Section 404 Application for Department of Army Permit

and

Section 401 Application for Ohio EPA Water Quality Certification

MAH-80-0.97
(PID 6080)

Prepared for:

Ohio Department of Transportation
Office of Environmental Services
1930 West Broad Street
Columbus, Ohio 43223

June 2005

Prepared by:

Gannett Fleming

4151 Executive Parkway, Suite 350
Westerville, OH 43081
Michael A. Krokonko
(614) 794-9424
(614) 794-9442

APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT *(33 CFR 325)*	OMB APPROVAL NO. 0710-0003 Expires December 31, 2004

One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETED

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME Gordon Proctor, Director	8. AUTHORIZED AGENT'S NAME AND TITLE *(an agent is not required)* Michael A. Pettegrew, Environmental Supervisor
6. APPLICANT'S ADDRESS Ohio Department of Transportation Office of Environmental Services 1930 West Broad Street Columbus, Ohio 43223	9. AGENT'S ADDRESS Michael A. Pettegrew ODOT - Office of Environmental Services 1930 West Broad Street Columbus, Ohio 43223
7. APPLICANT'S PHONE NUMBERS WITH AREA CODE a. Residence b. Business William R. Cody (614) 466-5198	10. AGENT'S PHONE NUMBERS WITH AREA CODE a. Residence b. Business Michael A. Pettegrew (614) 466-7102

11. **STATEMENT OF AUTHORIZATION**

I hereby authorize Michael A. Pettegrew to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

APPLICANT'S SIGNATURE — DATE

NAME, LOCATION AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE *(see instructions)*

MAH-80-0.97

13. NAME OF WATERBODY, IF KNOWN *(if applicable)* Meander Creek Reservoir	14. PROJECT STREET ADDRESS *(if applicable)* N/A
15. LOCATION OF PROJECT Mahoning — COUNTY Ohio — STATE	

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions)

Austintown and Jackson Townships

17. DIRECTIONS TO THE SITE

If traveling from the west, take IR-76 through Akron to the I-80 east (Youngstown) exit. The project starts at Mile Marker 0.97 and extends west across Meander Creek Reservoir to the IR-80/SR 11 interchange (Mile Marker 5.5). See 404 Exhibit 1 – Block 17 for additional directions.

18. Nature of Activity *(Description of project, include all features)*

The Ohio Department of Transportation (ODOT) is proposing to improve Interstate 80 (IR 80) between the Ohio Turnpike Interchange and the State Route 11 (SR 11) Interchange in Jackson and Austintown Townships, in Mahoning County, Ohio. (See Figure 1 located in Appendix B). The proposed project would add one new lane in each direction (increasing from two to three lanes), replace and widen the IR 80 bridges over the Meander Creek Reservoir, replace or rehabilitate other bridges, and construct a spill containment system along IR 80 to protect the Meander Creek Reservoir. An additional through travel lane, for a total of four lanes, is proposed for IR 80 westbound from approximately 0.64 mile east of SR 46 to approximately 0.81 mile west of SR 46, a distance of approximately 1.45 miles. Continued in 404 Exhibit 1 – Block 18.

19. Project Purpose *(Describe the reason or purpose of the project, see instructions)*

The purpose of the project is to improve the level of service, eliminate deficient/substandard bridge conditions and reduce the potential risk of hazardous/regulated material contamination to a public drinking water reservoir traversed by the interstate highway. Interstate Route 80 (IR 80) is currently a four-lane interstate highway. Traffic on IR 80 was 32,160 AADT in 1992, including 11,860 trucks per day. In a ten-year period from 1992 to 2002, traffic volume nearly doubled on the section of IR 80 under consideration in this study to 51,000 and 61,000 AADT.... Continued in 404 Exhibit 1 – Block 19.

USE BLOCKS 20-22 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

Permanent discharges resulting from this project are a result of embankment needed to accommodate roadway widening activities. Fill material is also required to construct the new bridge abutments.

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards

Approximately 52,000 cubic yards of in-place embankment (Type A rock) will be added to Meander Creek Reservoir. An additional amount of fill material (Type A rock) is anticipated to compensate for sub-grade undercutting. Approximately 2,984 cubic yards of standard road fill material or Type A rock (wetlands located in Meander Creek Reservoir) will be added to wetlands. Stream work will require the addition of 8.4 cubic yards of fill material as scour protection. See Appendix A - Table G for a Summary of wetland and stream fill quantities.

22. Surface Area in Acres of Wetlands or Other Waters Filled *(see instructions)*

Approximately 5.0 acres of Meander Creek Reservoir will be filled as required by the eastbound realignment and proposed spill containment system. Approximately 1.86 acres of wetlands will be filled. Stream work will only require the addition of fill material (scour protection) at each culvert outlet. Approximately 0.023 acres of scour protection is needed. See Appendix A - Tables E, F, and G for a summary of stream and wetland impacts.

23. Is Any Portion of the Work Already Complete? Yes ________ No __X__ IF YES, DESCRIBE THE COMPLETED WORK

24. Addresses of Adjoining Property Owners, Lessees, etc., Whose Property Adjoins the Waterbody (if more than can be entered here, please attach a supplemental list).

See 404 Exhibit 1 – Block 24 for listing of adjacent property owners

25. List of Other Certifications or Approvals/Denials Received from other Federal, State, or Local Agencies for Work Described in This Application

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED
ODNR	T&E Species			9/2/04	
USACE	Jurisdictional Determinatio		3/22/05	4/27/05	
Ohio EPA	Underground Injection Wel		4/18/05	Pending	
Ohio EPA	WQC		Pending		
Ohio EPA	Isolated Wetland Permit		Pending		
FHWA	Level 4 CE Document		Pending		

*Would include but is not restricted to zoning, building and flood plain permits

26. Application is hereby made for a permit or permits to authorize the work described in this application. I certify that the information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

SIGNATURE OF APPLICANT ________ DATE ________ SIGNATURE OF AGENT ________ DATE ________

The application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States, knowingly and willfully falsifies, conceals, or covers up any trick scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both.

Section 404 Department of Army Permit

404 EXHIBIT 1

Section 404 Permit Narrative

404 Exhibit 1: Additional Project Narrative

Block 17: Directions to Site

If traveling from the east, travel IR 80 west past Youngstown. Project area starts at the IR 80/SR 11 (mile marker 5.5) interchange and continues west over Meander Creek Reservoir to mile marker 0.97. See Project Area Map included in Appendix B of this application packet.

Block 18: Nature of Activity

From Ohio Turnpike Interchange 15 to Lipkey Road (0.3 miles), the alternatives reviewed provided additional lanes for through traffic on IR 80. From Lipkey Road to Turner Road (1.7 miles), the alternatives involve additional lanes and replacement of the bridges over the Meander Creek Reservoir. From Turner Road to the IR 680/SR 11 Interchange (1.5 miles), the alternatives involve adding additional lanes to existing IR 80. In order to minimize right of way acquisition, construction costs, and environmental impacts, alternatives which involve construction of additional lanes outside of the existing lane groups were dismissed.

Although the additional through lane in each direction will mostly be constructed within the highway median, approximately 42 acres of new right of way will be required. The project's lateral limits extend a maximum of 300 feet north and south of the existing mainline. Most of the additional right of way is located between Lipkey and Turner Roads. In order to maintain traffic during construction of the new Meander Creek Reservoir bridges, the new eastbound bridge must be constructed separately while traffic is maintained on the two existing bridges. This new bridge will be located 130 feet south of the existing IR 80 centerline. Additional right of way is also required for the new spill containment system and basins.

A substantial component of the MAH-80-0.97 project is the replacement of the existing twin two-lane bridges over Meander Creek Reservoir. Meander Creek Reservoir is managed by the Mahoning Valley Sanitary District (MVSD) and is the major water supply for approximately 300,000 residents in Youngstown, Ohio and other communities in the Mahoning Valley. The existing bridges do not meet current safety standards and are in need of continual, extensive repairs. Furthermore, the design of the bridges increases the risk to Meander Creek Reservoir's water supply in the event of a hazardous material spill on IR 80.

Engineering analysis indicated that replacement of the existing deficient bridges over the Meander Creek Reservoir with a causeway and shorter bridges was not feasible for several reasons. Substantial constructability issues remain with the existing bridges. The availability of materials and the settlement time period to achieve full causeway consolidation were also concerns with rebuilding the bridges. Finally, the cost to cure for MVSD water associated with the displacement factors alternative would result in an estimated cost for the causeway/shorter bridge alternative being approximately $30 million greater than the bridge (no causeway) alternative. Therefore, the project currently proposes to replace and widen the existing Meander Creek Reservoir bridges with new bridge structures, approximately 2500 feet in length, on a partially modified alignment south of the existing location. A redesigned spill containment system that will be capable of accommodating 100-year rainfalls will also be incorporated into the design.

The proposed improvement will include safety grading within the project limits as deemed appropriate to meet current design standards. Finally, all traffic will be maintained during construction.

Block 19: Project Purpose

(continued) - with 33% of traffic consisting of heavy trucks. Figure 2 in Appendix B illustrates the Traffic AADT for Mahoning County and the substantive increase in AADT between the logical termini in the proposed project area. As AADT traffic volume is projected to be approximately 75,000 by the design year of 2026, the capacity of the existing IR 80 in the study area section will be exceeded.

Level Of Service (LOS) represents a driver's freedom to follow a path and select a speed. It also reflects the physical and mental effort of the driving task. LOS is reported on a scale ranging from A to F, A being the best and LOS C being the minimum acceptable LOS for a rural freeway such as IR 80. LOS can be summarized:

A. Free Flowing Conditions with a high level of physical and psychological comfort.
B. Stable Flow with operating speeds occasionally restricted by other traffic. High level of physical and psychological comfort.
C. Stable Flow with noticeable restriction in freedom to change lanes, select speed, or pass. Driver tension results from the vigilance required for safe operation.
D. Stable Flow with severe restriction in freedom to change lanes, select speed, or pass. Extreme driver tension results from the vigilance required for safe operation.
E. Unstable Flow with fluctuating speeds and severely limited maneuverability within a traffic stream. Facility is operating at capacity and driver frustration is high.
F. Forced or Breakdown in flow. Traffic volume exceeds highway capacity causing queues and long delays.

In 1996, a Major Investment Study (MIS), required by the Intermodal Surface Transportation Efficiency Act (ISTEA), was prepared to substantiate the need for additional lanes under the Transportation Planning process. This MIS indicated the need for additional lanes in the project area to efficiently carry the high volume of traffic and maintain an acceptable LOS of C in the design year of 2026.

Currently, the IR 80 westbound lane, westbound IR 680 lane and the northbound to westbound SR 11 ramps form a three lane westbound section located east of SR 46 with the outside lane becoming an exit only lane to SR 46. The proposed configuration is for a two lane IR 80 westbound ramp, a westbound IR 680 lane and the northbound to westbound SR 11 lane forming a four-lane westbound section. This modification to the system is needed because the location of the IR 80/IR 680/SR 11 interchange in respect to the SR 46 interchange does not provide for adequate distance to drop the median lane. According to AASHTO standards, the median lane must continue 2 miles past the point of influence of an interchange before it is discontinued. In the absence of lane additions the Level of Service (LOS) for the facility will decrease to an unacceptable LOS of F in the design year (2026).

Within the project corridor there are twin two-lane bridges over the Meander Reservoir that were constructed in 1969. These bridges do not meet current design standards and are in need of continual, extensive repairs. The existing shoulder width of the bridges consists of a 3 foot shoulder on each side of the structures. The required dimensions under ASHTO standards are for a 4 foot median shoulder and a 14 foot outside shoulder. In the design of the new bridges, a 14 foot median shoulder will be provided to accommodate the flow for the proposed spill containment system. The most recent inspection of both structures, conducted by ODOT, took place in 2003 and found a floor condition rating of 3, indicating that the bridge decks are in poor condition and are considered deficient. Table A (Appendix A) is a summary table of this inspection report. The general appraisal and paint condition ratings indicate a fair condition. Although the bridges are not rated as structurally deficient, their overall sufficiency ratings of 65.4 and 66.5 out of 100, automatically make them candidates for rehabilitation.

Tables B and C, located in Appendix A, reflect maintenance costs from year 2000 to 2005 for the Meander Creek Reservoir Bridges. Table B lists annual maintenance and repair costs and Table C reflects capital repair and maintenance costs. Together, the annual maintenance cost for the bridges averages approximately $50,000 per year. As the structures continue to deteriorate the cost for maintaining the two 2500 foot long bridges is anticipated to increase.

The regional metropolitan planning organization, Eastgate Development and Transportation Agency (EDATA), now Eastgate Regional Council of Governments (Eastgate), conducted two surveys of trucks transporting hazardous materials in Mahoning County. The initial survey was performed in 1988 with a follow-up survey conducted in 1995. Survey results indicate a 13% increase in trucks carrying hazardous materials during this time period in the project area, with higher percentages on other sections of IR 80 adjacent to the proposed project area.

The Meander Creek Reservoir is not protected from vehicles traveling IR 80 that transport hazardous material as the existing facility does not provide protection in the event of a hazardous material spill. A survey of federal, state, and local agencies identified the most probable types of chemical spills/releases to occur along IR 80 near Meander Reservoir. These substances are petroleum products, corrosives, compressed gases, and pesticides/herbicides.

In 1976, a tanker truck was involved in an accident on the existing westbound bridge. The accident caused the trailer carrying about 10,000 gallons of gasoline to catapult into the reservoir. In 1986, another tanker truck overturned in the westbound lane just east of the reservoir. This truck carried styrene monomer, a highly toxic carcinogen used in the manufacture of polymers. As indicated in Appendix A - Table D, there have been 32 vehicular crashes on, or in the immediate vicinity of the twin bridges in the past four years from 2001-2004. The Meander Creek Reservoir and the communities that rely on this water supply are potentially at risk for types of drinking water contamination incidents. The spill containment system proposed as part of this project will substantively reduce this potential risk.

In 1994 the United States Environmental Protection Agency concurred with the Ecological Survey Report for the project and stated that the scope of the project must include spill containment measures to ensure clean water for the reservoir.

Block 24
Mahoning Valley Sanitary District

Elias Redriquez
5098 Webb Road
Youngstown, Ohio 44515

BLI of Kerrwood Ltd.
1607 Motor Inn Dr., Suite 1
Girard, Ohio 44420

Victor M. Carroce
11135 W. South Range Rd.
Salem, Ohio 44460

Frederick Thompson
905 Ohltown Road
Youngstown, Ohio 44515

Mill Creek Metro Park District
P.O. Box 596
Canfield, Ohio 44406

Floyd Stephens
925 Ohltown Road
Youngstown, Ohio 44515

Sebastiani Trucking, Inc.
856 Ohltown Road
Youngstown, Ohio 44515

Felix Tesner
1464 N. Lipkey Road
N. Jackson, Ohio 44451

APPLICATION FOR OHIO EPA
SECTION 401 WATER QUALITY CERTIFICATION

Effective October 1, 1996
Revised August, 1998

This application must be completed whenever a proposed activity requires an individual Clean Water Act Section 401 Water Quality Certification (Section 401 certification) from Ohio EPA. A Section 401 certification from the State is required to obtain a federal Clean Water Act Section 404 permit from the U.S. Army Corps Engineers, or any other federal permits or licenses for projects that will result in a discharge of dredged or fill material to any waters of the State. To determine whether you need to submit this application to Ohio EPA, contact the U.S. Army Corps of Engineers District Office with jurisdiction over your project, or other federal agencies reviewing your application for a federal permit to discharge dredged or fill material to waters of the State, or an Ohio EPA Section 401 Coordinator at (614) 644-2001.

The Ohio EPA Section 401 Water Quality Certification Program is authorized by Section 401 of the Clean Water Act (33 U.S.C. 1251) and the Ohio Revised Code Section 6111.03(P). Ohio Administrative Code (OAC) Chapter 3745-32 outlines the application process and criteria for decision by the Director of Ohio EPA. In order for Ohio EPA to issue a Section 401 certification, the project must comply with Ohio's Water Quality Standards (OAC 3745-1) and not potentially result in an adverse long-term or short-term impact on water quality. Included in the Water Quality Standards is the Antidegradation Rule (OAC Rule 3745-1-05), effective October 1, 1996, revised October, 1997 and May, 1998. The Rule includes additional application requirements and public participation procedures. **Because there is a lowering of water quality associated with every project being reviewed for Section 401 certification, every Section 401 certification applicant must provide the information required in Part 10 (pages 3 and 4) of this application**. In addition, applications for projects that will result in discharges of dredged or fill material to wetlands must include a wetland delineation report approved by the Corps of Engineers, a wetland assessment with a proposed assignment of wetland category (ies), official documentation on evaluation of the wetland for threatened or endangered species, and appropriate avoidance, minimization, and mitigation as prescribed in OAC 3745-1-50 to 3745-1-54. Ohio EPA will evaluate the applicant's proposed wetland category assignment and make the final assignment.

Information provided with the application will be used to evaluate the project for certification and is a matter of public record. If the Director determines that the application lacks information necessary to determine whether the applicant has demonstrated the criteria set forth in OAC Rule 3745-32-05(A) and OAC Chapter 3745-1, Ohio EPA will inform the applicant in writing of the additional information that must be submitted. The application will not be accepted until the application is considered complete by the Section 401 Coordinator. An Ohio EPA Section 401 Coordinator will inform you in writing when your application is determined to be complete.

Please submit the following to "Section 401 Supervisor, Ohio EPA/DSW, P.O. Box 1049, Columbus, Ohio 43216-1049:

- Four (4) sets of the completed application form, including the location of the project (preferably on a USGS quadrangle) and 8-1/2 x 11" scaled plan drawings and sections.
- One (1) set of original scaled plan drawings and cross-sections (or good reproducible copies).

(See Application Primer for detailed instructions)

1. The federal permitting agency has determined this project: (check appropriate box and fill in blanks)

a. X requires an individual 404 permit/401 certification- Public Notice # (if known)__________________

b.____ requires a Section 401 certification to be authorized by Nationwide Permit #__________________

c.____ requires a modified 404 permit/401 certification for original Public Notice #__________________

d.____ requires a federal permit under __________________ jurisdiction identified by #________________

e.____ requires a modified federal permit under________________ jurisdiction identified by #____________

2. Application number (to be assigned by Ohio EPA):

3. Name and address of applicant:

Gordon Proctor, Director
Ohio Department of Transportation
1930 West Broad Street
Columbus, Ohio 43223

Telephone number during business hours:

(_____) ______________ (Residence)

(614) 466-5198 (Office)

3a. Signature of Applicant: Date:

4. Name, address and title of authorized agent:

Michael A. Pettegrew, Environmental Supervisor
Ohio Department of Transportation
1930 West Broad Street
Columbus, Ohio 43223

Telephone number during business hours:

(_____) ______________ (Residence)

(614) 466-7102 (Office)

4a. Statement of Authorization: I hereby designate and authorize the above-named agent to act in my behalf in the processing of this permit application, and to furnish, upon request, supplemental information in support of the application.

Signature of Applicant: Date:

5. Location on land where activity exists or is proposed. Indicate coordinates of a fixed reference point at the impact site (if known) and the coordinate system and datum used.

Address: N/A

IR 80 from Mile Marker 0.97 across Meander Creek Reservoir to the IR 80/SR 11 interchange (Mile Marker 5.5).

Street, Road, Route, and Coordinates, or other descriptive location

Watershed	County	Township	City	State	Zip Code
Mahoning River HUC 05030103	Mahoning	Austintown and Jackson	N/A	Ohio	N/A

6. Is any portion of the activity for which authorization is sought complete? _____ Yes X No
If answer is "yes," give reasons, month and year activity was completed. Indicate the existing work on the drawings.

7. List all approvals or certifications and denials received from other federal, interstate, state or local agencies for any structures, construction, discharge or other activities described in this application.

Issuing Agency	Type of Approval	Identification No.	Date of Application	Date of Approval	Date of Denial
ODNR	T&E Species			9/2/04	
USACE	Jurisdictional Determination		3/22/05	4/27/05	
Ohio EPA	Underground Injection Well		4/18/05	Pending	
Ohio EPA	WQC		Pending		
Ohio EPA	Isolated Wetland Permit		Pending		
FHWA	Level 4 CE Document		Pending		

8. **DESCRIPTION OF THE ACTIVITY (fill in information in the following four blocks - 8a, 8b, 8c & 9)**

8a. Activity: Describe the Overall Activity:

The Ohio Department of Transportation (ODOT) is proposing to improve Interstate 80 (IR 80) between the Ohio Turnpike Interchange and the State Route 11 (SR 11) Interchange in Jackson and Austintown Townships, Mahoning County, Ohio. (See Figure 1 located in Appendix B). The proposed project would add one new lane in each direction (increasing from two to three lanes), replace and widen the IR 80 bridges over the Meander Creek Reservoir, replace or rehabilitate other bridges, and construct a spill containment system along IR 80 to protect the Meander Creek Reservoir. An additional through travel lane, for a total of four lanes, is proposed for IR 80 westbound from approximately 0.64 mile east of SR 46 to approximately 0.81 mile west of SR 46, a distance of approximately 1.45 miles. Continued in 401 Exhibit 1 – Block 8a.

8b. Purpose: Describe the purpose, need and intended use of the activity:

The purpose of the project is to improve the level of service, eliminate deficient/substandard bridge conditions and reduce the potential risk of hazardous/regulated material contamination to a public drinking water reservoir traversed by the interstate highway. Interstate Route 80 (IR 80) is currently a four-lane interstate highway. Traffic on IR 80 was 32,160 AADT in 1992, including 11,860 trucks per day. In a ten-year period from 1992 to 2002, traffic volume nearly doubled on the section of IR 80 under consideration in this study to 51,000 and 61,000 AADT, with 33% of traffic consisting of heavy trucks. Figure 2 in Appendix B illustrates the Traffic AADT for Mahoning County and the substantive increase in AADT between the logical termini in the proposed project area. As AADT traffic volume is projected to be approximately 75,000 by the design year of 2026, the capacity of the existing IR 80 in the study area section will be exceeded. Continued in 401 Exhibit 1 - Block 8b.

8c. Discharge of dredged or fill material: Describe type, quantity of dredged material (in cubic yards), and quantity of fill material (in cubic yards). **(OAC 3745-1-05(B)(2)(a))**

An amount of material which results in 52,000 cubic yards of in-place embankment (Type A rock) will be added to Meander Creek Reservoir as required by the eastbound realignment and the proposed spill containment system. An additional amount of fill material (estimated at 2,000 cubic yards of Type A rock) is anticipated to compensate for sub-grade undercutting. Approximately 2,984 cubic yards of standard road fill material or Type A rock (wetlands located within Meander Creek Reservoir) will be used to fill wetlands. Stream work will require 8.36 cubic yards of fill material below the Ordinary High Water mark (scour protection). The remainder of stream related work involves culvert replacements and minor grading where needed to promote proper drainage.

See Table G located in Appendix A for additional wetland and stream fill quantity information.

9. Waterbody and location of waterbody or upland where activity exists or is proposed, or location in relation to a stream, lake, wetland, wellhead or water intake (if known). Indicate the distance to, and the name of any receiving stream, if appropriate.

The proposed action will involve impacts to 26 wetlands, 6 streams, and the addition of fill material to Meander Creek Reservoir as a means of constructing new IR 80 bridges.

See Tables E, F, and G located in Appendix A for a summary of Stream and Wetland impacts.

10. To address the requirements of the Antidegradation Rule, your application must include a report evaluating the:

- Preferred Design (your project) and Mitigative Techniques **See 401 Exhibit 1**
- Minimal Degradation Alternative(s) (scaled-down version(s) of your project) and Mitigative Techniques
- Non-Degradation Alternative(s) (project resulting in avoidance of all waters of the state)

At a minimum, item a) below must be completed for the Preferred Design, the Minimal Degradation Alternative(s), and the Non-Degradation Alternative(s), followed by completion of item b) for each alternative, and so on, until all items have been discussed for each alternative (see Primer for specific instructions). (Application and review requirements appear at **OAC 3745-1-05(B)(2), OAC 3745-1-05(C)(6), OAC 3745-1-05(C)(1) and OAC 3745-1-54**).

10a) Provide a detailed description of any construction work, fill or other structures to occur or to be placed in or near the surface water. Identify all substances to be discharged, including the cubic yardage of dredged or fill material to be discharged to the surface water. **(OAC 3745-1-05(B)(2)(b))**

10b) Describe the magnitude of the proposed lowering of water quality. Include the anticipated impact of the proposed lowering of water quality on aquatic life and wildlife, including threatened and endangered species (include written comments from Ohio Department of Natural Resources and U.S. Fish and Wildlife Service), important commercial or recreational sport fish species, other individual species, and the overall aquatic community structure and function. Include a Corps of Engineers approved wetland delineation. **(OAC 3745-1-05(C)(6)(a, b) and OAC 3745-1-54)**

10c) Include a discussion of the technical feasibility, cost effectiveness, and availability. In addition, the reliability of each alternative shall be addressed (including potential recurring operational and maintenance difficulties that could lead to increased surface water degradation.) **(OAC 3745-1-05(C)(6)(h, j-k) and OAC 3745-1-54)**

10d) For regional sewage collection and treatment facilities, include a discussion of the technical feasibility, cost effectiveness and availability, and long-range plans outlined in state or local water quality management planning documents and applicable facility planning documents. **(OAC 3745-1-05(C)(6)(i))**

10e) To the extent that information is available, list and describe any government and/or privately sponsored conservation projects that exist or may have been formed to specifically target improvement of water quality or enhancement of recreational opportunities on the affected water resource. **(OAC 3745-1-05(B)(2)(g))**

10f) Provide an outline of the costs of water pollution controls associated with the proposed activity. This may include the cost of best management practices to be used during construction and operation of the project. **(OAC 3745-01-05(C)(6)(g))**

10g) Describe any impacts on human health and the overall quality and value of the water resource. **(OAC 3745-1-05(C)(6)(c) and OAC 3745-1-54)**

10h) Describe and provide an estimate of the important social and economic benefits to be realized through this project. Include the number and types of jobs created and tax revenues generated and a brief discussion on the condition of the local economy. **(OAC 3745-1-5(B)(2)(e), and OAC 3745-1-05(C)(6)(i))**

10i) Describe and provide an estimate of the important social and economic benefits that may be lost as a result of this project. Include the effect on commercial and recreational use of the water resource, including effects of lower water quality on recreation, tourism, aesthetics, or other use and enjoyment by humans. **(OAC 3745-1-05(B)(2)(e,f), and OAC 3745-1-05(C)(6)(e))**

10j) Describe environmental benefits, including water quality, lost and gained as a result of this project. Include the effects on the aquatic life, wildlife, threatened or endangered species. **(OAC 3745-1-05 (B)(2)(e,f), OAC 3745-1-05 (C)(6)(b) and OAC 3745-1-54)**

10k) Describe mitigation techniques proposed (except for the Non-Degradation Alternative):

- Describe proposed Wetland Mitigation (see **OAC 3745-1-54** and Primer)
- Describe proposed Stream, Lake, Pond Mitigation (see Primer)

11. Application is hereby made for a Section 401 Water Quality Certification. I certify that I am familiar with the information contained in this application and, to the best of my knowledge and belief, such information is true, complete and accurate. I further certify that I possess the authority to undertake the proposed activities or I am acting as the duly authorized agent of the applicant.

Signature of Applicant ______ Date ______ Signature of Agent ______

The application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in Block 3 has been filled out and signed.

Do not send a certification processing fee with this application. The appropriate fee will be assessed when a certification is issued.

401\401appl.898

Section 401Water Quality Certification Permit

401 EXHIBIT 1

Section 401 Permit Narrative

401 Exhibit 1: Additional Project Narrative

Block 8a: Activity – Desribe the Overall Activity

From Ohio Turnpike Interchange 15 to Lipkey Road (0.3 miles), the alternatives reviewed provided additional lanes for through traffic on IR 80. From Lipkey Road to Turner Road (1.7 miles), the alternatives involve additional lanes and replacement of the bridges over the Meander Creek Reservoir. From Turner Road to the IR 680/SR 11 Interchange (1.5 miles), the alternatives involve adding additional lanes to existing IR 80. In order to minimize right of way acquisition, construction costs, and environmental impacts, alternatives which involve construction of additional lanes outside of the existing lane groups were dismissed.

Although the additional through lane in each direction will mostly be constructed within the highway median, approximately 42 acres of new right of way will be required. The project's lateral limits extend a maximum of 300 feet north and south of the existing mainline. Most of the additional right of way is located between Lipkey and Turner Roads. In order to maintain traffic during construction of the new Meander Creek Reservoir bridges, the new eastbound bridge must be constructed separately while traffic is maintained on the two existing bridges. This new bridge will be located 130 feet south of the existing IR 80 centerline. Additional right of way is also required for the new spill containment system and basins.

A substantial component of the MAH-80-0.97 project is the replacement of the existing twin two-lane bridges over Meander Creek Reservoir. Meander Creek Reservoir is managed by the Mahoning Valley Sanitary District (MVSD) and is the major water supply for approximately 300,000 residents in Youngstown, Ohio and other communities in the Mahoning Valley. The existing bridges do not meet current safety standards and are in need of continual, extensive repairs. Furthermore, the design of the bridges increases the risk to Meander Creek Reservoir's water supply in the event of a hazardous material spill on IR 80.

Engineering analysis indicated that replacement of the existing deficient bridges over the Meander Creek Reservoir with a causeway and shorter bridges was not feasible for several reasons. The availability of materials and the settlement time period to achieve full causeway consolidation were also concerns with rebuilding the bridges. Finally, the cost to cure for MVSD water associated with the displacement factors alternative would result in an estimated cost for the causeway/shorter bridge alternative being approximately $30 million greater than the bridge (no causeway) alternative. Therefore, the project currently proposes to replace and widen the existing Meander Creek Reservoir bridges with new bridge structures, approximately 2500 feet in length, on a partially modified alignment south of the existing location. A redesigned spill containment system that will be capable of accommodating 100-year rainfalls will also be incorporated into the design.

The proposed improvement will include safety grading within the project limits as deemed appropriate to meet current design standards. Finally, all traffic will be maintained during construction.

Block 8b: Purpose – Describe the purpose, need, and intended use of the activity

Level of Service (LOS) represents a driver's freedom to follow a path and select a speed. It also reflects the physical and mental effort of the driving task. LOS is reported on a scale ranging from A to F, A being the best and LOS C being the minimum acceptable LOS for a rural freeway such as IR 80. LOS can be summarized:

A. Free Flowing Conditions with a high level of physical and psychological comfort.
B. Stable Flow with operating speeds occasionally restricted by other traffic. High level of physical and psychological comfort.
C. Stable Flow with noticeable restriction in freedom to change lanes, select speed, or pass. Driver tension results from the vigilance required for safe operation.
D. Stable Flow with severe restriction in freedom to change lanes, select speed, or pass. Extreme driver tension results from the vigilance required for safe operation.
E. Unstable Flow with fluctuating speeds and severely limited maneuverability within a traffic stream. Facility is operating at capacity and driver frustration is high.
F. Forced or Breakdown in flow. Traffic volume exceeds highway capacity causing queues and long delays.

In 1996, a Major Investment Study (MIS), required by the Intermodal Surface Transportation Efficiency Act (ISTEA), was prepared to substantiate the need for additional lanes under the Transportation Planning process. This MIS indicated the need for additional lanes in the project area to efficiently carry the high volume of traffic and maintain an acceptable LOS of C in the design year of 2026.

Currently, the IR 80 westbound lane, westbound IR 680 lane and the northbound to westbound SR 11 ramps form a three lane westbound section located east of SR 46 with the outside lane becoming an exit only lane to SR 46. The proposed configuration is for a two lane IR 80 westbound ramp, a westbound IR 680 lane and the northbound to westbound SR 11 lane forming a four-lane westbound section. This modification to the system is needed because the location of the IR 80/IR 680/SR 11 interchange in respect to the SR 46 interchange does not provide for adequate distance to drop the median lane. According to AASHTO standards, the median lane must continue 2 mile past the point of influence of an interchange before it is discontinued. In the absence of lane additions the Level of Service (LOS) for the facility will decrease to an unacceptable LOS of F in the design year (2026).

Within the project corridor there are twin two-lane bridges over the Meander Reservoir, that were constructed in 1969. These bridges do not meet current design standards and are in need of continual, extensive repairs. The existing shoulder width of the bridges consists of a 3 foot shoulder on each side of the structures. The required dimensions under ASHTO standards are for a 4 foot median shoulder and a 14 foot outside shoulder. In the design of the new bridges, a 14 foot median shoulder will be provided to accommodate the flow for the proposed spill containment system. The most recent inspection of both structures, conducted by ODOT, took place in 2003 and found a floor condition rating of 3, indicating that the bridge decks are in poor condition and are considered deficient. Table A, included in Appendix A, is a summary table of this inspection report. The general appraisal and paint condition ratings indicate a fair condition. Although the bridges are not rated as structurally deficient, their overall sufficiency ratings of 65.4 and 66.5 out of 100, automatically make them candidates for rehabilitation.

Tables B and C, located in Appendix A, reflect maintenance costs from year 2000 to 2005 for the Meander Creek Reservoir Bridges. Table B lists annual maintenance and repair costs and Table C reflects capital repair and maintenance costs. Together, the annual maintenance cost for the bridges averages approximately $50,000 per year. As the structures continue to deteriorate the costs for maintaining the two 2500 foot long bridges is anticipated to increase.

The regional metropolitan planning organization, Eastgate Development and Transportation Agency (EDATA), now Eastgate Regional Council of Governments (Eastgate), conducted two surveys of trucks transporting hazardous materials in Mahoning County. The initial survey was performed in 1988 with a follow-up survey conducted in 1995. Survey results indicate a 13% increase in trucks carrying hazardous materials during this time period in the project area, with higher percentages on other sections of IR 80 adjacent to the proposed project area.

The Meander Creek Reservoir is not protected from vehicles traveling IR 80 that transport hazardous material as the existing facility does not provide protection in the event of a hazardous material spill. A survey of federal, state, and local agencies identified the most probable types of chemical spills/releases to occur along IR 80 near Meander Reservoir. These substances are petroleum products, corrosives, compressed gases, and pesticides/herbicides.

In 1976, a tanker truck was involved in an accident on the existing westbound bridge. The accident caused the trailer carrying about 10,000 gallons of gasoline to catapult into the reservoir. In 1986, another tanker truck overturned in the westbound lane just east of the reservoir. This truck carried styrene monomer, a highly toxic carcinogen used in the manufacture of polymers. As indicated in Appendix A - Table D, there have been 32 vehicular crashes on, or in the immediate vicinity of the twin bridges in the past four years from 2001-2004. The Meander Creek Reservoir and the communities that rely on this water supply are potentially at risk for types of drinking water contamination incidents. The spill containment system proposed as part of this project will substantively reduce this potential risk.

In 1994 the United States Environmental Protection Agency concurred with the Ecological Survey Report for the project and stated that the scope of the project must include spill containment measures to ensure clean water for the reservoir.

Block 10: Antidegradation Evaluation

10a)

Preferred Design

ODOT is proposing to widen IR 80 to six lanes between the Ohio Turnpike Interchange 15 and the IR 80/SR 11 Interchange. Improvements are needed to accommodate the existing and future traffic volumes along this route. The proposed project is located in Austintown and Jackson Townships, Mahoning County, Ohio. Although the addition of a third lane in each direction will mostly be constructed within the existing highway median, approximately 42 acres of new right of way will be required. The project's lateral limits extend approximately 300 feet north and south of the existing IR 80 centerline. Additional right of way is also needed for construction of the new spill containment system.

A major component of the project is the replacement of the existing twin two-lane bridges over Meander Creek Reservoir. Managed by the Mahoning Valley Sanitary District (MVSD), Meander Creek Reservoir is a major water supply for the city of Youngstown and other surrounding communities. The inability of the structures to meet current safety standards and the inherent risk of water supply contamination in the event of a hazardous materials spill warrant the said bridge replacements.

The project proposes to replace the existing bridge structures over Meander Creek Reservoir with new bridge structures, approximately 2500 feet in length, on a partially modified alignment south of the existing IR 80 crossing. A spill containment system that is capable of accommodating 100-year rainfall events is also being incorporated into the design.

Portions of the preferred design Stage III plan packet have been included in Appendix B of this permit application. Included are copies of the project site plan sheets, culvert detail sheets, and cross section sheets for locations where impacts to jurisdictional waters are anticipated. Also included is a copy of project area USGS topographic mapping (see Appendix B).

An amount of material which results in approximately 52,000 cubic yards of in-place embankment (Type A rock) will be added below the ordinary high water mark of Meander Creek Reservoir for construction of the eastbound realignment and proposed spill containment system. An additional amount of fill material (estimated at 2,000 cubic yards of Type A rock) is anticipated to compensate for sub-grade undercutting. These estimates are based on an existing spillway elevation of 906.07 feet. Approximately 2,984 cubic yards of standard road fill material or Type A rock (wetlands located within Meander Creek Reservoir) will be used to fill wetlands. Stream work will require 8.36 cubic yards of fill material below the Ordinary High Water mark (scour protection). The remainder of stream related work involves culvert replacements and minor grading where needed to promote proper drainage.

Construction of the proposed project will not require the removal of any dredge material from the project area reservoir, wetlands, or streams.

Minimal Degradation Alternative

Construction techniques associated with the Minimal Degradation Alternative are anticipated to be similar to those of the Preferred Design. In order to minimize impacts to project area wetlands, the Minimal Degradation Alternative, where possible, would utilize mechanically stabilized earth (MSE) walls rather than the proposed earthen embankment. Table L includes the location of each wetland identified by centerline stationing and summarizes the possibility of utilizing MSE walls to reduce wetland impacts. Cross Section sheets at each wetland location along the proposed alignment are included in Appendix B.

Of the 26 wetlands anticipated to be impacted as part of the project, it is only possible to lessen impacts through MSE wall construction at 11 locations. Of those 11 locations, wetland impacts can be totally eliminated at three locations through the construction of MSE walls. Construction of MSE walls would only decrease a portion of the anticipated impacts at the remaining eight wetlands. There are several design related reasons why the reduction of wetland impacts through MSE wall construction is not practical. These reasons include: the subject wetland impact is a product of the ditch/drainage design work; the wetland is located within the proposed Spill Containment basin; the wetland is located under the proposed roadway; the wetland is located within Meander Creek Reservoir where fill material is required for bridge construction; or the wetland is being impacted as part of required safety and clear zone grading.

Proposed MSE wall height and length were calculated using project Cross Section and Plan Sheets. As identified in Table L, a total of 11,150 square feet of possible MSE walls would be considered as part of the Minimal Degradation Alternative. It is estimated that costs associated with construction of the MSE wall would increase the current project construction estimate by approximately $560,000 (estimated at $45 per ft^2). Also, if the MSE walls are constructed, it is anticipated that additional costs associated with maintenance, annual inspections, and repairs would be incurred.

While construction of the Minimal Degradation Alternative is possible, it is not cost effective when you consider that it only eliminates impacts to three wetlands (out of 26 wetlands). In addition, two of the three wetlands to be saved are low-quality, Category 1 wetlands.

Non-Degradation Alternative

While the roadway widening portion of this project requires a land base, the purpose and need of the project fully demonstrates that the existing bridge structures over Meander Creek Reservoir must be replaced to meet current design criteria and accommodate increasing traffic volumes. Therefore, the proposed project can be considered "water dependent".

ODOT considers the Non-Degradation Alternative the "No build Alternative". Selection of this alternative would not meet the Purpose and Need of the project, whereby eliminating the needed improvements to the level of service and the deficient/substandard bridge conditions. Selection of the non-degradation alterative would not eliminate the potential risk of hazardous/regulated material contamination to Meander Creek Reservoir, a public drinking water reservoir traversed by the interstate highway. If the no build alternative were selected as the preferred alternative, there would be no affect on existing aquatic resources. No fill material would be placed below the OHWM of Meander Creek Reservoir or project area wetlands. Nor would any of the said culvert extension work and associated grading be required.

10b)

Preferred Design

Biological and Physical Impacts

As proposed, the impacts to project area aquatic resources will have minimal adverse affect on animal life. Meander Creek Reservoir does not permit recreational activities due to its status as a drinking water reservoir. As depicted on the Culvert Detail sheets included in Appendix B, the proposed project will also involve minor impacts to 6 streams through culvert extension, re-grading activities, and the addition of scour protection. Only short-term water quality impacts related to increased sedimentation during clearing and grubbing are anticipated. Proper erosion and sediment control measures will be implemented to minimize any short-term water quality impacts.

The project will have no effect on threatened or endangered species. The project area is within the know range of 2 federally endangered species, the Indiana bat and bald eagle. While a bald eagle nesting site has recently been identified approximately 1 mile north of the project area, it has been determined that the project will have no adverse impact on this nesting site. Other than the bald eagle, no additional threatened or endangered species were identified as part of the project's ecological studies. Several state-listed bird species were observed during project field studies. However, there is no evidence of nesting in the immediate project vicinity or Meander Creek Reservoir.

The project area has wooded areas. There are a substantial number of shagbark hickories and similar trees that could provide Indiana bat habitat. Project construction will require the removal of trees, and some of these trees are of the types suitable for Indiana bat habitat. For this project, a "buffer area" extending 2.5 miles each direction from I-80 was evaluated using aerial photography and USGS mapping. It was estimated that there are about 1120 acres of woodland in this buffer area, largely lands controlled by the Sanitary District. The project will clear about 24 wooded acres, or about 2.1% of the woodland in the "buffer area."

The area with the greatest potential for bat trees is on the west shore of the reservoir, just south of the existing roadway. Using the density approximations shown above, it is estimated that this project will remove up to 200 trees that are of the types suitable for Indiana bat habitat.

Two state-listed plants (flattened wild oatgrass and tall St. John's wort) were found during 1992 field surveys. The identified locations of these species are beyond the project work limits.

Physical impacts to aquatic habitat and the physical characteristics of each aquatic resource will vary. Compared to previous alternatives considered (causeways), a minimal amount of fill material will be added to Meander Creek Reservoir for the construction of the new bridge structures. Based on the proposed construction limits, impacts to project area wetlands will also vary significantly. As outlined in Block 9 of this application, physical impacts to wetland habitat can be as little as 0.001 acres, whereas the total area of 12 wetlands will be acquired. In areas where impacts to a portion of a wetland are anticipated, the impacts to aquatic habitat and the physical characteristics of that particular resource are anticipated to be minimal and proper erosion/sediment control measures will be implemented.

Impacts to the flow patterns and channel characteristics of those streams (culverts) being impacted are anticipated to be minimal. Work associated with the 6 stream crossings will involve extending or replacing existing culverts as required by the roadway widening activities. In certain instances minor re-grading will be necessary at either end of the culvert to promote proper drainage.

Wetlands

A total of 46 wetlands were identified within the project study area. ORAM v. 5.0 evaluations were completed as a means of assigning a category for each wetland. Table F in Appendix A provides a summary of project area wetlands to be impacted. According to the Ecological Survey Report prepared for the Preferred Design, approximately 12 acres of wetlands were identified within the project study area. Construction of the proposed project will impact 1.86 acres of wetland habitat of varying quality and functional value. Location of these wetlands with relation to other surface water resources are depicted on the Project Site Plans included with this application. Copies of the project USACE wetland delineation forms and Ohio EPA ORAM v. 5.0 data forms are also included in Appendix E and Appendix F respectively.

Streams

Table E in Appendix A provides a summary of stream impacts. The locations of the streams are depicted on the Project Site Plan Sheets included in Appendix B of the permit application packet. Culvert Detail sheets for each location are also included in Appendix B. Copies of the appropriate Ohio EPA Headwater Habitat Evaluation Index (HHEI) data sheets are included in Appendix G.

Summary of Streams/Culverts to be Impacted

Stream 1 – Stream 1 comes from the west on the north side of IR 80, flows parallel to IR 80 then crosses under the highway in a 60" culvert (STA 491+00). On the south side of IR 80, Stream 1 joins Stream 1A. In general, the stream channel is about 3 to 4 feet wide, with a gravel substrate. Debris was present, including car parts and tires. The stream supports a fish community, and the macroinvertebrate community suggested relatively good water quality. The stream had a variety of aquatic plants. The HHEI score for the stream was 46, in the range of a "Class II PHWH" stream.

Stream 3 – Stream 3 comes from the west on the north side of IR 80. Stream 3 passes under IR 80 in a 54" CMP (STA 504+65) and enters Meander Reservoir at the IR 80 bridge. The stream is less than 3 feet in width, and had moderate flow. The substrate was gravel and sand. The HHEI score for Stream 3 was 37, in the Class II PHWH range.

Stream 5 – Stream 5 flows from the east, passing under IR 80 in a 36" concrete pipe (STA 566+20) and entering Meander Reservoir at the IR 80 bridge. The stream channel is less than 3 feet wide, with a bedrock substrate in some areas. The flow was interstitial in some areas. The HHEI score for Stream 5 was 51, in the Class II PHWH range.

Stream 6 – Stream 6, an ephemeral channel, flows from the south, passing under IR 80 in a 21" concrete pipe (STA 580+86) and entering Meander Reservoir north of IR 80. The stream channel is very narrow, and was dry when observed. The substrate was artificial riprap. The HHEI score for Stream 6 was 9, in the Class I PHWH range.

Stream 8 – Stream 8, an ephemeral stream, flows from the east, passing under IR 80 in a 42" pipe (STA 597+63), and then flowing west towards Meander Reservoir. The channel is 3 to 5 feet wide, with cobble, gravel, and sand substrate. The HHEI score for Stream 8 was 33, in the Class II PHWH range.

Stream 9 – Stream 9 passes under IR 80 in a 48" pipe (STA 634+20), then flows north to join Stream 10. The stream channel was less than 3 feet wide, with silt and muck substrate. The HHEI score for Stream 9 was 35, in the Class II PHWH range.

Lakes/Ponds
Meander Creek Reservoir is located within the project area. The reservoir is the primary water supply for communities throughout the Mahoning Valley, including Youngstown, Ohio. Meander Creek Reservoir covers approximately 2000 acres and has a drainage area of 84 square miles. The most commonly observed aquatic macrophyte is Eurasion watermilfoil. Access to land adjacent to the reservoir is restricted to the public. The original hardwood forests of the area were eliminated and replanted with a variety of conifers, including red pines, white pines, scotch pines, and Douglas firs. The area supports a large resident deer herd that limits the amount of undergrowth thus affecting the population of additional wildlife.

Numerous streams empty into Meander Creek Reservoir, most notably Meander Creek and Sawmill Creek. There are a variety of unnamed tributaries draining into the reservoir.

Table H in Appendix A provides a summary of the proposed lowering of water quality related to construction of the Preferred Design. Table K summarizes project Impact and Avoidance estimations for the Preferred Design.

Appendix D includes photos of those project area aquatic resources identified as part of the project ecological investigations.

Minimal Degradation Alternative
Impacts associated with this alternative would be relatively the same as the Preferred Design. However, the overall impact would be reduced by a small amount due to the use of Mechanically Stabilized Earth (MSE) walls as a means to mitigate wetland impacts. A more detailed discussion on this mitigation technique can be found in Section 10c of this application.

Table H in Appendix A provides a summary of the proposed lowering of water quality related to construction of the Minimal Degradation Alternative.

Non-Degradation Alternative
ODOT considers the Non-Degradation Alternative the "No build Alternative". Selection of this alternative would not meet the Purpose and Need of the project, whereby eliminating the needed improvements to the level of service and the deficient/substandard bridge conditions. Selection of the non-degradation alterative would not eliminate the potential risk of hazardous/regulated material contamination to Meander Creek Reservoir, a public drinking water reservoir traversed by the interstate highway.

The no build alternative will not adversely impact animal life throughout the project area. Additionally, there will be no adverse impact on plant life, threatened and endangered species, aquatic habitat, and the physical characteristics of aquatic resources including the flow patterns of surface water bodies.

10c)

Preferred Design

Construction of the Preferred Design will utilize construction techniques that are commonly used for typical bridge replacement and roadway widening projects. These techniques have proven to be reliable and cost-effective. The design life for the proposed bridges over Meander Creek Reservoir is approximately 40 years with no reoccurring maintenance cost anticipated.

In addition to commonly used construction techniques, construction of the Preferred Design will incorporate Best Management Practices (BMP's) as a means of decreasing surface water degradation. Table M in Appendix A details the total construction cost for the Preferred Design.

Minimal Degradation Alternative

Construction techniques and BMP's associated with the Minimal Degradation Alternative are anticipated to be similar to those of the Preferred Design. In order to minimize impacts to project area wetlands, the Minimal Degradation Alternative, where possible, would utilize MSE walls rather than the proposed earthen embankment. Table L, located in Appendix A, summarizes the possibility of utilizing MSE walls to reduce wetland impacts. Included in Table L is the location of each wetland identified by centerline stationing. Cross Section sheets along the proposed alignment at each wetland location are included in Appendix B.

Of the 26 wetlands to be impacted as part of the project, it is only possible to lessen impacts through MSE wall construction at 11 locations. Of those 11 locations, wetland impacts can be totally eliminated at three wetland sites. Construction of MSE walls would only decrease a portion of the anticipated impacts at the remaining eight wetlands. There are several design related reasons why the reduction of wetland impacts through MSE wall construction is not practical. These reasons include: the subject wetland impact is a product of the ditch/drainage design work; the wetland is located within the proposed Spill Containment basin; the wetland is located under the proposed roadway; the wetland is located within Meander Creek Reservoir where fill material is required for bridge construction; or the wetland is being impacted as part of required safety and clear zone grading.

Proposed MSE wall height and length were calculated using project Cross Section and Plan Sheets. As identified in Table L, a total of 11,150 square feet of MSE walls would be considered as part of the Minimal Degradation Alternative. It is estimated that costs associated with construction of the MSE wall would increase the current project construction estimate by approximately \$560,000 (estimated at \$45 per ft^2). Also, if constructed, it is anticipated that additional costs associated with the maintenance, annual inspections, and repairs of the MSE walls would be incurred.

While construction of the Minimal Degradation Alternative is possible, it is not cost effective when you consider that it only eliminates impacts to three wetlands (out of the 26 wetlands being impacted). In addition, two of the three wetlands saved are low-quality, Category 1 wetlands. Table M in Appendix A details the total construction cost for the Minimal Degradation Alternative which includes the addition of MSE walls to minimize wetland impacts.

Nondegradation Alternative

No costs will be incurred by the applicant. However, this alternative does not meet the purpose and need of the project, therefore the existing Meander Creek Reservoir bridges and will remain deficient while the LOS for IR 80 continues to decrease as discussed in the project Purpose and Need Statement.

Tables B and C, located in Appendix A, reflect maintenance costs from year 2000 to 2005 for the Meander Creek Reservoir Bridges. Table B lists annual maintenance and repair costs while Table C reflects capital repair and maintenance costs. Together, the annual maintenance cost for the bridges averages approximately $50,000 per year. As the structures continue to deteriorate the cost of maintaining the two 2,500 foot long bridges is anticipated to increase.

10d)

This proposed project does not involve sewage collection or treatment facilities.

10e)

The following conservation projects and/or water quality improvement studies have been identified within the Mahoning River Watershed.

***Wetland Mitigation Plan for Mill Creek, Yellow Creek, and Meander Creek Watersheds,* Martin, Scott C. et al, Youngstown State University.** – This document was produced to develop a wetland mitigation plan for the Mill Creek, Yellow Creek, and Meander Creek watersheds. As part of this study, locations with the greatest potential for mitigation were identified within all three watersheds. Mitigation alternatives were identified through a detailed literature review and GIS analysis.

Results of this study identified wetland mitigation "target areas" at three areas within the Mill Creek Watershed and two areas within the Meander Creek Watershed. A detailed ranking system was used to identify and rank candidate parcels within each "target area". A summary of each candidate parcel including Parcel Number, size, location, and owner was included in the report. Although no candidate parcels identified as part of this study lie within the Wetland Mitigation Opportunity Inventory Report (WMOIR) one-mile study area, "target areas" and candidate parcels in the Meander Creek Watershed are within close proximity to the project. All other parcels identified are within the Mahoning River Watershed and the USACE Pittsburgh District.

***Application of Techniques to Identify Wetland Mitigation and Stream Restoration Opportunities,* Kolwalkar, Susheel R, Youngstown State University, August 2003.** – This report identified mitigation opportunities within the Mill Creek, Yellow Creek, and Meander Creek watershed using the same procedure(s) as the above Youngstown State University (YSU) report. However, stream restoration opportunities were also researched. The findings of this report as they relate to wetland mitigation opportunities are the same as the other YSU study completed by Scott C. Martin et al. This study did include a field inspection of the sites with a high potential for wetland mitigation and stream restoration.

***Interstate Pymatuning/Shenango Watershed Plan,* Davey Resource Group, November 2001**. Davey Resource Group completed a watershed plan for the Pymatuning/Shenango Watershed in order to characterize current environmental conditions throughout the 1,065 square mile watershed. While this study included a comprehensive look at the entire watershed, only that information pertaining to wetland resources can be applied to the MAH-80-0.97 project.

One of the key issues highlighted in the watershed plan was the "protection of wetlands" throughout the watershed. According to the watershed plan, five (5) percent of the watershed is covered by wetlands. With that said, no individual parcels or "target areas" for wetland mitigation opportunities were identified as part of this document. However, watershed wetland mapping, soil data, and conservation group information presented in this document can be used to help identify potential mitigation opportunities and/or conservation-minded organizations throughout the watershed.

***Grand River Riparian Corridor Protection Plan*, Davey Resource Group, March 1998**. - Davey Resource Group completed a riparian corridor protection plan for the Grand River Watershed in March of 1998. This report was completed in conjunction with Grand River Partners, Inc., a consortium of public agencies and private organizations. The primary goal of this organization is to protect water quality and aquatic resources throughout the Grand River Watershed through the acquisition of conservation easements in the riparian corridor of the Grand River and its major tributaries.

This plan focused on the identification and characterization of "three critical areas for riparian corridors, large wetland systems, and significant tracts of contiguous woodlands". The study resulted the identification of three (3) critical areas to be targeted for the acquisition of conservation easements. A review of secondary source information including Ohio Wetland Inventory (OWI) mapping and county soil data was conducted to analyze the "relevancy" of the critical areas.

Natural resource mapping presented in this report included both OWI and soils mapping for the Grand River Watershed. ODOT provided Gannett Fleming with a listing of Potential Conservation Easements in the Grand River Watershed. A total of thirteen (13) locations were identified, eleven (11) of which contain wetland resources

Watershed Groups - Three (3) local watershed groups were identified: the Mahoning River Consortium, AWARE (Alliance for Watershed Action and Riparian Easements), and the Penn-Ohio Watershed Association.

10f)

Preferred Design

As identified on the Project Site Plan sheets included in Appendix B, permanent erosion control measures have been identified. Examples of permanent erosion control measures include ditch channel protection, reinforcing mats, and rip-rap. Table N in Appendix A provides a detailed break down of water pollution control best management practices (BMPs) to be implemented as part of the proposed project.

Temporary sediment and erosion control measures shall be incorporated into the project in accordance with Ohio Department of Transportation (ODOT) Supplemental Specification 832 - Temporary Sediment and Erosion Control and ODOT Supplemental Specification 833 - OEPA National Pollutant Discharge Elimination System, Construction Effluent Guidelines Permit. Water column and sedimentation impacts shall be kept to a minimum through the use of best management practices for soil erosion and sedimentation control. All soil erosion and sediment control measures shall be in place prior to any excavation, grading or filling operations and installation of proposed structures or utilities. They shall remain in place until construction is completed and the area is stabilized as accepted by the engineer. These shall comply with ODOT's Handbook for Sediment and Erosion Control. An estimate of $170,000 for temporary sediment and erosion control was assigned by ODOT District 4 as part of project Stage III plan review.

Minimal Degradation Alternative
The cost for water pollution controls would be similar to that of the Preferred Design. There are no foreseeable cost reductions or increases. See Table N in Appendix A for a detailed breakdown of water pollution control best management practices (BMPs) to be implemented as part of the proposed project.

Non-Degradation Alternative
ODOT considers the Non-Degradation Alternative the "No build Alternative". Selection of this alternative would not meet the Purpose and Need of the project, whereby eliminating the needed improvements to the level of service and the deficient/substandard bridge conditions. Selection of the non-degradation alterative would not eliminate the potential risk of hazardous/regulated material contamination to Meander Creek Reservoir, a public drinking water reservoir traversed by the interstate highway.

This alternative would not require any water pollution control practices. Therefore, no cost for such controls is anticipated.

10g)

Preferred Design
There are no negative human health impacts anticipated as a result of the proposed environmental impacts. Construction of the spill containment system and the improvements in safety associated with the bridge replacement and roadway widening activities could potentially have a significant positive impact on human health.

With the exception of Meander Creek Reservoir, the quality of the water resources impacted can be considered marginal. Streams and wetlands are low to moderate quality as outlined in the Ohio EPA ORAM v. 5.0 and HHEI forms found in Appendix F and Appendix G respectively.

Minimal Degradation Alternative
Impacts to human health would be similar to that of the Preferred Design. This alternative would decrease the amount of wetland impacts by a very small amount. Therefore, it is anticipated that human health impacts related to water quality impacts would be virtually the same as the Preferred Design.

Non-Degradation Alternative
There would be no adverse human health impacts related to a reduction in water quality associated with this alternative.

ODOT considers the Non-Degradation Alternative the "No build Alternative". Human health impacts related to a reduction in water quality are not anticipated. However, as discussed in the Purpose and Need Statement, human health risks may increase if concerns over traffic safety and bridge deficiency are not addressed. Moreover, this alternative would leave people more susceptible to drinking water contamination if a hazardous chemical spill were to occur on the Meander Creek Reservoir crossing.

10h)

Mahoning County Profile
According to the Ohio Department of Development, Mahoning County has an estimated population of 257,555 people (2000 Census). Approximately 9.6% of the families in Mahoning County are below the poverty level. On average, the retail trade and health care and social assistance fields employ the most workers.

Preferred Design
There are no foreseen increases in jobs and/or economic benefits associated with this alternative. Local businesses may experience short term increases in business activity during the construction period, due to business from construction workers.

Approximately 50 acres of new right of way is needed to construct the Preferred Design. The purchase of this right of way may decrease some property values adjacent to the facility.

Minimal Degradation Alternative
This alternative would be expected to have the same effect with respect to jobs and revenue gained.

Non-Degradation Alternative
This alternative would neither result job creation or increased revenue. However, selection of this alternative would not meet the Purpose and Need of the project, whereby eliminating the needed improvements to the level of service and the deficient/substandard bridge conditions. Selection of the non-degradation alterative would not eliminate the potential risk of hazardous/regulated material contamination to Meander Creek Reservoir, a public drinking water reservoir traversed by the interstate highway.

10i)

Preferred Design
No social or economic benefits are expected to be lost as a result of this alternative.

There are no impacts to recreational waters anticipated as part of this project. Meander Creek Reservoir is not open to the public. The project area wetlands and streams are too small to provide recreational opportunities.

Minimal Degradation Alternative
This alternative would result in virtually the same impacts as the Preferred Design.

Non-Degradation Alternative
The No Build Alternative would not result in a loss to any social or economic benefits. However, selection of this alternative would not meet the Purpose and Need of the project, whereby eliminating the needed improvements to the level of service and the deficient/substandard bridge conditions. Selection of the non-degradation alterative would not eliminate the potential risk of hazardous/regulated material contamination to Meander Creek Reservoir, a public drinking water reservoir traversed by the interstate highway. Continued deterioration of the existing bridges and increases in traffic congestion and vehicular safety may discourage travel through the project corridor.

10j)

Preferred Design
A discussion of the aquatic resource impacts is included in Section 10b of this application. Construction of the proposed Spill Containment systems can be considered an environmental gain, whereby decreasing the chances of drinking water contamination and environmental pollution in the event a hazardous materials spill were to occur on the IR 80 crossing of Meander Creek Reservoir.

Minimal Degradation Alternative
The effect on environmental benefits for this alternative would be essentially the same as the Preferred Design. The Minimal Degradation Alternative would decrease impacts to 11 project area wetlands through the construction of MSE walls in lieu of embankment. However, the feasibility of constructing the said MSE walls in is questionable when you compare MSE wall construction and maintenance costs with the quality and amount of wetland to be preserved.

Non-Degradation Alternative
This alternative would not result in environmental benefits lost or gained. However, this alternative would not address the Purpose and Need of the project, specifically the need for a spill containment system over Meander Creek Reservoir. This alternative leaves Meander Creek, a valuable ecological and drinking water resource, susceptible to contamination via a hazardous material spill.

10k)

Preferred Design
Where feasible, efforts have been made to avoid impacts to project area aquatic resources. Design of this alternative considered all surface water bodies when delineating the proposed construction limits. Proper sediment and erosion control measures will be implemented during construction to keep water quality impacts to a minimum.

A Jurisdictional Determination (JD) field meeting was conducted on March 22, 2005 with the U.S. Army Corps of Engineers (USACE). ODOT received a JD for the proposed aquatic resources from USACE on April 29, 2005. A copy of the letter from USACE is included in Appendix H. Tables I and J in Appendix A provide a summary of proposed stream and wetland mitigation for the Preferred Design.

In order to satisfy the project wetland and stream mitigation requirements, ODOT is currently evaluating opportunities for compensatory wetland and stream mitigation at four off-site locations. These sites are depicted on the Preliminary Mitigation Opportunity mapping located in Appendix C. These sites are located in the Pittsburgh Corps District, within the Meander Creek sub-watershed to the Mahoning River. Both wetland and stream mitigation opportunities will be evaluated at three of the four sites (Omega Farms, Eparchy of Our Lady, and Gibson Road). The fourth site will be evaluated for stream mitigation only.

A detailed field assessment will be conducted at these sites to evaluate both wetland and stream mitigation opportunities. The existing conditions at each site will be summarized by completing a variety of studies including the delineation, classification, and evaluation of existing wetland and stream habitats, hydric soils surveys, wetland, riparian corridor, and upland vegetation surveys, as well as the identification of potential hydrology sources for wetland development.

The results of the various studies will be summarized in site specific summary reports in order to help ODOT evaluate which site offers the most appropriate mitigation opportunity. A preliminary conceptual mitigation plan will be developed for each site following completion of the aforementioned studies identifying all feasible wetland and stream mitigation techniques. Once a location has been selected, ODOT will complete the conceptual, preliminary, and final mitigation plans in accordance with agency mitigation plan requirements.

Minimal Degradation Alternative

Mitigation techniques for this alternative would be relatively the same as the Preferred Design. However, as discussed in Section 10c of this application, the construction of MSE walls would yield a small decrease in impacts to 11 project area wetlands. A summary of this mitigation strategy, including estimated costs, is included in Table L. Tables I and J in Appendix A provide a summary of proposed stream and wetland mitigation for the Minimal Degradation Alternative.

As stated above, opportunities for compensatory wetland and stream mitigation at four off-site locations are currently being evaluated by ODOT.

Non-Degradation Alternative

This alternative would not impact project area aquatic resources. Therefore, mitigation is not required. However, selection of this alternative would not meet the Purpose and Need of the project, whereby eliminating the needed improvements to the level of service and the deficient/substandard bridge conditions. Selection of the non-degradation alterative would not eliminate the potential risk of hazardous/regulated material contamination to Meander Creek Reservoir, a public drinking water reservoir traversed by the interstate highway.

Section 404 Department of Army Permit and Section 401 Water Quality Certification

APPENDIX A
Tables

Table A

INSPECTION REPORT RESULTS – MEANDER CREEK RESERVOIR BRIDGES

Inspected by ODOT

SFN	5002257	5002281
County	MAH	MAH
Route	00080	00080
SLM	0125	0125
Feature Intersected	Over Meander Reservoir	Over Meander Reservoir
General Appraisal	5	5
Floor	3	3
Wearing Surface	2	1
PCS Rating	6	6
Inspection Date	11/20/2003	11/20/2003
Inspected By	BAH	BAH
Percent Legal Load	150	150
Sufficiency Rating	065.4	065.5
SD/FO	0	0
IR	1	1
MR	1	1
Main Structure Type	322	322
Overall Structure Length	2,477	2,477
Deck Width Out/Out	36	36
Deck Area	89,169	89,169
# Lanes On	2	2
# Lanes Under	0	0
On/Under	1	1
Major Bridge	Y	Y
Year Built	1969	1969

Table B

Annual Maint Costs for Meander Bridges

11/26/2004

Transaction Fiscal Year	Program Act. Description	Route No.	From Milepost	Bridge SFN	SUM Total Cost
2000	TRAFFIC CONTROL	080	220.4500		$132.78
	SURFACE REPAIRS	080	220.4500		$2,330.14
	FILLING AND SEALING CRACKS	080	220.4500		$1,145.53
	POTHOLE PATCHING	080	220.4500		$36.59
Transaction Fiscal Year					$3,645.04
2001	BRIDGE DECK REPAIR	080	220.4500	5002281	$3,196.68
Transaction Fiscal Year					$3,196.68
2002	BRIDGE CLEANING	080	220.4500		$4,409.68
	POTHOLE PATCHING	080	220.4500		$695.18
	BRIDGE DECK REPAIR	080	220.4500		$1,200.74
Transaction Fiscal Year					$6,305.60
2003	POTHOLE PATCHING	080	220.4500		$409.21
	GROUND-MOUNTED FLATSHEET SIGN MAIN	080	220.4500		$38.88
	SIGN-FLAT SHEET MAINTENANCE	080	220.4500		$38.58
Transaction Fiscal Year					$486.67
2004	GROUND-MOUNTED FLATSHEET SIGN MAIN	080	220.4500		$216.65
	BRIDGE CLEANING	080	220.4500		$1,369.47
	POTHOLE PATCHING	080	220.4500		$1,167.92
Transaction Fiscal Year					$2,754.04
2005	BRIDGE DECK REPAIR	080	220.4500	5002281	$2,170.14
	POTHOLE PATCHING	080	220.4500		$300.79
	GROUND-MOUNTED FLATSHEET SIGN MAIN	080	220.4500		$176.99
Transaction Fiscal Year					$2,647.92

Table C

Annual Average Maintenance Costs for Meander Creek Reservoir Bridges Fiscal Years 2000 - 2005

Items on Project 396(01) used for Meander structures (Lump Sum Item Pro-rated at 4% of total project)

Ref #		Unit Price	Total Cost
3	RAISED PAVEMENT MARKER REMOVED FOR STORAGE		
8	PORTABLE CONCRETE BARRIER, 32", AS PER PLAN	4.50	$412.47
15	PAVEMENT PLANING, BITUMINOUS, AS PER PLAN	15.00	$315.22
16	TACK COAT	7.37	$86,781.75
19	ASPHALT CONCRETE SURFACE COURSE, 12.5MM, TYPE B (4	0.50	$883.00
22	RAISED PAVEMENT MARKER, INSTALLATION ONLY	150.00	$98,100.00
23	EDGE LINE	7.50	$593.42
24	LANE LINE	1460.00	$3,990.63
33	LAW ENFORCEMENT OFFICER WITH PATROL CAR	735.00	$928.20
34	WORK ZONE MARKING SIGN	40.00	$1,138.28
35	BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC	80.00	$238.80
36	PORTABLE CHANGEABLE MESSAGE SIGN, AS PER PLAN	50.00	$85.57
37	TEMPORARY LANE LINE, CLASS I	2300.00	$2,013.88
40	TYPE 3 WATERPROOFING	400.00	$1,278.69
68	PREMIUM FOR CONTRACT PERFORMANCE BOND AND FOR P	20.00	$741.87
69	MAINTAINING TRAFFIC	75000.00	$2,985.00
70	CONSTRUCTION LAYOUT STAKES	615000.00	$24,477.00
71	MOBILIZATION	17000.00	$676.60
72	FIELD OFFICE, TYPE B	200000.00	$7,960.00
74	AGREED LUMP SUM	2600.00	$103.48
82	AGREED LUMP SUM	24490.00	$974.70
83	MAINTAINING TRAFFIC	27591.73	$1,098.15
		47530.55	$1,891.72
			$237,668.42

Annual Cost based on 5 year anticipated life of repair

Table D

Meander Creek Reservoir Bridges Crashes
2001 – 2004

MAH 0080R, 1.20-1.77

01/01/2001 to Currently Available 2004 Data

General Location of Meander Reservoir Bridges

DOCUMENT NUMBER	COUNTY	ROUTE	SLM	CRASH DATE	ROAD ON	OFFSET	REFERENCE USED	TYPE OF LOCATION REFERENCED
20018000276	MAH	0080R	1.55	20010109	IR0080R OH	25 W	MP221.00	NON-INTERSECTION
20018094637	MAH	0080R	1.68	20010608	IR0080R	12 W	MP221.00	NON-INTERSECTION
20018111102	MAH	0080R	1.68	20010524	IR0080R	12 W	MP221.00	NON-INTERSECTION
20018164527	MAH	0080R	1.55	20010718	IR0080R	25 W	MP221.00	NON-INTERSECTION
20028043526	MAH	0080R	1.68	20020226	IR0080R	12 W	MP221.00	BRIDGE PASSING OVER
20028070914	MAH	0080R	1.3	20020321	IR0080R	50 E	MP220.00	NON-INTERSECTION
20028154975	MAH	0080R	1.68	20020608	IR0080R	12 W	MP221.00	BRIDGE PASSING OVER
20028188473	MAH	0080R	1.3	20020711	IR0080R	50 W	MP221.00	NON-INTERSECTION
20028205490	MAH	0080R	1.3	20020728	IR0080R	50 W	MP221.00	BRIDGE PASSING OVER
20028218123	MAH	0080R	1.63	20020816	IR0080R	17 W	MP221.00	NON-INTERSECTION
20028235558	MAH	0080R	1.68	20020825	IR0080R	12 W	MP221.00	NON-INTERSECTION
20028237494	MAH	0080R	1.68	20020903	IR0080R	12 W	MP221.00	NON-INTERSECTION
20028301578	MAH	0080R	1.68	20021114	IR0080R	12 W	MP221.00	BRIDGE PASSING OVER
20028333374	MAH	0080R	1.63	20021128	IR0080R	17 W	MP221.00	BRIDGE PASSING OVER
20028365412	MAH	0080R	1.47	20021224	IR0080R	33 W	MP221.00	NON-INTERSECTION
20028368413	MAH	0080R	1.68	20021224	IR0080R	12 W	MP221.00	NON-INTERSECTION
20018261142	MAH	0080R	1.47	20011020	IR0080R	33 W	MP221.00	NON-INTERSECTION
20018261258	MAH	0080R	1.47	20011011	IR0080R	33 W	MP221.00	NON-INTERSECTION
20038060214	MAH	0080R	1.68	20030310	IR0080R	12 W	MP221.00	BRIDGE PASSING OVER
20038191447	MAH	0080R	1.68	20030710	IR0080R	12 W	MP221.00	NON-INTERSECTION
20038225923	MAH	0080R	1.68	20030812	IR0080R	12 W	MP221.00	NON-INTERSECTION
20038254926	MAH	0080R	1.68	20030923	IR0080R	12 W	MP221.00	NON-INTERSECTION
20038253886	MAH	0080R	1.63	20031013	IR0080R	17 W	MP221.00	NON-INTERSECTION
20038291042	MAH	0080R	1.55	20031024	IR0080R	25 W	MP221.00	NON-INTERSECTION
20038335574	MAH	0080R	1.63	20031201	IR0080R	17 W	MP221.00	NON-INTERSECTION
20038374258	MAH	0080R	1.3	20031231	IR0080R	50 W	MP221.00	NON-INTERSECTION
20048068277	MAH	0080R	1.3	20040325	IR0080R	50 W	MP221.00	NON-INTERSECTION
20048130041	MAH	0080R	1.55	20040426	IR0080R	25 W	MP221.00	NON-INTERSECTION
20048138438	MAH	0080R	1.3	20040521	IR0080R	50 E	MP220.00	NON-INTERSECTION
20048169347	MAH	0080R	1.47	20040621	IR0080R	33 W	MP221.00	NON-INTERSECTION
20048244959	MAH	0080R	1.68	20040901	IR0080R	12 W	MP221.00	NON-INTERSECTION
20048244964	MAH	0080R	1.3	20040904	IR0080R	50 E	MP220.00	NON-INTERSECTION

404 / 401 TABLE E
Streams Affected by the Proposed Project

Site # / Feature	Approx. Station Location	Description of Length Impacted	Drainage Basin	Total Length (ft)	Receiving Stream/Waterbody	Approx. Distance to Receiving Water (ft)	Drainage Area at Impact Site (acres)	HHEI Score / OEPA Use Designation	Riparian Corridor and Adj. Habitats
Stream 1	STA 491+00	Perennial	Mahoning River 05030103	64'	Meander Creek Reservoir	1370'	216	II	Mature Forest, Wetland; Residential, Park, New Field
Stream 3	STA 504+65	Perennial	Mahoning River 05030103	67'	Meander Creek Reservoir	230'	137	II	Mature Forest; Wetland
Stream 5	STA 566+20	Interstitial / Intermittent	Mahoning River 05030103	138'	Meander Creek Reservoir	75'	60	II	Mature Forest; Urban Industrial
Stream 6	STA 580+86	Ephemeral	Mahoning River 05030103	52'	Meander Creek Reservoir	50'	26	I	Mature Forest, Wetland; Residential, Park, New Field
Stream 8	STA 597+63	Ephemeral	Mahoning River 05030103	30'	Meander Creek Reservoir	2700'	110	II	Urban, Industrial; Mining or Construction
Stream 9	STA 634+20	Perennial	Mahoning River 05030103	42'	Unnamed Tributary	1575'	111	II	Residential, Park, New Field; Urban or Industrial

404 / 401 TABLE F
Wetlands Affected by the Proposed Project

Wetland #	Drainage Basin	Wetland Description	Cowardin et al., 1979 Classification	ORAM v5.0 Score	OEPA Category	Total Size (acres)	Area Impacted (acres)	Adjacent Habitats	Proximity to Other Surface Waters
D	Mahoning River 05030103	On north side of interchange ramp, *Phragmites* monoculture.	PEM	19	1	0.197	0.049	Open pasture; transportation	Adjacent to drainage ditch on north side of I-80/SR-11 interchange
NE-4	Mahoning River 05030103	Shoreline wetland with narrow-leafed cattail, inundated to depths of up to 2 feet.	PEM	26	1	0.149	0.136	2nd growth or older forest; open water	Adjacent to Meander Creek Reservoir
NE-6	Mahoning River 05030103	Small shoreline wetland between the bridges.	PEM	28	1	0.038	0.038	Open pasture; open water	Adjacent to Meander Creek Reservoir
NE-8	Mahoning River 05030103	On north side of highway just west of the bike path.	PEM	23	1	0.080	0.030	Open field, shrubland; open pasture	Overland connection with Bikeway drainage ditch
NW-C	Mahoning River 05030103	Small wetland pocket dominated *by Carex scoparia.*	PEM	26	1	0.019	0.019	2nd growth or older forest; open pasture	Approximately 250' west of Meander Creek Reservoir
NW-E	Mahoning River 05030103	Small wooded wetland adjacent to Stream 3.	PEM	20	1	0.008	0.008	Shrubland; open pasture	Adjacent to stream 3
SE-2/3	Mahoning River 05030103	Predominantly narrow-leafed cattail areas, surface inundation.	PEM	27	1	0.248	0.092	shrubland; open field	Adjacent to drainage ditch
SW-BB	Mahoning River 05030103	Just south of highway at end of off-ramp, *Phragmites* monoculture.	PEM	21	1	0.266	0.026	Old field (>10 yrs.); transportation	Adjacent to tributary to Stream 1
F	Mahoning River 05030103	Large wetland area on north side of highway, *Phragmites* monoculture.	PEM	35	2	1.043	0.032	2nd Growth or older forest, shrubland; urban	Located perpendicular to Stream 9, north of I-80
NE-1	Mahoning River 05030103	Small wetland with good vegetation diversity, adjacent to Stream 6, surface inundation.	PEM	45	2	0.143	0.004	2nd growth or older forest; open pasture	Adjacent to Stream 6
NE-5	Mahoning River 05030103	Shoreline wetland with narrow-leafed cattail, some buttonbush developing, inundation of up to 2 feet.	PEM	35	2	0.300	0.033	2nd growth or older forest; open water	Adjacent to Meander Creek Reservoir
NE-A	Mahoning River 05030103	Shoreline wetland, inundated to 6" depth.	PEM	37	2	0.040	0.020	Shrubland; open water	Adjacent to Meander Creek Reservoir
NE-B	Mahoning River 05030103	Shoreline wetland north of bridge, some buttonbush developing, inundated to up to 2 feet.	PEM	32	2	0.070	0.070	2nd growth or older forest; open water	Adjacent to Meander Creek Reservoir
NW-A	Mahoning River 05030103	This wetland is along the shore of the reservoir.	PEM	30	2	0.119	0.113	Fenced pasture; open water	Adjacent to Meander Creek Reservoir
NW-F	Mahoning River 05030103	Very small wetland pocket, narrow-leafed cattail present.	PEM	33	2	0.067	0.017	2nd growth or older forest; fenced pasture	Adjacent to Stream 3, north of I-80

SE-1	Mahoning River 05030103	Large wetland area along Stream 5, inundated to 2".	PEM	39	2	0.628	0.005	2nd growth or older forest; open pasture	Located along Stream 5
SE-10	Mahoning River 05030103	Seasonally exposed shoreline, depths of 2".	PEM	32	2	0.035	0.035	Shrubland; open water	Adjacent to Meander Creek Reservoir
SE-5	Mahoning River 05030103	Stagnant marsh/pool dammed by a service road, depth up to 3'. Trees and shrubs developing.	PEM	46	2	0.417	0.360	2nd growth or older forest; open pasture	Located between inland pond and Meander Creek Reservoir
SE-8	Mahoning River 05030103	Seasonally exposed eastern shoreline, contiguous to inland pond. Some buttonbush development, good diversity.	PEM	48	2	0.500	0.097	2nd growth or older forest; open water	Contiguous to inland pond
SW-1	Mahoning River 05030103	Large wetland adjacent to Stream 1, inundated up to 8" depth, some reed canary grass present.	PEM	41	2	1.270	0.026	2nd growth or older forest; open water	Adjacent to Stream 1 and Meander Creek Reservoir
SW-3	Mahoning River 05030103	Predominantly seasonally exposed shoreline mudflat area	PEM	34	2	0.046	0.046	Shrubland; open water	Adjacent to Meander Creek Reservoir
B	Mahoning River 05030103	Large wetland just west of bike path, surface inundation. Narrow leafed cattail present.	PEM/PSS	32	2	0.697	0.029	Residential, park	Adjacent to Bikeway Drainage Ditch
SW-A	Mahoning River 05030103	Just west of reservoir, scrub-shrub area inundated to 4" depth. Some buttonbush present.	PSS	41	2	0.114	0.114	2nd growth or older forest; open water	Adjacent to Meander Creek Reservoir
NW-2	Mahoning River 05030103	This larger wetland has some invasive species (reed canary grass) and was inundated to the surface.	PFO	59	2	0.530	0.245	2nd growth or older forests; fenced pasture	Approximately 500' west of Meander Creek Reservoir
SE-9	Mahoning River 05030103	Seasonally exposed western shoreline contiguous to inland pond. Depths of 2", some buttonbush.	PFO	46	2	0.214	0.101	2nd growth or older forest; open water	Contiguous to inland pond
SE-A	Mahoning River 05030103	PFO shoreline wetland, Some buttonbush.	PFO	50	2	0.127	0.084	2nd growth or older forest; open water	Adjacent to Meander Creek Reservoir

404 / 401 TABLE G
Nature of Proposed Activities by Impacted Feature for the Preferred Alternative

A. STREAMS

Site / Feature	Approx. Station Location	Proposed Structure or Action	Existing Channel Disturbed Due to Placement of Proposed Structure, Highway Fill, Channel Change or Channel Protection					Existing Channel Disturbed Due to Temporary Crossing		
			Length of Channel Disturbed (feet)	Excavaton Below OHW		Fill Below OHW		Length of Channel Disturbed	Excavation / Fill Below OHW	
				Volume (cy)	Area (acres)	Volume (cy)	Area (acres)		Volume (cy)	Area (acres)
Stream 1	STA 491+00	The existing culvert will be lengthened by 21' plus the addition of scour protection at culvert outlet	64	N/A	N/A	2.4	0.005	N/A	N/A	N/A
Stream 3	STA 504+65	The existing 54", 438 ' culvert that crosses IR 80 on a diagonal will be abandoned and replaced with a new 66" 480' culvert perpendicular to IR 80 plus the addition of scour protection at culvert outlet	67	N/A	N/A	1.9	0.005	N/A	N/A	N/A
Stream 5	STA 566+20	The existing 36", 317' culvert will be removed and replaced with a new 48", 400' culvert. There will be a minor deviation in the location of the new culvert plus the addition of scour protection at the culvert outlet	138	N/A	N/A	2.6	0.009	N/A	N/A	N/A
Stream 6	STA 580+86	The existing 21", 420' culvert will be removed and replaced with a new 48", 454' culvert. Scour protection will be added at the culvert outlet	52	N/A	N/A	1.3	0.003	N/A	N/A	N/A
Stream 8	STA 597+63	The headwalls will be extended at each end of the existing 42" culvert	30	N/A	N/A	0	0	N/A	N/A	N/A
Stream 9	STA 634+20	The existing 48" culvert will be extended by 8' on the north side with scour protection being added at the culvert outlet.	42	N/A	N/A	0.18	0.002	N/A	N/A	N/A

B. WETLANDS

Wetland ID	Approx. Station Location (see Appendix B)	Description	Total Area Impacted (acres)	Proposed Action	Direct Impacts (within construction limits)			Indirect Impact Area (outside of construction limits)
					Volume Excavated	Volume Filled (CY)	Area (acres)	
D	STA 703+50 LT to STA 705+10 LT	On north side of interchange ramp, *Phragmites* monoculture.	0.049	Addition of Standard Road Fill Material and/or Type A Rock	N/A	104.1	0.049	Temporary minor sedimentation due to adjacent earth disturbing activity

NE-4	STA 556+80 LT to STA 559+40 LT	Shoreline wetland with narrow-leafed cattail, inundated to depths of up to 2 feet.	0.136	Addition of Standard Road Fill Material and/or Type A Rock	N/A	504	0.136	Temporary minor sedimentation due to adjacent earth disturbing activity
NE-6	STA 544+50 RT to STA 545+30 LT	Small shoreline wetland between the bridges.	0.038	Addition of Standard Road Fill Material and/or Type A Rock	N/A	140.8	0.038	Total Take
NE-8	STA 630+30 LT to STA 631+70 LT	On north side of highway just west of the bikepath.	0.030	Addition of Standard Road Fill Material and/or Type A Rock	N/A	63.2	0.030	Temporary minor sedimentation due to adjacent earth disturbing activity
NW-C	STA 517+20 LT to STA 517+50 LT	Small wetland pocket dominated *by Carex scoparia*.	0.019	Addition of Standard Road Fill Material and/or Type A Rock	N/A	40.1	0.019	Total Take
NW-E	STA 500+10 LT to STA 500+40 LT	Small wooded wetland adjacent to Stream 3.	0.008	Addition of Standard Road Fill Material and/or Type A Rock	N/A	16.9	0.008	Total Take
SE-2/3	STA 561+20 RT to STA 561+90 RT	Predominantly narrow-leafed cattail areas, surface inundation.	0.092	Addition of Standard Road Fill Material and/or Type A Rock	N/A	267.4	0.092	Temporary minor sedimentation due to adjacent earth disturbing activity
SW-BB	STA 488+20 RT to STA 489+30 RT	Just south of highway at end of off-ramp, *Phragmites* monoculture.	0.026	Addition of Standard Road Fill Material and/or Type A Rock	N/A	54.8	0.026	Temporary minor sedimentation due to adjacent earth disturbing activity
F	STA 673+70 LT to STA 674+35 LT & STA 676+00 LT to STA 677+05 LT	Large wetland area on north side of highway, *Phragmites* monoculture.	0.032	Addition of Standard Road Fill Material and/or Type A Rock	N/A	67.5	0.032	Temporary minor sedimentation due to adjacent earth disturbing activity
NE-1	STA 579+55 LT to STA 579+70 LT	Small wetland with good vegetation diversity, adjacent to Stream 6, surface inundation.	0.004	Addition of Standard Road Fill Material and/or Type A Rock	N/A	11.6	0.004	Temporary minor sedimentation due to adjacent earth disturbing activity
NE-5	STA 550+95 LT to STA 551+20 LT & STA 552+70 LT to STA 553+10 LT	Shoreline wetland with narrow-leafed cattail, some buttonbush developing, inundation of up to 2 feet.	0.033	Addition of Standard Road Fill Material and/or Type A Rock	N/A	122.3	0.033	Temporary minor sedimentation due to adjacent earth disturbing activity
NE-A	STA 561+00 LT to STA 561+60 LT	Shoreline wetland, inundated to 6" depth.	0.020	Addition of Standard Road Fill Material and/or Type A Rock	N/A	74.1	0.020	Temporary minor sedimentation due to adjacent earth disturbing activity
NE-B	STA 546+40 LT to STA 548+30 LT	Shoreline wetland north of bridge, some buttonbush developing, inundated to up to 2 feet.	0.070	Addition of Standard Road Fill Material and/or Type A Rock	N/A	259.4	0.070	Total Take
NW-A	STA 520+00 LT to STA 521+70 LT	This wetland is along the shore of the reservoir.	0.113	Addition of Standard Road Fill Material and/or Type A Rock	N/A	418.8	0.113	Temporary minor sedimentation due to adjacent earth disturbing activity
NW-F	STA 504+70 LT to STA 505+40 LT	Very small wetland pocket, narrow-leafed cattail present.	0.017	Addition of Standard Road Fill Material and/or Type A Rock	N/A	35.8	0.017	Temporary minor sedimentation due to adjacent earth disturbing activity
SE-1	STA 568+15 RT to STA 568+25 RT	Large wetland area along Stream 5, inundated to 2".	0.005	Addition of Standard Road Fill Material and/or Type A Rock	N/A	10.5	0.005	Temporary minor sedimentation due to adjacent earth disturbing activity

SE-10	STA 543+90 RT to STA 545+10 RT	Seasonally exposed shoreline, depths of 2".	0.035	Addition of Standard Road Fill Material and/or Type A Rock	N/A	101.7	0.035	Total Take
SE-5	STA 550+40 RT to STA 552+00 RT	Stagnant marsh/pool dammed by a service road, depth up to 3'. Trees and shrubs developing.	0.360	Addition of Standard Road Fill Material and/or Type A Rock	N/A	1046.5	0.360	Temporary minor sedimentation due to adjacent earth disturbing activity
SE-8	STA 554+60 RT to STA 556+10 RT	Seasonally exposed eastern shoreline, contiguous to inland pond. Some buttonbush development, good diversity.	0.097	Addition of Standard Road Fill Material and/or Type A Rock	N/A	359.5	0.097	Temporary minor sedimentation due to adjacent earth disturbing activity
SW-1	STA 504+20 RT to STA 504+70 RT	Large wetland adjacent to Stream 1, inundated up to 8" depth, some reed canary grass present.	0.026	Addition of Standard Road Fill Material and/or Type A Rock	N/A	96.4	0.026	Temporary minor sedimentation due to adjacent earth disturbing activity
SW-3	STA 511+20 RT to STA 511+80 RT	Predominantly seasonally exposed shoreline mudflat area.	0.046	Addition of Standard Road Fill Material and/or Type A Rock	N/A	133.7	0.046	Total Take
B	STA 626+50 RT to STA 628+30 RT	Large wetland just west of bikepath, surface inundation. Narrow-leafed cattail present.	0.029	Addition of Standard Road Fill Material and/or Type A Rock	N/A	61.1	0.029	Temporary minor sedimentation due to adjacent earth disturbing activity
SW-A	STA 518+70 RT to STA 519+80 RT	Just west of reservoir, scrub-shrub area inundated to 4" depth. Some buttonbush present.	0.114	Addition of Standard Road Fill Material and/or Type A Rock	N/A	331.4	0.114	Total Take
NW-2	STA 513+90 LT to STA 514+80 LT	This larger wetland has some invasive species (reed canary grass) and was inundated to the surface.	0.245	Addition of Standard Road Fill Material and/or Type A Rock	N/A	516.5	0.245	Temporary minor sedimentation due to adjacent earth disturbing activity
SE-9	STA 552+55 RT to STA 553+10 RT	Seasonally exposed western shoreline contiguous to inland pond. Depths of 2", some buttonbush.	0.101	Addition of Standard Road Fill Material and/or Type A Rock	N/A	374.3	0.101	Temporary minor sedimentation due to adjacent earth disturbing activity
SE-A	STA 547+85 RT to STA 549+40 RT	PFO shoreline wetland, Some buttonbush.	0.084	Addition of Standard Road Fill Material and/or Type A Rock	N/A	311.3	0.084	Temporary minor sedimentation due to adjacent earth disturbing activity

C. WHOLE PROJECT SUMMARY OF ACTIVITIES

Total Project Lineal Stream Disturbances			Total Project Excavation			Total Project Fill		
Total LengthDisturbed Due to Placement of Proposed Structure, Highway Fill, Channel Change or Channel Protection (feet)	Length Disturbed Due to Temporary Crossing (feet)	Net Length Disturbed (feet)	Stream Excavated	Wetland Excavated	Total Excavation	Stream Filled (standard roadfill, channel protection, temporary crossing & other materials)	Wetland Filled	Total Filled
			Volume (cy) / Area (ac)	Volume (cy) / Area (ac)	Volume (cy) / Area (ac)	Volume (cy) / Area (ac)	Volume (cy) / Area (ac)	Volume (cy) / Area (ac)
393	N/A	393	N/A	N/A	N/A	8.36/.023	2,948/1.86	2,956/1.88

404 / 401 TABLE H
Proposed Lowering of Water Quality by the Preferred and Antidegradation Alternatives

Alternative	Expected Impacts by Alternative						
	Direct Steam Impacts (linear feet)	**Aquatic Hab. (HHEI) / Use Designation / Stream Flow**	**Aquatic Biota**	**T & E Species**	**Terrestrial Plant / Animals (Riparian Area)**	**Wetlands**	**Summary of Alternatives**
Preferred Alternative	393	Minor impacts to Class I and II PHWH. No life use designation available. Stream flow varied from ephemeral to perennial.	Fish communities, macroinvertebrate communities, and aquatic plants only present in one stream (Stream 1).	Alternative will require the removal of approx. 200 potential Indiana bat trees.	No impacts to riparian areas anticipated. Project will impact wooded area adjacent to Meander Creek Reservoir.	Impacts to 1.86 acres of wetlands.	Impacts to 26 wetlands and 6 streams. The Preferred Alternative will also require that fill material be added to Meander Creek Reservoir.
Minimal Degradation Alternative	393	Minor impacts to Class I and II PHWH. No life use designation available. Stream flow varied from ephemeral to perennial.	Fish communities, macroinvertebrate communities, and aquatic plants only present in one stream (Stream 1).	Alternative will require the removal of approx. 200 potential Indiana bat trees.	No impacts to riparian areas anticipated. Project will impact wooded area adjacent to Meander Creek Reservoir.	Impacts to 1.83 acres of wetlands.	Impacts to 23 wetlands and 6 streams. The MDA will also require that fill material be added to Meander Creek Reservoir. The MDA requires the use of MSE walls to reduce wetland impacts.
Non-Degradation Alternative	N/A	N/A	N/A	N/A	N/A	N/A	N/A

404 / 401 TABLE I
Proposed Stream Mitigation for the Preferred Alternative and Antidegradation Alternatives

Stream Name	Impacted Length (linear feet)	Type of Mitigation	Watershed (8 Digit HUC)		QHEI Score	HHEI Score	Mitigated Length	
			Impacted	Mitigated			On-site	Off-site
Perferred Alternative	393	To be completed upon selection of mitigation alternative						
Minimal Degradation Alternative	393							
Non-Degradation Alternative	0	N.A	N/A	N/A	N/A	N/A	0	0

404 / 401 TABLE J
Proposed Wetland Mitigation for the Preferred Alternative and Antidegradation Alternatives

Wetland ID Number	Impacted Area (acres)	Type of Wetland (Isolated/Non-isolated)	Watershed (8 Digit HUC)		ORAM v5.0 Score	OEPA Category	Mitigation Area	
			Impacted	Mitigated			On-site	Off-site
Perferred Alternative								
D	0.049	Non-isolated	Mahoning River 05030103	Mahoning River 05030103	19	1	Mitigation Areas to be Determined	
NE-4	0.136	Non-isolated	Mahoning River 05030103	Mahoning River 05030103	26	1		
NE-6	0.038	Non-isolated	Mahoning River 05030103	Mahoning River 05030103	28	1		
NE-8	0.030	Non-isolated	Mahoning River 05030103	Mahoning River 05030103	23	1		
NW-C	0.019	Non-isolated	Mahoning River 05030103	Mahoning River 05030103	26	1		
NW-E	0.008	Non-isolated	Mahoning River 05030103	Mahoning River 05030103	20	1		
SE-2/3	0.092	Non-isolated	Mahoning River 05030103	Mahoning River 05030103	27	1		
SW-BB	0.026	Non-isolated	Mahoning River 05030103	Mahoning River 05030103	21	1		
F	0.032	Non-isolated	Mahoning River 05030103	Mahoning River 05030103	35	2		
NE-1	0.004	Non-isolated	Mahoning River 05030103	Mahoning River 05030103	45	2		
NE-5	0.033	Non-isolated	Mahoning River 05030103	Mahoning River 05030103	35	2		
NE-A	0.020	Non-isolated	Mahoning River 05030103	Mahoning River 05030103	37	2		
NE-B	0.070	Non-isolated	Mahoning River 05030103	Mahoning River 05030103	32	2		
NW-A	0.113	Non-isolated	Mahoning River 05030103	Mahoning River 05030103	30	2		
NW-F	0.017	Non-isolated	Mahoning River 05030103	Mahoning River 05030103	33	2		
SE-1	0.005	Non-isolated	Mahoning River 05030103	Mahoning River 05030103	39	2		
SE-10	0.035	Non-isolated	Mahoning River 05030103	Mahoning River 05030103	32	2		
SE-5	0.360	Non-isolated	Mahoning River 05030103	Mahoning River 05030103	46	2		
SE-8	0.097	Non-isolated	Mahoning River 05030103	Mahoning River 05030103	48	2		

SW-1	0.026	Non-isolated	Mahoning River 05030103	Mahoning River 05030103	41	2	
SW-3	0.046	Non-isolated	Mahoning River 05030103	Mahoning River 05030103	34	2	
B	0.029	Non-isolated	Mahoning River 05030103	Mahoning River 05030103	32	2	
SW-A	0.114	Non-isolated	Mahoning River 05030103	Mahoning River 05030103	41	2	
NW-2	0.245	Non-isolated	Mahoning River 05030103	Mahoning River 05030103	59	2	
SE-9	0.101	Non-isolated	Mahoning River 05030103	Mahoning River 05030103	46	2	
SE-A	0.084	Non-isolated	Mahoning River 05030103	Mahoning River 05030103	50	2	
Minimal Degradation Alternative							
D	0.049	Non-isolated	Mahoning River 05030103	Mahoning River 05030103	19	1	
NE-4	0.136	Non-isolated	Mahoning River 05030103	Mahoning River 05030103	26	1	
NE-6	0.038	Non-isolated	Mahoning River 05030103	Mahoning River 05030103	28	1	
NW-E	0.008	Non-isolated	Mahoning River 05030103	Mahoning River 05030103	20	1	
SE-2/3	0.092	Non-isolated	Mahoning River 05030103	Mahoning River 05030103	27	1	
F	0.032	Non-isolated	Mahoning River 05030103	Mahoning River 05030103	35	2	
NE-1	0.004	Non-isolated	Mahoning River 05030103	Mahoning River 05030103	45	2	
NE-A	0.020	Non-isolated	Mahoning River 05030103	Mahoning River 05030103	37	2	
NE-B	0.070	Non-isolated	Mahoning River 05030103	Mahoning River 05030103	32	2	
NW-A	0.113	Non-isolated	Mahoning River 05030103	Mahoning River 05030103	30	2	
NW-F	0.017	Non-isolated	Mahoning River 05030103	Mahoning River 05030103	33	2	**Mitigation Areas to be Determined**
SE-1	0.005	Non-isolated	Mahoning River 05030103	Mahoning River 05030103	39	2	
SE-10	0.035	Non-isolated	Mahoning River 05030103	Mahoning River 05030103	32	2	
SE-5	0.360	Non-isolated	Mahoning River 05030103	Mahoning River 05030103	46	2	
SE-8	0.097	Non-isolated	Mahoning River 05030103	Mahoning River 05030103	48	2	
SW-1	0.026	Non-isolated	Mahoning River 05030103	Mahoning River 05030103	41	2	
SW-3	0.046	Non-isolated	Mahoning River 05030103	Mahoning River 05030103	34	2	

B	0.029	Non-isolated	Mahoning River 05030103	Mahoning River 05030103	32	2		
SW-A	0.114	Non-isolated	Mahoning River 05030103	Mahoning River 05030103	41	2		
NW-2	0.245	Non-isolated	Mahoning River 05030103	Mahoning River 05030103	59	2		
SE-9	0.101	Non-isolated	Mahoning River 05030103	Mahoning River 05030103	46	2		
SE-A	0.084	Non-isolated	Mahoning River 05030103	Mahoning River 05030103	50	2		
Non-Degradation Alternative								
	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

404/401 Table K
Impacts and Avoidance Estimations

Resource	Feet Impacted (Alt)	Total Resource (ac/ft)	Volume of Fill (CY)	% Avoided
		STREAMS		
Stream 1	64	Unknown	2.4	Unknown
Stream 3	67	Unknown	1.9	Unknown
Stream 5	138	Unknown	2.6	Unknown
Stream 6	52	Unknown	1.3	Unknown
Stream 8	30	Unknown	0	Unknown
Stream 9	42	Unknown	0.18	Unknown

Resource	Acres Impacted (Alt)	Total Resource (ac/ft)	Volume of Fill (CY)	% Avoided
		WETLANDS		
D	0.049	0.197	79.6	74.9%
NE-4	0.136	0.149	219.1	8.7%
NE-6	0.038	0.038	61.2	0.0%
NE-8	0.030	0.080	48.3	62.5%
NW-C	0.019	0.019	30.6	0.0%
NW-E	0.008	0.008	12.9	0.0%
SE-2/3	0.092	0.248	148.2	62.9%
SW-BB	0.026	0.266	41.9	90.2%
F	0.032	1.043	51.6	96.9%
NE-1	0.004	0.143	6.4	97.2%
NE-5	0.033	0.300	53.2	89.0%
NE-A	0.020	0.040	32.2	49.4%
NE-B	0.070	0.070	112.8	0.0%
NW-A	0.113	0.119	182.1	5.0%
NW-F	0.017	0.067	27.4	74.6%
SE-1	0.005	0.628	8.1	99.2%
SE-10	0.035	0.035	56.4	0.0%
SE-5	0.360	0.417	580.0	13.7%
SE-8	0.097	0.500	156.3	80.6%
SW-1	0.026	1.270	41.9	98.0%
SW-3	0.046	0.046	74.1	0.0%
B	0.029	0.697	46.7	95.8%
SW-A	0.114	0.114	183.7	0.0%
NW-2	0.245	0.530	394.8	53.8%
SE-9	0.101	0.214	162.7	52.8%
SE-A	0.084	0.127	135.3	33.9%

404/401 Table L
MAH-80-0.97 Minimal Degradation Alternative Construction Techniques

Wetland ID	Wetland Type	ORAM Category	Location	Wetland Size (ac)	Arces Impacted (ac)	Impact Minimization Technique	Avg. Height* (ft)	Length (ft)	Wall Dimentions (sq. ft)	Estimated Cost ($45 per sq. ft.)	Elimination of Impacts? (Y or N)
SW-BB	PEM	1	STA 488+20 RT to STA 489+30 RT	0.266	0.026	MSE Wall	8	110	880	$39,600	Y
NW-E	PEM	1	STA 500+10 LT to STA 500+40 LT	0.008	0.008	MSE Wall	10	30	300	$13,500	N
SW-1	PEM	2	STA 504+20 RT to STA 504+70 RT	1.270	0.026	MSE Wall	11	50	550	$24,750	N
NW-F	PEM	2	STA 504+70 LT to STA 505+40 LT	0.067	0.017	Impacted as part of drainage and/or culvert design					
SW-3	PEM	2	STA 511+20 RT to STA 511+80 RT	0.046	0.046	Located under proposed roadway					
NW-2	PFO	2	STA 513+90 LT to STA 514+80 LT	0.530	0.245	Located within proposed Spill Containment basin					
NW-C	PEM	1	STA 517+20 LT to STA 517+50 LT	0.019	0.019	Located within proposed Spill Containment basin					
SW-A	PSS	2	STA 518+70 RT to STA 519+80 RT	0.114	0.114	Located under proposed roadway					
NW-A	PEM	2	STA 520+00 LT to STA 521+70 LT	0.119	0.113	Located under proposed roadway					
SE-10	PEM	2	STA 543+90 RT to STA 545+10 RT	0.035	0.035	Located under proposed roadway					
NE-6	PEM	1	STA 544+50 RT to STA 545+30 LT	0.038	0.038	Located under proposed roadway					
NE-B	PEM	2	STA 546+40 LT to STA 548+30 LT	0.070	0.070	Located withing Meander Creek Reservoir					
SE-A	PFO	2	STA 547+85 RT to STA 549+40 RT	0.127	0.084	Located withing Meander Creek Reservoir					
SE-5	PEM	2	STA 550+40 RT to STA 552+00 RT	0.417	0.360	MSE Wall	14	60	840	$37,800	N
NE-5	PEM	2	STA 550+95 LT to STA 551+20 LT	0.033	0.033	MSE Wall	16	35	560	$25,200	Y
			STA 552+70 LT to STA 553+10 LT			MSE Wall	16	40	640	$28,800	N
SE-9	PFO	2	STA 552+55 RT to STA 553+10 RT	0.214	0.101	MSE Wall	16	55	880	$39,600	N
SE-8	PEM	2	STA 554+60 RT to STA 556+10 RT	0.500	0.097	MSE Wall	14	150	2,100	$94,500	N
NE-4	PEM	1	STA 556+80 LT to STA 559+40 LT	0.149	0.136	MSE Wall	12	260	3,120	$140,400	N
NE-A	PEM	2	STA 561+00 LT to STA 561+60 LT	0.040	0.020	MSE Wall	16	60	960	$43,200	N
SE-2/3	PEM	1	STA 561+20 RT to STA 561+90 RT	0.248	0.092	Impacted as part of drainage and/or culvert design					
SE-1	PEM	2	STA 568+15 RT to STA 568+25 RT	0.628	0.005	Impacted as part of drainage and/or culvert design					
NE-1	PEM	2	STA 579+55 LT to STA 579+70 LT	0.143	0.004	Impacted as part of drainage and/or culvert design					
B	PEM/PSS	2	STA 626+50 RT to STA 628+30 RT	0.697	0.029	Impacted as part of drainage and/or culvert design					
NE-8	PEM	1	STA 630+30 LT to STA 631+70 LT	0.080	0.030	MSE Wall	12	140	1,680	$75,600	Y
F	PEM	1	STA 673+70 LT to STA 674+35 LT	1.043	0.032	Impacted as part of required Safety and Clear Zone grading					
			STA 676+00 LT to STA 677+05 LT								
D	PEM	1	STA 703+50 LT to STA 705+10 LT	0.197	0.049	Impacted as part of drainage and/or culvert design					

* Height included 4 feet of wall subsurface

404/401 Table M
Project Cost Analysis

Preferred Design

Category	Cost Subtotal
Roadway	$9,145,144
Erosion Control	$5,329,648
Drainage	$2,315,662
Pavement	$12,075,644
Water Work	$37,500
Lighting	$52,475
Traffic Control	$423,617
Traffic Signals	$25,908
Bridge No. MAH-80-0076 L/R Over Lipkey Road	$1,820,352
Bridge No. MAH-80-0123 L/R Over Meander Creek Reservoir	$30,200,049
Bridge No. MAH-80-0245 L/R Over Turner Road	$1,715,783
Bridge No. MAH-80-0313 L/R Over Ohltown Road	$1,554,751
Bridge No. MAH-80-0332 L/R Over Metroparks Bikeway (culvert)	$1,390,117
Maintenance of Traffic	$3,743,476
Incidentals	$2,212,200
TOTAL	**$72,042,326**

Minimal Degradation Alternative

Category	Cost Subtotal
Roadway	$9,145,144
Erosion Control	$5,329,648
Drainage	$2,315,662
Pavement	$12,075,644
Water Work	$37,500
Lighting	$52,475
Traffic Control	$423,617
Traffic Signals	$25,908
Bridge No. MAH-80-0076 L/R Over Lipkey Road	$1,820,352
Bridge No. MAH-80-0123 L/R Over Meander Creek Reservoir	$30,200,049
Bridge No. MAH-80-0245 L/R Over Turner Road	$1,715,783
Bridge No. MAH-80-0313 L/R Over Ohltown Road	$1,554,751
Bridge No. MAH-80-0332 L/R Over Metroparks Bikeway (culvert)	$1,390,117
Maintenance of Traffic	$3,743,476
MSE Walls	$560,000
Incidentals	$2,212,200
TOTAL	**$72,602,326**

404/401 Table N
Erosion Control Cost Summary

Item	Quantity	Unit	Unit Cost	Total
Rip Rap	52	Sq Yd	$85.00	$4,420
Rip Rap using 6" Reinforced Concrete Slab	59	Sq Yd	$80.00	$4,720
Dumped Rock Fill, Type A	52,251	Cu Yd	$60.00	$3,135,060
Dumped Rock Fill, Type C	18,317	Cu Yd	$36.00	$659,412
Rock Channel Protection, Type A with Filter	613	Cu Yd	$49.00	$30,037
Rock Channel Protection, Type A with Fabirc Filter	6,961	Cu Yd	$60.00	$417,660
Rock Channel Protection, Type B with Filter	68	Cu Yd	$55.00	$3,740
Rock Channel Protection, Type C with Filter	707	Cu Yd	$55.00	$38,885
Soil Analysis Test	7	Each	$95.00	$665
Topsoil	68,230	Cu Yd	$7.00	$477,610
Seeding and Mulching	598,010	Sq Yd	$0.42	$251,164
Seeding and Mulching, As Per Plan	16,670	Sq Yd	$0.60	$10,002
Repair Seeding and Mulching	30,734	Sq Yd	$0.26	$7,991
Inter-Seeding	30,734	Sq Yd	$0.18	$5,532
Commercial Fertilizer	86	Ton	$330.00	$28,380
Lime	127	Acre	$80.00	$10,160
Water	3,403	M Gal	$3.50	$11,911
Mowing	1,383	M Sq Ft	$1.50	$2,075
Sodding Reinforced	569	Sq Yd	$13.00	$7,397
Ditch Erosion Protection	23,922	Sq Yd	$1.70	$40,667
Storm Water Pollution Prevention Plan	1	Each	$10,000.00	$10,000
Erosion Control *	170,000	Each	$1.00	$170,000
Seeding and Erosion Control with Turf Reinforcing Mat, Type 2	288	Sq Yd	$7.50	$2,160
TOTAL				**$5,329,648**

* Erosion Control estimate is based on a dollar amount assigned by ODOT District 4 as part of the Stage 3 plan review process. Per ODOT Supplemental Specification 832, the Contactor will responsible for preparing and receiving approval of the project Storm Water Pollution Prevention Plan.

