Supplement Analysis

For

Greenville Gate Access to Kirschbaum Field at Lawrence Livermore National Laboratory

December 5, 1997

DOE/EIS-0236-NIFSA-1

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1.0 Introduction

The National Ignition Facility (NIF) Program proposes to provide additional access to the Kirschbaum Field construction laydown area. This additional access would alleviate traffic congestion at the East Gate entrance to Lawrence Livermore National Laboratory (LLNL) from Greenville Road during periods of heavy construction for the NIF. The new access would be located along the northeastern boundary of LLNL, about 305 m (1,000 ft) north of the East Gate entrance. The access road would extend from Greenville Road to the Kirschbaum Field construction laydown area and would traverse an existing storm water drainage channel. Two culverts, side by side, and a compacted road base would be installed across the channel. The security fence that runs parallel to Greenville Road would be modified to accommodate this new entrance and a vehicle gate would be installed at the entrance of Kirschbaum Field. The exiting shoulder along Greenville Road would be converted into a new turn lane for trucks entering the new gate. Figure 1 shows the engineering drawings for grading, drainage, paving and specifications for the turn lane and culverts at the access gate.

This analysis evaluates the impacts of constructing the Kirschbaum Field bridge and access gate at a different location than was analyzed in the NIF Project Specific Analysis in the Final Programmatic Environmental Impact Statement for Stockpile Stewardship and Management (SS&M PEIS) published in September 1996 (DOE/EIS-0236) and the Record of Decision published on December 19, 1996. This supplement analysis has been prepared pursuant to the DOE regulations implementing the National Environmental Policy Act (10 CFR 1021.314)

Issues of concern addressed in this supplement analysis include potential impacts to wetlands downstream of the access bridge, potential impacts to the California red-legged frog (*Rana aurora draytonii)* listed as threatened on the federal listing pursuant to the Endangered Species Act of 1974, and potential impacts on the 100-yr floodplain along the Arroyo Las Positas. Impacts to existing air quality from construction are considered negligible based on the short duration (i.e., 1-2 months) and the relatively small surface disturbance expected during the construction and thus will not be addressed further in this supplement analysis.

The DOE entered into formal consultation with the U.S. Fish and Wildlife Service on August 25, 1997 on the Proposed Arroyo Maintenance Project on Arroyo Las Positas at LLNL (USFWS 1997). A biological assessment was prepared and subsequently a biological opinion was issued on the project by the USFWS (letter to Ray Corey, DOE Oakland Operations Office from Wayne S. White, U.S. Fish and Wildlife Service, Sacramento Field Office dated October 27, 1997).

2.0 Summary Conclusion

Few, if any, adverse impacts would occur from construction of the Kirschbaum Field bridge and access gate. Good engineering practices would minimize erosion, thus minimizing downstream transport of suspended soil material during construction. This impact would be of short duration and would not likely affect wetlands downstream in the channel. The California red-legged frog breeding habitat located about 183 m (600-ft) north of the bridge site would not be adversely impacted by sedimentation from runoff of the construction area. It is therefore concluded that the bridge and access gate would result in negligible if any adverse environmental impacts to the California red-legged frogs or other sensitive resources.

3.0 Description of Evaluation Included in the SS&M PEIS

As indicated in the SS&M PEIS Section I.3.4.1.3, three possible options were considered as construction laydown areas, see Figure 2. Option one was evaluated in more detail in the SS&M PEIS. Section I.3.4.1.3 provided an evaluation of impacts of an access road and bridge across Arroyo Las Positas. The bridge was located along the northern boundary of LLNL (DOE 1996, Pg. I-29). The access road and bridge were intended to connect Patterson Pass Road with LLNL's existing Avenue T. The SS&M PEIS assumed the bridge would be suspended above the arroyo and would be about 12-18 m (40-60 ft) long and 7.3 m (24 ft) wide. All supporting structures were assumed to be located above the channel banks of Arroyo Las Positas and thus would not interfere with the 100-yr. floodplain, estimated to be contained within the arroyo.

