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STAFF REPORT: REGULAR CALENDAR

Application No.:	**3-97-039-A1**
Project Applicant:	**California Department of Transportation (Caltrans)**
Location:	Shoreline adjacent to Highway 1 between post miles 63.9 and 65.9, near Piedras Blancas, San Luis Obispo County.
Project Description:	Interim placement of 769 linear feet (17,132 cubic yards) of rock revetment, varying between 12 and 20 feet in height, comprised of 4-8 ton boulders on face of eroding bluff and shoulder reconstruction with soil backfill at three locations within the project limits as authorized by Emergency Permits number 3-00-154-G and 3-01-004-G for up to ten-year period pending completion of permanent highway realignment. Requested authorization to place a total of 1,325 feet (13,636 cubic yards) of additional interim rock slope protection, varying between 10 and 24 feet in height, at areas adjacent locations pending completion of highway realignment.
Related Approvals:	CDP 3-97-039; Army Corps permit number 200100299-TW; Monterey Bay National Marine Sanctuary Authorizations MBNMS-2000-051 and MBNMS-2001-006; RWQCB CWA Section 401 certification.
Substantive File Documents:	Permit 3-97-039; SLO County CDP D960151P

1.0 EXECUTIVE SUMMARY

California Department of Transportation (Caltrans) is requesting amendment of coastal development permit 3-97-039 to include emergency rock slope protection and shoulder reconstruction work performed during the 2000-2001 winter season along State Scenic Highway 1 at Piedras Blancas pursuant to Emergency Permits number 3-00-154-G and 3-01-004-G. In addition, Caltrans seeks permit authority to place additional temporary rock slope protection at areas adjacent to these locations where severe erosion threatens to cause failure of Highway 1.

Coastal development permit 3-97-039 authorized the interim placement of rock at certain locations along Highway 1 at Piedras Blancas for a five-year term, and applies to that portion of the project seaward of San Luis Obispo County's coastal permit jurisdiction. The permit requires Caltrans to remove all rock by August 15, 2002, but provides that Caltrans may seek permit extension for an additional two five-year terms pending completion of permanent highway realignment. This rock revetment is a temporary measure intended to protect Highway 1 pending completion of a planned permanent realignment; Caltrans is required to remove all rock slope protection at the latest by the end of August 15, 2012.

The staff recommends approval of the proposed development subject to the same special conditions as contained in the existing permit. In particular, staff recommends approval be conditioned on removal of the rip rap by August 15, 2002 unless an extension is approved.

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EXHIBITS

1. Location map
2. Site map, cross sections, and photographs, emergency rock slope protection ("RSP") already in place
3. Site map, cross sections, and photographs, proposed additional RSP
4. SLO County's Permit Conditions (CDP D960151P)

2.0 STAFF RECOMMENDATION

The staff recommends conditional approval of Coastal Development Permit Application 3-97-039-A1 by adoption of the following resolution:

Motion: *I move that the Commission approve Coastal Development Permit Application No. 3-97-039-A1, conditioned in the following recommendation.*

Staff Recommendation of Approval

The staff recommends a YES vote. To pass the motion, a majority of the Commissioners present is required. Approval of the motion will result in the adoption of the following resolution and findings.

Resolution

The Coastal Commission hereby **grants** permit No. 3-97-039-A1 subject to all of the same conditions as the original permit, as specified below, for the proposed development on the grounds that (1) the development is in conformity with the provisions of Chapter 3 of the California Coastal Act of 1976 and (2) there are no feasible alternatives or feasible mitigation measures other than those specified in this permit that would substantially lessen any significant adverse impact which the activity may have on the environment.

3.0 CONDITIONS

3.1 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. **Compliance.** All development must occur in strict compliance with the proposal as set forth in the application for permit, subject to any special conditions set forth below. Any deviation

from the approved plans must be reviewed and approved by staff and may require Commission approval.

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

5. **Inspections.** The commission staff shall be allowed to inspect the site and the project during its development, subject to 24-hour advance notice.

6. **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.

7. **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.

3.2 Special Conditions

1. **Revised Plans.** PRIOR TO COMMENCEMENT OF CONSTRUCTION, permittee shall submit to the Executive Director for review and approval two copies of revised plans showing that the rock slope protection will have a maximum slope of 1.5:1.

2. **Other Approvals.** PRIOR TO COMMENCEMENT OF CONSTRUCTION, permittee shall submit a letter of approval or other documentation from the State Lands Commission, Army Corps of Engineers and the Monterey Bay National Marine Sanctuary showing that the project has been approved by those agencies, or that no approval is necessary. This permit applies only to that portion of the project seaward of San Luis Obispo County's coastal permit jurisdiction; Caltrans must accordingly seek a separate coastal development permit or amendment from the County of San Luis Obispo for that portion of the project within the County's LCP jurisdiction.

3. **Approved Development.** This permit amendment is for the interim installation of rock slope protection in the manner and form described in the original application materials for 3-97-039 and this amendment, and the findings contained herein. The rock placed pursuant to this permit amendment shall not exceed the total volume and length specified in Caltrans' permit amendment application and Exhibits 2 and 3 hereto, specifically, 150 feet (4,533 cubic yards) at "Rocks 1," 1,544 feet (19,835 cubic yards) at the area known as "Rocks 2," and at two locations in the area known as "Rocks 3" of 200 feet (3,200 cubic yards) each. This permit is valid from the date of issuance through August 15, 2002. Unless extended by amendment as provided in Special Condition 4, this permit shall expire, and permittee shall remove all rock slope protection from the site and return it to pre-construction conditions, **by August 15, 2002.**

4. **Permit Amendment to Authorize Continued Use of Rock Slope Protection.** This permit may be amended no more than twice to authorize the continued use of the rock slope protection for a maximum of two, five-year terms beyond the initial expiration date of this permit. If the permittee chooses to do this, then the permittee shall submit a completed amendment application form with all the necessary supporting material no later than May 15 of the year in which the then current five-year term will expire, i.e. May 15, 2002, and May 15, 2007. Supporting material shall include the following: 1) an alternatives analysis. The

alternatives analysis shall include all feasible measures to protect the highway while avoiding or minimizing encroachment onto the beach and tidal areas. Alternatives shall include, but not be limited to: realigning the roadway, maintaining the rock slope protection, removing rock slope protection, use of other shoreline protection methods; an avoidance alternative must be considered; 2) cumulative impact discussion for the area in the general vicinity (approximately one-half mile up and down coast of the current project area) where similar conditions exist or could reasonably be expected to occur. A new permit shall be required for any permanent protection.

5. **Incorporation of Local Government Conditions.** The conditions of San Luis Obispo County Coastal Development Permit No. D960151P, attached as Exhibit 4, shall be considered as conditions of this permit as well. Any changes in these conditions shall not be effective until: a) such change is submitted to the Executive Director for a determination of materiality; and b) if found to be material, it is approved in accordance with the requirements of the Commission permit amendment process.

6. **Maintenance.** Maintenance of the permitted shoreline protection device shall be the responsibility of the permittee. If, after inspection, it is apparent that repair or maintenance is necessary, the permittee shall contact the Commission office to determine whether additional permits are necessary.

7. **Excavation.** Keyway excavation and similar work that could potentially impact the marine environment shall be conducted only during the low tide portions of the daily tidal cycle.

8. **Work From Bluff Top.** The work shall be performed from the bluff top; operation of construction vehicles on the beach or intertidal areas is not authorized by this permit.

9. **Assumption of Risk, Waiver of Liability and Indemnity.** By acceptance of this permit, the applicant on behalf of (1) themselves, (2) their agents and assignees and (3) any other holder of the possessory interest in the development authorized by this permit, acknowledges and agrees:

    1. that the project and site may be hazardous due to site conditions, including heavy surf;
    2. to waive unconditionally any and all claims of damage or liability against the Commission, its officers, agents, and employees for injury or damage arising from the project or resulting directly or indirectly from such hazards; and 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 fees and costs incurred in defense of such claims), expenses, and amount paid in settlement arising from any injury or damage arising from the project or due to such hazards.

10. **All Original Permit Conditions Applicable.** All work which is the subject of this amendment application is subject to all of the same conditions contained in the original permit number 3-97-039.

4.0 FINDINGS AND DECLARATIONS

4.1 Project Background and History

4.1.1 Project Area

The project is located on the seaward side of Highway 1 near Piedras Blancas in northern San Luis Obispo County at three locations where severe erosion of the bluff threatens the highway. The three locations, known as "Rocks 1" (post mile 65.9), "Rocks 2" (post mile 65.4), and "Rocks 3" (postmile 63.9), are spread along a roughly three mile stretch of coastline. "Rocks 2" has been divided into four sub-areas, labeled "a" through "d" (see Exhibit B).

4.1.2 Shoreline Erosion at Piedras Blancas

Erosion of the sandstone bedrock and marine terrace formations at this location in northern San Luis Obispo County is causing the steady retreat of shoreline within the project area. Comparisons of aerial photographs taken in 1957 and 1998 show a retreat of shoreline of as much as 150 feet in some areas over this period. Analysis of photographic evidence from 1957 to the present yields an average of 3.7 feet per year of bluff erosion. However, the rate of bluff erosion ranges widely from year to year. Also, the erosion rate varies widely at different points along the bluff due to a variety of external variables including angle to the surf, offshore and surf zone rock formations, and relative distance from the shore break. These variables make prediction of where, when, and to what extent bluff erosion will occur an inexact science. At several places within the project area, the shoreline has eroded to within less than five feet of Highway 1, imminently threatening the integrity of the roadbed.

4.1.3 Previous Shoreline Protection Projects at Piedras Blancas

Following winter storms in December 1996, Caltrans placed some rock as an emergency measure at the base of the bluff at the location known as "Rocks 1" at postmile 65.9 to prevent closure of Highway 1. In January 1997, Caltrans obtained a permit from San Luis Obispo County (SLO CDP D960151P) authorizing the placement of the existing and additional rock. Subsequent evaluation determined that some rock had been placed seaward of the mean high tide line, within Coastal Commission original jurisdiction, and that additional rock protection would be required. Caltrans accordingly sought and obtained Coastal Commission permit authorization under Permit No. CDP 3-97-039 in August 1997 for the placement of existing and additional rock slope protection along a 150 foot stretch of shoreline at "Rocks 1."

4.2 Project Description

4.2.1 Emergency Rock Slope Protection In Place

The project seeks permit approval for emergency rock slope protection measures and highway shoulder reconstruction work performed last winter pursuant to Emergency Permits number 3-00-154-G and 3-01-004-G pending completion of the proposed highway realignment at this location. The emergency permits require that Caltrans seek amendment of the existing permit at this location to include this emergency work. If granted, the amendment will be subject to all of

the same terms and conditions of the permit 3-97-039, including that the rock be removed by August 15, 2002, unless extension is sought and granted by the Commission.[1]

Emergency permit 3-00-154-G involved placement of approximately 400 cubic yards of 4-8 ton rock in an area 130 feet in length adjacent to the existing revetment at "Rocks 2" and approximately 625 cubic yards of 4-8 ton rock in an area 75 feet in length 300 feet south of Arroyo del Oso Creek, at "Rocks 2a."

Rock was placed under emergency permit 3-01-004-G at the areas known as "Rocks 1" and "Rocks 2a-d" beginning on January 11, 2001 and concluding on February 15, 2001. The total amount of rock placed at "Rocks 1" was 3,022.6 tons, or 4,533.9 cubic yards, stretching approximately 150 linear feet. At "Rocks 2," the total amount of rock placed at the four sub-areas was as follows:

- "Rocks 2a": 1,691.2 tons (2,536.8 cubic yards), spanning 100 feet in length;
- "Rocks 2b": 1,494.3 tons (2,241.5 cubic yards), spanning 65 feet in length;
- "Rocks 2c": 2,035.4 tons (3,053.1 cubic yards), spanning 78 feet in length; and
- "Rocks 2d": 2,496 tons (3,744 cubic yards), spanning 171 feet in length.

The height of the rock revetment at these locations varies between 12 and 20 feet. The site maps and cross sections attached as Exhibit 2 show the placement of this rock in greater detail. At these locations, horizontal distance from bluff to foot of revetment ranges from 14.8 to 24.7 feet. Because of the variation in height and width of the revetment, exact area of beach coverage is difficult to calculate, but estimates based on the submitted plans are as follows:

New Proposed RSP:

Revetment Area	Length	Avg. Width	Area (sq. ft.)	Area (acres)
South of "Rocks2"	175	14	**2,450**	**0.06**
North of "Rocks2"	750	24	**18,000**	**0.41**
"Rocks 3"	400	28	**11,200**	**0.26**
Total			**31,650**	**0.73**

Emergency Permit RSP:

Revetment Area	Length	Avg. Width	Area (sq. ft.)	Area (acres)
EP 3-00-154-G				
"Rocks 2"	205	19	**3,895**	**0.089**
EP 3-01-004-G				
"Rocks 1"	150	19	**2,850**	**0.065**
"Rocks 2"	414	19	**7,866**	**0.181**
Total			**14,611**	**0.335**

[1] Notwithstanding Standard Condition #2 of the CDP 3-97-039, the additional Rock Slope Protection authorized by the permit amendment is subject to the original five year term and extension requirements fo CDP 3-97-039, which has been exercised.

Although surveys completed by Caltrans in March 2001 determined that of the five locations where rock was placed in January and February 2001, only two extended below the plane of Mean High Water (MHW), there is some uncertainty as to precise location of the Coastal Commission's jurisdiction in this case, and some portion of all of the proposed rock work may lie within the Commission's original permit jurisdiction.[2] In any case, this permit amendment applies only to that portion of the project within Coastal Commission original jurisdiction; and Caltrans has simultaneously applied to San Luis Obispo County for a separate coastal development permit amendment for that portion of the project within the County's LCP jurisdiction, and the County planning staff has indicated that any County permit amendment will conform to the Commission's permit amendment.

4.2.2 Additional Proposed Slope Protection Measures

Caltrans has identified additional locations as having the potential to fail and threaten Highway 1, the area located at PM 63.9 ("Rocks 3"), where no rock has been placed to date, and at "Rocks 2," immediately adjacent to the existing installations. As part of its amendment application, Caltrans has sought permission to place rock at these areas.

At "Rocks 3," where to date no rock has been placed, Caltrans seeks permission to place rock along two stretches, each approximately 200 feet in length, where the bluff is currently between 12 and 15 feet from the roadway. These areas would together require an estimated 6,400 cubic yards, or 9,300 tons, of rock.

Caltrans additionally proposes to place rock at two locations at "Rocks 2," where the bluff is between 15 and 20 feet from the roadway, north and south of the rock revetment already in place. The length of the proposed revetment at "Rocks 2" would be 175 feet to the south and 750 feet to the north of the existing revetment. Caltrans estimates the total volume of rock required will be approximately 7,236 cubic yards, or a total of 10,505 tons.

As described by Caltrans, the proposed additional rock slope protection is a measure necessary to protect Highway 1 where it is threatened by shoreline erosion pending the completion of the temporary detours and permanent realignment of Highway One, discussed below. As discussed below, without the additional rock slope protection, there is a substantial likelihood, given the proximity of the bluff edge and the historic rates of erosion, that Highway 1 will be damaged in the near future, and certainly before the temporary detours and permanent realignment can be completed. The rock slope protection placed under emergency permits in 1997 and last winter was installed during storm events with ocean waves and spray hitting the Highway 1 road surface, with the bluff top less than five feet from the road bed. The additional rock slope protection sought by this permit amendment application is necessary to avoid the imminent danger of collapse and closure of Highway 1 and such eleventh hour measures while winter storms are in progress. As discussed in greater detail in Section 4.3.1 below, the rock slope protection represents the least damaging and only practical alternative until the temporary detours and permanent realignment are complete. As conditioned, the rock slope protection under this permit amendment is a temporary measure needed only until the long-term solution of

[2] This uncertainty is due to such factors as the ambulatory nature of the MHT, the uncertainty inherent in limited surveys, the fact that the base datum for such surveys may be out of date, etc.

the permanent realignment has been completed. All rock must be removed by the applicant at the latest by the expiration of the permit.

4.2.3 Temporary Detours and Permanent Highway Realignment

In two areas, at one from "Rocks 2" to beyond "Rocks 1" and the second, from south to just north of "Rocks 3," temporary detours have been proposed. Design of the temporary detours has nearly been completed and the project is in the environmental phase. Due to the environmental issues, it will likely be 1 ½ to 2 years before the temporary detours can be constructed.

At the area known as "Rocks 2," however, where much of the existing and proposed rockwork is located, a temporary detour is not feasible because of potential impacts to nearby Arroyo Del Oso and cultural resources in the immediate vicinity. Arroyo Del Oso is a seasonally wet area which provides potential red-legged frog habitat. In addition, as depicted in Exhibit 3, Figure 1, a site known to contain archaeological resources lies immediately inland of Highway 1 at Arroyo Del Oso. A temporary detour inland of the present alignment of Highway 1 would difficult to construct without disturbing these sensitive resources. As a result, because a temporary detour is not practically feasible at this location, rock placed at "Rocks 2" will in effect have to be left in place until completion of the permanent realignment.

A long-term plan of permanent realignment is planned by Caltrans for the area from PM 63.0 to 66.8, and is presently in the preliminary study phase. Caltrans is working on a Project Study report which will identify several design alternatives for the realignment. Project Development Team meetings have begun. Caltrans does not yet have a schedule for completion, but it is unlikely that construction will begin before 2010.

4.3 Other Approvals

4.3.1 Army Corps of Engineers

The ACOE issued Permit number 200100299-TW on December 5, 2000 for work at "Rocks 2" placed in December 2000. On February 20, 2001, Caltrans applied for an "after-the-fact" permit for the January work at "Rocks 1" and "Rocks 2." The Army Corps Ventura Field Office is still preparing and has not yet issued this permit or a permit for the new proposed rock work.

4.3.2 Monterey Bay National Marine Sanctuary

Monterey Bay National Marine Sanctuary has issued two authorizations, MBNMS-2000-051 and MBNMS-2001-006, for rock slope protection placed to date. Caltrans is simultaneously seeking MBNMS authorization for the future rock slope protection which is the subject of the present permit amendment application, and MBNMS has indicated its intention to grant authorization conforming to the amended Commission permit.

4.3.3 Regional Water Quality Control Board

A Clean Water Act Section 401 water quality certification was issued on December 1, 2000.

4.4 Coastal Act Issues

4.4.1 Shoreline Structures

Section 30235 of the California Coastal Act governs proposed shoreline structures in the coastal zone. It states, in relevant part:

> *Revetments, breakwaters, groins, harbor channels, seawalls, cliff retaining walls, and other such construction that alters natural shoreline processes shall be permitted when required . . . to protect existing structures or public beaches in danger from erosion, and when designed to eliminate or mitigate adverse impacts on local shoreline sand supply.*

Under this section, the Commission may approve a shoreline structure, such as the revetments which are the subject of the application, when (1) it is necessary to protect an existing structure threatened by erosion and (2) it is designed to eliminate or mitigate adverse impacts on shoreline sand supply.

Existing Structure at Risk. The project which is the subject of the application involves rock revetments intended to protect Highway 1 from damage due to erosion. Roads such as Highway One are typically considered to be "structures" for purposes of section 30235. Caltrans' application materials indicate that in the areas both where emergency rock was placed last winter and where Caltrans proposes additional rock placement, the bluff top ranges from 24 feet to less than 5 feet from the roadway.

Erosion of the sandstone bedrock and marine terrace formations at this location in northern San Luis Obispo County is causing the steady retreat of shoreline within the project area. Comparisons of aerial photographs taken in 1957 and 1998 show a retreat of shoreline of as much as 150 feet in some areas over this period. Analysis of photographic evidence from 1957 to the present yields an average of 3.7 feet per year of bluff erosion. However, the rate of bluff erosion ranges widely from year to year. In recent years, large sections of bluff have eroded away in single storm events, underscoring the episodic and uncertain erosion along this section of coast. Also, the erosion rate varies widely at different points along the bluff due to a variety of external variables including angle to the surf, offshore and surf zone rock formations, and relative distance from the shore break. These variables make prediction of where, when, and to what extent bluff erosion will occur an inexact science. At several places within the project area, the shoreline has eroded to less than five feet of Highway 1, imminently threatening the integrity of the roadbed. There is little question in this case that the sections of Highway One proposed for additional rock protection are at risk within the next 3-5 storm cycles, meeting the test of section 30235.

Feasible Alternatives. Under section 30235, the proposed revetment may be approved as the appropriate response to the erosion risk if "required" to protect an existing structure, i.e., when there is no feasible alternative. Here, three alternatives exist which require discussion: (1) no revetment, and (2) highway realignment; and (3) a vertical seawall.