Section 404 Department of Army Permit and Section 401 Water Quality Certification

APPENDIX B

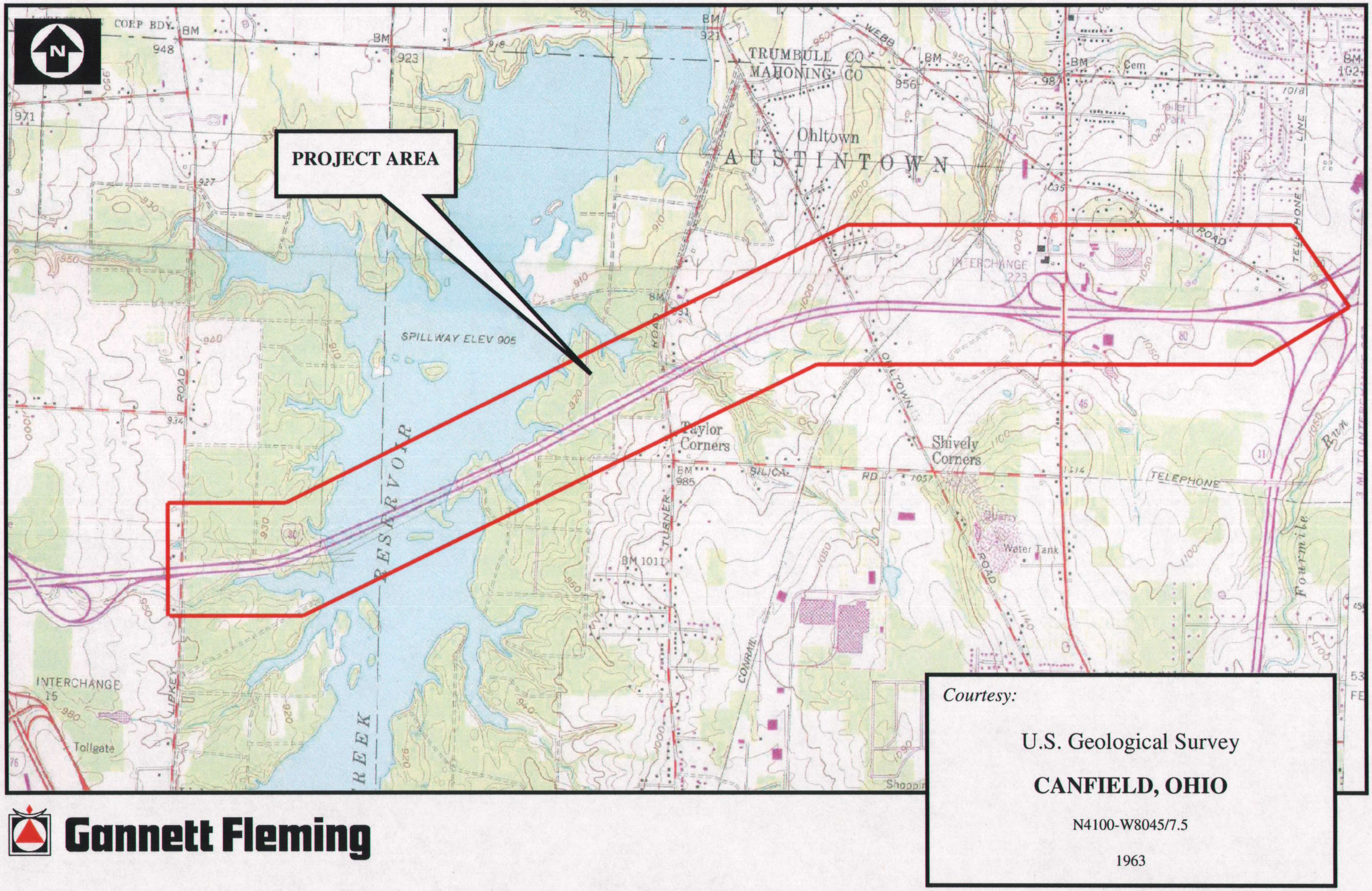
Mapping and Plan Sheets

Project Area Topographic Map
Figure 1 – Project Location Map
Figure 2 – Traffic AADT Map
Project Site Plan Sheets
Culvert Detail Sheets
Impact Area Cross Sections

MAPPING

MAH-80-0.97

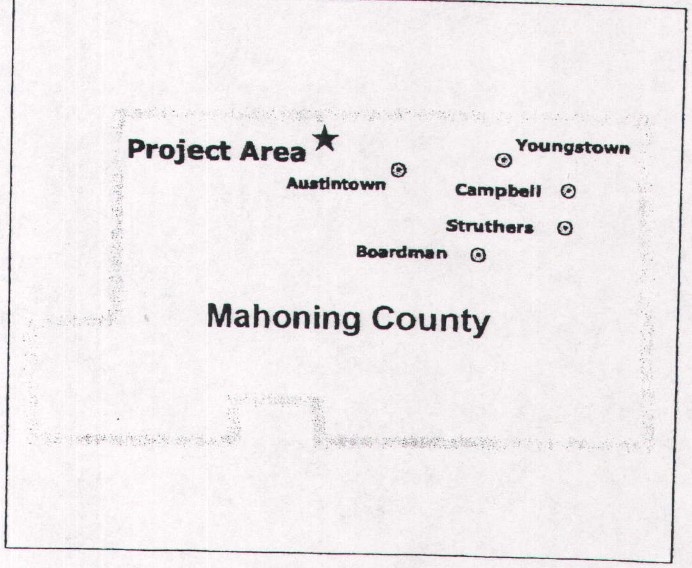
Project Area Topographic Map

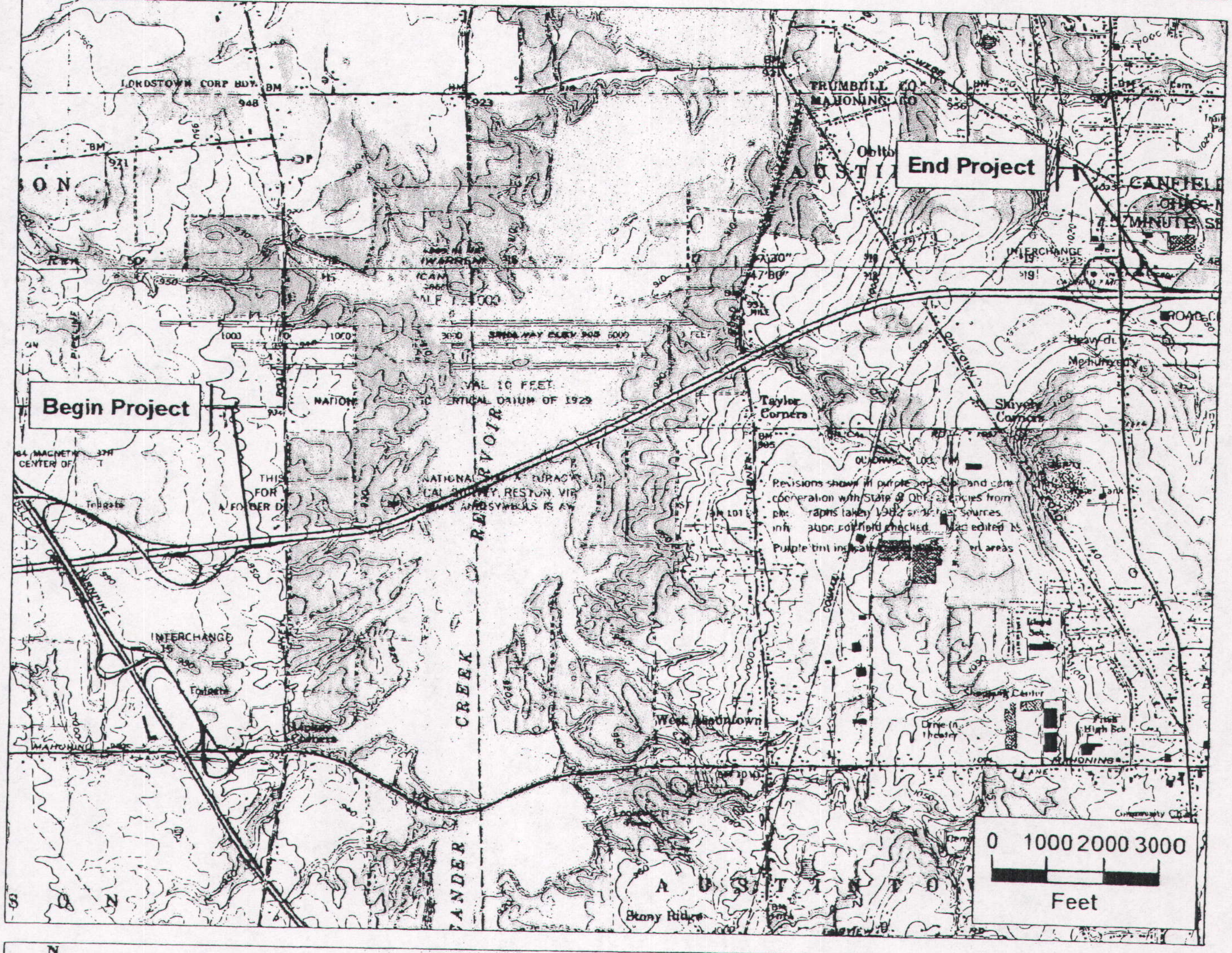


Gannett Fleming

Project Location Map

Figure 1

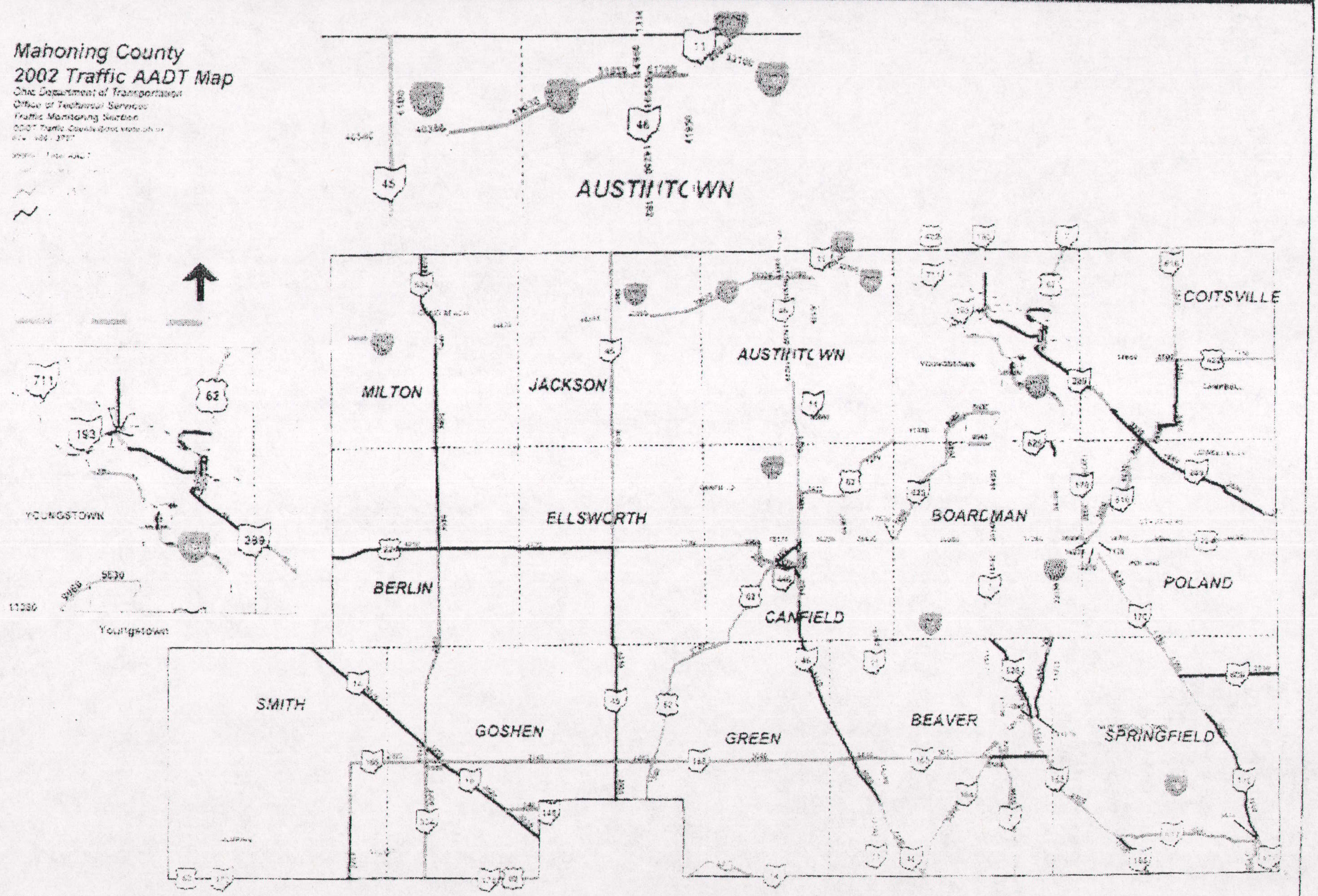




MAH-80-0.46

Traffic AADT

Figure 2



MAH-80-0.97

PROJECT SITE PLAN SHEETS

PROJECT DESCRIPTION

RECONSTRUCTION AND WIDENING OF 4.55 MILES OF IR 80. INCLUDING PARTIAL RECONSTRUCTION OF SEVEN INTERCHANGE RAMPS, THE REHABILITATION OF SIX BRIDGES, THE REPLACEMENT OF THE MEANDER CREEK RESERVOIR BRIDGES, AND THE CONSTRUCTION OF A 20' X 14' 3-SIDED CULVER TO REPLACE EXISTING BRIDGES.

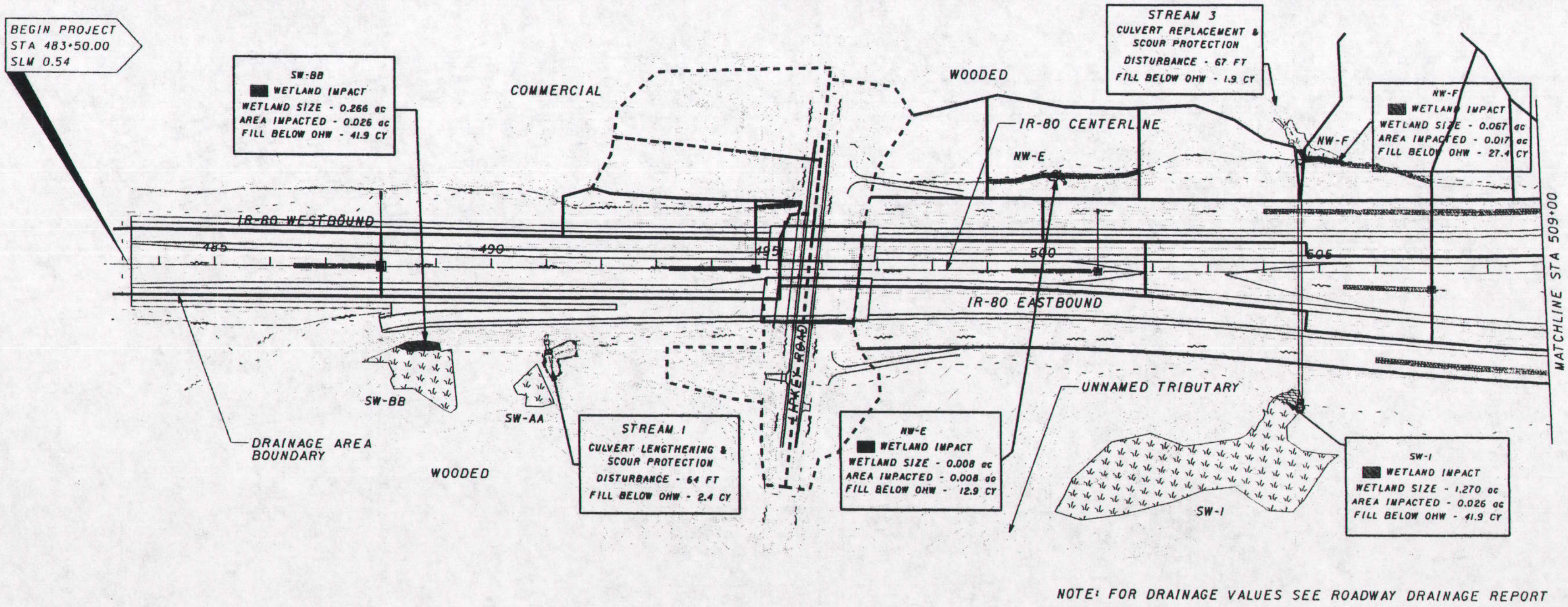
USGS QUADRANT(S)

CANFIELD, OHIO
GIRARD, OHIO
WARREN, OHIO
YOUNGSTOWN, OHIO

LATITUDE: N 41° 07' 05"
LONGITUDE: W 80° 47' 35"
LATITUDE AND LONGITUDE TO APPROXIMATE MIDDLE OF PROJECT

WETLANDS
ROCK CHANNEL PROTECTION
DITCH EROSION PROTECTION
TURF REINFORCING MAT, TYPE I

PROJECT DATA	
TOTAL AREA (RIGHT-OF-WAY)	190 ACRES
PROJECT EARTH DISTURBED AREA	162 ACRES
ESTIMATED CONTRACTOR EARTH DISTURBED AREA	188 ACRES
NOTICE OF INTENT EARTH DISTURBED AREA	197.4 ACRES
RUNOFF COEFFICIENT FOR PRE-CONSTRUCTION SITE	0.58
RUNOFF COEFFICIENT FOR POST-CONSTRUCTION SITE	0.63
IMPERVIOUS AREA FOR PRE-CONSTRUCTION	38 ACRES
IMPERVIOUS AREA FOR POST-CONSTRUCTION	63 ACRES
SOIL DATA	SOIL SURVEY OF MAHONING COUNTY, SHEETS 4 - 6
IMMEDIATE RECEIVING WATERS	MEANDER CR. RESERVOIR & UNNAMED TRIBS.
SUBSEQUENT RECEIVING WATERS (WITHIN 200' OF ROW)	NONE
RECEIVING WATERS UNDER TOTAL MAXIMUM DAILY LOAD (TMDL) REGULATIONS	NONE



NOTE: FOR DRAINAGE VALUES SEE ROADWAY DRAINAGE REPORT

CALCULATED MAK	CHECKED TLW

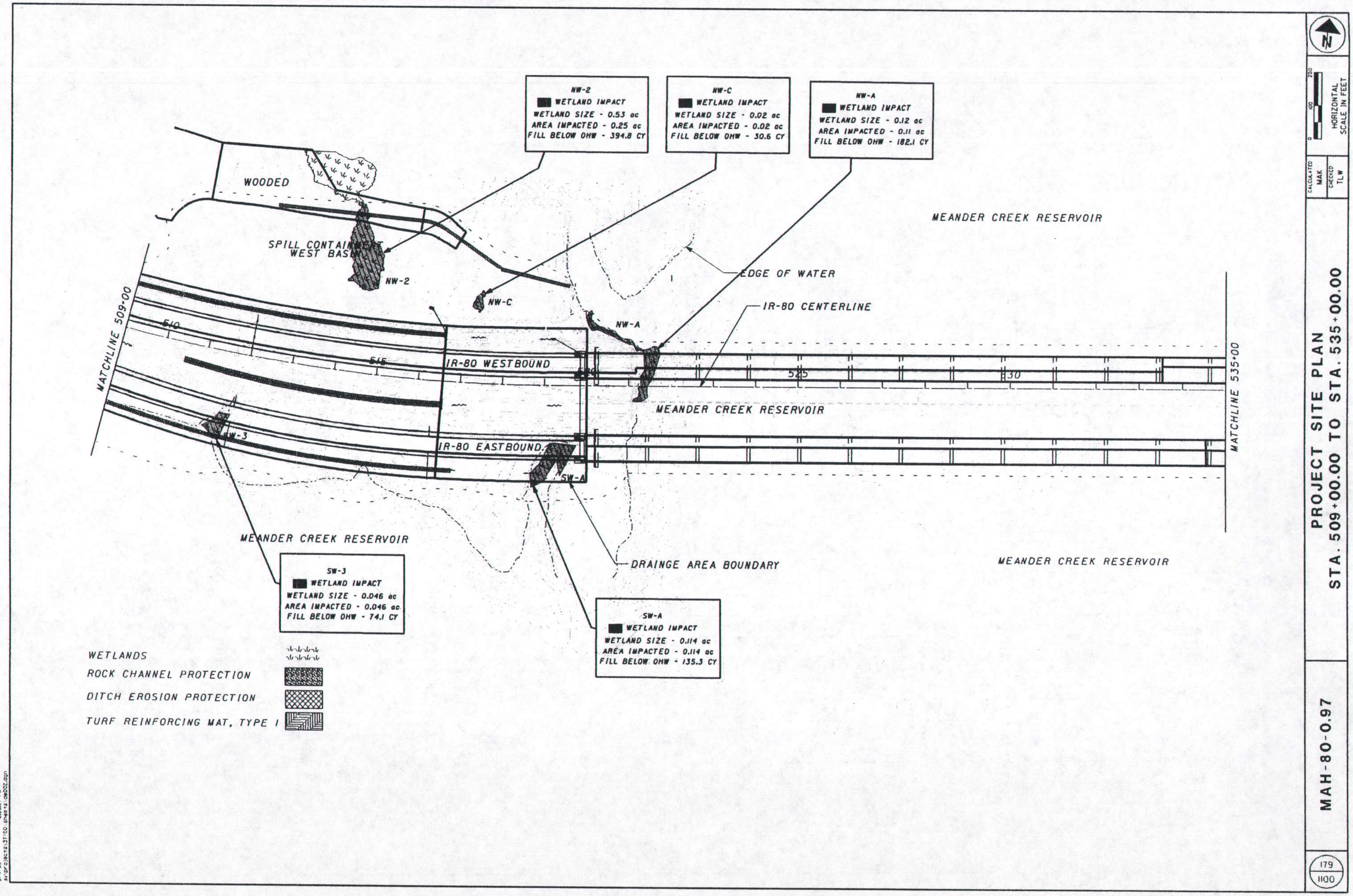
HORIZONTAL SCALE IN FEET (0, 100, 200)

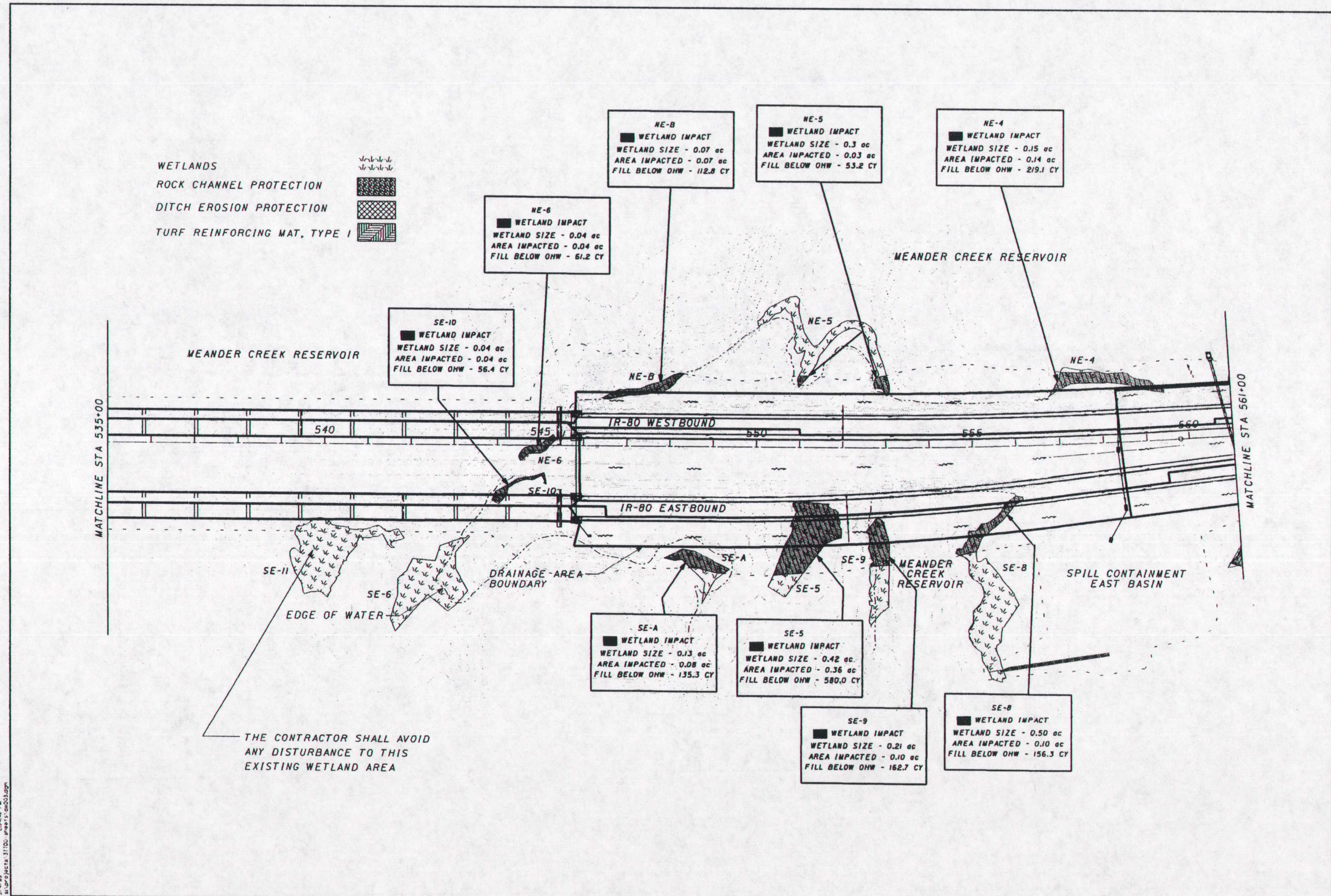
PROJECT SITE PLAN
STA. 483+50.00 TO STA 509+00.00

MAH-80-0.97

178 / 1100

5/4/05 2:52:48 PM


NW-2
WETLAND IMPACT
WETLAND SIZE - 0.53 ac
AREA IMPACTED - 0.25 ac
FILL BELOW OHW - 394.8 CY
NW-C
WETLAND IMPACT
WETLAND SIZE - 0.02 ac
AREA IMPACTED - 0.02 ac
FILL BELOW OHW - 30.6 CY
NW-A
WETLAND IMPACT
WETLAND SIZE - 0.12 ac
AREA IMPACTED - 0.11 ac
FILL BELOW OHW - 182.1 CY
WOODED
SPILL CONTAINMENT
WEST BASIN
NW-2
NW-C
NW-A
EDGE OF WATER
IR-80 CENTERLINE
MEANDER CREEK RESERVOIR
MATCHLINE 509+00
510
515
525
530
IR-80 WESTBOUND
IR-80 EASTBOUND
SW-3
SW-A
MATCHLINE 535+00
MEANDER CREEK RESERVOIR
MEANDER CREEK RESERVOIR
DRAINGE AREA BOUNDARY
MEANDER CREEK RESERVOIR
SW-3
WETLAND IMPACT
WETLAND SIZE - 0.046 ac
AREA IMPACTED - 0.046 ac
FILL BELOW OHW - 74.1 CY
SW-A
WETLAND IMPACT
WETLAND SIZE - 0.114 ac
AREA IMPACTED - 0.114 ac
FILL BELOW OHW - 135.3 CY
WETLANDS
ROCK CHANNEL PROTECTION
DITCH EROSION PROTECTION
TURF REINFORCING MAT, TYPE I
N
0 100 200
HORIZONTAL
SCALE IN FEET
CALCULATED MAK
CHECKED TLW
PROJECT SITE PLAN
STA. 509+00.00 TO STA. 535+00.00
MAH-80-0.97
179
1100



N

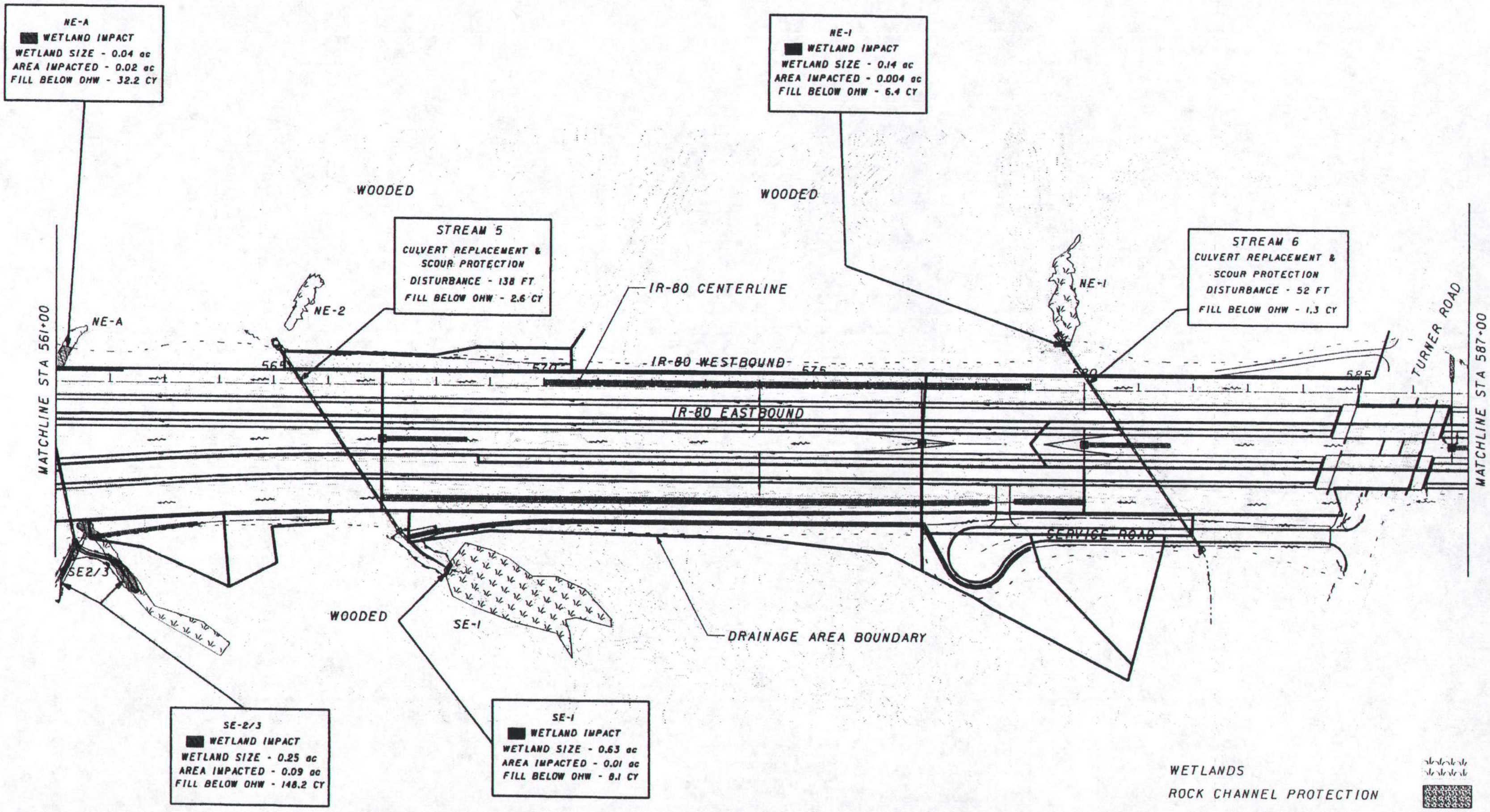
0 100 200
HORIZONTAL
SCALE IN FEET

CALCULATED MAK
CHECKED TLW

PROJECT SITE PLAN
STA. 535+00.00 TO STA. 561+00.00

MAH-80-0.97

180
1100



N

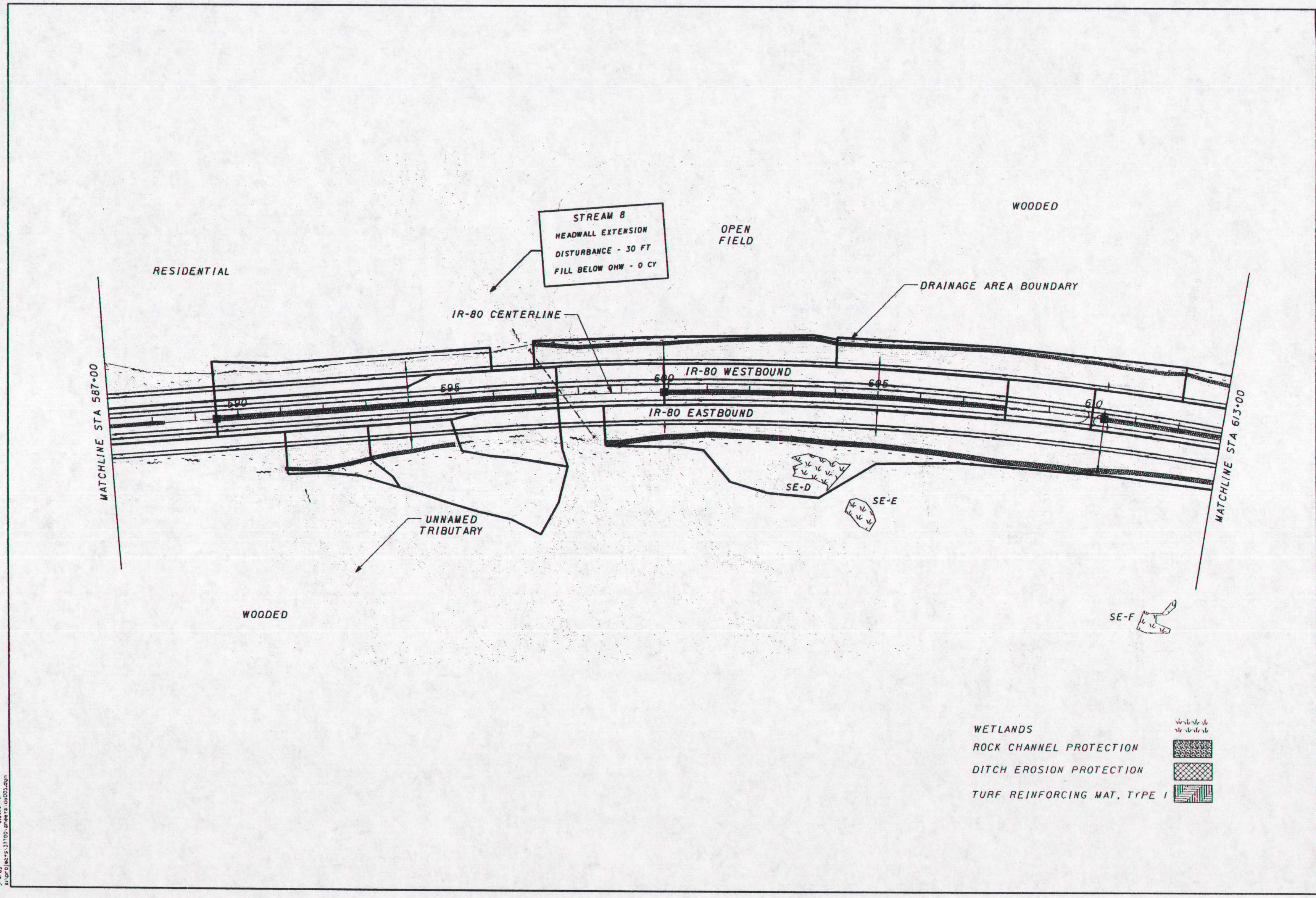
0 100 200
HORIZONTAL SCALE IN FEET

CALCULATED MAK
CHECKED TLW

PROJECT SITE PLAN
STA. 561+00.00 TO STA. 587+00.00

MAH-80-0.97

181
1100



HORIZONTAL SCALE IN FEET
0 100 200

CALCULATED MAK
CHECKED TLW

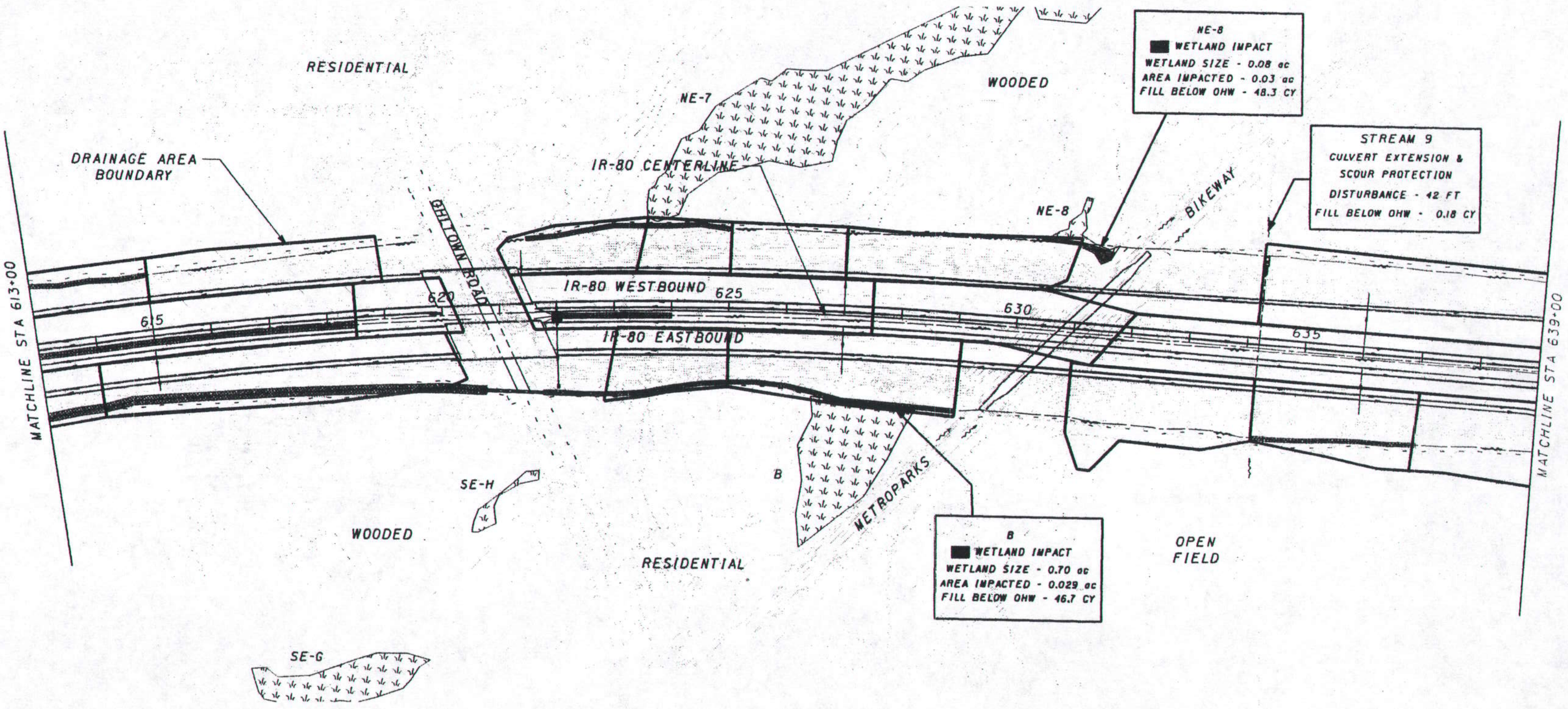
PROJECT SITE PLAN
STA. 587+00.00 TO STA. 613+00.00

MAH-80-0.97

182
1100

PROJECT SITE PLAN
STA. 613+00.00 TO STA. 639+00.00

MAH-80-0.97



WETLANDS

ROCK CHANNEL PROTECTION

DITCH EROSION PROTECTION

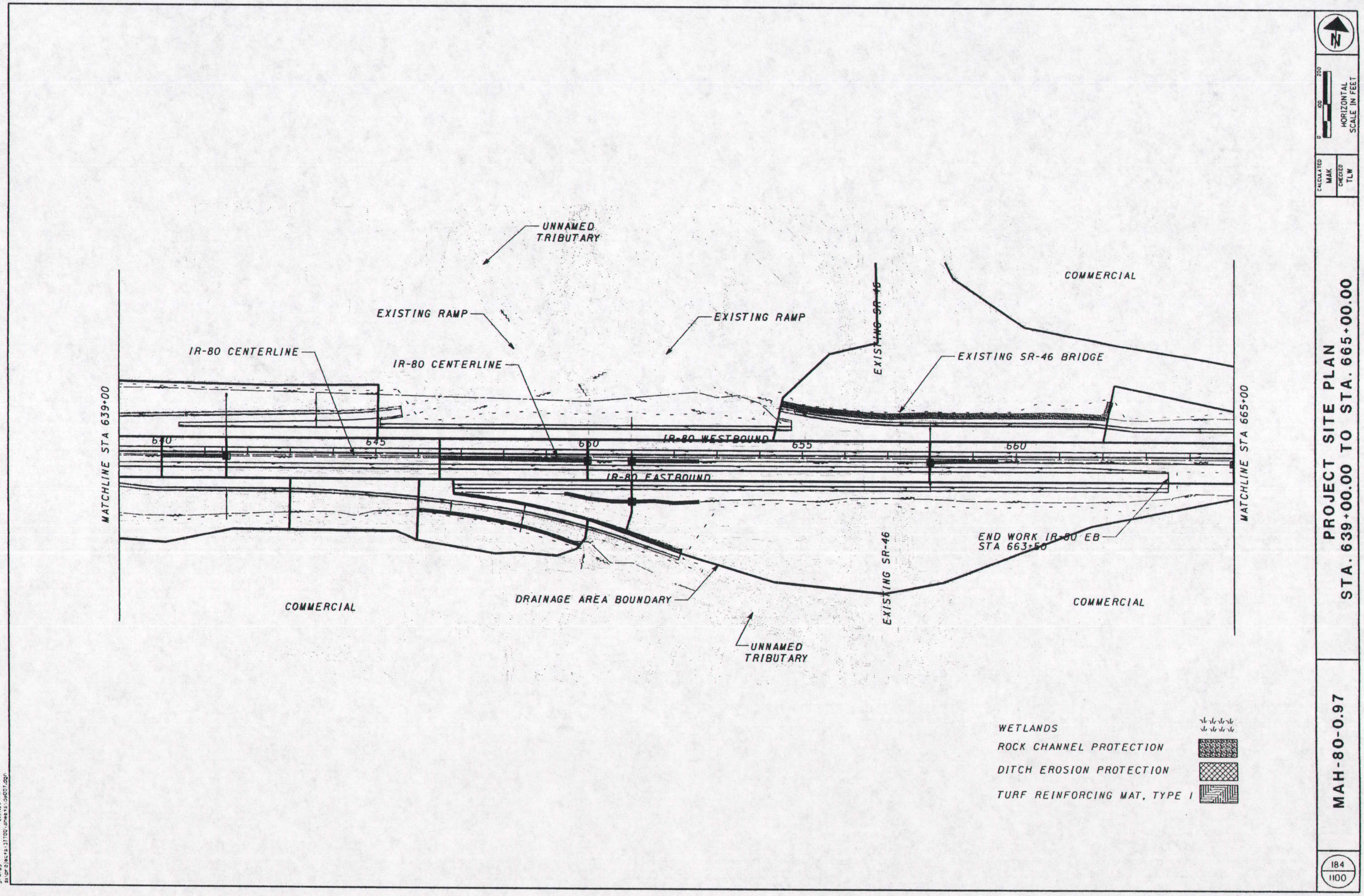
TURF REINFORCING MAT, TYPE I

HORIZONTAL SCALE IN FEET: 0 100 200

CALCULATED MAK

CHECKED TLW

183 / 1100



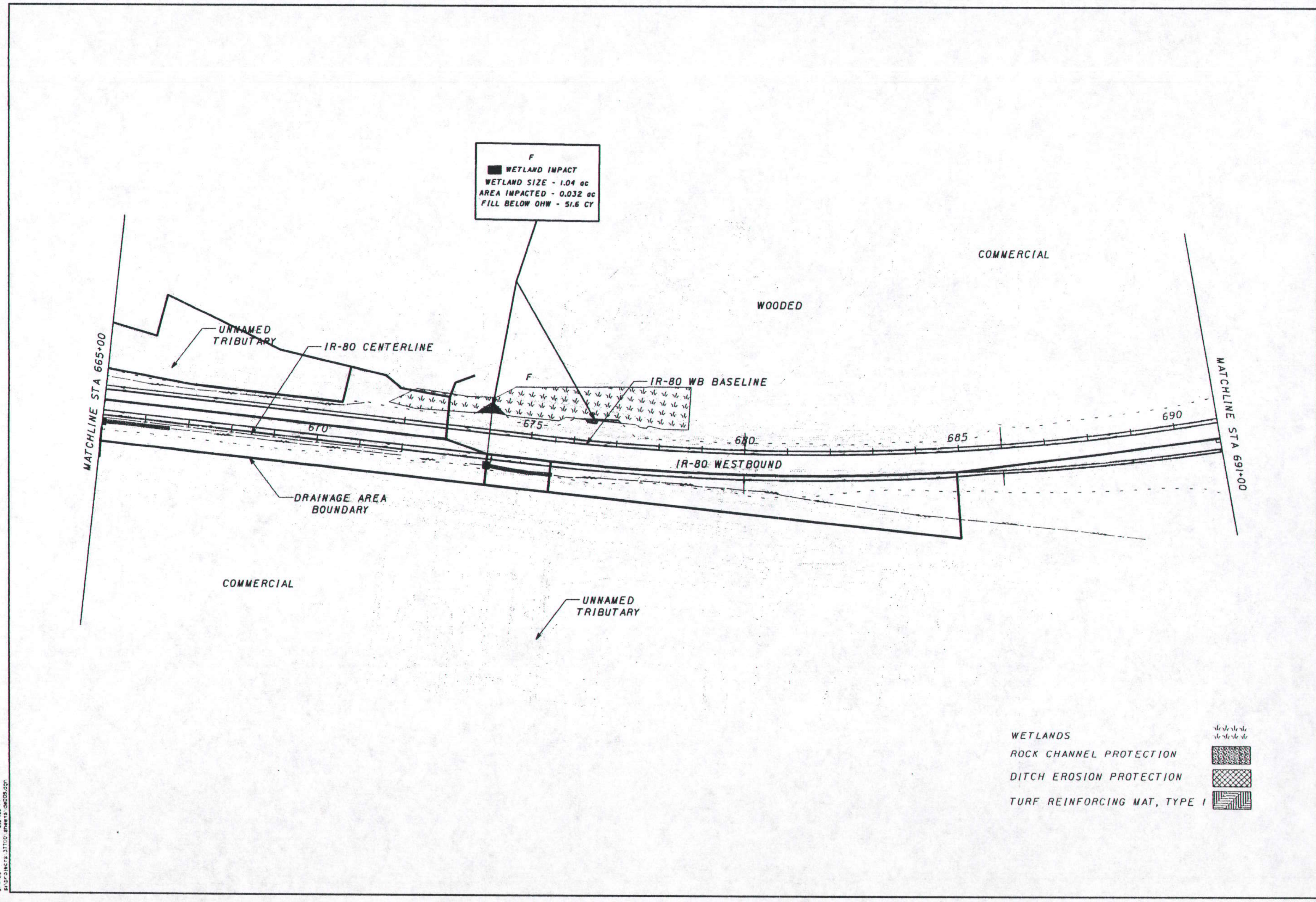
PROJECT SITE PLAN
STA. 639+00.00 TO STA. 665+00.00
MAH-80-0.97
184
1100
CALCULATED MAK
CHECKED TLW
HORIZONTAL SCALE IN FEET
0
100
200
MATCHLINE STA 639+00
MATCHLINE STA 665+00
UNNAMED TRIBUTARY
EXISTING RAMP
EXISTING RAMP
IR-80 CENTERLINE
IR-80 CENTERLINE
EXISTING SR-46
EXISTING SR-46 BRIDGE
COMMERCIAL
IR-80 WESTBOUND
IR-80 EASTBOUND
640
645
650
655
660
END WORK IR-80 EB
STA 663+50
DRAINAGE AREA BOUNDARY
EXISTING SR-46
COMMERCIAL
COMMERCIAL
UNNAMED TRIBUTARY
WETLANDS
ROCK CHANNEL PROTECTION
DITCH EROSION PROTECTION
TURF REINFORCING MAT, TYPE I

PROJECT SITE PLAN
STA. 665+00.00 TO STA. 691+00.00

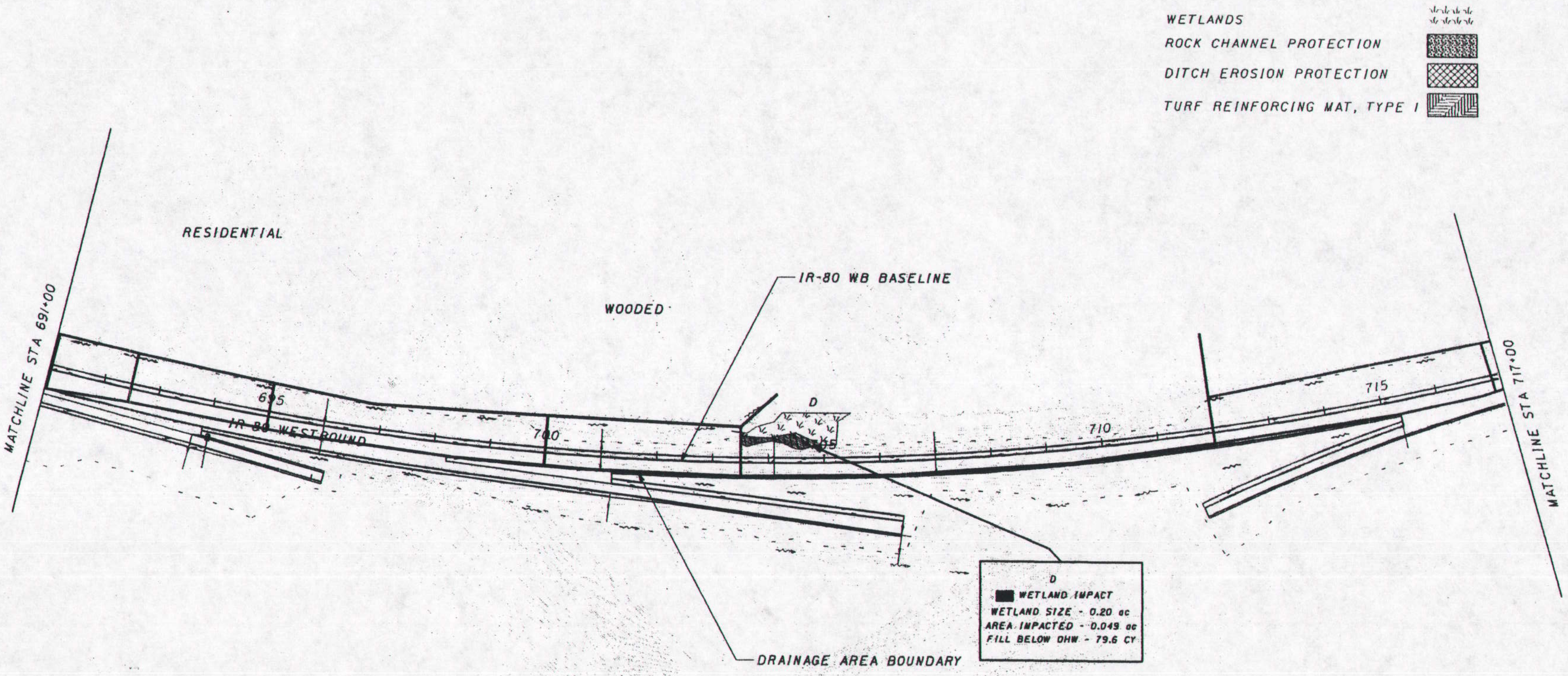
MAH-80-0.97

CALCULATED MAK | CHECKED TLW

HORIZONTAL SCALE IN FEET 0 100 200



185/1100



HORIZONTAL SCALE IN FEET

0 100 200

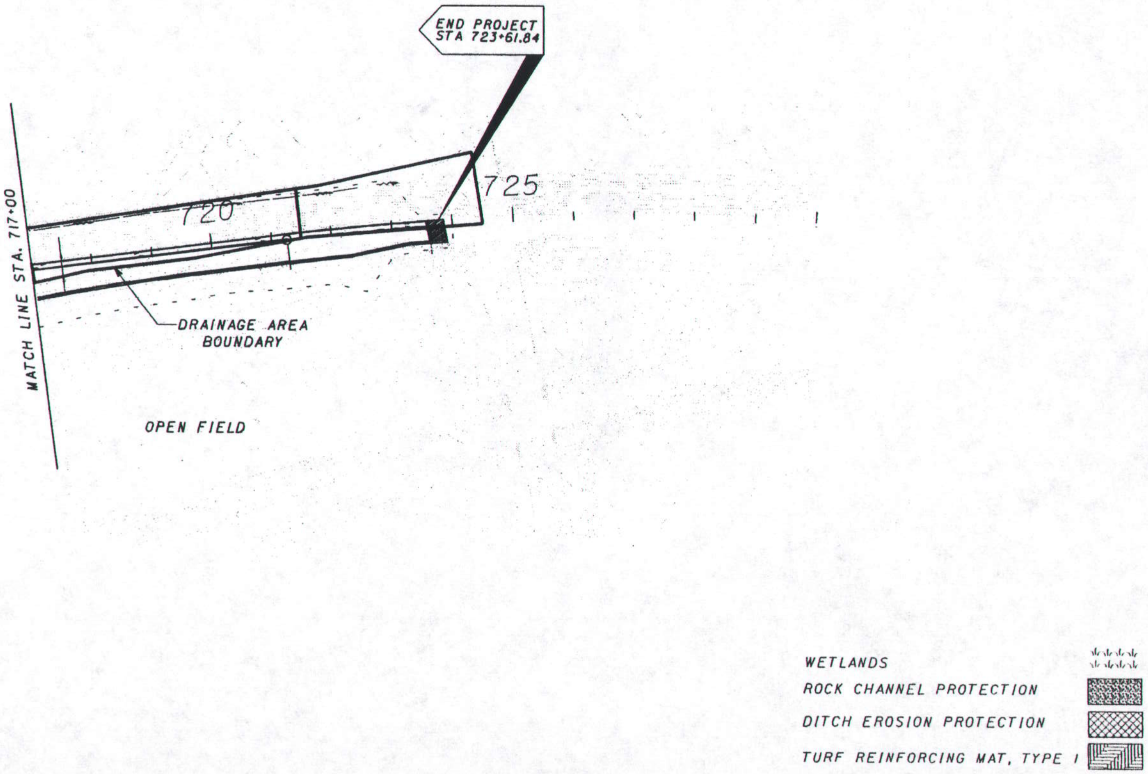
CALCULATED MAK

CHECKED TLW

PROJECT SITE PLAN
STA. 691+00.00 TO STA. 717+00.00

MAH-80-0.97

186
1100



PROJECT SITE PLAN
STA. 717+00.00 TO STA. 723.87.12

CALCULATED MAK
CHECKED TLW

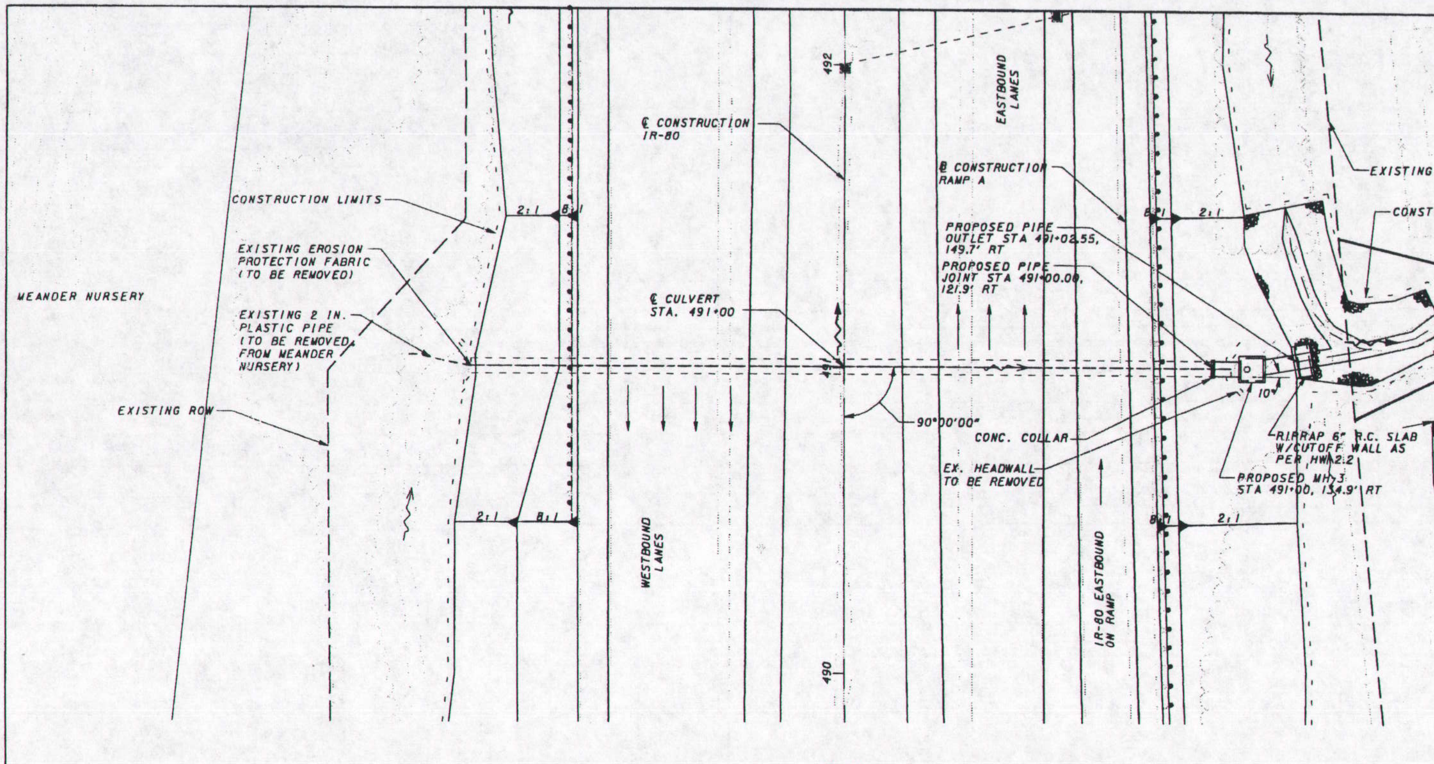
HORIZONTAL SCALE IN FEET

MAH-80-0.97

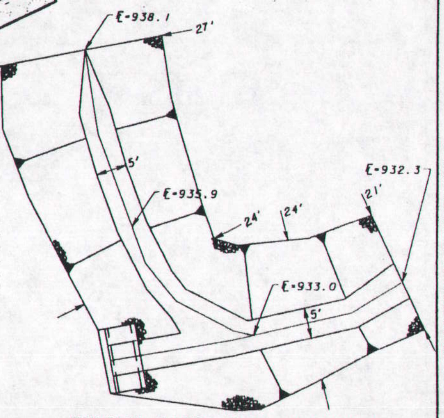
187
1100

CULVERT DETAIL SHEETS

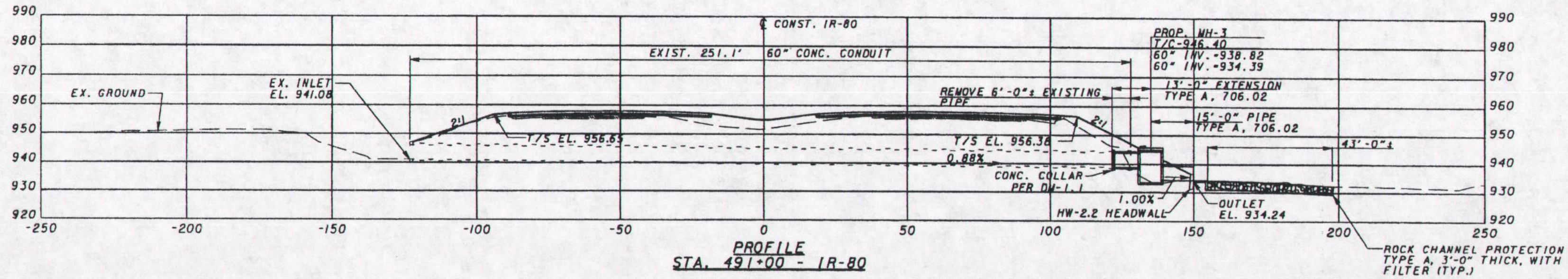
CULVERT DETAILS
STA. 491+00



PLAN



EROSION PROTECTION AT OUTLET



PROFILE
STA. 491+00 - IR-80

HYDRAULIC DESIGN DATA

CULVERT DATA	TOTAL
DRAINAGE AREA	- 216.0 ACRES
FLOW (Q50)	- 182.1 $FT.^3/S$
VELOCITY (V50)	- 14.8 FT./S
HEAD WATER ELEV. (HW50)	- 947.9 FT.
JUST FULL CAPACITY (50 YR)	- 303.5 $FT.^3/S$

FOR CULVERT QUANTITIES, SEE SHEET 862

HORIZONTAL SCALE IN FEET 0 10 20 40

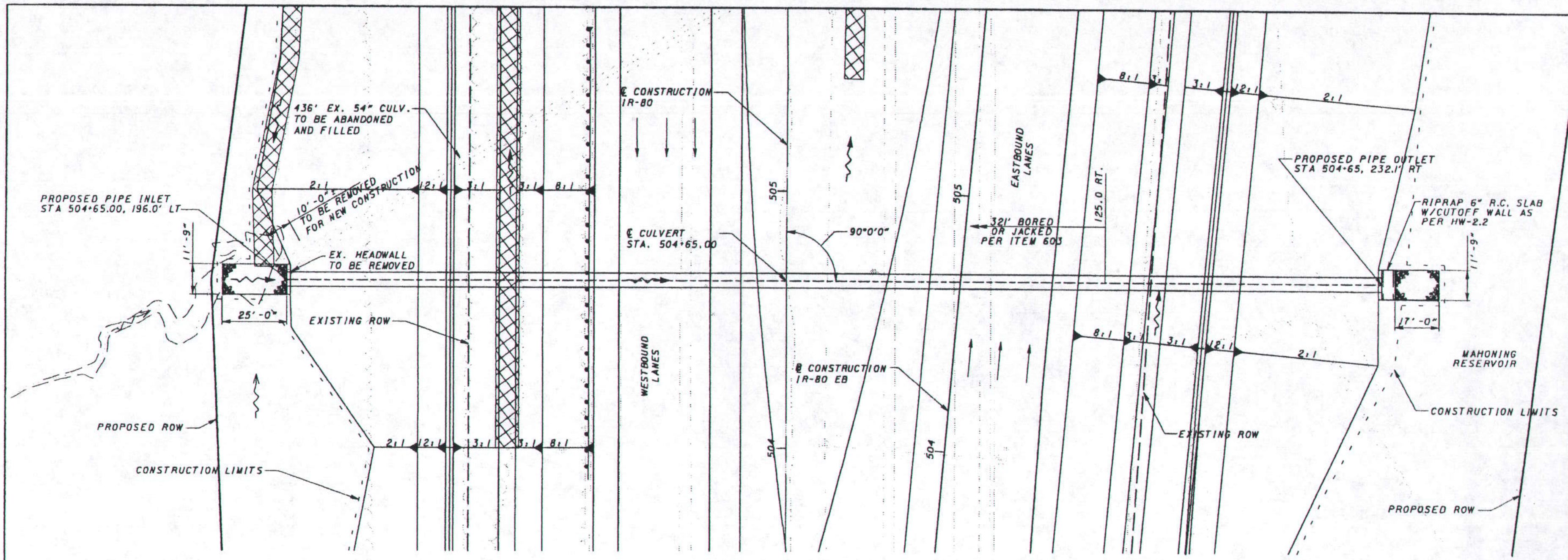
CALCULATED AJP
CHECKED DEK

MAH-80-0.97

863
1100

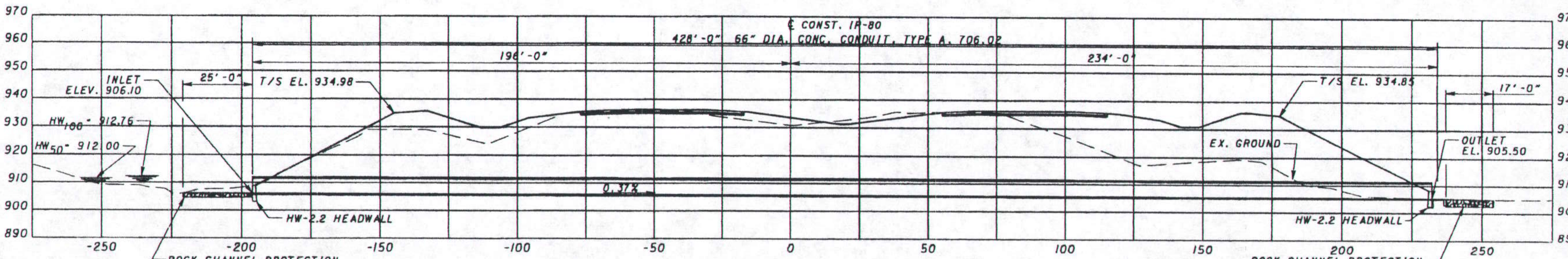
HORIZONTAL SCALE IN FEET 0 10 20 40

CALCULATED AJP CHECKED DEK



PLAN

NOTE: ALL MEASUREMENTS ARE TAKEN FROM THE ℄ OF CONSTRUCTION OF IR-80 UNLESS OTHERWISE NOTED.

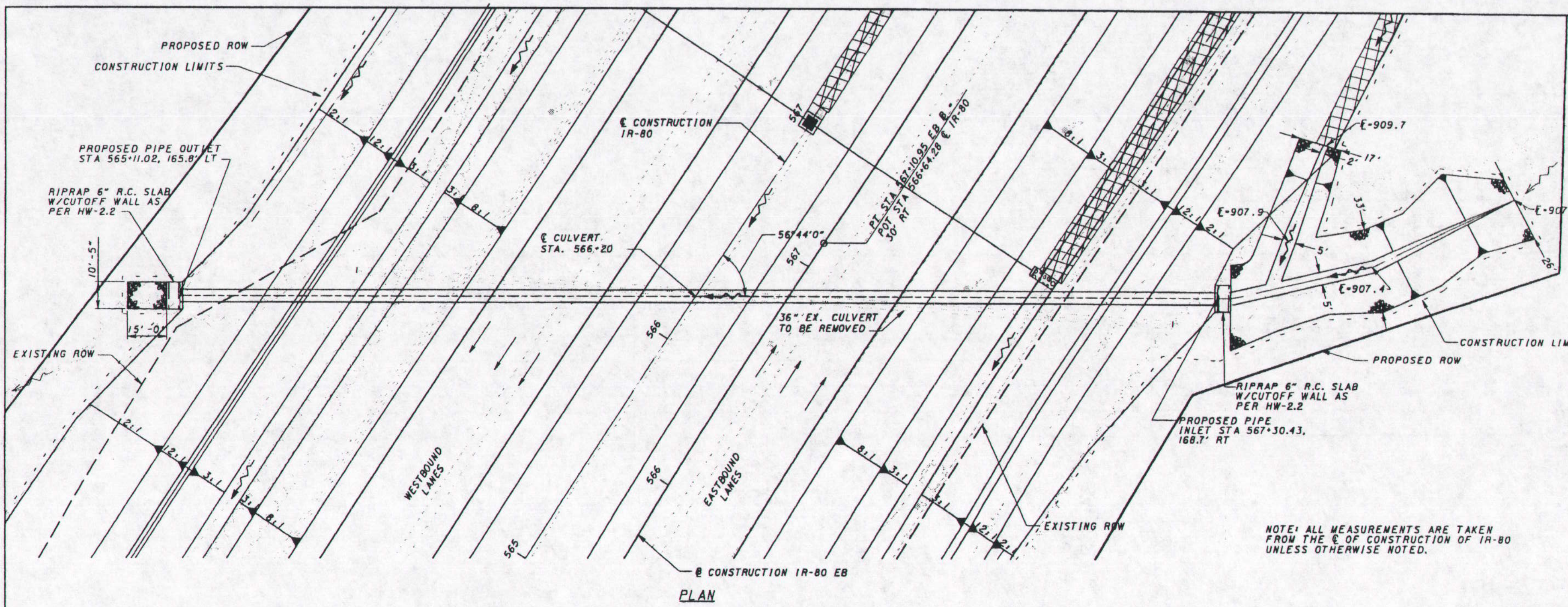


PROFILE
STA. 504+65 - IR-80

HYDRAULIC DESIGN DATA

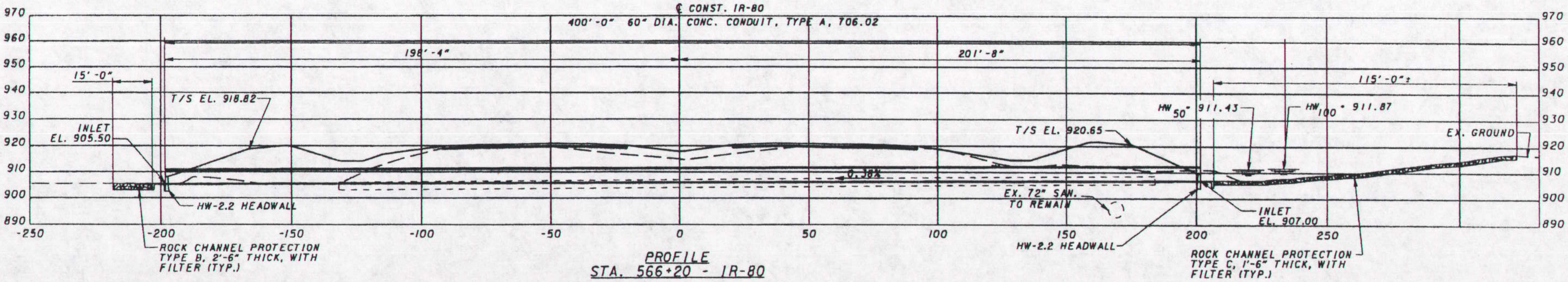
CULVERT DATA	TOTAL
DRAINAGE AREA	= 136.5 ACRES
FLOW (Q50)	= 160.0 FT.³/S
VELOCITY (V50)	= 9.9 FT./S
HEAD WATER ELEV. (HW50)	= 912.0 FT.
FLOW (Q100)	= 189.0 FT.³/S
VELOCITY (V100)	= 10.6 FT./S
HEAD WATER ELEV. (HW100)	= 912.8 FT.

FOR CULVERT QUANTITIES, SEE SHEET 862



PLAN

NOTE: ALL MEASUREMENTS ARE TAKEN FROM THE ℄ OF CONSTRUCTION OF IR-80 UNLESS OTHERWISE NOTED.



PROFILE
STA. 566+20 - IR-80

HYDRAULIC DESIGN DATA

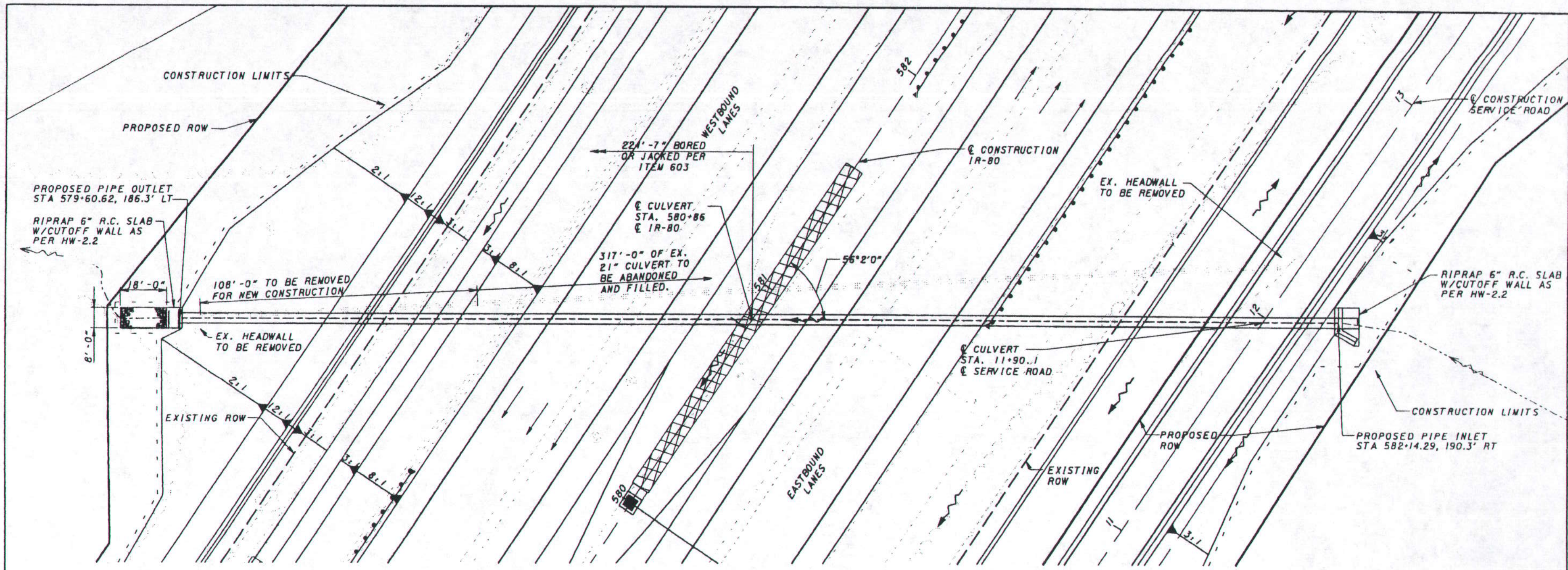
CULVERT DATA	TOTAL
DRAINAGE AREA	= 59.5 ACRES
FLOW (Q50)	= 94.0 FT.^{3}/S
VELOCITY (V50)	= 8.5 FT./S
HEAD WATER ELEV. (HW50)	= 911.4 FT.
FLOW (Q100)	= 111.0 FT.^{3}/S
VELOCITY (V100)	= 9.0 FT./S
HEAD WATER ELEV. (HW100)	= 911.9 FT.

FOR CULVERT QUANTITIES, SEE SHEET 862

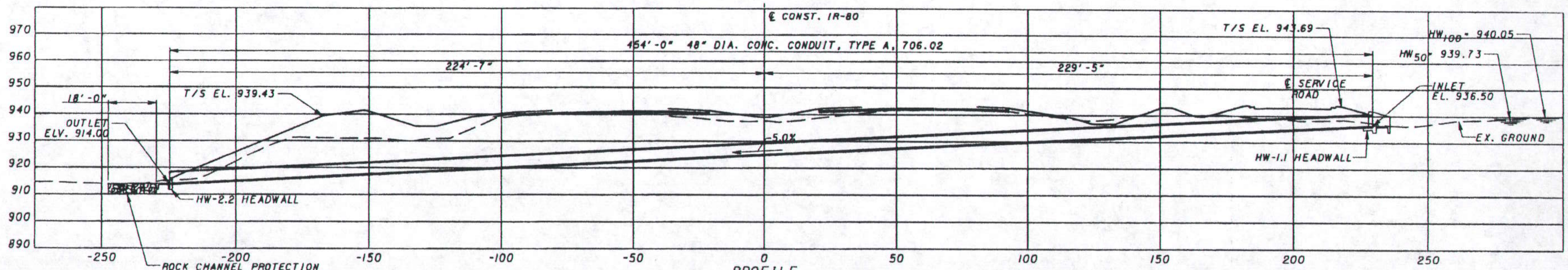
HORIZONTAL SCALE IN FEET
CALCULATED AJP
CHECKED DEK

CULVERT DETAILS
STA. 566+20

MAH-80-0.97



PLAN



PROFILE
STA. 580+86 - IR-80

HYDRAULIC DESIGN DATA

CULVERT DATA	TOTAL
DRAINAGE AREA	= 26.3 ACRES
FLOW (Q50)	= 46.0 $FT.^3/S$
VELOCITY (V50)	= 19.1 FT./S
HEAD WATER ELEV. (HW50)	= 939.7 FT.
FLOW (Q100)	= 54.0 $FT.^3/S$
VELOCITY (V100)	= 20.1 FT./S
HEAD WATER ELEV. (HW100)	= 940.1 FT.

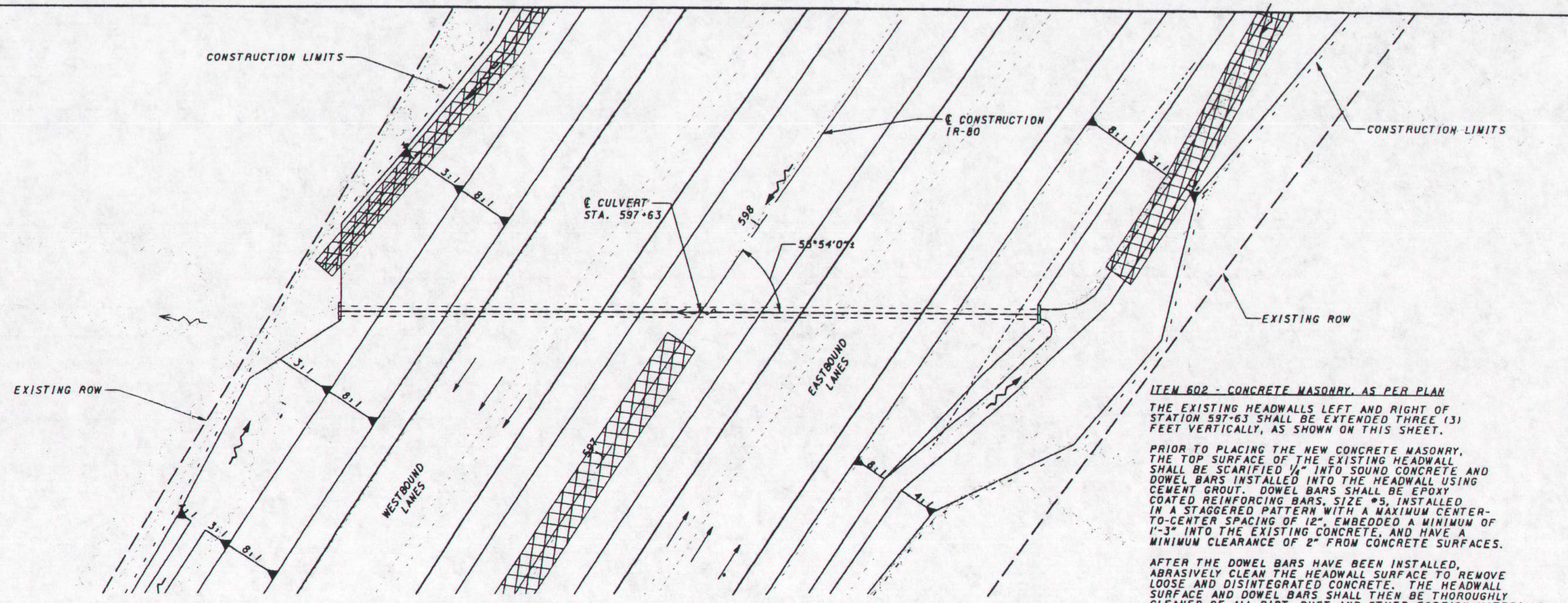
FOR CULVERT QUANTITIES, SEE SHEET 862

HORIZONTAL SCALE IN FEET

CALCULATED AJP
CHECKED DEK

CULVERT DETAILS
STA. 580+86

MAH-80-0.97



PLAN

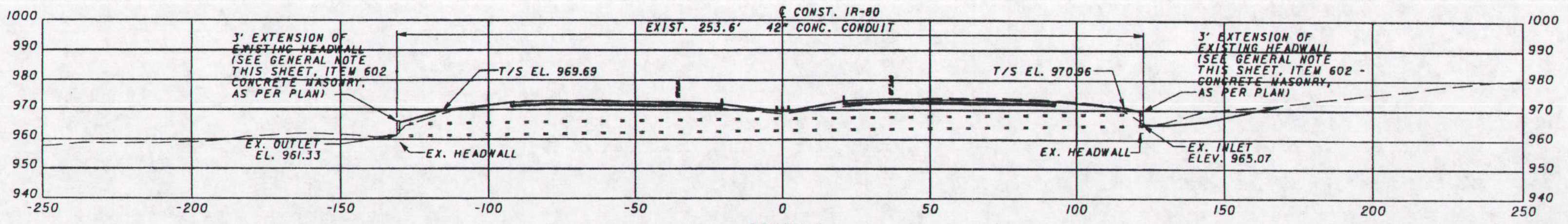
ITEM 602 - CONCRETE MASONRY, AS PER PLAN

THE EXISTING HEADWALLS LEFT AND RIGHT OF STATION 597+63 SHALL BE EXTENDED THREE (3) FEET VERTICALLY, AS SHOWN ON THIS SHEET.

PRIOR TO PLACING THE NEW CONCRETE MASONRY, THE TOP SURFACE OF THE EXISTING HEADWALL SHALL BE SCARIFIED 1/4" INTO SOUND CONCRETE AND DOWEL BARS INSTALLED INTO THE HEADWALL USING CEMENT GROUT. DOWEL BARS SHALL BE EPOXY COATED REINFORCING BARS, SIZE #5, INSTALLED IN A STAGGERED PATTERN WITH A MAXIMUM CENTER-TO-CENTER SPACING OF 12", EMBEDDED A MINIMUM OF 1'-3" INTO THE EXISTING CONCRETE, AND HAVE A MINIMUM CLEARANCE OF 2" FROM CONCRETE SURFACES.

AFTER THE DOWEL BARS HAVE BEEN INSTALLED, ABRASIVELY CLEAN THE HEADWALL SURFACE TO REMOVE LOOSE AND DISINTEGRATED CONCRETE. THE HEADWALL SURFACE AND DOWEL BARS SHALL THEN BE THOROUGHLY CLEANED OF ALL DIRT, DUST AND OTHER FOREIGN MATERIALS BY USING WATER, HIGH PRESSURE AIR, OR OTHER METHODS THAT PRODUCES RESULTS SATISFACTORY TO THE ENGINEER. THE CONCRETE BONDING SURFACE SHALL BE WET WITHOUT FREESTANDING WATER AS CONCRETE MASONRY IS PLACED.

ALL MASONRY WORK SHALL CONFORM TO ITEM 602 OF THE CMS. INSTALLATION OF THE DOWELS SHALL CONFORM TO ITEM 510 OF THE CMS. ALL COSTS FOR LABOR, MATERIALS, EQUIPMENT, AND INCIDENTALS NECESSARY TO COMPLETE THIS WORK SHALL BE INCLUDED FOR PAYMENT WITH ITEM 602 - CONCRETE MASONRY, AS PER PLAN.



PROFILE
STA. 597+63 - IR-80

EXISTING HYDRAULIC DATA	
CULVERT DATA	TOTAL
DRAINAGE AREA	- 110.4 ACRES
FLOW (Q50)	- 78.0 FT.^{3}/S
VELOCITY (V50)	- 14.1 FT./S
HEAD WATER ELEV. (HW50)	- 970.0 FT.

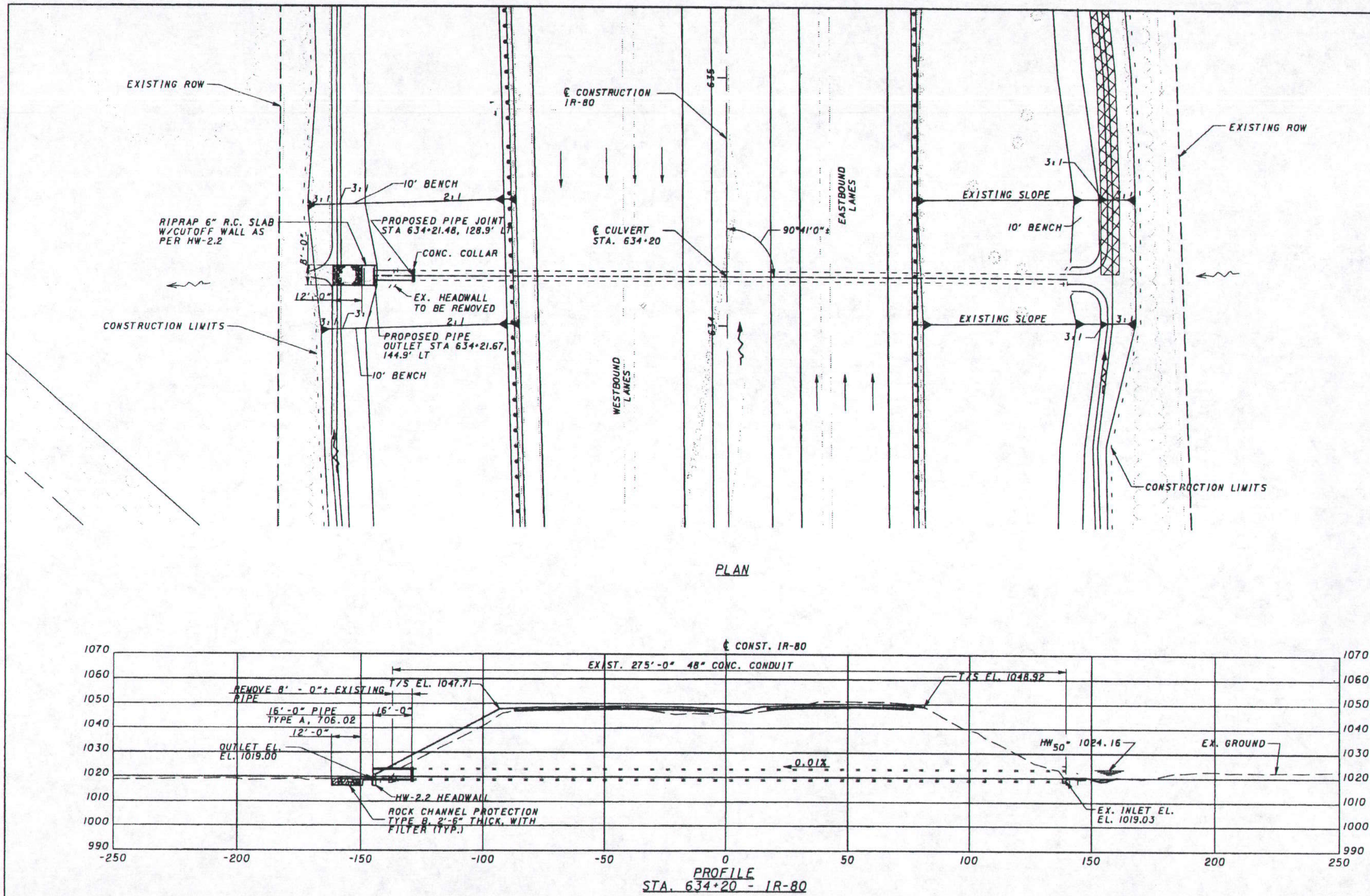
FOR CULVERT QUANTITIES, SEE SHEET 862

CALCULATED AJP
CHECKED DEK

HORIZONTAL SCALE IN FEET 0 10 20 40

CULVERT DETAILS
STA. 597+63

MAH-80-0.97



HYDRAULIC DESIGN DATA

CULVERT DATA	TOTAL
DRAINAGE AREA	- 111.4 ACRES
FLOW (Q50)	- 83.5 FT.^{3}/S
VELOCITY (V50)	- 9.0 FT./S
HEAD WATER ELEV. (HW50)	- 1024.2 FT.