The assessment of impacts from the access bridge construction presented in the SS&M PEIS concluded that no significant impacts were expected. No impacts to aquatic resources and wetlands were predicted (DOE 1996; Section I.4.1.2.4.2). The nearest wetland to the proposed bridge crossing of the arroyo was estimated to be about 100 m (328 ft) to the West. Bridge construction was not expected to impact wetland habitat. No impacts to federal or state-listed species were predicted from bridge construction or any other construction activity related to the NIF. However, the California red-legged frog was not listed as threatened until May 23, 1996 (61 Federal Register pg. 25813) effective June 24, 1996. Project impacts to this species were not evaluated in the SS&M PEIS because the frog had not yet been listed at the time of the analysis.

The SS&M PEIS stated that "three small wetlands totaling 0.15 ha (0.36 ac) were located onsite at LLNL." Two wetlands comprised mostly of saltgrass and sedges were identified as being present along Arroyo Las Positas. Other plant species existing in the three wetlands include willow, curly dock, ryegrass, and Hooker's evening primrose.

The SS&M PEIS concluded that construction of NIF facilities would not impact archaeological sites, historic structures, or paleontological resources.

4.0 Description of Change in Access Bridge Location and Associated Impacts

As indicated above, the original location of the access road and access bridge was along the northern boundary of LLNL across Arroyo Las Positas (see Figure 2). The new access road is from Greenville Road to Kirschbaum Field and is located about 1,000 ft north of the East Gate entrance to LLNL. This access will cross a storm water drainage channel that flows northward to the northeast corner of LLNL and then extends westward along the northern perimeter of LLNL. During most of the year the channel in the vicinity of Kirschbaum Field is dry and lacks standing water.

Construction of the access bridge and road modifications is planned during December 1997 and January 1998. The bridge would consist of a six-inch base scarified and recompacted to 95 % relative compaction. Two 34ft, 25" diameter culverts will be placed parallel to each other and spaced 12" apart. The maximum flow rate through the culverts would be 45 cubic feet per second (cfs). Backfill material will consist of 8-inch aggregate covered with soil and compacted. An asphalt layer(s) will cover the backfill material. Winter rains during the construction period may result in some surface erosion at the construction site both during vegetation removal, grading activity, culvert installation and final stabilization. However, erosion control measures would be implemented to minimize this erosion. The amount of sediment from construction related runoff is not expected to adversely impact wetlands to the north.

The nearest pool habitat is about 274 m (900 ft) north of the bridge construction site at a culvert under Greenville Road where Arroyo Las Positas enters LLNL. Sediment deposition from construction would be expected to occur in the drainage south of this pool. California red-legged frogs would be expected to use pool habitat for breeding during the winter and spring months; three adult and three newly transformed juvenile frogs were observed during July and September 1997 at this location (USFWS 1997) which suggests that breeding took place in the pool. California red-legged frogs would be expected to move throughout the drainage channel in the vicinity of this pool during periods of storm water flow, particularly during the time when breeding activity is at a peak and when winter rains occur. Juvenile and adult frogs are known to move from 1-2 km from summer habitat during winter rains. During 1996 wetland vegetation occurred along a 183 m (600 ft) stretch of the channel near the influx of Arroyo Las Positas. This area is being proposed to be maintained free of vegetation; however, the wetland values to be removed would be mitigated through agreement with the USFWS to protect habitat for the California red-legged frog.

The two new culverts and riprap below the concrete drainage swale adjacent to the Kirshbaum bridge would likely have standing water following a rainfall event that resulted in channel flow. Water within these culverts would not dry up as quickly as in the adjacent channel and thus could provide temporary cover for California red-legged frogs. Such temporary standing water would not be expected to provide breeding habitat for frogs but rather could create temporary cover and refugia for juveniles and adults in the immediate area. Construction activities occurring in December and January would not likely impact California red-legged frog breeding activity at downstream pool locations. Stebbins (1985) indicates the breeding season

over the entire species' range lasts 1-2 weeks during the period of January-April. Observations at LLNL in 1997 indicated that breeding activity started in early February.

No impacts to any other protected species are anticipated from the access road and bridge construction. A nesting pair of white-tailed kites, a state-protected species was noted in a stand of eucalyptus trees near the East Gate (DOE 1996) entrance about 305-366m (1,000 -1,200 ft) south of the proposed access gate which is well beyond the area affected by construction activities. Also, construction would not occur during the white-tailed kites' nesting season.