(1) The "no revetment" or status quo alternative leaves unchecked the natural erosive processes which in time will inevitably undermine the present roadbed of Highway 1 within the project area. The only question is how long, within the near future, it will take for erosion to reach the highway. As discussed, although an average annual erosion rate in excess of three feet has been calculated for the Piedras Blancas shoreline, the erosion rate at particular locations varies widely. Caltrans believes that, if no measures are taken, portions of Highway 1 could be lost as early as this winter. The experience with emergency permitting of rock revetments in this area over the last few years indicates that erosion can occur very rapidly. The bluff top within the

project area is close enough to the highway, and the rate of erosion variable enough, that imminent risk of damage to the highway exists in each of the locations identified by Caltrans. The staff geologist concurs that the areas in question are at risk for purposes of section 30235. As a result, the "no revetment" option is not a practical, feasible alternative.

(2) The second alternative, highway realignment inland, represents the only acceptable long-term alternative. Caltrans is already in the early planning stage for permanent highway realignment from PM 63.0 to PM 66.8. When completed, this alternative will obviate the need for rock revetments in this area to protect the highway. However, because of the numerous legal, environmental and engineering issues presented by realignment, the planning process will take as many as ten years to complete. In the interim, Caltrans is also planning a temporary detour, or minor realignment inland, of Highway 1 at the locations known as "Rocks 1" and "Rocks 3." However, the planning and construction of these detours, which present some of the same issues as the major realignment, will take in all probability at least two years. Due to the significant impacts to wetlands and archaeological sites, no interim detour is proposed at "Rocks 2," adjacent to Arroyo Del Oso. With respect to at least "Rocks 2," therefore, the present alignment of Highway 1 must remain functional until the permanent realignment is complete. Given the uncertain length of time required to complete both the detours and the realignment, the "realignment" alternative is not adequate at this time to protect Highway 1 and insure continued public access along this stretch of coastline.

(3) A third alternative to the proposed rock slope protection is a vertical seawall. The cost of a seawall is significantly greater than placed rock and more permanent in nature. Vertical seawalls have the advantage of creating less footprint on the beach than would the proposed revetment, thereby lessening any impact to lateral access along the beach. Seawalls are also less likely to trap sand moving parallel to coast with littoral drift. However, in addition to being more expensive, any seawall at this location would probably be visually more intrusive and more difficult to remove without significant impacts than placed rock. Because the shore armoring measures sought by Caltrans at this location are intended as a temporary measure to protect an existing structure until that structure can be moved, a vertical seawall is inappropriate.

Mitigation of Impacts to Sand Supply. Under Section 30235, any proposed shoreline structure must be designed to eliminate or mitigate adverse impacts to shoreline sand supply. Shoreline armoring measures, including rock revetments, lead to adverse impacts to local sand supply by preventing sand replenishment from bluff erosion and accelerating erosion of sand beaches. Rock revetments can also trap sand in voids between rocks and block littoral drift. The project as proposed includes a number of conditions to lessen these impacts. First, the rock revetments are temporary. The amended permit would be subject to the same terms and conditions as the existing permit, under which Caltrans is required to remove all rock at the expiration of the permit. The permit will presently expire on August 15, 2002, unless an extension is sought and granted by the Commission. The permit allows for a maximum of two five-year extensions. Thus any adverse impacts will be limited to the time that the rock is in place.

Second, Special Condition 1 requires that rock revetments be built at a maximum 1.5:1 horizontal to vertical slope. As a result, wave action against the revetment which results in erosion of beach sand and impacts on littoral drift is also minimized. Caltrans surveys also showed that all rock placed in fact had a slope less (steeper) than 1.5:1. Finally, rock slope protection tends to absorb more energy than alternative structures such as seawalls, thereby decreasing erosion relatively where water does come in contact with the revetments.

The Commission finds that the proposed project is required to protect an existing structure, Highway 1, pending the completion of the permanent realignment of the highway at this location and that no feasible alternative exists. The Commission further finds that the proposed project is designed to mitigate adverse impacts to sand supply in conformance with the requirements of Section 30235 of the Coastal Act.

4.4.2 Public Access and Recreation

Coastal Act Section 30210 states:

> *In carrying out the requirement of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.*

Coastal Act Section 30211 states:

> *Development shall not interfere with the public's right of access to the sea where acquired through use or legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation.*

Coastal Act Section 30214 states in relevant part:

> *(a) The public access policies of this article shall be implemented in a manner that takes into account the need to regulate the time, place, and manner of public access depending on the facts and circumstances in each case including, but not limited to, the following:*
>
> *(1) Topographic and geologic site characteristics.*
>
> *(2) The capacity of the site to sustain use and at what level of intensity.*
>
> *(3) The appropriateness of limiting public access to the right to pass and repass depending on such factors as the fragility of the natural resources in the area and the proximity of the access area to adjacent residential uses.*
>
> *(4) The need to provide for the management of access areas so as to protect the privacy of adjacent property owners and to protect the aesthetic values of the area by providing for the collection of litter.*

Public access in the project area is somewhat difficult due to the natural topography of the area. For the length of the project area, a steep, sandstone bluff averaging approximately 20 feet in height limits easy vertical access to the beach from Highway 1. Informal access to the beach exists at the mouth Arroyo de la Cruz north of "Rocks #1," but no stairways exist leading from bluff top to beach. In addition, a fence runs along the shoulder of Highway 1 for much of the

length of the project area, limiting access to the bluff top. Narrow gravel and sand beaches run sporadically for most of the length of the project area below the bluffs. Although the ocean reaches the bluffs at many points at high tide, rendering the beaches impassable at these times, there is lateral access along the rocky shoreline at lower tides. The land seaward of Highway 1 in the project area is part of Hearst Ranch belonging to the Hearst Corporation. The nearest formal access point is approximately three miles south of the project area.

The emergency rock placed last winter extends onto the beach between 14.8 and 24.7 feet. Because of this variation, exact area of beach coverage is difficult to calculate. As shown in the cross-sections contained in Exhibit 3, the proposed additional rock revetment would project 13 feet onto the beach at the location south of "Rocks 2," 24 feet at the location north of "Rocks 2," and 28 feet at the "Rocks 3," locations 1 and 2. As summarized earlier, the total area of beach covered by rock revetment will be significant – approximately 1 acre of shoreline. Because of the area of beach covered, the revetments inevitably impact lateral access along the beach. As noted, access to the beach from Highway 1 is obstructed by the steep bluff top along the length of the project area. The rock revetment will not affect access along the bluff top.

The rock revetments are an interim solution to protect Highway 1 pending the completion of the permanent realignment. As is the case throughout the state, Highway 1 represents the main route for public access to and along the coast in northern San Luis Obispo County from Morro Bay to the gateway to Big Sur. Impacts to lateral access along the beach north of Piedras Blancas as the result of the rock slope protection must be weighed against significant loss of coastal access as a result of damage to and closure of Highway 1. Experience over the last four storm seasons has shown that in the absence of adequate shore armoring measures at key points in this area where bluff retreat is greatest, damage to Highway 1 during large storm events is virtually certain to occur. The rock revetments proposed by Caltrans represent the best alternative for the protection of Highway 1 in the near term for which no viable alternative exists. Overall, within the context of the paramount importance of Highway One for coastal access, the temporary impacts to lateral access along the beach from rock revetments, to protect Highway One, meet the objectives of section 30210.

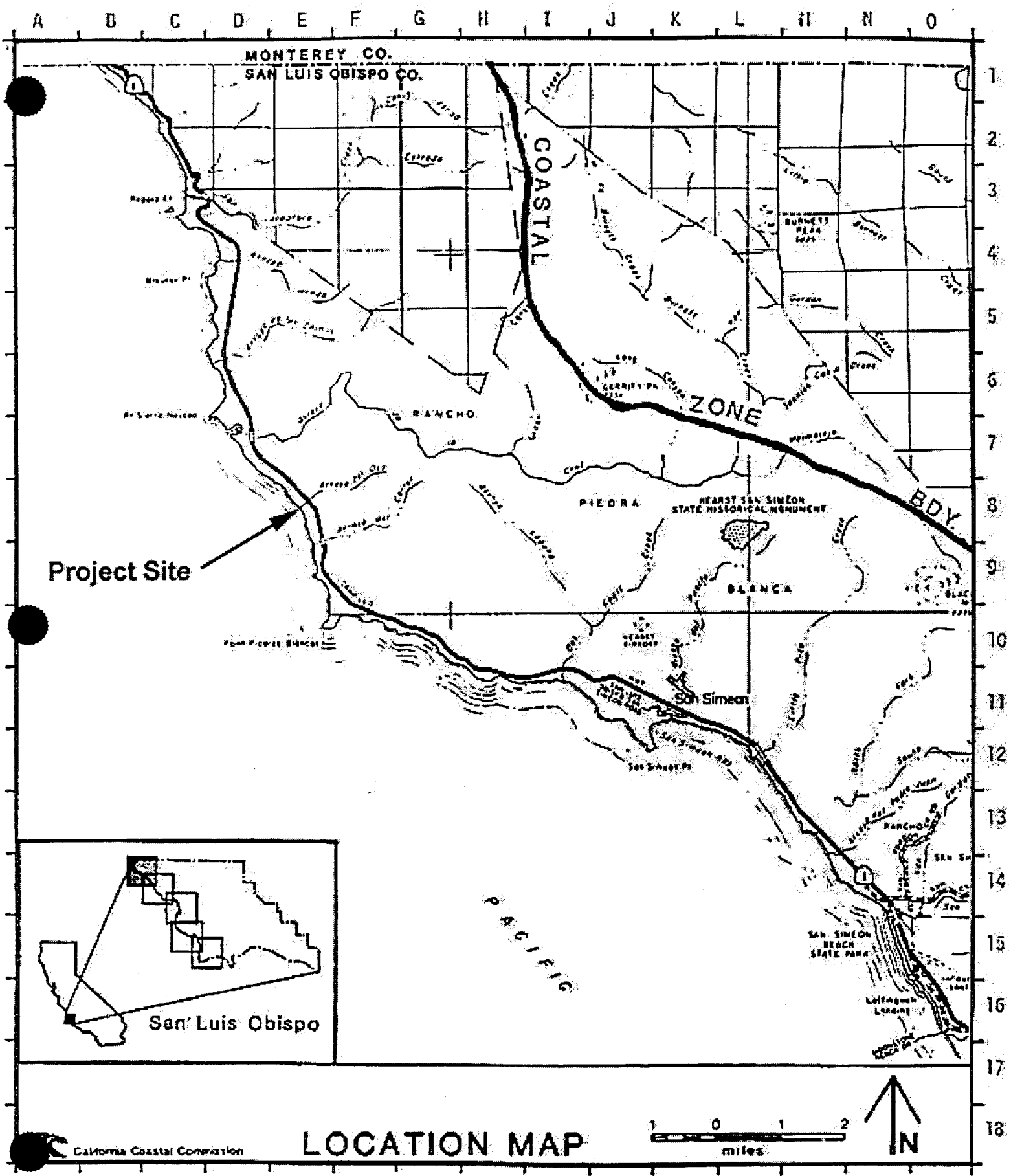
Permit conditions require that all rock must be removed at the expiration of the permit term, and the permit can be extended for a maximum of two, five-year terms. For this reason, any impacts to access from the presence of the rock are temporary, limited to the time that the rock remains in place. The Commission finds that the proposed project, as conditioned, will protect public access in conformance with the requirements of Section 30210 of the Coastal Act and that any impacts to lateral beach access from the proposed revetments are outweighed by need to protect public access along Highway 1. In addition, the Commission finds that any impacts to coastal access from the revetments are temporary.

4.4.3 California Environmental Quality Act

Section 13096 of the California Code of Regulations requires Commission approval of Coastal Development Permit applications to be supported by a finding showing the application, as conditioned by any conditions of approval, to be 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 feasible alternatives or

feasible mitigation measures available, which would substantially lessen any significant adverse effect that the activity may have on the environment.

The proposed project has been conditioned to be found consistent with the policies of the Coastal Act and to minimize all adverse environmental effects. The Commission incorporates its findings on Coastal Act policies at this point as if set forth in full. As conditioned, there are no feasible alternatives or feasible mitigation measures available, which would substantially lessen any significant adverse impact, which the project may have on the environment. Therefore, the Commission finds that the proposed project, as conditioned to mitigate the identified impacts, and can be found consistent with Coastal Act requirements to conform to CEQA.



California Coastal Commission

LOCATION MAP

County of San Luis Obispo

Sheet 1 of 5

Exhibit 1
Pg. 1 of 2

Exhibit 1
Pg. 2 of 2

INDEX OF SHEETS

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

PROJECT PLANS FOR CONSTRUCTION ON
STATE HIGHWAY

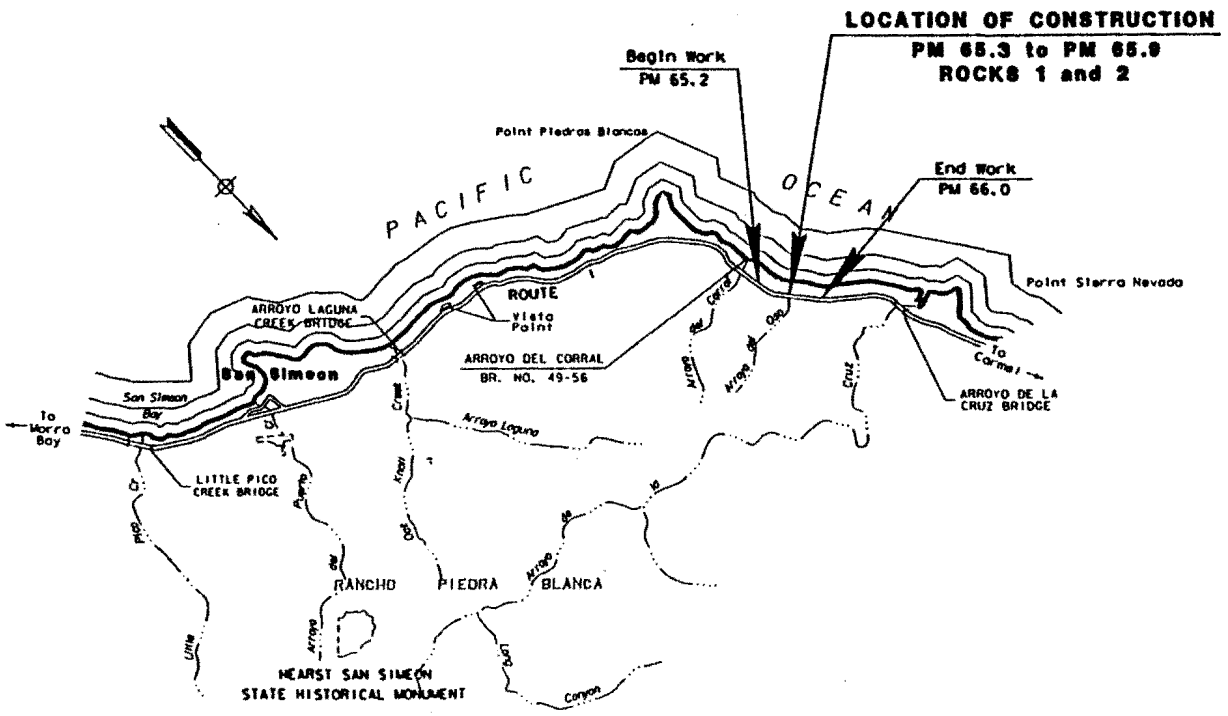
IN SAN LUIS OBISPO COUNTY
NEAR SAN SIMEON AT
0.6 MILES (0.9 km) NORTH OF ARROYO
DEL CORRAL BRIDGE NO. 49-56

To be supplemented by Standard Plans dated July, 1997

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO	TOTAL SHEETS
05	SLO	1	65.4 (105.2)		

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

LOCATION OF CONSTRUCTION
PM 65.3 to PM 65.8
ROCKS 1 and 2



NO SCALE

The Contractor shall possess the Class (or classes) of license as specified in the "Notice to Contractors".

Project Engineer _____ Date
Registered Civil Engineer

Plans Approval Date

REGISTERED PROFESSIONAL ENGINEER — CIVIL — STATE OF CALIFORNIA

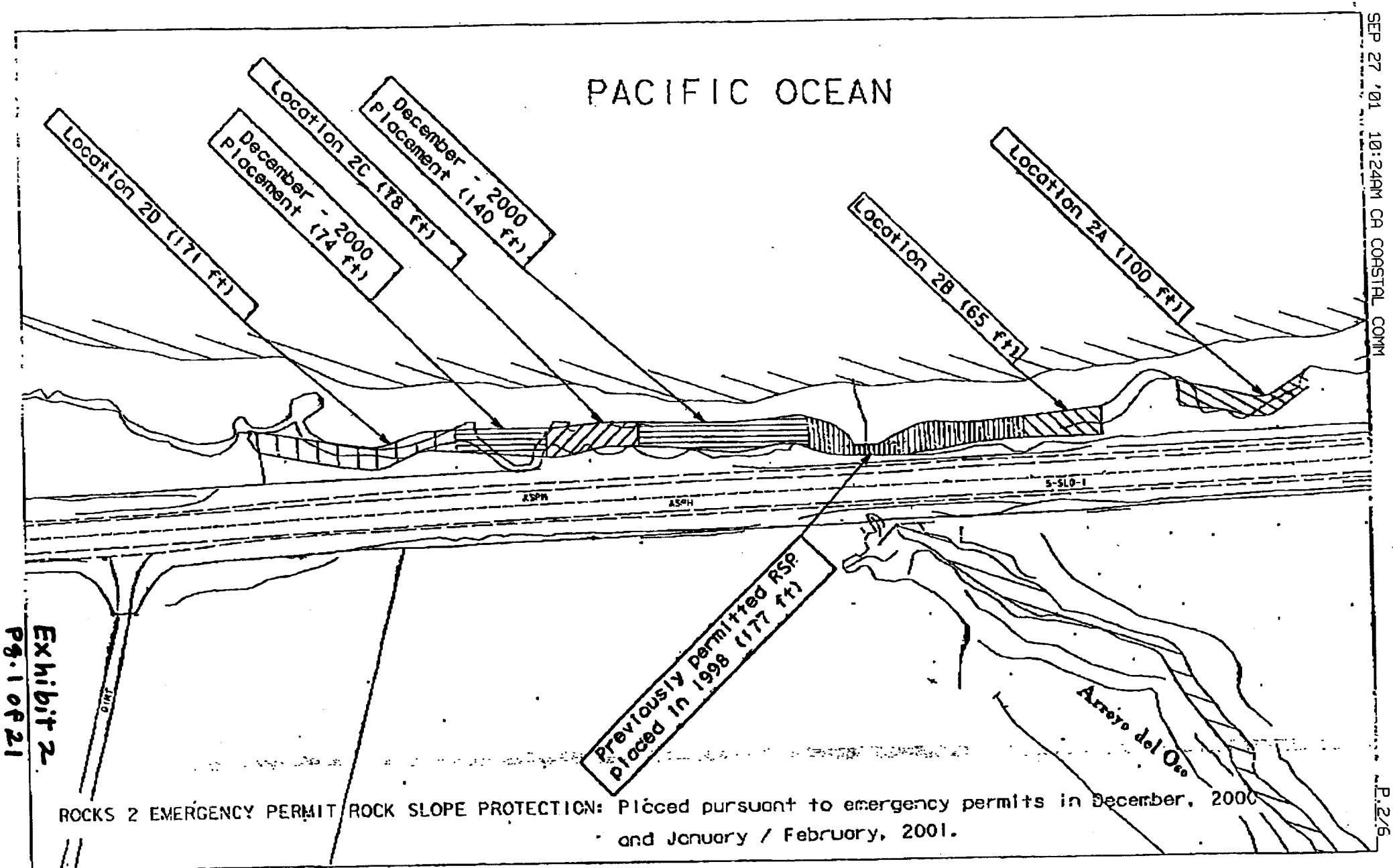
Contract No. 05-469404

FOR REDUCED PLANS ORIGINAL SCALE IS IN MILLIMETERS 0 20 40 60 80

USERNAME =>
DGN FILE =>

CU 05601 EA 469401

THE PLOTTED => 11-26-98



ROCKS 2 EMERGENCY PERMIT ROCK SLOPE PROTECTION: Placed pursuant to emergency permits in December, 2000 and January / February, 2001.