FOR CULVERT QUANTITIES, SEE SHEET 862

CULVERT DETAILS
STA. 634+20

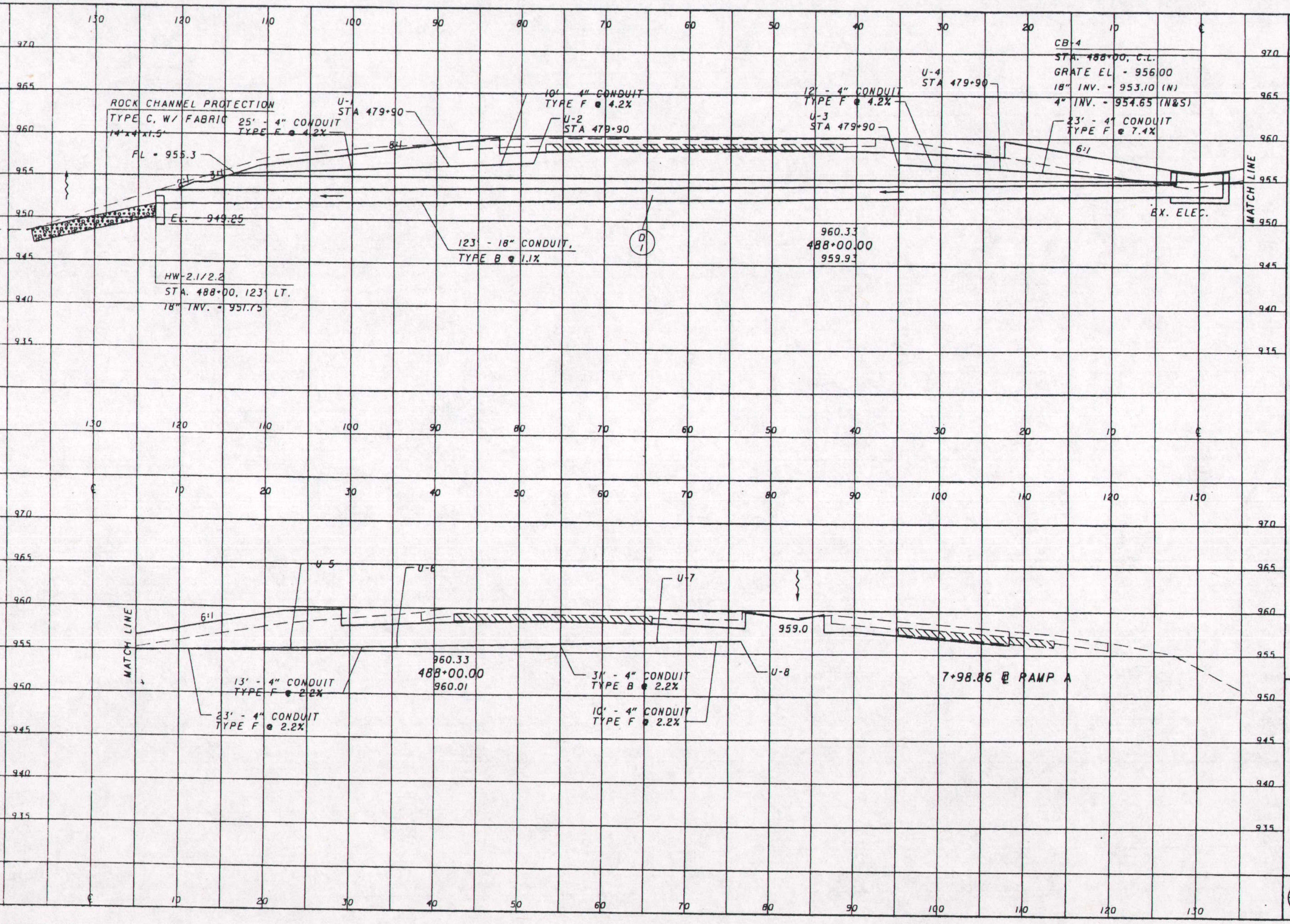
HORIZONTAL SCALE IN FEET

CALCULATED AJP
CHECKED DEK

MAH-80-0.97

869
1100

CROSS SECTION SHEETS

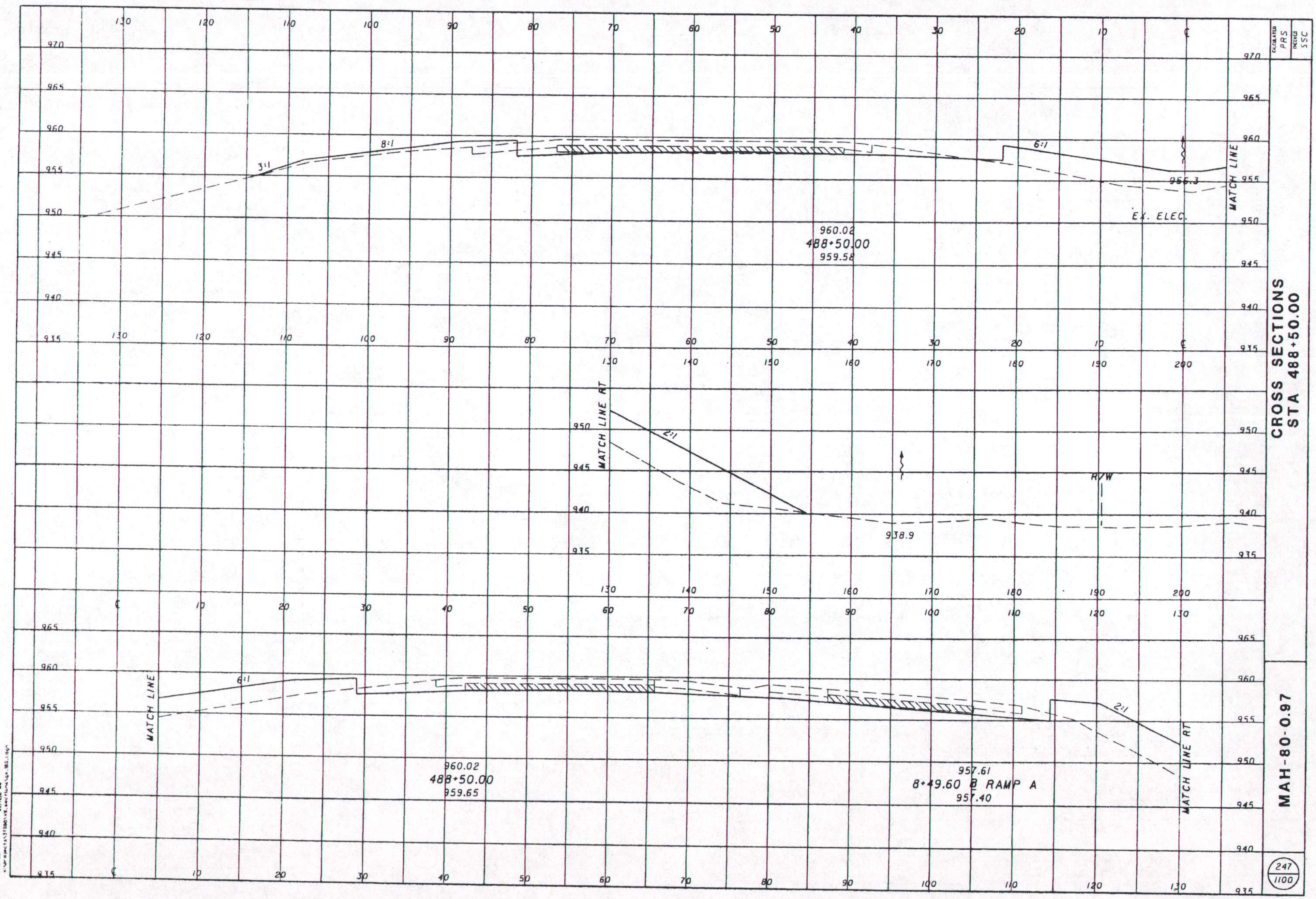


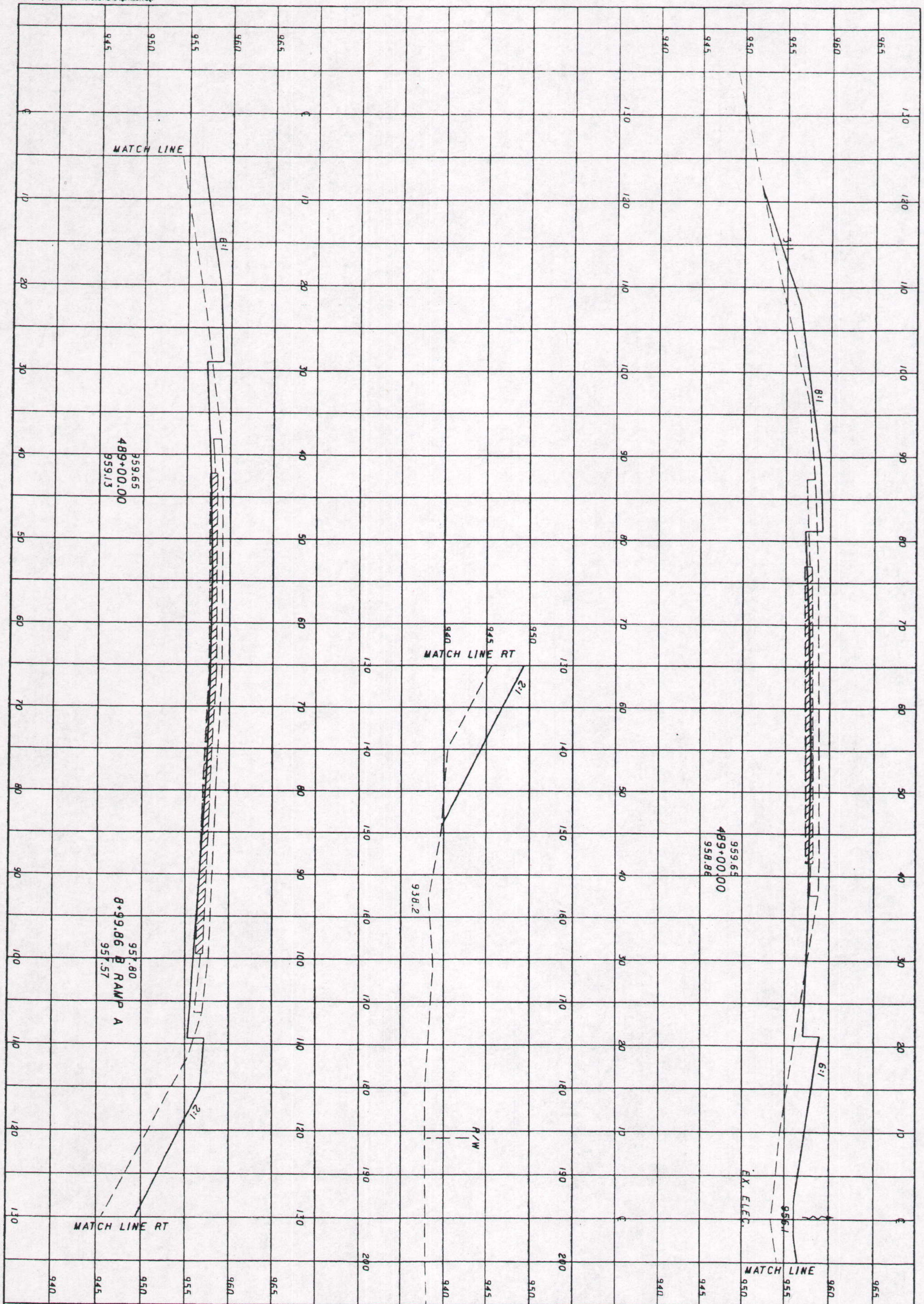
CALCULATED PRS
CHECKED SSC

CROSS SECTIONS
STA 488+00.00

MAH-80-0.97

246
1100


CROSS SECTIONS
STA 488+50.00
MAH-80-0.97
247
1100
CALCULATED PRS
CHECKED SSC
MATCH LINE
956.3
EX. ELEC.
6:1
8:1
3:1
960.02
488+50.00
959.58
MATCH LINE RT
2:1
R/W
938.9
MATCH LINE
6:1
960.02
488+50.00
959.65
957.61
8+49.60 ℄ RAMP A
957.40
2:1
MATCH LINE RT

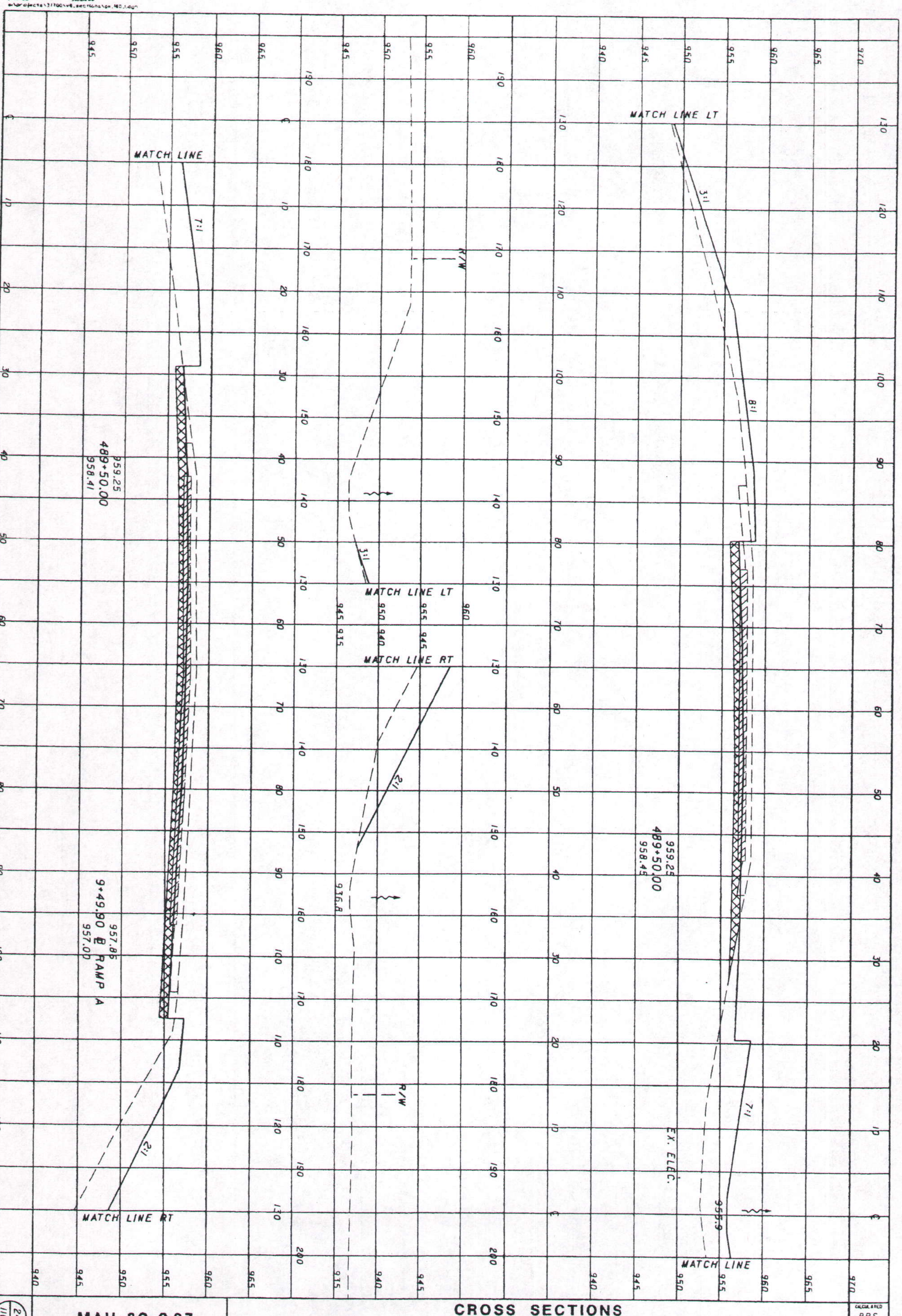


248/1100

MAH-80-0.97

CROSS SECTIONS
STA 489+00.00

CALCULATED PRS
CHECKED SSC

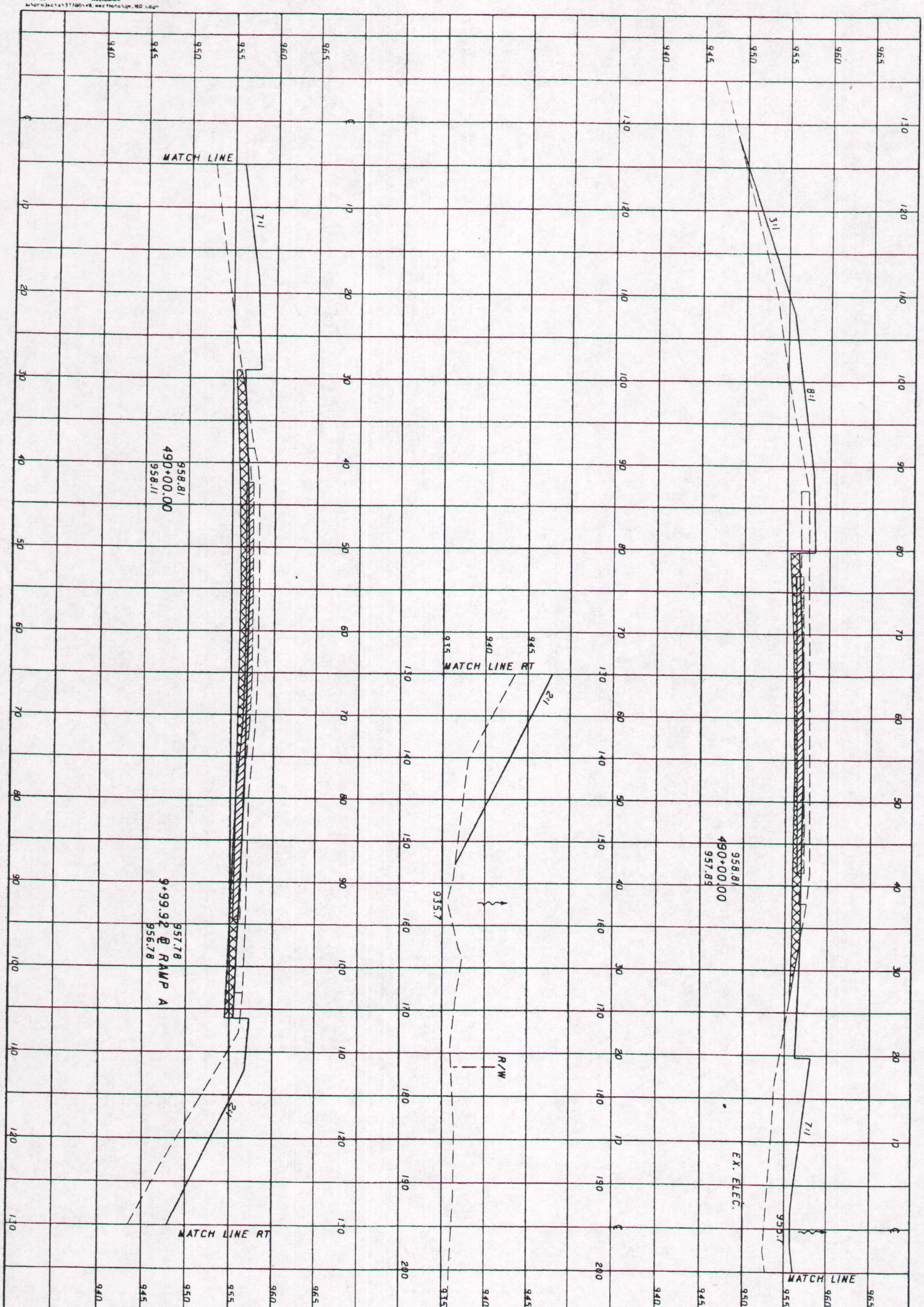


249
1100

MAH-80-0.97

CROSS SECTIONS
STA 489+50.00

CALCULATED PRS
CHECKED SSC

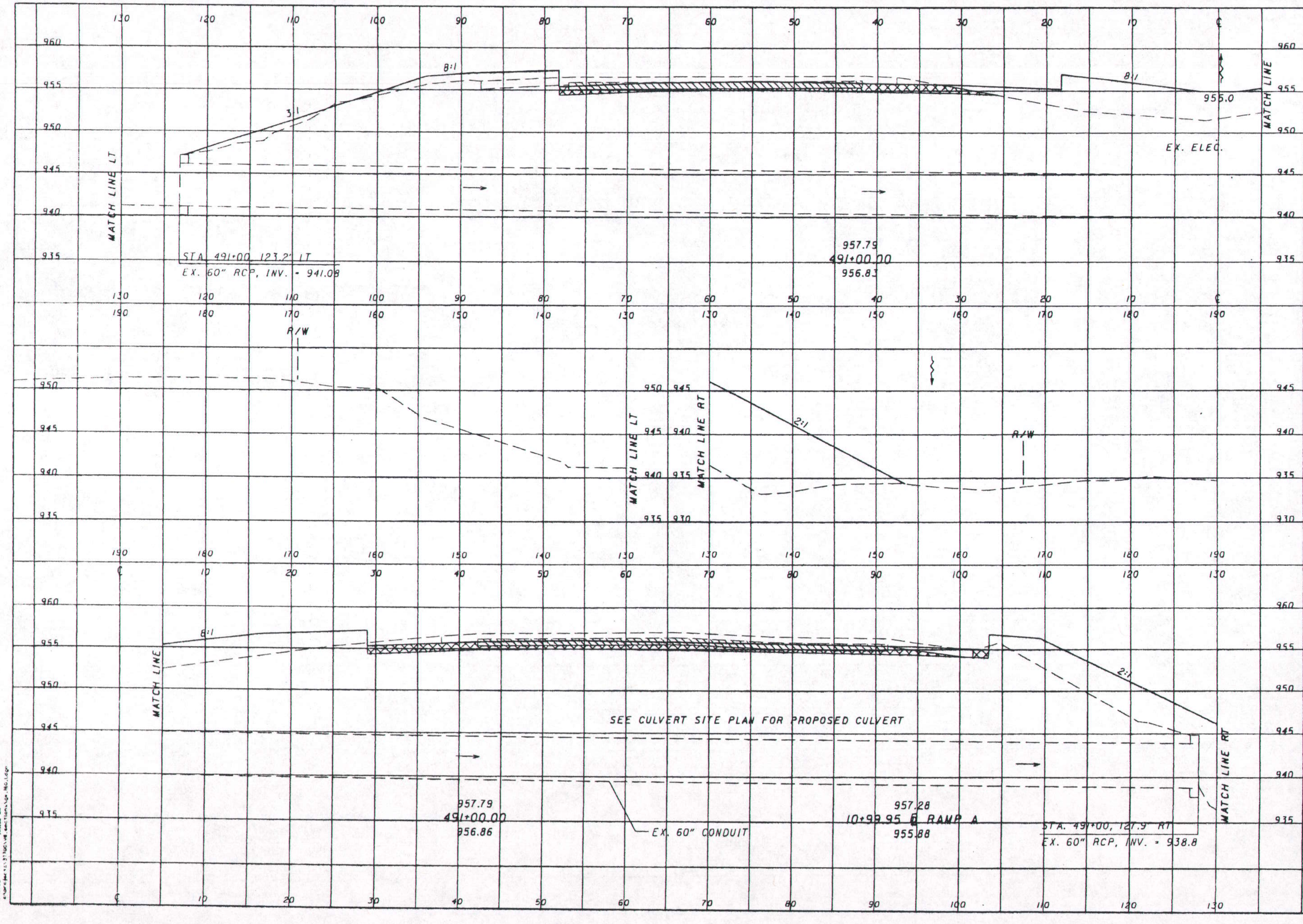


MAH-80-0.97

CROSS SECTIONS
STA 490+00.00

CALCULATED PRS
CHECKED SSC

250/1100

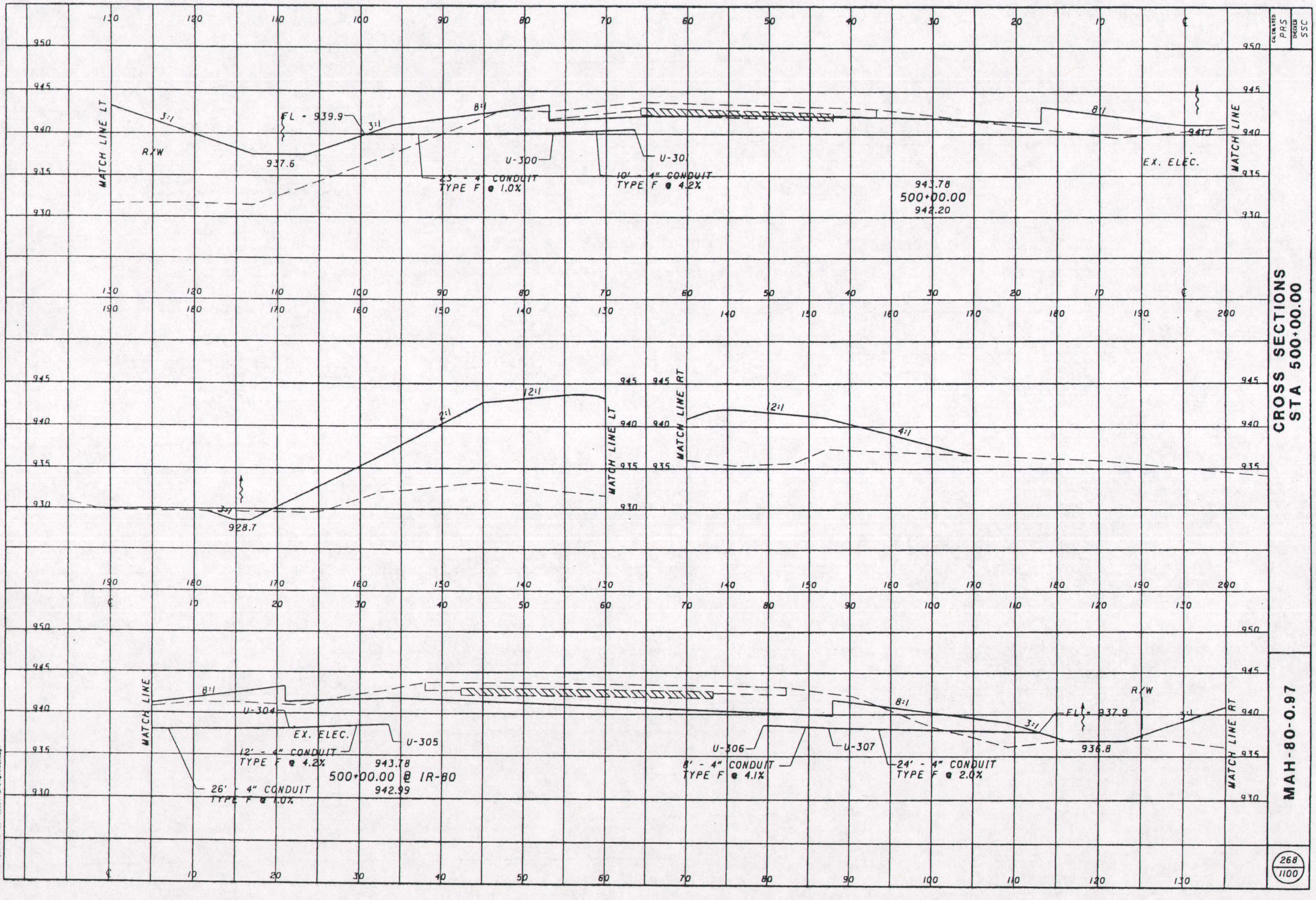


CALCULATED PRS
CHECKED SSC

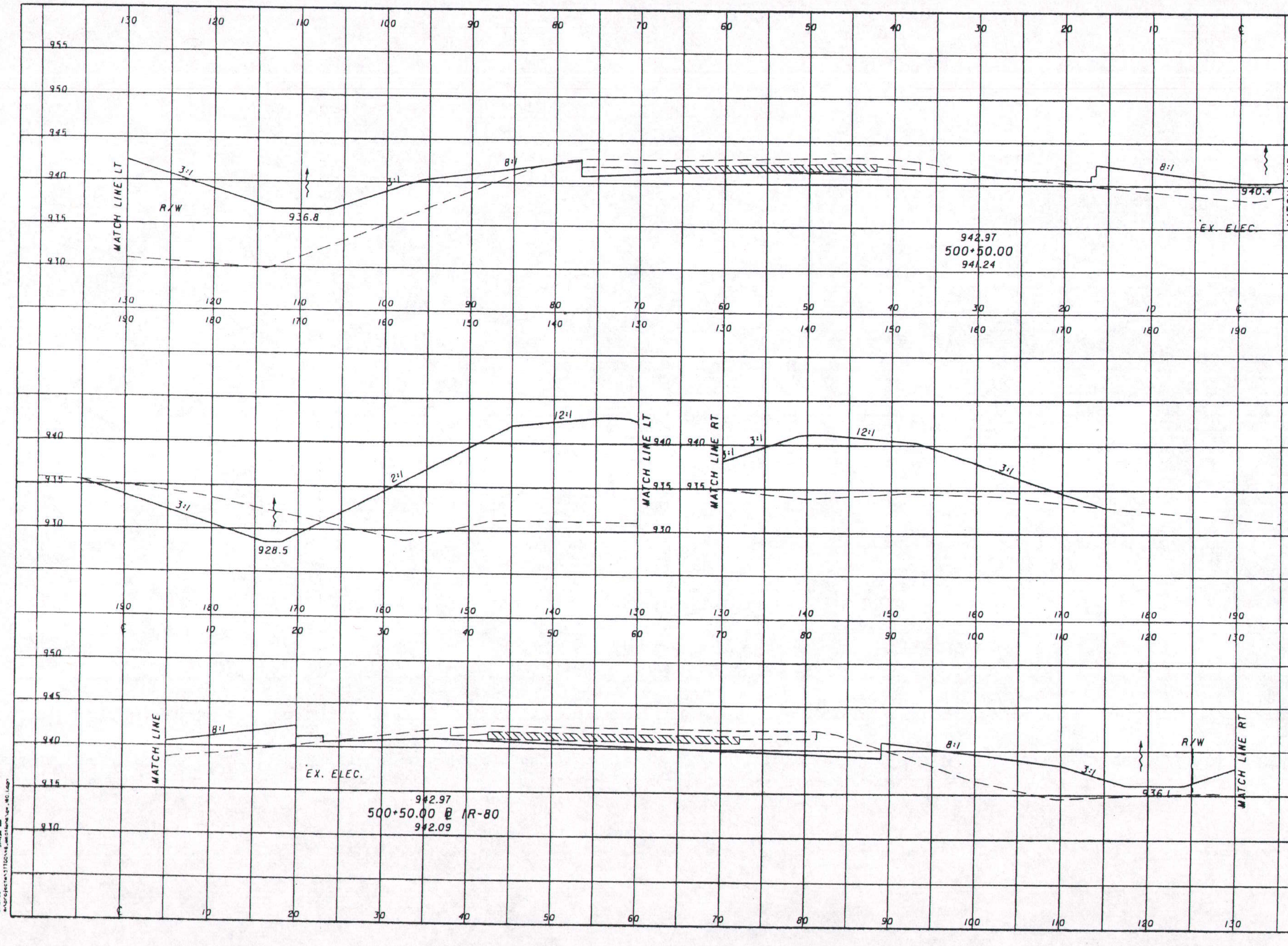
CROSS SECTIONS
STA 491+00.00

MAH-80-0.97

252/1100



CROSS SECTIONS
STA 500+00.00
MAH-80-0.97
268
1100
CALCULATED PRS
CHECKED SSC
MATCH LINE LT
R/W
3:1
FL - 939.9
937.6
3:1
8:1
U-300
23' - 4" CONDUIT
TYPE F @ 1.0%
U-301
10' - 4" CONDUIT
TYPE F @ 4.2%
943.78
500+00.00
942.20
8:1
941.1
EX. ELEC.
MATCH LINE
928.7
3:1
2:1
12:1
MATCH LINE LT
MATCH LINE RT
12:1
4:1
MATCH LINE
8:1
U-304
EX. ELEC.
U-305
12' - 4" CONDUIT
TYPE F @ 4.2%
943.78
500+00.00 @ IR-80
942.99
26' - 4" CONDUIT
TYPE F @ 1.0%
U-306
8' - 4" CONDUIT
TYPE F @ 4.1%
U-307
24' - 4" CONDUIT
TYPE F @ 2.0%
8:1
3:1
FL - 937.9
936.8
R/W
3:1
MATCH LINE RT

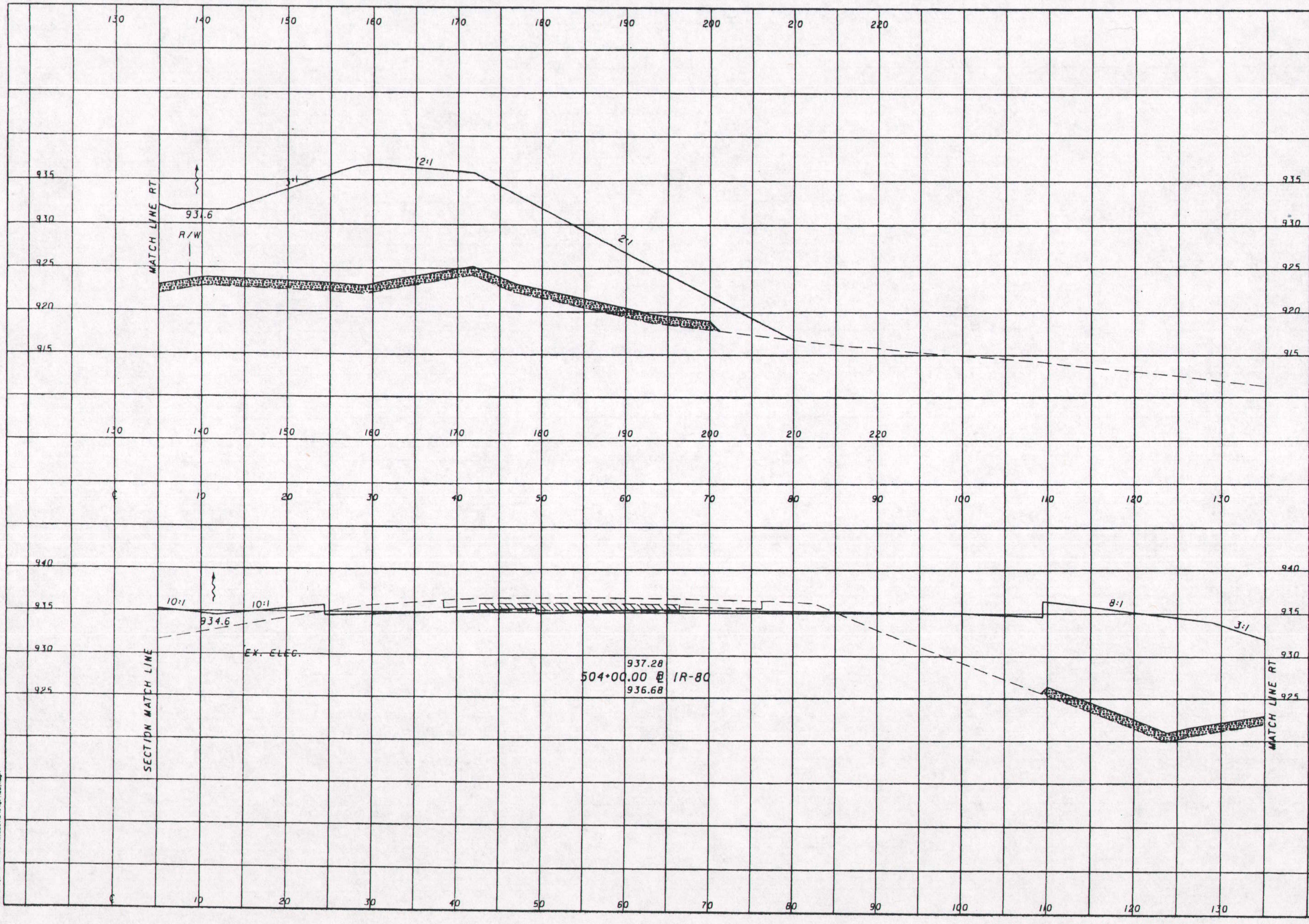


CROSS SECTIONS
STA 500+50.00

MAH-80-0.97

CALCULATED PRS
CHECKED SSC

269
1100

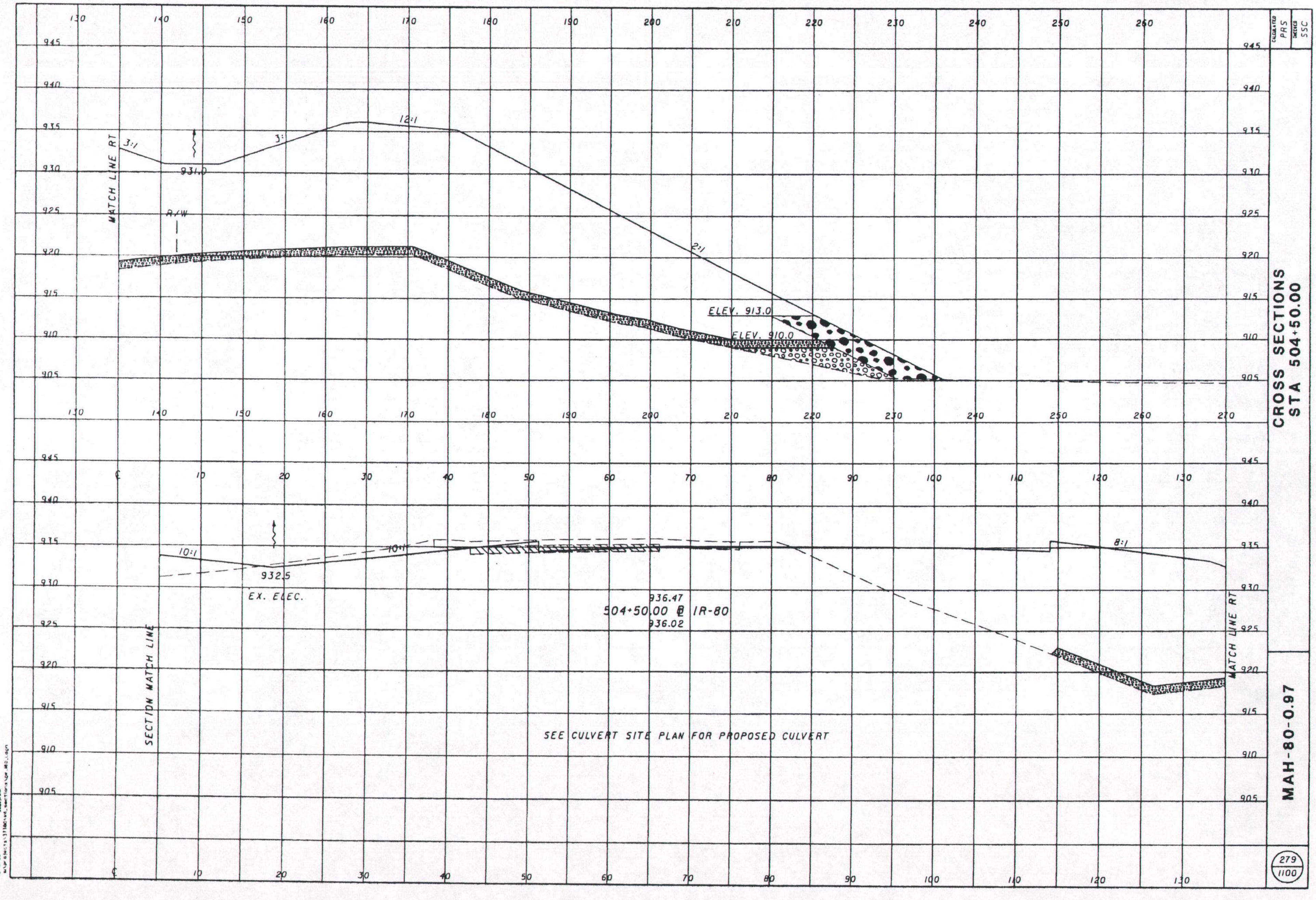


CALCULATED PRS
CHECKED SSC

CROSS SECTIONS
STA 504+00.00

MAH-80-0.97

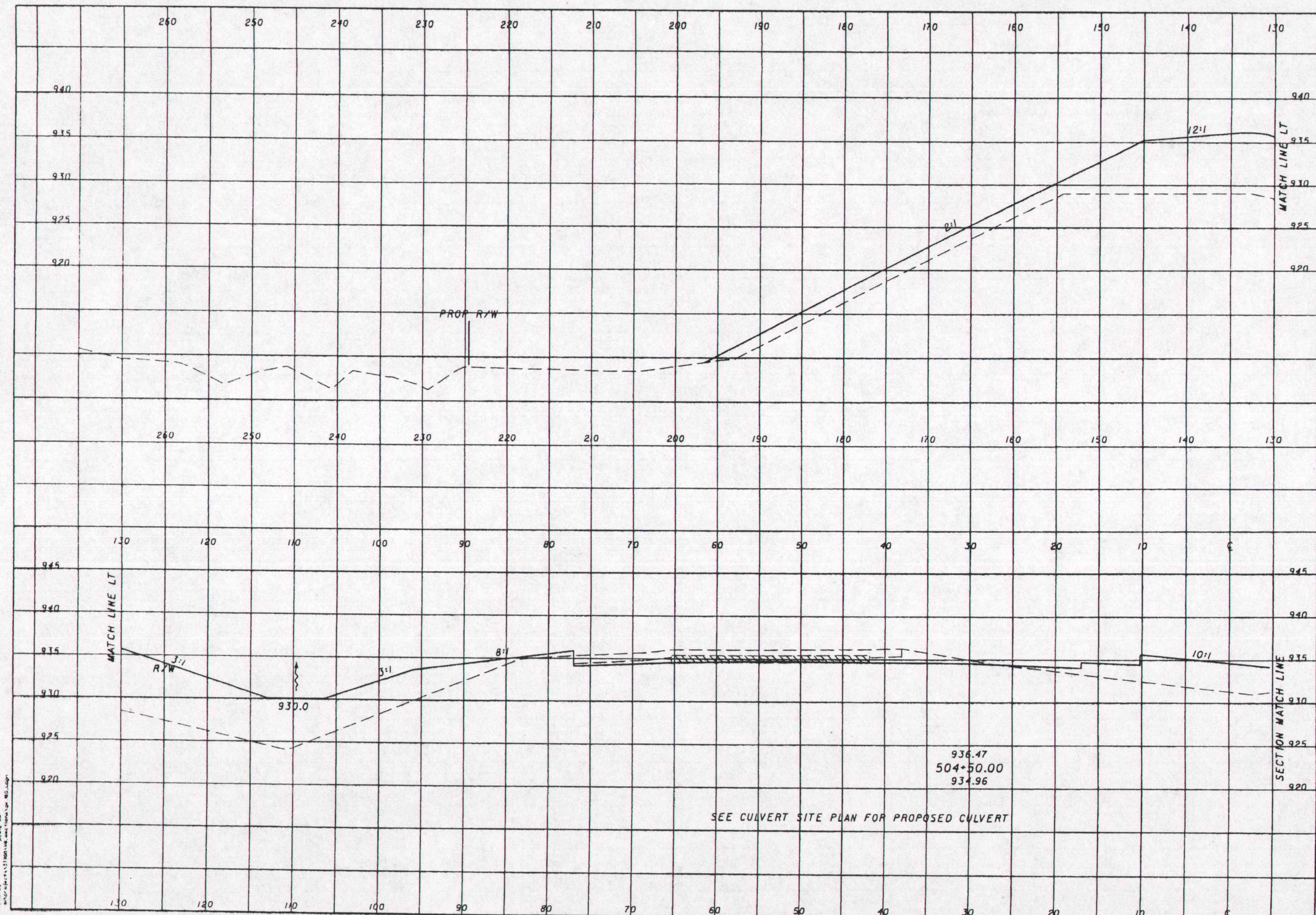
277/1100



CROSS SECTIONS
STA 504+50.00
MAH-80-0.97
279
1100
CALCULATED PRS
CHECKED SSC
WATCH LINE RT
3:1
931.0
3:1
12:1
2:1
R/W
ELEV. 913.0
ELEV. 910.0
SECTION WATCH LINE
10:1
932.5
EX. ELEC.
10:1
936.47
504+50.00 ℄ IR-80
936.02
8:1
WATCH LINE RT
SEE CULVERT SITE PLAN FOR PROPOSED CULVERT

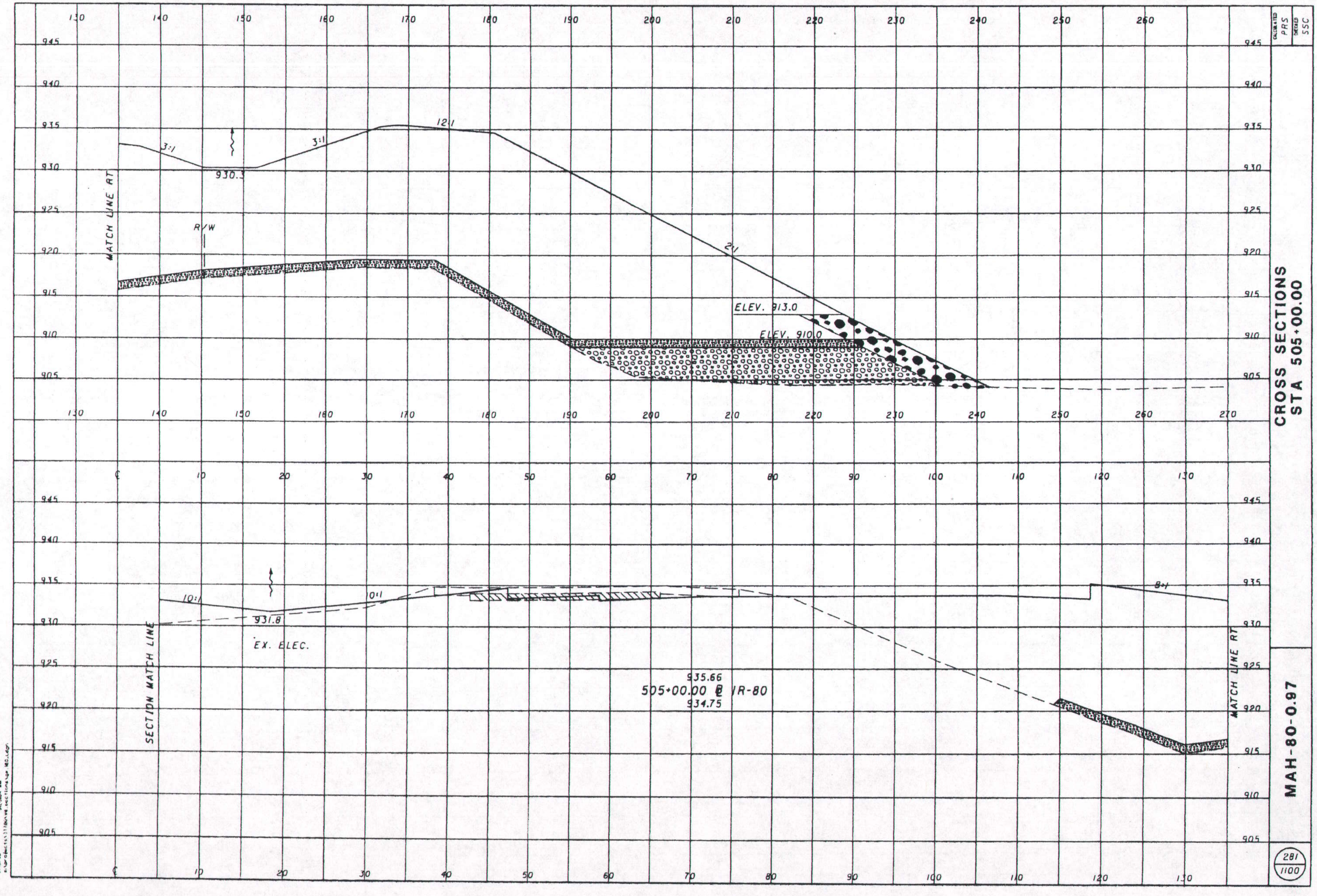
CALCULATED PRS
CHECKED SSC

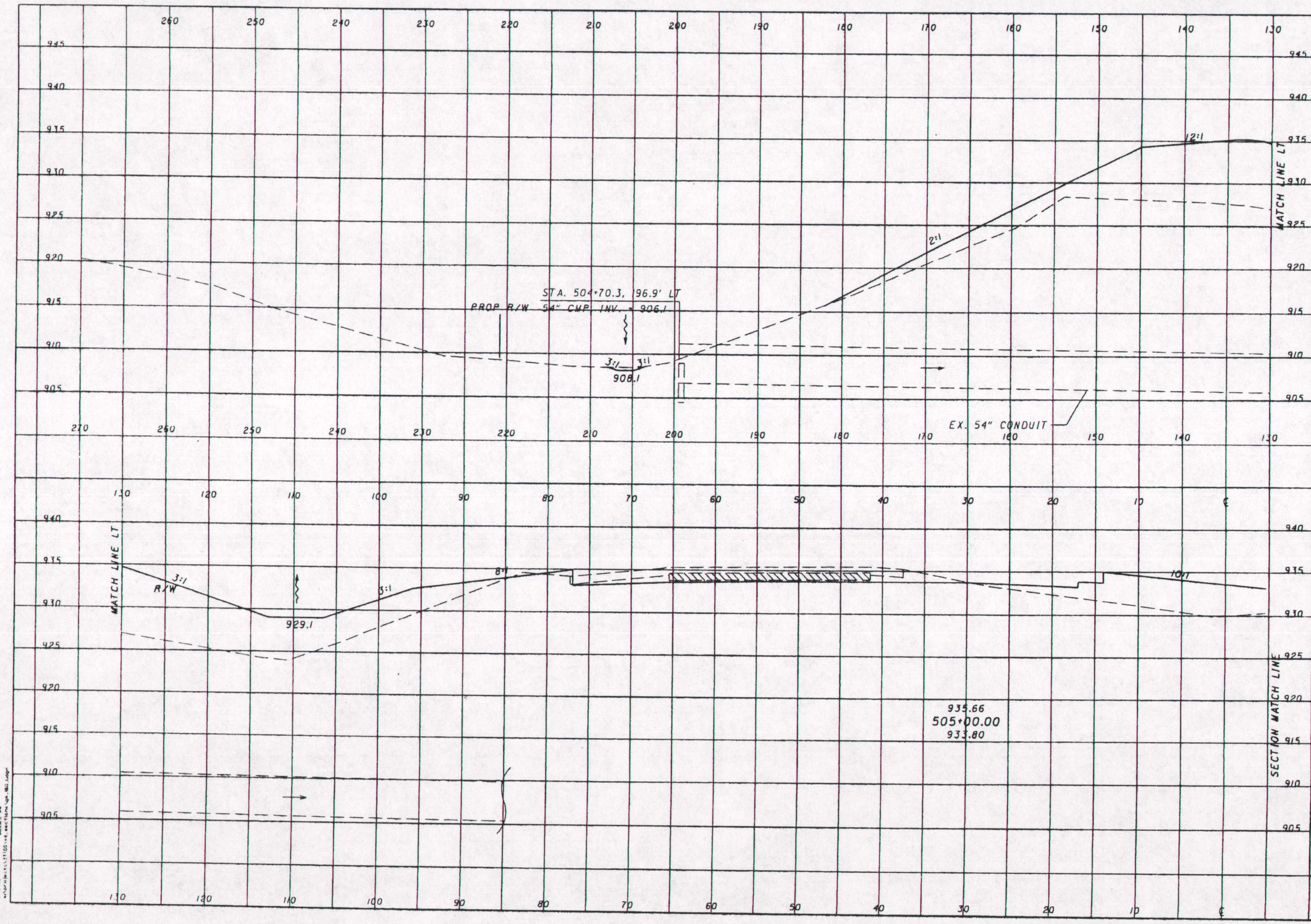
CROSS SECTIONS
STA 504+50.00



MAH-80-0.97

278/1100


CROSS SECTIONS
STA 505+00.00
MAH-80-0.97
281
1100
CALCULATED PRS
CHECKED SSC
MATCH LINE RT
R/W
930.3
3:1
12:1
2:1
ELEV. 913.0
ELEV. 910.0
SECTION MATCH LINE
10:1
931.8
EX. ELEC.
8:1
935.66
505+00.00 ℄ IR-80
934.75

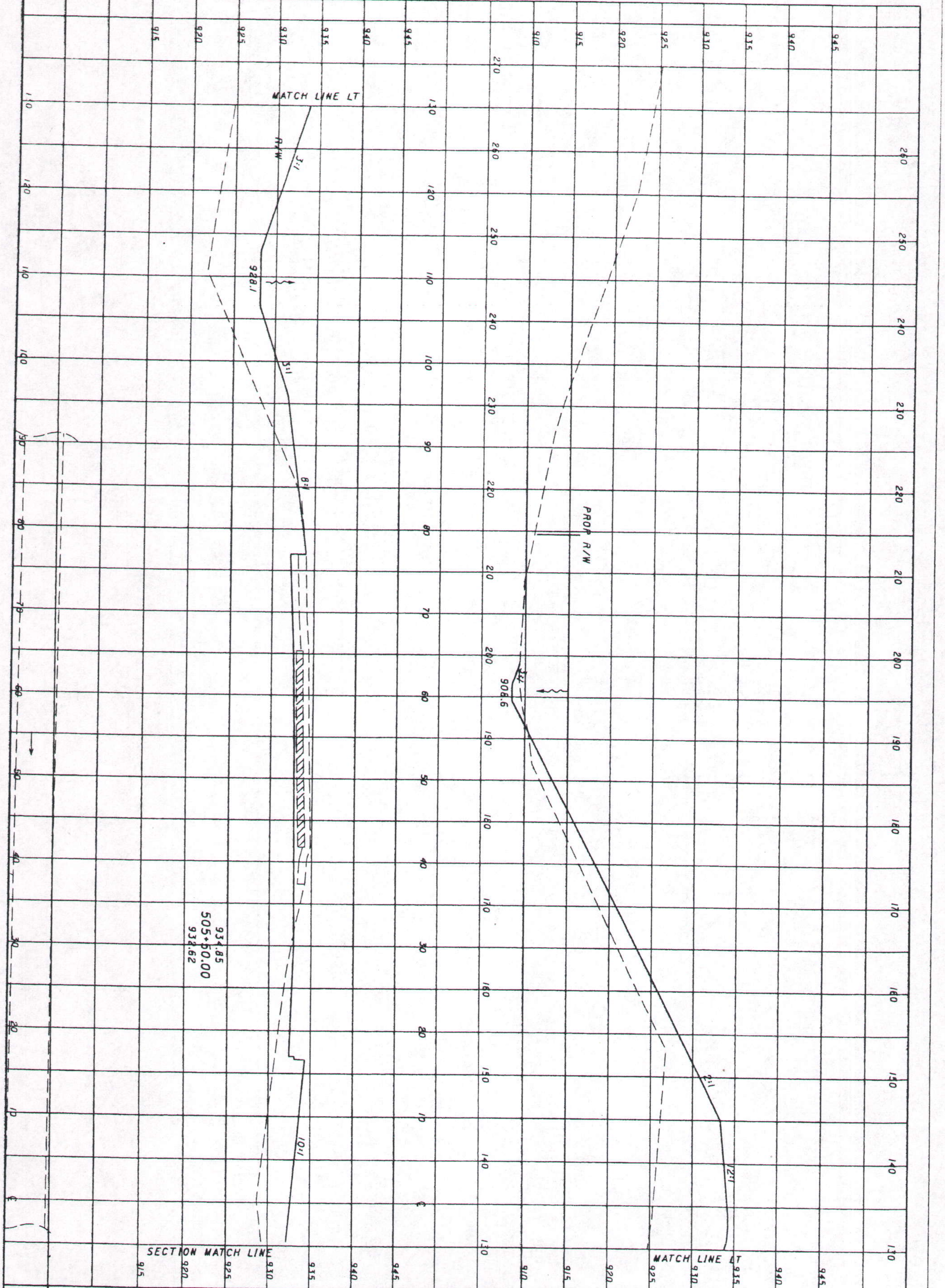


CROSS SECTIONS
STA 505+00.00

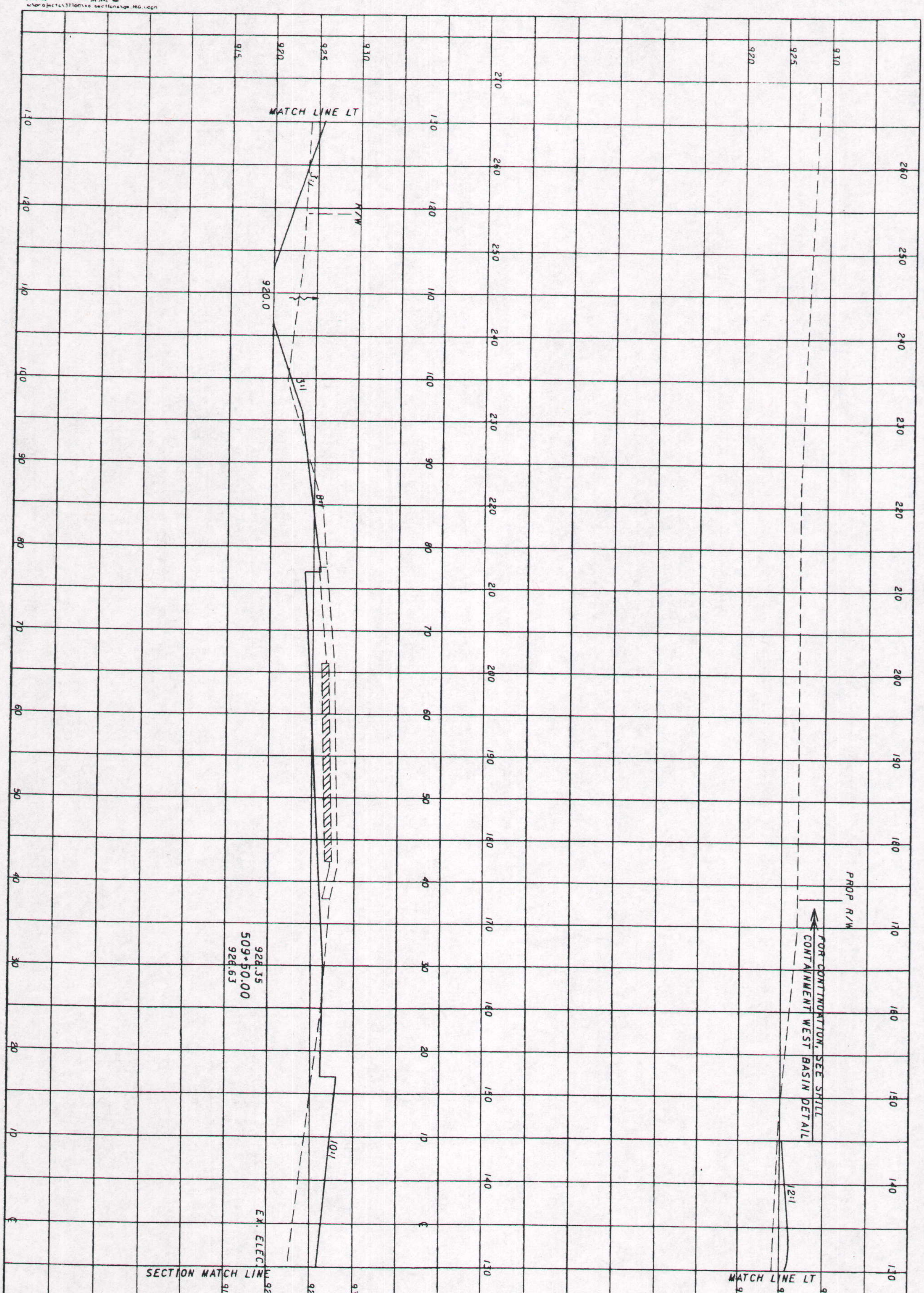
MAH-80-0.97

280
1100

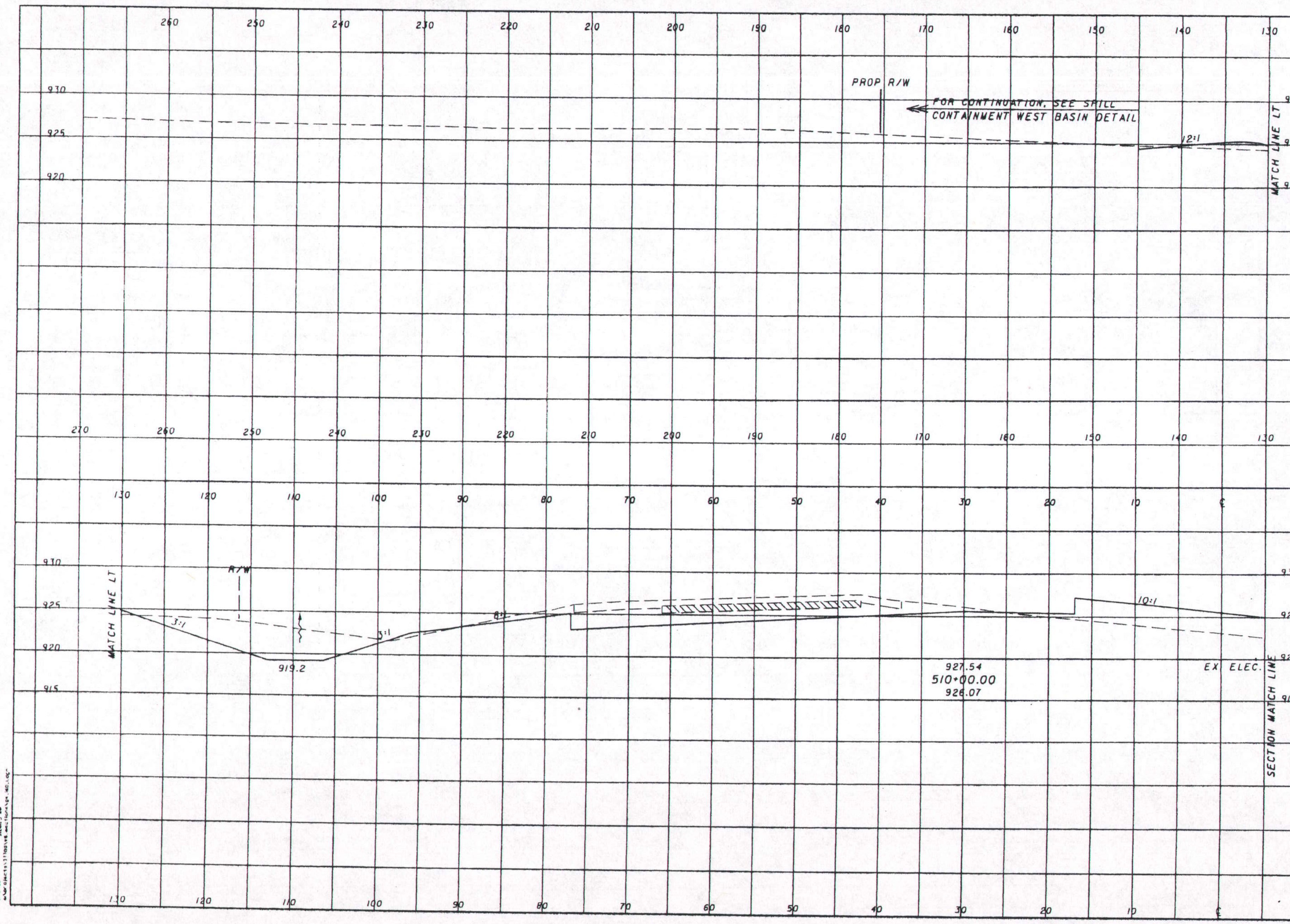
CALCULATED PRS
CHECKED SSC



282/1100 MAH-80-0.97	CROSS SECTIONS STA 505+50.00	CALCULATED PRS CHECKED SSC



298 / 1100	MAH-80-0.97	CROSS SECTIONS STA 509+50.00	CALCULATED PRS CHECKED SSC

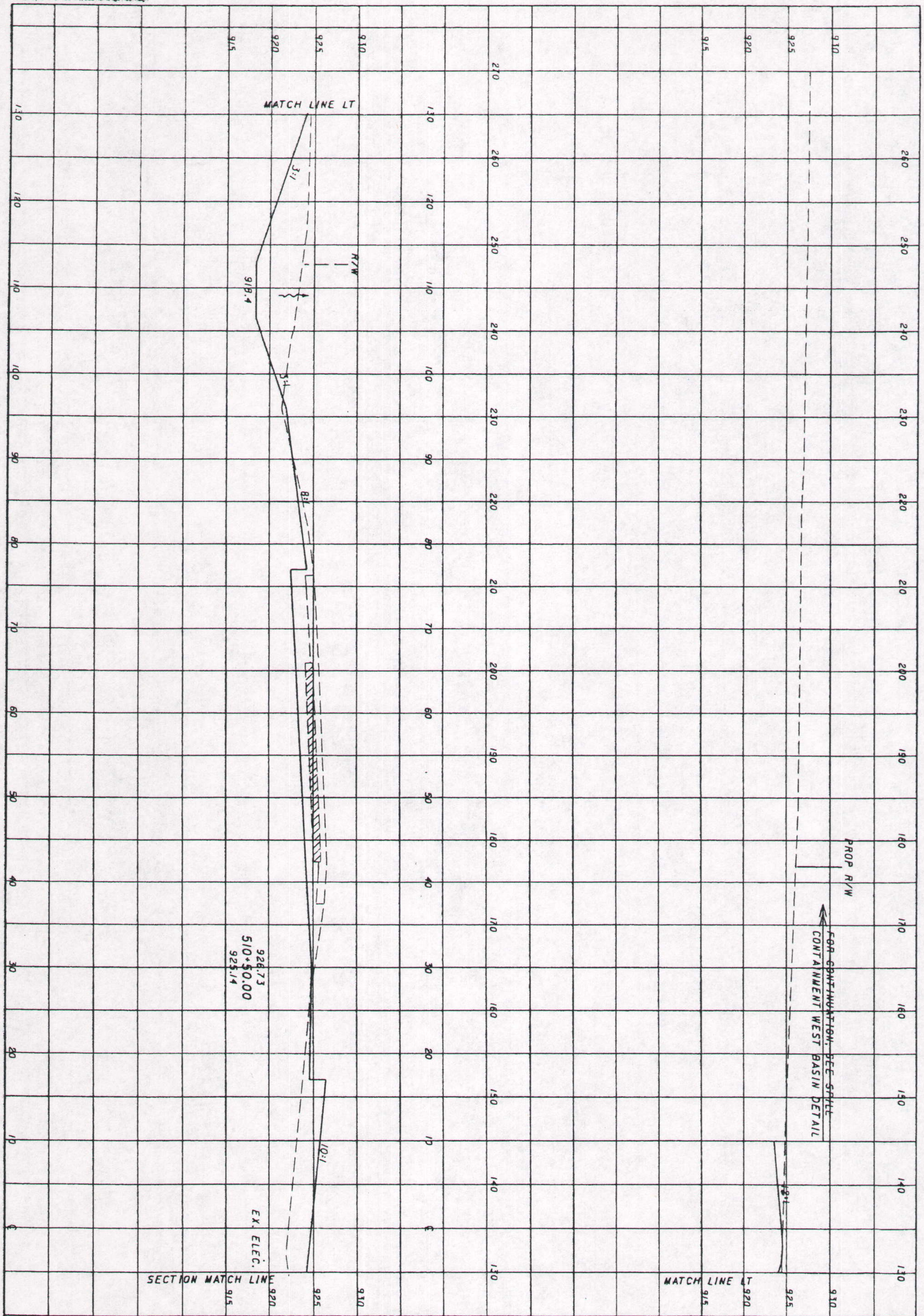


CROSS SECTIONS
STA 510+00.00

CALCULATED PRS
CHECKED SSC

MAH-80-0.97

300/1100

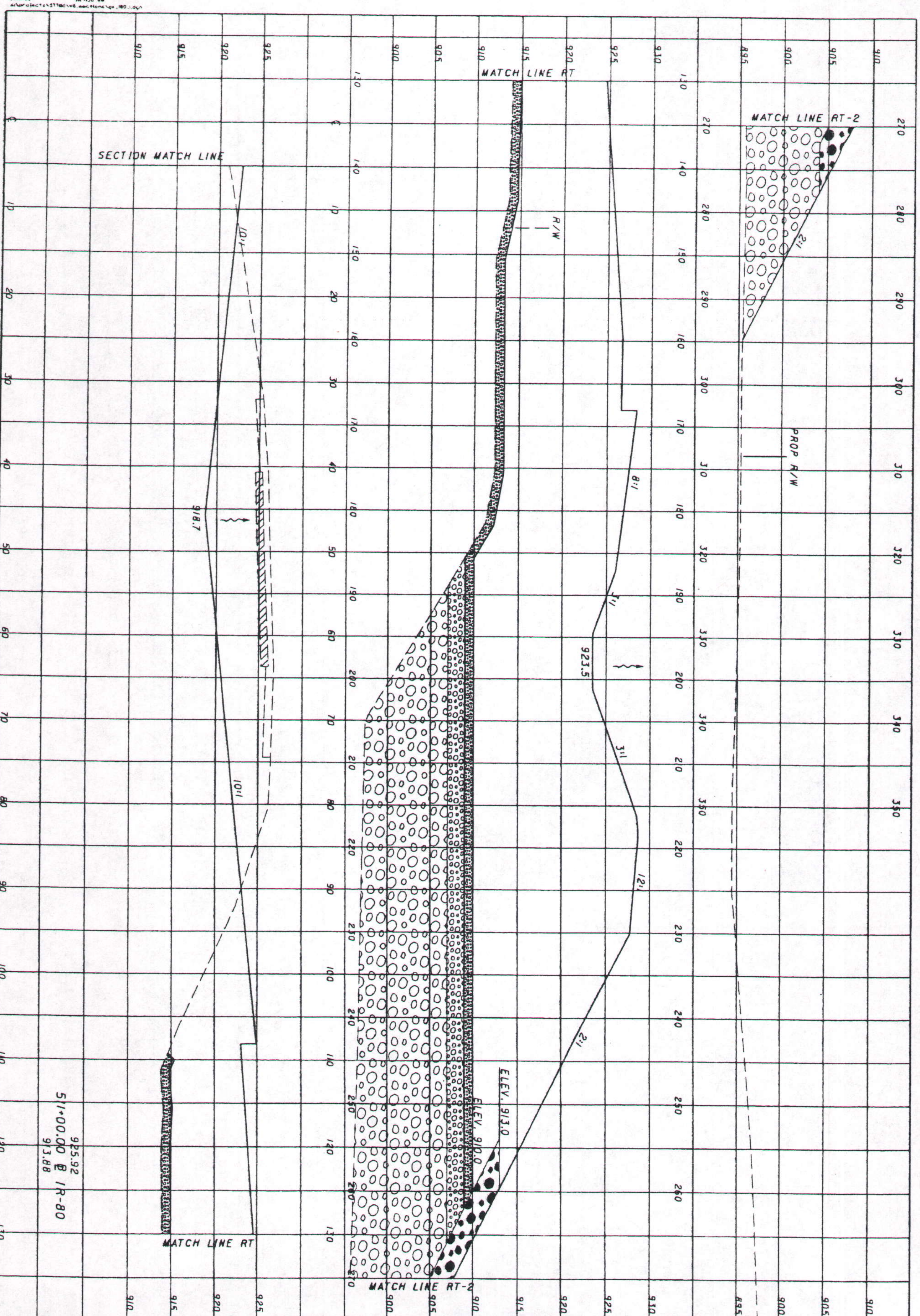


MAH-80-0.97

CROSS SECTIONS
STA 510+50.00

302/1100

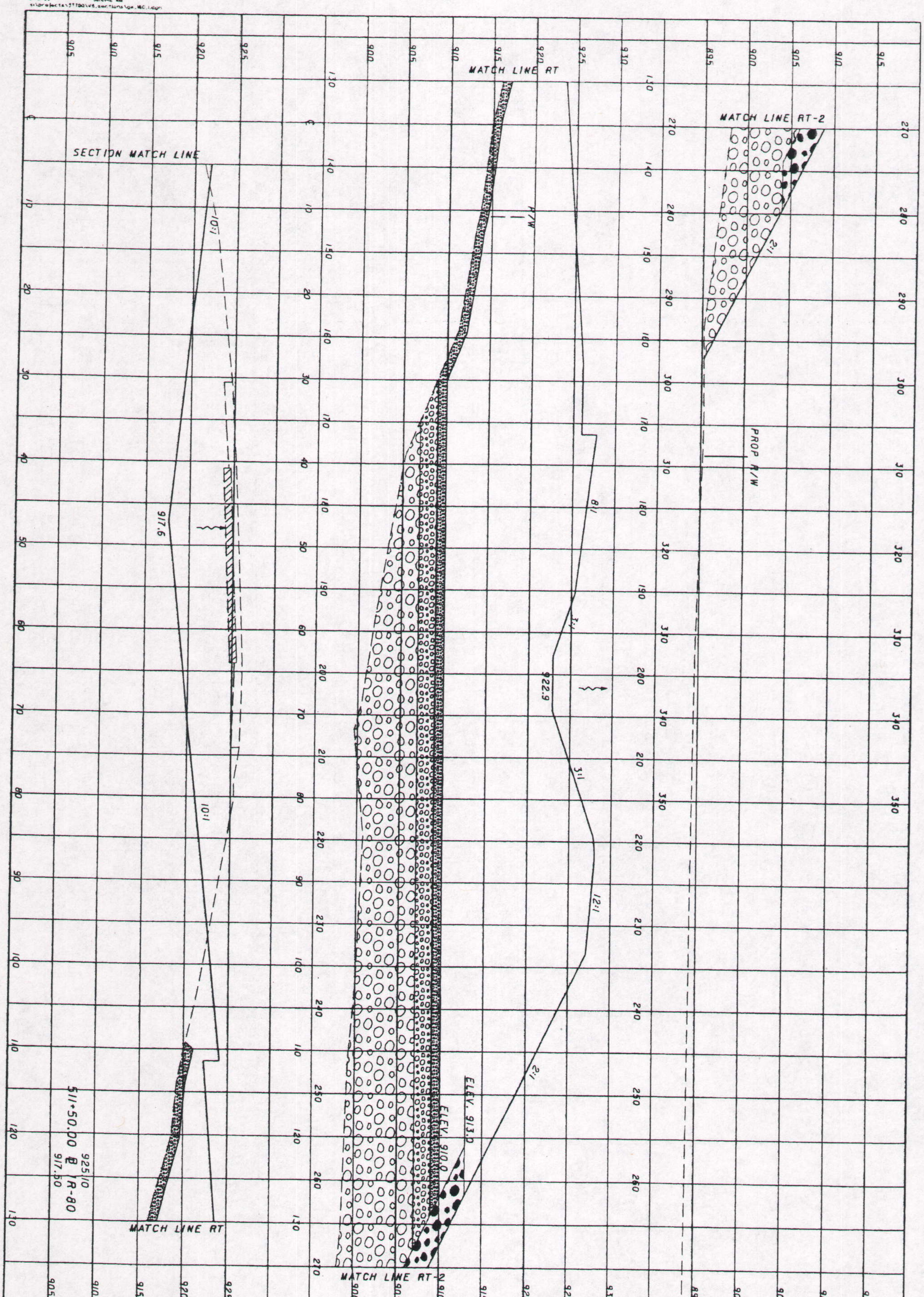
CALCULATED PRS
CHECKED SSC



305/1100 MAH-80-0.97

CROSS SECTIONS
STA 511+00.00

CALCULATED PRS
CHECKED SSC

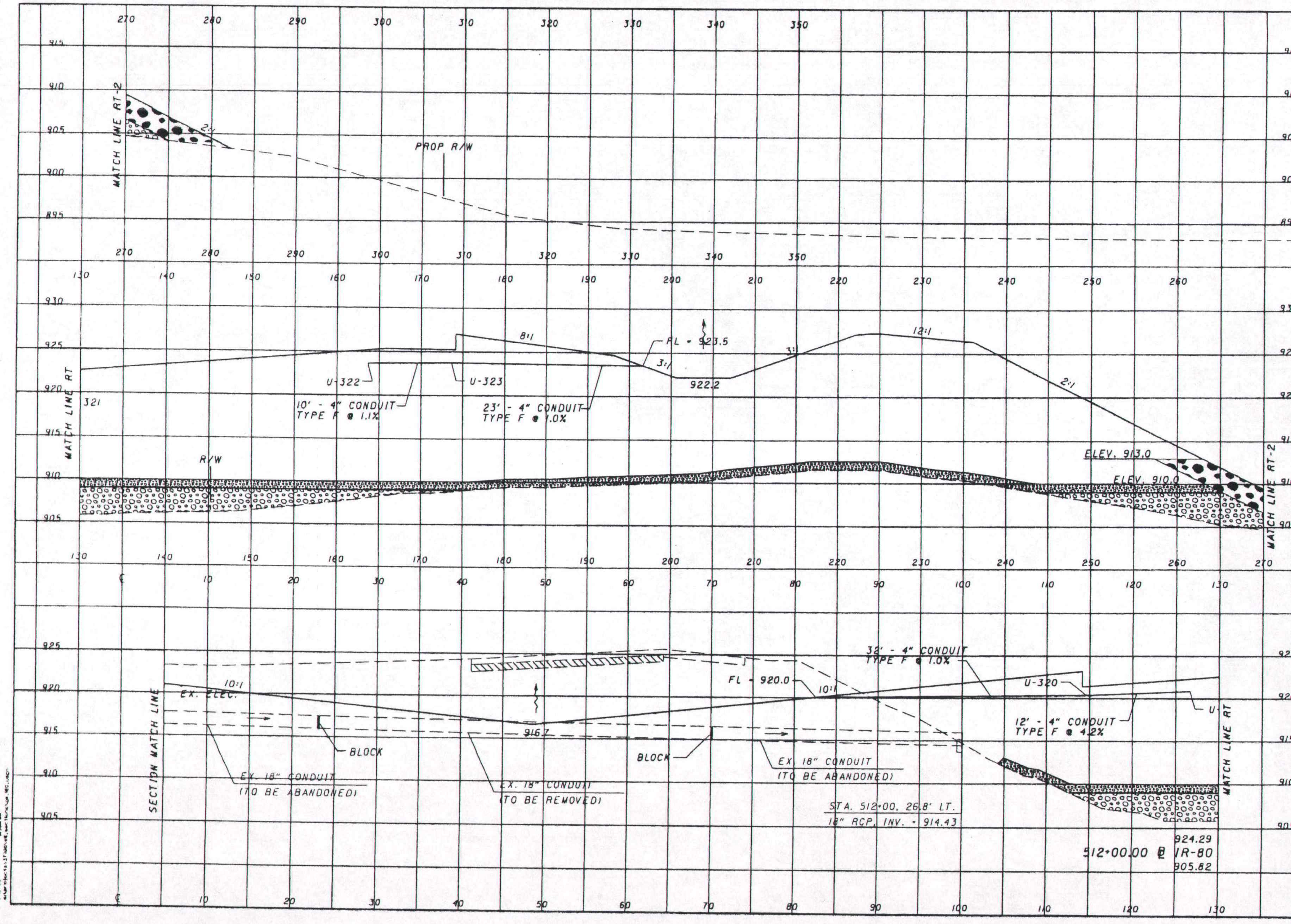


MAH-80-0.97

CROSS SECTIONS
STA 511+50.00

307
1100

CALCULATED PRS
CHECKED SSC

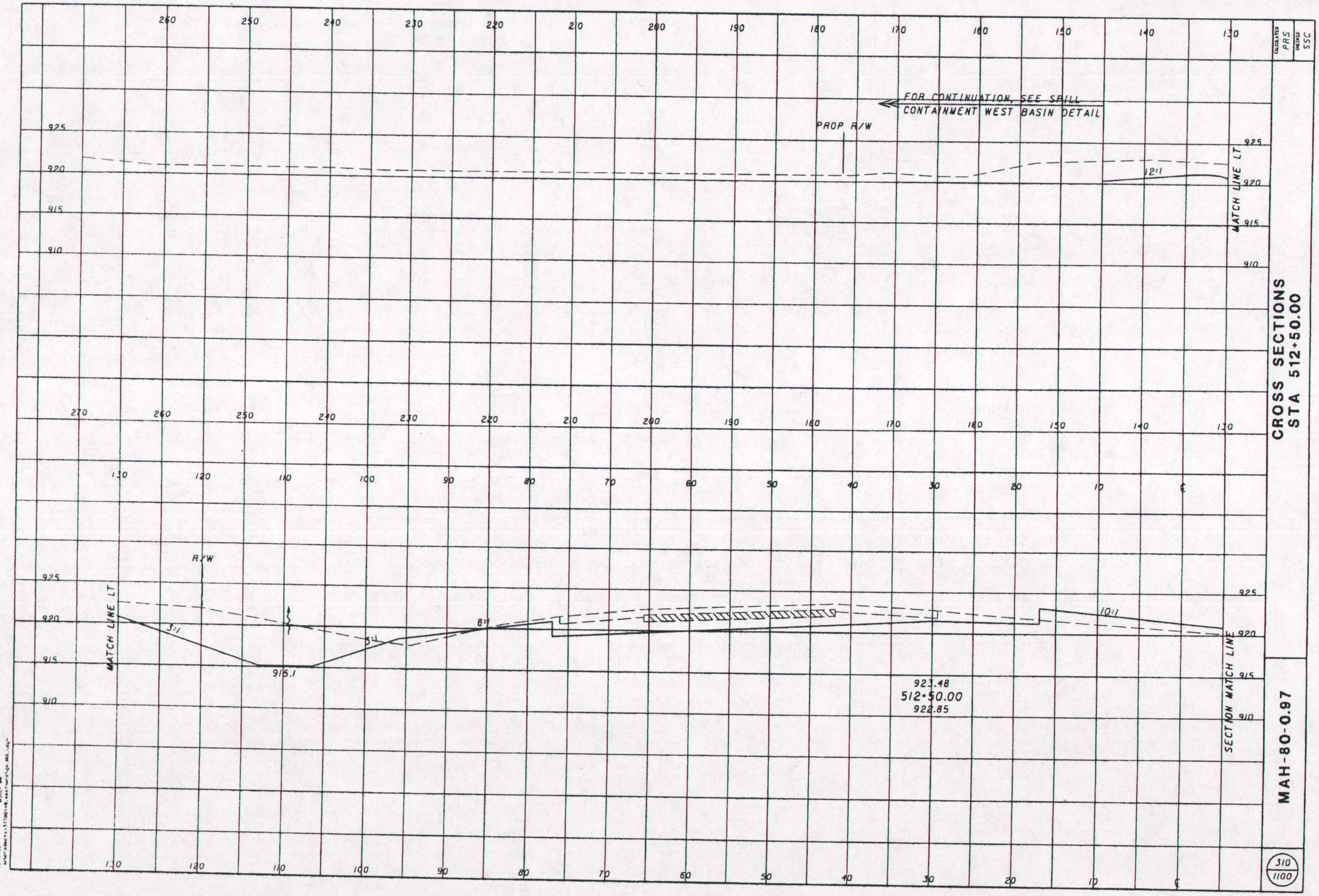


CALCULATED PRS
CHECKED SSC

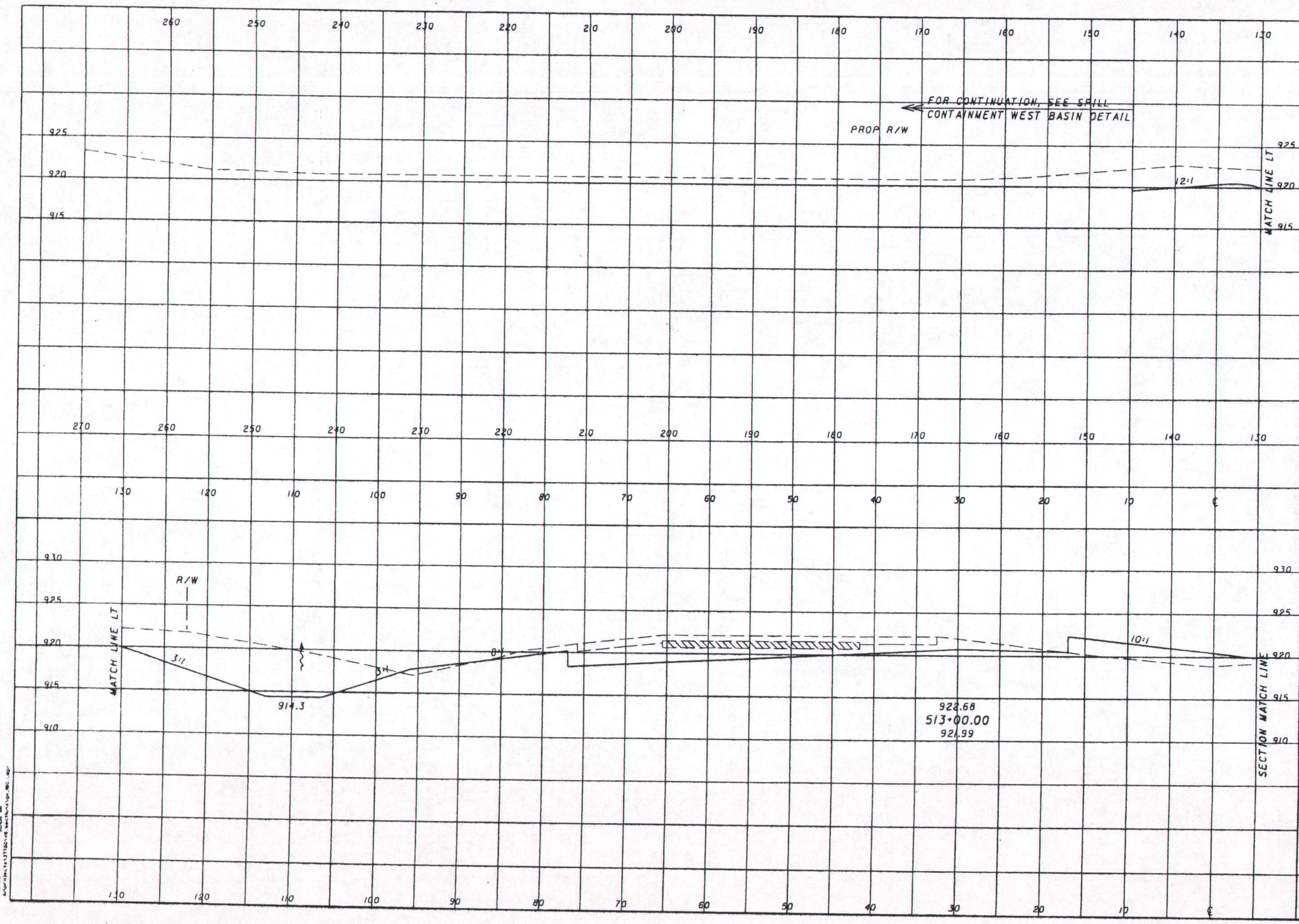
CROSS SECTIONS
STA 512+00.00

MAH-80-0.97

309
1100



CROSS SECTIONS
STA 512+50.00
MAH-80-0.97
310
1100
CALCULATED PRS
CHECKED SSC
FOR CONTINUATION, SEE SPILL CONTAINMENT WEST BASIN DETAIL
PROP R/W
MATCH LINE LT
12:1
R/W
3:1
915.1
5:1
8:1
10:1
SECTION MATCH LINE
923.48
512+50.00
922.85
925
920
915
910

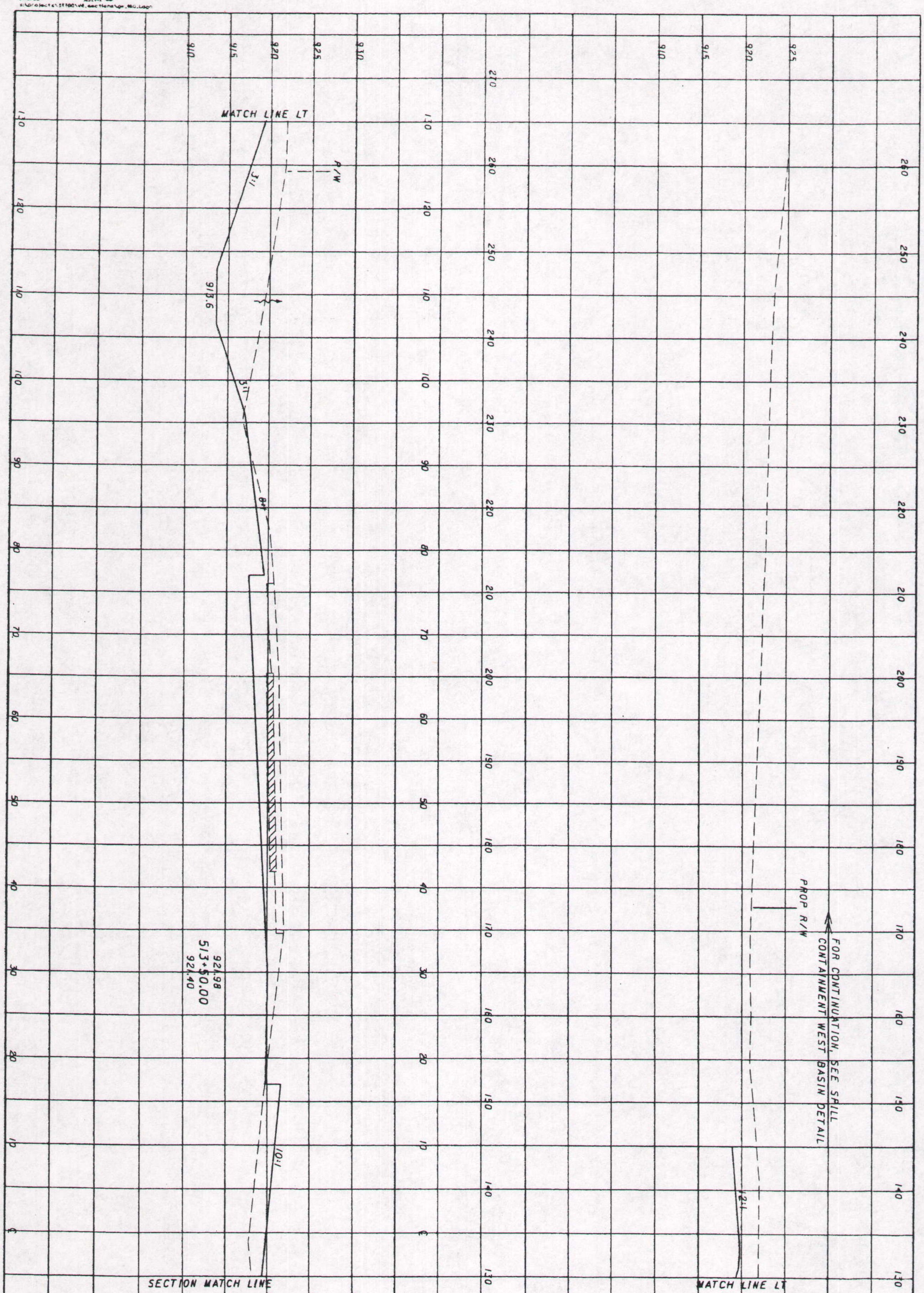


CROSS SECTIONS
STA 513+00.00

MAH-80-0.97

312 / 1100

CALCULATED PRS
CHECKED SSC



MAH-80-0.97

314/1100

CROSS SECTIONS
STA 513+50.00

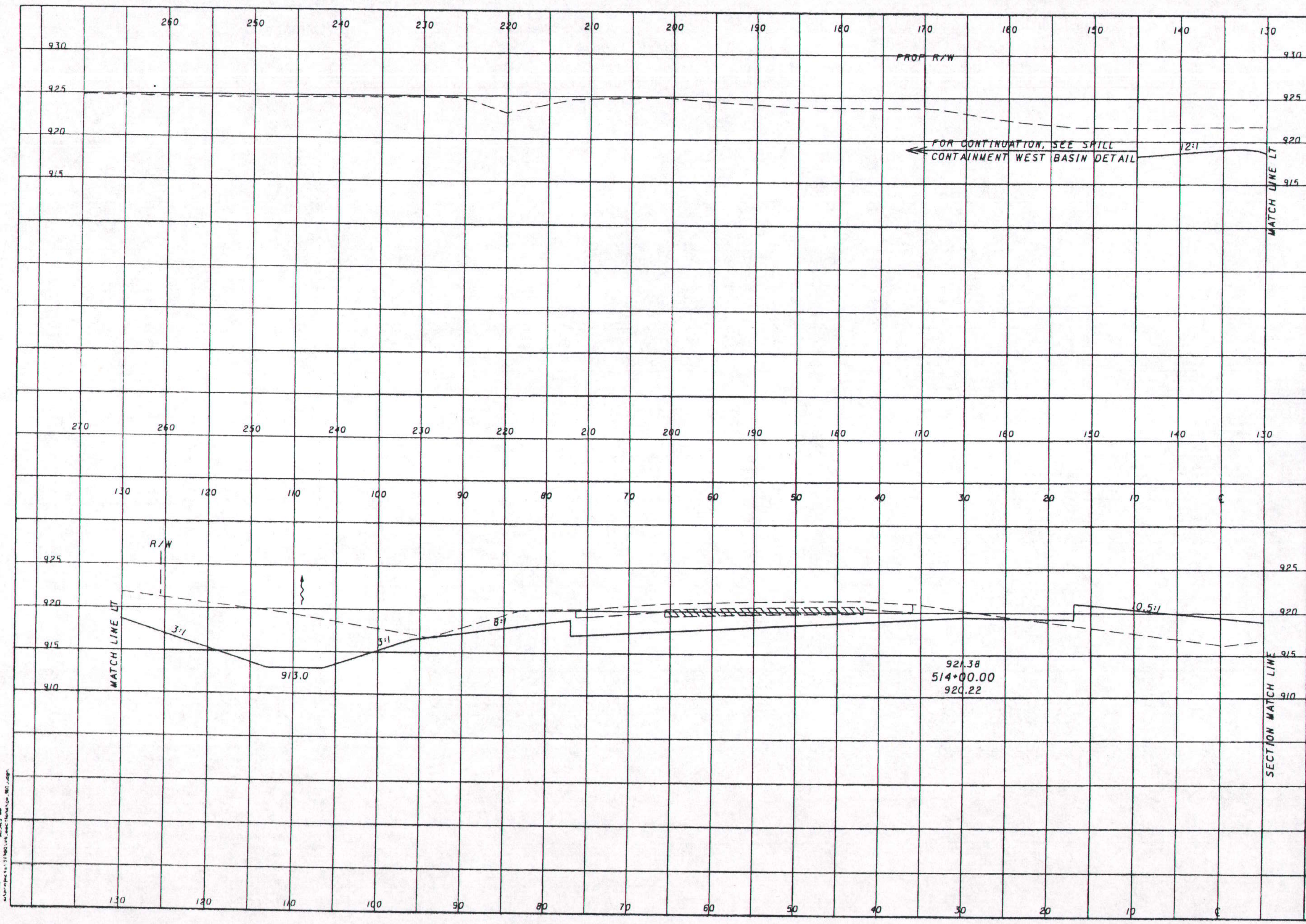
CALCULATED PRS
CHECKED SSC

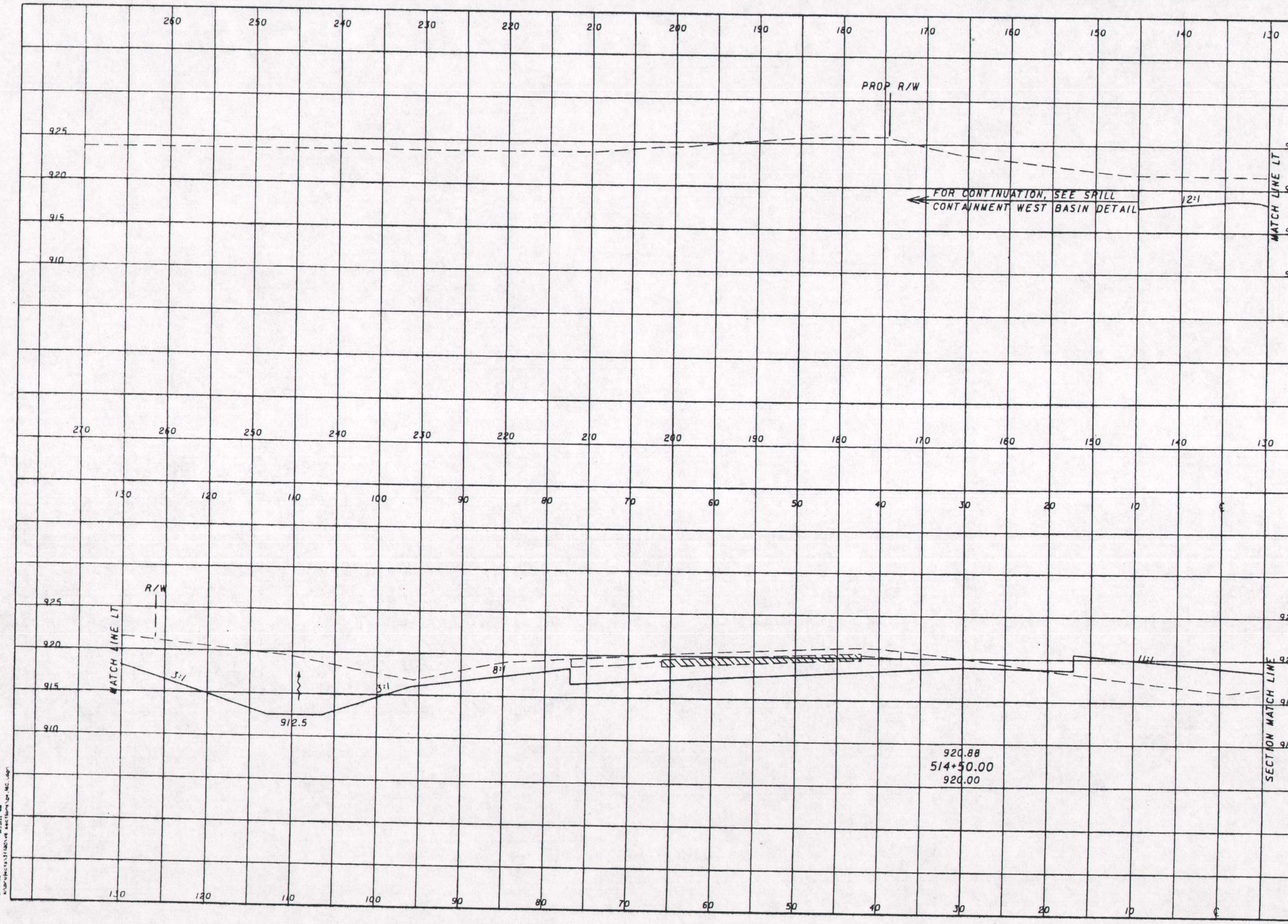
CROSS SECTIONS
STA 514+00.00

MAH-80-0.97

316/1100

CALCULATED PRS
CHECKED SSC



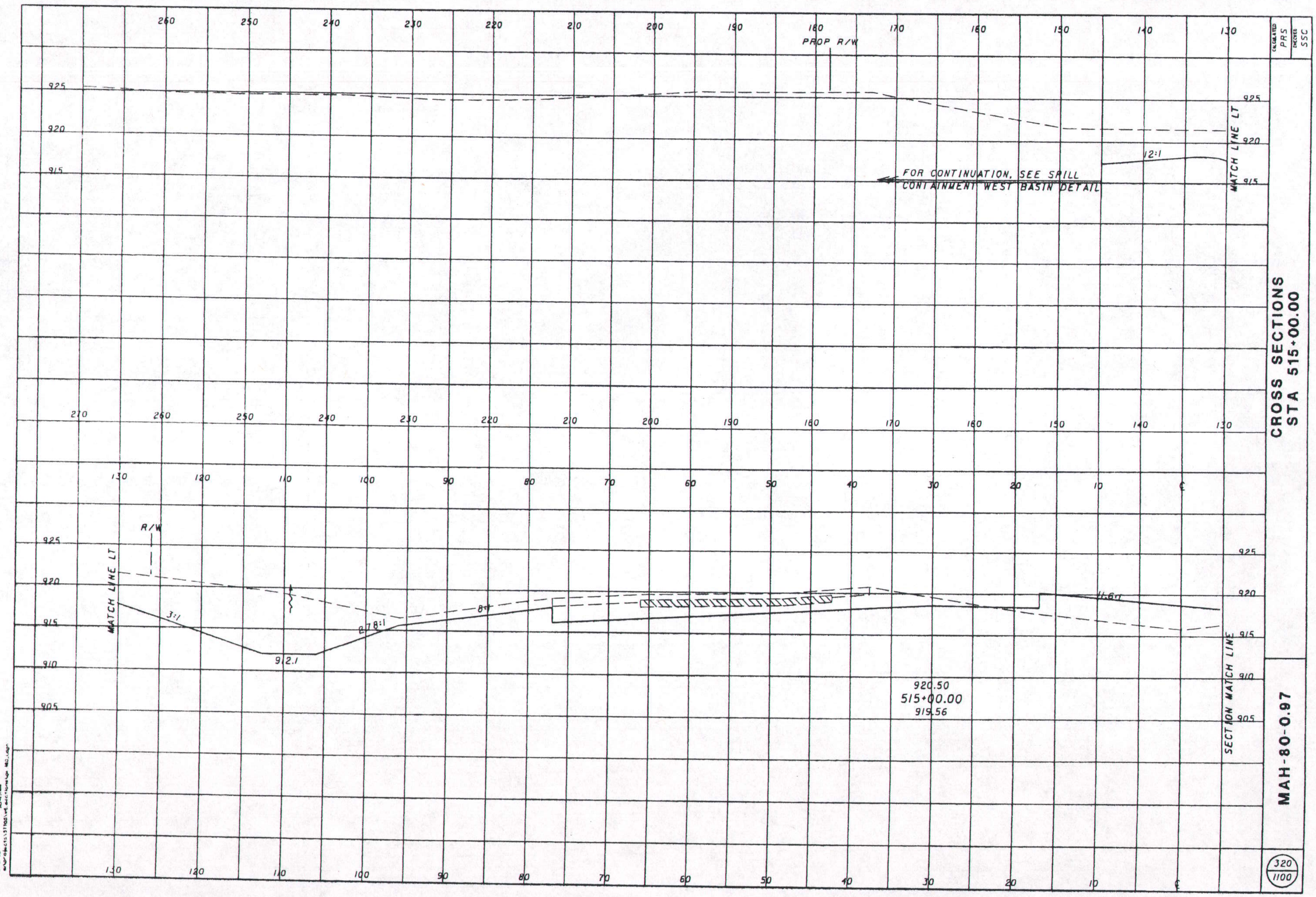


CALCULATED PRS
CHECKED SSC

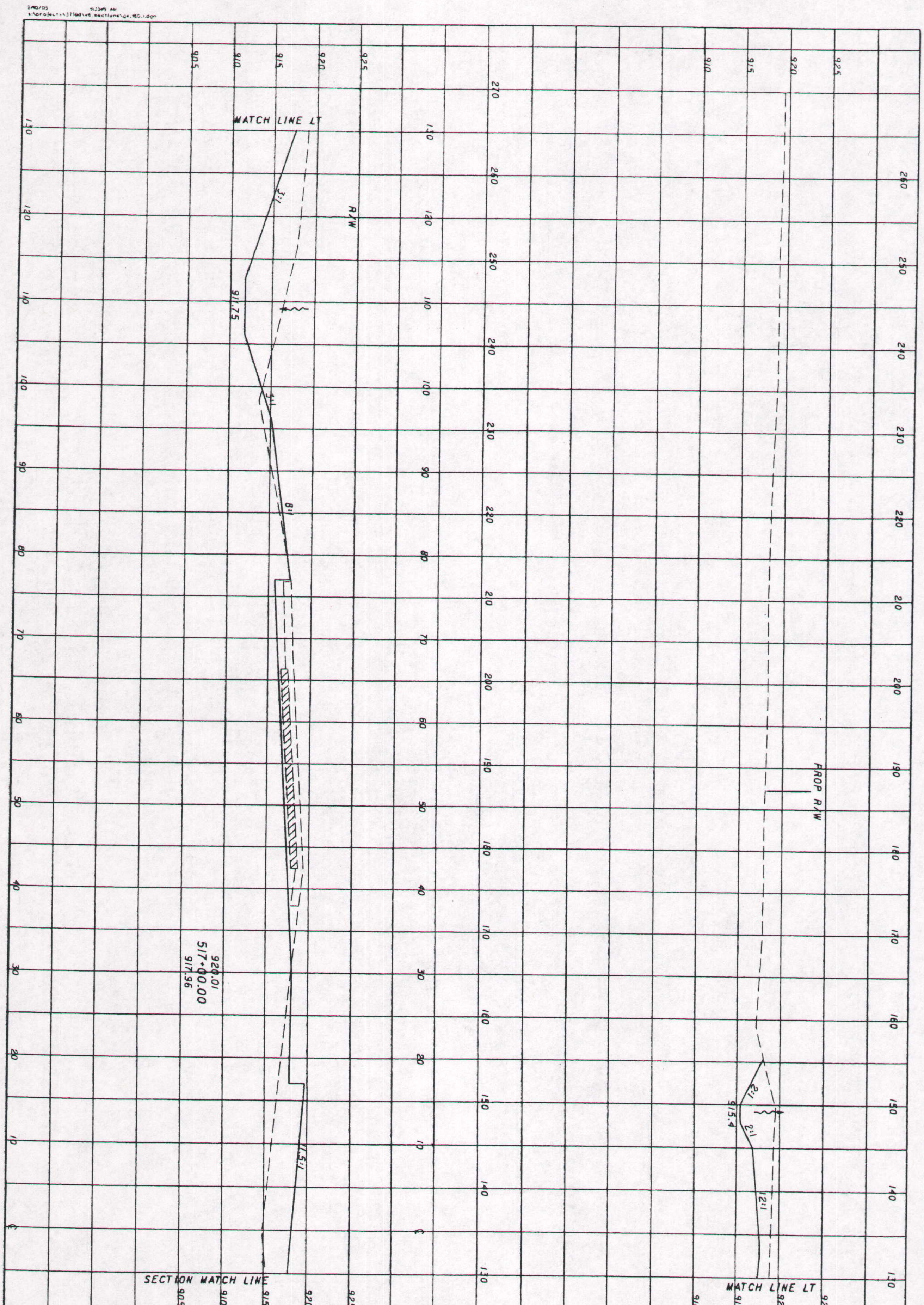
CROSS SECTIONS
STA 514+50.00

MAH-80-0.97

318/1100



CROSS SECTIONS
STA 515+00.00
MAH-80-0.97
320
1100
PRS
SSC
PROP R/W
FOR CONTINUATION, SEE SPILL
CONTAINMENT WEST BASIN DETAIL
MATCH LINE LT
12:1
R/W
3:1
9.2:1
2.78:1
8:1
11.6:1
920.50
515+00.00
919.56
SECTION MATCH LINE
925
920
915
910
905

