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STAFF REPORT: REGULAR CALENDAR

Application No.:	**1-16-0122**
Applicant:	**City of Arcata**
Location:	Along the City of Arcata's waterfront along Humboldt Bay from Samoa Boulevard (State Route 255) southward to a terminus just north of Brainard's Slough (APNs 021-191-002; 021-191-003; 503-251-011; 503-251-008; 503-251-002; 503-251-003; 503-251-012; 503-241-005; 503-241-001; 503-241-012; 503-241-011; 503-251-009; 503-241-010; 503-241-013; 503-241-014; 503-211-004; 501-043-001; 501-043-002; 501-043-004; 501-043-005; 501-061-001; 501-061-002; 501-061-015; 501-091-006; 503-232-013; 506-011-004; & 506-291-014).
Project Description:	Construct approximately three miles of Class 1 multi-use trail as part of the California Coastal Trail including five bridges, one viewing platform, one trailhead, and interpretive signs; and mitigate for wetland fill impacts.
Staff Recommendation:	Approval with conditions.

SUMMARY OF STAFF RECOMMENDATION

The City of Arcata proposes to construct three miles of Class 1 multi-use trail along the Arcata waterfront as part of the California Coastal Trail, and install related facilities and amenities including five bridges, an overlook, benches, signage, fencing, and one new trailhead. The proposed trail segment, known as the Humboldt Bay Trail North, would begin just south of Samoa Boulevard and travel south through the Arcata Marsh and Wildlife Sanctuary (Arcata Marsh) and then south along the North Coast Railroad Authority (NCRA) railroad corridor paralleling South G Street and then Highway 101, terminating just north of Brainard's Slough in unincorporated Humboldt County.

The City proposes to mitigate for 1.78 acres of permanent impacts to palustrine and estuarine wetlands by (1) creating 2.26 acres of palustrine wetlands and (2) enhancing 9.4 acres of estuarine wetlands at two separate offsite locations (APNs 506-291-014 & 506-011-004). The estuarine wetland enhancement mitigation will consist of eradicating invasive *Spartina densiflora* (Spartina) in a relatively isolated salt marsh habitat in the Arcata Marsh. The City also proposes to mitigate for the loss of 0.03 acres of special-status salt marsh plant species Humboldt Bay owl's-clover and Point Reyes bird's-beak and 0.07 acres of riparian habitat by replacing plants and riparian habitat in-kind at a 1:1 ratio in the project vicinity.

Staff recommends conditions ensuring that project implementation, mitigation, and monitoring is undertaken as proposed, with a few recommended changes. First, to ensure long-term success of Spartina eradication at the mitigation site, Commission staff recommends **Special Condition 9** requiring the City to achieve less than 5% cover by Spartina within the 9.4-acre mitigation area within five years, instead of the City's proposed performance standard of less than 10% cover. Requiring less than 5% cover of Spartina at the end of the five year monitoring period is necessary to decrease the significant risk of reinvasion. Second, the City's proposed 1:1 ratio for riparian habitat mitigation does not account for temporal loss between the time the riparian vegetation along the trail is lost and the mitigation site(s) are established. To ensure riparian habitat mitigation is successful and to account for temporal loss, Commission staff recommends **Special Condition 12** requiring in-kind mitigation for the loss of 0.07 acres of riparian habitat at a 2:1 ratio, instead of the City's proposed 1:1 ratio. Finally, to ensure permissible wetland impacts are minimized, Commission staff recommends **Special Condition 22**, requiring revised construction plans that depict a reduction in paved trail width from ten to eight feet where the trail intersects wetlands within the Arcata Marsh. Narrowing the width of the trail to minimize wetland impacts in the Arcata Marsh would result in a reduction of over 1,200 square feet of wetland fill.

Staff also recommends conditions to ensure that the trail functions as a coordinated and integrated continuous public access system along the Arcata waterfront, as well as conditions to ensure that the Applicant has the legal ability to undertake development on property owned by others and comply with all conditions of approval. Staff believes that the proposed project, as conditioned, is consistent with all applicable Chapter 3 policies of the Coastal Act.

The motion to adopt the staff recommendation of **approval** of Coastal Development Permit (CDP) 1-16-0122 with special conditions is found on page 4.

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APPENDICES

EXHIBITS

I. MOTION AND RESOLUTION

Motion:

*I move that the Commission **approve** Coastal Development Permit Application No. 1-16-0122 subject to the conditions set forth in the staff recommendation.*

Staff recommends a **YES** vote on the foregoing motion. Passage of this motion will result in conditional approval of the permit and adoption of the following resolution and findings. The motion passes only by affirmative vote of a majority of the Commissioners present.

Resolution:

The Commission hereby approves Coastal Development Permit 1-16-0122 and adopts the findings set forth below on grounds that the development as conditioned will be in conformity with the policies of Chapter 3 of the Coastal Act and will not prejudice the ability of the local government having jurisdiction over the area to prepare a Local Coastal Program conforming to the provisions of Chapter 3. Approval of the permit complies with the California Environmental Quality Act because either 1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment, or 2) there are no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment.

II. STANDARD CONDITIONS

This permit is granted subject to the following standard conditions:

1. **Notice of Receipt and Acknowledgment**. The permit is not valid and development shall not commence until a copy of the permit, signed by the permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.

2. **Expiration.** If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.

3. **Interpretation.** Any questions of intent of interpretation of any condition will be resolved by the Executive Director or the Commission.

4. **Assignment.** The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.

5. **Terms and Conditions Run with the Land.** These terms and conditions shall be perpetual, and it is the intention of the Commission and the permittee to bind all future owners and possessors of the subject property to the terms and conditions.

III. SPECIAL CONDITIONS

This permit is granted subject to the following special conditions:

1. **Humboldt Bay Harbor, Recreation, and Conservation District Approval.** PRIOR TO ISSUANCE OF COASTAL DEVELOPMENT PERMIT 1-16-0122, the applicant shall provide to the Executive Director a copy of a permit issued by the Humboldt Bay Harbor, Recreation, and Conservation District, a letter of permission, or evidence that no permit or permission is required. The applicant shall inform the Executive Director of any changes to the project required by the District. Such changes shall not be incorporated into the project until the applicant obtains a Commission amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required

2. **California Public Utilities Commission (CPUC) Approval.** PRIOR TO ISSUANCE OF COASTAL DEVELOPMENT PERMIT 1-16-0122, the applicant shall provide to the Executive Director a copy of a final permit, license, review-approval, or other authorization issued by the CPUC for all new trail crossings of the North Coast Railroad Authority rail corridor, or evidence that no permit or grant of authority is required. The applicant shall inform the Executive Director of any changes to the project required by the CPUC. Such changes shall not be incorporated into the project until the applicant obtains a Commission amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

3. **North Coast Regional Water Quality Control Board Approval.** PRIOR TO ISSUANCE OF COASTAL DEVELOPMENT PERMIT 1-16-0122, the applicant shall provide to the Executive Director a copy of a permit issued by the Regional Board, a letter of permission, or evidence that no permit or permission is required. The applicant shall inform the Executive Director of any changes to the project required by the Regional Board. Such changes shall not be incorporated into the project until the applicant obtains a Commission amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

4. **U.S. Army Corps of Engineers Approval.** PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION, the permittee shall provide to the Executive Director a copy of a permit issued by the Army Corps of Engineers, or letter of permission, or evidence that no permit or permission is required. The permittee shall inform the Executive Director of any changes to the project required by the Army Corps of Engineers. Such changes shall not be incorporated into the project until the permittee obtains a Commission amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

5. **Approval for Mitigation Work at the Lanphere Parcel under Section 7 of the Federal Endangered Species Act**

   A. PRIOR TO COMMENCEMENT OF CONSTRUCTION OF WETLAND CREATION MITIGATION ON THE LANPHERE PARCEL (APN 506-291-014), the permittee shall provide to the Executive Director a copy of a letter of concurrence or biological opinion issued by the National Marine Fisheries Service, or evidence that no letter of concurrence or biological opinion is required. The permittee shall inform the Executive Director of any changes to the project required by the National Marine Fisheries Service. Such changes shall not be incorporated into the project until the permittee obtains a Commission amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

   B. PRIOR TO COMMENCEMENT OF CONSTRUCTION OF WETLAND CREATION MITIGATION ON THE LANPHERE PARCEL (APN 506-291-014), the permittee shall provide to the Executive Director a copy of a letter of concurrence or biological opinion issued by the United States Fish and Wildlife Service (USFWS), or evidence that no letter of concurrence or biological opinion is required. The permittee shall inform the Executive Director of any changes to the project required by USFWS. Such changes shall not be incorporated into the project until the permittee obtains a Commission amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

6. **Evidence of Legal Ability of Applicant to Undertake Development on Property Owned by Others and Comply with Conditions of Approval**

   A. PRIOR TO ISSUANCE OF COASTAL DEVELOPMENT PERMIT 1-16-0122, the applicant shall submit, for the review and approval of the Executive Director, evidence that clearly demonstrates that the North Coast Railroad Authority or the Northwestern Pacific Railroad Company is the legal owner of APNs 501-091-006, 503-251-008, 503-241-014, 503-211-004, 501-043-001, 501-043-002, 501-043-004, 501-043-005, 501-061-015, and 021-191-003, and as such has formally agreed in writing that the applicant may undertake development on each of their respective properties pursuant to Coastal Development Permit 1-16-0122 and as conditioned by the Commission herein.

   B. PRIOR TO ISSUANCE OF COASTAL DEVELOPMENT PERMIT 1-16-0122, the applicant shall submit, for the review and approval of the Executive Director, evidence that clearly demonstrates that Slack and Winzler Properties, LLC is the legal owner of APNs 021-191-002 and 503-251-011, and as such has formally agreed in writing that the applicant may undertake development on its property pursuant to Coastal Development Permit 1-16-0122 and as conditioned by the Commission herein.

   C. PRIOR TO ISSUANCE OF COASTAL DEVELOPMENT PERMIT 1-16-0122, the applicant shall submit, for the review and approval of the Executive Director, evidence that clearly demonstrates that the California Department of Transportation (Caltrans) is the legal owner of APN 506-291-014 and has formally agreed in writing

that the applicant may undertake development on its property pursuant to Coastal Development Permit 1-16-0122 and as conditioned by the Commission herein.

7. **Scope of Use for Trail and Easement.** PRIOR TO ISSUANCE OF COASTAL DEVELOPMENT PERMIT 1-16-0122, the permittee shall submit, for the review and approval of the Executive Director, a Grant of Easement that has been executed and recorded over the portion of the Humboldt Bay Trail North owned by Slack and Winzler Properties, LLC (APN 021-191-002). The recorded Grant of Easement to the City of Arcata shall permanently authorize use of the Trail by the public as approved by Coastal Development Permit 1-16-0122 with conditions, including Special Condition 24.

8. **Palustrine Wetland Creation Mitigation**

   A. The permittee shall carry out its proposed mitigation and monitoring on the Lanphere Parcel (APN 506-291-014) to create 2.26 acres of seasonal palustrine wetlands out of uplands both in conformance with the conditions of this permit and the plan entitled "City of Arcata Wetland Mitigation and Monitoring Plan for Humboldt Bay Trail North" and dated July 22, 2016 (Exhibit 9). Any proposed changes to the approved final plan shall be reported to the Executive Director. No changes to the approved final plan shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

   B. The permittee shall complete construction of mitigation work (i.e., creation of 2.26 acres of seasonal palustrine wetlands) on the Lanphere Parcel within four (4) years of permit approval (by October 5, 2020). If mitigation work is not completed within four (4) years of permit approval, the permittee shall submit a revised or supplemental mitigation program to compensate for the additional temporal loss of habitat associated with the delay in implementing the wetland mitigation plan. The revised mitigation program shall be processed as an amendment to this coastal development permit.

9. **Tidal Salt Marsh Enhancement Mitigation (*Spartina densiflora* Eradication)**

   A. The permittee shall carry out proposed *Spartina densiflora* (Spartina) eradication activities on 9.4 acres of the South I Street Parcel (APN 506-011-004) in compliance with the special conditions of Coastal Development Permit 1-14-0249, including Special Condition 4 (See Exhibit 7 for a list of the special conditions).

   B. PRIOR TO ISSUANCE OF COASTAL DEVELOPMENT PERMIT 1-16-0122, the applicant shall submit, for the review and written approval of the Executive Director, a revised final wetland mitigation and monitoring plan for the proposed Spartina eradication activities on 9.4 acres of the South I Street Parcel (APN 506-011-004) for tidal salt marsh enhancement mitigation that conforms to the plan entitled "City of Arcata Wetland Mitigation and Monitoring Plan for Humboldt Bay Trail North" and dated July 22, 2016 (Exhibit 9), except the revised final plan shall include:

      i. All of the components of a Site-Specific Spartina Removal Plan required by Special Condition 4 of Coastal Development Permit 1-14-0249.

      ii. The following performance standards:

a. Greater than 50% cover of native salt marsh plant species within the 9.4-acre mitigation project area within five years of implementation of primary treatment.

b. Less than 5% cover by Spartina within the 9.4-acre mitigation project area within five years of implementation of primary treatment.

C. The permittee shall undertake the proposed tidal salt marsh enhancement mitigation on the South I Street Parcel in compliance with the special conditions of Coastal Development Permit 1-14-0249 and in accordance with the approved final wetland mitigation and monitoring plan. Any proposed changes to the approved final plan shall be reported to the Executive Director. No changes to the approved final plan shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

10. **Open Space Restriction on Mitigation Properties**

A. Mitigation Property Owned by the City

i. No development, as defined in Section 30106 of the Coastal Act, shall occur within the 9.4-acre wetland enhancement area on APN 506-011-004 which is bordered by open waters of Humboldt Bay to the south, a tidal channel to the west, a tidal channel and trail berm to the north, and South I Street to the east as generally depicted on Exhibit 8, pg. 3 except for:

a. The authorized development that is approved by this permit as specifically identified in Finding IV-A, "Project Description;" and

b. The following development, if approved by the California Coastal Commission as an amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required: (a) vegetation clearance if required by the California Department of Forestry and Fire Protection to meet fire safety standards; (b) maintenance of existing utilities and community services infrastructure; (c) improvements for public access purposes; (d) further habitat restoration and enhancement activities; and (e) soil stabilization measures.

ii. PRIOR TO ISSUANCE OF COASTAL DEVELOPMENT PERMIT 1-16-0122, the applicant shall submit a written agreement, in a form and content acceptable to the Executive Director, expressly acknowledging and agreeing that the 9.4-acre wetland enhancement area on APN 506-011-004, as generally depicted on Exhibit 8, pg. 3, is subject to the restrictions on development set forth in this condition.

B. Mitigation Property Owned by Caltrans

i. No development, as defined in Section 30106 of the Coastal Act, shall occur within the 2.26-acre mitigation area APN 506-291-014, which is located on pastureland in the southwestern third of the site from (south to north) the southern property boundary to the northern end of the remnant sand dune and from (west to east) the forested wetlands to a drainage ditch that runs north/south across the southern half of the property as generally depicted on Exhibit 8, pg. 2 except for:

a. The authorized development that is approved by this permit as specifically identified in Finding IV-A, "Project Description;"

b. Seasonal agricultural grazing; and

c. The following development, if subsequently authorized by the California Coastal Commission: (a) vegetation clearance if required by the California Department of Forestry and Fire Protection to meet fire safety standards; (b) maintenance of existing utilities and community services infrastructure; (c) improvements for public access purposes; (d) further habitat restoration and enhancement activities; and (e) soil stabilization measures.

ii. PRIOR TO ISSUANCE OF COASTAL DEVELOPMENT PERMIT 1-16-0122, the applicant shall cause Caltrans, the landowner of APN-506-291-014, to submit a written agreement, in a form and content acceptable to the Executive Director, expressly acknowledging and agreeing that the 2.26-acre mitigation area on APN 506-291-014, as generally depicted on Exhibit 8, pg. 2, is subject to the restrictions on development set forth in this condition.

11. **Agreement to Record a Deed Restriction if either of the Mitigation Properties are to be Conveyed**

A. Mitigation Property Owned by the City

a. PRIOR TO ANY CONVEYANCE OF APN 506-011-004 (the APN containing the 9.4-acre estuarine intertidal salt marsh enhancement mitigation site as generally depicted on Exhibit 8, pg. 3), the City of Arcata shall submit to the Executive Director for review and approval, documentation demonstrating that they as landowner have executed and recorded against APN 506-011-004 a deed restriction, in a form and content acceptable to the Executive Director which reflects the restrictions on development of the subject parcel contained in Special Condition 10 above. The deed restriction shall run with the land binding all successors and assigns, and shall be recorded free of prior liens that the Executive Director determines may affect the enforceability of the restriction. This deed restriction shall not be removed or changed without a Commission amendment to this coastal development permit.

b. PRIOR TO ANY CONVEYANCE OF APN 506-011-004 and prior to submittal to the Executive Director of the deed restriction required in Part A(a) above, the applicant shall submit for the review and approval of the Executive Director, and upon such approval, for attachment as an Exhibit to the deed restriction, a formal metes and bounds legal description and graphic depiction, prepared by a licensed surveyor, of the portions of APN 506-011-004 affected by this condition, as generally described above and shown on Exhibit 8, pg. 3 attached to this staff report.

c. PRIOR TO ISSUANCE OF COASTAL DEVELOPMENT PERMIT 1-16-0122, the applicant, as landowner of APN 506-011-004, shall submit a written agreement, in a form and content acceptable to the Executive Director, expressly acknowledging and agreeing to implementation of all of the above terms of this condition.

B. Mitigation Properties Owned by Caltrans

a. PRIOR TO ANY CONVEYANCE OF APN 506-291-014 (the APN containing the palustrine emergent wetland mitigation site as generally depicted on Exhibit 8, pg. 2), the permittee shall cause the landowner of APN 506-291-014 to record against APN 506-291-014 a deed restriction, in a form and content acceptable to the Executive Director, which reflects the restrictions on development of the subject parcel contained in Special Condition 10 above. The deed restriction shall run with the land binding all successors and assigns, and shall be recorded free of prior liens that the Executive Director determines may affect the enforceability of the restriction. This deed restriction shall not be removed or changed without a Commission amendment to this coastal development permit.

b. PRIOR TO ANY CONVEYANCE OF APN 506-291-014 and prior to submittal to the Executive Director of the deed restriction required in Part B(a) above, the permittee shall submit for the review and approval of the Executive Director, and upon such approval, for attachment as an Exhibit to the deed restriction, a formal metes and bounds legal description and graphic depiction, prepared by a licensed surveyor, of the portions of APN 506-291-014 affected by this condition, as generally described above and shown on Exhibit 8, pg. 2 attached to this staff report.

c. PRIOR TO ISSUANCE OF COASTAL DEVELOPMENT PERMIT 1-16-0122, the applicant shall cause Caltrans, as landowner of APN 506-291-014, to submit a written agreement, in a form and content acceptable to the Executive Director, expressly acknowledging and agreeing to implementation of all of the above terms of this condition.

12. **Mitigation for Riparian Wetland Habitat Loss**

A. PRIOR TO ISSUANCE OF COASTAL DEVELOPMENT PERMIT 1-16-0122, the applicant shall submit, for the review and approval of the Executive Director, a final riparian habitat mitigation and monitoring plan prepared by a qualified botanist or ecologist to mitigate for the impacts to 0.07 acres of one-parameter riparian wetlands at a 2:1 ratio.

i. The final riparian habitat mitigation and monitoring plan shall provide for in-kind compensation for the filling of 0.07 acres of riparian wetlands at a 2:1 ratio by creating 0.14 acres of riparian wetlands in the project vicinity.

ii. The final riparian habitat mitigation and monitoring plan shall demonstrate that:

a. Only habitat-specific, regionally appropriate native vegetation shall be used. The vegetation to be replanted shall be of local genetic stock, if available. No plant species listed as problematic and/or invasive by the California Native Plant Society, the California Invasive Plant Council, or as may be identified from time to time by the State of California, shall be installed or allowed to naturalize or persist in the mitigation area. No plant species listed as a “noxious weed” by the governments of the State of California or the United States shall be utilized within the mitigation area;

b. Revegetation shall achieve a standard for success of at least 80 percent survival of plantings and at least 80 percent ground cover for broadcast seeding after a period of 3 years; and

c. Rodenticides containing any anticoagulant compounds, including, but not limited to, Bromadiolone or Diphacinone, shall not be used.

iii. The final riparian habitat mitigation and monitoring plan shall include, at a minimum, the following components:

a. A map identifying riparian planting mitigation site(s) totaling 0.14 acres within or adjacent to existing wetlands in the project vicinity, such as areas around creeks and sloughs currently lacking riparian cover;

b. Specified goals of the plan, including a clear narrative description of the characteristics of the habitat type that the mitigation is intended to provide, and performance standards for evaluating the success of the riparian mitigation goals that will ensure establishment of 0.14 acres of self-sustaining compensatory riparian vegetation, including at least 2:1 replacement of native riparian trees lost by trail development;

c. A description of the existing habitat at the chosen mitigation site(s);

d. A schedule for the creation of 0.14 acres of riparian wetland habitat that demonstrates that (a) any required excavation and grading at the mitigation site(s) shall only be performed during the non-rainy season between May 1 and October 15, and shall be completed within three months of completion of construction of the development authorized by Coastal Development Permit 1-16-0122, and (b) the riparian vegetation planting shall be performed between November 1 and April 15 during the first rainy season following completion of the mitigation site(s) excavation and grading work;

e. Any necessary grading and erosion and sediment control plans for the mitigation site(s) if soil will be significantly disturbed during the course of the mitigation work;

f. A planting plan accompanied by a plant list, which together show the type, size, number, source, and location of all plant materials that will be retained or installed at the mitigation site(s);

g. A maintenance plan (e.g., weeding, replacement planting) and monitoring plan to ensure that the specified goals and performance standards have been satisfied. Mitigation site(s) shall be monitored yearly with at least one site visit during the spring or summer months for a minimum of three years following completion of the project. All plants that have died shall be replaced during the next planting cycle (generally between late fall and early spring) and monitored for a period of three years after planting;

h. Provisions for submittal within 30 days of completion of the initial mitigation work a report with maps, photographs, and a narrative discussion demonstrating that the riparian wetland mitigation work has been completed in accordance with the approved final riparian habitat mitigation and monitoring plan; and

i. Provisions for submittal of a final monitoring report to the Executive Director at the end of the three-year reporting period. The final report must be prepared in conjunction with a qualified wetlands biologist. The report must evaluate whether the revegetation of the site(s) conforms with the goals, objectives, and performance standards set forth in the approved final riparian habitat mitigation and monitoring plan. The report must address all of the monitoring data collected over the three-year period.

B. If the final monitoring report indicates that the riparian habitat mitigation has been unsuccessful, in part or in whole, based on the approved goals, objectives, and performance standards set forth in the approved final riparian habitat mitigation and monitoring plan, the applicant shall submit a revised or supplemental plan to compensate for those portions of the original plan which did not meet the approved goals, objectives, and performance standards. The revised or supplemental plan shall be processed as an amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

C. The applicant shall undertake development in accordance with the approved final riparian habitat mitigation and monitoring plan. Any proposed changes to the approved final plan shall be reported to the Executive Director. No changes to the approved final plan shall occur without a Commission amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

13. **Monitoring and Mitigation of Temporary Wetland Impacts.** Where project staging and/or access occurs in wetlands, the areas temporarily impacted shall be revegetated with native wetland plants where bare ground is observed, and shall be monitored for successful plant reestablishment one year following impacts. A monitoring report shall be submitted to the Executive Director by December 31st of that following year. If the monitoring report indicates that the temporarily impacted wetlands do not have a similar vegetative density and cover to the surrounding wetlands, the City shall submit a revised or supplemental restoration program to mitigate for wetland impacts in kind and in place. The revised or supplemental restoration program shall be processed as an amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

14. **Protection of Special Status Salt Marsh Plants**

A. Construction in the vicinity of special-status plant populations including, but not limited to, Point Reyes bird's-beak (*Chloropyron maritimum* ssp. *palustre*), Humboldt Bay owl's-clover (*Castilleja ambigua* ssp. *humboldtiensis*), and Lyngbye's sedge (*Carex lyngbyei*), shall be scheduled for times of the year occurring after special-status plants have dropped their seed to the maximum extent feasible to avoid impacts to plant blooming and seed dispersal. Should construction occur during times when special-status plants are present in the project vicinity, prior to the start of construction activities, a qualified biologist shall identify special-status plant populations within 50 feet of the project footprint, including, but not limited to Point Reyes bird's-beak, Humboldt Bay owl's-clover, and Lyngbye's sedge, and temporary flagging shall be erected around the special-status plant populations to ensure

avoidance of these areas. The flagging shall be periodically inspected throughout each period of construction and repaired as necessary. All pedestrian and vehicular entry into these patches shall be avoided.

B. PRIOR TO ISSUANCE OF COASTAL DEVELOPMENT PERMIT 1-16-0122, the applicant shall submit, for the review and approval of the Executive Director, a final special-status plant mitigation and monitoring plan to mitigate for direct impacts to special-status plant habitat in the project footprint, including the four patches of Humboldt Bay owl's-clover totaling 389 square feet and three patches of Point Reyes bird's-beak totaling 885 square feet previously identified north and south of Gannon Slough within the footprint of the proposed trail and overlook. The final special-status plant mitigation and monitoring plan shall be prepared by a qualified botanist or ecologist in consultation with staff from the California Department of Fish and Wildlife.

   i. The plan shall demonstrate that:

      a. No construction activities shall occur in the affected areas until after all Humboldt Bay owl's clover and Point Reyes bird's beak plants have set seed, as determined by a qualified botanist;

      b. For Humboldt Bay owl's clover and Point Reyes bird's beak plants within the project area of impact, a qualified botanist shall collect and conserve all seeds of the affected individuals to be distributed in a suitable habitat (with suitable host plants, native plant cover, elevations, and tidal exchange for the species) that already contains Humboldt Bay owl's clover and Point Reyes bird's beak near to where the seeds were collected; and

      c. Collected seeds shall be distributed into the identified habitat areas at the phenologically appropriate time, as determined by the qualified botanist.

   ii. The plan shall include, at a minimum, the following components:

      a. Updated preconstruction seasonally appropriate botanical surveys conducted by a qualified botanist for Humboldt Bay owl's clover and Point Reyes bird's beak that indicate the number of special-status plant individuals to be impacted by construction activities;

      b. A map that locates the affected areas relative to the habitat area where seeds will be distributed;

      c. A narrative that describes the seed collection and distribution program and methods, identifies the habitats that will receive the seeds to be dispersed and why the receiver sites were selected, and discusses the phenologically appropriate time for distribution of the seed; and

      d. Provisions for submittal within 30 days of completion of the initial mitigation work a report with maps, photographs, and a narrative discussion demonstrating that the initial mitigation work has been completed in accordance with the approved final mitigation plan.

   iii. The applicant shall undertake development in accordance with the approved final special-status plant mitigation and monitoring plan. Any proposed changes to the approved final plan shall be reported to the Executive Director. No

changes to the approved final plan shall occur without a Commission amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

15. **Protection of Bird Nesting Habitat**

A. Potential nesting habitat (i.e., woody vegetation) to be removed by project construction shall be removed between September 1 and January 31, outside the avian nesting season, to the maximum extent feasible.

B. If it is not feasible to remove potential nesting habitat outside the avian nesting season, a survey for nesting birds in and adjacent to the project construction area shall be conducted by a qualified biologist according to current California Department of Fish and Wildlife (CDFW) protocol no more than seven days prior to the commencement of construction activities. If any active nest is identified during preconstruction surveys, the biologist, in consultation with CDFW, shall determine the extent of a construction-free buffer zone to be established around the nest, and construction in the buffer zone shall be delayed until after the young have fledged, as determined by additional surveys conducted by a qualified biologist. The construction-free buffer zone shall be a minimum of 250 feet for nesting raptors and a minimum of 50 feet for other sensitive bird species.

C. Prior to the commencement of authorized work each year during the avian nesting season, the permittee shall submit, for the review and approval of the Executive Director, the survey required in Part B above, including a map that locates any nesting habitat identified by the survey and a narrative that describes proposed sensitive habitat avoidance measures.

16. **Protection of Northern Red-legged Frogs (*Rana aurora*)**

A. In compliance with Special Condition 17(A), all construction in waterways and wetlands with standing water, including construction within Wetland #1 (the palustrine emergent wetland in the Arcata Marsh and Wildlife Sanctuary depicted on Exhibit 5, pgs. 2-4), shall be limited to the period of the year between July 1 and September 30 to avoid disturbance to breeding northern red-legged frogs.

B. No more than one week prior to commencement of ground disturbance within 50 feet of all suitable northern red-legged frog habitat, a qualified biologist shall perform a pre-construction survey for the northern red-legged frog and shall coordinate with the California Department of Fish and Wildlife (CDFW) staff to relocate any animals that occur within the work impact zone to nearby suitable habitats.

C. In the event that a northern-red legged frog is observed in an active construction zone, the contractor shall immediately halt construction activities until a biologist, in consultation with CDFW, has moved the frog to a safe location in similar habitat outside of the construction zone.

17. **Construction Responsibilities.** The permittee shall comply with the following construction-related requirements:

A. Timing of work:

i. All construction in stream and slough channels and in wetlands with standing water, including pile driving for bridge construction, shall be limited to the period of the year between July 1 and September 30 to avoid sensitive fish species, breeding northern red-legged frogs, and wet weather.

ii. All other earth-disturbing activities shall be limited to the dry season, April 15 through October 31. The Executive Director may grant an extension of the work windows through November 30th for good cause upon written request, provided evidence is submitted that continued dry weather is forecast by the National Weather Service during the requested extension period.

iii. All ground disturbing activities and asphaltic-concrete paving operations shall be performed during dry-weather periods only. If rainfall is forecast (i.e., the National Weather Service's Northwestern California forecast for the Eureka area predicts a greater than 50 percent chance of precipitation for the timeframe in which the work is to be conducted) after construction has commenced and before construction is complete, any exposed soil areas shall be promptly mulched with weed-free straw or covered with sheeting and secured with sand bagging or other appropriate materials before the onset of precipitation. Adequate and effective erosion and sediment control measures shall be used to prevent sediment-laden water from entering coastal waters and wetlands.

B. Bridge piles shall be installed with a vibratory hammer. Pile driving with an impact hammer is prohibited.

C. Pile installations, bridge footing installations, and other ground disturbing activities within the channel or below the high tide line shall be isolated from coastal waters by:

i. Installing piles during periods of minus ebb tides; and

ii. Installing clear water diversions (e.g. cofferdams) as necessary to ensure cast-in-place concrete elements of the bridges and Gannon Slough Overlook are isolated from coastal waters until cured and thus minimize the transport of sediment and concrete pollution to coastal waters.

D. Pre-construction training shall be provided for all on-site contractors by a qualified biologist to educate personnel on the biological restrictions and sensitivity of habitats in and adjacent to the construction area.

E. During equipment access and/or staging in wetlands, protective pads (metal/wood/rubber sheets) shall be placed on top of wetlands where equipment access and/or staging would be required to prevent rutting and compression of soils and uprooting or destroying existing wetland vegetation.

F. On-site native vegetation shall be maintained to the maximum extent feasible during construction activities. Areas where wetland and upland vegetation need to be removed shall be identified in advance of ground disturbance and limited to only those areas identified in the final project plans. Exclusionary fencing shall be installed to mark the boundaries of the work area to ensure construction occurs in the designated areas and does not impact adjacent wetlands and environmentally sensitive areas.

G. Within 10 days of completion of construction, soils and slopes exposed due to project-related earthwork shall be re-vegetated using native seed mix and/or a sterile

quick grow species. No plant species listed as problematic and/or invasive by the California Native Plant Society, the California Invasive Plant Council, or by the State of California shall be planted or allowed to naturalize or persist. No plant species listed as a "noxious weed" by the State of California or the U.S. Federal Government shall be planted.

H. Sediment control measures shall be in place prior to the onset of the rainy season and shall be monitored and maintained in good working condition until disturbed areas have been revegetated.

I. Suitable erosion and sediment control devices, such as silt fences, straw wattles, or catch basins, shall be placed below all construction activities at the edge of surface water features to intercept sediment before it reaches waterways. These structures shall be installed prior to any clearing or grading activities. Sediment built up at the base of structures shall be removed before structure removal to avoid any accumulated sediments from being mobilized post-construction.

J. To minimize wildlife entanglement and plastic debris pollution, the use of temporary rolled erosion and sediment control products with plastic netting (such as polypropylene, nylon, polyethylene, polyester, or other synthetic fibers used in fiber rolls, erosion control blankets, and mulch control netting) is prohibited. Any erosion-control associated netting shall be made of natural fibers and constructed in a loose-weave design with movable joints between the horizontal and vertical twines.

K. If treated wood is used in trail facilities and amenities such as for benches and bridge decking, the following additional Best Management Practices (BMPs) shall be implemented: (i) no creosote-treated wood shall be utilized; (ii) whenever possible, cutting or drilling of treated wood shall occur at least 100 feet away from coastal waters and wetlands, and any sawdust, drill shavings, and wood scraps shall be contained and collected to prevent the discharge of treated wood to the marine environment; and (iii) treated wood materials shall be stored during construction in a contained, covered area to minimize exposure to precipitation.

L. No uncured concrete or runoff from uncured concrete shall be allowed to enter coastal waters. Concrete paving and grinding operations, and storm drain inlet protection BMPs shall be employed to prevent concrete grindings, cutting slurry, and paving rinsate from entering drop inlets or sheet-flowing into coastal waters. Concrete delivery vehicle wash-out maintenance at the project site is prohibited.

M. Any excess excavated material and other construction debris resulting from construction activities shall be removed immediately upon completion of component construction, and shall be disposed of at a disposal site outside the coastal zone or within the coastal zone pursuant to a valid coastal development permit. Any potentially hazardous waste materials would be disposed of at an approved Class II landfill that is equipped to handle hazardous waste.

N. Equipment when not in use shall be stored in upland areas at least 100 feet away from surface water features, including Humboldt Bay.

O. Equipment shall use non-toxic vegetable oil for operating hydraulic equipment instead of conventional hydraulic fluids.

P. Plastic materials shall be placed under asphaltic concrete paving equipment while not in use to catch and contain drips and leaks.

Q. Any fueling, maintenance, and washing of construction equipment shall occur in confined upland areas specifically designed to control runoff and located more than 100 feet away from coastal waters.

R. Fuels, lubricants, and solvents shall not be allowed to enter coastal waters or wetlands. Hazardous materials management equipment including oil containment booms and absorbent pads shall be available immediately on-hand at the project site. Any accidental spill shall be rapidly contained and cleaned up.

18. **Avoidance of Soil and Groundwater Contamination.** PRIOR TO COMMENCEMENT OF CONSTRUCTION OF DEVELOPMENT AUTHORIZED BY COASTAL DEVELOPMENT PERMIT 1-16-0122, the permittee shall

A. Complete pre-construction soil borings where the trail alignment is located within the NCRA right-of-way to characterize soil and groundwater as recommended by the Hazardous Materials Corridor Study prepared for the project (Winzler & Kelly, 2010 and Mark Andre, 2014), and submit the results of soil and groundwater sample analysis for the review and approval of the Executive Director.

B. Prepare and submit a Construction Soil and Groundwater Management Plan for the review and approval of the Executive Director:

i. The plan shall demonstrate that all contaminated soil and groundwater encountered during construction shall be contained, handled, and properly disposed of in a manner that prevents discharge of contaminated soil and groundwater to the surrounding environment;

ii. The plan shall provide for field screening during construction activities, and sampling of any impacted soils and groundwater encountered with characterization for off-site disposal; and

iii. The plan shall include proposed containment, handling, and disposal methods for special handling of impacted groundwater, impacted soil segregation, and manifested disposal if necessary.

C. The permittee shall undertake development in accordance with the final plans. Any proposed changes to the final plans shall be reported to the Executive Director. No changes to the final plans shall occur without a Commission approved amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

19. **Assumption of Risk, Waiver of Liability and Indemnity.** By acceptance of this permit, the permittee acknowledges and agrees (i) that the site may be subject to hazards, including but not limited to ground shaking, liquefaction, wave run-up, storm surges, flooding, and erosion, many of which will worsen with future sea level rise; (ii) to assume the risks to the permittee and the property that is the subject of this permit of injury and damage from such hazards in connection with this permitted development; (iii) to unconditionally waive any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards; and (iv) to indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs

and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards.

20. **Liability for Costs and Attorney's Fees**. The permittee shall reimburse the Coastal Commission in full for all Coastal Commission costs and attorney's fees (including but not limited to such costs/fees that are: (1) charged by the Office of the Attorney General; and (2) required by a court) that the Coastal Commission incurs in connection with the defense of any action brought by a party other than the permittee against the Coastal Commission, its officers, employees, agents, successors and assigns challenging the approval or issuance of this permit, the interpretation and/or enforcement of permit conditions, or any other matter related to this permit. The permittee shall reimburse the Coastal Commission within 60 days of being informed by the Executive Director of the amount of such costs/fees. The Coastal Commission retains complete authority to conduct and direct the defense of any such action against the Coastal Commission.

21. **Protection of Archeological Resources**

    A. AT LEAST TWO WEEKS PRIOR TO COMMENCEMENT OF GROUND-DISTURBING ACTIVITIES AUTHORIZED BY COASTAL DEVELOPMENT PERMIT 1-16-0122, the permittee shall notify the Tribal Historical Preservation Officers (THPOs) from the Wiyot Tribe, the Bear River Band of Rohnerville Rancheria, and the Blue Lake Rancheria of the construction schedule and arrange for tribal representative(s) to be present to observe ground-disturbing activities if deemed necessary by the THPOs. A cultural resources monitor approved by the Wiyot Tribe, the Bear River Band of Rohnerville Rancheria, and the Blue Lake Rancheria shall be present to oversee all ground disturbing activities authorized by Coastal Development Permit 1-16-0122 unless evidence has been submitted for the review and approval of the Executive Director that the THPOs of these three entities have agreed that a cultural resources monitor need not be present.

    B. If an area of cultural deposits or human remains is discovered during the course of the project, all construction shall cease and shall not re-commence until a qualified cultural resource specialist, in consultation with the THPOs of the Wiyot Tribe, the Bear River Band of Rohnerville Rancheria, and the Blue Lake Rancheria, analyzes the significance of the find and prepares a supplementary archaeological plan for the review and approval of the Executive Director, and either: (a) the Executive Director approves the Supplementary Archaeological Plan and determines that the Supplementary Archaeological Plan's recommended changes to the proposed development or mitigation measures are *de minimis* in nature and scope, or (b) the Executive Director reviews the Supplementary Archaeological Plan, determines that the changes proposed therein are not *de minimis*, and the permittee has thereafter obtained an amendment to coastal development permit 1-16-0122.

22. **Final Site and Construction Plans**

    A. PRIOR TO COMMENCEMENT OF CONSTRUCTION OF THE COASTAL TRAIL PROJECT AUTHORIZED BY COASTAL DEVELOPMENT PERMIT 1-16-0122, the permittee shall submit for the review and written approval of the Executive Director, a revised set of final site and construction plans for the trail that

are consistent with the plans submitted to the Commission and attached as Exhibit 3, except that the plans shall demonstrate that impacts to wetlands are minimized through a reduction in surfaced trail width to eight feet with two-foot-wide, unpaved shoulders within the Arcata Marsh and Wildlife Sanctuary where the trail intersects with Wetland Nos. 1-6 (as shown in Exhibit 5, pgs. 2-6).

i. The revised final plans shall include, at a minimum, plan and profile architectural drawings for all segments of the trail including the bridges, viewing platform, trailhead, benches, fencing, and railway, roadway, and driveway crossings.

ii. The revised final plans shall also identify the specific location of all construction areas, all staging areas, and all construction access corridors in site plan view.

B. The permittee shall undertake development in accordance with the revised final plans. Any proposed changes to the revised final plans shall be reported to the Executive Director. No changes to the revised final plans shall occur without a Commission approved amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

23. **Final Design Plans for All Signage**

A. PRIOR TO COMMENCEMENT OF CONSTRUCTION OF SIGNAGE AUTHORIZED BY COASTAL DEVELOPMENT PERMIT 1-16-0122, the permittee shall submit for the review and written approval of the Executive Director, two copies of a plan for all proposed signage, including informational and directional signage.

i. The plans shall demonstrate that all signs to be erected at the project site:

a. Are visually compatible with the character of surrounding areas with respect to height and bulk, including signs that are no larger than those currently installed at the adjacent Arcata Marsh and Wildlife Sanctuary;

b. Do not significantly obstruct views from public vantage points; and

c. Conform in style, materials, colors, and physical appearance with other similar signage within the Arcata Marsh and Wildlife Sanctuary and Humboldt Bay National Wildlife Refuge.

ii. The plan shall include, at a minimum, the following components:

a. A map or site plan showing the locations of all signage;

b. To-scale, dimensioned elevation plan depictions of the signage, including clear representation of sign verbiage, symbology, and size; and

c. A description of the materials and colors of all signs.

B. The permittee shall undertake development in accordance with the approved final plans. Any proposed changes to the approved final plans shall be reported to the Executive Director. No changes to the approved final plans shall occur without a Commission approved amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

24. **Use, Maintenance, Modification, and Abandonment of Trail**

A. The trail authorized by this coastal development permit shall comply with the following:

i. The trail shall be a Class I multi-use trail available for shared public use 24 hours a day daily;

ii. The permittee shall be responsible for maintenance of the multi-modal trail and motorized vehicles shall be permitted access by the City and its agents for construction, maintenance and emergency purposes;

iii. The City shall maintain continuously all trail improvements in good order and repair and shall allow no nuisances to exist or be maintained therein;

iv. No portion of the trail owned by the City of Arcata in fee or by grant of easement may be abandoned by the City until a grant of easement is transferred to another entity, approved by the Executive Director, who can operate that portion of the trail in conformance with all terms and conditions of this coastal development permit; and

v. Any proposed changes, including any proposed change in the above-identified scope and manner of use or any proposed relocation or abandonment of any portion of the multi-modal trail, shall require an amendment to Coastal Development Permit No. 1-16-0122 approved by the California Coastal Commission unless the Executive Director determines that no amendment is legally required.

B. PRIOR TO ISSUANCE OF COASTAL DEVELOPMENT PERMIT 1-16-0122, the applicant shall enter into a written agreement with the Commission, in a form and content acceptable to the Executive Director, acknowledging and agreeing to implementation of all of the above terms of this condition.

25. **Agreement To Record A Deed Restriction if Coastal Trail Property Owned by the City of Arcata is to be Conveyed**

A. PRIOR TO ANY CONVEYANCE OF ANY COASTAL TRAIL PROPERTIES OWNED BY THE CITY OF ARCATA (APNs 503-251-002; 503-251-003; 503-251-012; 503-241-011; 503-241-012; 503-241-010; and 503-241-013) as generally depicted in Exhibit 12, the permittee shall submit to the Executive Director for review and approval, documentation demonstrating that the permittee as landowner has executed and recorded against the property to be conveyed a deed restriction, in a form and content acceptable to the Executive Director, which authorizes the Coastal Trail in the scope and manner set forth in Special Condition 24 above. The deed restriction shall run with the land binding all successors and assigns, and shall be recorded free of prior liens that the Executive Director determines may affect the enforceability of the restriction. This deed restriction shall not be removed or changed without a Commission amendment to this coastal development permit.

B. PRIOR TO ISSUANCE OF COASTAL DEVELOPMENT PERMIT 1-16-0122, the applicant shall submit a written agreement, in a form and content acceptable to the Executive Director, acknowledging and agreeing to implementation of all of the above terms of this condition.

IV. FINDINGS AND DECLARATIONS

A. PROJECT DESCRIPTION

The City of Arcata is proposing to construct three miles of Class 1 multi-use trail along the Arcata waterfront as part of the California Coastal Trail (Exhibits 1-2). The purpose of the project is to provide nature study opportunities, enhance non-motorized transportation access and connectivity, and increase public access to and along Arcata's Waterfront on Arcata Bay (northern Humboldt Bay).

The proposed trail segment, known as the Humboldt Bay Trail North, would begin just south of Samoa Boulevard (State Route 255) at its intersection with L Street in the City of Arcata and end just north of Brainard's Slough directly west of Highway 101 between Arcata and Eureka in unincorporated Humboldt County. Approximately one mile of the trail would be located within the City of Arcata's Marsh and Wildlife Sanctuary where there is an existing trail network. The southern two miles would be located within the North Coast Railroad Authority's (NCRA) railroad right-of way that first runs between South G Street and the City of Arcata's Wastewater Treatment Plant (WWTP), then between the Eureka-Arcata Highway 101 corridor and Humboldt Bay. For the portions of the trail within the NCRA right-of-way, the project would use a "rail-with-trail" design in which the trail is located on the side of the railroad tracks rather than on top of the tracks.[1] Improvements proposed as part of the trail include five bridges, an overlook, benches, signage, fencing, and one new trailhead.

The City also proposes to mitigate for 1.78 acres of permanent wetland fill impacts to palustrine emergent and estuarine intertidal wetlands through off-site mitigation at two locations. One location would be on a City-owned parcel adjacent to the outlet of McDaniel Slough into Humboldt Bay in the Arcata Marsh and Wildlife Sanctuary ("South I Street Parcel"), where the City is proposing to perform wetland enhancement through eradication of invasive *Spartina densiflora* (Spartina) on 9.4 acres of salt marsh (APN 506-011-004) (See Exhibit 8). Spartina eradication at the proposed mitigation site has been approved previously under Coastal Development Permit (CDP) 1-14-0249. The second location ("Lanphere Parcel") would be located on an agricultural parcel owned by the California Department of Transportation (Caltrans) that is situated between Mad River Slough and the Lanphere Dunes Unit of the Humboldt Bay National Wildlife Refuge, where the City is proposing to create 2.26 acres of palustrine wetlands (APN 506-291-014) (See Exhibit 8). This 2.26-acre area equates to a 1:1 creation ratio for in-kind impacts to palustrine wetlands and a 2:1 creation ratio for out-of-kind impacts to estuarine wetlands. The City is also proposing to mitigate for the loss of 0.03 acres of special-status salt marsh plant species Humboldt Bay owl's-clover and Point Reyes bird's-beak and 0.07 acres of riparian habitat by replacing plants and riparian habitat in-kind at a 1:1 ratio in the project vicinity.

[1] The NCRA railroad corridor is currently inactive but is being preserved for potential future use. The proposed trail alignment therefore avoids the tracks to the greatest extent possible, maintaining minimum setbacks from the centerline of the tracks in conformance with NCRA Policy 0907 – Trail Projects on the NWP Line Rights-of-Way: Design, Construction, Safety, Operations, and Maintenance Guidelines (North Coast Railroad Authority, 2009).

Trail Alignment

The proposed Humboldt Bay Trail North would extend a recently completed 1.3-mile multi-use trail segment that follows the NCRA railroad right-of-way generally southwest through the City of Arcata from near Larson Park, at the northern end of town, to just north of Samoa Boulevard (See "Arcata City Trail" on Exhibit 10). The currently proposed trail segment would start on the south side of Samoa Boulevard and follow the NCRA right-of-way south along the west side of the tracks to the north end of the City of Arcata's Marsh and Wildlife Sanctuary (Arcata Marsh) (Exhibit 4, pg. 1 and Exhibit 5, pg. 2). Within the Arcata Marsh, the trail would leave the NCRA right-of-way, bridge over an emergent wetland, and connect to an existing trail (part of the Arcata Marsh trail network) on an earthen berm that parallels the railroad tracks but is separated from the tracks by the emergent wetland (Exhibit 4, pg. 2 and Exhibit 5, pg. 3). The trail would continue on the berm until reaching South I Street, where it would cross South I Street and connect to another existing crushed gravel path that parallels South I Street and then heads southeast towards Butcher Slough (Exhibit 4, pg. 3 and Exhibit 5, pgs. 4-6). The trail would cross Butcher Slough on a new bridge directly south of the existing trail bridge and would continue to follow the existing crushed gravel path to the parking lot at the City of Arcata's Wastewater Treatment Plant (WWTP) entrance (Exhibit 4, pg. 4 and Exhibit 5, pg. 7). Where existing Arcata Marsh trails would be utilized for the trail alignment, the existing paths would be widened to accommodate the Class 1 trail.

After the WWTP entrance, the trail would re-enter the NCRA right-of-way on the west side of the tracks where it would continue southeast parallel to South G Street towards Highway 101 and then south along Highway 101 (Exhibit 4, pgs. 4-5 and Exhibit 5, pgs. 7-11). The trail would cross to the east side of the tracks immediately north of Gannon Slough and would be located on the east side of the tracks for the remainder of the alignment (Exhibit 5, pgs. 11-18). For this portion of the trail, the trail fill prism would extend into a portion of an existing drainage ditch that lies between the railroad track prism and the highway.

Along the Highway 101 corridor, the trail would cross Gannon Slough, Jacoby Creek, and Old Jacoby creek with three new bridges located between the existing Highway 101 bridges to the east and the existing railroad bridges to the west (Exhibit 4, pgs. 6-7 and Exhibit 5, pgs. 12-14). The alignment would terminate approximately 0.2 miles south of the Bayside Cutoff just north of Brainard's Slough and the Bracut Industrial Park. See Exhibits 2 and 5 for maps of the trail alignment and Exhibit 4 for photographs of the alignment.

The County of Humboldt has begun preliminary design work on the future Humboldt Bay Trail South which will connect to the southern terminus of the currently proposed trail and run the remaining 4 miles south along the Highway 101 corridor to Eureka, where it will connect to the Eureka Waterfront Trail (See Exhibit 10 for a map of the entire regional trail network). To provide connectivity for commuters prior to the construction of this southern trail segment, the City of Arcata proposes to install temporary bicycle on- and off-ramps from the proposed southern terminus of the Humboldt Bay Trail North onto the shoulder of southbound Highway 101 (cyclists are permitted to use the 10-foot-wide shoulders of Highway 101 along the Eureka-Arcata corridor). The City proposes to remove the ramps onto the highway shoulder once the Humboldt Bay Trail South project is complete. See Exhibit 3, page 6 for plan and profile drawings of the southern trail terminus (Plan Sheet C-1.0).

Components of the Trail (Trail Design)
The standard trail width would be 10 feet of asphalt with two-foot-gravel shoulders (for a 14-foot-wide trail). In certain areas with wetland constraints, the trail width would be reduced to 8 feet with two-foot shoulders (for a 12-foot-wide trail). Trail construction would consist mostly of excavating, grading, scarifying, and compacting existing railroad and trail fill soils, adding road base aggregate to a width of about 14 feet, and applying an asphalt concrete surface to create a paved trail with 2-foot gravel shoulders along each side (See Exhibit 3, pgs. 2-4 for typical trail cross sections). Cutting and filling would be necessary in many areas to obtain an appropriate grade for the trail requiring an estimated 3,510 cubic yards of cut and 10,440 cubic yards of fill. Average cut depth would be six inches and average depth of fill would be nine inches.

The proposed trail alignment would cross South I Street and the driveway that connects the WWTP to South G Street. The trail would also cross the railroad tracks twice, once just north of Gannon Slough and once at the driveway to the WWTP (Exhibit 3, pgs. 17 and 24, Plan Sheets C-12 and C-19). Roadway, railway, and driveway crossings would be ADA-accessible and include warning signage and markings both on the trail and the approaching vehicular way. Removable bollards would be placed at trail intersections and entrances to prevent all but emergency and maintenance vehicles from entering.

The Humboldt Bay Trail North would include five bridge crossings over (from north to south): (1) an unnamed drainage channel in the Arcata Marsh; (2) Butcher Slough; (3) Gannon Slough; (4) Jacoby Creek; and (5) Old Jacoby Creek. All of the waterways are tidally influenced except the unnamed drainage channel which contains dense emergent wetland vegetation. The bridges over these waterways would be 10-feet wide and would include pedestrian guardrails. The bridges' support structures, including abutments, footings, and piles, require wetland fill, except at the Butcher Slough crossing where there would be no wetland impacts.

The proposed bridge over the emergent wetland in the Arcata Marsh would consist of four equally sized pre-cast concrete bridge decks with a total span of 93 feet. The bridge decks would be supported by cast-in-place concrete retaining footings with wing walls on both sides of the drainage channel and three cast-in-place concrete footings within the channel (Exhibit 3, pgs. 31 and 42). The proposed bridge over Butcher Slough would be constructed of a pre-manufactured, 80-foot-long fiberglass bridge with timber decking. The Butcher Slough bridge would be supported on both sides by cast-in-place bridge spread footing with wing walls (Exhibit 3, pgs. 25 and 41).

The proposed bridges over Gannon Slough, Jacoby Creek, and Old Jacoby Creek would be located between railroad bridges to the west and Highway 101 bridges to the east. The Gannon Slough bridge would consist of a pre-manufactured, steel bridge deck with cement decking, supported by cast-in-place concrete retaining footings on both sides of the slough and eighteen 18-inch-diameter round cast-in-place steel shell piles within the slough channel (Exhibit 3, pgs. 16-17 and 40). The Jacoby Creek bridge would be constructed of a pre-manufactured, 80-foot long fiberglass bridge structure with timber decking. The bridge would be supported by cast-in-place concrete retaining footings on both sides of the creek, and four 18-inch-diameter round cast-in-place steel shell piles within the creek channel (Exhibit 3, pgs. 14 and 39). The Old

Jacoby Creek bridge crossing would be identical to the Jacoby Creek crossing except it would be only 55 feet long (Exhibit 3, pgs. 12 and 38).

TABLE 1. BRIDGE CROSSINGS

Bridge	Bridge Deck Elevation (feet)	Bridge Span Dimensions (feet)	Bridge Span Composition	Bridge Supports
Unnamed Drainage Ditch	9.90	93' by 10'	4 pre-cast concrete bridge decks	5 cast-in-place concrete footings
Butcher Slough	13.50	80' by 10'	Fiberglass with timber decking	2 cast-in-place bridge spread footing with wing walls
Gannon Slough	12.98	180' by 10'	Steel with concrete surface	2 cast-in-place concrete abutments & 18 18"-diameter steel shell piles filled with concrete
Jacoby Creek	12.54	80' by 10'	Fiberglass with timber decking	2 cast-in-place concrete abutments & 4 18"-diameter steel shell piles filled with concrete
Old Jacoby Creek	12.54	55' by 10'	Fiberglass with timber decking	2 cast-in-place concrete abutments & 4 18"-diameter steel shell piles filled with concrete

The City proposes to construct one viewing platform located to the west of the railroad tracks on the north side of the mouth of Gannon Slough. The Gannon Slough Overlook would provide views of the U.S. Fish and Wildlife Service (USFWS)'s Humboldt Bay National Wildlife Refuge to the west and of Gannon Slough itself. The overlook would consist of a wooden-decked platform supported by concrete footings around its perimeter (Exhibit 3, pgs. 17 and 45). The overlook would include three benches and would be lined at its bayward edge by a 3.5-foot-tall, galvanized steel wire railing.

The City proposes to retrofit the existing parking lot at the City of Arcata's WWTP's entrance into a trailhead (Exhibit 3, pgs. 24 and 33). The City would repave and stripe the parking lot and add a six-foot-wide crosswalk linking the parking lot to the trail. The trailhead would include an interpretive sign about wastewater reclamation as well as a wayfinding sign and a number of safety and traffic signs. Although this parking area would be accessed via the WWTP turn-off from South G Street, it would be outside the existing fenced WWTP and would not interfere with WWTP access or operations.

No lighting or trash receptacles are proposed as part of the project. Six benches are proposed, including three at the Gannon Slough Overlook, one at the trail terminus, and two adjacent to the Humboldt Bay National Wildlife Refuge (one just north of Jacoby Creek and one north of Gannon Slough). A minimum of five new interpretive signs would be installed along the trail. In addition to the interpretive sign at the new trailhead, there would be a number of interpretive signs installed adjacent to the Humboldt Bay National Wildlife Refuge depicting topics including brackish marsh habitat and species diversity, railroad history, sea level rise, and natural history. Wayfinding signs would be installed at the new trailhead as well as at the southern terminus of the trail.

Fencing or guardrails would be installed along approximately 760 linear feet of the trail at bridge approaches and spans (690 feet), the Gannon Slough Overlook (60 feet), and the new railroad crossing north of Gannon Slough (10 feet). Guardrails at the Gannon Slough Overlook and railroad crossing would have a height of approximately 3.5 feet. Guardrails associated with the bridges would have a height of approximately 5 feet; however the railing at the bridge crossing Gannon Slough would have a height of approximately 10 feet. The guardrails would be composed of fiberglass, aluminum, or steel and would be visually porous. If rail service returns, a 4-foot high wood rail fence would also be installed between the trail and the railroad tracks to facilitate continued use of the trail.

Construction Staging and Access

The City has identified 17 construction staging areas totaling 1.9 acres (82,628 square feet) (See Exhibit 2, pgs. 2-3). For the northern section of the trail from Samoa Boulevard through the Arcata Marsh to the Butcher Slough bridge crossing, staging areas would be located on the north side of the bridge over the unnamed drainage channel, on the east side of South I Street, in parking turnouts on South H and G Streets, on either side of Butcher Slough, and in the trailhead parking lot outside of the WWTP. For the southern section of the trail from Butcher Slough to just north of Brainard's Slough, staging of construction equipment and materials would be located along the trail alignment in the parking lot at the south end of the WWTP, on vacant land and pullouts on the west side of South G Street, in grassy areas between the trail and edge of pavement along Highway 101, and on the railway grade at the north and south ends of the new trail bridges. Five of the staging areas contain wetlands, including staging areas adjacent to the proposed bridges over the unnamed drainage channel in the Arcata Marsh, Butcher Slough, Gannon Slough, and Jacoby Creek, as well as one staging area near the intersection of South G Street and Highway 101 (See Exhibit 5, pgs. 3, 7, 10, 12, and 13). Where practical, the City proposes to place construction fabrics and protective pads on top of the wetlands where equipment access and/or staging is required to prevent the equipment tracks and/or wheels from rutting and compressing the soil and uprooting or destroying existing wetland vegetation. The City proposes to conduct all construction in stream and slough channels and in wetlands with standing water during the latter half of the dry season from July 1st to September 30th to avoid impacts to sensitive fish species and northern red-legged frog's breeding season. Where temporary wetland impacts occur, impacted areas would be planted with native wetland plants where bare ground is observed.

Earthwork and rough grading would be conducted with a bulldozer, backhoe or excavator, while fine grading of base would be performed by a grader. A vibratory roller would be used for compacting base and rolling pavement. Dump trucks, concrete trucks and 18-wheel tractor trailers would be used for delivery of equipment. No falsework would be required to construct the pedestrian trail bridges. Concrete bridge footings would be cast-in-place, and piles would be driven with a vibratory hammer. After driving the steel shell piles, the City would augur out the sediment from inside the piles, place rebar cage in the shells, and fill the piles with concrete. Cranes and/or excavators would be used for lifting and placing pre-manufactured bridge decks onto footings and piles, as well as for placing piles and excavating for cast-in-place concrete bridge footings.

Construction Timing

Humboldt Bay Trail North construction would require approximately 100-150 work days between March 2017 and October 2018. The City estimates that it would take a month to construct each bridge, with the exception of the longest bridge at Gannon Slough which would take two months to construct. Work within waterways would be limited to negative low tides occurring between July 1st and September 30th when water is not present. The City proposes to complete estuarine enhancement mitigation at the South I Street Parcel prior to completion of trail construction and palustrine wetland creation at the Lanphere Parcel after completion of trail construction.

Wetland Impacts

The proposed project would result in permanent impacts to approximately 0.48 acres of estuarine wetlands, approximately 1.32 acres of palustrine wetlands, and approximately 0.07 acres of riparian habitat as a result of trail construction, including bridge and overlook construction. The northern most portion of the trail, including the first bridge, would result in fill of approximately 0.13 acres of a palustrine emergent wetland (Wetland #1 on Exhibit 5, pgs. 2-3) that begins as a ditch on the west side of the railroad and transitions into a well-established freshwater marsh that contains breeding habitat for northern red-legged frogs (*Rana aurora*), a California species of special concern. Heading south, the next wetland to be impacted by the trail occurs soon after the trail crosses South I Street. The widening of the existing trail in this location would impact 27 square feet of this wetland (Wetland #2 on Exhibit 5, pg. 4) which is an isolated marginal freshwater wetland associated with the road bed. Heading south again, the next impacts would occur just north of the Butcher Slough crossing where the widening of the existing trail would impact 0.02 acres of salt marsh vegetation on the margins of Butcher Slough, as well as 0.02 acres of palustrine emergent wetlands and 0.02 acres of riparian habitat associated with a ditch on the west side of the existing marsh trail (Wetlands #3-6 on Exhibit 5, pg. 6). The trail alignment then avoids wetlands until just south of the WWTP trailhead where it would impact 65 square feet of a palustrine emergent ditch (Wetland #7 on Exhibit 5, pg. 7).

For the remainder of the trail, past the WWTP until the trail terminus, the railroad prism is a high point on the landscape with dense, low salt marsh with scattered open mudflat associated with Humboldt Bay to the west and a drainage ditch to the east. Between the WWTP sludge beds and just north of Gannon Slough, the trail would be located on the west side of the railroad tracks and would result in occasional fill of salt marsh habitat (0.15 acres of estuarine intertidal emergent wetlands and 0.03 acres of associated riparian habitat; Wetlands #8-11 on Exhibit 5, pgs. 9-12). From just north of Gannon Slough to the southern terminus of the trail, the trail would be located on the east side of the railroad tracks and would fill a portion of the existing drainage ditch. Most of the ditch is classified as palustrine emergent wetland, although several portions are classified as estuarine emergent (these portions likely receive subsurface saltwater infiltration or receive occasional saltwater inputs during high-tide storm events). The ditch also supports scattered bunches of willows that are classified as riparian habitat when the vegetation drip-line extends beyond mapped three-parameter palustrine wetlands. The extension of the trail into the drainage ditch would result in the majority of the trail's wetland fill impacts (approximately 0.27 acres of estuarine wetlands, 1.15 acres of palustrine wetlands, and 0.02 acres of riparian habitat; see Exhibit 5, pgs. 12-18). The remainder of the wetland fill impacts would result from the bridge

abutments and piles of the Gannon Slough, Jacoby Creek, and Old Jacoby Creek bridges (See Exhibit 5, pgs. 12-14).

Off-site Wetland Mitigation

As previously mentioned, the City proposes to provide compensatory mitigation in the form of off-site creation of palustrine wetlands on a 2.26-acre upland portion of the Lanphere Parcel (Exhibit 8, pgs. 1-2). The City would create wetlands by grading the site down to 3 feet (NAVD88) in elevation, and grading around the mitigation site to achieve a stable 3:1 slope (See Exhibit 9, pgs. 7-9 for mitigation site plans). To establish the desired wetland vegetation typical of this habitat, the first 12 inches of sod would be removed and stockpiled. After excavation of the wetland mitigation area, the sod would be replaced.

The City also proposes enhancement mitigation through habitat restoration in the form of Spartina control/removal on 9.4 acres of salt marsh at the South I Street Parcel (Exhibit 8, pgs. 1 and 3). Spartina eradication at the proposed mitigation site has been previously approved under CDP 1-14-0249, and the City is proposing to conduct Spartina removal consistent with this previous permit. Primary treatment would be conducted with a combination of handheld brushcutters and/or rototillers in low to moderate density infestations. In a few locations, such as locations where Spartina is growing in riprap, manual removal (excavation with handheld tools such as shovels, pulaskis, and digging bars) may be used. The City also proposes potentially one to two follow up resprout treatments to fully kill all established plants. Resprout treatments would be conducted with a handheld brushcutter. Seedling treatments would also be required, because the bare areas created by Spartina removal would be readily colonized by Spartina seedlings. New seedlings would be treated by flaming when young, or removed using brushcutters.

B. SETTING & BACKGROUND

The proposed Humboldt Bay Trail North would be located along the northeastern shoreline of Arcata Bay (northern Humboldt Bay) in low lying areas ranging from approximately nine to fifteen feet in elevation. The relatively flat trail alignment would cross vacant land, NCRA right-of-way, City of Arcata right-of-way, existing trails, riparian habitat, and palustrine and estuarine wetlands.

The northern portion of the trail passes through the Arcata Marsh and Wildlife Sanctuary (Arcata Marsh) which covers approximately 154 acres of publicly-owned open space and includes approximately 5 miles of walking and biking paths and an interpretive center. Established in 1949, the Arcata Marsh is nationally recognized for its methods of treating the City's wastewater via the natural processes of the marsh.

South of the Arcata Marsh, the trail travels along the NCRA right-of-way approximately 0.6 miles adjacent to the WWTP and parallel to South G Street toward Highway 101. Salt marsh exists to the west, and grazed seasonal wetlands, and commercial/industrial properties to the east.

The trail then continues south for approximately 1.4 miles within the NCRA right-of-way between Humboldt Bay to the west and Highway 101 to the east. The railroad track embankment in this area acts as a levee between Humboldt Bay and the land to the east. The adjacent land

area to the east of the highway is largely seasonally grazed wetlands. Humboldt Bay to the west of the trail contains extensive salt marsh habitat that is part of the USFWS's Humboldt Bay National Wildlife Refuge. The wildlife refuge was established to conserve important habitat in the Humboldt Bay Area and includes ten units around the bay totaling 4,000 acres. The Arcata Marsh and the Humboldt Bay National Wildlife Refuge host over 300 bird species and are situated along the Pacific Flyway, a major migratory route for thousands of birds. Humboldt Bay and its tributaries in the project area also provide habitat for approximately 100 species of fish and marine invertebrates, many of which contribute to sport and commercial fisheries, including steelhead, coho and chinook salmon.

As previously mentioned, the proposed trail would span five watercourses, including an unnamed drainage channel, Butcher Slough, Gannon Slough, Jacoby Creek, and Old Jacoby Creek. The unnamed drainage channel that would be bridged over in the Arcata Marsh separates the elevated railroad prism from a berm around a restored brackish marsh pond. The channel conveys drainage from surrounding urban and industrial land surfaces to the Arcata Marsh. The channel is not tidally influenced and contains dense emergent wetland vegetation (Exhibit 4, pg. 2).

Butcher Slough is tidally influenced and receives upstream freshwater inputs from Jolly Giant Creek. At the location of the proposed bridge, the slough is approximately 60 feet wide and less than 10 feet deep, with a vertical tidal range of 1 to 3 feet (Exhibit 4, pg. 4).

Gannon Slough is also free flowing and tidally influenced at its proposed bridge site. The slough has several tributary streams (Beith, Campbell, and Grotzman Creeks). Two tide gates are located about 550 and 1,200 feet, respectively, upstream and northeast of the proposed bridge crossing which control water that enters the slough from the City of Arcata and surrounding pasturelands. At the location of the proposed bridge, Gannon Slough is approximately 170 feet wide and less than 10 feet deep with a tidal range of 3 to 5 feet (Exhibit 4, pg. 6).

Jacoby Creek originates in the Coastal Range just southwest of Kneeland and flows freely into Humboldt Bay just north of the Bayside Cutoff. At the location of the proposed bridge, the creek is tidally influenced and approximately 25 feet wide and less than 10 feet deep with a tidal range of 1 to 5 feet (Exhibit 4, pg. 6).

Old Jacoby Creek flows under the highway and is controlled by a tide gate with a large culvert (Exhibit 4, pg. 7). The creek flows through two 48-inch metal culverts, less than 20 feet downstream of the proposed bridge crossing and under the railroad grade directly into the Humboldt Bay National Wildlife Refuge. The downstream end of these culverts is currently eroding heavily and in need of repair.

The railroad right-of-way utilized by this project is part of the Northwestern Pacific Railroad line which has been managed by NCRA since 1992. The track embankment was constructed along the margin of the bay starting in 1900. In 1975, the Northwestern Pacific Railroad Company ran 65,000 cars a year or almost 200 cars per day through the Humboldt Bay area. Rail usage dropped dramatically in the following decade as the Humboldt County timber industry declined. In 1997, severe winter storms caused substantial rock slides and erosion of the rail bed resulting

in the closure of the line. By the time the last train ran in 1997, the railroad was running only three to four trains per week. The tracks and underlying berm are now in various states of disrepair. Although the tracks have not been in use for over 19 years, the NCRA hopes to restore rail service in the future. Given the potential future active status of the NCRA railroad, NCRA requires the City's trail to be located a minimum distance from the railroad tracks (8.5 and 9.5 feet from the centerline of the tracks along straight and curved sections of the track, respectively) so that the trail and the railroad line could operate concurrently.

Offsite Mitigation

The Lanphere Parcel is a 78-acre parcel bounded by Lanphere Road to the north, privately-owned grazing land to the south, an earthen levee and Mad River Slough to the east, and Lanphere Road and USFWS's Lanphere Dune Unit to the west (Exhibit 8). Historically covered in tidal salt marsh and mudflat habitats, the property was diked off from Mad River Slough in the 1930s. The majority of the project site is now a mosaic of upland and seasonal wetland pastureland, which was seasonally grazed from the 1930s until 2009, when Caltrans acquired the property. In addition to pasturelands, the parcel currently includes an area of freshwater marsh that is infrequently grazed, a ribbon of high quality forested wetland habitat, and a small remnant sand dune. The majority of the site is relatively flat and low-lying, at an elevation of approximately two to four feet (NAVD88). Most of the site interior lies below Mean Higher High Water (MHHW), and would be inundated regularly by daily high tides were it not for the presence of the existing outboard levee. Freshwater runoff and shallow groundwater seepage from the dunes and incomplete site drainage to Mad River Slough have sustained the dense forested wetland/riparian swamp corridor along the west side of the project site, the freshwater marsh, and the wet meadow further east. The 2.26 acres of mitigation is proposed within the southwestern quarter of the parcel on seasonally-grazed pastureland directly to the east of forested wetlands and the remnant sand dune.

The South I Street Parcel is a 14.7-acre parcel on the northeastern shore of Humboldt Bay in the Arcata Marsh (Exhibit 8). The South I Street Parcel is predominately covered in low elevation salt marsh habitat. The parcel also contains tidal channels, as well as an approximately 0.2 mile long berm along its northern perimeter that supports a public trail and separates the parcel from restored tidelands to the north. The outlet of McDaniel Slough to Humboldt Bay is located to the west of the parcel, while South I Street and Hauser Marsh are located to the east. The salt marsh on the parcel is covered with *Spartina densiflora* (Spartina), an invasive wetland plant that has outcompeted the native plant community to form dense monocultures over an estimated 90% of salt marshes in Humboldt Bay. The City proposes to eradicate Spartina over the entire South I Street Parcel, which would result in 9.4 acres of wetland enhancement.

C. RELATIONSHIP TO OTHER COMMISSION APPROVALS

CDP 1-14-0249 (Humboldt Bay Harbor, Recreation, and Conservation District)

In June 2015, the Commission approved CDP 1-14-0249 for implementation of the Humboldt Bay Regional Spartina Eradication Plan for removal of *Spartina densiflora* (Spartina) within approximately 1,400 acres of tidal marsh habitats in Humboldt Bay, the Eel River estuary, and the Mad River estuary. The CDP permits Spartina removal for five (5) years from the date of Commission approval (until June 12, 2020), with a potential extension for an additional five-year period. Although the Regional Plan was developed for the eradication of all Spartina region-

wide, CDP 1-14-0249 authorizes Spartina removal only on those specific lands where the District has submitted adequate evidence of its permission to use the property consistent with Section 30601.5 of the Coastal Act.

As discussed above, as partial mitigation for the Humboldt Bay Trail North's wetland fill impacts, the City of Arcata is proposing Spartina removal on 9.4 acres of salt marsh at the South I Street Parcel. Spartina removal on the South I Street Parcel is permitted under CDP 1-14-0249 and is included in the "List of Lands Covered Under CDP Application No. 1-14-0249" associated with that permit (Appendix C to the May 22, 2015 Staff Recommendation). The Spartina removal methods currently proposed by the City of Arcata, including tilling, mowing, and flaming, are among the methods approved by the Commission under CDP 1-14-0249.

Special Condition 4 of CDP 1-14-0249 requires submittal of a site-specific Spartina removal plan prior to commencement of primary treatment of Spartina at each site covered by the CDP. The site-specific Spartina removal plan must be consistent with (1) all terms and conditions of CDP 1-14-0249, and (2) the mitigation measures proposed in the adopted Final Programmatic Environmental Impact Report (FPEIR) prepared for the Humboldt Bay Regional Spartina Eradication Plan (See Exhibit 7). The Commission attaches **Special Condition 9** to the current CDP to ensure that the City includes all the components of a Site-Specific Spartina Removal Plan required by Special Condition 4 of CDP 1-14-0249 in their final wetland mitigation and monitoring plan for the South I Street Parcel, and carries out eradication activities in compliance with the special conditions of CDP 1-14-0249.

CC-016-13 (Caltrans)

The proposed trail would provide a separated bicycle/pedestrian path adjacent to a portion of the Eureka-Arcata Route 101 Corridor, which is a seven-mile-long segment of Highway 101 between Eureka and Arcata situated within a narrow, low-lying, linear transportation corridor largely surrounded by open space including Humboldt Bay to the west and grazed seasonal tidelands to the east. Within the Eureka-Arcata Route 101 Corridor, Highway 101 is a four-lane expressway with two travel lanes in each direction (south-bound and north-bound) separated by a vegetated drainage ditch. The roadway includes 11- to 12-foot-wide travel lanes and ten-foot-wide shoulders. In 2002, this highway segment was designated the Eureka-Arcata Route 101 Safety Corridor as part of a program to reduce collision rates at at-grade intersections. Caltrans and Humboldt County Association of Governments (HCAOG) are currently in the process of implementing the Eureka-Arcata Route 101 Corridor Improvement Project, which proposes to improve safety along the corridor through various means including eliminating uncontrolled turns across oncoming traffic lanes, constructing an interchange at Indianola Cutoff, replacing the southbound Jacoby Creek Bridge, and partially signalizing the Route 101/Airport Road intersection. In September 2013, the Commission conditionally concurred with Caltrans' consistency certification on the Eureka-Arcata Route 101 Corridor Improvement Project (CC-016-13), with four conditions, including a condition requiring that construction of the corridor improvements not commence until adequate commitments are in place to assure that a separate Class 1 bicycle and pedestrian trail, parallel to Route 101 from Arcata to the northern end of downtown Eureka, will be constructed and operational by the time the major corridor improvement project components are completed. The currently proposed Humboldt Bay Trail

North along with the County of Humboldt's future Humboldt Bay Trail South will facilitate Caltrans' ability to meet this condition and construct their highway improvements.

D. STANDARD OF REVIEW

The proposed trail alignment includes areas within the retained coastal development permit (CDP) jurisdiction of the Commission and the CDP jurisdiction delegated to the City of Arcata by the Commission through the City's certified local coastal program (LCP). The proposed wetland mitigation at the Lanphere Parcel (APN 506-291-014) also includes areas within the CDP jurisdiction of the County of Humboldt.

Section 30601.3 of the Coastal Act authorizes the Commission to process a consolidated CDP application when requested by the local government and the applicant and approved by the Executive Director for projects that would otherwise require CDPs from both the Commission and a local government with a certified LCP. In this case, the City of Arcata, as applicant and local government with CDP jurisdiction, has requested a consolidated permit process in a letter to the Commission dated March 20, 2016. The City has also requested a consolidated permit process with the County of Humboldt, and the County consented to the request in a letter dated August 23, 2016. The Executive Director agreed to both consolidated permit processing requests.

The policies of Chapter 3 of the Coastal Act provide the legal standard of review for a consolidated CDP application submitted pursuant to Section 30601.3.

E. OTHER AGENCY APPROVALS

The City of Arcata and the County of Humboldt

The proposed project includes areas both within the City of Arcata and unincorporated Humboldt County. Neither the City nor the County require any discretionary permits for the project.

Humboldt Bay Harbor, Recreation, and Conservation District

The Harbor District has permit jurisdiction over all the tidelands and submerged lands of Humboldt Bay. The Harbor District has indicated in a letter to the Commission dated March 21, 2016 that it is acceptable for the Commission to act on CDP 1-16-0122 prior to the Harbor District issuing their discretionary approval. To ensure that the project ultimately approved by the Harbor District is the same as the project authorized herein, the Commission attaches **Special Condition 1**, which requires the applicant to submit to the Executive Director evidence of the Harbor District's approval of the project prior to permit issuance. The condition requires that any project changes resulting from the Harbor District's approval not be incorporated into the project until the applicant obtains any necessary amendments to this CDP.

California State Lands Commission (CSLC)

The CSLC has jurisdiction and management authority over all ungranted tidelands, submerged lands, and the beds of navigable lakes and waterways. The CSLC also has certain residual and review authority for tidelands and submerged lands legislatively granted in trust to local jurisdictions. The proposed project is located in part on tide and submerged lands legislatively granted to the City of Arcata, pursuant to Chapter 1238, Statutes of 1989, as amended. In an

email dated March 28, 2016, CSCL staff indicated that they have reviewed the project and found it consistent with the public trust. No separate approval is required by the CSCL.

California Public Utilities Commission (CPUC)
The proposed project entails one new grade crossings of the North Coast Railroad Authority's rail corridor and one existing crossing that will be repaired under the proposed project (see Plan Sheets C-12.0 and C-19.0 on pgs. 17 and 24 of Exhibit 3). Pursuant to its delegated federal and state statutory authority, the CPUC must approve and license the trail's grade crossings of an established railroad corridor. The City has filed applications for the two crossings with the CPUC which have been reviewed by CPUC staff and are awaiting final approval by the Public Utilities Commission. The Coastal Commission attaches **Special Condition 2** requiring the applicant to submit evidence to the Executive Director that the applicant has obtained the necessary authorizations from the CPUC for the new railroad crossings prior to permit issuance. The condition requires that any project changes resulting from the CPUC's approval not be incorporated into the project until the applicant obtains any necessary amendments to this CDP.

California Department of Fish and Wildlife (CDFW)
The project requires a Section 1600 Streambed Alteration Agreement from CDFW. CDFW issued Agreement No. 1600-2016-0086-R1 on June 22, 2016 for the City of Arcata's Humboldt Bay Trail North project.

North Coast Regional Water Quality Control Board (Regional Board)
The Regional Board requires a water quality certification for projects involving dredging and/or filling activities under Section 401 of the Clean Water Act. To ensure that the project ultimately approved by the Regional Board is the same as the project authorized herein, the Commission attaches **Special Condition 3**, which requires the applicant to submit to the Executive Director evidence of the Regional Board's approval of the project prior to permit issuance. The condition requires that any project changes resulting from the Regional Board's approval not be incorporated into the project until the applicant obtains any necessary amendments to this CDP.

U.S. Army Corps of Engineers
Under Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act, the US Army Corps of Engineers has regulatory authority over the proposed project. To ensure that the project ultimately approved by the Army Corps is the same as the project authorized herein, the Commission attaches **Special Condition 4**, which requires the permittee to submit to the Executive Director evidence of the Army Corps' approval of the project prior to the commencement of construction activities. The condition requires that any project changes resulting from the Army Corps' approval not be incorporated into the project until the permittee obtains any necessary amendments to this CDP.

National Marine Fisheries Service & United States Fish & Wildlife Service
Pursuant to Section 7(a) of the Endangered Species Act (ESA) of 1973, as amended (U.S.C. Sec 1531 et seq.), written concurrence was requested from the National Marine Fisheries Service (NMFS) that the proposed City of Arcata Humboldt Bay Trail North project is not likely to adversely affect listed species or their critical habitats. In a letter to Caltrans dated September 22, 2015, NMFS concurred that the project is not likely to adversely affect Southern

Oregon/Northern California Coast (SONCC) coho salmon (*Oncorhynchus kisutch*), California Coastal (CC) Chinook salmon (*O. tshawytscha*), Northern California (NC) steelhead (*O. mykiss*), Southern DPS of North American green sturgeon (*Acipenser medirostris*) and designated critical habitat for these species (NMFS No.WCR-2015-3179).

The proposed offsite wetland fill mitigation work on the South I Street and Lanphere Parcels had not been determined at the time of NMFS consultation. The proposed eradication of invasive *Spartina densiflora* (Spartina) on 9.4 acres of salt marsh that will be undertaken for wetland enhancement mitigation on the South I Street Parcel (APN 506-011-004) has been previously approved under CDP 1-14-0249. The proposed palustrine wetland creation mitigation on 2.26-acres of the Lanphere Parcel (APN 506-291-014) has no previous permit approval and may trigger re-initiation of Section 7 consultation. The Commission therefore attaches **Special Condition 5**, which requires the permittee, prior to construction on the Lanphere Parcel, to submit to the Executive Director a concurrence letter or biological opinion from NMFS and USFWS or evidence that no concurrence letter or biological opinion is necessary from either NMFS or USFWS (the two trust agencies responsible for species listed under the federal ESA). The condition requires that any project changes resulting from NMFS or USFWS consultations not be incorporated into the project until the permittee obtains any necessary amendments to this CDP.

F. APPLICANT'S LEGAL INTEREST IN THE PROPERTIES

Under Section 30601.5 of the Coastal Act, an applicant for a CDP does not need to be the owner of a fee interest in the property on which the proposed development is located as long as the applicant can demonstrate a legal right, interest, or other entitlement to use the property for the proposed development, and as long as all holders or owners of any other interests of record in the affected property are notified in writing of the permit application and invited to join as coapplicants. In addition, Section 30601.5 of the Coastal Act requires that the applicant demonstrate authority to comply with all conditions of approval prior to issuance of a CDP. The proposed trail alignment is located within NCRA right-of-way, City-owned properties, and private property directly south of Samoa Boulevard owned by Slack and Winzler Properties, LLC. The City has provided evidence that the affected property owners have been notified of the proposed trail project and invited to join as coapplicants.

The City has signed a license agreement with NCRA, dated March 14, 2016, for the use of the rail corridor throughout the trail alignment from Brainard's Slough (Mile Post 289.58) north to the Samoa Boulevard crossing (Mile Post 292.2). The term of the agreement is 25 years until March 14, 2041. To ensure that the City has the authority to comply with all conditions of approval of CDP 1-16-0122 on properties owned by the North Coast Railroad Authority or the Northwestern Pacific Railroad Company (APNs 501-091-006; 503-251-008; 503-241-014; 503-211-004; 501-043-001; 501-043-002; 501-043-004; 501-043-005; 501-061-015; and 021-191-003), the Commission attaches **Special Condition 6(A)**, requiring that the City, prior to permit issuance, show evidence that the railroad has agreed in writing that the applicant may undertake development on its properties pursuant to CDP 1-16-0122 as conditioned.