No archeological or paleontological sites are known within 1000 feet of the proposed location.

The culverts will not impede water flow that would subsequently impact a the 100-yr flood plain along Arroyo Las Positas which joins the drainage channel about 183 m (600 ft) downstream of the bridge. A design maximum flow rate of 45 cfs through culvert will accommodate any foreseeable maximum storm runoff event.

5.0 Impact Summary and Planned Mitigation

As stated previously few, if any, adverse impacts would occur from construction of the Kirschbaum Field bridge and access gate. Good engineering practices would minimize erosion, thus minimizing downstream transport of suspended soil material during construction. This impact would be of short duration and would not likely affect wetlands downstream in the channel. The California red-legged frog breeding habitat located about 274 m (900-ft) north of the bridge site would not be adversely impacted by sedimentation from runoff of the construction area.

It is therefore concluded that the bridge and access gate would result in negligible if any adverse environmental impacts to the California red-legged frogs or other sensitive resources. This finding will be ensured by implementation of the following mitigation measures to further reduce or avoid impacts from construction activities:

1. Good engineering practices would be used during construction to control surface erosion, such as, of straw bales or sediment fences along affected areas.
2. The construction would be conducted in accordance with personnel safety requirements in the applicable *LLNL Health and Safety Manual* sections and supplements.
3. Preconstruction soil sampling would be conducted, if necessary, prior to the start of construction and the project manager would excavate any contaminated soil in a manner to preclude an uncontrolled, unpermitted release of hazardous substances to the environment.
4. All work would be covered by an addendum to the *National Ignition Facility Storm Water Pollution Prevention Plan, Livermore Site,* Lawrence Livermore National Laboratory, March 1997 and NPDES Permit NO. CAS000002, State Water Resources Control Board Order Number 92-08-DWQ.

5. No work would be allowed in the storm water channel during periods of flowing water unless appropriate procedures are in place to minimize water quality concerns downstream in the Arroyo Las Positas.

6. Any trees removed by the proposed project would be replaced according to the current LLNL tree replacement policy.

7. Disturbed areas along the banks of the channel adjacent to the bridge and road turn lane will be mulched and seeded in a timely manner following construction activities.

8. Within 60 days prior to the start of construction, the LLNL biologist will survey the affected area for the presence of protected or other sensitive species.

9. Prior to work in the crossing area, all persons would be briefed on the status, behavior, and regulatory status of the California red-legged frog, penalties for "take" of the fog, and given a map depicting the known frog locations to the north.

10. LLNL's wildlife biologist would be present to observe certain key project activities (e. g., at the start of construction activity at the site of the drainage channel crossing and at the time of culvert installation.)

11. California red-legged frog are not expected to be found during surveys and upon monitoring activities. However, if this frog is found at the construction site area, the USFWS will be notified and appropriate protective measures will be developed through consultation.

12. Ground disturbing activities will be monitored for the presence of unearthed cultural resources. The LLNL archaeologist will be notified if any resources such as ground or flaked stone tools, shell, bone, beads, trash areas, weathered boards, glass (especially colored), pottery, or square nails are uncovered.

6.0 References

DOE 1996. Final Programmatic Environmental Impact Statement for Stockpile Stewardship and Management. DOE/EIS-0236, Volume III, Appendix I. U. S. Department of Energy, Washington, DC

Stebbins, R. C. 1985. A field guide to western reptiles and amphibians. Houghton Mifflin Co., Boston, MA, 336 pgs.

U.S. Fish and Wildlife Service. 1997. Biological Opinion for the Proposed Arroyo Maintenance Project on Arroyo Las Positas at Lawrence Livermore National Laboratory, Alameda County, California. Letter dated October 27, 1997 from Wayne S. White Sacramento Field Office to Ray C. Corey, Department of Energy, Oakland Operations Office, Oakland, California.