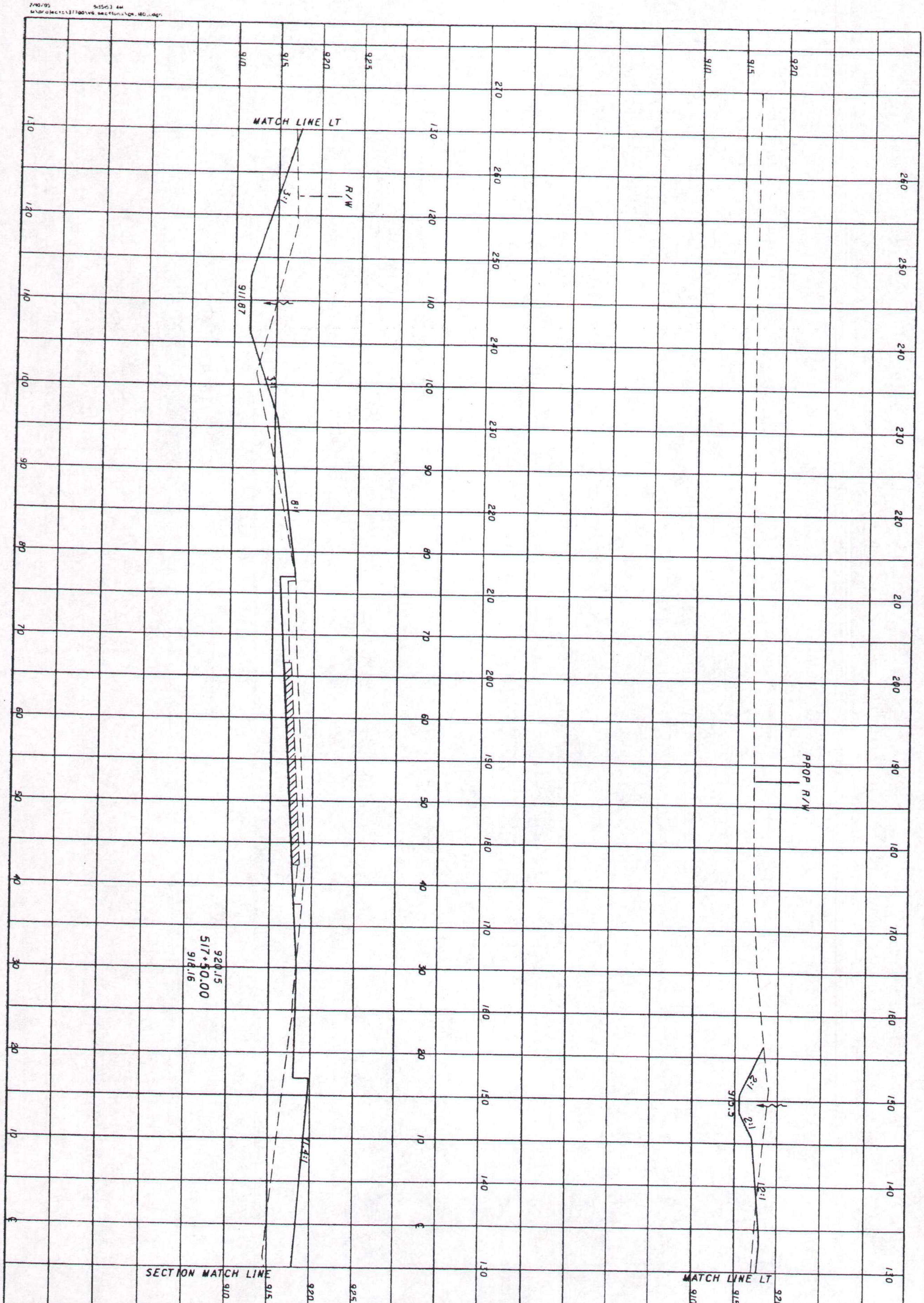


MAH-80-0.97

328
1100

CROSS SECTIONS
STA 517+00.00

CALCULATED PRS
CHECKED SSC

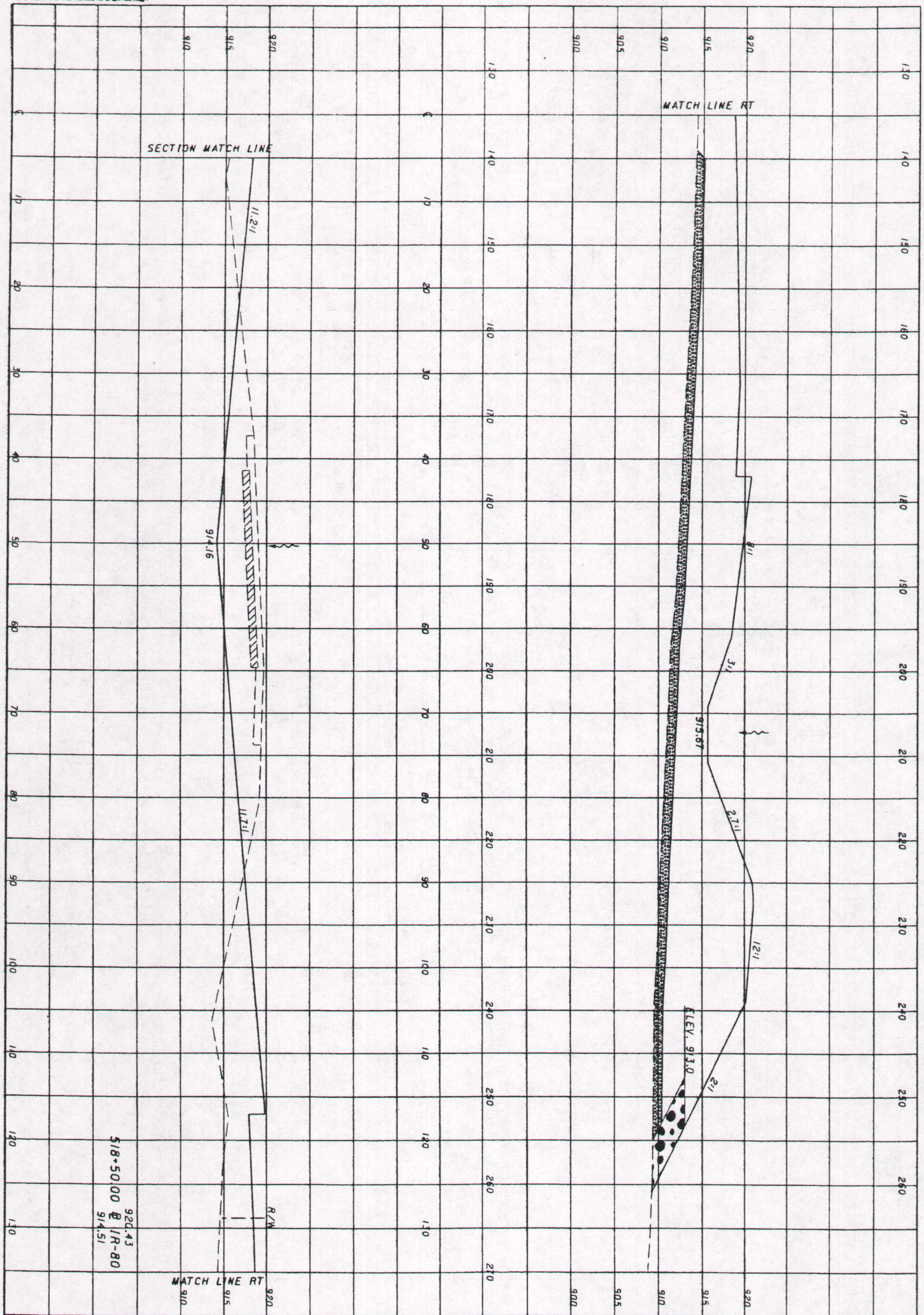


330/1100

MAH-80-0.97

CROSS SECTIONS
STA 517+50.00

CALCULATED PRS
CHECKED SSC

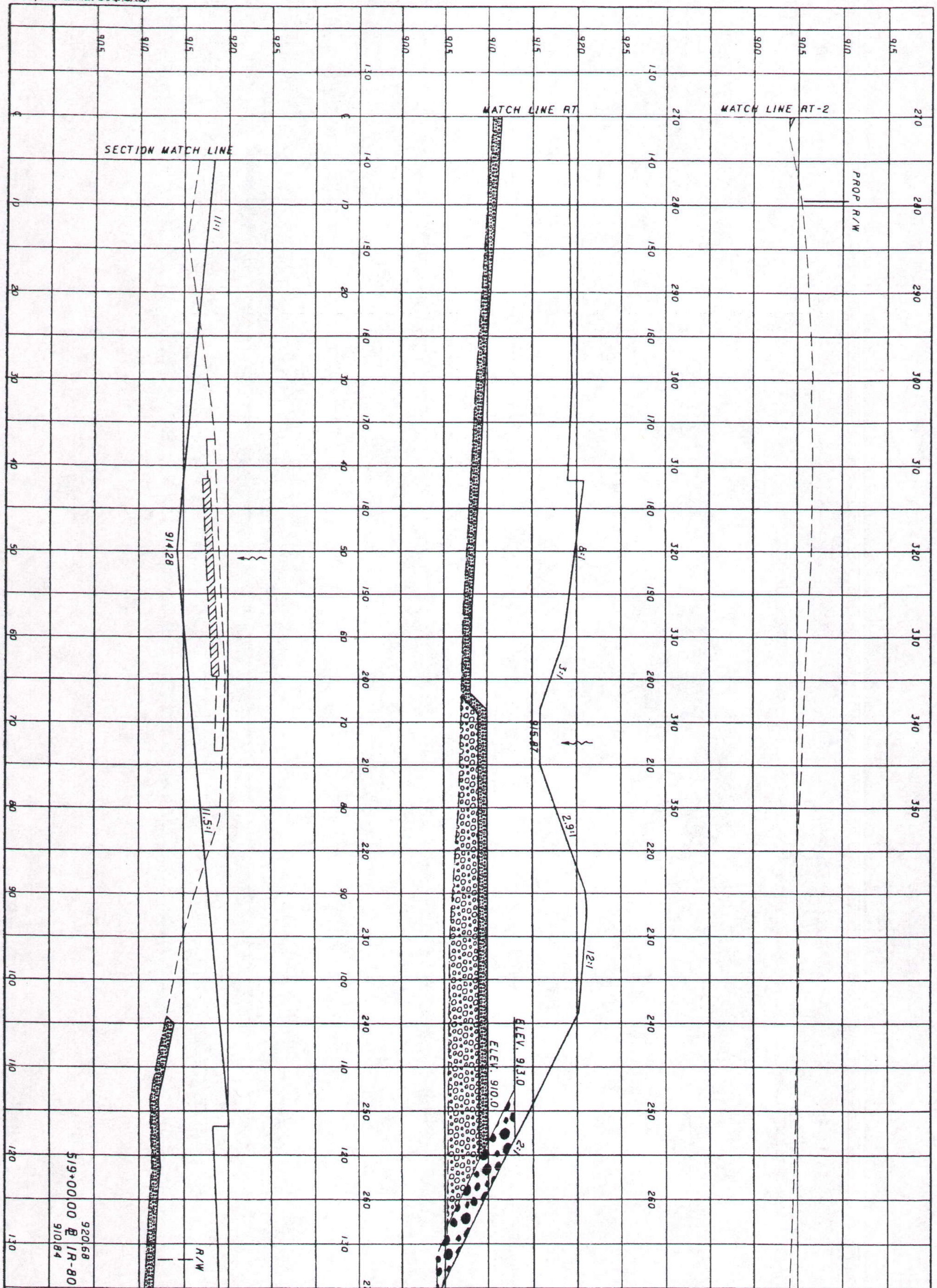


335
1100

MAH-80-0.97

CROSS SECTIONS
STA 518+50.00

CALCULATED PRS
CHECKED SSC

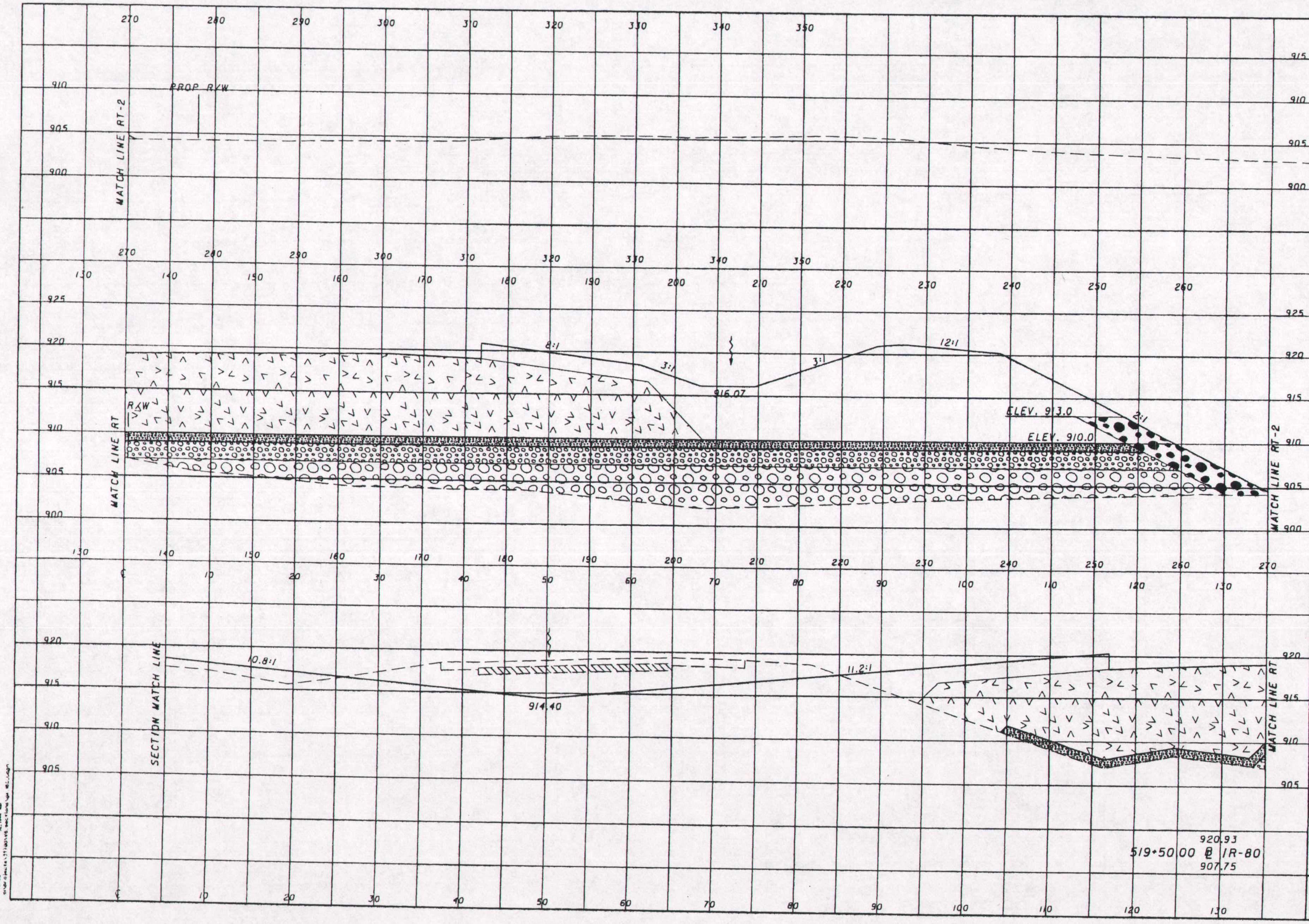


337/1100

MAH-80-0.97

CROSS SECTIONS
STA 519+00.00

CALCULATED PRS
CHECKED SSC

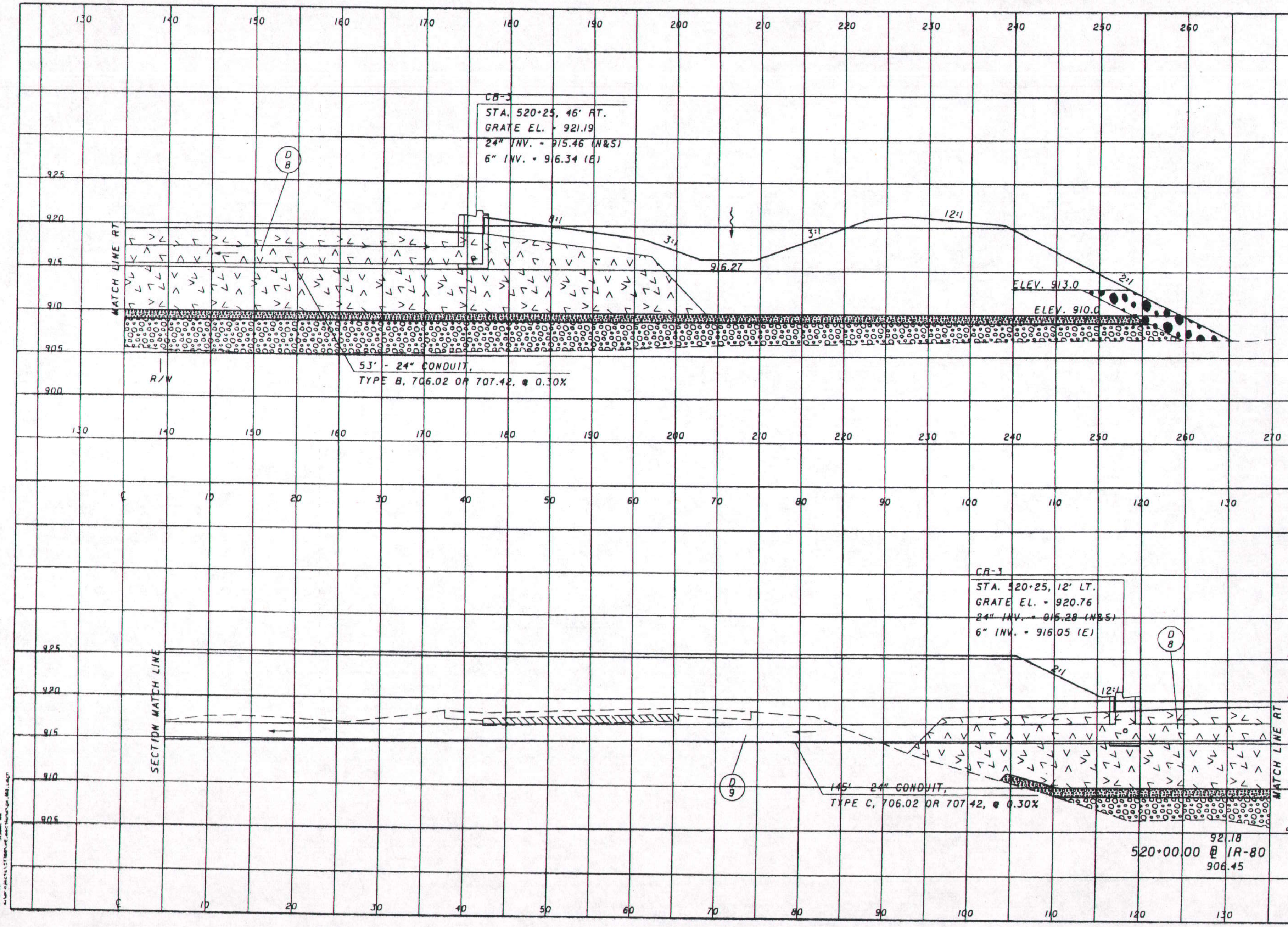


CALCULATED PRS
CHECKED SSC

CROSS SECTIONS
STA 519+50.00

MAH-80-0.97

339/1100

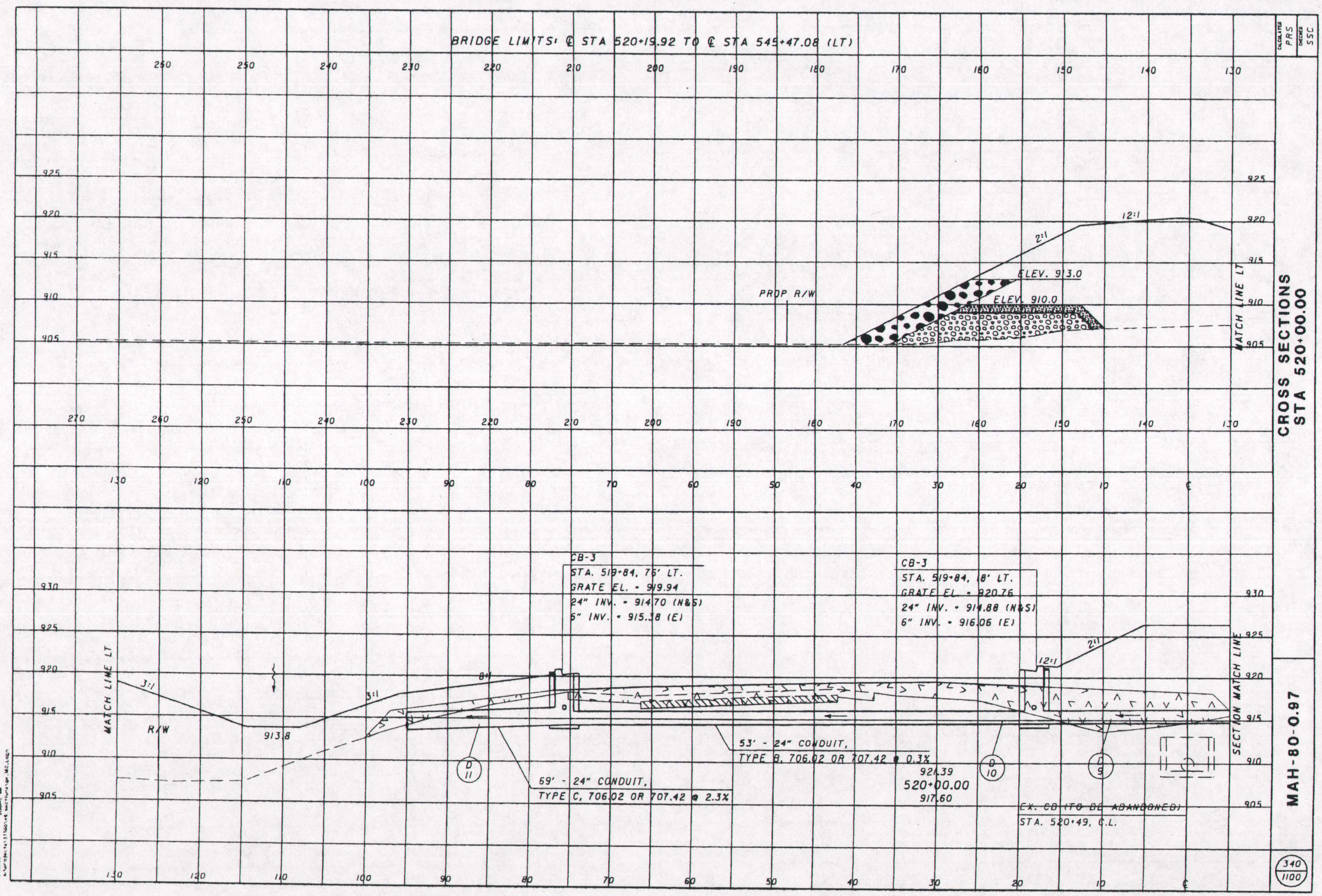


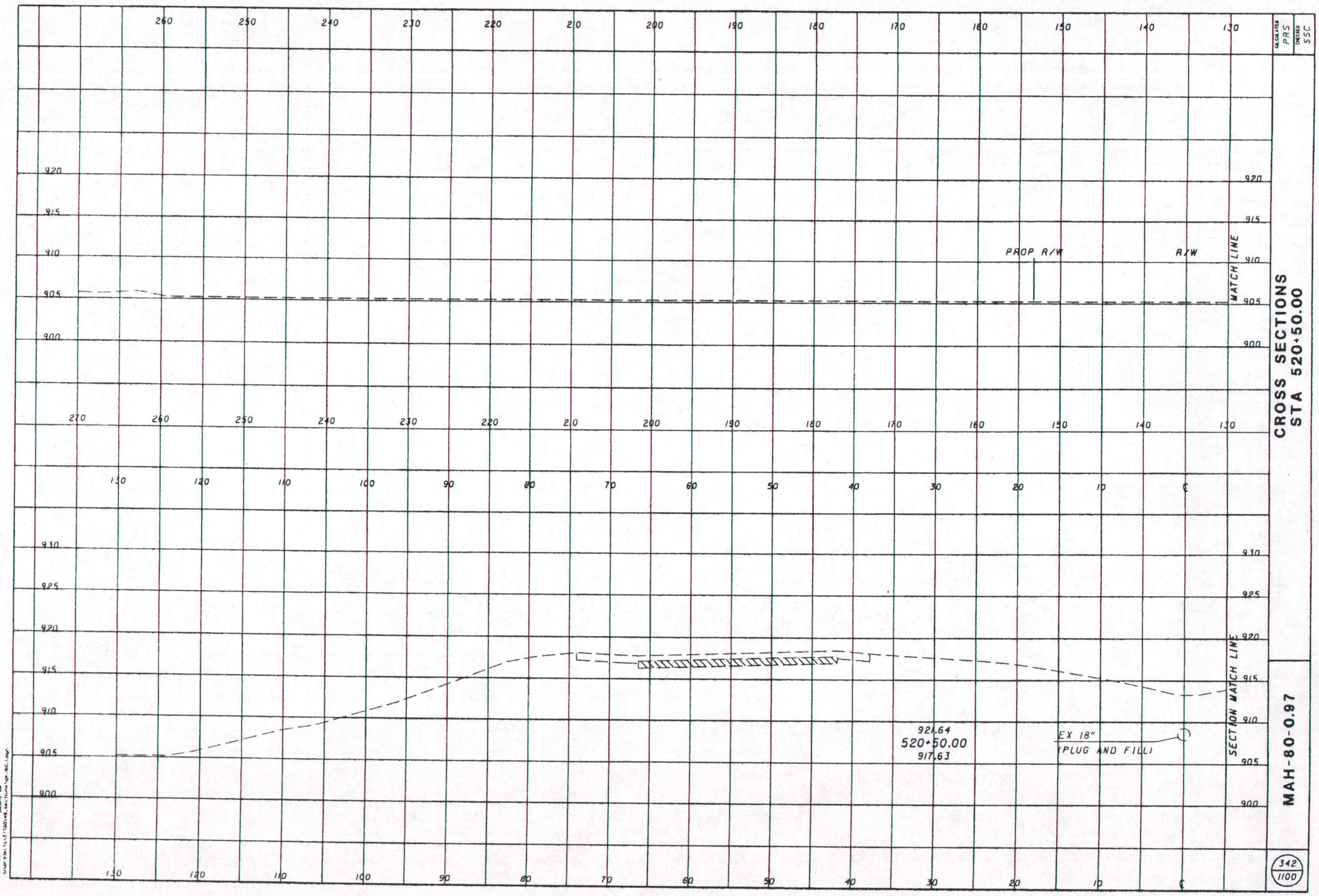
CROSS SECTIONS
STA 520+00.00

MAH-80-0.97

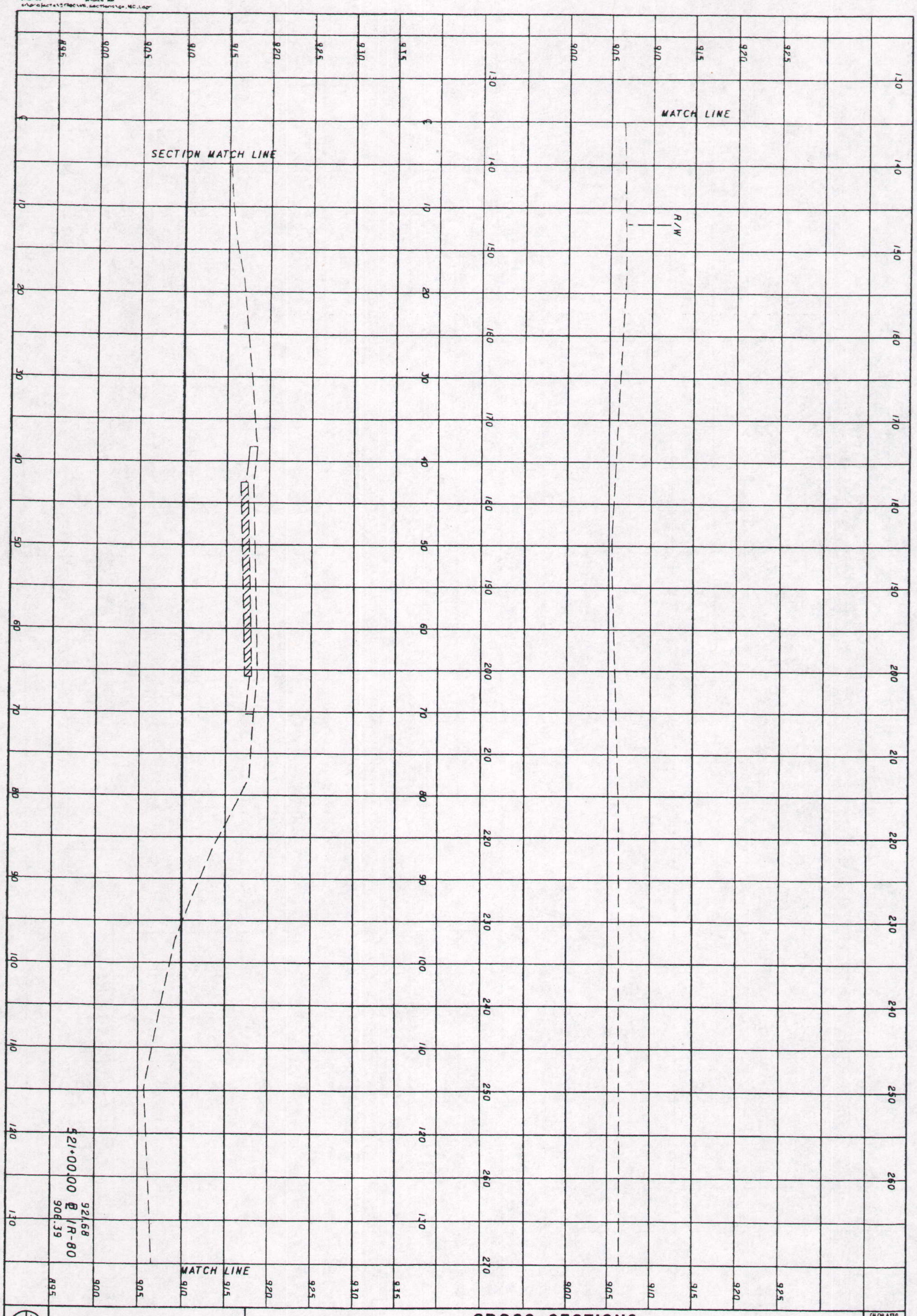
CALCULATED PRS
CHECKED SSC

341/1100

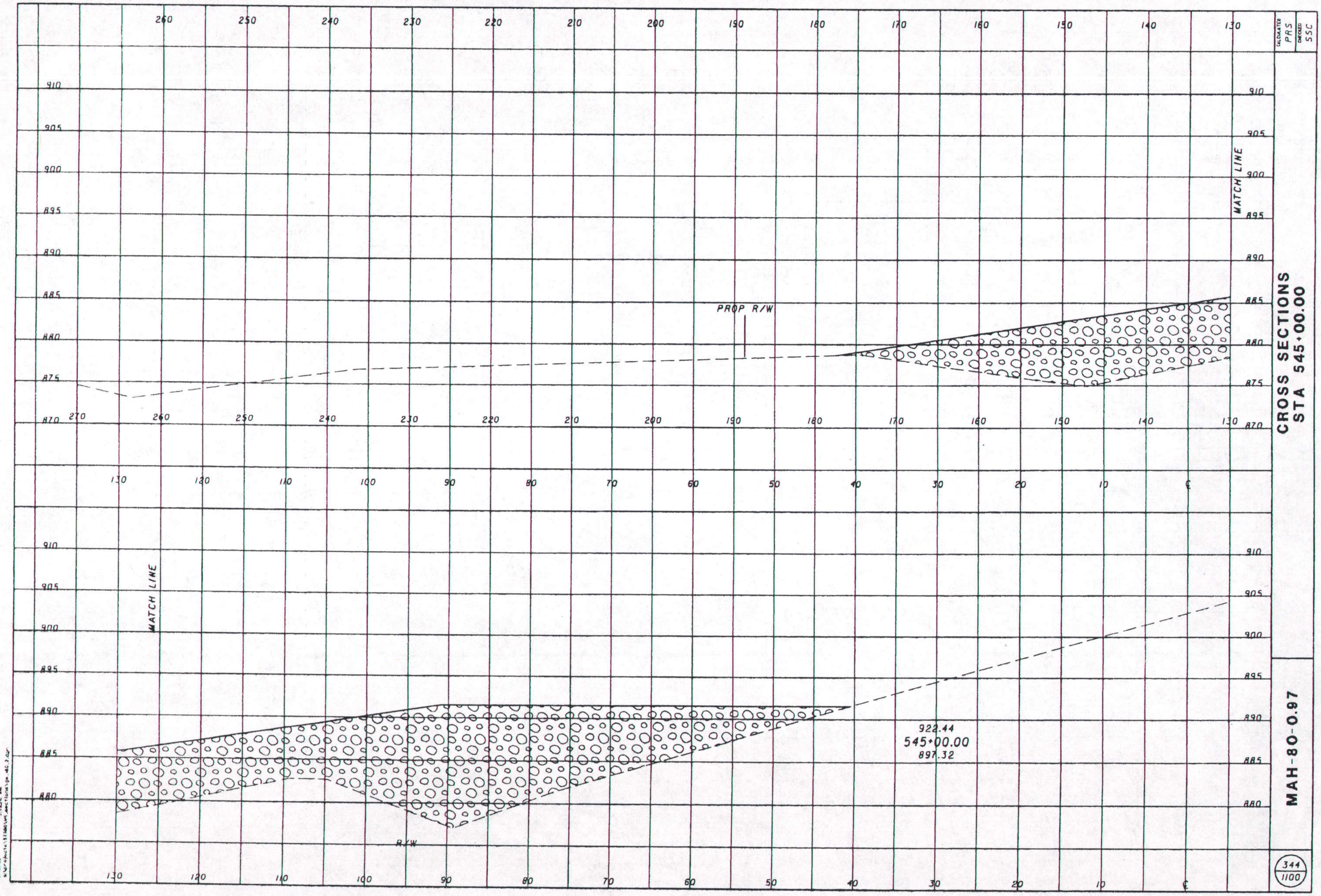

BRIDGE LIMITS: ℄ STA 520+19.92 TO ℄ STA 545+47.08 (LT)
CROSS SECTIONS
STA 520+00.00
MAH-80-0.97
340/1100
CALCULATED PRS
CHECKED SSC
ELEV. 913.0
ELEV. 910.0
PROP R/W
12:1
2:1
3:1
8:1
WATCH LINE LT
SECTION WATCH LINE
R/W
913.8
CB-3
STA. 519+84, 75' LT.
GRATE EL. = 919.94
24" INV. = 914.70 (N&S)
6" INV. = 915.38 (E)
CB-3
STA. 519+84, 18' LT.
GRATE EL. = 920.76
24" INV. = 914.88 (N&S)
6" INV. = 916.06 (E)
53' - 24" CONDUIT,
TYPE B, 706.02 OR 707.42 @ 0.3%
69' - 24" CONDUIT,
TYPE C, 706.02 OR 707.42 @ 2.3%
921.39
520+00.00
917.60
EX. CB (TO BE ABANDONED)
STA. 520+49, C.L.
D 9
D 10
D 11

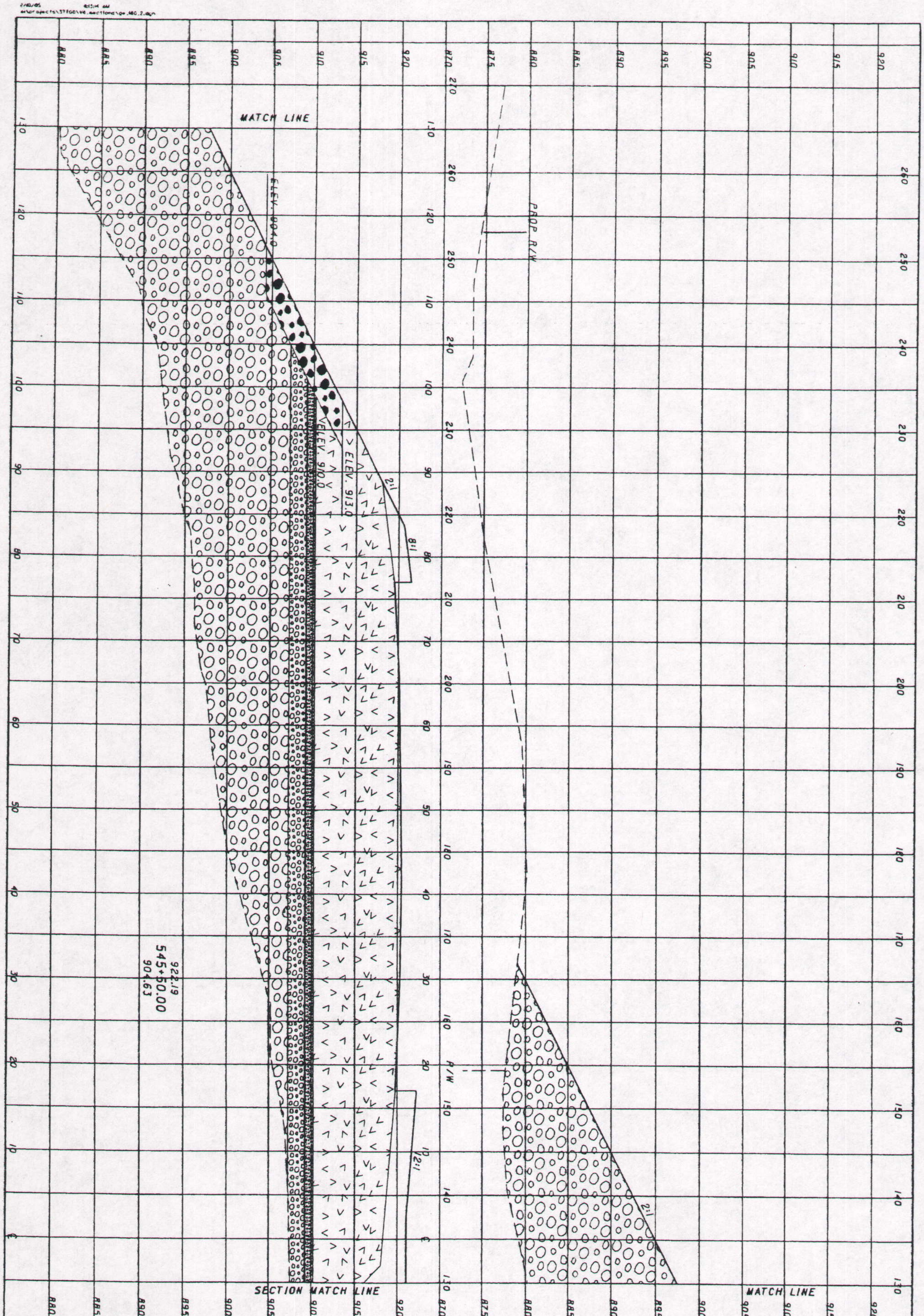


CROSS SECTIONS
STA 520+50.00
MAH-80-0.97
342
1100
CALCULATED PRS
CHECKED SSC
PROP R/W
R/W
WATCH LINE
SECTION WATCH LINE
921.64
520+50.00
917.63
EX 18"
(PLUG AND FILL)



343A 1100 MAH-80-0.97	CROSS SECTIONS STA 521+00.00	CALCULATED PRS CHECKED SSC


CROSS SECTIONS
STA 545+00.00
MAH-80-0.97
344
1100
CALCULATED PRS
CHECKED SSC
WATCH LINE
PROP R/W
R/W
922.44
545+00.00
897.32
910
905
900
895
890
885
880
875
870

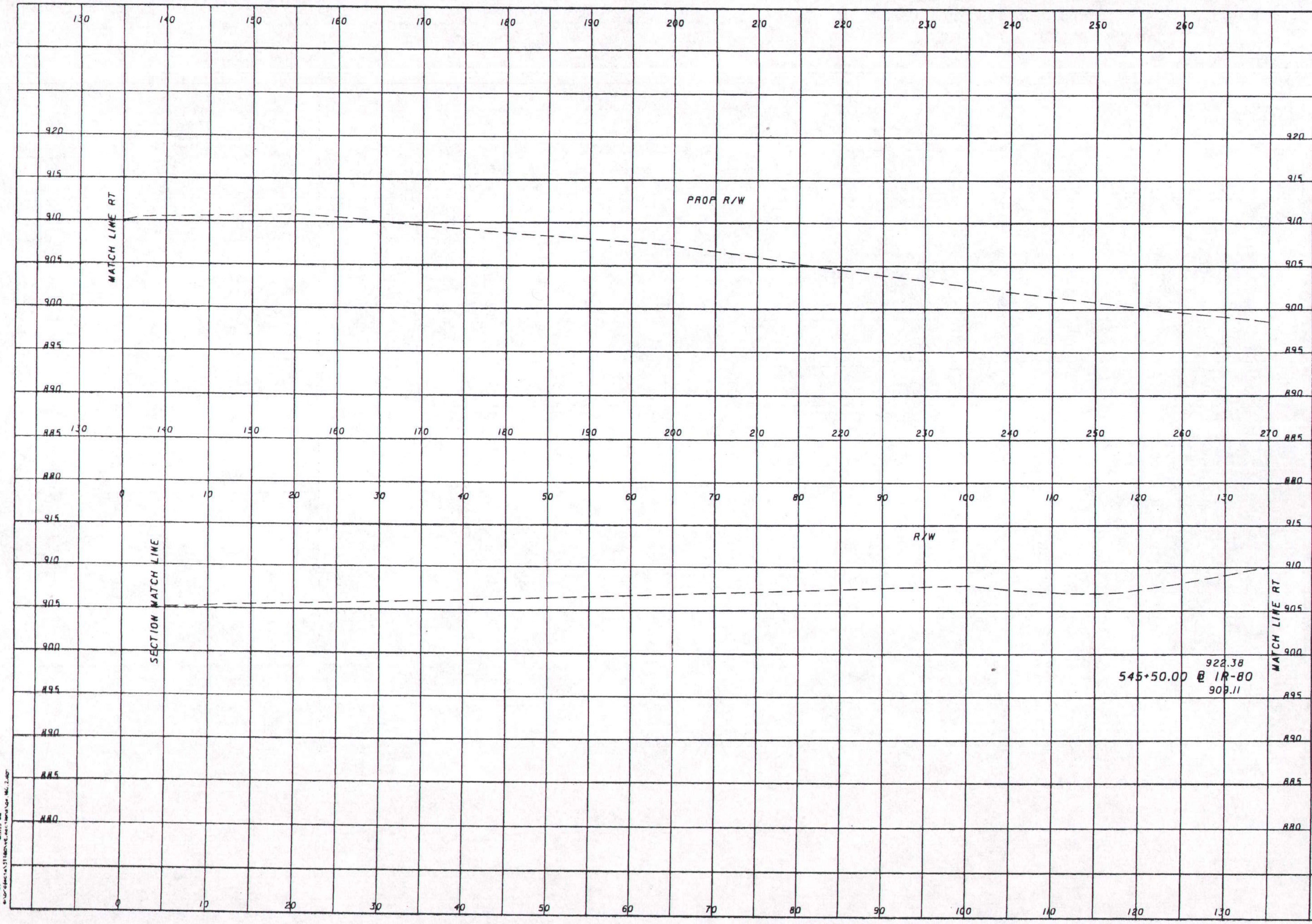


MAH-80-0.97

345
1100

CROSS SECTIONS
STA 545+50.00

CALCULATED PRS
CHECKED SSC

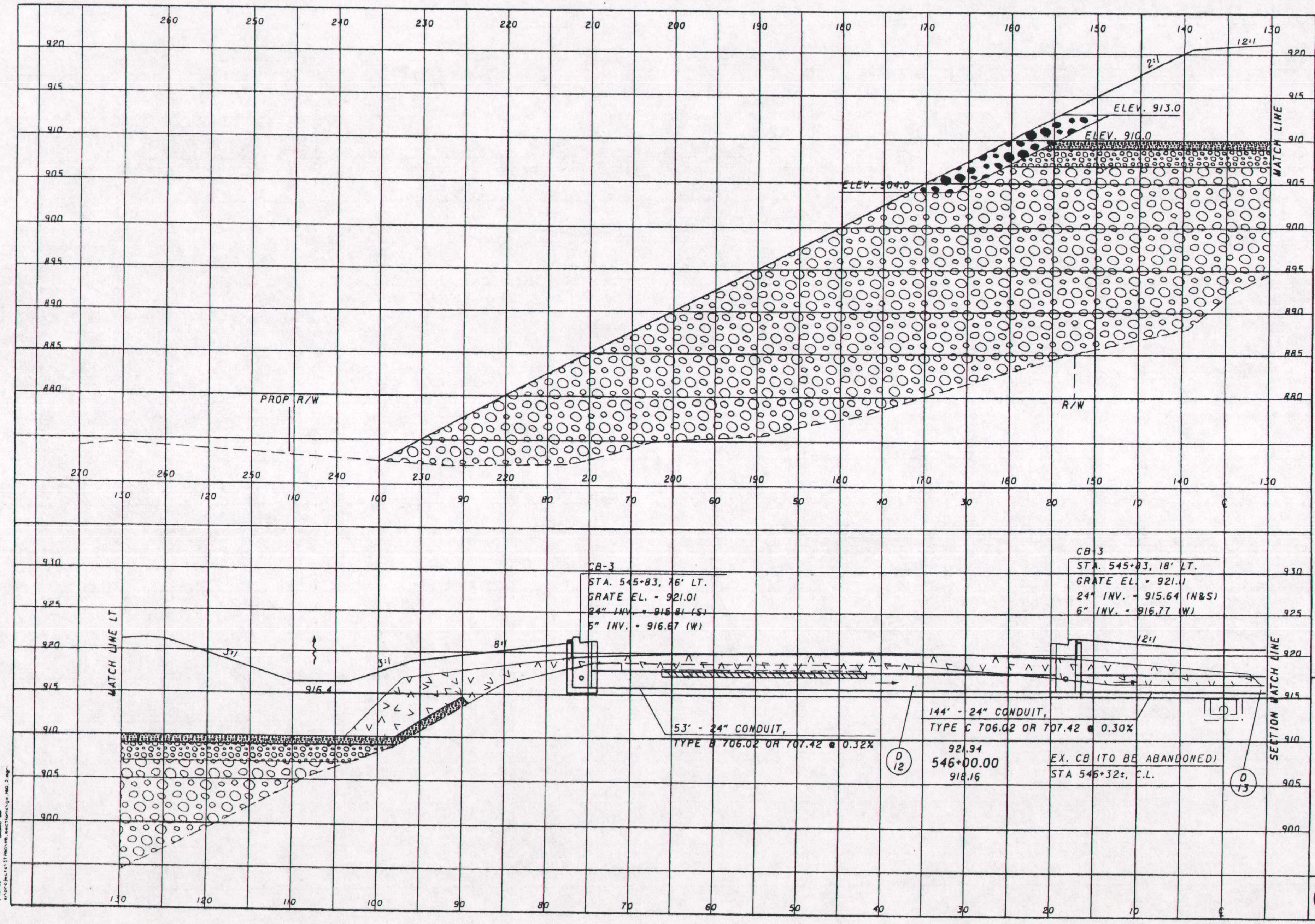


CROSS SECTIONS
STA 545+50.00

MAH-80-0.97

345A
1100

CALCULATED PRS
CHECKED SSC

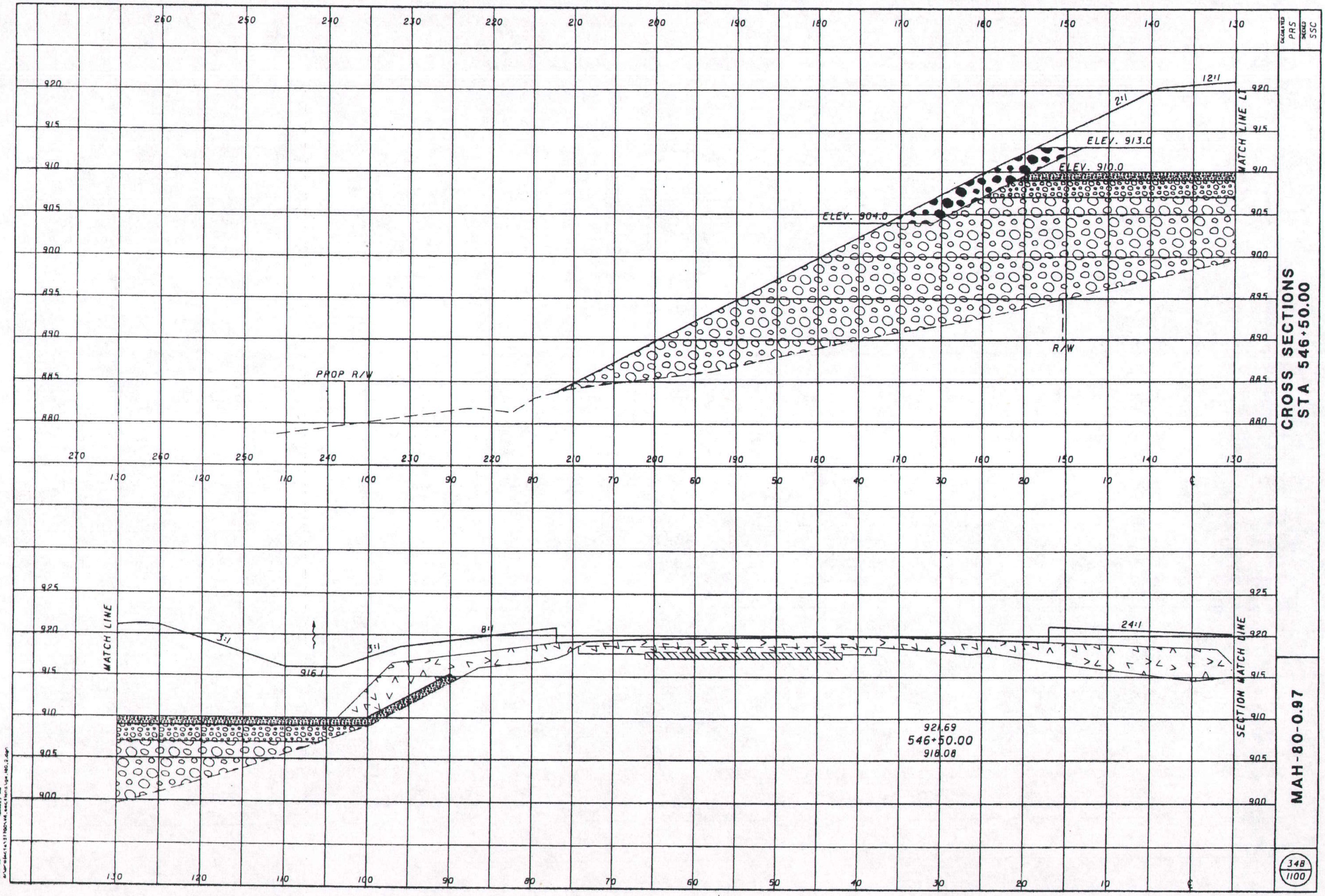


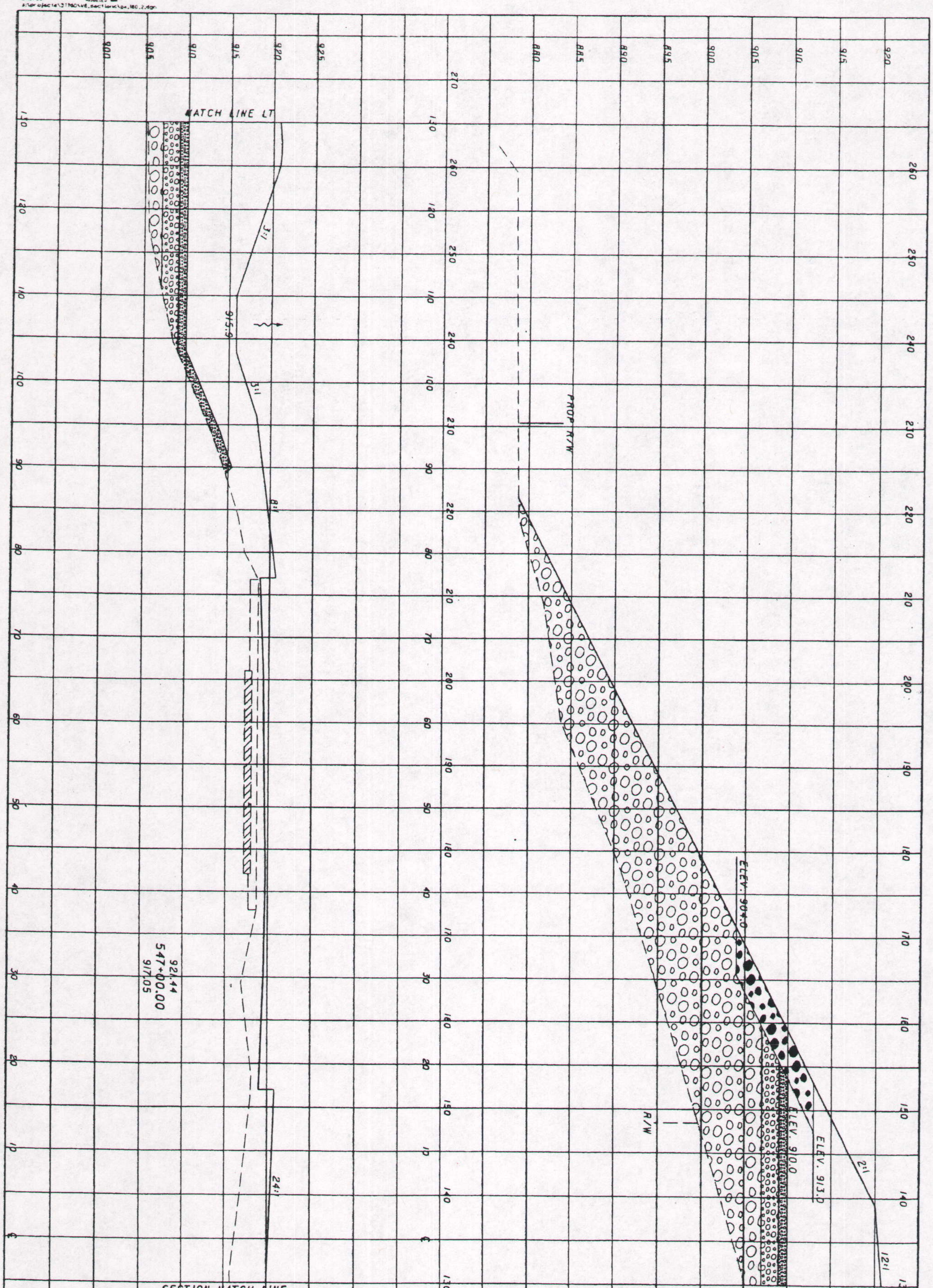
CROSS SECTIONS
STA 546+00.00

MAH-80-0.97

346/1100

CALCULATED PRS
CHECKED SSC


CROSS SECTIONS
STA 546+50.00
MAH-80-0.97
348
1100
PRS
SSC
ELEV. 913.0
ELEV. 910.0
ELEV. 904.0
12:1
2:1
R/W
PROP R/W
WATCH LINE LT
SECTION WATCH LINE
WATCH LINE
24:1
8:1
3:1
916.1
921.69
546+50.00
918.08

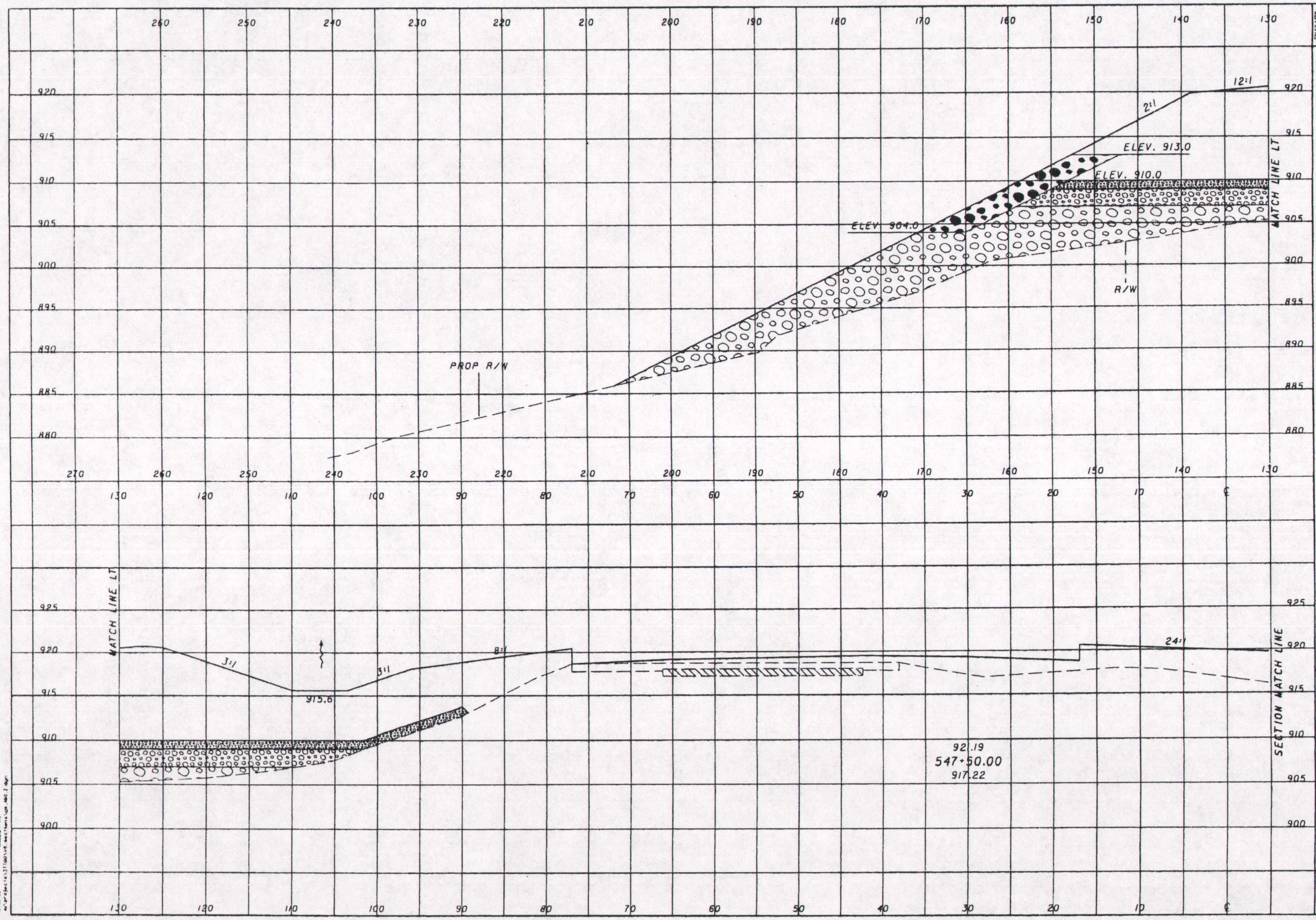


MAH-80-0.97

CROSS SECTIONS
STA 547+00.00

CALCULATED PRS
CHECKED SSC

350/1100

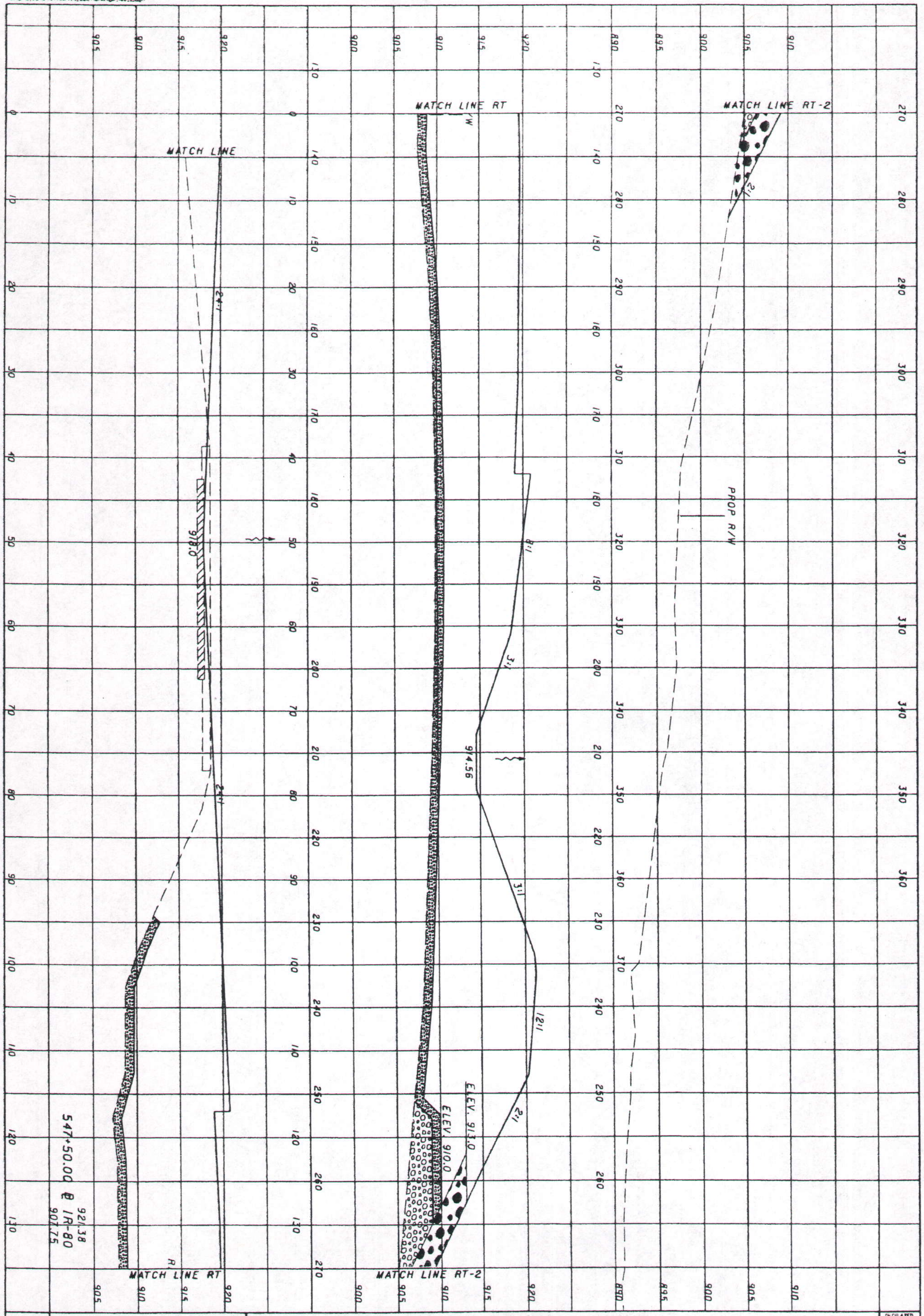


CROSS SECTIONS
STA 547+50.00

MAH-80-0.97

CALCULATED PRS
CHECKED SSC

352/1100

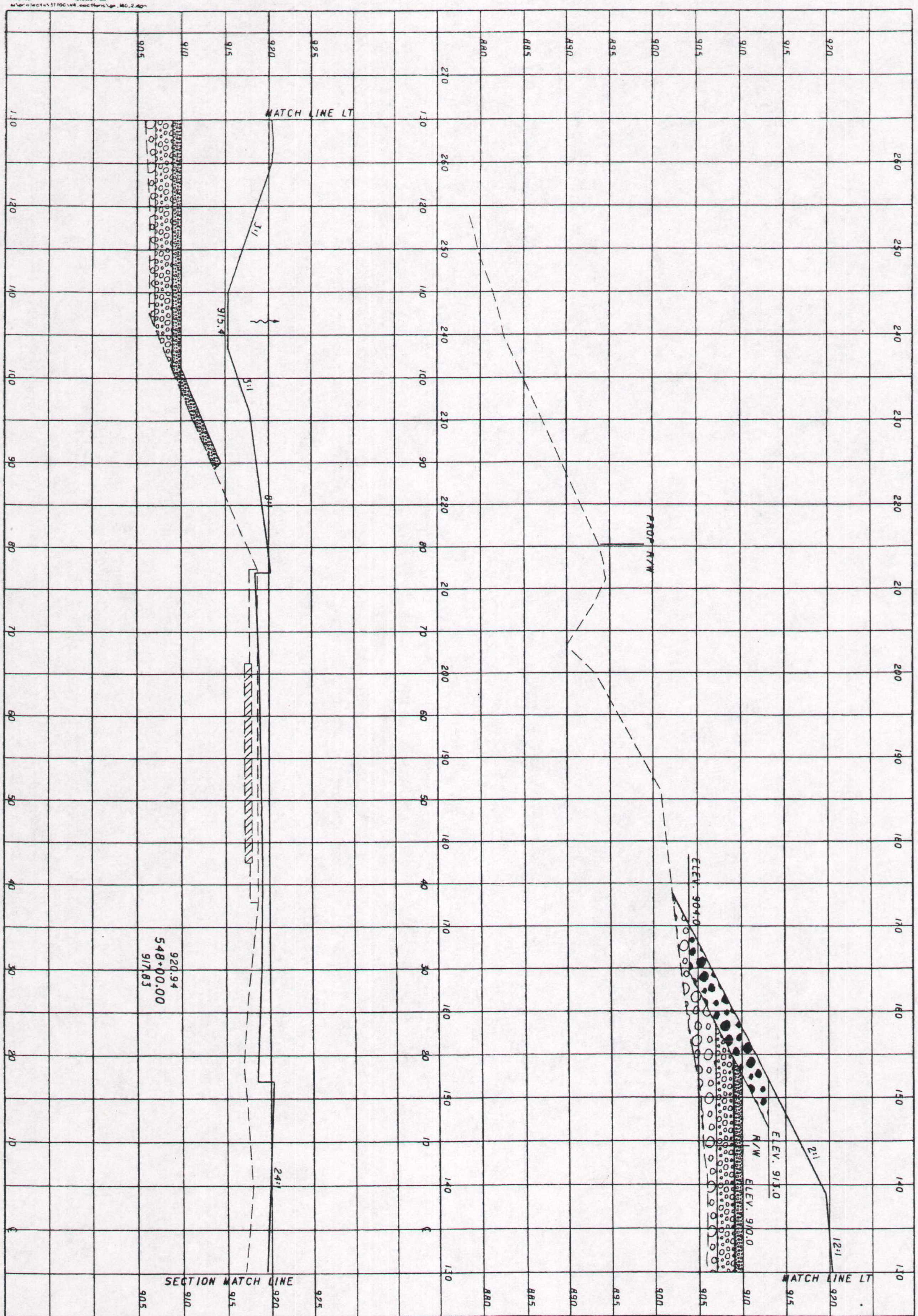


CROSS SECTIONS
STA 547+50.00

MAH-80-0.97

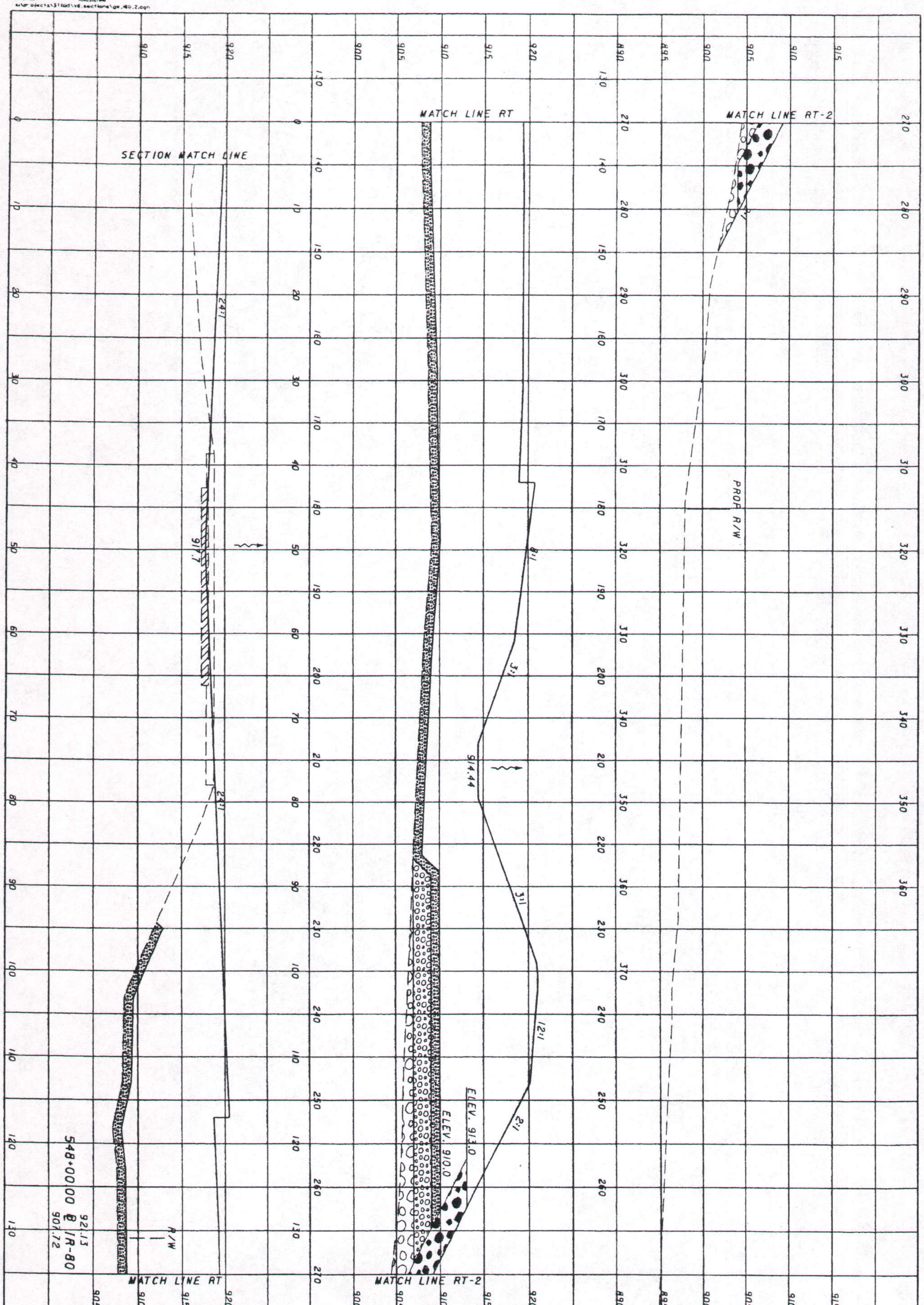
353/1100

CALCULATED PRS
CHECKED SSC

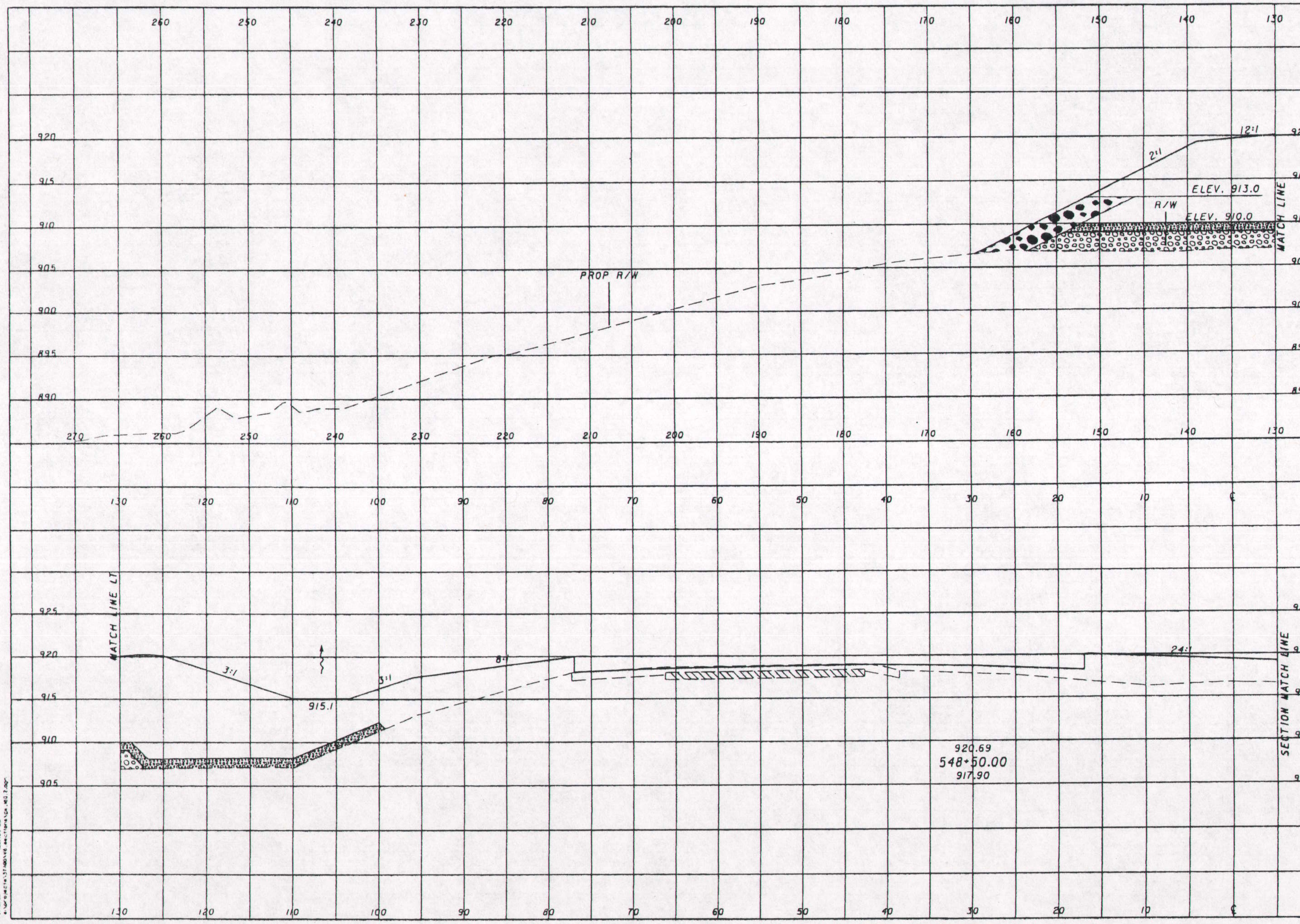


MAH-80-0.97	CROSS SECTIONS STA 548+00.00	CALCULATED PRS CHECKED SSC

354/1100



355/1100	MAH-80-0.97	CROSS SECTIONS STA 548+00.00	CALCULATED PRS CHECKED SSC

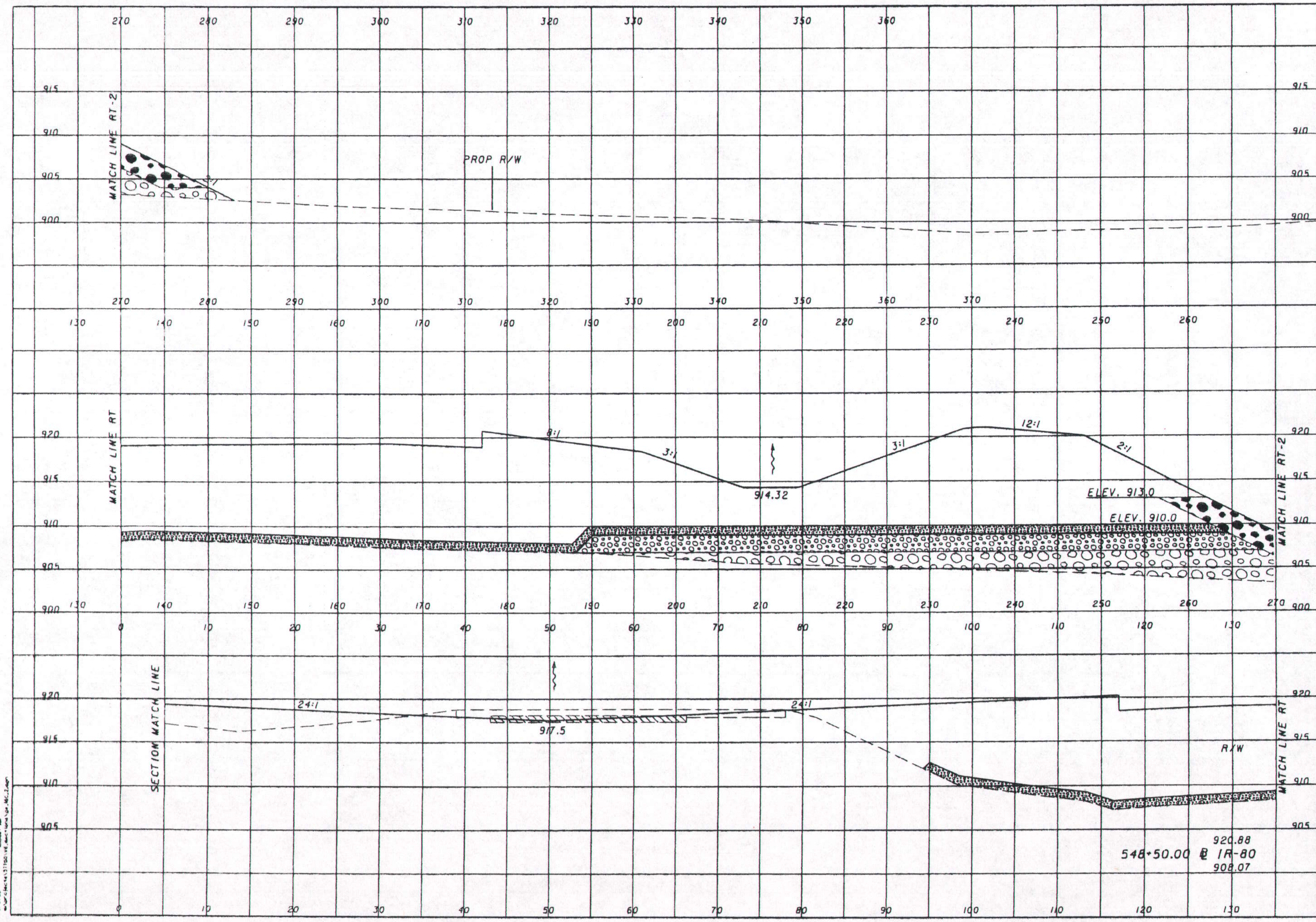


CROSS SECTIONS
STA 548+50.00

MAH-80-0.97

356
1100

CALCULATED PRS
CHECKED SSC

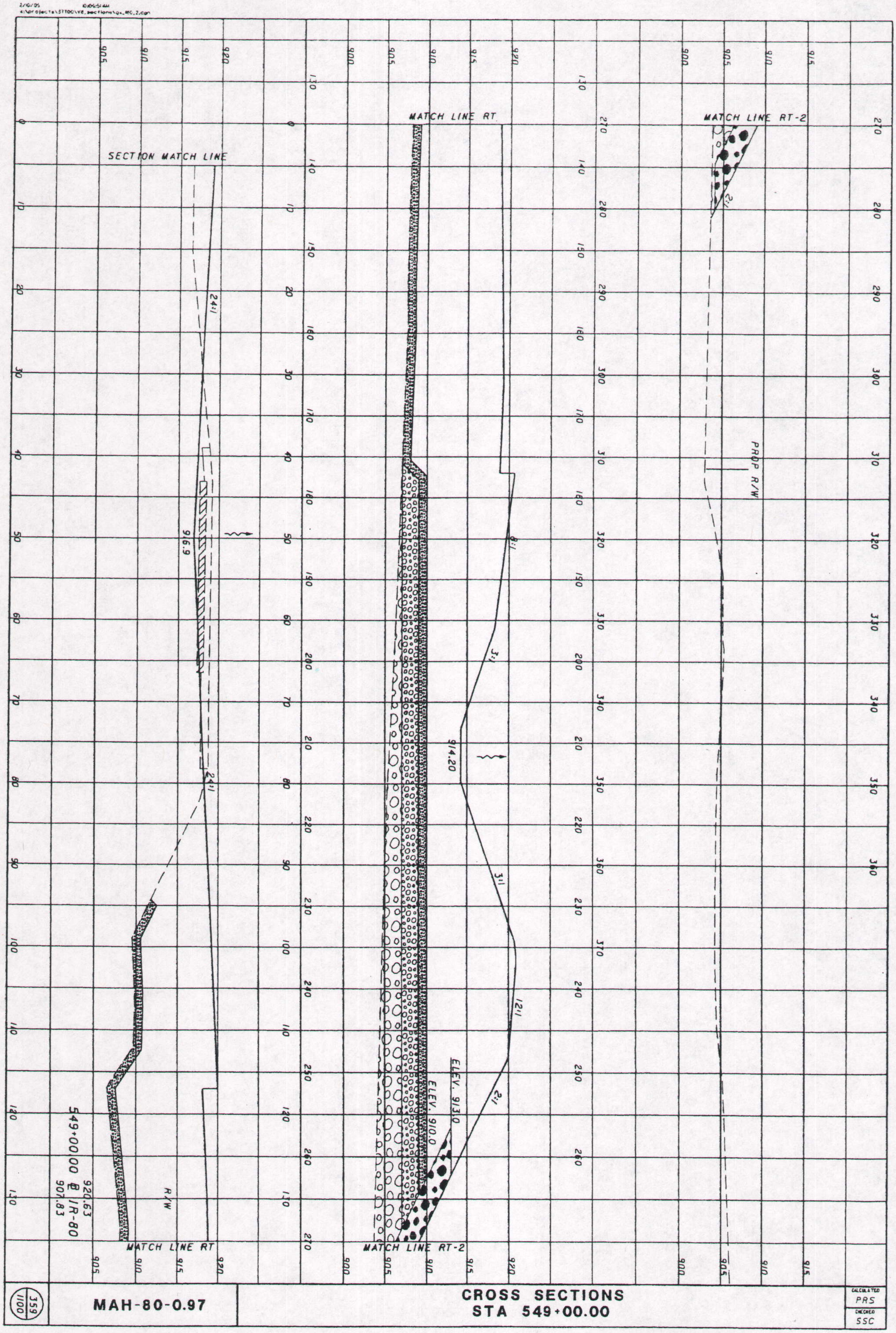


CROSS SECTIONS
STA 548+50.00

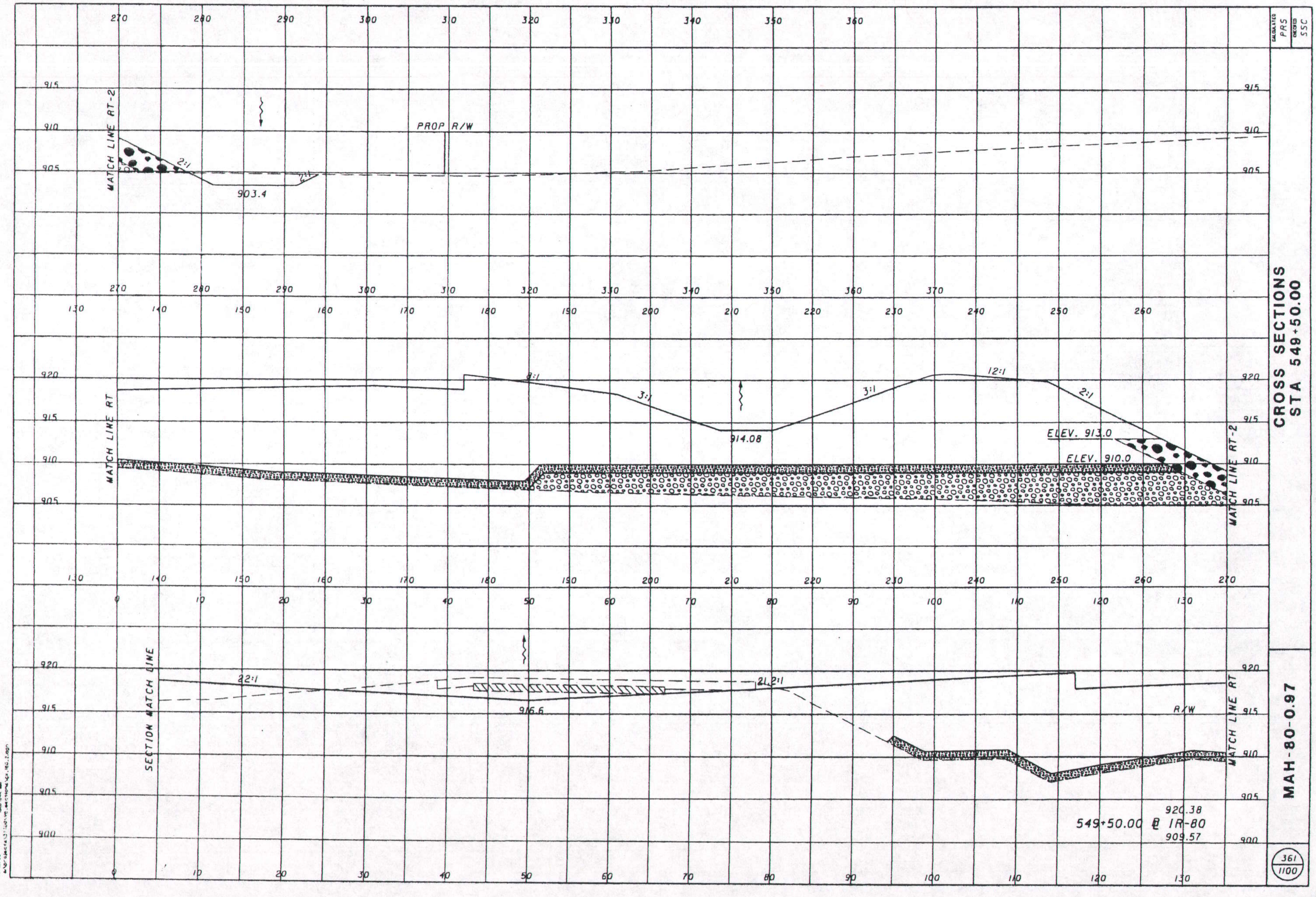
MAH-80-0.97

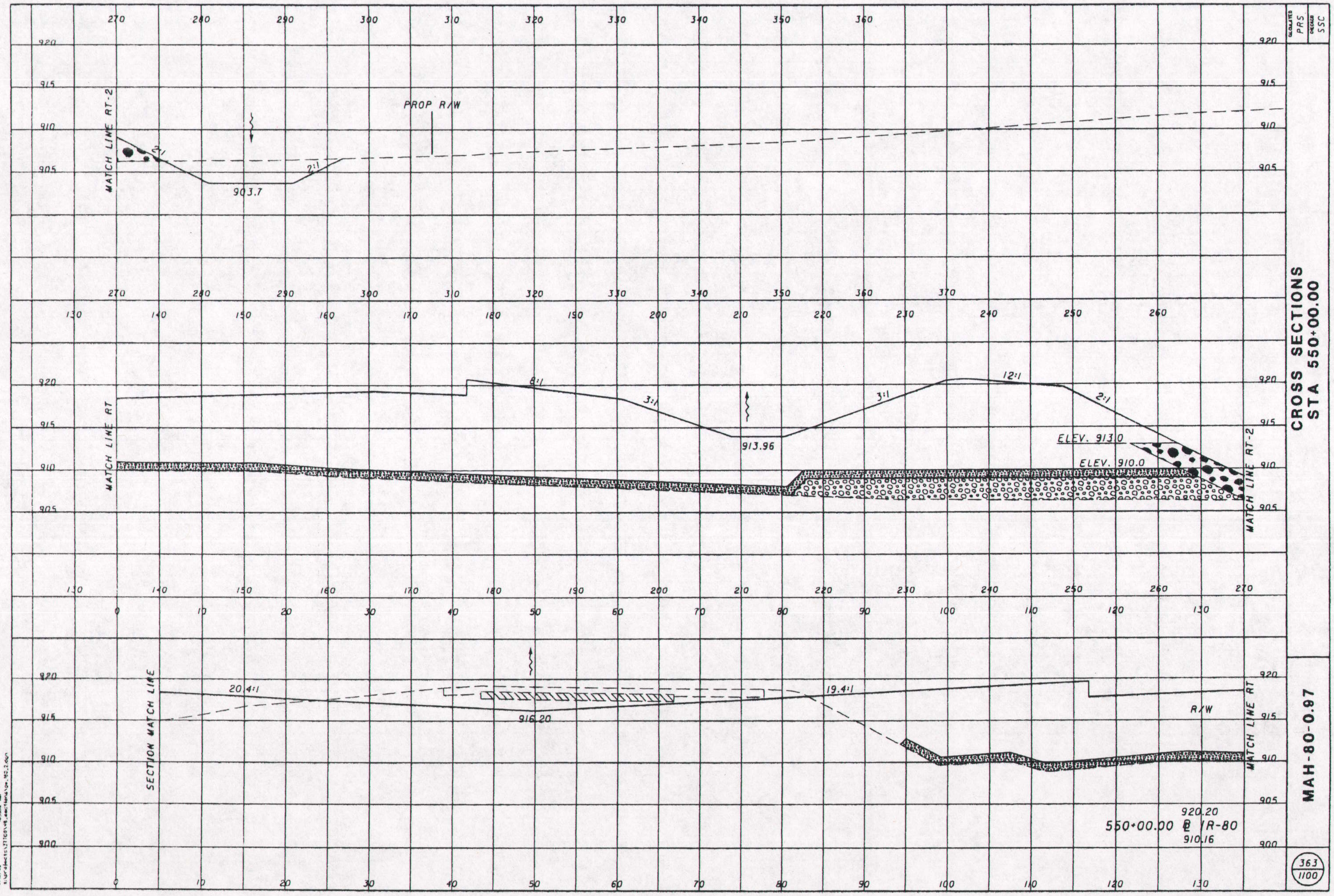
357/1100

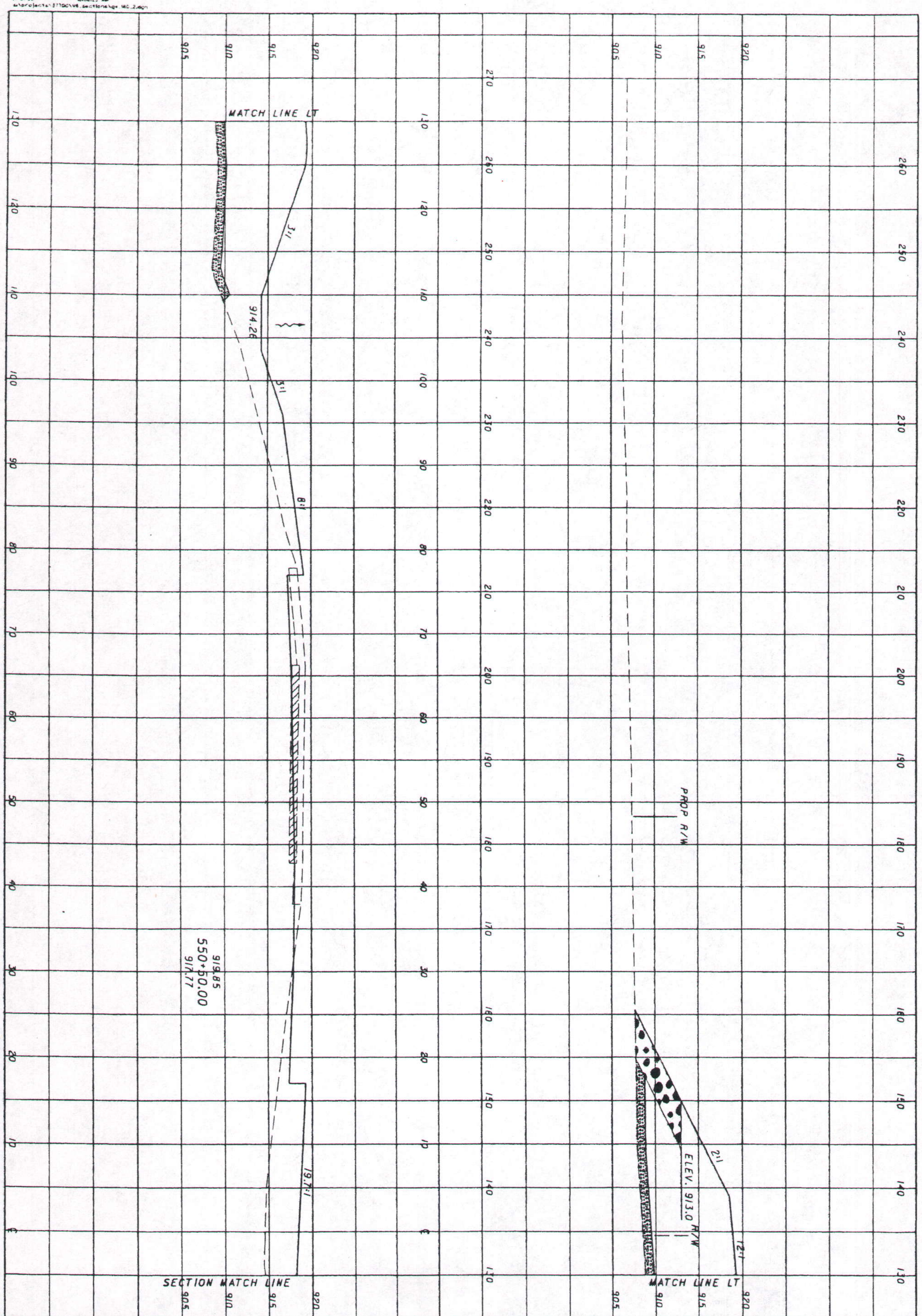
CALCULATED PRS
CHECKED SSC



MAH-80-0.97
359
1100
CROSS SECTIONS
STA 549+00.00
CALCULATED PRS
CHECKED SSC
SECTION MATCH LINE
MATCH LINE RT
MATCH LINE RT-2
PROP R/W
R/W
549+00.00 ℄ IR-80
920.63
907.83
ELEV. 913.0
ELEV. 910.0
914.20
916.9
24:1
2:1
3:1
12:1
8:1


CROSS SECTIONS
STA 549+50.00
MAH-80-0.97
361
1100
CALCULATED PRS
CHECKED SSC
WATCH LINE RT-2
PROP R/W
2:1
903.4
WATCH LINE RT
8:1
3:1
914.08
12:1
ELEV. 913.0
ELEV. 910.0
SECTION WATCH LINE
22:1
21.2:1
916.6
R/W
549+50.00 ℄ IR-80
920.38
909.57


CROSS SECTIONS
STA 550+00.00
MAH-80-0.97
363
1100
CALCULATED PRS
CHECKED SSC
WATCH LINE RT-2
PROP R/W
903.7
2:1
WATCH LINE RT
8:1
3:1
913.96
12:1
ELEV. 913.0
ELEV. 910.0
SECTION WATCH LINE
20.4:1
19.4:1
916.20
R/W
550+00.00 ℄ IR-80
920.20
910.16