...\rocks2plcmf2.dgn Sep. 27, 2001 07:27:37

Exhibit 2
Pg. 1 of 21

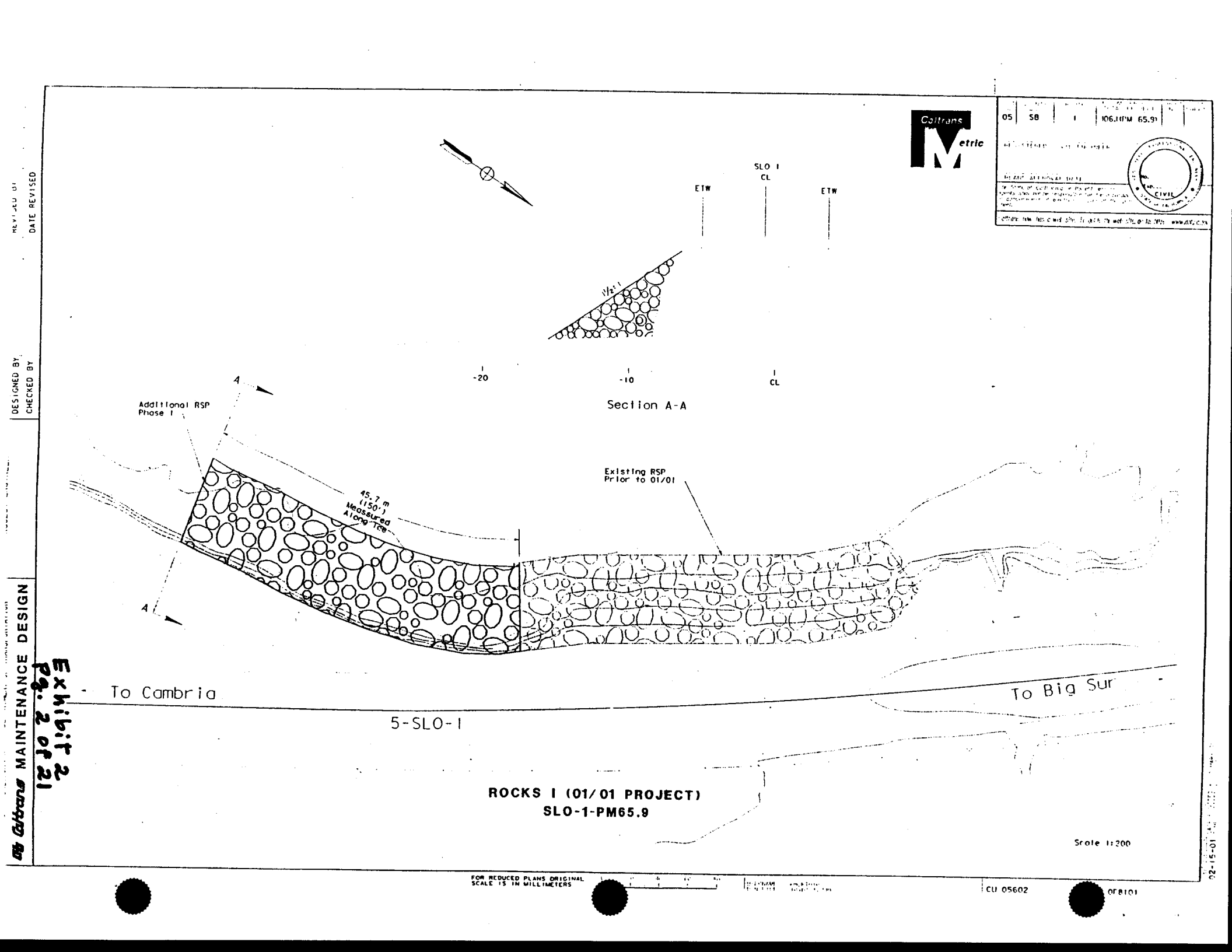
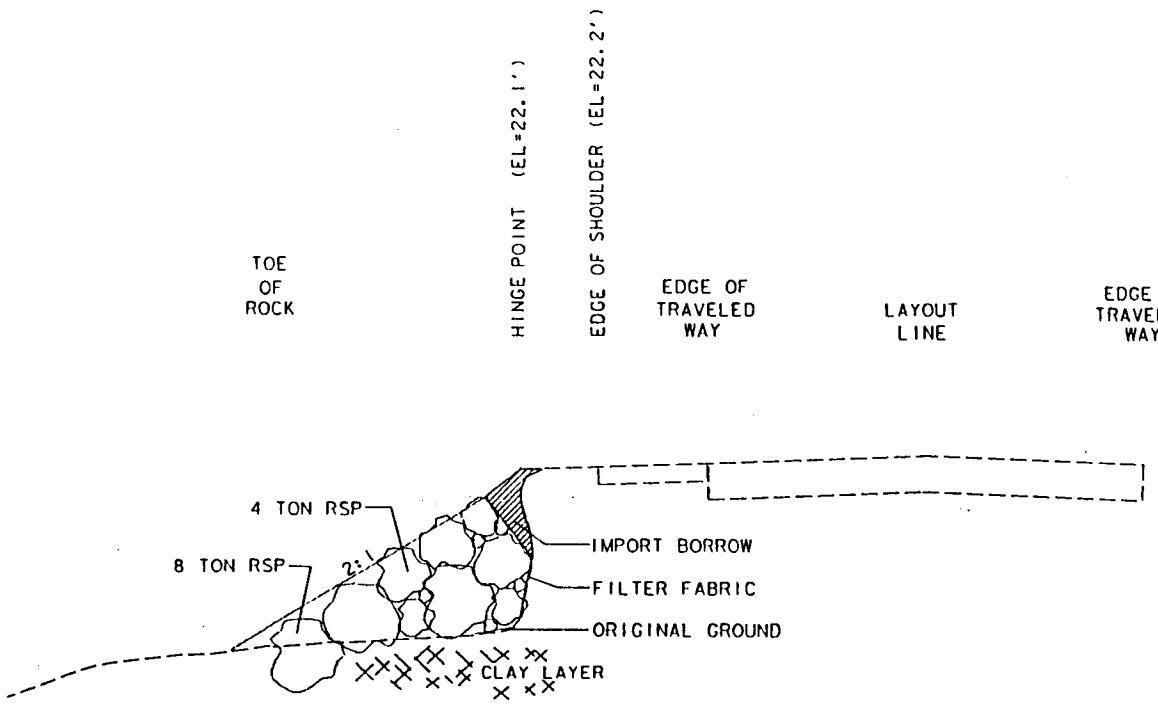


Exhibit 2
Pg. 2 of 21



SECTION A-A

Exhibit 2
Pg. 3 of 21

QUANTITY CALCULATIONS

SHEET 1 OF 20

JOB STAMP

SLO-1-64.3/64.5
ROCKS II RSP X-SECTS. ON 50 ft STATIONS

FROM SOUTH END, NORTHWARD
LANCE GORMAN
3/12/01

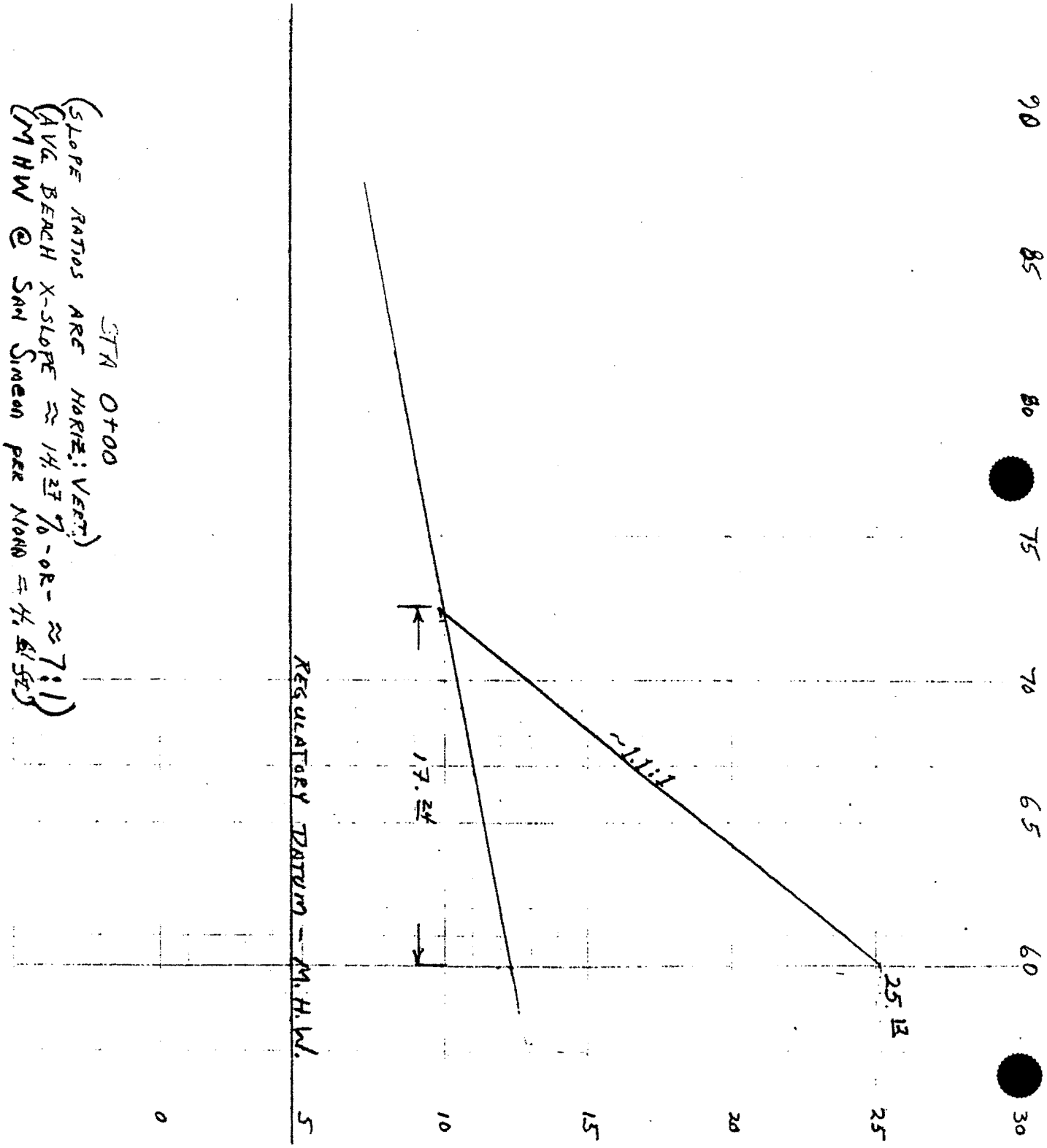
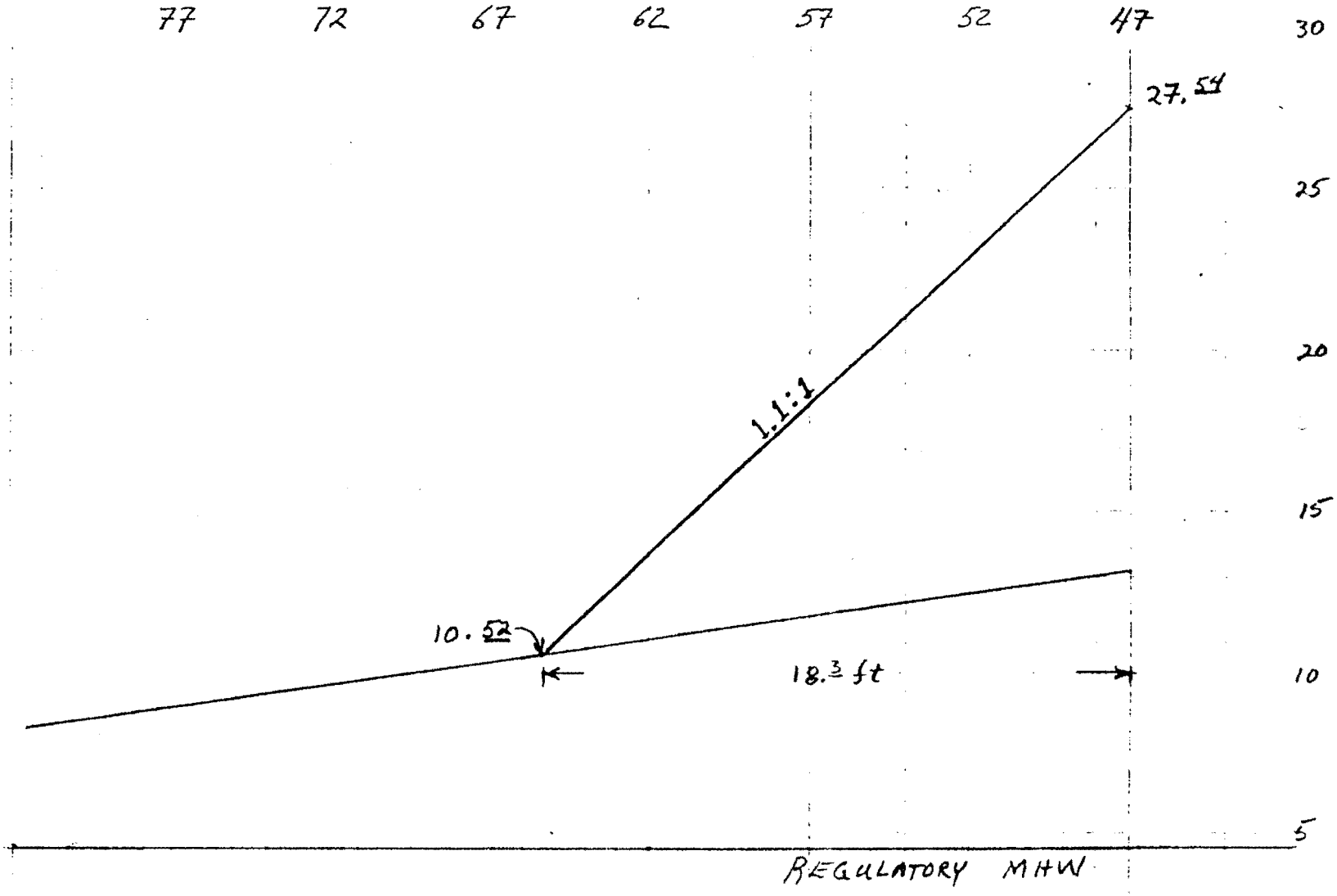


Exhibit 2
pg. 4 of 21

SHEET 2 OF 20

FILE NO.

Exhibit 2
Pg. 5 of 21



STA 0+50

SLOPE RATIOS ARE HORIZ. TO VERTICAL
AVG BEACH SLOPE = 14.29% -OR- 7:1
MHW = 4.6 ft. PER SAN SIMEON STATION.

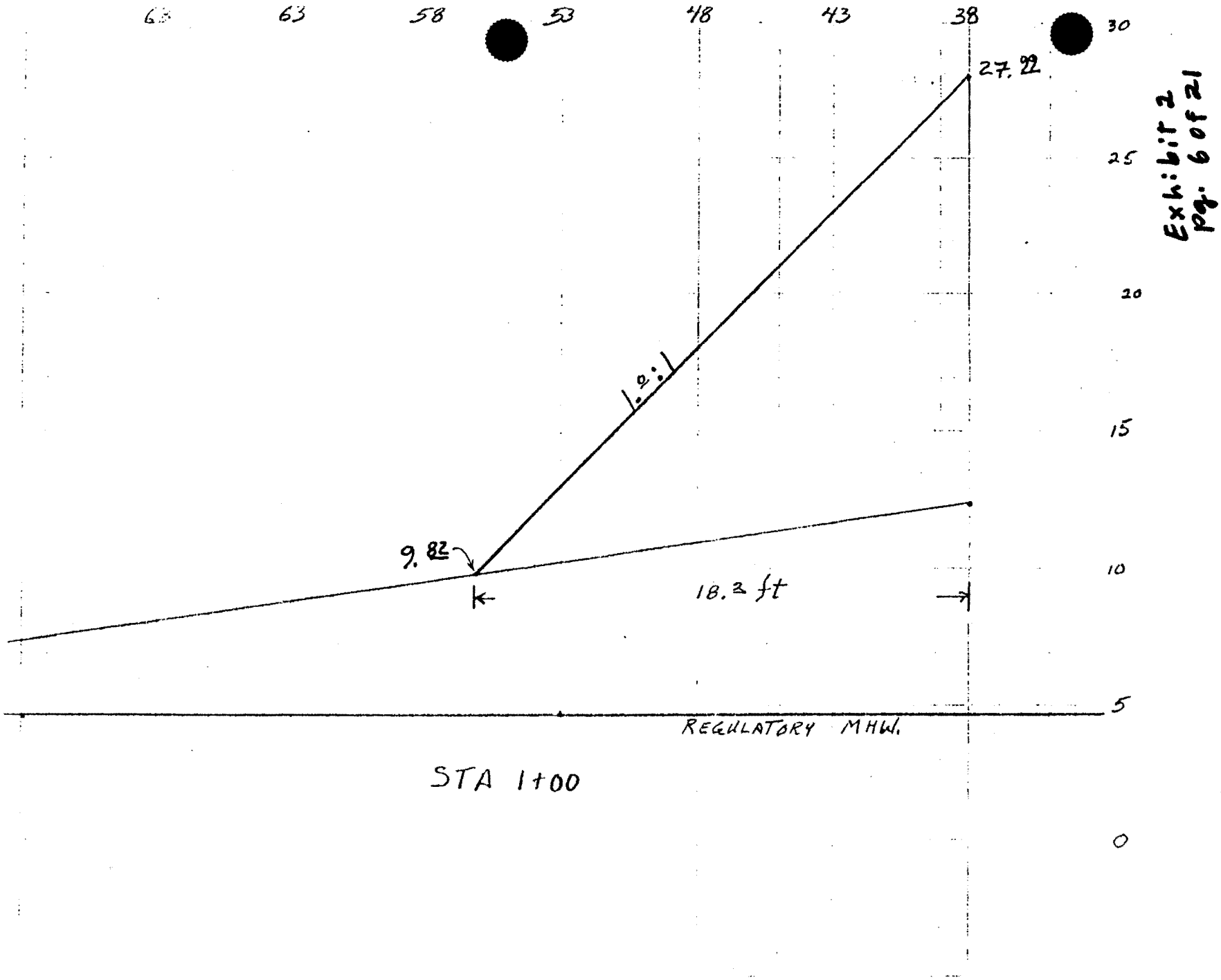


Exhibit 2
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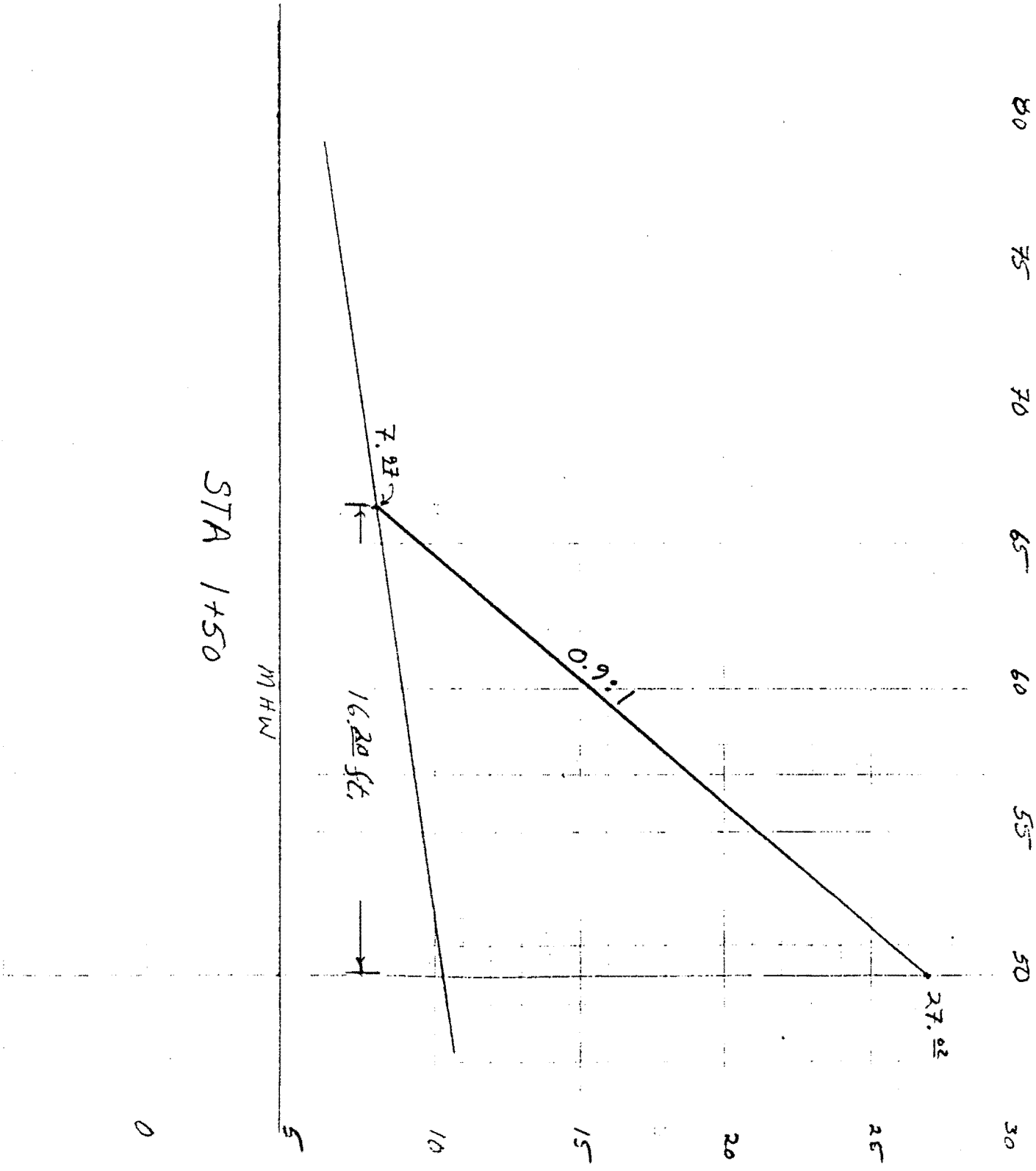
QUANTITY CALCULATIONS

JOB STAMP

SHEET 4 of 20

FILE NO.