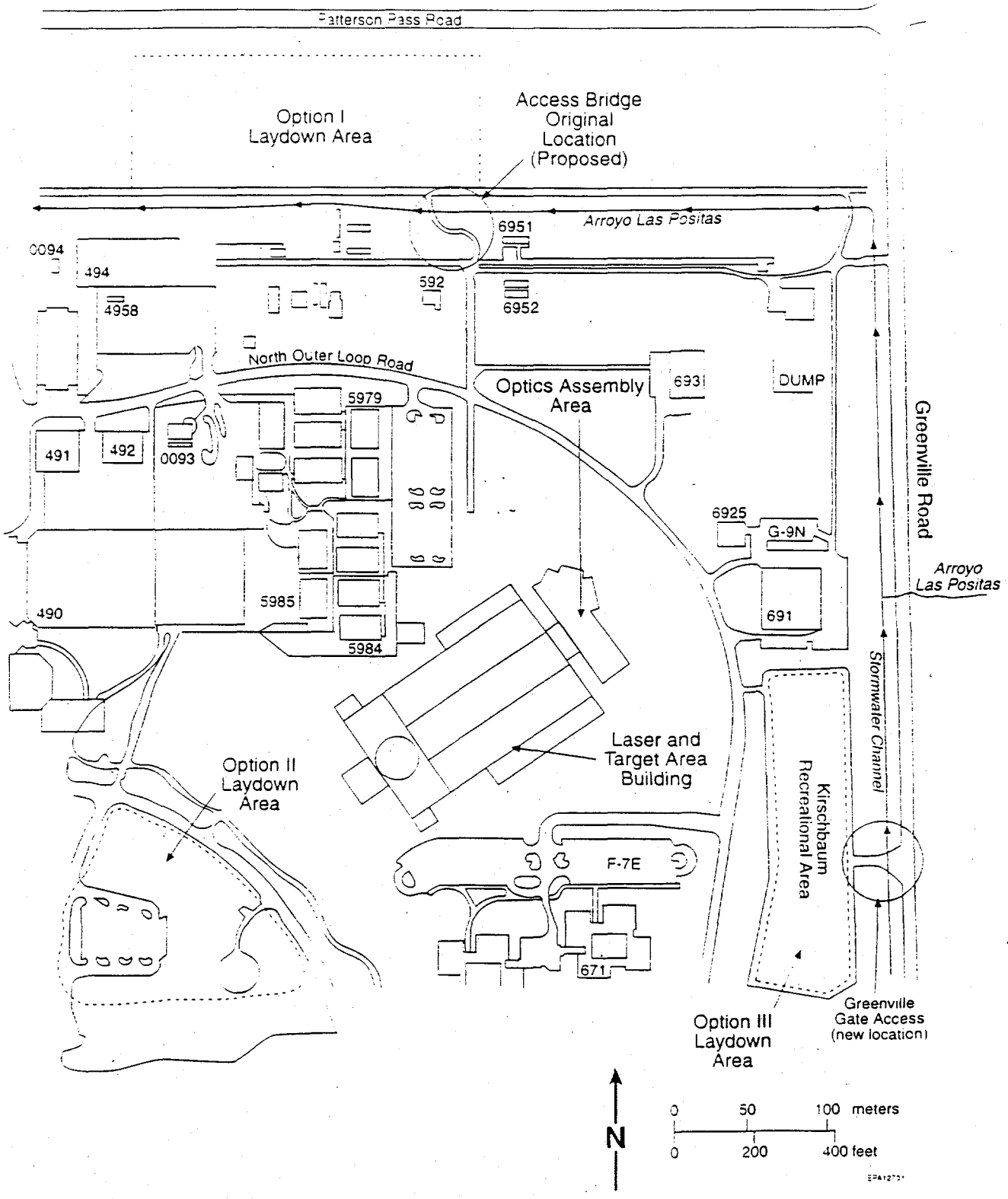


Figure 2. Lawrence Livermore National Laboratory Showing Proposed Greenville Access Access to Kirschbaum Field