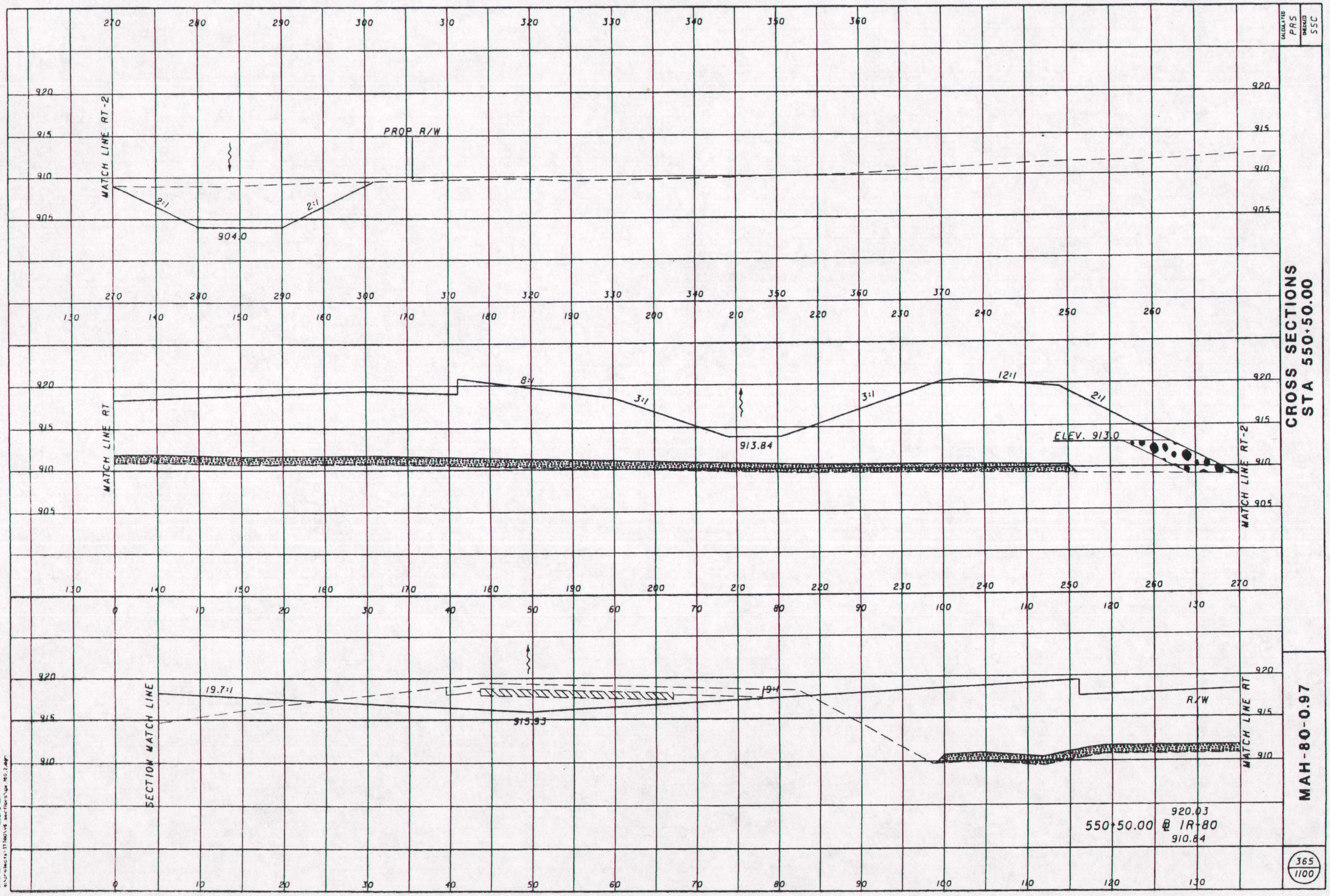


MAH-80-0.97

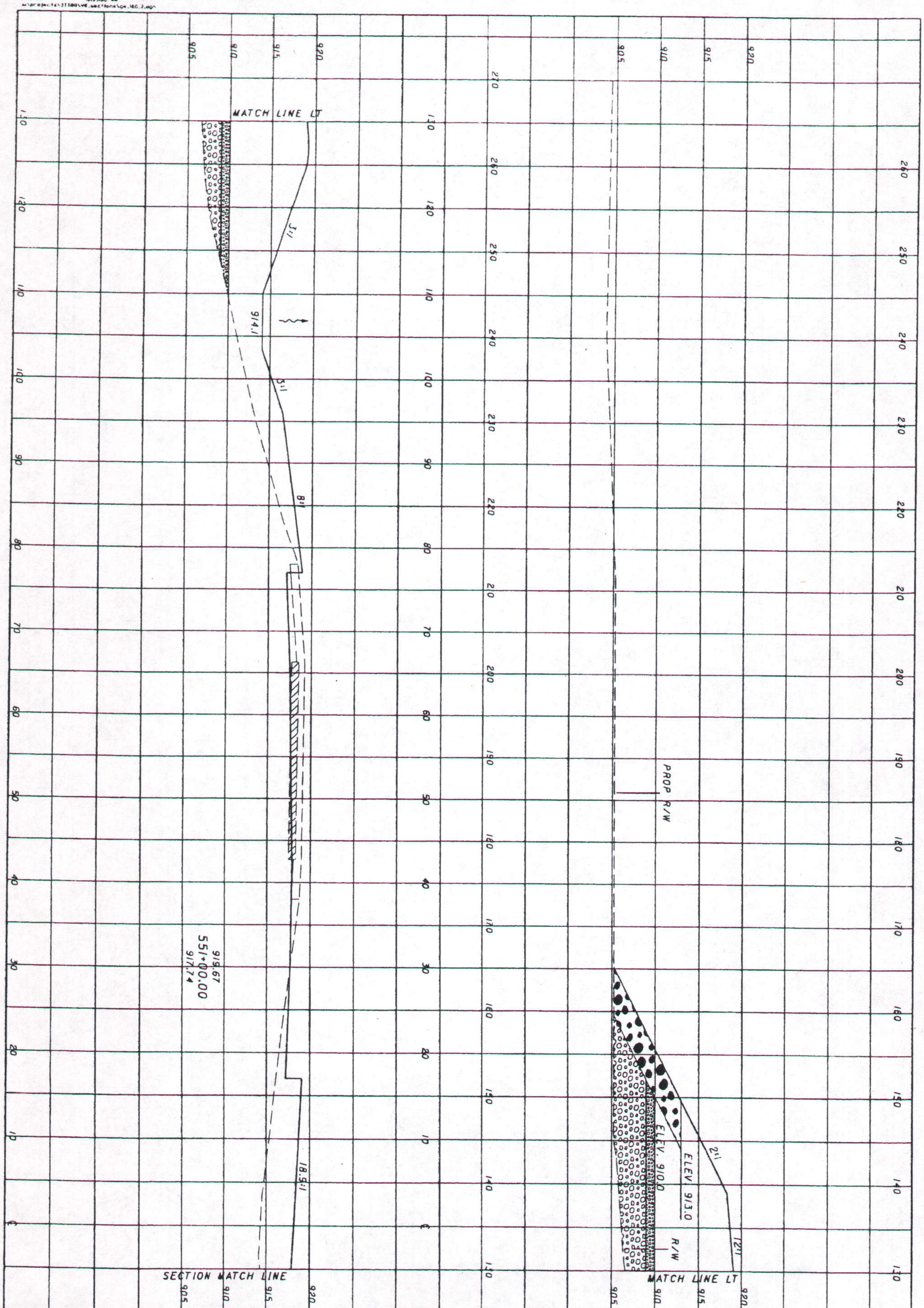
CROSS SECTIONS
STA 550+50.00

364/1100

CALCULATED PRS
CHECKED SSC



CROSS SECTIONS
STA 550+50.00
MAH-80-0.97
365
1100
CALCULATED PRS
CHECKED SSC
WATCH LINE RT-2
PROP R/W
2:1
904.0
WATCH LINE RT
8:1
3:1
913.84
12:1
ELEV. 913.0
SECTION WATCH LINE
19.7:1
915.93
19:1
R/W
550+50.00 ℄ IR-80
920.03
910.84

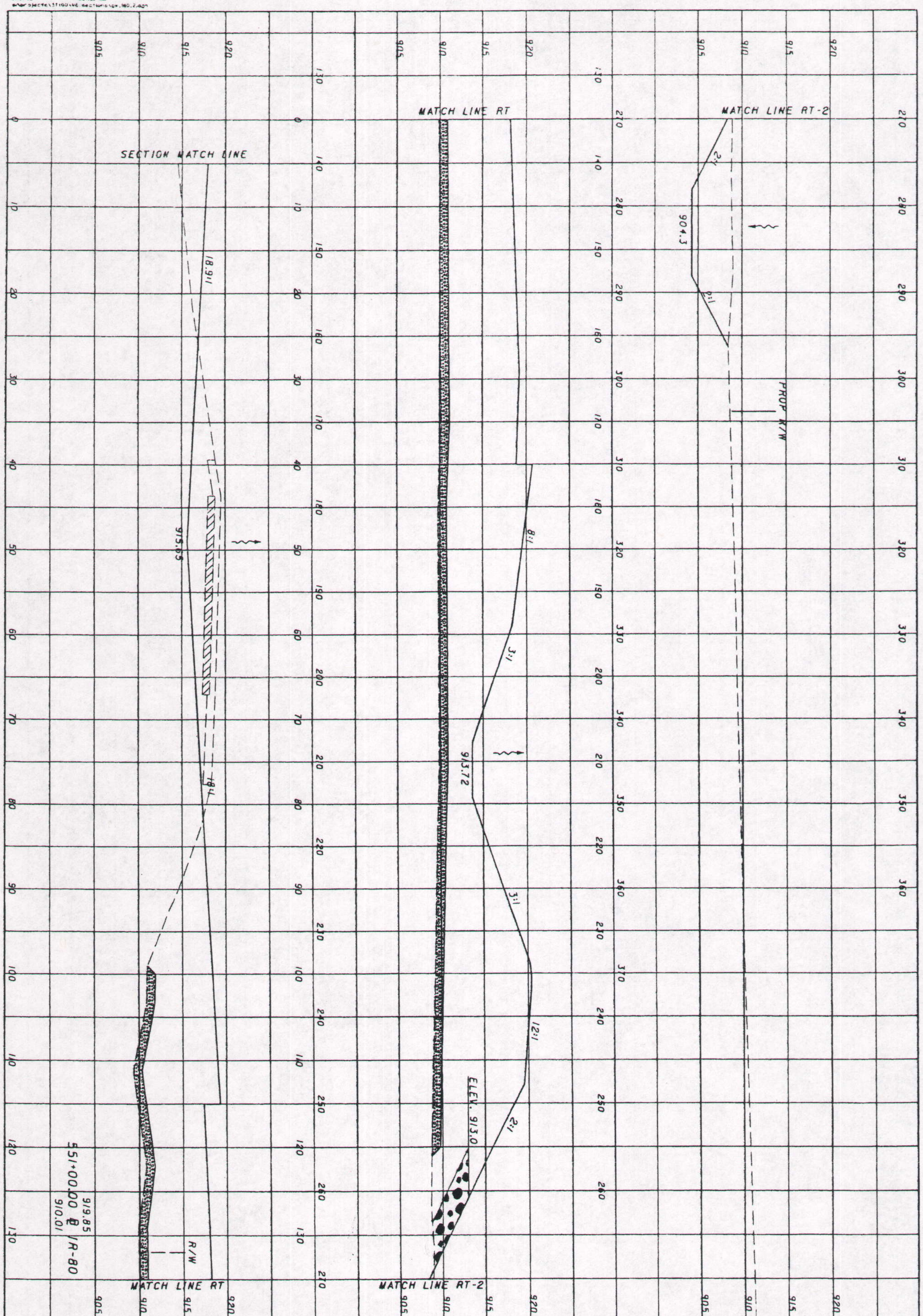


366/1100

MAH-80-0.97

CROSS SECTIONS
STA 551+00.00

CALCULATED PRS
CHECKED SSC

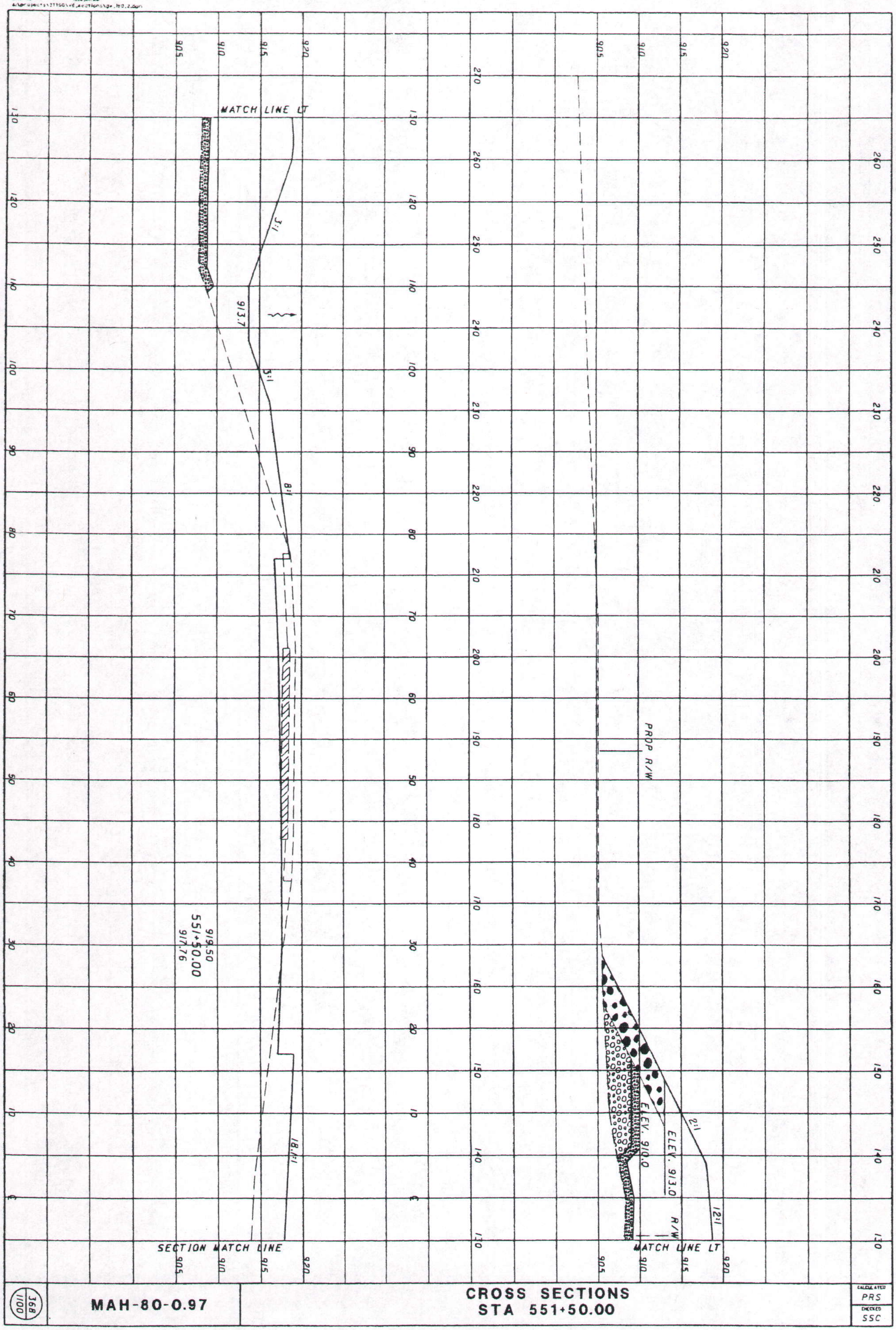


367/1100

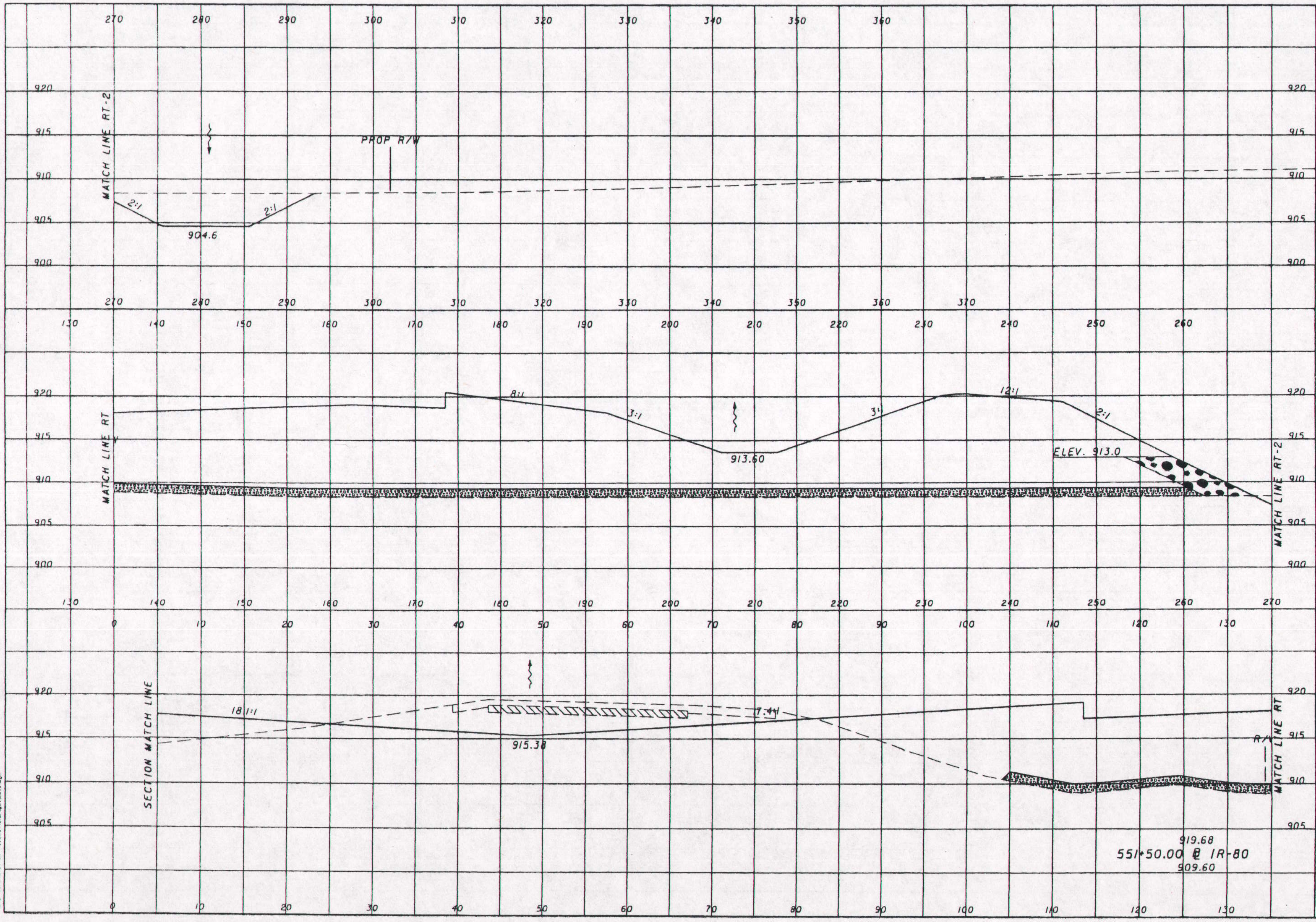
MAH-80-0.97

CROSS SECTIONS
STA 551+00.00

CALCULATED PRS
CHECKED SSC



CROSS SECTIONS
STA 551+50.00
MAH-80-0.97
368/1100
CALCULATED PRS
CHECKED SSC
WATCH LINE LT
SECTION WATCH LINE
R/W
ELEV. 913.0
ELEV. 910.0
PROP R/W
12:1
2:1
18.1:1
8:1
3:1
913.7
919.50
551+50.00
917.76

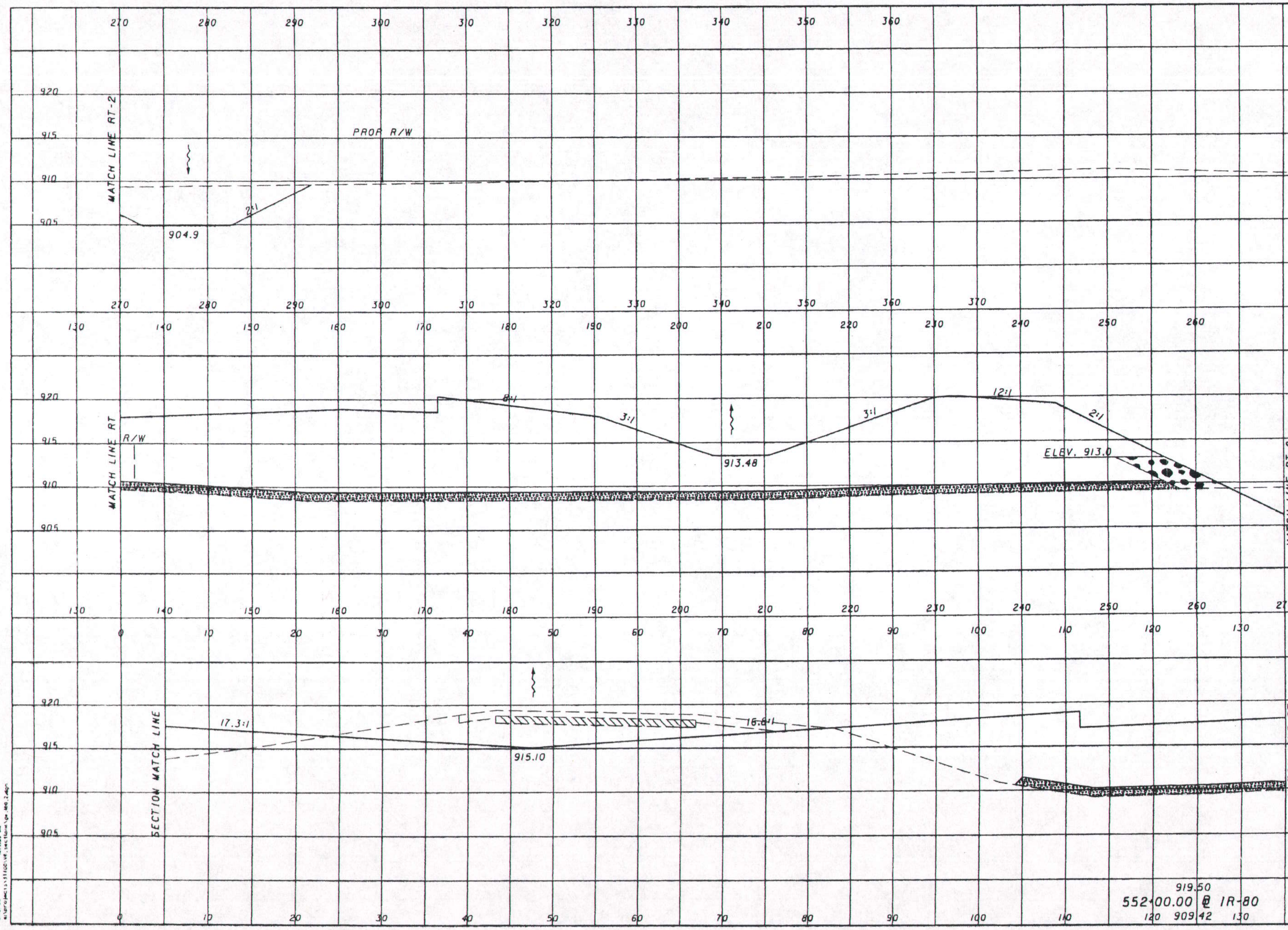


CROSS SECTIONS
STA 551+50.00

MAH-80-0.97

CALCULATED PRS
CHECKED SSC

369
1100

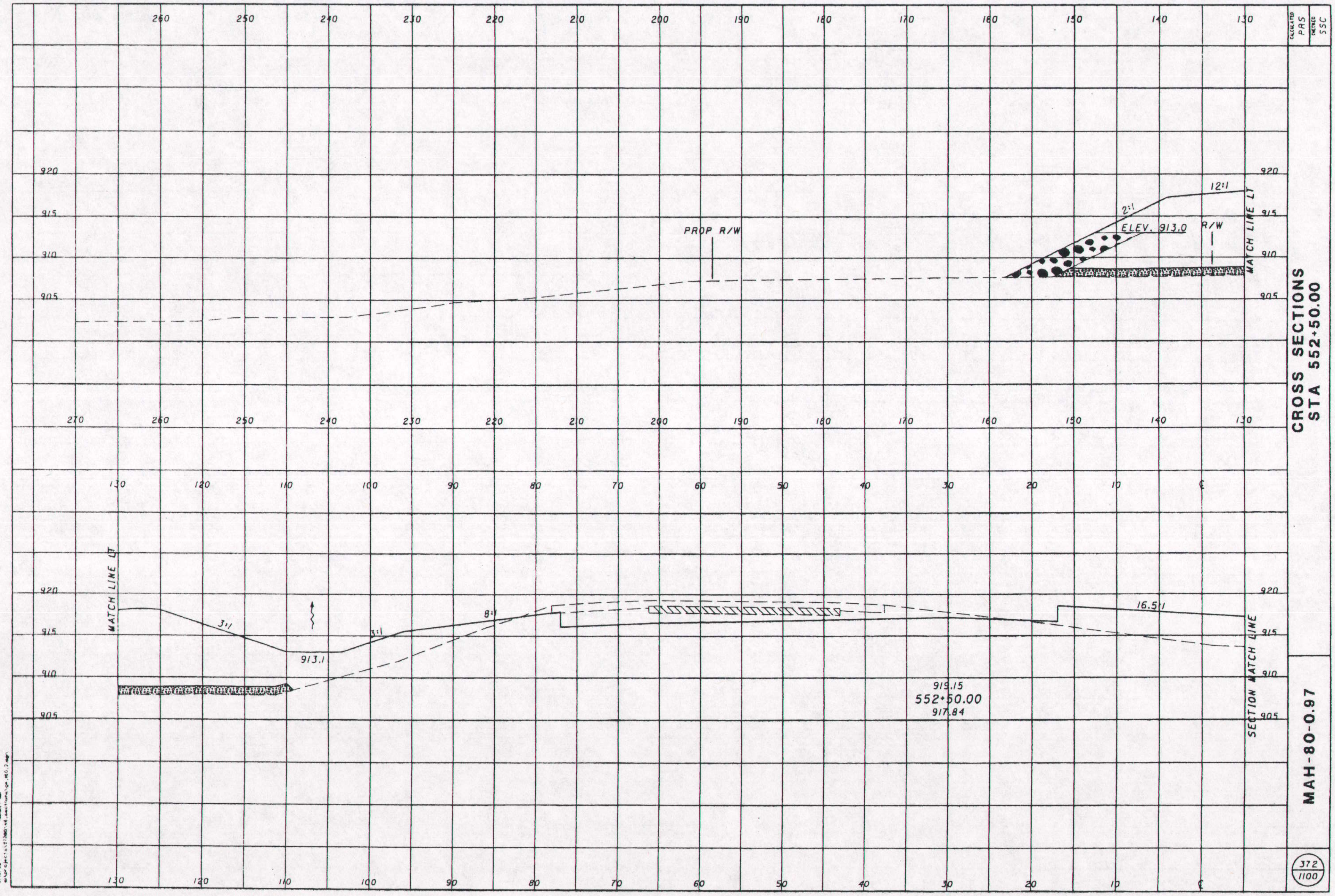


CROSS SECTIONS
STA 552+00.00

MAH-80-0.97

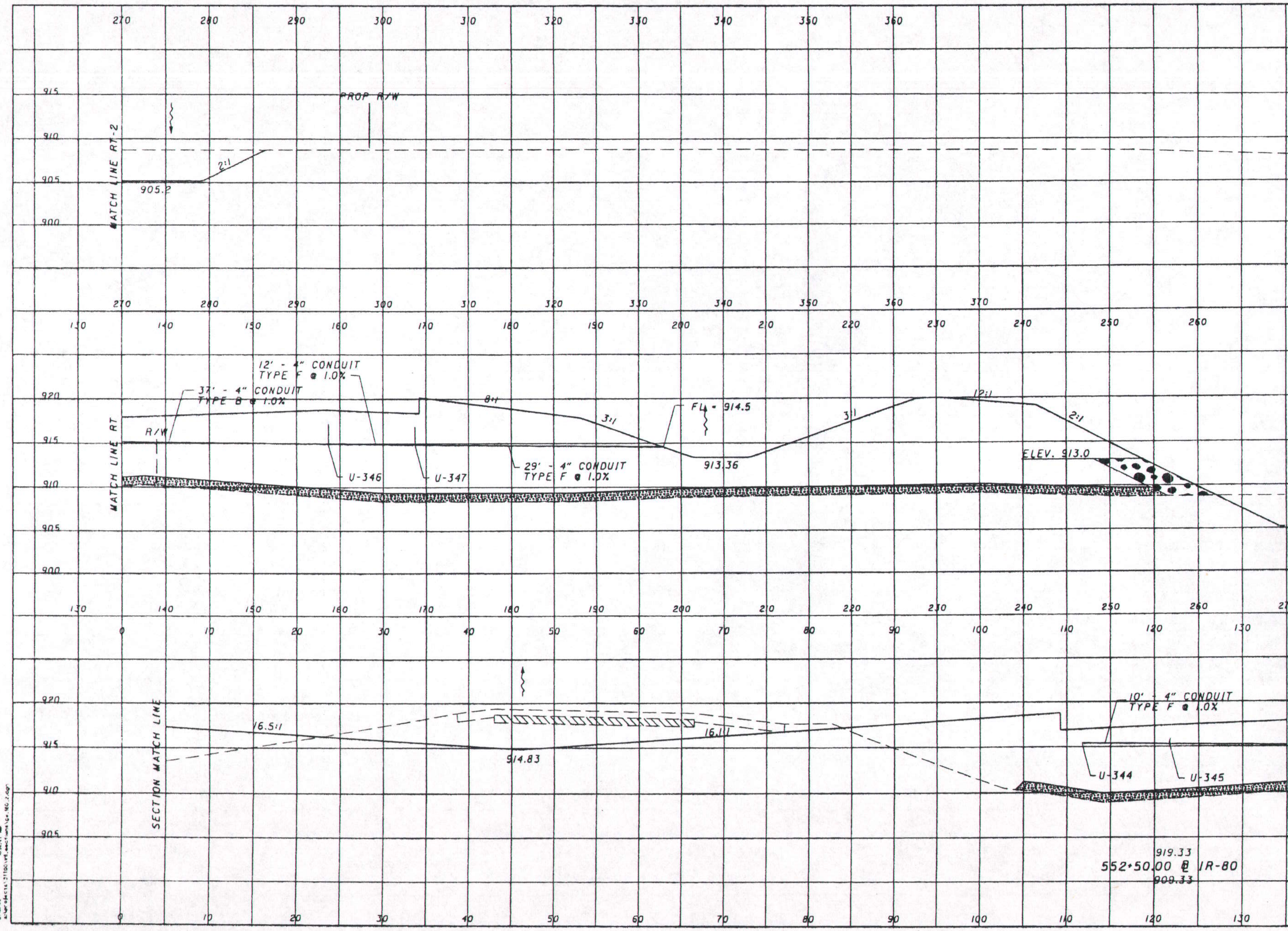
371
1100

CALCULATED PRS
CHECKED SSC


CROSS SECTIONS
STA 552+50.00
MAH-80-0.97
372
1100
CALCULATED PRS
CHECKED SSC
PROP R/W
R/W
ELEV. 913.0
2:1
12:1
MATCH LINE LT
SECTION MATCH LINE
16.5:1
8:1
3:1
913.1
919.15
552+50.00
917.84

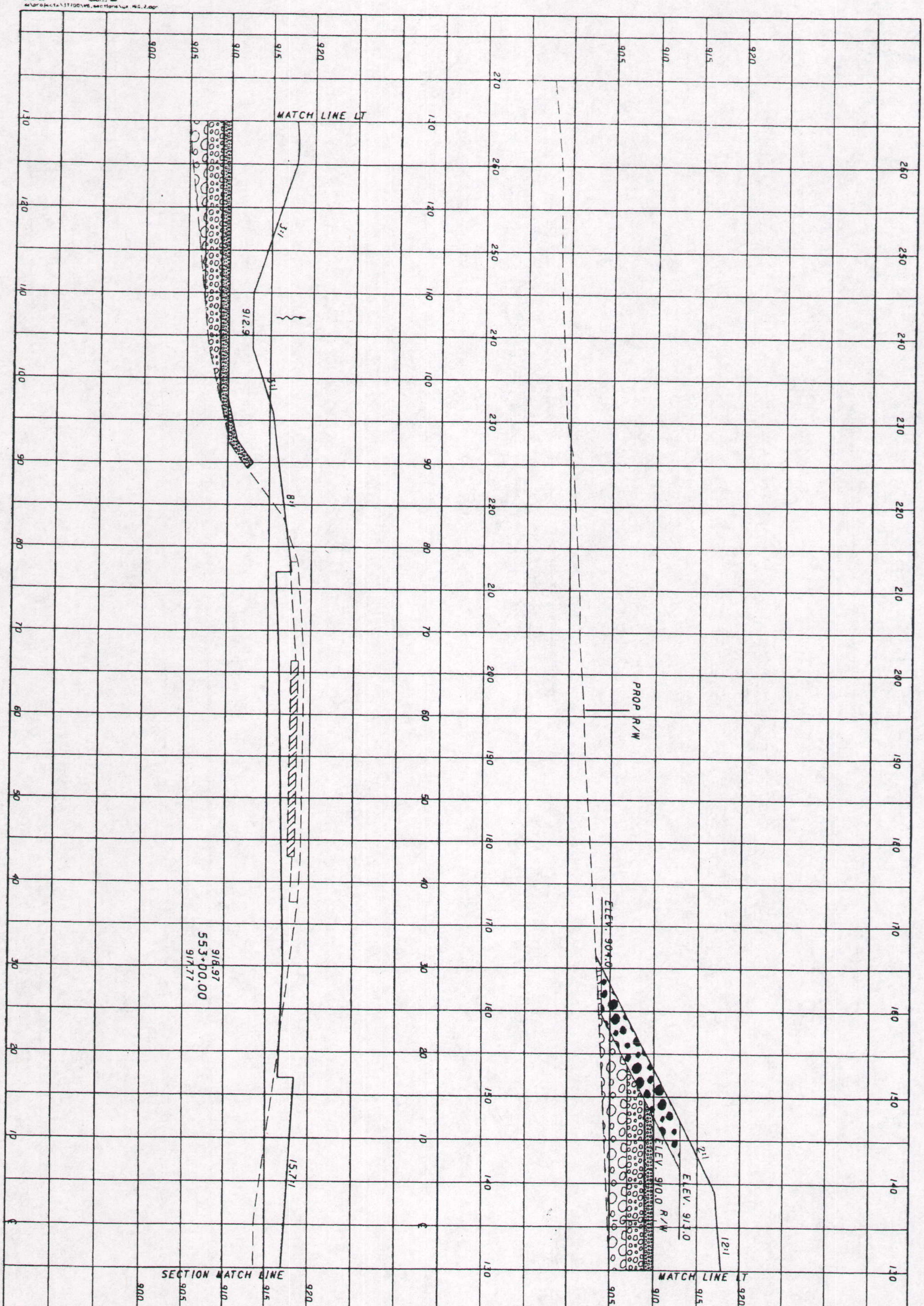
CROSS SECTIONS
STA 552+50.00

MAH-80-0.97

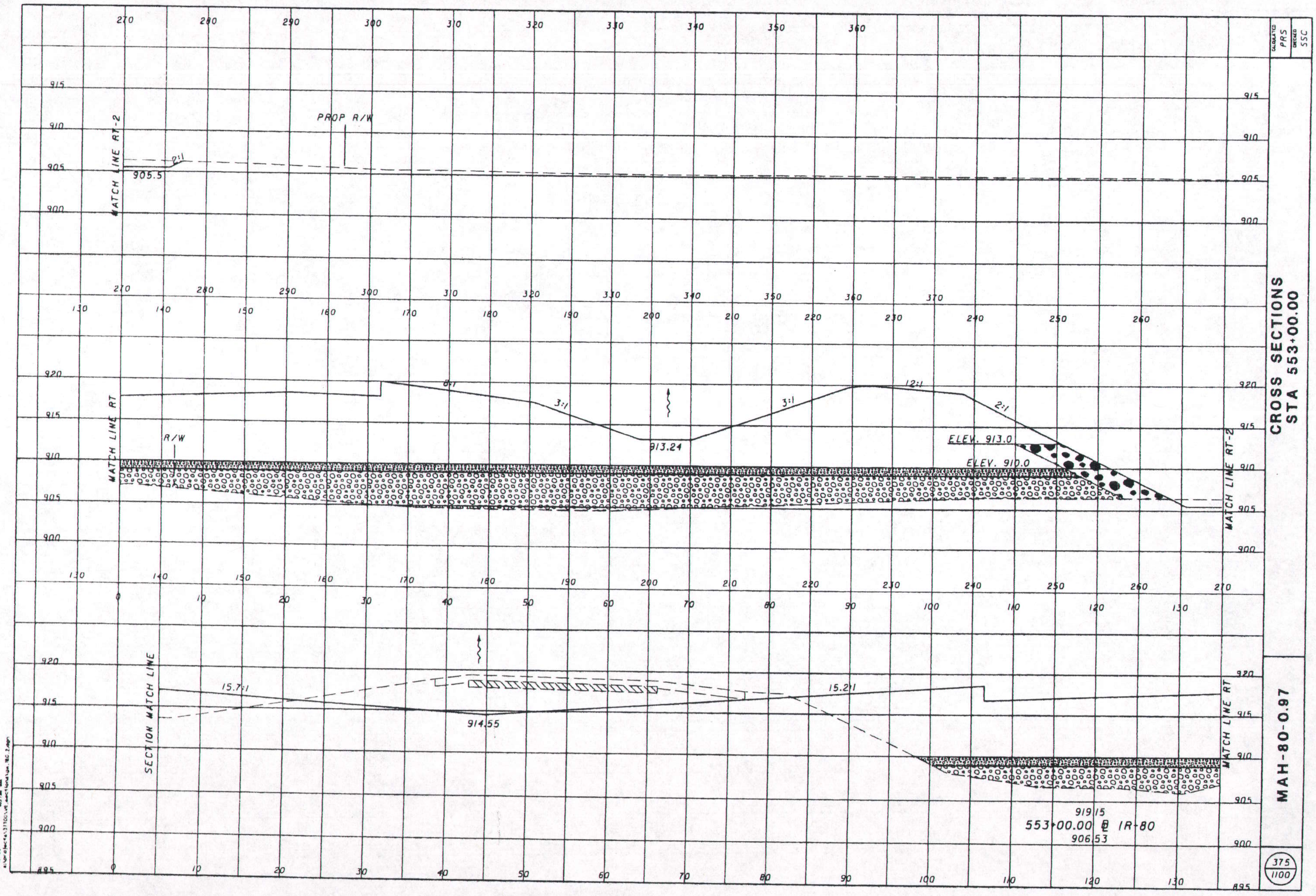


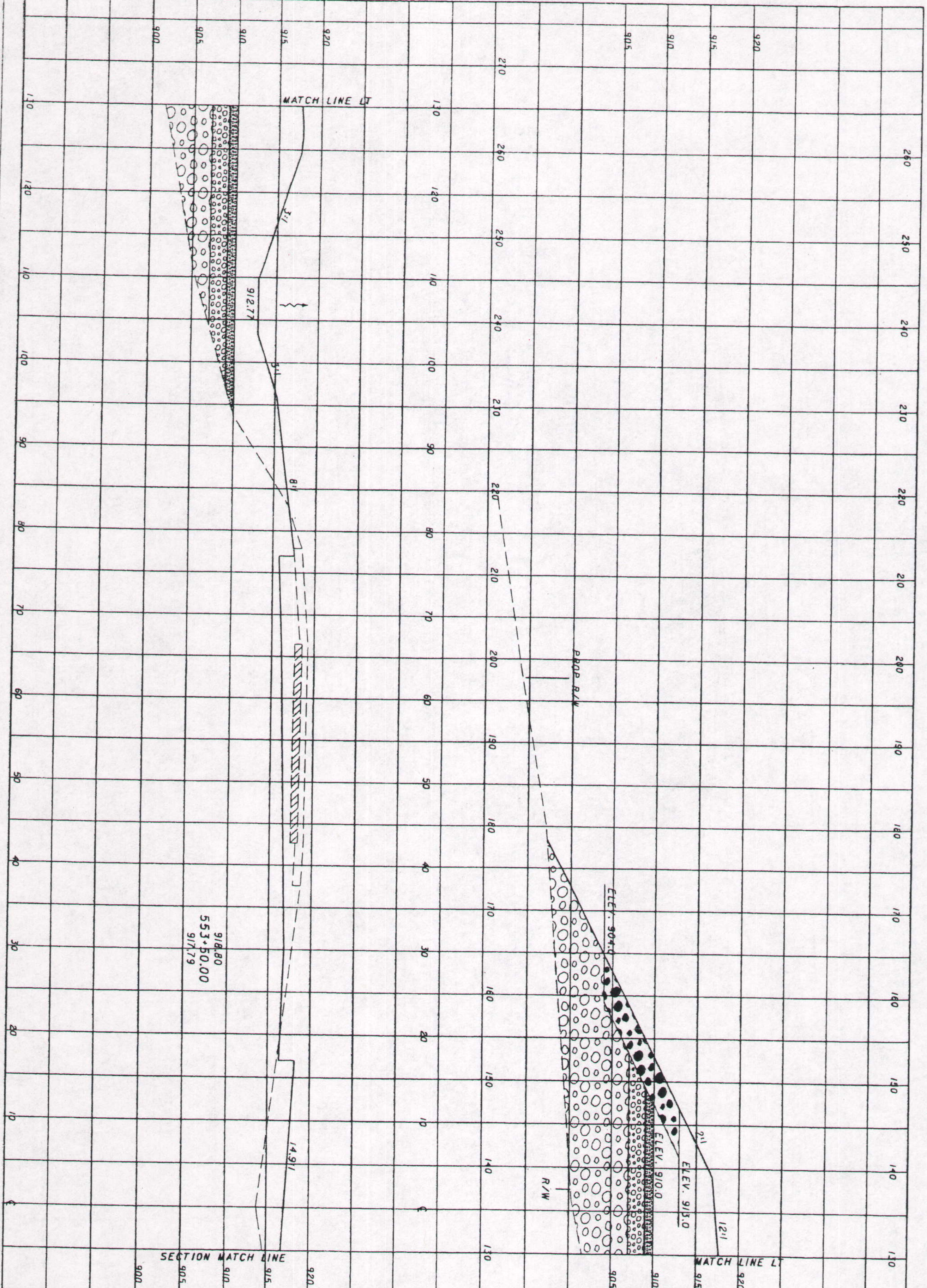
CALCULATED PRS
CHECKED SSC

373/1100



MAH-80-0.97	CROSS SECTIONS STA 553+00.00	CALCULATED PRS CHECKED SSC


CROSS SECTIONS
STA 553+00.00
MAH-80-0.97
375
1100
CALCULATED PRS
CHECKED SSC
WATCH LINE RT-2
PROP R/W
2:1
905.5
WATCH LINE RT
R/W
8:1
3:1
913.24
3:1
12:1
2:1
ELEV. 913.0
ELEV. 910.0
WATCH LINE RT-2
SECTION WATCH LINE
15.7:1
914.55
15.2:1
WATCH LINE RT
919.15
553+00.00 ℄ IR-80
906.53

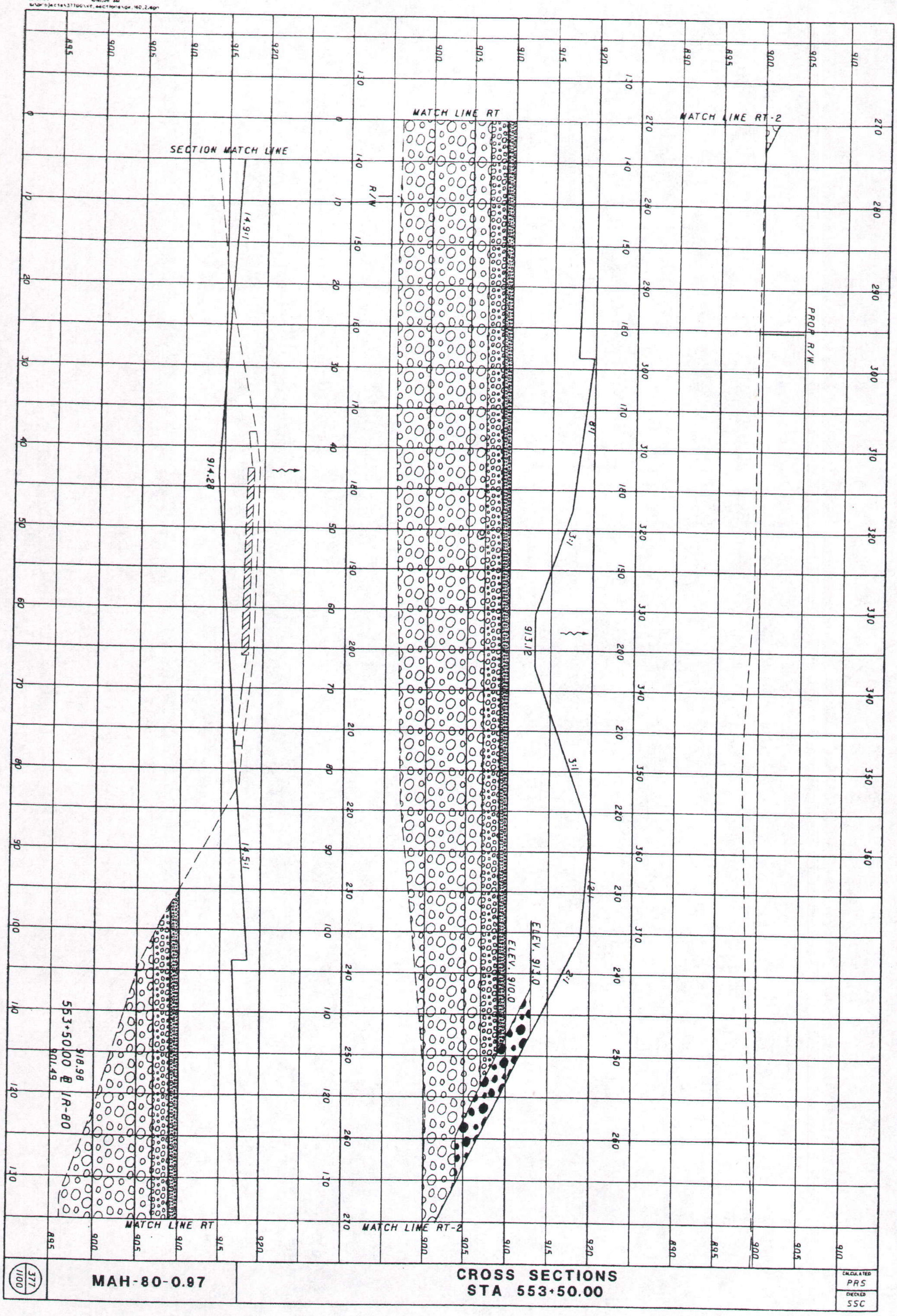


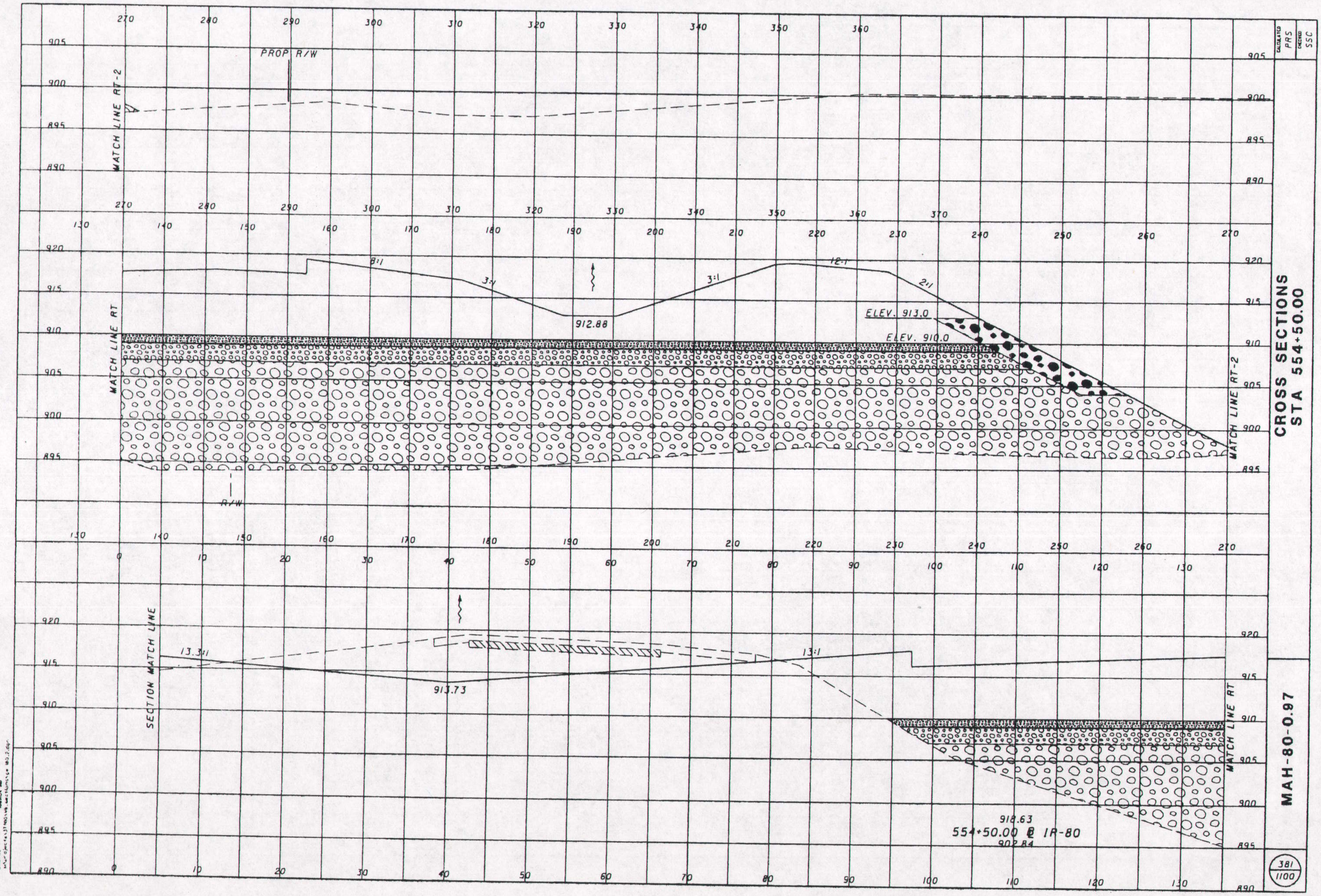
MAH-80-0.97

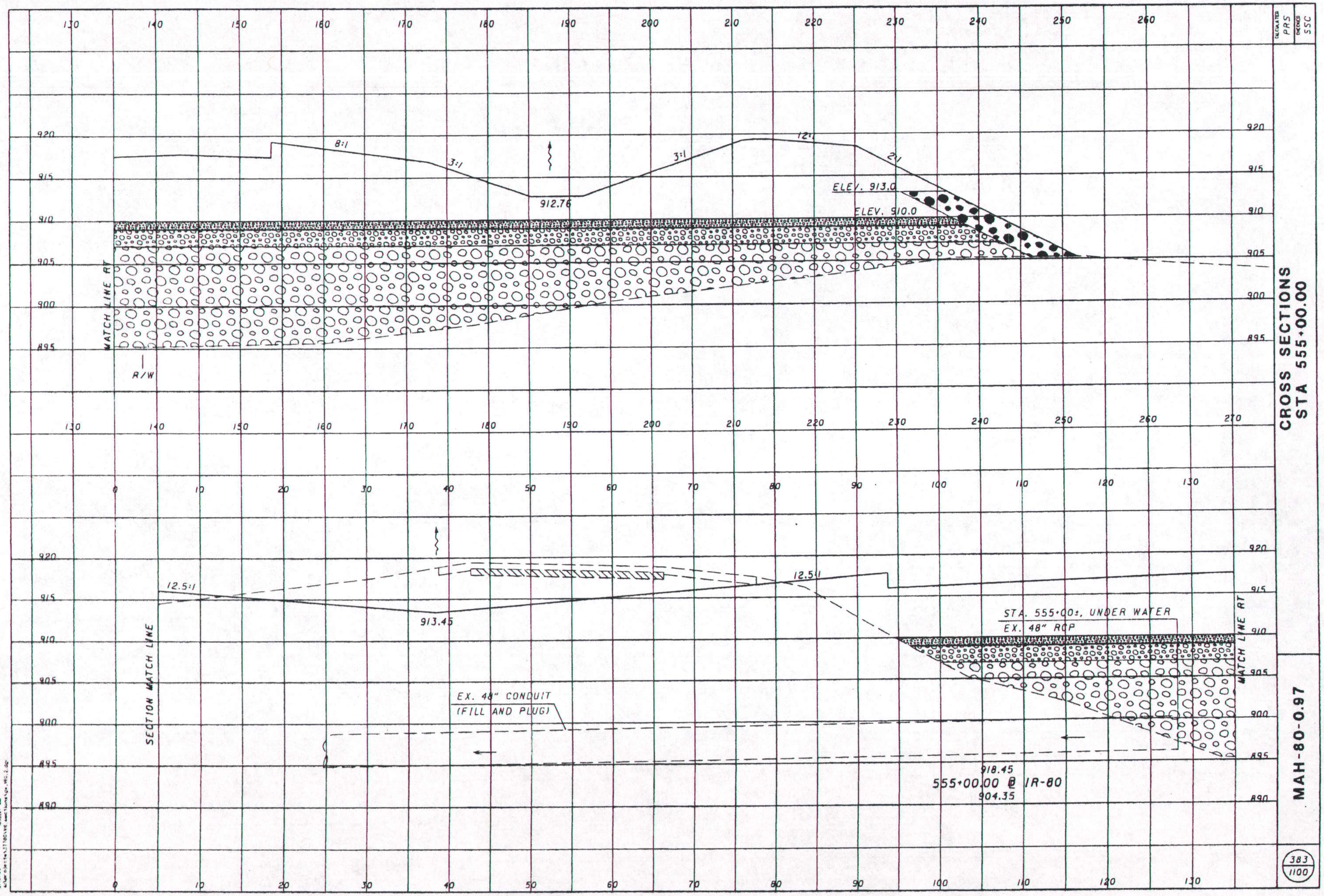
CROSS SECTIONS
STA 553+50.00

376
1100

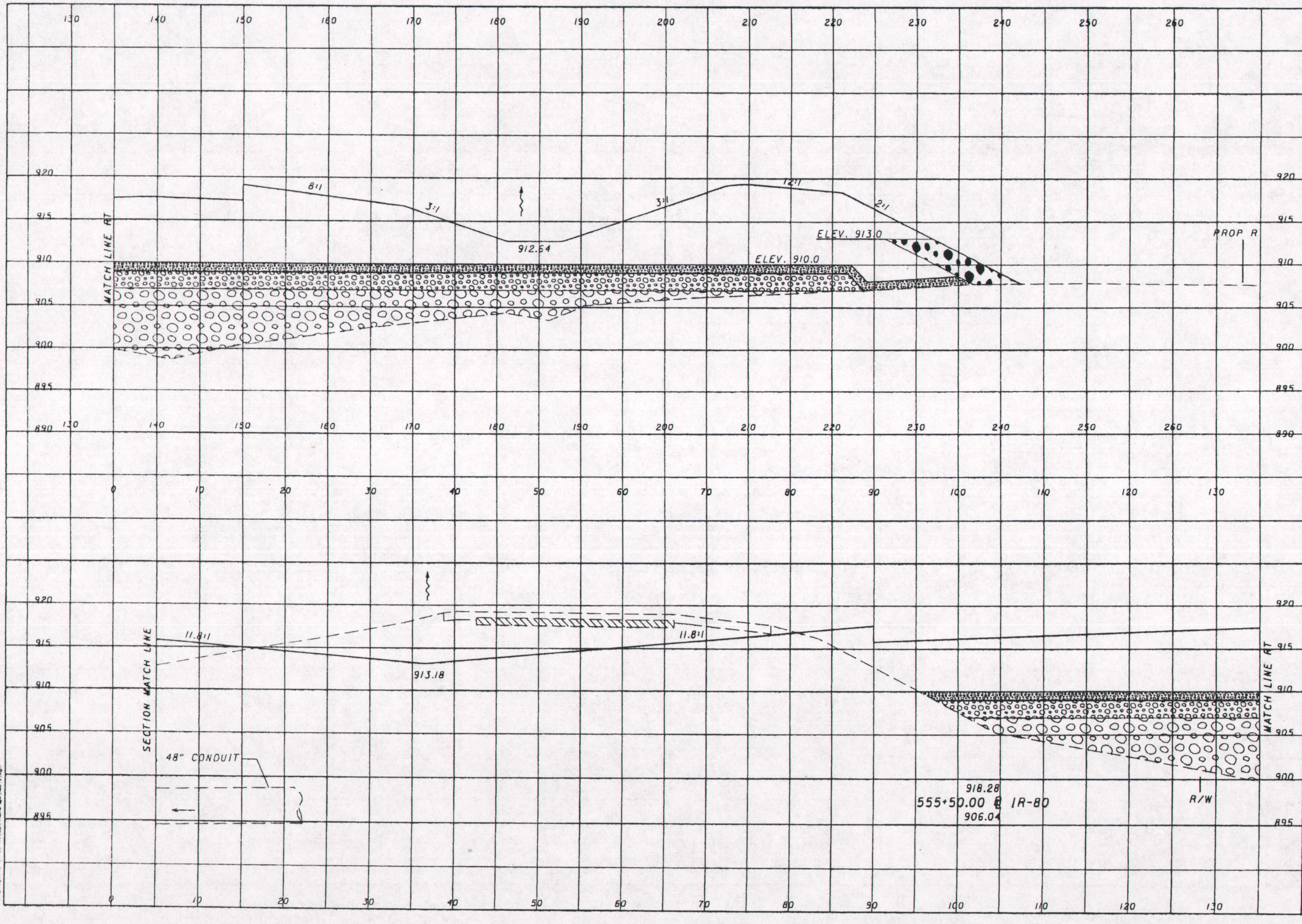
CALCULATED PRS
CHECKED SSC


MAH-80-0.97
CROSS SECTIONS
STA 553+50.00
CALCULATED PRS
CHECKED SSC
377/1100
553+50.00 ℄ IR-80
918.98
901.49
ELEV. 913.0
ELEV. 910.0
913.12
914.28
PROP R/W
R/W
WATCH LINE RT
WATCH LINE RT-2
SECTION WATCH LINE


CROSS SECTIONS
STA 554+50.00
MAH-80-0.97
381/1100
CALCULATED PRS
CHECKED SSC
PROP R/W
WATCH LINE RT-2
WATCH LINE RT
SECTION WATCH LINE
R/W
8:1
3:1
12:1
2:1
13.3:1
13:1
912.88
913.73
ELEV. 913.0
ELEV. 910.0
918.63
554+50.00 ℄ IR-80
902.84


CROSS SECTIONS
STA 555+00.00
MAH-80-0.97
383/1100
CALCULATED PRS
CHECKED SSC
WATCH LINE RT
R/W
8:1
3:1
912.76
12:1
2:1
ELEV. 913.0
ELEV. 910.0
12.5:1
913.45
SECTION WATCH LINE
STA. 555+00±, UNDER WATER
EX. 48" RCP
EX. 48" CONDUIT
(FILL AND PLUG)
918.45
555+00.00 @ IR-80
904.35

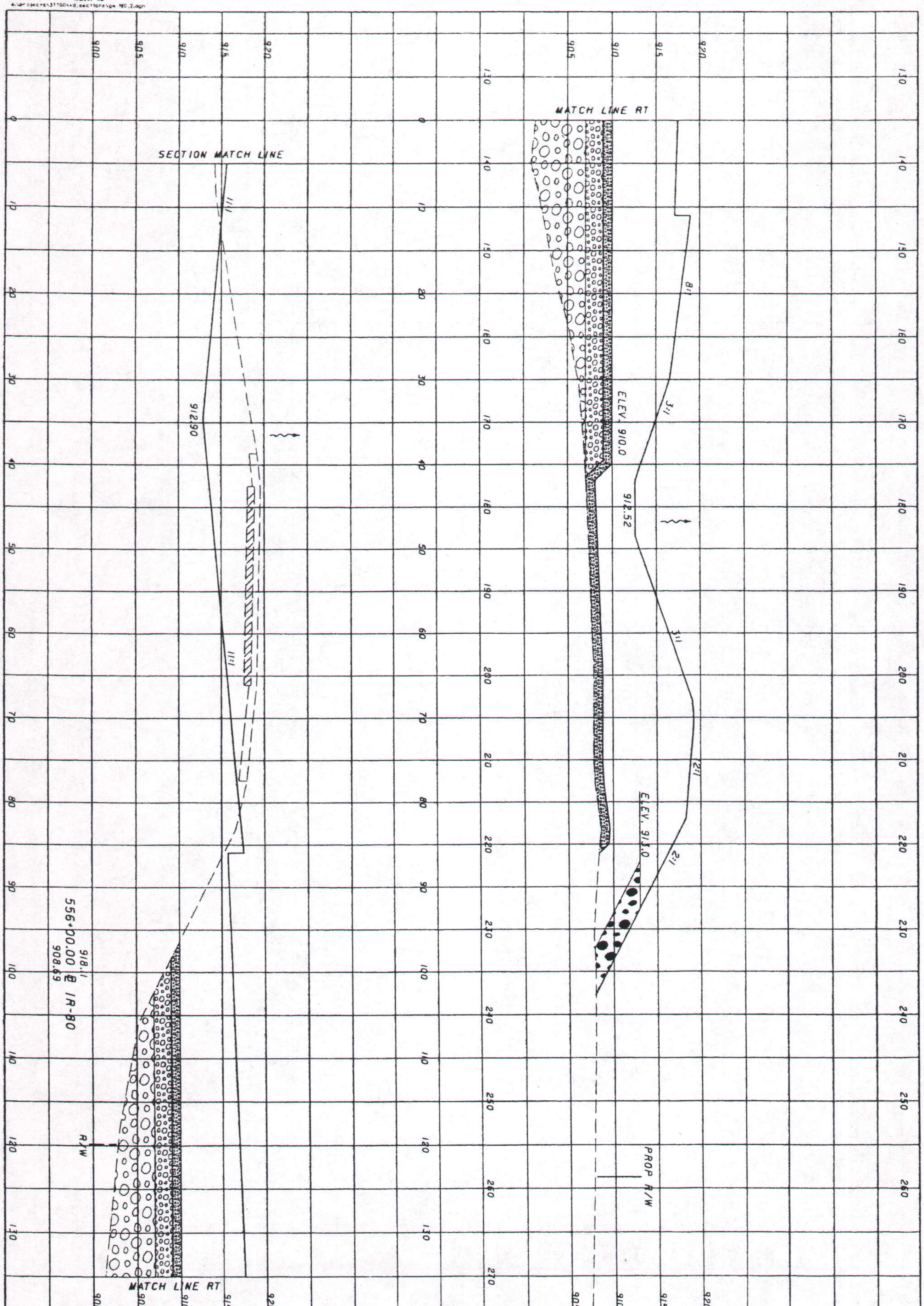
CALCULATED PRS
CHECKED SSC



CROSS SECTIONS
STA 555+50.00

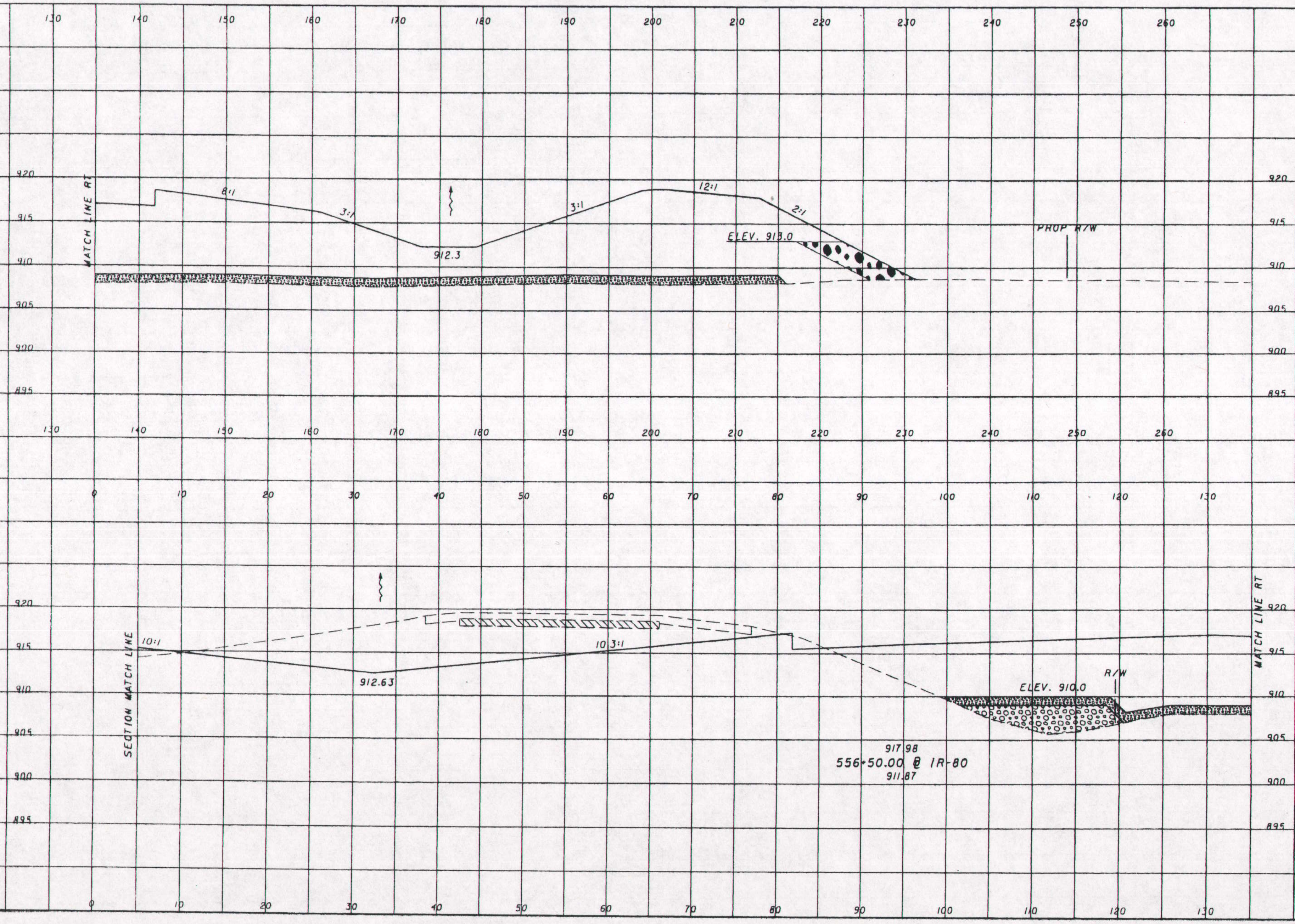
MAH-80-0.97

385/1100



387/1100	MAH-80-0.97	CROSS SECTIONS STA 556+00.00

CALCULATED PRS
CHECKED SSC



CROSS SECTIONS
STA 556+50.00

MAH-80-0.97

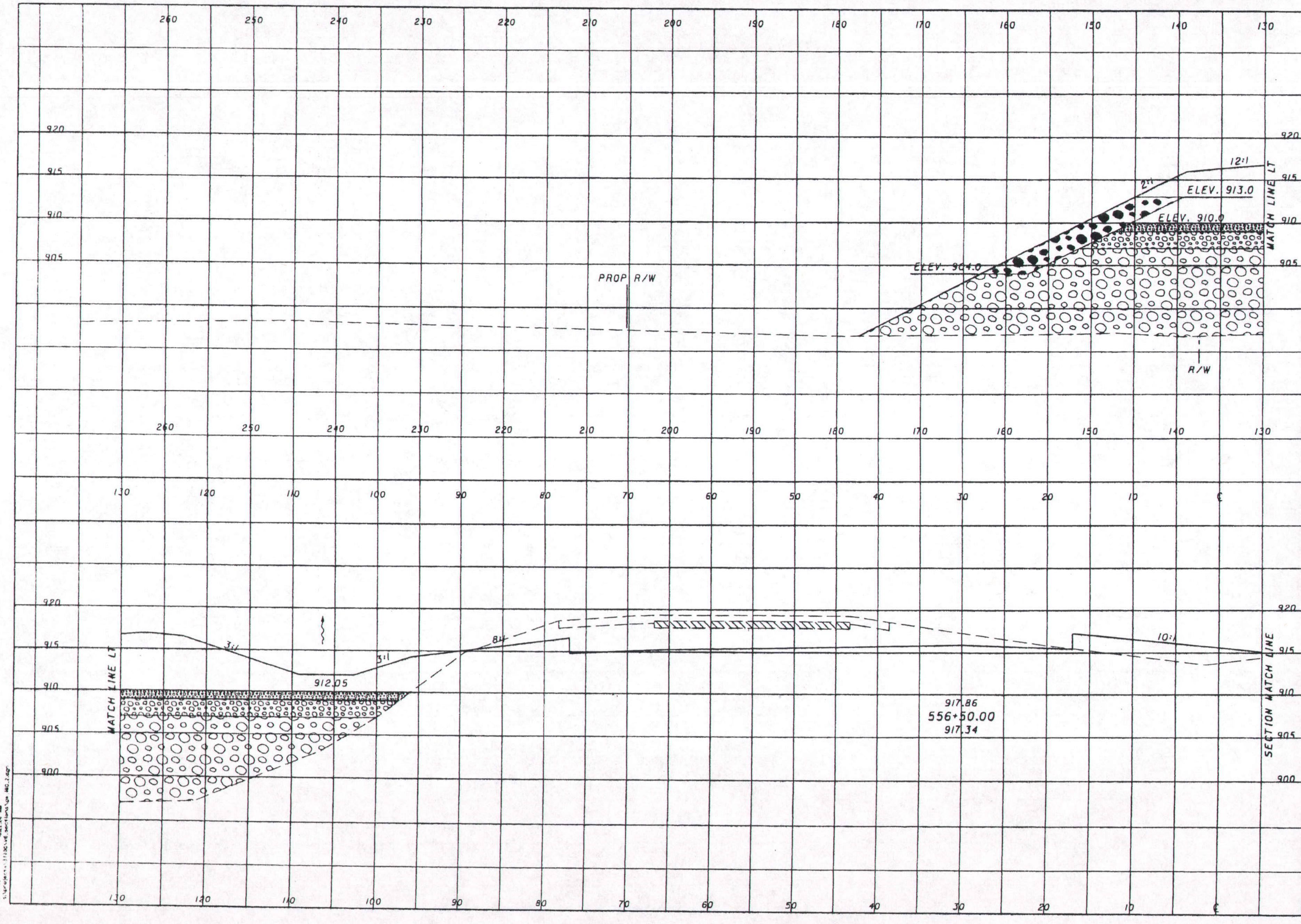
CALCULATED PRS
CHECKED SSC

389/1100

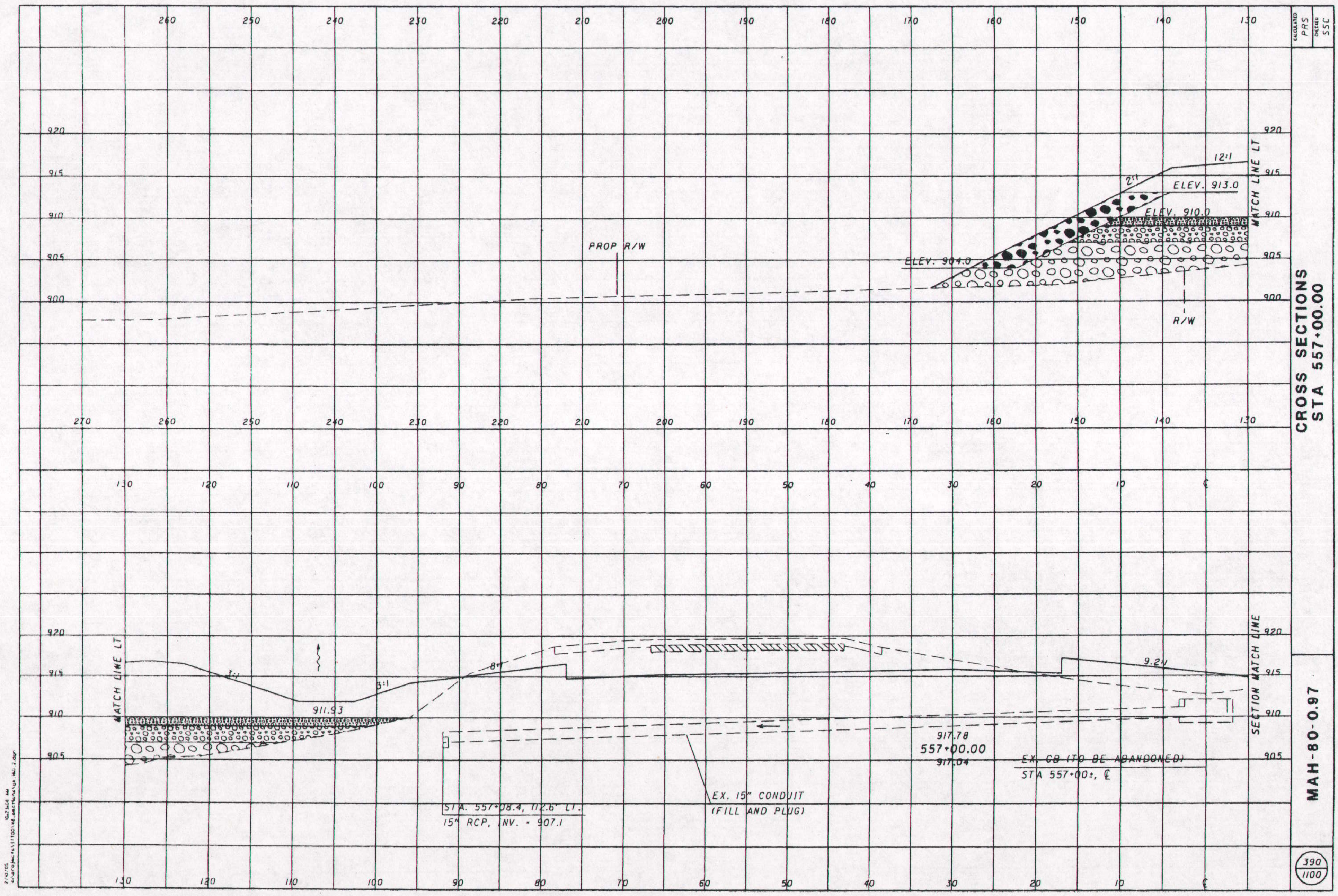
CROSS SECTIONS
STA 556+50.00

MAH-80-0.97

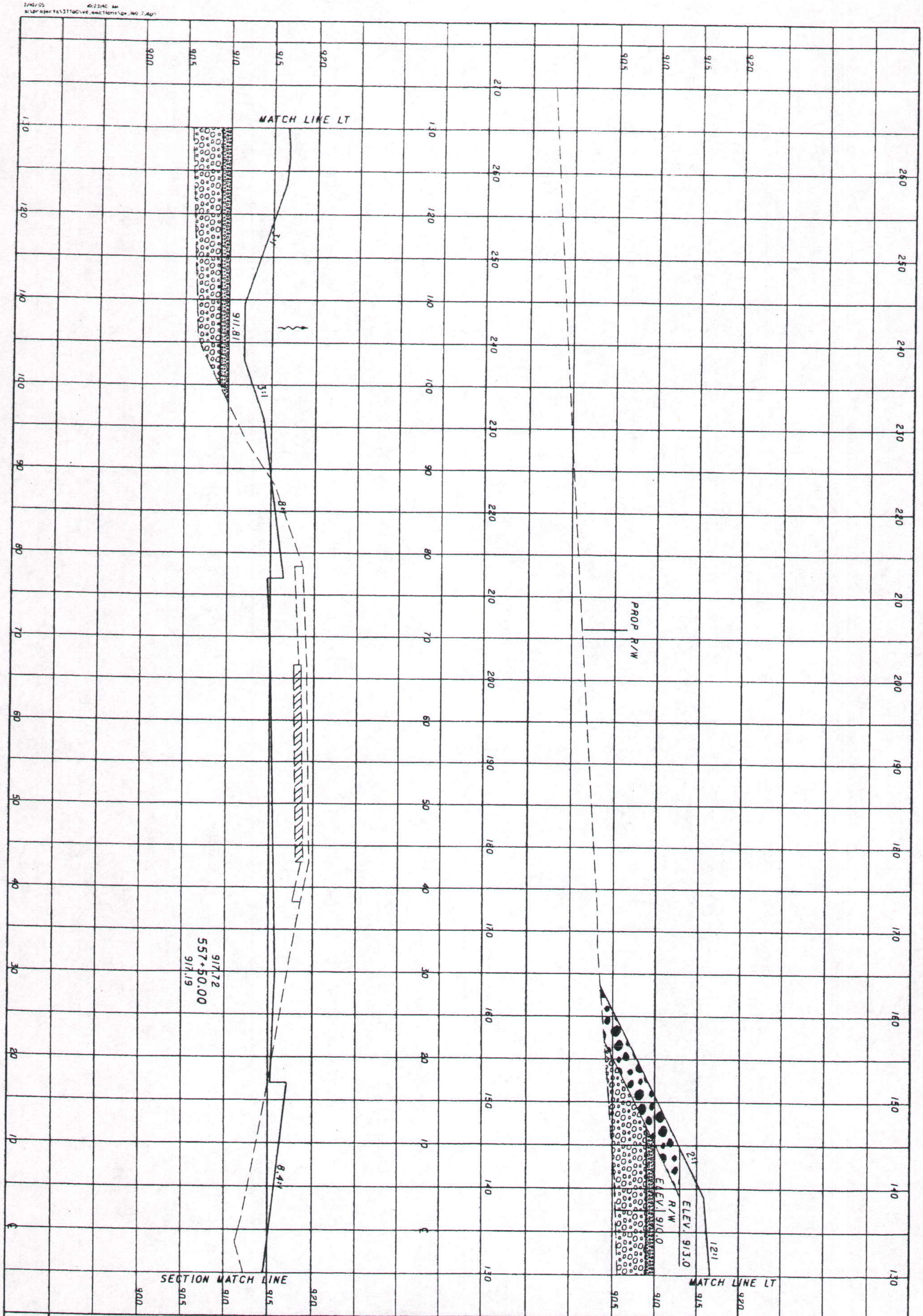
388/1100



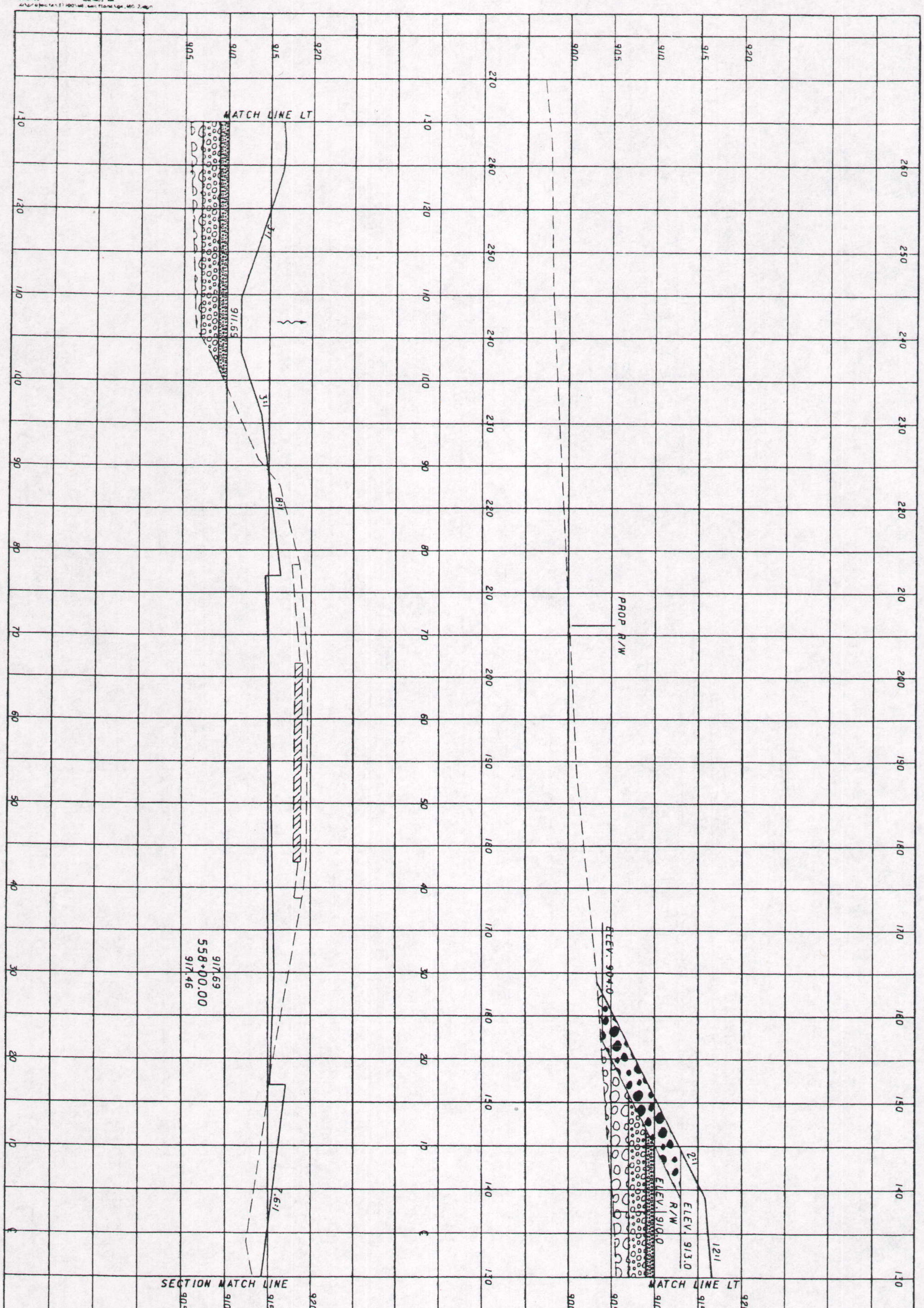
CALCULATED PRS
CHECKED SSC



MAH-80-0.97
390
1100
CROSS SECTIONS
STA 557+00.00
CALCULATED PRS
CHECKED SSC
MATCH LINE LT
12:1
2:1
ELEV. 913.0
ELEV. 910.0
ELEV. 904.0
R/W
PROP R/W
SECTION MATCH LINE
9.24
EX. CB (TO BE ABANDONED)
STA 557+00±, ℄
917.78
557+00.00
917.04
EX. 15" CONDUIT
(FILL AND PLUG)
STA. 557+08.4, 112.6' LT.
15" RCP, INV. = 907.1
8:1
3:1
911.93
1:1
920
915
910
905
900
130
140
150
160
170
180
190
200
210
220
230
240
250
260
270



392/1100 MAH-80-0.97	CROSS SECTIONS STA 557+50.00	CALCULATED PRS CHECKED SSC

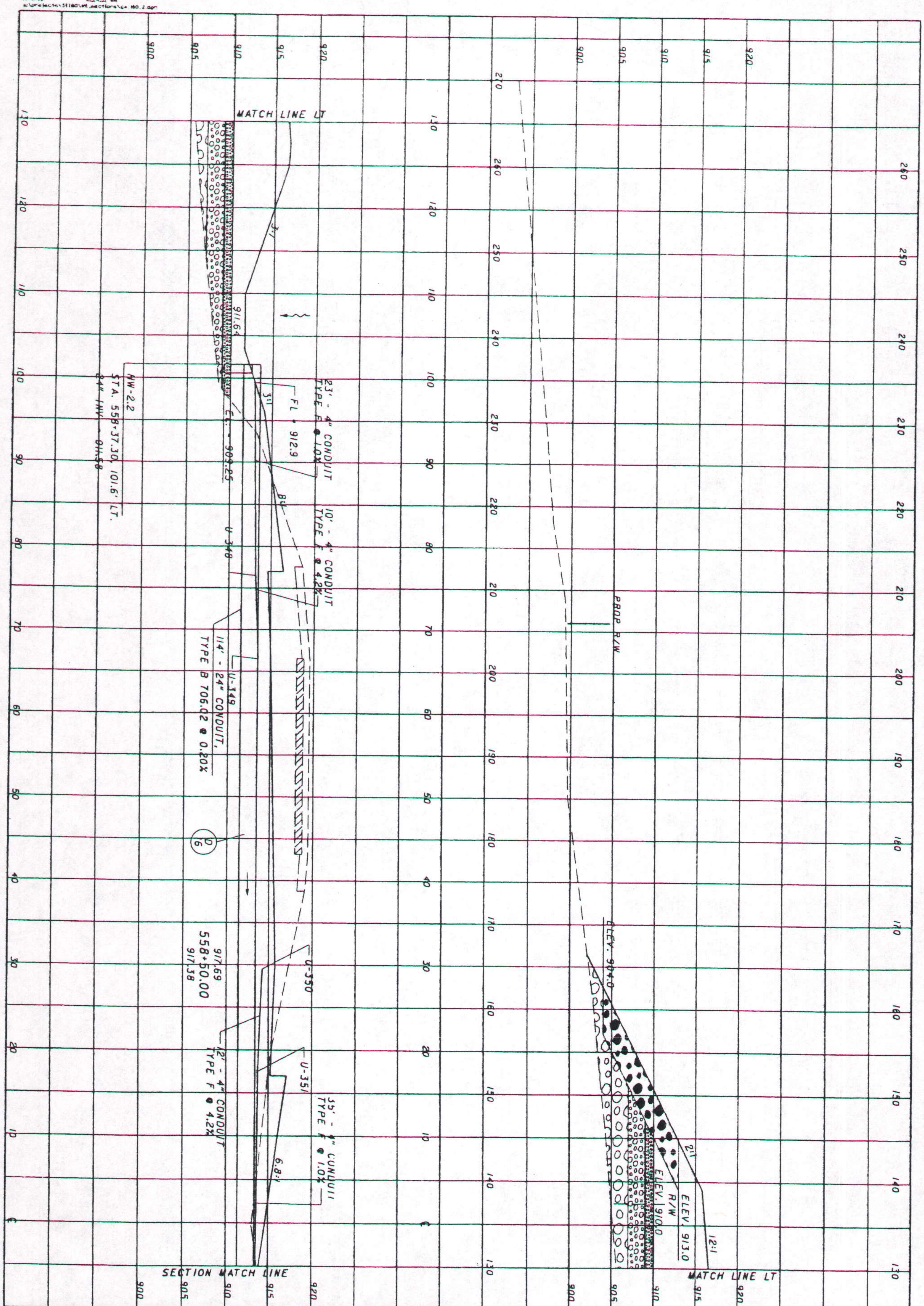


MAH-80-0.97

394 / 1100

CROSS SECTIONS
STA 558+00.00

CALCULATED PRS
CHECKED SSC

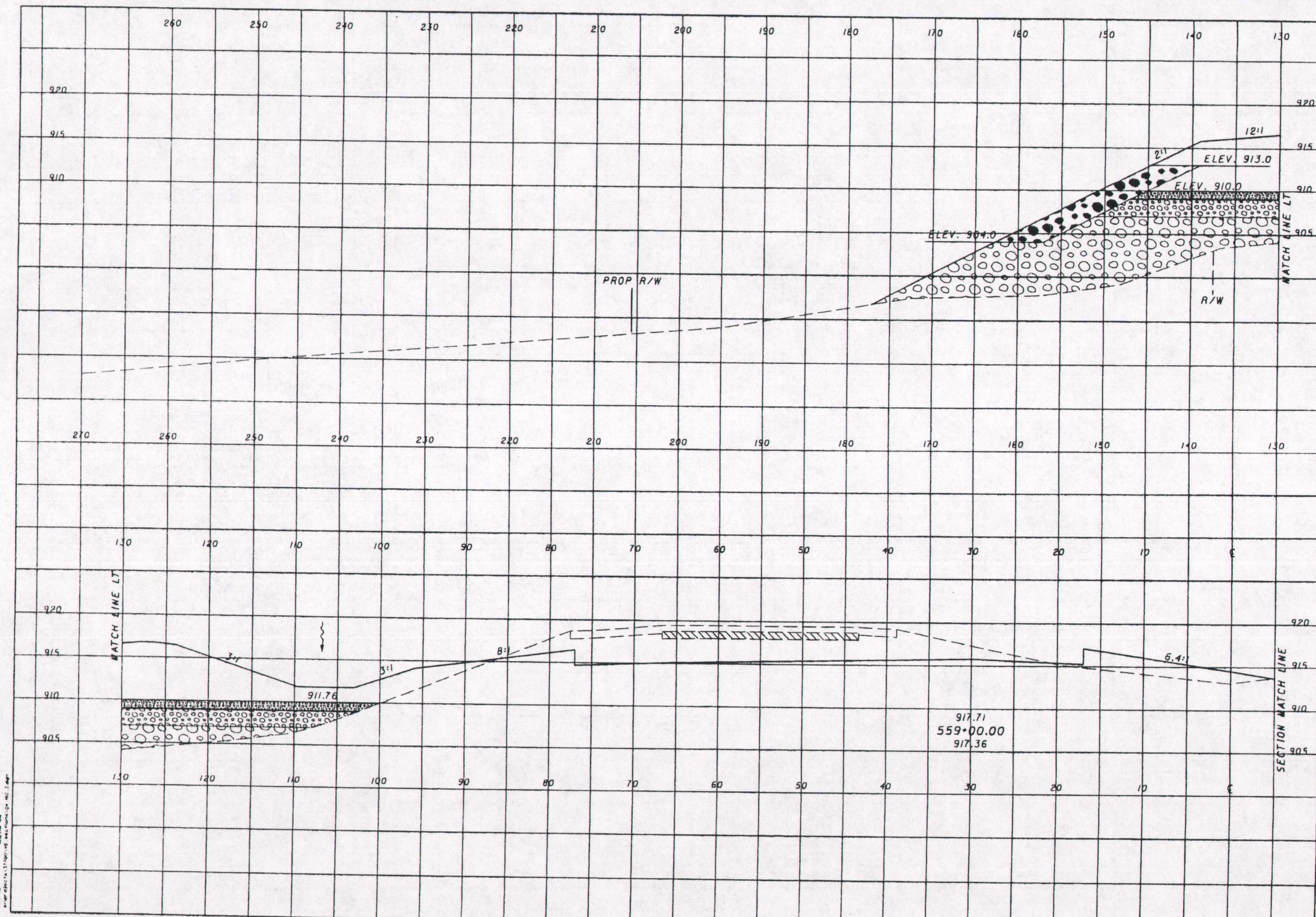


MAH-80-0.97

CROSS SECTIONS
STA 558+50.00

CALCULATED PRS
CHECKED SSC

396/1100

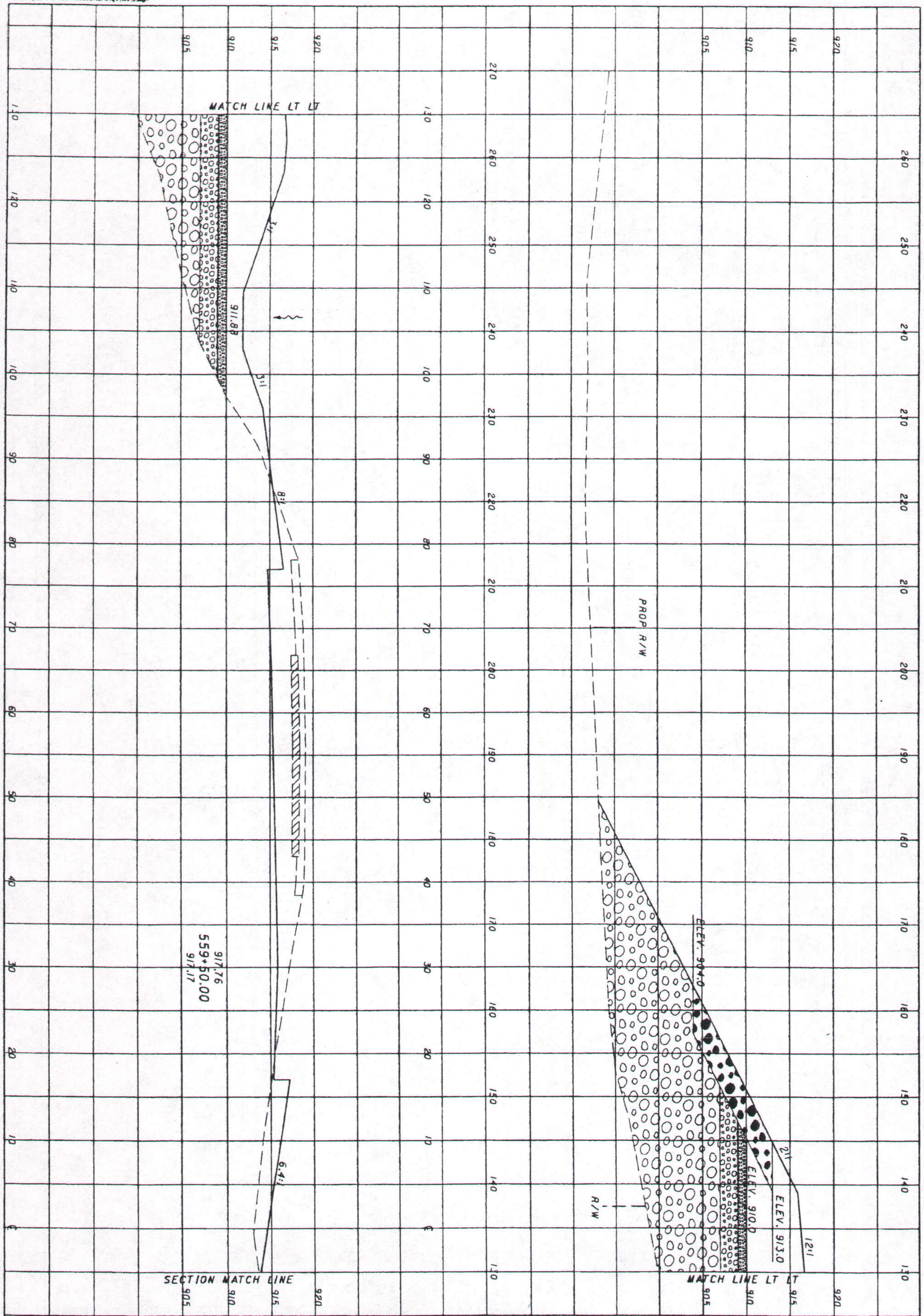


CROSS SECTIONS
STA 559+00.00

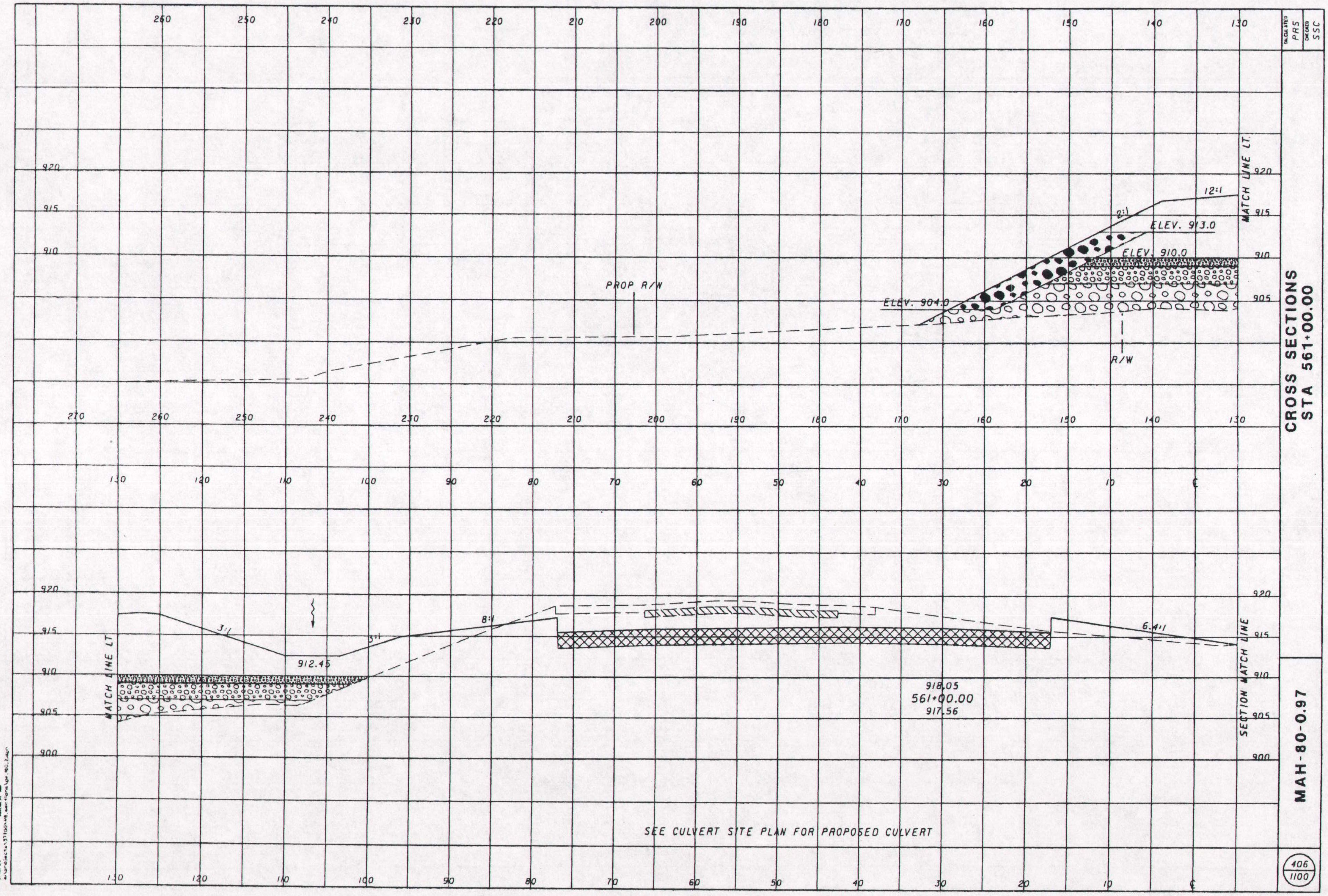
CALCULATED FRS
CHECKED SSC

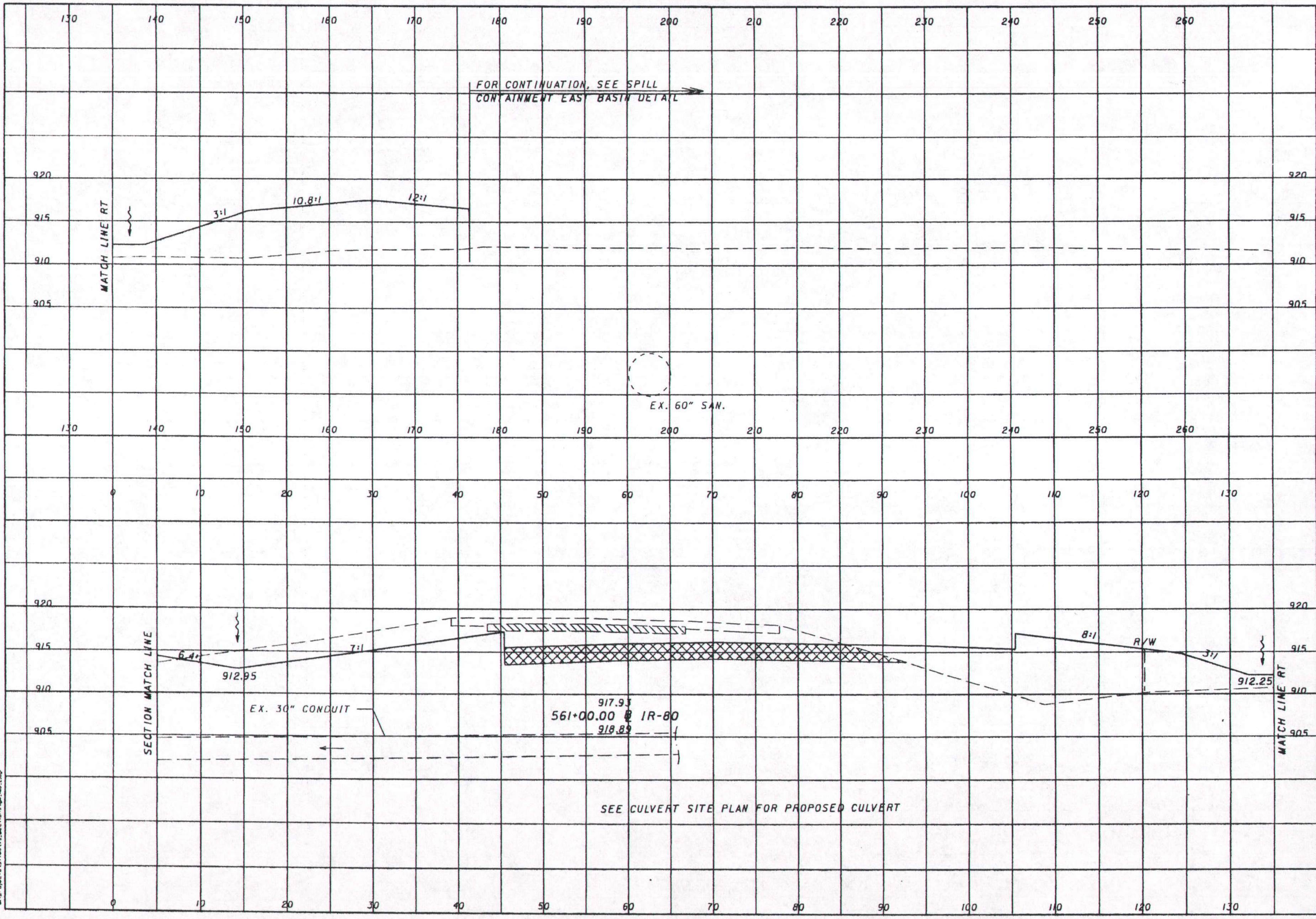
MAH-80-0.97

398
1100



400/1100	MAH-80-0.97	CROSS SECTIONS STA 559+50.00	CALCULATED PRS CHECKED SSC


CROSS SECTIONS
STA 561+00.00
MAH-80-0.97
406
1100
CALCULATED PRS
CHECKED SSC
MATCH LINE LT.
12:1
2:1
ELEV. 913.0
ELEV. 910.0
ELEV. 904.0
R/W
PROP R/W
SECTION MATCH LINE
6.4:1
8:1
3:1
912.45
918.05
561+00.00
917.56
MATCH LINE LT
SEE CULVERT SITE PLAN FOR PROPOSED CULVERT