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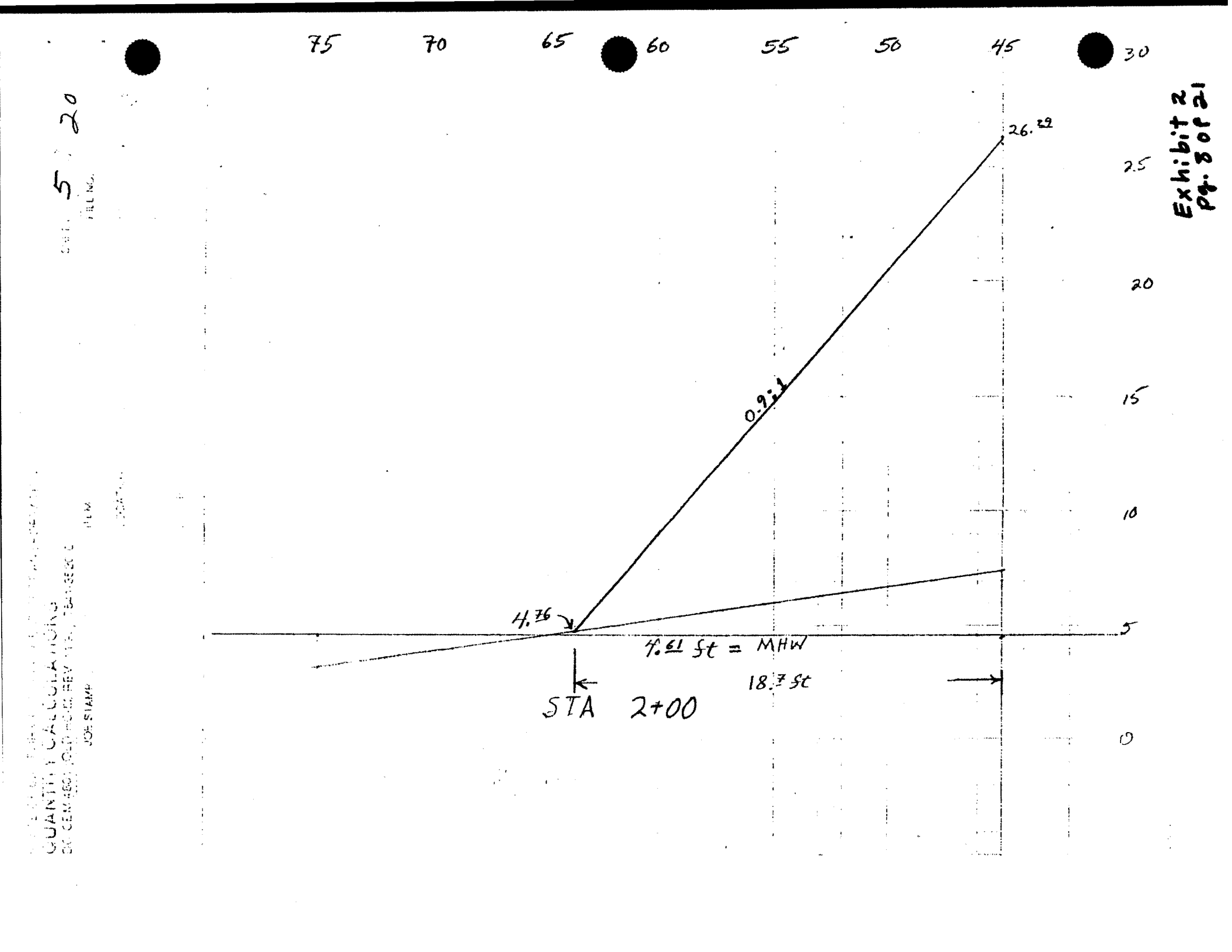

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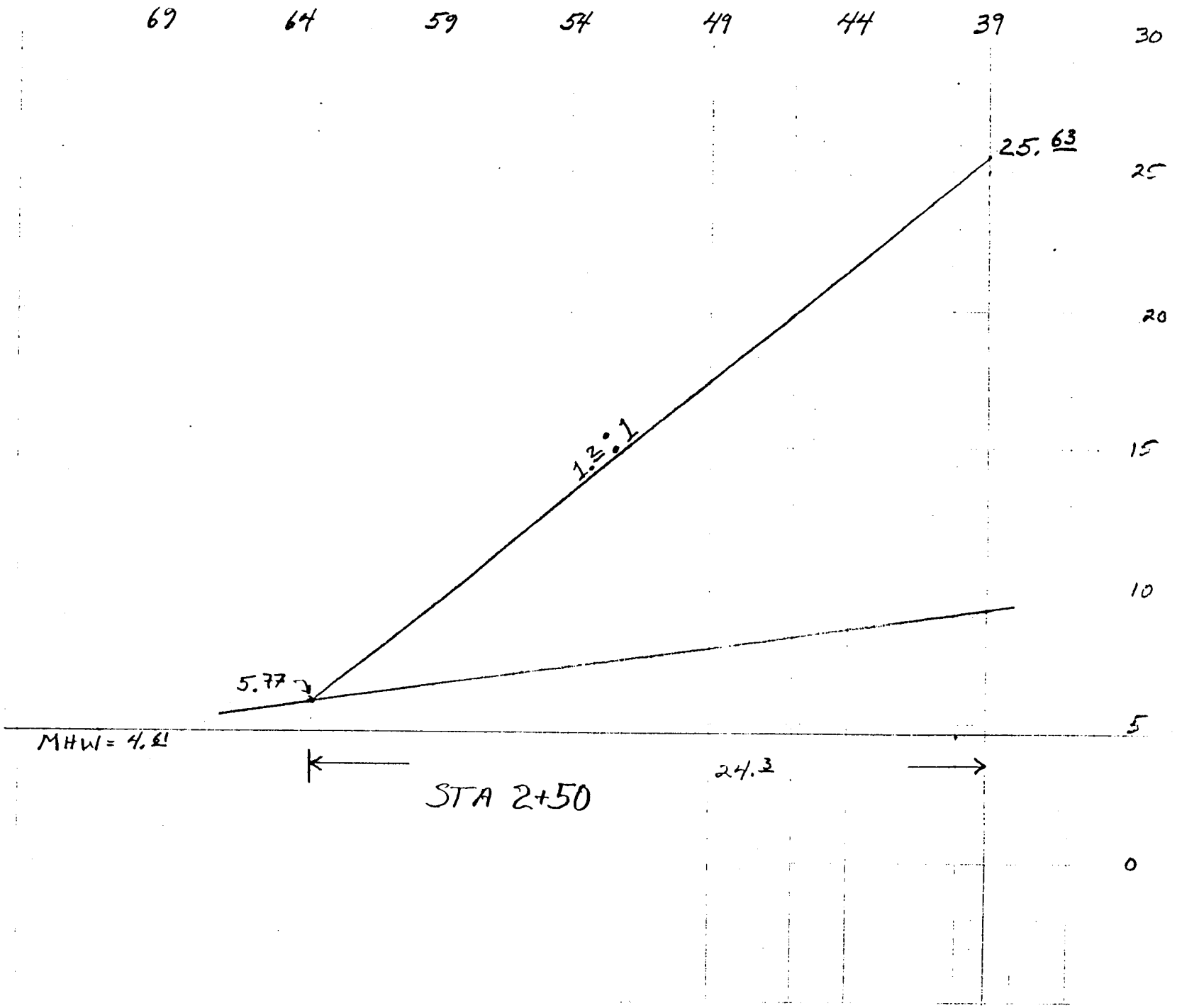


Exhibit 2
pg. 9 of 21

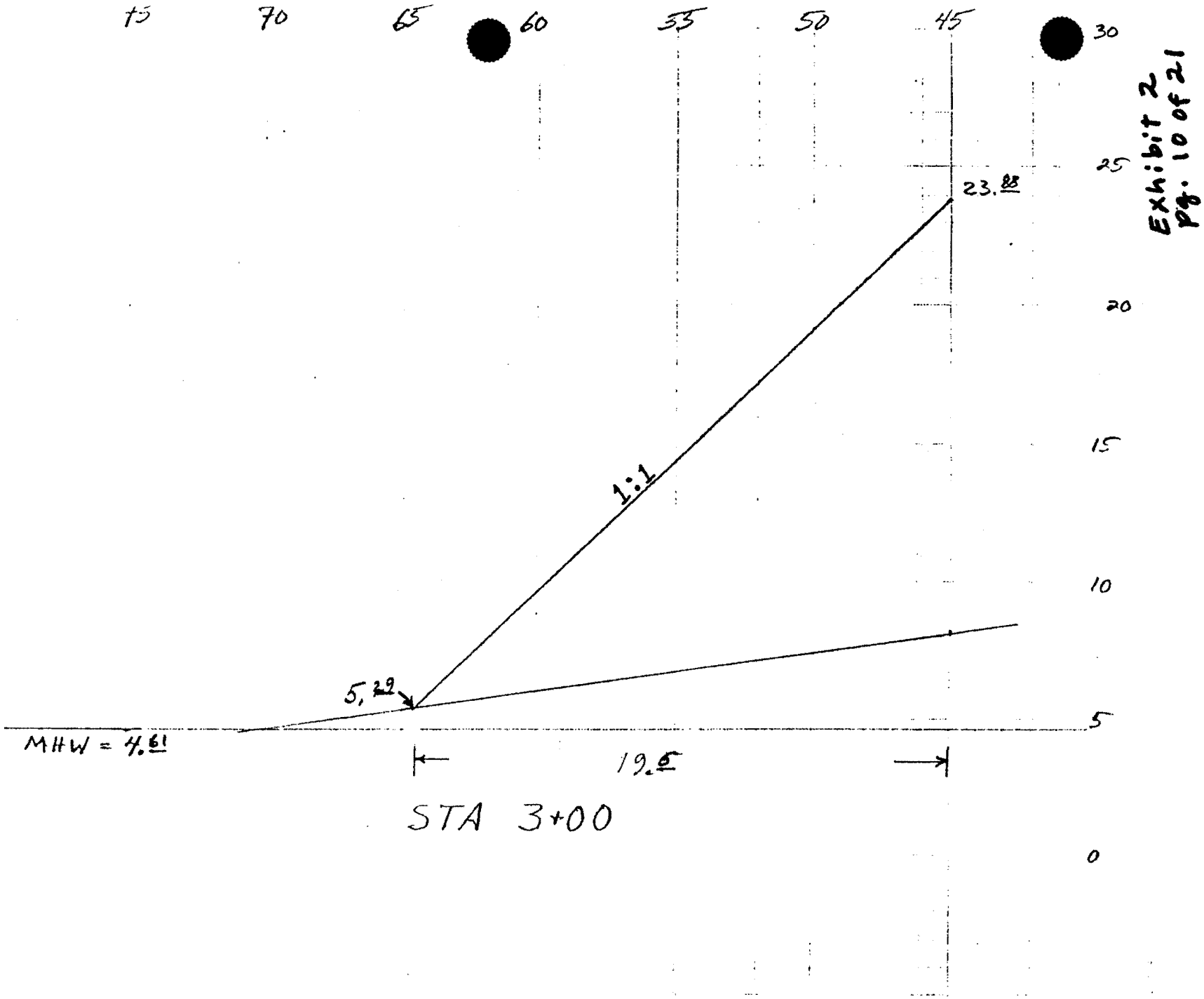
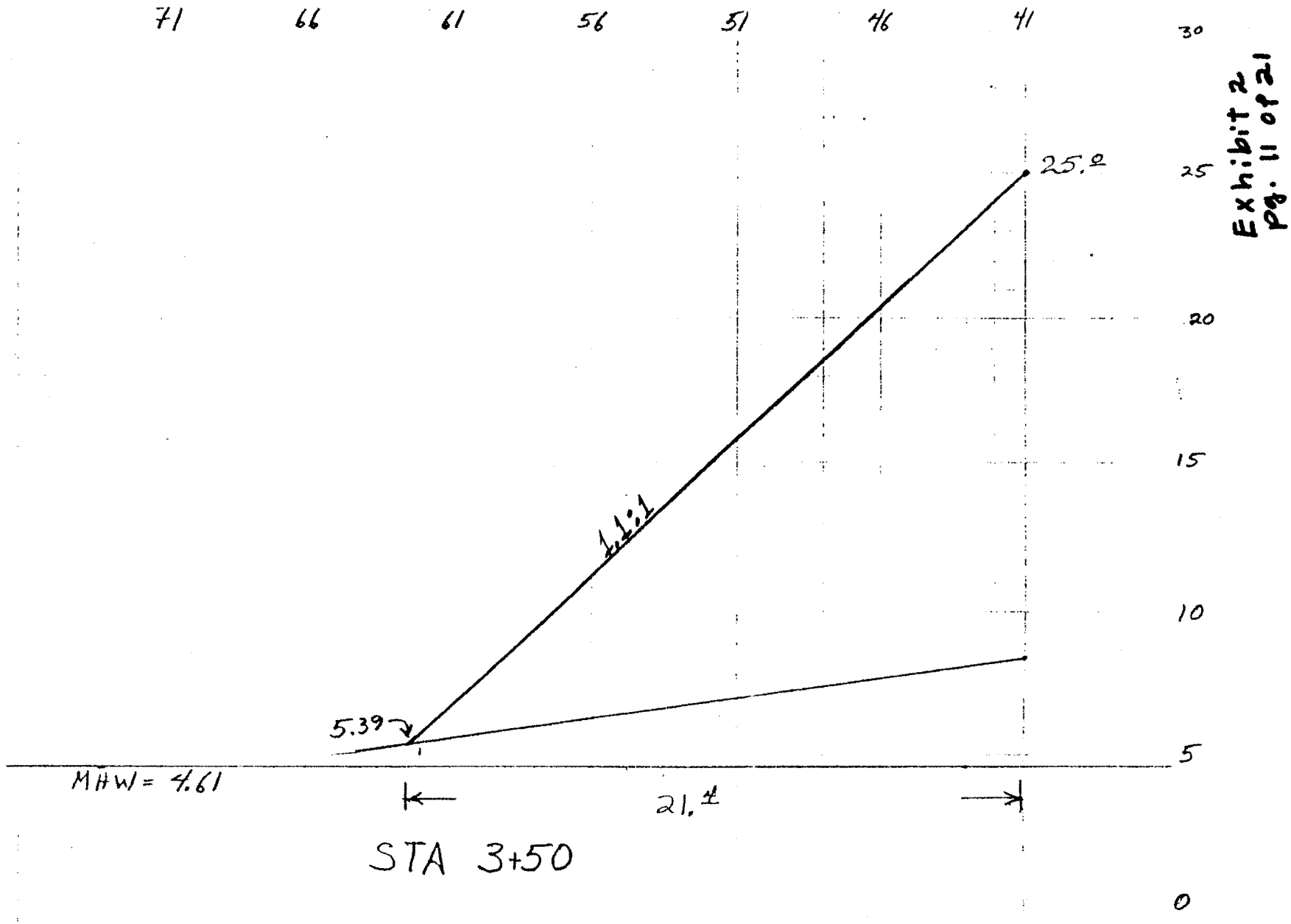
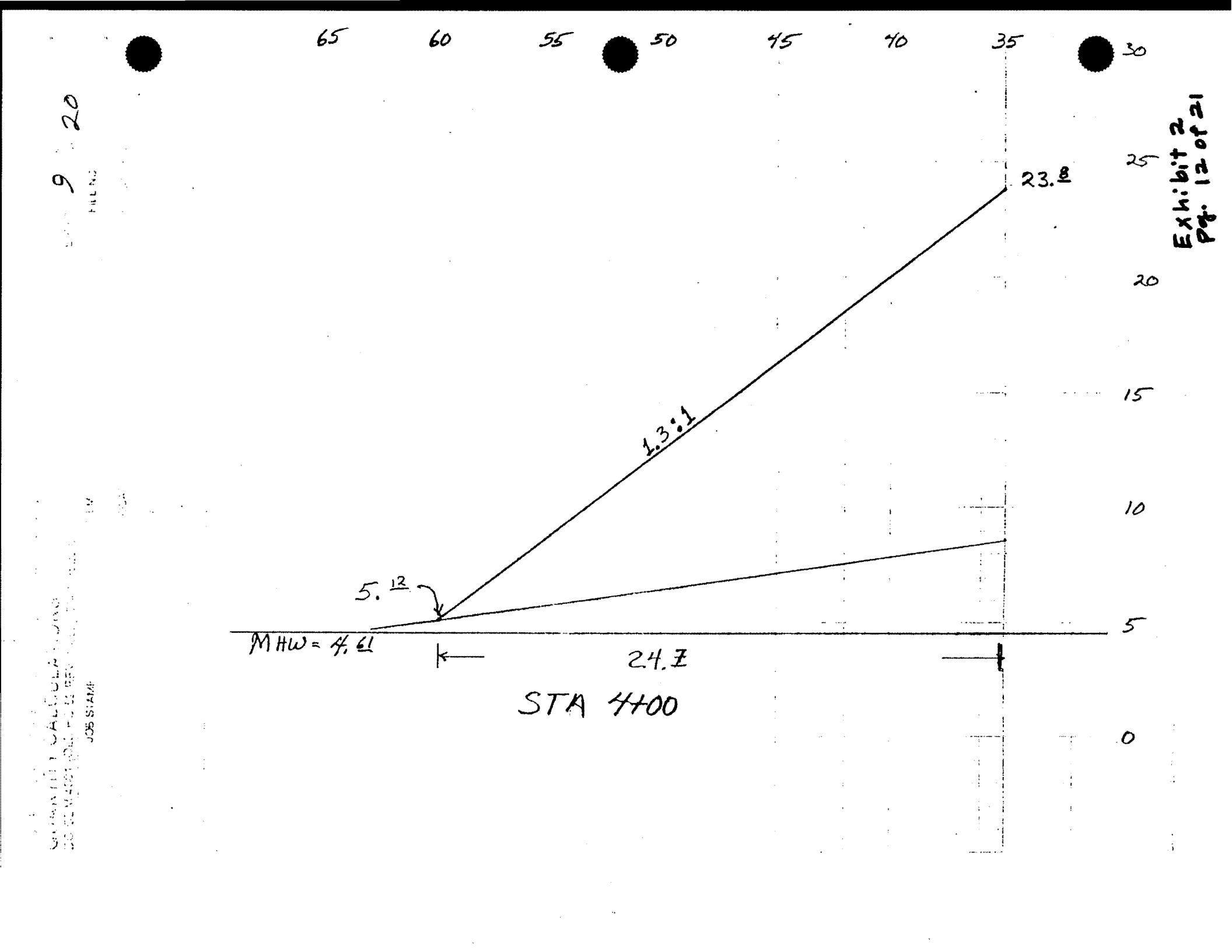


Exhibit 2
pg. 10 of 21


71
66
61
56
51
46
41
30
25
20
15
10
5
0
25.2
1.1:1
5.39
MHW = 4.61
21.±
STA 3+50


65
60
55
50
45
40
35
30
25
20
15
10
5
0
23.8
1.3:1
5.12
MHW = 4.61
24.7
STA 4400
Exhibit 2
Pg. 12 of 21