For the segment of the trail on private property (APN 021-191-002), the City has acquired a right-of-way easement from the property owner, Slack and Winzler Properties, LLC. The

easement was recorded April 14, 2016 (Official Records 2016-008235) and accepted by the City May 5, 2016. As discussed later in this report, to avoid the potential for incomplete or inconsistent trail segments and to ensure that the trail safely functions as a coordinated and integrated continuous public access system, the Commission attaches **Special Condition 24** identifying the fundamental provisions of the scope of trail use, most of which are already contained in the license agreement between the North Coast Railroad Authority and the applicant. Such fundamental provisions include that the trail be a Class 1 multi-use trail open 24 hours a day and available not just to pedestrians but bicyclists and other non-motorized vehicle users. To ensure that the City has the authority to use easement areas located within privately owned property as the City is proposing and in a manner that complies with all conditions of approval of CDP 1-16-0122, the Commission attaches **Special Condition 7**. Special Condition 7 requires the City to submit, prior to commencement of development and for the review and approval of the Executive Director, a Granted Easement for the segment of the trail within Slack and Winzler Properties, LLC property, that permanently authorizes use of the trail by the public consistent with CDP 1-16-0122, including Special Condition 24. In addition, to ensure that the City has the authority to comply with all conditions of approval of CDP 1-16-0122 on the subject property, **Special Condition 6(B)** requires that the City, prior to permit issuance, show evidence that Slack and Winzler Properties, LLC has agreed in writing that the applicant may undertake development on its property pursuant to CDP 1-16-0122 as conditioned.

The proposed project also involves temporary construction access on USFWS's Humboldt Bay National Wildlife Refuge requiring a special use permit. USFWS approved a Humboldt Bay National Wildlife Refuge General Activities Special Use Permit for construction activity adjacent to refuge land on April 15, 2016 (Permit No. 81590-16011).

The City will also need to encroach onto Caltrans right-of-way (the shoulder of Highway 101) in order to access trail construction and staging areas. In addition, until Humboldt County constructs Humboldt Bay Trail South, linking the currently proposed trail (i.e., Humboldt Bay Trail North) to the City of Eureka's trail system, the trail will have a temporary southern terminus just north of Brainard's Slough with bicycle on- and off-ramps onto the shoulder of Highway 101 (See Exhibit 3, pg. 6). These temporary bicycle on- and off-ramps onto Highway 101 require authorization from Caltrans. On June 2, 2016, Caltrans conditionally approved an encroachment exception request for the proposed project. Caltrans' approval specifies that the ingress/egress connection to the shoulder of Route 101 is temporary and shall be removed with the completion of the larger Humboldt Bay Trail project.

The South I Street Parcel wetland enhancement mitigation site (APN 506-011-004) is owned by the City of Arcata, while the Lanphere Parcel wetland creation mitigation site (APN 506-291-014) is owned by Caltrans. Caltrans has been invited by the City as a coapplicant on CDP 1-16-0122 and has declined. Caltrans' Distict 1 Director Charles Fielder has sent an official letter to the City of Arcata's City Manager Karen Diemer that authorizes the City to undertake 2.26 acres of compensatory wetland mitigation on Caltrans' property. The letter also commits Caltrans to management, in perpetuity, of the mitigation area for the wetland resource values for which the City's mitigation shall be undertaken. To ensure that the City has the authority to comply with all conditions of approval of CDP 1-16-0122 on the subject Caltrans' property, **Special Condition 6(C)** requires that the City, prior to permit issuance, show evidence that Caltrans has agreed in

writing that the applicant may undertake development on their property pursuant to CDP 1-16-0122 as conditioned.

The Commission finds that as conditioned, the development is consistent with the requirements of Section 30601.5 of the Coastal Act.

G. MARINE RESOURCES, WATER QUALITY, & WETLAND FILL

Section 30230 of the Coastal Act states:

> *Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.*

Section 30231 of the Coastal Act states:

> *The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.*

Section 30233 of the Coastal Act provides, in applicable part, as follows:

> *(a) The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:*
>
> …
>
> *(6) Restoration purposes.*
>
> *(7) Nature study, aquaculture, or similar resource dependent activities.*
>
> …
>
> *(c) In addition to the other provisions of this section, diking, filling, or dredging in existing estuaries and wetlands shall maintain or enhance the functional capacity of the wetland or estuary…*
>
> …

Coastal Act Section 30108.2 defines "fill" as "*earth or any other substance or material, including pilings placed for the purposes of erecting structures thereon, placed in a submerged area*." The construction of the trail will result in 1.78 acres of permanent wetland fill in estuarine

and palustrine wetlands and 0.07 acres of fill in one-parameter riparian wetlands. In addition, construction staging and in-channel bridge installation work will result in an additional approximately 0.2 acres of temporary wetland impacts.

Furthermore, the proposed mitigation at the South I Street Parcel, consisting of *Spartina densiflora* (Spartina) eradication in existing estuarine salt marsh habitat, includes grading activities in 9.4 acres of wetlands. The Commission has long considered grading, excavating, and other ground-disturbing activities in coastal wetlands and estuaries to be a form of dredging.[2] As such, the Spartina eradication constitutes a form of dredging in wetlands requiring consistency with Section 30233. Spartina eradication at the proposed mitigation site has been previously approved under CDP 1-14-0249, and the Commission attaches **Special Condition 9** to the current CDP to ensure that the City carries out eradication activities in compliance with the special conditions of CDP 1-14-0249. As CDP 1-14-0249 analyzed the consistency of the proposed Spartina eradication with Section 30233, the analysis is not repeated here.

Section 30233 of the Coastal Act limits the diking, dredging, and filling of coastal wetlands to seven specific, enumerated uses, and also requires that any project which results in excavation or fill in coastal wetlands (a) be the least environmentally damaging feasible alternative, and (b) provide adequate mitigation to minimize adverse environmental effects. In addition, Coastal Act Sections 30230, 3231, and 30233 together require that marine resources, the biological productivity and quality of coastal waters, and the functional capacity of estuaries be maintained and enhanced.

Allowable use

The first test set forth above is that any proposed filling, diking, or dredging in wetlands must be for an allowable purpose as specified under Section 30233 of the Coastal Act. The relevant category of use listed under Section 30233(a) that relates to the proposed trail project is subcategory (7), *nature study…or similar resource dependent activities*. The Commission has considered the development of new recreational trail segments through wetlands and other environmentally sensitive resource areas to be a form of "nature study… or similar resource dependent activities" in cases where design efforts have been made to minimize such intrusions to the smallest feasible area or least impacting routes, and where the trail segment functions as a nature trail [e.g., see findings for LCP Amendment Nos. STB-MAJ-3-02 (Toro Canyon Planning Area) and HUM-MAJ-1-03 (Riparian Corridor Trails); and CDP Nos. 3-11-074 (City of Santa Cruz, Arana Gulch Master Plan), 1-11-037 (City of Eureka, Elk River Access Area/Hiksari′ Trail Project), and 1-15-2054 (City of Eureka, Coastal Trail Project)].

By providing venues for incidental exploration of the physical and biological world, trails in natural settings generally are recognized as one of the best ways to ensure continued public support for protecting environmentally significant natural areas. This perspective is at the core of the many public outreach and grant-funding efforts undertaken by natural resource conservation-oriented public agencies and other organizations, from the Coastal Conservancy to many of the numerous land trusts involved in public access acquisition and development. Regardless of their age, people in general are more likely to develop a stewardship ethic toward the natural

[2] E.g., CDPs 1-06-036, 1-08-011, 1-08-012, 1-08-020, 1-09-020, 1-09-030, and 1-10-032.

environment if they are educated about the importance of the overall ecosystem, especially if provided the opportunity to experience the physical, mental, and spiritual benefits of these areas first-hand. Providing for the development of trails into the outer fringes of marshes and wetlands can be an ideal setting for such activities, as they offer a safe, convenient and unique perspective of the rich and diverse biological resources associated with watercourses, estuaries, and the natural coastline.

The areas where the proposed trail has wetland fill impacts, including the areas where the overlook and bridges are located, all have expansive views of the Arcata Marsh and/or Humboldt Bay and further the nature study use of the trail. The proposed Gannon Slough Overlook and interpretive signage along the trail will encourage an understanding and appreciation of the environment and the socio-cultural history of the area. The opportunities include providing up-close views of local vegetation/habitats, midrange views of Humboldt Bay, long-range views of the surrounding ridgeline, and interpretive signs that include information regarding local habitats and resource issues.

Thus, the proposed development within coastal wetlands is a form of "*nature study… or similar resource-dependent activities,*" as it is: (1) a development type integral to the appreciation and comprehension of biophysical elements that comprise wetland areas; and (2) dependent upon the presence of the natural area resource through which the trail passes to provide a nature study experience. As such, the Commission finds that the proposed wetland fill for trail development is inherently for the purpose of nature study, a use consistent with Section 30233(a) of the Coastal Act.

Alternatives

As mentioned above, the Commission must ensure that the proposed project has no less environmentally damaging feasible alternative consistent with Section 30233 of the Coastal Act. Coastal Act Section 30108 defines "feasible" as …c*apable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social and technological factors*. In this case, alternatives include the no-project alternative, alternative routes, alternative trail alignments within the selected route, alternative staging areas, use of existing bridges, alternative bridge design, alternative locations for the overlook, and alternative trail width.

a. <u>No project alternative</u>

The no project alternative means that no trail would be constructed along 3 miles of the Humboldt Bay shoreline. Under this alternative, the objective of the proposed project – to provide a grade-separate Class I, ADA-accessible, multi-use trail for nonmotorized transportation and nature study as part of the California Coastal Trail would not be met. Non-motorized access along the waterfront south of the Arcata Marsh would continue to involve the shoulders of South G Street and Highway 101, posing public access and recreational safety questions, and providing little opportunity for up-close nature viewing of the unit of the Humboldt Bay National Wildlife Refuge west of Highway 101 in the project area. Although bicycle access is allowed along the shoulder of Highway 101, pedestrians are prohibited. Accordingly, the no project alternative is not a feasible less environmentally damaging alternative to the proposed development as conditioned.

b. Alternative trail routes

There are two other routes between Eureka and Arcata along the coast aside from the Eureka-Arcata Highway 101 Corridor along the east side of the bay (the proposed route for the Coastal Trail): State Route 255 across the Samoa Peninsula on the west side of Humboldt Bay and Old Arcata Road/ Myrtle Avenue further inland. These two other routes also were considered as potential options for locating the Coastal Trail before the Eureka-Arcata Highway 101 Corridor was chosen as the proposed route for the Coastal Trail.[3] However, a route along the Samoa Peninsula on the west side of the bay would cross the Mad River Slough and Samoa bridges, neither of which have wide enough shoulders to safely accommodate bicyclists and pedestrians given the high speeds and high volumes of traffic, including truck traffic from timber and other industrial operations along the peninsula. Retrofitting the bridges for a trail route would be prohibitively expensive. In addition, a route along the Samoa Peninsula would require wetland fill for either widening road shoulders or improving the rail corridor. Alternatively, the route along Old Arcata Road would not provide for nature study of the Bay and would also require extensive wetland fill. Therefore neither of the two alternative routes are less environmentally damaging feasible alternatives to the proposed development as conditioned.

c. Alternative trail alignment within selected route

The trail has been aligned to avoid wetland fill to the maximum extent feasible given a number of alignment constraints, including minimum required distances from adjacent railroad tracks.[4] There are numerous potential alternative alignments through the Arcata Marsh, including aligning the trail completely within the NCRA right-of-way, utilizing a variety of Arcata Marsh trails, and utilizing the shoulder of South I Street. The City proposes to utilize existing trails within the Arcata Marsh rather than creating a new trail along the NCRA right-of-way to avoid approximately 1,500 square feet of wetland and riparian impacts. As the trail will be utilized for regional nonmotorized transportation including work commutes, the Arcata Marsh trails chosen for the alignment provide the most direct route through the Arcata Marsh. The wetland crossing location at the north end of the Arcata Marsh from the NCRA right-of-way to an existing Arcata Marsh trail was chosen because it spans the shortest length across the drainage ditch. The City proposes to use the existing trail parallel to South I Street (rather than South I Street itself) because it is safer.

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[3] A number of feasibility studies have been conducted over the past two decades exploring potential alternative routes and alignments for a bicycle/pedestrian/Coastal Trail connection between Eureka and Arcata (*Humboldt County Bicycle Facilities Planning Project*, 1997; *Humboldt Bay Trail Feasibility Study*, 2001; *Humboldt Bay Trail Feasibility Study: Arcata-Eureka*, 2007; *Humboldt County Coastal Trail Implementation Strategy*, 2011).

[4] The Arcata Rail with Trail Feasibility Study and Operations Plan (2010) studied a number of alternative trail alignments, including using the NCRA right-of-way instead of existing trails through the Arcata Marsh, and placing the trail on the railroad tracks, to the east of the tracks, or to the west of the tracks within the NCRA right-of-way.

South of the Arcata Marsh, the trail must be accommodated within the narrow NCRA right-of-way between Humboldt Bay and South G Street/Highway 101. Alternatives include aligning the trail on the railroad tracks, to the east of the tracks, or to the west of the tracks within the NCRA right-of-way. The proposed portion of trail within the NCRA right-of-way is located on the west side of the tracks where it parallels South G Street and on the east side of the tracks where it parallels Highway 101 south of Gannon Slough in order to minimize wetland and special-status plant impacts. Because railroad crossings need to be minimized, it would not be feasible to cross from the west to the east side of the tracks repeatedly to capture any further reduction in wetland fill. In addition, NCRA will not allow the City to construct the trail on the railroad tracks, which would be the least environmentally damaging alternative if it were feasible. In 2009, after hearing broad community support for trails within the railroad right-of-way, the NCRA determined that it could support a "rails with trails" design concept allowing a trail alongside the railroad tracks, but would not support rail banking, where a trail would be constructed on top of the track alignment until such time as the railroad ever becomes operational.

The portion of the trail between the WWTP trailhead and Gannon Slough that is located on the west side of the tracks includes an approximately 3,600 foot stretch of trail that is below 10 feet in elevation that will be immediately at risk of flooding during extreme tidal events, storm surge, and periods of heavy stormwater runoff. There is no feasible alternative that would avoid the portion of the path below 10 feet in elevation. The trail cannot be located to the east of the tracks in this area because there are extensive wetlands on the east side of the tracks that maintain water year round. The trail cannot be located on top of the tracks because NCRA will not allow the City to construct the trail on the tracks. If the trail were built up higher, it would require a larger fill prism, resulting in more wetland fill. The trail could be rerouted inland along South G Street, but this would not fulfill the purpose of the project which is creating a Class 1 bike/pedestrian path separated from motor-vehicle traffic.

Therefore, alternative trail alignments are not a less environmentally damaging feasible alternative to the proposed development as conditioned.

d. Alternative staging areas

In total, 9,454.1 square feet of wetlands will be temporarily impacted by project staging (9,156.6 square feet of palustrine wetland impacts and 297.5 square feet of estuarine wetland impacts). Of the 17 construction staging areas proposed for Humboldt Bay Trail North, five contain wetlands, including staging areas adjacent to the proposed bridges over the emergent wetland in the Arcata Marsh, Butcher Slough, Gannon Slough, and Jacoby Creek, as well as one staging area near the intersection of South G Street and Highway 101 (Staging Area #10 on Exhibit 5, pg. 10).

Four of the staging areas that impact wetlands are located at proposed bridge crossings where staging must be sited in close proximity to the crossings in order to install bridge supports. The emergent wetland to be bridged over in the Arcata Marsh separates the elevated railroad prism from a recently created berm around a restored brackish marsh

pond (Staging Area #1 on Exhibit 5, pg. 3). Other than the narrow railroad tracks and berm, this crossing is surrounded by wetlands and adequate space does not exist to limit staging and access to uplands. The staging area on the south side of Butcher Slough also contains wetlands (Staging Area #8 on Exhibit 5, pg. 7). Although this staging area is near upland Arcata Marsh trails and upland areas at the City of Arcata WWTP and Corp Yard, these possible upland areas are not available for use as staging. Using the trails for staging would block a critical link in the trail system within the Arcata Marsh, while using the WWTP and Corp Yard for staging is not feasible because the compound is surrounded by fencing that cannot be breached for safety purposes. The staging areas directly south of the Gannon Slough bridge crossing and directly north of the Jacoby Creek crossing also involve wetland fill, but they are necessary for bridge abutment and pier installation and are otherwise surrounded by wetlands and highway (Staging Areas #12 and 13 on Exhibit 5, pgs. 12-13).

Staging Area #10 is the only staging area that results in temporary impacts to wetlands that is not located at a bridge crossing (Exhibit 5, pg. 10). This staging area was selected because it is located off of an existing graveled access road that provides the best construction access to this portion of the trail. The area between the eastern boundary of the trail and South G Street is dominated by riparian vegetation and wetlands. The existing graveled access road provides sufficient space for equipment staging while utilizing an area that has already been disturbed. While some temporary wetland impacts are unavoidable, this area minimizes impacts to the greatest extent feasible.

Each staging area is expected to be utilized for one to two months. As described further in the section on mitigation measures below, the Commission attaches **Special Conditions 13** and **17** which include a number of mitigation measures to ensure that wetlands are fully restored after temporary staging impacts. Special Condition 13 requires areas temporarily impacted to be revegetated with native wetland plants where bare ground is observed and monitored for successful plant reestablishment. Special Condition 17 requires installation of perimeter fencing between staging areas and surrounding wetland and riparian areas, and placement of protective pads on top of wetlands where equipment access/staging would be required. As (1) the location of each staging area within wetlands is necessary to provide area for the staging and access of construction materials and equipment for the trail project, and (2) the impacts to wetlands will be of short duration and wetlands will be fully restored after construction, the Commission finds that use of alternative staging locations is not a feasible less environmentally damaging alternative to the proposed development as conditioned.

e. Use of existing bridges

Existing railroad and highway bridges are located directly adjacent to the proposed new bridges over Gannon Slough, Jacoby Creek, and Old Jacoby Creek, while an existing pedestrian bridge is located directly adjacent to the proposed new bridge over Butcher Slough. Utilizing these existing bridges instead of constructing new bridges could potentially reduce environmental impacts. None of the existing bridges, however, would be suitable for use for the trail project.

The existing highway bridge decks over Gannon Slough, Jacoby Creek, and Old Jacoby Creek to the east of the trail do not have a sufficient width to accommodate a Class 1, ADA-accessible trail, and the NCRA will not give the City permission to use the existing railroad bridges to the west of the trail. In addition, as the existing railroad bridges have not been used or maintained since the 1990s and show signs of deterioration, their stability and structural integrity over the design life of the trail are suspect. Furthermore, their deck elevations are only at a height of 9.37 feet (NAVD 88). As further described in Section IV-H (Coastal Hazards), those elevations are too low to minimize risk of flooding given predicted future sea level rise.

As noted above, the City also proposes to construct a new bridge over Butcher Slough directly adjacent to an existing pedestrian bridge that is attached to a large sewer pipe. According to the City, a new bridge at Butcher Slough is necessary because 1) retrofitting the existing bridge to meet Class 1 width requirements and raising the bridge to address sea level rise could compromise the existing load-bearing sewer pipe under the bridge; 2) the sewer pipe may require future replacement which would necessitate replacement of the entire bridge; 3) retrofitting the existing bridge would prohibit access during construction which would temporarily but severely affect trail connectivity at the Arcata Marsh; and 4) the existing abutments would need to be widened to accommodate the additional loads of the Class 1 trail, making retrofitting the existing bridge as disruptive as constructing a new bridge. Furthermore, although the new bridge will result in a minor amount of additional shading impacts on Butcher Slough, the new bridge will fully span the slough with no permanent wetland fill impacts.

Therefore, the Commission finds that use of existing bridges to avoid the construction of new trail bridges is not a feasible, less environmentally damaging alternative to the proposed development as conditioned.

f. Alternative bridge design

All proposed bridges except for the bridge over Butcher Slough involve wetland fill for their abutments and footings or supports, including five concrete footings for the bridge over the unnamed drainage ditch in the Arcata Marsh, two retaining footings and 18 piles for the bridge over Gannon Slough, and two retaining footings and four piles each for the bridges over Jacoby and Old Jacoby Creeks. According to the City, lengthening the bridges (while maintaining necessary elevations) to completely span the wetlands would have an equal or greater impact on wetlands as compared to the currently proposed lengths of bridges. Utilizing an alternative bridge design that would avoid piers and/or footings in waterways would require a single-span bridge with very large foundations on either side of the bridge that would be much wider than the width of the trail embankment itself. The wetland impacts associated with these wide foundations would be significantly larger than the proposed design. Therefore the use of alternative designs for the five bridges is not a feasible, less environmentally damaging alternative to the proposed development as conditioned.

g. Alternative locations for the overlook

The proposed Gannon Slough Overlook will result in 2,580 square feet of permanent impacts to estuarine intertidal emergent wetlands including the loss of 156 square feet of a larger 400-plant patch of Humboldt Bay owl's-clover and 104 square feet of a larger 20-plant patch of Point Reyes bird's-beak (two special-status salt marsh plants with a Rare Plant Rank of 1B.2). At least one overlook along the stretch of trail paralleling Highway 101 is necessary to afford nature-viewing opportunities adjacent to the scenic Humboldt Bay National Wildlife Refuge and to provide a safe place for trail users to stop and rest. There is limited space between the highway and the bay in the railroad right-of-way, especially given NCRA guidelines for avoiding the railroad tracks. All of the land that is west of the trail and tracks adjacent to the refuge has been mapped as estuarine intertidal emergent wetland. Because there is no available upland habitat west of the trail, wetland impacts are inevitable. Ample space does not exist to provide a safe overlook on the eastern side of the trail without more wetland fill, therefore siting the overlook on the east side is not a feasible less environmentally damaging alternative.

The City chose to site the overlook north of Gannon Slough because the City is required by the NCRA to limit crossings of the railroad tracks. The trail will be located on the west side of the tracks until just north of Gannon Slough where it will cross to the east side of the tracks. Since the trail alignment will cross from the west to the east side of the tracks directly north of Gannon Slough, locating a viewing platform at this location west of the tracks will not create any new railroad crossings.

The City has designed the overlook using footings as supports rather than a retaining wall to minimize the amount of wetland fill to the greatest extent feasible. However, because of its higher elevation, the location of the overlook provides suitable habitat for Humboldt Bay owl's-clover and Point Reyes bird's-beak. To minimize impacts to these special-status plants, the City has revised their plans for the overlook, reducing its width from 12 to 7 feet and its length from 54 to 44 feet. As described further in the section on mitigation measures below, the Commission attaches **Special Condition 14** which requires a final special-status plant mitigation and monitoring plan to compensate for the loss of plants.

Therefore, the Commission finds that use of an alternative location for the overlook is not a feasible less environmentally damaging alternative to the proposed development as conditioned.

h. Alternative trail width

Approximately 8,691 linear feet (1.45 miles) of the 3-mile-long Humboldt Bay Trail North will include wetland fill impacts. The City proposes a 10-foot-wide paved trail with 2 foot shoulders (for a total width of 14 feet). In some Coastal Trail projects,[5] where the Coastal Trail intersects with wetlands and environmentally sensitive habitat areas, applicants have reduced the trail width to 8 feet with 2 foot shoulders (a 12 foot width), which is the established minimum width standard for a Class 1 path/bikeway facility as

[5] E.g., the City of Eureka's Hikshari Trail (CDP 1-11-037) and Eureka Waterfront Trail (CDP 1-15-2054).

set forth by Caltrans [Chapter 1000, Section 1003.1(1) "Widths and Cross Slopes," *Highway Design Manual*, California Department of Transportation, December 30, 2015].

The City of Arcata estimates that a reduction in the width of the Humboldt Bay Trail North from 14 feet to 12 feet in areas of wetland impacts would result in a reduction of 0.23 acres (10,019 square feet) of wetland fill.[6] The City has agreed to reduce the trail width to 12 feet to minimize wetland impacts at two locations in the Arcata Marsh, at the abutments of the unnamed drainage basin crossing (for a reduction of 59 square feet of fill in a palustrine emergent wetland) and along an approximately 690-foot-long stretch of trail just north of Butcher Slough (for a reduction of 786 square feet of fill in a palustrine emergent wetland and 343 square feet of fill in riparian habitat) (See Exhibit 6 for a depiction of the proposed reductions in trail width at these locations and resulting wetland fill reductions). The City however does not propose to reduce the trail width anywhere else along the alignment, including where there are wetland fill impacts in the railroad right-of-way north of the Arcata Marsh, along an existing trail adjacent to South I Street within the Arcata Marsh, and in the railroad right-of-way adjacent to South G Street and Highway 101.

Although the Highway Design Manual sets a minimum paved width of 8 feet (with 2 foot shoulders) for a Class 1 trail, it sites a preferred width of 10 feet and makes clear that context is important in determining trail width. For instance, the manual states, "*Where heavy bicycle volumes are anticipated and/or significant pedestrian traffic is expected, the paved width of a two-way bike path should be greater than 10 feet, preferably 12 feet or more. Another important factor to consider in determining the appropriate width is that bicyclists will tend to ride side by side on bike paths, and bicyclists may need adequate passing clearance next to pedestrians and slower moving bicyclists*." The Caltrans' standards are based in part on the American Association of State Highway and Transportation Officials (AASHTO) Guide to Bicycle Facilities (2012) which sets a 10 foot minimum paved width for a two-directional shared use path, but allows for a reduced paved width of 8 feet for a short distance due to a physical constraint such as an environmental feature, or where low bicycle traffic, limited pedestrian use, frequent passing/resting opportunities, and infrequent use by maintenance vehicles is expected. These Caltrans and AASHTO standards are applied by transportation professionals based on the specific context and user profile of a proposed trail to ensure a minimum level of safety and operational effectiveness.

The majority of the proposed trail's wetland fill impacts will occur where the trail runs within the NCRA right-of-way between Humboldt Bay and Highway 101, including a continuous mile of wetland fill impacts from just north of Gannon Slough to the southern terminus of the trail, where the trail would be located on the east side of the railroad tracks and would fill a portion of the existing drainage ditch that runs between the

[6] The City compared the impacts of 12- and 14-foot-wide trails by uniformly narrowing on the eastern boundary of the trail (even when the western boundary had greater impacts), with the exception of just north of Butcher Slough (Wetlands Nos. 3 – 6). Using this methodology, the City's estimate does not capture potential maximum wetland fill reductions for Wetland Nos. 1, 2, 7, 8, and 9.

railroad prism and Highway 101. As the only separated, non-motorized transportation connection between Arcata and Eureka, the two most densely populated areas within Humboldt County, this segment of the Humboldt Bay Trail will have a unique combination of users with a relatively high proportion of commuters and long-distance cyclists. This portion of the trail will also be extremely straight and flat with no street crossings to slow down bicyclists. One key design goal of the Humboldt Bay Trail is to provide recreational and nature-viewing opportunities along the shoreline of Humboldt Bay. Recreational users tend to be more casual trail users taking shorter trips at slower speeds than people using the trail for transportation purposes. This potential for conflict that exists between recreational (including coastal access and nature study) and transportation uses is heightened along this section of the trail given the likely higher proportion of bicyclists and the relatively long, undisrupted reach where cyclists can retain high speeds. In addition, this section of the trail is isolated between the highway/South G Street and the Bay on an elevated embankment with few opportunities for bikes to pull off the trail or pedestrians to step off the trail and no alternative paths for pedestrians who are not allowed on the highway shoulder. Given this unique context, a ten foot paved width is necessary to prevent collisions or the perception of unsafe conditions that will deter recreational and nature study uses. The trail could also minimize the potential for conflict by providing a wider unpaved shoulder or regular turnouts along the trail, but these alternatives would not further reduce wetland fill impacts. Thus a narrower trail width is not a less environmentally damaging feasible alternative for the portion of the Humboldt Bay Trail North within the rail corridor.

In contrast, within the Arcata Marsh where existing trails will be widened to accommodate the proposed Humboldt Bay Trail North, there are alternative paths, more curves and crossings to slow down bicyclists, and more opportunity to pull off the trail without risking a fall off an embankment. Therefore, as with past Coastal Trail projects, the Commission finds that an eight-foot asphalt trail with two-foot shoulders is the least environmentally damaging feasible alternative through the Arcata Marsh. As previously described, the City has already agreed to narrow the path in two locations within the Arcata Marsh where there are wetland fill impacts, but does not propose to narrow the path in a third location in the Arcata Marsh directly adjacent to South I Street where the trail intersects a palustrine emergent wetland resulting in 27 square feet of wetland fill (Exhibit 5, pg. 4). As this segment of trail is directly adjacent to South I Street, and both South I Street and other Arcata Marsh trails provide alternative routes that allow users to avoid conflicts, this segment of trail should also be narrowed. Therefore the Commission attaches **Special Condition 22**, requiring the City to submit revised final construction plans for the trail that capture this reduction as well as the other trail width reductions in the Arcata Marsh proposed by the City. Narrowing the trail within the Arcata Marsh where the trail intersects wetlands will result in a cumulative reduction of over 1,200 square feet of wetland fill. With the attachment of Special Condition 22, the Commission finds that further reducing trail widths is not a feasible less environmentally damaging alternative to the approved development as conditioned.

For all of the reasons discussed above, the Commission finds that proposed development, as conditioned, is the least environmentally damaging feasible alternative as required by Section 30233(a).

Feasible Mitigation Measures

The Commission must ensure that the proposed project minimizes adverse environmental effects and maintains and enhances the functional capacity of coastal wetlands consistent with Section 30233, and protects marine resources and the biological productivity and the quality of coastal wetlands consistent with the requirements of Sections 30230 and 30231.The proposed development would be located in part within and adjacent to coastal wetlands. The potential significant adverse impacts of the project include a loss of palustrine and estuarine wetland habitat, a loss of riparian wetland habitat, impacts to special-status salt marsh plants species, impacts to nesting birds, impacts to northern red-legged frogs (*Rana aurora*), impacts to fish and other aquatic species, and impacts to water quality and the marine environment. The potential impacts and their mitigation are discussed below.

a. Permanent estuarine and palustrine wetland fill impacts

Consulting firm Winzler and Kelly conducted a wetland delineation for the proposed project in January, March, and April of 2010. Based on this delineation and the current project footprint, the City has determined that the Humboldt Bay Trail North will permanently impact 1.3 acres of palustrine wetlands and 0.48 acres of estuarine wetlands. To mitigate for the loss of wetlands, the City proposes to create 2.26 acres of palustrine wetlands offsite on Caltrans' Lanphere Parcel (APN 506-291-014; Exhibit 8, pg. 2). This 2.26-acre mitigation area equates to a 1:1 creation ratio for in-kind impacts to palustrine wetlands and a 2:1 creation ratio for out-of-kind impacts to estuarine wetlands (an overall ratio of 1.27:1 wetlands created to wetlands lost). To further mitigate for the loss of 1.78 acres of palustrine and estuarine wetlands, the City proposes to perform wetland enhancement through eradication of invasive *Spartina densiflora* (Spartina) on 9.4 acres on the City's South I Street Parcel (APN 506-011-004; Exhibit 8, pg. 3). The City's mitigation proposals for both the Lanphere Parcel and the South I Street Parcel are contained within a report titled "City of Arcata Wetland Mitigation and Monitoring Plan for Humboldt Bay Trail North" and dated July 22, 2016 (Exhibit 9).

At the Lanphere Parcel, the City proposes to create wetlands on a 2.26-acre upland portion of the Lanphere Parcel by grading the site down to 3 feet (NAVD88) in elevation, and grading around the mitigation site to achieve a stable 3:1 slope. The lower elevation will expose the site to groundwater hydrology and create a grassy seasonal wetland suitable for cattle grazing. To establish the desired wetland vegetation typical of this habitat, the first 12 inches of sod will be removed and stockpiled. After excavation of the wetland mitigation area, the sod will be replaced. As part of the City of Arcata Wetland Mitigation and Monitoring Plan for Humboldt Bay Trail North, the City proposes a number of construction Best Management Practices (BMPs) to avoid impacts to adjacent wetlands, including flagging wetlands and ESHAs in the field during construction, placing excavated material away from wetlands and ESHAs, and installing sediment and erosion control measures including silt fences, straw bales, fiber rolls, or other measures as applicable between excavation work and adjacent downslope wetlands.

After project implementation, the City proposes to use a Global Positioning System (GPS) to digitally capture the mitigation area and dimensions to produce an "as built" map. This map, along with photographs of the site and an assessment of the initial biological and ecological status of the mitigation, will be submitted to the Coastal Commission within 45 days of completion of the mitigation project. The City also proposes to monitor the site for a period of five years, taking photographs seasonally to document inundation and extent of open water at the wetlands, and keeping a record of (a) all vascular plants present at the site; (b) percent cover of native vegetation; (c) the natural community type (e.g. palustrine); and (d) any notable disturbance or impact. If ponded water is not obvious on the surface, the City proposes to also measure the depth to groundwater to demonstrate wetland hydrology. The City proposes performance standards for the site, including (a) at least 50% colonization of the 2.26-acre mitigation area by wetland vegetation commonly found in palustrine wetlands; and (b) inundation of the 2.26-acre mitigation area with water on or within 10 inches of the surface under normal winter rainfall conditions for at least 14 consecutive days each year. Annual reports will be submitted to the Coastal Commission by January 31st of each year of monitoring which include a "Performance Evaluation" section where information and results from the monitoring program are used to evaluate the status of the wetland mitigation project in relation to the performance standards. The final monitoring report will be submitted to the Coastal Commission at the end of the reporting period and will contain all the post-project data collected over the monitoring period including pre-project (or baseline) information to assess whether the mitigation site conforms to the goals, objectives, and performance standards of the mitigation. If the final report indicates the project has been unsuccessful based on the approved performance standards, the City proposes to submit a revised mitigation plan to compensate for those portions of the original project that did not achieve the performance standards, and to continue monitoring and reporting until performance standards are met.

The portion of the Lanphere Parcel where palustrine wetland creation is proposed is an ecologically significant location directly to the east of a ribbon of high quality forested wetland that transitions into high quality upland dune forest habitat associated with the adjacent Laphere Dunes, a unit of the Humboldt Bay National Wildlife Refuge. Due to (a) the relatively high average annual rainfall in the region, (b) the type of wetlands to be restored (seasonally inundated farmed wetlands), (c) the success of nearby City-managed wetland restoration projects, and (d) the location of the mitigation site near existing, functioning wetlands, the proposed mitigation has a high likelihood of success. To ensure mitigation, monitoring, and reporting are implemented as proposed and the creation of 2.26 acres of palustrine wetlands is successful, the Commission attaches **Special Condition 8(A)**, requiring the City to undertake the Lanphere Parcel mitigation in conformance with the City's plan.

In a Memorandum of Understanding signed by the City Manager and Caltrans' District Director on August 17, 2016, Caltrans has agreed to perform the proposed mitigation work on the Lanphere Parcel on behalf of the City. Caltrans is also working on a separate plan for additional wetland restoration on the Lanphere Parcel as compensatory mitigation for wetland impacts associated with future transportation projects in the

Humboldt Bay area, including the Highway 101 Corridor Improvement Project. Caltrans has developed a concept design report for this future restoration project, but has not yet performed environmental review or submitted permit applications for the project. In conversations with Caltrans staff, Commission staff has learned that Caltrans is planning to perform the City's Humboldt Bay Trail North mitigation work on the Lanphere Parcel at the same time as they construct their future restoration project. Because this restoration project is only in its initial design phase, there is a concern that Caltrans may not secure approvals for this additional work for some time, thus delaying the City's mitigation. The currently proposed mitigation package accounts for a certain amount of temporal loss between the time of wetland fill impacts associated with trail construction and the time of wetland establishment at the mitigation site. To prevent unmitigated additional temporal loss, the Commission attaches **Special Condition 8(B)** requiring the City to complete construction of mitigation work (i.e., creation of 2.26 acres of seasonal palustrine wetlands) on the Lanphere Parcel within four (4) years of permit approval (by October 5, 2020). If mitigation work is not completed within four (4) years of permit approval, Special Condition 8(B) requires the City to submit a revised or supplemental mitigation program to be processed as an amendment to CDP 1-16-0122, to compensate for the additional temporal loss of habitat associated with the delay in implementing the wetland mitigation plan.

To further mitigate for the loss of wetlands, the City proposes to perform wetland enhancement through eradication of invasive Spartina on 9.4 acres of salt marsh adjacent to the outlet of McDaniel Slough into Humboldt Bay in the Arcata Marsh. Spartina is an invasive wetland plant from South America that was introduced to the region in the late 19th century. According to the USFWS,[7] Spartina has infested an estimated 90% of salt marshes in Humboldt Bay and the adjacent Eel and Mad River estuaries. Spartina is most abundant at low to mid-marsh elevations, but also invades high elevation marsh and intertidal mudflats. The species outcompetes native plants to form dense monocultures, displacing a diverse native plant community that includes rare plants such as Humboldt Bay owl's-clover and Point Reyes Bird's beak (both of which have a Rare Plant Rank 1B.2). In addition to altering the plant species composition of salt marsh ecosystems, Spartina has also been shown to alter the benthic macroinvertebrate community, increasing the abundance of non-native snails and reducing the abundance of important prey items for waterfowl and shorebirds. Conversely, the removal of Spartina from Humboldt Bay salt marshes has been observed to result in increased invertebrate species richness and increased abundance of the native snail *Littorina subrotundata* (Mitchell, 2012). A recent comparative study of native and Spartina-invaded salt marshes in Humboldt Bay has demonstrated that Spartina-dominated marshes also have lower net primary productivity, most likely related to low light-penetration and reduced growth of benthic algal in dense stands of Spartina (Lagarde, 2012). In addition to its direct impacts, the dominance of invasive Spartina in Humboldt Bay has slowed efforts at marsh restoration because of fears that restored marshes will be invaded by Spartina, compromising their habitat value (CDP 1-14-0249).

[7] http://www.fws.gov/refuge/Humboldt_Bay/wildlife_and_habitat/SpartinaManagement.html

In June 2015, the Commission granted CDP 1-14-0249 to the Humboldt Bay, Harbor, Recreation and Conservation District to implement the Humboldt Bay Regional Spartina Eradication Plan within approximately 1,400 acres of tidal marsh habitats in Humboldt Bay, the Eel River estuary, and the Mad River estuary, including the South I Street Parcel owned by the City. The city proposes to remove Spartina as partial mitigation for the wetland impacts of the Coastal Trail project using the authorization to perform such work under CDP 1-14-0249. Based on past eradication successes, the Humboldt Bay Regional Spartina Eradication Plan calls for two years of focused treatment at any one site using one or more mechanical and/or chemical methods to kill established Spartina stands and allow recruitment from the native seedbank, with treatment intensity higher in the first year (primary treatment) than the second year (secondary treatment). Consistent with CDP 1-14-0249, at the South I Street Parcel, the City proposes primary treatment using handheld brush cutters and/or rototillers or manual removal in locations where the mechanical removal is infeasible. Follow-up treatments will focus on removal of re-sprouts and seedlings using brush cutters and/or propane torches. The City proposes to implement salt marsh enhancement following permit approvals and/or concurrent with construction of the Humboldt Bay Trail North to prevent temporal loss associated with the wetland impacts.

Consistent with the Lanphere Parcel mitigation proposal, the City proposes to produce an "as built" map of the South I Street Parcel salt marsh enhancement site, and submit the map, photographs of the site, and an assessment of the initial biological and ecological status of the mitigation to the Coastal Commission within 45 days of completion of the mitigation project. The City also proposes to monitor the site for a period of five years, taking photographs twice yearly to document high and low tide conditions, and keeping a record of (a) all vascular plants present at the site; (b) percent cover of native vegetation; (c) the natural community type (e.g. coastal salt marsh, brackish marsh, etc.); and (d) any notable disturbance or impact. Consistent with the Lanphere Parcel mitigation proposal, annual reports for the South I Street Parcel mitigation will be submitted to the Coastal Commission by January 31st of each year of monitoring, and a final monitoring report will be submitted to the Coastal Commission at the end of the reporting period. Though it is expected that the native salt marsh plant community will recover naturally, if warranted, the City proposes to undertake active revegetation after Years 3 or 5 of monitoring. If the final report indicates the project has been unsuccessful based on the approved performance standards, the City proposes to submit a revised mitigation plan to compensate for those portions of the original project that did not achieve the performance standards, and to continue monitoring and reporting until performance standards are met.

Over the last ten years, Spartina has been removed from approximately 200 acres of Humboldt Bay's 1,030 acres of tidal marsh under previous Spartina eradication projects in the Humboldt Bay National Wildlife Refuge (ND-049-06, ND-017-10, ND-025-10, and ND-041-10) and on marshes owned by the City of Arcata (McDaniel Slough Wetland Enhancement Project, CDPs 1-06-036 and 1-06-036-A1). The City's current Spartina eradication proposal has a high-likelihood of success, given the City's proposal utilizes the same methods as previously successful eradication efforts in the Humboldt Bay area, and the City itself has succeeded in eradicating Spartina at nearby locations

including Butcher Slough, which is now colonized by a diverse assemblage of native salt marsh species. In addition, the City is proposing eradication in a large, discrete, isolated peninsula of salt marsh habitat, limiting the risk of immediate reinvasion from adjacent Spartina infestations.

The goals of the City's salt marsh enhancement mitigation are to (1) eradicate Spartina and (2) establish a dominance of native salt marsh species over a 9.4-acre area. The City proposes to demonstrate success at the end of five years with (1) less than 10% cover of Spartina seedling or re-sprouts and (2) at least 50% colonization by brackish and or salt-tolerant vegetation native to Humboldt Bay. The current eradication proposal differs from previous Spartina removal projects approved by the Commission in that it is intended as compensatory mitigation for the projected impacts of development in wetlands. In order for the mitigation to be effective, and the impacts to wetlands to be fully offset, the proposed Spartina eradication and native marsh restoration must prove to be successful and sustainable through the full period during which the impacts of the Humboldt Bay Trail North are occurring. A primary threat to the long-term success of Spartina removal projects (and marsh restoration in general) in Humboldt Bay is the potential for the reinvasion by Spartina once treatments have ceased (H.T. Harvey & Associates, 2012). Allowing over 5% cover of Spartina to remain at the end of the five year monitoring period creates too large a risk of failure. In addition, the South I Street Parcel currently has medium (26-60%) to high (61-100%) vegetation density of Spartina. Converting areas of 26-60% cover to 10% cover does not provide the same level of enhancement value as larger percent reductions. Therefore, in order to memorialize the mitigation commitment made by the City, and to strengthen the proposed mitigation in order to maximize its chance of success and assure full compensation for wetland impacts, the Commission is adopting **Special Condition 9** which requires the City to undertake salt marsh enhancement mitigation, monitoring, and reporting consistent with the City's plan, except that the special condition requires 95% eradication of Spartina after five years (rather than the 90% proposed by the City). In addition, to ensure construction of the mitigation site does not have adverse impacts on coastal resources, including impacts to water quality and special-status fish from erosion and sediment mobilization, **Special Condition 9** also requires the City to revise the mitigation plan to include all the components of a Site-Specific Spartina Removal Plan required by Special Condition 4 of CDP 1-14-0249, which addresses all potential coastal resource issues of Spartina eradication work (See Exhibit 7 for CDP 1-14-0249 special condition language).

As discussed above, the removal of Spartina from Humboldt Bay has significant estuarine habitat benefits. As the removal does not actually result in the creation of new wetland, only enhancement of the existing wetland, it is difficult to numerically equate a specific amount of Spartina removal with a specific amount of loss of estuarine habitat from wetland fill. This is further complicated by the fact that Spartina coverage on the site ranges from 26 to 100 percent. However, the Commission notes that the size of the area of Spartina removal (9.4 acres) is significantly greater than the 1.78 acres of wetland fill. In this case, the Commission finds that taken together, the proposed 2.26-acres of palustrine wetland creation at the Lanphere Parcel and the 9.4-acres of salt marsh enhancement at the South I Street Parcel will adequately compensate for the loss of 1.78

acres of palustrine and estuarine wetlands that will result from the construction of the Humboldt Bay Trail North.

To ensure future development does not encroach into the tidal salt marsh mitigation area on the South I Street Parcel or the palustrine wetland mitigation area on the Lanphere Parcel, resulting in the loss or degradation of enhanced/created wetlands, the Commission attaches Special Conditions 10 and 11. **Special Condition 10** prohibits all development within the mitigation areas except for (i) the authorized development that is approved by this permit, and (ii) the following development if subsequently authorized by the California Coastal Commission, including: (a) vegetation clearance if required by the California Department of Forestry and Fire Protection to meet fire safety standards; (b) maintenance of existing utilities and community services infrastructure; (c) improvements for public access purposes; (d) further habitat restoration and enhancement activities; and (e) soil stabilization measures. In addition for the Lanphere Parcel mitigation area, Special Condition 10 also allows seasonal agricultural grazing. **Special Condition 11** requires that, prior to any conveyance of the properties on which salt marsh enhancement or palustrine wetland creation mitigation is proposed, the permittee must cause to be recorded a deed restriction that imposes restrictions on the use of the property to ensure that future purchasers of the property are notified of the prohibitions on development within the wetland mitigation areas. Such notification of future purchasers will eliminate expectations on the part of the purchasers that they may be able to develop other improvements or uses within the mitigation areas.

Therefore, the Commission finds that the project as conditioned provides feasible mitigation measures to minimize the project's palustrine and estuarine wetland fill impacts consistent with Section 30233 of the Coastal Act.

b. Permanent impacts to riparian wetland habitat

Riparian habitat provides nesting, roosting, and foraging opportunities for migratory and resident bird species, and shade, food, and protection from predators for fish and other marine organisms. Riparian habitat also stabilizes stream banks, captures contaminants by absorbing or filtering contaminated stormwater runoff, and serves as a buffer against flooding. Based on the 2010 Winzler & Kelly wetland delineation and the current project footprint, the City estimates that the Humboldt Bay Trail North will permanently impact approximately 0.07 acres of riparian habitat delineated as one-parameter Coastal Act wetlands.

Riparian habitat in the project area consists of scattered narrow strips and small patches of riparian vegetation adjacent to and within palustrine emergent wetlands. Where the riparian drip line extends beyond three-parameter wetlands, the habitat was mapped by Winzler & Kelly as "riparian" and considered one-parameter Coastal Commission wetlands. Permanent impacts to riparian habitat occur in five separate locations along the trail, including just north of the Butcher Slough crossing (associated with palustrine emergent "No Name Pond" to the south; Exhibit 5, pg. 6), where the trail is located between the WWTP and South G Street (associated with salt marsh habitat between the WWTP oxidation ponds and the railroad berm; Exhibit 5, pg. 9), and at three locations on

the east side of the railroad tracks (associated with palustrine emergent wetlands in the adjacent drainage ditch; Exhibit 5, pgs. 12, 13, and 15). These riparian areas are dominated primarily by Arroyo willow (*Salix lasiolepis*), red alder (*Alnus rubra*), and Himalayan blackberry (*Rubus discolor).*

The City proposes to mitigate for the loss of 0.07 acres (2,965 square feet) of riparian habitat at a 1:1 replacement ratio within the vicinity of the disturbance, primarily by planting willow cuttings from nearby willows. The City proposes to monitor revegetated areas for success following the first year, and to re-plant areas that are not successful. The City proposes to monitor unsuccessful areas (if any) annually following re-planting until successful reestablishment has occurred.

Because the City's proposal does not (1) identify specific locations for planting compensatory riparian habitat, (2) address temporal loss associated with establishment of compensatory mitigation sites, nor (3) contain clear provisions for monitoring or remediating to ensure that sufficient habitat will be restored to compensate for the proposed direct impacts to riparian habitat, the Commission attaches **Special Condition 12** requiring the applicant to submit a final riparian habitat mitigation and monitoring plan for the Executive Director's review and approval prior to permit issuance. Special Condition 12 requires that the final plan include, among other requirements, (a) a map identifying riparian planting mitigation site(s) totaling 0.14 acres adjacent to existing wetlands, such as areas around creeks and sloughs currently lacking riparian cover; (b) goals and performance standards that will ensure establishment of 0.14 acres of self-sustaining compensatory riparian vegetation, including at least 2:1 replacement of native riparian trees lost by trail development; (c) a schedule for construction of the mitigation; (d) grading and erosion and sediment control plans for the mitigation site(s); (e) a planting plan accompanied by a plant list, which together show the type, size, number, source, and location of all plant materials that will be retained or installed at the mitigation site(s); (f) a maintenance plan (e.g., weeding, replacement planting); (g) a monitoring plan for monitoring the mitigation site(s) annually for a minimum of three years; (h) provisions for submittal, within 30 days of completion of the initial mitigation work, a report demonstrating that the riparian wetland mitigation work has been completed in accordance with the approved mitigation plan; and (i) provisions for the submittal of a final monitoring report to the Executive Director at the end of the reporting period. Special Condition 12 also requires that if the goals and performance standards of the final riparian habitat mitigation and monitoring plan have not been met at the end of three years following the riparian habitat planting, the permittee shall submit an application for an amendment to this CDP proposing additional mitigation to ensure all goals and performance standards are satisfied consistent with all terms and conditions of this permit.

The City only proposes to replace riparian one-parameter wetlands at a 1:1 ratio which does not account for temporal loss between the time the riparian vegetation along the trail is lost and the mitigation site(s) are established. Special Condition 12 instead requires 2:1 replacement to address temporal loss. Though the Commission has required 4:1 mitigation in certain cases, the Commission finds that a 2:1 replacement to address

temporal loss of willow-dominated riparian habitat in the North Coast is adequate because the wetter climate increases the chance of rapid and successful restoration of such habitat.

As conditioned in the manner discussed above, the Commission finds that the project provides feasible mitigation measures to minimize the project's impacts to riparian wetlandhabitat consistent with Section 30233 of the Coastal Act.

c. Temporary construction staging/access impacts to wetlands

Construction staging and in-channel bridge installation work will result in an additional approximately 0.2 acres of temporary wetland impacts. To limit the areas of disturbance to only what is necessary, the City proposes to install exclusionary fencing between the work area and adjacent wetlands and environmentally sensitive areas. The City also proposes to place protective pads (metal/wood/rubber sheets) on top of the wetlands where equipment access/staging would be required to prevent the equipment tracks/wheels from rutting and compressing the soil and uprooting or destroying existing wetland vegetation. These avoidance and minimization measures are included as part of **Special Condition 17** (Construction Responsibilities).

While wetland vegetation will be disturbed by the movement of construction equipment during construction staging and access, it is anticipated that the root systems will remain intact and plants will recover. To ensure recovery of wetland vegetation, the City proposes to revegetate the areas temporarily impacted with native wetland plants where bare ground is observed, and to monitor for successful plant reestablishment one year following impacts. The Commission attaches these mitigation measures as **Special Condition 13**. To ensure successful mitigation, Special Condition 13 also requires that a monitoring report be submitted to the Executive Director by December 31st of that year. If the monitoring report indicates that the temporarily impacted wetlands do not have a similar vegetative density and cover to the surrounding wetlands, Special Condition 13 requires the City to submit a revised or supplemental restoration program to mitigate for wetland impacts in kind and in place. As conditioned in the manner discussed above, the Commission finds that the project provides feasible mitigation measures to minimize the project's temporary wetland fill impacts consistent with Section 30233 of the Coastal Act.

d. Impacts to special-status salt marsh plant species

Areas of estuarine intertidal emergent wetlands in the project vicinity are considered potential habitat for four special-status plant species, Lyngby's sedge (*Carex lyngbyei*) [Rare Plant Rank (RPR) 2B.2], Humboldt Bay owl's-clover (*Castilleja ambigua* ssp. *humboldtiensis*) [RPR 1B.2], Point Reyes bird's-beak (*Chloropyron maritimum* ssp. *palustre*) [RPR 1B.2], and western sandspurrey (*Spergularia canadensis* var. *occidentalis*) [RPR 2B.1]. The brackish sections of the drainage ditch[8] on the east side of the railroad tracks between the tracks and the highway are considered low-quality potential habitat. The salt marsh associated with Butcher Slough, Gannon Slough, and Jacoby Creek and the vegetated salt flats on the west side of the railroad tracks along the

[8] Portions of the drainage ditch have been classified as estuarine emergent wetland.

margin of Humboldt Bay (from the WWTP sludge drying beds to the southern terminus of the trail) are considered moderate to high value habitat for these species.

On May 28 and July 17, 2010, Winzler & Kelly conducted focused site-specific and seasonally appropriate botanical surveys for the four special status plant species potentially present in salt marsh habitat in the project vicinity. An estimated 29,000 individual Humboldt Bay owl's clover plants were identified at approximately 17 different sites from north of Butcher Slough in the Arcata Marsh to Brainard's Slough directly south of the trail's southern terminus. In addition, an estimated 35,734 Point Reyes bird's beak plants were identified within 20 locations. Most of the special-status plants were found in the high salt marsh west of the railroad tracks along the margin of Humboldt Bay outside of the project footprint. However, patches of Humboldt Bay owl's clover and Point Reyes bird's beak plants were also identified east of the railroad tracks to the north and south of Gannon Slough in the proposed project footprint. Lygnby's sedge was also observed near Gannon Slough. No western sandspurrey was identified in the project vicinity.

The 2010 Mitigated Negative Declaration (MND) prepared for the Humboldt Bay Trail North[9] included an avoidance measure requiring that all efforts be made to avoid Humboldt Bay Owl's clover and Point Reyes bird's beak during trail construction. If construction occurs during times of the year when these plants will be present, the avoidance measure requires that the area be surveyed and any individual special-status plants be flagged. Caltrans prepared a Natural Environment Study (NES) report for the Humboldt Bay Trail North project dated October 2015 that also includes avoidance measures for impacts to special-status plants adjacent to the project footprint. These measures include a requirement that, prior to the start of construction activities in the project area, with the assistance of a qualified botanist, the edges and endpoints of the patches of Humboldt Bay owl's clover and Point Reyes bird's beak adjacent to the trail corridor be identified with flagging. The NES also specifies that the flagging be periodically inspected throughout each period of construction and repaired as necessary; and all pedestrian and vehicular entry into these patches be avoided as practicable. The Commission includes these avoidance measures as part of **Special Condition 14(A)**. However, because the avoidance measures proposed by the City do not specify the minimum distance from the project footprint at which any identified special-status plant populations will be flagged, Special Condition 14(A) further clarifies that flagging will occur within 50 feet of the project footprint. Finally, to alert the contractor hired by the City of the presence of special-status plants**,** **Special Condition 17(D)** requires training for all on-site contractors by a qualified biologist to educate personnel on the biological restrictions and sensitivity of habitats in and adjacent to the construction area.

Four of the patches of Humboldt Bay owl's-clover and three of the patches of Point Reyes bird's-beak identified in the 2010 botanical surveys intersect with the project footprint directly north and south of Gannon Slough (at the Gannon Slough Overlook and

[9] The MND included not just the Humboldt Bay Trail North project, but also the City of Arcata trail segment to the north from Foster Avenue in northern Arcata to Samoa Boulevard.

the north and south approaches to the bridge over Gannon Slough). As a result, based on the 2010 special-status plant mapping, 389 square feet of Humboldt Bay owl's-clover and 885 square feet of Point Reyes bird's-beak will be permanently impacted by the project. Impacts to known populations of Lygnby's sedge have been avoided.

Both Humboldt Bay owl's-clover and Point Reyes bird's-beak are annual, hemiparasitic species in the Broom-rape family (*Orobanchaceae*) that grow in coastal salt marsh habitats primarily along the North Coast of California. In addition to photosynthesizing, these hemiparasites supplement their nutrient intake by parasitizing the live roots of adjacent salt marsh species. Humboldt Bay owl's-clover plants typically germinate in late winter to spring and bloom sometime between April and August (often peaking in June). Point Reyes bird's-beak plants are slightly later: on average, germination is in spring and flowering is approximately in July (CNPS 2007). Population numbers of each species normally fluctuate from year to year, since, as annuals, germination rates are dependent on a number of environmental factors. In general, both species are threatened by development and nonnative plants, among other causes (CNPS 2007).

The NES prepared by Caltrans in October 2015 references the 2011 *Wetland and Habitat Mitigation and Monitoring Plan* prepared by Winzler and Kelly (updated in 2014) for compensatory mitigation for direct impacts to special-status plants. This report calls for replacing special status plant individuals on a 1:1 basis at a site adjacent to the trail corridor or in the previously proposed estuarine mitigation areas that will no longer be used. To ensure compensatory mitigation, the Commission attaches **Special Condition 14(B)** requiring submittal of a final special-status plant mitigation and monitoring plan for the Executive Director's review and approval to mitigate for direct impacts to special-status plants and their habitat within the project footprint by collecting seeds from the area of impact and distributing the seeds to nearby marsh habitat. The Humboldt Bay owl's-clover and Point Reyes bird's-beak are annual plants. Individual plants die off each year, and the species depend on dispersal of the seeds from plants by wind and other means to suitable habitat areas nearby where the seeds can grow into new individual plants. Special Condition 14(B) thus requires seed collection and dispersal because this mimics the natural process that would occur if the project were not being conducted.

Special Condition 14(B) requires that the final special-status plant mitigation and monitoring plan include: (1) an updated seasonally appropriate preconstruction special-status plant survey estimating the number of special-status plant individuals to be directly impacted by project construction; (2) a map identifying site(s) for Humboldt Bay owl's-clover and Point Reyes bird's-beak mitigation in suitable habitat near to the area of impact; (3) a narrative that describes the seed collection and distribution program and methods, identifies the habitats that will receive the seeds to be dispersed and why the receiver sites were selected, and discusses the phenologically appropriate time for distribution of the seed; and (4) provisions for submittal within 30 days of completion of the initial mitigation work of a report with maps, photographs, and a narrative discussion demonstrating that the initial mitigation work has been completed in accordance with the approved final plan. Special Condition 14(B) does not require monitoring because it is not feasible to monitor with confidence the success of the seeds themselves that are

conserved and transplanted/distributed since the species grow in a tidal environment in which the tiny seeds may be carried with tidal flow far from their original distribution point. Therefore, Special Condition 14(B) does not propose success standards or monitoring for the transplanted/distributed seeds.

As conditioned in the manner discussed above, the Commission finds that the project as conditioned provides feasible mitigation measures to minimize the project's impacts to special status salt marsh plants consistent with Section 30233 of the Coastal Act.

e. Impacts to bird species

According to the MND and NES prepared for the project, the project area provides habitat for numerous bird species including waterfowl, shorebirds , birds of prey, and songbirds. For avian species potentially nesting in the project area, including special status raptors [northern harrier (*Circus* cyaneus), white-tailed kite (*Elanus leucurus*), and short-eared owl (*Asio flammeus*)] and songbirds [Little willow flycatcher (*Empidonax traillii brewsteri*), Yellow-breasted chat (*Icteria virens*), and California Yellow warbler (*Setophaga Petechial brewsteri*)], construction disturbance (e.g., site grading and vegetation removal) during the breeding season could result in loss of fertile eggs or nestlings, or otherwise lead to nest abandonment.

To ensure protection of bird species in the project area, including special status raptors and migratory birds, the Commission attaches **Special Condition 15** which requires a qualified biologist to conduct pre-construction surveys for nesting birds no more than seven days prior to the commencement of work, unless the project will occur between September 1 and January 31, outside the avian breeding/nesting season. If any active nest is identified, the condition requires that the biologist, in consultation with CDFW, determine the extent of a construction-free buffer zone to be established around the nest, and construction must be delayed until after the young have fledged, as determined by additional surveys conducted by a qualified biologist.

Construction of the trail prism will result in the removal of vegetation including trees and shrubs along some trail segments. This vegetation management proposed along portions of the trail could permanently decrease the amount of suitable nesting, roosting, and foraging habitat for a variety of migratory and resident bird species. Therefore the City proposes, and the Commission requires under **Special Condition 17(G)**, that soils and slopes exposed by earthwork be revegetated. As described above in the subsection on loss of riparian habitat, the Commission also attaches **Special Condition 12**, requiring the City to establish 0.14 acres of self-sustaining riparian vegetation in the project vicinity to compensate for the loss of 0.07 acres of riparian wetlands on a 2:1 basis, including at least 2:1 in-kind replacement of native riparian tree species.

With the addition of Special Conditions 15, 17(G), and 12, the Commission finds that the project as conditioned provides feasible mitigation measures to minimize the project's impacts on nesting birds consistent with Section 30233 of the Coastal Act.

f. Impacts to northern red-legged frogs (*Rana aurora*)

The northern red-legged frog is a state-listed species of special concern that breeds in seasonal freshwater ponds with emergent vegetation. According to correspondence with Environmental Scientists from the California Department of Fish and Wildlife (CDFW), the only suitable breeding habitat in the project area is located towards the northern end of the trail in the Arcata Marsh where the City proposes to construct a bridge over an unnamed drainage ditch (Wetland #1; Exhibit 5, pgs. 2-3). CDFW surveyed the Arcata Marsh for northern red-legged frog egg masses in 2011 and found some egg masses in palustrine emergent wetlands in close vicinity to the proposed location of the bridge (per. comm. with CDFW Environmental Scientist Jennifer Olson). CDFW staff recommends an egg mass survey if the City plans to construct this segment of the trail between November and April during the red-legged frog breeding season. However, the NES prepared for the project by Caltrans includes a conservation measure limiting work in waterways to the period of the year between July 1st and September 30th, outside of the frog breeding season. The Commission attaches this restriction on the timing of construction as **Special Condition 16**, which requires that all construction in creeks and sloughs and wetlands with standing water, including Wetland #1, shall be limited to the period of the year between July 1 and September 30. Therefore the Commission finds that as conditioned, the project will avoid impacts to northern red-legged frog egg masses and tadpoles.

Although construction in waterways and wetlands with standing water will occur during the latter part of the dry season, adult northern red-legged frogs may still be encountered in the project vicinity in freshwater ditches, portions of the Arcata Marsh, and streams such as Jacoby Creek. To avoid impacts to adult northern red-legged frogs during project construction, the Commission attaches **Special Condition 16** requiring a qualified biologist to perform a pre-construction survey for the northern red-legged frog no more than one week prior to commencement of ground disturbance within 50 feet of all suitable northern red-legged frog habitat. Special Condition 16 also requires that construction in the vicinity cease if a northern red-legged frog is encountered, until a biologist, in consultation with CDFW, has moved the frog to a safe location outside of the construction zone. Finally, to alert the contractor hired by the City of the presence of special-status plants, **Special Condition 17(D)** requires training for all on-site contractors by a qualified biologist to educate personnel on the biological restrictions and sensitivity of habitats in and adjacent to the construction area.

In addition to direct loss of individuals that may result from construction activities in or near occupied habitat, the species may also be indirectly affected if construction activities result in degradation of aquatic habitat and water quality due to erosion and sedimentation, accidental fuel leaks, and spills. With the addition of Special Condition 17 (discussed in the next subsection), the Commission finds that the project as conditioned provides feasible mitigation measures to minimize the project's impacts on northern red-legged frogs consistent with Section 30233 of the Coastal Act.

g. Impacts to fish and other aquatic species

A significant portion of the proposed trail facilities will be constructed within and adjacent to coastal wetlands associated with Humboldt Bay and its tributaries. The brackish waters of the sloughs, drainage ditches, and the lower reaches of the streams in the project area provide potential habitat for special status species including federally threatened Southern Oregon and Northern California Coast ESU coho salmon (*Oncorhynchus kisutch*), federally threatened California Coast Evolutionary Significant Unit (ESU) chinook salmon (*Oncorhynchus tshawytscha*), Northern California ESU steelhead (*Oncorhynchus mykiss*), federally endangered tidewater goby (*Eucyclogobius newberryi*), federally threatened green sturgeon (*Acipenser medirostris*), and state listed longfin smelt (*Spirinchus thalyichthys*).

The proposed project will require construction work within stream and slough channels for bridge installation. A total of 22 cast-in-place steel shell piles eighteen to twenty-inches in diameter will be driven into the substrate approximately 55 to 60 feet deep at Gannon Slough, Jacoby Creek, and Old Jacoby Creek. Jacoby Creek and Old Jacoby Creek bridges will require one to two days of pile driving for four piles, while Gannon Slough will require a maximum of seven days for 18 piles.

Pile driving with an impact hammer generates hydroacoustic pressure impulses and particle velocities that can cause effects on fish ranging from altered behavior, hearing loss, and tissue injuries to immediate mortality. In contrast, vibratory hammers produce peak sound levels that are substantially lower than those produced by impact hammers and as such are a less environmentally damaging alternative than impact pile driving (Caltrans, 2009, pgs. 2-26). Thus to minimize potential impacts to fish from pile driving, the City proposes to use a vibratory hammer instead of an impact hammer to install bridge piles. The City also proposes to install piles during minus ebb tides to avoid pile driving in water.

The proposed five bridges and one overlook all involve cast-in-place concrete support elements, including footings, retaining footings, bridge spread footings, and/or wing walls. For any cast-in-place elements below the high water line, the City proposes to use cofferdams to isolate curing concrete from coastal waters. In addition, for all work in stream and slough channels and in wetlands with standing water, including but not limited to pile driving and concrete pouring, the City proposes to limit construction to the period of July 1 to September 30 of each year, when sensitive fish species, including juveniles of listed salmonids, are least likely to be present in the area. This construction period is also within the dry season to avoid rainfall. The Commission requires these proposed mitigation measures for bridge and overlook construction under **Special Condition 17(A)-(C)**. The Commission finds that the project as conditioned provides feasible mitigation measures to minimize the project's impacts on fish and other aquatic species from in-channel construction work consistent with Section 30233 of the Coastal Act.

h. Impacts to water quality and the marine environment

Project construction along the Humboldt Bay shoreline could also result in impacts to aquatic species related to water contamination as a result of sediment, construction debris, or hazardous materials entering coastal waters. Vegetation clearing and grubbing and cut and fill slopes and stockpiles have the potential to increase suspended sediments and turbidity levels in adjacent coastal waters. Operation of heavy equipment, concrete pouring and curing, and asphalt paving near coastal waters could result in the leaking or spilling of oil, grease, and chemicals to receiving waters. The City has proposed a number of BMPs to be implemented during construction for erosion and sediment control and prevention of accidental spills, including, but not limited to, (a) re-vegetating soils and slopes exposed due to project-related earthwork using native seed mix and/or a sterile quick grow species; (b) installing suitable erosion and sediment control devices, such as silt fences, straw wattles, or catch basins below all construction activities at the edge of surface water features to intercept sediment before it reaches waterways; (c) storing equipment while not in use in upland areas at least 100 feet away from surface water features; (d) using non-toxic vegetable oil for operating hydraulic equipment instead of conventional hydraulic fluids; (e) placing plastic materials under asphaltic concrete paving equipment while not in use to catch and/or contain drips and leaks; and (f) fueling, maintenance, and washing construction equipment in confined upland areas more than 100 feet away from coastal waters. To ensure these and additional BMPs are implemented during project construction, the Commission attaches **Special Condition 17** requiring adherence to various construction-related responsibilities so that no construction materials, debris, or waste shall be allowed to enter coastal waters or be placed where it may be washed by rainfall or runoff into coastal waters.

Some project components including benches and bridge and overlook decking will be composed of pressure-treated wood. The use of pressure-treated wood near coastal waters and wetlands could lead to the leaching of contaminants into the marine environment. The Commission attaches **Special Condition 17(K)** to require the implementation of additional BMPs during construction if treated wood is utilized. These BMPs include a ban on the use of creosote-treated wood, and requirements for (i) cutting/drilling treated wood at least 100 feet away from coastal waters and wetlands, (ii) containing/collecting any sawdust, drill shavings, and wood scraps in order to prevent the discharge of treated wood to the marine environment, and (iii) storing treated wood materials in a contained, covered area to minimize exposure to precipitation.

The new trail will be a paved, impervious surface, which will slightly increase runoff and associated chemicals over the life of the project. Along the Eureka-Arcata Highway 101 Corridor, stormwater runoff from the trail will drain to open ditches, which will eventually flow into the creek and slough tributaries of Humboldt Bay. The paved trail and gravel shoulder will slope slightly toward the drainage ditches, but the slope face will be protected with an erosion control fabric/blanket and seeded with native seeds. Once the seeds sprout and the slope is vegetated, the compacted gravel of the trail's shoulder will stay in place. Since the trail will not be used by motor vehicles, asphalt wear will be tempered and contaminants such as fuels and oils associated with motor vehicles will not be generated. In addition, the drainage ditch adjacent to the trail is vegetated and

expected to provide biofiltration of runoff. Leaching of PAHs and metals from the new asphalt trail into waterways may be a concern at new bridge locations, where runoff will flow directly into the waterways. However, all of the proposed bridges except the Gannon Slough bridge will have timber decking and no asphalt surfacing.

Because the trail traverses land impacted by current and historic railroad and industrial use, there is the potential for soil and/or groundwater contamination along the project alignment that could pose a risk to the quality of coastal waters and the health of construction workers if exposed during construction and not contained and properly handled and disposed of. A Hazardous Materials Corridor Study (2010) was prepared by Winzler & Kelly that included an investigation of the currently proposed Humboldt Bay Trail North trail alignment, as well as the trail segment from Foster Avenue to Samoa Boulevard constructed last year, and a previously proposed mitigation site at the Arcata Marsh. The purpose of this report was to identify areas of potentially impacted soil and/or groundwater along the project alignment that may require special handling and disposal during construction or could pose a health exposure risk to construction workers.

Although a number of Hazard Rank 1 and 2 sites[10] were identified, including sites of former teepee burners where dioxin, furan, and heavy metal contamination may exist, none are located in close vicinity to the currently proposed project footprint. In addition, no hazardous materials storage drums or tanks, and no visual evidence of soil contaminated, was noted during the field survey of the trail corridor. However, a large part of the current alignment is located on the NRCA right-of-way, and railroad right-of-ways in other areas of California have been found to contain heavy metals, petroleum hydrocarbons, creosote, chlorinated compounds, pesticides, and polychlorinated biphenyls (PCBs) in the underlying soil and/or groundwater. Soil disturbance is planned for the entire length of the trail alignment, as either excavation or scarifying prior to compaction and placement of fill are anticipated to occur. Although there is no evidence to indicate that contaminated soils or hazardous materials are present in the project footprint, there is the potential that impacted soil and groundwater could be encountered in areas of soil disturbance that would require containment, removal, and proper disposal. If contamination is found, the City proposes to have the site remediated to the satisfaction of the applicable federal, state, and county regulatory agencies.

To further address this potential hazard, the City of Arcata prepared a memorandum in December 2014 addressing project protocol for known hazardous sites for the Humboldt Bay Trail North project. In this memorandum, the City proposes pre-construction soil borings to characterize the soil and groundwater adjacent to the NCRA right-of-way where the trail alignment follows the railroad. Laboratory analytical results of samples collected from these borings will be utilized to ascertain whether health and safety concerns are present and to determine necessary soil and/or groundwater disposal options. The City also proposes to require construction contractors to report any evidence

[10] Hazard Rank 1 indicates that contamination of soils and/or groundwater is confirmed to exist within the project footprint and will likely affect project construction. Hazard Rank 2 indicates that the site has the potential to affect the project, either because of the presence of contamination that may migrate into the project area or because the extent of contamination is unknown.

of potential soil contamination, or any unearthing of storage drums or other potential sources of hazardous materials/wastes to the City. To prevent the release of any soil and groundwater contamination that might be encountered in areas of soil disturbance, the Commission attaches **Special Condition 18**, requiring the City to complete proposed pre-construction soil borings, and to submit results of soil and groundwater sample analysis to the Executive Director for review and approval. Special Condition 18 also requires the City to submit a Construction Soil and Groundwater Management Plan that (a) demonstrates that all contaminated soil and groundwater encountered during construction shall be contained, handled, and properly disposed of in a manner that prevents discharge of contaminated soil and groundwater to the surrounding environment; (b) provides for field screening during construction activities, and sampling of any impacted soils and groundwater encountered with characterization for off-site disposal; and (c) includes proposed containment, handling, and disposal methods for special handling of impacted groundwater, impacted soil segregation, and manifested disposal if necessary.

Therefore, the Commission finds that the project as conditioned provides feasible mitigation measures to minimize the project's potential impacts to the biological productivity and quality of coastal waters and wetlands consistent with Sections 30230, 30231, and 30233 of the Coastal Act.

Conclusion

In conclusion, the fill of coastal waters and wetlands associated with the project is allowable as it is required for nature study purposes, is the least environmentally damaging feasible alternative, includes feasible mitigation measures to minimize adverse environmental effects, and will maintain the functional capacity, biological productivity, and quality of coastal waters. Therefore, the Executive Director finds the proposed project consistent with Sections 30230, 30231, and 30233 of the Coastal Act.

H. COASTAL HAZARDS

Section 30253 of the Coastal Act states, in applicable part, as follows:

New development shall do all of the following:

(a) Minimize risks to life and property in areas of high geologic, flood, and fire hazard.

(b) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.

Section 30253 requires in part that new development minimize risk to life and property in areas of high flood hazard, assure structural integrity and stability, and neither create nor contribute significantly to erosion or engender the need for protective devices that would alter natural landforms. The proposed project is located along the margin of Humboldt Bay in an active

seismic area that is subject to numerous seismic hazards, including strong ground motions, seismic settlement, soil liquefaction, and tsunamis. The proposed trail is also located in the mapped FEMA Zone A 100-year floodplain and many segments of the alignment are located over or adjacent to tidally influenced waters, resulting in flooding risks that will only increase in frequency and extent with sea level rise.

Earthquake Shaking, Soil Settlement, and Liquefaction

Humboldt County is a very active tectonic region subject to frequent, and sometimes large, earthquakes due in part to the presence of numerous fault lines and its location near the intersection of the Pacific, Gorda, and North American plates.

To address the significant geologic risks common to the general Humboldt Bay region, Blackburn Consulting (BCI) prepared a geotechnical report for the City's trail project[11] dated July 6, 2010. Based on eight drilled test borings, groundwater in the project area ranges from -1 to 8 feet in depth and includes brackish water tidally influenced by Humboldt Bay. Soils in the vicinity include alluvium deposits typical of northwest California coastal plains, and non-native soils used as fill for the construction of the railroad and highway embankments. Along large portions of the trail, the upper layer of sediment consists of unconsolidated, soft bay muds. Based on the encountered sediments, depth to groundwater, and laboratory test results, the potential for detrimental soil liquefaction and/or seismic settlement to occur within the project footprint are high.

Based on the site conditions and resulting hazards, the geotechnical report makes a number of recommendations on grading, ground improvement, and foundation support that have been incorporated into the project design and construction plans. For example, if loose and soft bay muds are encountered at the location of bridge abutments or footings, the City proposes to place a layer of nonwoven geotextile fabric into the excavated abutment/footing areas prior to backfilling. In addition, the City proposes to use bridge and overlook footings composed of concrete to withstand the corrosive soil environment that the shallow, brackish groundwater creates as well as use steel shell piles with poured concrete for the Gannon Slough, Jacoby Creek, and Old Jacoby Creek bridges in order to facilitate vibratory pile driving to a stable depth while still maintaining corrosion resistance.

Because the proposed project will comply with California Building Code and local building codes which have been designed to allow structures to withstand strong seismic ground shaking, and because the project will comply with the site-specific recommendations of the project's geotechnical report, the development is designed to assure stability and structural integrity consistent with the requirements of Section 30253(b).

Tsunami Inundation

Due to the known seismic activity in the Pacific Rim, there is the potential for a tsunami to occur that could impact Humboldt Bay. If the region were to suffer a major earthquake along the Cascadia Subduction Zone, a local tsunami could hit the Humboldt Bay shoreline within

[11] This report covers the entire City of Arcata Rail with Trail Connectivity Project which includes the Humboldt Bay Trail North as well as the previously constructed trail segment from Foster Avenue in northern Arcata to the north side of Samoa Boulevard.

minutes. The entire trail alignment is in a tsunami evacuation area that may be subject to tsunami inundation. As the proposed project is a recreational trail that does not include habitable structures, residential units, or critical facilities, the risks to life and property are proportionately less than for more intense development. Tsunami hazard warning signs already exist along the Eureka-Arcata Highway 101 Corridor, including one near the WWTP trailhead. In addition, the County maintains a coastal tsunami early warning system, including the use of tsunami sirens, to minimize risk inside the tsunami vulnerability and evacuation area where the trail will be located.

Floodplain and Drainage Affects

The proposed project is in a relatively low-lying waterfront area in the mapped 100-year floodplain. Although the proposed project includes installation of three miles of an eight-to-ten-foot-wide impervious asphalt surface (3.25 acres of additional paved area), the trail is not expected to have a significant impact on flood capacity (the entire floodplain is 1,440 acres in size). The existing substrate in the proposed location of the trail is predominantly compacted, imported fill associated with existing Arcata Marsh trails and the railroad grade. Although the project will add a paved surface to the compacted material, there will be a negligible change in the volume and path of runoff. Any water falling on the paved trail will flow downhill to surrounding areas (including the two-foot-wide gravel shoulders) where percolation will occur. In addition, the proposed trail will not redirect or impede flood flows, is not expected to be subject to significant damage as a result of inundation, and is not an essential facility required to be operational in the event of a flood.

The proposed project will modify the drainage capacity along the western edge of Highway 101. The existing drainage system consists of a drainage ditch which lies between the edge of the highway and the existing railroad embankment. This ditch drains runoff from the western half of the southbound freeway (i.e., from one highway lane and shoulder). The ditch system has open outfalls into Humboldt Bay at Gannon Slough, Jacoby Creek, Old Jacoby Creek, and Brainard's Slough, and portions of the ditch are tidally influenced. The approximately 0.9 miles of trail proposed south of Gannon Slough will extend from the railroad prism into a portion of this existing drainage ditch, resulting in less available drainage ditch volume for storm discharges.

High water elevations in the ditch are a direct function of precipitation duration and quantities, tidal elevations, and outflow capacity of the existing drainage system. To evaluate the impacts of the decrease in drainage capacity that will result from the construction of the trail, a hydrologic and hydraulic analysis of the drainage ditch along Highway 101 was completed in 2011 by Winzler and Kelly, and later updated in 2015 by GHD. The results of these analyses show that the ditch capacity will not be exceeded during the analyzed storm event. In addition, based on a ditch flow rate analysis, the reports determine that the grass-lined ditch will be stable and erosion-resistant. The reports recommend specific rock slope protection for the ditch outlets that will be required for energy dissipation that have been incorporated into the project design.

Tidal Inundation and Sea Level Rise

The proposed trail spans four tidally influenced waterways, and large portions of the trail are adjacent to tidally influenced waters. The proposed trail elevation, which ranges from approximately 9 to 15 feet (NAVD 88), is above the current mean monthly maximum water

(MMMW) elevation on Humboldt Bay of 7.74 feet (NAVD 88 as measured at NOAA's North Spit Tide Gage) and the average annual king tide elevation of 8.78 feet (NAVD 88). However, extreme tides (100 year events) and king tides and/or storm surges can reach up to two feet above the tidal baseline elevation and therefore portions of the trail that are below 9.74 feet in elevation that are exposed to tidal waters will be at risk of flooding. The only portion of the trail below 10 feet in elevation will be the approximately 3,600 foot stretch of trail on the west side of the railroad tracks between the WWTP trailhead and Gannon Slough.[12] This portion of the trail, which is directly adjacent to a wide swath of salt marsh on the east side of Humboldt Bay, will be immediately at risk of flooding during extreme tidal events, storm surge, and periods of heavy stormwater runoff.

The proposed bridges over tidally influenced Butcher Slough, Gannon Slough, Jacoby Creek, and Old Jacoby Creek have been designed with deck elevations ranging from 12.54 feet at Jacoby and Old Jacoby Creeks to 12.98 feet at Gannon Slough and 13.5 feet at Butcher Slough.[13] These elevations are above current king tides and 100-year flood events.

Bridge	Bridge Deck Elevation (feet)
Butcher Slough	13.50
Gannon Slough	12.98
Jacoby Creek	12.54
Old Jacoby Creek	12.54

Under sea level rise, the proposed trail may be exposed to an increased level of periodic inundation as a result of high tide and flood events. Humboldt Bay is experiencing the greatest rate of relative sea level rise in the State (due to active land subsidence), with up to 0.9 feet of rise expected by 2030, 1.9 feet by 2050, and 5.3 feet by 2100.[14] The following table depicts the projected water levels resulting from sea level rise in the project area.[15]

[12] A very small portion of the trail in the Arcata Marsh (where the trail crosses South I Street) is also below 10 feet in elevation but is not located near tidal waters.

[13] In comparison, the existing bridge deck elevations for the railroad crossings are at a height of 9.37 feet (NAVD 88).

[14] These projections are from Northern Hydrology & Engineering's 2015 report entitled Humboldt Bay: Sea Level Rise, Hydrodynamic Modeling, and Inundation Vulnerability Mapping, prepared for the State Coastal Conservancy and Coastal Ecosystems Institute of Northern California. The study includes projections for relative sea level rise in Humboldt Bay that takes into account the combined effects of regional eustatic sea level rise and vertical land motion (tectonic uplift and subsidence).

[15] The baseline water levels were determined using the Humboldt Bat Sea Level Rise Water Level Extract Program and KMZ files prepared by Northern Hydrology & Engineering. Sea level rise projections were calculated using data from Humboldt Bay: Sea Level Rise, Hydrodynamic Modeling, and Inundation Vulnerability Mapping (Northern Hydrology, 2015), using year 2000 as the baseline. All elevations in the table and in the following analysis are using NAVD88.

Sea Levels & Project Sea Levels for Humboldt Bay (NAVD88)			
		MMMW*	**MAMW°**
Current Levels		7.74	8.78
2030	Best case	8.46	9.48
	Average	8.74	9.75
	Worst case	9.03	10.05
2050	Best case	8.69	9.71
	Average	9.03	10.05
	Worst case	9.85	10.86

*MMMW = mean monthly maximum water level
°MAMW = mean annual maximum water level (i.e., average King Tide)

The City has secured a 25 year license through 2041 from NCRA for use of the NCRA railroad right-of-way for the Humboldt Bay Trail North. The California Coastal Commission's sea level rise policy guidance (2015) states that ancillary development and amenity structures may identify a relatively short expected life compared to residential and commercial structures, such as 25 years or less. Consistent with the sea level rise guidance, and given the 25 year license agreement with NCRA, in this case it is useful to analyze trail vulnerability through 2041. Because there is a significant range between best- and worst- case sea level rise projection scenarios, it is reasonable to assume that the average projection for year 2050 can be used to reflect the range of scenarios (best-worst case) for year 2041.