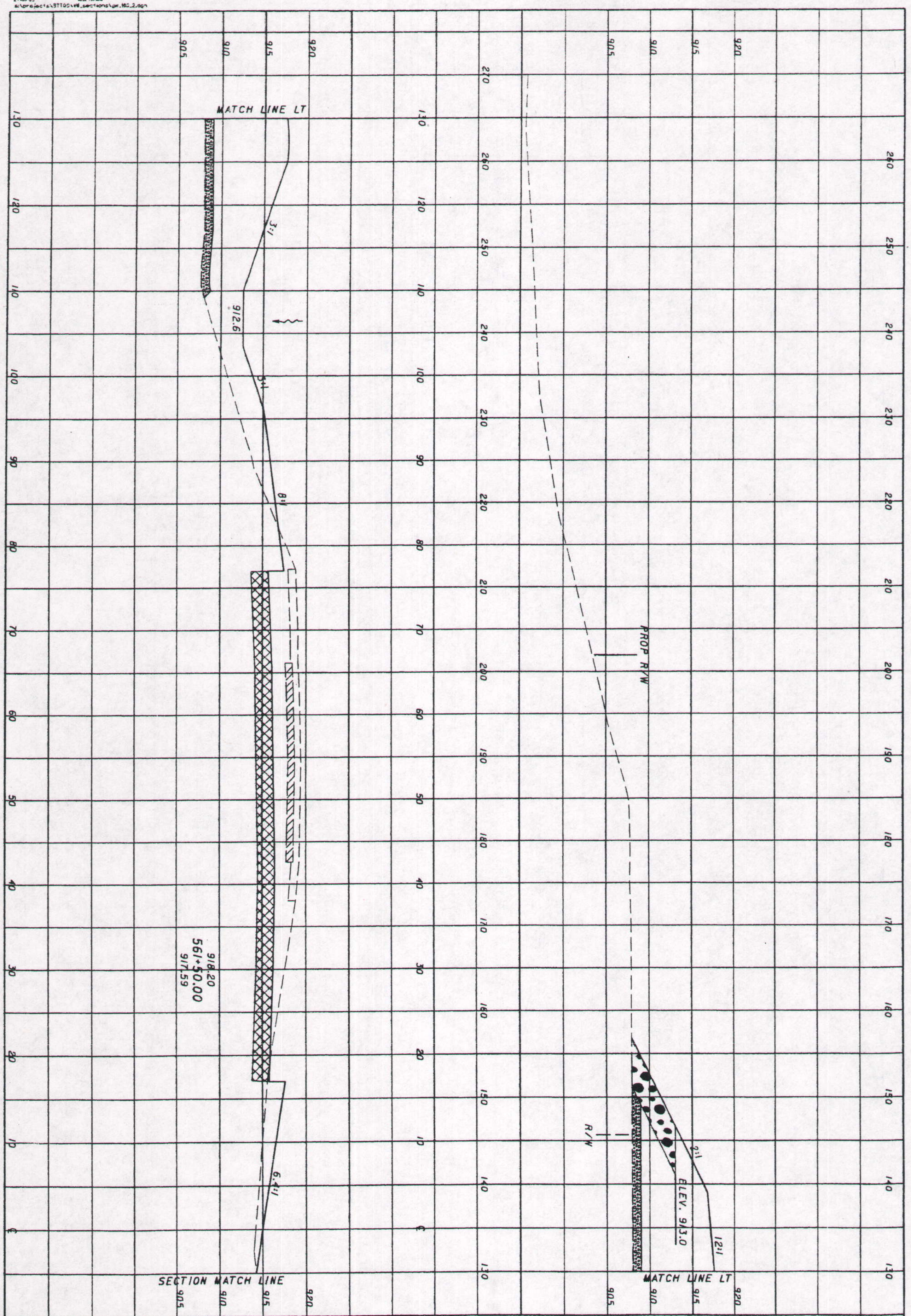


CROSS SECTIONS
STA 561+00.00

MAH-80-0.97

CALCULATED PRS
CHECKED SSC

407/1100

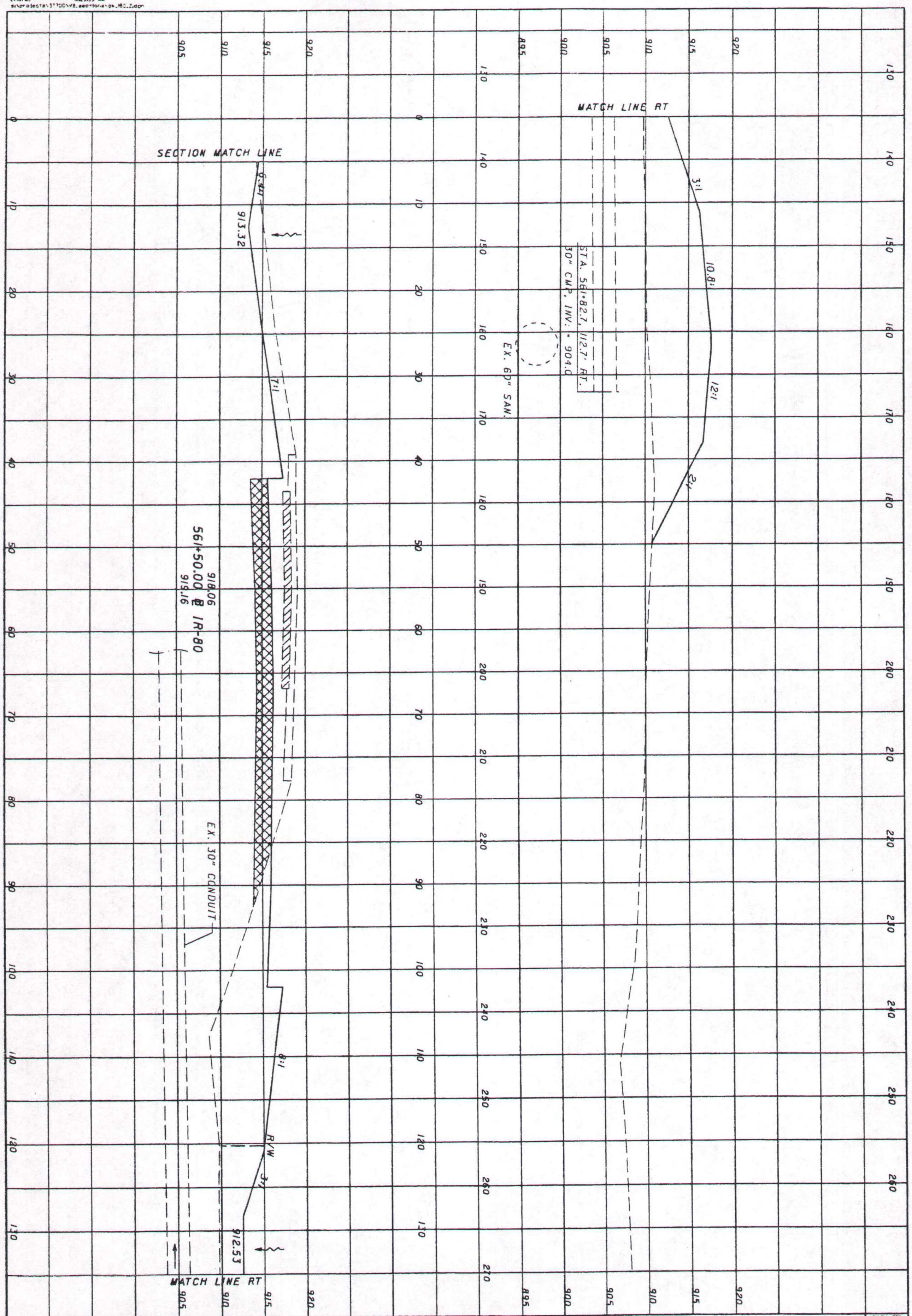


MAH-80-0.97

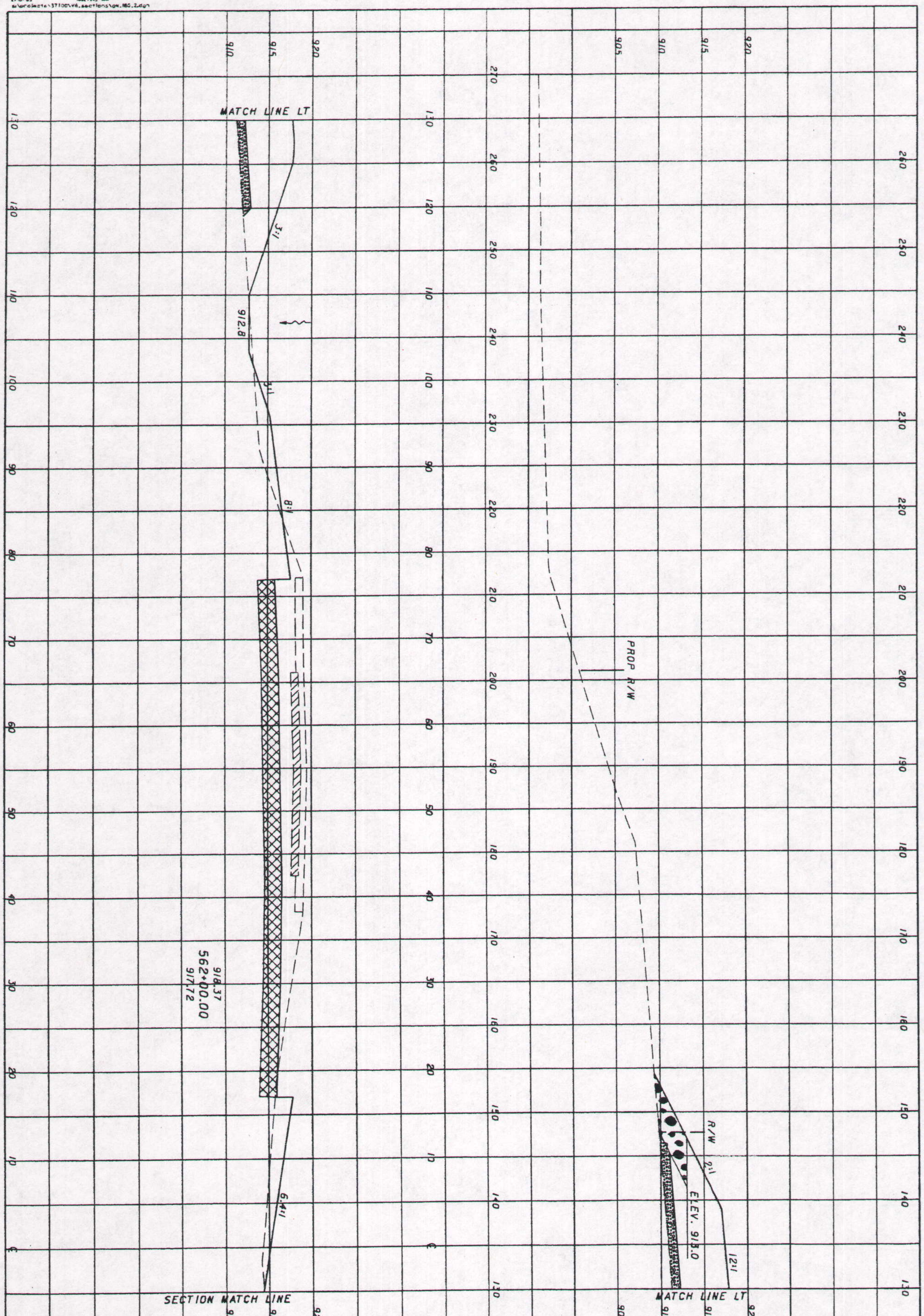
CROSS SECTIONS
STA 561+50.00

CALCULATED PRS
CHECKED SSC

408/1100



MAH-80-0.97	CROSS SECTIONS STA 561+50.00	CALCULATED PRS CHECKED SSC

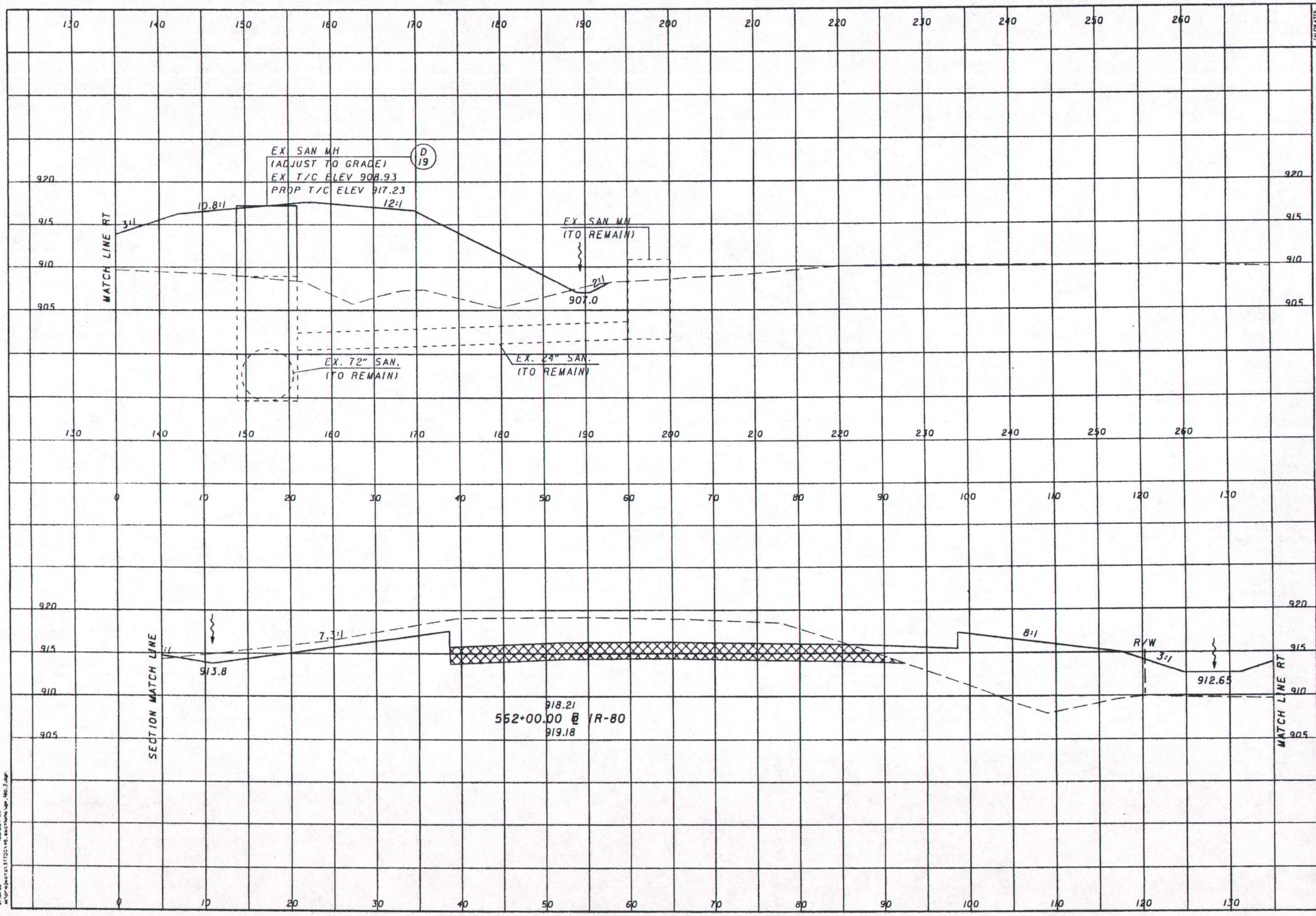


MAH-80-0.97

CROSS SECTIONS
STA 562+00.00

CALCULATED PRS
CHECKED SSC

410 / 1100

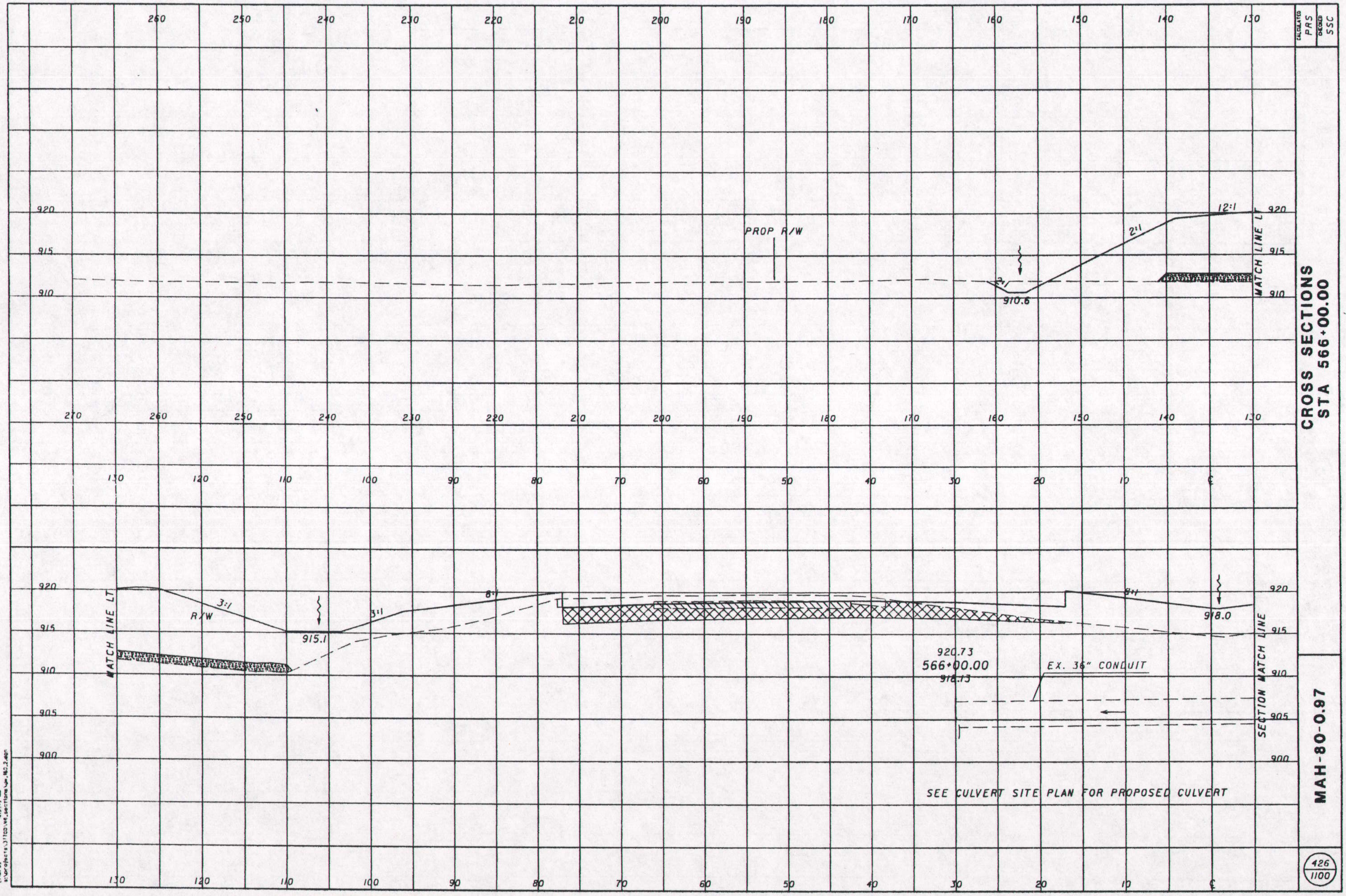


CROSS SECTIONS
STA 562+00.00

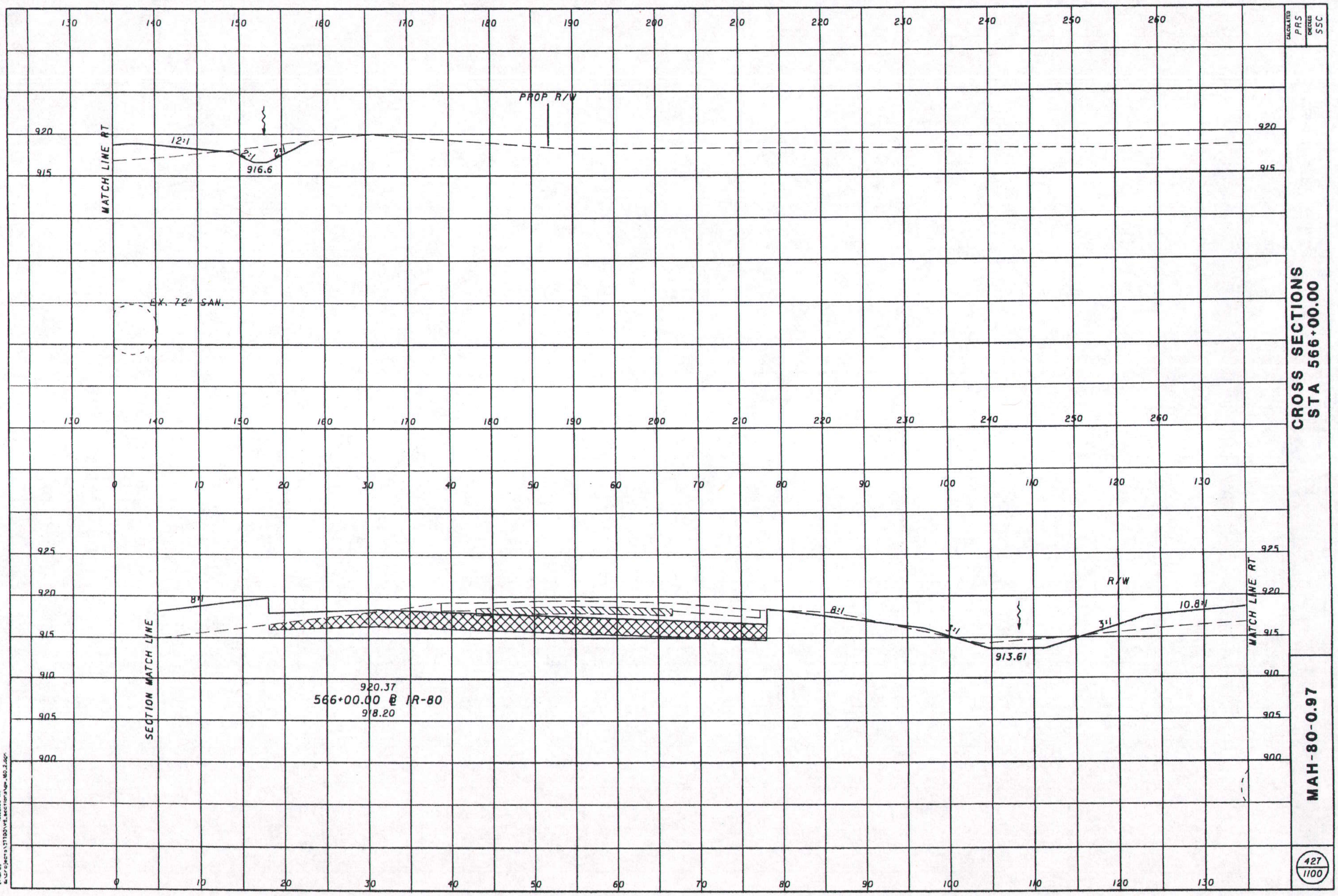
MAH-80-0.97

CALCULATED PRS
CHECKED SSC

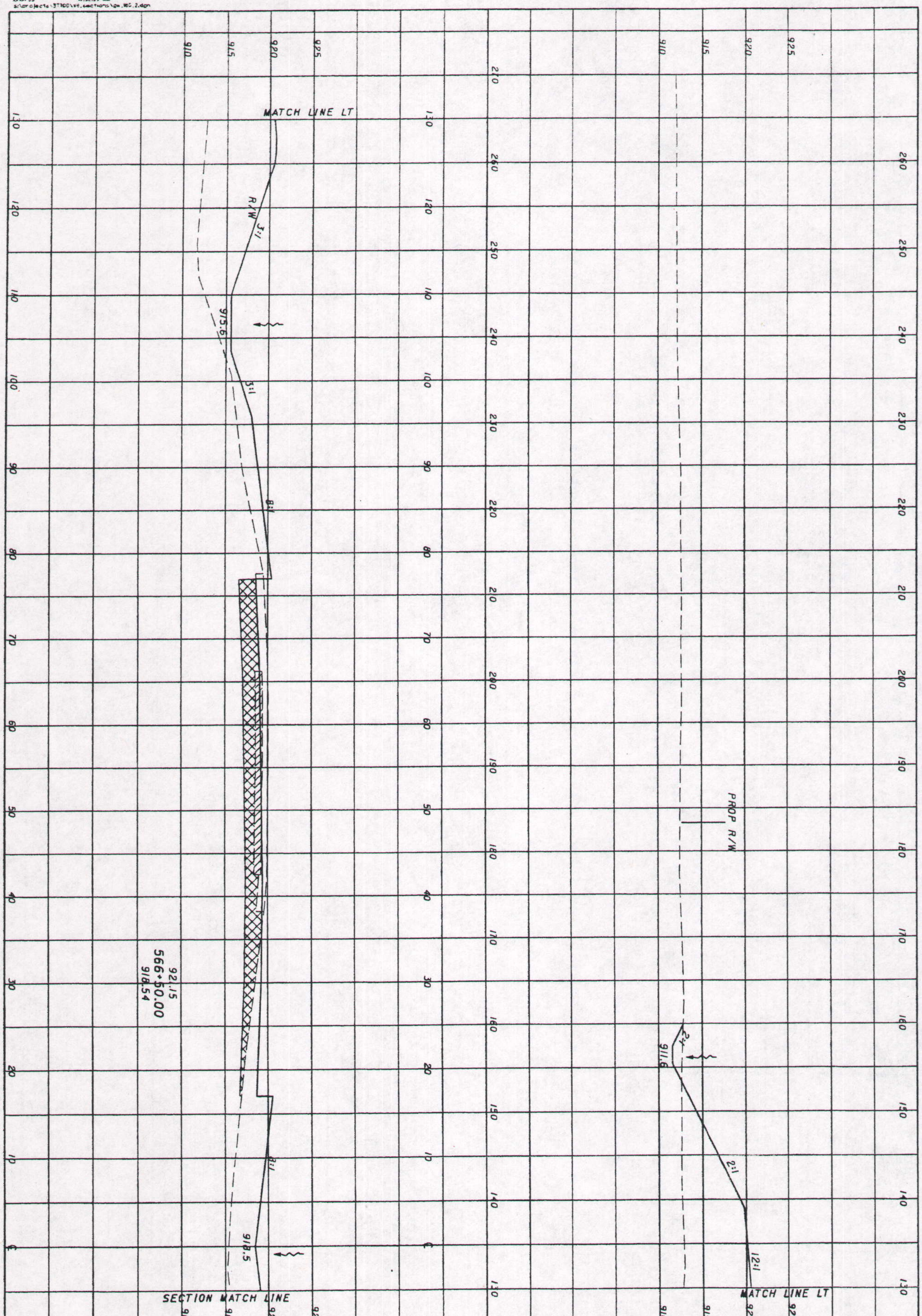
411/1100



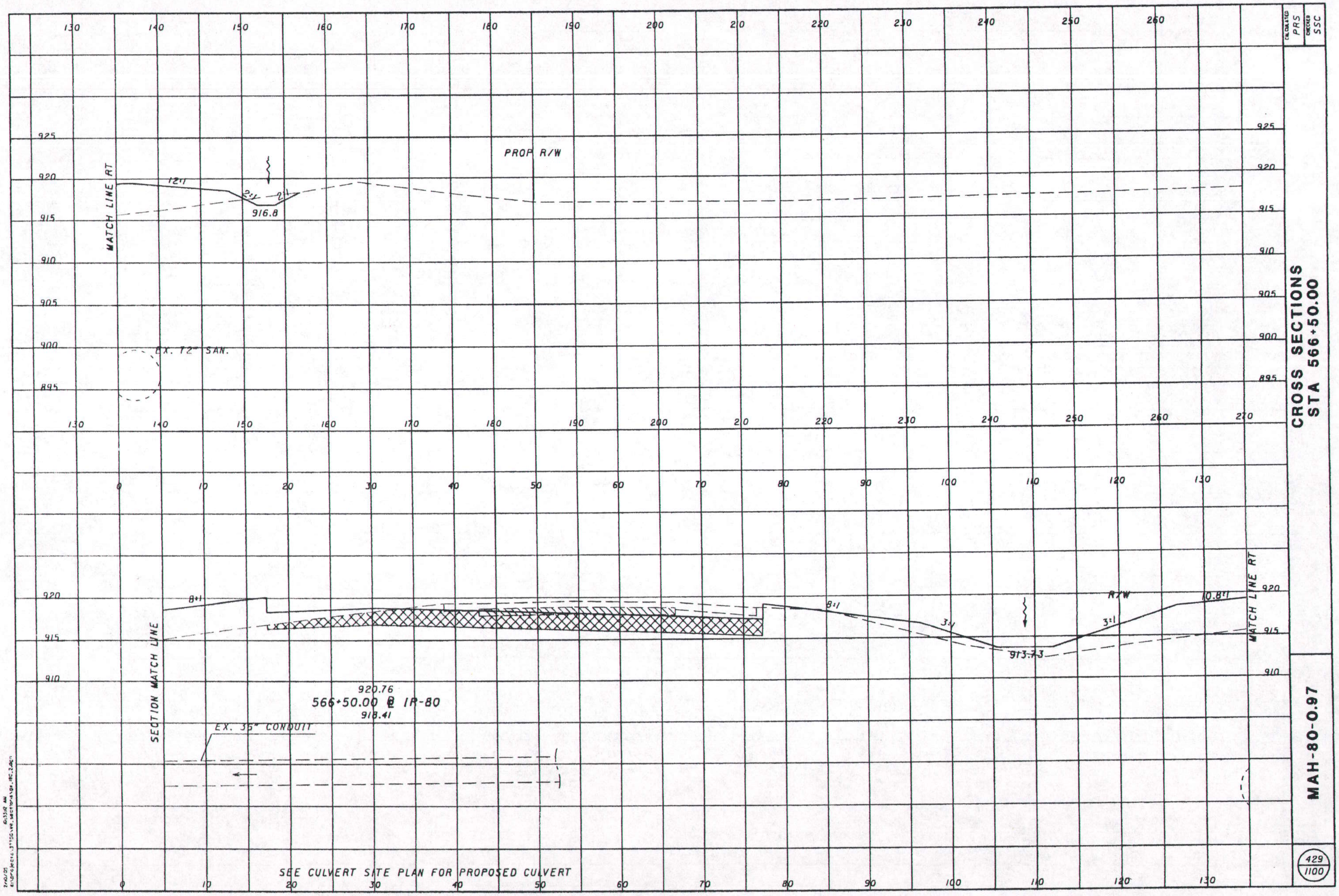
CROSS SECTIONS
STA 566+00.00
MAH-80-0.97
426
1100
CALCULATED PRS
CHECKED SSC
PROP R/W
12:1
2:1
910.6
WATCH LINE LT
R/W
3:1
915.1
8:1
918.0
920.73
566+00.00
918.13
EX. 36" CONDUIT
SECTION WATCH LINE
SEE CULVERT SITE PLAN FOR PROPOSED CULVERT



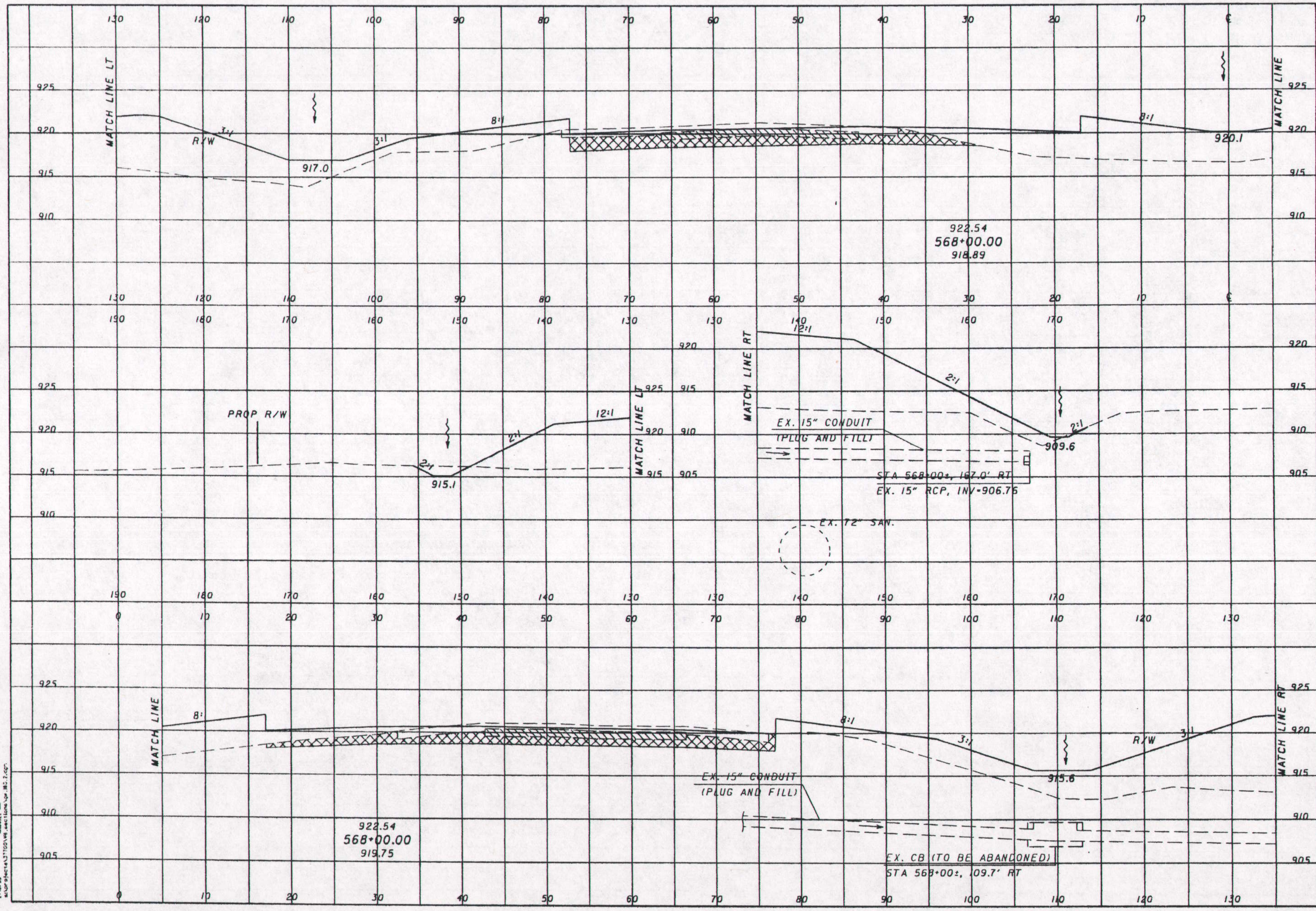
CROSS SECTIONS
STA 566+00.00
MAH-80-0.97
427/1100
CALCULATED PRS
CHECKED SSC
PROP R/W
WATCH LINE RT
12:1
2:1
916.6
EX. 72" SAN.
SECTION MATCH LINE
8:1
R/W
3:1
913.61
10.8:1
920.37
566+00.00 ℄ IR-80
918.20



428 / 1100	MAH-80-0.97	CROSS SECTIONS STA 566+50.00	CALCULATED PRS CHECKED SSC



CROSS SECTIONS
STA 566+50.00
MAH-80-0.97
429
1100
CALCULATED PRS
CHECKED SSC
PROP R/W
MATCH LINE RT
12:1
2:1
2:1
916.8
EX. 72" SAN.
SECTION MATCH LINE
8:1
8:1
3:1
3:1
913.73
R/W
10.8:1
MATCH LINE RT
920.76
566+50.00 ℄ IR-80
918.41
EX. 36" CONDUIT
SEE CULVERT SITE PLAN FOR PROPOSED CULVERT

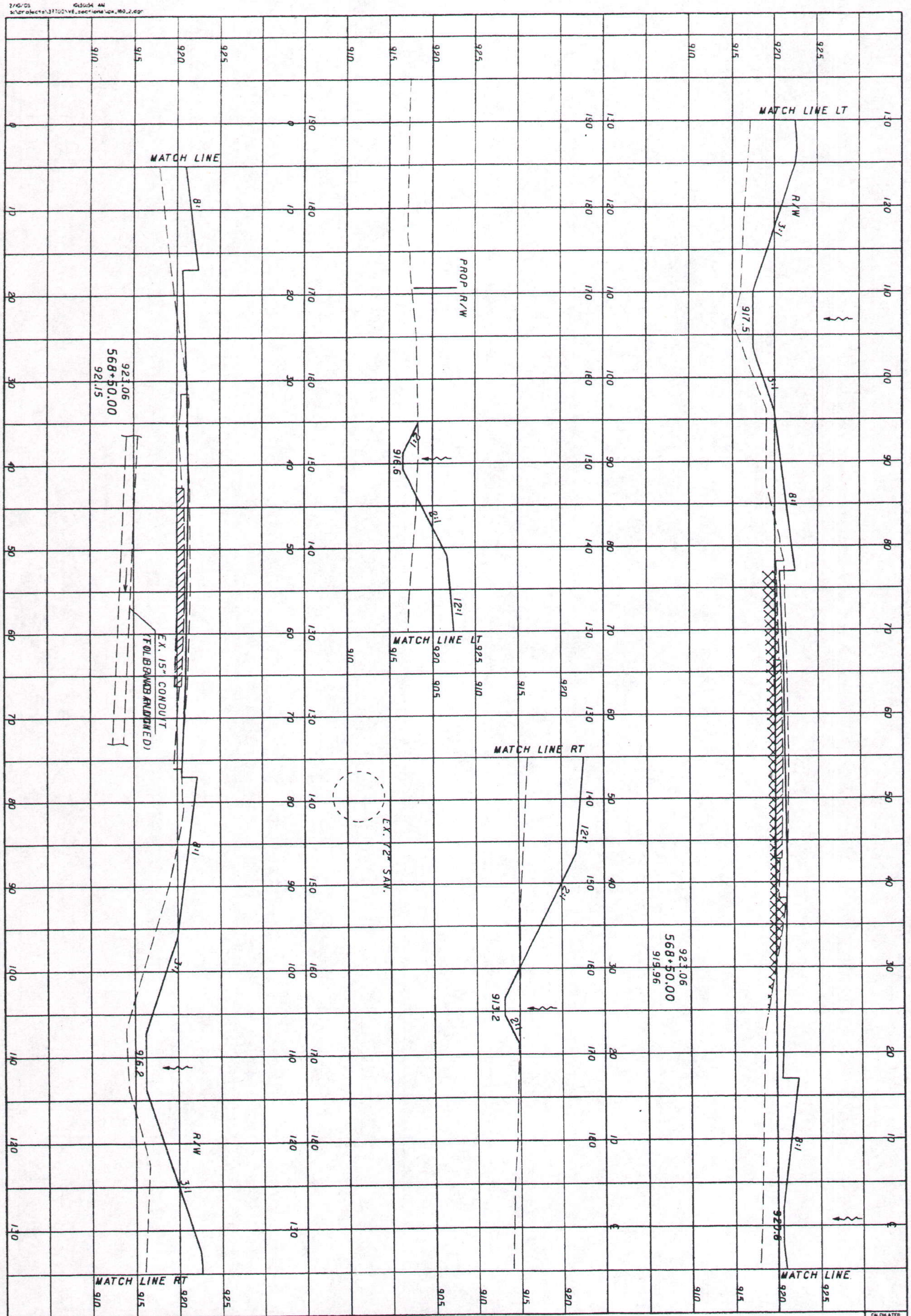


CALCULATED PRS
CHECKED SSC

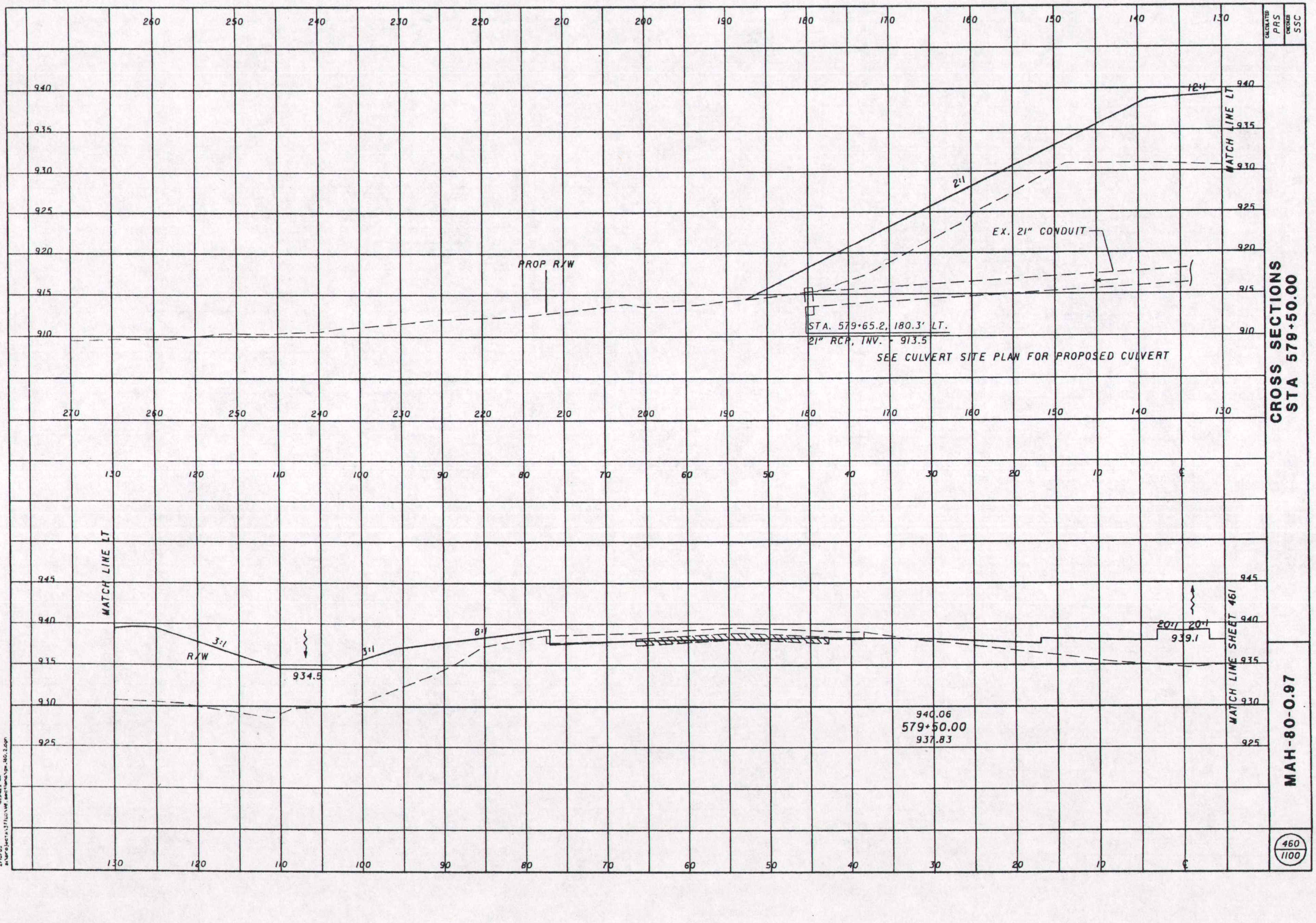
CROSS SECTIONS
STA 568+00.00

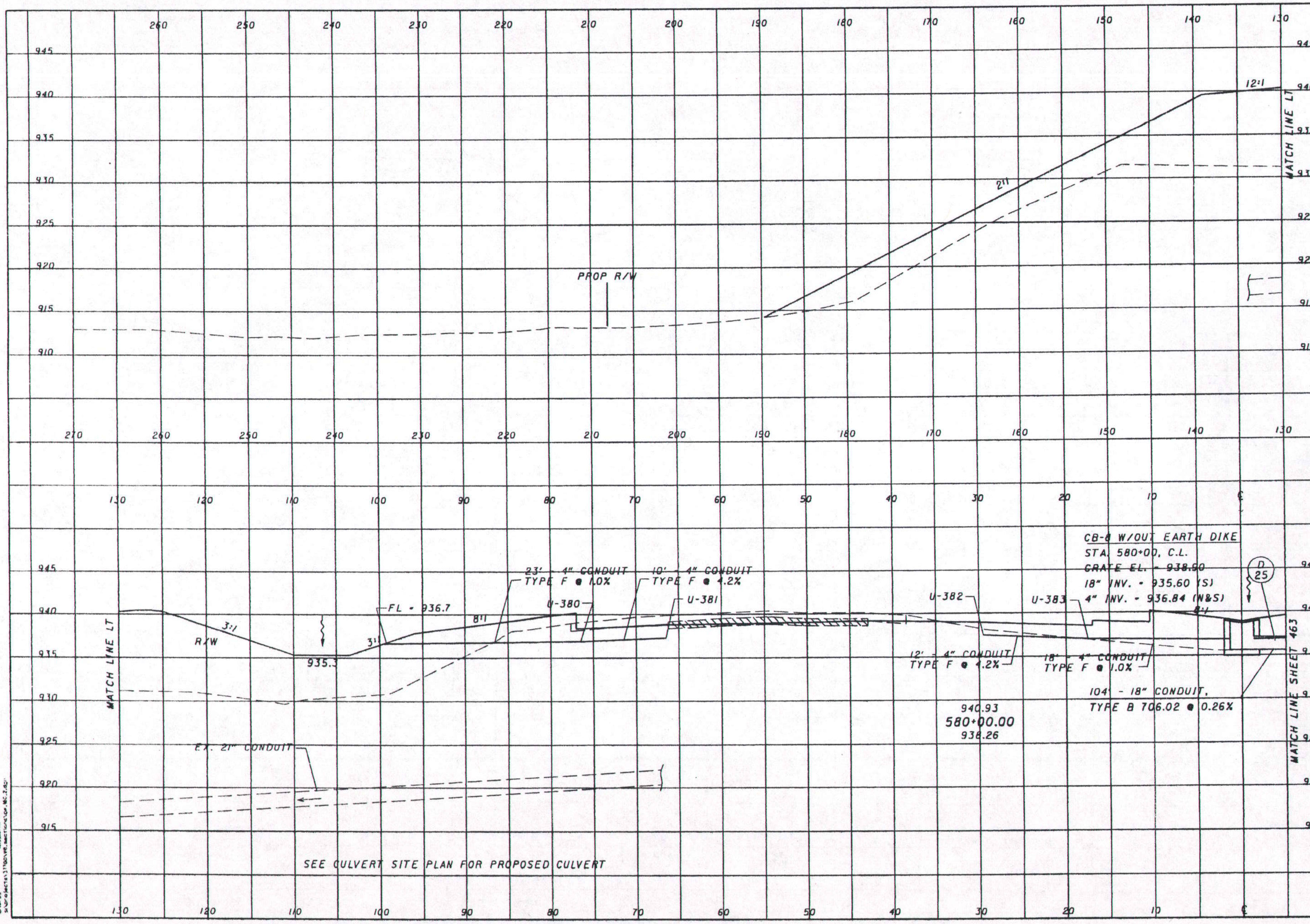
MAH-80-0.97

433/1100



434/1100 MAH-80-0.97	CROSS SECTIONS STA 568+50.00	CALCULATED PRS CHECKED SSC


CROSS SECTIONS
STA 579+50.00
MAH-80-0.97
460
1100
CALCULATED PRS
CHECKED SSC
WATCH LINE LT
WATCH LINE SHEET 461
EX. 21" CONDUIT
PROP R/W
STA. 579+65.2, 180.3' LT.
21" RCP, INV. = 913.5
SEE CULVERT SITE PLAN FOR PROPOSED CULVERT
12:1
2:1
3:1
R/W
934.5
8:1
20:1
939.1
940.06
579+50.00
937.83

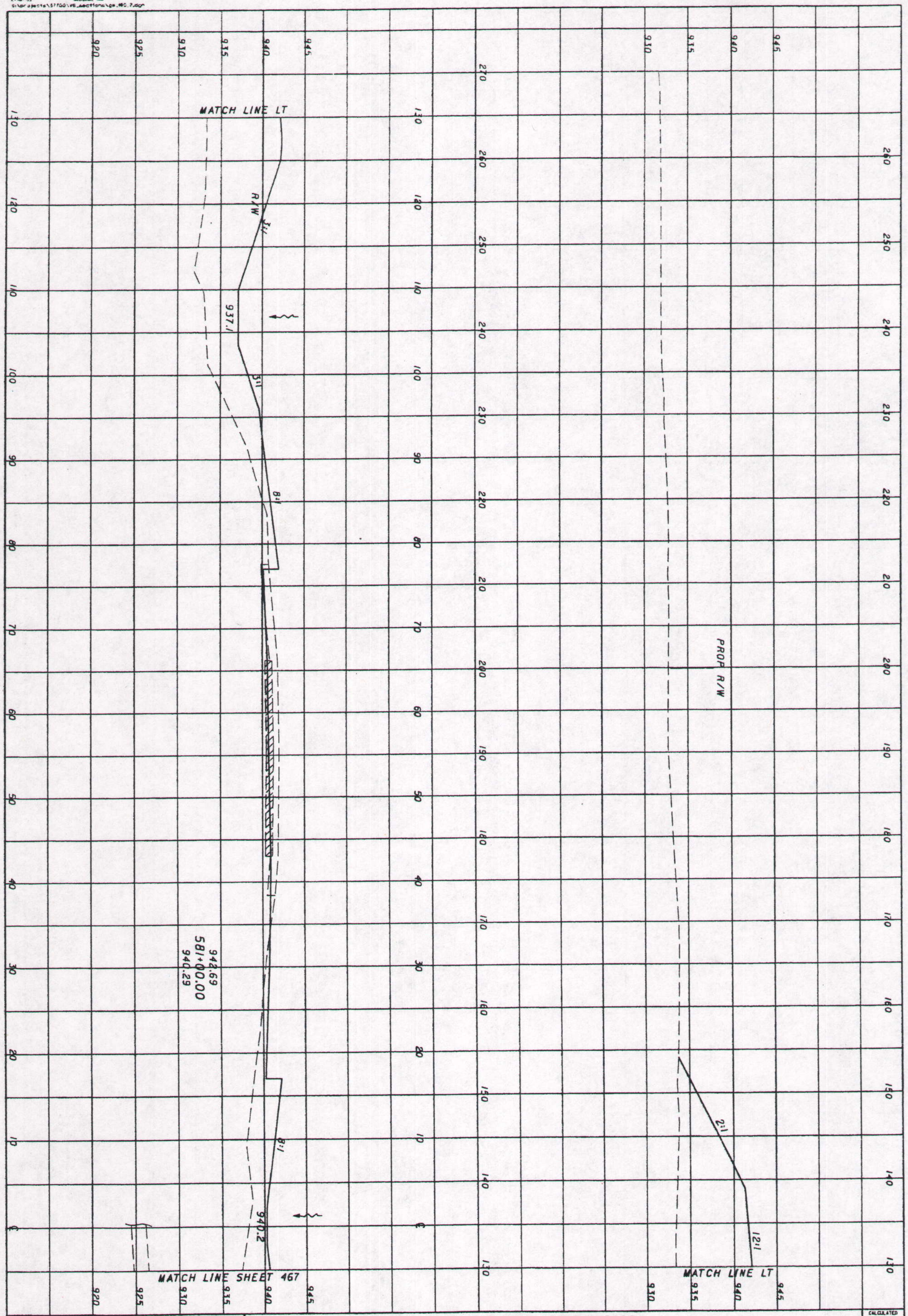


CALCULATED PRS
CHECKED SSC

CROSS SECTIONS
STA 580+00.00

MAH-80-0.97

462/1100



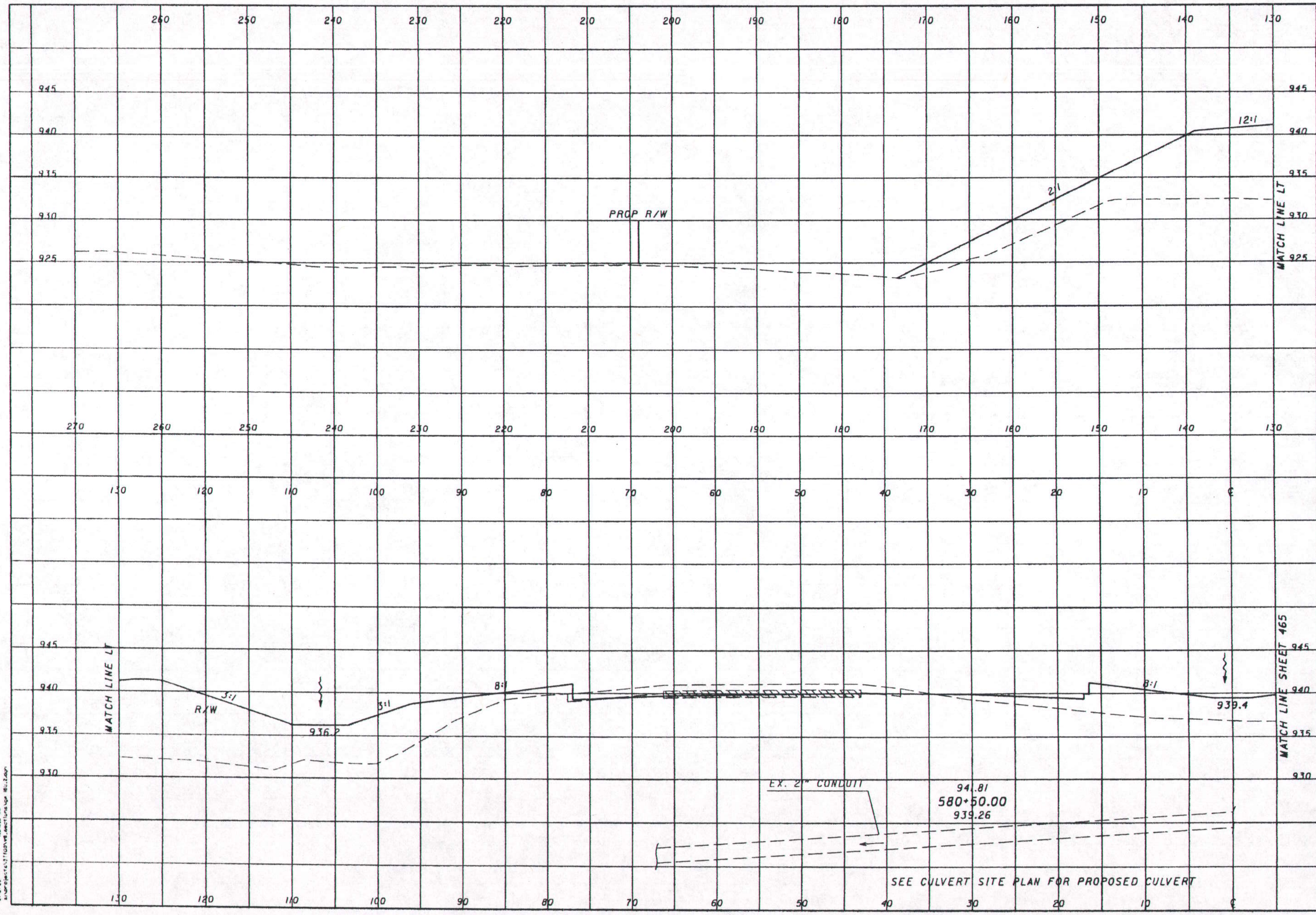
MAH-80-0.97

466
1100

CROSS SECTIONS
STA 581+00.00

CALCULATED PRS
CHECKED SSC

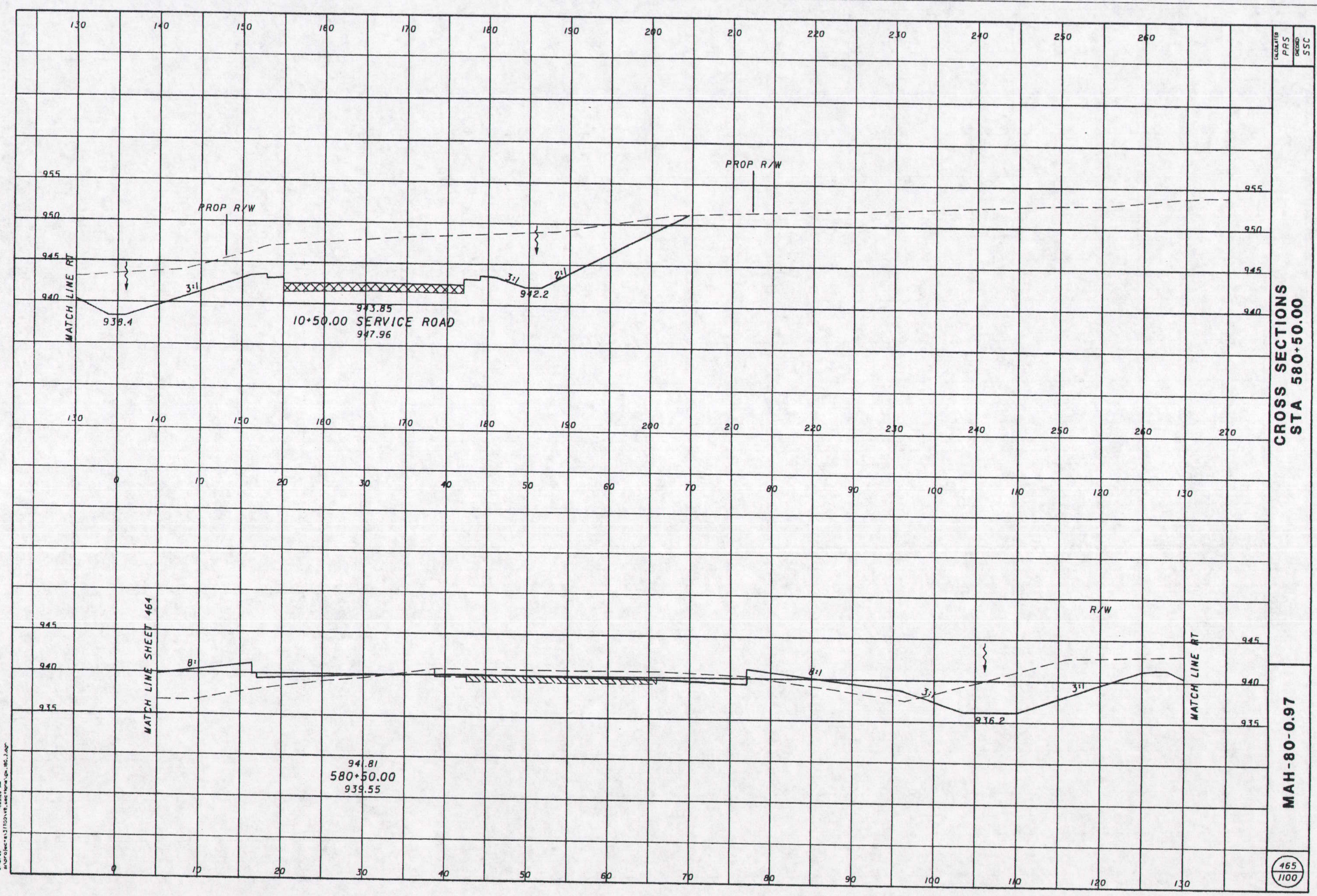
CROSS SECTIONS
STA 580+50.00

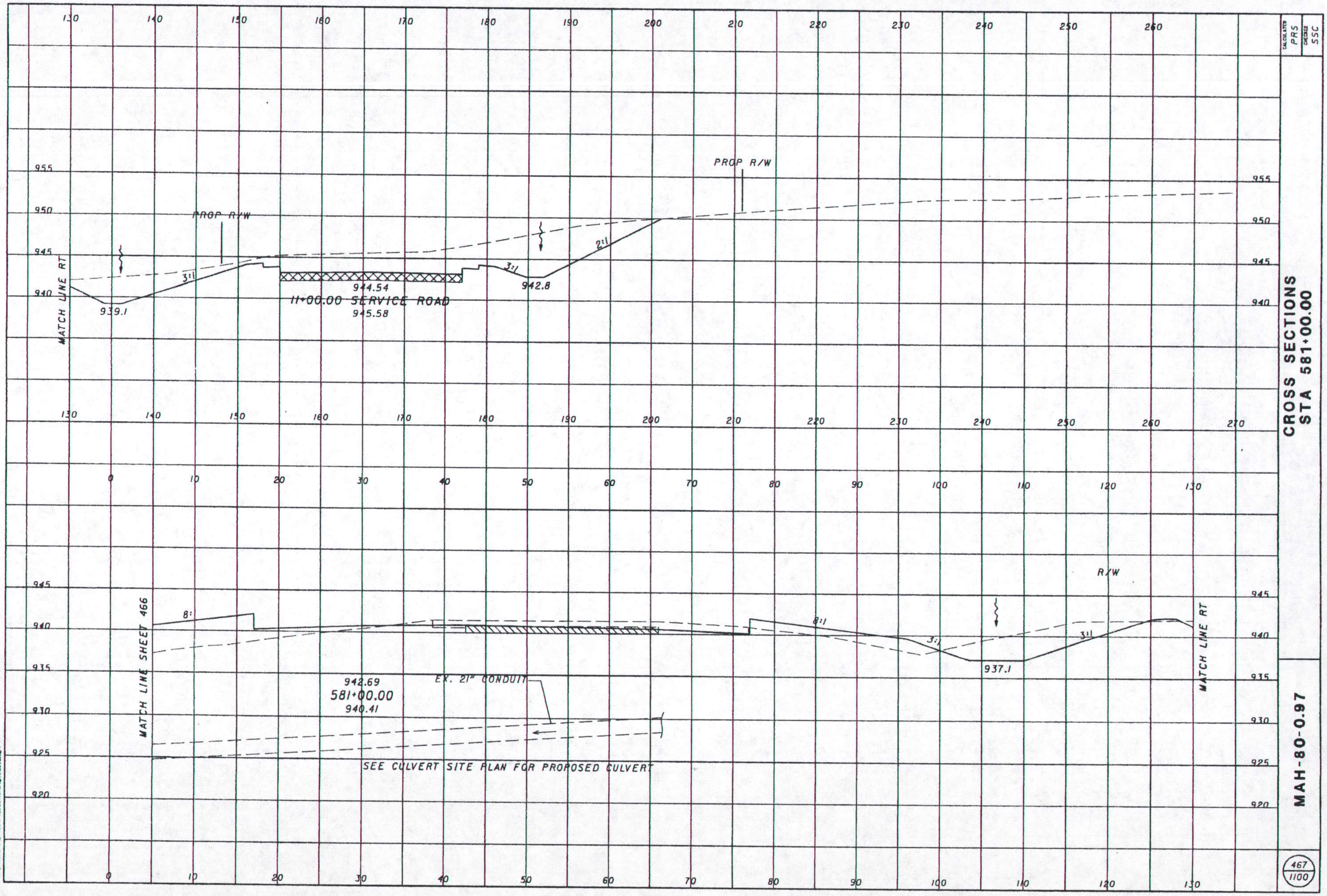


MAH-80-0.97

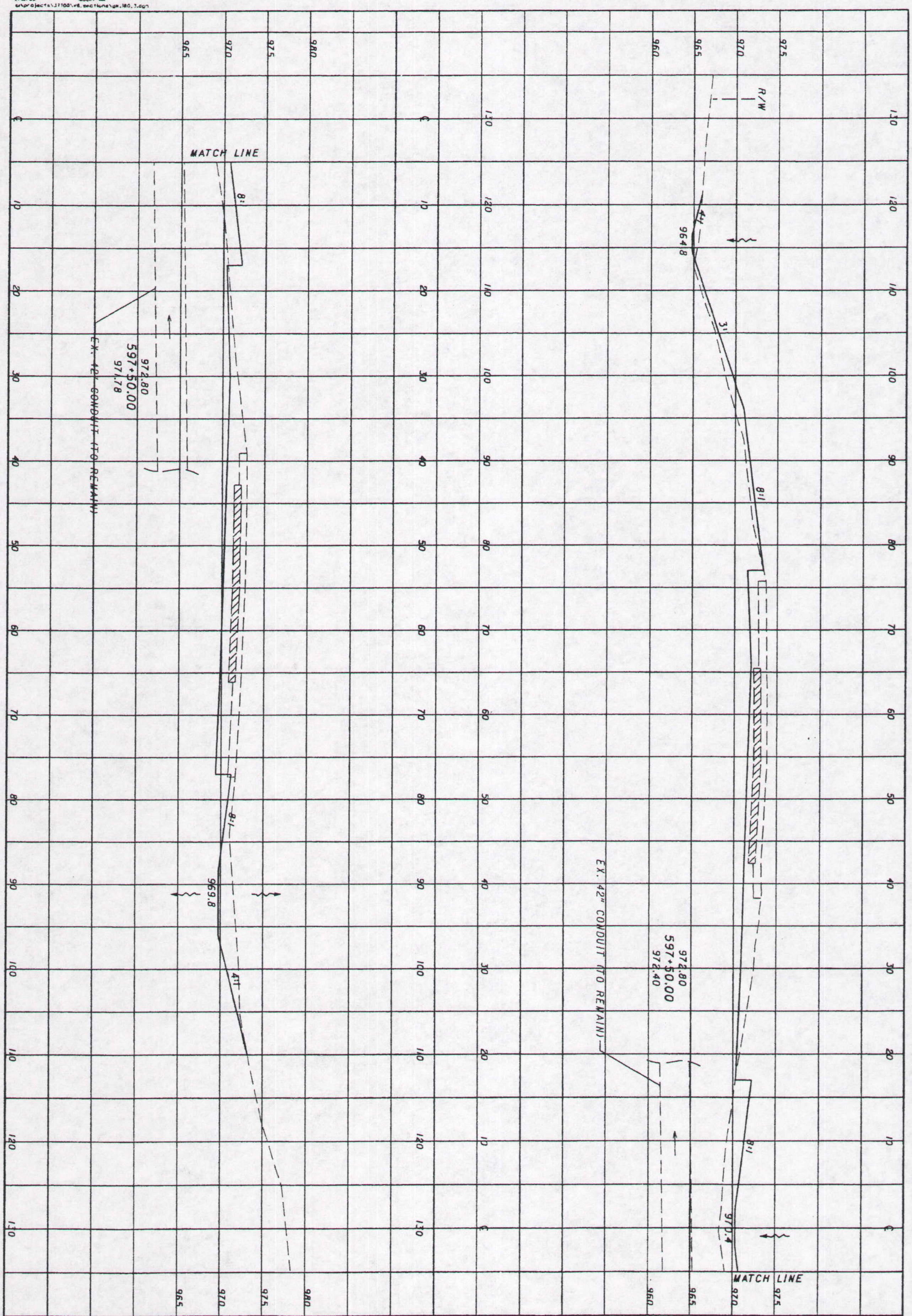
464/1100

CALCULATED PRS
CHECKED SSC


CROSS SECTIONS
STA 580+50.00
MAH-80-0.97
465
1100
CALCULATED
PRS
CHECKED
SSC
PROP R/W
PROP R/W
WATCH LINE RT
938.4
3:1
943.85
10+50.00 SERVICE ROAD
947.96
3:1
942.2
2:1
WATCH LINE SHEET 464
8:1
94.81
580+50.00
939.55
8:1
3:1
936.2
3:1
R/W
WATCH LINE RT
955
950
945
940
935
130
140
150
160
170
180
190
200
210
220
230
240
250
260
270
0
10
20
30
40
50
60
70
80
90
100
110
120



CROSS SECTIONS
STA 581+00.00
MAH-80-0.97
467
1100
CALCULATED PRS
CHECKED SSC
PROP R/W
MATCH LINE RT
939.1
3:1
944.54
11+00.00 SERVICE ROAD
945.58
942.8
2:1
R/W
8:1
3:1
937.1
MATCH LINE SHEET 466
942.69
581+00.00
940.41
EX. 21" CONDUIT
SEE CULVERT SITE PLAN FOR PROPOSED CULVERT

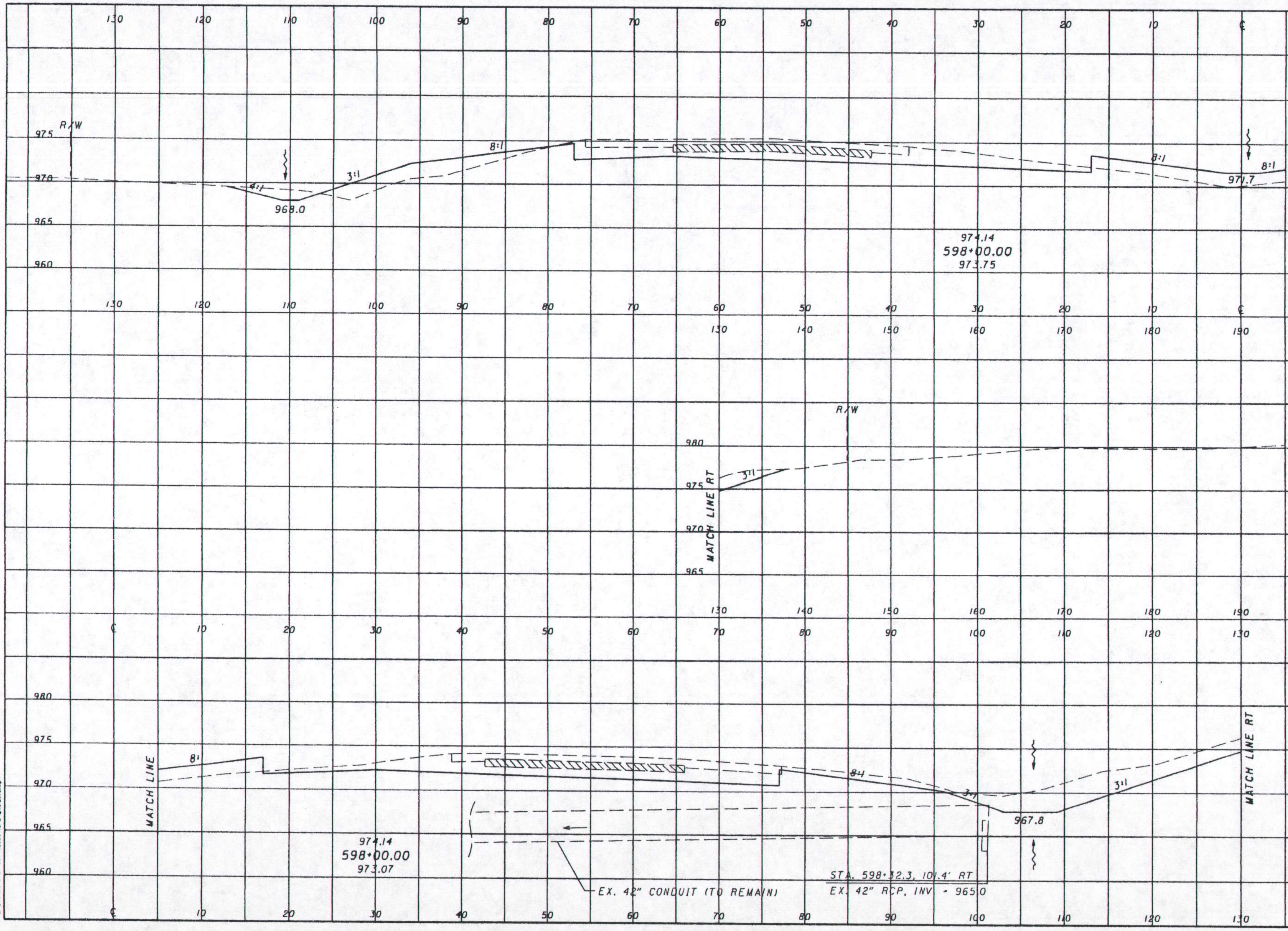


MAH-80-0.97

505/1100

CROSS SECTIONS
STA 597+50.00

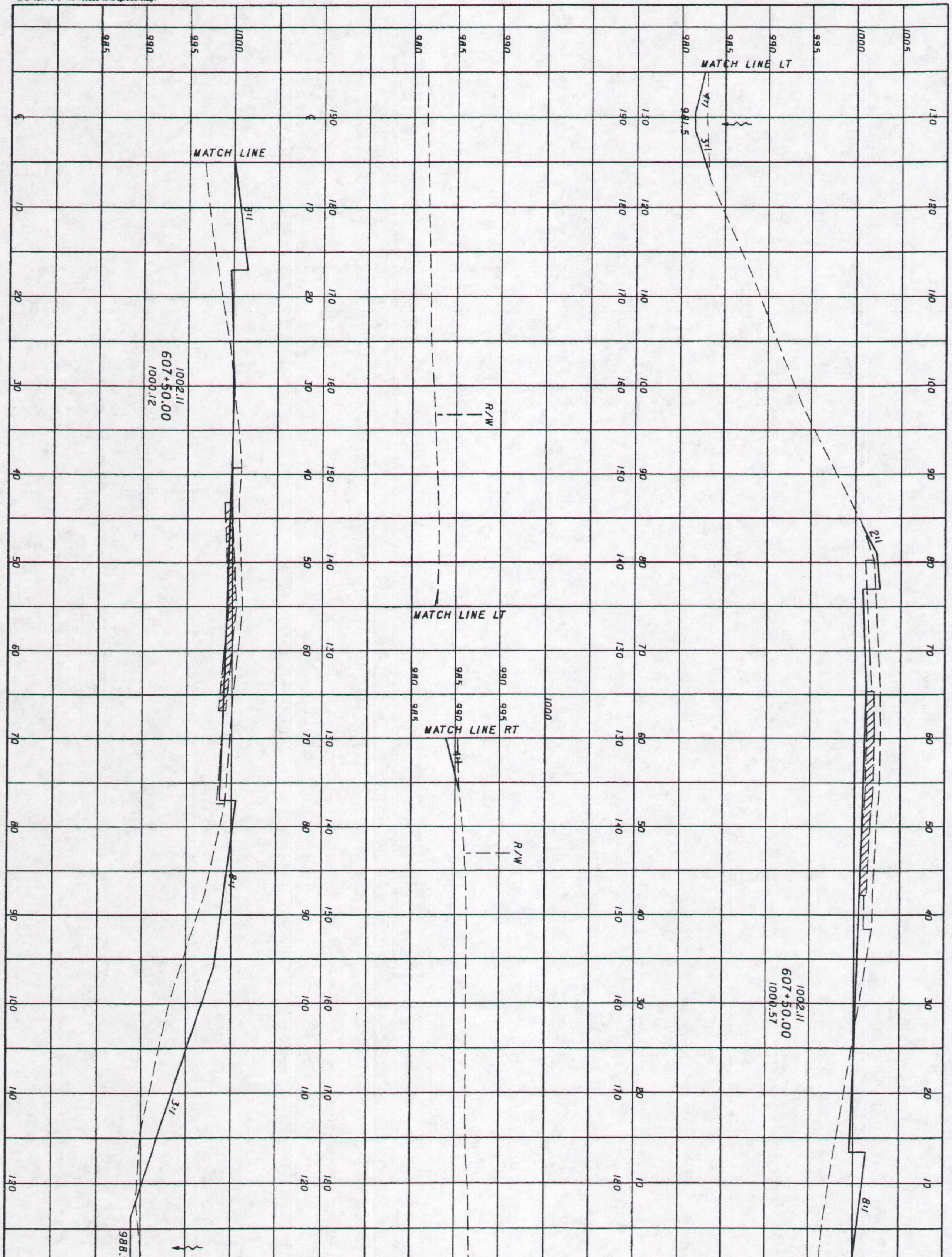
CALCULATED PRS
CHECKED SSC



CROSS SECTIONS
STA 598+00.00

MAH-80-0.97

CALCULATED PRS
CHECKED SSC

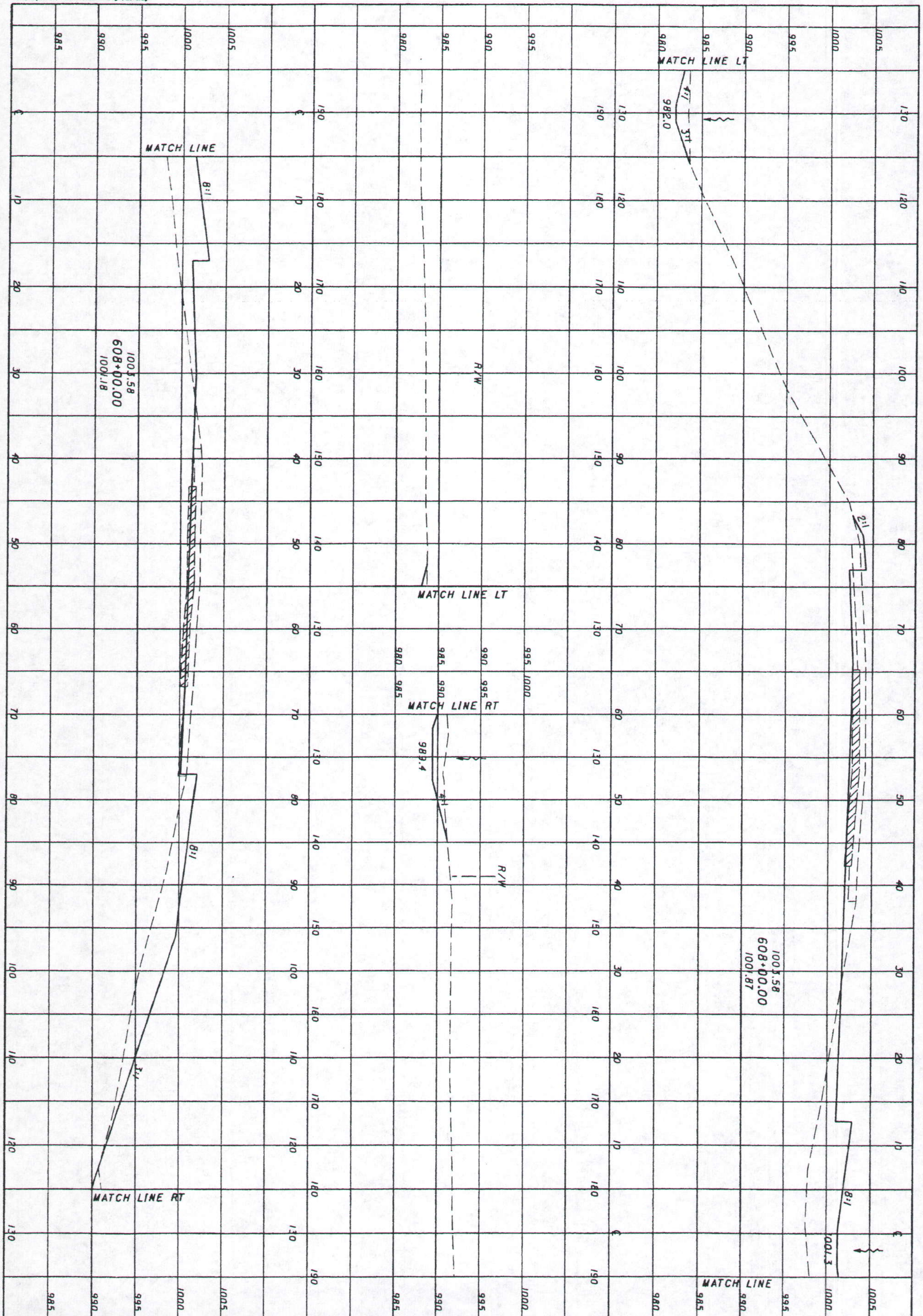


525/1100

MAH-80-0.97

CROSS SECTIONS
STA 607+50.00

CALCULATED PRS
CHECKED SSC

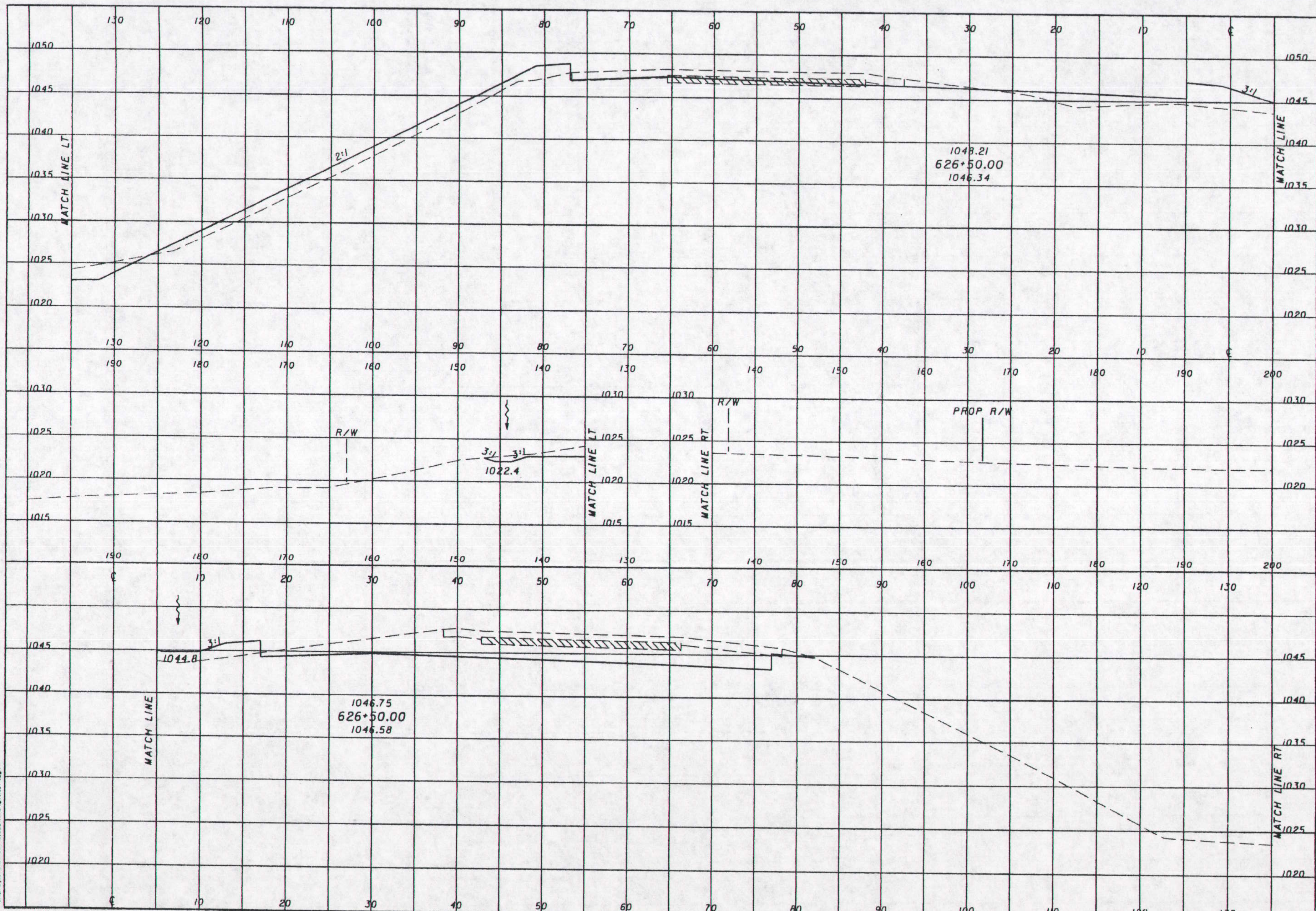


MAH-80-0.97

CROSS SECTIONS
STA 608+00.00

CALCULATED PRS
CHECKED SSC

526/1100

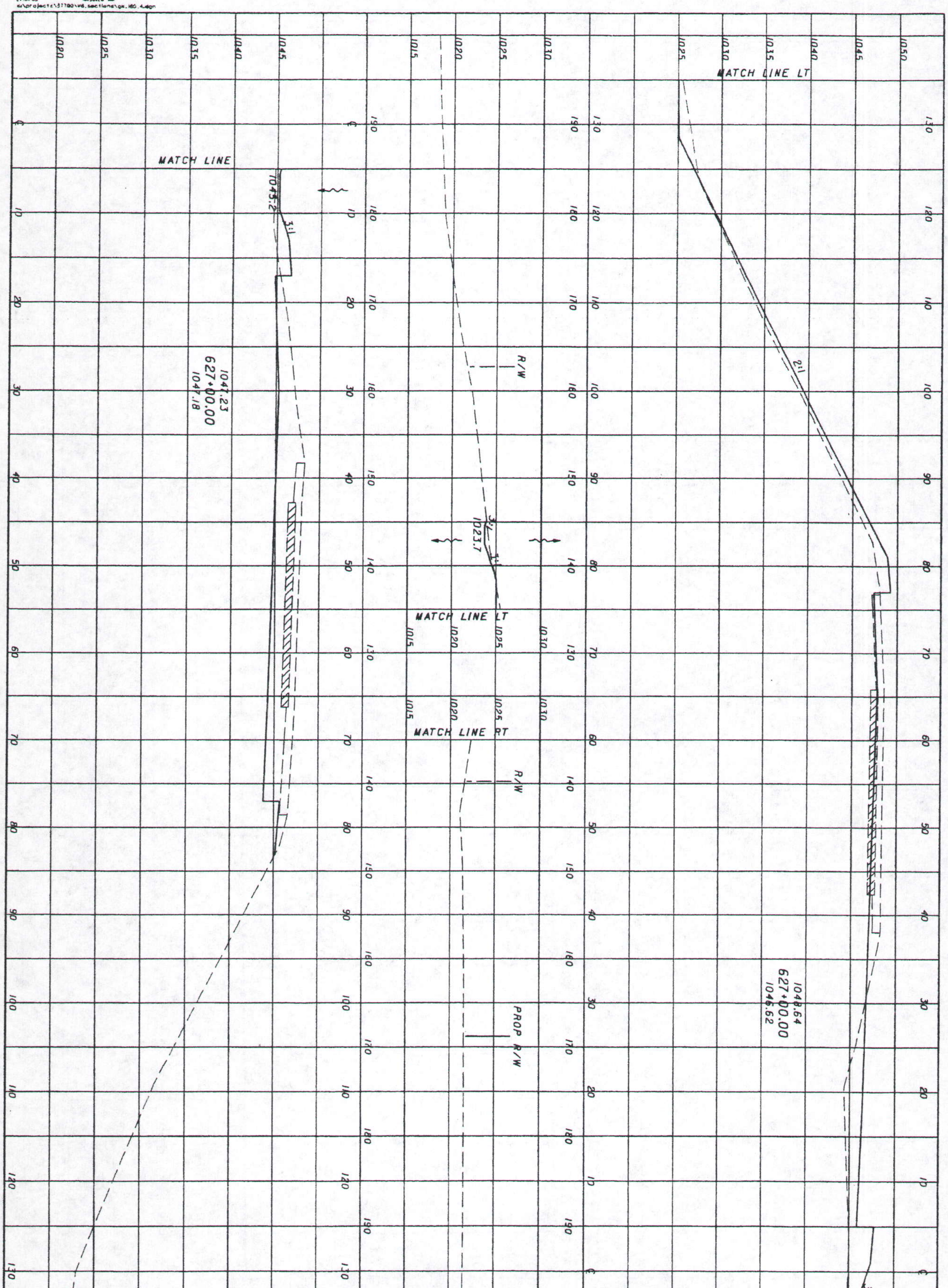


CALCULATED PRS
CHECKED SSC

CROSS SECTIONS
STA 626+50.00

MAH-80-0.97

564
1100

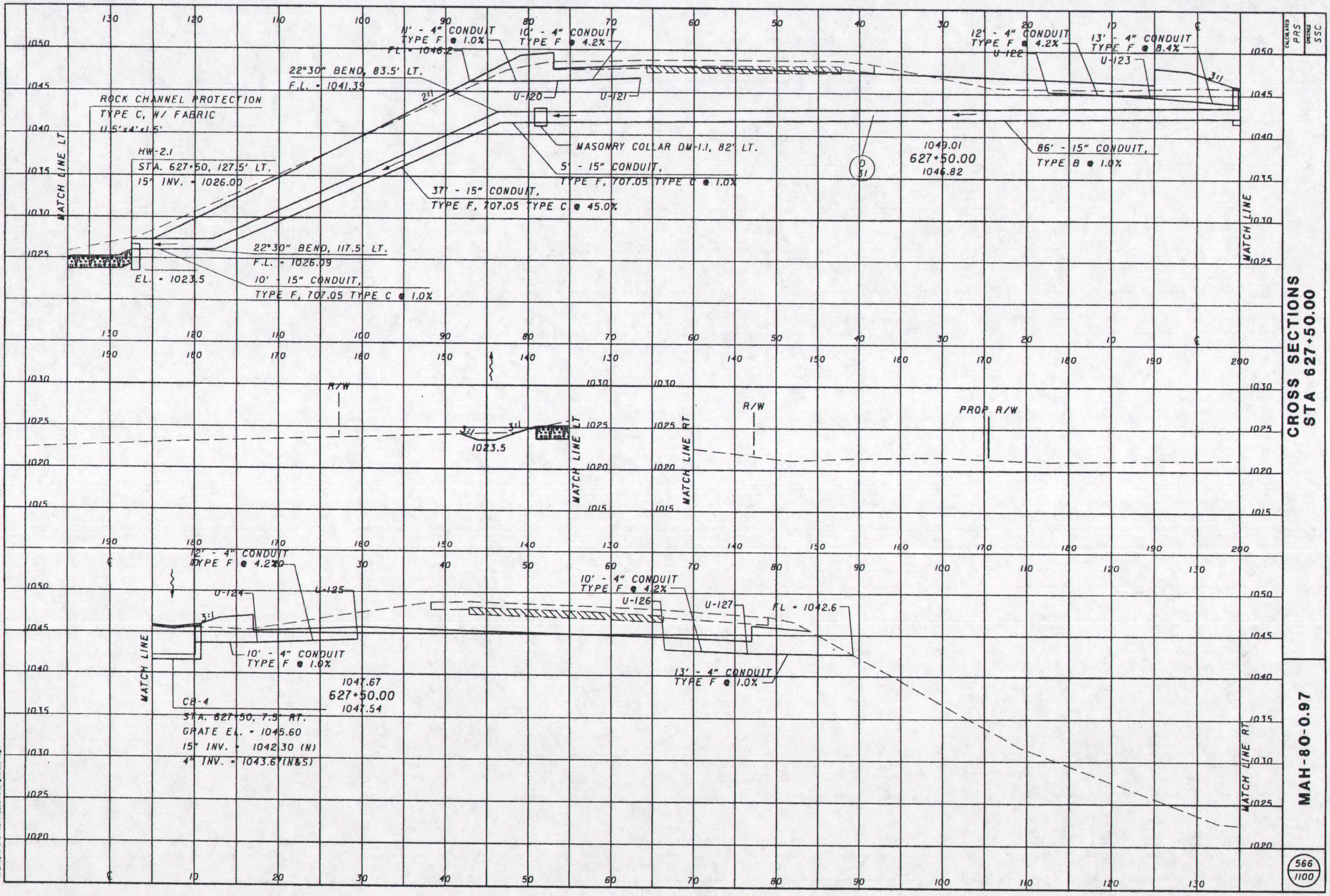


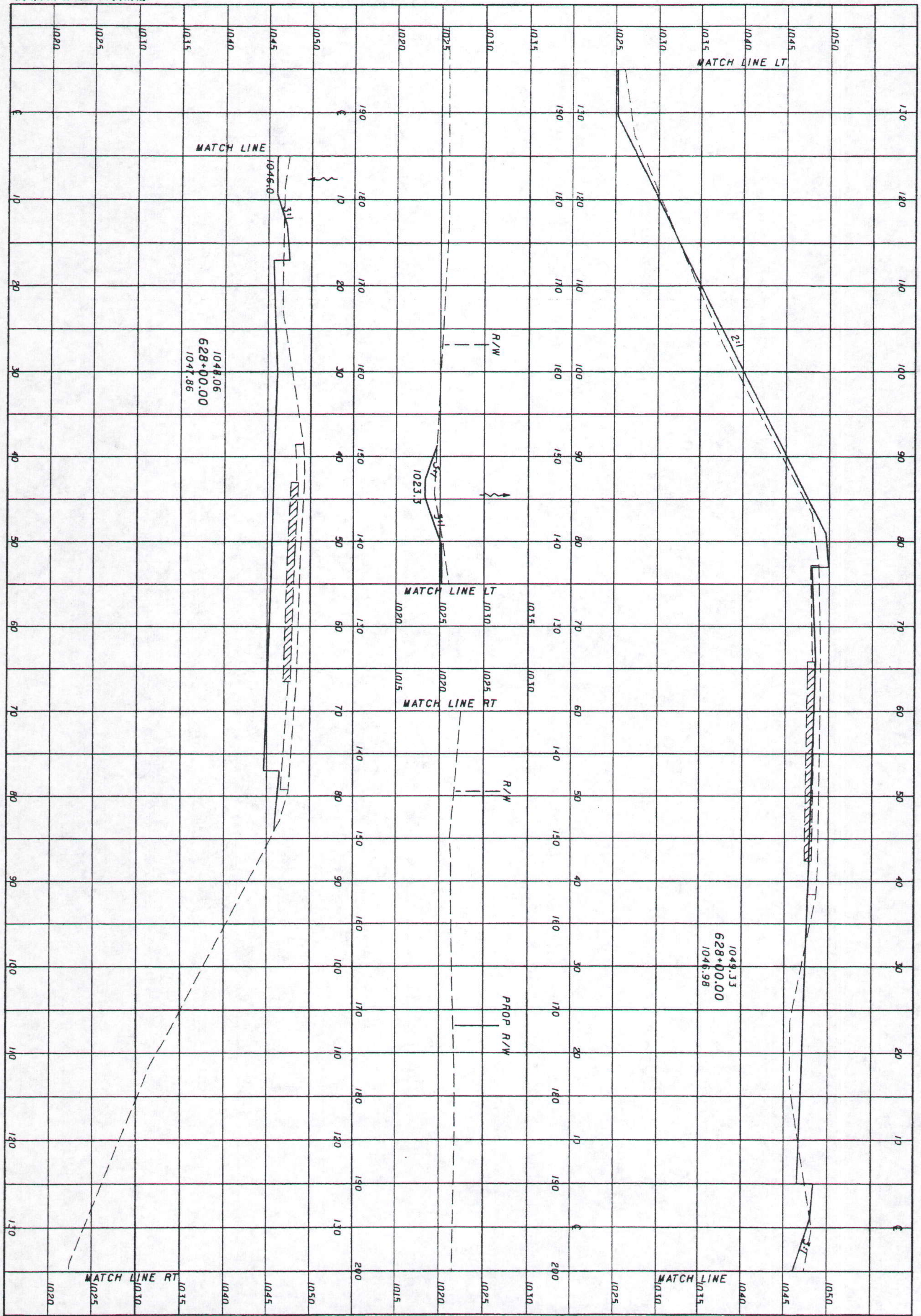
565
1100

MAH-80-0.97

CROSS SECTIONS
STA 627+00.00

CALCULATED PRS
CHECKED SSC


CROSS SECTIONS
STA 627+50.00
MAH-80-0.97
566
1100
CALCULATED PRS
CHECKED SSC
11' - 4" CONDUIT
TYPE F @ 1.0%
FL - 1046.2
10' - 4" CONDUIT
TYPE F @ 4.2%
12' - 4" CONDUIT
TYPE F @ 4.2%
U-122
13' - 4" CONDUIT
TYPE F @ 8.4%
U-123
22°30" BEND, 83.5' LT.
F.L. - 1041.39
U-120
U-121
ROCK CHANNEL PROTECTION
TYPE C, W/ FABRIC
11.5'x4'x1.5'
MASONRY COLLAR DM-1.1, 82' LT.
HW-2.1
STA. 627+50, 127.5' LT.
15" INV. - 1026.00
5' - 15" CONDUIT,
TYPE F, 707.05 TYPE C @ 1.0%
1049.01
627+50.00
1046.82
86' - 15" CONDUIT,
TYPE B @ 1.0%
37' - 15" CONDUIT,
TYPE F, 707.05 TYPE C @ 45.0%
22°30" BEND, 117.5' LT.
F.L. - 1026.09
EL. - 1023.5
10' - 15" CONDUIT,
TYPE F, 707.05 TYPE C @ 1.0%
MATCH LINE LT
MATCH LINE
R/W
PROP R/W
1023.5
MATCH LINE LT
MATCH LINE RT
12' - 4" CONDUIT
TYPE F @ 4.2%
U-124
U-125
10' - 4" CONDUIT
TYPE F @ 4.2%
U-126
U-127
FL - 1042.6
10' - 4" CONDUIT
TYPE F @ 1.0%
1047.67
627+50.00
1047.54
13' - 4" CONDUIT
TYPE F @ 1.0%
CB-4
STA. 627+50, 7.5' RT.
GRATE EL. - 1045.60
15" INV. - 1042.30 (N)
4" INV. - 1043.67 (N&S)
MATCH LINE RT