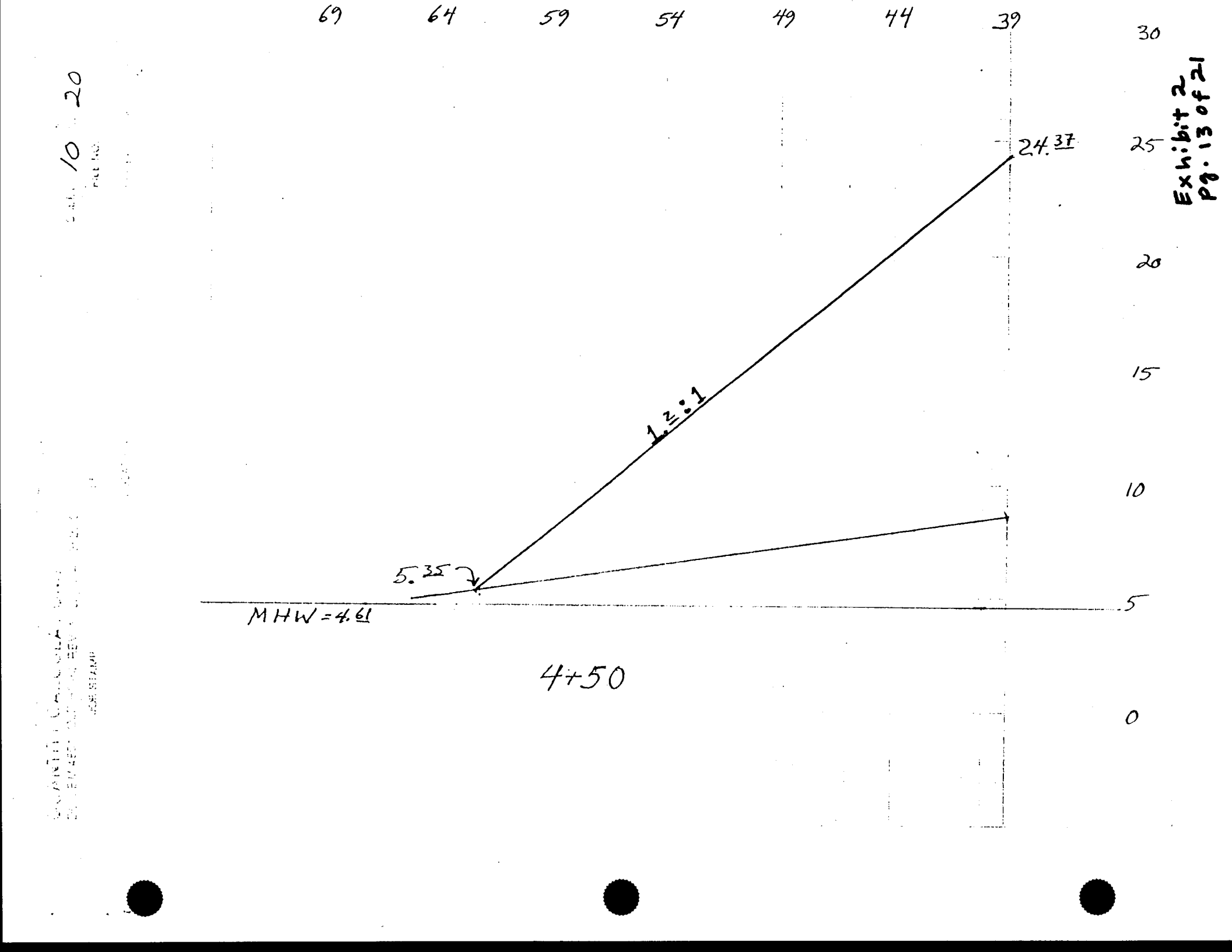


Exhibit 2
Pg. 13 of 21

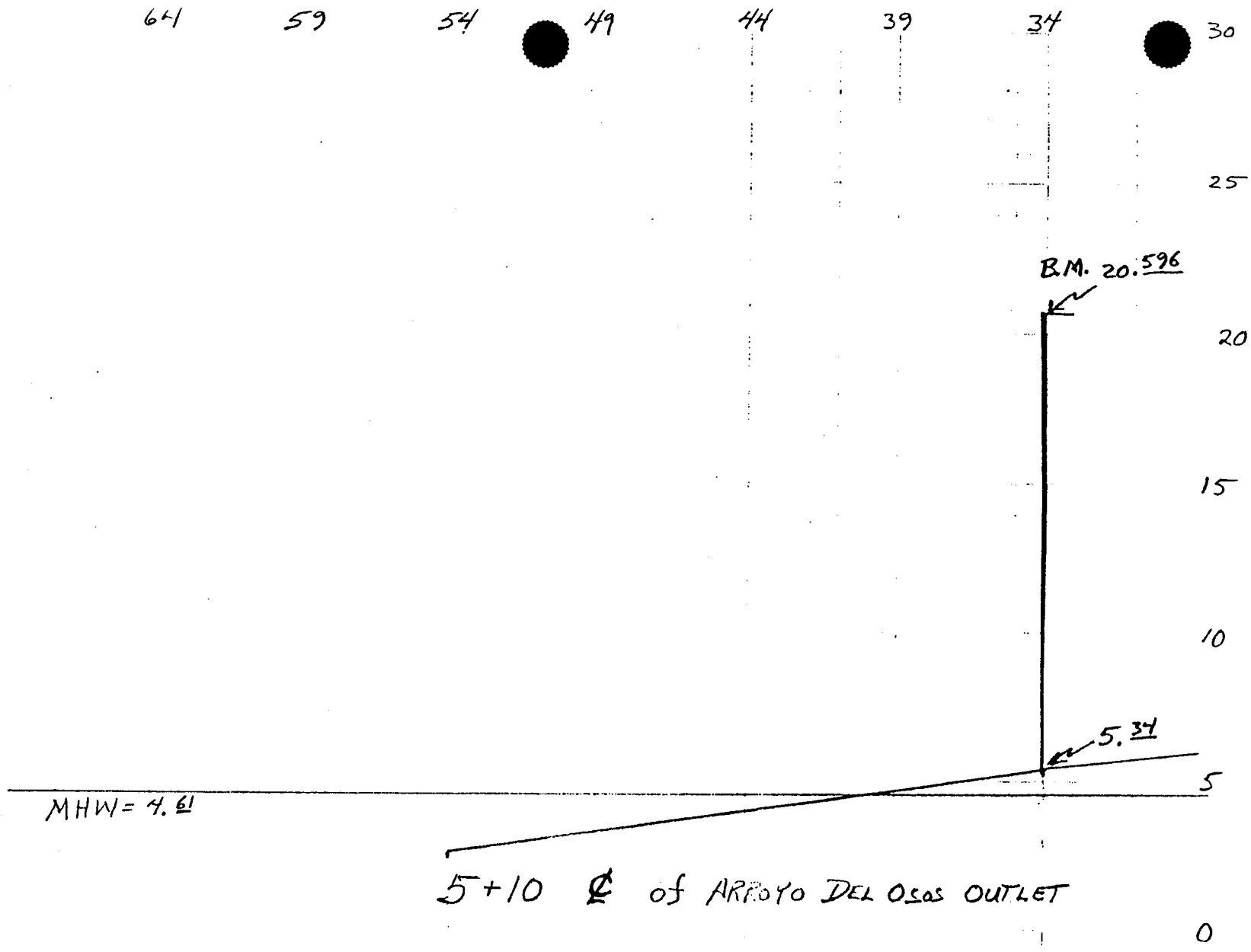


Exhibit 2
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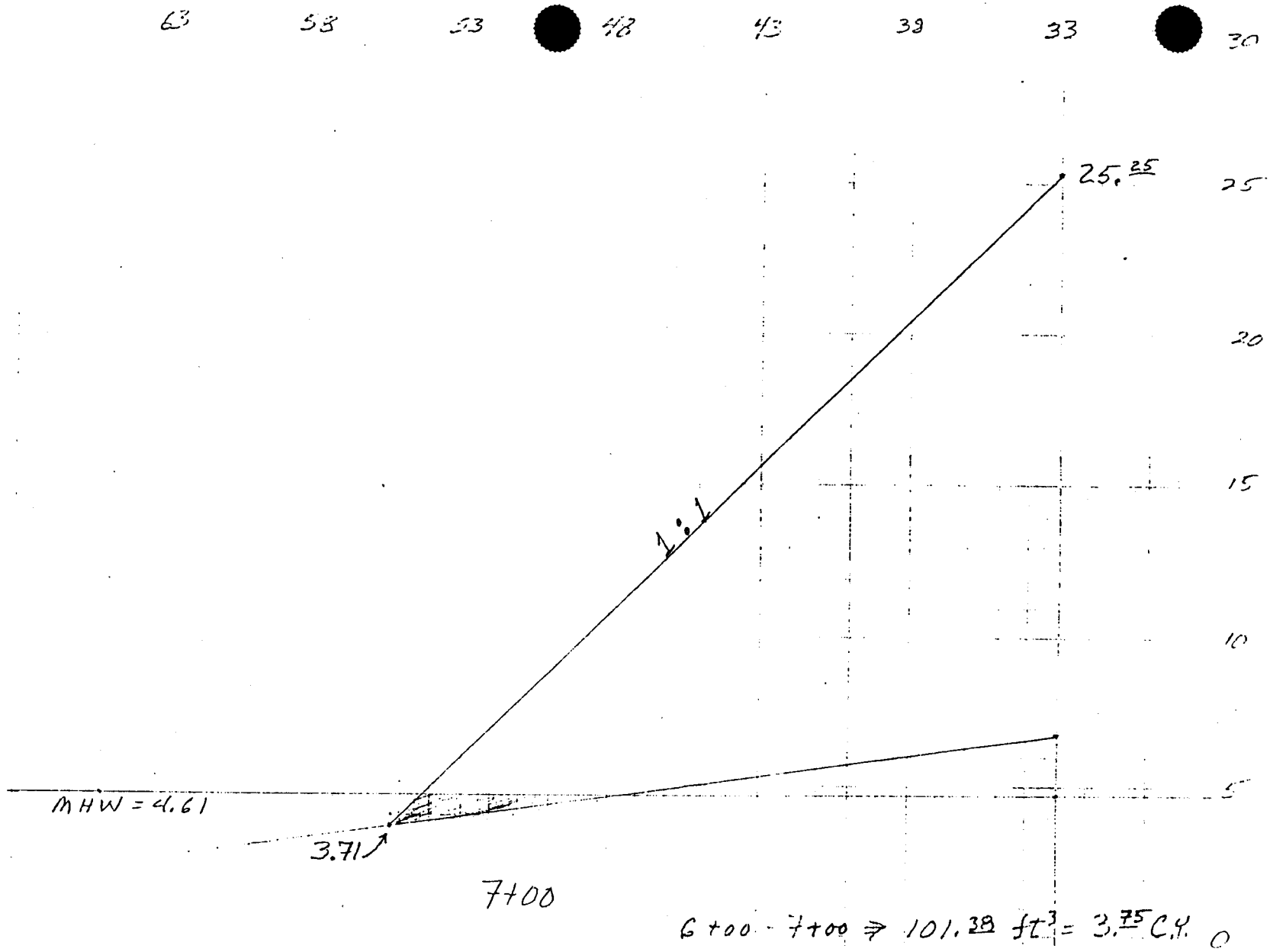
60
55
50
45
40
35
30
30
25
20
15
10
5
0
20
17
24.27
1:1
8.35
5.75
MHW = 4.61
18.3
5+50



3.75 C.Y. OF ROCK IN FILL PLACED IN MARINE SANCTUARY JURISDICTION FROM STA 6+00 - 7+05 OR 0.036 CY PER RUNNING FOOT

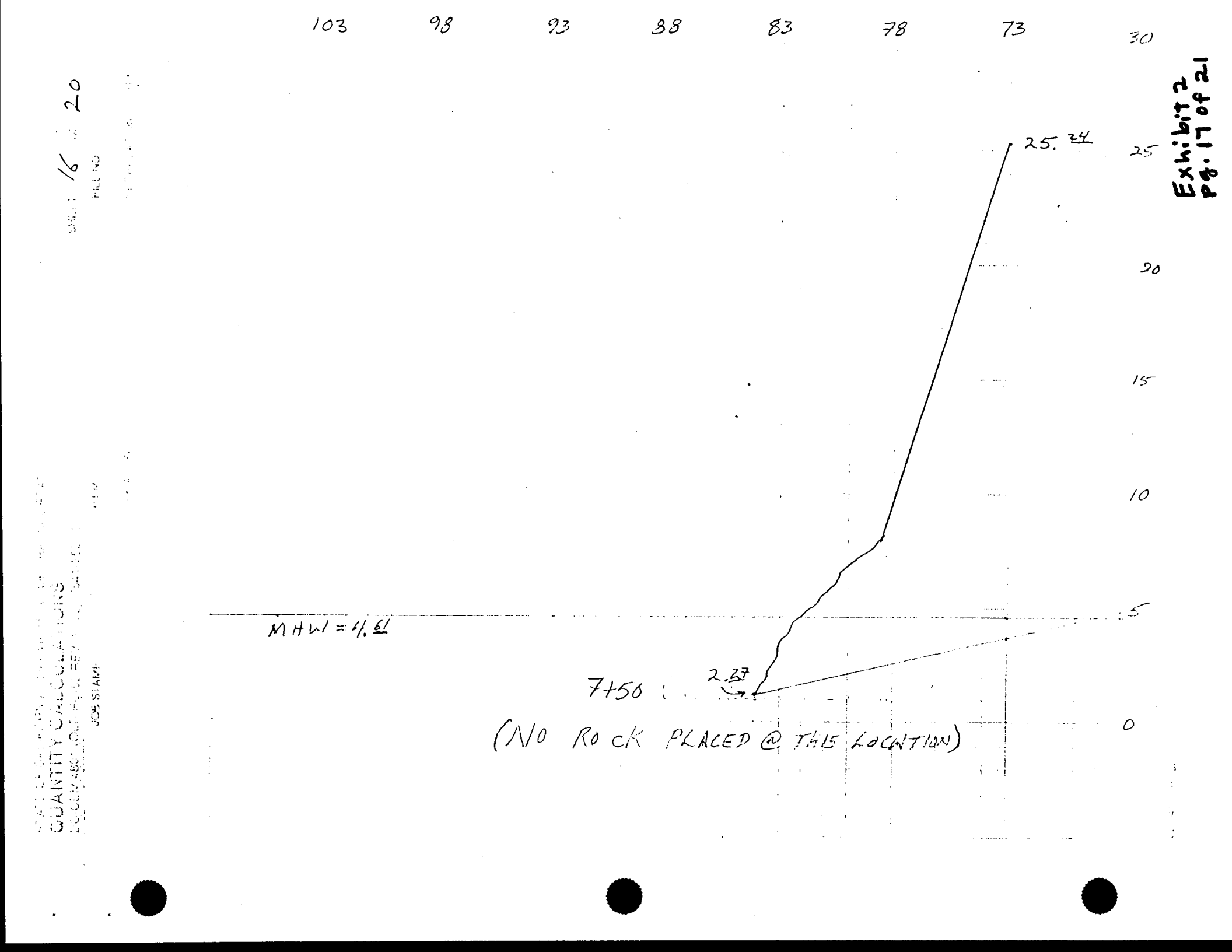


Exhibit 2
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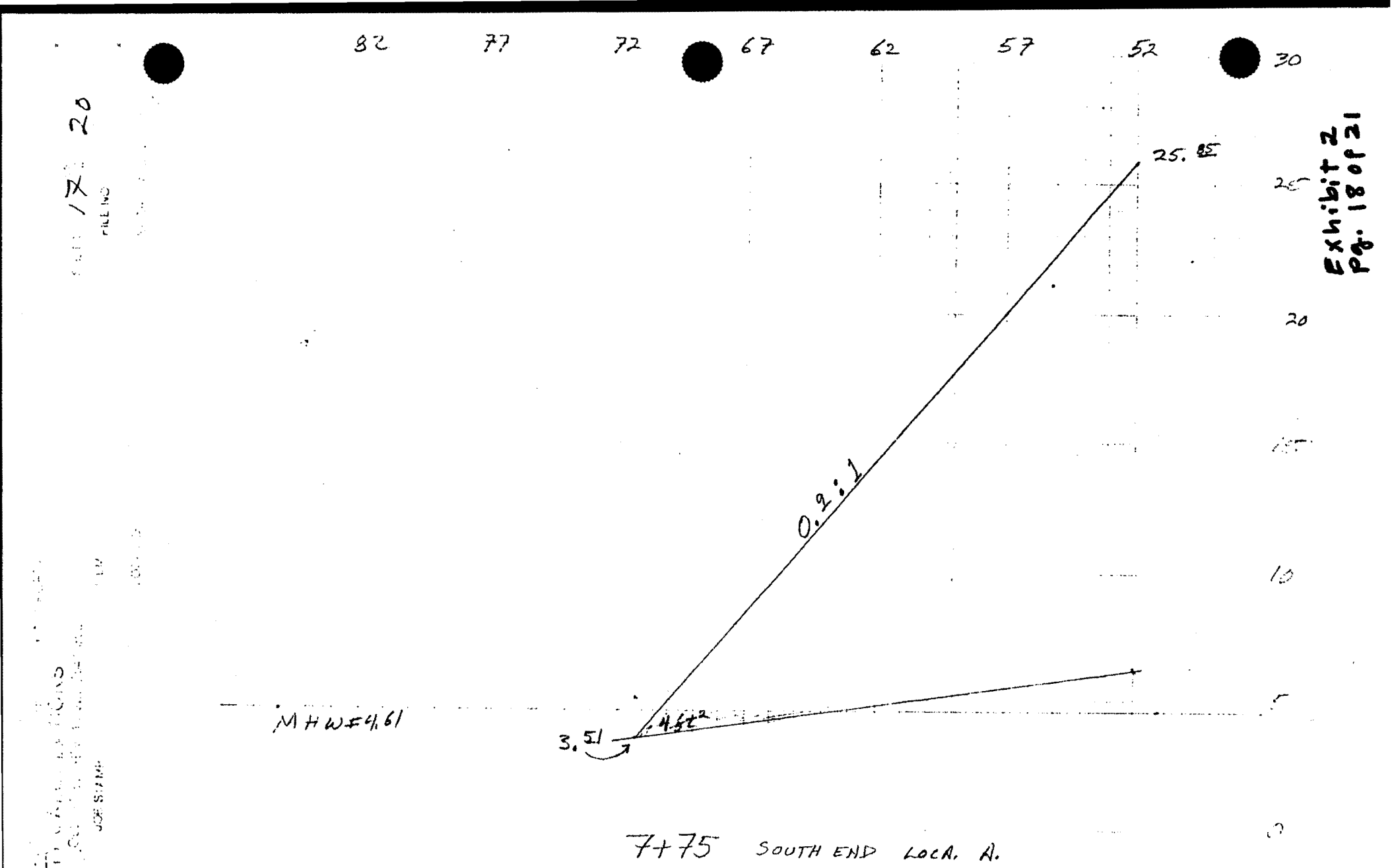
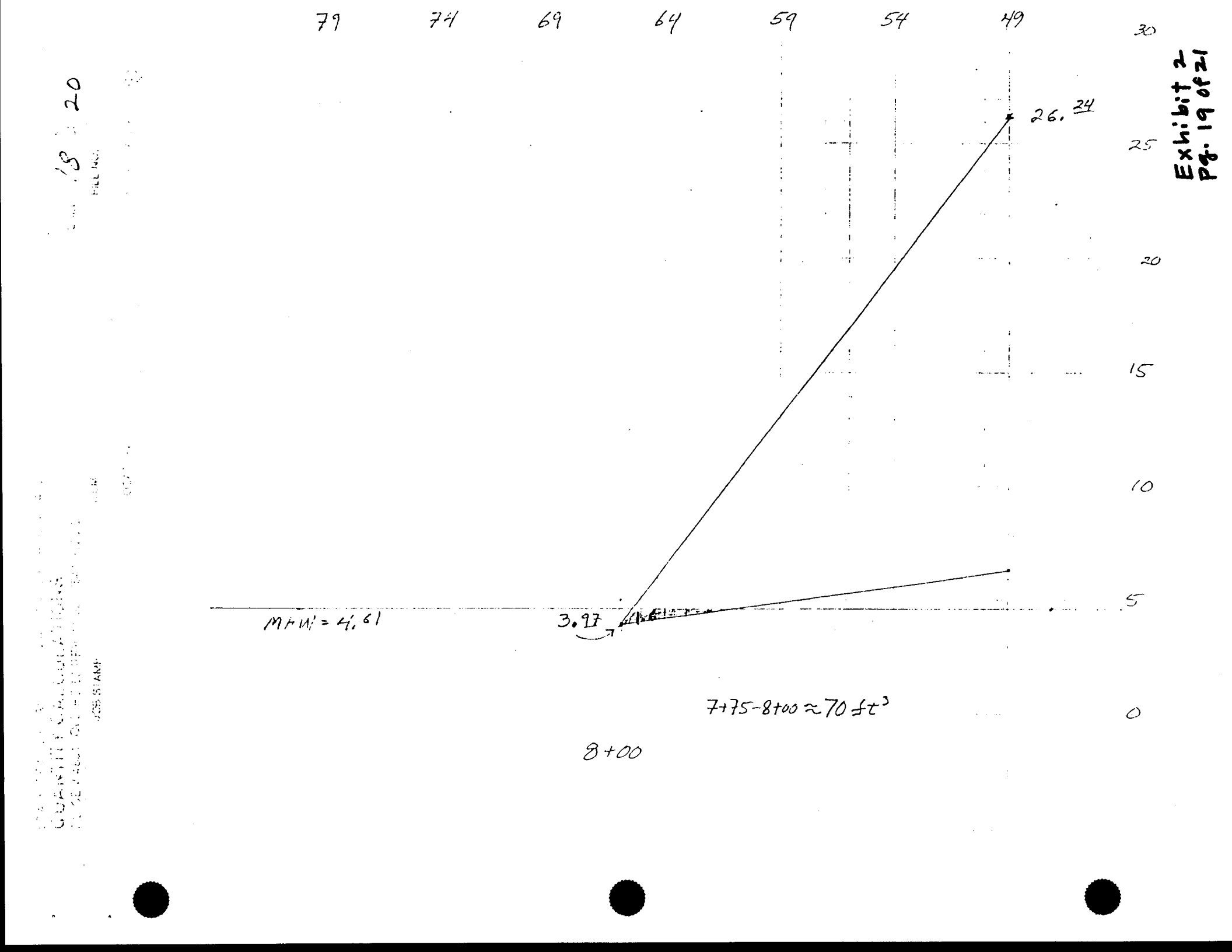
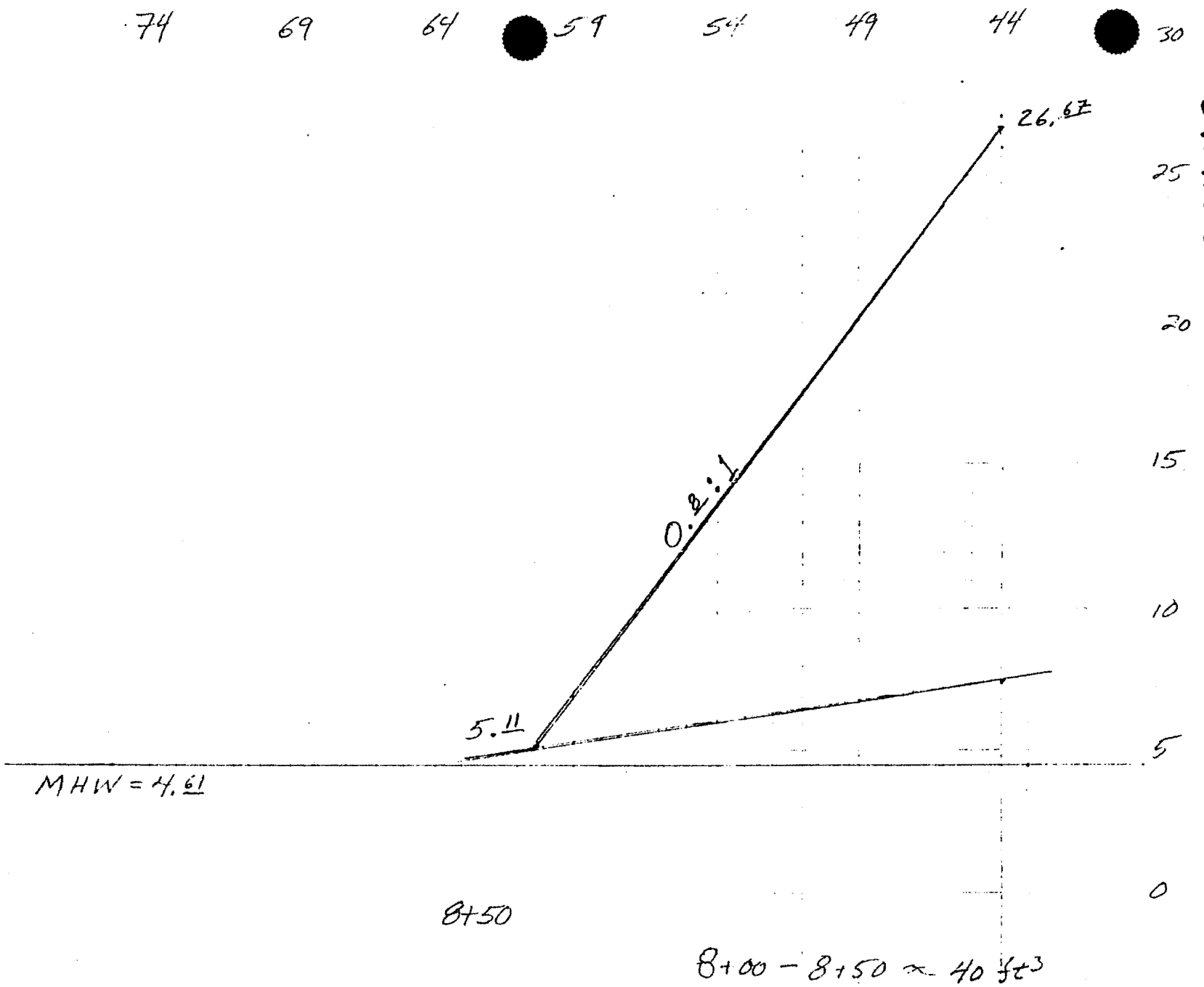