As described above, the proposed trail elevation ranges from approximately 9 to 15 feet (NAVD 88). Considering the average projection of sea level rise for year 2050, the entire proposed trail will avoid flooding from mean monthly maximum water elevations (up to 9.03 feet in elevation) over the 25 year analysis period. However, the approximately 3,600-foot-long stretch of trail below 10 feet in elevation between the WWTP trailhead and Gannon Slough mentioned above will be subject to occasional flooding during average king tides (up to 10.05 feet in elevation) over this period.

King tides occur less than ten calendar days per year and typically last less than a few hours each day. Although a portion of the trail will be inundated with water during these times, the trail will be designed to withstand occasional flooding. In addition, because the project is not critical infrastructure and does not include any habitable structures, occasional inundation from king tides and storm surge will not be a significant risk to life or property. Also, as discussed above, avoiding the portion of the alignment below ten feet in elevation is infeasible. The subject portion of the trail is west of the railroad tracks between the tracks and Humboldt Bay. The trail cannot be located to the east of the tracks in this area because there are extensive wetlands on the east side of the tracks that maintain water year round. The trail cannot be located on top of the tracks because NCRA will not grant its permission. If the trail were built up higher, it would require a larger fill prism, resulting in more wetland fill. The trail could be rerouted inland along South G Street, but this would not fulfill the purpose of the project which is creating a Class 1 bicycle/pedestrian path separated from motor-vehicle traffic.

Further, as previously mentioned, the lowest portion of the trail is located between the WWTP trailhead and Gannon Slough adjacent to extensive salt marsh habitat on Humboldt Bay. The 2013 Analysis of the Costs and Benefits of Using Tidal Marsh Restoration as a Sea Level Rise Adaptation Strategy in San Francisco Bay published by the Bay Institute found that "tidal marsh can reduce storm wave heights by over 50% depending on water depth and marsh width." This finding suggests that flood risk management is improved significantly when areas of tidal marsh exist between the developed shoreline and open waters of the Bay. The study also found that wave attenuation is increased with the width of marsh. The salt marsh width adjacent to the lowest sections of the trail is 70 to 450 feet wide. Therefore, while there will be times under storm conditions when the trail may be flooded, this study suggests it will occur less frequently due to the adjacent salt marsh habitat.

In addition, between the WWTP trailhead and Gannon Slough, there are two parallel railroad tracks (See Exhibit 3, pgs. 17-19). The NCRA currently will not allow the City to build its trail on the railroad tracks, which would be the highest location for the trail and thus the least vulnerable to sea level rise (the track crossing just north of Gannon Slough is at 11.31 feet elevation). If sea level rise becomes an issue in this low-lying stretch of trail, the City may be able to negotiate use of the secondary track with NCRA.

The proposed trail segment adjacent to Highway 101 is located within a corridor of infrastructure between Arcata and Eureka containing the trail, the railroad, U.S. Highway 101, and water, sewer, and natural gas lines. The entire corridor is within an area vulnerable to sea level rise. Along this corridor, the railroad track embankment acts as a levee between Humboldt Bay and the land to the east. This embankment is deteriorating and is highly vulnerable to breaching by erosion or by being overtopped by extreme tides, king tides, and/or storm surges (See Exhibit 11 for a shoreline vulnerability map). If this embankment were overtopped, it may result in permanent tidal inundation of the lands behind the railroad, including the trail and the highway. At this point, the City, Caltrans, and other implicated property owners will have to adapt or retreat their infrastructure. Potential adaptation measures include, among other options, fortifying the railroad berm or the Coastal Trail. As a coastal dependent use, shoreline protective devices could be considered to protect the trail under Section 30235 of the Coastal Act. Other potential adaptation measures include constructing new dikes, raising the elevations of the highway, providing more space for the exchange of moving waters, constructing a viaduct to accommodate both the highway and the trail, or relocating all of the infrastructure facilities to follow different routes between Arcata and Eureka. Humboldt County and the cities of Eureka and Arcata are embarking on local coastal program updates which include planning for sea level rise adaptation in the corridor and other vulnerable shoreline areas. The threat of sea level rise to the corridor will be further addressed during that process.

Since future modification, relocation, reconstruction, or abandonment of the trail are forms of development as defined by Section 30106 of the Coastal Act that require CDP authorization, the City will need to obtain a CDP amendment or a new CDP prior to making such changes to the trail. In the review of an application for future trail changes, the Commission will consider the flooding risk from sea level rise and other flood and geologic hazards in evaluating the consistency of the development with Section 30253 of the Coastal Act. To ensure that the applicant and the owners of the trail right-of-way are notified of the need to obtain additional

CDP authorization for any changes to the trail, **Special Condition 24** requires that any proposed relocation, abandonment, or modifications to the trail shall require a permit amendment.

In light of the aforementioned hazards, the Commission also attaches **Special Condition 19**, which requires the City to assume the risks of flooding and geologic hazards to the property and waive any claim of liability on the part of the Commission. Given that the applicant has chosen to implement the project despite flooding and geologic risks, the applicant must assume the risks. Special Condition 19 notifies the applicant that the Commission is not liable for damage as a result of approving the permit for development. The condition also requires the applicant to indemnify the Commission in the event that third parties bring an action against the Commission as a result of the failure of the development to withstand the hazards.

Further, Coastal Act section 30620(c)(1) authorizes the Commission to require applicants to reimburse the Commission for expenses incurred in processing CDP applications [See also 14 C.C.R. §13055(g)]. Thus, the Commission is authorized to require reimbursement for expenses incurred in defending its action on the pending CDP application. Therefore, consistent with Section 30620(c), the Commission imposes **Special Condition 20** requiring reimbursement of any costs and attorneys' fees the Commission incurs in connection with the defense of any action brought by a party other than the applicant challenging the approval or issuance of this permit.

As discussed above, the project as conditioned will not eliminate all risk to life and property from geologic and flood hazards. However, all feasible mitigation measures necessary to minimize the flood and geologic risks have been incorporated into the project as conditioned. Therefore, the Commission finds that the proposed project, as conditioned, will minimize risk to life and property from hazards, consistent with Section 30253(a) of the Coastal Act.

I. AGRICULTURAL LANDS

Coastal Act Sections 30241 and 30242 require the protection of prime agricultural lands[16] and sets limits on the conversion of all agricultural lands to non-agricultural uses. Coastal Act Section 30241 states:

> *The maximum amount of prime agricultural land shall be maintained in agricultural production to assure the protection of the areas agricultural economy, and conflicts shall be minimized between agricultural and urban land uses through all of the following:*

[16] The Coastal Act defines "prime agricultural land" through incorporation-by-reference of paragraphs (1) through (4) of Section 51201(c) of the California Government Code. Prime agricultural land entails land with any of the follow characteristics: (1) a rating as class I or class II in the Natural Resource Conservation Service land use capability classifications; or (2) a rating 80 through 100 in the Storie Index Rating; or (3) the ability to support livestock used for the production of food and fiber with an annual carrying capacity equivalent to at least one animal unit per acre as defined by the United States Department of Agriculture; or (4) the ability to normally yield in a commercial bearing period on an annual basis not less than two hundred dollars ($200) per acre of unprocessed agricultural plant production of fruit- or nut-bearing trees, vines, bushes or crops which have a nonbearing period of less than five years.

(a) By establishing stable boundaries separating urban and rural areas, including, where necessary, clearly defined buffer areas to minimize conflicts between agricultural and urban land uses.

(b) By limiting conversions of agricultural lands around the periphery of urban areas to the lands where the viability of existing agricultural use is already severely limited by conflicts with urban uses or where the conversion of the lands would complete a logical and viable neighborhood and contribute to the establishment of a stable limit to urban development.

(c) By permitting the conversion of agricultural land surrounded by urban uses where the conversion of the land would be consistent with Section 30250.17

(d) By developing available lands not suited for agriculture prior to the conversion of agricultural lands.

(e) By assuring that public service and facility expansions and nonagricultural development do not impair agricultural viability, either through increased assessment costs or degraded air and water quality.

(f) By assuring that all divisions of prime agricultural lands, except those conversions approved pursuant to subdivision (b), and all development adjacent to prime agricultural lands shall not diminish the productivity of such prime agricultural lands.

Coastal Act Section 30242 states:

> *All other lands suitable for agricultural use shall not be converted to nonagricultural uses unless (l) continued or renewed agricultural use is not feasible, or (2) such conversion would preserve prime agricultural land or concentrate development consistent with Section 30250. Any such permitted conversion shall be compatible with continued agricultural use on surrounding lands.*

The palustrine wetland creation proposed as partial mitigation for the trail project is located on the Lanphere Parcel adjacent to Mad River Slough in unincorporated Humboldt County. The parcel is planned and zoned for agricultural exclusive uses under the Humboldt County LCP and had been used for seasonally grazing from the 1930s until 2009, when Caltrans acquired the property.

Historically covered in tidal mudflats, salt marsh, open water, and forested wetland and dune forest, the majority of the property was converted to pasturelands after a dike was constructed between the property and Mad River Slough in the 1930s. The pasturelands currently on the site are a relatively flat and low-lying mosaic of uplands and seasonal wetlands. The parcel also currently includes an area of freshwater marsh that is infrequently grazed in the northeastern corner of the parcel, a ribbon of high quality

[17] The portion of referenced Section 30250 applicable to this project type and location [sub-section (a)] requires that, "*New residential, commercial, or industrial development, except as otherwise provided in this division, shall be located within, contiguous with, or in close proximity to, existing developed areas able to accommodate it or, where such areas are not able to accommodate it, in other areas with adequate public services and where it will not have significant adverse effects, either individually or cumulatively, on coastal resources.*"

forested wetland habitat along the western edge of the parcel, and a small remnant sand dune. Most of the site interior lies below Mean Higher High Water (MHHW), and would be inundated regularly by daily high tides were it not for the presence of the existing outboard levee.

The City of Arcata proposes to create 2.26 acres of seasonal wetlands in the southwestern quadrant of the parcel on upland pastureland. The subject property contains no "prime agricultural land" as defined by the government code. The types of agricultural activities that may be feasibly undertaken at the site are limited by the soils, the low relief of the area, and the relatively shallow water table. The subject non-prime agricultural land property is located within a rural area and is not located on the periphery of an urban area where conversion of agricultural land may occur consistent with the provisions of Coastal Act Section 30241. Therefore, the agricultural lands on the subject property are instead governed by Coastal Act Section 30242.

Coastal Act Section 30242 protects lands suitable for agricultural use even if such lands are not prime agricultural lands. Specifically, non-prime agricultural lands located away from the periphery of urban areas may not be converted to non-agricultural use unless continued or renewed agricultural use is not feasible, or such conversion would preserve prime agricultural land or concentrate development consistent with Section 30250. Although, as stated above, the land is not considered "prime," cattle grazing (though limited by seasonal inundation and pasture quality) has been a primary agricultural use on the property's agricultural land.

The proposed project would not result in a conversion of agricultural land inconsistent with Coastal Act section 30242 because the proposed mitigation on 2.26 acres of pastureland is designed to create seasonal wetlands that maintain the existing grassy habitat of the surrounding pastureland and match the elevations of surrounding grazed seasonal wetlands in order to allow for future grazing. The pastureland on the 78-acre property that includes the 2.26-acre portion of the property where mitigation will occur is largely seasonally inundated so the parcel has only ever been used for cattle grazing during the dry summer months (May through October). Because the 2.26 acres of seasonal wetlands to be created for the City's wetland fill mitigation will be able to be grazed seasonally, grazing will be able to continue in the future in the same manner as it has occurred historically.

Therefore, the Commission finds that the proposed wetland mitigation on the Lanphere Parcel will not result in the conversion of grazing lands inconsistent with Section 30242 of the Coastal Act.

J. ARCHAEOLOGICAL RESOURCES

Section 30244 of the Coastal Act states:

> *Where development would adversely impact archeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required.*

The project area lies within the traditional territory of the Wiki division of the Wiyot tribe. At the time that Euro-Americans first made contact in this region, the Wiyot lived almost exclusively in villages along the protected shores of Humboldt Bay and near the mouths of the Eel and Mad Rivers. Today, representatives of the Wiyot Tribe are the Table Bluff Reservation Wiyot Tribe, the Blue Lake Rancheria, and the Bear River Band of the Rohnerville Rancheria.

Although the project is located along the shoreline of Humboldt Bay, the trail alignment predominately follows the railroad corridor and existing trails in areas previously disturbed by railway and trail construction and dike and tidal marsh reclamation activities. Roscoe & Associates prepared an archaeological survey report dated January 2014 that included an investigation of the currently proposed Humboldt Bay Trail North trail alignment, as well as the trail segment from Foster Avenue to Samoa Boulevard constructed last year, and a previously proposed mitigation site at the Arcata Marsh. The investigation conducted by Roscoe & Associates involved background research, a records search, a field survey of the project area, and consultation with the Tribal Historical Preservation Officers (THPOs) of the Wiyot Tribe, the Bear River Band of Rohnerville Rancheria, and the Blue Lake Rancheria. According to the records search at the North Coast Information Center (NCIC), the trail alignment does not intersect known archaeological sites. While the investigation did identify a number of previously recorded archaeological sites in the vicinity of the project area, none of these sites are in close proximity to the currently proposed Humboldt Bay Trail North alignment. Roscoe and Associates conducted the archaeological field survey on September 16, October 17 and December 13 and 14, 2013 over the entire project area, including staging areas. No artifacts, features, sites or other archaeological cultural resources were encountered during this investigation.

The proposed wetland fill mitigation sites at the Arcata Marsh and the Lanphere Parcel were not included in Roscoe & Associates' investigations. However, Caltrans has performed a field survey and records search for the Lanphere Parcel, and no sensitive resources were identified. The Spartina removal at the Arcata Marsh proposed as partial mitigation for the current trail project was permitted under CDP 1-14-0249. Special Condition 4 of CDP 1-14-0249 requires preparation of a site-specific Spartina removal plan for proposed Spartina removal activities that must include, among other requirements, the development of a protocol for the inadvertent discovery of archaeological resources in consultation with the three Wiyot Tribe THPOs. **Special Condition 9** of the current permit requires the City to submit a revised final mitigation plan for the Spartina removal that includes all of the components of a Site-Specific Spartina Removal Plan required by Special Condition 4 of CDP 1-14-0249, including the archaeological resource protection measures described above.

In addition, the City met with the THPOs on August 12, 2016 to discuss project changes since the 2014 archaeological resources report, including the proposed off-site mitigation locations. Because the Spartina eradication will be performed on salt marsh within Humboldt Bay, the tribes concurred with the City that there is a very small likelihood for cultural resources to be present. The THPOs recommended adherence to standard inadvertent discovery protocols should any cultural or paleontological resources be discovered.

Although no cultural resources have been identified in the project footprint, including the mitigation sites, there could still be a potential to unearth archaeological or paleontological resources during trail construction. As a result, the City proposes to retain a cultural monitor at the construction site during all earthmoving and excavation activities and to immediately stop work if such activities uncover suspected cultural resources or human remains.

To ensure protection of any archaeological resources that may be discovered at the site during construction of the proposed project, the Commission attaches **Special Condition 21**. This special condition requires that if an area of cultural deposits is discovered during the course of the project, all construction must cease and a qualified cultural resource specialist, in conjunction with the Wiyot Tribe, the Bear River Band of Rohnerville Rancheria, and the Blue Lake Rancheria THPOs, must analyze the significance of the find. To recommence construction following discovery of cultural deposits, the permittee is required to submit a supplementary archaeological plan for the review and approval of the Executive Director, who determines whether the changes are de minimis in nature and scope, or whether an amendment to this permit is required. Consistent with the City's proposal, Special Condition 21 also requires a cultural resources monitor approved by the Wiyot Tribe, the Bear River Band of Rohnerville Rancheria, and the Blue Lake Rancheria be present to oversee all ground disturbing activities authorized by CDP 1-16-0122 unless evidence has been submitted for the review and approval of the Executive Director that the THPOs of these three entities have agreed that a cultural resources monitor need not be present.

Therefore, the Commission finds that the proposed project is consistent with Coastal Act Section 30244, as the proposed development includes reasonable mitigation measures to ensure that construction activities within the project area will not result in significant adverse impacts to archaeological resources.

K. VISUAL RESOURCES

Section 30251 of the Coastal Act states in applicable part:

> *The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality of visually degraded areas.*

The proposed project will create new viewing opportunities of Humboldt Bay and surrounding marshes, grazed tidelands, creeks, and sloughs by creating a designated bike and pedestrian route along the northeastern shoreline of Humboldt Bay. The proposed project will also include a viewing platform north of Gannon Slough and interpretive signs along the trail in key locations to further enhance viewing opportunities of the bay.

The proposed trail is an at-grade facility, so it will have a minimal effect on views to and along the bay. The proposed project does however include a number of above-grade elements that will be visible from public vantage points. These improvements include five bridges, one overlook, benches, interpretive signage, and fencing. The City has submitted project plans and specifications depicting the proposed bridges, overlook, and benches (See Exhibit 3). As preliminarily described and depicted by the City, the height, bulk, location, and design of these structures are similar in size to those typically in use at other coastal access facilities in the area and are therefore compatible with the visual character of the surrounding area. In addition, the proposed overlook, bridges, and benches will not adversely affect the expansive views to Humboldt Bay and along the coast from Highway 101 and other public vantage points.

To maintain existing natural areas in the Arcata Marsh and along the Humboldt Bay National Wildlife Refuge, the City does not propose to install any lighting. In addition, fencing will be limited to (1) 60 linear feet at the Gannon Slough Overlook, (2) 10 feet at the railroad track crossing north of Gannon Slough, and (3) 690 feet along the five bridges' approaches and spans. The railing along the overlook and at the railroad crossing will have a height of 3.5 feet, while the fencing on the bridges will have a height of approximately 4 feet (except for the Gannon Slough bridge where the railing will reach 10 feet in height). Fencing will be composed of fiberglass, aluminum, or steel and will be visually porous to prevent obstructions of bay views. To ensure the fencing ultimately chosen by the City of Arcata is consistent with the City's preliminary proposal and protective of visual resources, the Commission requires final plans for fencing as part of **Special Condition 22**.

The City also proposes to install a minimum of five new interpretive signs and two wayfinding signs along the trail, but has not submitted plans depicting this trail signage. To ensure signage will be constructed to be unobtrusive on the landscape and visually compatible with the character of the surrounding area, the Commission attaches **Special Condition 23**. Special Condition 23 requires the permittee, prior to installation of signage, to submit final plans, for the review and approval of the Executive Director, that include the location of all signage as well as the dimensions, materials, colors, and content of each sign. The final plans must demonstrate to the satisfaction of the Executive Director how trail signage will be visually compatible with the character of surrounding areas.

Construction of the trail prism would result in the removal of vegetation including trees and shrubs along some trail segments. To prevent trail construction from degrading the visual character of the shoreline, the City proposes to re-vegetate soils and slopes exposed by earthwork with native ground cover, understory species, and trees. To ensure exposed soils and slopes are revegetated, the Commission attaches **Special Condition 17(G)**. As described in Findings IV-G (Marine Resources, Water Quality, and Wetland Fill), the Commission also attaches **Special Condition 12**, requiring the City to establish 0.14 acres of self-sustaining riparian vegetation to

compensate for the loss of 0.07 acres of riparian wetlands on a 2:1 basis, including at least 2:1 in-kind replacement of native riparian trees. In addition to these mitigation measures, the habitat restoration proposed as mitigation for the trail's wetland fill impacts, especially the Spartina removal, will also improve the visual character of the shoreline.

The Commission therefore finds that for all of the reasons discussed above, the project, as conditioned, will be consistent with Section 30251 of the Coastal Act.

L. PUBLIC ACCESS & RECREATION

Section 30210 of the Coastal Act requires that maximum public access shall be provided consistent with public safety needs and the need to protect natural resource areas from overuse. Section 30212 of the Coastal Act requires that access from the nearest public roadway to the shoreline be provided in new development projects, except where it is inconsistent with public safety, military security, or protection of fragile coastal resources, or where adequate access exists nearby. Section 30211 of the Coastal Act requires that development not interfere with the public's right to access gained by use or legislative authorization. Section 30214 of the Coastal Act provides that the public access policies of the Coastal Act shall be implemented in a manner that takes into account the capacity of the site and the fragility of natural resources in the area. Section 30221 of the Coastal Act require that oceanfront land suitable for recreational use shall be protected for recreational use and development unless already adequately provided for in the area. In applying Sections 30210, 30211, 30212, 30214, and 30221, the Commission is also limited by the need to show that any denial of a permit application based on these sections or any decision to grant a permit subject to special conditions requiring public access is necessary to avoid or offset a project's adverse impact on existing or potential access.

The City of Arcata proposes to construct, operate, and maintain an approximately three-mile-long Class I, ADA-accessible, non-motorized multiuse trail along the northeastern shoreline of Humboldt Bay from Samoa Boulevard to just north of Brainard's Slough that will serve as part of the California Coastal Trail. As designed to meet Caltrans Class I multi-use trail design standards (Caltrans Highway Design Manual, Chapter 1000) and Americans with Disabilities Act (ADA) design standards, the proposed trail will expand shoreline access for a variety of users including bicyclists, walkers, hikers, runners, skaters, wildlife viewers, nature educators, persons in wheelchairs, and other non-motorized outdoor users. The trail will provide a key connection in the Humboldt Bay Trail and the California Coastal Trail, promoting coastal access regionally and state-wide. The trail will also promote environmentally sensitive access to the Bay and surrounding marshlands for wildlife viewing and a variety of recreational and educational activities.

The Humboldt Bay Trail North is being developed as part of a collaborative effort among the Humboldt County Association of Governments (HCAOG), County of Humboldt, Caltrans, Cities of Arcata and Eureka, California State Coastal Conservancy, NCRA, Redwood Community Action Agency (RCAA), and other partners to develop a continuous trail from central Arcata to the southern end of Eureka for a total length of nearly 13 miles (See Exhibit 10 for a map of the entire regional trail alignment). In 2015, the City of Arcata constructed the northern-most section, a 1.3-mile path from Foster Avenue to Samoa Boulevard. The currently proposed Humboldt Bay Trail North extends the trail another three miles from Samoa Boulevard to a point

just south of Brainard's Slough along the Highway 101 corridor between Arcata and Eureka. The County of Humboldt has begun preliminary design work on the future Humboldt Bay Trail South which will run the remaining 4 miles south along the Highway 101 corridor to Eureka, where it will connect to the Eureka Waterfront Trail. The City of Eureka is currently constructing 3.7 miles of trail (under CDP 1-15-2054) to fill gaps between existing segments of the Eureka Waterfront Trail which, when complete, will create a continuous 6.3-mile-long waterfront trail route connecting the Humboldt Bay Trail to south Eureka.

By providing a separated bike/pedestrian path between Eureka and Arcata, the Humboldt Bay Trail will open up nonmotorized commuting opportunities between the two largest urban hubs in Humboldt County for cyclists of a wider array of experience and comfort levels.[18] The Eureka-Arcata Highway 101 Corridor has the highest highway traffic volume within Humboldt County with an average annual daily traffic[19] of 37,500 (2014 data). By encouraging additional bicycle commuting, the trail will reduce overall motorized vehicle miles traveled (VMT), which will reduce greenhouse gas emissions.

A survey conducted in 1999 by the Redwood Community Action Agency recorded an average of 60 cyclists per day using the Eureka-Arcata Highway 101 Corridor shoulders. Pedestrians are not allowed to use the shoulders of Highway 101, but several pedestrians a day can be observed using the shoulders, particularly the west shoulder. The Humboldt Bay Trail will not only encourage new bicycle commuters, but will facilitate safer public access and improve the user experience of existing nonmotorized commutes.

The trail will also serve recreational users, including people exercising, bird-viewing, and sightseeing. The northern portion of the alignment passes through the Arcata Marsh which is managed for wastewater treatment, public education and interpretation, and habitat values. While the Arcata Marsh already has a network of approximately 5 miles of trails, the proposed Humboldt Bay Trail North will widen and improve existing Arcata Marsh trail segments to create a long stretch of trail that will be ADA accessible, a feature that is currently missing at the Arcata Marsh. Aligning the trail through the Arcata Marsh provides an opportunity to enjoy a relatively lengthy section of trail away from a road or highway in an area with great wildlife viewing. The southern portion of the alignment provides expansive views of the bay and provides public access to a portion of the Humboldt Bay National Wildlife Refuge west of the highway that currently has no access.

Because the trail will be used by a wide array of users from bird watchers to high-speed, long-distance bicycle commuters, there could be conflicts among users. However, the trail has been designed to avoid conflicts among trail users. The proposed trail includes striping, signage, and

[18] Currently there are three routes connecting Eureka and Arcata: State Route 255 across the north spit on the west side of the bay, the Eureka-Arcata Highway 101 Corridor along the east side of the bay, and Old Arcata Road/ Myrtle Avenue further inland. While all three of these routes allow cyclists on their shoulders, commuting by bicycle is intimidating to many because of high volumes of traffic, high motorized vehicle speeds, and/or narrow shoulders.

[19] Annual average daily traffic is the total volume for the year divided by 365 days. The average sited is from the Highway 101 Corridor's intersection with Bayside Cutoff.

unpaved shoulders which will help avoid substantial safety related conflicts among trail users including bicyclists, birdwatchers, and parents pushing strollers. In addition, to avoid conflicts between non-motorized trail users and motorized traffic, roadway, railway, and driveway crossings will include warning signage and markings both on the trail and the approaching vehicular way. Bollards will also be installed at trail intersections and entrances to prevent vehicles from entering the trail. To avoid substantial conflicts between the rail line (which is currently inactive) and trail users, the City will maintain minimum setbacks from the railroad centerline as specified by NCRA Policy 0907 (North Coast Railroad Authority, 2009), install railroad crossing pavement markings and signage at crossing locations, and establish a minimum 45 degree angle for trail/railroad crossings. The City will also work with NCRA to install additional controls at crossings if the railroad becomes active.

No new parking facilities are proposed as part of the trail. However, the lack of new trail-access parking will not discourage use of the tail as adequate parking/trailhead facilities exist nearby. The Arcata Marsh currently has four parking lots, and there is ample off-street parking located along portions of the trail. As there are a number of parking options at various locations along the proposed trail that have unused capacity, and the trail is not expected to result in a concentrated increase in demand at any one of the many parking locations, the proposed project is served by adequate parking.

During construction of the proposed trail, public access within the Arcata Marsh will be temporarily impacted as approximately 1.2 miles of existing trail will be improved for use as part of the new Humboldt Bay Trail route. The City proposes to close trails and complete work in segments, with each closure lasting two to three weeks, in order to minimize impacts to public access. Trail closures will be clearly signed at the location of closures and in the main parking lots. Furthermore, the Arcata Marsh contains over 4.66 miles of trails (four main loops) for recreational use, and trail closures will not prohibit access to areas beyond the immediate project vicinity.

As stated above, the trail will be developed as part of a 13-mile route from northern Arcata to southern Eureka and as part of the larger California Coastal Trail. Portions of the proposed trail segment are located within NCRA right-of-way, City-owned properties, and private property directly south of Samoa Boulevard owned by Slack and Winzler Properties, LLC. To avoid the potential for incomplete or inconsistent trail segments and to ensure that the trail safely functions as a coordinated and integrated continuous public access system, the Commission attaches **Special Condition 24**. Special Condition 24 identifies the fundamental provisions of the scope of trail use, most of which are already contained in the license agreement between the North Coast Railroad Authority and the Applicant. Special Condition 24 includes the following requirements: (a) the entire trail shall be a Class 1 multi-use trail available for shared public use 24 hours a day daily; (b) the permittee shall be responsible for maintenance of the multi-modal trail and motorized vehicles shall be permitted access by the City and its agents for construction, maintenance and emergency purposes; (c) the City shall maintain continuously all trail improvements in good order and repair, and shall allow no nuisances to exist or be maintained therein; (d) no portion of the trail owned by the City in fee or by grant of easement may be abandoned by the City until a grant of easement is transferred to another entity, approved by the Executive Director, who can operate that portion of the trail in conformance with all terms and

conditions of this CDP; and (e) any proposed changes, including any proposed change in the above-identified scope and manner of use or any proposed relocation or abandonment of any portion of the multi-modal trail, shall require an amendment to CDP 1-16-0122 approved by the California Coastal Commission unless the Executive Director determines that no amendment is legally required. As conditioned, the trail will more safely function as a coordinated and integrated continuous public access system, consistent with the access provisions of Coastal Act Sections 30210-30214.

Finally, **Special Condition 25** requires that, prior to any conveyance of the properties owned by the City on which the trail is proposed, the permittee will execute and record a deed restriction that assures protection of the scope and manner of public use along the trail and assures that future purchasers of the property are notified of the scope and manner of public use along the trail. Such notification of future purchasers will eliminate expectations on the part of the purchasers that they may be able to exclude the public from the trail property.

Therefore, the Commission finds that the proposed project as conditioned, which includes substantial new public access and fosters expanded use of existing coastal access and recreational facilities, is consistent with the public access and recreation policies of the Coastal Act.

M. California Environmental Quality Act

The City of Arcata served as the lead agency for the purposes of CEQA review. A Notice of Determination adopting the Mitigated Negative Declaration was signed by the City of Arcata on May 7, 2013 (SCH#2013032008). The City of Arcata prepared an addendum to the Mitigated Negative Declaration to address environmental impacts associated with the off-site mitigation activities in August 2016.

Section 13906 of the Commission's administrative regulation requires Coastal Commission approval of CDP applications to be supported by a finding showing the application, as modified by any conditions of approval, is consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Section 21080.5(d)(2)(A) of CEQA prohibits a proposed development from being approved if there are any feasible alternatives or feasible mitigation measures available, which would substantially lessen any significant adverse effect the proposed development may have on the environment.

The Commission incorporates its findings on Coastal Act consistency at this point as if set forth in full. As discussed above, the proposed project has been conditioned to be consistent with the policies of the Coastal Act. The findings address and respond to all public comments regarding potential significant adverse environmental effects of the project on coastal resources that were received prior to preparation of the staff report. As conditioned, there are no other feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse impacts which the activity may have on the environment. Therefore, the Commission finds that the proposed project, as conditioned to mitigate the identified impacts, can be found consistent with the requirements of the Coastal Act to conform to CEQA.

APPENDIX A
SUBSTANTIVE FILE DOCUMENTS

Coastal Development Permits, Consistency Certifications, Negative Determinations and Application Materials:

Application File for Coastal Development Permit (CDP) No. 1-16-0122

Blackburn Consulting. (2010, July 6). Geotechnical report: Arcata rail with trail connectivity project. Prepared for Winzler & Kelly.

Caltrans. (2015, October). Natural Environmental Study: City of Arcata Humboldt Bay Trail – North Project.

GHD. (2015, August). Humboldt Bay Trail North drainage analysis. Prepared for the City of Arcata.

Planwest Partners, Inc. (2010, July 2; updated by City of Arcata 2013, February). Initial study & draft mitigated negative declaration for the Arcata Rail with Trail Connectivity Project. Prepared for the City of Arcata.

Revised Findings on Consistency Certification No. CC-016-13.

Roscoe and Associates. (2014, January). An archaeological survey report for the rail with trail connectivity project located in Humboldt County, California. Prepared for the City of Arcata.

Winzler & Kelly. (2010, June 29). Re: Hazardous Materials Corridor Study: City of Arcata – Arcata Rail-with-Trail Project. Letter to Karen Diemer, City of Arcata.

Winzler & Kelly. (2010, July). Wetlands delineation and habitat mapping rail-with-trail connectivity project City of Arcata. Prepared for the City of Arcata.

Winzler & Kelly. (2010, July 1). California endangered species biological assessment for the rail-with-trail connectivity project. Prepared for the City of Arcata.

Winzler & Kelly. (2010, July 1). Biological assessment for the Arcata rail-with-trail connectivity project. Prepared for the City of Arcata.

Winzler & Kelly. (2011, January). Arcata rails with trails connectivity project drainage analysis. Prepared for the City of Arcata.

Background Documents Related to Trail Design & Construction:

Alta Planning + Design. (2010, June). Arcata rail with trail feasibility study and operations plan – final draft.

American Association of State Highway and Transportation Officials. (2012) Guide to bicycle facilities, 4th edition (Chapter 5: Design of shared use paths).

Caltrans. (2015, December 30). Highway design manual (Chapter 100: Bicycle transportation design).

Caltrans. (2009, February). Technical guidance for assessment and mitigation of the hydroacoustic effects of pile driving on fish. Sacramento, CA: ICF Jones & Stokes, Illinworth & Rodkin.

Humboldt County Department of Public Works. (2016, March 31). Basis of design report for trail width (Humboldt Bay Trail: Eureka-to-Arcata segment).

NCRA (2009, May 13). NCRA – Policy & Procedures Manual, 0907 Trail Projects on the NWP Line Rights-of-Way: Design, Construction, Safety, Operations, and Maintenance Guidelines.

RCAA, Alta Planning + Design, Planwest Partners, & Streamline Planning Consultants. (2011, January). Humboldt County Coastal Trail implementation strategy. Prepared for the State of California Coastal Conservancy

U.S. Department of Transportation, Federal Highway Administration. (2006, July). Evaluation of safety, design, and operation of shared-use paths, final report.

U.S. Department of Transportation, Federal Highway Administration. (2006, July). Shared use path level of service calculator, a user's guide.

Background Documents Related to Wetland Fill Mitigation:

Caltrans. (2009, October). Preliminary wetland delineation Samoa and Demello South properties.

Caltrans. (2015, December). Lanphere Parcel (Mad River Slough) Restoration Project: Concept design report.

Caltrans. (2015, December). Humboldt Bay Area Mitigation Concept Design Report.

Caltrans. (2015, August). Mad River Slough (Lanphere Parcel) Restoration Project: Topographic and vegetation survey and hydrologic monitoring report.

H.T. Harvey & Assoc. (2012, November 14). Humboldt Bay Regional Spartina Eradication Plan. Prepared for the California State Coastal Conservancy. Arcata.

Lagarde, L.A. (2012). Invasive Spartina densiflora Brongn. Reduces Primary Productivity in a Northern California Salt Marsh. M. S. Thesis, Humboldt State University, Arcata, CA, 65 pp.

Mitchell, M.L. (2012). A Comparison of Terrestrial Invertebrate Communities in Spartina-Invaded and Restored Humboldt Bay Salt Marshes. M. S. Thesis, Humboldt State University, Arcata, CA.

Staff Report for CDP 1-14-0249 (Humboldt Bay Harbor, Recreation, and Conservation District).

Background Documents Related to Sea Level Rise:

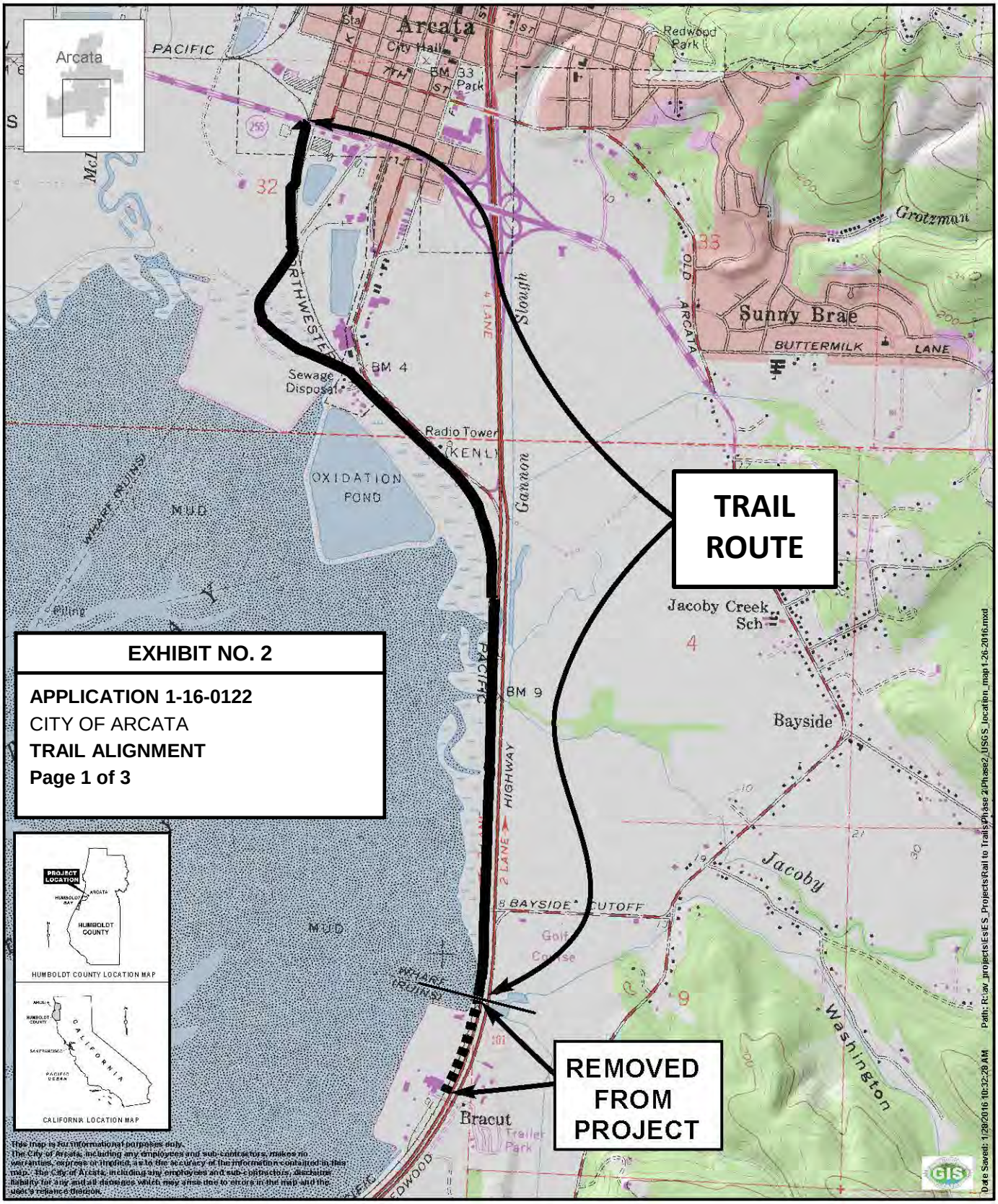
Coastal Commission. (2015, August 12). California Coastal Commission sea level rise policy guidance: Interpretive guidelines for addressing sea level rise in local coastal programs and coastal development permits.

Laird, Aldaron. (2014, October). How can the Highway 101 corridor on Humboldt Bay adapt to sea level rise? Available online at: http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=7&ved=0ahUKEwi-1vL0urrOAhUFKWMKHZm0AjYQFghFMAY&url=http%3A%2F%2Fhumboldtbay.org%2Fsites%2Fhumboldtbay.org%2Ffiles%2Fdocuments%2F10142014%2520Highway%2520101%2520Corridor%2520White%2520paper.docx&usg=AFQjCNEpCd1rbTx8N62xGnjQilr6I1Oxog&sig2=wsojBtouzZEhmOPLxg3lqg

Northern Hydrology & Engineering. (2015, April). Humboldt Bay: Sea level rise, hydrodynamic modeling, and inundation vulnerability mapping – Final report. Prepared for the State Coastal Conservancy and Coastal Ecosystems Institute of Northern California.

EXHIBIT NO. 1

APPLICATION 1-16-0122
CITY OF ARCATA
REGIONAL LOCATION MAP



City of Arcata
Environmental Services

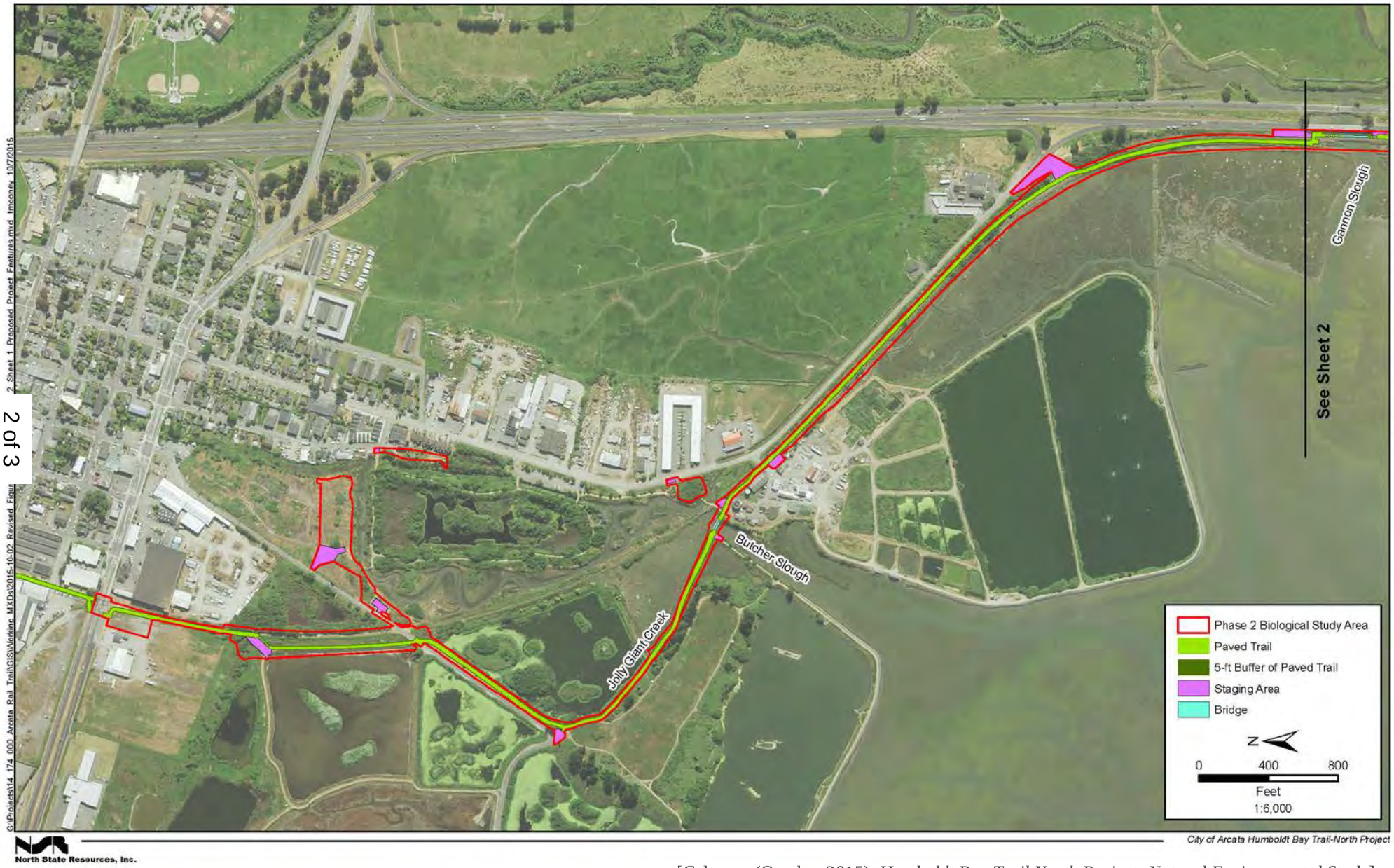
City of Arcata
Humboldt Bay Trail-North
Location Map

U.S.G.S. 7.5 Minute Topographic Map:
Arcata South Quadrangle
Section 32 of T.6.N., R.1.E. &
Section 4 & 9 of T.5.N., R.1.E of H.B. & M.

1:24,000

0 500 1,000
Feet

Project Footprint



[Caltrans. (October 2015). *Humboldt Bay Trail North Project: Natural Environmental Study*]

Project Footprint Continued

G:\Projects\14_174_000_Arcata_Rail_Trail\GIS\Working_MXDs\2015-10-02_Revised_Figur 2_Sheet_2_Proposed_Project_Features.mxd tmooney 10/7/2015

North State Resources, Inc.

City of Arcata Humboldt Bay Trail-North Project

Figure 2 – Sheet 2 of 2
Proposed Project Features

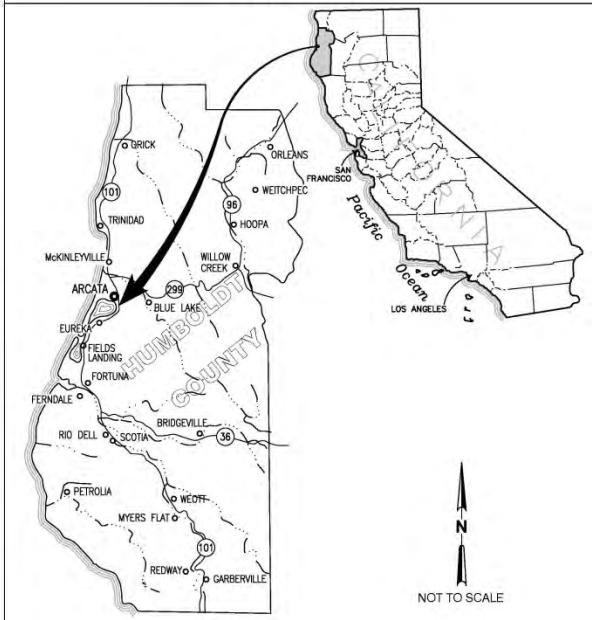
EXHIBIT NO. 3

APPLICATION 1-16-0122
CITY OF ARCATA
PROJECT PLANS
Page 1 of 45

CITY OF ARCATA
HUMBOLDT BAY TRAIL NORTH PROJECT

FEBRUARY 2016

AREA MAP



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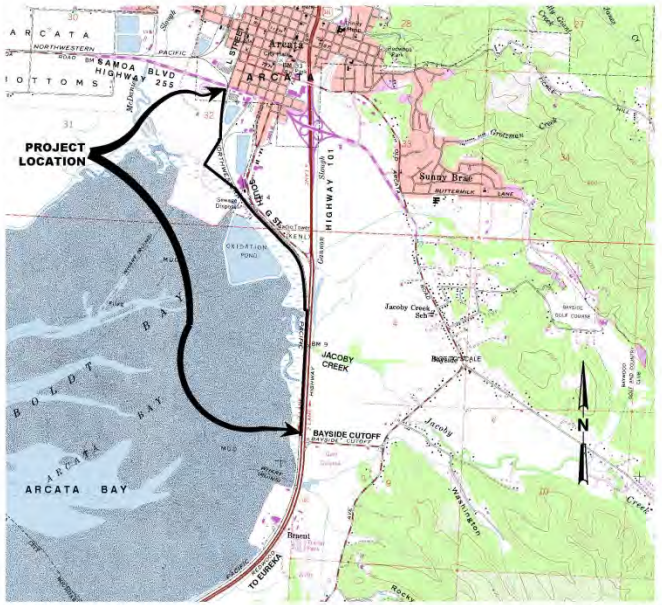
LOCATION MAP



SOURCE: USGS QUADRANGLE MAP

APPROVALS

CITY OF ARCATA

CITY ENGINEER:

DOBY CLASS, PE — SIGNED — DATE

ENGINEER: GHD Inc.

JOSHUA A. WOLF, PE — SIGNED — DATE

GHD Inc
718 Third Street Eureka California 95501 USA
T 1 707 443 8326 F 1 707 444 8330
W www.ghd.com

BAR IS ONE INCH ON ORIGINAL DRAWING

MARK	DATE	ISSUE
		DESCRIPTION

CITY OF ARCATA
HUMBOLDT BAY TRAIL NORTH

GENERAL COVER SHEET

PROJ NO. 8411982
DRWN: OFG | CHKD: JW

G-1.0

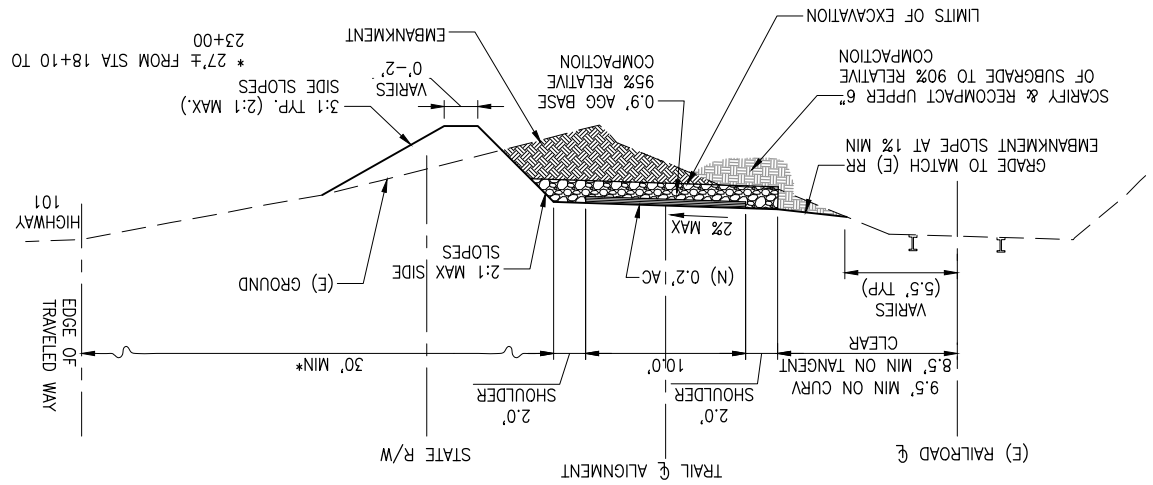
SHEET 1 OF 52

Plot Date: 1 February 2016 - 4:43 PM Plotted By: Owen Goode
Cad File No: \\ghdnet\ghd\US\Eureka\Projects\84\11982\06-CAD\Sheets\8411982_01-G-1.0.dwg

Plot Date: 1 February 2016 - 4:44 PM Plotted By: Owen Goode Cad File No: \\ghdnet\ghd\US\Eureka\Projects\84\119821\06-CAD\Sheets\8411982_05-07-G-5.0-6.0.dwg

STA 25+10 TO 57+65, 58+72 TO 68+85, 70+15 TO 78+70, 81+83 TO 82+30,
121+29.67 TO 125+35, 126+18 TO 140+50, 151+11.50 TO 159+43

TYPICAL TRAIL SECTION – TYPE II



NOTE: PROVIDE A SMOOTH AND GRADUAL TRANSITION FROM ONE TYPICAL TRAIL SECTION TYPE TO ANOTHER. STANDARD TRANSITION RATE IS 10' PER 1% CHANGE IN CROSS-SLOPE (UNLESS OTHERWISE NOTED)

CITY OF ARCATA
HUMBOLDT BAY TRAIL NORTH

TYPICAL TRAIL SECTIONS

PROJ NO. 8411982
DRWN: OFG CHKD: JW

G-5.0

SHEET 5 OF 52

2 of 45

ISSUE	DESCRIPTION	DATE	MARK

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T 1 707 443 8326 F 1 707 444 8330
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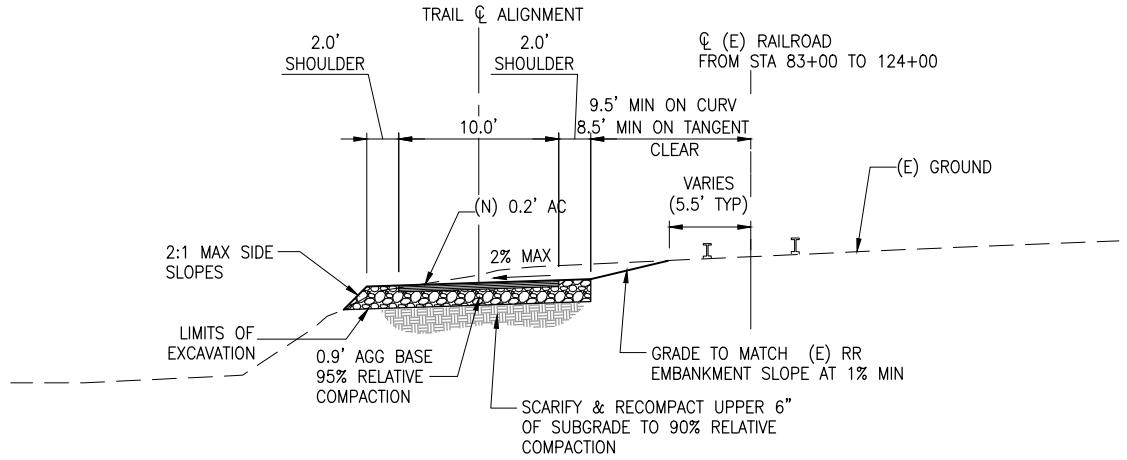
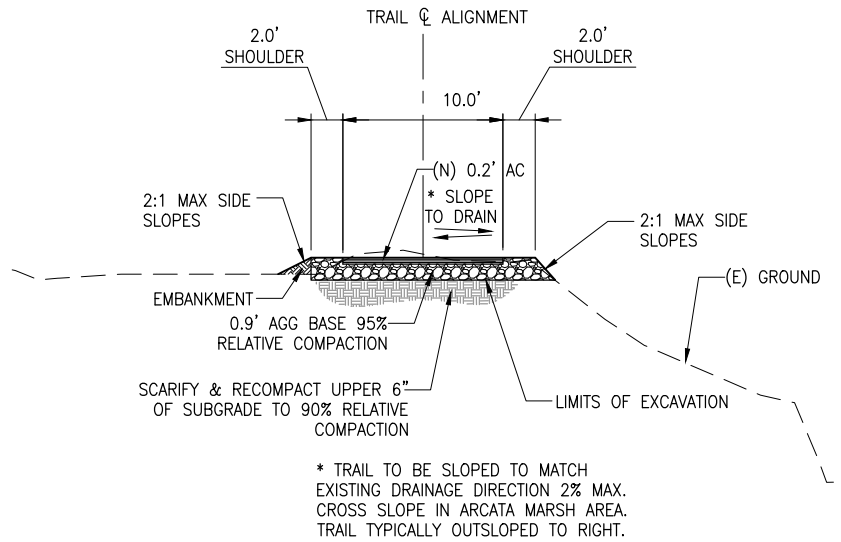


STA 83+00 TO 121+30, 121+60 TO 124+00, 160+40 TO 169+44.25

TYPICAL TRAIL SECTION – TYPE III

NOTE: PROVIDE A SMOOTH AND GRADUAL TRANSITION FROM ONE TYPICAL TRAIL SECTION TYPE TO ANOTHER. STANDARD TRANSITION RATE IS 10' PER 1% CHANGE IN CROSS-SLOPE (UNLESS OTHERWISE NOTED)



STA 82+30 TO 83+00, 124+00 TO 125+35, 126+18 TO 140+50

TYPICAL TRAIL SECTION – TYPE IV

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BAR IS ONE INCH ON ORIGINAL DRAWING 0 1"

MARK	DATE	DESCRIPTION
		ISSUED

CITY OF ARCATA
HUMBOLDT BAY TRAIL NORTH

TYPICAL TRAIL SECTIONS

PROJ NO: 8411982

DRWN: OFG CHKD: JW

G-6.0

SHEET 6 OF 52

23 of 45

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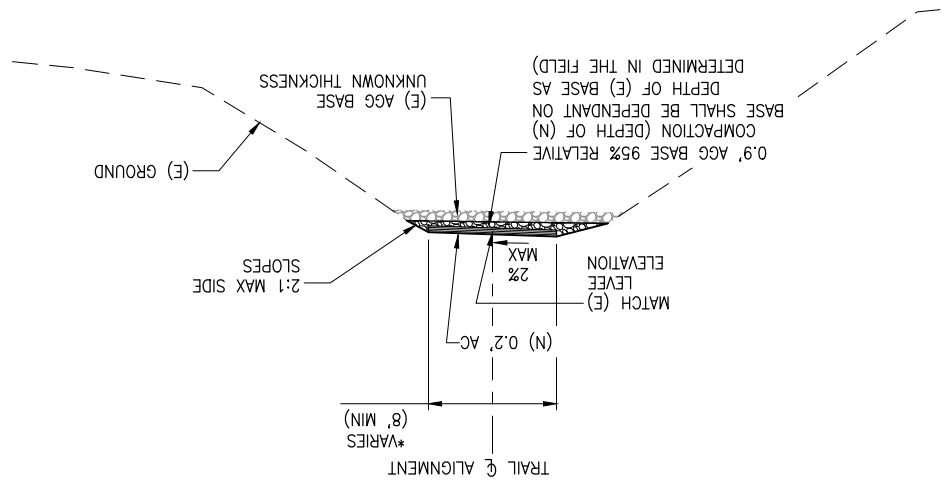
STA 151+04 TO 159+45

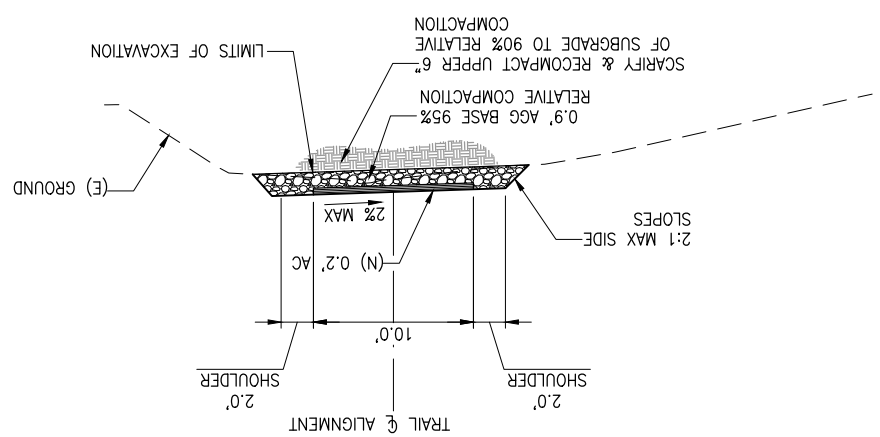
TYPICAL TRAIL SECTION – TYPE VI



*ADD 2' SHOULDERS IN ADDITION TO PAVED TRAIL ONLY WHERE (E) LEVEE WIDTH ALLOWS AND AS SHOWN ON PLAN

STA 140+50 TO 150+72

TYPICAL TRAIL SECTION – TYPE V



NOTE: PROVIDE A SMOOTH AND GRADUAL TRANSITION FROM ONE TYPICAL TRAIL SECTION TYPE TO ANOTHER. STANDARD TRANSITION RATE IS 10' PER 1% CHANGE IN CROSS-SLOPE (UNLESS OTHERWISE NOTED)

CITY OF ARCATA
HUMBOLDT BAY TRAIL NORTH

TYPICAL TRAIL SECTIONS

PROJ NO. 841198 2

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SHEET 7 OF 52

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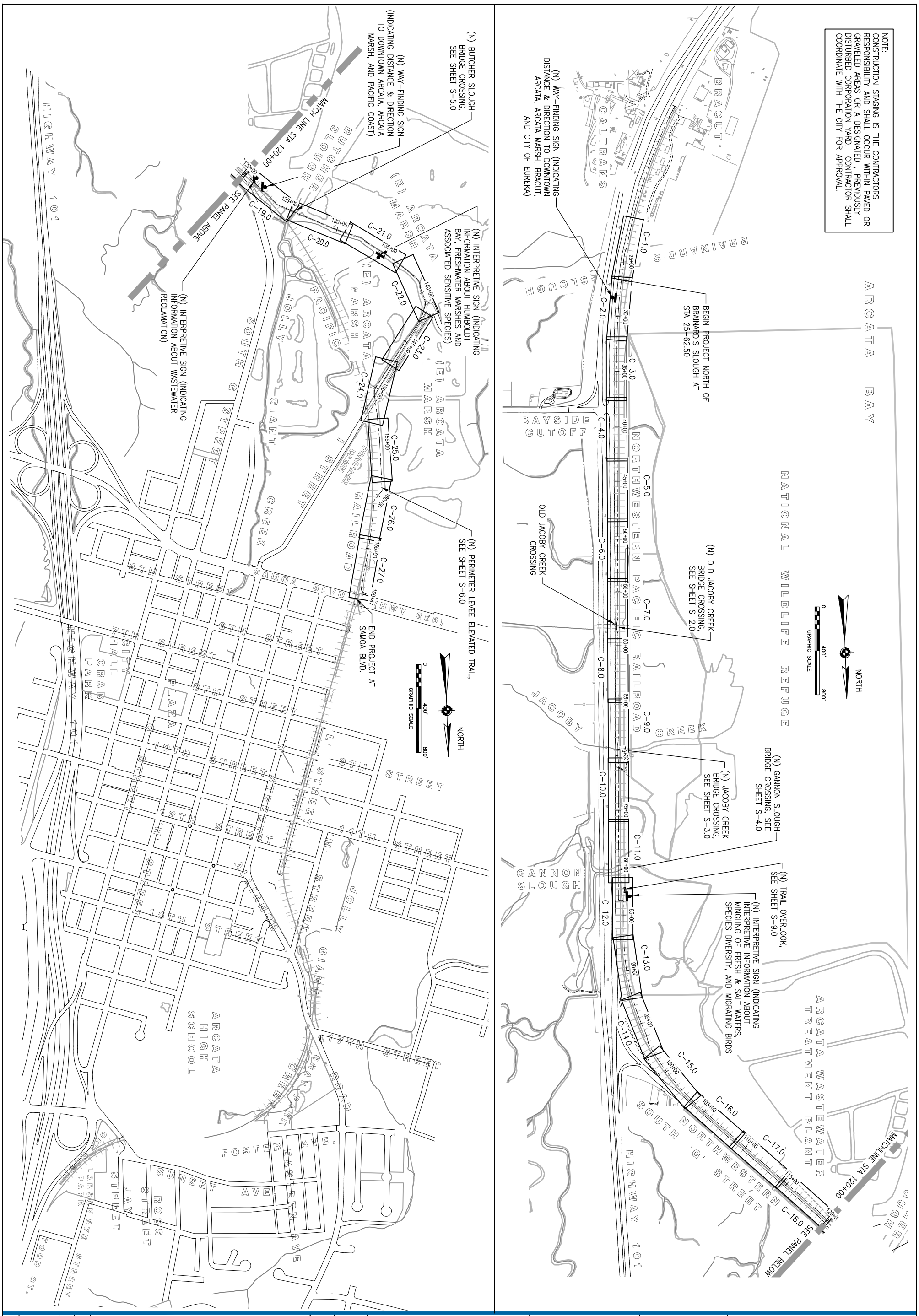
4 of 45

NOTE:
CONSTRUCTION STAGING IS THE CONTRACTORS RESPONSIBILITY AND SHALL OCCUR WITHIN PAVED OR GRAVELED AREAS OR A DESIGNATED , PREVIOUSLY DISTURBED CORPORATION YARD. CONTRACTOR SHALL COORDINATE WITH THE CITY FOR APPPROVAL.



SHEET	8 OF 52
	G-8.0
DRWN:	OFG
CHKD:	JW
PROJ NO:	8411982

CITY OF ARCATA
HUMBOLDT BAY TRAIL NORTH

GENERAL
PLAN SHEET INDEX &
INTERPRETIVE/WAYFINDING SIGNS

MARK	DATE	DESCRIPTION
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ABOLDT BAY

NORTHWESTERN PACIFIC RAILROAD

HIGHWAY 101

BRAECUT LUMBER CO
APN 301-241-036

NOTE:
CLEAR BRUSH AND VEGETATION WITHIN LIMITS OF DISTURBANCE AS NECESSARY TO CONSTRUCT PROJECT IMPROVEMENTS, TYP

(N) BICYCLE LANE ARROWS PER CALTRANS STANDARD PLAN A24A, TYP

(N) RIP RAP ENERGY DISSIPATER 10'L X 5'W PER DETAIL 53, CD-3.0

(N) 4" SOLID YELLOW STRIPE (72' LONG)

GRADE (N) DRAINAGE SWALE TOWARDS THE SOUTH

(E) SWALE

(N) END OF TRAIL SIGN & (2) 2 TON BOULDERS 10' O.C., TYP

STA: 25+66.00
FG EL = 11.10'

MATCH EXISTING SWALE FLOWLINE EL=8'±

(E) EDGE OF TRAVELED WAY TO (N) BOULDERS

30' MIN

(N) 25 LF OF 18" HDPE

50' TAPER

10.9' FG

STA: 27+47.23
FG EL=11.08'
(CL NTX ACCESS TO HWY 101)

10.5 EG

11.2' FG

(N) 4" WIDE FOG LINE PER CALTRANS STANDARD PLANS DETAIL 24, A20B

(N) 4" YELLOW STRIPE (125' LONG) PER CALTRANS STANDARD PLAN A24E

(N) "STAY ON TRAIL" SIGN PER DETAIL 36, CD-1.0

(N) WAY-FINDING SIGN (INDICATING DIRECTION AND DISTANCE TO ARCATA DOWNTOWN, ARCATA MARSH, BRACUT, & EUREKA PER DETAIL 36, CD-1.0

SEE SHEET G-2.0

(N) "STOP" SIGN TYPE R1-1 PER DETAIL 36, CD-1.0 & 12" WIDE WHITE LIMIT LINE PAVEMENT STRIPE PER CALTRANS STANDARD PLAN A24E

(N) "NO MOTOR VEHICLES" SIGN R5-3 PER DETAIL 36, CD-1.0

(N) 4" SOLID YELLOW STRIPE (15' LONG) BEGINNING AT LIMIT LINE

GRADE (N) DRAINAGE SWALE TOWARDS THE SOUTH

MATCHLINE STA 28+50

TRAIL – PLAN VIEW

TYPICAL TRAIL SECTION TYPE II, SEE SHEET G-5.0 FOR MORE INFORMATION

(N) 4" DASHED YELLOW STRIPE (22' LONG) PER CALTRANS STANDARD PLAN DETAIL 41, A20D

GENERAL SHEET NOTES:

1. THE TRAIL SHALL BE INSTALLED ACCORDING TO THE LINE AND CURVE DATA ON SHEET G-9.0 EXCEPT AS NECESSARY TO MEET THE MINIMUM SEPARATION REQUIREMENTS FROM THE RAILROAD TRACKS. THE MINIMUM SEPARATION (AS MEASURED IN THE FIELD) FROM THE CENTERLINE OF THE TRACKS TO THE EDGE OF THE TRAIL SHALL BE 8.5' AND 9.5' ALONG A STRAIGHT AND CURVED SECTION OF TRACK, RESPECTIVELY.
2. (N) RR WARNING SIGNS @ 2000 FT SPACING, TO BE PROVIDED BY CITY (NIC).

PROPERTY LINE BRAECUT LUMBER CO APPROX. STA 25+81

(E) GROUND AT RAILROAD TIE, CL TRACKS TYP

(N) "MELD" SIGN TYPE R1-2 PER DETAIL 36, CD-1.0 & 12" WIDE WHITE LIMIT LINE PAVEMENT STRIPE PER CALTRANS STANDARD PLAN A24E

(N) FINISHED GRADE, TYP

CL ACCESS TO HWY 101

2' SHOULDER @ 2% TYP

3:1 SLOPE MAX, TYP

BEGIN STA = 26+66.00
ELEV = 11.10'

(N) SWALE GRADE TO DRAIN @ 0.5% MIN

-0.08%

25 LF OF (N) 18" RCP @ 1% SLOPE

(N) RIP RAP ENERGY DISSIPATER PER DETAIL 53, CD-3.0

GB STA = 28+00.00
ELEV = 10.99'

-0.14%

(N) SWALE AT (E) FLOWLINE ELEVATION, TYP

MATCH EXISTING SWALE FLOWLINE EL=8'±

BRANNARD'S SLOUGH

NO WORK

EG 7.0 / FG — 25+00
EG 8.8 / FG — 26+00
EG 8.8 / FG 11.07 — 27+00
EG 9.4 / FG 10.99 — 28+00

HORIZONTAL SCALE 0 20' 40'
VERTICAL SCALE 0 4' 8'

TRAIL – PROFILE

PROJ NO:	8411982
DRWN:	OFG
CHKD:	JW

CITY OF ARCATA
HUMBOLDT BAY TRAIL NORTH

CIVIL
PLAN & PROFILE
STA 25+00 TO STA 28+50

C-1.0

SHEET 10 OF 52

MARK	DATE	DESCRIPTION
		ISSUE

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3/30/2016

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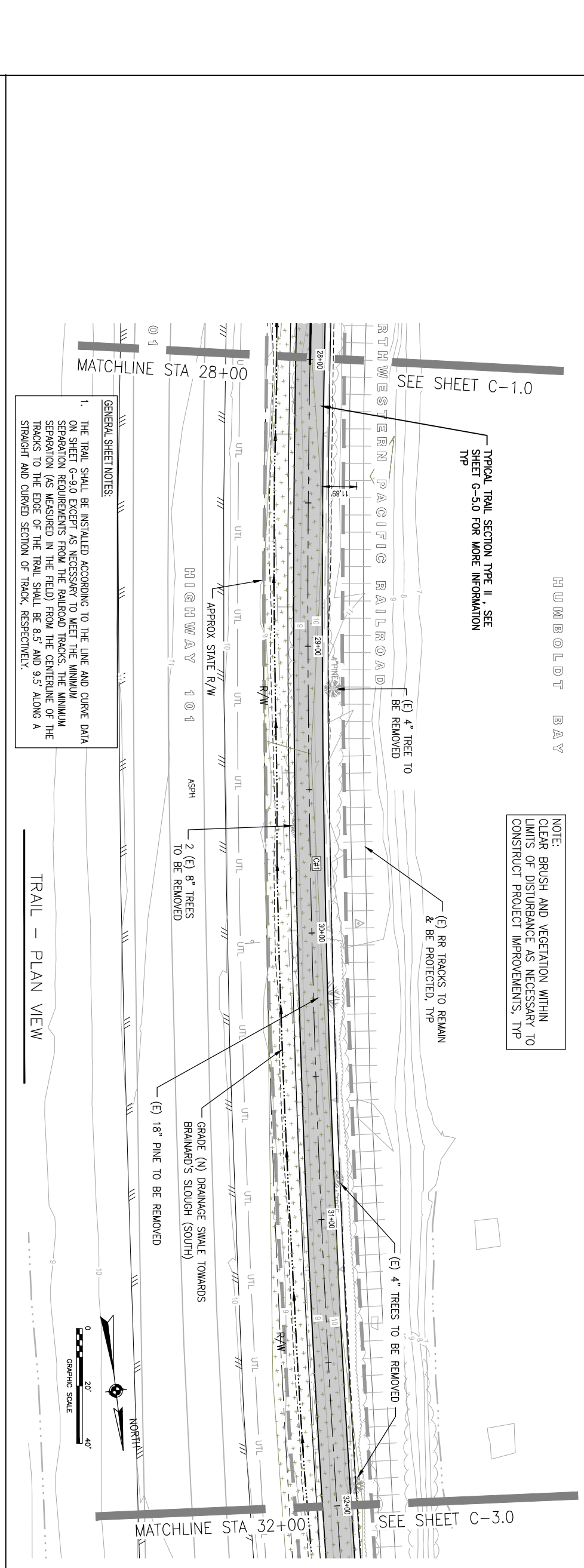

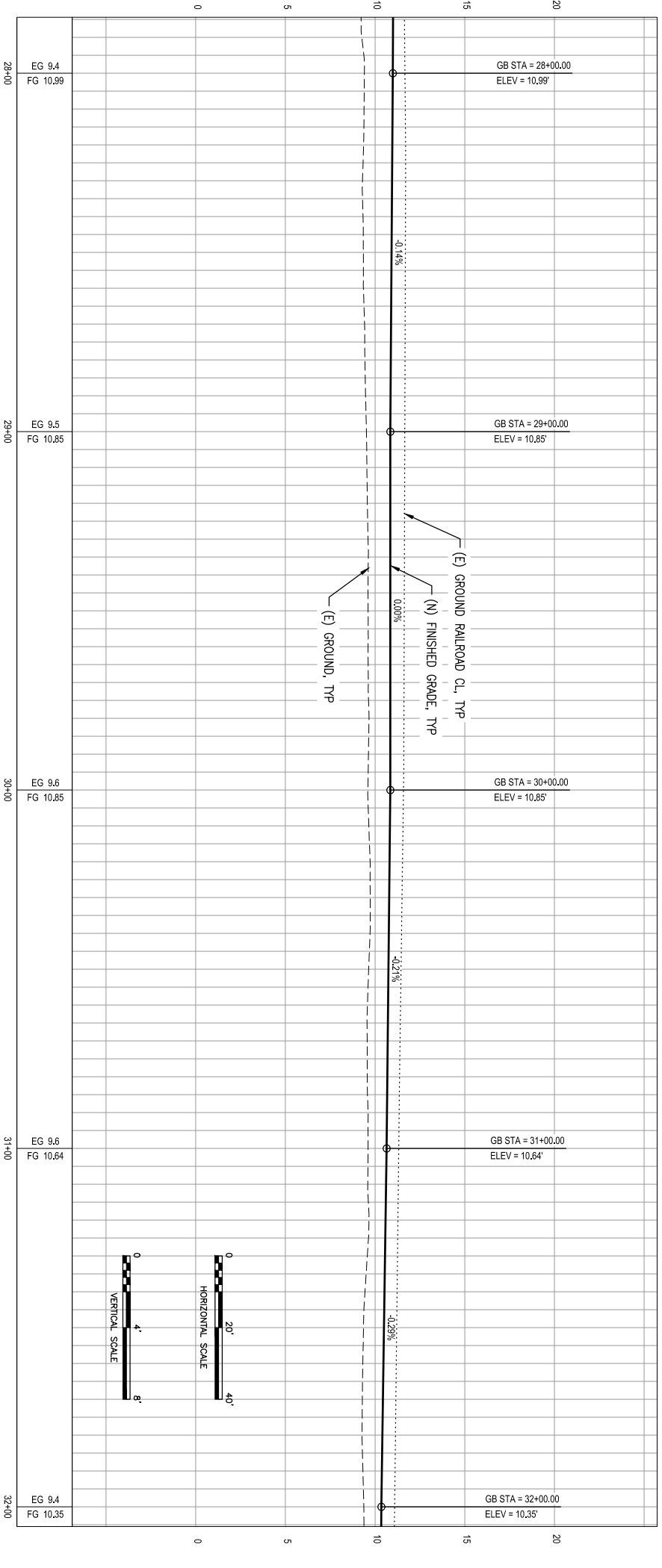

SHEET 11 OF 52	C-2.0
DRWN: OFG	CHKD: JW
PROJ NO: 8411982	

CITY OF ARCATA
HUMBOLDT BAY TRAIL NORTH

PLAN & PROFILE
STA 28+00 TO STA 32+00

MARK	DATE	DESCRIPTION
		ISSUE

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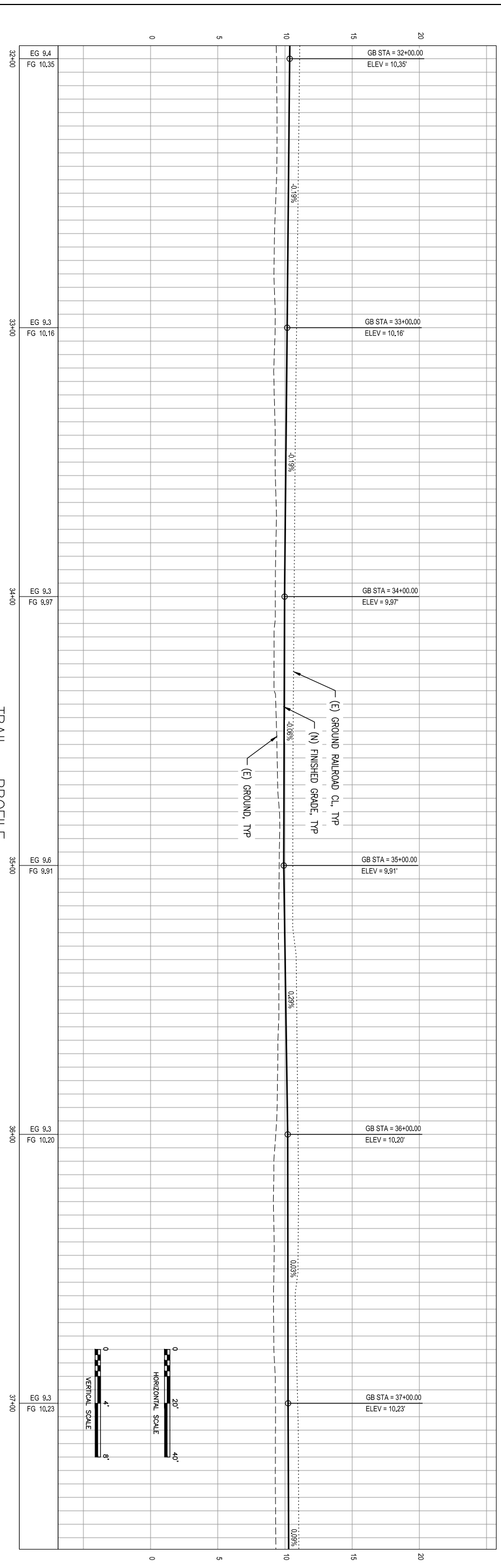
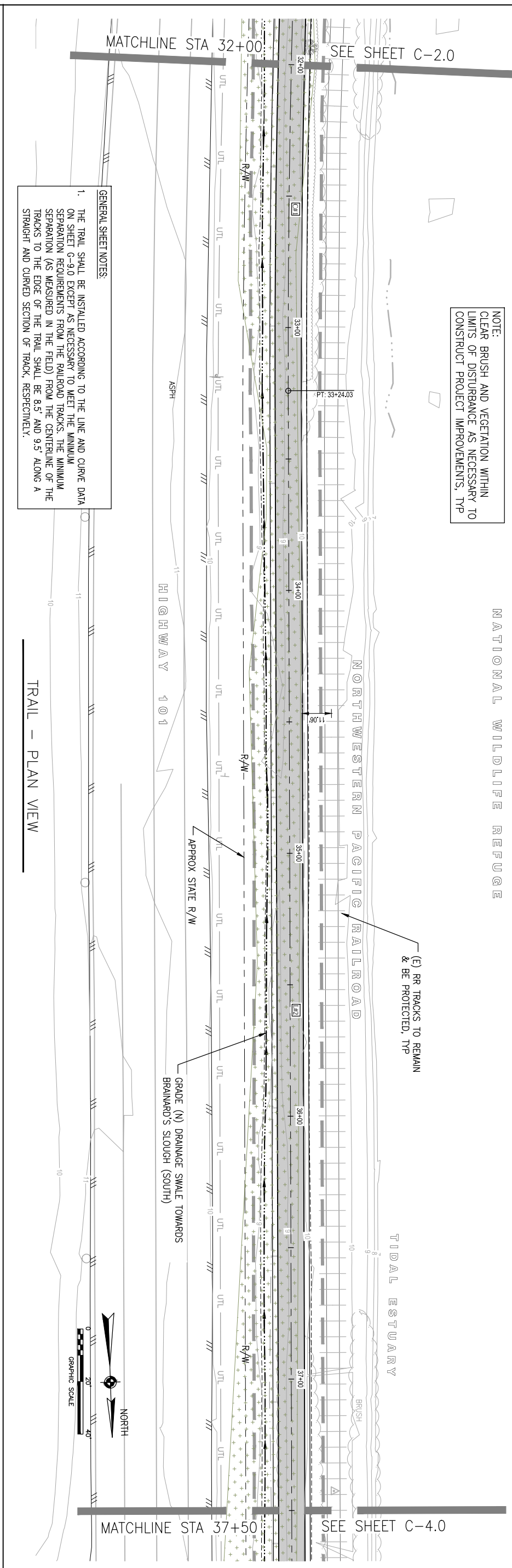


TRAIL – PROFILE



TRAIL – PLAN VIEW

PROJ NO:	8411982
DRWN:	OFG
CHKD:	JW
SHEET	12 OF 52

C-3.0

CITY OF ARCATA
HUMBOLDT BAY TRAIL NORTH

PLAN & PROFILE
STA 32+00 TO STA 37+50

MARK	DATE	DESCRIPTION
		ISSUED

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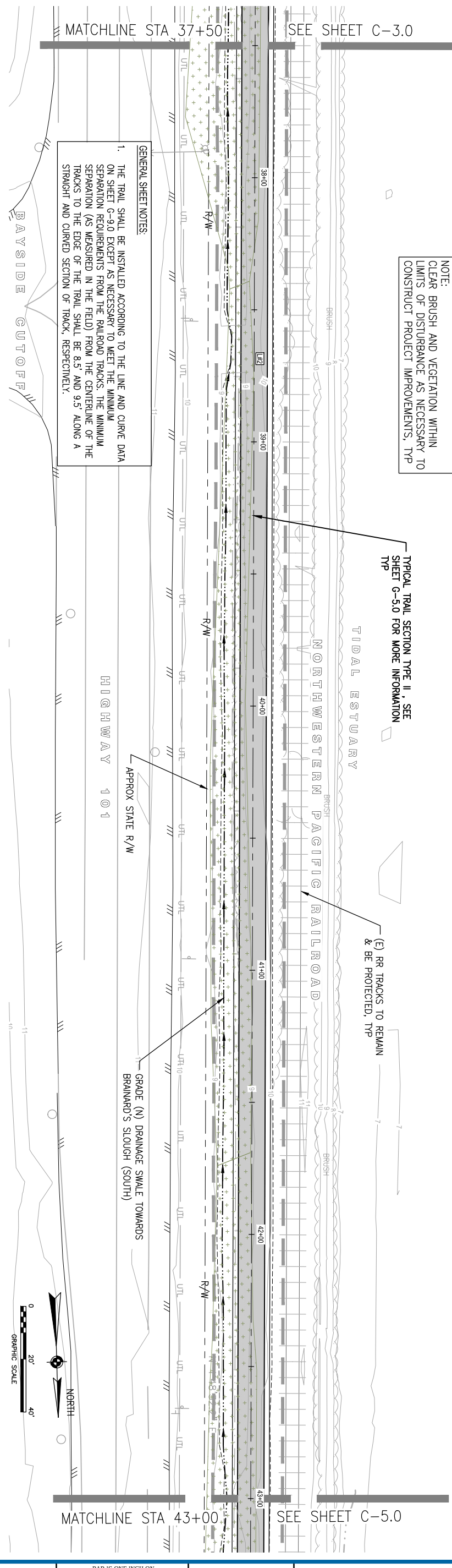
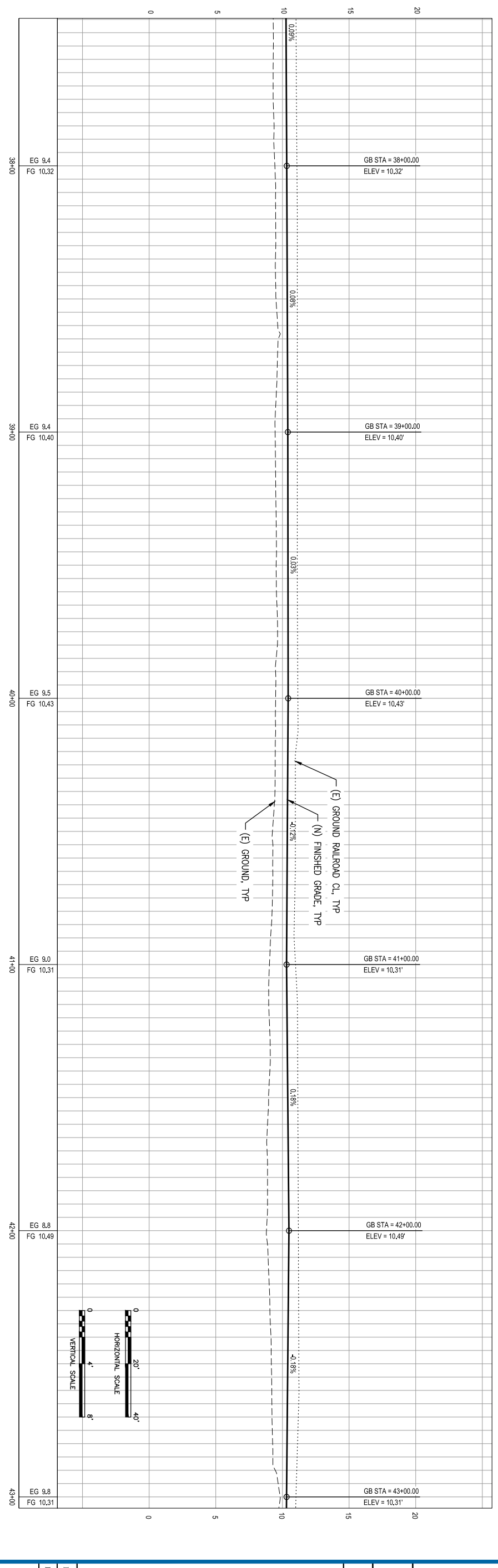


TRAIL – PLAN VIEW



TRAIL – PROFILE

SCALE: SEE SCALE BAR

CITY OF ARCATA
HUMBOLDT BAY TRAIL NORTH

PLAN & PROFILE
STA 37+50 TO STA 43+00

C-4.0

SHEET 13 OF 52

DRWN: OFG
CHKD: JW

PROJ NO: 8411982

MARK	DATE	DESCRIPTION
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0 1"

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NOTE:
CLEAR BRUSH AND VEGETATION WITHIN LIMITS OF DISTURBANCE AS NECESSARY TO CONSTRUCT PROJECT IMPROVEMENTS, TYP

GENERAL SHEET NOTES:

1. THE TRAIL SHALL BE INSTALLED ACCORDING TO THE LINE AND CURVE DATA ON SHEET G-9.0 EXCEPT AS NECESSARY TO MEET THE MINIMUM SEPARATION REQUIREMENTS FROM THE RAILROAD TRACKS. THE MINIMUM SEPARATION (AS MEASURED IN THE FIELD) FROM THE CENTERLINE OF THE TRACKS TO THE EDGE OF THE TRAIL SHALL BE 8.5' AND 9.5' ALONG A STRAIGHT AND CURVED SECTION OF TRACK, RESPECTIVELY.