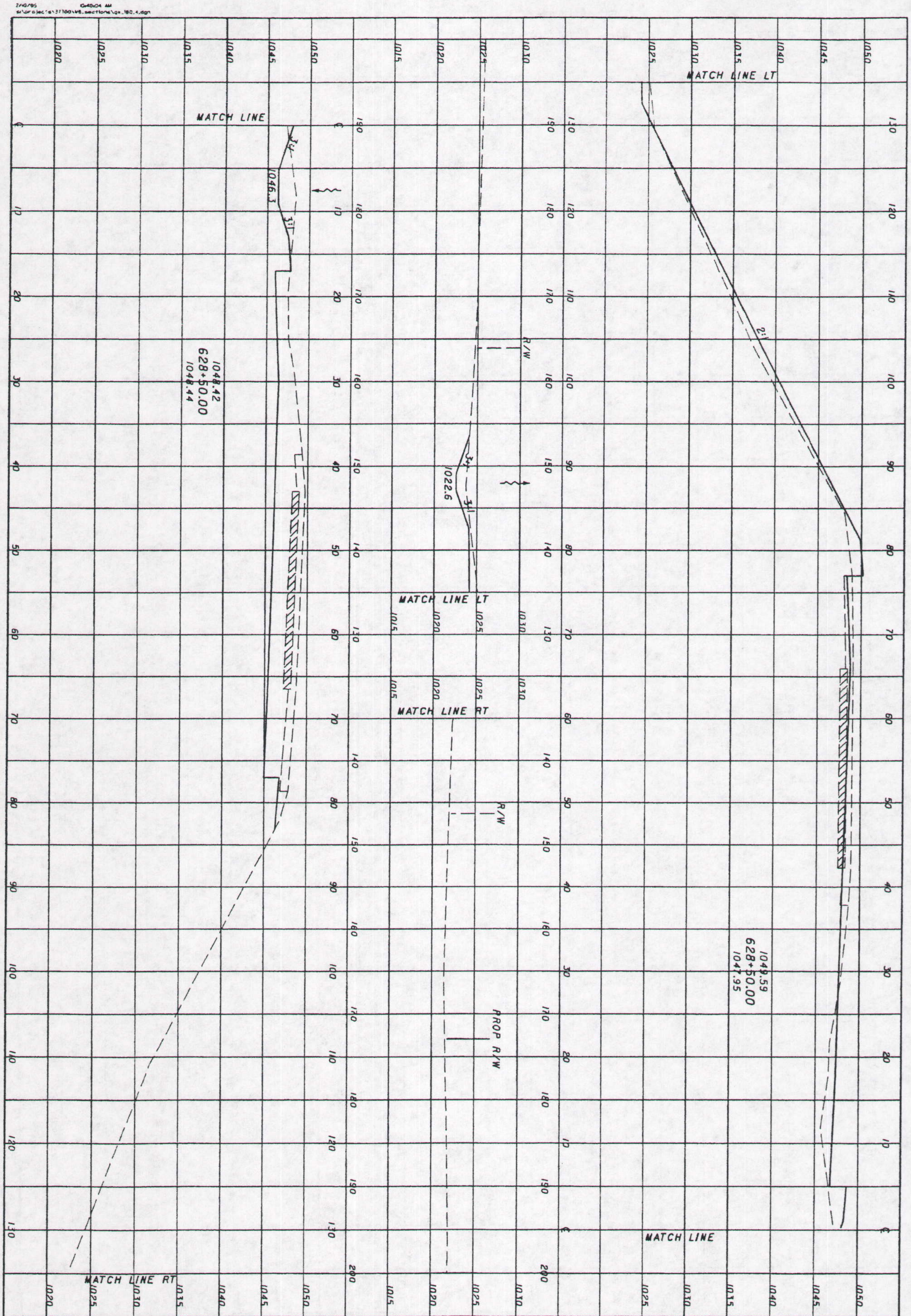


MAH-80-0.97

567/1100

CROSS SECTIONS
STA 628+00.00

CALCULATED PRS
CHECKED SSC

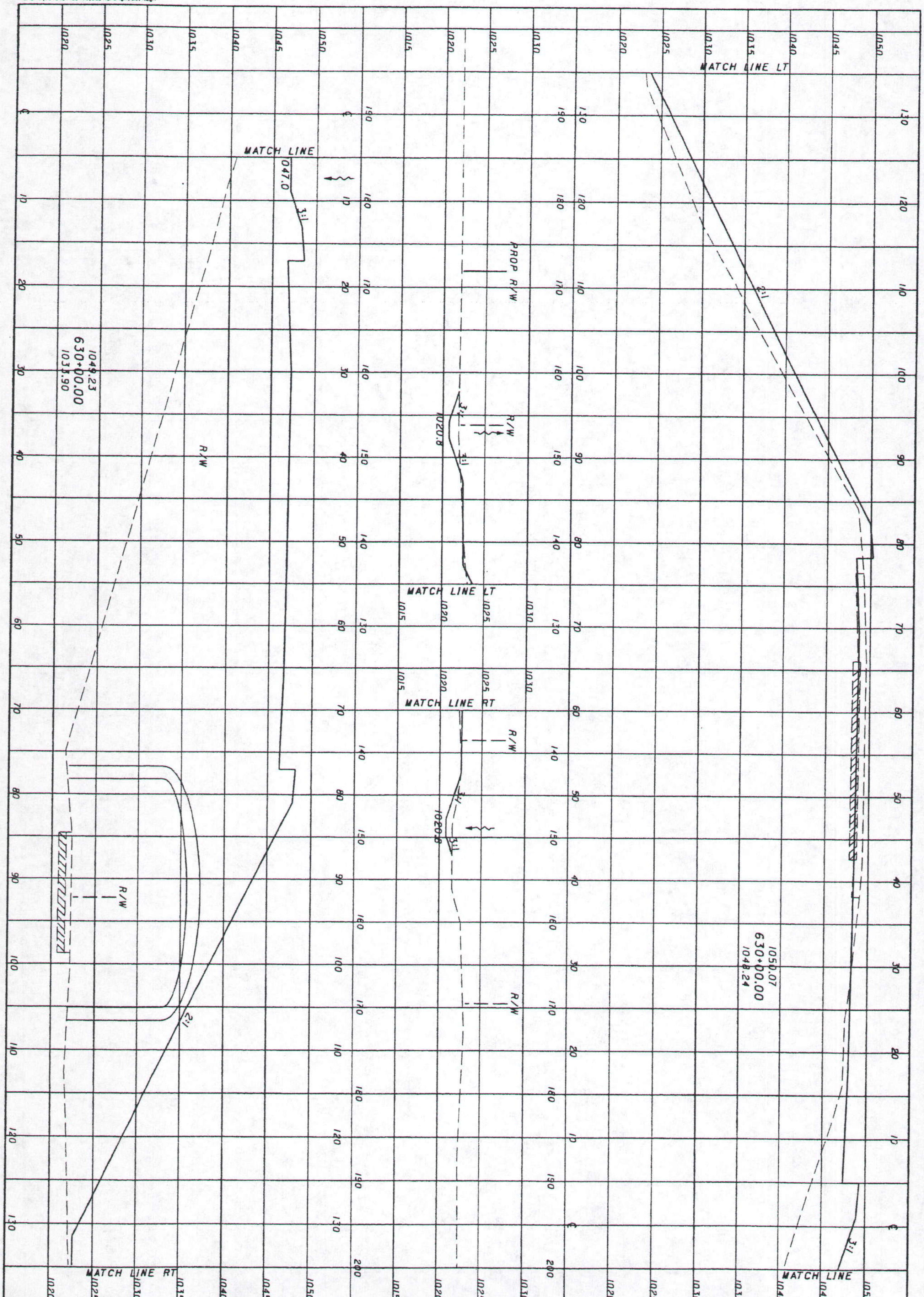


568
1100

MAH-80-0.97

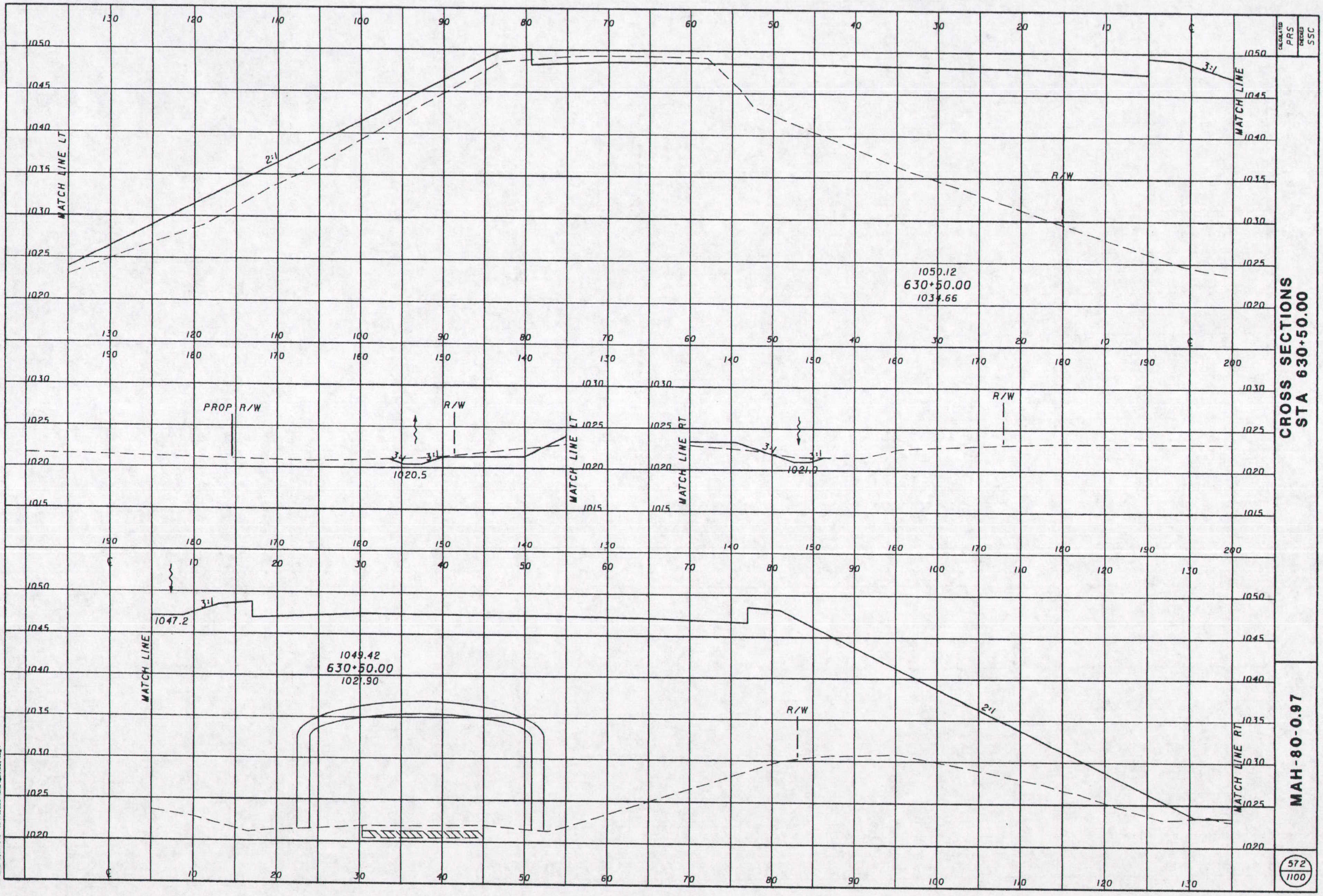
CROSS SECTIONS
STA 628+50.00

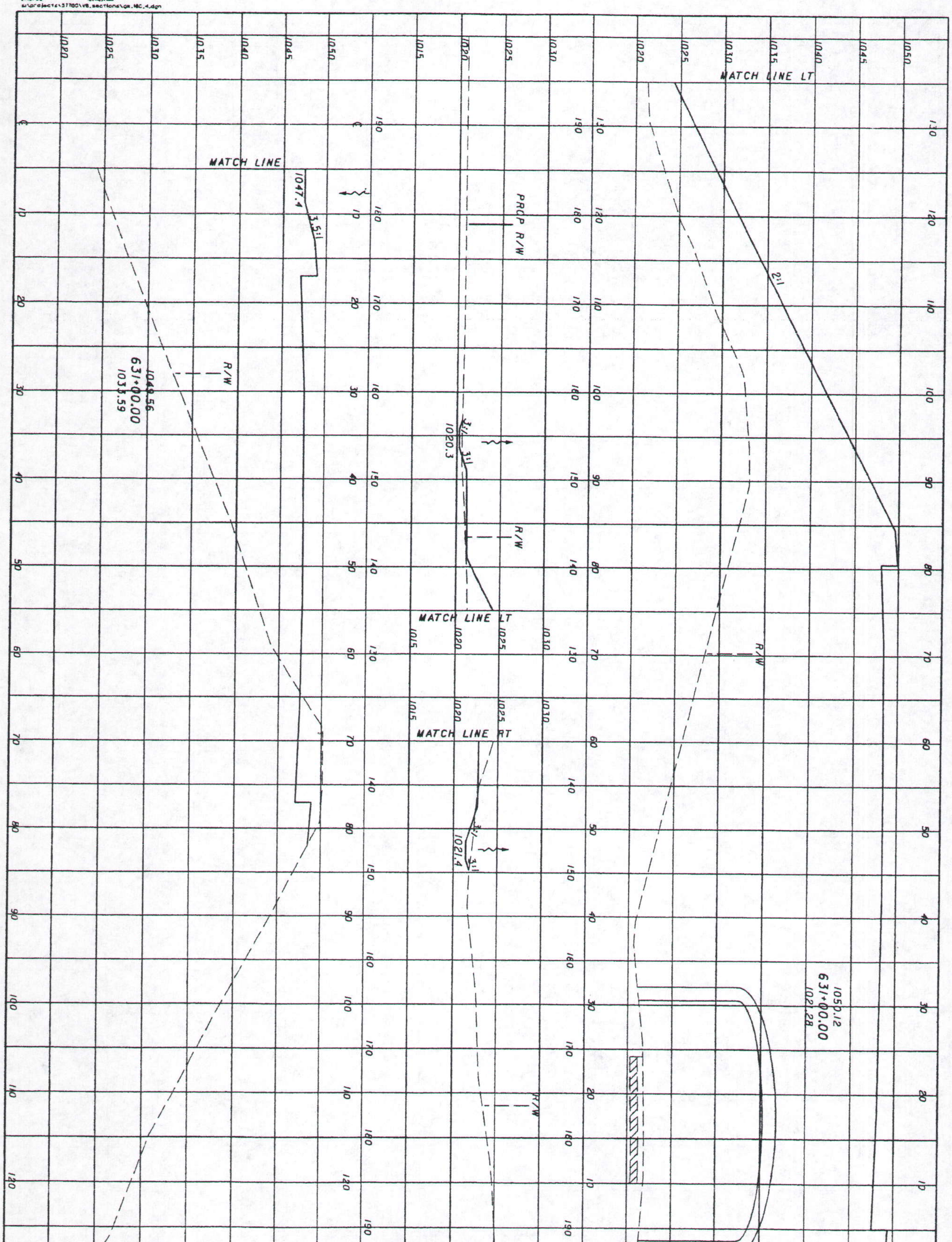
CALCULATED PRS
CHECKED SSC



MAH-80-0.97	CROSS SECTIONS STA 630+00.00	CALCULATED PRS CHECKED SSC

571 / 1100


CROSS SECTIONS
STA 630+50.00
MAH-80-0.97
572
1100
CALCULATED PRS
CHECKED SSC
MATCH LINE LT
MATCH LINE RT
MATCH LINE
R/W
PROP R/W
2:1
3:1
1050.12
630+50.00
1034.66
1020.5
1021.0
1047.2
1049.42
630+50.00
1021.90

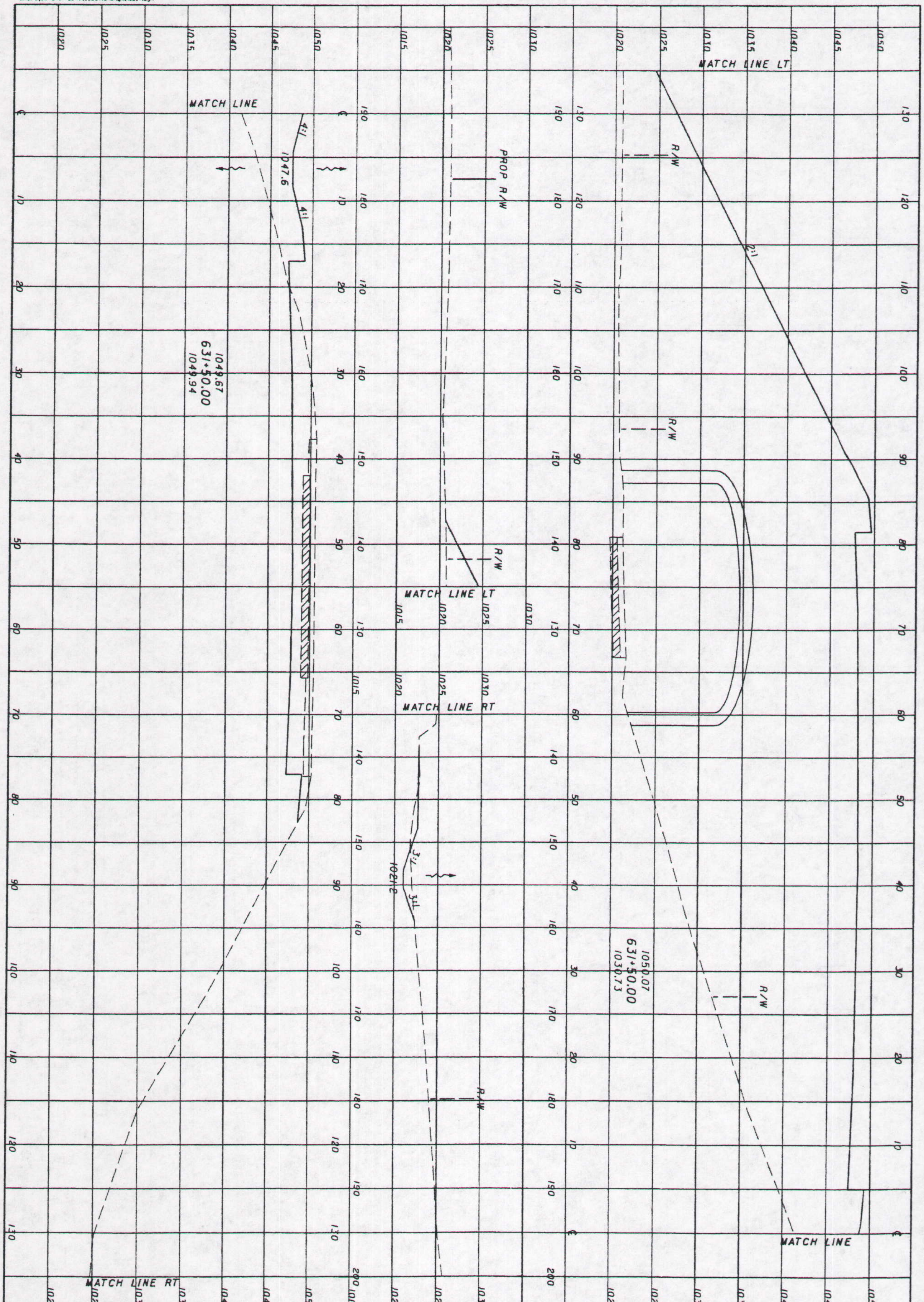


573
1100

MAH-80-0.97

CROSS SECTIONS
STA 631+00.00

CALCULATED PRS
CHECKED SSC

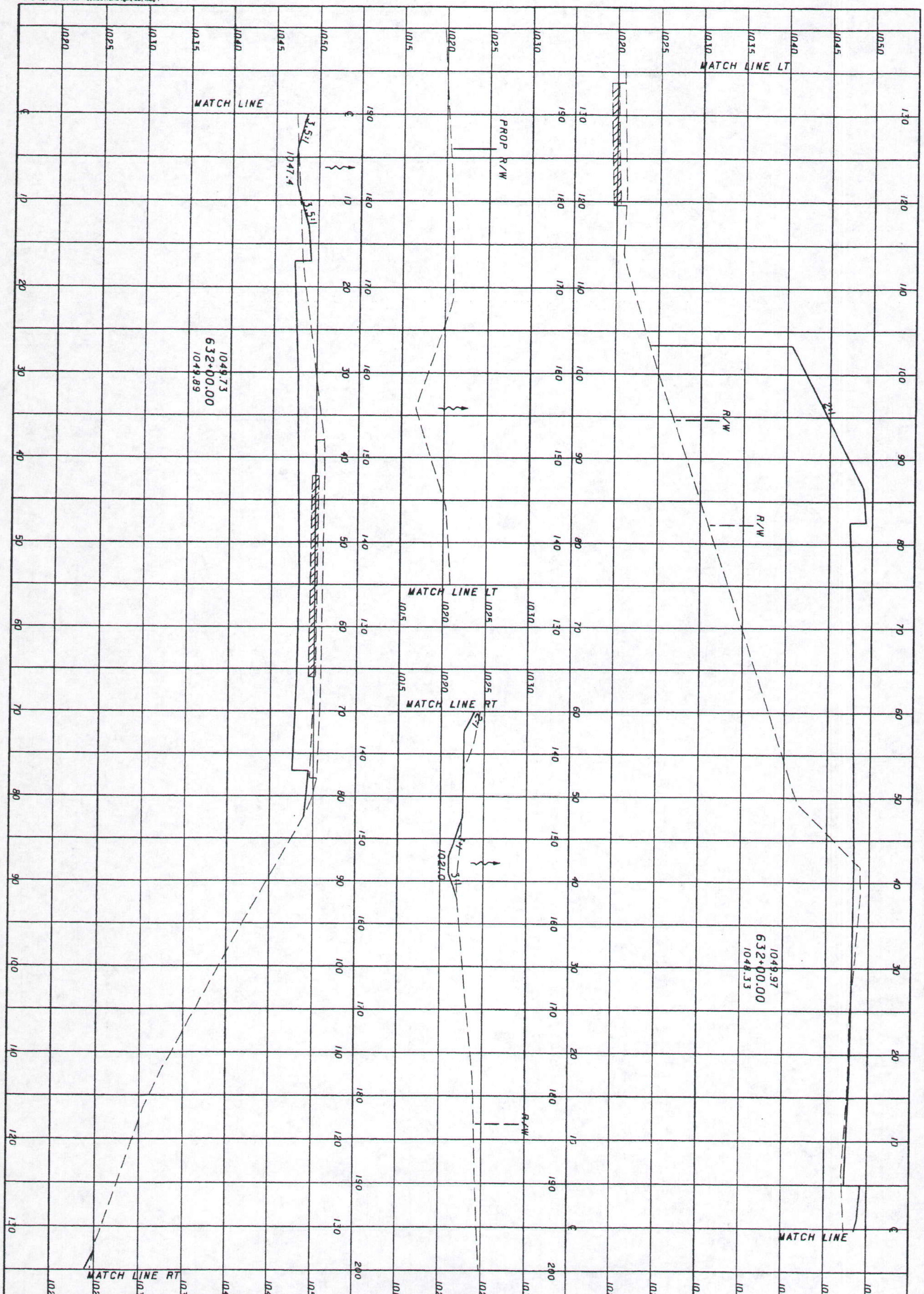


574
1100

MAH-80-0.97

CROSS SECTIONS
STA 631+50.00

CALCULATED PRS
CHECKED SSC

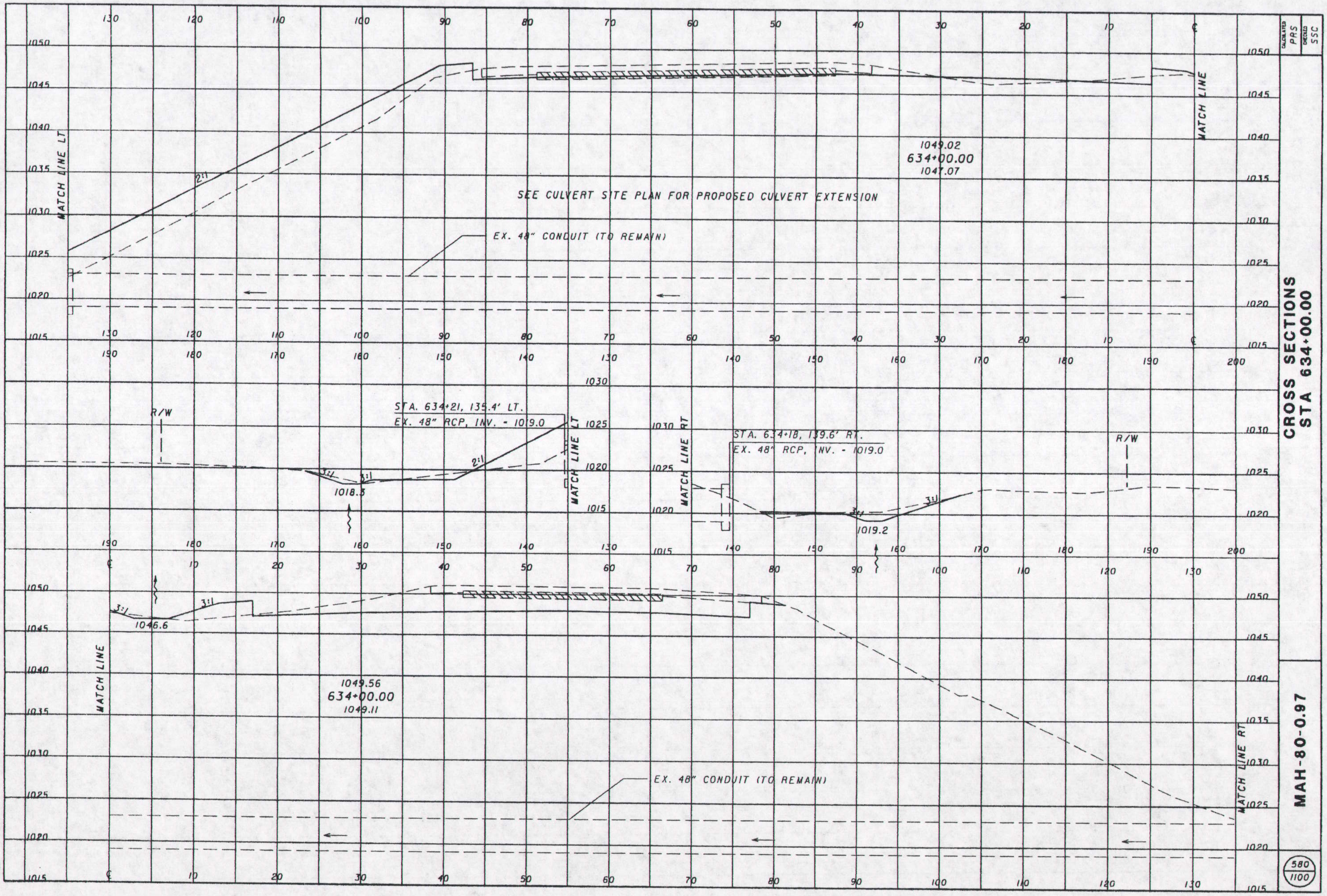


MAH-80-0.97

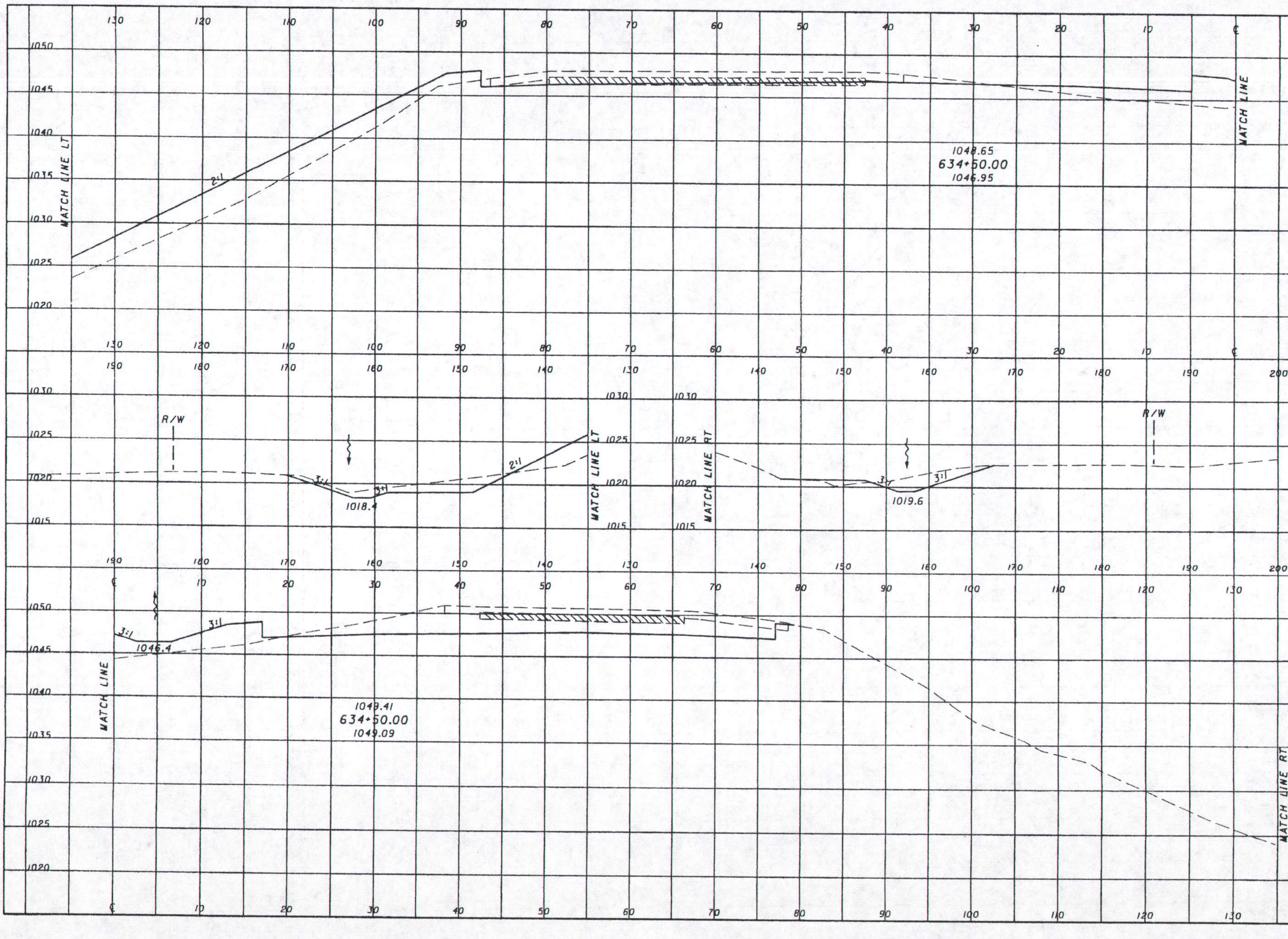
CROSS SECTIONS
STA 632+00.00

CALCULATED PRS
CHECKED SSC

575/1100



CROSS SECTIONS
STA 634+00.00
MAH-80-0.97
580
1100
CALCULATED PRS
CHECKED SSC
1049.02
634+00.00
1047.07
SEE CULVERT SITE PLAN FOR PROPOSED CULVERT EXTENSION
EX. 48" CONDUIT (TO REMAIN)
MATCH LINE LT
MATCH LINE
2:1
STA. 634+21, 135.4' LT.
EX. 48" RCP, INV. - 1019.0
STA. 634+18, 139.6' RT.
EX. 48" RCP, INV. - 1019.0
R/W
3:1
1018.3
1019.2
MATCH LINE RT
1046.6
1049.56
634+00.00
1049.11



CROSS SECTIONS
STA 634+50.00

MAH-80-0.97

CALCULATED PRS
CHECKED SSC

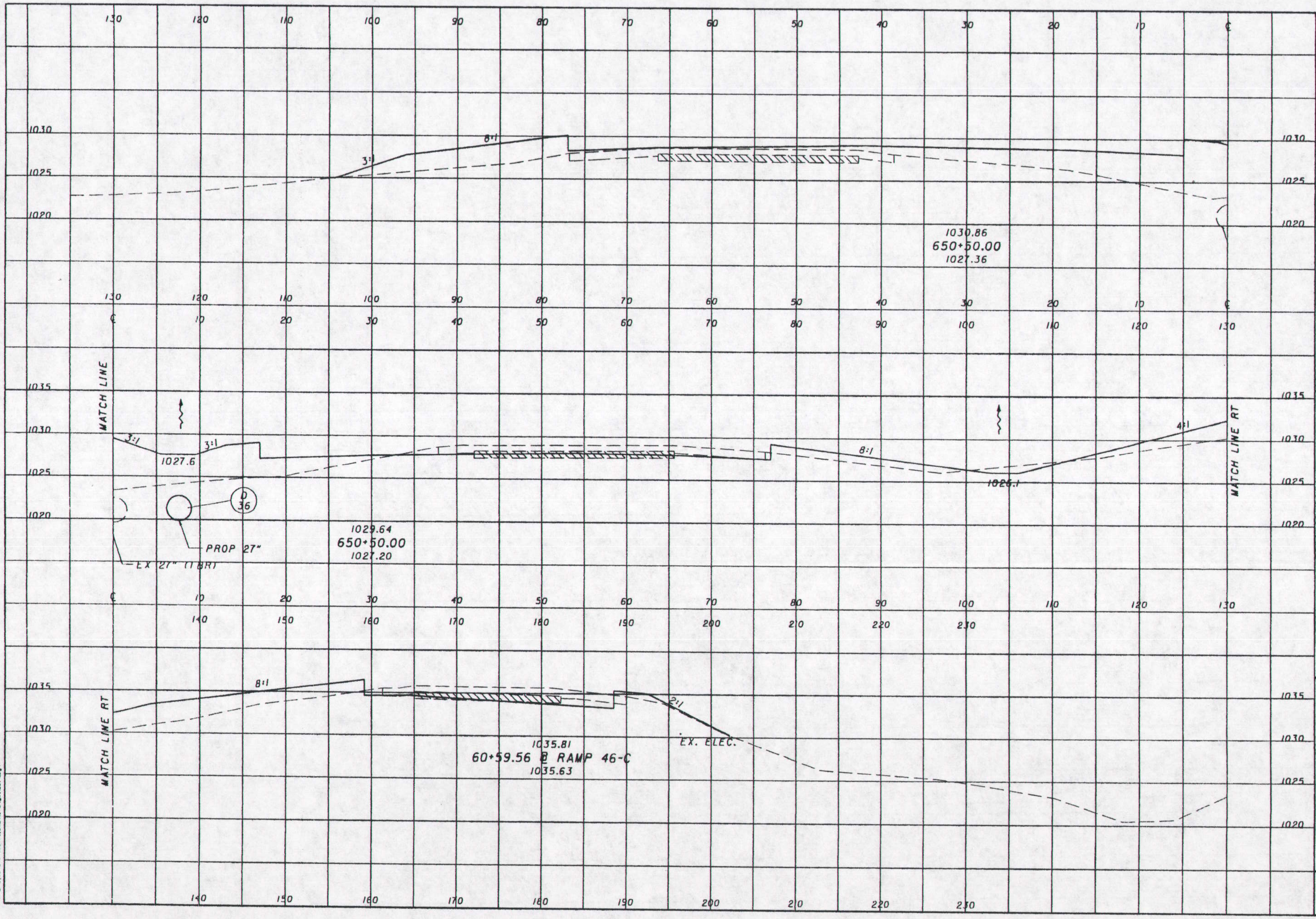
581
1100

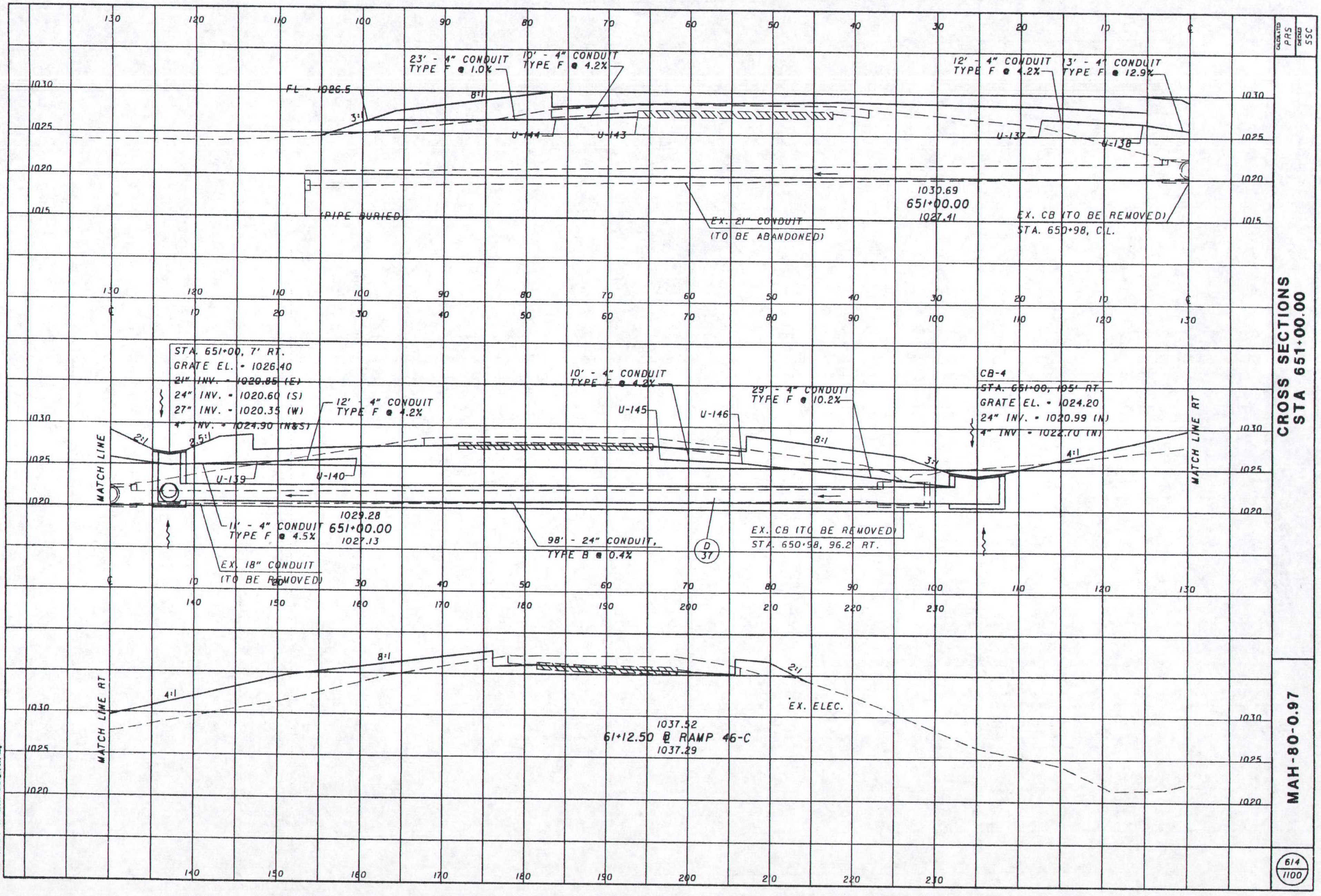
CROSS SECTIONS
STA 650+50.00

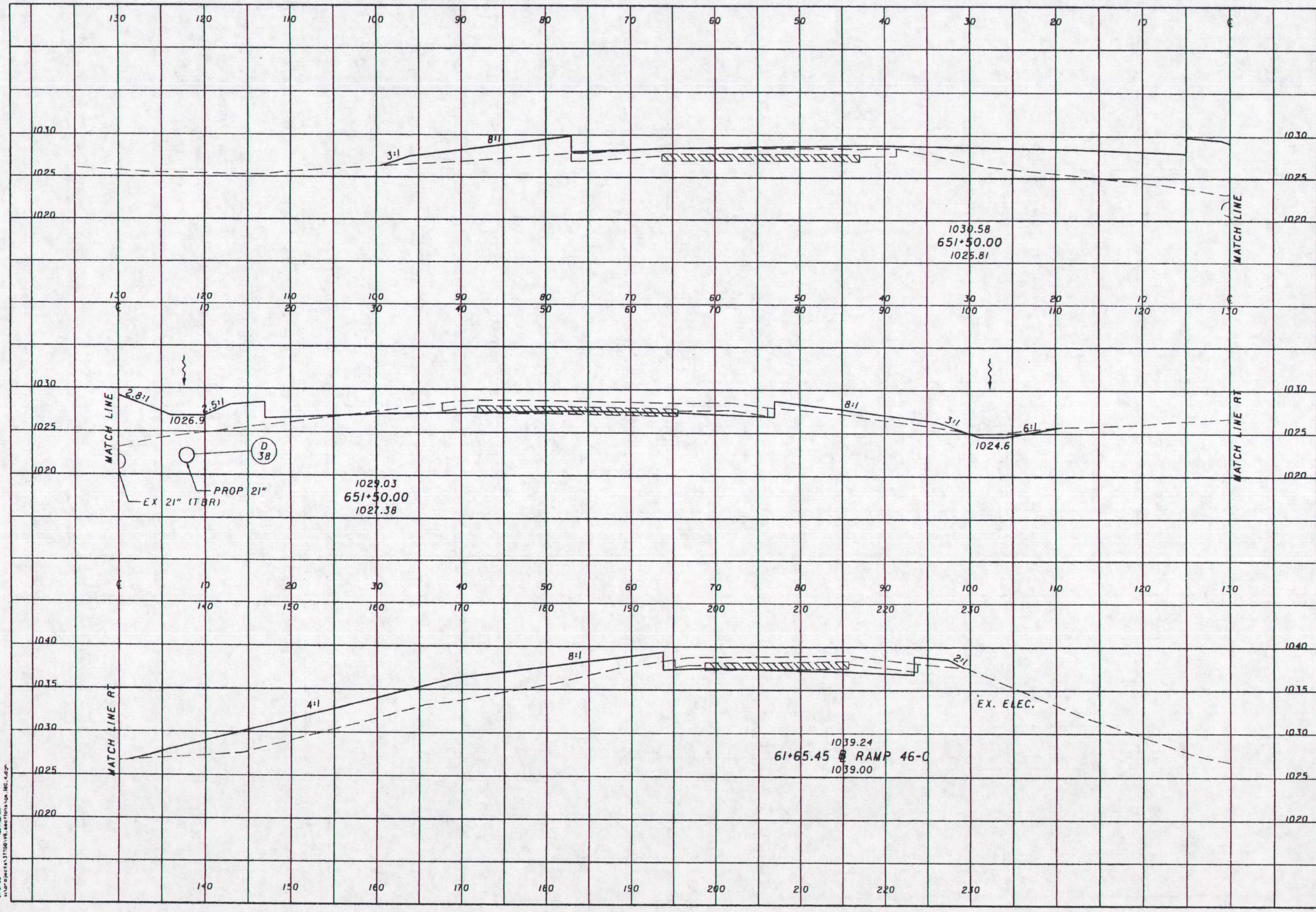
MAH-80-0.97

613/1100

CALCULATED PRS
CHECKED SSC




CROSS SECTIONS
STA 651+00.00
MAH-80-0.97
614
1100
CALCULATED PRS
CHECKED SSC
23' - 4" CONDUIT
TYPE F @ 1.0%
10' - 4" CONDUIT
TYPE F @ 4.2%
12' - 4" CONDUIT
TYPE F @ 4.2%
13' - 4" CONDUIT
TYPE F @ 12.9%
FL - 1026.5
U-144
U-143
U-137
U-138
1030.69
651+00.00
1027.41
PIPE BURIED
EX. 21" CONDUIT
(TO BE ABANDONED)
EX. CB (TO BE REMOVED)
STA. 650+98, C.L.
STA. 651+00, 7' RT.
GRATE EL. = 1026.40
21" INV. = 1020.85 (E)
24" INV. = 1020.60 (S)
27" INV. = 1020.35 (W)
4" INV. = 1024.90 (N&S)
12' - 4" CONDUIT
TYPE F @ 4.2%
10' - 4" CONDUIT
TYPE F @ 4.2%
29' - 4" CONDUIT
TYPE F @ 10.2%
U-145
U-146
U-139
U-140
CB-4
STA. 651+00, 105' RT.
GRATE EL. = 1024.20
24" INV. = 1020.99 (N)
4" INV = 1022.70 (N)
MATCH LINE
MATCH LINE RT
11' - 4" CONDUIT
TYPE F @ 4.5%
1029.28
651+00.00
1027.13
98' - 24" CONDUIT,
TYPE B @ 0.4%
D
37
EX. CB (TO BE REMOVED)
STA. 650+98, 96.2 RT.
EX. 18" CONDUIT
(TO BE REMOVED)
EX. ELEC.
1037.52
61+12.50 ℄ RAMP 46-C
1037.29

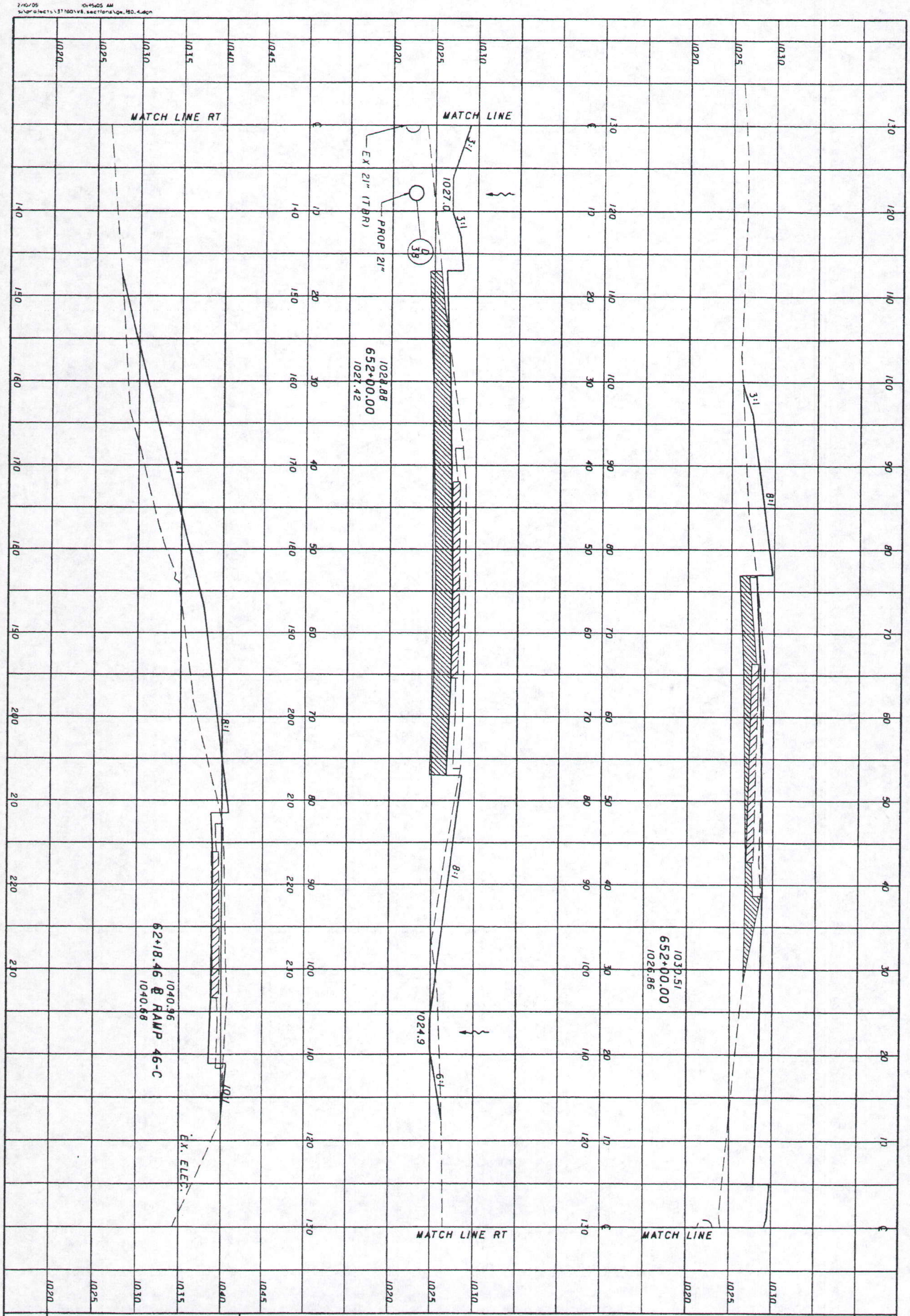


CROSS SECTIONS
STA 651+50.00

MAH-80-0.97

615
1100

CALCULATED PRS
CHECKED SSC

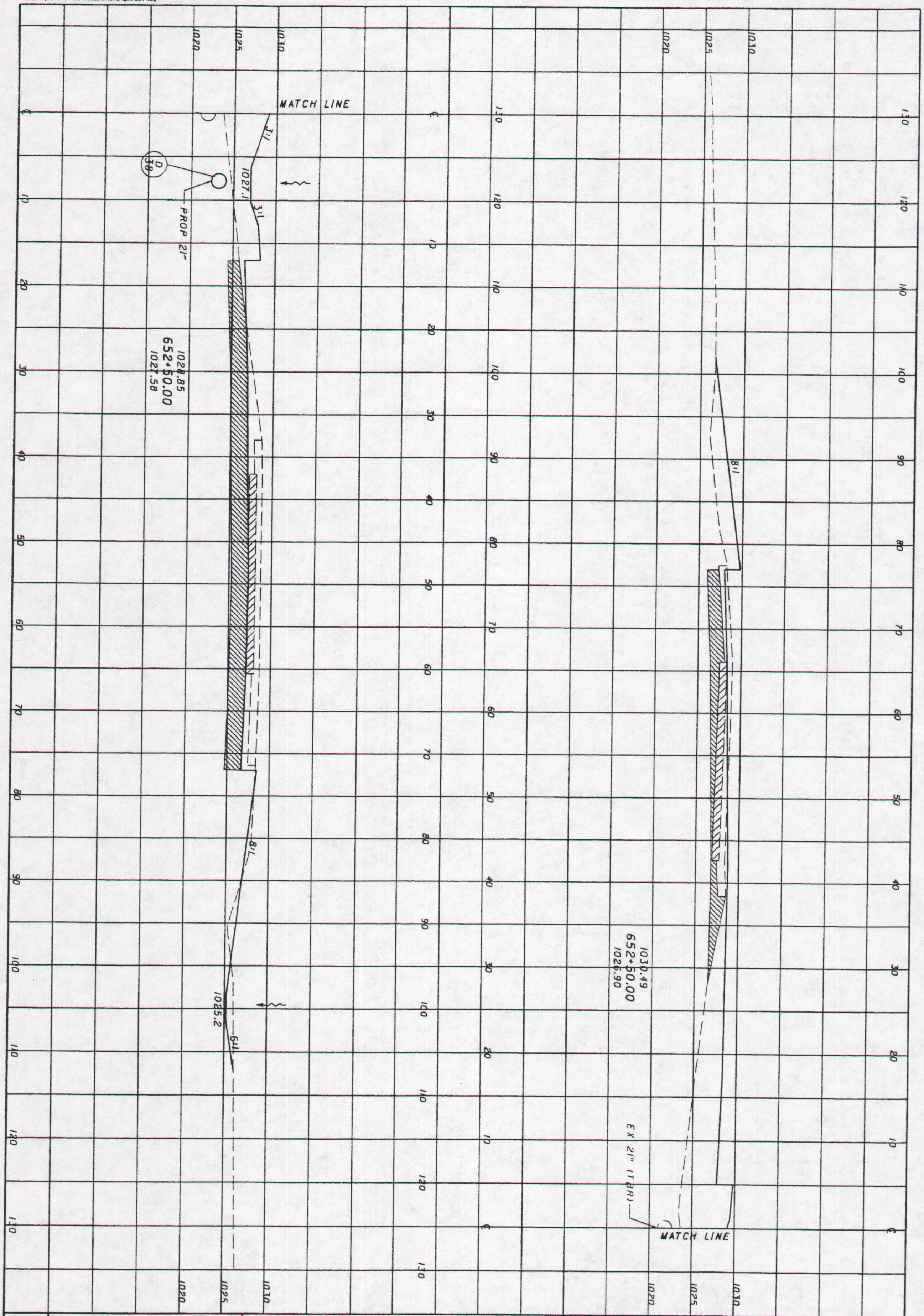


MAH-80-0.97

616/1100

CROSS SECTIONS
STA 652+00.00

CALCULATED PRS
CHECKED SSC

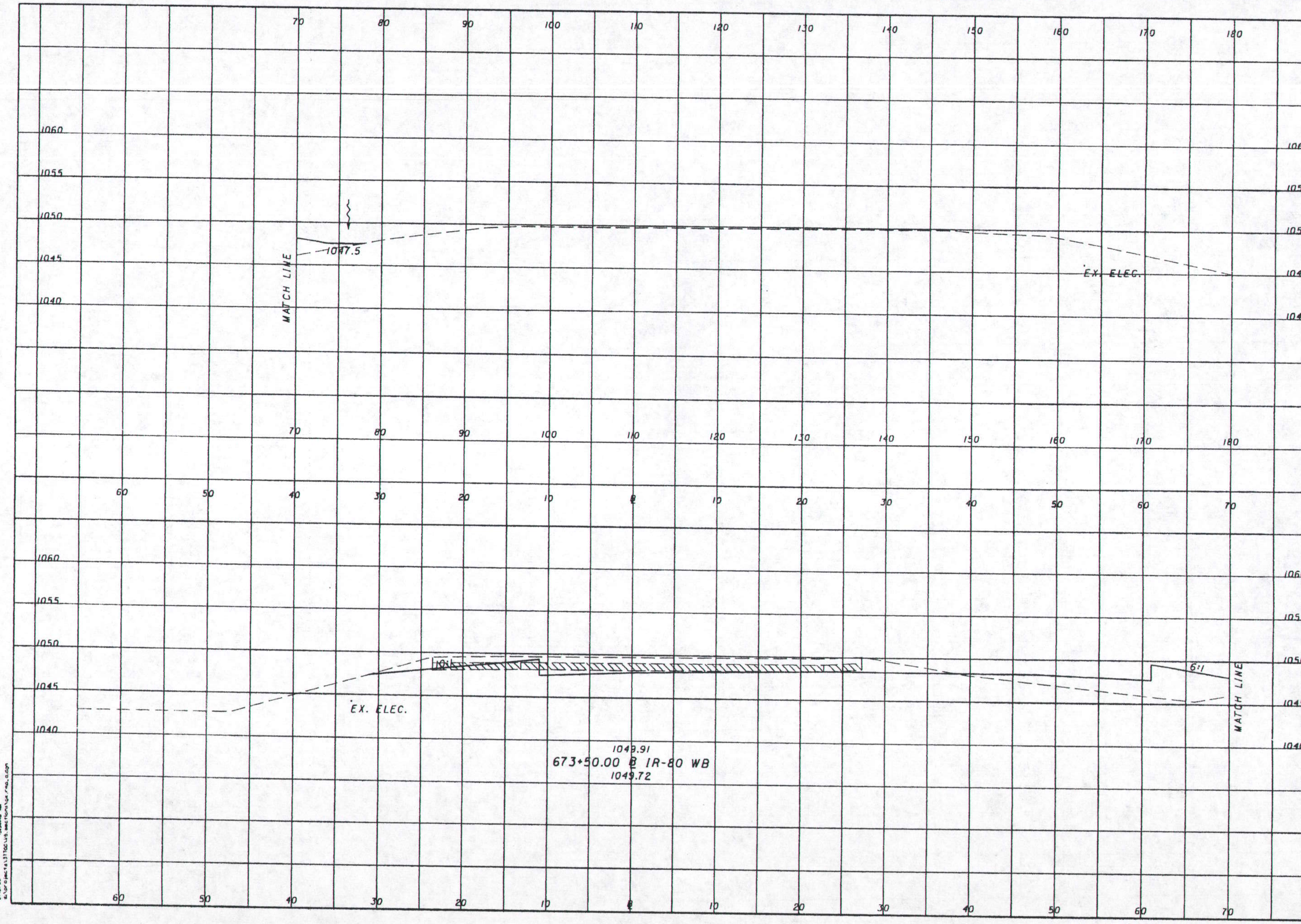


MAH-80-0.97

617 / 1100

CROSS SECTIONS
STA 652+50.00

CALCULATED PRS
CHECKED SSC

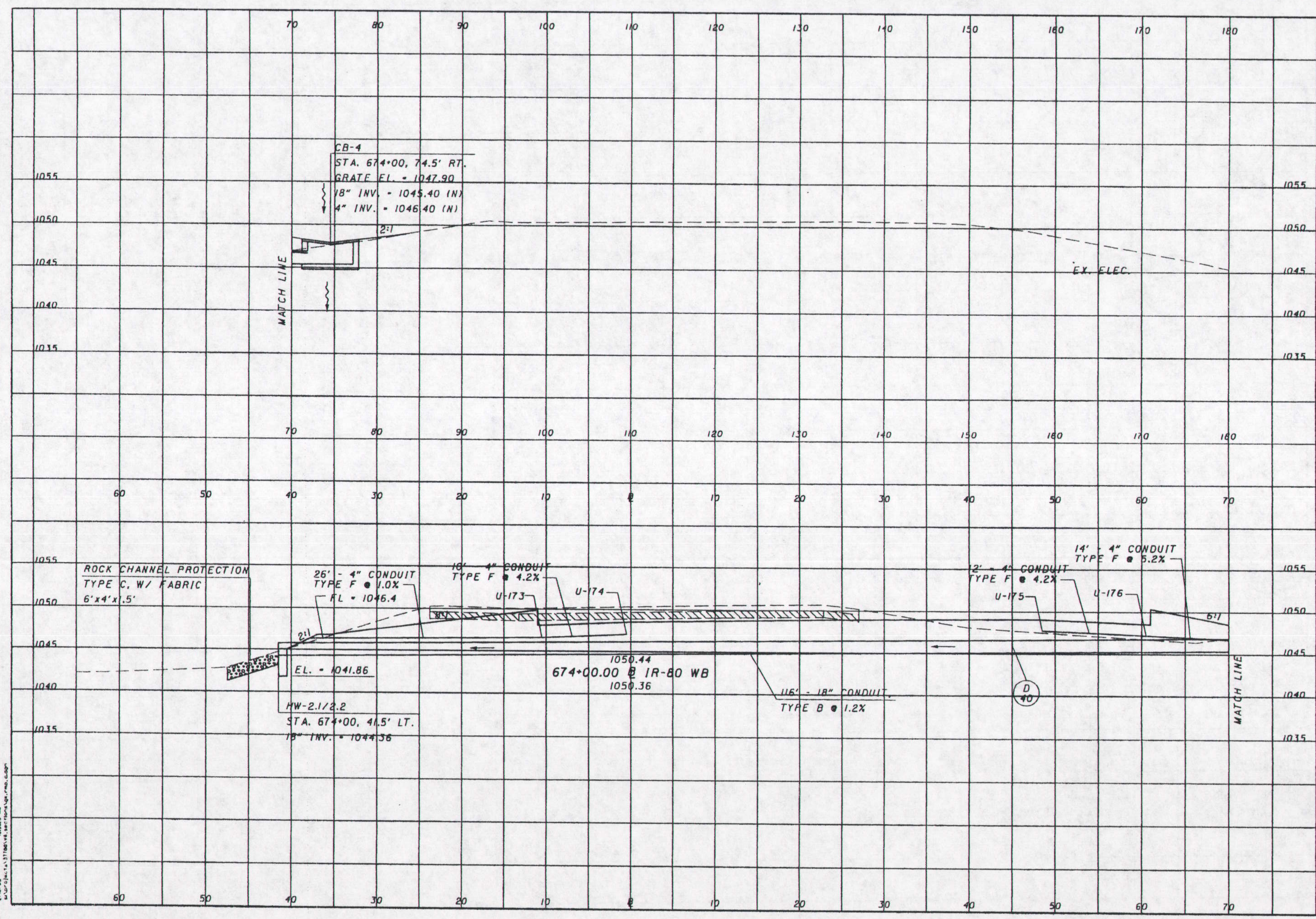


CROSS SECTIONS
STA 673+50.00

MAH-80-0.97

CALCULATED PRS
CHECKED SSC

659
1100



CROSS SECTIONS
STA 674+00.00

MAH-80-0.97

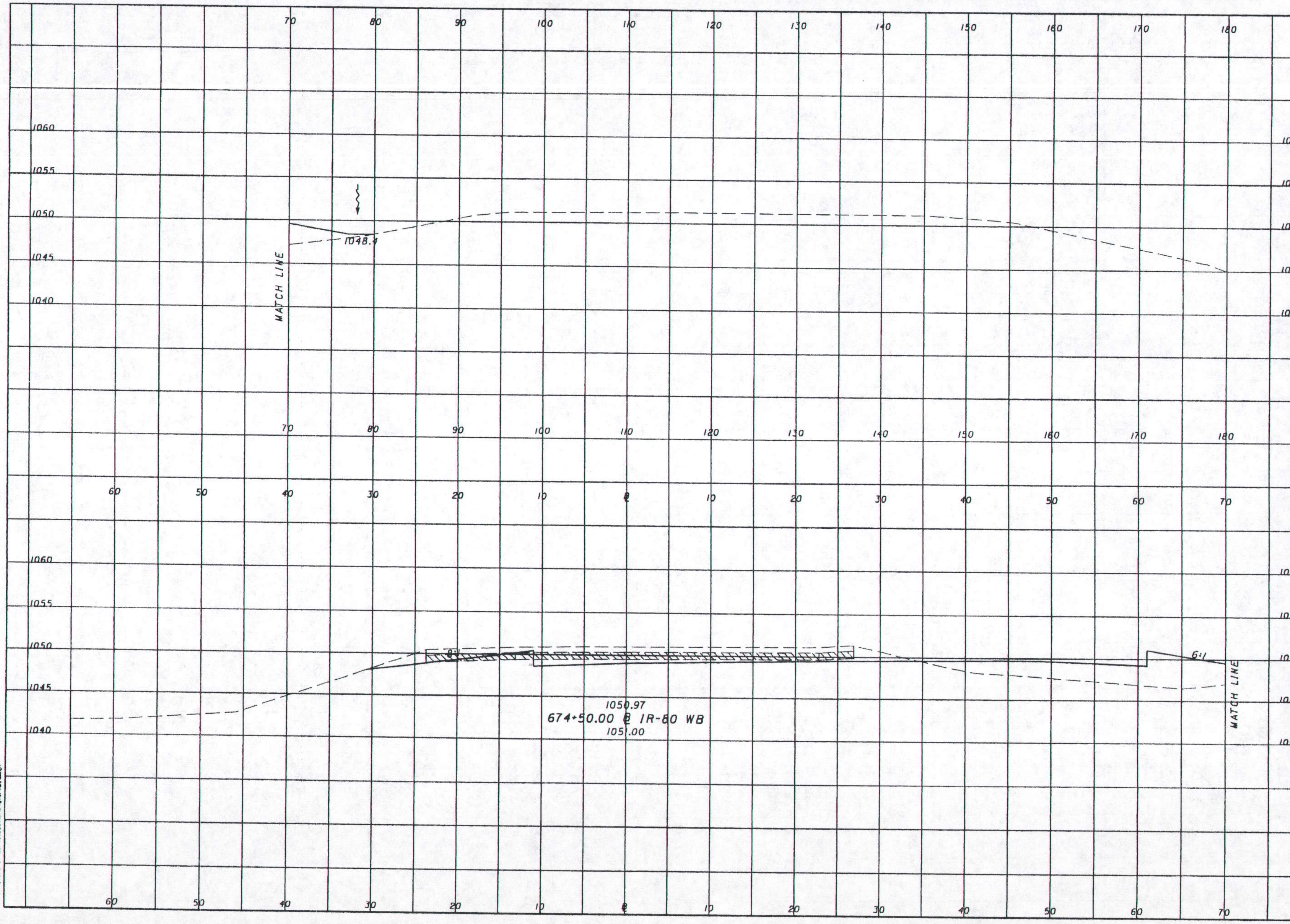
660
1100

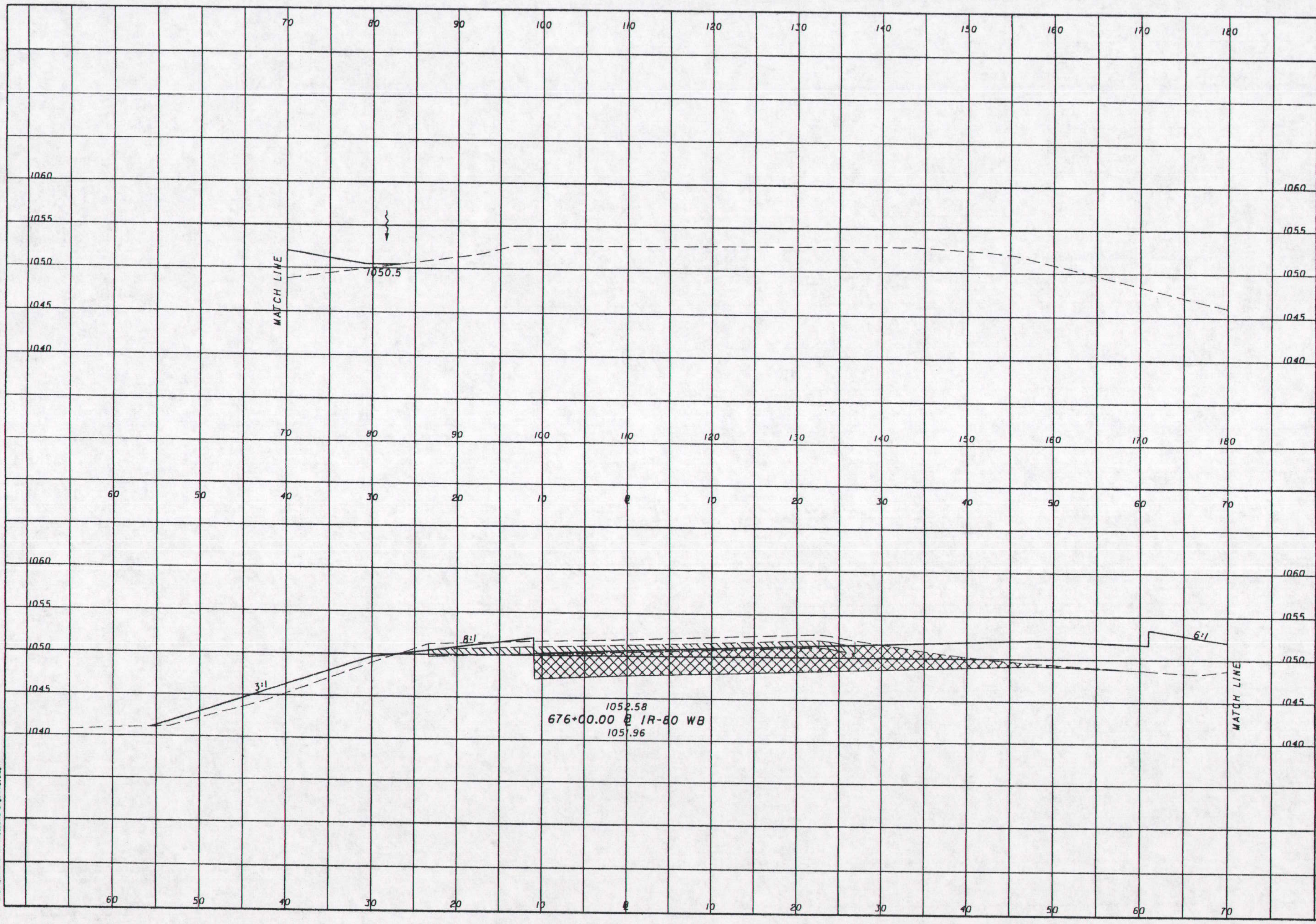
CROSS SECTIONS
STA 674+50.00

MAH-80-0.97

CALCULATED PRS
CHECKED SSC

199
1100



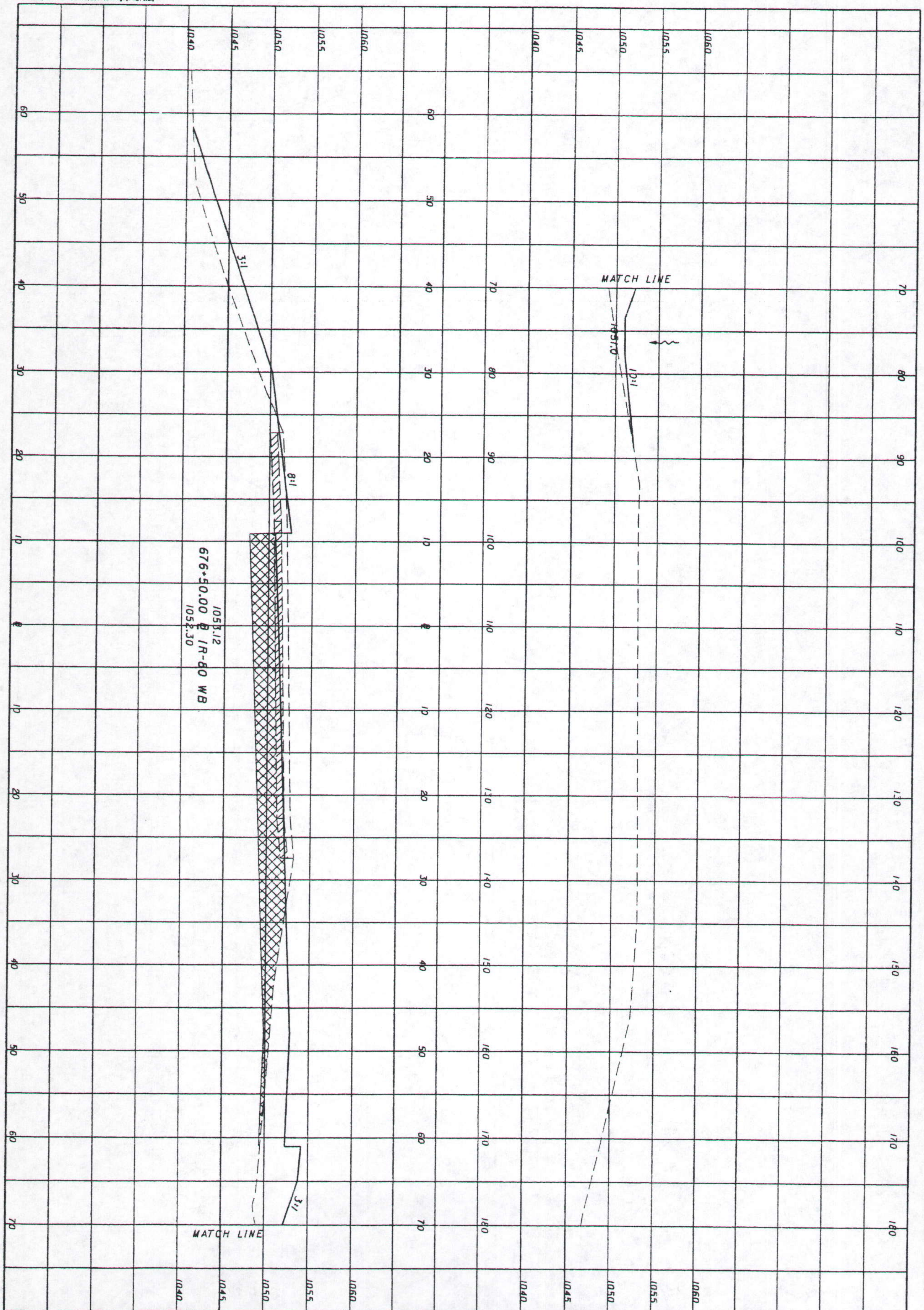


CROSS SECTIONS
STA 676+00.00

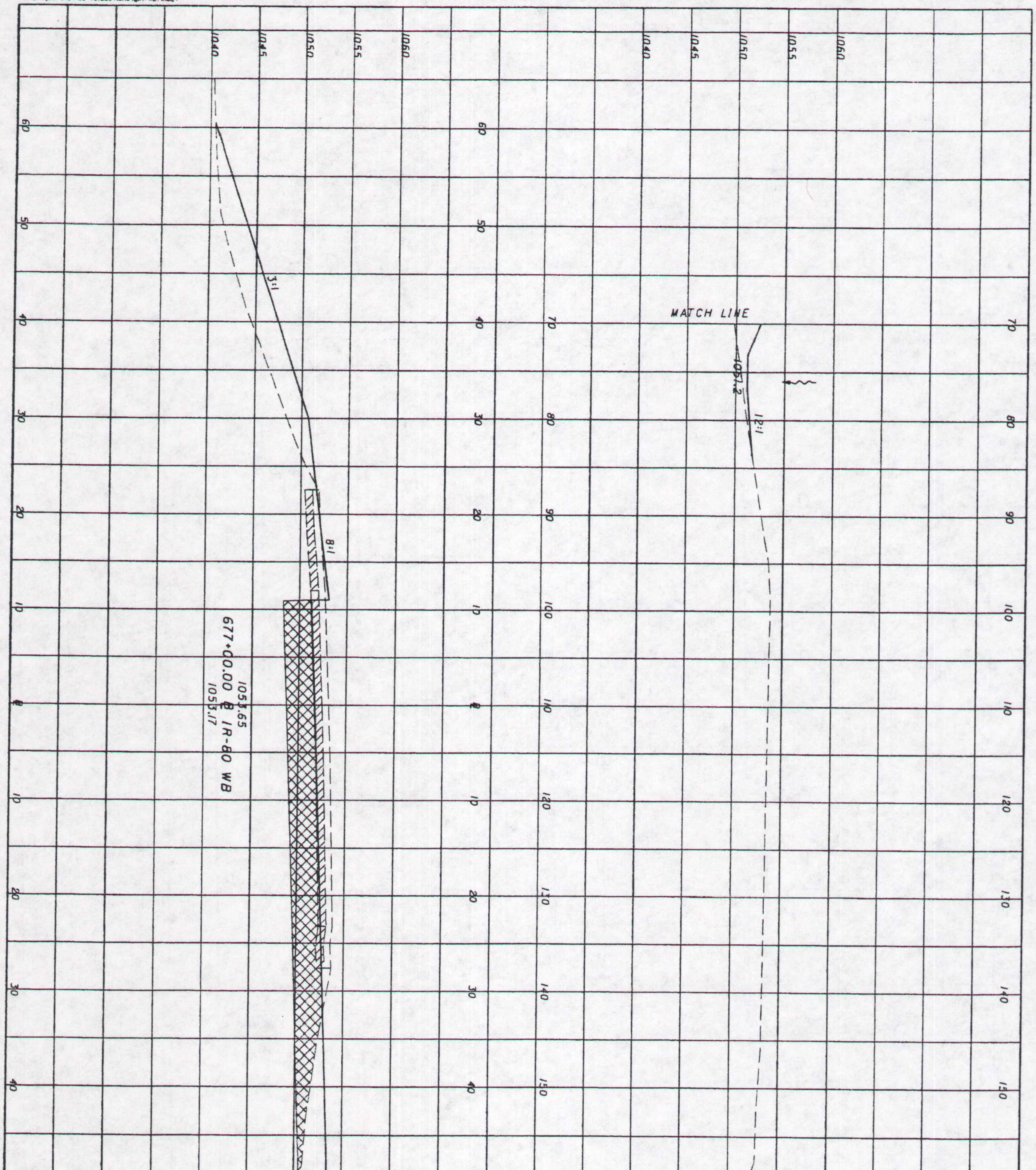
CALCULATED PRS
CHECKED SSC

MAH-80-0.97

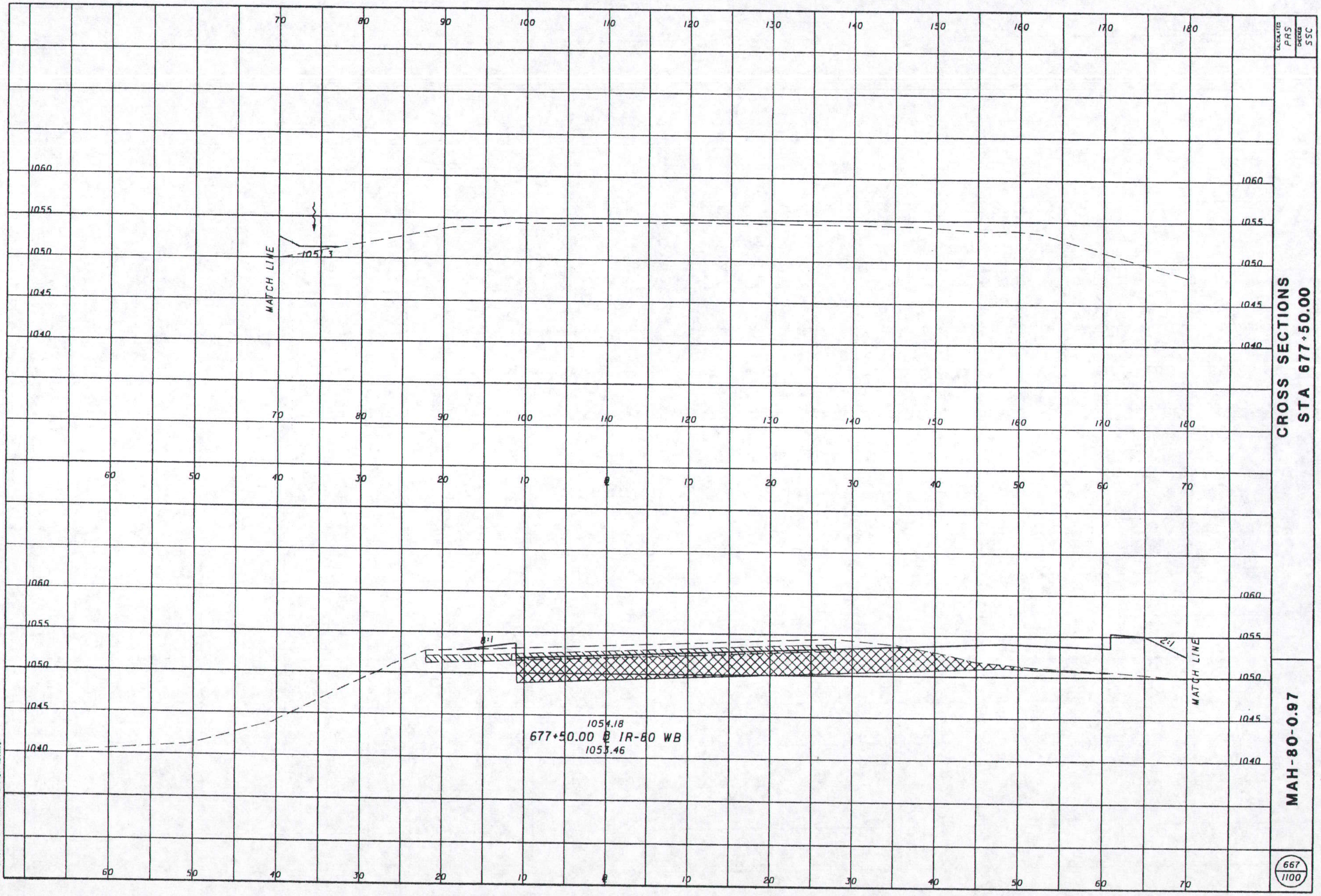
664/1100

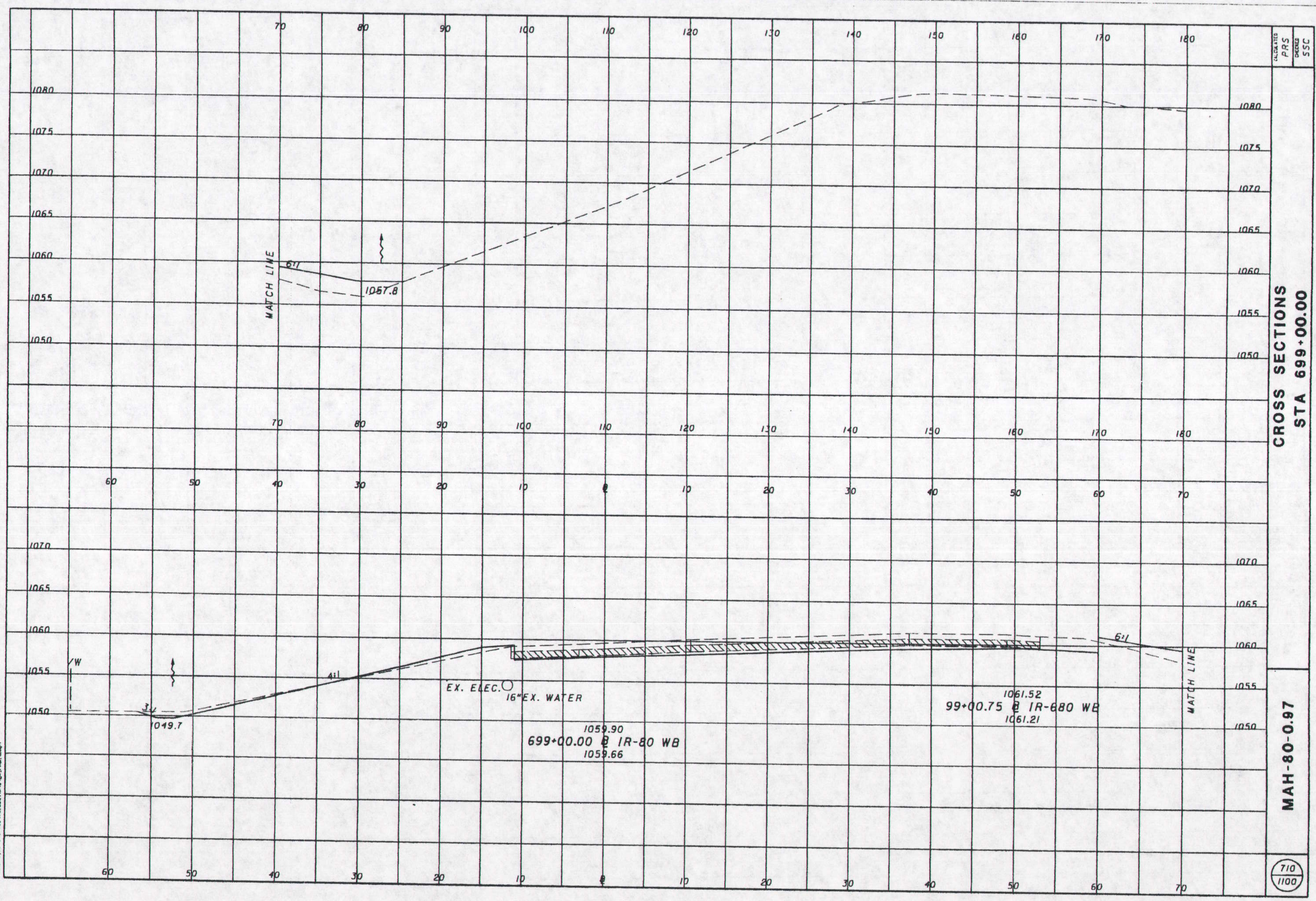


665/1100 MAH-80-0.97	CROSS SECTIONS STA 676+50.00	CALCULATED PRS CHECKED SSC



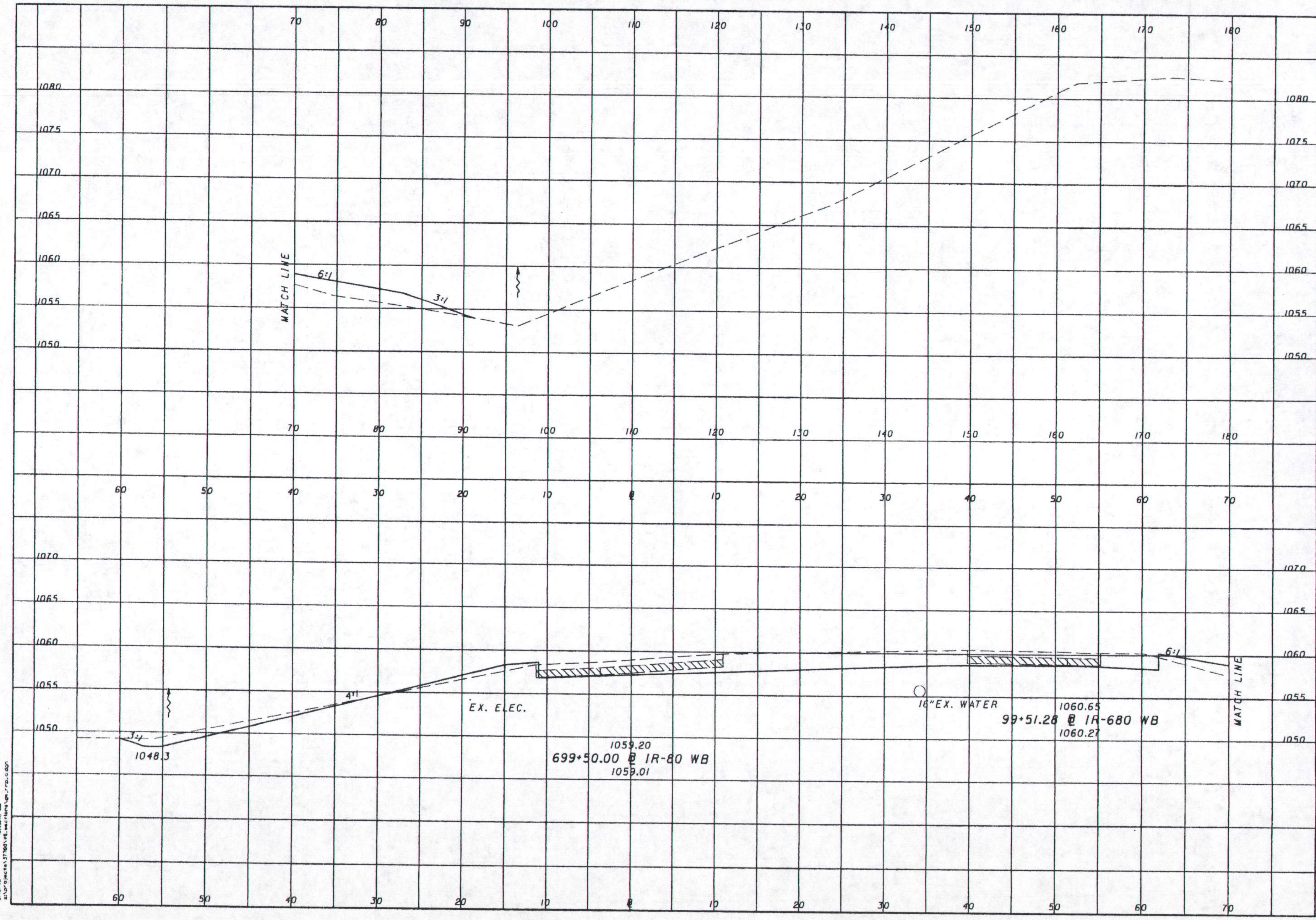
666 / 1100 MAH-80-0.97	CROSS SECTIONS STA 677+00.00	CALCULATED PRS CHECKED SSC


CROSS SECTIONS
STA 677+50.00
MAH-80-0.97
667
1100
CALCULATED PRS
CHECKED SSC
MATCH LINE
1051.3
677+50.00 ℄ IR-80 WB
1054.18
1053.46
2:1
8:1



CROSS SECTIONS
STA 699+00.00
MAH-80-0.97
710
1100
CALCULATED PRS
CHECKED SSC
WATCH LINE
6:1
1057.8
699+00.00 ℄ IR-80 WB
1059.90
1059.66
99+00.75 ℄ IR-680 WB
1061.52
1061.21
EX. ELEC.
16" EX. WATER
4:1
3:1
1049.7
/W

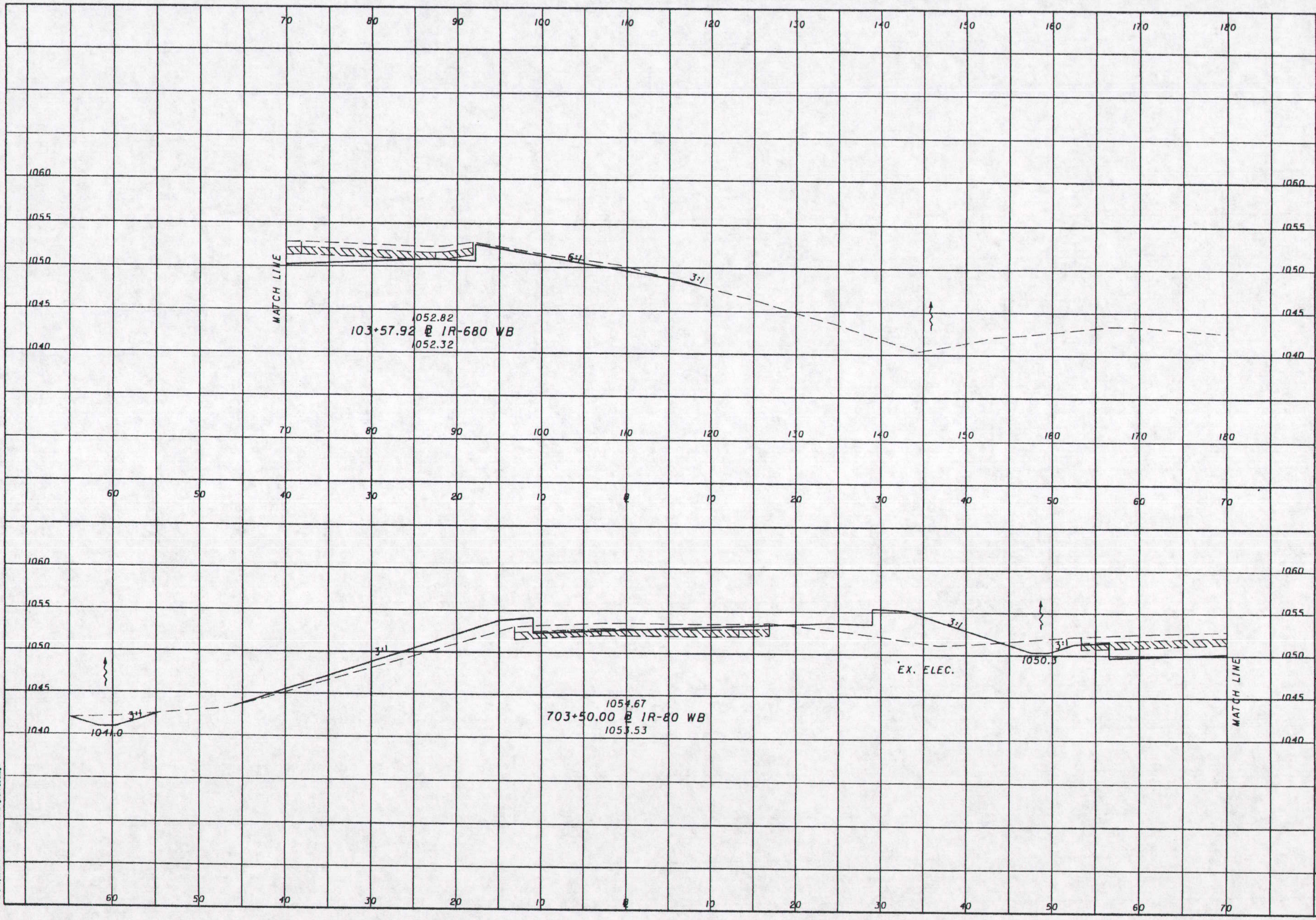
CROSS SECTIONS
STA 699+50.00



CALCULATED PRS
CHECKED SSC

MAH-80-0.97

711/1100

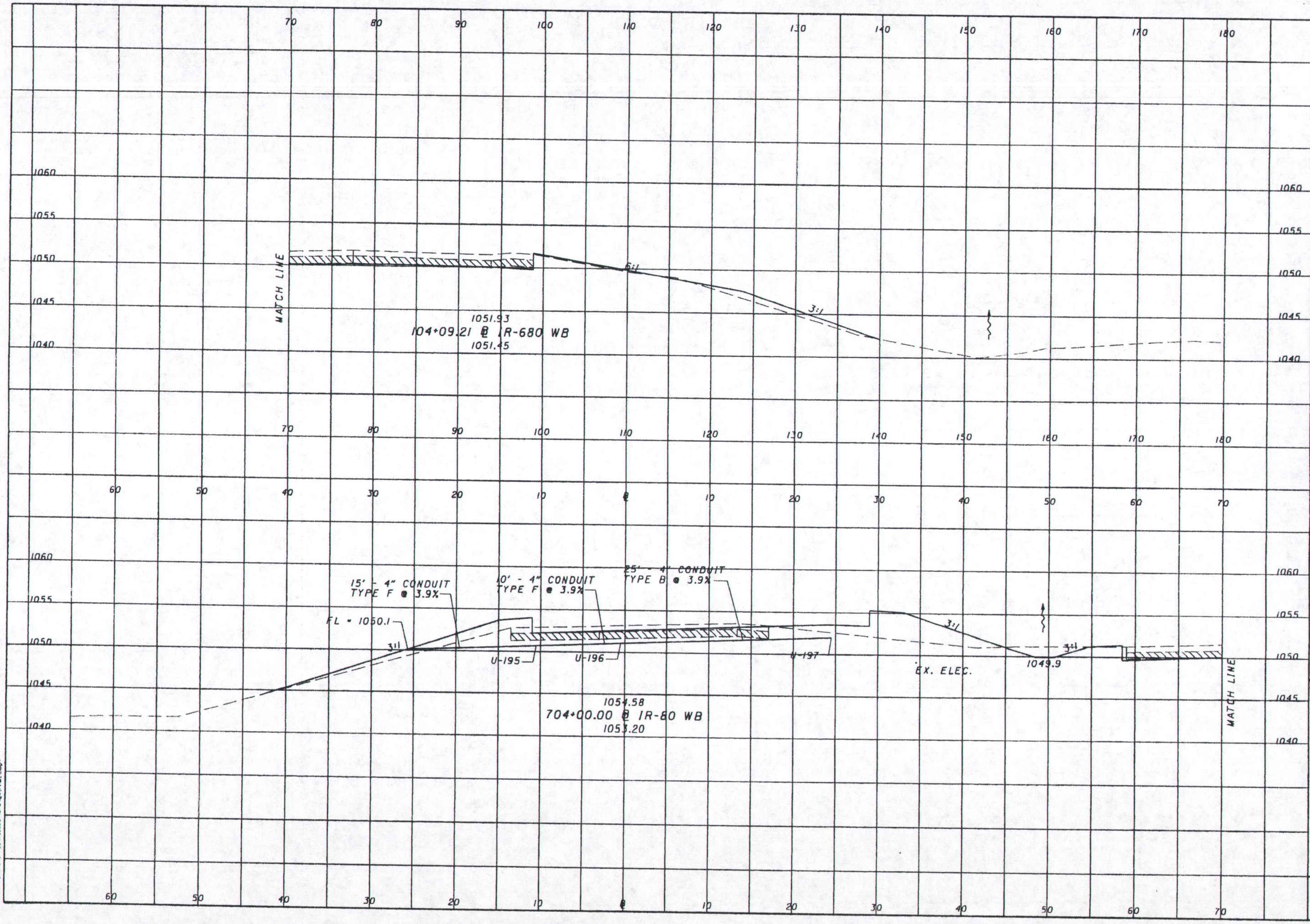


CROSS SECTIONS
STA 703+50.00

MAH-80-0.97

CALCULATED PRS
CHECKED SSC

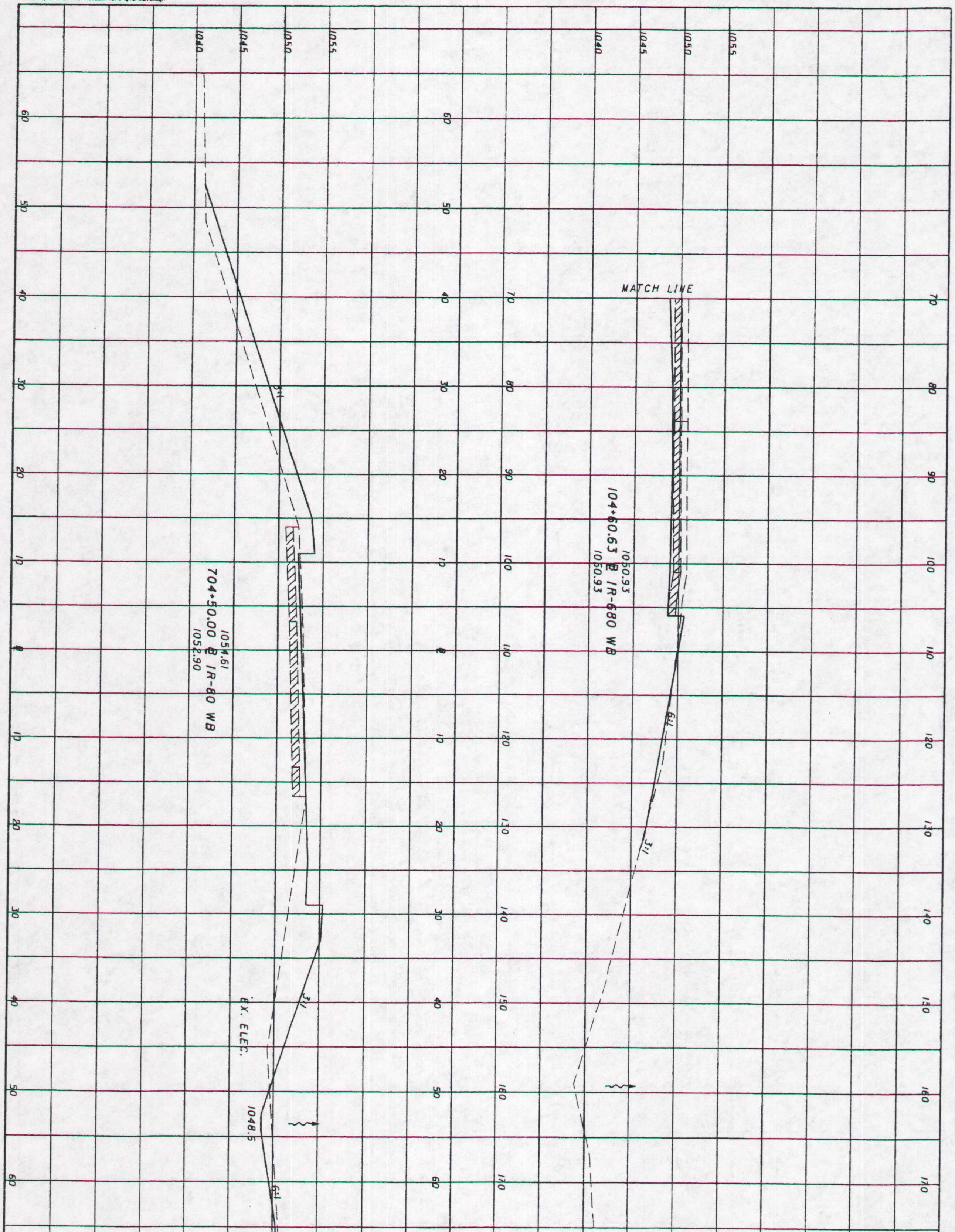
719/1100



CROSS SECTIONS
STA 704+00.00

MAH-80-0.97

720/1100

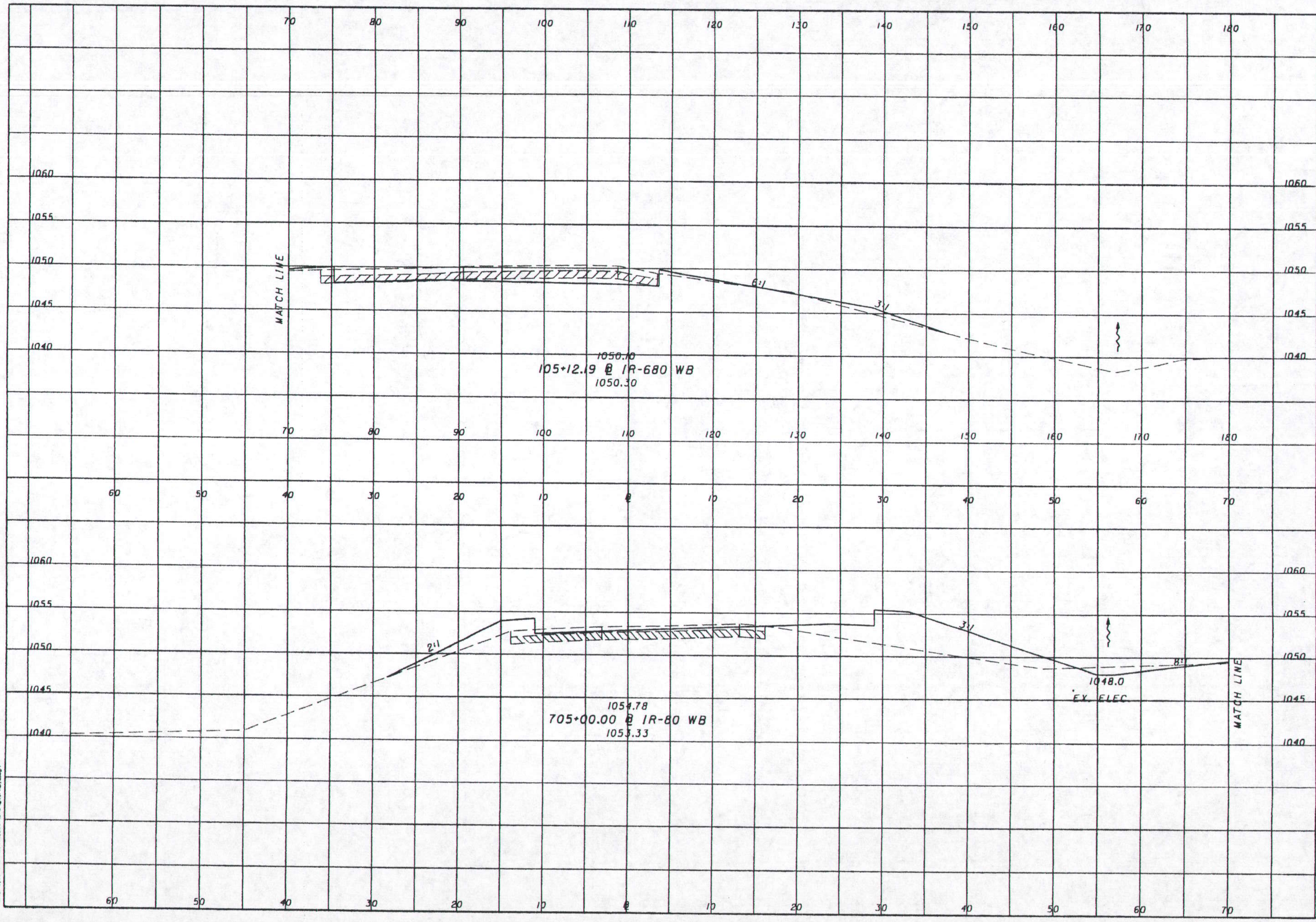


CROSS SECTIONS
STA 704+50.00

MAH-80-0.97

721/1100

CALCULATED PRS
CHECKED SSC

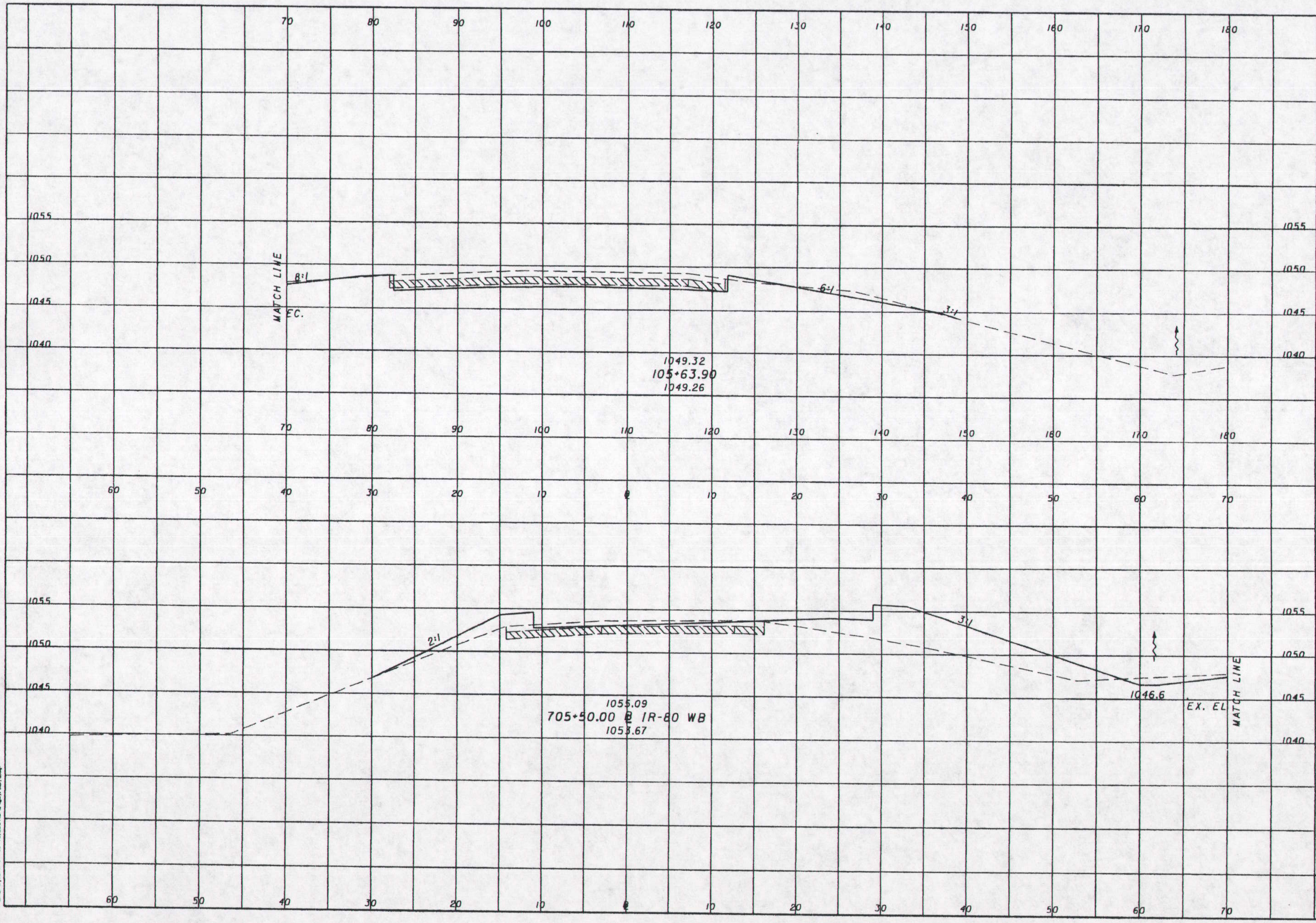


CALCULATED PRS
CHECKED SSC

CROSS SECTIONS
STA 705+00.00

MAH-80-0.97

722
1100



CALCULATED PRS
CHECKED SSC

CROSS SECTIONS
STA 705+50.00

MAH-80-0.97

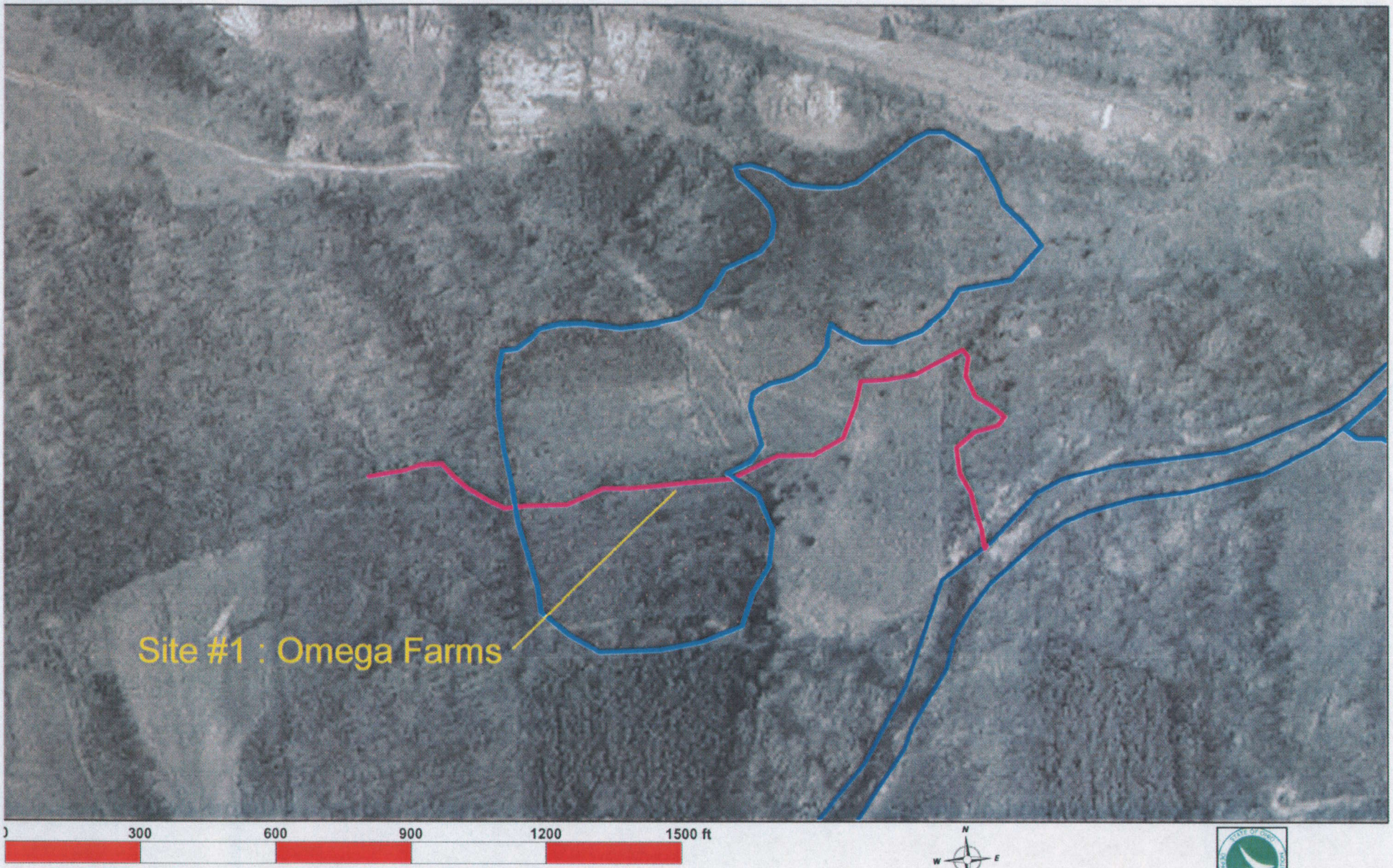
723/1100

Section 404 Department of Army Permit and Section 401 Water Quality Certification