Supplement Analysis Approval
December 1997

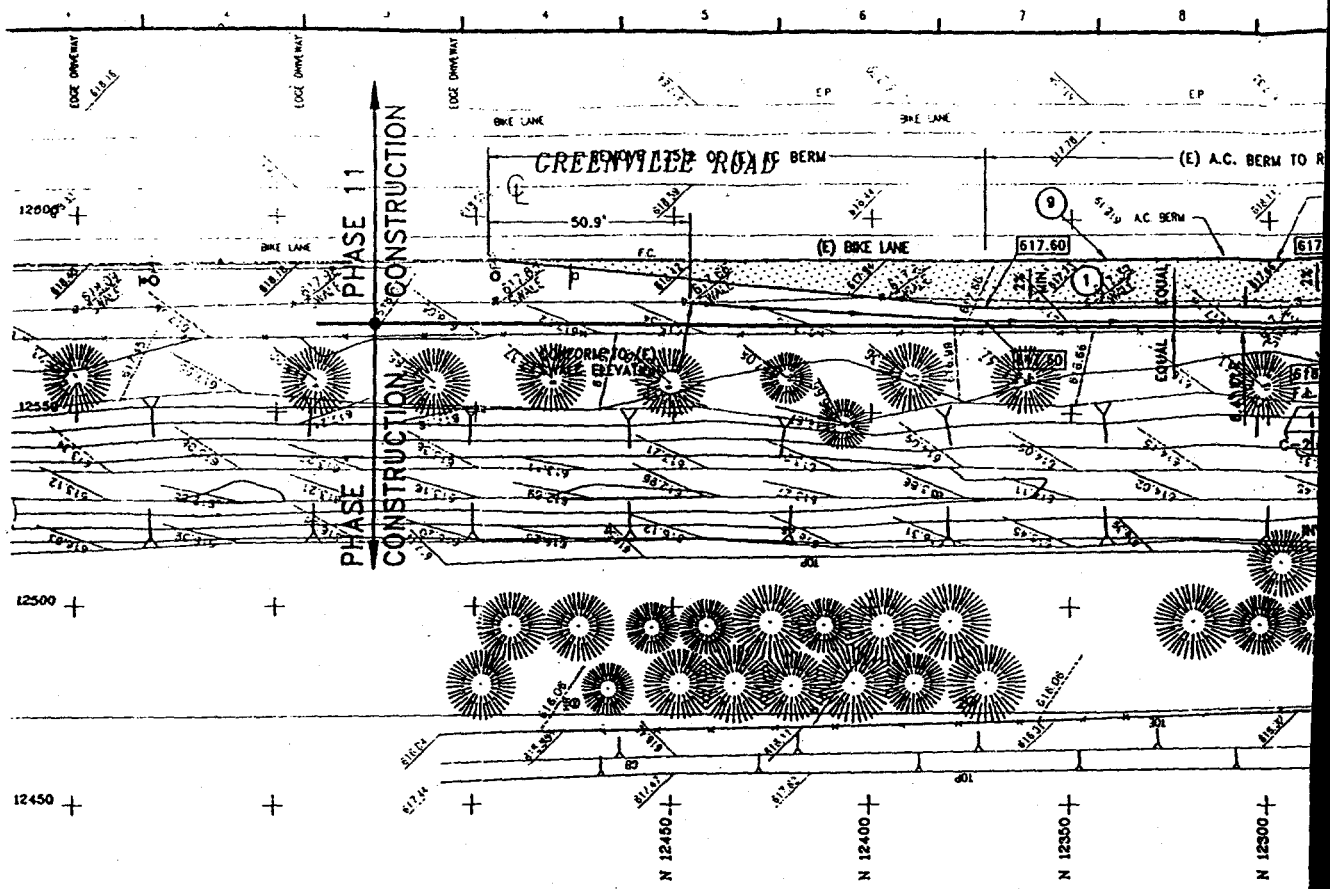
Preparer: _____ Date: 12-8-97
C. A. Taylor, Document Manager

Concurrence: _____ Date: 12/8/97
S. Samuelson, ICFD Director

Concurrence: _____ Date: 12-08-97
J. Neville, NCO

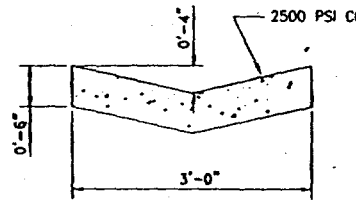
Concurrence: _____ Date: 12-8 97
J. Parenti, GLD