MATCHLINE STA 43+00

SEE SHEET C-4.0

TYPICAL TRAIL SECTION TYPE II TYP. SEE SHEET G-5.0 FOR MORE INFORMATION TYP

(E) RR TRACKS TO REMAIN & BE PROTECTED, TYP

GRADE (N) DRAINAGE SWALE

R/W

ASPH

APPROX STATE R/W

GRADE (N) DRAINAGE SWALE TOWARD BRAINARD'S SLOUGH (SOUTH)

GRADE (N) DRAINAGE SWALE TOWARD OLD JACOBY CREEK (NORTH)

PI: 44+12.96

PI: 48+04.32

NORTH

GRAPHIC SCALE 0 20' 40'

MATCHLINE STA 48+50

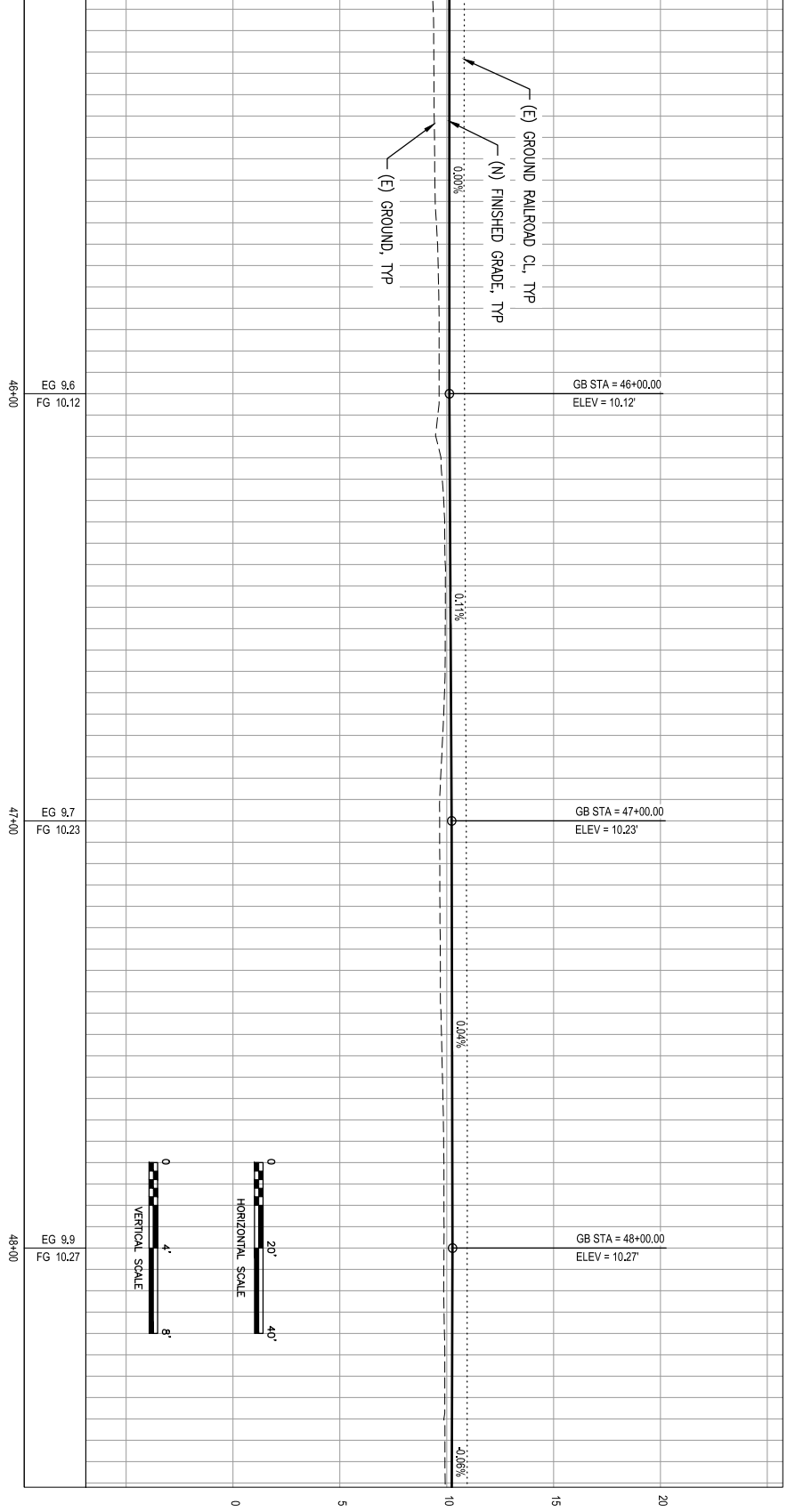
SEE SHEET C-6.0

NATIONAL WILDLIFE REFUGE

NORTHWESTERN PACIFIC RAILROAD

HIGHWAY 101

TRAIL – PLAN VIEW



TRAIL – PROFILE

CITY OF ARCATA HUMBOLDT BAY TRAIL NORTH	
PLAN & PROFILE STA 43+00 TO STA 48+50	
PROJ NO: 8411982	
DRWN: OFG	
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C-5.0	
SHEET 14 OF 52	

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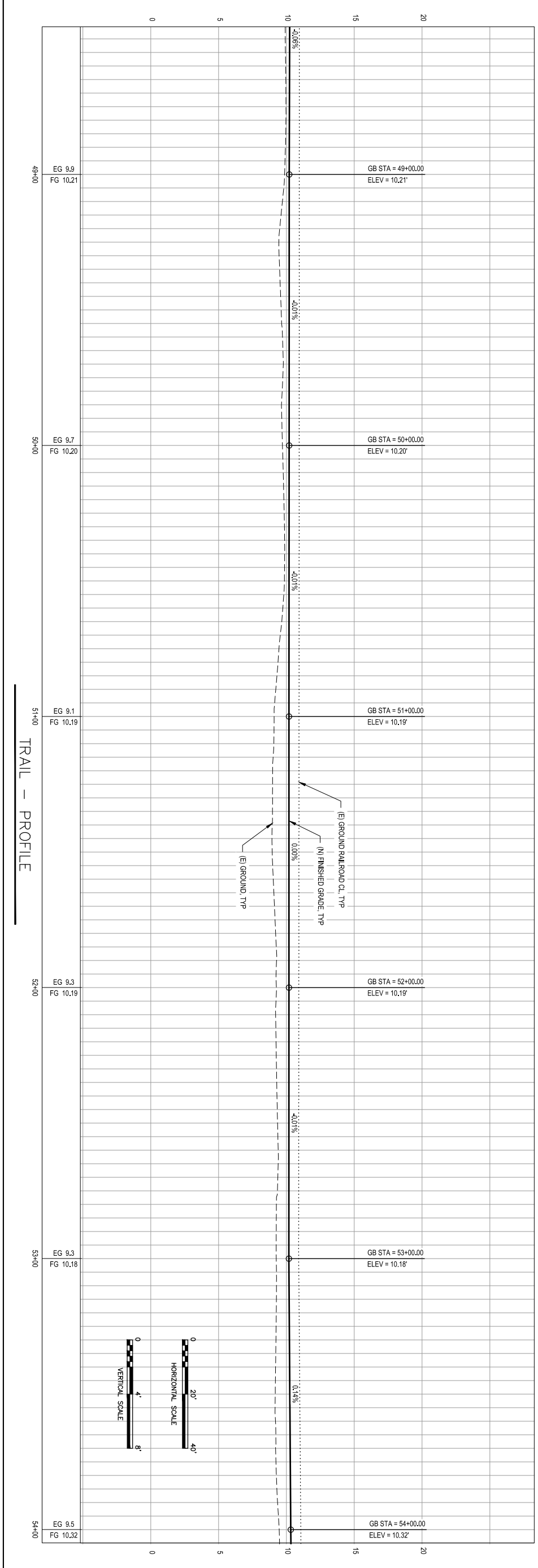

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SHEET 15 OF 52	C-6.0	
DRWN: OFG	CHKD: JW	PROJ NO: 8411982

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STA 48+50 TO STA 54+00

MARK	DATE	DESCRIPTION
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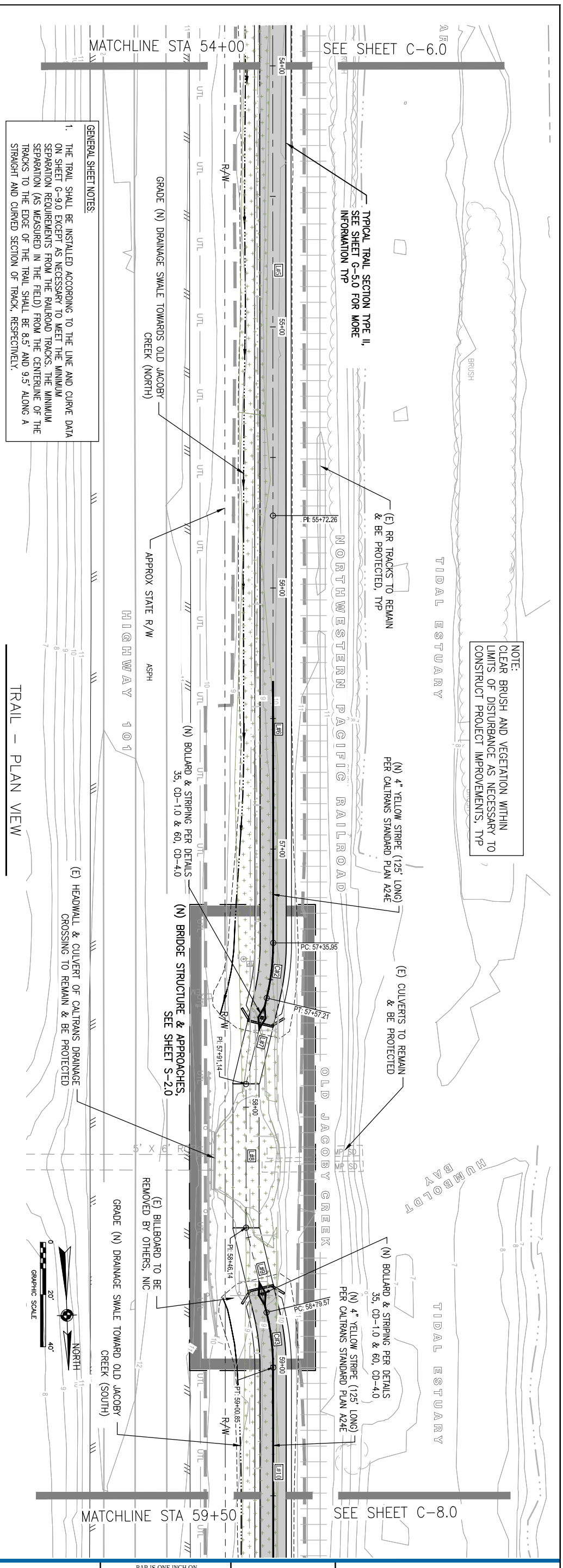

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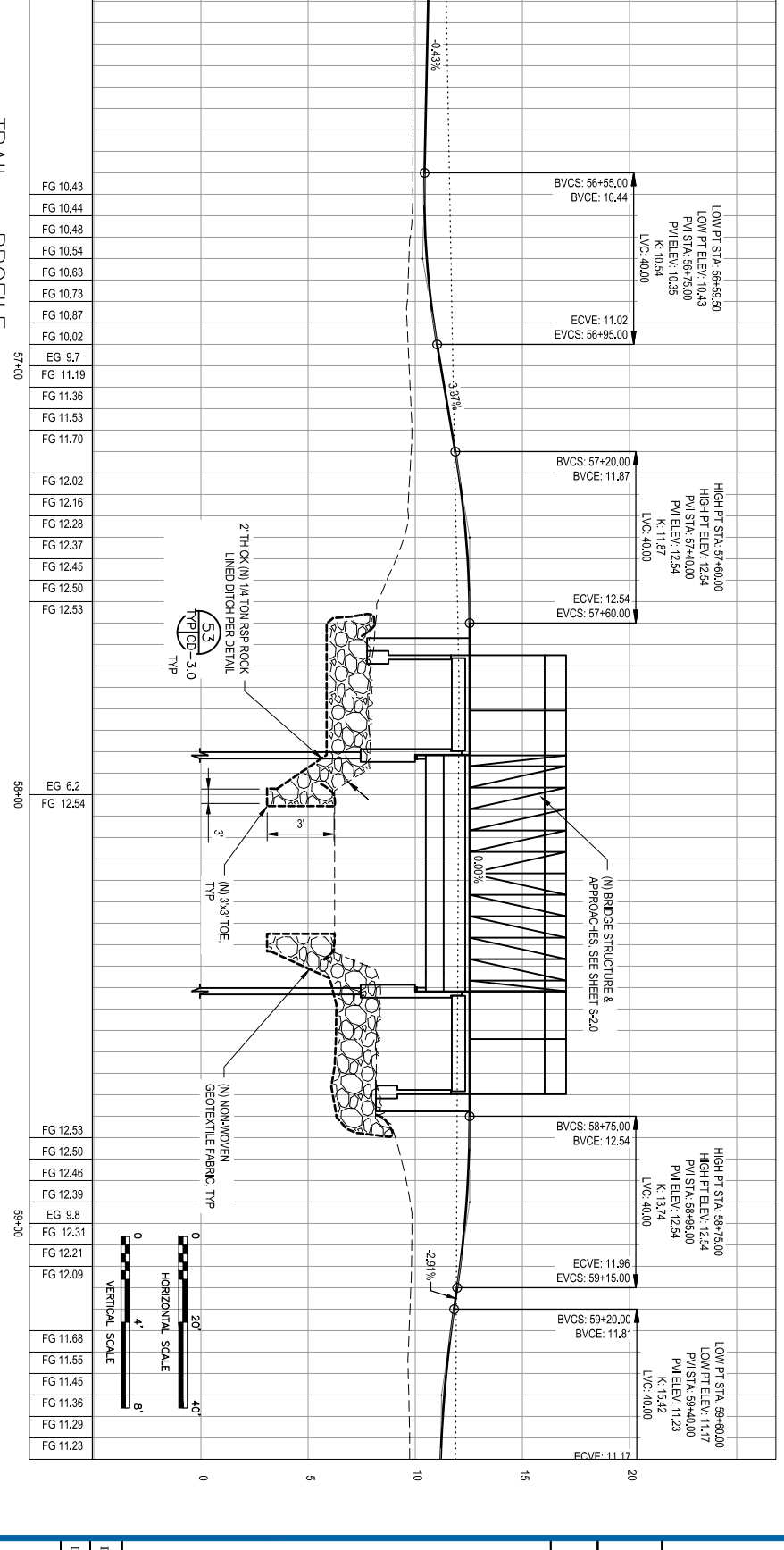

TRAIL – PROFILE

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CHKD:	JW

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SHEET 16 OF 52

CITY OF ARCATA
HUMBOLDT BAY TRAIL NORTH

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STA 54+00 TO STA 59+50

MARK	DATE	DESCRIPTION
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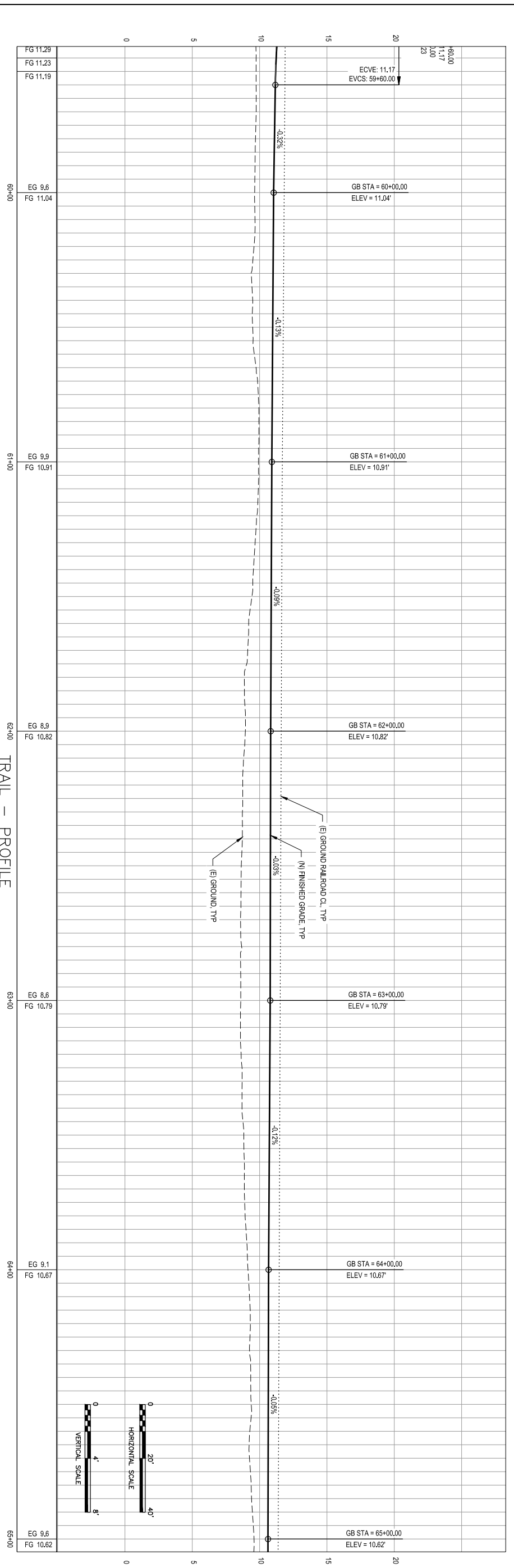

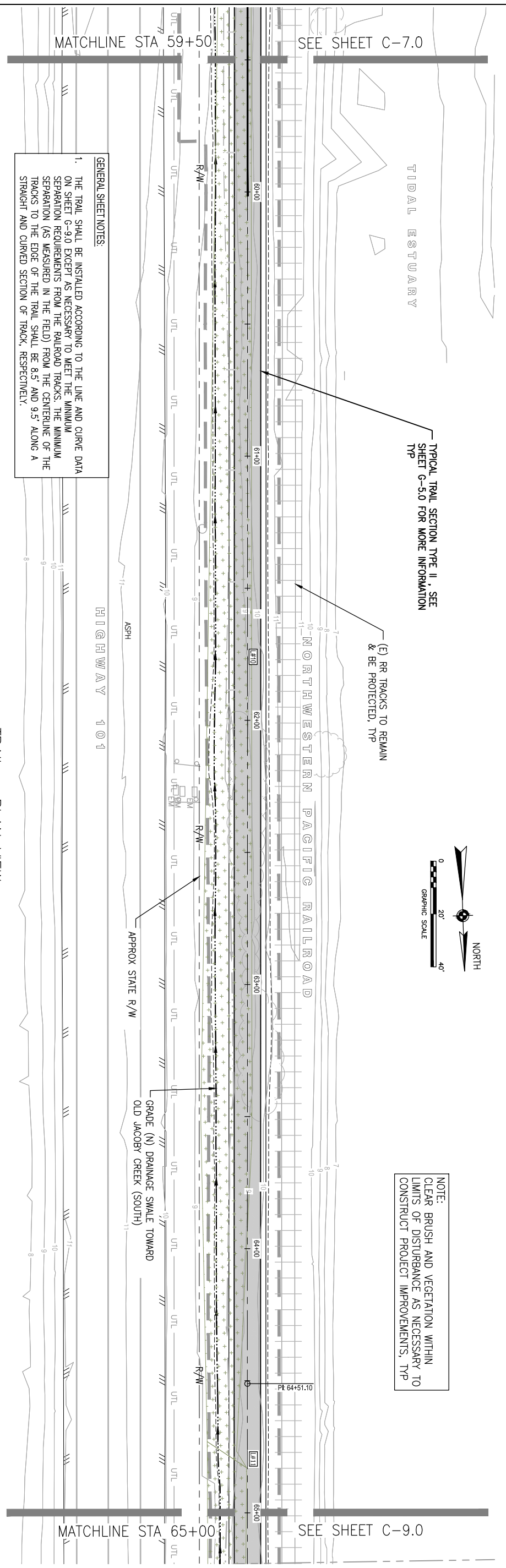

GENERAL SHEET NOTES:

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SHEET	17 OF 52
C-8.0	
DRWN:	OFG
CHKD:	JW
PROJ NO:	8411982

CITY OF ARCATA
HUMBOLDT BAY TRAIL NORTH

CIVIL
PLAN & PROFILE
STA 59+50 TO STA 65+00

MARK	DATE	DESCRIPTION
		ISSUE

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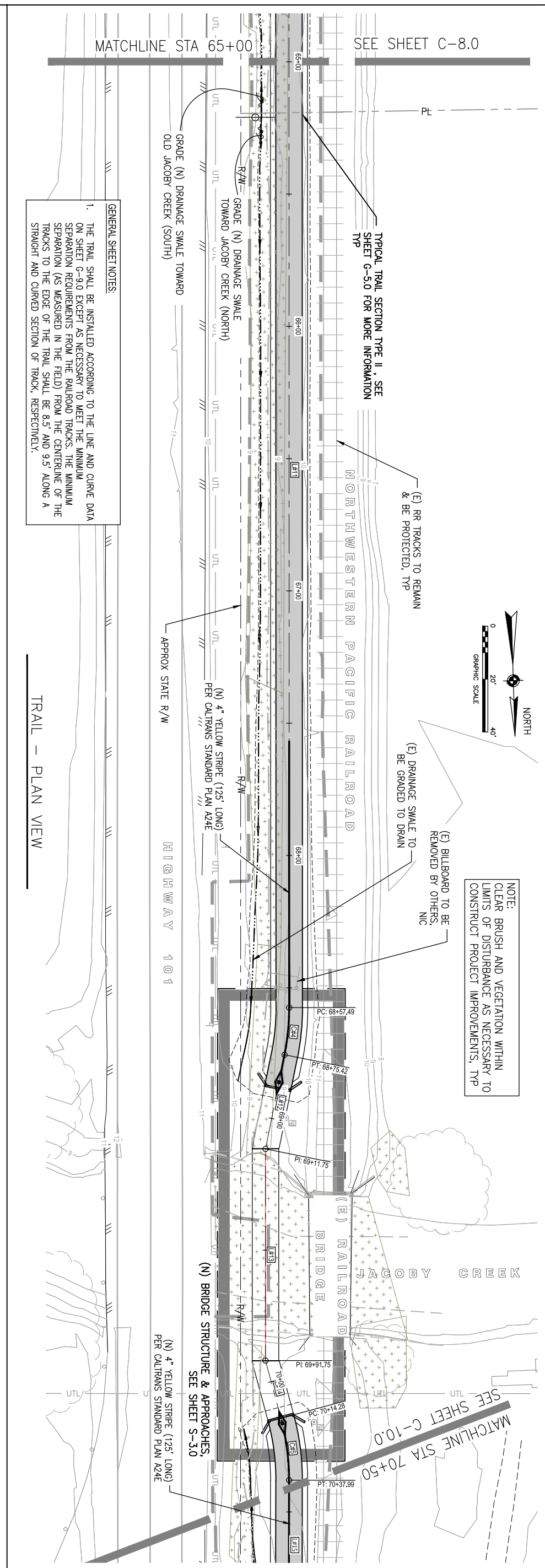
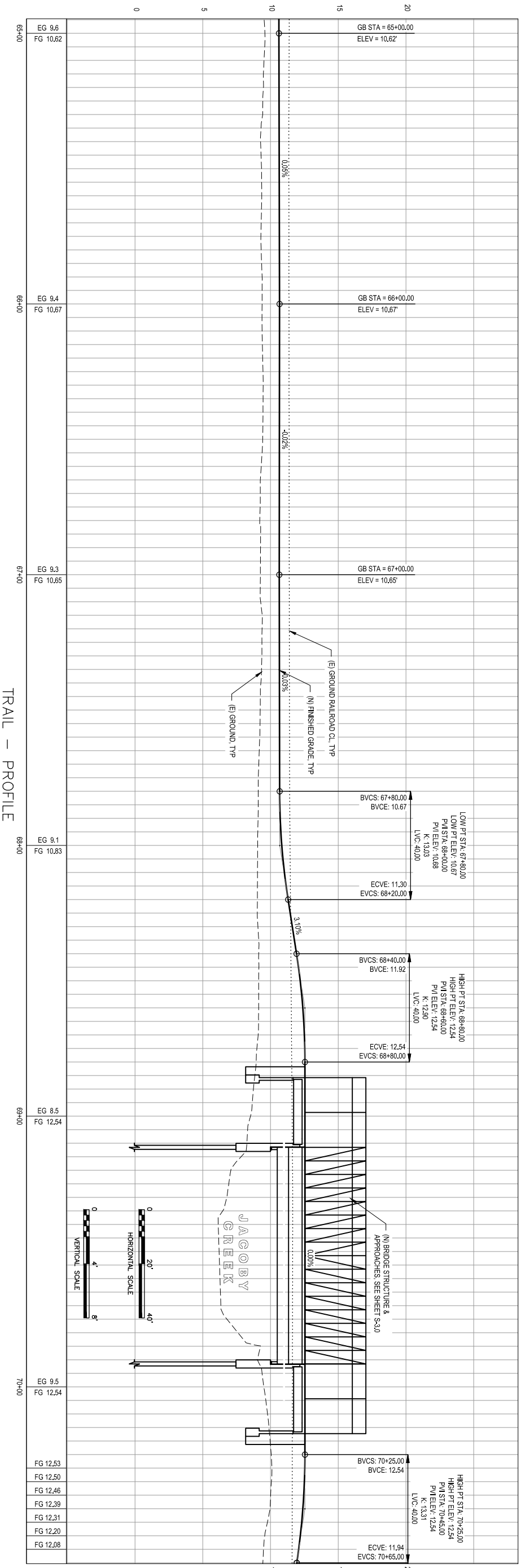


TRAIL – PLAN VIEW



TRAIL – PROFILE

SHEET	18 OF 52
C-9.0	
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CHKD:	JW
PROJ NO:	8411982

CITY OF ARCATA
HUMBOLDT BAY TRAIL NORTH

CIVIL
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STA 65+00 TO STA 70+50

MARK	DATE	DESCRIPTION
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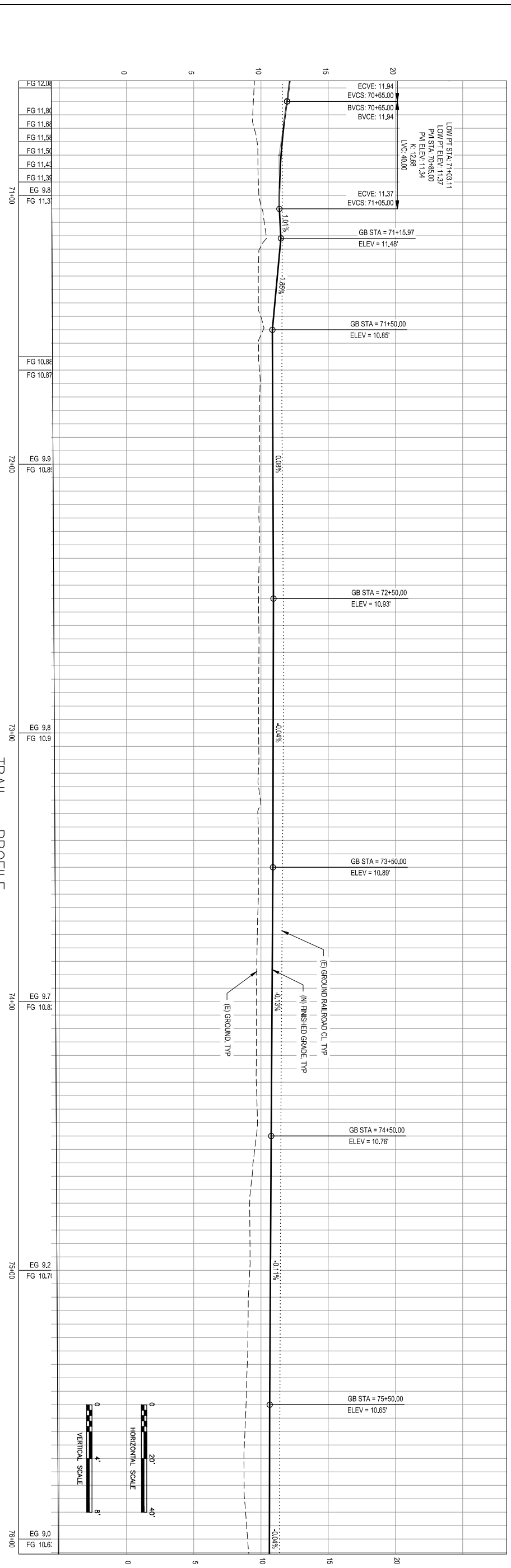
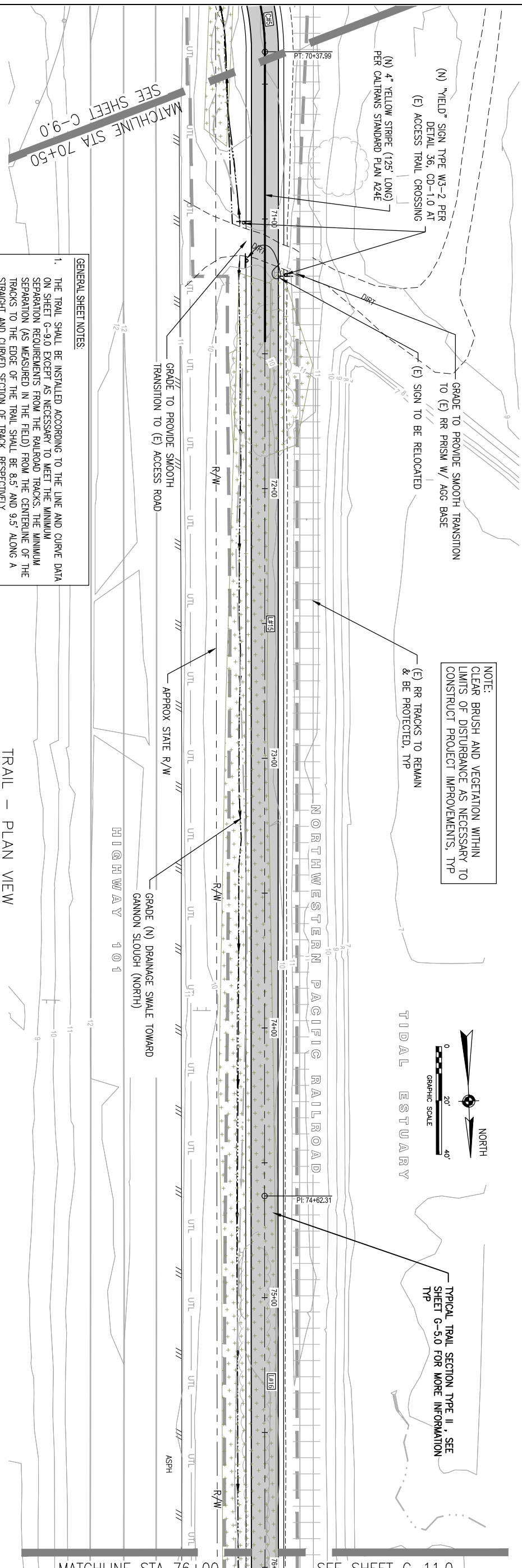


TRAIL – PROFILE



TRAIL – PLAN VIEW

GENERAL SHEET NOTES:

1. THE TRAIL SHALL BE INSTALLED ACCORDING TO THE LINE AND CURVE DATA ON SHEET G-9.0 EXCEPT AS NECESSARY TO MEET THE MINIMUM SEPARATION REQUIREMENTS FROM THE RAILROAD TRACKS. THE MINIMUM SEPARATION (AS MEASURED IN THE FIELD) FROM THE CENTERLINE OF THE TRACKS TO THE EDGE OF THE TRAIL SHALL BE 8.5' AND 9.5' ALONG A STRAIGHT AND CURVED SECTION OF TRACK, RESPECTIVELY.

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SHEET	19 OF 52
	C-10.0
DRWN:	OFG
CHKD:	JW
PROJ NO:	8411982

CITY OF ARCATA
HUMBOLDT BAY TRAIL NORTH

CIVIL
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STA 70+50 TO STA 76+00

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		ISSUE

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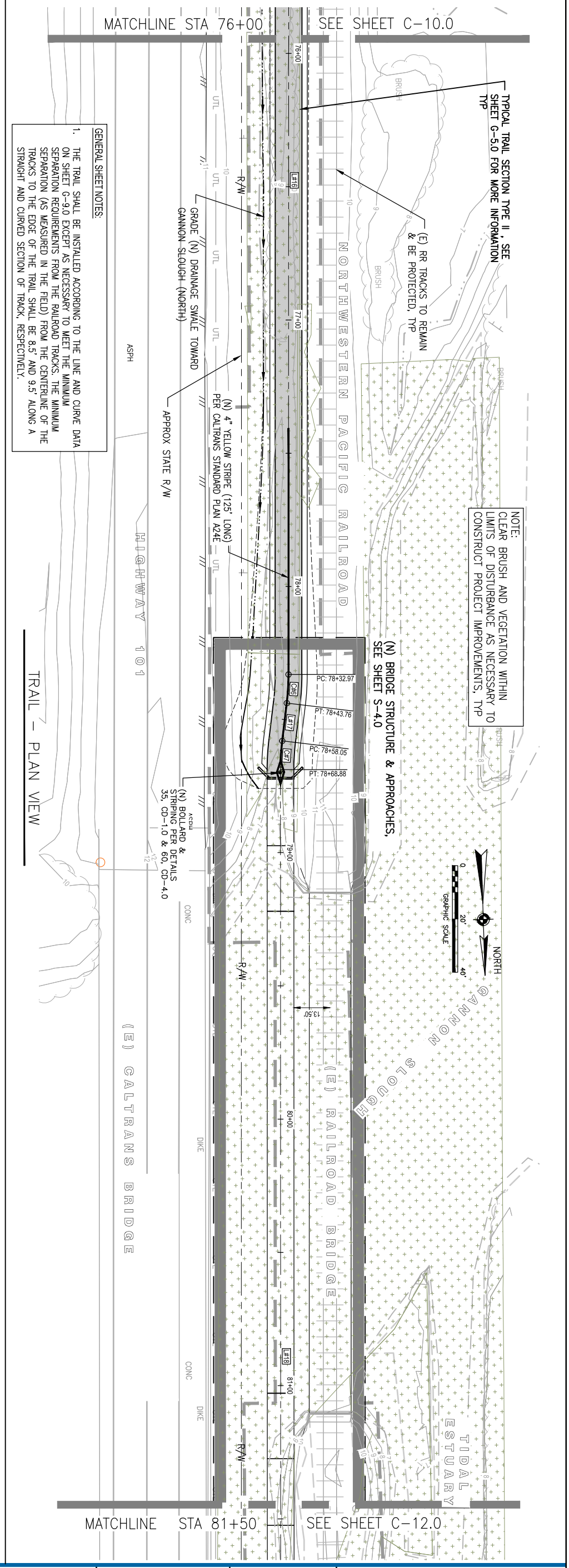

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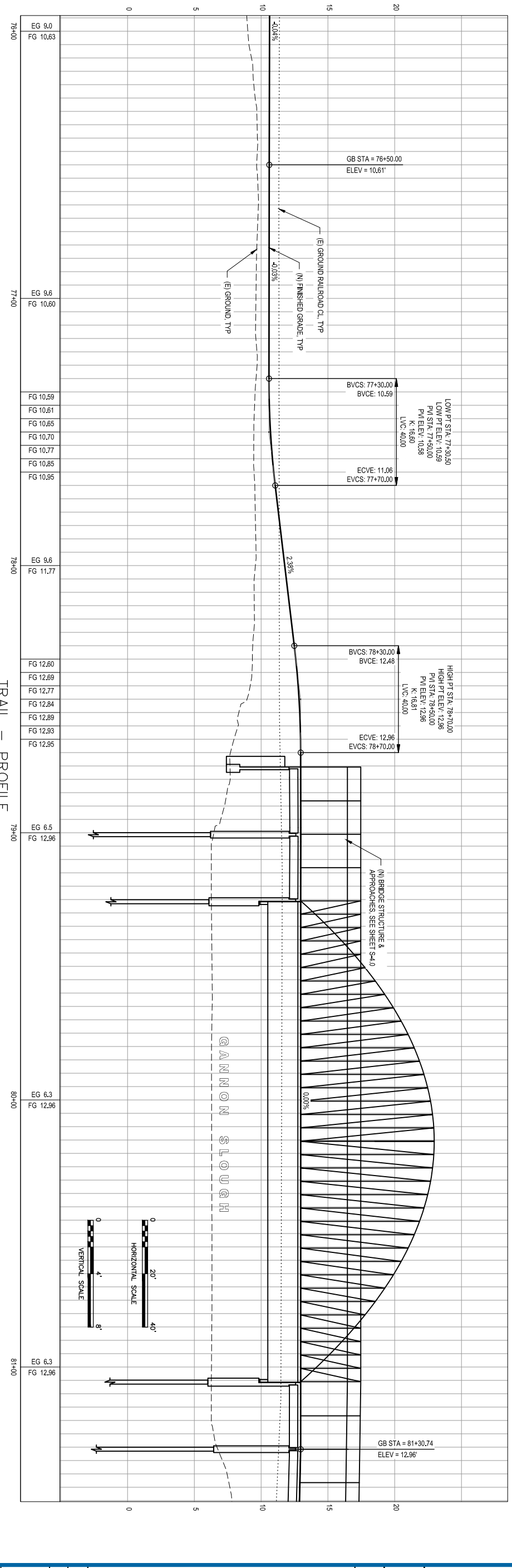

SHEET 20 OF 52	C-11.0	DRWN: OFG CHKD: JW	PROJ NO: 8411982

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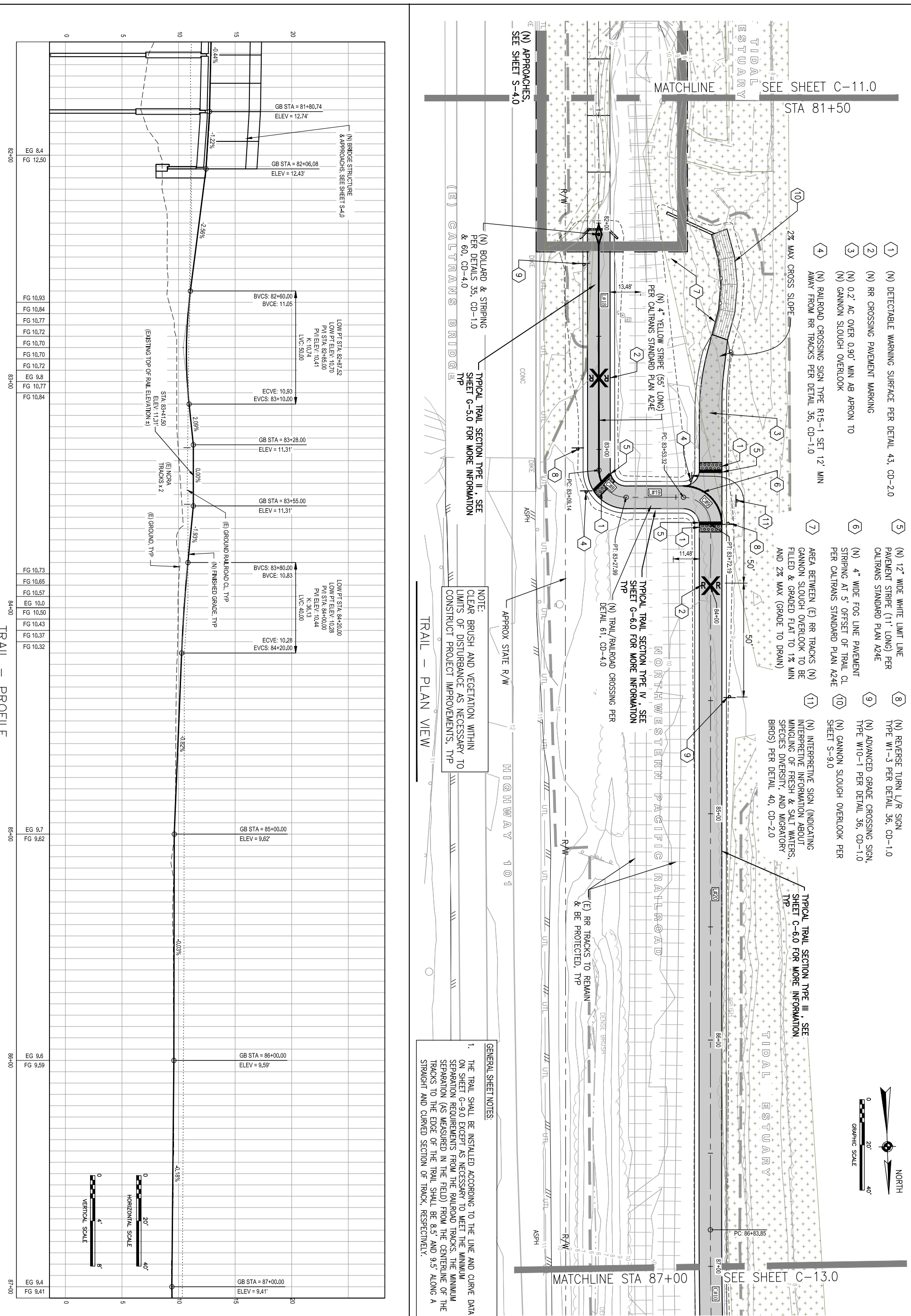

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C-12.0

SHEET 21 OF 52

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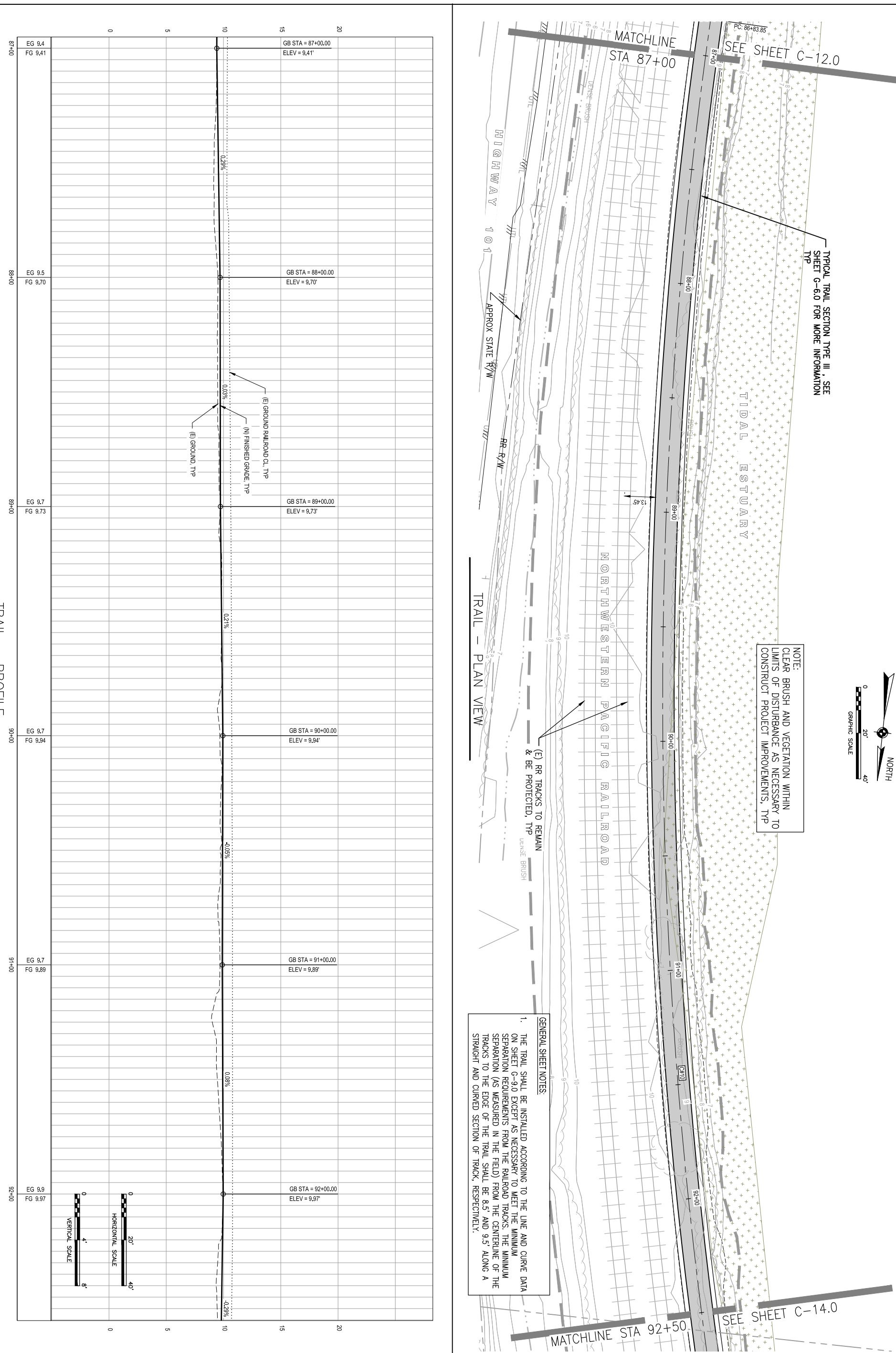

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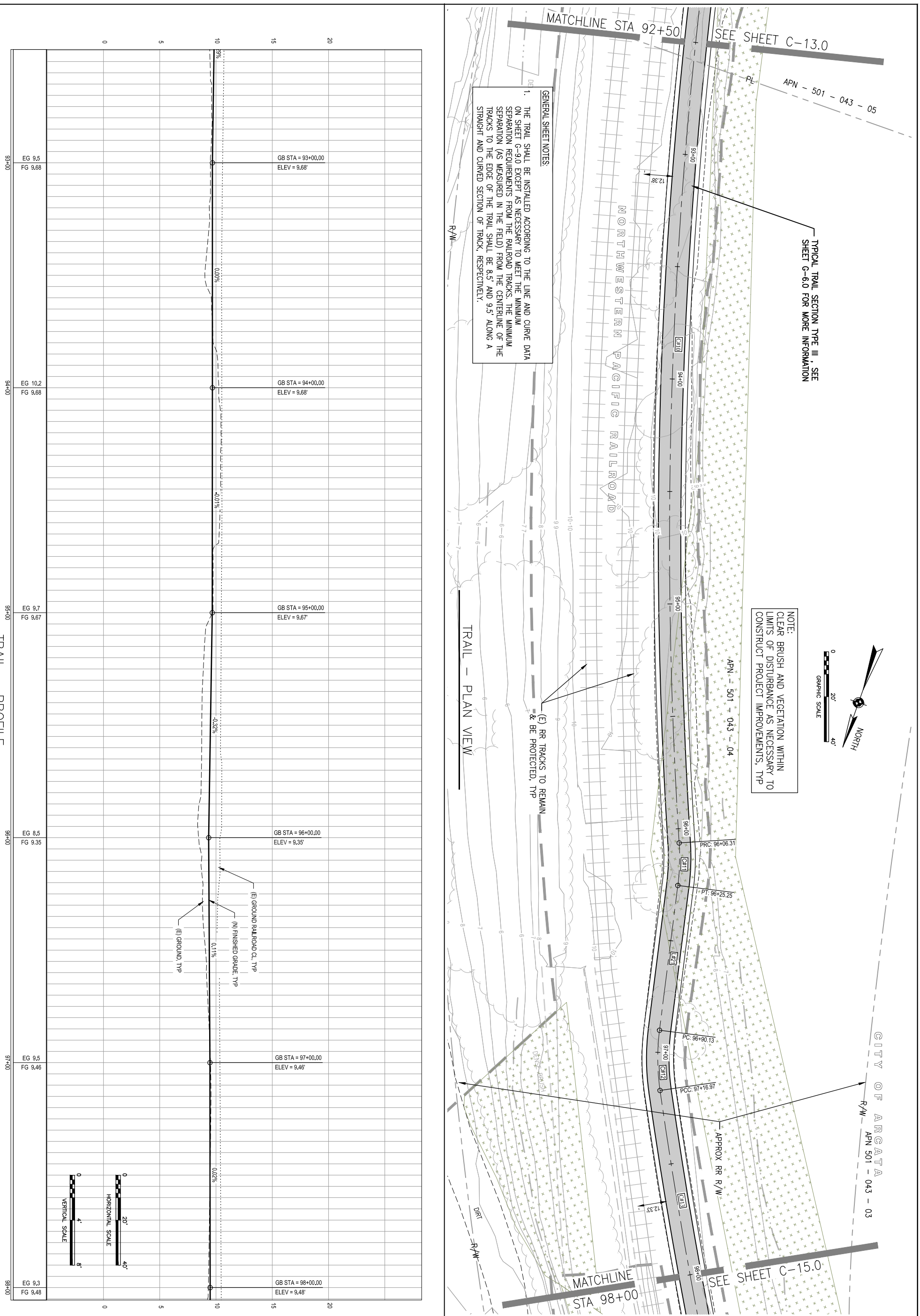
SHEET 22 OF 52



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SHEET	23 OF 52
	C-14.0
DRWN:	OFG
CHKD:	JW
PROJ NO:	8411982

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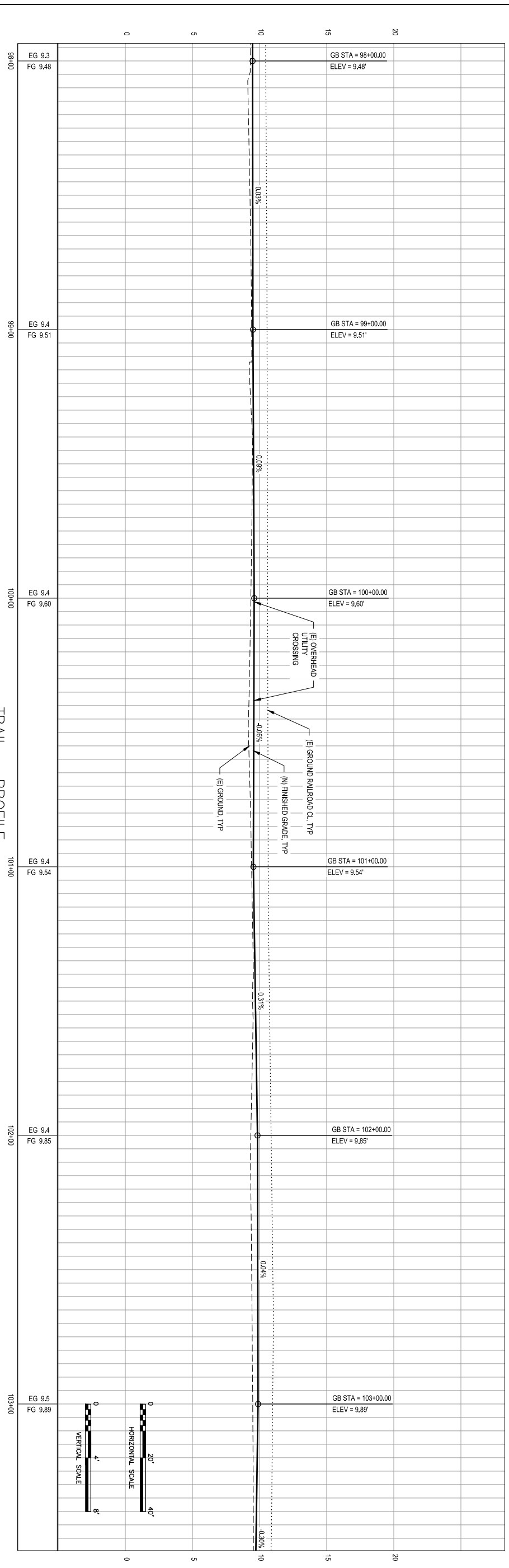

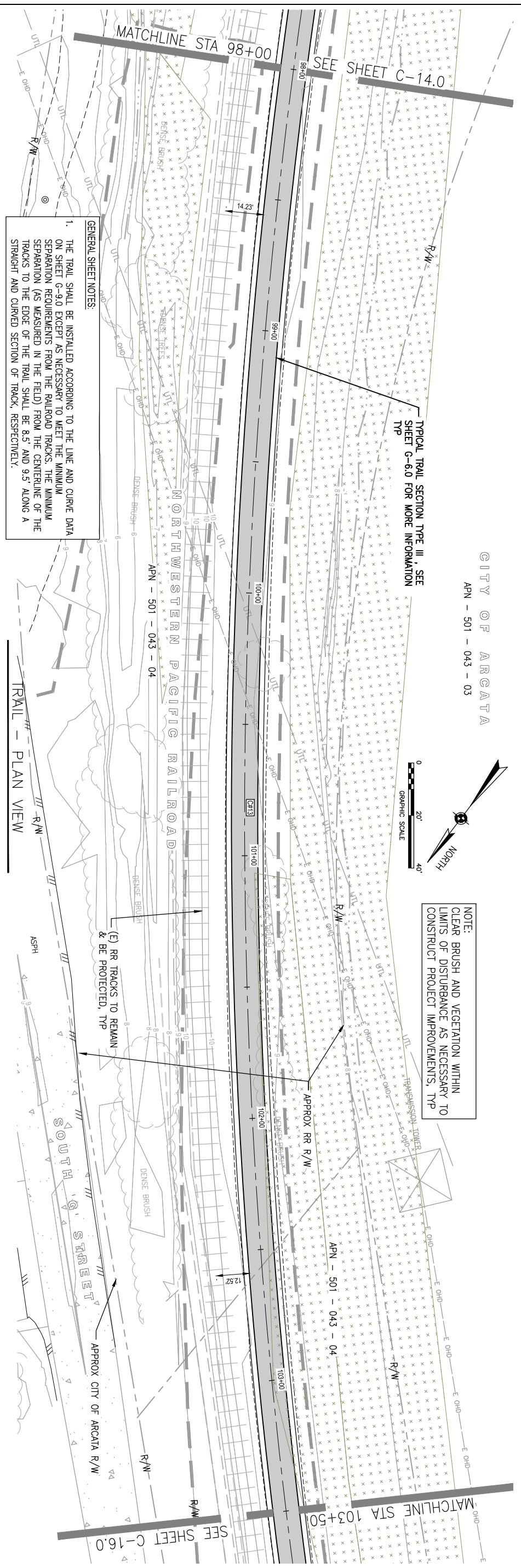

NOTE:
CLEAR BRUSH AND VEGETATION WITHIN LIMITS OF DISTURBANCE AS NECESSARY TO CONSTRUCT PROJECT IMPROVEMENTS, TYP

TYPICAL TRAIL SECTION TYPE III , SEE SHEET G-6.0 FOR MORE INFORMATION TYP

GENERAL SHEET NOTES:

1. THE TRAIL SHALL BE INSTALLED ACCORDING TO THE LINE AND CURVE DATA ON SHEET G-9.0 EXCEPT AS NECESSARY TO MEET THE MINIMUM SEPARATION REQUIREMENTS FROM THE RAILROAD TRACKS. THE MINIMUM SEPARATION (AS MEASURED IN THE FIELD) FROM THE CENTERLINE OF THE TRACKS TO THE EDGE OF THE TRAIL SHALL BE 8.5' AND 9.5' ALONG A STRAIGHT AND CURVED SECTION OF TRACK, RESPECTIVELY.

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C-15.0

SHEET 24 OF 52

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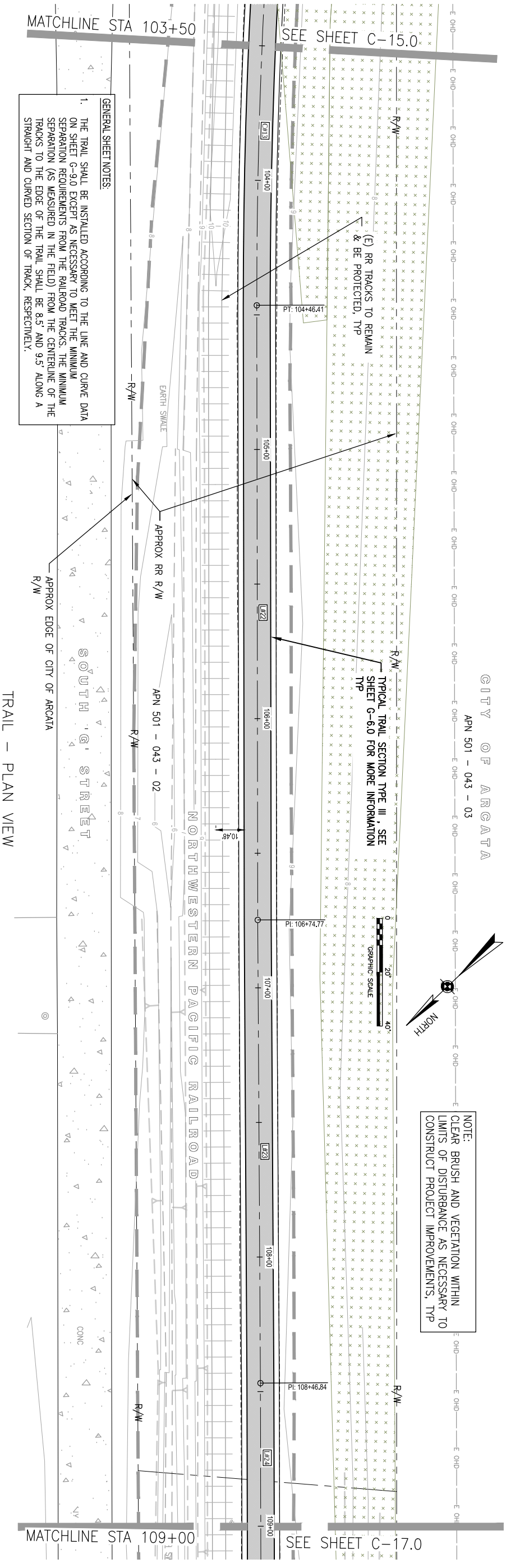

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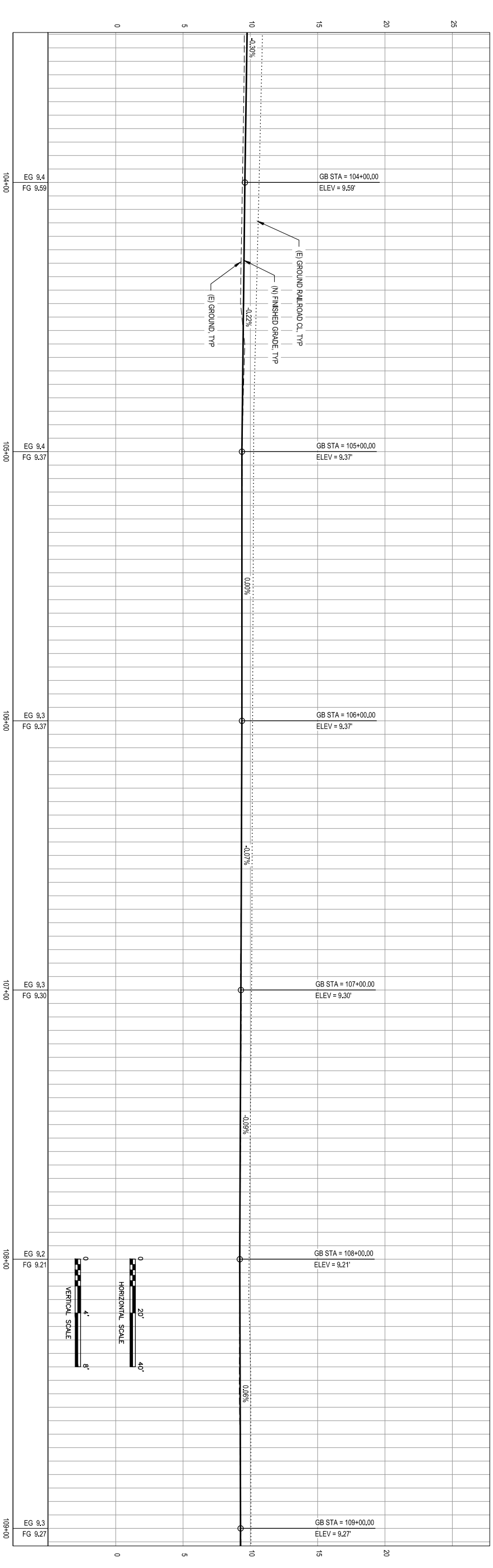
TRAIL – PLAN VIEW



TRAIL – PROFILE

SHEET 25 OF 52	C-16.0	DRWN: OFG CHKD: JW PROJ NO: 8411982

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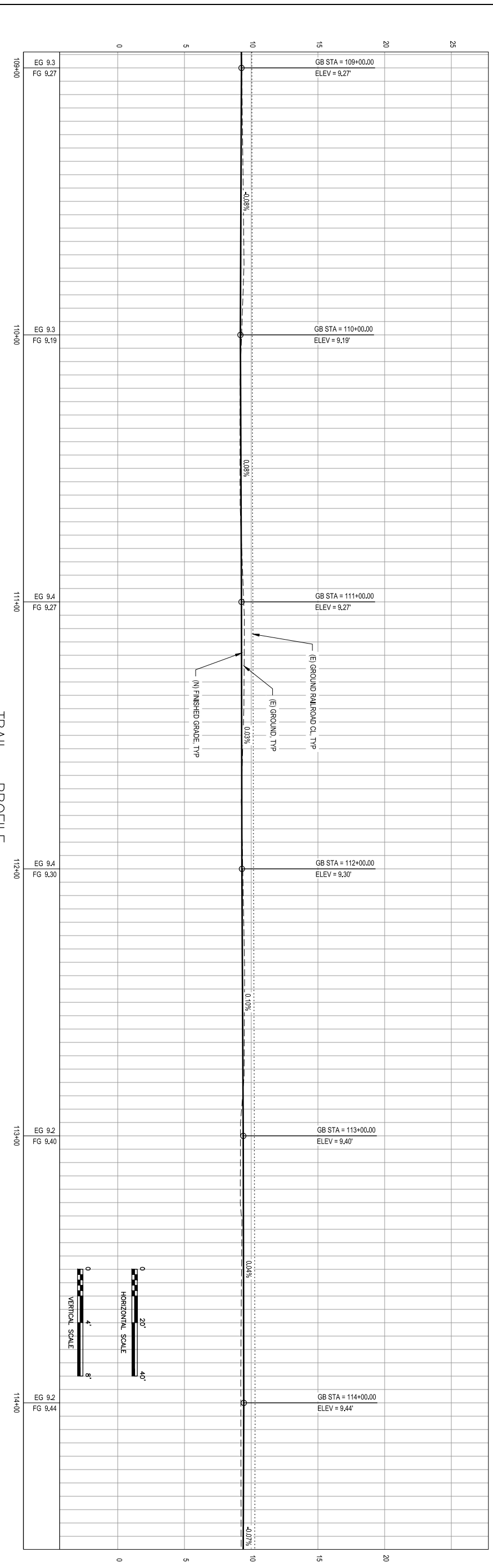

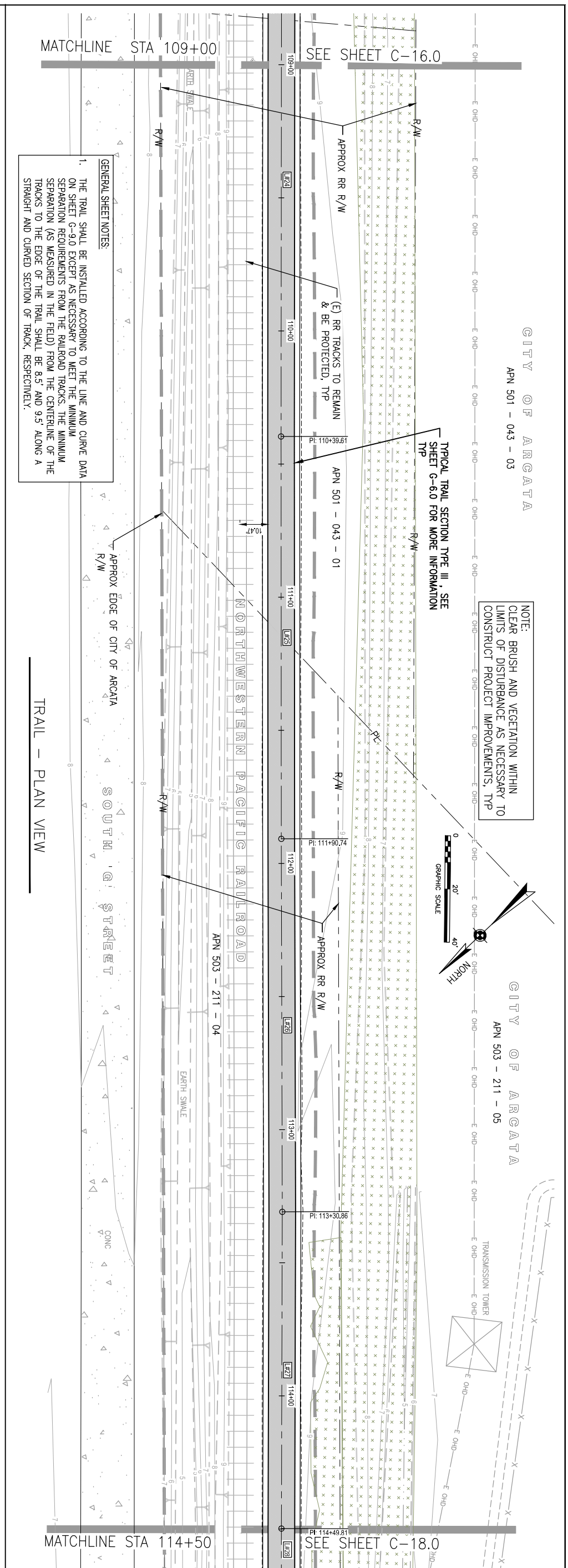

SHEET 26 OF 52	C-17.0	
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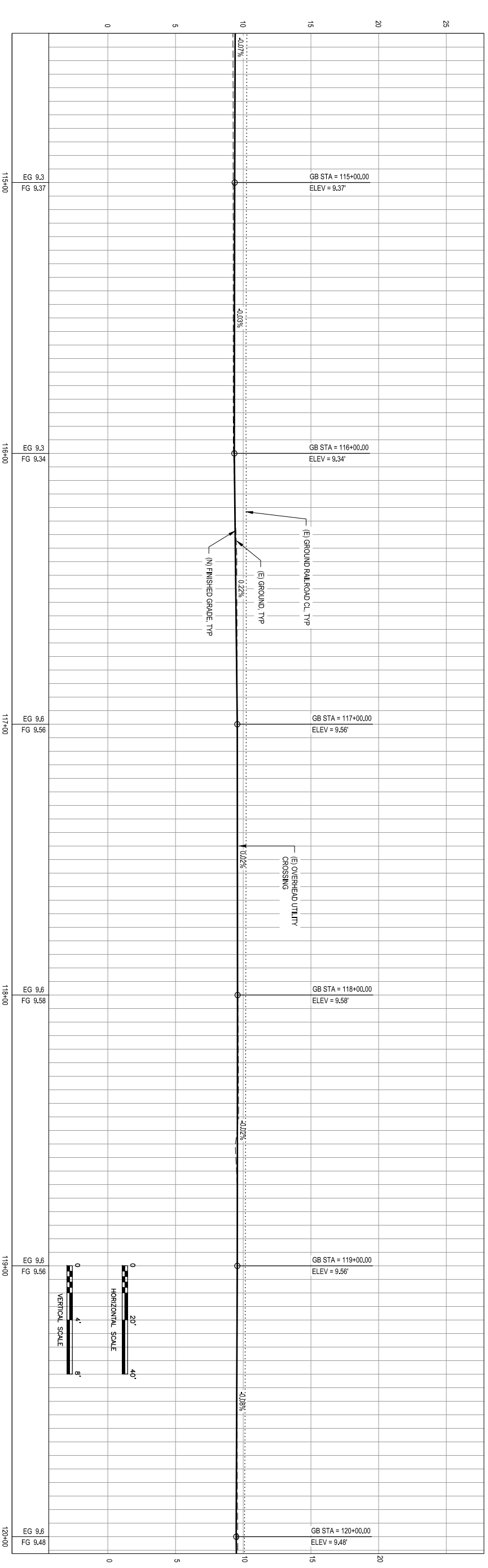
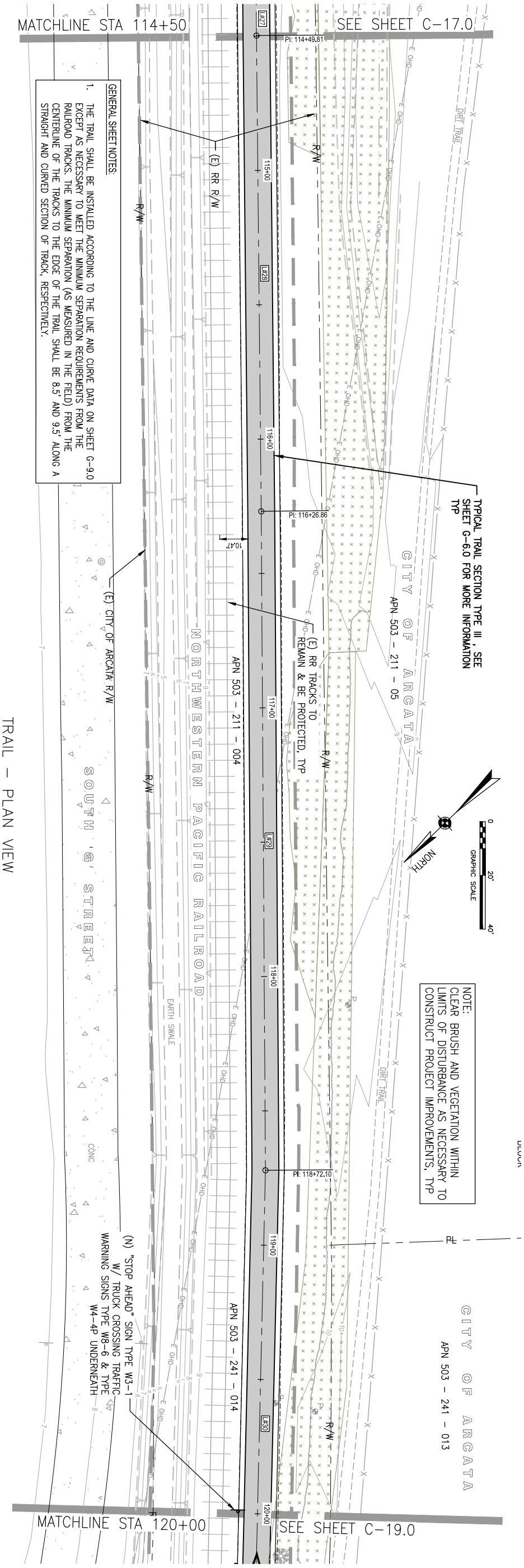


TRAIL – PROFILE



TRAIL – PLAN VIEW

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CIVIL
PLAN & PROFILE
STA 114+50 TO STA 120+00

C-18.0

SHEET 27 OF 52

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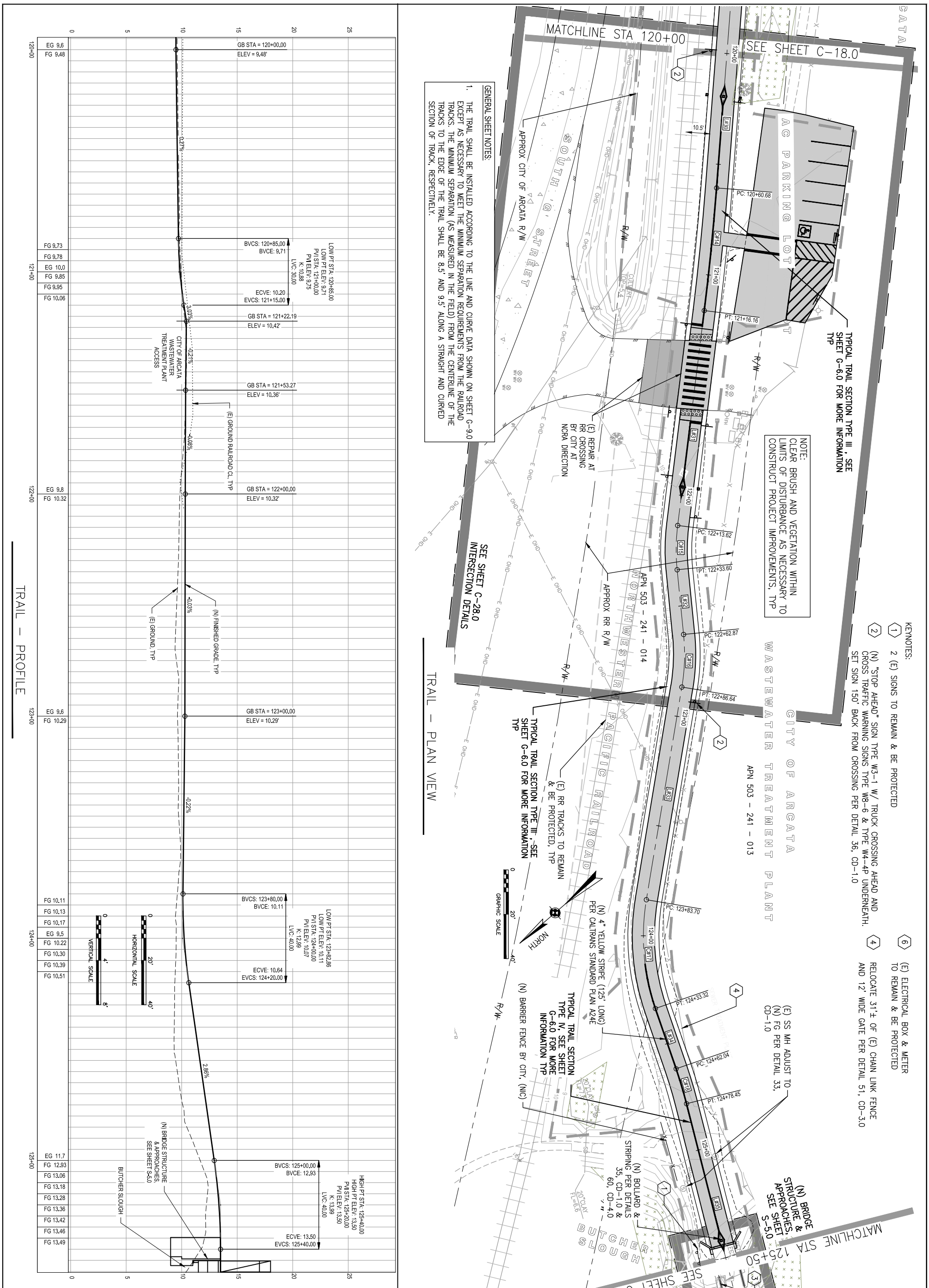

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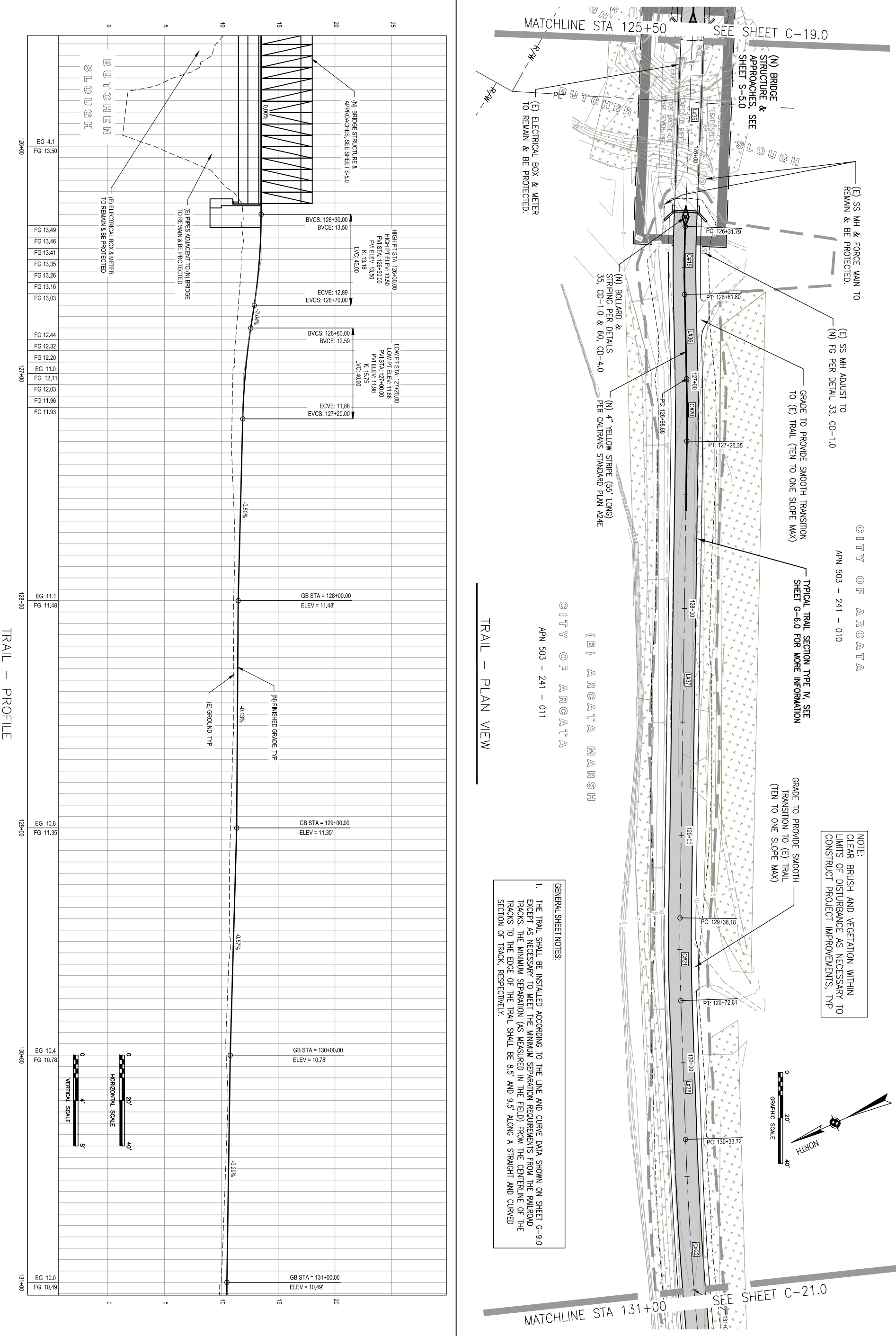
SHEET 28 OF 52