Exhibit 2
Pg. 18 of 21


79
74
69
64
59
54
49
30
25
20
15
10
5
0
26.34
M+W = 4.61
3.97
7+75-8+00 ≈ 70 ft³
8+00
Exhibit 2
Pg. 19 of 21



8+00 - 8+50 ≈ 40 yd³

FROM STA 7+75 + 8+50 APPROX 4 C.Y. OF INFILL TO MARINE SANCTUARY JURISDICTION @ ROCA. A OR 0.053 C.Y./L.F.

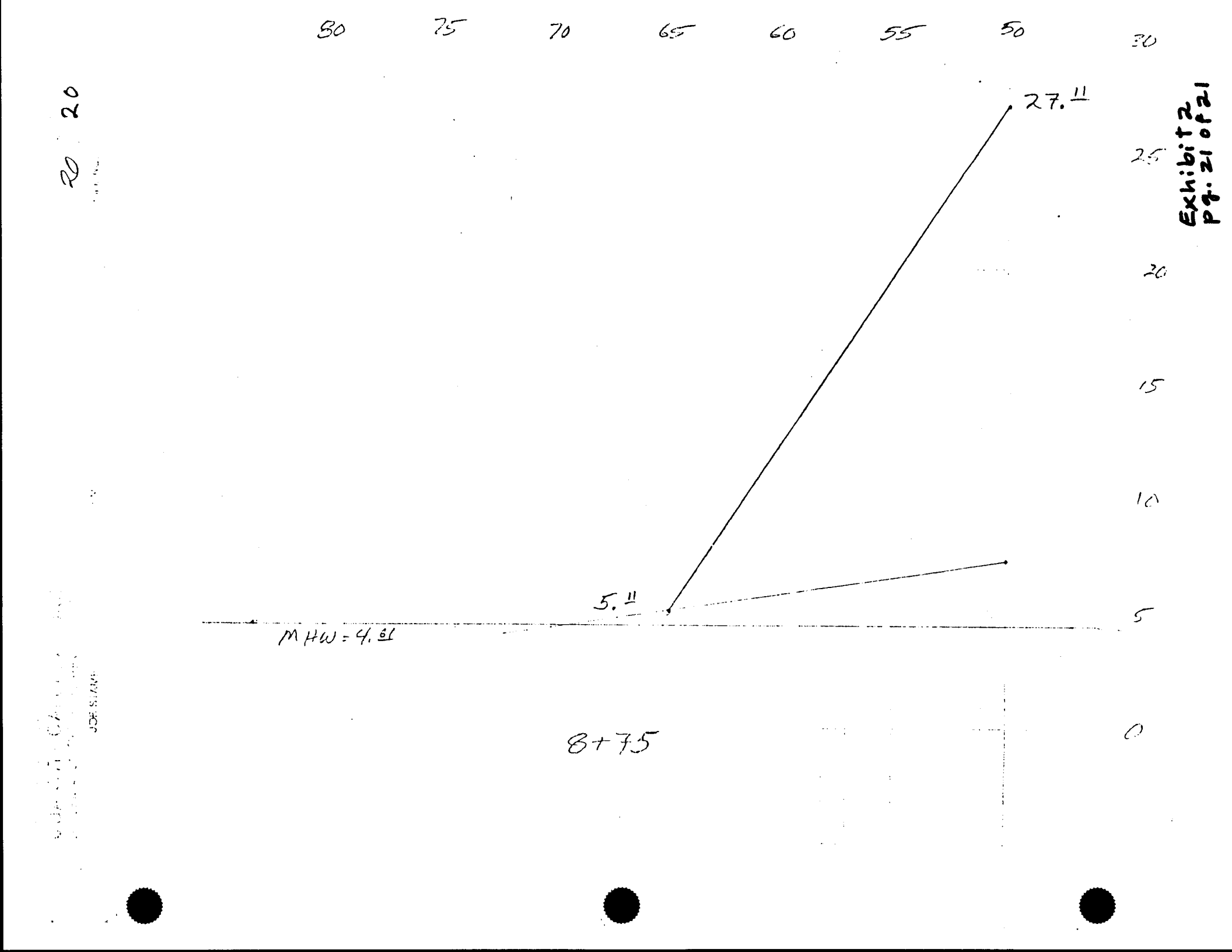


Exhibit 2
Pg. 21 of 21

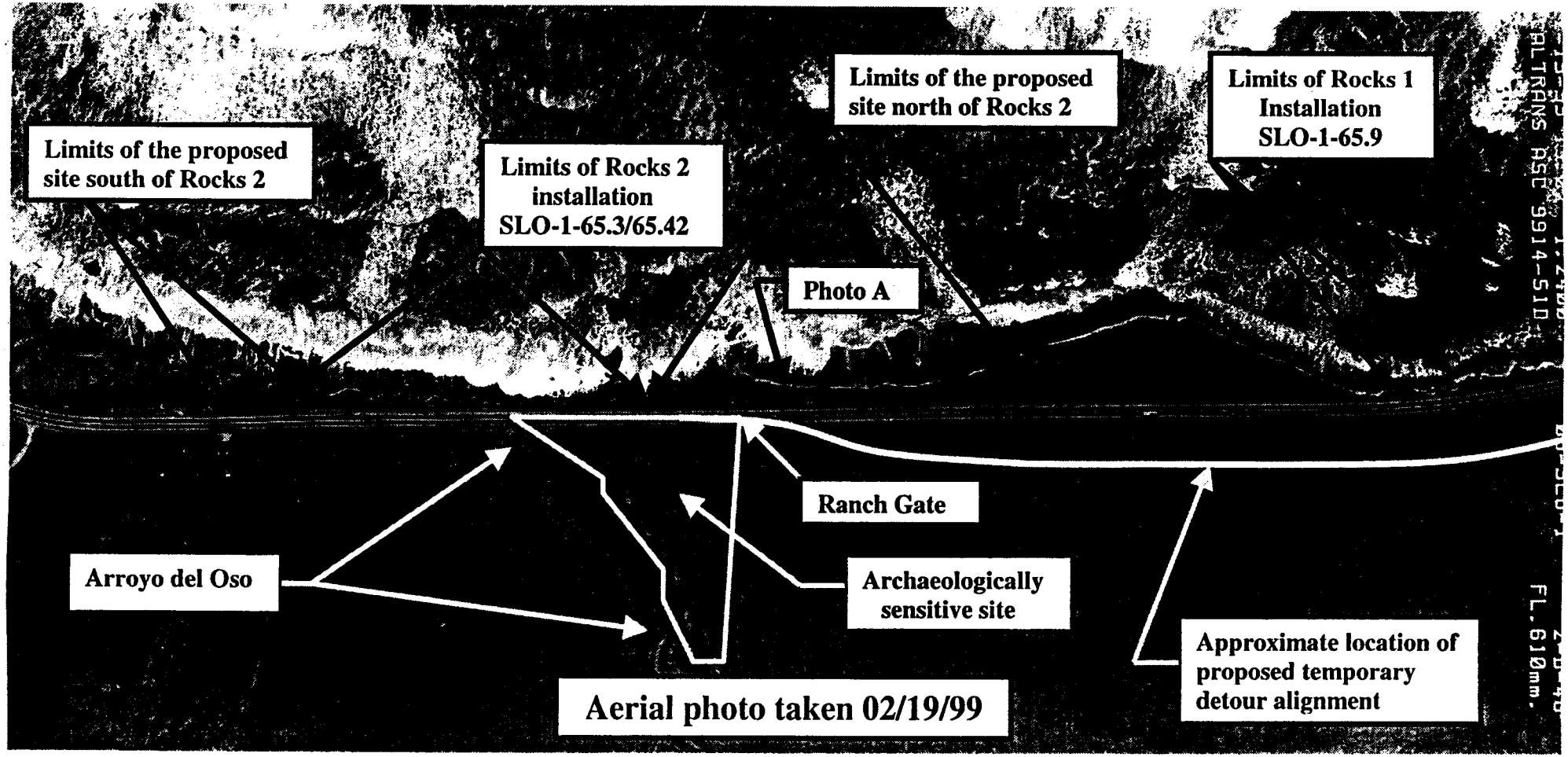
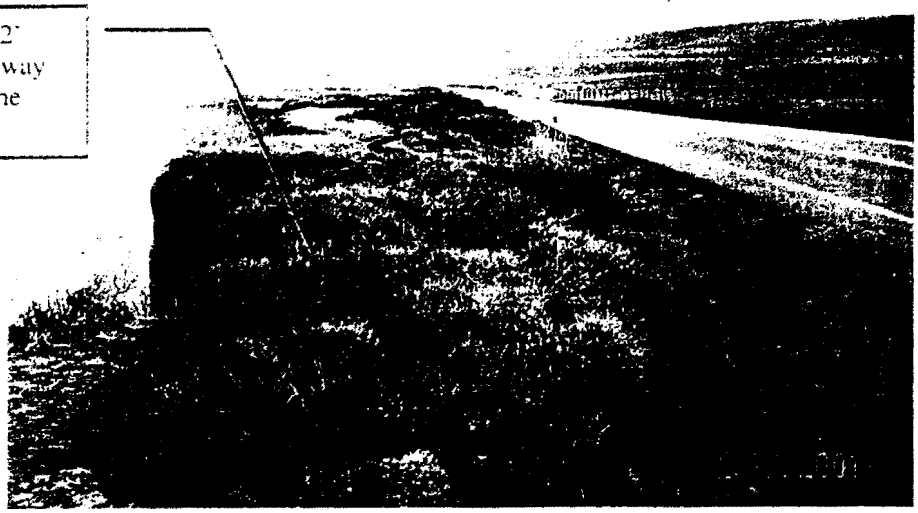


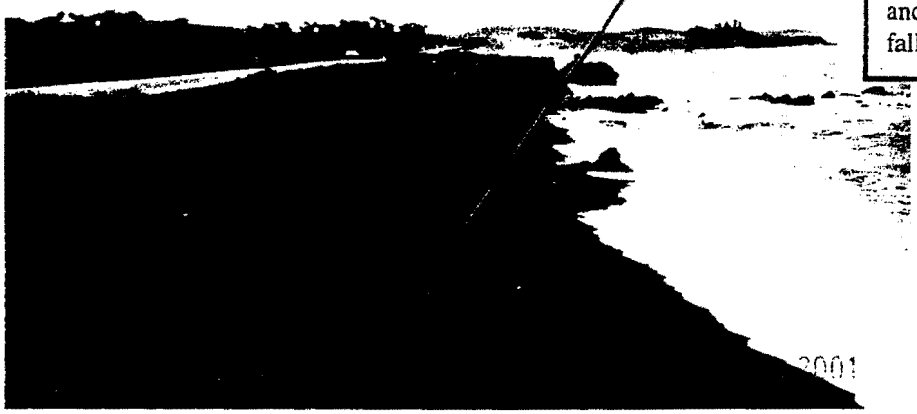
Figure 1: Future RSP requirements at Rocks 1 and 2
SLO-1-PM 65.4/65.9

Approximately 12' between the roadway and the edge of the bluff



Looking north.

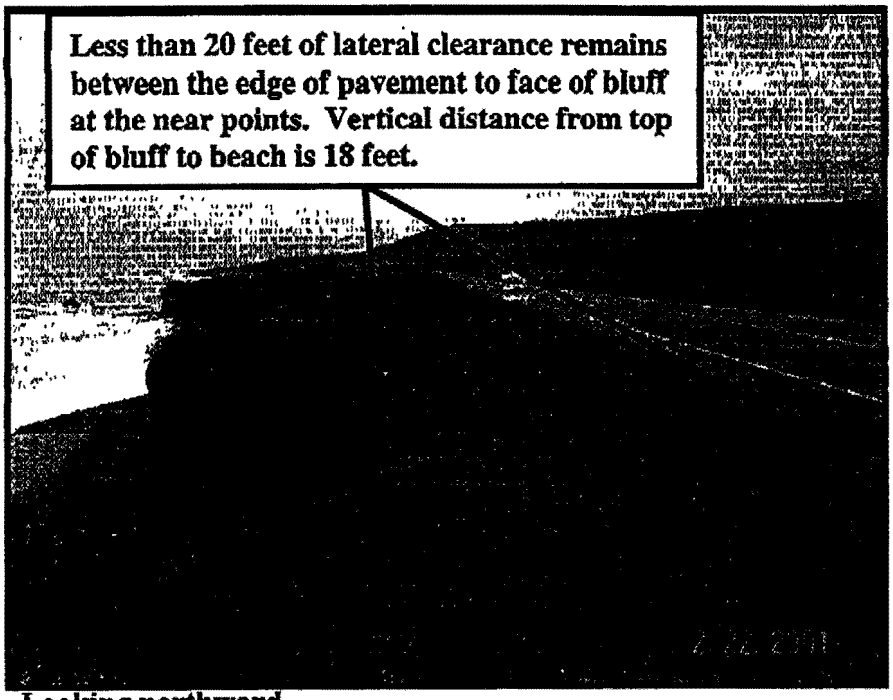
Erosion in progress. Notice the large cracks and material that has fallen onto the beach



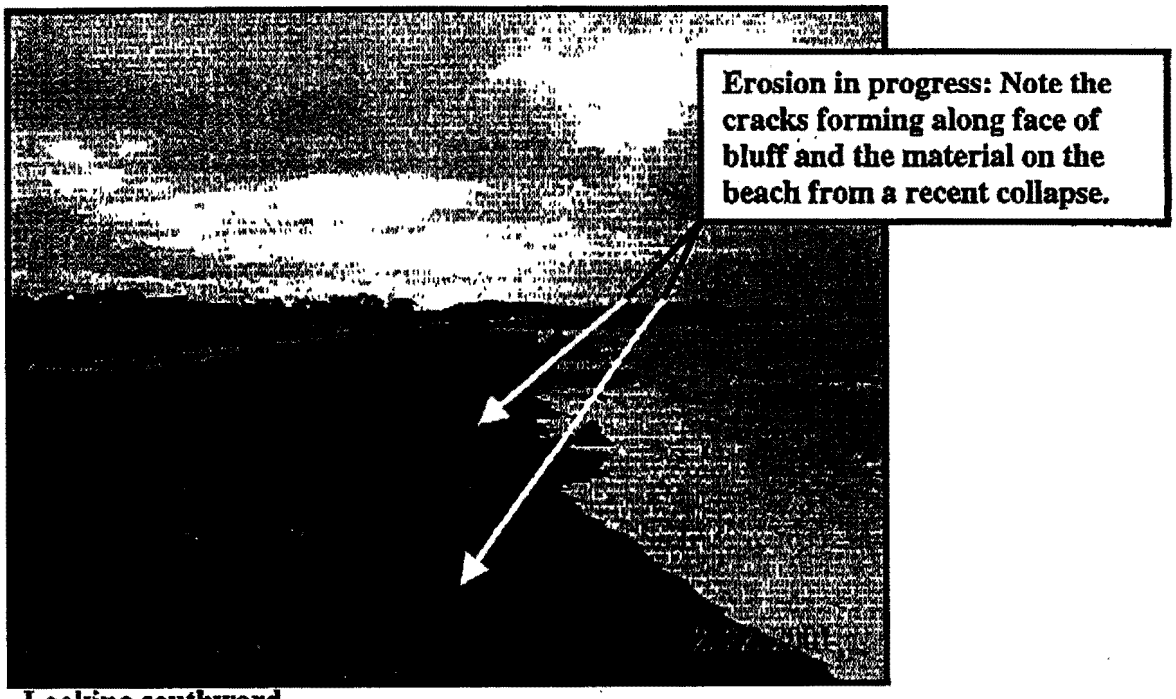
Looking south.

Photo A

Figure 2: This area is located between Rocks 1 and 2. Note the large cracks in the lower photo. Currently, there is about 12'-15' feet of bluff between the roadway and the ocean in the most exposed spots. The bluff retreat is occurring rapidly. At the current rate of recession, it is likely that additional RSP will be needed within one year.