Approval: _____ Date: 12/9/97
for Dr. James M. Turner, Manager



CONSTRUCTION NOTES:

1. EXCAVATE TO SUBGRADE, SCARIFY 6 DEEP AND RECOMPACT TO 95% RELATIVE COMPACTION. INSTALL 8" THK CLASS 2 AGGREGATE BASE AND COMPACT TO 95% REL. COMPACTION. INSTALL 3" ASPHALT CONC.
2. CONSTRUCT ASPHALT CONCRETE BERM. SEE DETAIL 4/C-2|C-3
3. INSTALL 2-34x24 CMPA (HELICAL). MAINTAIN 12" CLEAR BETWEEN PIPES. SEE DETAIL 3/C-2|C-3
4. INSTALL 6" TO 9" ROCK RIPRAP. PLACED ROCK BY HAND AND ARRANGE IN CLOSE CONTACT TO FULL COURSE THICKNESS. SURFACE IRREGULARITIES SHALL NOT VARY FROM SURROUNDING GRADE BY MORE THAN 3-INCHES.
5. INSTALL 8-FT HIGH SECURITY FENCE. SEE DETAIL 1/C-2|C-3
6. INSTALL 24-FT. WIDE DOUBLE SWING GATE. SEE DETAIL 5/C-2|C-3
7. CONSTRUCT CONCRETE LINED SWALE. SEE DETAIL 1/C-2|C-2
8. INSTALL SIGN POST AND SIGNS. SEE DETAIL 2/C-2|C-3
9. PAINT (E) BERM WITH 2-COATS OF WHITE TRAFFIC PAINT
10. REMOVE (E) TREE INCLUDING ROOTS UP TO 2-FT DEEP.