NOTE:
CLEAR BRUSH AND VEGETATION WITHIN LIMITS OF DISTURBANCE AS NECESSARY TO CONSTRUCT PROJECT IMPROVEMENTS, TYP

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TRAIL – PLAN VIEW

TRAIL – PROFILE

SHEET 29 OF 52	C-20.0	PROJ NO: 8411982
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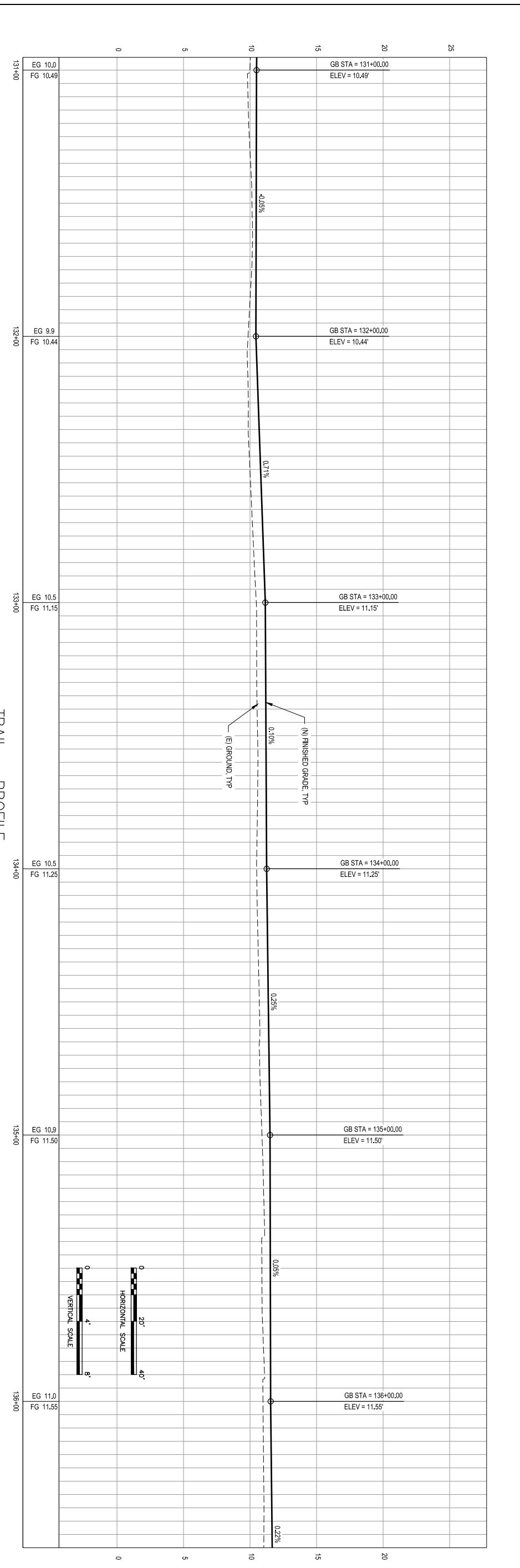

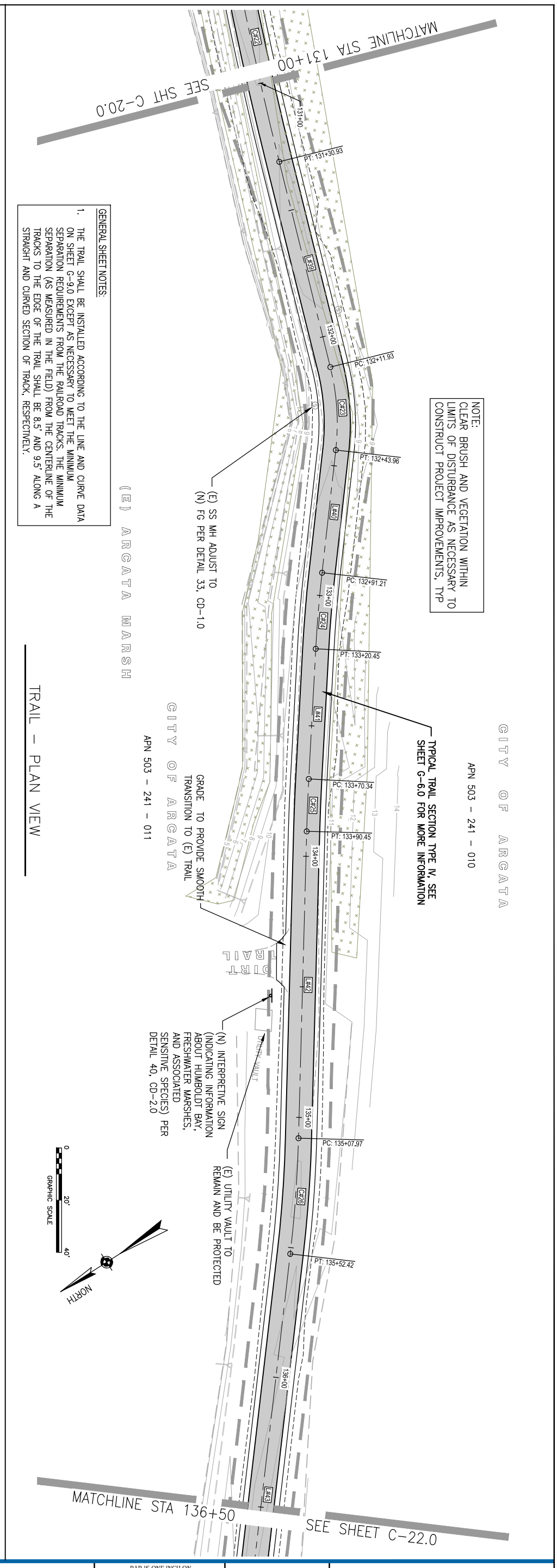

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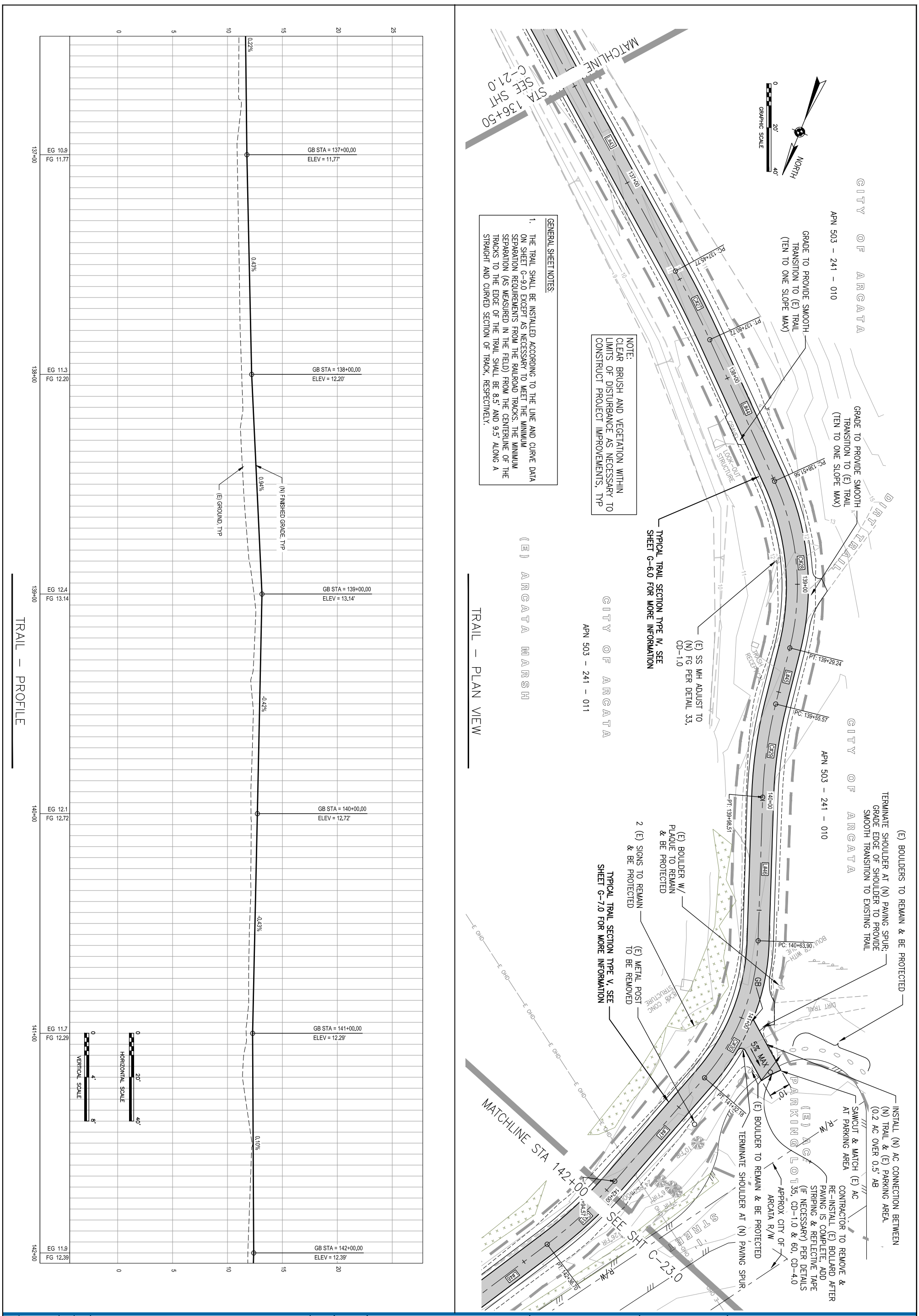

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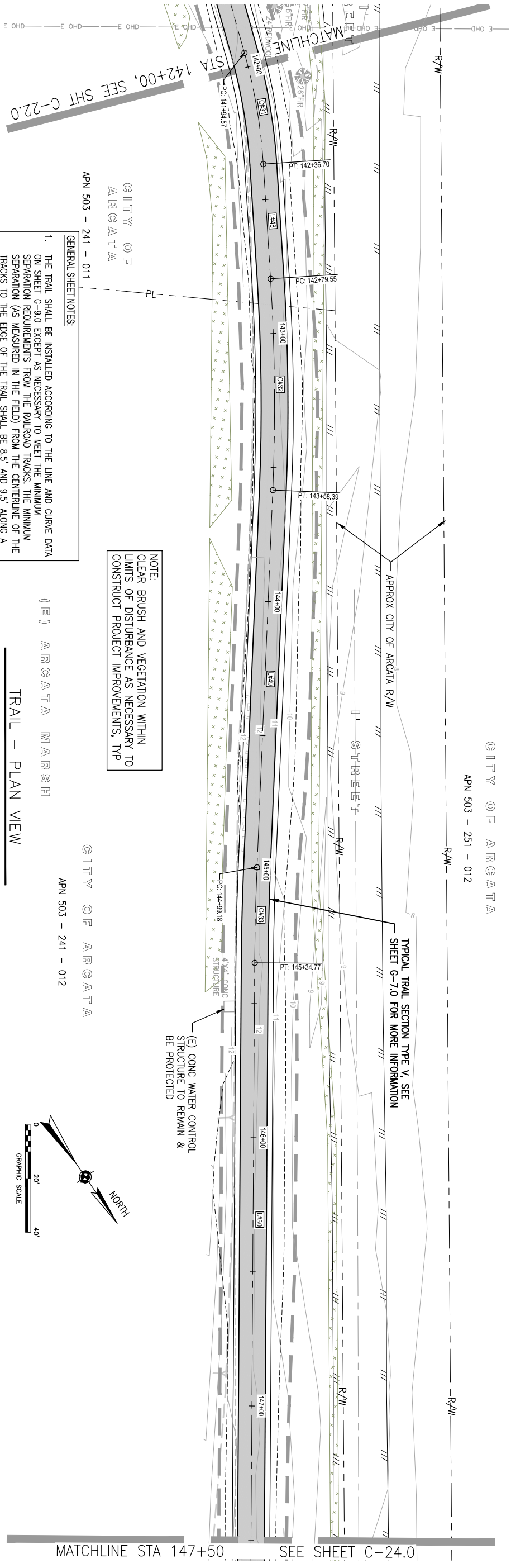
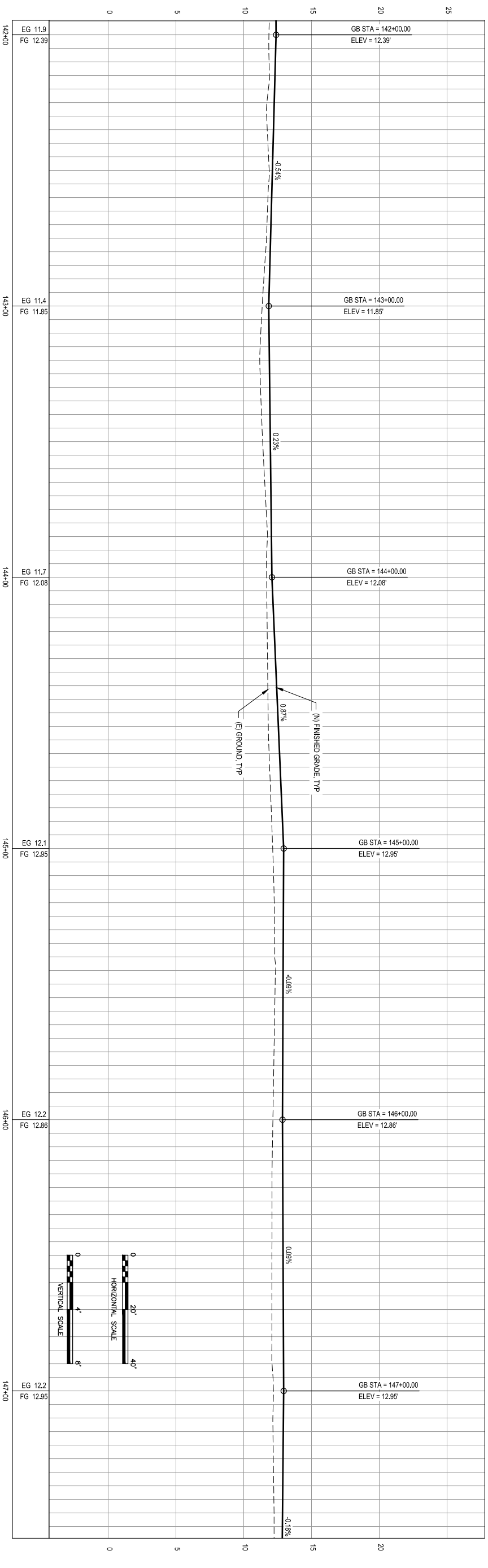
CHKD: JW

C-22.0

SHEET 31 OF 52





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HUMBOLDT BAY TRAIL NORTH

CIVIL
PLAN & PROFILE
STA 142+00 TO STA 147+50

C-23.0

SHEET 32 OF 52

DRWN: OFG CHKD: JW

PROJ NO: 8411982

MARK	DATE	DESCRIPTION
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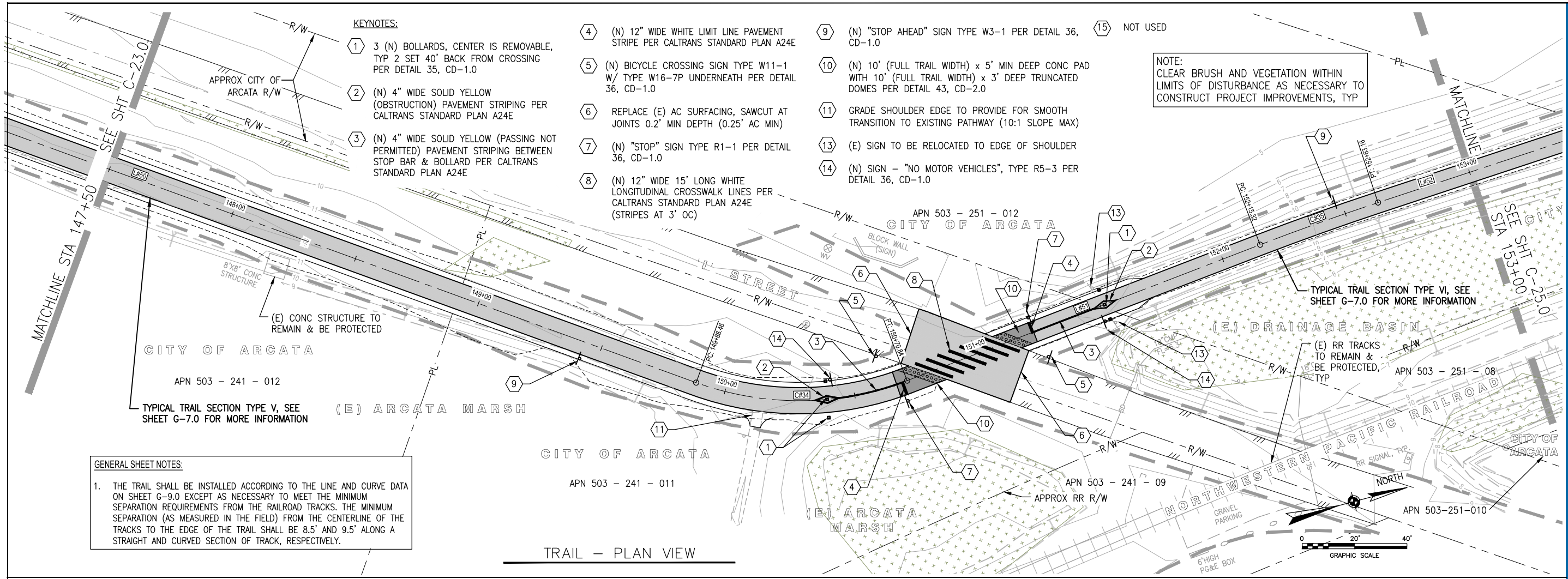
KEYNOTES:

1. 3 (N) BOLLARDS, CENTER IS REMOVABLE, TYP 2 SET 40' BACK FROM CROSSING PER DETAIL 35, CD-1.0
2. (N) 4" WIDE SOLID YELLOW (OBSTRUCTION) PAVEMENT STRIPING PER CALTRANS STANDARD PLAN A24E
3. (N) 4" WIDE SOLID YELLOW (PASSING NOT PERMITTED) PAVEMENT STRIPING BETWEEN STOP BAR & BOLLARD PER CALTRANS STANDARD PLAN A24E
4. (N) 12" WIDE WHITE LIMIT LINE PAVEMENT STRIPE PER CALTRANS STANDARD PLAN A24E
5. (N) BICYCLE CROSSING SIGN TYPE W11-1 W/ TYPE W16-7P UNDERNEATH PER DETAIL 36, CD-1.0
6. REPLACE (E) AC SURFACING, SAWCUT AT JOINTS 0.2' MIN DEPTH (0.25' AC MIN)
7. (N) "STOP" SIGN TYPE R1-1 PER DETAIL 36, CD-1.0
8. (N) 12" WIDE 15' LONG WHITE LONGITUDINAL CROSSWALK LINES PER CALTRANS STANDARD PLAN A24E (STRIPES AT 3' OC)
9. (N) "STOP AHEAD" SIGN TYPE W3-1 PER DETAIL 36, CD-1.0
10. (N) 10' (FULL TRAIL WIDTH) x 5' MIN DEEP CONC PAD WITH 10' (FULL TRAIL WIDTH) x 3' DEEP TRUNCATED DOMES PER DETAIL 43, CD-2.0
11. GRADE SHOULDER EDGE TO PROVIDE FOR SMOOTH TRANSITION TO EXISTING PATHWAY (10:1 SLOPE MAX)
13. (E) SIGN TO BE RELOCATED TO EDGE OF SHOULDER
14. (N) SIGN – "NO MOTOR VEHICLES", TYPE R5-3 PER DETAIL 36, CD-1.0
15. NOT USED

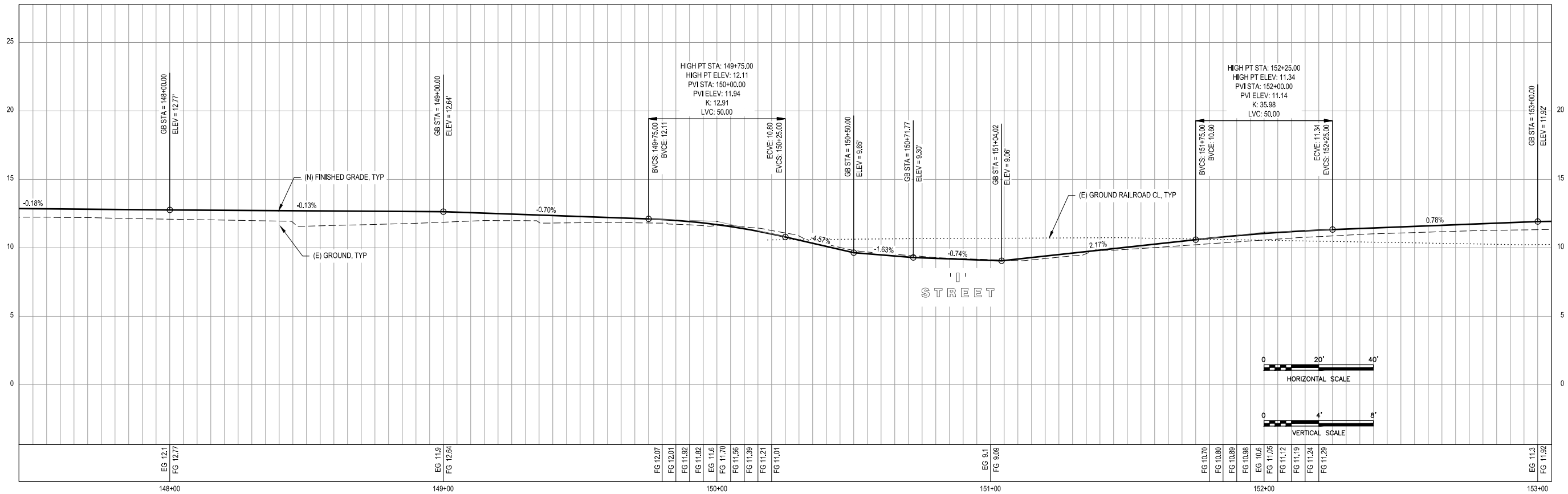
NOTE:
CLEAR BRUSH AND VEGETATION WITHIN LIMITS OF DISTURBANCE AS NECESSARY TO CONSTRUCT PROJECT IMPROVEMENTS, TYP

GENERAL SHEET NOTES:

1. THE TRAIL SHALL BE INSTALLED ACCORDING TO THE LINE AND CURVE DATA ON SHEET G-9.0 EXCEPT AS NECESSARY TO MEET THE MINIMUM SEPARATION REQUIREMENTS FROM THE RAILROAD TRACKS. THE MINIMUM SEPARATION (AS MEASURED IN THE FIELD) FROM THE CENTERLINE OF THE TRACKS TO THE EDGE OF THE TRAIL SHALL BE 8.5' AND 9.5' ALONG A STRAIGHT AND CURVED SECTION OF TRACK, RESPECTIVELY.



TRAIL – PLAN VIEW



TRAIL – PROFILE

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718 Third Street Eureka California 95501 USA
T 1 707 443 8326 F 1 707 444 8330
W www.ghd.com

REGISTERED PROFESSIONAL ENGINEER JOSEPH A. WOLF No. C70358 CIVIL STATE OF CALIFORNIA

BAR IS ONE INCH ON ORIGINAL DRAWING 0 1"

ISSUE	DESCRIPTION	DATE	MARK

CITY OF ARCATA
HUMBOLDT BAY TRAIL NORTH

CIVIL
PLAN & PROFILE
STA 147+50 TO STA 153+00

PROJ NO: 8411982
DRWN: OFG CHKD: JW

C-24.0

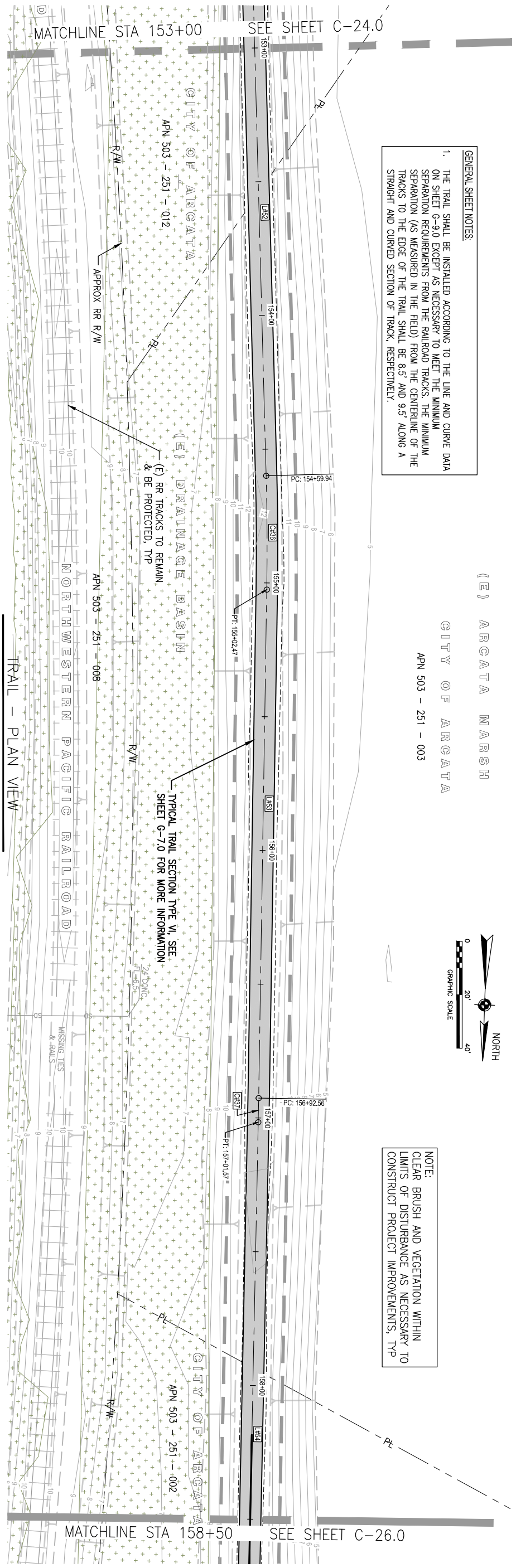
SHEET 33 OF 52

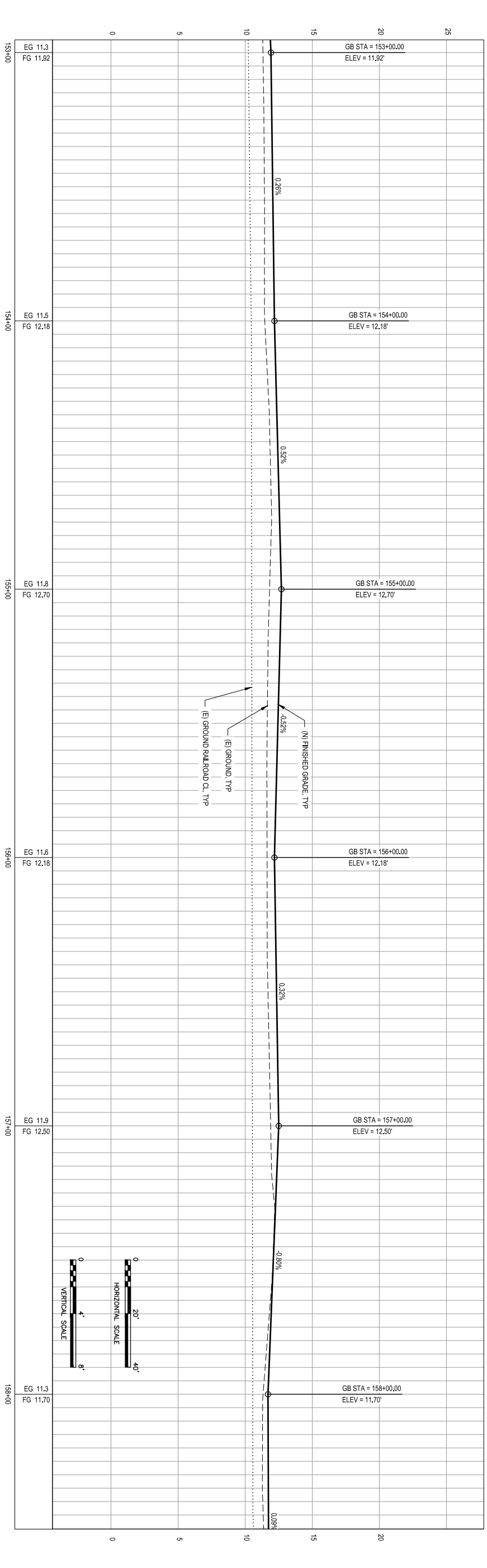
29 of 45

Plot Date: 1 February 2016 - 5:00 PM Plotted By: Owen Goode
Cad File No: \\ghdnet\ghd\US\Eureka\Projects\84\11982\06-CAD\Sheets\8411982_27-36_PPs.dwg

GENERAL SHEET NOTES:

1. THE TRAIL SHALL BE INSTALLED ACCORDING TO THE LINE AND CURVE DATA ON SHEET G-9.0 EXCEPT AS NECESSARY TO MEET THE MINIMUM SEPARATION REQUIREMENTS FROM THE RAILROAD TRACKS. THE MINIMUM SEPARATION (AS MEASURED IN THE FIELD) FROM THE CENTERLINE OF THE TRACKS TO THE EDGE OF THE TRAIL SHALL BE 8.5' AND 9.5' ALONG A STRAIGHT AND CURVED SECTION OF TRACK, RESPECTIVELY.





Plot Date: 1 February 2016 - 5:01 PM Plotted By: Owen Goode Cad File No: \\ghdnet\ghd\US\Eureka\Projects\84\11982\06-CAD\Sheets\84111982_27-36_PPs.dwg

SHEET 34 OF 52	C-25.0
DRWN: OFG / CHKD: JW	PROJ NO: 8411982

CITY OF ARCATA
HUMBOLDT BAY TRAIL NORTH

CIVIL
PLAN & PROFILE
STA 153+00 TO STA 158+50

MARK	DATE	DESCRIPTION
		ISSUED

BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"

REGISTERED PROFESSIONAL ENGINEER
JOSHUA A. WOLF
No. C70358
CIVIL
STATE OF CALIFORNIA

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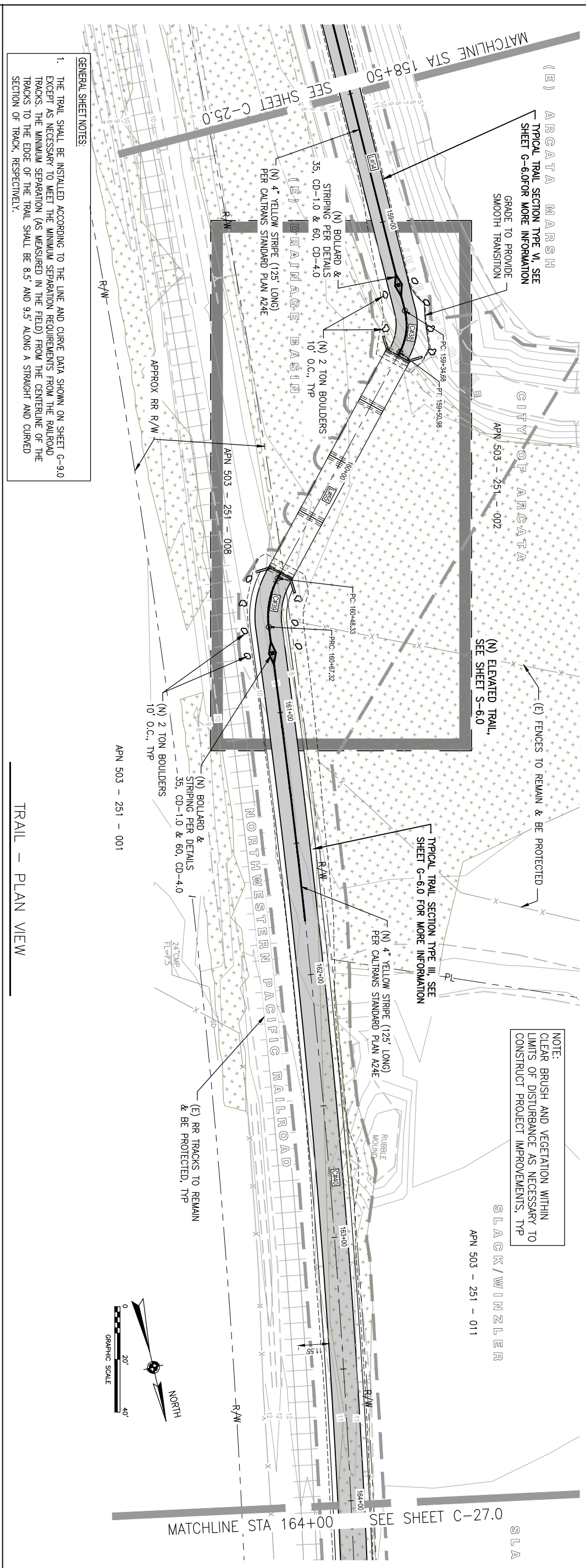
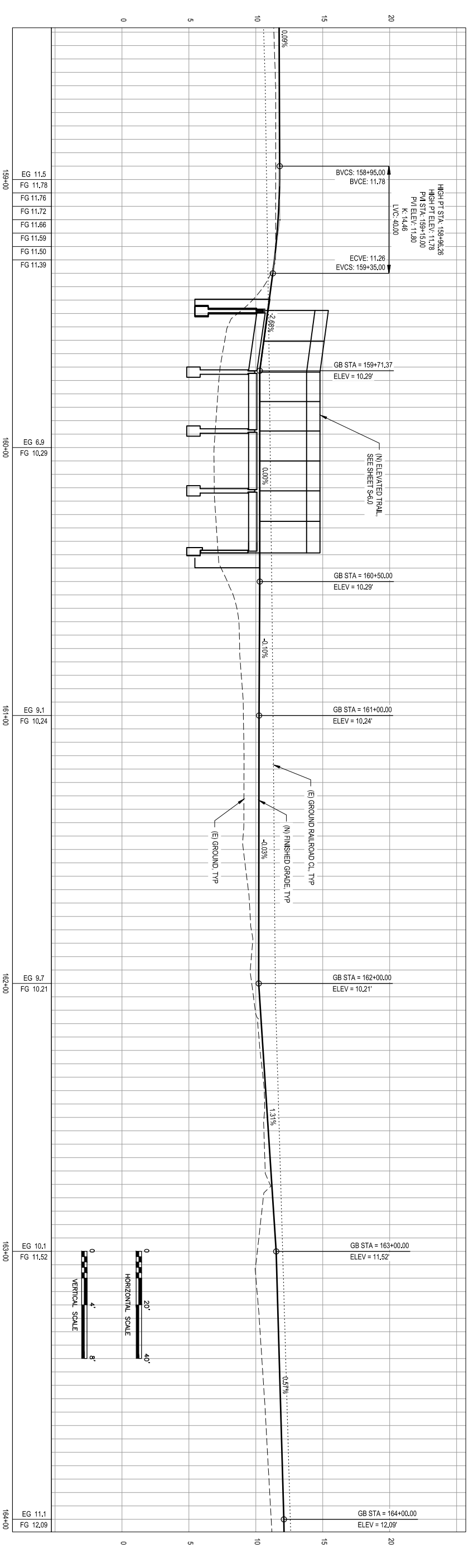
W www.ghd.com

GENERAL SHEET NOTES:

1. THE TRAIL SHALL BE INSTALLED ACCORDING TO THE LINE AND CURVE DATA SHOWN ON SHEET G-9.0 EXCEPT AS NECESSARY TO MEET THE MINIMUM SEPARATION REQUIREMENTS FROM THE RAILROAD TRACKS. THE MINIMUM SEPARATION (AS MEASURED IN THE FIELD) FROM THE CENTERLINE OF THE TRACKS TO THE EDGE OF THE TRAIL SHALL BE 8.5' AND 9.5' ALONG A STRAIGHT AND CURVED SECTION OF TRACK, RESPECTIVELY.



TRAIL – PLAN VIEW



TRAIL – PROFILE

SHEET 35 OF 52	C-26.0	PROJ NO: 8411982 DRWN: OFG CHKD: JW

CITY OF ARCATA
HUMBOLDT BAY TRAIL NORTH

CIVIL
PLAN & PROFILE
STA 158+50 TO STA 164+00

MARK	DATE	DESCRIPTION
		ISSUED

BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"

REGISTERED PROFESSIONAL ENGINEER
JOSHUA A. WOLF
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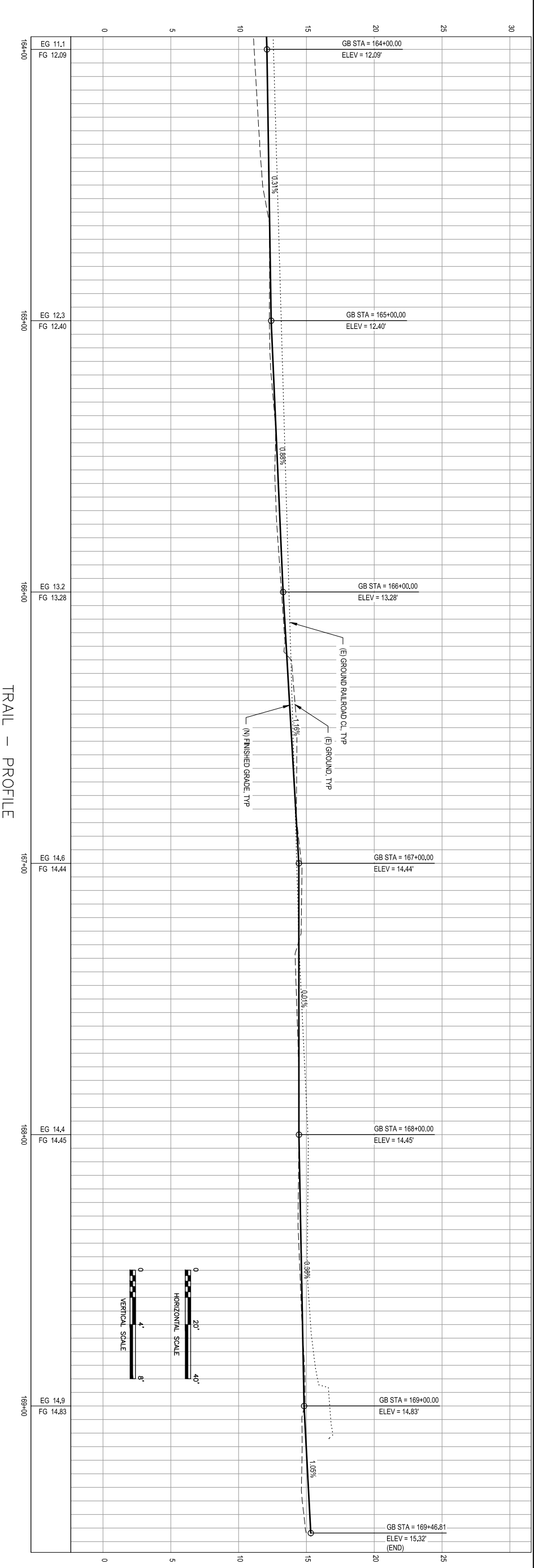
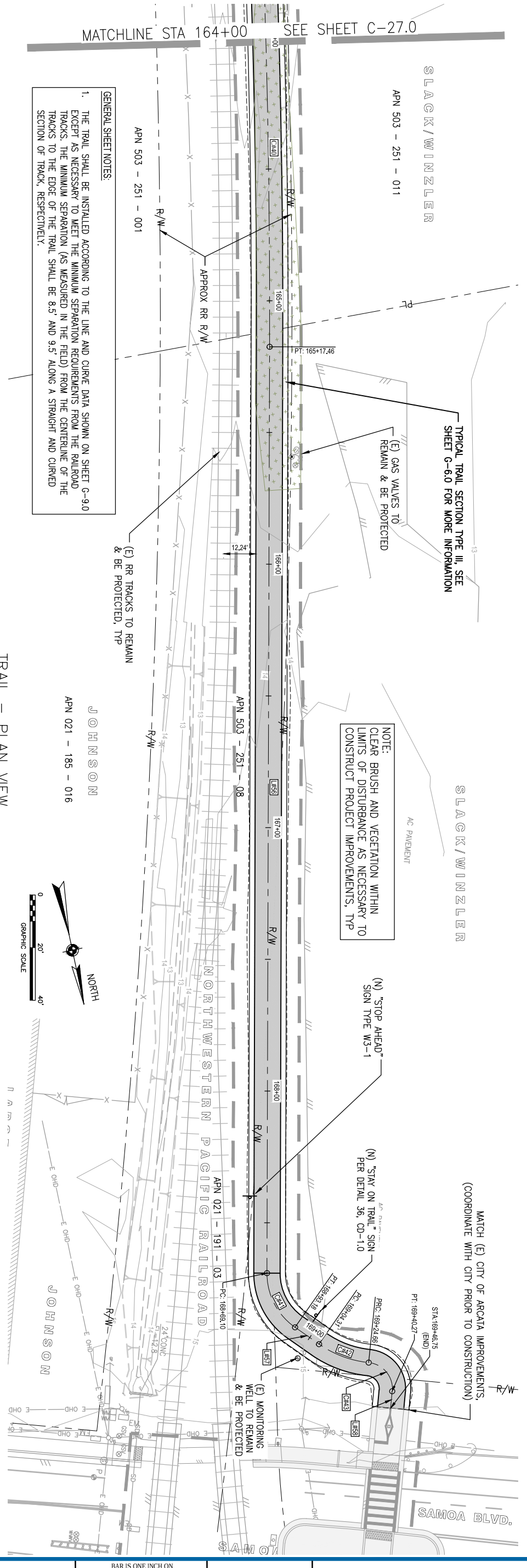


TRAIL – PROFILE



TRAIL – PLAN VIEW

CITY OF ARCATA
HUMBOLDT BAY TRAIL NORTH

CIVIL
PLAN & PROFILE
STA 164+00 TO STA 169+50

MARK	DATE	DESCRIPTION
		ISSUED

BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"

REGISTERED PROFESSIONAL ENGINEER JOSHUA A. WOLF No. C70358 CIVIL STATE OF CALIFORNIA

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PROJ NO: 8411982
DRWN: OFG
CHKD: JW

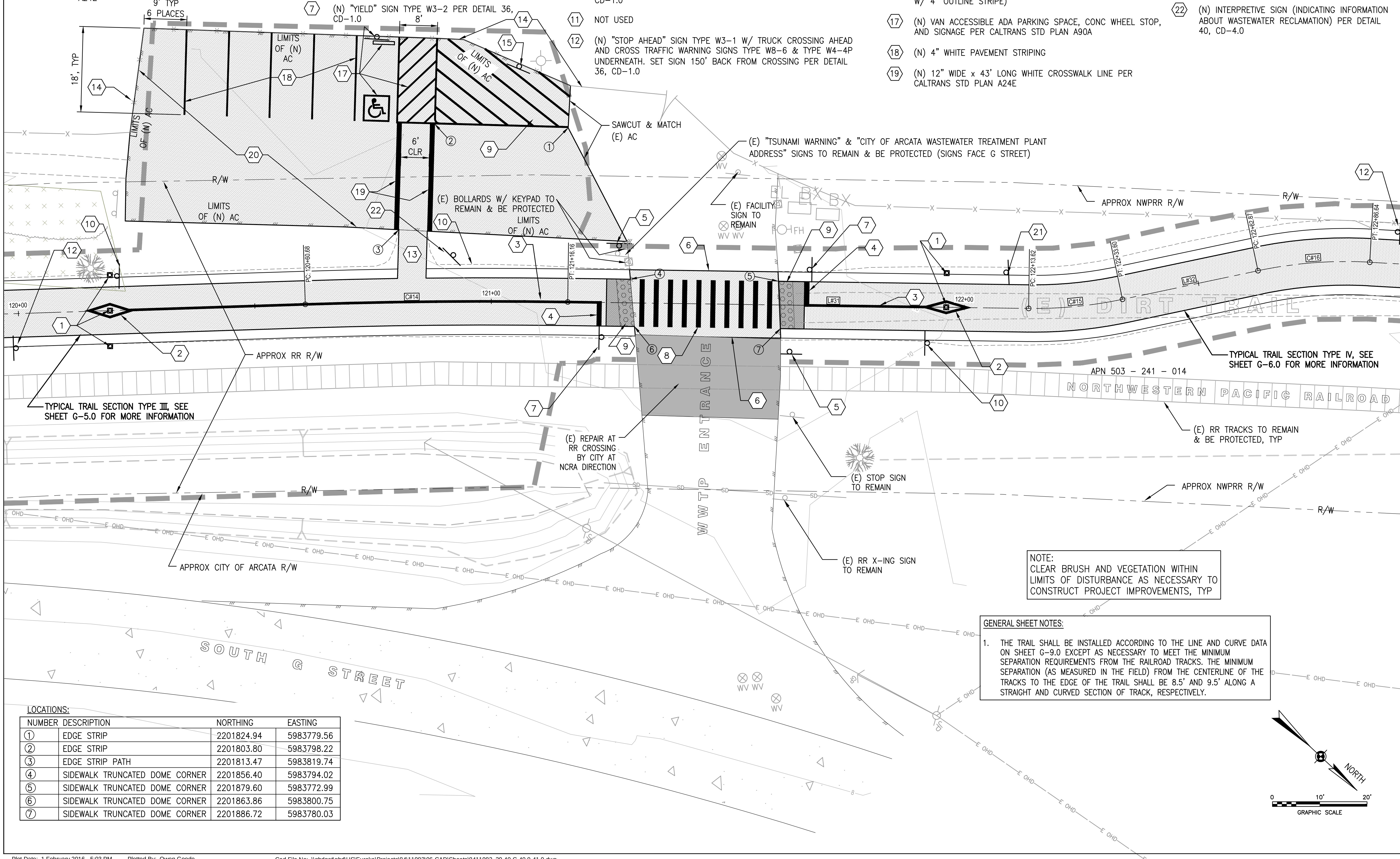
C-27.0

SHEET 36 OF 52

Plot Date: 1 February 2016 - 5:02 PM Plotted By: Owen Goode
Cad File No: \\ghdnet\ghd\US\Eureka\Projects\8411982\06-CAD\Sheets\8411982_37-38_PPs.dwg

KEYNOTES:

1. (N) BOLLARD, CENTER IS REMOVABLE, TYP 2 SET 40' BACK FROM CROSSING PER DETAIL 35, CD-1.0
2. (N) 4" WIDE SOLID YELLOW (OBSTRUCTION) PAVEMENT STRIPING PER DETAIL 60, CD-4.0
3. (N) 4" WIDE SOLID YELLOW (PASSING NOT PERMITTED) PAVEMENT STRIPING BETWEEN STOP BAR & BOLLARD PER CALTRANS STANDARD PLAN A24E
4. (N) 12" WIDE WHITE LIMIT LINE PAVEMENT STRIPE PER CALTRANS STANDARD PLAN A24E
5. (N) BICYCLE CROSSING SIGN TYPE W11-1 W/ TYPE W16-7P UNDERNEATH PER DETAIL 36, CD-1.0
6. REPLACE (E) AC SURFACING, SAWCUT AT JOINTS, 0.2' MIN DEPTH (0.25' MIN AC)
7. (N) "YIELD" SIGN TYPE W3-2 PER DETAIL 36, CD-1.0
8. (N) 12" WIDE 10' WHITE LONGITUDINAL CROSSWALK LINE PER CALTRANS STANDARD PLAN A24E (STRIPES AT 3' OC)
9. (N) 10' (FULL TRAIL WIDTH) x 5' MIN DEEP CONC PAD W/ 10' (FULL TRAIL WIDTH) x 3' DEEP TRUNCATED DOMES PER DETAIL 43, CD-2.0
10. (N) SIGN - "NO MOTOR VEHICLES", TYPE R5-3 PER DETAIL 36, CD-1.0
11. NOT USED
12. (N) "STOP AHEAD" SIGN TYPE W3-1 W/ TRUCK CROSSING AHEAD AND CROSS TRAFFIC WARNING SIGNS TYPE W8-6 & TYPE W4-4P UNDERNEATH. SET SIGN 150' BACK FROM CROSSING PER DETAIL 36, CD-1.0
13. (N) 6' WIDE AC PATH CONNECTION TO (N) TRAIL (0.2' AC OVER 0.5' AB)
14. (E) FENCE & GATE TO REMAIN & BE PROTECTED
15. (N) "NO PARKING" SIGN TYPE R8-3 PER DETAIL, 36, CD-1.0
16. (N) 4" DIAGONAL RED PAVEMENT STRIPING (STRIPES AT 3' OC W/ 4" OUTLINE STRIPE)
17. (N) VAN ACCESSIBLE ADA PARKING SPACE, CONC WHEEL STOP, AND SIGNAGE PER CALTRANS STD PLAN A90A
18. (N) 4" WHITE PAVEMENT STRIPING
19. (N) 12" WIDE x 43' LONG WHITE CROSSWALK LINE PER CALTRANS STD PLAN A24E
20. REMOVE (E) AC WITHIN LIMITS SHOWN & REPLACE WITH (N) AC WITH 2% MAX SLOPE IN ANY DIRECTION (0.25' MIN AC)
21. (N) WAY-FINDING SIGN (INDICATING DISTANCE AND DIRECTION TO ARCATA DOWNTOWN, ARCATA MARSH, AND PACIFIC COAST PER DETAIL 36, CD-1.0
22. (N) INTERPRETIVE SIGN (INDICATING INFORMATION ABOUT WASTEWATER RECLAMATION) PER DETAIL 40, CD-4.0



NOTE:
CLEAR BRUSH AND VEGETATION WITHIN LIMITS OF DISTURBANCE AS NECESSARY TO CONSTRUCT PROJECT IMPROVEMENTS, TYP

GENERAL SHEET NOTES:

1. THE TRAIL SHALL BE INSTALLED ACCORDING TO THE LINE AND CURVE DATA ON SHEET G-9.0 EXCEPT AS NECESSARY TO MEET THE MINIMUM SEPARATION REQUIREMENTS FROM THE RAILROAD TRACKS. THE MINIMUM SEPARATION (AS MEASURED IN THE FIELD) FROM THE CENTERLINE OF THE TRACKS TO THE EDGE OF THE TRAIL SHALL BE 8.5' AND 9.5' ALONG A STRAIGHT AND CURVED SECTION OF TRACK, RESPECTIVELY.

LOCATIONS:

NUMBER	DESCRIPTION	NORTHING	EASTING
1	EDGE STRIP	2201824.94	5983779.56
2	EDGE STRIP	2201803.80	5983798.22
3	EDGE STRIP PATH	2201813.47	5983819.74
4	SIDEWALK TRUNCATED DOME CORNER	2201856.40	5983794.02
5	SIDEWALK TRUNCATED DOME CORNER	2201879.60	5983772.99
6	SIDEWALK TRUNCATED DOME CORNER	2201863.86	5983800.75
7	SIDEWALK TRUNCATED DOME CORNER	2201886.72	5983780.03

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REGISTERED PROFESSIONAL ENGINEER
JOSHUA A. WOLF
No. C70358
CIVIL
STATE OF CALIFORNIA

BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"

MARK	DATE	DESCRIPTION

ISSUE

CITY OF ARCATA
HUMBOLDT BAY TRAIL NORTH

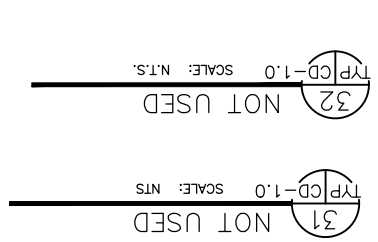
CIVIL
INTERSECTION LAYOUT
WWTP ENTRANCE

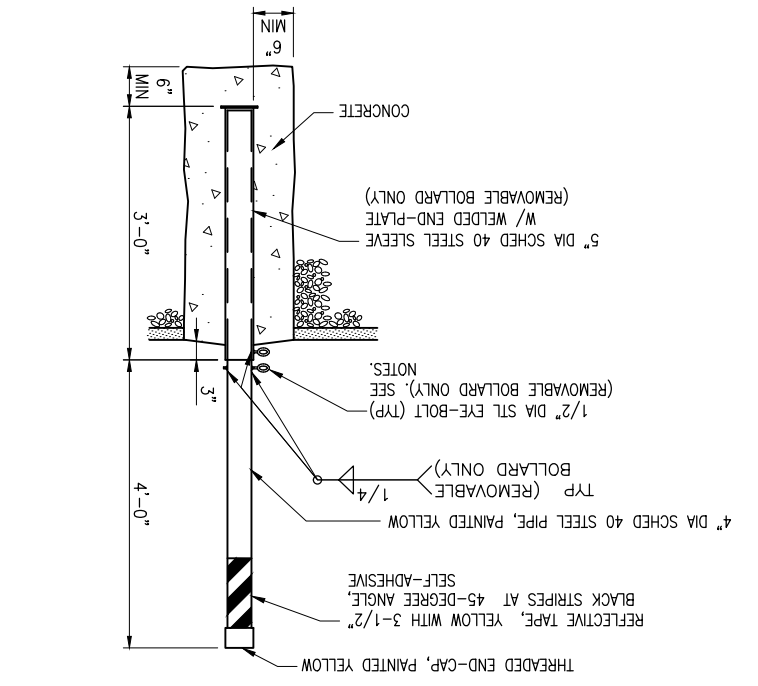
PROJ NO: 8411982
DRWN: OFG CHKD: JW

C-28.0

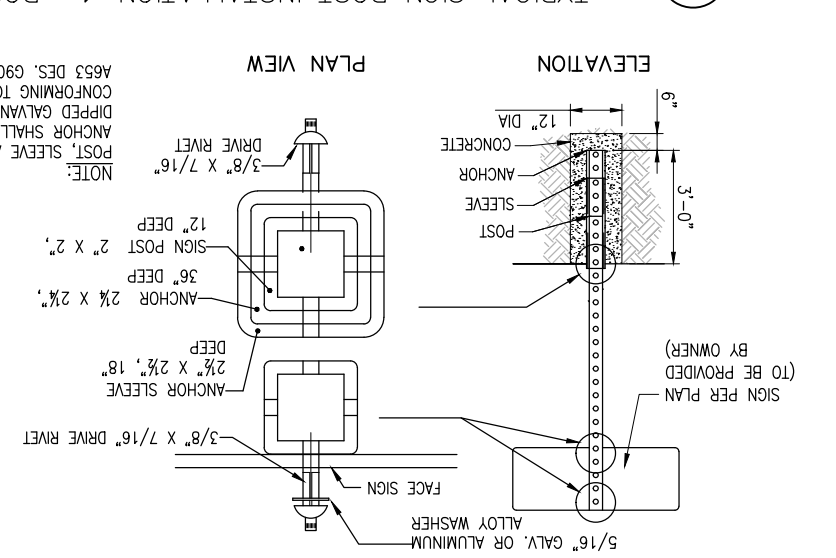
SHEET 37 OF 52

Plot Date: 1 February 2016 - 5:06 PM Plotted By: Owen Goode Cad File No: \\humboldtgfdi\USEureka\Projects\84\1198210\6-CAD\Sheets\841198210-41-CD-1.0.dwg

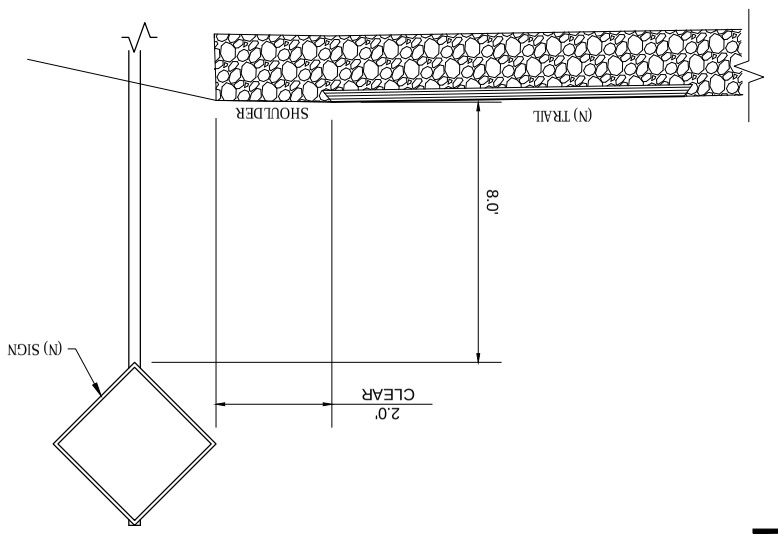


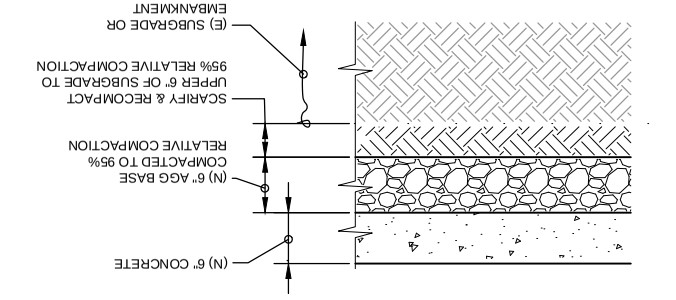


35 TYPICAL BOLLARD DETAIL
TYP. CD-1.0 SCALE: N.T.S.

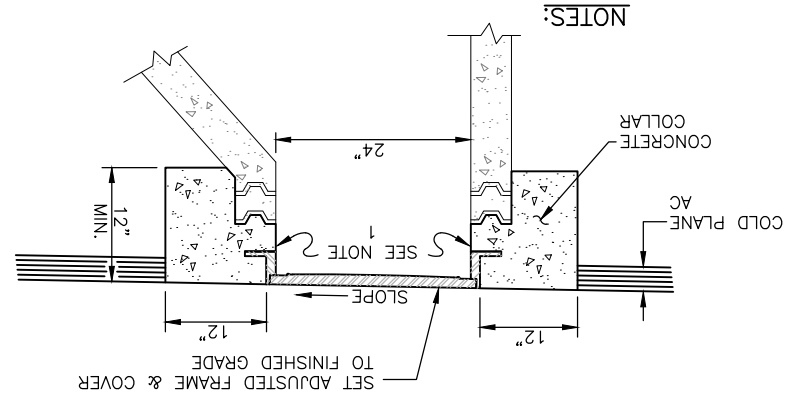


36 TYPICAL SIGN POST INSTALLATION, 1- POST DETAIL
TYP. CD-1.0 SCALE: NTS

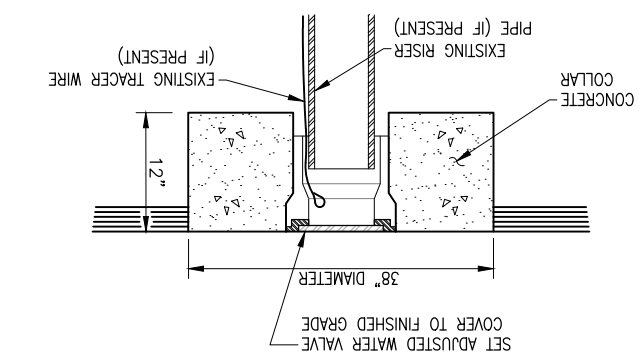




30 TYPICAL CONCRETE PAVEMENT DETAILS
TYP. CD-1.0 SCALE: N.T.S.



33 TYPICAL ADJUST MANHOLE TO GRADE DETAIL
TYP. CD-1.0 SCALE: NTS



34 TYPICAL ADJUST WATER VALVE COVER TO GRADE DETAIL
TYP. CD-1.0 SCALE: NTS

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MARK	DATE	DESCRIPTION

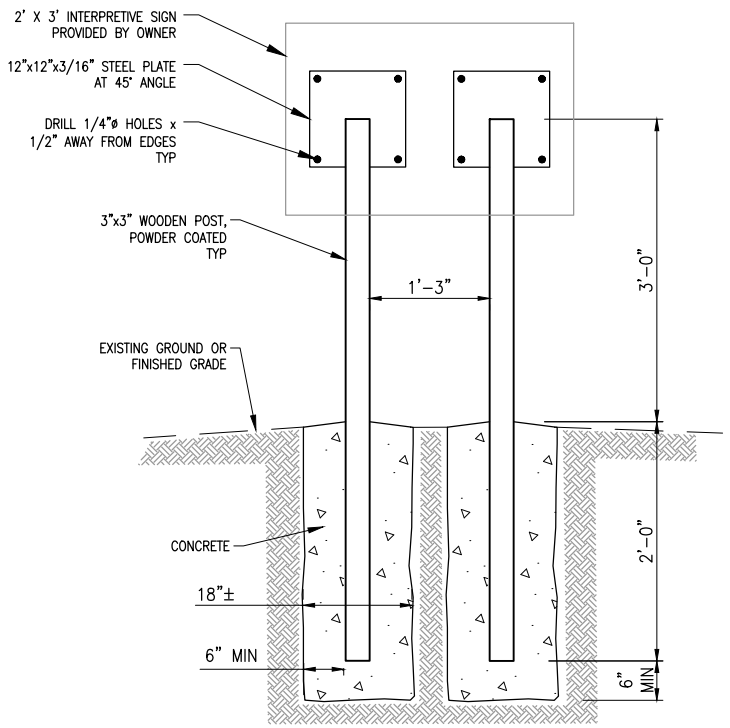
CITY OF ARCATA
HUMBOLDT BAY TRAIL NORTH
CIVIL DETAILS
STANDARD DETAILS - 1

PROJ NO. 8411982
DRWN: OFG CHKD: JW

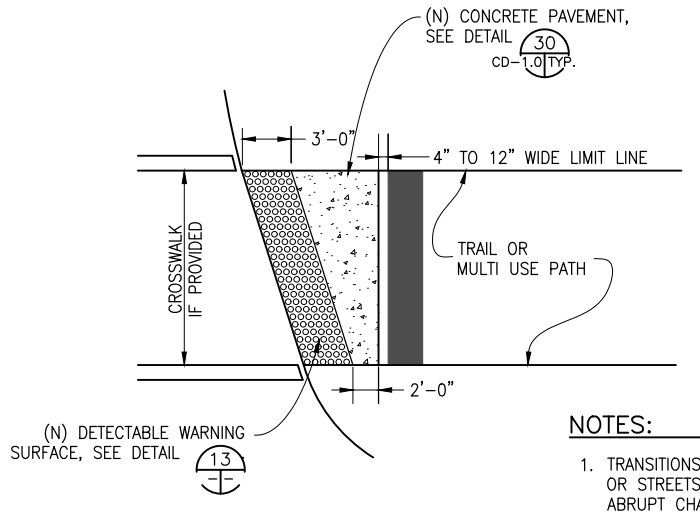
CD-1.0

SHEET 40 OF 52

41 of 45



40 TYP. CD-2.0 INTERPERATIVE SIGN DETAIL
SCALE: NTS



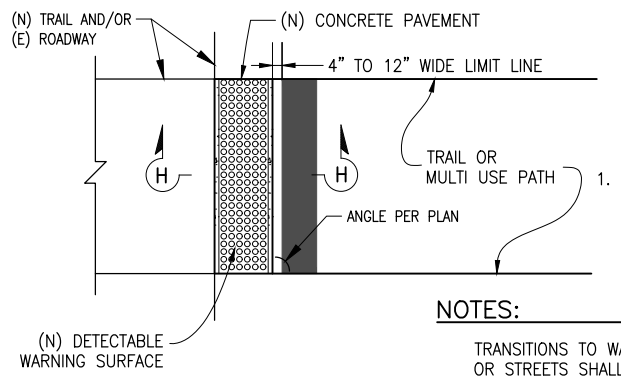
NOTES:

1. TRANSITIONS TO WALKS, GUTTERS, OR STREETS SHALL BE FREE OF ABRUPT CHANGES.

42 TYP. CD-2.0 VEHICULAR AREA CROSSING DETAIL
SCALE: N.T.S.

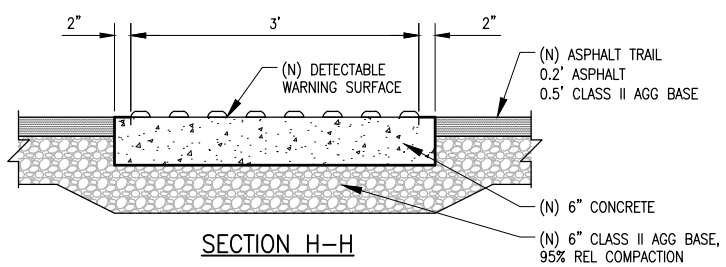
NOTES:

1. CURB RAMPS SHALL BE OUTLINED, AS SHOWN ON THE RAMP DETAILS, WITH A 1'-0" WIDE BORDER WITH 1/4" GROOVES APPROXIMATELY 3/4" ON CENTER.
2. CURB RAMPS SHALL HAVE A DETECTABLE WARNING SURFACE THAT EXTENDS THE FULL WIDTH AND 3'-0" DEPTH OF RAMP. SEE RAMP DETAILS ON THIS SHEET FOR DETECTABLE WARNING TRUNCATED DOME LAYOUT.
3. THE EDGE OF THE DETECTABLE WARNING SHALL BETWEEN 6" AND 8" AWAY FROM THE STREET GUTTER FLOWLINE.
4. DETECTABLE WARNING SHALL BE A PREFORMED MATERIAL AS APPROVED BY THE ENGINEER. THE DETECTABLE WARNING SHALL BE CAST-IN-PLACE, NOT SURFACE APPLIED UNLESS PERMITTED OTHERWISE BY PLANS. THE USE OF CONCRETE STAMPING IS NOT PERMITTED. NEW RAMPS SHALL BE CAST-IN-PLACE AND EXISTING RAMS SHALL BE SURFACE-APPLIED.



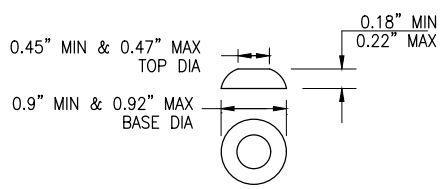
NOTES:

TRANSITIONS TO WALKS, GUTTERS, OR STREETS SHALL BE FREE OF ABRUPT CHANGES.



SECTION H-H

RAISED TRUNCATED DOME PATTERN (IN-LINE)
DETECTABLE WARNING SURFACE



RAISED TRUNCATED DOME

41 TYP. CD-2.0 NOT USED
SCALE: NTS

44 TYP. CD-2.0 NOT USED
SCALE: N.T.S.

43 TYP CD-2.0 DETECTABLE WARNING SURFACE - TYPICAL DETAILS
SCALE: NTS

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REGISTERED PROFESSIONAL ENGINEER JOSHUA A. WOLF No. C70358 CIVIL STATE OF CALIFORNIA

BAR IS ONE INCH ON ORIGINAL DRAWING 0 1"

MARK	DATE	DESCRIPTION
		ISSUE

CITY OF ARCATA
HUMBOLDT BAY TRAIL NORTH

CIVIL DETAILS
STANDARD DETAILS - 2

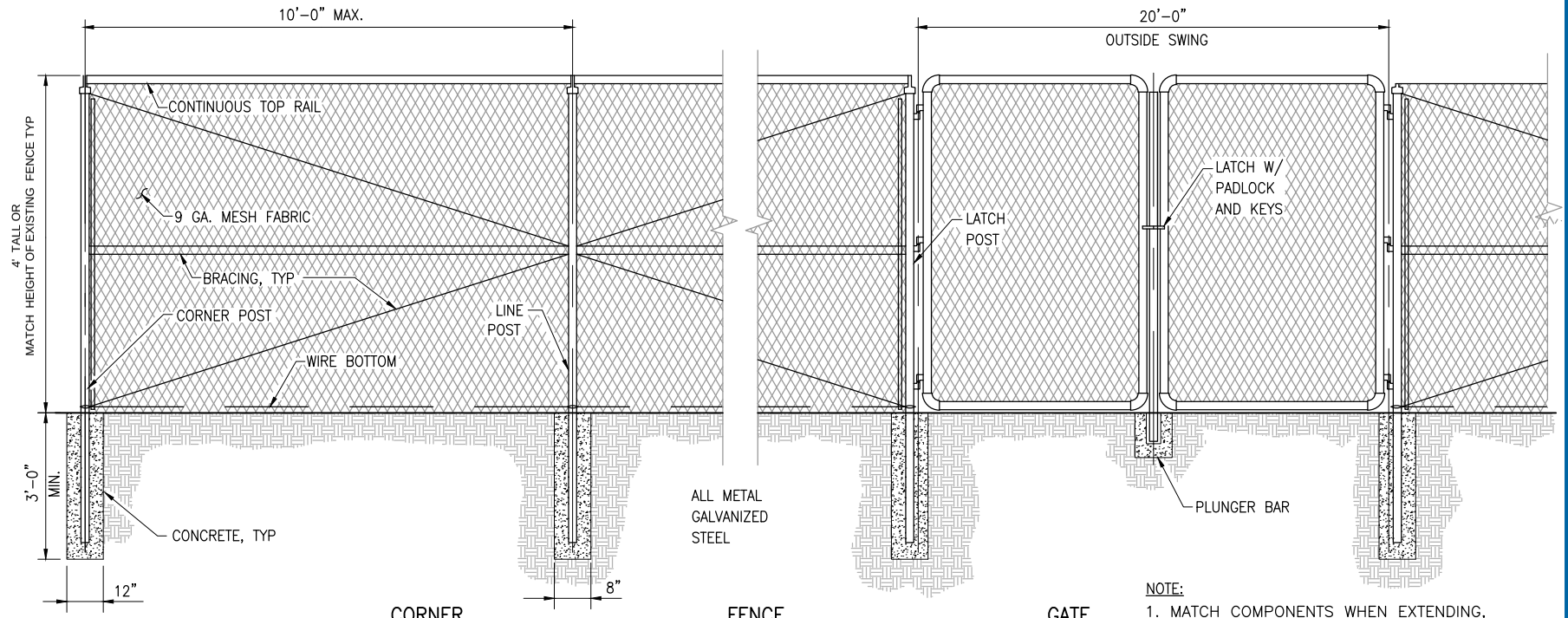
PROJ NO: 8411982
DRWN: OFG CHKD: JW

CD-2.0

SHEET 41 OF 52

35 of 45

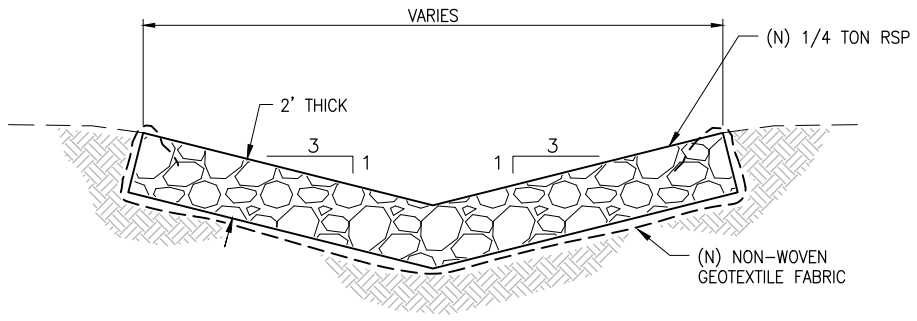
Plot Date: 1 February 2016 - 5:06 PM Plotted By: Owen Goode
Cad File No: \\ghdnet\ghd\US\Eureka\Projects\84\11982\06-CAD\Sheets\8411982_42-CD-2.0.dwg



CORNER FENCE GATE

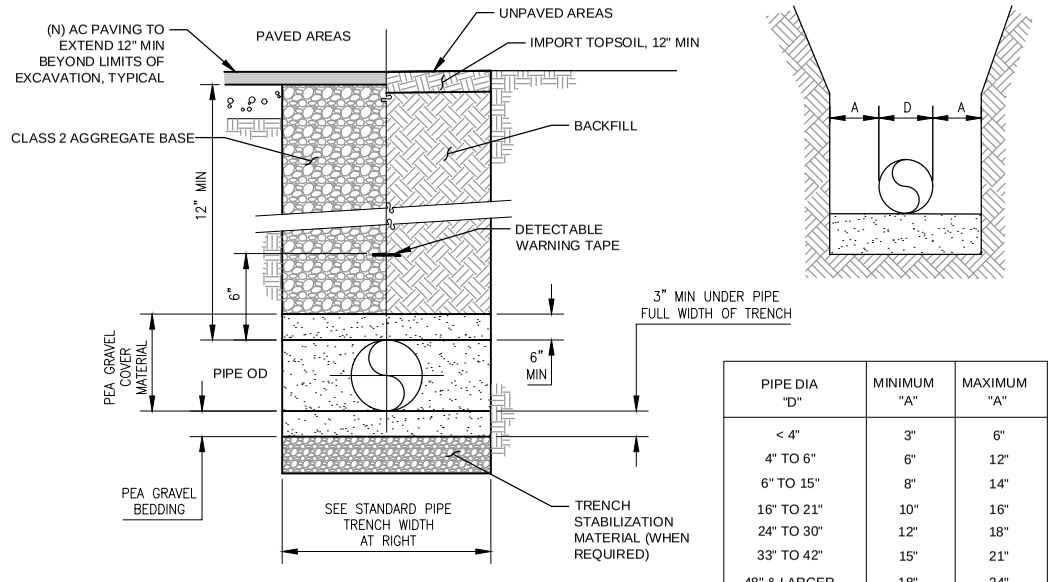
NOTE:
1. MATCH COMPONENTS WHEN EXTENDING, MODIFYING OR CONNECTING TO EXISTING (UNLESS OTHERWISE NOTED).

51 TYP. CD-3.0 TYPICAL CHAIN LINK FENCE AND GATE DETAIL
SCALE: N.T.S.



53 TYP. CD-3.0 TYPICAL ROCK LINED DITCH DETAIL
SCALE: NTS

52 TYP. CD-3.0 NOT USED
SCALE: NTS



PIPE DIA "D"	MINIMUM "A"	MAXIMUM "A"
< 4"	3"	6"
4" TO 6"	6"	12"
6" TO 15"	8"	14"
16" TO 21"	10"	16"
24" TO 30"	12"	18"
33" TO 42"	15"	21"
48" & LARGER	18"	24"

NOTES:
1. WIDER TRENCHES MAY REQUIRE HIGHER STRENGTH PIPE AND/OR SPECIAL BEDDING.
2. FOR MULTIPLE PIPE TRENCHES, SEPARATE PIPES BY 12". FOR CONDUITS IN PIPE TRENCH SEPARATE BY 6".
3. DIFFERING TRENCH WIDTHS REQUIRE PRIOR APPROVAL OF ENGINEER.
4. IN MAKING EXCAVATIONS FOR THIS PROJECT, THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR PROVIDING & INSTALLING ADEQUATE SHEETING, SHORING & BRACING AS MAY BE NECESSARY AS A PRECAUTION AGAINST SLIDES OR CAVE-INS, AND TO PROTECT ALL (E) IMPROVEMENTS OF ANY KIND, EITHER ON PUBLIC OR PRIVATE PROPERTY, FULLY FROM DAMAGE.
5. BEDDING AND COVER MATERIAL SHALL BE PEA GRAVEL. SATISFACTORY NATIVE BACKFILL MATERIAL MAY BE ACCEPTABLE FOR USE AS UTILITY TRENCH BACKFILL BELOW UNPAVED AREAS IF APPROVED BY THE ENGINEER PRIOR TO USE.
6. 2-SACK SLURRY BACKFILL MAY BE USED IN TRENCH WHEN MINIMUM PIPE COVER NOT POSSIBLE, WHEN APPROVED BY ENGINEER.
7. DETECTABLE WARNING TAPE SHALL BE BRIGHT COLORED, CONTINUOUSLY PRINTED, MINIMUM 6" WIDE BY 4 MIL. THICK, MANUFACTURED FOR DIRECT BURIAL.