Looking northward



Looking southward

Photo A_1

Figure 2A: This area is located north of Rocks 2. The bluffs average 17 to 18 feet in height throughout this area. The bluff retreat is occurring rapidly along this reach of coastline. At the current rate of recession, it is likely that additional RSP will be needed within one year.

Exhibit 3
pg. 3 of 14

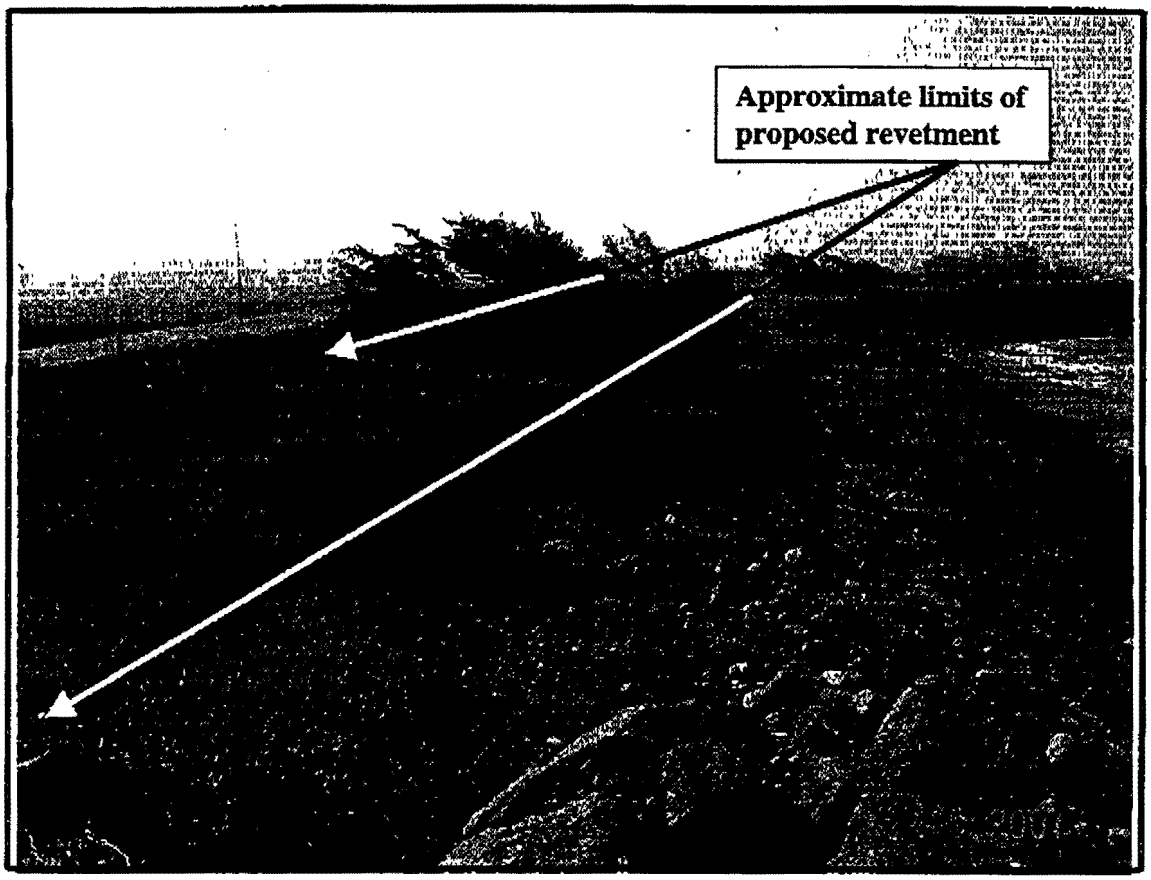


Photo A_2

Figure 2B: Rocks 2, South. This location has shown some retreat. Since this section of the highway will not be able to be moved laterally inland until the permanent highway realignment is complete in 12 to 15 years, it is likely that this site will require RSP before that time.

Exhibit 3
Pg. 4 of 14

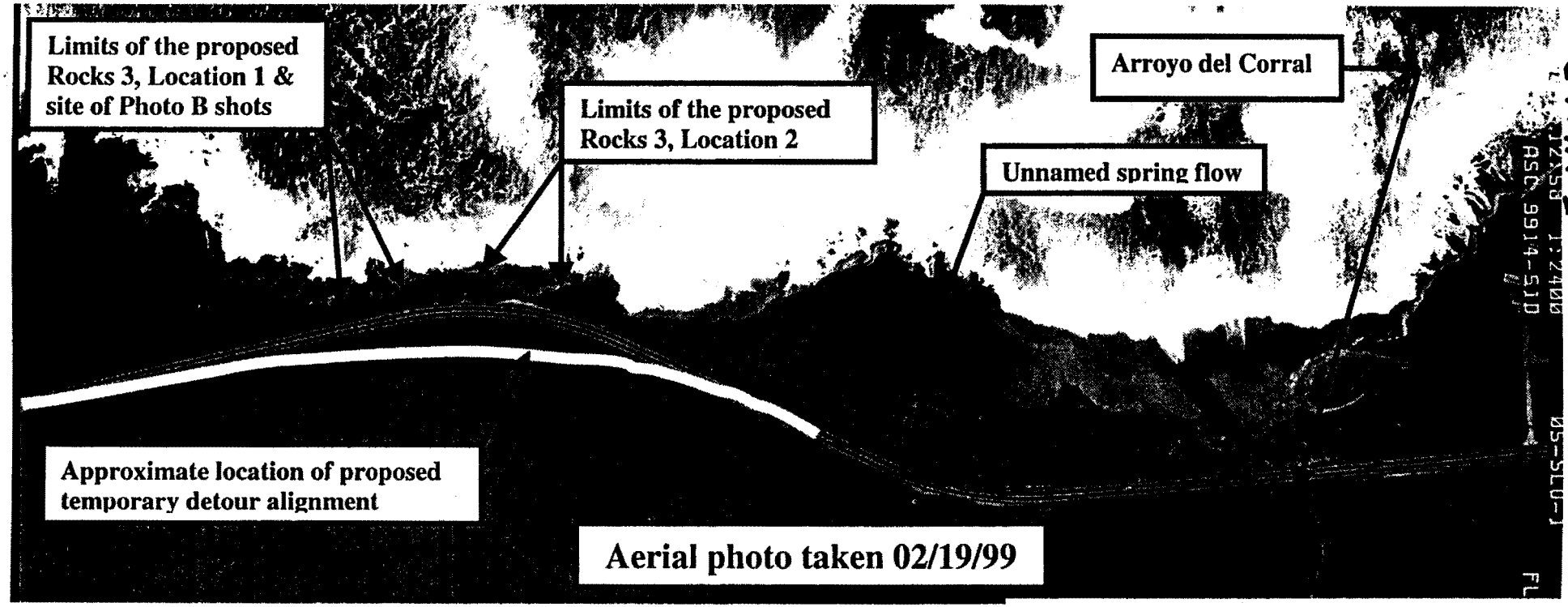
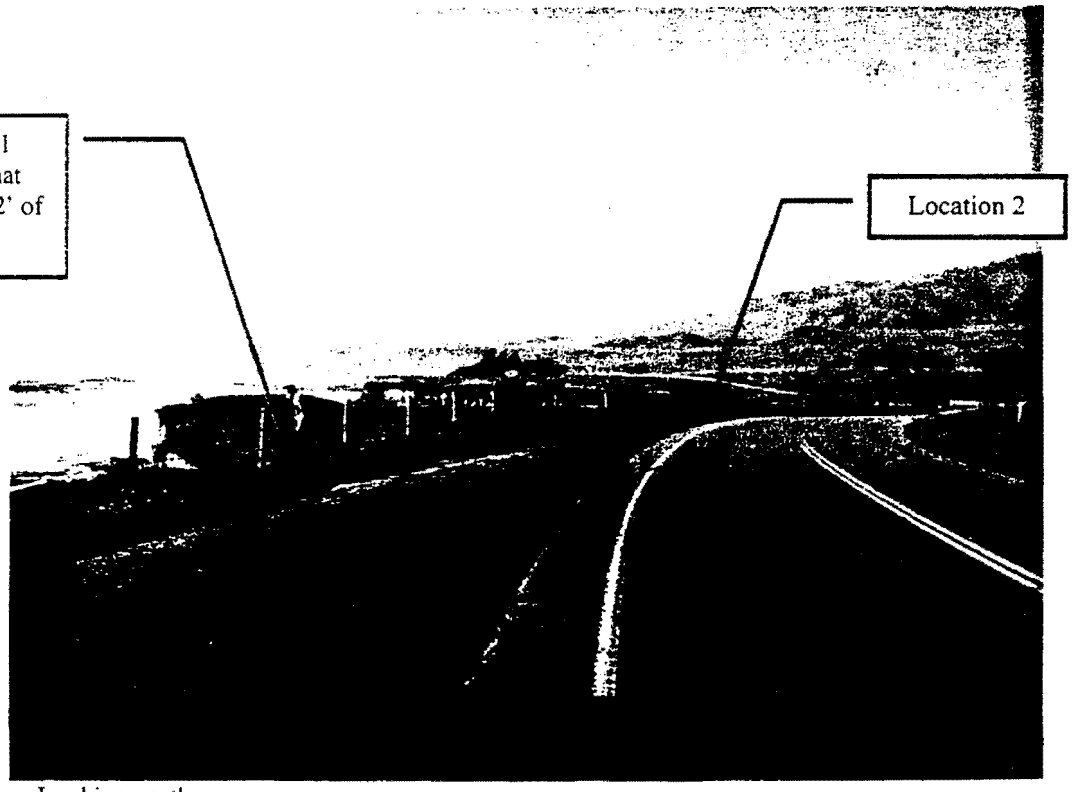


Figure 3: Future RSP requirements at Rocks 3
SLO-1-PM 63.9

Note: The above photo was taken in 1999. Since this time, significant bluff erosion has continued to threaten Highway 1. Currently at this location, two spots (as shown) have eroded within 12-24 feet of the roadway. To date, no preventive action has been taken. Loss of the highway is imminent if nothing is done due to the current rate of recession, the extreme tide cycles, and significant storm surf. Over the last decade, this area has receded as much as 60-100 feet in the worst locations. Two locations, each approximately 200 feet in length are proposed as likely emergency installation sites.

Location 1, Looking south.



Looking north.

Photo B

Figure 4: This is the area referred to as Rocks 3. To date, no RSP has been placed in this location and a temporary detour has been proposed. The bluff retreat has been occurring rapidly. The width of the locations has also increased greatly over the last couple of years. Currently, the bluff is between 12' and 15' at the various locations at Rocks 3.

Photo B_1

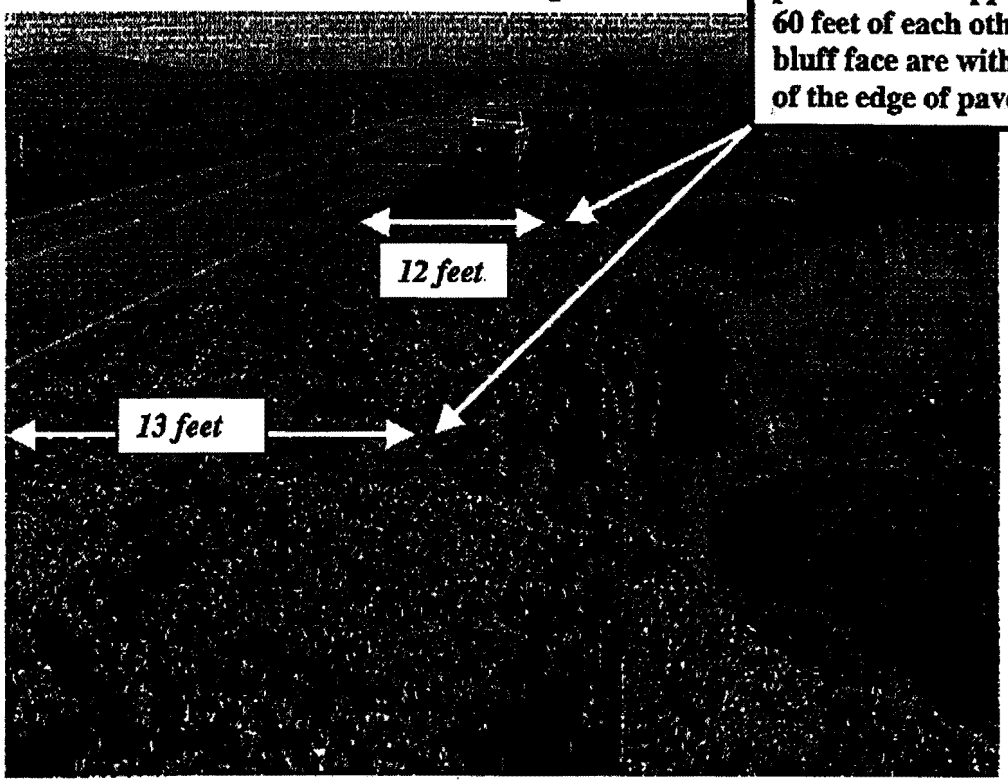


Figure 4A: This is the area referred to as Rocks 3, Location 1. To date, no RSP has been placed in this location and a temporary detour has been proposed. The bluff retreat has been occurring rapidly. The width of the locations has also increased greatly over the last couple of years. Currently, these two "notches" in the bluff face are approximately 12 feet from edge of pavement and 60 feet apart.

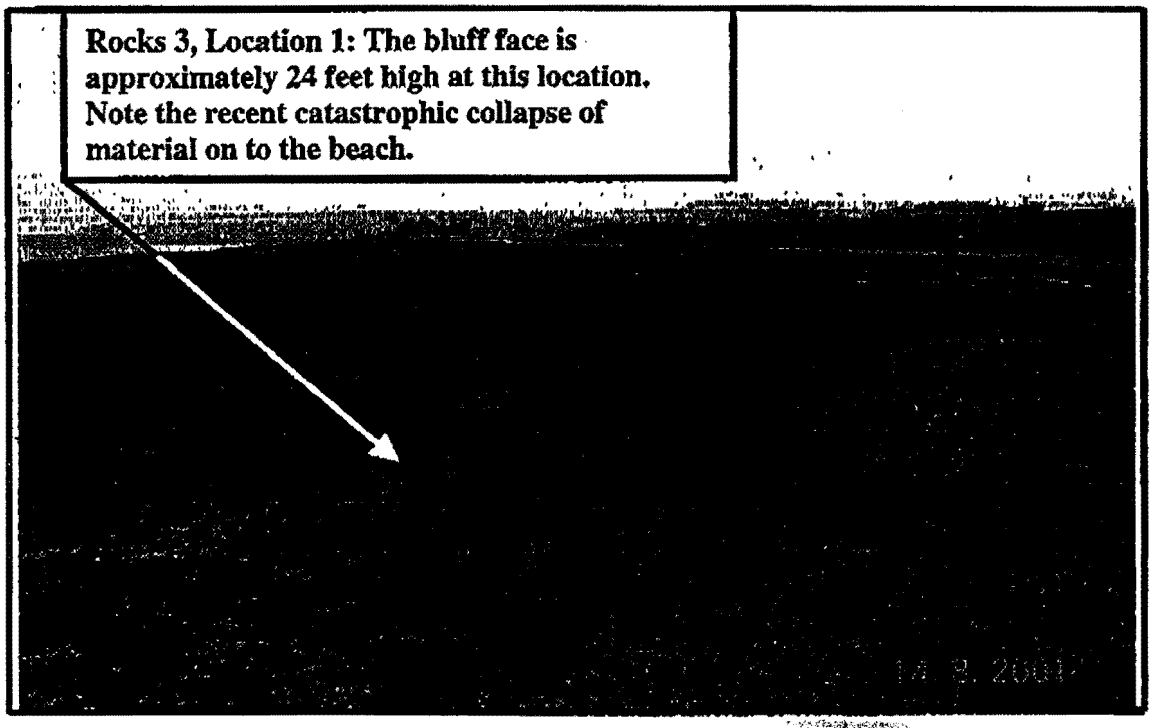
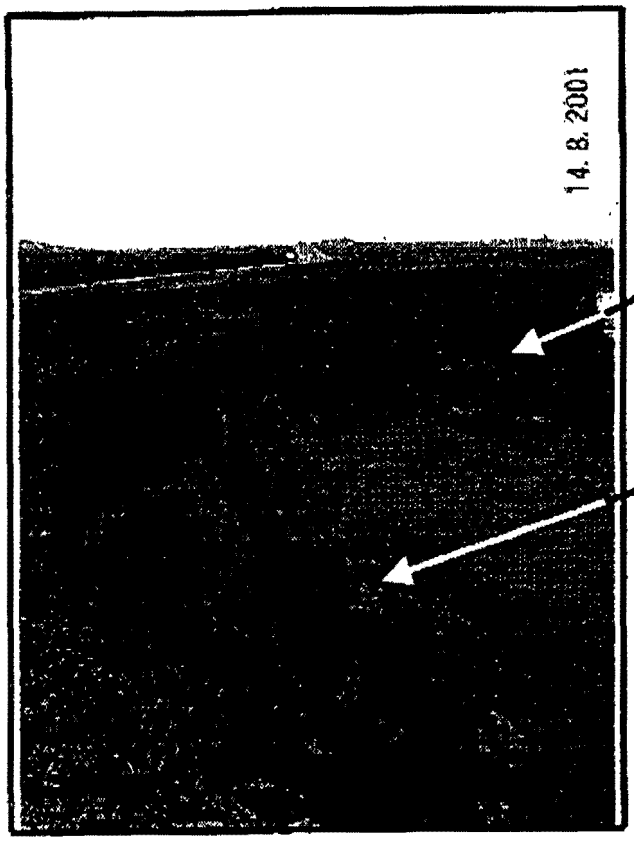


Exhibit 3
Pg. 7 of 14

Photo B_2



Rocks 3, Location 2. Note the cavity formed at the toe of bluff in the background. This is the typical way that these bluffs erode.

Eventually the bluffs, above these cavities, catastrophically collapse resulting in an apparently sudden loss of several feet of bluff top. The material in the foreground is an example of such a failure that has recently occurred.

Figure 4B: Rocks 3, Location 2. This location's near point to the roadway is approximately 330 feet north of the "notches" in the bluffs shown at location 1. It is presently 24 feet from bluff face to edge of pavement. Both of these locations have widened at almost twice the rate that they have retreated towards the highway.