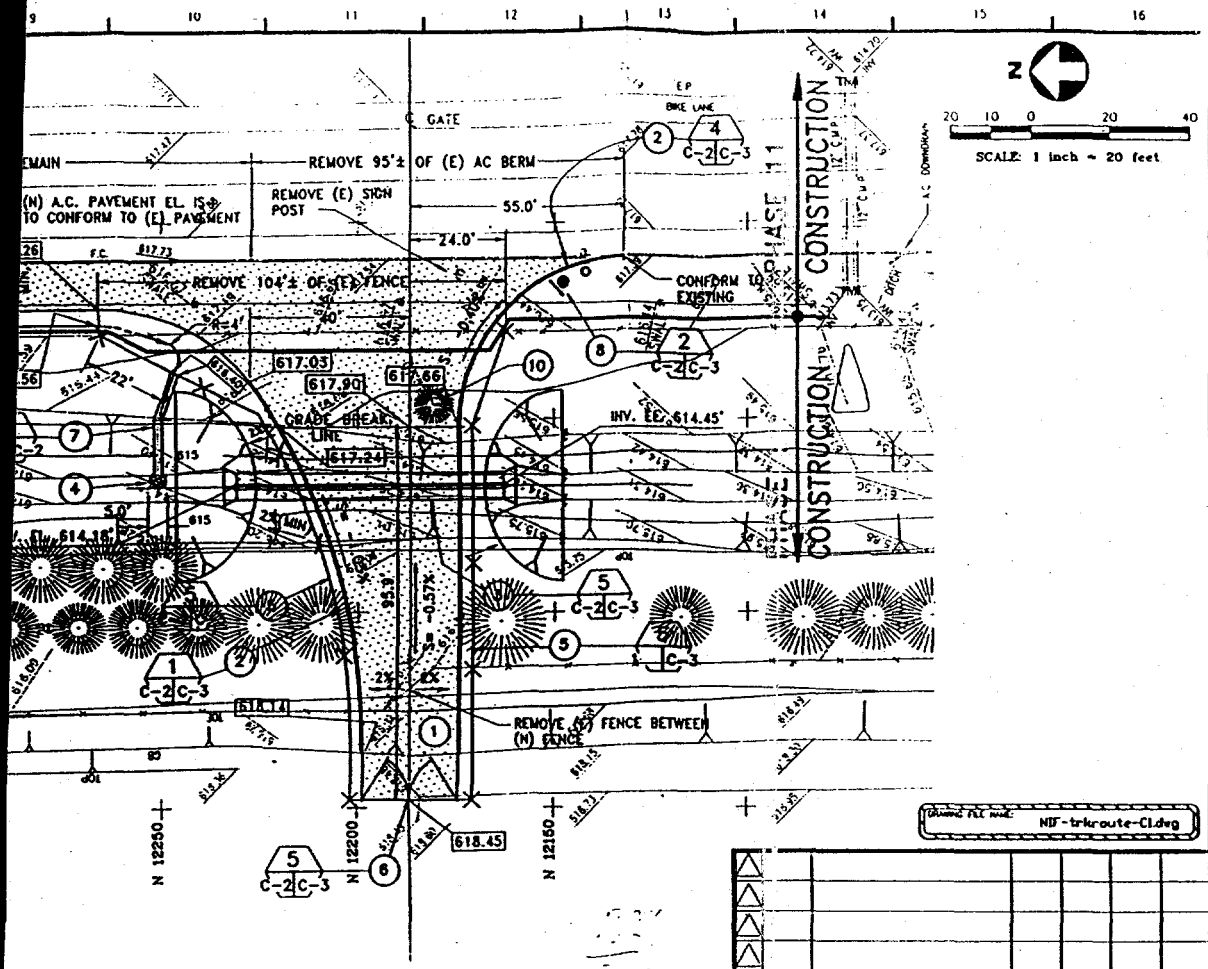


1/C-2|C-2 CONC. SWALE
SCALE: 1" = 1'-0"

GENERAL NOTES:

1. ON SITE FIELD VERIFICATION OF ALL DIMENSIONS AND CONDITIONS SHALL BE THE RESPONSIBILITY OF THE SUBCONTRACTOR. NOTED DIMENSIONS/COORDINATES TAKES PRECEDENCE OVER SCALE.
2. PRIOR TO CONSTRUCTION OF ROAD AND INSTALLATION OF STORM PIPES, CLEAR AND STRIP AREAS OF GRASS, SHRUBS, DEBRIS, AND OTHER DELETERIOUS MATER.
3. ALL GRASS, SHRUBS, DEBRIS, AND OTHER ITEMS NOTED TO BE DEMOLISHED DISPOSED OFF SITE UNLESS OTHERWISE NOTED.

Figure 1. Engineering Drawings of the Proposed Greenville Gate Access to Kirschbaum Field



ABBREVIATIONS

A.C.	ASPHALT CONCRETE
(E)	EXISTING
EL.	ELEVATION
FT.	FEET
INV.	INVERT
(N)	NEW
S	SLOPE

LEGEND

- SIGN POST & SIGN
- POWER POLE
- EXISTING FENCE
- EXISTING SWALE
- 614.39 EXISTING SPOT ELEVATION
- NEW SWALE
- DIRECTION OF GRADING/SLOPE
- (1) ITEM OF WORK
- [618.45] ITEM OF WORK
- NEW ASPHALT CONCRETE PAVING
- EXISTING TREE
- DETAIL DESIGNATION
- DRAWING WHERE DETAIL IS LOCATED
- DRAWING WHERE DETAIL IS REFERRED

DRAWING FILE NAME: NIF-trkroute-Cl.dwg

NO	DATE	REVISION	BY	CHKED	DC	PE/A

DRAWING TITLE: DEMOLITION, GRADING, DRAINAGE AND PAVING PLAN

Lawrence Livermore National Laboratory
Plant Engineering
Livermore, CA 94550

PROJECT TITLE: NIF CONSTRUCTION ENTRANCE GREENVILLE ROAD

EST		
PM/CL		
PE/A		
SEC		
M/O		
H.C.		
DES	MEL VILLEGAS	10/1/97
DWG	MEL VILLEGAS	10/3/97
CHK	D. LITTLEFIELD	
CL	DICK LING	
STAMP	SCALE: AS NOTED	DATE

PFNID: SHEET NO: OF:

DWG. NO.: PLC97-099-012D C-2