54 TYP. CD-3.0 TYPICAL TRENCH DETAILS
SCALE: N.T.S.

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MARK	DATE	DESCRIPTION

CITY OF ARCATA
HUMBOLDT BAY TRAIL NORTH

CIVIL DETAILS
STANDARD DETAILS - 3

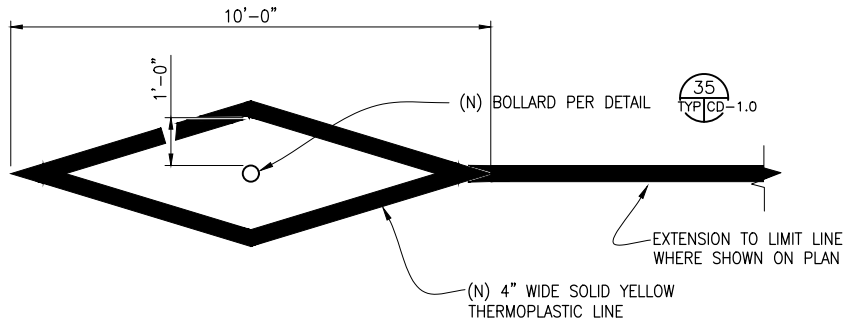
PROJ NO: 8411982
DRWN: OFG CHKD: JW

CD-3.0

SHEET 42 OF 52

36 of 45

Plot Date: 1 February 2016 - 5:06 PM Plotted By: Owen Goode
Cad File No: \\ghdnet\ghd\US\Eureka\Projects\84\11982\06-CAD\Sheets\8411982_43-CD-3.0.dwg

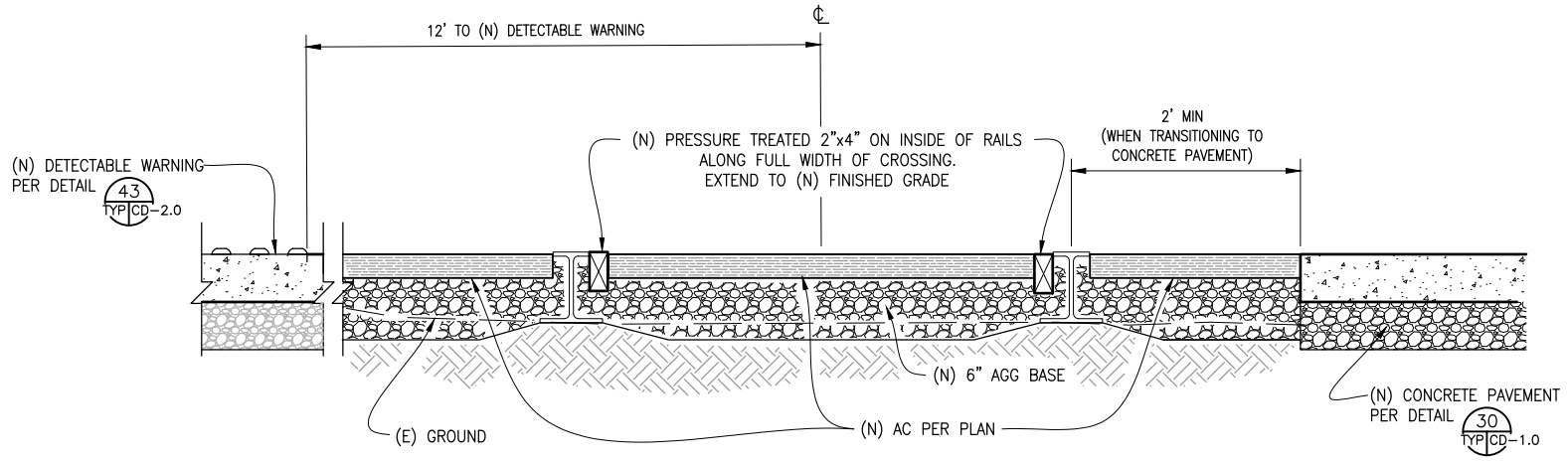


NOTES:

1 STRIPING SHOWN ABOVE IS CONSISTENT WITH THE CAMUTCD, SEE SHEET G-4.0, NOTE 14

60 TYP. CD-4.0 TYPICAL OBSTRUCTION STRIPING DETAIL

SCALE: NTS



61 TYP. CD-4.0 TYPICAL TRAIL/RAILROAD CROSSING DETAIL

SCALE: NTS

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REGISTERED PROFESSIONAL ENGINEER JOSHUA A. WOLF No. C70358 CIVIL STATE OF CALIFORNIA

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MARK	DATE	DESCRIPTION
		ISSUE

CITY OF ARCATA
HUMBOLDT BAY TRAIL NORTH

CIVIL DETAILS
STANDARD DETAILS - 4

PROJ NO: 8411982

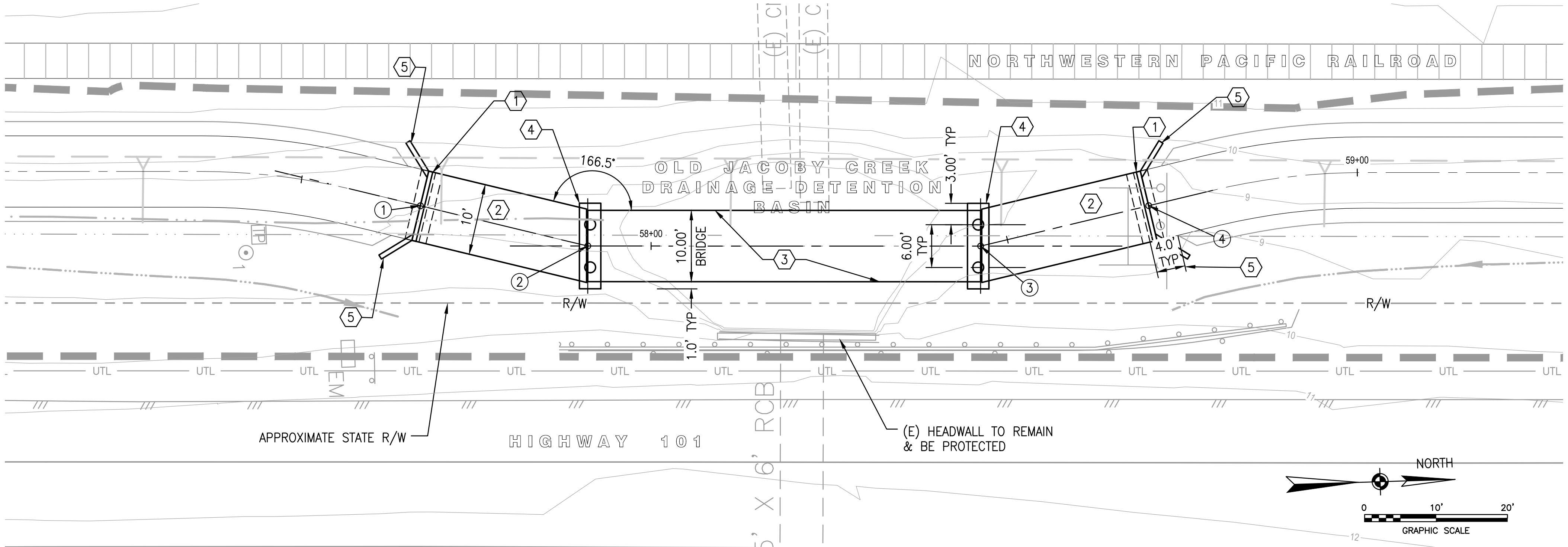
DRWN: OFG CHKD: JW

CD-4.0

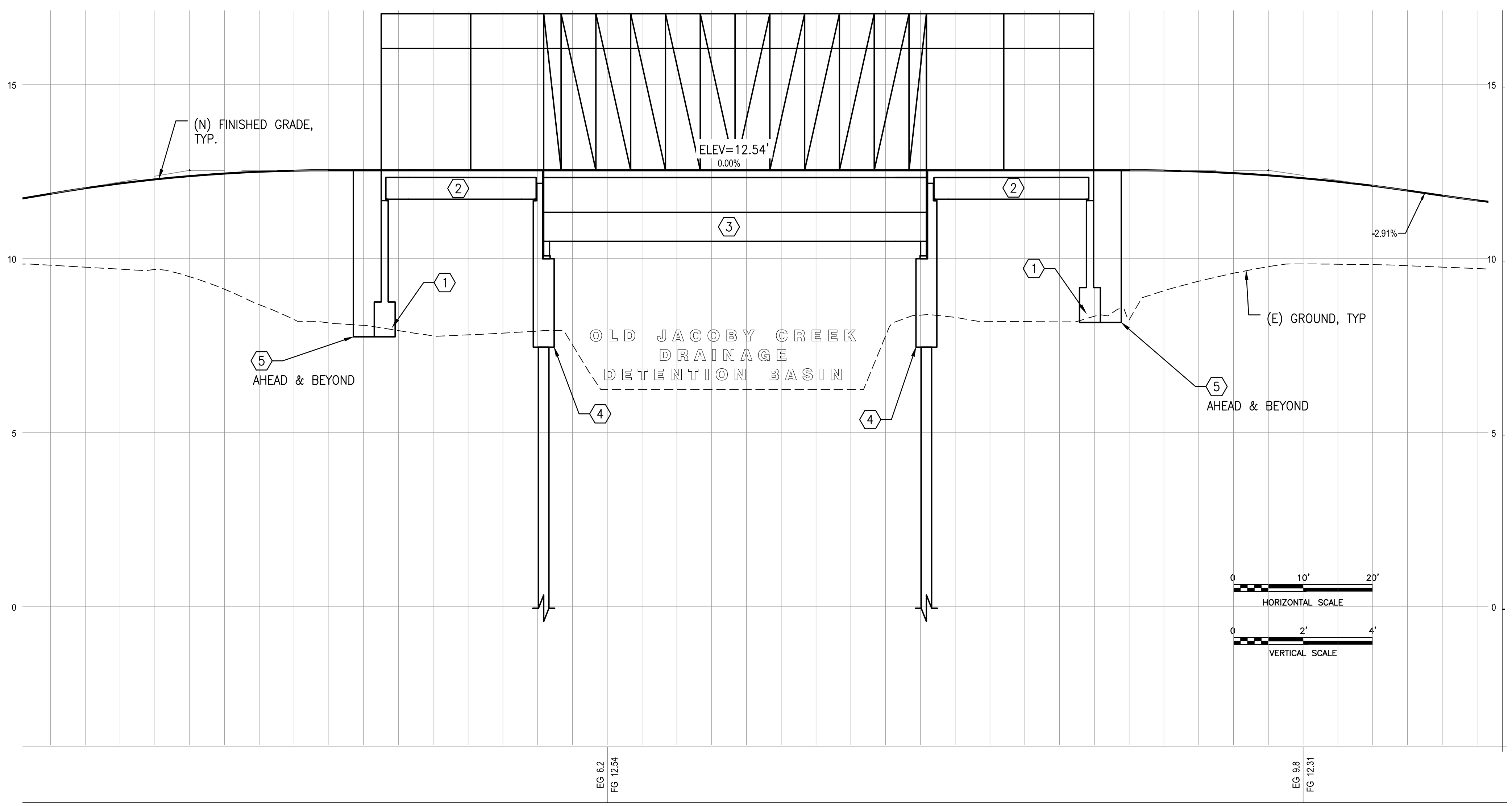
SHEET 43 OF 52

37 of 45

Plot Date: 1 February 2016 - 5:06 PM Plotted By: Owen Goode
Cad File No: \\ghdnet\ghd\US\Eureka\Projects\84\11982\06-CAD\Sheets\8411982_44-CD-4.0.dwg



BRIDGE SITE PLAN



BRIDGE PROFILE

NOTES:

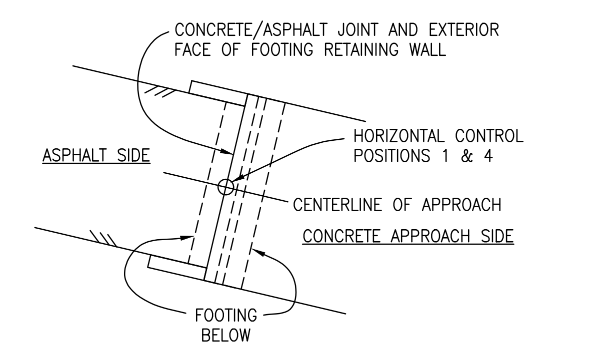
1. DIMENSIONS SHOWN ARE TYPICAL. APPROACH SPANS AND FOOTINGS ARE SYMMETRICAL ABOUT CENTER LINE OF TRAIL.
2. THE BRIDGE SOFFIT SHALL BE SET AT OR ABOVE ELEVATION 10.5 FT (NAVD 88).

LOCATIONS:

NUMBER	DESCRIPTION	NORTHING	EASTING
1	CL OF APPROACH (SEE FOOTING DIAGRAM)	2196227.07	5985611.48
2	CL OF BRIDGE (SEE PILE CAP DIAGRAM)	2196250.77	5985617.61
3	CL OF BRIDGE (SEE PILE CAP DIAGRAM)	2196330.73	5985620.14
4	CL OF APPROACH (SEE FOOTING DIAGRAM)	2196354.77	5985615.51

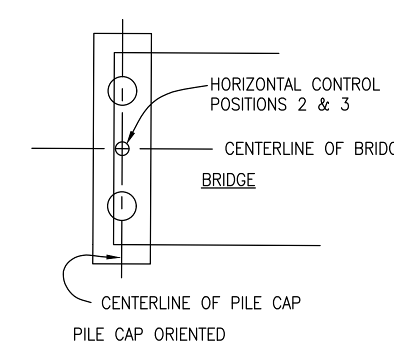
KEYNOTES:

1. (N) CAST-IN-PLACE CONC RETAINING FTG PER DETAIL 1/S-7.0 TYP
2. (N) PRECAST CONC BRIDGE DECKS W/ PEDESTRIAN GUARDRAILS AND CONCRETE OVERLAY, TYP 2/S-8.0 TYP
3. (N) PRE-MANUFACTURED 55 FT LONG BY 10 FT WIDE FIBERGLASS BRIDGE W/ PEDESTRIAN GUARDRAILS AND TIMBER DECKING 1/S-8.0 TYP
4. (N) CAST-IN-PLACE PILE CAP ON DRIVEN PILES PER 3/S-7.0 TYP
5. (N) CAST-IN-PLACE WING WALL PER DETAIL 5/S-8.0 TYP



TYPICAL APPROACH FOOTING DIAGRAM

SCALE: NTS



TYPICAL PILE CAP DIAGRAM

SCALE: NTS

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MARK	DATE	DESCRIPTION
		ISSUE

CITY OF ARCATA
HUMBOLDT BAY TRAIL NORTH

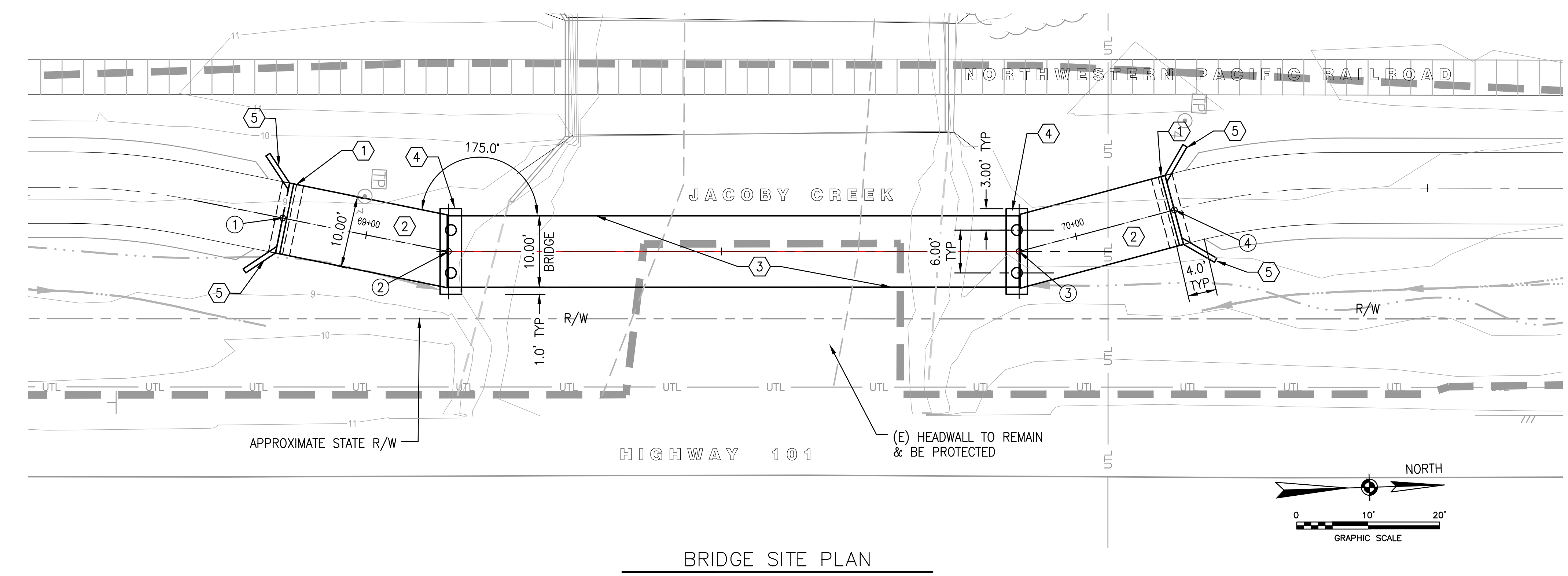
STRUCTURAL
OLD JACOBY CREEK CROSSING
SITE PLAN & PROFILE

PROJ NO: 8411982
DRWN: CHKD:

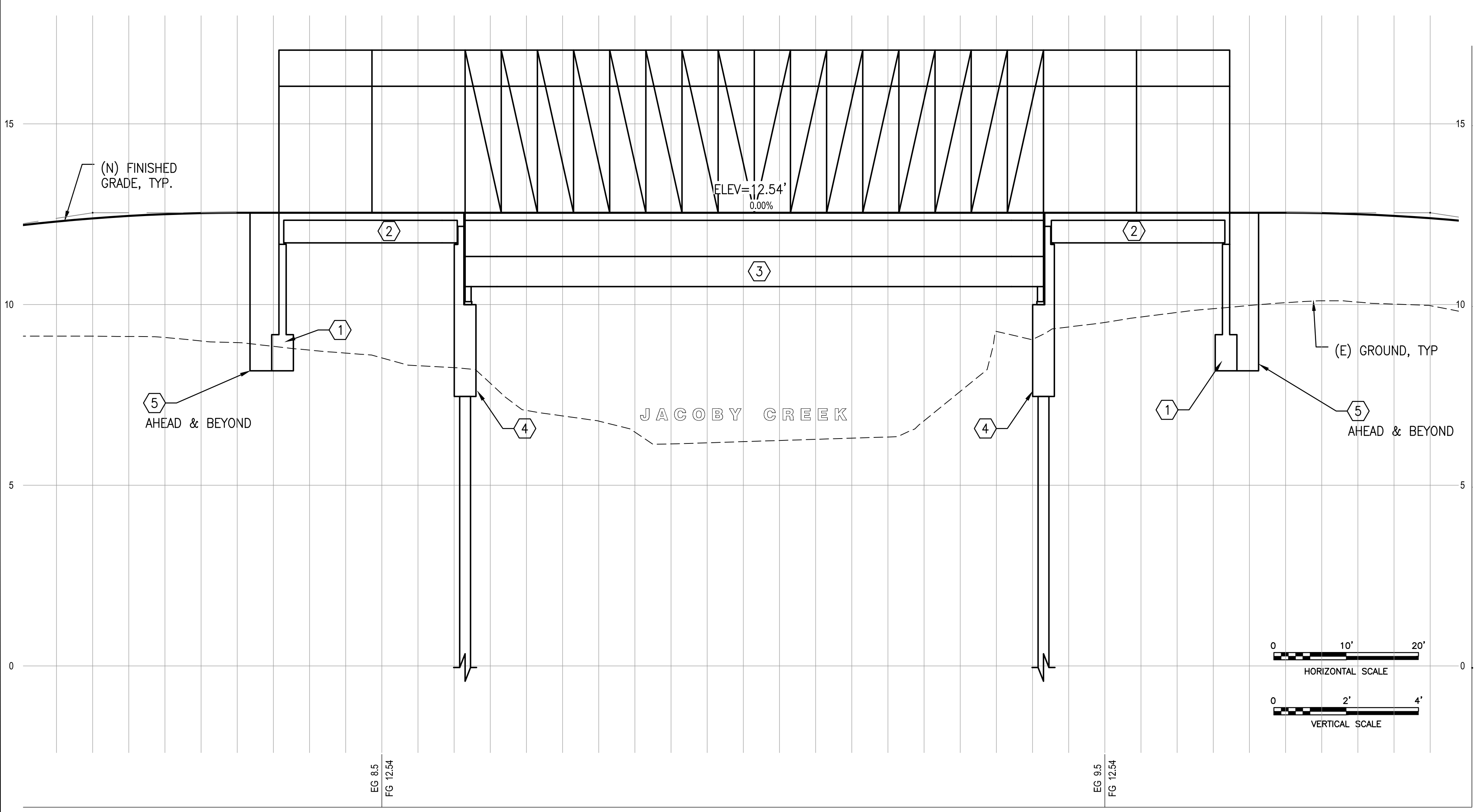
S-2.0

SHEET 45 OF 52

Plot Date: 1 February 2016 - 5:07 PM Plotted By: Owen Goode Cad File No: \\ghdnet\ghd\US\Eureka\Projects\84\11982\06-CAD\Sheets\8411982_47-S-3.0-old jacoby.dwg



BRIDGE SITE PLAN



BRIDGE PROFILE

NOTES:

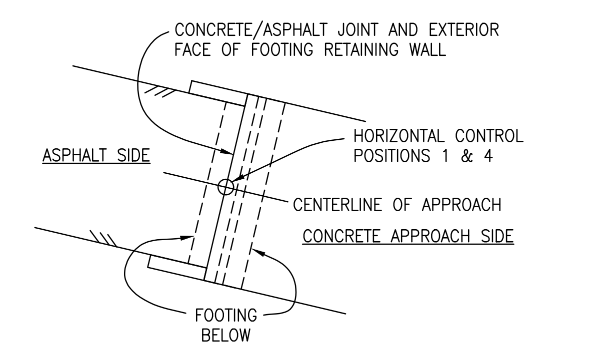
1. DIMENSIONS SHOWN ARE TYPICAL. APPROACH SPANS AND FOOTINGS ARE SYMMETRICAL ABOUT CENTER LINE OF TRAIL.
2. THE BRIDGE SOFFIT SHALL BE SET AT OR ABOVE ELEVATION 10.5 FT (NAVD 88).

LOCATIONS:

NUMBER	DESCRIPTION	NORTHING	EASTING
1	CL OF APPROACH (SEE FOOTING DIAGRAM)	2196227.07	5985611.48
2	CL OF BRIDGE (SEE PILE CAP DIAGRAM)	2196250.77	5985617.61
3	CL OF BRIDGE (SEE PILE CAP DIAGRAM)	2196330.73	5985620.14
4	CL OF APPROACH (SEE FOOTING DIAGRAM)	2196354.77	5985615.51

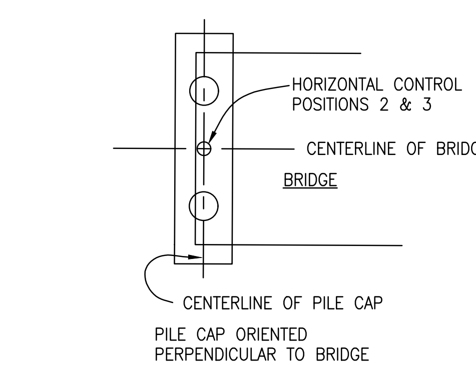
KEYNOTES:

1. (N) CAST-IN-PLACE CONC RETAINING FTG PER DETAIL 1/TYP S-7.0
2. (N) PRECAST CONC BRIDGE DECKS W/ PEDESTRIAN GUARDRAILS AND CONCRETE OVERLAY, TYP 2/TYP S-8.0
3. (N) PRE-MANUFACTURED 80 FT LONG BY 10 FT WIDE FIBERGLASS BRIDGE W/ PEDESTRIAN GUARDRAILS AND TIMBER DECKING 1/TYP S-8.0
4. (N) CAST-IN-PLACE PILE CAP ON PRECAST DRIVEN PILES PER 3/TYP S-7.0
5. (N) CAST-IN-PLACE WING WALL PER DETAIL 5/TYP S-8.0



TYPICAL APPROACH FOOTING DIAGRAM

SCALE: NTS



TYPICAL PILE CAP DIAGRAM

SCALE: NTS

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MARK	DATE	DESCRIPTION

CITY OF ARCATA
HUMBOLDT BAY TRAIL NORTH

STRUCTURAL
JACOBY CREEK CROSSING
SITE PLAN & PROFILE

PROJ NO: 8411982
DRWN: CHKD:

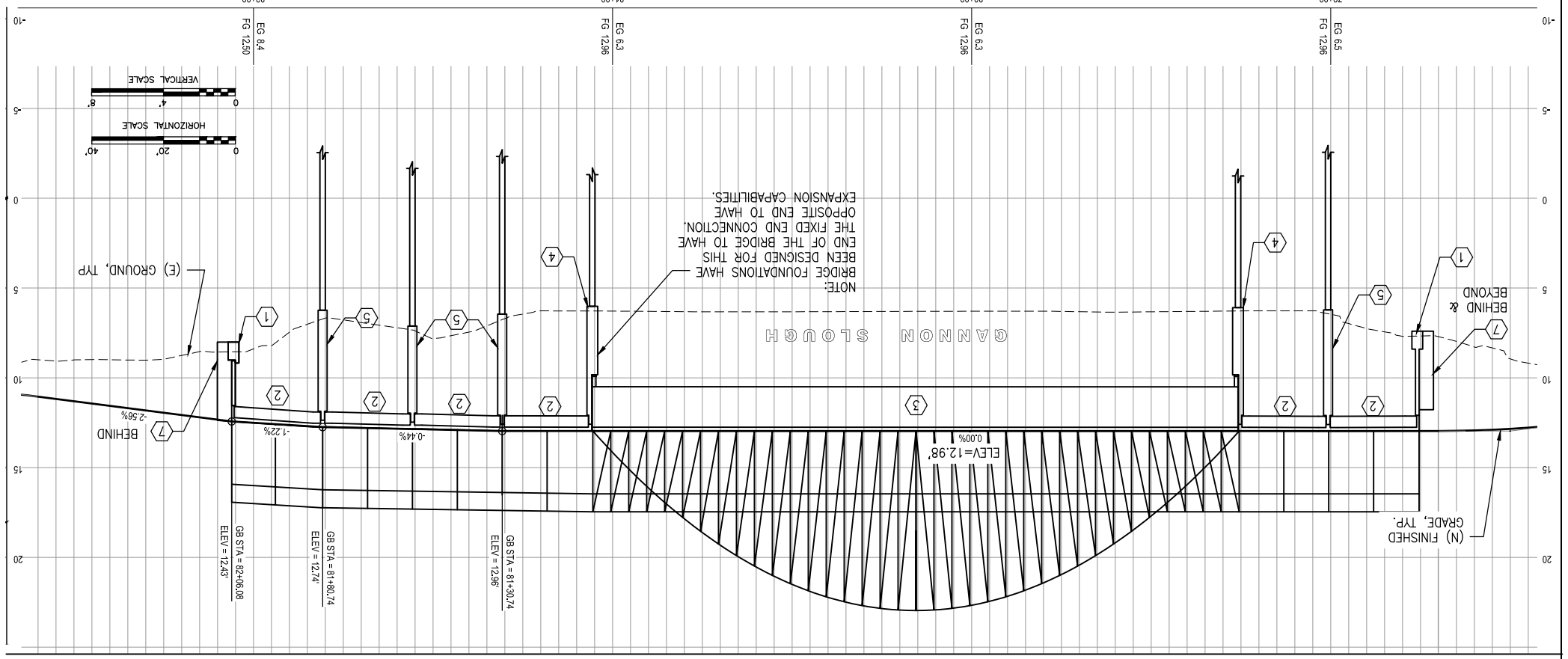
S-3.0

SHEET 46 OF 52

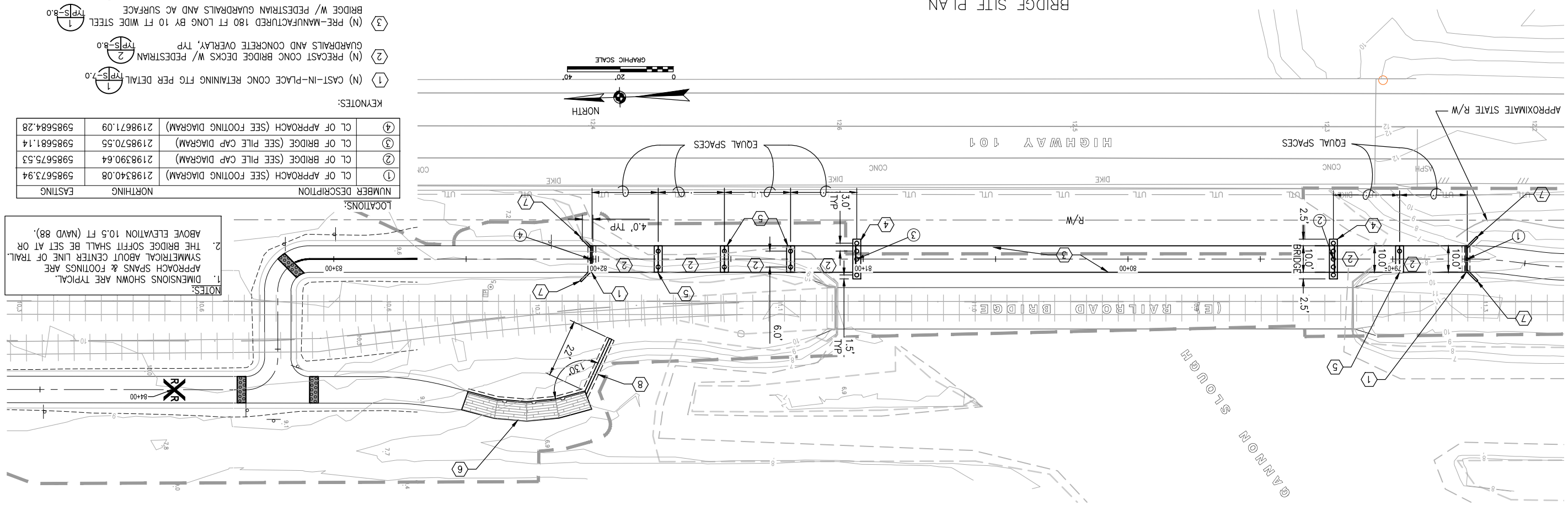
Plot Date: 1 February 2016 - 5:08 PM Plotted By: Owen Goode Cad File No: \\ghdnet\ghd\US\Eureka\Projects\84\11982\06-CAD\Sheets\8411982_48-S-3.5-jacoby creek.dwg

Plot Date: 1 February 2016 - 5:09 PM Plotted By: Owen Goode Cad File No: \\ghdnet\ghd\US\Eureka\Projects\84\119820\06-CAD\Sheets\841198 2_49-S-4.0-Gannon.dwg

BRIDGE PROFILE



BRIDGE SITE PLAN



LOCATIONS:

NUMBER	DESCRIPTION	NORTHING	EASTING
①	CL OF APPROACH (SEE FOOTING DIAGRAM)	2198340.08	5985673.94
②	CL OF BRIDGE (SEE PILE CAP DIAGRAM)	2198390.64	5985675.53
③	CL OF BRIDGE (SEE PILE CAP DIAGRAM)	2198570.55	5985681.14
④	CL OF APPROACH (SEE FOOTING DIAGRAM)	2198671.09	5985684.28

KEYNOTES:

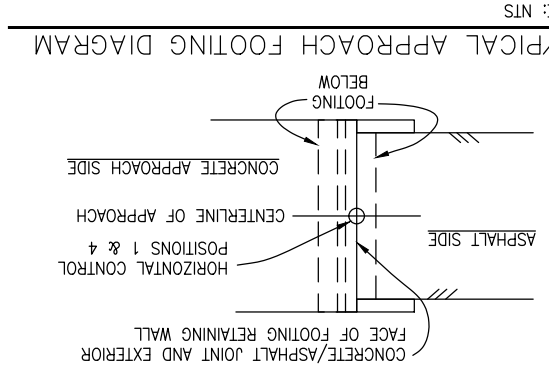
1. (N) CAST-IN-PLACE CONC RETAINING FTG PER DETAIL 1/TYP S-7.0
2. (N) PRECAST CONC BRIDGE DECKS W/ PEDESTRIAN GUARDRAILS AND CONCRETE OVERLAY, TYP 2/TYP S-8.0
3. (N) PRE-MANUFACTURED 180 FT LONG BY 10 FT WIDE STEEL BRIDGE W/ PEDESTRIAN GUARDRAILS AND AC SURFACE 1/TYP S-8.0
4. (N) CAST-IN-PLACE PILE CAP ON DRIVEN PILES PER 3/TYP S-7.0
5. (N) CAST-IN-PLACE PILE CAP ON DRIVEN PILES PER 2/TYP S-7.0
6. (N) GANNON SLOUGH OVERLOOK PER 1/S-4.0 S-9.0
7. (N) CAST-IN-PLACE WING WALL PER DETAIL 5/TYP S-8.0
8. (N) CAST-IN-PLACE FOOTING SIMILAR TO DETAIL 3/TYP S-9.0 EXCEPT DECK NOTCH

NOTES:

1. DIMENSIONS SHOWN ARE TYPICAL. APPROACH SPANS & FOOTINGS ARE SYMMETRICAL ABOUT CENTER LINE OF TRAIL.
2. THE BRIDGE SOFFIT SHALL BE SET AT OR ABOVE ELEVATION 10.5 FT (NAVD 88).

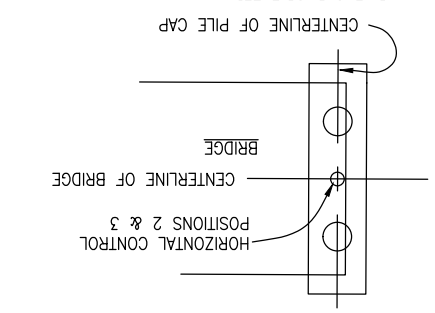
TYPICAL APPROACH FOOTING DIAGRAM

SCALE: NTS



TYPICAL PILE CAP DIAGRAM

SCALE: NTS



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MARK	DATE	DESCRIPTION

CITY OF ARCATA
HUMBOLDT BAY TRAIL NORTH

STRUCTURAL
GANNON SLOUGH BRIDGE
SITE PLAN & PROFILE

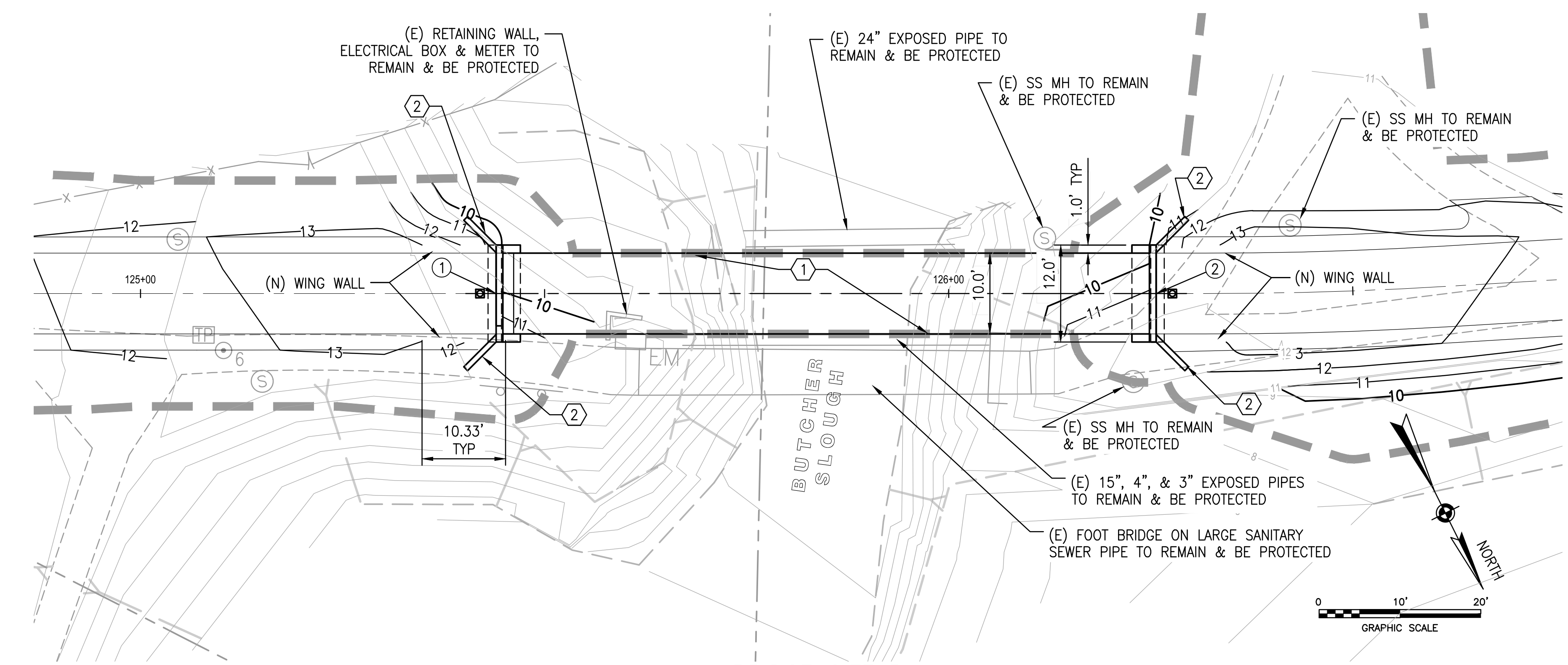
PROJ NO. 841198 2

DRWN: CHKD:

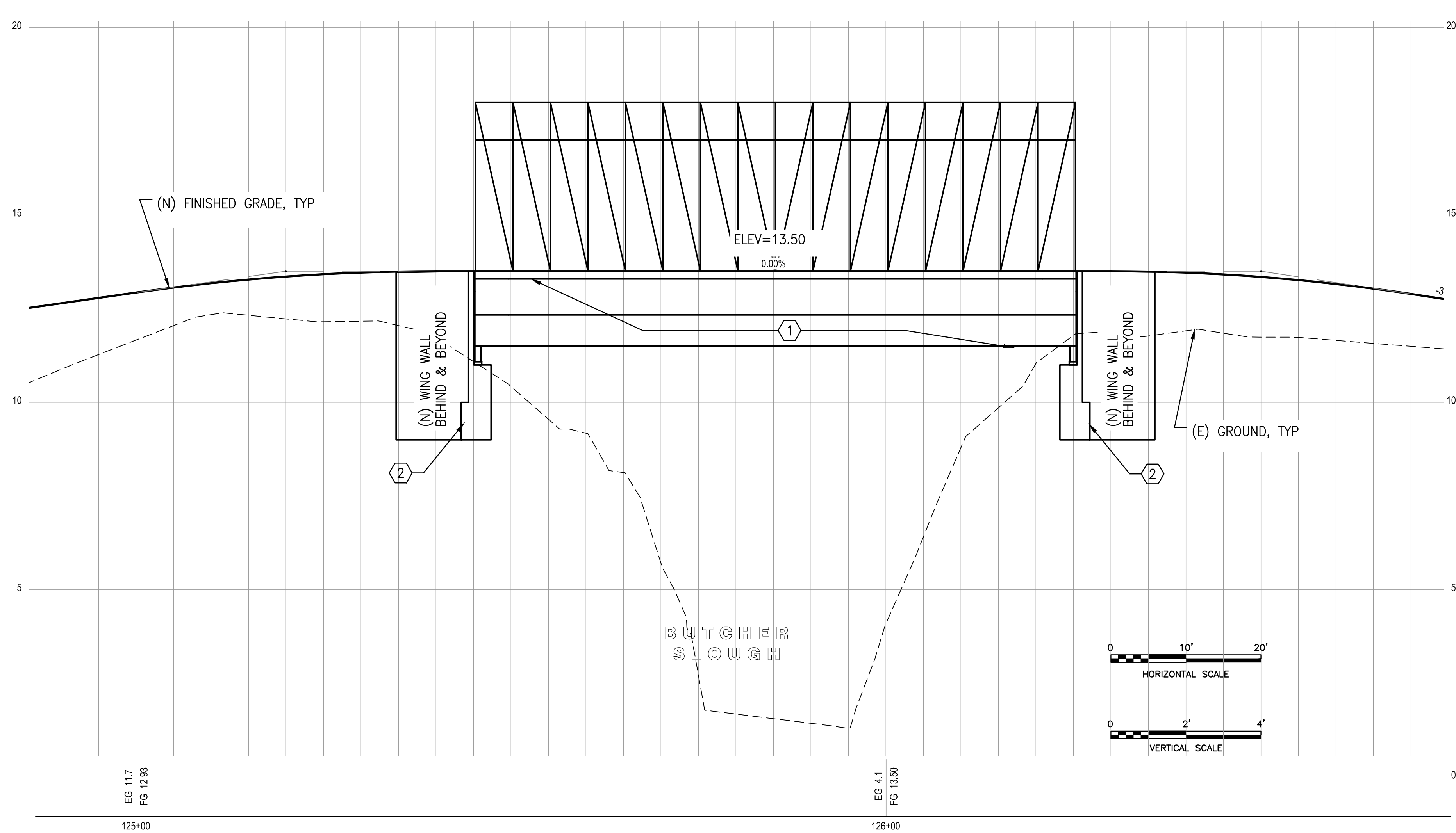
S-4.0

SHEET 47 OF 52

40 of 45



BRIDGE SITE PLAN



BRIDGE PROFILE

NOTES:

1. DIMENSIONS SHOWN ARE TYPICAL. APPROACH SPANS AND FOOTINGS ARE SYMMETRICAL ABOUT CENTER LINE OF TRAIL.
2. THE BRIDGE SOFFIT SHALL BE SET AT OR ABOVE ELEVATION 10.5 FT (NAVD 88).

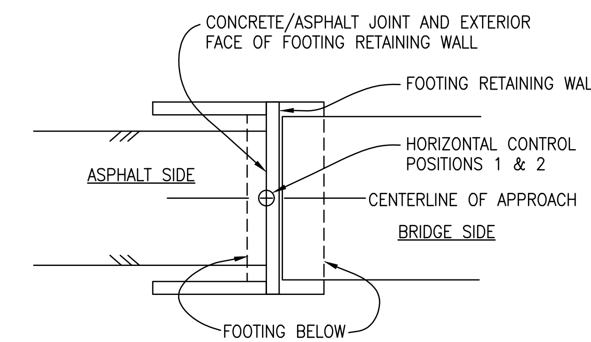
KEYNOTES:

(1) (N) PRE-MANUFACTURED 80 FT LONG BY 10 FT WIDE FIBERGLASS BRIDGE W/ PEDESTRIAN GUARDRAILS AND TIMBER DECKING 1/S-8.0 TYP

(2) (N) CAST-IN-PLACE BRIDGE SPREAD FOOTING PER 7/S-8.0 TYP WITH WING WALLS PER 5/S-8.0 TYP

LOCATIONS:

NUMBER	DESCRIPTION	NORTHING	EASTING
1	CL OF BRIDGE (SEE FOOTING DIAGRAM)	2202118.36	5983482.64
2	CL OF BRIDGE (SEE FOOTING DIAGRAM)	2202154.79	5983409.55



FOOTING PERPENDICULAR TO BRIDGE

TYPICAL FOOTING DIAGRAM

SCALE: NTS

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		ISSUE

CITY OF ARCATA
HUMBOLDT BAY TRAIL NORTH

STRUCTURAL
BUTCHER SLOUGH BRIDGE
SITE PLAN & PROFILE

PROJ NO: 8411982
DRWN:
CHKD:

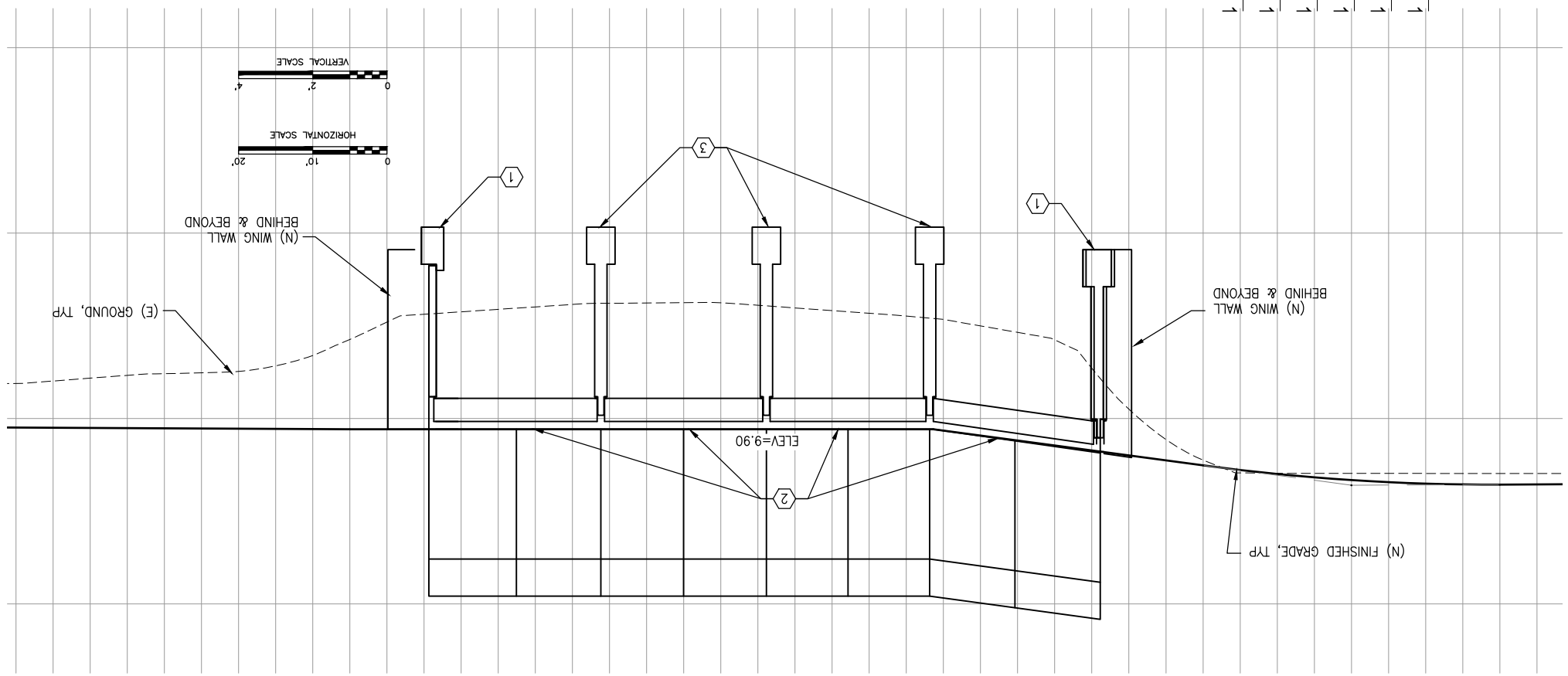
S-5.0

SHEET 48 OF 52

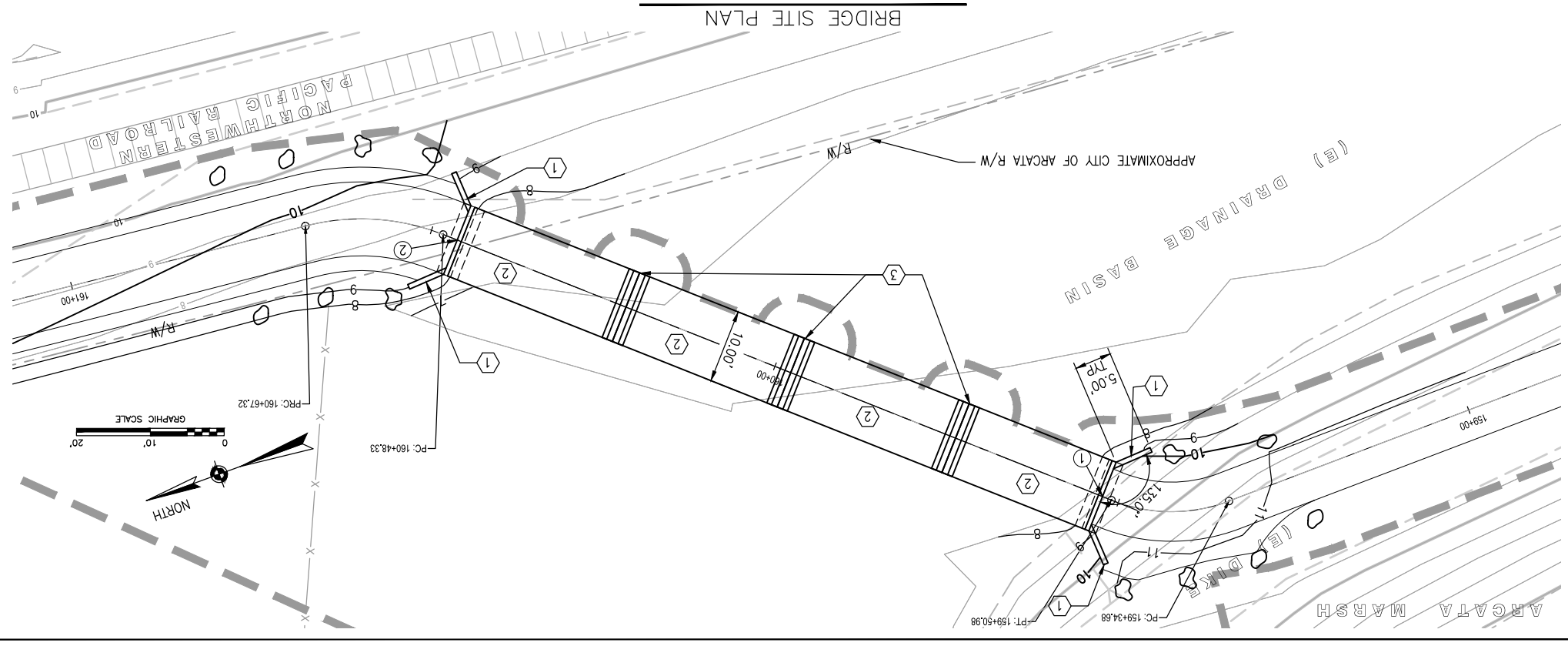
Plot Date: 1 February 2016 - 5:10 PM Plotted By: Owen Goode Cad File No: \\ghdnet\ghd\US\Eureka\Projects\84\11982\06-CAD\Sheets\8411982_50-S-5.0-butcher.dwg

Plot Date: 1 February 2016 - 5:11 PM Plotted By: Owen Goode Cad File No: \\ghdnet\ghd\US\Eureka\Projects\84\119821\06-CAD\Sheets\841198 2_S1-S-6.0-levee.dwg

BRIDGE PROFILE



BRIDGE SITE PLAN



NUMBER	DESCRIPTION	NORTHING	EASTING
1	CL OF BRIDGE (SEE FOOTING DIAGRAM)	2204706.20	5982746.22
2	CL OF BRIDGE (SEE FOOTING DIAGRAM)	2047776.42	5982808.71

LOCATIONS:

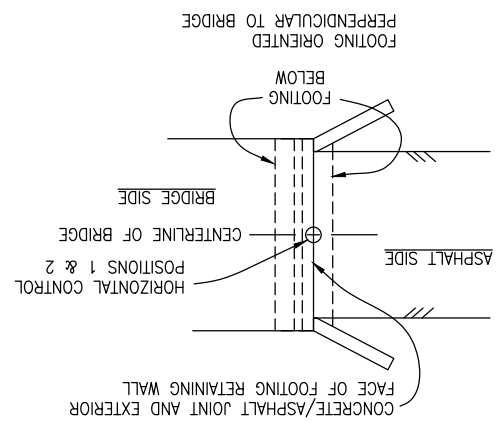
NOTES:
1. DIMENSIONS SHOWN ARE TYPICAL. APPROACH SPANS AND FOOTINGS ARE SYMMETRICAL ABOUT CENTER LINE OF TRAIL.
2. THE BRIDGE SOFFIT SHALL BE SET AT OR ABOVE ELEVATION 10.5 FT (NAVD 88).

KEYNOTES:

1. (N) CAST-IN-PLACE CONC RETAINING FOOTING PER DETAIL 1/TPS-7.0 WITH WING WALLS PER 5/TPS-8.0
2. (N) PRECAST CONC BRIDGE DECKS W/ PEDESTRIAN GUARDRAILS AND CONCRETE OVERLAY, TYP 2/TPS-8.0
3. (N) CAST-IN-PLACE CONC FOOTING PER DETAIL 4/TPS-7.0

TYPICAL APPROACH FOOTING DIAGRAM

SCALE: NTS



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0 1"

NO.	DESCRIPTION	DATE	MARK

CITY OF ARCATA
HUMBOLDT BAY TRAIL NORTH

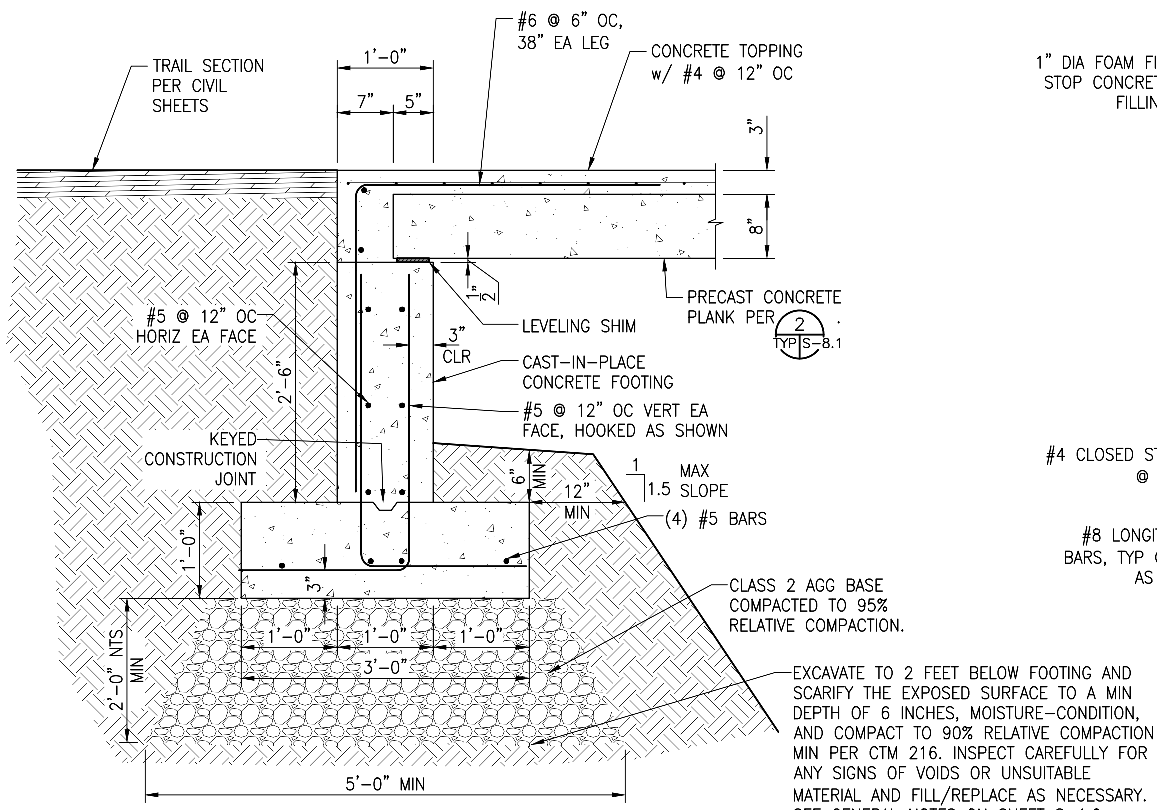
STRUCTURAL
PERIMETER LEVEE ELEVATED
TRAIL - SITE PLAN & PROFILE

PROJ NO. 8411982
DRWN: CHKD:

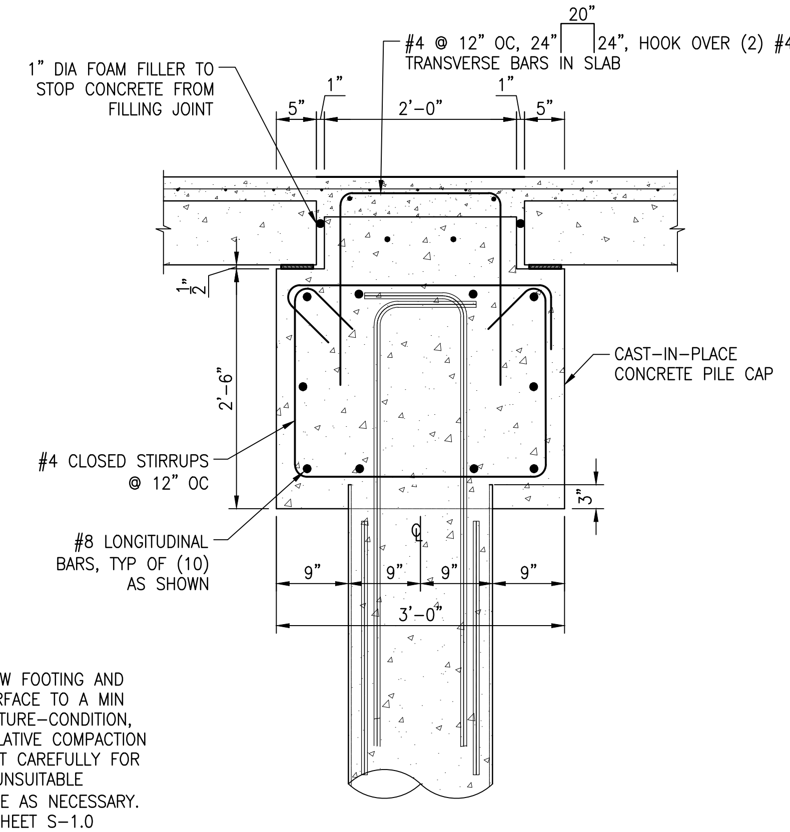
S-6.0

SHEET 49 OF 52

42 of 45

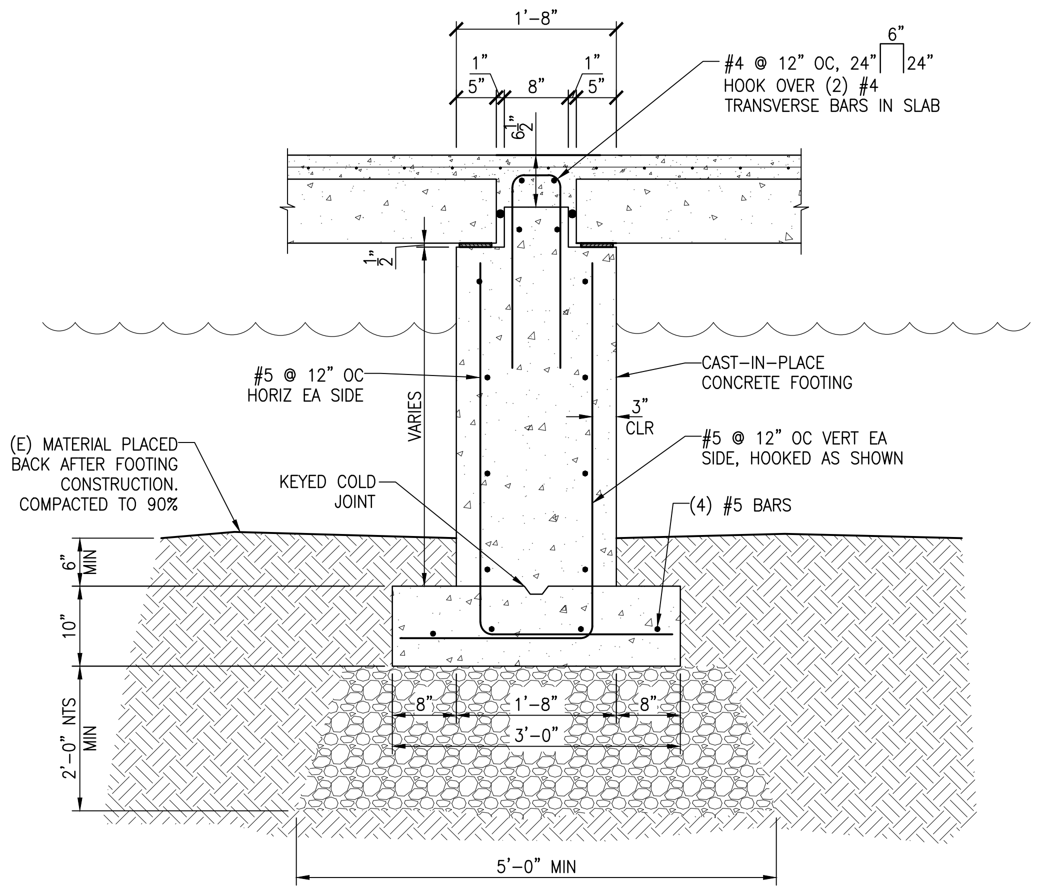


1 TYP S-7.0 TYPICAL RETAINING FOOTING
SCALE: 1" = 1'-0"



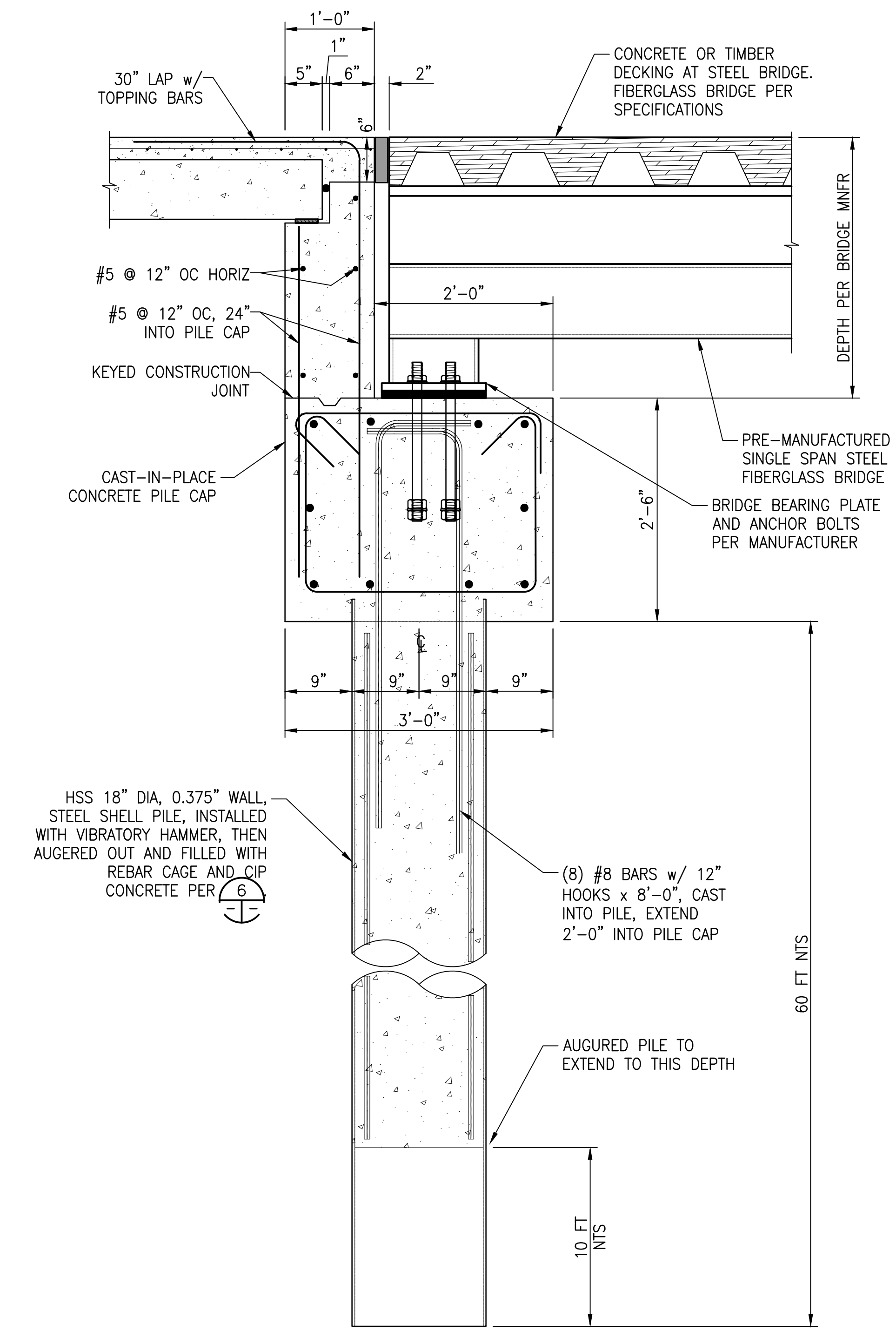
2 TYP S-7.0 TYPICAL PRECAST PILE CAP
SCALE: 1" = 1'-0" FOR INFORMATION NOT SHOWN SEE 1 AND 3

ENTIRE SHEET SCALE
1"=1'-0" 0 1/2' 1' 2'

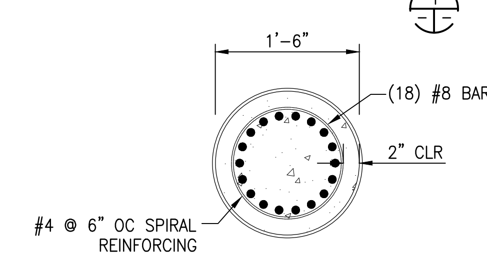


4 TYP S-7.0 PERIMETER LEVEE FOOTING
SCALE: 1" = 1'-0" FOR INFORMATION NOT SHOWN SEE 1

5 TYP S-7.0 NOT USED
SCALE: 1" = 1'-0"



3 TYP S-7.0 TYPICAL BRIDGE PILE CAP
SCALE: 1" = 1'-0" FOR INFORMATION NOT SHOWN SEE 1 AND 2



6 TYP S-7.0 TYPICAL 18" STEEL SHELL PILE FILLED WITH CIP CONCRETE
SCALE: 1" = 1'-0"

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MARK	DATE	DESCRIPTION

CITY OF ARCATA
HUMBOLDT BAY TRAIL NORTH

STRUCTURAL
STANDARD DETAILS

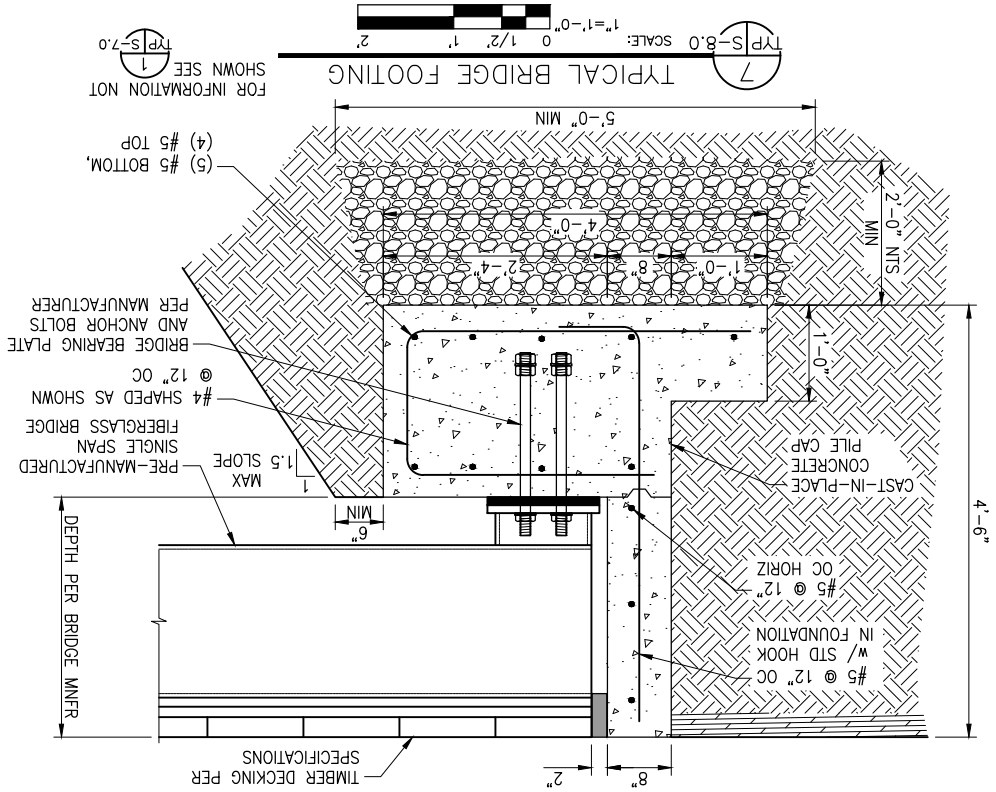
PROJ NO: 8411982
DRWN: SOG CHKD: SPP

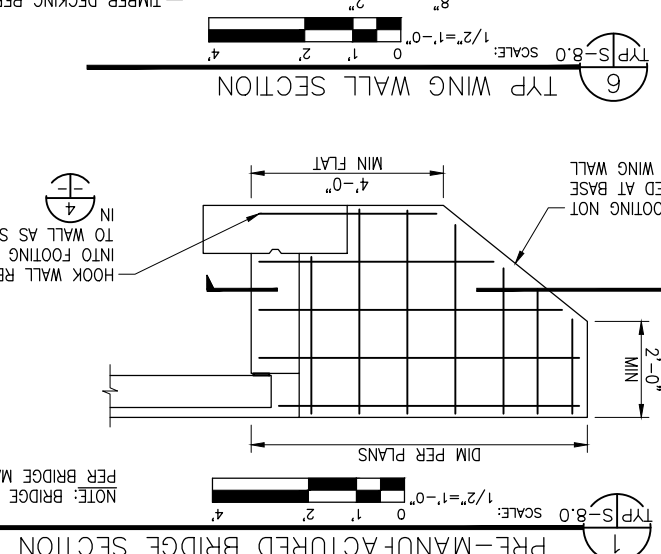
S-7.0

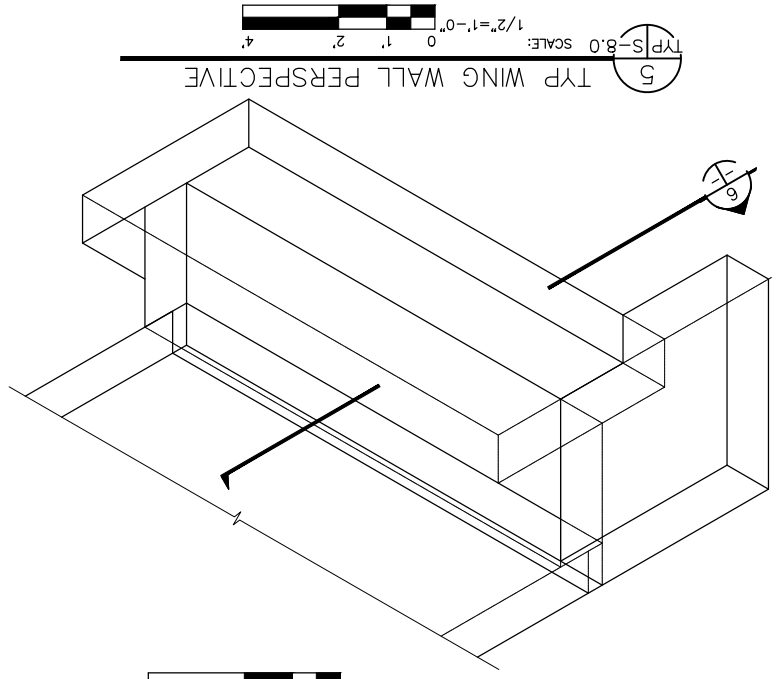
SHEET 50 OF 52

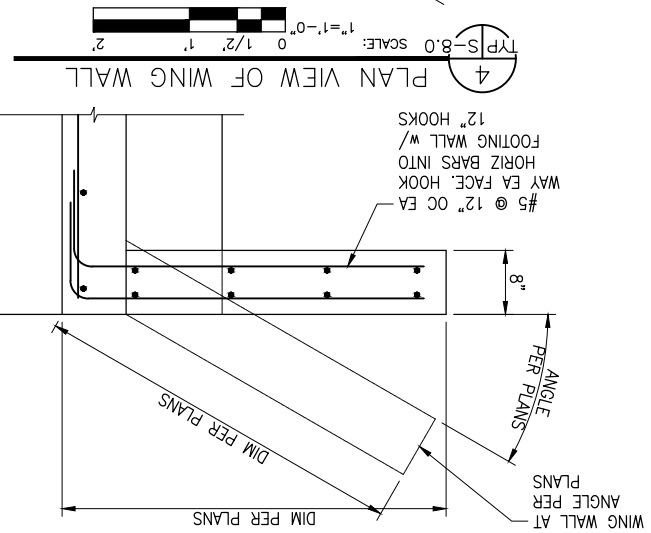
Plot Date: 1 February 2016 - 5:11 PM Plotted By: Owen Goode Cad File No: \\ghdnet\ghd\US\Eureka\Projects\84\11982\06-CAD\Sheets\8411982_52-54-S-8.0-details.dwg

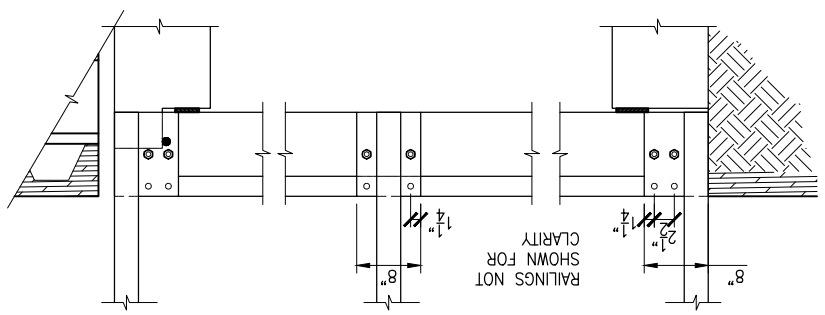
Plot Date: 1 February 2016 - 5:11 PM Plotted By: Owen Goode Cad File No: \\ghdnet\ghd\US\Eureka\Projects\84\11982\06-CAD\Sheets\841982_S2-S4-S-8.0-details.dwg

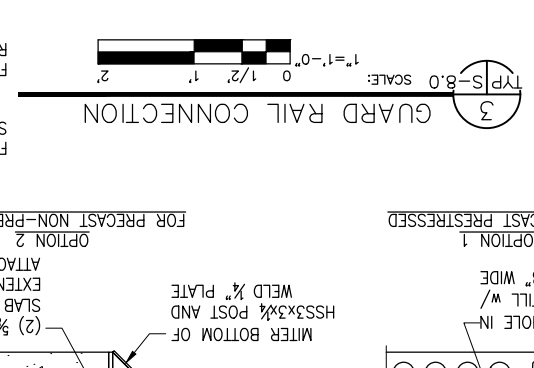


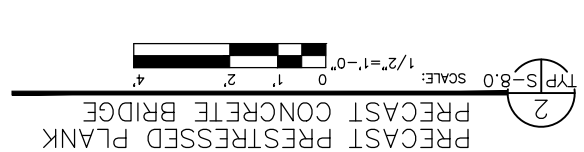


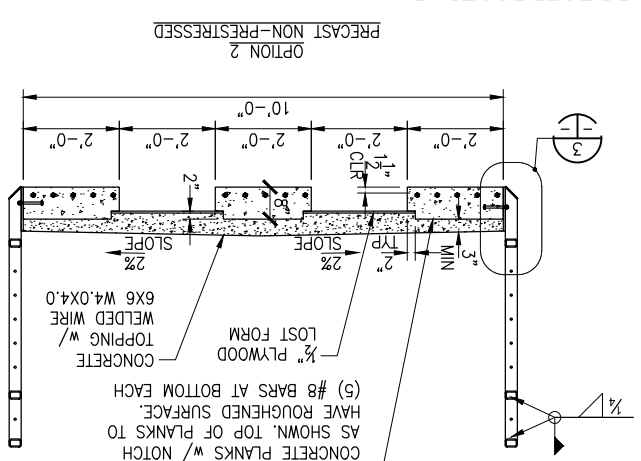


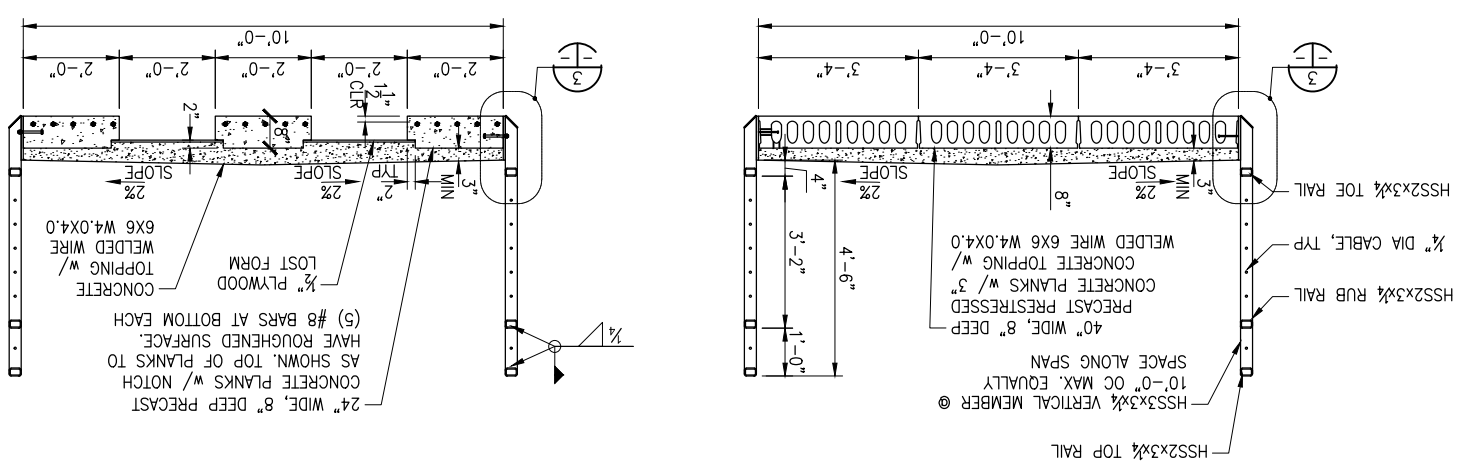












NOTE:
GUARD RAIL AT CONCRETE BRIDGE HAS BEEN DESIGNED TO MATCH STYLE OF EXPECTED PRE-MANUFACTURED STEEL OR FIBERGLASS BRIDGE. CONTRACTOR TO MODIFY CONCRETE BRIDGE RAIL AS NECESSARY TO MATCH PRE-MANUFACTURED BRIDGE RAIL. ENGINEER TO APPROVE MODIFICATIONS.

GHD Inc.
718 Third Street Eureka California 95501 USA
T 1 707 443 8326 F 1 707 444 8330
W www.ghd.com

MARK	DATE	DESCRIPTION

CITY OF ARCATA
HUMBOLDT BAY TRAIL NORTH

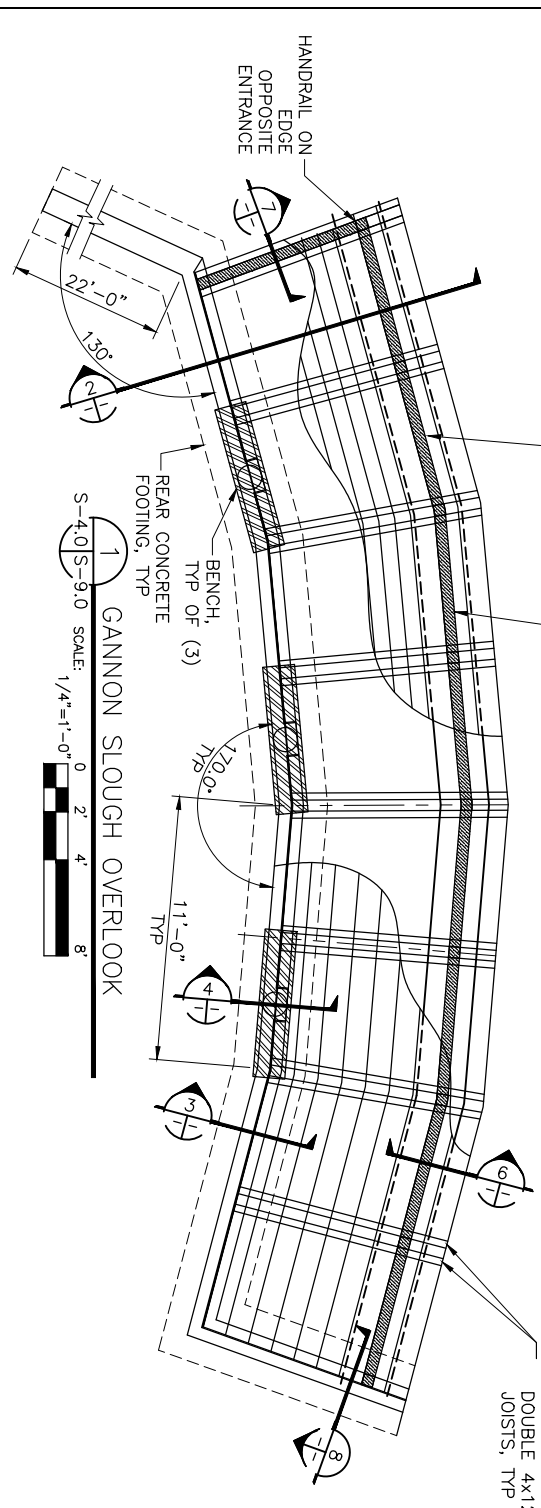
STRUCTURAL
STANDARD DETAILS

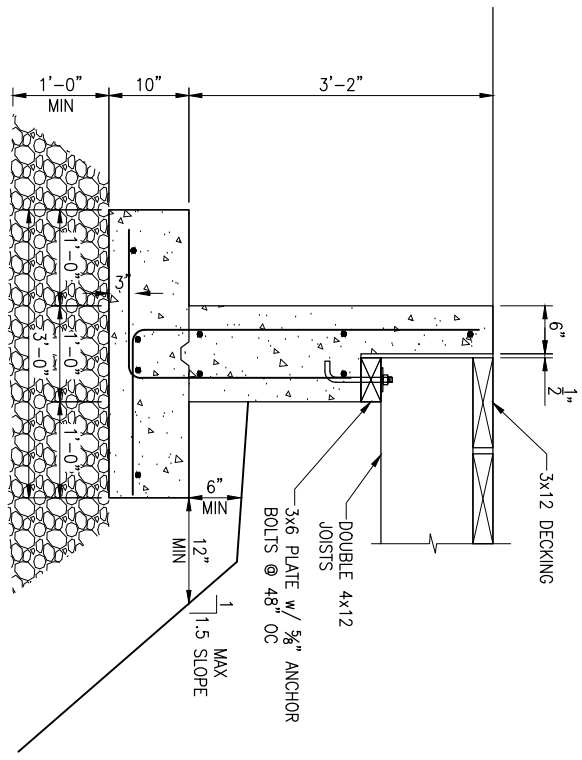
PROJ NO. 841982
DRWN: CHKD:

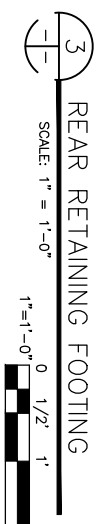
S-8.0

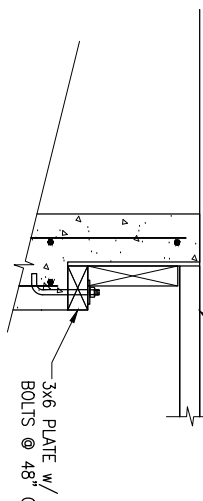
SHEET 51 OF 52

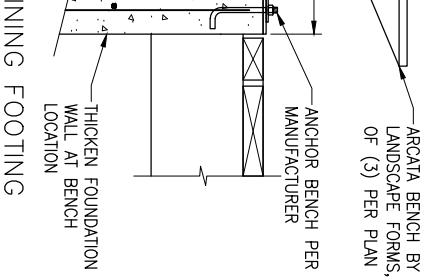
441 of 745

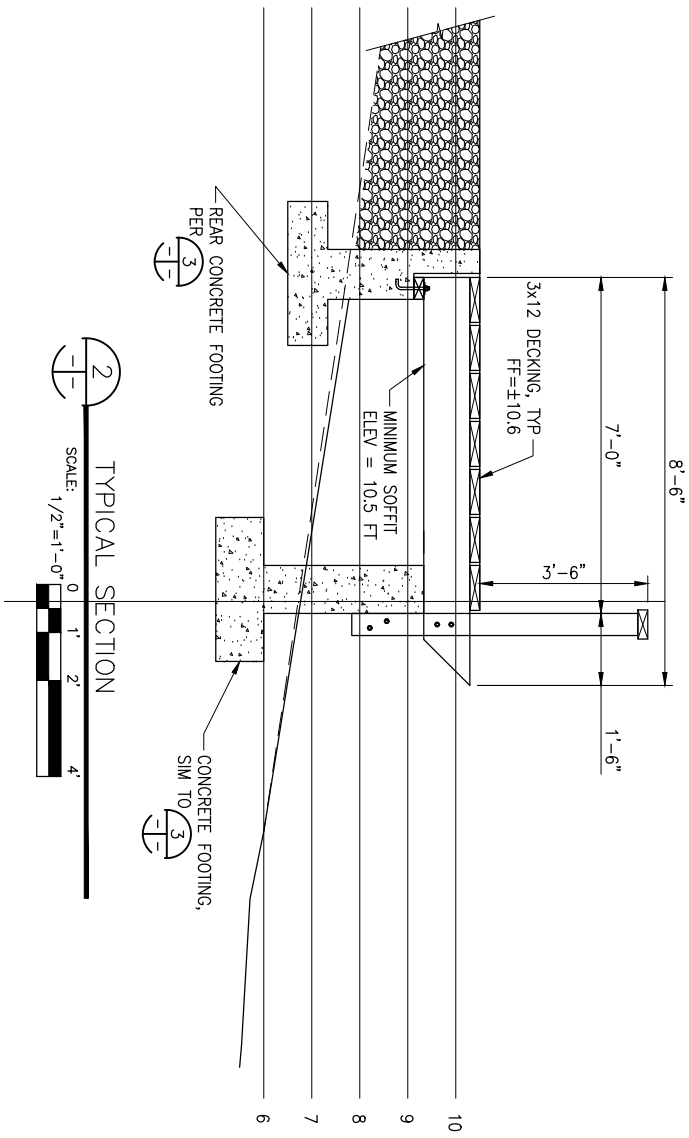


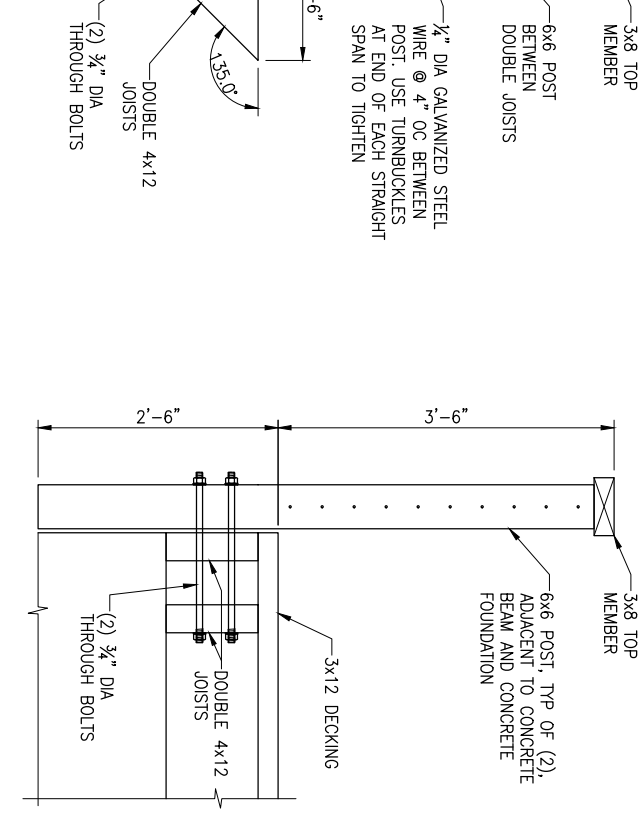












Plot Date: 1 February 2016 - 5:11 PM Plotted By: Owen Goode Cad File No: \ghdnet\ghd\US\Eureka\Projects\84\11982\06-CAD\Sheets\8411982_52-54-S-8.0-details.dwg

CITY OF ARCATA
HUMBOLDT BAY TRAIL NORTH

STRUCTURAL
STANDARD DETAILS

MARK	DATE	DESCRIPTION
		ISSUED

PROJ NO: 8411982
DRWN:
CHKD:

S-9.0

SHEET 52 OF 52

BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"

REGISTERED PROFESSIONAL ENGINEER SUSAN TERESA OGORMAN 71124 CIVIL STATE OF CALIFORNIA

GHD Inc.
718 Third Street Eureka California 95501 USA
T 1 707 443 8326 F 1 707 444 8330
W www.ghd.com

[Winzler & Kelly. (2010, June 30). Photo Log City of Arcata Rail-With-Trail Connectivity Project]

Photo 19 (view towards north): Wetlands south of Samoa Boulevard along rail road tracks

EXHIBIT NO. 4

APPLICATION 1-16-0122
CITY OF ARCATA
PHOTO LOG OF TRAIL ALIGNMENT EXISTING CONDITIONS

Photo 20 (view to east): From northern end (at bend) of berm, looking east towards railroad tracks across area to be bridged over to return to the railroad alignment. (Section 5.1→5.2)

Photo 21 (view north): along upland birm, existing trail with City of Arcata manmade wetland pond to west (left) and freshwater marsh to east (right) between berm and railroad alignment.