Exhibit 3
Pg. 8 of 14

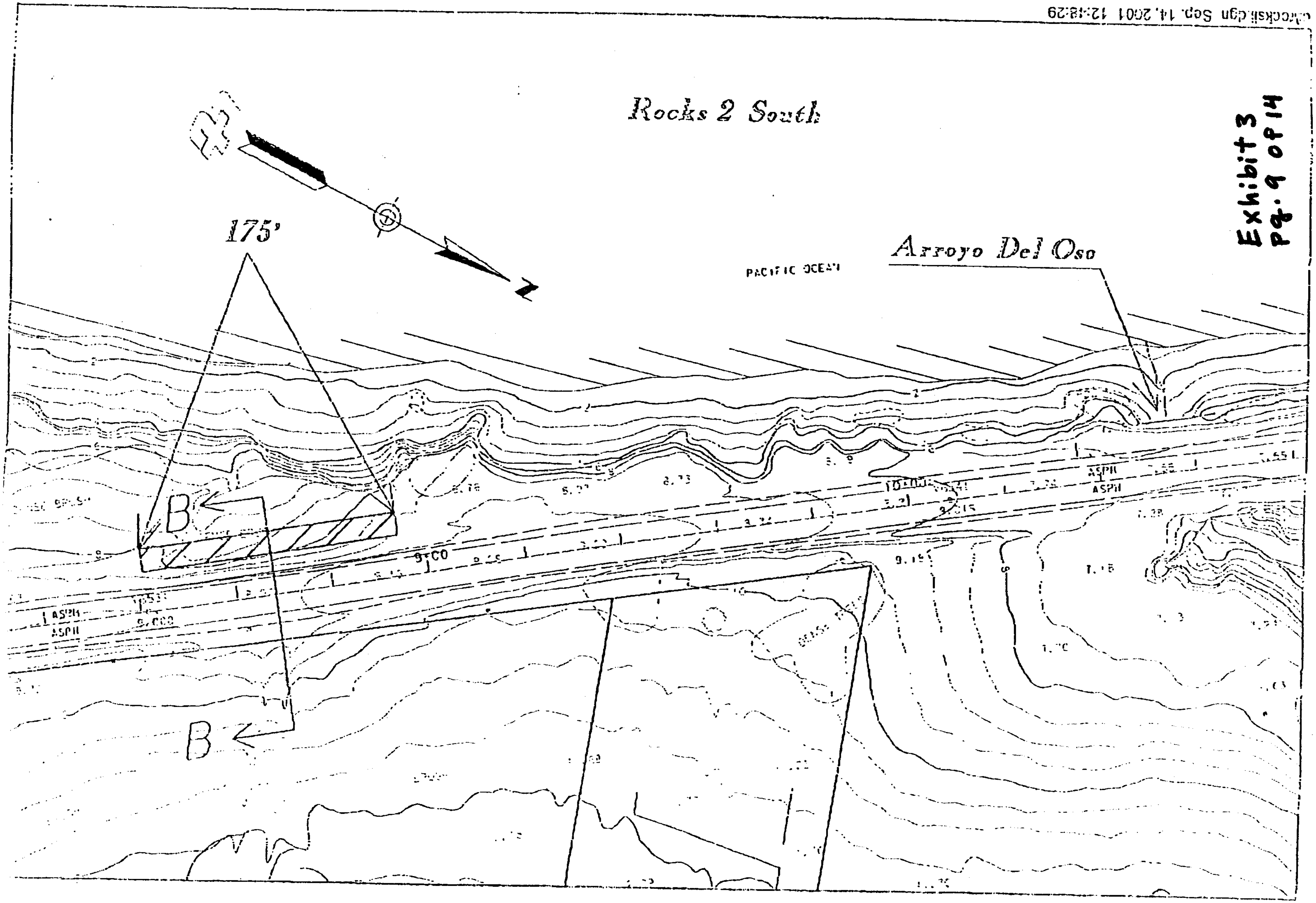


Exhibit 3
pg. 9 of 14

Rocks 2 North
750'
Exhibit 3
Pg. 10 of 14
ksii.dgn Sep. 17, 2001 13:42:00

Rocks 3 Locations 1 & 2

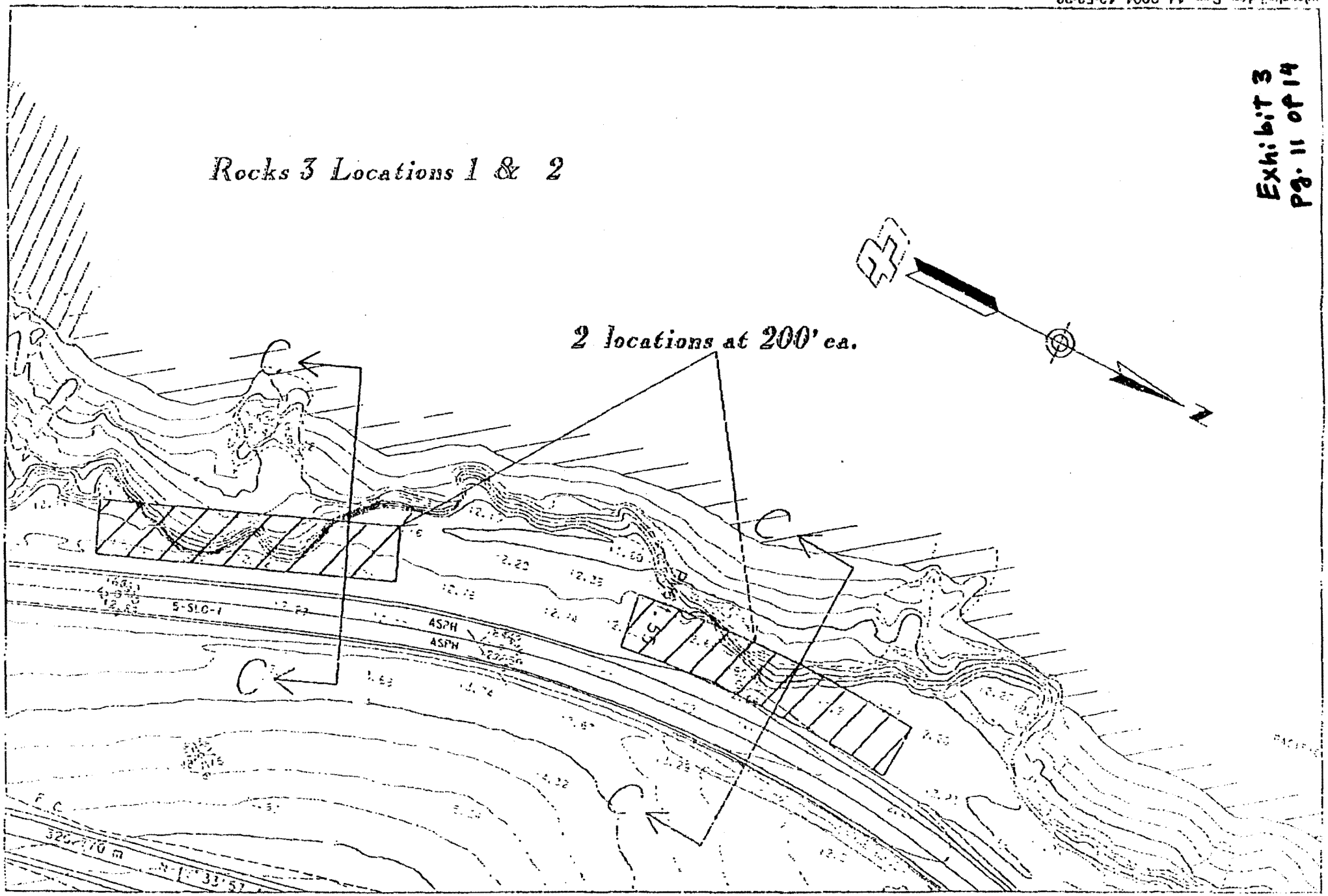
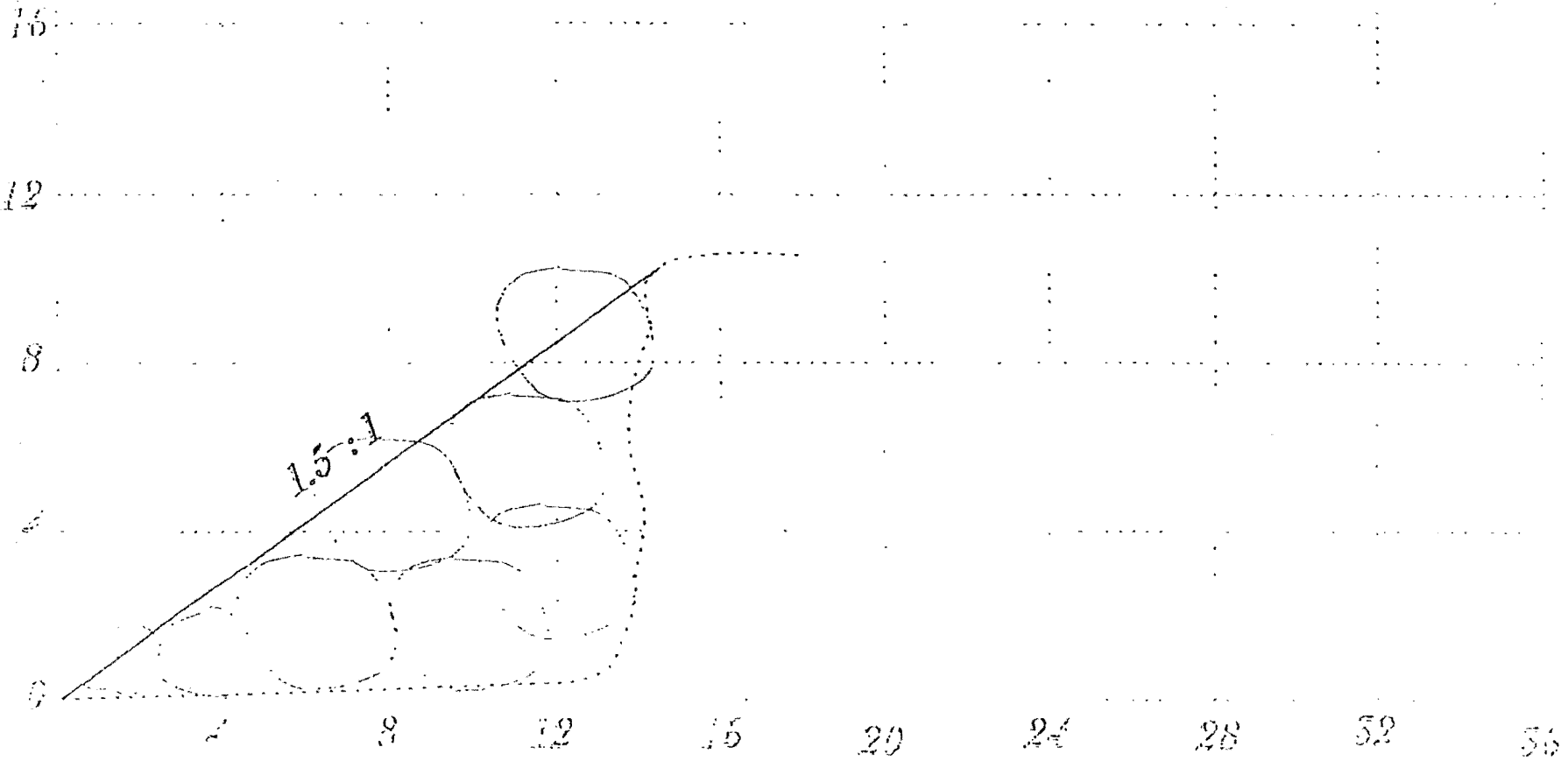


Exhibit 3
pg. 12 of 14

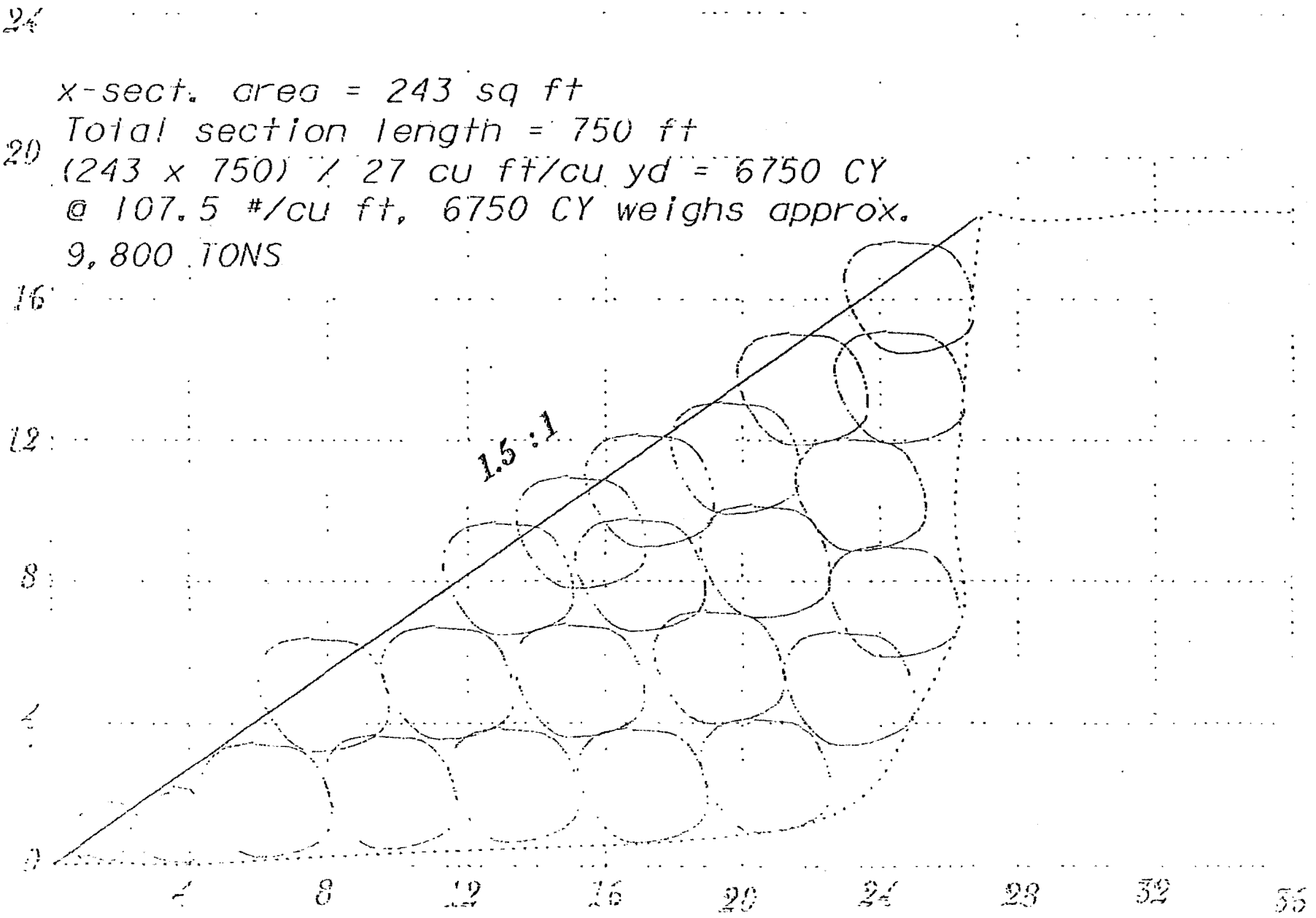
x-sect. area = 75 sq ft
Total section length = 175 ft
(75 x 175) / 27 cu ft/cu yd = 486 CY
@ 107.5 #/cu ft, 486 CY weighs approx.
705 TONS



Rocks 2 South

checksli.dgn Sep. 14, 2001 14:16:15

x-sect. area = 243 sq ft
Total section length = 750 ft
(243 x 750) / 27 cu ft/cu yd = 6750 CY
@ 107.5 #/cu ft, 6750 CY weighs approx.
9,800 TONS



Rocks 2 North

c:\rocksii.dgn Sep. 14, 2001 14:02:45

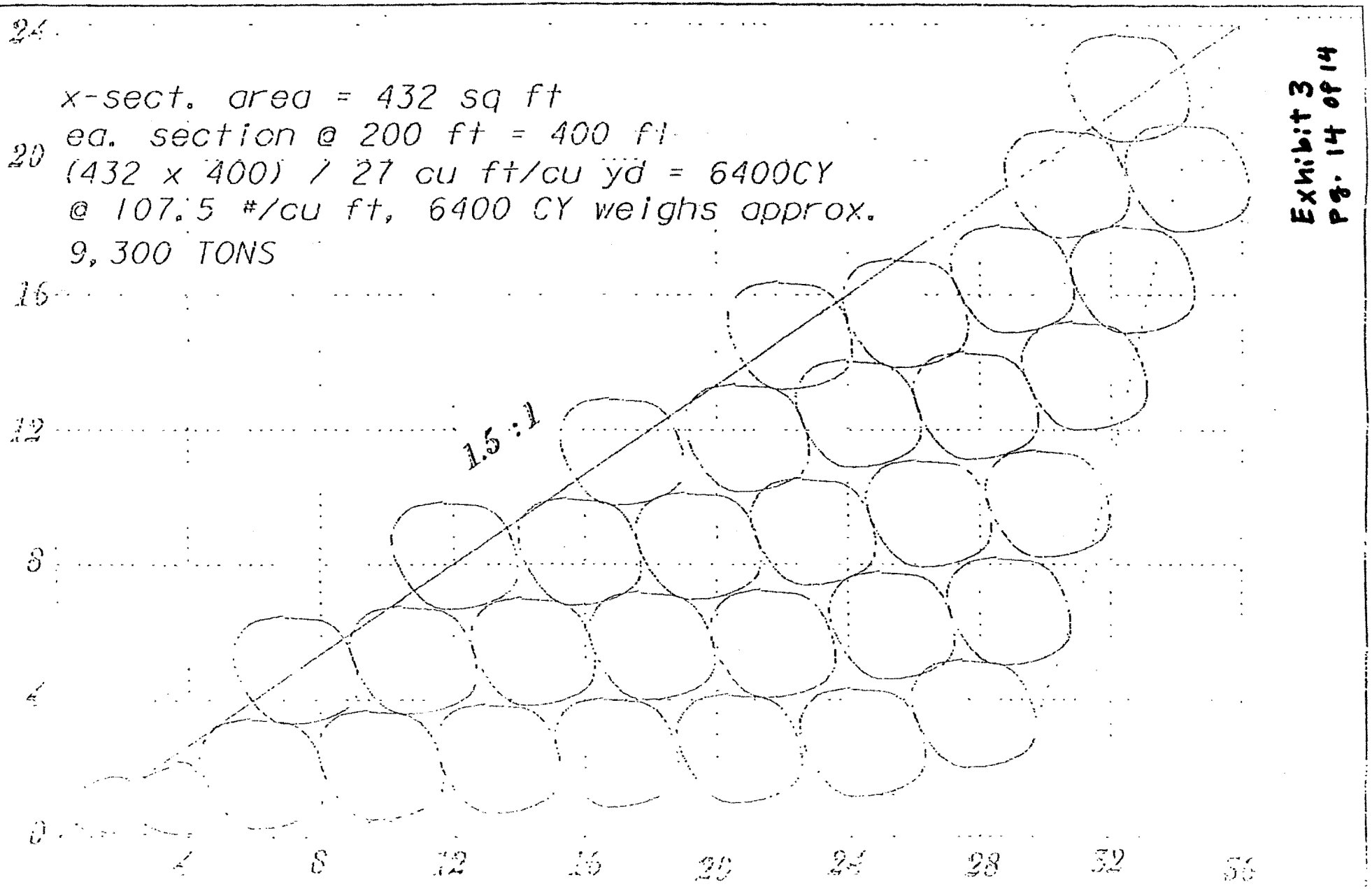


Exhibit 3
Pg. 14 of 14

Rocks 5 Locations 1 & 2

crocks5.dgn Sep. 14, 2001 13:47:17

D960151P - Conditions
CalTrans Seawall

JANUARY 3, 1997.

This permit authorizes the a rock rip-rap seawall/slope and shore rock slope protection structure approximately 200 feet long and 25 feet high to protect Highway 1 from the rapid erosion by wave action.

2. Work under this permit shall be limited to the following:

a. the replanting of the bluff face where soils exist to stabilize the soils.

b. the rip rap seawall as shown on the approved plans and as further conditioned in this permit.

3. All work shall be done with review and approval of the project engineer with a minimum of three on site visits; to establish the mean high tide prior to construction, general placement of the filter fabric, inspection of the placement of the base rip rap, and a final inspection when work has been completed with a written letter or report by an engineering geologist on the project to be submitted to the Department of Planning and Building stating how the project met the conditions of approval.

4. Because the area near the base of the bluff is assumed to be tidelands, submerged lands, or public trust lands, no equipment shall be placed there or work done from or to that area below mean high tide without approval of California State Lands Commission and the California Coastal Commission. All equipment and materials storage shall take place above the bluff except for workers and light equipment as necessary near the face of the bluff to carry out the approved project.

5. The applicant shall place the toe of the new seawall as close as feasible to the existing toe of bluff.

6. All excavated material, if any, other than dirt, rock, and clean beach sand shall be removed from the beach prior to the next high tide following excavation. Such material shall be disposed of in either an approved fill location or a permitted landfill.

7. This permit does not provide for relocation of any part of the existing roadway lost to the natural actions of weather. It only permits for stabilization of the existing soils and structures.

8. All equipment used for seawall construction shall be removed from the beach at the end of the working day. If high tides encroach into the construction area, such equipment shall also be removed from the wetted beach area during each tidal cycle.

9. No fueling or scheduled maintenance of equipment shall occur on the beach. Equipment shall be removed from the sandy beach for such activities.

10. All equipment shall be inspected for leakage of petroleum products (e.g. gasoline, diesel fuel, hydraulic oil) or antifreeze on a daily basis. Equipment showing obvious signs of such leakage shall not be used on the beach.

Exhibit 4
pg. 1 of 2

EXHIBIT NO. 4
APPLICATION NO. 3-97-039
S.L.O. COUNTY CONDI-

The applicant is aware that construction of new or temporary equipment access-ways onto the beach may require additional review and permits.

2. The applicant is aware that spillage of any petroleum product on the beach requires immediate notification of the proper authorities. In the event of a spill, notification shall be accomplished as follows:

a. During normal business, notify the County Division of Environmental Health at (805) 781-5544.

or,

During "off" hours, contact the San Luis Obispo County Sheriff at (805)781-4553 or (805) 781-4550 and request to be connected with the On-duty Hazardous Materials Coordinator at County Environmental Health.

b. Contact the State Department of Fish and Game, Office of Oil Spill Prevention and Response at (805) 772-1756 (24 hours).

If the spill presents an immediate or imminent hazard to life and/or safety, call 911.

ctseawal.mdd

Ex. 4
p.2

3-97-039
SLO County Condition
(CDP# D960151P)

Exhibit 4
pg. 2 of 2