Photo 22: Crossing I Street

Photo 23: Existing crushed gravel trail along WWTP pond and riparian.

Photos 24a and b: Along existing marsh trail that will be widened into adjacent ditch/wetlands near mount trashmore.

Photo 25: (view north) Existing Butcher Slough crossing at Arcata Marsh.

Photo 26: (looking northwest) South of WWTP along South G Street, patches of riparian visible to west (left).

Photo 27: (looking north) Riparian patches along railroad alignment

Photo 28: Representative salt marsh to west of railroad alignment

Photo 29 (view south): Existing railroad crossing of Gannon Slough

Photo 30 (view southwest): Jacoby Creek crossing

Photo 31: Representative brackish portion of highway ditch.

Photo 32: Representative freshwater emergent portion of highway ditch.

Photo 33: Old Jacoby Creek tidegate.

Photo 34: Rocky Gulch tidegate.

EXHIBIT NO. 5

APPLICATION 1-16-0122

CITY OF ARCATA

WETLAND FILL & RARE PLANT IMPACTS

Page 1 of 18

Wetlands
- Impacted Wetlands
- Ditch
- Riparian
- Wetland - Estuarine Emergent (Ditch)
- Wetland - Estuarine Intertidal Emergent
- Wetland - Estuarine Intertidal Shore (Mud)
- Wetland - Palustrine Emergent

Botanical Survey
- Impacted Botanical Survey
- Castilleja ambigua
- Cordylanthus maritimus

- Permanent Impacts (Trail Footprint)
- Temporary Impacts
- Staging Area
- Bridge
- HBMWR
- Phase I
- Creek
- Property Line
- Arcata City Limits

0 50 100 Ft

1 Inch = 100 feet printed at 8.5x11

N

Sources: City of Arcata GIS - Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBMWR boundaries, and Parcels; 2016 Bing Imagery

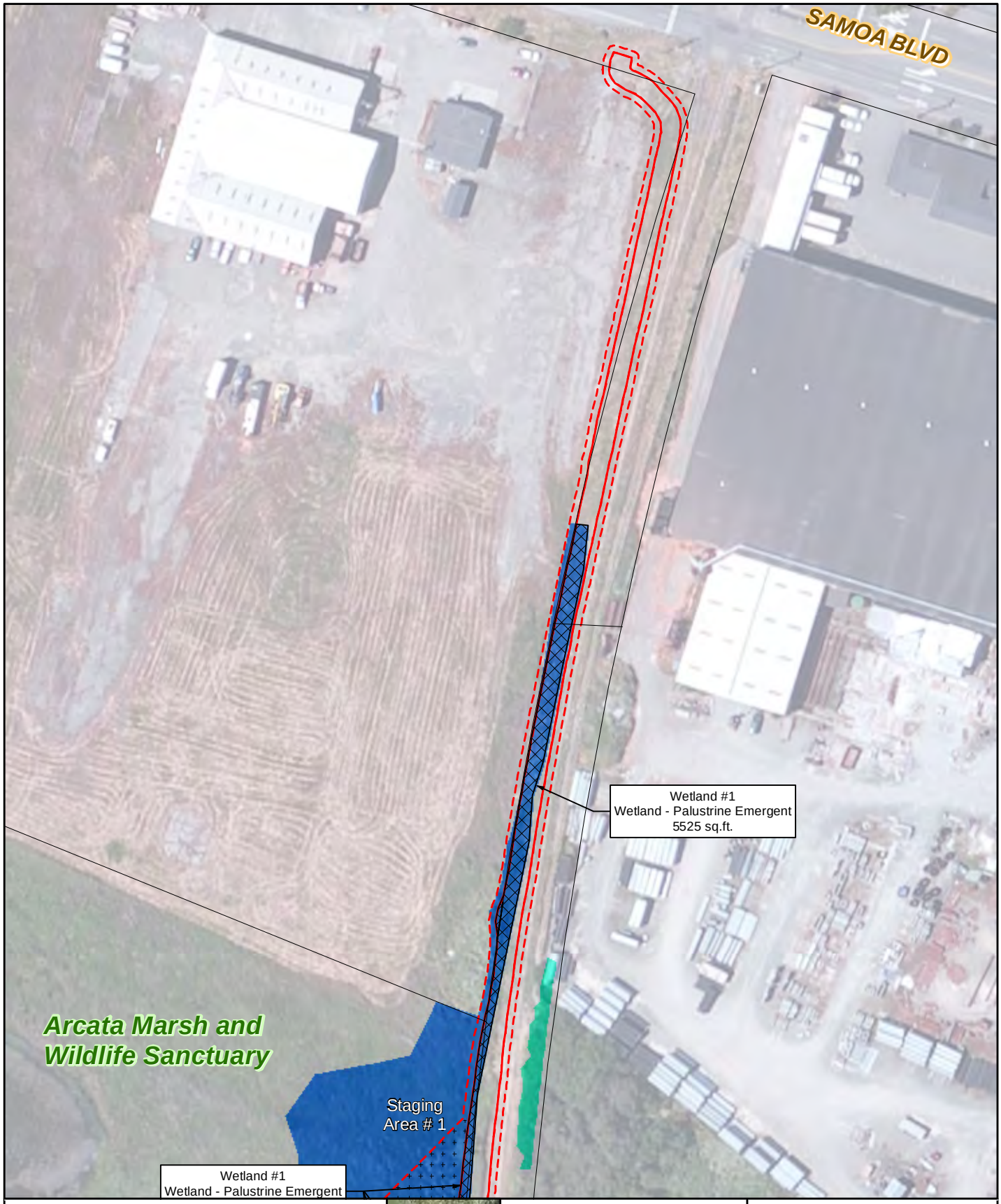
Cartography	Date:	Project#
GLD/BK	3/25/2016	01051-09-004

Figure 5-1
Wetlands/Habitats Impacts

Project:
Phase 2 City of Arcata
Rail-with-Trail Connectivity Project

WINZLER & KELLY

Revised by City of Arcata 3/25/2016



Wetlands
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- Cordylanthus maritimus

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- HBNWR
- Phase I
- Creek
- Property Line
- Arcata City Limits

Page 2 of 18

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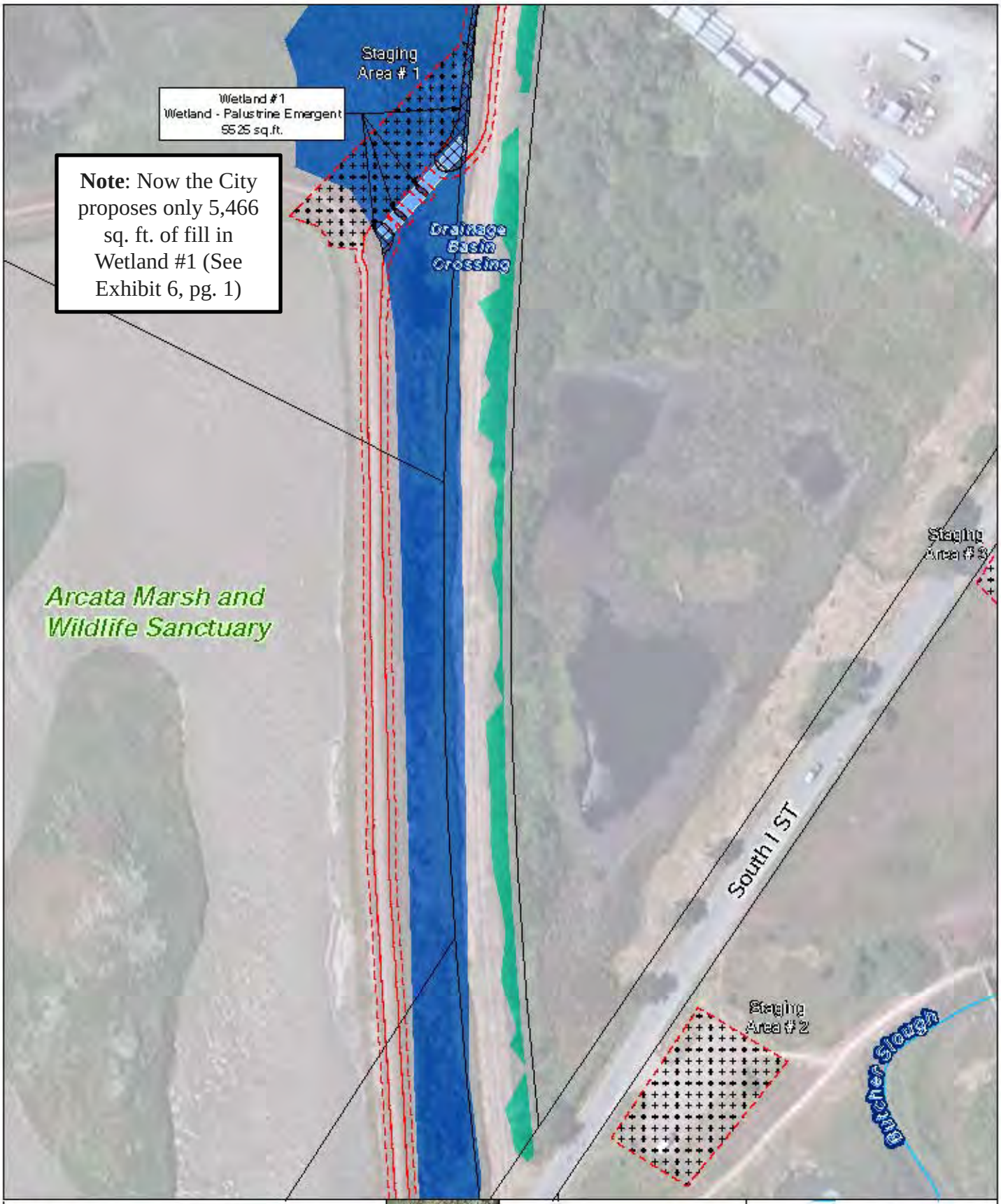
Cartography	Date:	Project #
GLD/BK	3/25/2016	01051-09-004

Figure 5-2
Wetlands/Habitats Impacts

Project:
Phase 2 City of Arcata
Rail-with-Trail Connectivity Project

WINZLER & KELLY

Revised by City of Arcata 3/25/2016



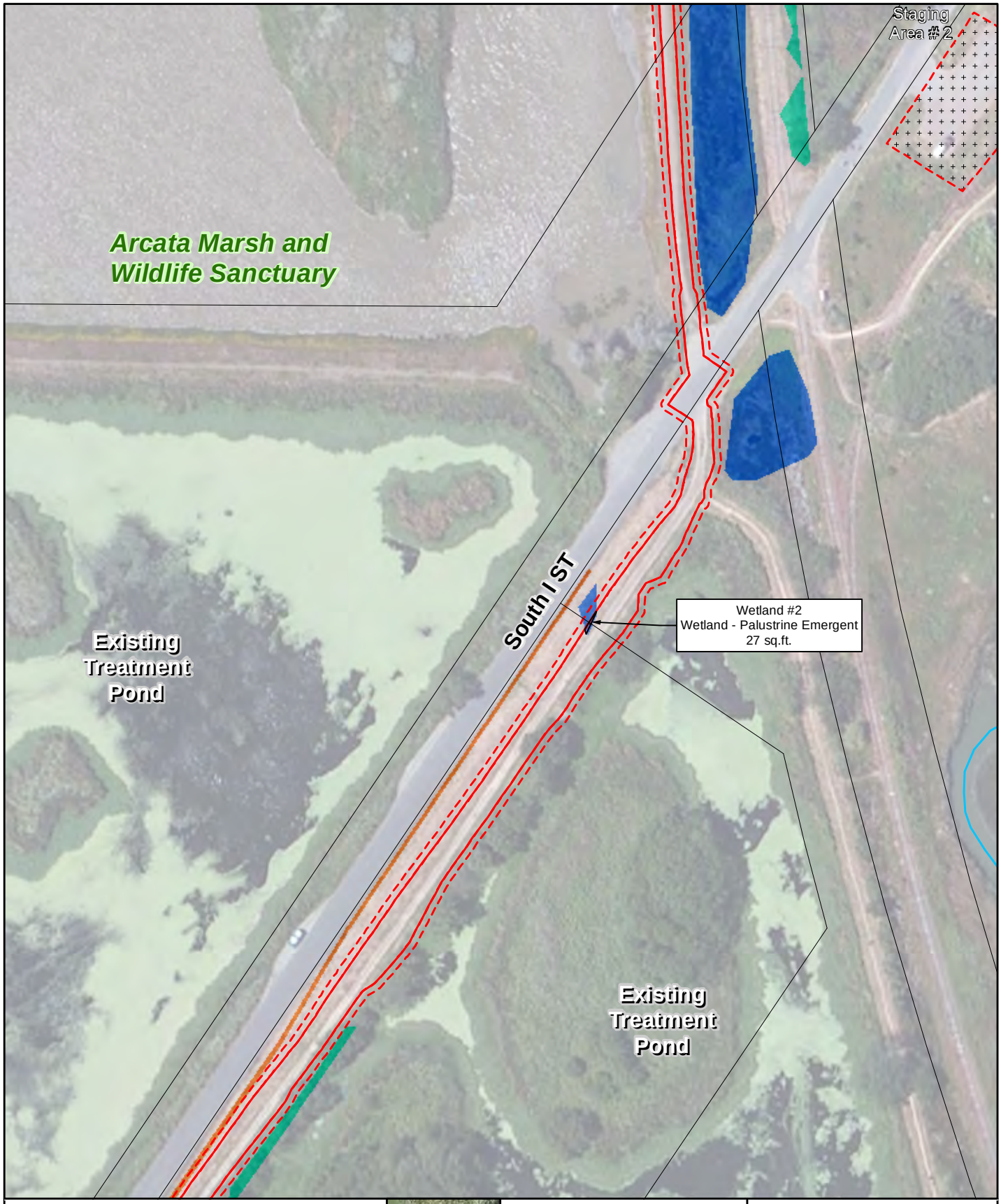
Note: Now the City proposes only 5,466 sq. ft. of fill in Wetland #1 (See Exhibit 6, pg. 1)

Figure 5-3
Wetlands/Habitats Impacts

Project:
Phase 2 City of Arcata
Rail-with-Trail Connectivity Project

WINZLER & KELLY

Revised by City of Arcata 3/25/2016



Wetlands
- Impacted Wetlands
- Ditch
- Riparian
- Wetland - Estuarine Emergent (Ditch)
- Wetland - Estuarine Intertidal Emergent
- Wetland - Estuarine Intertidal Shore (Mud)
- Wetland - Palustrine Emergent

Botanical Survey
- Impacted Botanical Survey
- Castilleja ambigua
- Cordylanthus maritimus

- Permanent Impacts (Trail Footprint)
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- Bridge
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- Arcata City Limits

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Sources: City of Arcata GIS - Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Parcels; 2010 Bing Imagery

Cartography	Date:	Project #
GLD/BK	3/25/2016	01051-09-004

Figure 5-4
Wetlands/Habitats Impacts

Project:
Phase 2 City of Arcata
Rail-with-Trail Connectivity Project

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Wetlands
- Impacted Wetlands
- Ditch
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- Wetland - Estuarine Intertidal Emergent
- Wetland - Estuarine Intertidal Shore (Mud)
- Wetland - Palustrine Emergent

Botanical Survey
- Impacted Botanical Survey
- Castilleja ambigua
- Cordylanthus maritimus

- Permanent Impacts (Trail Footprint)
- Temporary Impacts
- Staging Area
- Bridge
- HBNWR
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- Property Line
- Arcata City Limits

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Sources: City of Arcata GIS - Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Parcels; 2010 Bing Imagery

Cartography	Date:	Project #
GLD/BK	3/25/2016	01051-09-004

Figure 5-5
Wetlands/Habitats Impacts

Project:
Phase 2 City of Arcata
Rail-with-Trail Connectivity Project

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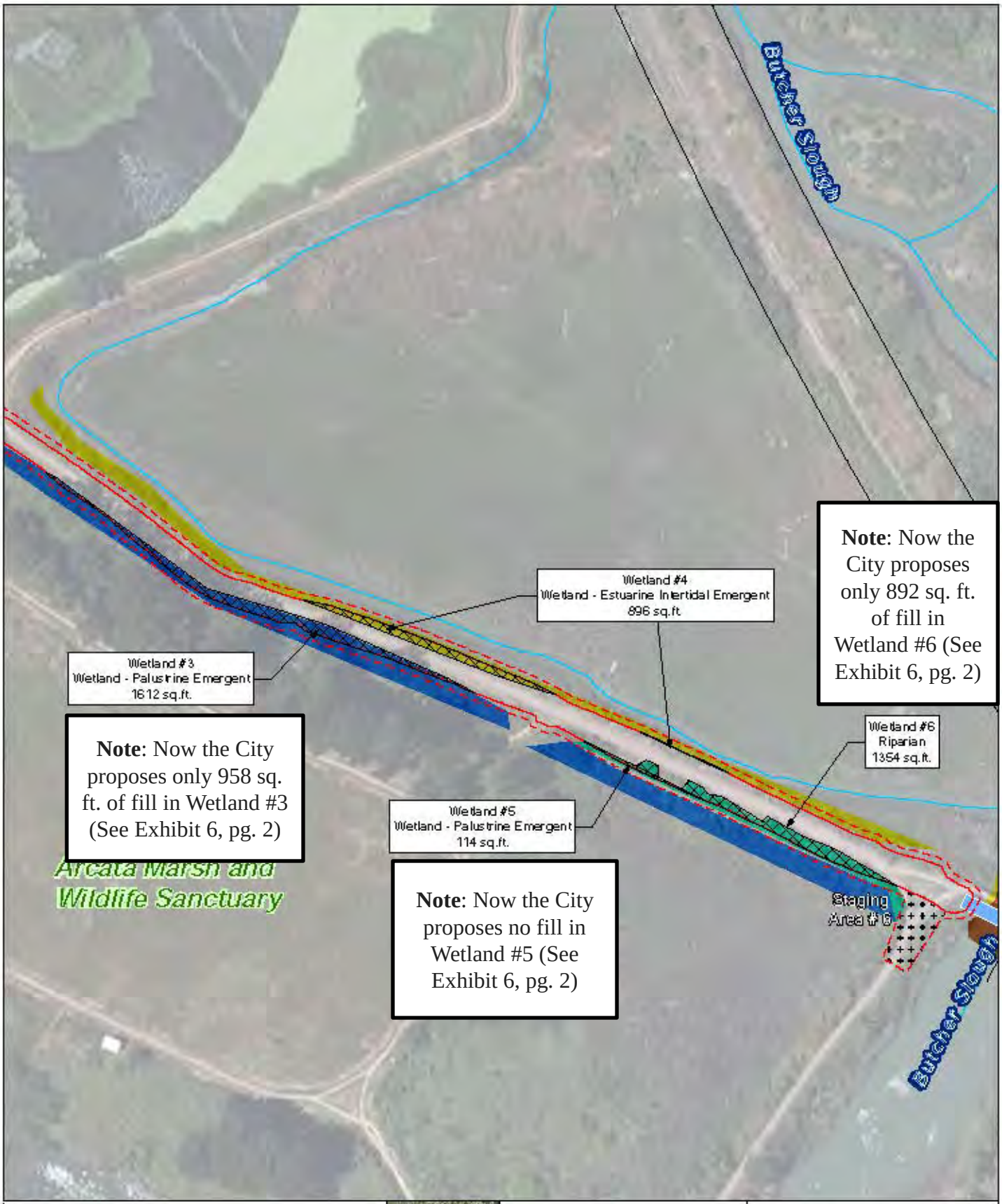

Page 6 of 18

Figure 5-6
Wetlands/Habitats Impacts

Project:
Phase 2 City of Arcata
Rail-with-Trail Connectivity Project

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Revised by City of Arcata 3/25/2016

	Date:	Project #
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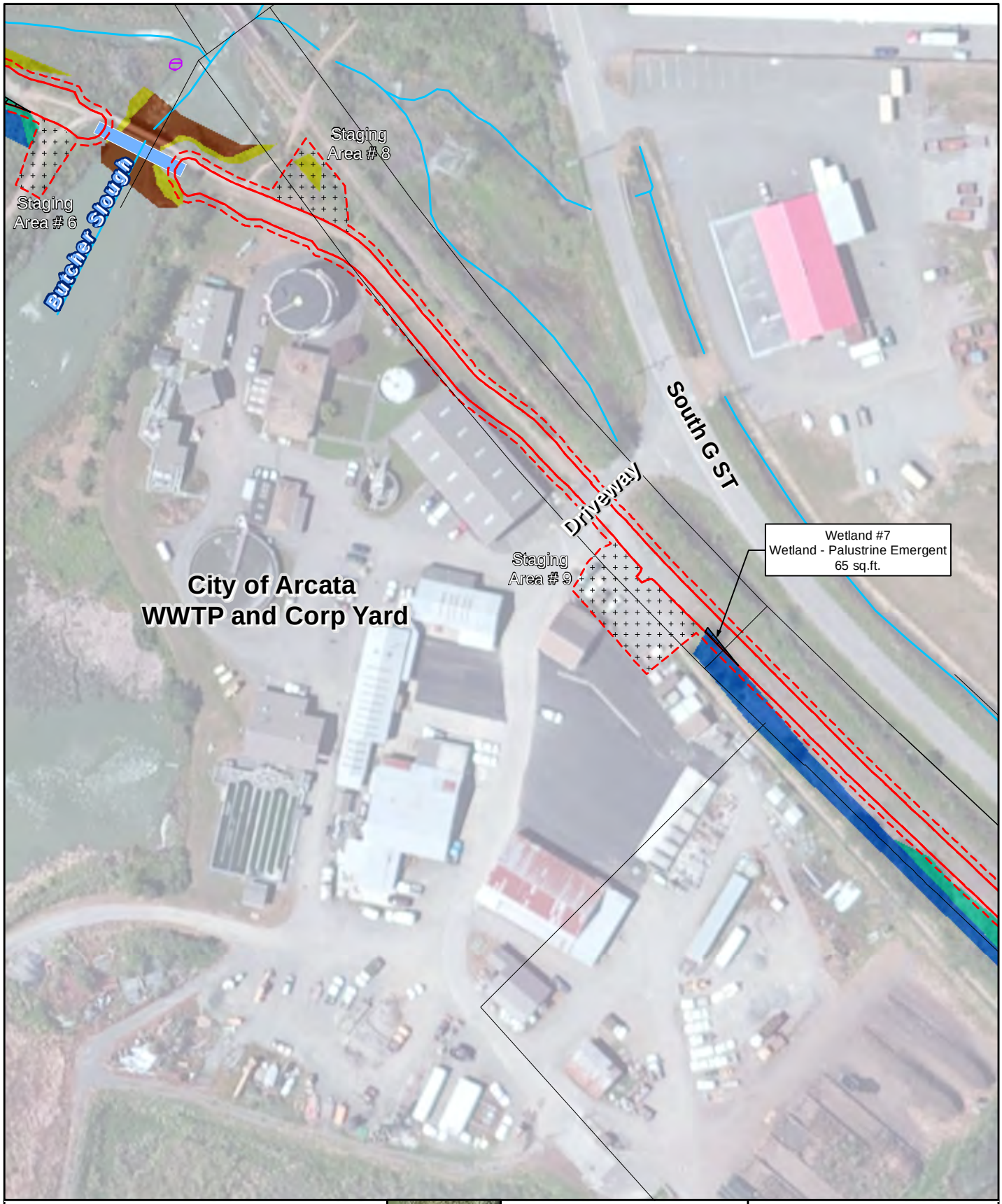

Wetlands
- Impacted Wetlands
- Ditch
- Riparian
- Wetland - Estuarine Emergent (Ditch)
- Wetland - Estuarine Intertidal Emergent
- Wetland - Estuarine Intertidal Shore (Mud)
- Wetland - Palustrine Emergent

Botanical Survey
- Impacted Botanical Survey
- Castilleja ambigua
- Cordylanthus maritimus

- Permanent Impacts (Trail Footprint)
- Temporary Impacts
- Staging Area
- Bridge
- HBNWR
- Phase I
- Creek
- Property Line
- Arcata City Limits

0 50 100 Ft

1 inch = 100 feet printed at 8.5x11

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Sources: City of Arcata GIS - Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Parcels; 2010 Bing Imagery

Cartography	Date:	Project #
GLD/BK	3/25/2016	01051-09-004

Figure 5-7
Wetlands/Habitats Impacts

Project:
Phase 2 City of Arcata
Rail-with-Trail Connectivity Project

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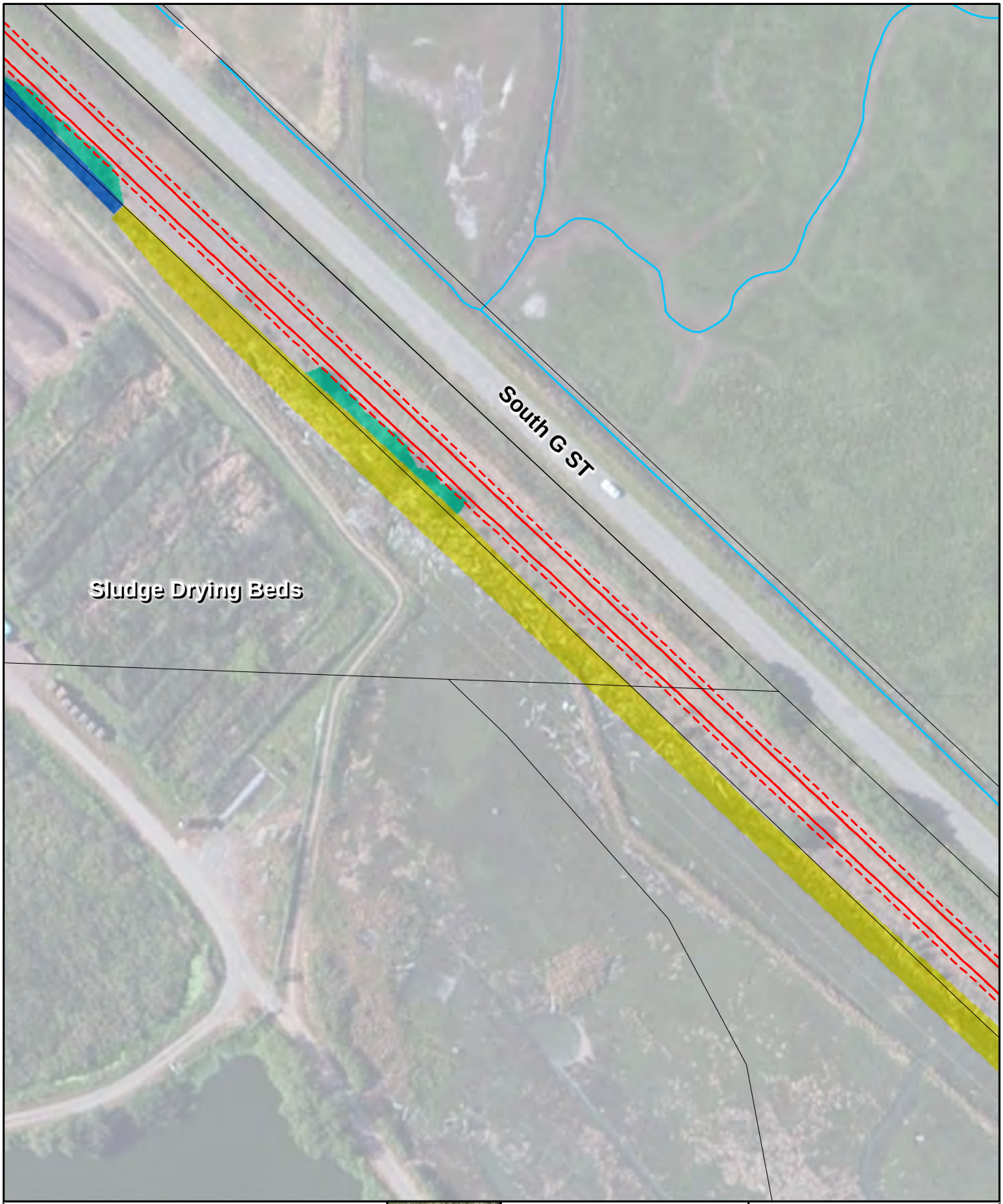
Revised by City of Arcata 3/25/2016



Wetlands
- Impacted Wetlands
- Ditch
- Riparian
- Wetland - Estuarine Emergent (Ditch)
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- Wetland - Estuarine Intertidal Shore (Mud)
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Botanical Survey
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0 50 100 Ft

N

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Sources: City of Arcata GIS - Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Parcels; 2010 Bing Imagery

Cartography	Date:	Project #
GLD/BK	3/25/2016	01051-09-004

Figure 5-8
Wetlands/Habitats Impacts

Project:
Phase 2 City of Arcata
Rail-with-Trail Connectivity Project

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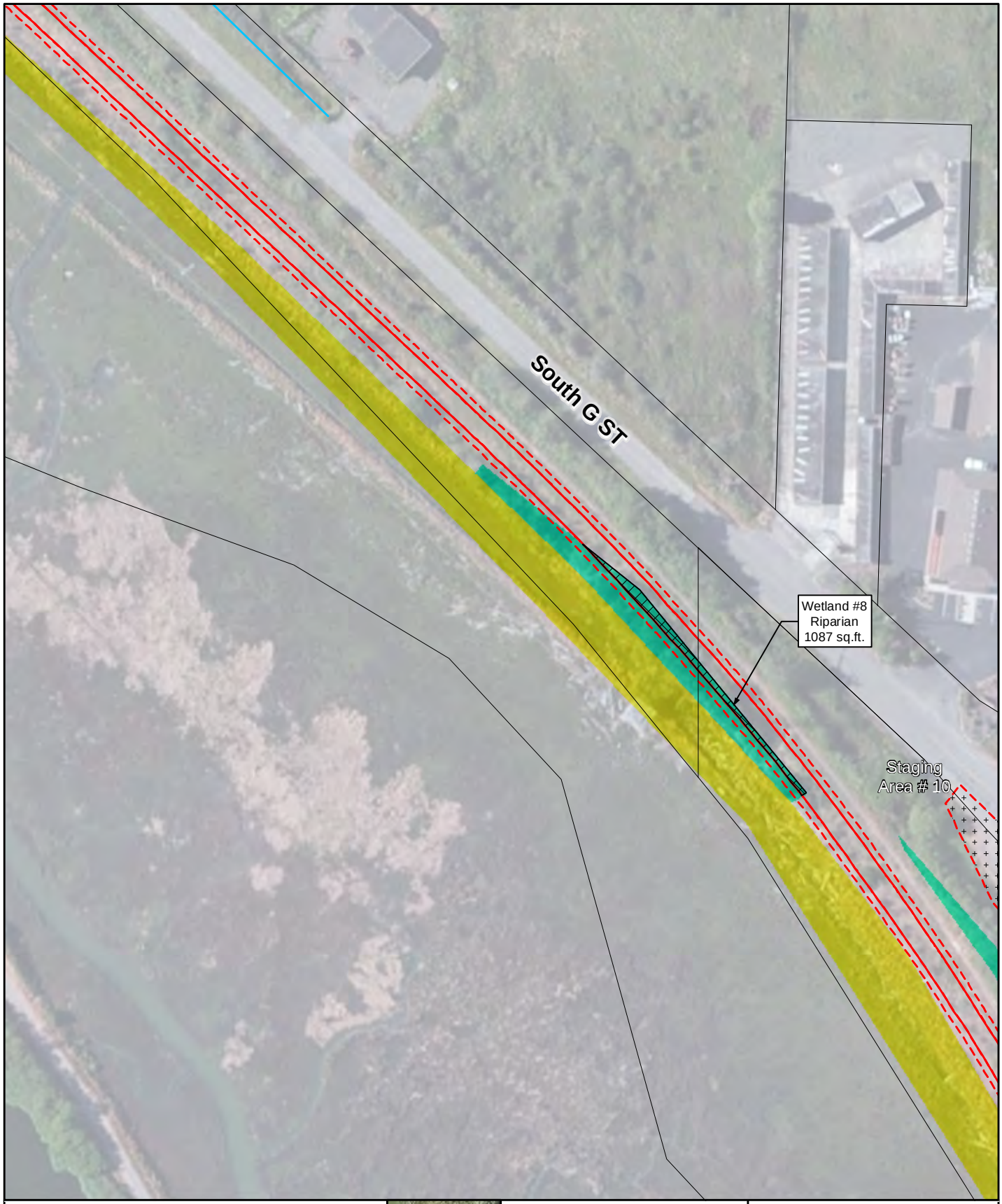

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Cartography	Date:	Project #
GLD/BK	3/25/2016	01051-09-004

Figure 5-9
Wetlands/Habitats Impacts

Project:
Phase 2 City of Arcata
Rail-with-Trail Connectivity Project

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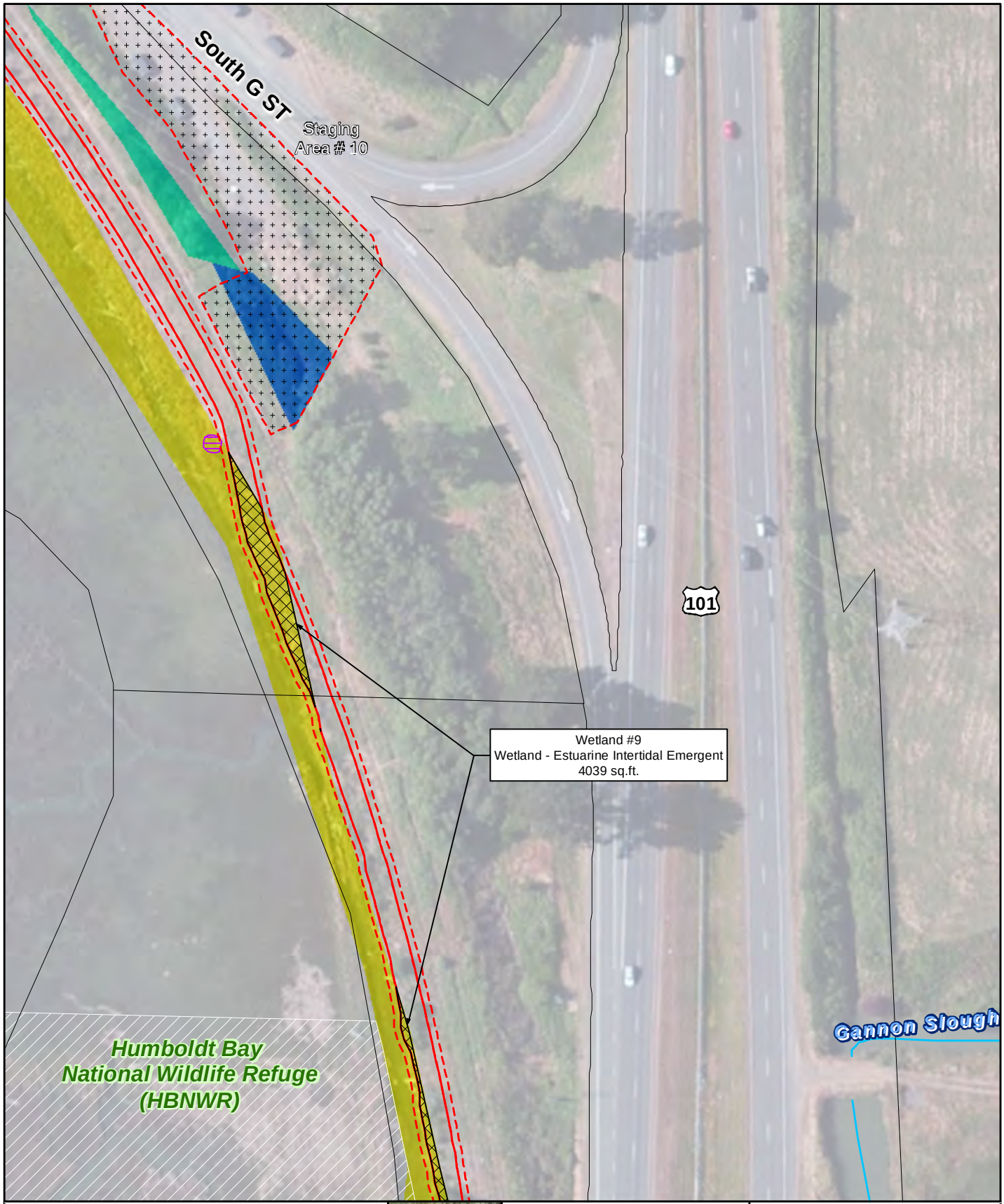

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Page 10 of 18

0 50 100 Ft

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Cartography	Date:	Project #
GLD/BK	3/25/2016	01051-09-004

Figure 5-10
Wetlands/Habitats Impacts

Project:
Phase 2 City of Arcata
Rail-with-Trail Connectivity Project

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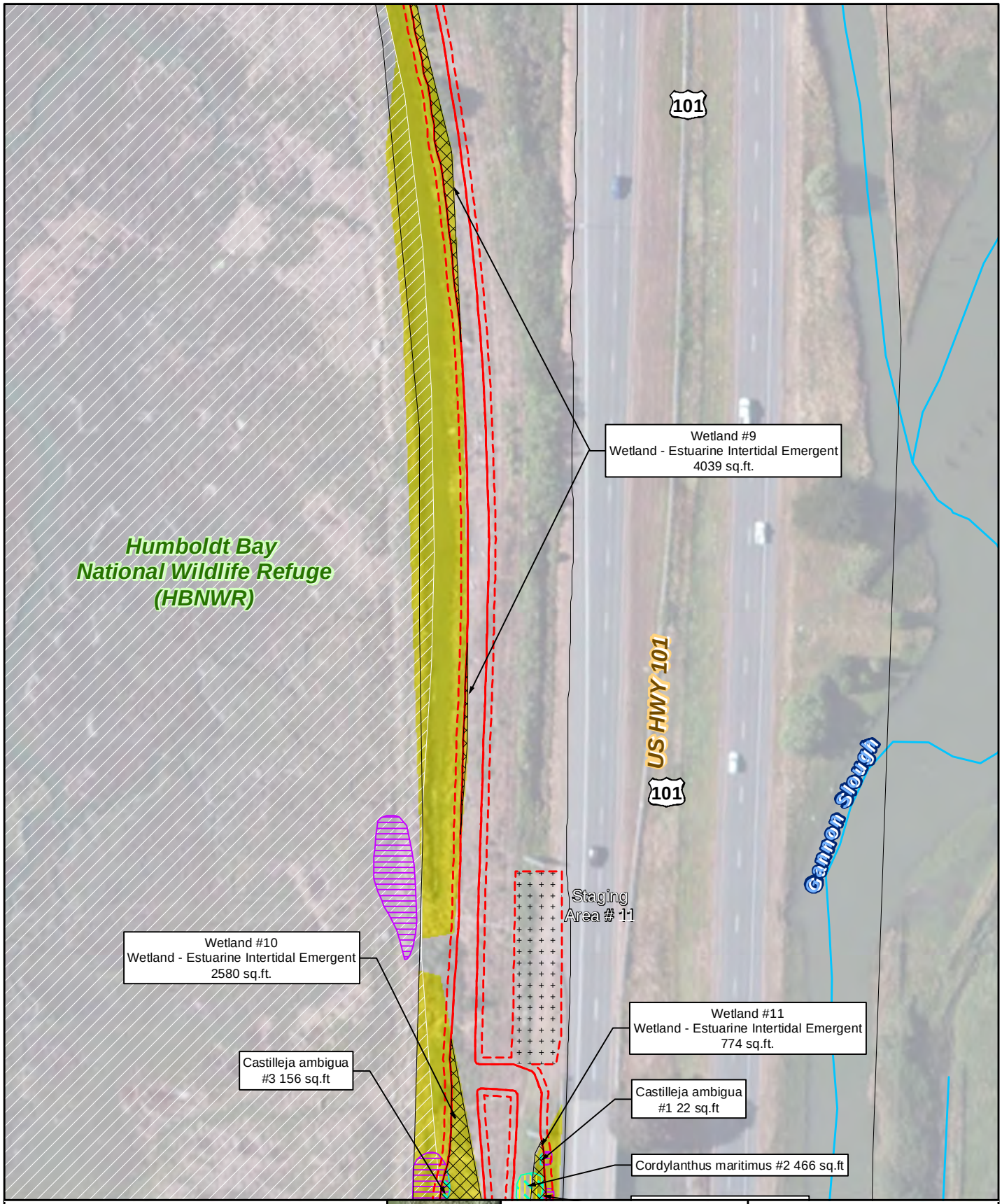

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Cartography	Date:	Project #
GLD/BK	3/25/2016	01051-09-004

Figure 5-11
Wetlands/Habitats Impacts

Project:
Phase 2 City of Arcata
Rail-with-Trail Connectivity Project

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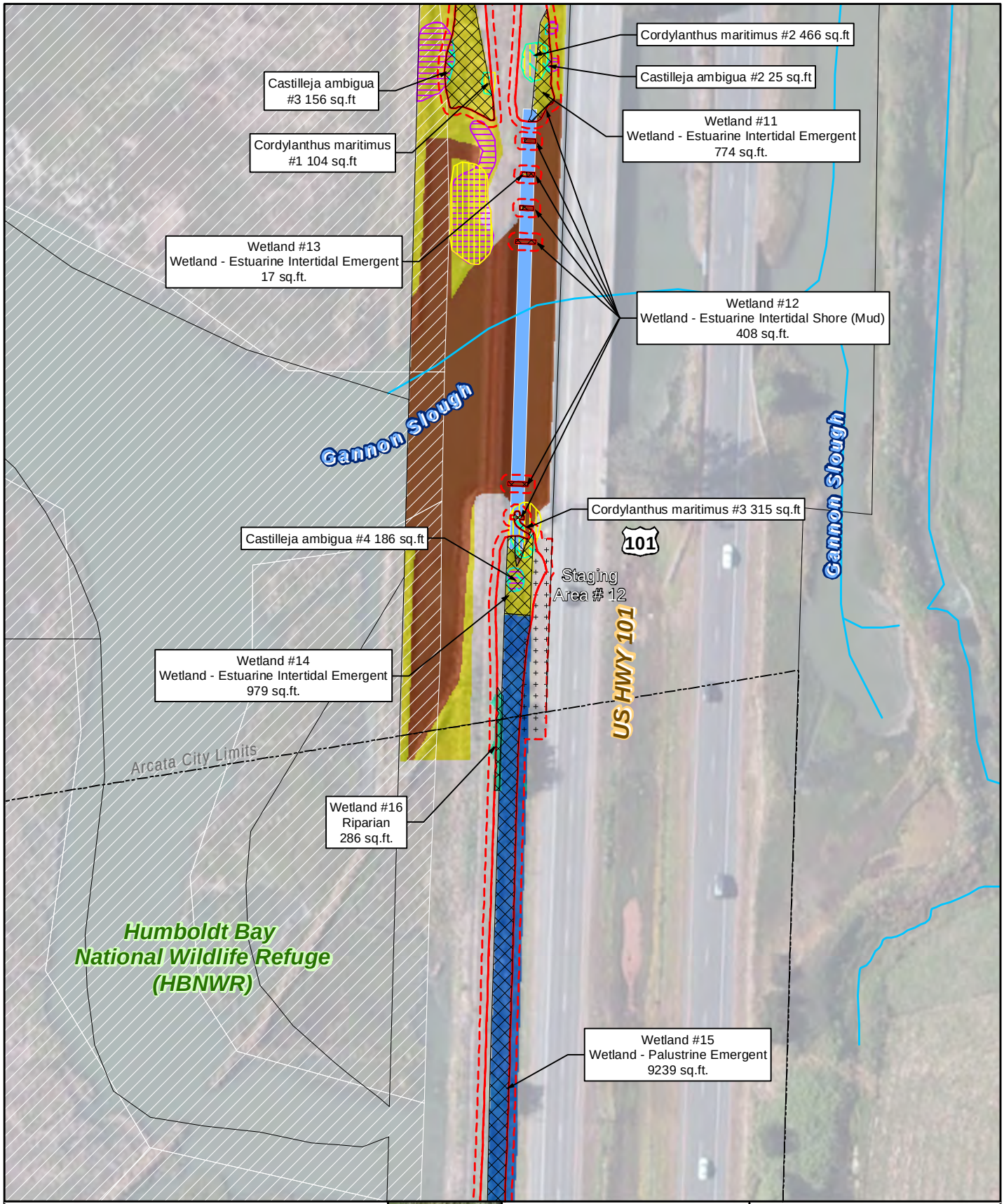
Revised by City of Arcata 3/25/2016



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Cartography	Date:	Project #
GLD/BK	3/25/2016	01051-09-004

Figure 5-12
Wetlands/Habitats Impacts

Project:
Phase 2 City of Arcata
Rail-with-Trail Connectivity Project

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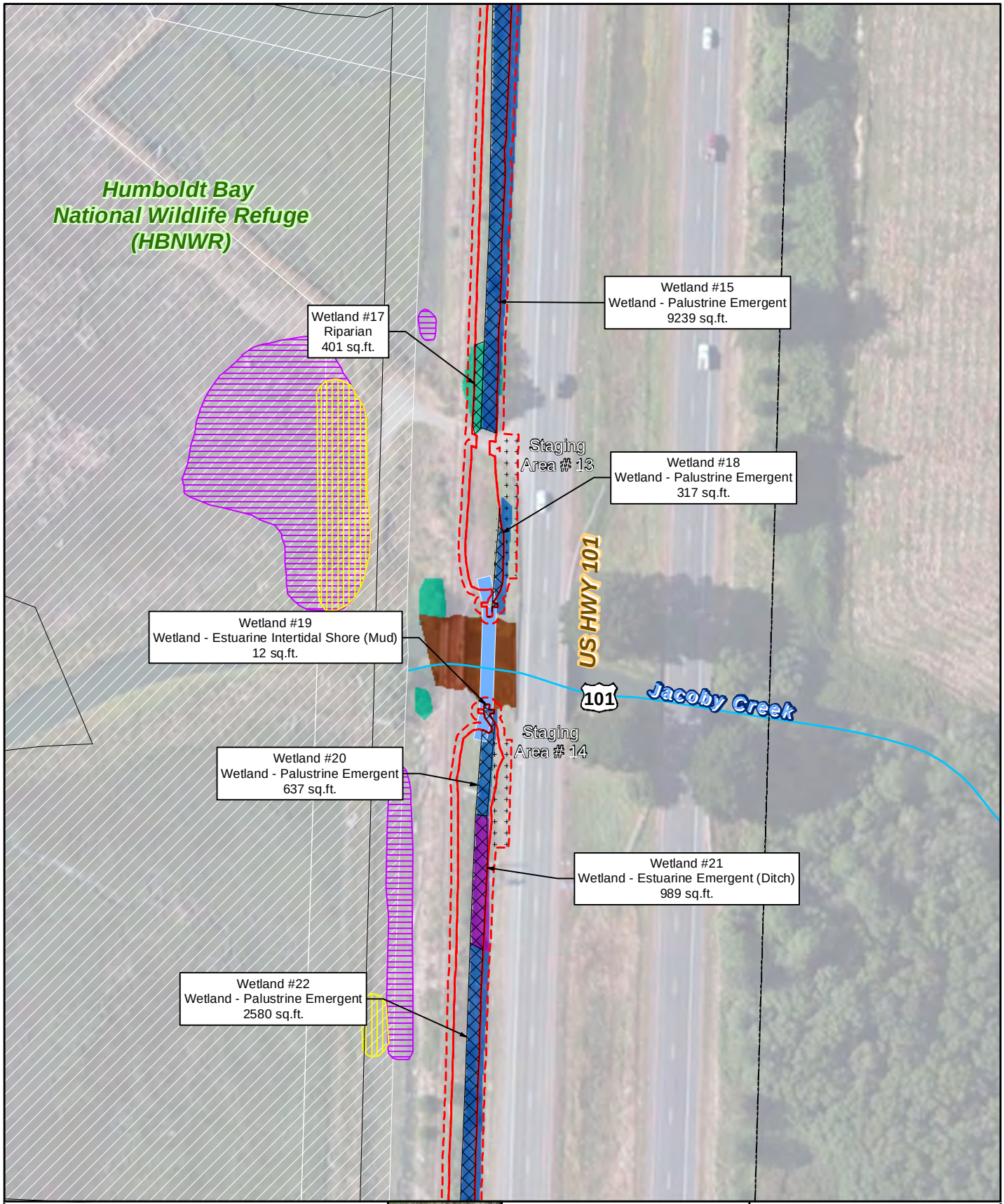

Wetlands
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Cartography	Date:	Project #
GLD/BK	3/25/2016	01051-09-004

Figure 5-13
Wetlands/Habitats Impacts

Project:
Phase 2 City of Arcata
Rail-with-Trail Connectivity Project

WINZLER & KELLY

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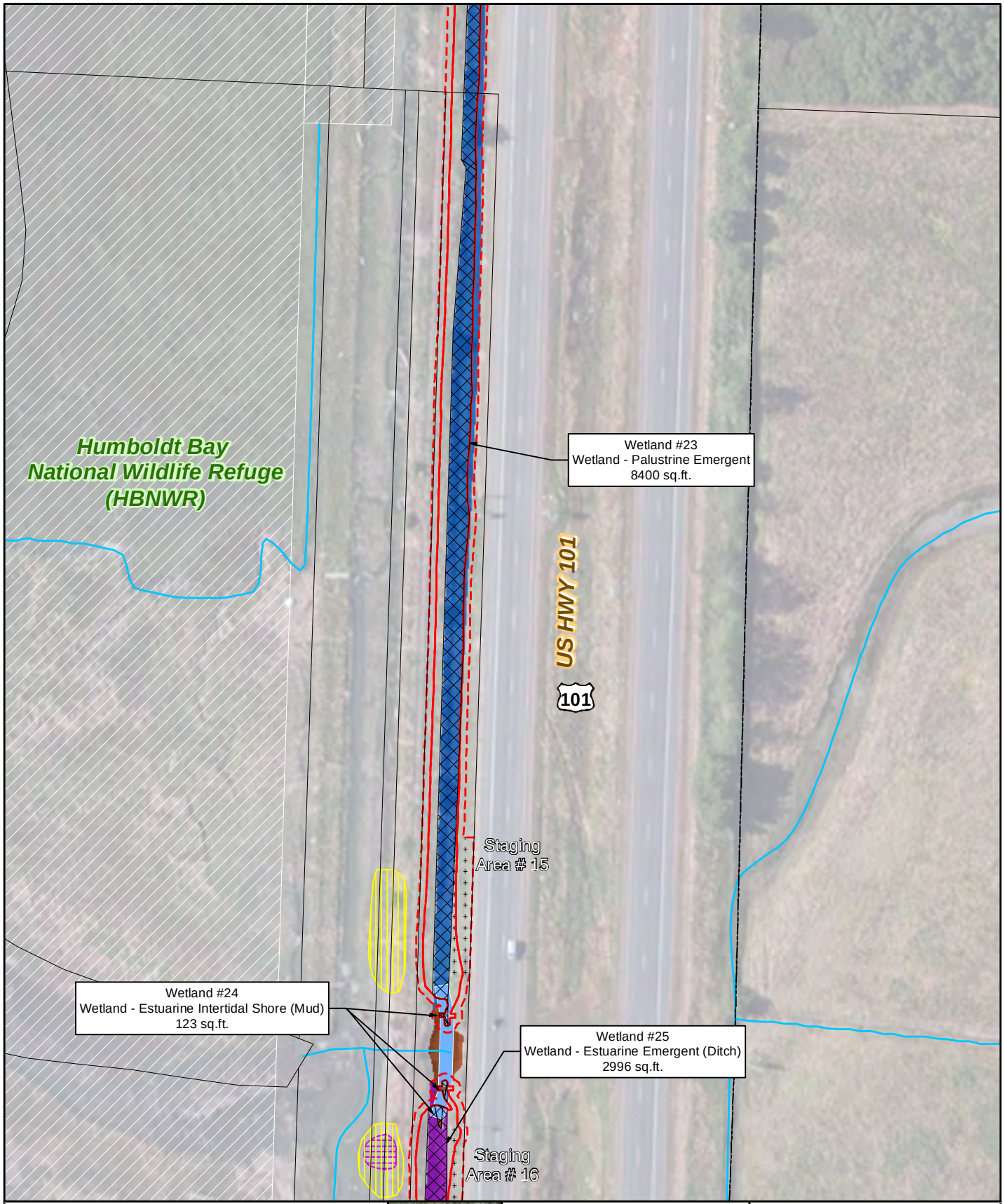

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Page 14 of 18

0 50 100 Ft

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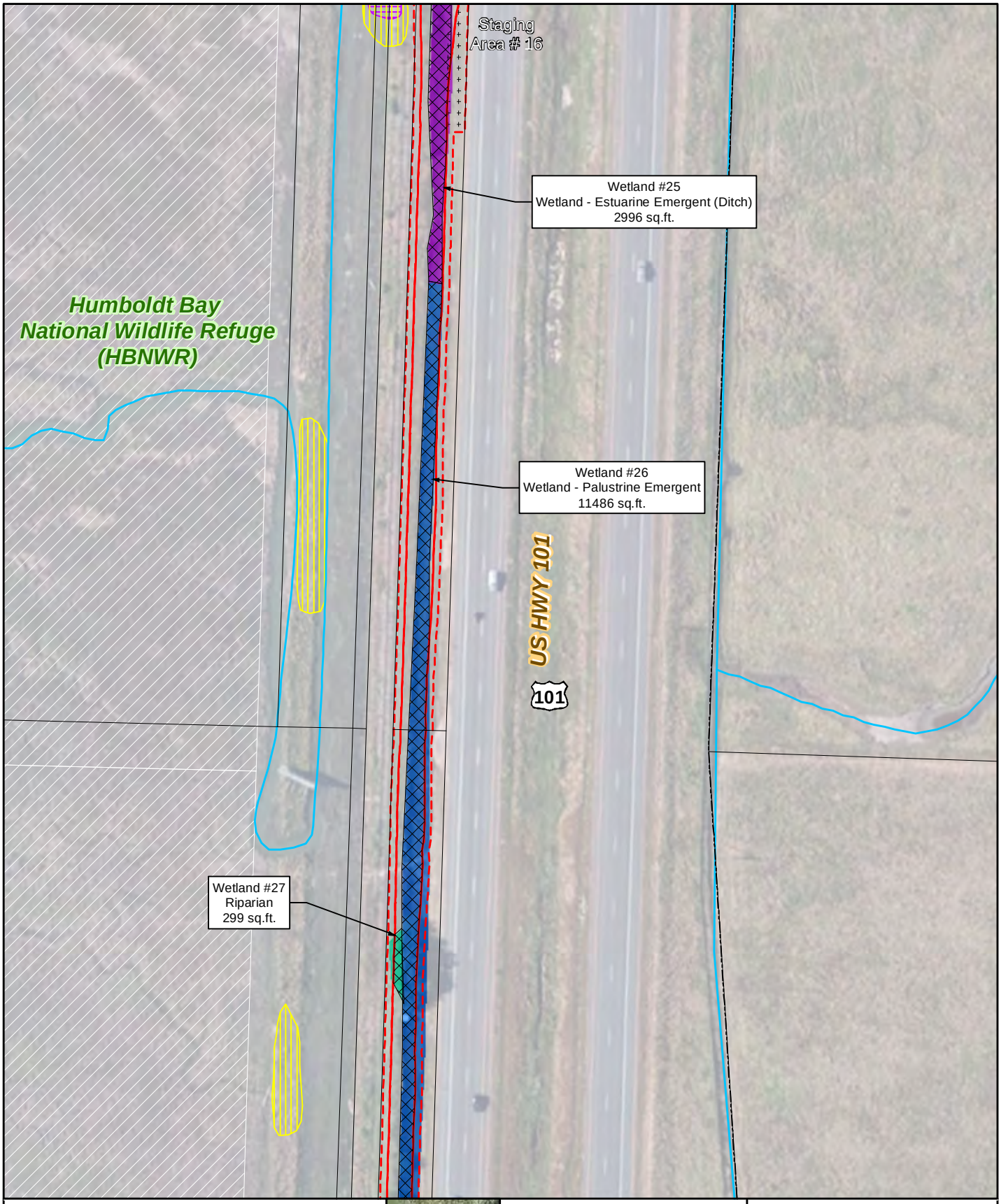
Cartography	Date:	Project #
GLD/BK	3/25/2016	01051-09-004

Figure 5-14
Wetlands/Habitats Impacts

Project:
Phase 2 City of Arcata
Rail-with-Trail Connectivity Project

WINZLER & KELLY

Revised by City of Arcata 3/25/2016



Wetlands
- Impacted Wetlands
- Ditch
- Riparian
- Wetland - Estuarine Emergent (Ditch)
- Wetland - Estuarine Intertidal Emergent
- Wetland - Estuarine Intertidal Shore (Mud)
- Wetland - Palustrine Emergent

Botanical Survey
- Impacted Botanical Survey
- Castilleja ambigua
- Cordylanthus maritimus

- Permanent Impacts (Trail Footprint)
- Temporary Impacts
- Staging Area
- Bridge
- HBNWR
- Phase I
- Creek
- Property Line
- Arcata City Limits

0 50 100 Ft

1 inch = 100 feet printed at 8.5x11

N

Sources: City of Arcata GIS - Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Parcels; 2010 Bing Imagery

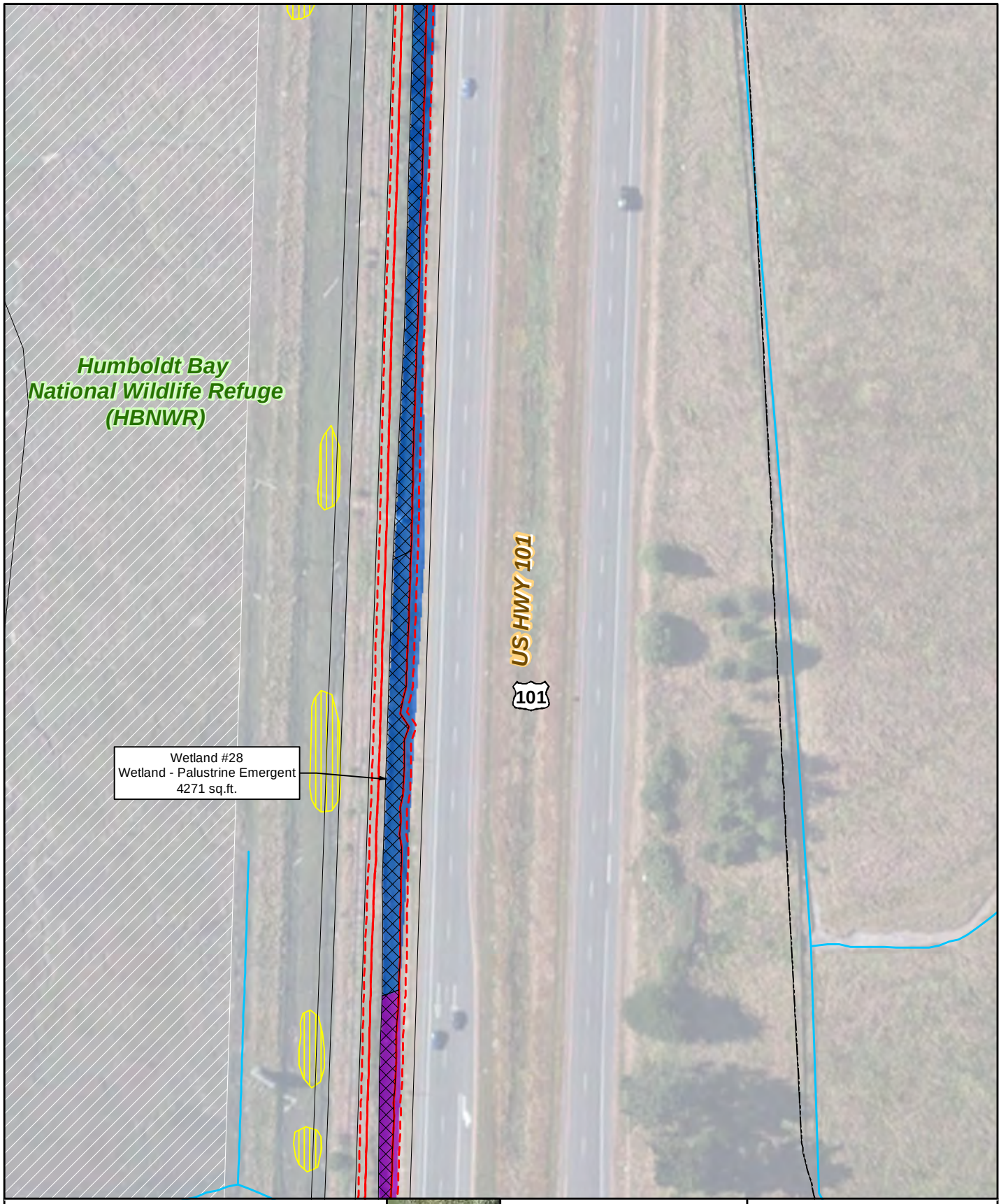
Cartography	Date:	Project #
GLD/BK	3/25/2016	01051-09-004

Figure 5-15
Wetlands/Habitats Impacts

Project:
Phase 2 City of Arcata
Rail-with-Trail Connectivity Project

WINZLER & KELLY

Revised by City of Arcata 3/25/2016



Wetlands
- Impacted Wetlands
- Ditch
- Riparian
- Wetland - Estuarine Emergent (Ditch)
- Wetland - Estuarine Intertidal Emergent
- Wetland - Estuarine Intertidal Shore (Mud)
- Wetland - Palustrine Emergent

Botanical Survey
- Impacted Botanical Survey
- Castilleja ambigua
- Cordylanthus maritimus

- Permanent Impacts (Trail Footprint)
- Temporary Impacts
- Staging Area
- Bridge
- HBNWR
- Phase I
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- Property Line
- Arcata City Limits

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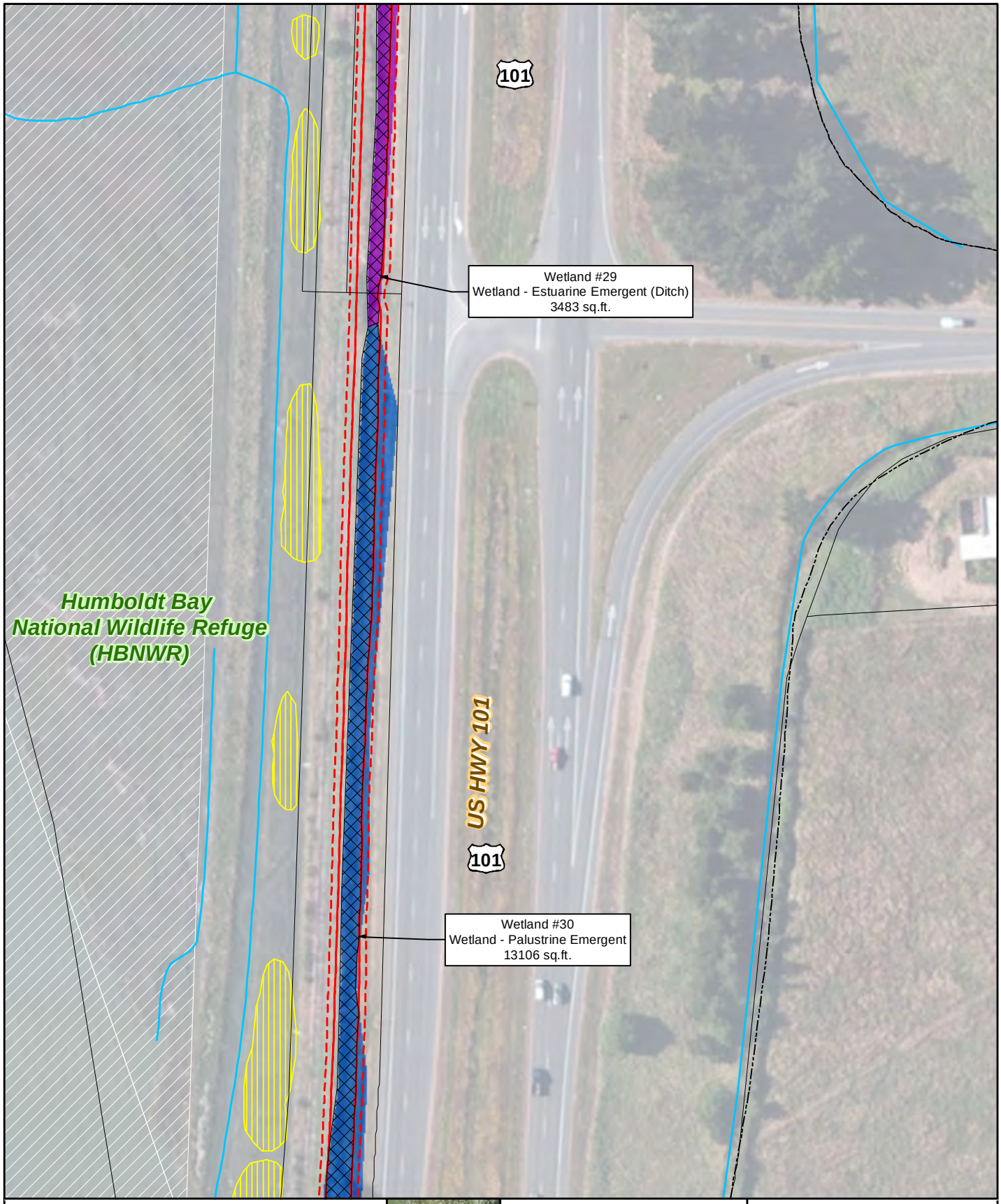
Cartography	Date:	Project #
GLD/BK	3/25/2016	01051-09-004

Figure 5-16
Wetlands/Habitats Impacts

Project:
Phase 2 City of Arcata
Rail-with-Trail Connectivity Project

WINZLER & KELLY

Revised by City of Arcata 3/25/2016



Wetlands
- Impacted Wetlands
- Ditch
- Riparian
- Wetland - Estuarine Emergent (Ditch)
- Wetland - Estuarine Intertidal Emergent
- Wetland - Estuarine Intertidal Shore (Mud)
- Wetland - Palustrine Emergent

Botanical Survey
- Impacted Botanical Survey
- Castilleja ambigua
- Cordylanthus maritimus

- Permanent Impacts (Trail Footprint)
- Temporary Impacts
- Staging Area
- Bridge
- HBNWR
- Phase I
- Creek
- Property Line
- Arcata City Limits

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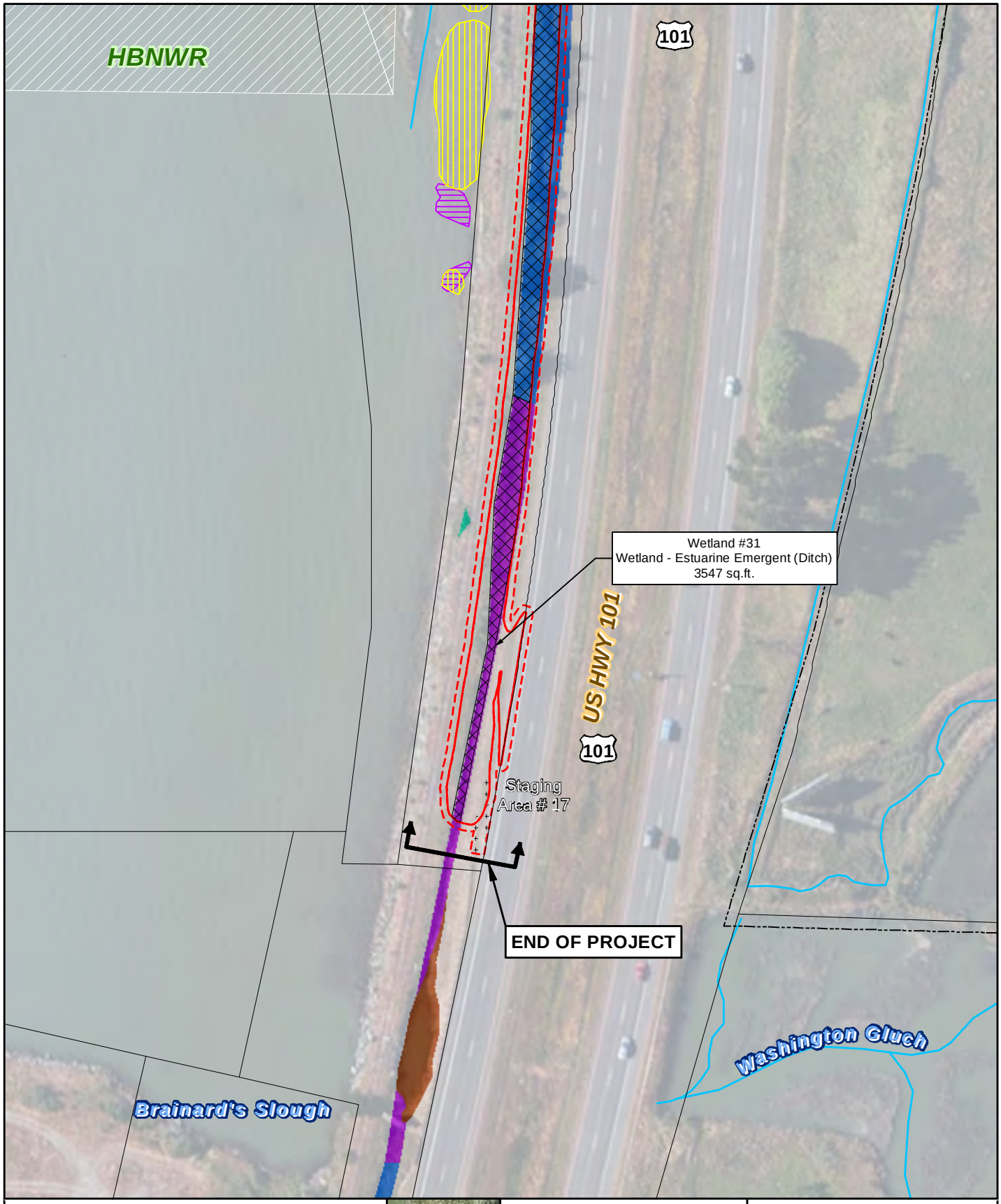
Cartography	Date:	Project #
GLD/BK	3/25/2016	01051-09-004

Figure 5-17
Wetlands/Habitats Impacts

Project:
Phase 2 City of Arcata
Rail-with-Trail Connectivity Project

WINZLER & KELLY

Revised by City of Arcata 3/25/2016



Wetlands
- Impacted Wetlands
- Ditch
- Riparian
- Wetland - Estuarine Emergent (Ditch)
- Wetland - Estuarine Intertidal Emergent
- Wetland - Estuarine Intertidal Shore (Mud)
- Wetland - Palustrine Emergent

Botanical Survey
- Impacted Botanical Survey
- Castilleja ambigua
- Cordylanthus maritimus

- Permanent Impacts (Trail Footprint)
- Temporary Impacts
- Staging Area
- Bridge
- HBNWR
- Phase I
- Creek
- Property Line
- Arcata City Limits

Page 18 of 18

0 50 100 Ft

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N

Sources: City of Arcata GIS - Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Parcels; 2010 Bing Imagery

Cartography	Date:	Project #
GLD/BK	3/25/2016	01051-09-004

Figure 5-18
Wetlands/Habitats Impacts

Project:
Phase 2 City of Arcata
Rail-with-Trail Connectivity Project

WINZLER & KELLY

Revised by City of Arcata 3/25/2016

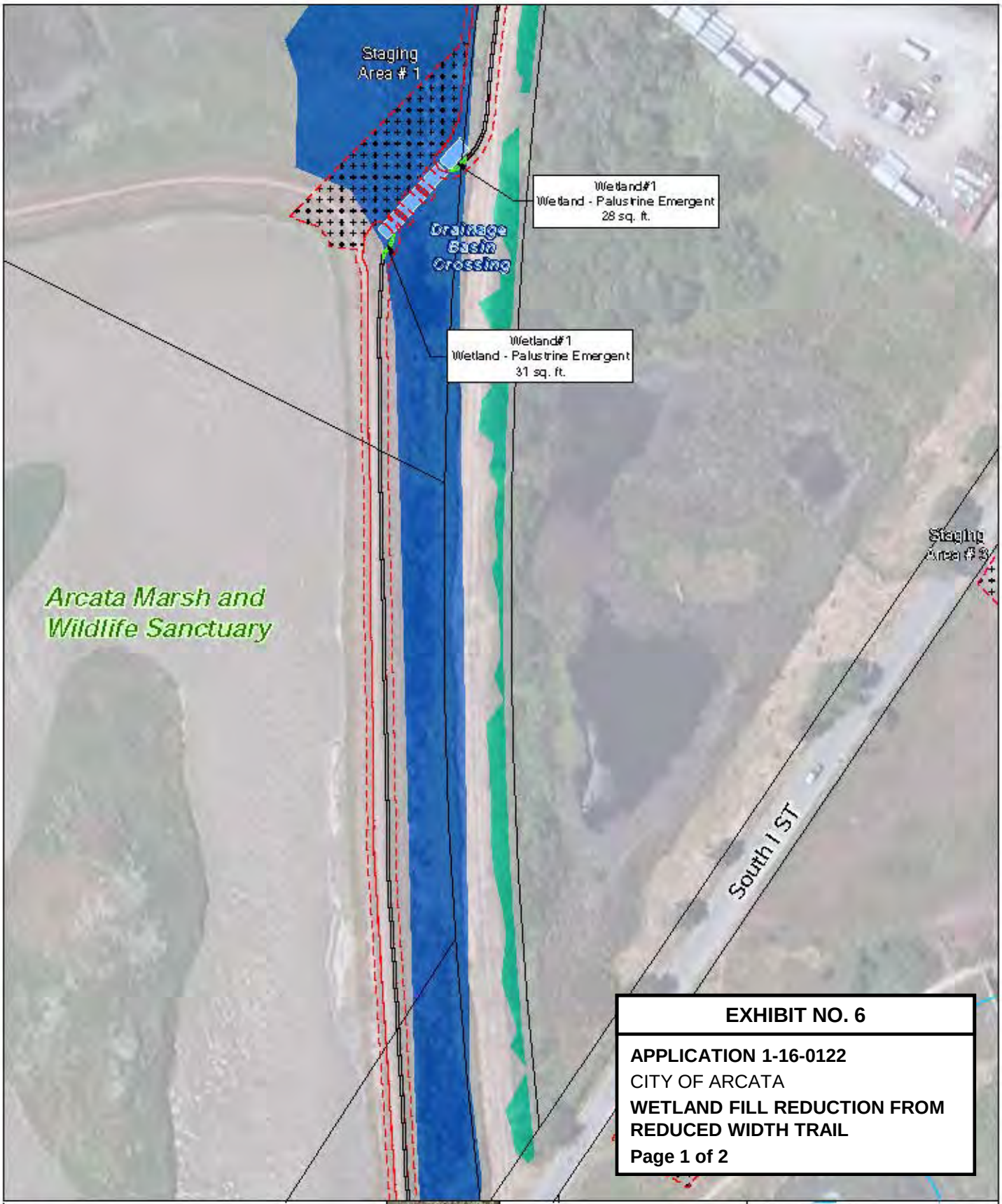


EXHIBIT NO. 6

APPLICATION 1-16-0122

CITY OF ARCATA

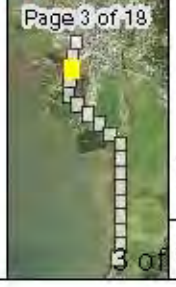
WETLAND FILL REDUCTION FROM REDUCED WIDTH TRAIL

Page 1 of 2

Wetlands
- Impacted Wetlands (Permanent)
- Ditch
- Riparian
- Wetland - Estuarine Emergent (Ditch)
- Wetland - Estuarine Intertidal Emergent
- Wetland - Estuarine Intertidal Shore (Mud)
- Wetland - Palustrine Emergent

Botanical Survey
- Impacted Botanical Survey
- Castilleja ambigua
- Cordylanthus maritimus

- 2' Trail Reduction
- Permanent Impacts (Trail Footprint)
- Temporary Impacts
- Staging Area
- Bridge
- HBNWR
- Phase I
- Creek
- Property Line
- Arcata City Limits



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1 inch = 100 feet printed at 8.5x11

N

Sources: City of Arcata GIS - Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - Coastal Zone, HBNWR boundaries, and Parcels; 2010 Bing Imagery

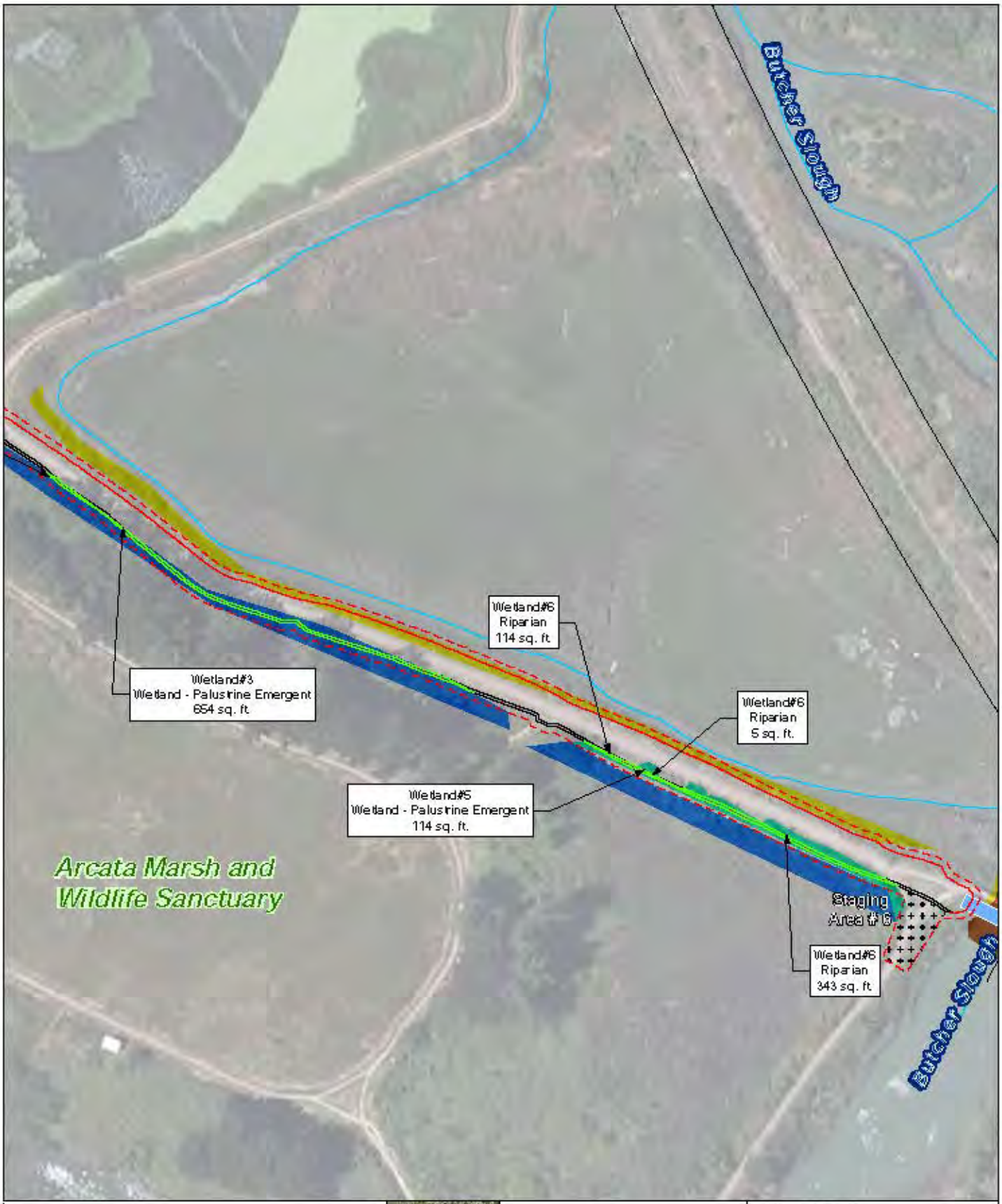
Cartography	Date:	Project #
GLD/BK	7/13/2016	01051-09.004

Figure 5b-3
Wetlands/Habitats Impacts within 2' Trail Reduction

Project:
Phase 2 City of Arcata
Rail-with-Trail Connectivity Project

WINZLER & KELLY

Revised by City of Arcata 7/13/2016



Wetlands
- Impacted Wetlands (Permanent)
- Ditch
- Riparian
- Wetland - Estuarine Emergent (Ditch)
- Wetland - Estuarine Intertidal Emergent
- Wetland - Estuarine Intertidal Shore (Mud)
- Wetland - Palustrine Emergent

Botanical Survey
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- Cordylanthus maritimus

- 2' Trail Reduction
- Permanent Impacts (Trail Footprint)
- Temporary Impacts
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- Bridge
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1 inch = 100 feet printed at 8.5x11

N

Sources: City of Arcata GIS - Streets, Parks, Landmarks, City Boundary; Humboldt County GIS - zone, HBNWR boundaries, and Parcels; 2010 Bing Imagery

Cartography	Date:	Project #
GLD/BK	7/13/2016	01051-09.004

Figure 5b-6
Wetlands/Habitats Impacts within 2' Trail Reduction

Project:
Phase 2 City of Arcata
Rail-with-Trail Connectivity Project

WINZLER & KELLY

Revised by City of Arcata 7/13/2016

CALIFORNIA COASTAL COMMISSION
NORTH COAST DISTRICT OFFICE
1385 8TH STREET • SUITE 130
ARCATA, CA 95521
VOICE (707) 826-8950
FAX (707) 826-8960

SPECIAL CONDITIONS OF CDP 1-14-0249
(Humboldt Bay Harbor, Recreation, and Conservation District)

1. **Project Area Limits**. This permit authorizes development only on those lands proposed for development in the CDP application (listed in Appendix C of the May 22, 2015 staff report for CDP 1-14-0249). Expansion of the project area beyond the specified lands shall require an amendment to this coastal development permit.

2. **Water Board Approval**. PRIOR TO COMMENCEMENT OF DEVELOPMENT (PRIMARY TREATMENT OF *SPARTINA*) AT EACH SITE, the Applicant shall provide, for the review and approval of the Executive Director, a copy of a permit issued by the North Coast Regional Water Quality Control Board, or evidence that no permit is required for the treatment of *Spartina* at the site. The Applicant shall inform the Executive Director of any proposed changes to the project required by the Board. Such changes shall not be incorporated into the project until the Applicant obtains a Commission amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

3. **State Lands Commission Review**. PRIOR TO COMMENCEMENT OF DEVELOPMENT (PRIMARY TREATMENT OF *SPARTINA*) AT EACH SITE IN THE EEL RIVER OR MAD RIVER, the Applicant shall provide to the Executive Director a written determination from the State Lands Commission that for the treatment of *Spartina* at the site: (A) no State or public trust lands are involved in the development; or (B) State or public trust lands are involved in the development and all permits required by the State Lands Commission have been obtained; or (C) State or public trust lands may be involved in the development, but pending a final determination an agreement has been made with the State Lands Commission for the approved project as conditioned by the Commission to proceed without prejudice to that determination.

4. **Submittal of Site-Specific *Spartina* Removal Plans.**
   A. AT LEAST TWO WEEKS PRIOR TO COMMENCEMENT OF DEVELOPMENT (PRIMARY TREATMENT OF *SPARTINA*) AT EACH SITE, the Applicant shall submit, for the review and approval of the Executive Director, a site-specific *Spartina* Removal Plan for the proposed primary *Spartina* removal work in the area consistent with (1) all terms and conditions of Coastal Development Permit 1-14-0249, and (2) the mitigation measures in the adopted Final Programmatic Environmental Impact Report (FPEIR) prepared for the project (dated March 21, 2013), as supplemented by

the conditions of this CDP. The plan shall include, at a minimum, the following components:

(i) A description of the treatment area location, size, access routes, and proposed primary and anticipated secondary methods for *Spartina* removal;

(ii) A site evaluation that describes the size and density of the *Spartina* infestation in the treatment area, vegetation composition, substrate characteristics, topography, tidal circulation and elevations, the presence of tidal channels on or adjacent to the site, site accessibility, the presence of sensitive resources, distances to the nearest aquaculture operations and residential areas, public access use in and around the area, and other factors relevant to the proposed primary treatment method;

(iii) Analyses and, as applicable, survey results, completed by a qualified biologist using agency-approved protocols, for sensitive fish, birds, plants, and other sensitive species consistent with the relevant mitigation measures proposed in the FPEIR;

(iv) In cases where ground disturbance methods or imazapyr application are proposed, a preliminary assessment of sediment contamination in and around treatment areas and access routes consistent with the relevant mitigation measures proposed in the FPEIR;

(v) Any necessary approvals from the Regional Water Quality Control Board, the North Coast Unified Air Quality Management District, and other agencies as applicable for the proposed site-specific treatment activities;

(vi) Plans consistent with the mitigation measures in the FPEIR for all of the following, as applicable: (a) the posting of educational signage, (b) noise monitoring, (c) bird nesting habitat protection, (d) rare plant protection, (e) eelgrass avoidance, (f) erosion and sediment control, (g) hazardous materials spill prevention and containment, (h) worker health and safety, (i) herbicide drift management developed consistent with the requirements of **Special Condition 9**; and (j) public access protection;

(vii) A protocol for the inadvertent discovery of artifacts or archaeological deposits developed consistent with the requirements of **Special Condition 8**;

(viii) A description of the specific mitigation measures proposed to avoid or minimize impacts to visual, biological, and cultural resources, water quality, surrounding mudflats, ESHA, and park and recreation areas, and public access from the proposed *Spartina* removal activities, including demonstrating consistency with all relevant mitigation measures from the FPEIR and the special conditions of this coastal development permit;

(ix) A site plan depicting the primary treatment area, designated ingress/egress routes, staging/stockpiling areas, buffer areas (from channels, nesting bird habitat, sensitive plants, etc., as applicable), and locations of relevant mitigation measures (e.g., educational signage, locations to be staked for rare plant protection, locations for erosion and sediment control devices, etc.);

(x) A schedule for timing of work, including timing of mitigation measure implementation, and an analysis of how the proposed timing of work minimizes impacts on public access (e.g., avoiding peak use periods) and coastal resources;

(xi) Applicable acreage calculations demonstrating compliance with **Special Condition 5**;

(xii) A description of the specific implementation of performance standards that will assure achievement of the restoration goals and objectives set forth in the Humboldt Bay Regional *Spartina* Eradication Plan (H.T. Harvey & Assoc. 2012) including, but not limited to (a) the restoration of native tidal marsh plant species in the treatment area to a level of coverage and diversity similar to surrounding natural marshlands, and (b) achievement of fully restored (to "maintenance" stage) marsh habitats within the treatment area within five years of implementation of primary treatment;

(xiii) A monitoring plan that includes provisions for (a) monitoring the treatment area for a minimum of five years post implementation of primary treatment; (b) photo-documenting the restoration/recovery of the treatment area; and (c) performing quantitative sampling in the treatment area to track native plant recovery and *Spartina* presence/cover in the area throughout the monitoring period. The monitoring plan should include a schedule of proposed monitoring activities; and

(xiv) A reporting plan that includes provisions for submittal to the Executive Director of (a) an "as built" report demonstrating that the initial restoration work has been completed in accordance with the approved site-specific *Spartina* removal plan within 30 days of completion of primary treatment; (b) annual reports of monitoring results by December 31st each year for the duration of the required monitoring period, beginning the first year after submittal of the "as-built" assessment. Each annual report shall include a "Performance Evaluation" section where information and results from the monitoring are used to evaluate the status of the restoration project and to recommend follow-up treatment methods as well as any necessary revegetation; and (c) a final monitoring report the end of the five-year reporting period. The final report must be prepared in conjunction with a qualified biologist. The report must evaluate whether the restoration site conforms to the goals, objectives, and performance standards set forth in the approved final site-specific *Spartina* removal plan.

B. If the final report indicates that the site-specific *Spartina* removal project has been unsuccessful, in part or in whole, based on the approved performance standards, the permittee shall submit a revised or supplemental plan to compensate for those portions of the original plan that did not meet the approved performance standards. The revised plan shall be processed as an amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

C. The permittee shall undertake development in accordance with the approved final plans. Any proposed changes to the approved final plans shall be reported to the Executive Director. No changes to the approved final plans shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

5. Limitations and Restrictions on Primary Treatment Methods. The maximum total acreage authorized to receive primary treatment (all methods) in any given calendar year

shall not exceed 722 acres and not more than 415 acres in Humboldt Bay (HB), 300 acres in the Eel River (ER), and 7 acres in the Mad River (MR) as proposed. In addition, in any given year in which primary treatment is proposed, the total maximum acreages of primary treatment of each method shall not exceed the following as proposed:

A. For Marsh Master® or other amphibious tracked heavy equipment: 118 acres for HB, 118 acres for ER, and 0 acres for MR;

B. For handheld grinding and tilling tools: 200 acres for HB, 200 acres for ER, and 7 acres for MR;

C. For manual excavation: 10 acres for HB, 10 acres for ER, and 7 acres for MR;

D. For covering: 5 acres each for HB, ER, and MR. In addition, for specific treatment areas that are visible from public vantage points, covering shall be limited to a maximum of 0.5-acre each in HB, ER, and MR.

E. For imazapyr application: 200 acres for HB, 200 acres for ER, and 7 acres for MR. In addition, no site shall be treated with imazapyr more than three times during any five year period.

6. Length of Development Authorization. Development authorized by this permit is valid for five (5) years from the date of Commission approval (until June 12, 2020). One request for an additional five-year period of development authorization may be accepted, reviewed, and approved by the Executive Director for a maximum total of ten (10) years of development authorization (until June 12, 2025), provided that the request would not substantively alter the project description and/or require modifications of conditions due to new information or technology or other changed circumstances. The request for an additional five-year period of development authorization shall be made prior to June 12, 2020. If the request for an additional five-year period would substantively alter the project description and/or require modifications of conditions due to new information or technology or other changed circumstances, an amendment to this permit will be necessary. All *Spartina* removal operations proposed after June 12, 2025, or after 2020 if no additional five-year period of authorization has been granted by the Executive Director or amendment has been obtained, shall require a new coastal development permit.

7. Implementation of Best Management Practices and Mitigation Measures. All *Spartina* removal activities shall be undertaken consistent with the limitations, restrictions, protection measures, and protocols detailed in the coastal development permit and included in the adopted Final Programmatic Environmental Impact Report prepared for the project (dated March 21, 2013) to ensure minimization of impacts to sensitive species and habitats within and around the project area and protection of water quality, worker and public health and safety, and public access.

8. Protection of Archaeological Resources. The authorized development shall implement the cultural resources mitigation measures specified in the adopted final programmatic EIR for the project (measures CR-1, CR-2, and CR-3), as modified/supplemented by the following additional measures recommended by the Tribal Historic Preservation Officer (THPO) for the Blue Lake Rancheria:

A. The Applicant shall develop, in consultation with the THPOs for the three Wiyot area tribes (Wiyot Tribe, Blue Lake Rancheria, and Bear River Band of Rohnerville

Rancheria), a detailed protocol for the inadvertent discovery of artifacts or cultural deposits. The protocol shall be developed prior to implementation of primary treatment in any given area and shall be included in the site-specific removal plan for that area required pursuant to **Special Condition 4**. The development of the protocol shall include formal record searches for the area of expected disturbance. The protocol shall include requirements to cease all *Spartina* removal activities if cultural resources are inadvertently discovered and immediately notify the three Wiyot Tribe THPOs. Workers involved in *Spartina* removal activities shall be familiar with and agree to abide by the protocol.

B. If historic or prehistoric cultural resources (such as chipped or ground stone, historic debris, building foundations, or bone, or human remains) are discovered during the course of the project, all *Spartina* removal activities shall cease and shall not recommence except as provided in subsection (C) hereof, and a qualified cultural resource specialist shall analyze the significance of the find. If human remains are discovered, the three Wiyot Tribe THPOs and the County Coroner must also be notified immediately.

C. A Permittee seeking to recommence *Spartina* removal activities following discovery of cultural deposits shall submit an archaeological plan for the review and approval of the Executive Director, prepared in consultation with the three Wiyot Tribe THPOs. If the tribes object to chemical treatment in areas where Native American remains are discovered, then such chemical treatment shall not be used. If the Executive Director approves the Archaeological Plan and determines that the Archaeological Plan's recommended changes to the proposed development or mitigation measures are *de minimis* in nature and scope, *Spartina* removal activities may recommence after this determination is made by the Executive Director. If the Executive Director approves the Archaeological Plan but determines that the changes therein are not *de minimis*, *Spartina* removal activities may not recommence until after an amendment to this permit is approved by the Commission.

9. Best Management Practices for Herbicide Use.

A. AT LEAST TWO WEEKS PRIOR TO COMMENCEMENT OF DEVELOPMENT (PRIMARY TREATMENT OF *SPARTINA*) USING HERBICIDE AT ANY SITE, the Applicant shall submit, for the review and approval of the Executive Director, an Herbicide Management Plan. The plan shall be prepared and submitted in conjunction with the Site-Specific Spartina Removal Plan required by **Special Condition 4**. The plan shall demonstrate the following:

(i) Consistency with all applicable mitigation measures in the adopted Final Programmatic Environmental Impact Report prepared for the project (dated March 21, 2013), including, but not limited to, Mitigation Measures BIO-4, WQ-1, WQ-2, WQ-3, HHM-1, HHM-2, HHM-3, HHM-4, HHM-5, LU-1, and LU-3;

(ii) Herbicides shall not be applied unless the predicted chance of rain is less than 40 percent for the Redwood Coast segment of the National Weather Service's forecast for Northwestern California;

(iii) Herbicides shall only be applied during low and outgoing tides to ensure that treated plants remain above tidal inundation levels for a minimum of several hours;

(iv) Herbicide use shall not occur when winds are in excess of 10 miles per hour, or when inversion conditions exist, or when wind could carry spray drift into surrounding inhabited areas;

(v) Herbicide application shall be coordinated with the County Agricultural Commissioner to identify nearby sensitive areas and/or areas that have non-target vegetation, including farmlands and park and recreation areas, that could be affected by the herbicide, and provide advanced notification to surrounding landowners; and

(vi) A minimum 250-foot buffer zone where herbicides shall not be applied shall be established around park and recreation areas adjacent to herbicide primary treatment areas to avoid significant adverse effects to surrounding sensitive receptors and non-target habitats;

B. The plan shall include, at a minimum, the following:

(i) A description of the type of equipment and application techniques to be used to reduce the amount of small droplets that could drift into adjacent areas;

(ii) Provisions for posting warning/notification signs at and/or near any public trails, boat launches, and other potential points of access to herbicide application sites a minimum of one week prior to treatment;

(iii) A site plan depicting the primary treatment area, designated ingress/egress routes, buffer areas (from channels, nesting bird habitat, sensitive plants, eelgrass, aquaculture site, etc. as applicable), locations of relevant mitigation measures (e.g., educational signage, locations to be staked for rare plant protection, locations for erosion and sediment control devices, etc.); and

(iv) A schedule for timing of work, including timing of mitigation measure implementation, and an analysis of how the proposed timing of work minimizes impacts on public access (e.g., avoiding peak use periods) and coastal resources.

C. The permittee shall undertake development in accordance with the approved final plans. Any proposed changes to the approved final plans shall be reported to the Executive Director. No changes to the approved final plans shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

Mitigation Measures in the Adopted Final Programmatic EIR Proposed Under CDP Application No. 1-14-0249

Aesthetic & Visual Resources	
AV-1	**Post Educational Signs**. Educational signs shall be posted in areas where public use is high. The signs will explain *Spartina*'s ecological impacts and describe the project. Increased public understanding of the project will improve the public's reaction to the temporary adverse change to the scenic marsh vista.
AV-2	**Limit covering**. In any given area that is visible from a public vantage point, including roads, highways and other areas of relatively high public use, covering shall be limited to 0.5 acres.
Air Quality	
AQ-1	**Dust Control**. Apply dust control measures where treatment methods may produce visible dust clouds and where sensitive receptors (i.e., houses, schools, hospitals) are located within 500 ft of the treatment site. The following dust control measures shall be included: • Suspend activities when winds are too great to prevent visible dust clouds from affecting sensitive receptors; and • Limit traffic speeds on any dirt access roads to 15 mi per hour.
AQ-2	**Smoke and Ash Emissions**. The Management Area is within NCUAQMD Smoke Management Zones 1 and 2. Therefore, for prescribed burns, notification of and coordination with NCUAQMD and a local fire agency shall happen well in advance, prior to initiating the burn. Depending upon the quantity of material to be burned, the District APCO may request that a burn authorization number be obtained prior to ignition. On a project specific basis, a burn permit may be required with NCUAQMD to address potential issues with smoke and as a component of a smoke management plan, if deemed necessary. Additional notification to the local fire agency and/or department may also be required as deemed appropriate by the APCO. The following shall be conducted as a part of this mitigation measure: • Initiate consultation with the District APCO by calling (707) 443-3093 (or the current phone number) to determine if the following would be required for the site specific project: • Burn authorization number, • Burn permit, and/or • Smoke management plan, as well as • Consultation with additional agencies such as the local fire agency and/or department. • If the treatment is occurring within the jurisdiction of a local fire agency and/or department, initiate consultation well in advance, prior to the initiating the burn.
Biological Resources	
BIO-1	**Minimize Effects of Mechanical *Spartina* Removal Methods to Special Status Fish Species**. On a project specific basis, a habitat analysis shall be done to determine if special status fish species have the potential to occur. If they could occur, then surveys may be done to establish that these species are absent, using protocols approved by USFWS or NMFS. If such surveys are not conducted, then the species will be assumed present. If special status fish species are present, then *Spartina* control methods will be selected that minimize potential impacts. To minimize erosion effects, control methods that are most likely to cause erosion (i.e., grinding, tilling, disking and digging/ excavating) will not occur within 15 ft of any aquatic habitat containing special status fish species, but this distance could be increased depending on site specific conditions, such as soil stability and bank slopes. Additionally, amphibious vehicles will not contact the channel substrate where special status fish species are present and the vehicles will be operated in such a manner that they avoid causing erosion into the channels. Furthermore, no flooding will be conducted in areas where special status fish species are present. Treatments that do not involve ground disturbance, such as top mowing, crushing, chemical treatment and covering will be the only methods used in close proximity (e.g., within 15 ft) to special status fish species. This mitigation measure is intended to avoid take as defined by the ESA and California ESA.

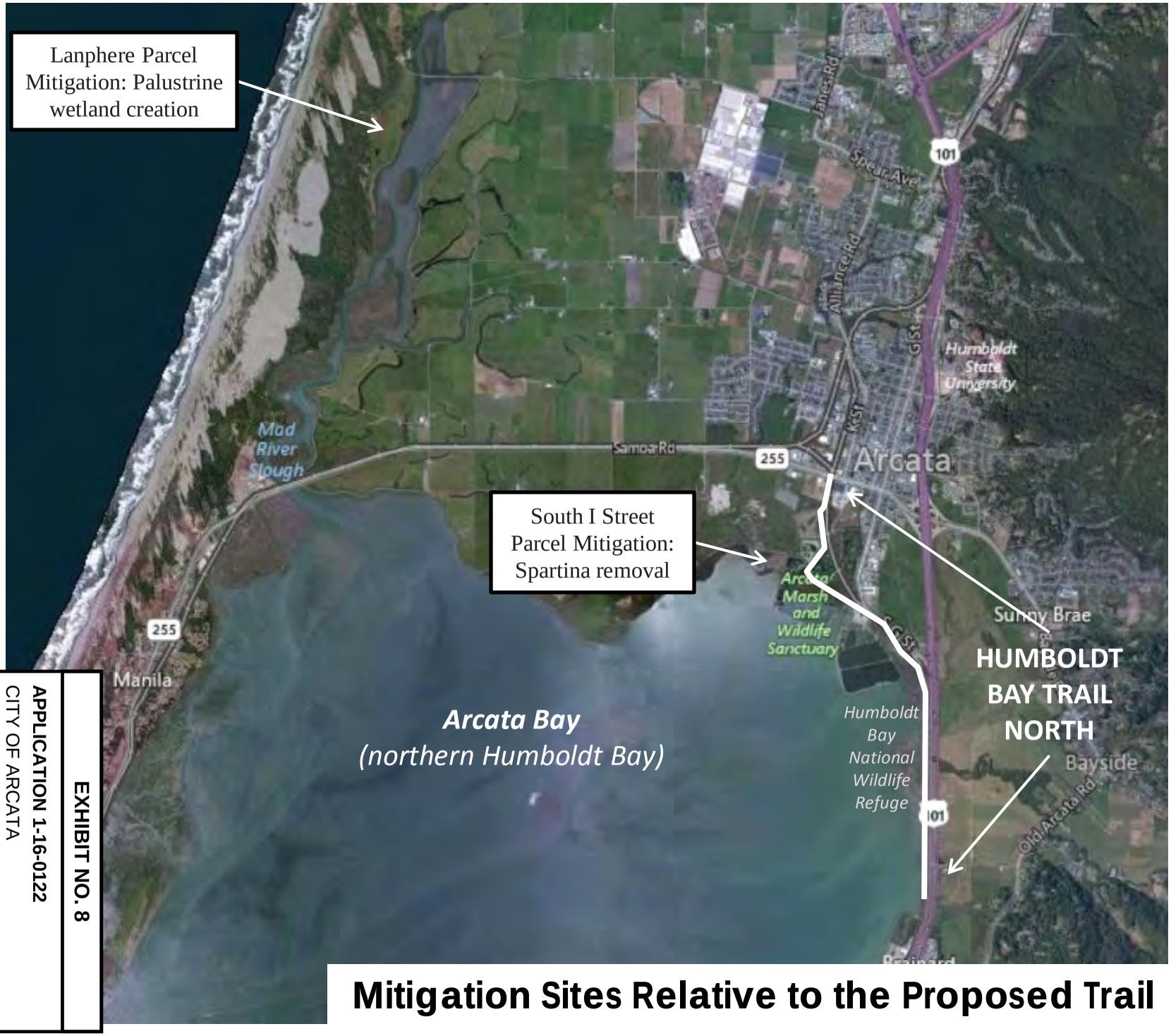
BIO-2	**Minimize Noise Effects**. Breeding special status birds could be present based on habitat and time of year. The breeding season is generally October through mid-August. On a project specific basis, a habitat analysis shall be done to determine if special status bird species have the potential to occur. If the habitat would support special status birds, and if eradication is planned to occur when these birds may be breeding, then surveys will be done to establish that these species are absent, using protocols approved by USFWS. If such surveys are not conducted, then the species will be assumed present. Response of birds to noise varies by species as well as site specific factors including ambient noise levels, topography and vegetation. A limit of 60 dB reaching breeding songbirds has recently been advocated for the by the California Department of Fish and Wildlife (see ICF Jones and Stokes 2009). For the purpose of this PEIR, if breeding birds are known or assumed present within close proximity to Spartina control activities than actions will be taken to ensure that ≤60 dB reaches the breeding area. Actions may include the use of sound measuring devices to determine the range of noise production and limit Spartina control methods accordingly (i.e., use quieter methods near breeding special-status birds).
BIO-3	**Avoid Northern Harrier and Short-Eared Owl Nests**. The breeding season is March-August for northern harriers (Loughman and McLandress 1994) and March-July for short-eared owls (Gill 1977). If *Spartina* control activities are planned to occur during these periods (i.e., between March-August) then a qualified biologist will assess whether there is potential nesting habitat for northern harrier or short-eared owls. If there is potential habitat, it will be avoided or a qualified biologist will survey the potential habitat immediately prior to *Spartina* control work and if nests are found then a minimum 300 ft buffer zone will be delineated. The buffer zone will be avoided by *Spartina* control workers and equipment.
BIO-4	**Minimize Impacts to Special Status Plant Species**. On a site specific basis, a habitat analysis shall be done to determine if special status plant species have the potential to occur. If they could occur, then surveys may be done to establish that these species are absent, using protocols approved by CDFW. If such surveys are not conducted, then the species will be assumed present. If special status plant species are present, then *Spartina* control methods will be selected that avoid or minimize potential impacts. Staked locations of special status plant populations or special status plant habitat shall be recorded, and field crews on foot or in vehicles shall be instructed to avoid and protect special status plant populations or plant habitat. Impact to the endangered dune plants beach layia and Humboldt Bay wallflower will be avoided by selecting access routes that do not contain these plants. For Humboldt Bay owl's clover and Point Reyes bird's beak, avoidance is determined not to be necessary because temporary effects during *Spartina* control are mitigated by the explosive increase in population that has been demonstrated after *Spartina* control (Pickart 2012). For other annual special status plants such as Western sand spurrey, avoidance shall occur by using only treatment methods that are highly selective; for example heavy equipment will not be operated where these plants or their habitat occur. For perennial plants such as Lyngbye's sedge, a qualified botanist shall stake out locations of special status plants and provide training to control crews to ensure that they minimize impacts to these plants. If special status plant populations or habitat occur near the high tide line, wrack and large deposits of mown *Spartina* shall be removed during the growing season. Special status plant populations shall be covered with fabric adjacent to areas sprayed with herbicide, or spray-drift barriers made of plastic or geo textile (aprons or tall silt fences) shall be installed. If accidental exposure to spray drift occurs, affected plants shall be thoroughly washed with silt-clay suspensions. To avoid trampling of special status plant species, in areas where frequent access will occur, paths shall be marked and used that avoid special status plant species to the maximum extent possible.
BIO-5	**Avoid Impacts to Eelgrass**. Workers removing *Spartina* in areas with the potential for eelgrass shall be trained to recognize eelgrass and the mudflats that are habitat for eelgrass. Training shall be conducted by a qualified biologist. Only methods that avoid physical disturbance to eelgrass plants shall be used in close proximity to eelgrass, such as top mowing and excavation. With this mitigation measure, there will be no impact to eelgrass.

BIO-6	**Reduce Noise near Marine Mammals**. If marine mammals are present within 200 ft of *Spartina* control operations, then methods which cause relatively high levels of noise (i.e., brushcutters, the Marsh Master and airboats) shall not be used. Other methods which do not generate a relatively high level of noise can be used.
Cultural Resources	
CR-1	**Worker Awareness**. Workers shall be made aware of the potential of uncovering artifacts or human remains, and instructed to cease work should any artifacts or human remains be found, and to contact the California Native American Heritage Commission (CNAHC), National Crime Information Center and/or County Coroner as appropriate. When treatment is allowed to begin again, areas identified as potentially having artifacts will be treated with methods that do not disturb the soil, such as top mowing, crushing and chemical treatment.
CR-2	**Site Specific Planning for Artifacts**. Site specific planning will include a consultation with the Wiyot Tribe to determine the likelihood that artifacts are present. If there are indications that artifacts are likely to be found, soil disturbing methods shall be avoided.
CR-3	**Site Specific Planning for Human Remains**. If, during site specific planning, indications are that human remains are likely to be found (e.g., based on literature or communications with representatives from a Tribe), soil disturbing methods shall not be used until the remains are located and properly removed. If the coroner determines that the remains may be Native American, the coroner will contact CNAHC. CNAHC staff will notify the most likely descendants of the deceased. The descendants may, with permission of the land owner or representative, "inspect the site of the discovery of the Native American remains and may recommend to the owner or the person responsible for the excavation work means for treating or disposing, with appropriate dignity, the human remains and any associated grave goods" (Public Resources Code Section 5097.98). The descendants must make their recommendations within 48 h of being contacted by CNAHC. The land owner will insure that the area within the immediate vicinity of the remains is not further disturbed or damaged until the land owner and the most likely descendants have "discussed and conferred" reasonable options.
Geology/Soils	
GS-1/ WQ-5	**Erosion Control**. *Spartina* control methods which directly impact the soil (i.e., grinding, tilling, disking, digging and excavation) shall not be conducted on salt marsh areas that are within 15 ft of a salt marsh edge that is directly exposed to wave action. Other control methods can be used in these areas. This mitigation measure only applies to salt marsh edges along Humboldt Bay proper where wave action is relatively high, not attached sloughs/channels nor the Eel River or Mad River estuaries. Future research may reveal that control methods that directly impact the soil do not result in a significant level of erosion and that this mitigation is not necessary.
Hazards/Hazardous Materials	
HHM-1	**Worker Injury from Accidents Associated with Manual and Mechanical Non-native *Spartina* Treatment**. A health and safety plan shall be developed to identify and educate workers engaged in *Spartina* removal activities. Appropriate safety procedures and equipment, including hearing, eye, hand and foot protection, and proper attire, shall be used by workers to minimize risks associated with manual and mechanical treatment methods. Workers shall receive safety training appropriate to their responsibilities prior to engaging in treatment activities.
HHM-2	**Accidents Associated with Release of Chemicals and Motor Fuel**. Contractors and equipment operators on site during treatment activities will be required to have emergency spill cleanup kits immediately accessible. If fuel storage containers are utilized exceeding a single tank capacity of 660 gallons or cumulative storage greater than 1,320 gallons, a Hazardous Materials Spill Prevention Control and Countermeasure Plan (HMSPCCP) would be required and approved by the NCRWQCD. The HMSPCCP regulations are not applicable for chemicals other than petroleum products; therefore, the contractor shall prepare a spill prevention and response plan for the specific chemicals utilized during treatment activities. This mitigation is intended to be carried-out in conjunction with Mitigation WQ-2.

HHM-3	**Worker Health Effects from Herbicide Application**. Appropriate health and safety procedures and equipment, as described on the herbicide or surfactant label, including PPE as required, shall be used by workers to minimize risks associated with chemical treatment methods. Mixing and applying herbicides shall be restricted to certified or licensed herbicide applicators.
HHM-4	**Avoid Health Effects to the Public and Environment from Herbicide Application**. For areas targeted for application of herbicides that are within 500 ft of human sensitive receptors (i.e., houses, schools, hospitals), prepare and implement an herbicide drift management plan to reduce the possibility of chemical drift into populated areas. The Plan shall include the elements listed below. To minimize risks to the public, mitigation measures for chemical treatment methods related to timing of herbicide use, area of treatment, and public notification, shall be implemented by entities engaging in treatment activities as identified below: • Coordinate herbicide applications with the County Agricultural Commissioner. Identify nearby sensitive areas (e.g., houses, schools, hospitals) and/or areas that have non-target vegetation that could be affected by the herbicide and provide advanced notification. • Establish buffer zones to avoid affecting sensitive receptors. • Identify the type of equipment and application techniques to be used in order to reduce the amount of small droplets that could drift into adjacent areas. Consult with herbicide manufacturer for proper application instructions and warnings. • Herbicide shall not be applied when winds are below 3 mile per hour or in excess of 10 mi per hour or when inversion conditions exist (consistent with Supplemental California Manufacturer Labeling), or when wind could carry spray drift into inhabited areas. This condition shall be strictly enforced by the implementing entity. Herbicide applications should not be conducted when surface-based inversions are present. Refer to Section 4.7, Air Quality, for discussion on inversions. The site-specific work plan should identify how meteorological conditions would be obtained. • Signs shall be posted at and/or near any public trails, boat launches, or other potential points of access to herbicide application sites a minimum of one week prior to treatment. • Application of herbicides shall be avoided near areas where the public is likely to contact water or vegetation. • At least one week prior to application, signs informing the public of impending herbicide treatment shall be posted at prominent locations within a conservative 500-foot radius of treatment sites where sensitive receptors could be affected. Schools and hospitals within 500 ft of any treatment site shall be separately noticed at least one week prior to the application. • No surfactants containing nonylphenol ethoxylate will be used.
HHM-5	**Health Effects to Workers, the Public and the Environment Due to Accidents Associated with Chemical Spartina Treatment**. Appropriate health and safety procedures and equipment shall be used to minimize risks associated with *Spartina* treatment methods, including exposure to or spills of fuels, petroleum products, and lubricants. These shall include the preparation of a health and safety plan, a spill contingency plan, and if threshold onsite storage values are exceeded, an HMSPCCP (see mitigation measure HHM-2 and the mitigation measures in Water Quality Section).
Hydrology/Water Quality	
WQ-1	**Managed Herbicide Control**. Herbicides shall be applied directly to plants and at low or receding tide to minimize the potential application of herbicide directly on the water surface, as well as to ensure proper dry times before tidal inundation. Herbicides shall be applied by a certified applicator and in accordance with application guidelines and the manufacturer label. The Control Program shall obtain coverage under the statewide General NPDES Permit for the Discharge of Aquatic Pesticides for Aquatic Weed Control in Waters of the United States (SWRCB 2004). The specific measures that will be required are not known at this time.

WQ-2	**Minimize Herbicide Spill Risks**. Herbicides shall be applied by or under the direct supervision of trained, certified or licensed applicators. Herbicide mixtures shall be prepared by, or under the direct supervision of trained, certified or licensed applicators. Storage of herbicides and surfactants on or near project sites shall be allowed only in accordance with a spill prevention and containment plan approved by the NCRWQCD; on-site mixing and filling operations shall be confined to areas appropriately bermed or otherwise protected to minimize spread or dispersion of spilled herbicide or surfactants into surface waters. This mitigation is intended to be carried out in conjunction with Mitigation HMM-2.
WQ-3	**Minimize Fuel and Petroleum Spill Risks**. Fueling operations or storage of petroleum products shall be maintained off-site, and a spill prevention and management plan shall be developed and implemented to contain and clean up spills. Transport vessels and vehicles, and other equipment (e.g., mowers) shall not be serviced or fueled in the field except under emergency conditions; hand-held gas-powered equipment shall be fueled in the field using precautions to minimize or avoid fuel spills within the marsh. For example, gas cans will be placed on an oil drip pan with a PIG® Oil-Only Mat Pad placed on top to prevent oil/gas contamination. Only vegetable oil-based hydraulic fluid will be used in heavy equipment and vehicles during Spartina control efforts. When feasible, biodiesel will be used instead of petroleum diesel in heavy equipment and vehicles during *Spartina* control efforts. Other, specific BMPs shall be specified as appropriate to comply with the Basin Plan and the other applicable Water Quality Certifications and/or NPDES requirements. This mitigation is intended to be carried out in conjunction with Mitigation HHM-2 in order to reduce potential impacts to less than significant level.
WQ-4/ HHM-6	**Assess Existing Contamination**. For projects where ground disturbance methods (such as digging or excavation) or imazapyr application are considered, a preliminary assessment shall be performed to determine the potential for contamination in sediments prior to initiating treatment. The preliminary assessment shall include (1) review of existing site data and (2) evaluation of historical site use and/or proximity to possible contaminant sources. If the preliminary assessment finds a potential for historic sediment contamination, an appropriate sediment sampling and analysis guide shall be followed and implemented, or soil contamination shall be assumed to be present. If contaminants with a known potential for synergistic effects with imazapyr are present or assumed to be present at levels higher than background levels, that would result in synergistic effects, an alternative treatment method (that shall not disturb sediment or apply imazapyr) will be implemented, such as repeated top-mowing, or the specific project shall apply to the Regional Water Board for site-specific WDR. If contaminants are present or assumed to be present at levels higher than background levels (but below levels that might trigger site cleanup), and these contaminants raise concerns for potential impacts from ground disturbance but not from synergistic effects due to imazapyr application, treatment methods that shall not disturb sediment (e.g., top mowing or imazapyr application) shall be used, or the specific project shall apply to the Regional Water Board for site-specific WDR. If significant contamination that warrants site cleanup is identified, sampling information shall be provided to the U.S. EPA or other appropriate authority.
WQ-5	**Erosion Control**. See GS-1 above
WQ-6	**Designate Ingress/Egress Routes**. Designated ingress/egress routes shall be established at control sites to minimize temporarily disturbed areas. Where areas adjacent to staging and stockpile areas are erosion prone, the extent of staging and stockpile areas shall be minimized by flagging their boundaries. An erosion/sediment control plan (ESCP) shall be developed for erosion prone areas outside the treatment area where greater than ¼ acre of ground disturbance may occur as a result of ingress/egress, access roads, staging and stockpile areas. The ESCP shall be developed by a qualified professional and identify BMPs for controlling soil erosion and discharge of treatment-related contaminants. The ESCP shall be prepared prior to any treatment activities, and implemented during construction.

WQ-7	**Removal of Wrack**. During site specific planning, tidal circulation will be visually assessed. In areas with relatively low tidal circulation, it will either be assumed that DO levels are depressed or monitoring will be conducted to determine if DO levels are depressed. In treatment areas located within or adjacent to waters known or expected to have depressed DO, if wrack is generated during the treatment process, the wrack shall be removed from the treatment area subject to tidal inundation or mulched finely and left in place.
WQ-8	NOT APPLICABLE since flooding is not one of the primary treatment methods authorized under this CDP application.
Land Use	
LU-1	**Use Certified Herbicide Applicators**. Herbicides will only be applied by certified applicators.
LU-2	**Compliance Monitors**. Applicators shall be assigned a compliance monitor who observes that spray does not reach agricultural fields.
LU-3	**Mechanical Methods near Agriculture**. If crops (including aquaculture crops such as oysters and clams) are growing in the vicinity of spraying, such that these crops would be more difficult to sell even if herbicides are undetectable, mechanical methods of treatment shall be selected.
LU-4	**Posting Notices and Limiting Access**. Public safety shall be ensured by posting notices and limiting access during treatment periods. Public notice shall be posted at the entrances of public lands, at trailheads, and on the websites of agencies responsible for the public lands, such as HBNWR. If members of the public access lands during treatment, the field supervisor shall have the authority to ask them to leave for their safety.
LU-5	**Do not treat *Spartina* during peak public use periods**. Although public use is minimal in the salt marshes where *Spartina* primarily occurs, there is some use, particularly by waterfowl hunters. *Spartina* treatment will not occur in waterfowl hunting areas during periods of time when hunters are active. If other peak periods of public use are identified in *Spartina* infested areas then control efforts will also avoid these time periods.
Noise	
N-1	**Use Relatively Quiet Brushcutters**. All brushcutters shall be new and quieter models, with noise not exceeding 90 dB.
N-2	**Selective Use of the Marsh Master**. Avoid treatment that uses the Marsh Master, if residential receptors are within 800 ft.
N-3	**Limit Hours of Operation**. Within 3,200 ft of homes, hours of operation shall be within times that residents would be the least disturbed, as in during work and school hours, and avoiding early morning or early evening.



Mitigation Sites Relative to the Proposed Trail

EXHIBIT NO. 8

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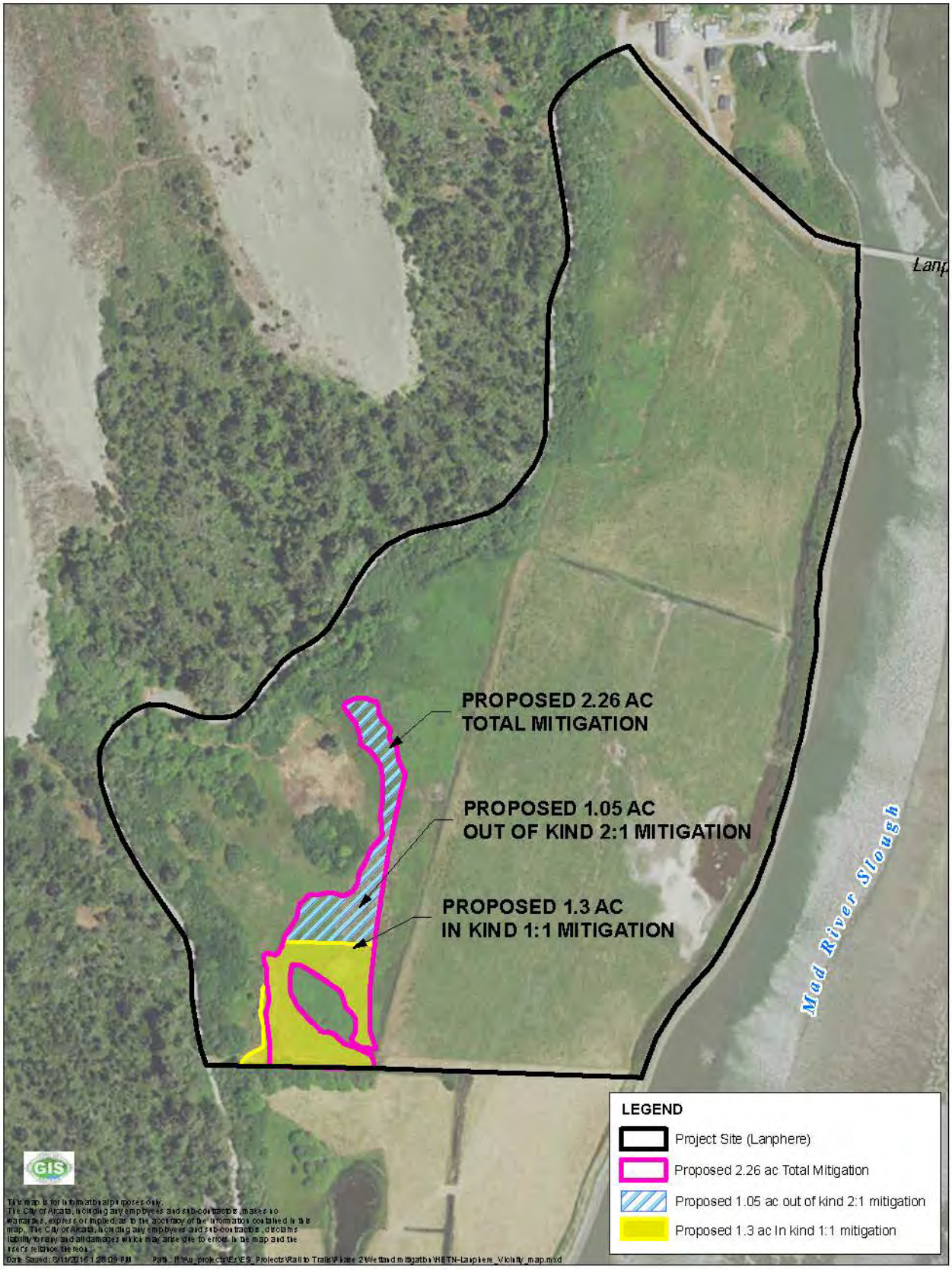

City of Arcata
Environmental Services

Humboldt Bay Trail North Mitgation
Lanphere Parcel Vicinity Map

0 100 Feet

Revised: 8/11/2016

City of Arcata
Environmental Services

Humboldt Bay Trail North
South I Street Wetland
Enhancement Area (5.2:1)

NORTH
0 100
Feet

City of Arcata
Wetland Mitigation and Monitoring Plan for Humboldt Bay Trail North
Arcata, California, Humboldt County
July 22, 2016

Project Description: The Humboldt Bay Trail North (HBTN) will be a three mile Class I multi-use trail (project) that will follow the Humboldt Bay coastline along the Arcata Waterfront. The project purpose is to provide substantial nature study opportunities, further enhance non-motorized transportation/commuter corridor access, increase pedestrian connectivity, and increase public access to and along Arcata's Waterfront on Humboldt Bay. The project is also an important piece of the statewide initiative to complete the California Coastal Trail.

The construction of the project, will result in 1.78 acres of permanent wetland impacts. Of these impacts, 0.48 acres are estuarine and 1.30 acres are palustrine.

The estuarine habitats that will be impacted by construction of the HBTN are characterized as predominantly Estuarine Emergent (Ditch) and Estuarine Intertidal habitats. The habitat quality of both types is marginal to moderate based on the plant species composition, and marginal to non-habitat based on location (Winzler & Kelly, 2010). The Estuarine Emergent (Ditch) habitat is characterized as such based on vegetation, but is considered marginal/non-habitat for the CNPS-listed salt marsh species. Although the vegetation within the ditches support brackish species, they have limited diversity and primarily consist of pickleweed (*Salicornia pacifica)* and seashore saltgrass (*Distichlis spicata)* (Winzler & Kelly, 2010). Approximately 0.25 acres of this habitat will be impacted, which equates to approximately 52% of all estuarine impacts. The Estuarine Intertidal Emergent consists primarily of spartina (*Spartina densiflora*), marsh rosemary (*Limonium californicum*), pickleweed (*Sacracornia pacifica*), seashore saltgrass (*Distichlis spicata*), spear oracle *(Atriplex patula*), tufted hairgrass (*Deschampsia cespitosa*), Baltic rush (*Juncus balticus*), and Dune Rush (*Juncus lescurii)* (Winzler & Kelly, 2010). Many of these species are found in high elevation salt marsh, and tufted hair grass is only found in the highest salt marsh, which is subject to only the highest tides. Approximately 0.21 acres of this habitat will be impacted, which equates to approximately 45% of all estuarine impacts.

The palustrine habitats that will be impacted by the construction of the HBTN are characterized as primarily vegetated freshwater ditches, most of which function as stormwater conveyances (Winzler & Kelly, 2010). These wetlands consist primarily of arroyo willow (*Salix lasiolepis*) or Hookers willow (*Salix hookeriana*), Baltic rush (*Juncus balticus*), California blackberry (*Rubus ursinus*), fringed willowherb (*Epilobium ciliatum*), Himalayan blackberry (*Rubus discolor),* reed canary grass (*Phalaris arundinacea*), soft rush (*Juncus effuses*) and tufted hairgrass (*Deschampsia cespitosa*). The majority of palustrine impacts span approximately 5,150 contiguous linear feet and are within the ditch that is located between the railroad grade and US 101.

To mitigate for the 1.78 acres of permanent wetland impacts, the City is proposing off-site mitigation at two locations. One location ("South I Street") will be at South I Street within the Arcata Marsh Wildlife Sanctuary (AMWS), where the City is proposing to perform wetland enhancement through eradication of invasive *Spartina densiflora* (Spartina) on 9.4 acres. This 9.4-acre area equates to a 5.3:1 enhancement ration. The second location ("Lanphere Parcel") will be at Assessor's Parcel Number 506-291-014, where the City is proposing to create 2.26 acres of palustrine wetlands. This 2.6-acre area equates to a 1:1 creation ratio for in-kind impacts to palustrine wetlands and a 2:1 creation ratio for out-of-kind impacts to estuarine wetlands. The total proposed mitigation ratio is 6.55:1.

EXHIBIT NO. 9

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WETLAND MITIGATION & MONITORING PLAN
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PROJECT MITIGATION OBJECTIVES

1) **Creation of 2.26 acres of Palustrine wetland habitat**
2) **Enhancement of 9.4 acres of Estuarine Salt Marsh habitat**

Project Mitigation Methodology

This mitigation proposal includes compensatory mitigation at a ratio of 1:1 for in-kind mitigation (1.3 acres created: 1.3 acres impacted) and 2:1 for out-of-kind mitigation (0.96 acres created: 0.48 acres impacted) in the form of off-site creation of palustrine habitat at the Lanphere parcel. Additionally, the project proposes enhancement mitigation through habitat restoration in the form of Spartina control/removal from nearby salt marsh areas at the Arcata Marsh and Wildlife Sanctuary at a 5.3:1 ratio. This Spartina control, which is located on salt marshes under City jurisdiction, reestablishes habitat for native plant species including the rare plant species that are located within some wetlands impacted by the project. Considering both enhancement and creation, the total proposed mitigation ratio is 6.55:1.

Creation of Palustrine Wetlands

The Lanphere Parcel (Attachment 1) is located on a parcel that is adjacent to Mad River Slough in north Humboldt Bay, and is roughly bounded by Lanphere Road on the north and west sides, and earthern levee and Mad River Slough on the east side, and the parcel boundary between the Lanphere parcel and the Ralph property on the south side. The USFWS Lanphere Dunes Unit of HBNWR flanks the project site to the west. The 2.26 acres of mitigation is proposed within the southwestern quarter of the parcel an in area that has been defined by Caltrans and approved by the US Army Corps of Engineers (ACOE) as uplands that did not meet the required three wetland parameters.

The City is proposing to create palustrine wetlands that are seasonally flooded and are capable of being grazed, should an agricultural use be re-initiated on the parcel. Existing elevations in the mitigation area range from 3 to 7 feet (NAVD88). To create the desired palustrine wetlands, the mitigation area will be graded to approximately 3 feet (NAVD88). A footprint outside of the mitigation area has also been identified to be graded to achieve a stable 3:1 slope, which extends to a maximum of ten feet in some areas. Because this area is currently classified as wetland, it will not count toward project mitigation. However, the excavation in this area will enhance these existing wetlands by providing more frequent and longer winter duration inundation. The 3 feet (NAVD88) target elevation was chosen after review of the Humboldt Bay Area Mitigation and Lanphere Concept Design prepared by Caltrans (Caltrans, December 2015) which documents that wetland vegetation associated with wet pasture and freshwater marsh is typically found between 2-4 feet (NAVD88). Within this elevation range and the pasture habitat type, the wetland plants found on the parcel are dominated by pacific rush (*Juncus effuses* var. *pacificus)*, silverweed (*Potentilla anserine)* and creeping buttercup (*Ranunculus repens).* Grading to the elevation of 3 feet will also ensure that the water table is located within the top 10" of the soil, the hydrology indicator provided by ACOE during the wetland delineation for the parcel. To establish the desired wetland vegetation typical of this habitat, the first 12 inches of sod will be removed and stockpiled. The sod will be used later as topsoil and to provide an appropriate seed bank. After excavation of the wetland restoration area, the sod will be replaced; the area is expected to naturally re-vegetate with wetland vegetation from the seeds contained in the sod. Based on the vegetation characteristics and wetland mosaic of the site, desired wetland plants are expected to stablish naturally.

While the City has developed the mitigation and monitoring plan for this property, Caltrans will be responsible for implementing and monitoring the project, as specified in the Memorandum of Understanding between the City and Caltrans (Attachment 2).

Estuarine Salt Marsh Enhancement

Estuarine salt march enhancement of 9.4 acres will occur at the "South I Street" location (Attachment 3) which is located within the AMWS.

The South I Street location currently has medium (26-60%) to high (61-100%) vegetation density of Spartina. To effectively control Spartina, primary treatment will remove mature plants and follow-up treatments will remove resprouts and seedlings. Primary treatment will be conducted with a combination of handheld brushcutters and/or rototillers in low- to moderate density infestations. These mechanical treatments involve mowing aboveground material, then disturbing the shallow subsurface (top 2-5 inches of marsh) with handheld brushcutters and mini-tillers. Large wrack generation is avoided by chopping aboveground plant material into a fine mulch. The metal blades of the brushcutter or rototiller grind

the shallow rhizomes and reduce the seed bank. In a few locations, such as locations where Spartina is growing in riprap, manual removal (excavation with handheld tools such as shovels, pulaskis, and digging bars) may be used. Typically, one to two follow up resprout treatments are needed to fully kill all established plants. Resprout treatments involve much less disturbance than initial treatments and are conducted with a handheld brushcutter. Seedling treatments are also required, because the bare areas created by Spartina removal are readily colonized by Spartina seedlings. New seedlings are treated by flaming when young, or removed using brushcutters.

The City will implement salt marsh enhancement following permit approvals and/or concurrent with construction of the HBTN to prevent temporal loss associated with the wetland impacts.

ESHA PROTECTION GOALS

- Construction activities shall avoid direct (e.g. grading, excavation, foot trampling etc.) and indirect (e.g. erosion, spills, etc.) impacts to adjacent rare plants ESHA, salt marsh ESHA, and brackish ESHA.

- Construction of the mitigation areas shall in no way degrade adjacent rare plants ESHA, salt marsh ESHA and brackish ESHA (e.g. through changes in site hydrology, erosion problems, introduction of invasive species, etc.)

ESHA PROTECTION METHODS:

Pre Project

Prior to construction all ESHAs shall be flagged so that construction crews will know areas that must be avoided.

All operators will know that no equipment is to be placed in the ESHA.

During Construction

Excavation will be operated so that a 10' buffer area is retained between the dozer work area and the ESHAs.

All excavated material will be placed away from ESHAs.

Sediment and erosion control measures will include silt fences, straw bales, fiber rolls, or other measures if applicable; to ensure that discharges to Humboldt Bay, Waters of the US, and Waters of the State do not occur.

Once the work area is excavated to the proper elevation, sod will be spread in the mitigation area to provide a seed bank for vegetation reestablishment.

Post Project – Weeks 1-4

City and/or Caltrans will monitor the mitigation sites for any soil disturbance that could threaten the mitigation site and or the ESHA and install additional BMPs to prevent erosion into ESHA's should that be needed.

Post Project Winter Season (November –February)

City and/or Caltrans will continue to monitor the mitigation sites for any soil disturbance that could threaten the mitigation site and/or the ESHAs during and after significant storm events. Should erosion be a problem, additional erosion control BMP's will be employed to protect the ESHAs and mitigation areas.

MONITORING GOALS

After project implementation, the sites will be monitored for a five year period. The goal of the enhancement area (South I Street) is to demonstrate the 9.4 acres are dominated by native salt marsh species. The goal of the creation area (Lanphere Parcel) is to demonstrate the 2.6 acres are dominated by wetland vegetation commonly found in palustrine wetlands.

Estuarine Habitat

A Global Positioning Systems (GPS) will be used to digitally capture the enhancement site areas and dimensions to produce an "as built" map" after mitigation project completion. Photos will be taken twice yearly to document condition during high and low tide conditions.

Monitor the following attributes:

a. A list of all vascular plants present at all mitigation sites;
b. Percent cover of native vegetation;
c. Classification of natural community type (e.g. coastal salt marsh , brackish marsh, etc.); and
d. Any notable disturbance or impacts (anthropogenic or natural to the areas)

Palustrine Habitat

An as-built map will be produced to define the creation areas and dimensions after mitigation project completion.

Seasonal Photo point documentation of the inundation and extent of open water at the wetlands. Seven day and 14 day prior cumulative rainfall will be noted at the time of each photo point session. If ponded water is not obvious on the surface a measurement of depth to ground water to demonstrate wetland hydrology will be recorded and photographed.

Monitor the following attributes:

e. A list of all vascular plants present at all mitigation sites;
f. Percent cover of native vegetation;
g. Classification of natural community type (e.g. palustrine); and
h. Any notable disturbance or impacts (anthropogenic or natural to the areas)

Performance Standards

Estuarine Habitat

1. The enhanced mitigation areas show at least 50% colonization by brackish and or salt tolerant vegetation native to Humboldt Bay and tidal slough channels for the respective enhancement areas specified in the permit.

2. At the end of the 5 year monitoring period, the area shows dominance by cover of native plants and less than 10% cover of spartina seedling or re-sprouts.

Palustrine Habitat

1. The restored mitigation areas show at least 50% colonization by wetland vegetation commonly found in palustrine wetlands for the respective creation area specified in the permit.

2. The seasonal freshwater wetlands show inundation with water and or within 10 inches of the surface under normal winter rainfall conditions for at least 14 days.

3. Seasonal wetlands perimeters after 5 years are equal to an area equivalent to the as built perimeters recorded after project completion.

Project Reporting Schedule

Within 45 days of completion of the mitigation project, Global Positioning Systems (GPS) will be used to digitally capture the enhancement and creation site areas and dimensions to produce an "as built" map" for each respective area. These maps and photos of the sites along with an assessment of the initial biological and ecological status of the mitigation will be submitted to the Coastal Commission within 45 days of completion. The assessment shall include an analysis of the attributes that will be monitored pursuant to the program, with a description of the methods for making that evaluation.

Annual reports will be submitted to the Coastal Commission by January 31st of the first year following completion of the implementation of the mitigation project. Each report shall include copies of all previous reports as appendices. Each report shall also include a "Performance Evaluation" section where information and results from the monitoring program are used to evaluate the status of the wetland mitigation project in relation to the performance standards.

The final monitoring report will be submitted to the Coastal Commission at the end of the reporting period. The final report will contain all the post-project data collected over the monitoring period including pre-project (or baseline) information to provide a comparison. The format for the final report will include an introduction; site plans and study area, methods used, etc. A project evaluation section will evaluate whether the mitigation site conforms to the goals, objectives, and performance standards set forth in this monitoring program

Remedial Measures

If the desired vegetation is not established to the ≥50% level, augmentation through planting additional desired species may be warranted. Each year's monitoring will be evaluated for increases in colonization by the desired species. If increases in desired vegetation are not documented by the third and fifth year, the applicant will consider, based on site conditions, additional seeding and/or planting of desired species.

If the final report indicates the project has been unsuccessful based on the approved performance standards, the City and or Caltrans will submit a revised mitigation plan to compensate for those portions of the original project that did not achieve the performance standards. Monitoring and reporting will continue until success criteria are met.

References

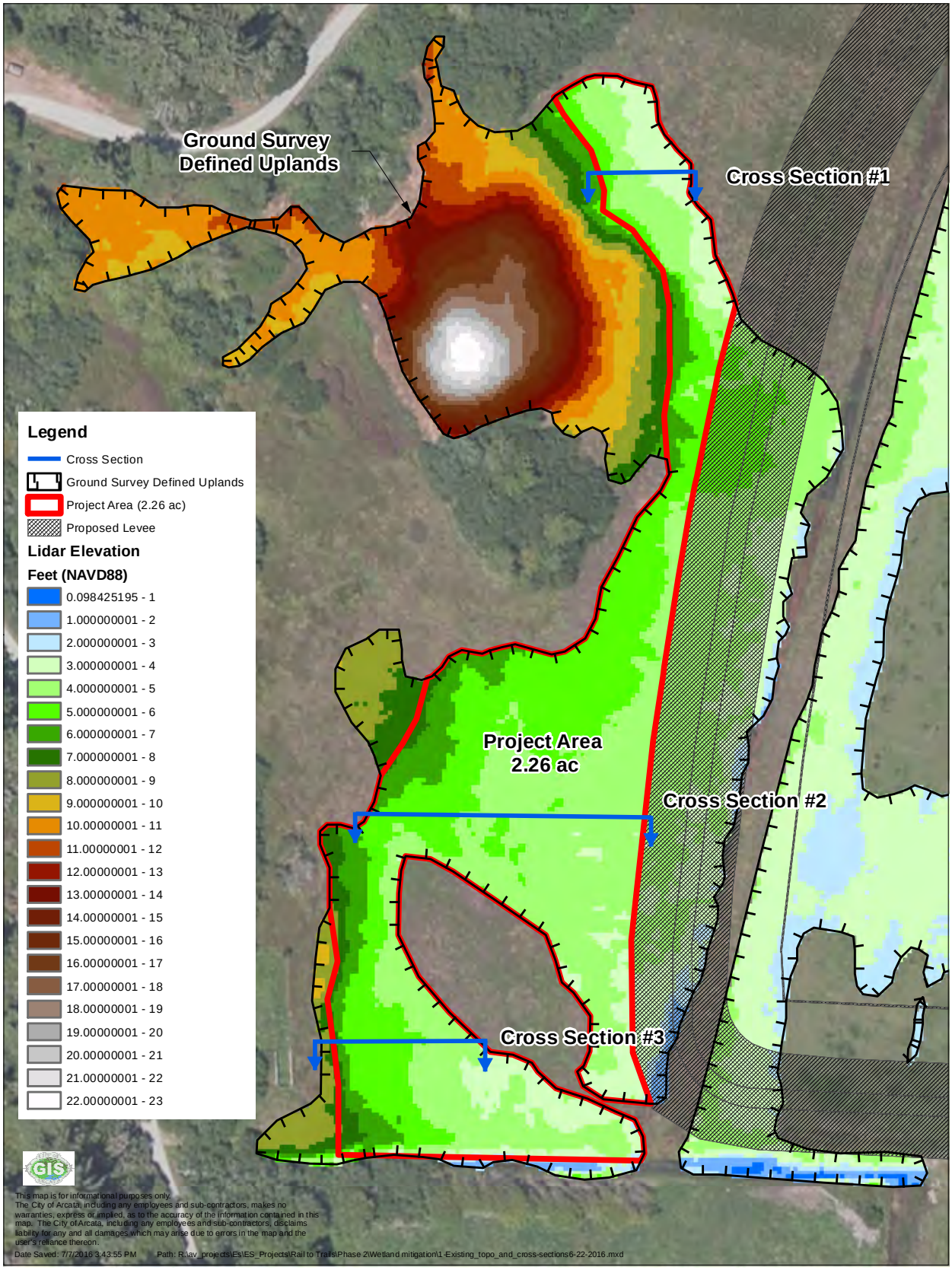
Winzler and Kelly. 2010. Updated 2014. Wetlands delineation and habitat mapping rail-with-trail connectivity project—City of Arcata, Humboldt County, California.

Caltrans. 2015. Humboldt Bay Area Mitigation and Concept Design Report – Humboldt County, California.

Caltrans. 2015. Lanphere parcel (Mad River Slough) Restoration Project Concept Design Report – Humboldt County, California.

Attachment 1

Lanphere Concept Design

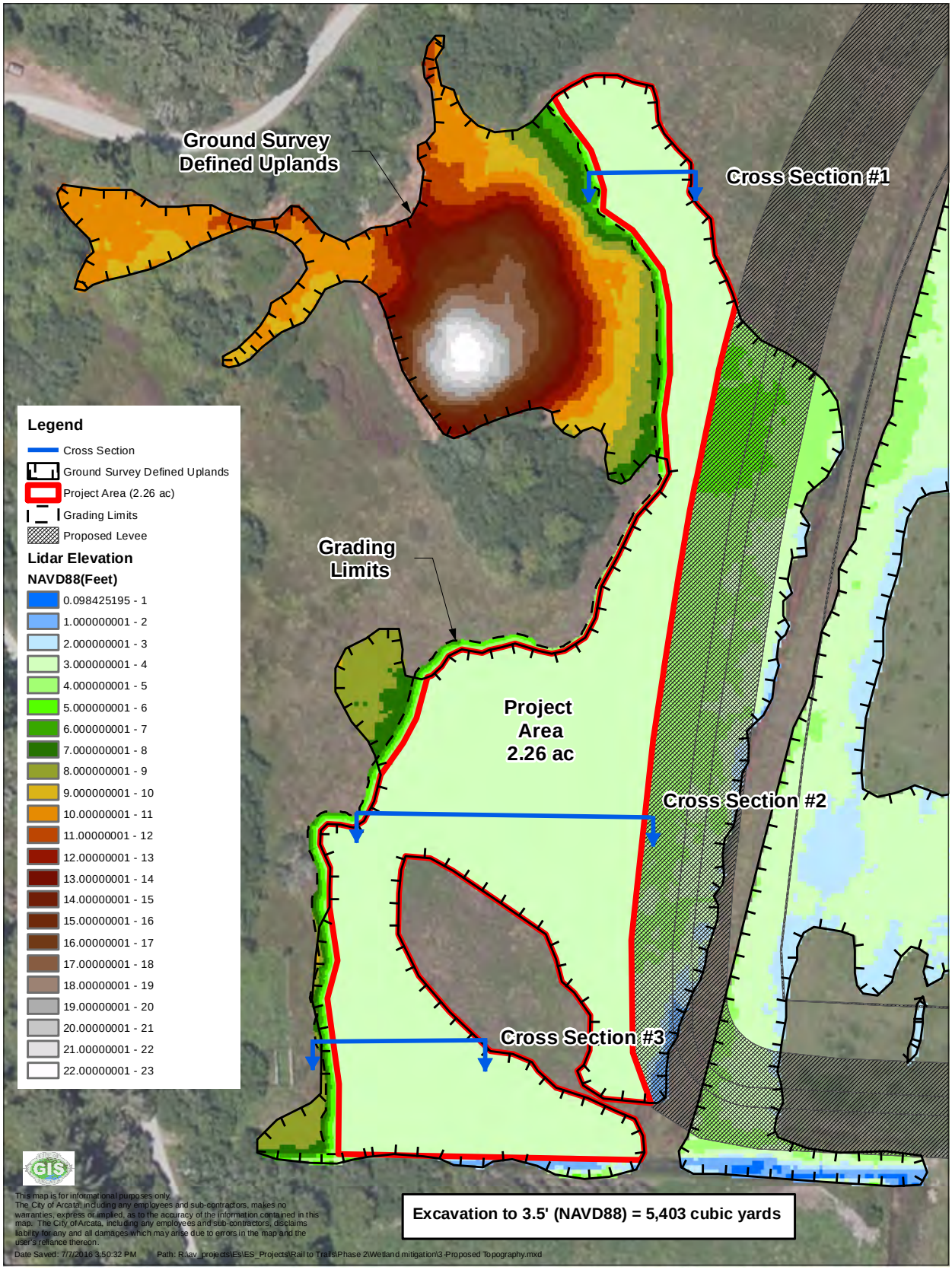


City of Arcata
Environmental Services

Humboldt Bay Trail North
Mitgation Creation Scenarios - Lanphere Parcel

Existing Topography and Cross Section Locations

0 50 Feet

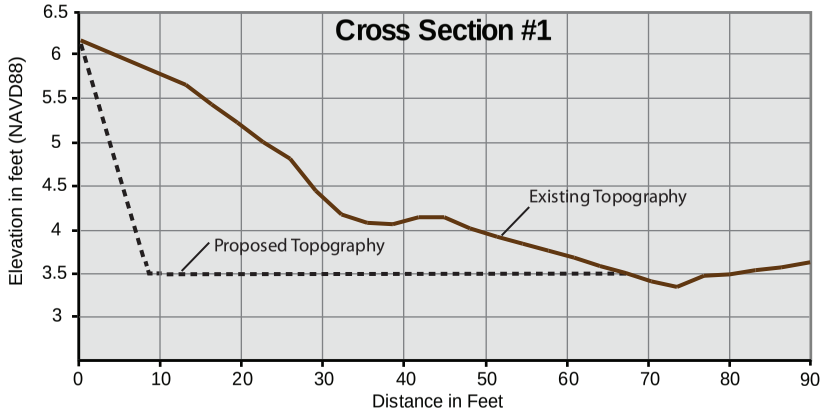


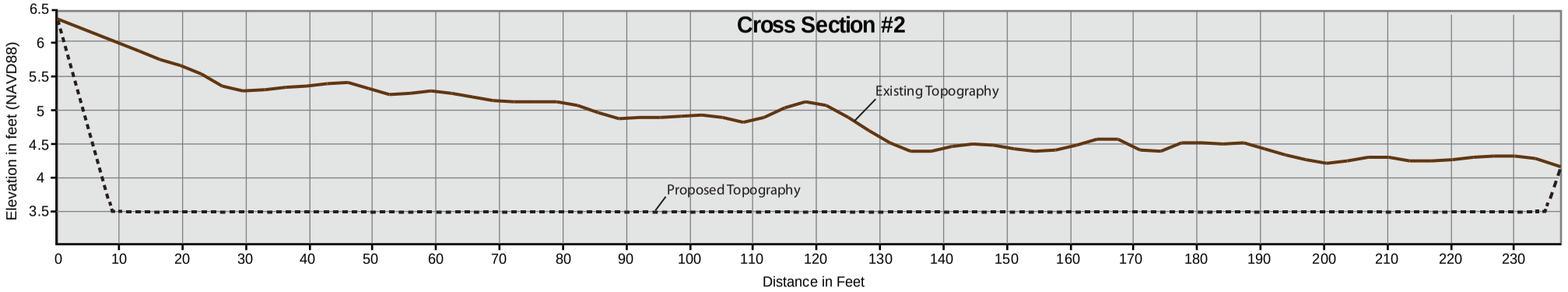
City of Arcata
Environmental Services

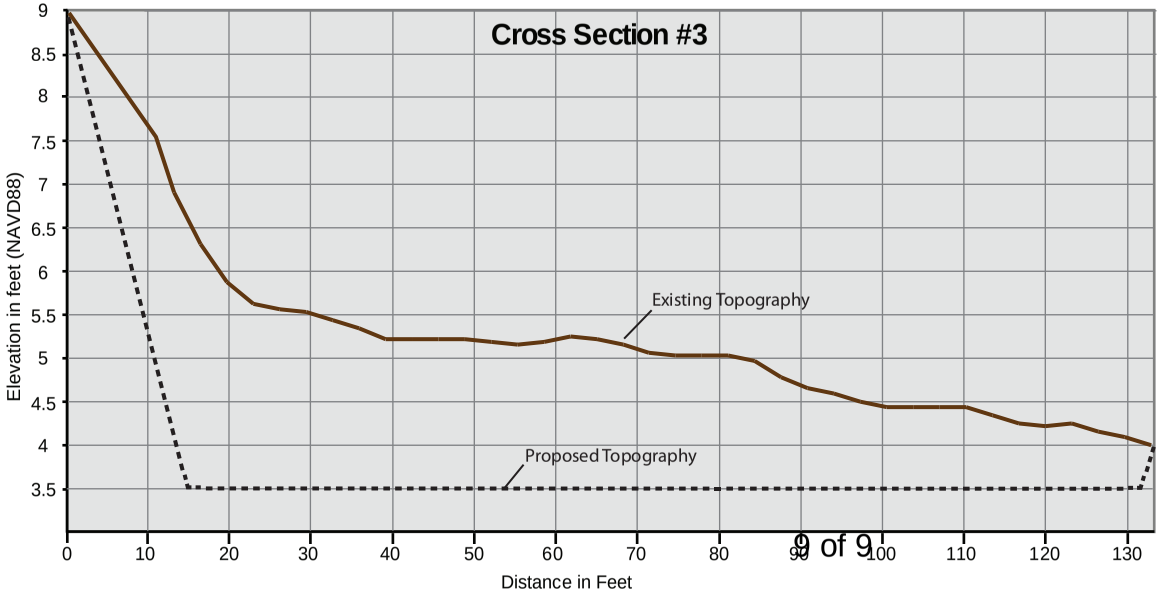
Humboldt Bay Trail North
Mitgation Creation Scenarios - Lanphere Parcel

Project Location with excavation to 3.5' (NAVD88)

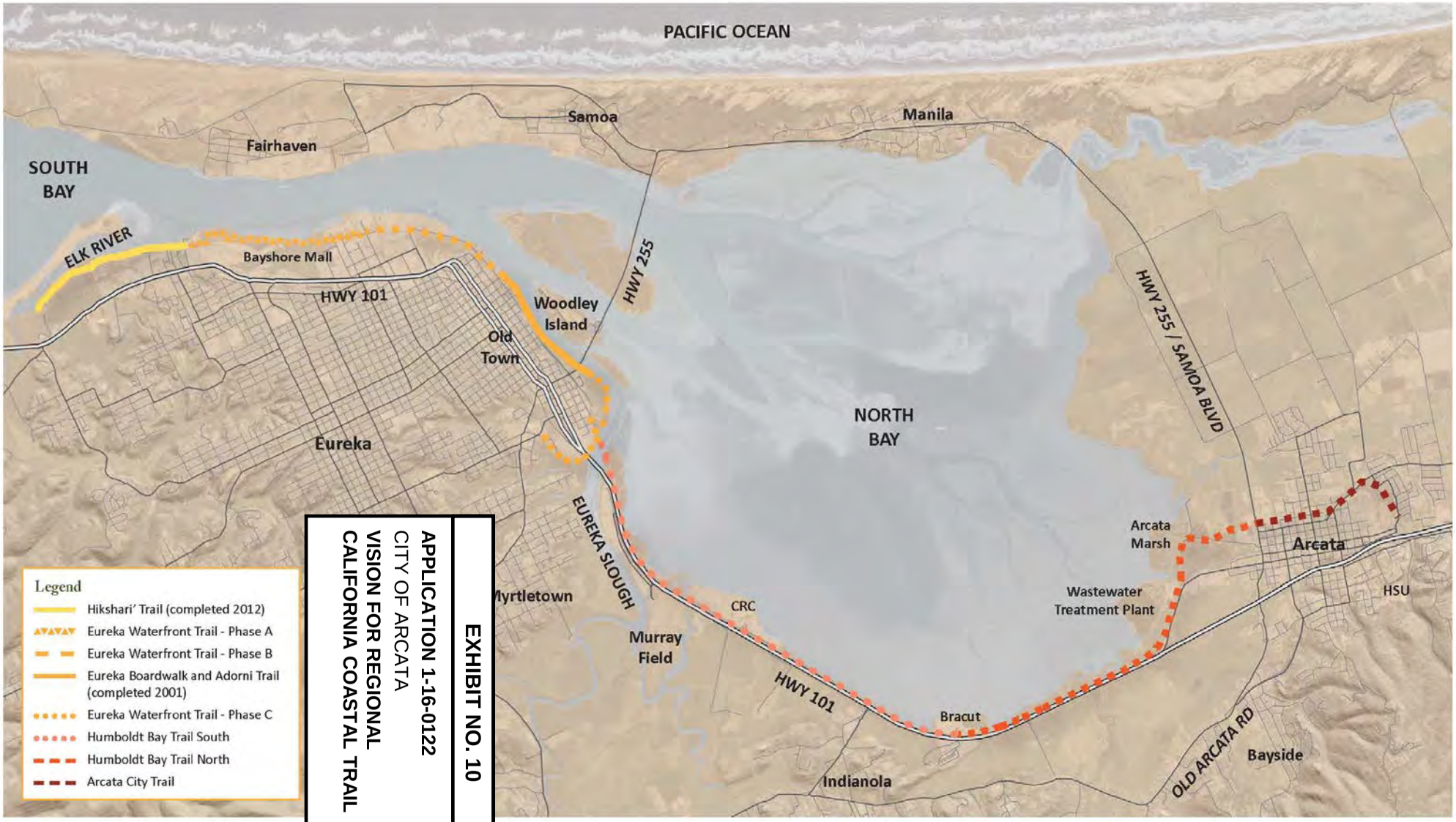
0 50 Feet


Cross Section #1
Elevation in feet (NAVD88)
6.5
6
5.5
5
4.5
4
3.5
3
0
10
20
30
40
50
60
70
80
90
Distance in Feet
Existing Topography
Proposed Topography


Cross Section #2
Elevation in feet (NAVD88)
6.5
6
5.5
5
4.5
4
3.5
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
200
210
220
230
Distance in Feet
Existing Topography
Proposed Topography


Cross Section #3
Elevation in feet (NAVD88)
9
8.5
8
7.5
7
6.5
6
5.5
5
4.5
4
3.5
0
10
20
30
40
50
60
70
80
90
100
110
120
130
Distance in Feet
Existing Topography
Proposed Topography

Trail Projects Currently in Development



APPLICATION 1-16-0122
CITY OF ARCATA
VISION FOR REGIONAL
CALIFORNIA COASTAL TRAIL

EXHIBIT NO. 10

[Created by GHD (June 2014) *The Humboldt Bay Trail: Project Update*]

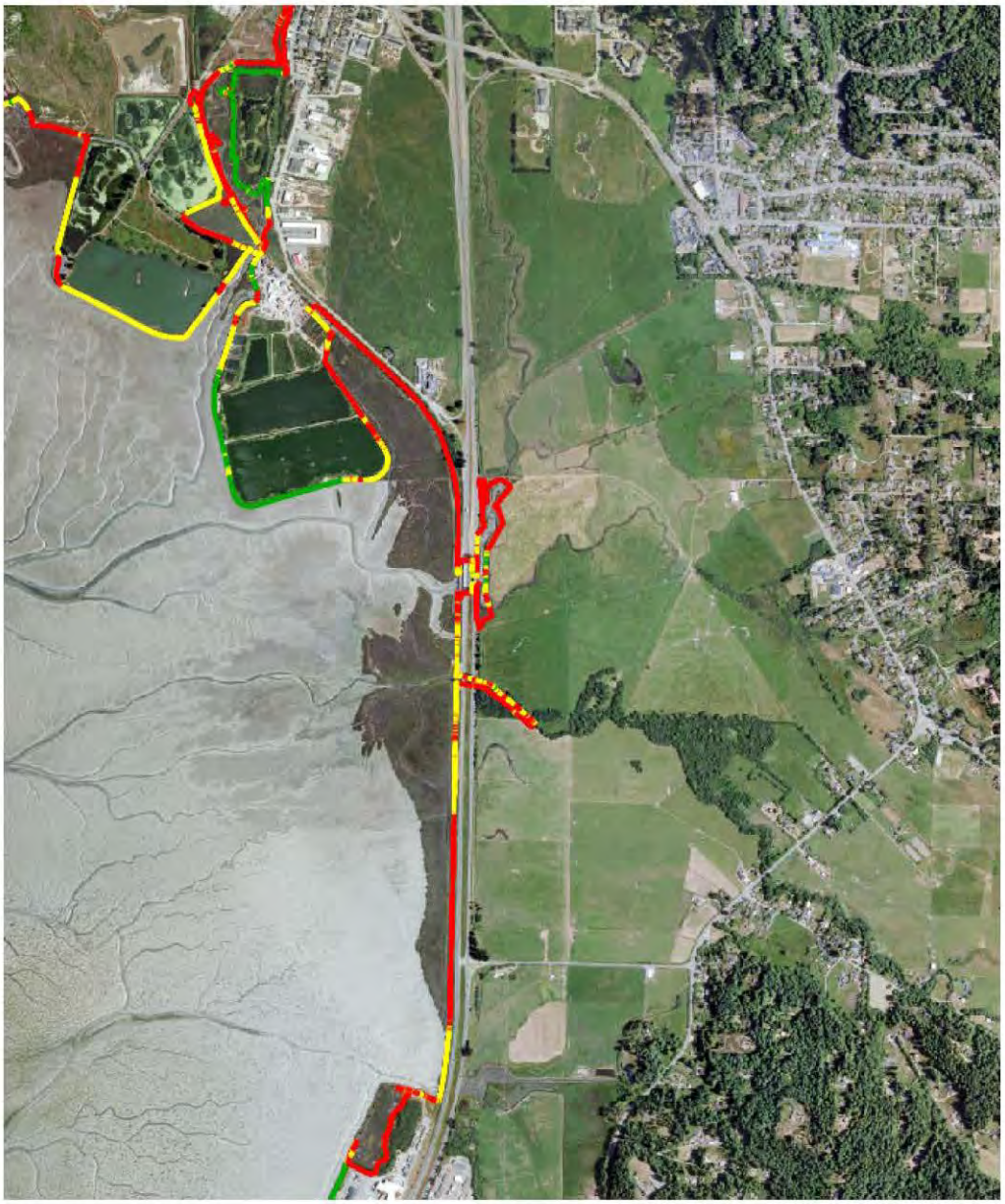
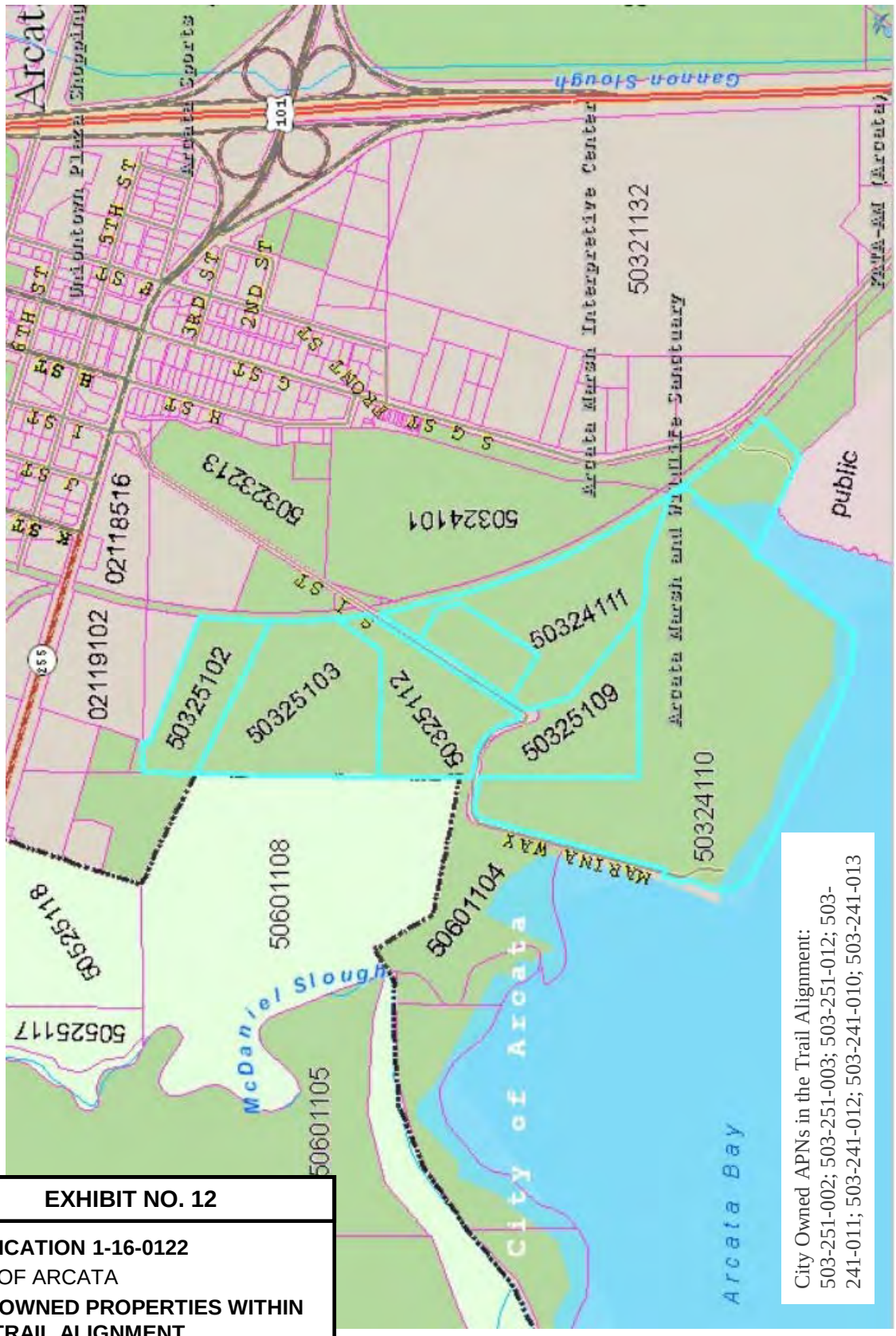


Figure 10. Shoreline vulnerability rating of the upper reach of Highway 101: high (red), moderate (yellow), and low (green) (Powell 2013).

[Laird, Aldaron. (2014, October). How can the Highway 101 corridor on Humboldt Bay adapt to sea level rise?]

EXHIBIT NO. 11

APPLICATION 1-16-0122
CITY OF ARCATA
SHORELINE VULNERABILITY ALONG ARCATA BAY



City Owned APNs in the Trail Alignment: 503-251-002; 503-251-003; 503-251-012; 503-241-011; 503-241-012; 503-241-010; 503-241-013

EXHIBIT NO. 12

APPLICATION 1-16-0122
CITY OF ARCATA
CITY-OWNED PROPERTIES WITHIN THE TRAIL ALIGNMENT