APPENDIX C

Preliminary Mitigation Opportunities

MAH-80 (PID 6080) - Potential Wetland/Stream Site #1

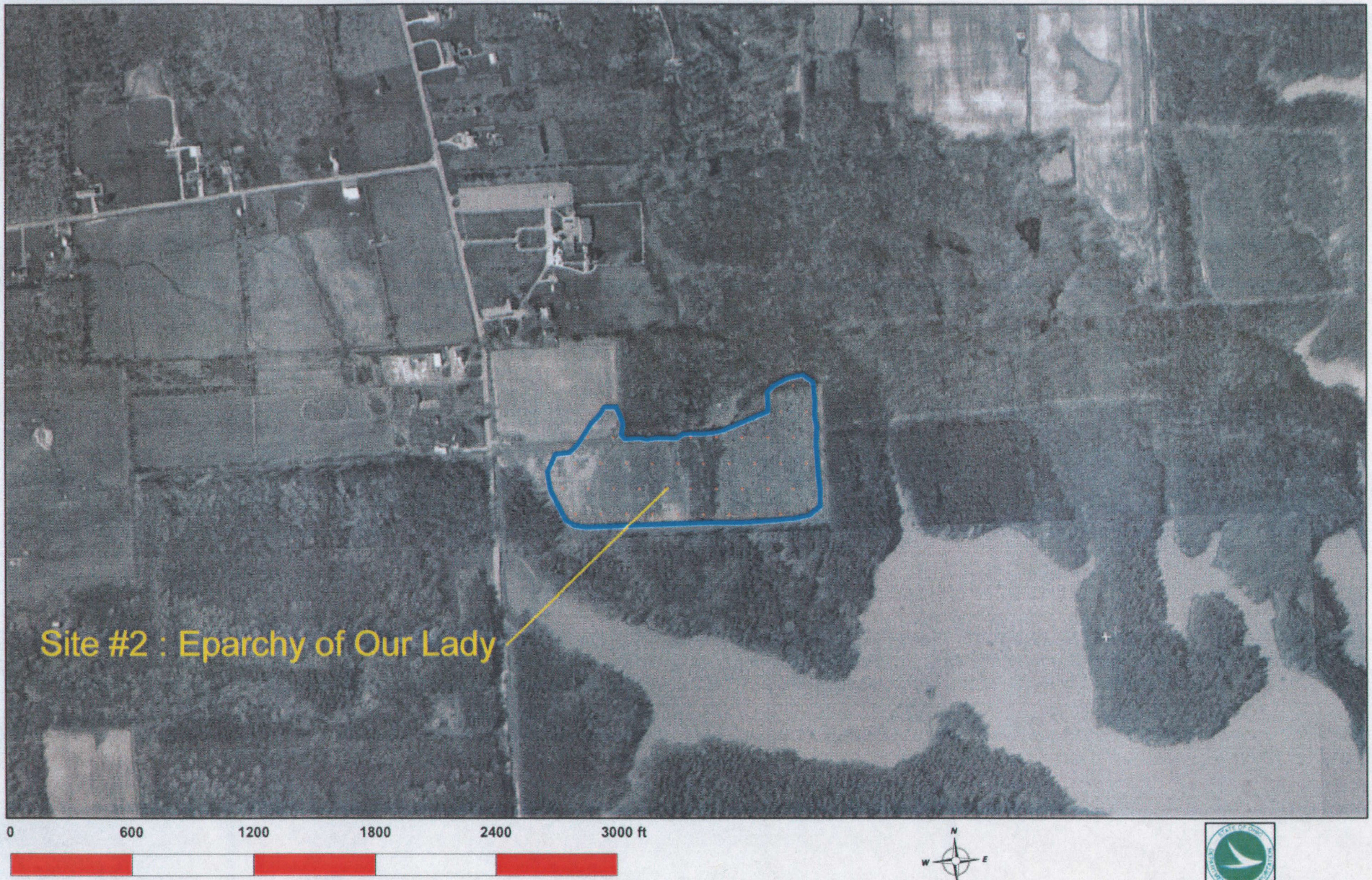


- Sites investigated for potential mitigation development
- Proposed wetland sites for further investigation
- Proposed stream sites for further development

DISCLAIMER: THIS ANALYSIS AND GRAPHIC ARE STRICTLY AN INITIAL SCREENING OF THE DATA PRESENTED AND FOR THE ADDITIONAL DISCLAIMERS FROM THE APPROPRIATE DATA SOURCE AGENCIES

THE OHIO DEPARTMENT OFTRANSPORTATION
OFFICE OF ENVIRONMENTAL SERVICES
1980 WEST BROAD STREET
COLUMBUS, OHIO 43223
PRODUCED WITH GEOMEDIA SOFTWARE
CREATED BY: DON ROSTOFER
DATE CREATED: 4/13/05

MAH-80 (PID 6080) - Potential Wetland Site #2



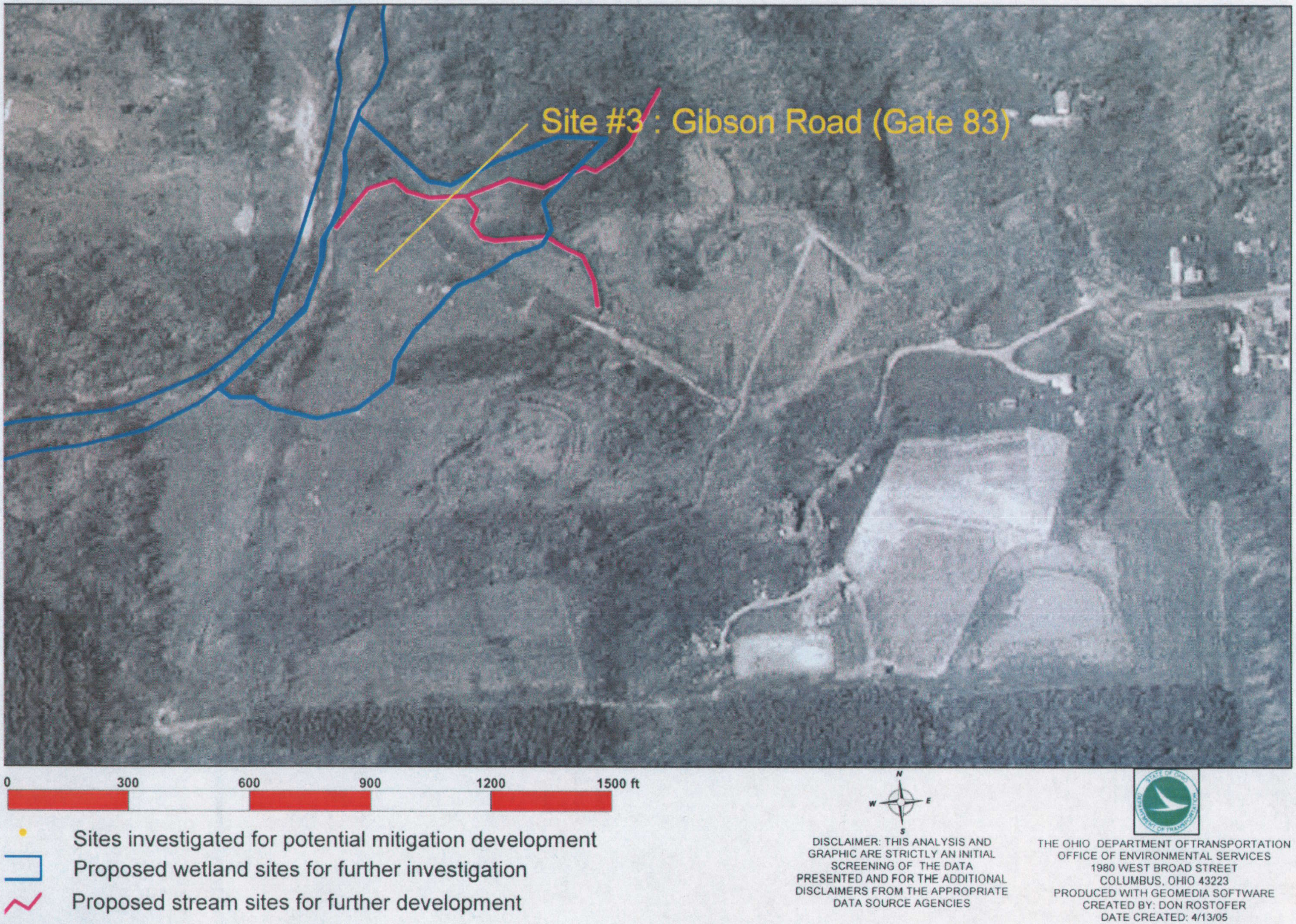
Sites investigated for potential mitigation development

Proposed wetland sites for further investigation

DISCLAIMER: THIS ANALYSIS AND GRAPHIC ARE STRICTLY AN INITIAL SCREENING OF THE DATA PRESENTED AND FOR THE ADDITIONAL DISCLAIMERS FROM THE APPROPRIATE DATA SOURCE AGENCIES

THE OHIO DEPARTMENT OFTRANSPORTATION
OFFICE OF ENVIRONMENTAL SERVICES
1980 WEST BROAD STREET
COLUMBUS, OHIO 43223
PRODUCED WITH GEOMEDIA SOFTWARE
CREATED BY: DON ROSTOFER
DATE CREATED: 4/13/05

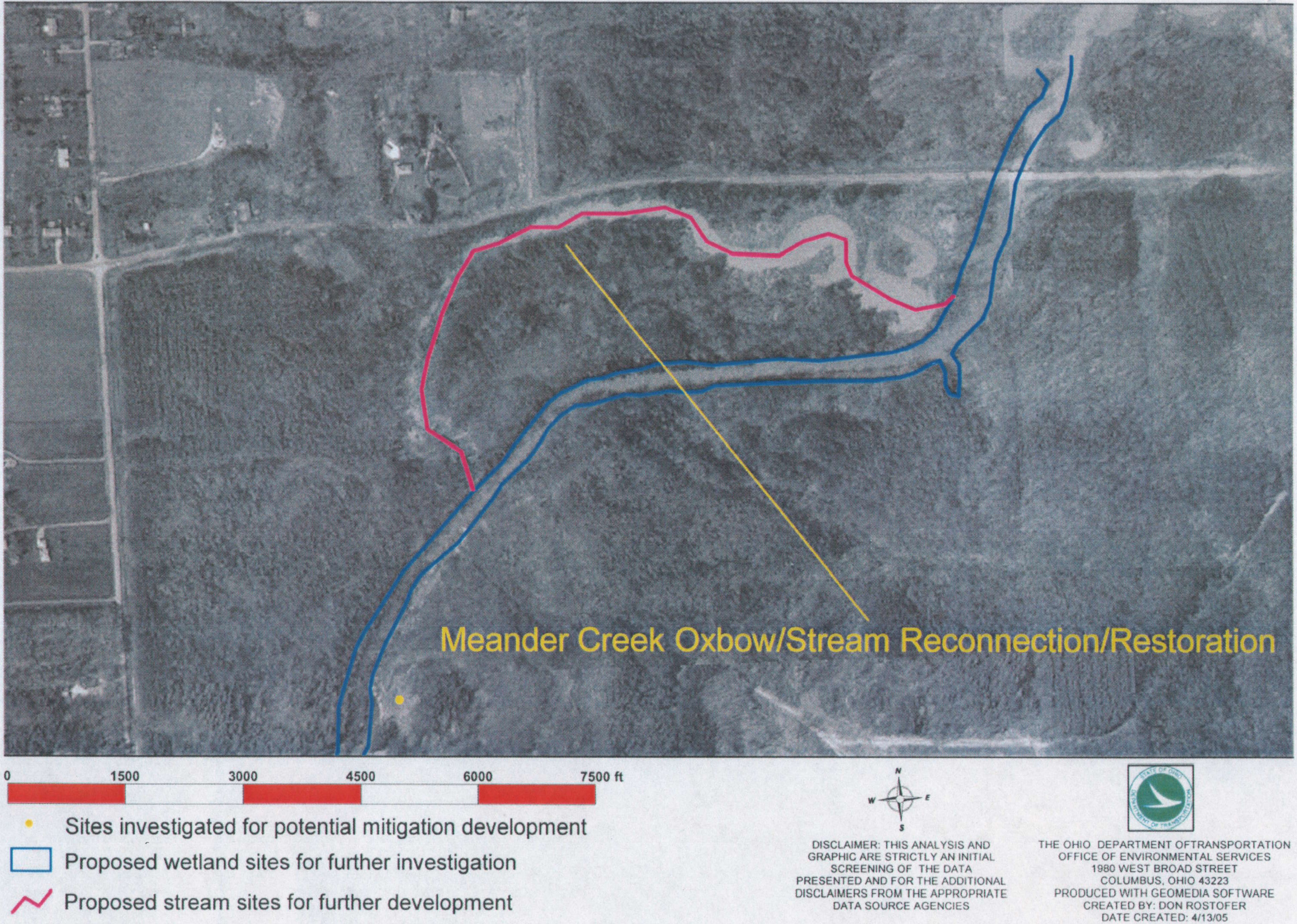
MAH-80 (PID 6080) - Potential Stream/Wetland Site #3



DISCLAIMER: THIS ANALYSIS AND GRAPHIC ARE STRICTLY AN INITIAL SCREENING OF THE DATA PRESENTED AND FOR THE ADDITIONAL DISCLAIMERS FROM THE APPROPRIATE DATA SOURCE AGENCIES

THE OHIO DEPARTMENT OFTRANSPORTATION
OFFICE OF ENVIRONMENTAL SERVICES
1980 WEST BROAD STREET
COLUMBUS, OHIO 43223
PRODUCED WITH GEOMEDIA SOFTWARE
CREATED BY: DON ROSTOFER
DATE CREATED: 4/13/05

MAH-80 (PID 6080) - Potential Stream Site



DISCLAIMER: THIS ANALYSIS AND GRAPHIC ARE STRICTLY AN INITIAL SCREENING OF THE DATA PRESENTED AND FOR THE ADDITIONAL DISCLAIMERS FROM THE APPROPRIATE DATA SOURCE AGENCIES

THE OHIO DEPARTMENT OFTRANSPORTATION
OFFICE OF ENVIRONMENTAL SERVICES
1980 WEST BROAD STREET
COLUMBUS, OHIO 43223
PRODUCED WITH GEOMEDIA SOFTWARE
CREATED BY: DON ROSTOFER
DATE CREATED: 4/13/05

Section 404 Department of Army Permit and Section 401 Water Quality Certification

APPENDIX D
Project Photo Log

Photo 1: Looking west at wetland SW-BB.

Photo 2: Looking northwest at wetland SW-AA.

Photo 3: Looking north (upstream) at stream Str-1.

Photo 4: Looking south (downstream) at stream Str-1.

Photo 5: Looking northwest at wetland NW-E.

Photo 6: Looking southeast at wetland SW-1.

Photo 7: Looking north (upstream) at stream Str-3.

Photo 8: Looking south (downstream) at stream Str-3.

Photo 9: Looking north at wetland NW-2.

Photo 10: Looking west at wetland NW-2.

Photo 11: Looking north at exfoliating snags.

Photo 12: Looking southwest at wetland SW-4.

Photo 13: Looking south at wetland NW-C.

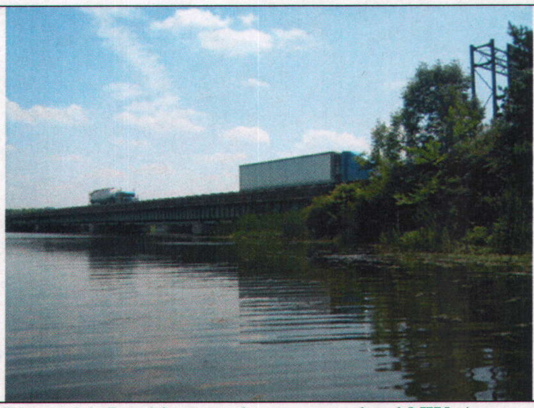


Photo 14: Looking southeast at wetland NW-A.

Photo 15: Looking north at wetland SW-A.

Photo 16: Looking east at potential Indiana bat habitat..

Photo 17: Looking northeast at wetland SE-11.

Photo 18: Looking west at wetland SE-6.


Photo 19: Looking north at wetland SE-10.

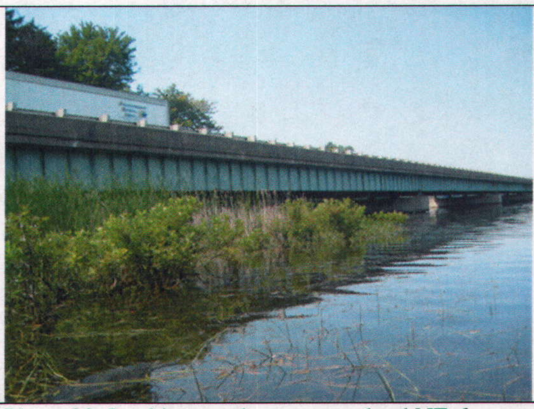


Photo 20: Looking southwest at wetland NE-6.


Photo 21: Looking southwest at wetland NE-B.


Photo 22: Looking north at wetland SE-A.


Photo 23: Looking south at wetland SE-5.


Photo 24: Looking south at wetland SE-9.

Photo 25: Looking east at wetland SE-8.

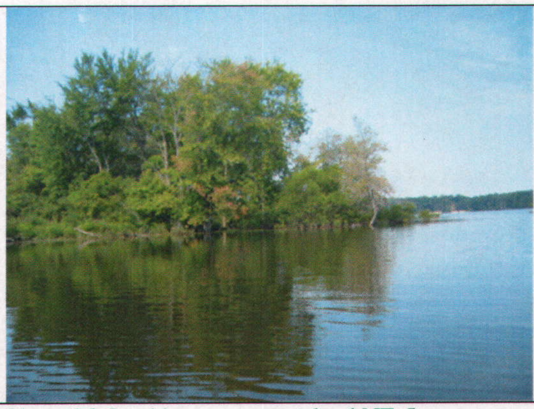


Photo 26: Looking west at wetland NE-5.

Photo 27: Looking northeast at wetland NE-4.

Photo 28: Looking south at wetland NE-A.

Photo 29: Looking southeast at wetland SE-2/3.

Photo 30: Looking southeast at wetland just past SE-2/3.

Photo 31: Looking upstream at stream Str-5.

Photo 32: Looking southeast at wetland SE-1.

Photo 33: Looking downstream at stream Str-6.

Photo 34: Looking north at wetland NE-1.

Photo 35: Looking downstream at stream Str-7.

Photo 36: Looking upstream at stream Str-7.

Photo 37: Looking west at wetland SE-D.

Photo 38: Looking northwest at wetland SE-I.

Photo 39: Looking east at wetland SE-F.

Photo 40: Looking south at wetland NE-C.

Photo 41: Looking northeast at wetland SE-H.

Photo 42: Looking east at cattails along ditch line (later removed, See Photo 43).

Photo 43: Area after ditch cleaning.

Photo 44: Looking east at wetland NE-7.

Photo 45: Looking west at wetland B.

Photo 46: Looking north at wetland C.

Photo 47: Looking northeast at wetland NE-8.

Photo 48: Looking south at wetland NE-8.

Photo 49: Looking south (upstream) at stream STR-9.

Photo 50: Looking north (downstream) at stream STR-9.

Photo 51: Looking west (downstream) at stream STR-10.

Photo 52: Looking east (upstream) at stream STR-10

Photo 53: Looking west at wetland H.

Photo 54: Looking west at ditch in center of highway.

Photo 55: Looking west at wetland F.


Photo 56: Looking northwest at wetland E.


Photo 57: Looking northwest at wetland D.

Section 404 Department of Army Permit and Section 401 Water Quality Certification

APPENDIX E

U.S. Army Corps of Engineers Wetland Data Forms

NW 1-w

PFO

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart   Date: 7/2/2004

Project/Site: MAH-80   State: Ohio   County: Mahoning

Applicant/Owner: ODOT   Plant Community #/Name:

Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Carex lupulina*	OBL	H-30	11.			
2.	*Glyceria striata*	OBL	H-40	12.			
3.	*Impatiens capensis*	FACW	H-30	13.			
4.	*Quercus palustris*	FACW	T-100	14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 100%

Is the vegetation criterion met? Yes

Rationale: OVER 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Sebring   Subgroup: silt loam

Is the soil on the hydric soils list? Yes

Is the soil a Histosol? No   Histic epipedon present? No

Is the soil: Mottled? Yes   Gleyed? No

Matrix color: 10 YR 3/1   Mottle colors:

Other hydric soil indicators: None

Is the hydric soil criterion met? Yes

Rationale: SOIL CHROMATIC CRITERIA MET

HYDROLOGY

Is the ground surface inundated? Yes   Surface water depth: Surface

Is the soil saturated? Yes

Depth to free-standing water in pit/soil probe hole:

List other field evidence of surface inundation or soil saturation.

None

Is the hydrology criterion met? Yes

Rationale:

OBSERVED HYDROLOGY

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? Yes

Rationale for jurisdictional decision: ALL THREE CRITERIA MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

ms consultants, inc.

NW 1- u

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart
Date: 7/2/2004
Project/Site: MAH-80 State: Ohio County: Mahoning
Applicant/Owner: ODOT Plant Community #/Name:
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Prunus serotina*	FACU-	T-60	11.			
2.	*Quercus rubra*	FACU-	T-40	12.			
3.	*Toxicodendron radicans*	FAC	H-70	13.			
4.	*Rubus allegheniensis*	FACU-	H-30	14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 25%
Is the vegetation criterion met? No
Rationale: LESS THAN 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Sebring
Subgroup: silt loam
Is the soil on the hydric soils list? Yes
Is the soil a Histosol? No
Histic epipedon present? No
Is the soil: Mottled? Yes
Gleyed? No
Matrix color: 10 YR 4/4
Mottle colors:
Other hydric soil indicators: None
Is the hydric soil criterion met? No
Rationale: SOILS CHROMATIC CRITERIA NOT MET

HYDROLOGY

Is the ground surface inundated? No
Surface water depth:
Is the soil saturated? No
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? No
Rationale:
NO OBSERVED EVIDENCE

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? No
Rationale for jurisdictional decision: ALL THREE CRITERIA NOT MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

ms consultants, inc.

NW 2 - w
PFO

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart   Date: 7/2/2004
Project/Site: MAH-80   State: Ohio   County: Mahoning
Applicant/Owner: ODOT   Plant Community #/Name:
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Glyceria striata*	OBL	H-20	11.			
2.	*Phalaris arundinacea*	FACW-	H-40	12.			
3.	*Impatiens capensis*	FACW	H-20	13.			
4.	*Carex rostrata*	OBL	H-20	14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 100%
Is the vegetation criterion met? Yes
Rationale: OVER 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Sebring   Subgroup: silt loam
Is the soil on the hydric soils list? Yes
Is the soil a Histosol? No   Histic epipedon present? No
Is the soil: Mottled? Yes   Gleyed? No
Matrix color: 10 YR 7/1   Mottle colors: 10 YR 5/6
Other hydric soil indicators: None
Is the hydric soil criterion met? Yes
Rationale: SOIL CHROMATIC CRITERIA MET

HYDROLOGY

Is the ground surface inundated? Yes   Surface water depth: Surface
Is the soil saturated? Yes
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? Yes
Rationale:
OBSERVED HYDROLOGY

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? Yes
Rationale for jurisdictional decision: ALL THREE CRITERIA MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

ms consultants, inc.

NW 2- u

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart Date: 7/2/2004
Project/Site: MAH-80 State: Ohio County: Mahoning
Applicant/Owner: ODOT Plant Community #/Name:
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain) ______

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain) ______

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Prunus serotina*	FACU-	T-60	11.			
2.	*Quercus rubra*	FACU-	T-40	12.			
3.	*Toxicodendron radicans*	FAC	H-70	13.			
4.	*Rubus allegheniensis*	FACU-	H-30	14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 25%
Is the vegetation criterion met? No
Rationale: LESS THAN 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Sebring Subgroup: silt loam
Is the soil on the hydric soils list? Yes
Is the soil a Histosol? No Histic epipedon present? No
Is the soil: Mottled? Yes Gleyed? No
Matrix color: 10 YR 4/4 Mottle colors:
Other hydric soil indicators: None
Is the hydric soil criterion met? No
Rationale: SOILS CHROMATIC CRITERIA NOT MET

HYDROLOGY

Is the ground surface inundated? No Surface water depth:
Is the soil saturated? No
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? No
Rationale:
NO OBSERVED EVIDENCE

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? No
Rationale for jurisdictional decision: ALL THREE CRITERIA NOT MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

NW A -w
PEM

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart   Date: 7/2/2004
Project/Site: MAH-80   State: Ohio   County: Mahoning
Applicant/Owner: ODOT   Plant Community #/Name:
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Potogamon sp.*	OBL	H-80	11.			
2.	*Butomus umbellatus*	OBL	H-20	12.			
3.	*Salix nigra*	FACW+	S-100	13.			
4.				14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 100%
Is the vegetation criterion met? Yes
Rationale: OVER 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Chili   Subgroup: silt loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No   Histic epipedon present? No
Is the soil: Mottled? Yes   Gleyed? No
Matrix color: 10 YR 7/1   Mottle colors: 10 YR 5/6
Other hydric soil indicators: None
Is the hydric soil criterion met? Yes
Rationale: SOIL CHROMATIC CRITERIA MET

HYDROLOGY

Is the ground surface inundated? Yes   Surface water depth: Surface
Is the soil saturated? Yes
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? Yes
Rationale:
OBSERVED HYDROLOGY

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? Yes
Rationale for jurisdictional decision: ALL THREE CRITERIA MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

ms consultants, inc.

NW - A u

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart   Date: 7/2/2004
Project/Site: MAH-80   State: Ohio   County: Mahoning
Applicant/Owner: ODOT   Plant Community #/Name:
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Rhamnus frangula*	FAC	S-70	11.			
2.	*Festuca rubra*	FACU	H-100	12.			
3.	*Eleagnus angustifolia*	FACU	S-30	13.			
4.				14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 33%
Is the vegetation criterion met? No
Rationale: LESS THAN 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Chili   Subgroup: silt loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No   Histic epipedon present? No
Is the soil: Mottled? Yes   Gleyed? No
Matrix color: Roadway fill   Mottle colors:
Other hydric soil indicators: None
Is the hydric soil criterion met? No
Rationale: Soil not sampled - roadway fill and bridge abutment backfill material

HYDROLOGY

Is the ground surface inundated? No   Surface water depth:
Is the soil saturated? No
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? No
Rationale:
NO OBSERVED EVIDENCE

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? No
Rationale for jurisdictional decision: ALL THREE CRITERIA NOT MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

ms consultants, inc.

NW C -W
PEM

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart   Date: 7/2/2004
Project/Site: MAH-80   State: Ohio   County: Mahoning
Applicant/Owner: ODOT   Plant Community #/Name:
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Carex scoparia*	FACW	H-70	11.			
2.	*Glyceria striaita*	OBL	H-30	12.			
3.				13.			
4.				14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 100%
Is the vegetation criterion met? Yes
Rationale: OVER 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Chili   Subgroup: silt loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No   Histic epipedon present? No
Is the soil: Mottled? Yes   Gleyed? No
Matrix color: Mottle colors: 10 YR 5/6
Other hydric soil indicators: None
Is the hydric soil criterion met? Yes
Rationale: SOIL CHROMATIC CRITERIA MET

HYDROLOGY

Is the ground surface inundated? No   Surface water depth:
Is the soil saturated? Yes
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
Wetland drainage patterns, blackened leaves
Is the hydrology criterion met? Yes
Rationale:
OBSERVED EVIDENCE OF HYDROLOGY

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? Yes
Rationale for jurisdictional decision: ALL THREE CRITERIA MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

ms consultants, inc.

NW C- u
wooded

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart | Date: 7/2/2004
Project/Site: MAH-80 | State: Ohio | County: Mahoning
Applicant/Owner: ODOT | Plant Community #/Name:

Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Prunus serotina*	FACU-	T-60	11.			
2.	*Quercus rubra*	FACU-	T-40	12.			
3.	*Toxicodendron radicans*	FAC	H-70	13.			
4.	*Rubus allegheniensis*	FACU-	H-30	14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 25%
Is the vegetation criterion met? No
Rationale: LESS THAN 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Chili | Subgroup: silt loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No | Histic epipedon present? No
Is the soil: Mottled? Yes | Gleyed? No
Matrix color: 10 YR 4/4 | Mottle colors:
Other hydric soil indicators: None
Is the hydric soil criterion met? No
Rationale: SOILS CHROMATIC CRITERIA NOT MET

HYDROLOGY

Is the ground surface inundated? No | Surface water depth:
Is the soil saturated? No
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? No
Rationale:
NO OBSERVED EVIDENCE

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? No
Rationale for jurisdictional decision: ALL THREE CRITERIA NOT MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

ms consultants, inc.

NW - D w
PFO

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart Date: 7/2/2004
Project/Site: MAH-80 State: Ohio County: Mahoning
Applicant/Owner: ODOT Plant Community #/Name:
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Quercus palustris*	FACW	T-100	11.			
2.	*Impatiens capensis*	FACW	H-100	12.			
3.				13.			
4.				14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 100%
Is the vegetation criterion met? Yes
Rationale: OVER 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Bogart Subgroup: loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No Histic epipedon present? No
Is the soil: Mottled? Yes Gleyed? No
Matrix color: 10 YR 3/1 Mottle colors:
Other hydric soil indicators: None
Is the hydric soil criterion met? Yes
Rationale: SOIL CHROMATIC CRITERIA MET

HYDROLOGY

Is the ground surface inundated? No Surface water depth:
Is the soil saturated? Yes
Depth to free-standing water in pit/soil probe hole: 8"
List other field evidence of surface inundation or soil saturation.
Evidence of standing water conditions, blackened leaves, bare soil, buttressed trunks,
Is the hydrology criterion met? Yes
Rationale:
OBSERVED HYDROLOGY

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? Yes
Rationale for jurisdictional decision: ALL THREE CRITERIA MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

ms consultants, inc.

NW D-u

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart Date: 7/2/2004
Project/Site: MAH-80 State: Ohio County: Mahoning
Applicant/Owner: ODOT Plant Community #/Name:
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Prunus serotina*	FACU-	T-40	11.			
2.	*Acer saccharum*	FAC	T-30	12.			
3.	*Quercus rubra*	FACU-	T-30	13.			
4.	*Rubus allegheniensis*	FACU-	H-70	14.			
5.	*Toxicodendron radicans*	FAC	H-30	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 40%
Is the vegetation criterion met? No
Rationale: LESS THAN 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Bogart Subgroup: loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No Histic epipedon present? No
Is the soil: Mottled? Yes Gleyed? No
Matrix color: 10 YR 4/4 Mottle colors:
Other hydric soil indicators: None
Is the hydric soil criterion met? No
Rationale: SOILS CHROMATIC CRITERIA NOT MET

HYDROLOGY

Is the ground surface inundated? No Surface water depth:
Is the soil saturated? No
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? No
Rationale:
NO OBSERVED EVIDENCE

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? No
Rationale for jurisdictional decision: ALL THREE CRITERIA NOT MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

NW- E w
PEM

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart   Date: 7/21/2004
Project/Site: MAH-80   State: Ohio   County: Mahoning
Applicant/Owner: ODOT   Plant Community #/Name:
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Glyceria striata*	OBL	H-30	11.			
2.	*Quercus palustris*	FACW	H-30	12.			
3.	*Impatiens capensis*	FACW	H-20	13.			
4.	*Toxicodendron radicans*	FAC	H-20	14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 100%
Is the vegetation criterion met? Yes
Rationale: OVER 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Geeburg   Subgroup: silt loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No   Histic epipedon present? No
Is the soil: Mottled? Yes   Gleyed? No
Matrix color: 10 YR 4/2   Mottle colors: 10 YR 5/6
Other hydric soil indicators: None
Is the hydric soil criterion met? Yes
Rationale: SOIL CHROMATIC CRITERIA MET

HYDROLOGY

Is the ground surface inundated? Yes   Surface water depth: Surface
Is the soil saturated? Yes
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
Wetland drainage patterns
Is the hydrology criterion met? Yes
Rationale:
OBSERVED HYDROLOGY

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? Yes
Rationale for jurisdictional decision: ALL THREE CRITERIA MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

ms consultants, inc.

NW E - u

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart
Date: 7/21/2004
Project/Site: MAH-80
State: Ohio
County: Mahoning
Applicant/Owner: ODOT
Plant Community #/Name:

Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Prunus serotina*	FACU-	T-60	11.			
2.	*Quercus rubra*	FACU-	T-40	12.			
3.	*Toxicodendron radicans*	FAC	H-70	13.			
4.	*Rubus allegheniensis*	FACU-	H-30	14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 25%
Is the vegetation criterion met? No
Rationale: LESS THAN 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Geeburg
Subgroup: silt loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No
Histic epipedon present? No
Is the soil: Mottled? Yes
Gleyed? No
Matrix color: 10 YR 4/4
Mottle colors:
Other hydric soil indicators: None
Is the hydric soil criterion met? No
Rationale: SOILS CHROMATIC CRITERIA NOT MET

HYDROLOGY

Is the ground surface inundated? No
Surface water depth:
Is the soil saturated? No
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? No
Rationale:
NO OBSERVED EVIDENCE

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? No
Rationale for jurisdictional decision: ALL THREE CRITERIA NOT MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

ms consultants, inc.

NW F- w
PEM

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart   Date: 7/21/2004
Project/Site: MAH-80   State: Ohio   County: Mahoning
Applicant/Owner: ODOT   Plant Community #/Name:
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Typha angustifolia*	OBL	H-60	11.			
2.	*Symplocarpus foetidus*	OBL	H-20	12.			
3.	*Bidens frondosa*	FACW	H-20	13.			
4.				14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 100%
Is the vegetation criterion met? Yes
Rationale: OVER 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Geeburg   Subgroup: silty clay loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No   Histic epipedon present? No
Is the soil: Mottled? Yes   Gleyed? No
Matrix color: 10 YR 4/2   Mottle colors: 10 YR 5/6
Other hydric soil indicators: None
Is the hydric soil criterion met? Yes
Rationale: SOIL CHROMATIC CRITERIA MET

HYDROLOGY

Is the ground surface inundated? No   Surface water depth:
Is the soil saturated? Yes
Depth to free-standing water in pit/soil probe hole: 10"
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? Yes
Rationale:
OBSERVED HYDROLOGY

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? Yes
Rationale for jurisdictional decision: ALL THREE CRITERIA MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

ms consultants, inc.

NW F-u

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart
Project/Site: MAH-80 State: Ohio Date: 7/21/2004
Applicant/Owner: ODOT County: Mahoning
Plant Community #/Name:
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Prunus serotina*	FACU-	T-60	11.			
2.	*Quercus rubra*	FACU-	T-40	12.			
3.	*Toxicodendron radicans*	FAC	H-70	13.			
4.	*Rubus allegheniensis*	FACU-	H-30	14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 25%
Is the vegetation criterion met? No
Rationale: LESS THAN 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Geeburg
Subgroup: silty clay loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No
Histic epipedon present? No
Is the soil: Mottled? Yes
Gleyed? No
Matrix color: 10 YR 4/4
Mottle colors:
Other hydric soil indicators: None
Is the hydric soil criterion met? No
Rationale: SOILS CHROMATIC CRITERIA NOT MET

HYDROLOGY

Is the ground surface inundated? No
Surface water depth:
Is the soil saturated? No
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? No
Rationale:
NO OBSERVED EVIDENCE

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? No
Rationale for jurisdictional decision: ALL THREE CRITERIA NOT MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

ms consultants, inc.

NE 1 -w
PEM

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart Date: 7/1/2004
Project/Site: MAH-80 State: Ohio County: Mahoning
Applicant/Owner: ODOT Plant Community #/Name:
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Cornus racemosa*	FAC	S-100	11.			
2.	*Pilea pumila*	FACW	H-30	12.			
3.	*Urtica procera*	FACU	H-20	13.			
4.	*Impatiens capensis*	FACW	H-30	14.			
5.	*Lysimachia nummularia*	OBL	H-20	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 100%
Is the vegetation criterion met? Yes
Rationale: OVER 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Geeburg Subgroup: silty clay loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No Histic epipedon present? No
Is the soil: Mottled? Yes Gleyed? No
Matrix color: 10 YR 5/2 Mottle colors: 10 YR 4/6
Other hydric soil indicators: None
Is the hydric soil criterion met? Yes
Rationale: SOIL CHROMATIC CRITERIA MET

HYDROLOGY

Is the ground surface inundated? Yes Surface water depth: Surface
Is the soil saturated? Yes
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? Yes
Rationale:
OBSERVED HYDROLOGY

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? Yes
Rationale for jurisdictional decision: ALL THREE CRITERIA MET

NE 1 -u

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart
Date: 7/1/2004
Project/Site: MAH-80
State: Ohio
County: Mahoning
Applicant/Owner: ODOT
Plant Community #/Name:
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Prunus serotina*	FACU-	T-100	11.			
2.	*Crataegus phaenopyrum*	FAC	S-100	12.			
3.	*Rubus allegheniensis*	FACU-	H-40	13.			
4.	*Toxicodendron radicans*	FAC	H-60	14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 50%
Is the vegetation criterion met? No
Rationale: NOT MORE THAN 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Geeburg
Subgroup: silty clay loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No
Histic epipedon present? No
Is the soil: Mottled? Yes
Gleyed? No
Matrix color: 10 YR 4/4
Mottle colors:
Other hydric soil indicators: None
Is the hydric soil criterion met? No
Rationale: SOILS CHROMATIC CRITERIA NOT MET

HYDROLOGY

Is the ground surface inundated? No
Surface water depth:
Is the soil saturated? No
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? No
Rationale:
NO OBSERVED EVIDENCE

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? No
Rationale for jurisdictional decision: ALL THREE CRITERIA NOT MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

ms consultants, inc.

NE 4 -w
PEM

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart   Date: 7/1/2004
Project/Site: MAH-80   State: Ohio   County: Mahoning
Applicant/Owner: ODOT   Plant Community #/Name:
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Typha angustifolia*	FACW	H-100	11.			
2.				12.			
3.				13.			
4.				14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 100%
Is the vegetation criterion met? Yes
Rationale: OVER 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Remsen   Subgroup: silt loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No   Histic epipedon present? No
Is the soil: Mottled? Yes   Gleyed? No
Matrix color: Mottle colors:
Other hydric soil indicators: Inundated water conditions
Is the hydric soil criterion met? Yes
Rationale:
SOIL CHROMATICS ASSUMMED WITH ININDATED WATER CONDITIONS

HYDROLOGY

Is the ground surface inundated? Yes   Surface water depth: Surface - 2 FEET
Is the soil saturated? Yes
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? Yes
Rationale:
OBSERVED HYDROLOGY

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? Yes
Rationale for jurisdictional decision: ALL THREE CRITERIA MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

ms consultants, inc.

NE 4 -u

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart
Date: 7/1/2004
Project/Site: MAH-80 State: Ohio County: Mahoning
Applicant/Owner: ODOT Plant Community #/Name:
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Daucus carota*	UPL	H-50	11.			
2.	*Aster vimineus*	FAC	H-30	12.			
3.	*Dactylis glomerata*	FACU	H-20	13.			
4.				14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 33%
Is the vegetation criterion met? No
Rationale: LESS THAN 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Chili
Subgroup: silt loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No
Histic epipedon present? No
Is the soil: Mottled? Yes
Gleyed? No
Matrix color: 10 YR 4/4
Mottle colors:
Other hydric soil indicators: None
Is the hydric soil criterion met? No
Rationale: SOILS CHROMATIC CRITERIA NOT MET

HYDROLOGY

Is the ground surface inundated? No
Surface water depth:
Is the soil saturated? No
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? No
Rationale:
NO OBSERVED EVIDENCE

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? No
Rationale for jurisdictional decision: ALL THREE CRITERIA NOT MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

NE 5 -w
PEM

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart   Date: 7/1/2004
Project/Site: MAH-80   State: Ohio   County: Mahoning
Applicant/Owner: ODOT   Plant Community #/Name:
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Typha angustifolia*	FACW	H-100	11.			
2.	*Cephalanthus occidentalis*	OBL	S-100	12.			
3.				13.			
4.				14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 100%
Is the vegetation criterion met? Yes
Rationale: OVER 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Remsen   Subgroup: silt loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No   Histic epipedon present? No
Is the soil: Mottled? Yes   Gleyed? No
Matrix color: Mottle colors:
Other hydric soil indicators: Inundated water conditions
Is the hydric soil criterion met? Yes
Rationale:
SOIL CHROMATICS ASSUMMED WITH ININDATED WATER CONDITIONS

HYDROLOGY

Is the ground surface inundated? Yes   Surface water depth: Surface - 2 FEET
Is the soil saturated? Yes
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? Yes
Rationale:
OBSERVED HYDROLOGY

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? Yes
Rationale for jurisdictional decision: ALL THREE CRITERIA MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

NE 5 -u

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart
Date: 7/1/2004
Project/Site: MAH-80
State: Ohio
County: Mahoning
Applicant/Owner: ODOT
Plant Community #/Name:
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Daucus carota*	UPL	H-50	11.			
2.	*Aster vimineus*	FAC	H-30	12.			
3.	*Dactylis glomerata*	FACU	H-20	13.			
4.				14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 33%
Is the vegetation criterion met? No
Rationale: LESS THAN 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Chili
Subgroup: silt loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No
Histic epipedon present? No
Is the soil: Mottled? Yes
Gleyed? No
Matrix color: 10 YR 4/4
Mottle colors:
Other hydric soil indicators: None
Is the hydric soil criterion met? No
Rationale: SOILS CHROMATIC CRITERIA NOT MET

HYDROLOGY

Is the ground surface inundated? No
Surface water depth:
Is the soil saturated? No
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? No
Rationale:
NO OBSERVED EVIDENCE

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? No
Rationale for jurisdictional decision: ALL THREE CRITERIA NOT MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

NE 6 - w
PEM

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart
Date: 6/30/2004
Project/Site: MAH-80
State: Ohio
County: Mahoning
Applicant/Owner: ODOT
Plant Community #/Name:

Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Leersia orizoides*	OBL	H-30	11.			
2.	*Scirpus atrovirens*	OBL	H-30	12.			
3.	*Potogamon spp.*	OBL	H-40	13.			
4.				14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 100%
Is the vegetation criterion met? Yes
Rationale: OVER 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Remsen
Subgroup: silt loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No
Histic epipedon present? No
Is the soil: Mottled? Yes
Gleyed? No
Matrix color: 10 YR 6/1
Mottle colors:
Other hydric soil indicators: None
Is the hydric soil criterion met? Yes
Rationale: SOIL CHROMATIC CRITERIA MET

HYDROLOGY

Is the ground surface inundated? Yes
Surface water depth: 2"
Is the soil saturated? Yes
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? Yes
Rationale:
OBSERVED HYDROLOGY

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? Yes
Rationale for jurisdictional decision: ALL THREE CRITERIA MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

ms consultants, inc.

NE 6- u

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart
Date: 6/30/2004
Project/Site: MAH-80
State: Ohio
County: Mahoning
Applicant/Owner: ODOT
Plant Community #/Name:

Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Quercus alba*	FACU-	T-30	11.			
2.	*Pinus sylvestris*	FACU	T-30	12.			
3.	*Cornus florida*	FACU-	T-20	13.			
4.	*Acer rubrum*	FAC	T-20	14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 25%
Is the vegetation criterion met? No
Rationale: LESS THAN 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Remsen
Subgroup: silt loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No
Histic epipedon present? No
Is the soil: Mottled? Yes
Gleyed? No
Matrix color: 10 YR 4/4
Mottle colors:
Other hydric soil indicators: None
Is the hydric soil criterion met? No
Rationale: SOILS CHROMATIC CRITERIA NOT MET

HYDROLOGY

Is the ground surface inundated? No
Surface water depth:
Is the soil saturated? No
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? No
Rationale:
NO OBSERVED EVIDENCE

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? No
Rationale for jurisdictional decision: ALL THREE CRITERIA NOT MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

NE 8-w
PEM

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart
Date: 7/21/2004
Project/Site: MAH-80 State: Ohio
County: Mahoning
Applicant/Owner: ODOT Plant Community #/Name:
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Scirpus cyperinus*	FACW+	H-60	11.			
2.	*Juncus tenuis*	FAC-	H-20	12.			
3.	*Juncus effusus*	FACW+	H-20	13.			
4.				14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 100%
Is the vegetation criterion met? Yes
Rationale: OVER 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Loundonville
Subgroup: loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No
Histic epipedon present? No
Is the soil: Mottled? Yes
Gleyed? No
Matrix color: 10 YR 6/1
Mottle colors: 10 YR 5/6
Other hydric soil indicators: None - soil profile somewhat disturbed
Is the hydric soil criterion met? Yes
Rationale: SOIL CHROMATIC CRITERIA MET

HYDROLOGY

Is the ground surface inundated? No
Surface water depth:
Is the soil saturated? Yes
Depth to free-standing water in pit/soil probe hole: 3"
List other field evidence of surface inundation or soil saturation.
Evidence of standing water - wetland drainage patterns, cracked bare soil,
Is the hydrology criterion met? Yes
Rationale:
OBSERVED HYDROLOGY

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? Yes
Rationale for jurisdictional decision: ALL THREE CRITERIA MET

NE 8-u

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart
Date: 7/21/2004
Project/Site: MAH-80
State: Ohio
County: Mahoning
Applicant/Owner: ODOT
Plant Community #/Name:
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Rhamnus frangula*	FAC	S-100	11.			
2.	*Rubus allegheniensis*	FACU-	H-70	12.			
3.	*Festuca rubra*	FACU	H-30	13.			
4.				14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 33%
Is the vegetation criterion met? No
Rationale: LESS THAN 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Loundonville
Subgroup: loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No
Histic epipedon present? No
Is the soil: Mottled? Yes
Gleyed? No
Matrix color: 10 YR 4/4
Mottle colors:
Other hydric soil indicators: None
Is the hydric soil criterion met? No
Rationale: SOILS CHROMATIC CRITERIA NOT MET

HYDROLOGY

Is the ground surface inundated? No
Surface water depth:
Is the soil saturated? No
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? No
Rationale:
NO OBSERVED EVIDENCE

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? No
Rationale for jurisdictional decision: ALL THREE CRITERIA NOT MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

ms consultants, inc.

NE A -w
PEM

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart
Date: 7/2/2004
Project/Site: MAH-80
State: Ohio
County: Mahoning
Applicant/Owner: ODOT
Plant Community #/Name:
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Typha latifolia*	OBL	H-30	11.			
2.	*Scirpus cyperinus*	FACW+	H-30	12.			
3.	*Carex scoparia*	FACW	H-20	13.			
4.	*Juncus effusus*	FACW+	H-20	14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: **100%**
Is the vegetation criterion met? **Yes**
Rationale: OVER 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Chili
Subgroup: silt loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No
Histic epipedon present? No
Is the soil: Mottled? Yes
Gleyed? No
Matrix color:
Mottle colors:
Other hydric soil indicators: Soils not sampled due to standing water - permanent inundated condition
Is the hydric soil criterion met? **Yes**
Rationale: SOIL CHROMATIC CRITERIA MET

HYDROLOGY

Is the ground surface inundated? Yes
Surface water depth: 6"
Is the soil saturated? Yes
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? **Yes**
Rationale:
OBSERVED HYDROLOGY

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? **Yes**
Rationale for jurisdictional decision: ALL THREE CRITERIA MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

ms consultants, inc.

NE A -u

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart Date: 7/2/2004
Project/Site: MAH-80 State: Ohio County: Mahoning
Applicant/Owner: ODOT Plant Community #/Name:
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Daucus carota*	UPL	H-50	11.			
2.	*Aster vimineus*	FAC	H-30	12.			
3.	*Dactylis glomerata*	FACU	H-20	13.			
4.				14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 33%
Is the vegetation criterion met? No
Rationale: LESS THAN 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Chili Subgroup: silt loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No Histic epipedon present? No
Is the soil: Mottled? Yes Gleyed? No
Matrix color: 10 YR 4/4 Mottle colors:
Other hydric soil indicators: None
Is the hydric soil criterion met? No
Rationale: SOILS CHROMATIC CRITERIA NOT MET

HYDROLOGY

Is the ground surface inundated? No Surface water depth:
Is the soil saturated? No
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? No
Rationale:
NO OBSERVED EVIDENCE

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? No
Rationale for jurisdictional decision: ALL THREE CRITERIA NOT MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

ms consultants, inc.

NE B -w
PEM

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart Date: 7/2/2004
Project/Site: MAH-80 State: Ohio County: Mahoning
Applicant/Owner: ODOT Plant Community #/Name:
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Typha angustifolia*	FACW	H-100	11.			
2.	*Cephalanthus occidentalis*	OBL	S-100	12.			
3.				13.			
4.				14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 100%
Is the vegetation criterion met? Yes
Rationale: OVER 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Remsen Subgroup: silt loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No Histic epipedon present? No
Is the soil: Mottled? Yes Gleyed? No
Matrix color: Mottle colors:
Other hydric soil indicators: Inundated water conditions
Is the hydric soil criterion met? Yes
Rationale:
SOIL CHROMATICS ASSUMMED WITH ININDATED WATER CONDITIONS

HYDROLOGY

Is the ground surface inundated? Yes Surface water depth: Surface - 2 FEET
Is the soil saturated? Yes
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? Yes
Rationale:
OBSERVED HYDROLOGY

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? Yes
Rationale for jurisdictional decision: ALL THREE CRITERIA MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

ms consultants, inc.

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart
Date: 7/2/2004
Project/Site: MAH-80 State: Ohio County: Mahoning
Applicant/Owner: ODOT Plant Community #/Name:
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Daucus carota*	UPL	H-50	11.			
2.	*Aster vimineus*	FAC	H-30	12.			
3.	*Dactylis glomerata*	FACU	H-20	13.			
4.				14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 33%
Is the vegetation criterion met? No
Rationale: LESS THAN 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Chili
Subgroup: silt loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No
Histic epipedon present? No
Is the soil: Mottled? Yes
Gleyed? No
Matrix color: 10 YR 4/4
Mottle colors:
Other hydric soil indicators: None
Is the hydric soil criterion met? No
Rationale: SOILS CHROMATIC CRITERIA NOT MET

HYDROLOGY

Is the ground surface inundated? No
Surface water depth:
Is the soil saturated? No
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? No
Rationale:
NO OBSERVED EVIDENCE

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? No
Rationale for jurisdictional decision: ALL THREE CRITERIA NOT MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

SW 1-u

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart   Date: 7/2/2004
Project/Site: MAH-80   State: Ohio   County: Mahoning
Applicant/Owner: ODOT   Plant Community #/Name:
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Pinus sylvestris*	UPL	T-100	11.			
2.	*Toxicodendron radicans*	FAC	H-100	12.			
3.				13.			
4.				14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 0%
Is the vegetation criterion met? No
Rationale: LESS THAN 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Wayland   Subgroup: silt loam
Is the soil on the hydric soils list? Yes
Is the soil a Histosol? No   Histic epipedon present? No
Is the soil: Mottled? Yes   Gleyed? No
Matrix color: 10 YR 4/4   Mottle colors:
Other hydric soil indicators: None
Is the hydric soil criterion met? No
Rationale: SOILS CHROMATIC CRITERIA NOT MET

HYDROLOGY

Is the ground surface inundated? No   Surface water depth:
Is the soil saturated? No
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? No
Rationale:
NO OBSERVED EVIDENCE

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? No
Rationale for jurisdictional decision: ALL THREE CRITERIA NOT MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

ms consultants, inc.

SW-3 u
PEM

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart   Date: 7/2/2004
Project/Site: MAH-80   State: Ohio   County: Mahoning
Applicant/Owner: ODOT   Plant Community #/Name:
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Typha latifolia*	OBL	H-100	11.			
2.				12.			
3.				13.			
4.				14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: **100%**
Is the vegetation criterion met? **Yes**
Rationale: OVER 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Geeburg   Subgroup: silt loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No   Histic epipedon present? No
Is the soil: Mottled? Yes   Gleyed? No
Matrix color: 10 YR 4/1   Mottle colors: 10 YR 4/6
Other hydric soil indicators: None
Is the hydric soil criterion met? **Yes**
Rationale: SOIL CHROMATIC CRITERIA MET

HYDROLOGY

Is the ground surface inundated? Yes   Surface water depth: 8"
Is the soil saturated? Yes
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? **Yes**
Rationale:
OBSERVED HYDROLOGY

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? **Yes**
Rationale for jurisdictional decision: ALL THREE CRITERIA MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

ms consultants, inc.

SW 3-u

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart
Date: 7/2/2004
Project/Site: MAH-80 State: Ohio
County: Mahoning
Applicant/Owner: ODOT Plant Community #/Name:
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Quercus alba*	FACU-	T-30	11.			
2.	*Pinus sylvestris*	FACU	T-30	12.			
3.	*Cornus florida*	FACU-	T-20	13.			
4.	*Acer rubrum*	FAC	T-20	14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 25%
Is the vegetation criterion met? No
Rationale: LESS THAN 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Geeburg Subgroup: silt loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No Histic epipedon present? No
Is the soil: Mottled? Yes Gleyed? No
Matrix color: 10 YR 4/4 Mottle colors:
Other hydric soil indicators: None
Is the hydric soil criterion met? No
Rationale: SOILS CHROMATIC CRITERIA NOT MET

HYDROLOGY

Is the ground surface inundated? No Surface water depth:
Is the soil saturated? No
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? No
Rationale:
NO OBSERVED EVIDENCE

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? No
Rationale for jurisdictional decision: ALL THREE CRITERIA NOT MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

ms consultants, inc.

SW A-w
PSS

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart
Date: 7/2/2004
Project/Site: MAH-80
State: Ohio
County: Mahoning
Applicant/Owner: ODOT
Plant Community #/Name:
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Quercus palustris*	FACW	T-20	11.			
2.	*Panicum rigidulum*	FACW+	H-40	12.			
3.	*Typha latifolia*	OBL	H-60	13.			
4.	*Cephalanthus occidentalis*	OBL	S-100	14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 100%
Is the vegetation criterion met? Yes
Rationale: OVER 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Bogart
Subgroup: loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No
Histic epipedon present? No
Is the soil: Mottled? No
Gleyed? No
Matrix color: 10 YR 6/1
Mottle colors:
Other hydric soil indicators: None
Is the hydric soil criterion met? Yes
Rationale: SOIL CHROMATIC CRITERIA MET

HYDROLOGY

Is the ground surface inundated? Yes
Surface water depth: 4"
Is the soil saturated? Yes
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? Yes
Rationale:
OBSERVED HYDROLOGY

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? Yes
Rationale for jurisdictional decision: ALL THREE CRITERIA MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

ms consultants, inc.

SW A-w

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart
Date: 7/2/2004
Project/Site: MAH-80 State: Ohio County: Mahoning
Applicant/Owner: ODOT Plant Community #/Name:
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Quercus palustris*	FACW	T-100	11.			
2.	*Typha latifolia*	OBL	H-100	12.			
3.	*Cephalanthus occidentalis*	OBL	S-100	13.			
4.				14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 100%
Is the vegetation criterion met? Yes
Rationale: OVER 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Bogart
Subgroup: loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No
Histic epipedon present? No
Is the soil: Mottled? Yes
Gleyed? No
Matrix color: 10 YR 6/1
Mottle colors:
Other hydric soil indicators: None
Is the hydric soil criterion met? Yes
Rationale: SOIL CHROMATIC CRITERIA MET

HYDROLOGY

Is the ground surface inundated? Yes
Surface water depth: 2-6"
Is the soil saturated? yes
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? Yes
Rationale:
OBSERVED HYDROLOGY

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? Yes
Rationale for jurisdictional decision: ALL THREE CRITERIA MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

SW AA-w
PEM

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart
Date: 7/2/2004
Project/Site: MAH-80
State: Ohio
County: Mahoning
Applicant/Owner: ODOT
Plant Community #/Name:

Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Phragmites australis*	FACW	H-100	11.			
2.				12.			
3.				13.			
4.				14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: **100%**
Is the vegetation criterion met? Yes
Rationale: OVER 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Ellsworth
Subgroup: silt loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No
Histic epipedon present? No
Is the soil: Mottled? Yes
Gleyed? No
Matrix color: 10 YR 4/2
Mottle colors: 10 YR 5/6
Other hydric soil indicators: None
Is the hydric soil criterion met? Yes
Rationale: SOIL CHROMATIC CRITERIA MET

HYDROLOGY

Is the ground surface inundated? Yes
Surface water depth: Surface
Is the soil saturated? Yes
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? Yes
Rationale:
OBSERVED HYDROLOGY

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? Yes
Rationale for jurisdictional decision: ALL THREE CRITERIA MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

ms consultants, inc.

SW BB-u

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart   Date: 7/2/2004
Project/Site: MAH-80   State: Ohio   County: Mahoning
Applicant/Owner: ODOT   Plant Community #/Name:
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Festuca rubra*	FACU	H-60	11.			
2.	*Cisirum arvense*	FACU	H-20	12.			
3.	*Dipsacus sylvestis*	NI	H-20	13.			
4.				14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 0%
Is the vegetation criterion met? No
Rationale: LESS THAN 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Ellsworth   Subgroup: silt loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No   Histic epipedon present? No
Is the soil: Mottled? Yes   Gleyed? No
Matrix color: 10 YR 4/4   Mottle colors:
Other hydric soil indicators: None
Is the hydric soil criterion met? No
Rationale: SOILS CHROMATIC CRITERIA NOT MET

HYDROLOGY

Is the ground surface inundated? No   Surface water depth:
Is the soil saturated? No
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? No
Rationale:
NO OBSERVED EVIDENCE

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? No
Rationale for jurisdictional decision: ALL THREE CRITERIA NOT MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

ms consultants, inc.

SE 1 -w
PEM

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart
Date: 6/30/2004
Project/Site: MAH-80
State: Ohio
County: Mahoning
Applicant/Owner: ODOT
Plant Community #/Name:

Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Rosa palustris*	OBL	S-100	11.			
2.	*Mysotis scirpoides*	OBL	H-30	12.			
3.	*Onoclea sensibilis*	OBL	H-70	13.			
4.				14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 100%
Is the vegetation criterion met? Yes
Rationale: OVER 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Geeburg
Subgroup: silty clay loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No
Histic epipedon present? No
Is the soil: Mottled? Yes
Gleyed? No
Matrix color: 10 YR 5/2
Mottle colors: 10 YR 4/6
Other hydric soil indicators: none
Is the hydric soil criterion met? Yes
Rationale: SOIL CHROMATIC CRITERIA MET

HYDROLOGY

Is the ground surface inundated? Yes
Surface water depth: 2"
Is the soil saturated? Yes
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? Yes
Rationale: OBSERVED HYDROLOGY

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? Yes
Rationale for jurisdictional decision: ALL THREE CRITERIA MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

ms consultants, inc.

SE 1-u

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart
Date: 6/30/2004
Project/Site: MAH-80
State: Ohio
County: Mahoning
Applicant/Owner: ODOT
Plant Community #/Name:

Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain) ______

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain) ______

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Festuca rubra*	FACU	H-40	11.			
2.	*Daucus carota*	UPL	H-20	12.			
3.	*Achillea millefoium*	FACU	H-20	13.			
4.	*Plantago lanceolata*	UPL	H-20	14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 0%
Is the vegetation criterion met? No
Rationale: LESS THAN 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Geeburg
Subgroup: silty clay loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No
Histic epipedon present? No
Is the soil: Mottled? Yes
Gleyed? No
Matrix color: 10 YR 5/2
Mottle colors: 10 YR 4/6
Other hydric soil indicators: None
Is the hydric soil criterion met? No
Rationale: SOILS CHROMATIC CRITERIA NOT MET

HYDROLOGY

Is the ground surface inundated? No
Surface water depth:
Is the soil saturated? No
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? No
Rationale:
NO OBSERVED EVIDENCE

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? No
Rationale for jurisdictional decision: ALL THREE CRITERIA NOT MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

ms consultants, inc.

SE 2.3 - w
PEM

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart
Date: 6/30/2004
Project/Site: MAH-80
State: Ohio
County: Mahoning
Applicant/Owner: ODOT
Plant Community #/Name:
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Salix nigra*	FACW+	S-100	11.			
2.	*Typha angustifolia*	OBL	H-80	12.			
3.	*Scirpus validus*	OBL	H-20	13.			
4.				14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 100%
Is the vegetation criterion met? Yes
Rationale: OVER 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Chili
Subgroup: loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No
Histic epipedon present? No
Is the soil: Mottled? Yes
Gleyed? No
Matrix color: 10 YR 5/2
Mottle colors: 10 YR 4/6
Other hydric soil indicators: None
Is the hydric soil criterion met? Yes
Rationale: SOIL CHROMATIC CRITERIA MET

HYDROLOGY

Is the ground surface inundated? Yes
Surface water depth: Surface
Is the soil saturated? Yes
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? Yes
Rationale:
OBSERVED HYDROLOGY

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? Yes
Rationale for jurisdictional decision: ALL THREE CRITERIA MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

SE 2.3- u

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart
Date: 6/30/2004
Project/Site: MAH-80 State: Ohio County: Mahoning
Applicant/Owner: ODOT Plant Community #/Name:
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Festuca rubra*	FACU	H-40	11.			
2.	*Daucus carota*	UPL	H-20	12.			
3.	*Achillea millefoium*	FACU	H-20	13.			
4.	*Plantago lanceolata*	UPL	H-20	14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 0%
Is the vegetation criterion met? No
Rationale: LESS THAN 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Chili
Subgroup: loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No
Histic epipedon present? No
Is the soil: Mottled? Yes
Gleyed? No
Matrix color: 10 YR 5/2
Mottle colors: 10 YR 4/6
Other hydric soil indicators: None
Is the hydric soil criterion met? No
Rationale: SOILS CHROMATIC CRITERIA NOT MET

HYDROLOGY

Is the ground surface inundated? No
Surface water depth:
Is the soil saturated? No
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? No
Rationale:
NO OBSERVED EVIDENCE

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? No
Rationale for jurisdictional decision: ALL THREE CRITERIA NOT MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

ms consultants, inc.

SE 5 - w
PEM

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart
Date: 6/30/2004
Project/Site: MAH-80
State: Ohio
County: Mahoning
Applicant/Owner: ODOT
Plant Community #/Name:

Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Quercus palustris*	FACW	T-100	11.			
2.	*Cornus amomum*	FACW	S-100	12.			
3.	*Phalaris arundinacea*	FACW+	H-70	13.			
4.	*Scirpus cyperinus*	FACW+	H-30	14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 100%
Is the vegetation criterion met? Yes
Rationale: OVER 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Remsen
Subgroup: silt loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No
Histic epipedon present? No
Is the soil: Mottled? Yes
Gleyed? No
Matrix color: 10 YR 6/1
Mottle colors:
Other hydric soil indicators: None
Is the hydric soil criterion met? Yes
Rationale: SOIL CHROMATIC CRITERIA MET

HYDROLOGY

Is the ground surface inundated? Yes
Surface water depth: 0-36"
Is the soil saturated? Yes
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? Yes
Rationale:
OBSERVED HYDROLOGY

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? Yes
Rationale for jurisdictional decision: ALL THREE CRITERIA MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

ms consultants, inc.

SE 5- u

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart
Date: 6/30/2004
Project/Site: MAH-80
State: Ohio
County: Mahoning
Applicant/Owner: ODOT
Plant Community #/Name:
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Quercus alba*	FACU-	T-30	11.			
2.	*Pinus sylvestris*	FACU	T-30	12.			
3.	*Cornus florida*	FACU-	T-20	13.			
4.	*Acer rubrum*	FAC	T-20	14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 25%
Is the vegetation criterion met? No
Rationale: LESS THAN 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Remsen
Subgroup: silt loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No
Histic epipedon present? No
Is the soil: Mottled? No
Gleyed? No
Matrix color: 10 YR 4/4
Mottle colors:
Other hydric soil indicators: None
Is the hydric soil criterion met? No
Rationale: SOILS CHROMATIC CRITERIA NOT MET

HYDROLOGY

Is the ground surface inundated? No
Surface water depth:
Is the soil saturated? No
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? No
Rationale:
NO OBSERVED EVIDENCE

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? No
Rationale for jurisdictional decision: ALL THREE CRITERIA NOT MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

ms consultants, inc.

SE 6 - w
PFO

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart
Date: 6/30/2004
Project/Site: MAH-80
State: Ohio
County: Mahoning
Applicant/Owner: ODOT
Plant Community #/Name:
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Quercus palustris*	FACW	T-30	11.			
2.	*Salix nigra*	FACW+	S-40	12.			
3.	*Cephanthus occidentalis*	OBL	S-60	13.			
4.				14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 100%
Is the vegetation criterion met? Yes
Rationale: OVER 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Remsen
Subgroup: silt loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No
Histic epipedon present? No
Is the soil: Mottled?
Gleyed? No
Matrix color:
Mottle colors:
Other hydric soil indicators: Standing water
Is the hydric soil criterion met? Yes
Rationale: SOILS CHROMATIC CRITERIA ASSUMED WITH STANDING WATER

HYDROLOGY

Is the ground surface inundated? Yes
Surface water depth: 0"- 36"
Is the soil saturated? Yes
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? Yes
Rationale:
OBSERVED HYDROLOGY

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? Yes
Rationale for jurisdictional decision: ALL THREE CRITERIA MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

ms consultants, inc.

SE 8- u

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart Date: 6/30/2004
Project/Site: MAH-80 State: Ohio County: Mahoning
Applicant/Owner: ODOT Plant Community #/Name:
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Quercus alba*	FACU-	T-30	11.			
2.	*Pinus sylvestris*	FACU	T-30	12.			
3.	*Cornus florida*	FACU-	T-20	13.			
4.	*Acer rubrum*	FAC	T-20	14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC 25%
Is the vegetation criterion met? No
Rationale: LESS THAN 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Remsen Subgroup: silt loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No Histic epipedon present? No
Is the soil: Mottled? Yes Gleyed? No
Matrix color: 10 YR 4/4 Mottle colors:
Other hydric soil indicators: None
Is the hydric soil criterion met? No
Rationale: SOILS CHROMATIC CRITERIA NOT MET

HYDROLOGY

Is the ground surface inundated? No Surface water depth:
Is the soil saturated? No
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? No
Rationale:
NO OBSERVED EVIDENCE

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? No
Rationale for jurisdictional decision: ALL THREE CRITERIA NOT MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

ms consultants, inc.

SE 9 - w
PFO

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart   Date: 6/30/2004
Project/Site: MAH-80   State: Ohio   County: Mahoning
Applicant/Owner: ODOT   Plant Community #/Name:
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Nyssa sylvatica*	FACW+	T-40	11.			
2.	*Acer saccharinum*	FACW	T-60	12.			
3.	*Cephalanthus occidentalis*	OBL	S-100	13.			
4.	*Phalaris arundinacea*	FACW-	H-100	14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 100%
Is the vegetation criterion met? Yes
Rationale: OVER 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Remsen   Subgroup: silt loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No   Histic epipedon present? No
Is the soil: Mottled? Yes   Gleyed? No
Matrix color: Mottle colors:
Other hydric soil indicators: None
Is the hydric soil criterion met? Yes
Rationale: SOILS ASSUMED WITH INDUNDATED WATER CONDITIONS

HYDROLOGY

Is the ground surface inundated? Yes   Surface water depth: 2"
Is the soil saturated? Yes
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? Yes
Rationale:
OBSERVED HYDROLOGY

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? Yes
Rationale for jurisdictional decision: ALL THREE CRITERIA MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

ms consultants, inc.

SE 9- u

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart Date: 6/30/2004
Project/Site: MAH-80 State: Ohio County: Mahoning
Applicant/Owner: ODOT Plant Community #/Name:
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Quercus alba*	FACU-	T-30	11.			
2.	*Pinus sylvestris*	FACU	T-20	12.			
3.	*Cornus florida*	FACU-	T-30	13.			
4.	*Acer rubrum*	FAC	T-20	14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 25%
Is the vegetation criterion met? No
Rationale: LESS THAN 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Remsen Subgroup: silt loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No Histic epipedon present? No
Is the soil: Mottled? No Gleyed? No
Matrix color: 10 YR 4/4 Mottle colors:
Other hydric soil indicators: None
Is the hydric soil criterion met? No
Rationale: SOILS CHROMATIC CRITERIA NOT MET

HYDROLOGY

Is the ground surface inundated? No Surface water depth:
Is the soil saturated? No
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? No
Rationale:
NO OBSERVED EVIDENCE

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? No
Rationale for jurisdictional decision: ALL THREE CRITERIA NOT MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

SE 10 - w
PEM

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart Date: 6/30/2004
Project/Site: MAH-80 State: Ohio County: Mahoning
Applicant/Owner: ODOT Plant Community #/Name:
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Leersia orizoides*	OBL	H-30	11.			
2.	*Scirpus atrovirens*	OBL	H-30	12.			
3.	*Potogamon spp.*	OBL	H-40	13.			
4.				14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 100%
Is the vegetation criterion met? Yes
Rationale: OVER 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Remsen Subgroup: silt loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No Histic epipedon present? No
Is the soil: Mottled? Yes Gleyed? No
Matrix color: 10 YR 6/1 Mottle colors:
Other hydric soil indicators: None
Is the hydric soil criterion met? Yes
Rationale: SOIL CHROMATIC CRITERIA MET

HYDROLOGY

Is the ground surface inundated? Yes Surface water depth: 2"
Is the soil saturated? Yes
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? Yes
Rationale:
OBSERVED HYDROLOGY

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? Yes
Rationale for jurisdictional decision: ALL THREE CRITERIA MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

SE A -u

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart
Date: 7/21/2004
Project/Site: MAH-80
State: Ohio
County: Mahoning
Applicant/Owner: ODOT
Plant Community #/Name:

Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Toxicodendron radicans*	FAC	H-60	11.			
2.	*Solidago candensis*	FACU	H-20	12.			
3.	*Aster vimineus*	FAC	H-20	13.			
4.	*Ulmus americana*	FACW+	T-100	14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 50%
Is the vegetation criterion met? No
Rationale: NOT MORE THAN 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Remson
Subgroup: silt loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No
Histic epipedon present? No
Is the soil: Mottled? Yes
Gleyed? No
Matrix color: 10 YR 4/4
Mottle colors:
Other hydric soil indicators: None
Is the hydric soil criterion met? No
Rationale: SOILS CHROMATIC CRITERIA NOT MET

HYDROLOGY

Is the ground surface inundated? No
Surface water depth:
Is the soil saturated? No
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? No
Rationale:
NO OBSERVED EVIDENCE

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? No
Rationale for jurisdictional decision: ALL THREE CRITERIA NOT MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

SE- B w
PEM

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart   Date: 7/21/2004
Project/Site: MAH-80   State: Ohio   County: Mahoning
Applicant/Owner: ODOT   Plant Community #/Name:
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Juncus effusus*	FACW+	H-50	11.			
2.	*Carex hystericina*	OBL	H-30	12.			
3.	*Scirpius cyperinus*	FACW+	H-20	13.			
4.				14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 100%
Is the vegetation criterion met? Yes
Rationale: OVER 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Remson   Subgroup: silt loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No   Histic epipedon present? No
Is the soil: Mottled? Yes   Gleyed? No
Matrix color: 10 YR 5/1   Mottle colors: 10 YR 5/6
Other hydric soil indicators: None
Is the hydric soil criterion met? Yes
Rationale: SOIL CHROMATIC CRITERIA MET

HYDROLOGY

Is the ground surface inundated? No   Surface water depth:
Is the soil saturated? Yes
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? Yes
Rationale:
NO OBSERVED EVIDENCE

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland?
Rationale for jurisdictional decision: ALL THREE CRITERIA NOT MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart
Date: 7/21/2004
Project/Site: MAH-80
State: Ohio
County: Mahoning
Applicant/Owner: ODOT
Plant Community #/Name:

Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Festuca rubra*	FACU	H-40	11.			
2.	*Soidago canadensis*	FACU	H-20	12.			
3.	*Toxicodendron radicans*	FAC	H-30	13.			
4.	*Ulmus americana*	FACW+	T-100	14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 25%
Is the vegetation criterion met? No
Rationale: LESS THAN 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Loundonville
Subgroup: loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No
Histic epipedon present? No
Is the soil: Mottled? Yes
Gleyed? No
Matrix color: 10 YR 4/4
Mottle colors:
Other hydric soil indicators: None
Is the hydric soil criterion met?
Rationale: SOILS CHROMATIC CRITERIA NOT MET

HYDROLOGY

Is the ground surface inundated? No
Surface water depth:
Is the soil saturated? No
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? No
Rationale:
NO OBSERVED EVIDENCE

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? No
Rationale for jurisdictional decision: ALL THREE CRITERIA NOT MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

B-w
PEM/PSS

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart   Date: 7/27/2004
Project/Site: MAH-80   State: Ohio   County: Mahoning
Applicant/Owner: ODOT   Plant Community #/Name:
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Typha angustifolia*	OBL	H-50	11.			
2.	*Fraxinus pensylvanica*	FACW	T-30	12.			
3.	*Juncus effusus*	FACW+	H-50	13.			
4.	*Ulmus americana*	FACW+	T-70	14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 100%
Is the vegetation criterion met? Yes
Rationale: OVER 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Trumbull   Subgroup: silt loam
Is the soil on the hydric soils list? Yes
Is the soil a Histosol? No   Histic epipedon present? No
Is the soil: Mottled? Yes   Gleyed? No
Matrix color: 10 YR 4/2   Mottle colors: 10 YR 4/6
Other hydric soil indicators: none
Is the hydric soil criterion met? Yes
Rationale: SOIL CHROMATIC CRITERIA MET

HYDROLOGY

Is the ground surface inundated? Yes   Surface water depth: surface
Is the soil saturated? Yes
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? Yes
Rationale:
OBSERVED HYDROLOGY

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? Yes
Rationale for jurisdictional decision: ALL THREE CRITERIA MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

B-u

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart
Date: 7/27/2004
Project/Site: MAH-80
State: Ohio
County: Mahoning
Applicant/Owner: ODOT
Plant Community #/Name:
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Prunus serotina*	FACU-	T-100	11.			
2.	*Impatiens capensis*	FACW	H-40	12.			
3.	*Ligustrum vulgare*	FACU	S-40	13.			
4.	*Fraxinus pennsylvanica*	FACW	S-40	14.			
5.	*Sassafras albidum*	FACU-	S-20	15.			
6.	*Parthenocissus quinquefolia*	FACU	H-60	16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW., and/or FAC: 0%
Is the vegetation criterion met? No
Rationale: LESS THAN 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Trumbull
Subgroup: silt loam
Is the soil on the hydric soils list Yes
Is the soil a Histosol? No
Histic epipedon present? No
Is the soil: Mottled? Yes
Gleyed? No
Matrix color: 10YR 4/4
Mottle colors:
Other hydric soil indicators: None
Is the hydric soil criterion met? No
Rationale: SOILS CHROMATIC CRITERIA NOT MET

HYDROLOGY

Is the ground surface inundated? No
Surface water depth:
Is the soil saturated? No
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? No
Rationale:
NO OBSERVED EVIDENCE

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? No
Rationale for jurisdictional decision: ALL THREE CRITERIA NOT MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

C-w
PEM

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart
Date: 7/27/2004
Project/Site: MAH-80
State: Ohio
County: Mahoning
Applicant/Owner: ODOT
Plant Community #/Name:
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Typha angustifolia*	OBL	H-10	11.			
2.	*Carex squarrosa*	FACW	H-20	12.			
3.	*Carex vulpinoidea*	OBL	H-20	13.			
4.	*Asclepias incarnata*	OBL	H-40	14.			
5.	*Scirpus cyperinus*	FACW+	H-20	15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 100%
Is the vegetation criterion met? Yes
Rationale: OVER 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Trumbull
Subgroup: silt loam
Is the soil on the hydric soils list? Yes
Is the soil a Histosol? No
Histic epipedon present? No
Is the soil: Mottled? Yes
Gleyed? No
Matrix color: 10 YR 5/2
Mottle colors: 10 YR 4/6
Other hydric soil indicators: None
Is the hydric soil criterion met? Yes
Rationale: SOIL CHROMATIC CRITERIA MET WITH PRESENCE OF MOTTLES

HYDROLOGY

Is the ground surface inundated? Yes
Surface water depth: Surface
Is the soil saturated? Yes
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? Yes
Rationale:
OBSERVED HYDROLOGY

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? Yes
Rationale for jurisdictional decision: ALL THREE CRITERIA MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

D-u
PEM

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart Date: 7/27/2004
Project/Site: MAH-80 State: Ohio County: Mahoning
Applicant/Owner: ODOT Plant Community #/Name:
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain) ______

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain) ______

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Festuca rubra*	FACU	H-60	11.			
2.	*Cisirum arvense*	FACU	H-20	12.			
3.	*Achillea millefolium*	FACU	H-20	13.			
4.				14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 0%
Is the vegetation criterion met?
Rationale: LESS THAN 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Mahoning Subgroup: silt loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No Histic epipedon present? No
Is the soil: Mottled? Yes Gleyed? No
Matrix color: Roadway fill Mottle colors:
Other hydric soil indicators:
Is the hydric soil criterion met?
Rationale: SOILS CHROMATIC CRITERIA NOT MET

HYDROLOGY

Is the ground surface inundated? No Surface water depth:
Is the soil saturated? No
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.

Is the hydrology criterion met? No
Rationale:
NO OBSERVED EVIDENCE

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? No
Rationale for jurisdictional decision: ALL THREE CRITERIA NOT MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

E-w
PEM

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart — Date: 7/27/2004
Project/Site: MAH-80 — State: Ohio — County: Mahoning
Applicant/Owner: ODOT — Plant Community #/Name:
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Typha angustifolia*	OBL	H-60	11.			
2.	*Euthamia graminifolia*	FAC	H-20	12.			
3.	*Solanum dulcamara*	UPL	H-20	13.			
4.				14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 67%
Is the vegetation criterion met? Yes
Rationale: OVER 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Mahoning — Subgroup: silt loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No — Histic epipedon present? No
Is the soil: Mottled? Yes — Gleyed? No
Matrix color: 10 YR 5/1 — Mottle colors: 10 YR 4/6
Other hydric soil indicators: none
Is the hydric soil criterion met? Yes
Rationale: SOIL CHROMATIC CRITERIA MET

HYDROLOGY

Is the ground surface inundated? No — Surface water depth:
Is the soil saturated? Yes
Depth to free-standing water in pit/soil probe hole: 6"
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? Yes
Rationale:
OBSERVED HYDROLOGY

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? Yes
Rationale for jurisdictional decision: ALL THREE CRITERIA MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

ms consultants, inc.

E- u

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart
Date: 7/27/2004
Project/Site: MAH-80
State: Ohio
County: Mahoning
Applicant/Owner: ODOT
Plant Community #/Name:
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Festuca rubra*	FACU	H-100	11.			
2.				12.			
3.				13.			
4.				14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 0%
Is the vegetation criterion met? No
Rationale: LESS THAN 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Mahoning
Subgroup: silt loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No
Histic epipedon present? No
Is the soil: Mottled? Yes
Gleyed? No
Matrix color: No
Mottle colors:
Other hydric soil indicators: None
Is the hydric soil criterion met? No
Rationale: SOILS CHROMATIC CRITERIA NOT MET

HYDROLOGY

Is the ground surface inundated? No
Surface water depth:
Is the soil saturated? No
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? No
Rationale:
NO OBSERVED EVIDENCE

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? No
Rationale for jurisdictional decision: ALL THREE CRITERIA NOT MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

ms consultants, inc.

F-w
PEM

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart
Date: 7/27/2004
Project/Site: MAH-80 State: Ohio
County: Mahoning
Applicant/Owner: ODOT Plant Community #/Name:
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Phragmites australis*	FACW	H-100	11.			
2.				12.			
3.				13.			
4.				14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 100%
Is the vegetation criterion met? Yes
Rationale: OVER 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Loundonville
Subgroup: loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No
Histic epipedon present? No
Is the soil: Mottled? Yes
Gleyed? No
Matrix color: 10 YR 5/1
Mottle colors: 10 YR 5/6
Other hydric soil indicators: none
Is the hydric soil criterion met? Yes
Rationale: SOIL CHROMATIC CRITERIA MET

HYDROLOGY

Is the ground surface inundated? Yes
Surface water depth:
Is the soil saturated? Yes
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? Yes
Rationale:
OBSERVED HYDROLOGY

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? Yes
Rationale for jurisdictional decision: ALL THREE CRITERIA MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

ms consultants, inc.

F-u

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart
Date: 7/27/2004
Project/Site: MAH-80
State: Ohio
County: Mahoning
Applicant/Owner: ODOT
Plant Community #/Name:
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Festuca rubra*	FACU	H-80	11.			
2.	*Achillea millefolium*	FACU	H-20	12.			
3.				13.			
4.				14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 0%
Is the vegetation criterion met? No
Rationale: LESS THAN 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Loundonville
Subgroup: loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No
Histic epipedon present? No
Is the soil: Mottled? Yes
Gleyed? No
Matrix color: Roadway fill
Mottle colors:
Other hydric soil indicators: None
Is the hydric soil criterion met? No
Rationale: SOILS CHROMATIC CRITERIA NOT MET

HYDROLOGY

Is the ground surface inundated? No
Surface water depth:
Is the soil saturated? No
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
none
Is the hydrology criterion met? No
Rationale:
NO OBSERVED EVIDENCE

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? No
Rationale for jurisdictional decision: ALL THREE CRITERIA NOT MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

ms consultants, inc.

G- w
PEM

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart
Date: 7/27/2004
Project/Site: MAH-80
State: Ohio
County: Mahoning
Applicant/Owner: ODOT
Plant Community #/Name:
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Phragmites australis*	FACW	H-60	11.			
2.	*Typha angustifolia*	OBL	H-40	12.			
3.				13.			
4.				14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 100%
Is the vegetation criterion met? Yes
Rationale: OVER 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Mahoning
Subgroup: silt loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No
Histic epipedon present? No
Is the soil: Mottled? Yes
Gleyed? No
Matrix color: 10 YR 5/2
Mottle colors: 10 YR 5/6
Other hydric soil indicators: None
Is the hydric soil criterion met? Yes
Rationale: SOIL CHROMATIC CRITERIA MET WITH PRESENCE OF MOTTLES

HYDROLOGY

Is the ground surface inundated? No
Surface water depth:
Is the soil saturated? Yes
Depth to free-standing water in pit/soil probe hole: 8"
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? Yes
Rationale:
OBSERVED HYDROLOGY

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? Yes
Rationale for jurisdictional decision: ALL THREE CRITERIA MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

H-u

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart   Date: 7/27/2004
Project/Site: MAH-80   State: Ohio   County: Mahoning
Applicant/Owner: ODOT   Plant Community #/Name:
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Daucus carota*	UPL	H-30	11.			
2.	*Festuca rubra*	FACU	H-40	12.			
3.	*Trifolium repens*	FACU-	H-30	13.			
4.				14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 0%
Is the vegetation criterion met? No
Rationale: LESS THAN 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Mahoning   Subgroup: silt loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No   Histic epipedon present? No
Is the soil: Mottled? Yes   Gleyed? No
Matrix color: 10 YR 4/4   Mottle colors:
Other hydric soil indicators: None
Is the hydric soil criterion met? No
Rationale: SOILS CHROMATIC CRITERIA NOT MET

HYDROLOGY

Is the ground surface inundated? No   Surface water depth:
Is the soil saturated? No
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? No
Rationale:
NO OBSERVED EVIDENCE

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? No
Rationale for jurisdictional decision: ALL THREE CRITERIA NOT MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

I-w

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart Date: 7/27/2004
Project/Site: MAH-80 State: Ohio County: Mahoning
Applicant/Owner: ODOT Plant Community #/Name:
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Typha angustifolia*	OBL	H-40	11.			
2.	*Phragmites australis*	FACW	H-60	12.			
3.				13.			
4.				14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 100%
Is the vegetation criterion met? Yes
Rationale: OVER 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Loundonville Subgroup: loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No Histic epipedon present? No
Is the soil: Mottled? Yes Gleyed? No
Matrix color: 10 YR 5/2 Mottle colors: 10 YR 4/6
Other hydric soil indicators: None
Is the hydric soil criterion met? Yes
Rationale: SOIL CHROMATIC CRITERIA MET

HYDROLOGY

Is the ground surface inundated? Yes Surface water depth: Surface
Is the soil saturated? Yes
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
None
Is the hydrology criterion met? Yes
Rationale:
OBSERVED HYDROLOGY

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? Yes
Rationale for jurisdictional decision: ALL THREE CRITERIA MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

ms consultants, inc.

I-u

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD

Field Investigator(s): Mark Fedosick / Milton Lenhart
Date: 7/27/2004
Project/Site: MAH-80
State: Ohio
County: Mahoning
Applicant/Owner: ODOT
Plant Community #/Name:
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at this plant community? (if no, explain)

Has the vegetation, soils, and/or hydrology been significantly disturbed? (if yes, explain)

VEGETATION

	Dominant Plant Species	Indicator Status	Stratum %		Dominant Plant Species	Indicator Status	Stratum %
1.	*Festuca rubra*	FACU	H-40	11.			
2.	*Achillea millefolium*	FACU	H-30	12.			
3.	*Trifolium repens*	FACU-	H-20	13.			
4.	*Plantago lanceolata*	UPL	H-20	14.			
5.				15.			
6.				16.			
7.				17.			
8.				18.			
9.				19.			
10.				20.			

Percent of dominant species that are OBL, FACW, and/or FAC: 0%
Is the vegetation criterion met? No
Rationale: LESS THAN 50% HYDROPHYTIC VEGETATION

SOILS

Series/phase: Loundonville
Subgroup: loam
Is the soil on the hydric soils list? No
Is the soil a Histosol? No
Histic epipedon present? No
Is the soil: Mottled? Yes
Gleyed? No
Matrix color: 10 YR 4/4
Mottle colors:
Other hydric soil indicators: None
Is the hydric soil criterion met? No
Rationale: SOILS CHROMATIC CRITERIA NOT MET

HYDROLOGY

Is the ground surface inundated? No
Surface water depth:
Is the soil saturated? No
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.

Is the hydrology criterion met? No
Rationale:
NO OBSERVED EVIDENCE

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the community a wetland? No
Rationale for jurisdictional decision: ALL THREE CRITERIA NOT MET

This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.

Section 404 Department of Army Permit and Section 401 Water Quality Certification

APPENDIX F

Ohio EPA ORAM v. 5.0 Data Forms

Site: MAH-80-0.97 WL NW-1	Rater(s): MGL MAF	Date: 7/2/04

1	1
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [ ] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [1] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

8	9
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [4] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [7] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- 4 [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [1] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

6	15
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [1] Precipitation (1)
- [ ] Seasonal/Intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100 year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g. forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [1] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [ ] Seasonally inundated (2)
- [1] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [✓] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [✓] road bed/RR track
- [ ] dredging
- [ ] other______

9	24
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [2] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [4] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [✓] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

24
subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Site: NW-1	Rater(s):	Date: 7/2/04

24

subtotal first page

24 | 0

max 10 pts. subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Prairies (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

5 | 29

max 20 pts. subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [3] Emergent
- [ ] Shrub
- [2] Forest
- [ ] Mudflats
- [ ] Open water
- [ ] Other___________

6b. horizontal (plan view) Interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [1] Low (1)
- [ ] None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [1] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- [1] Vegetated hummucks/tussucks
- [0] Coarse woody debris >15cm (6in)
- [0] Standing dead >25cm (10in) dbh
- [0] Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

29 **GRAND TOTAL (max 100 pts)**

Cat. 1

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

Site: MAH-80-0.97 WL NW-2 | Rater(s): MGL MAF | Date: 7/2/04

3 | 3
max 6 pts. | subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [3] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [ ] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

12 | 15
max 14 pts. | subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [7] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [7] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- 5 [ ] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [3] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [ ] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

12 | 27
max 30 pts. | subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [1] Precipitation (1)
- [ ] Seasonal/Intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100 year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [1] Part of wetland/upland (e.g. forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [1] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [2] Seasonally inundated (2)
- [ ] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [7] Recovered (7)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [✓] road bed/RR track
- [ ] dredging
- [ ] other________

16 | 43
max 20 pts. | subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [3] Recovered (3)
- [ ] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [7] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [6] Recovered (6)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [✓] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

43
subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Site: NW-2	Rater(s):	Date: 7/2/04

43
subtotal first page

5	48
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- 5 Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Prairies (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

11	59
max 20 pts.	subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- 2 Emergent
- 1 Shrub
- 2 Forest
- 1 Mudflats
- [ ] Open water
- [ ] Other_______________

6b. horizontal (plan view) Interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- 3 Moderate (3)
- [ ] Moderately low (2)
- [ ] Low (1)
- [ ] None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- [ ] Extensive >75% cover (-5)
- -3 Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [ ] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- 1 Vegetated hummucks/tussucks
- 1 Coarse woody debris >15cm (6in)
- 2 Standing dead >25cm (10in) dbh
- 1 Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

59 **GRAND TOTAL (max 100 pts)** 2

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

last revised 1 February 2001 jjm

Site: MAH-80-0.97 WL NW-A	Rater(s): MGL MAF	Date: 1/2/04

1	1
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [ ] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [1] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

3	4
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [1] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- 2 [3] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [1] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

18	22
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [1] Precipitation (1)
- [ ] Seasonal/Intermittent surface water (3)
- [5] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [1] 100 year floodplain (1)
- [1] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g. forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [3] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [ ] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [4] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [ ] Seasonally inundated (2)
- [ ] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [✓] filling/grading
- [✓] road bed/RR track
- [ ] dredging
- [ ] other________________

6	28
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [ ] Recovering (2)
- [1] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [4] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [ ] Recovering (3)
- [1] Recent or no recovery (1)

Check all disturbances observed

- [✓] mowing
- [ ] grazing
- [✓] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

28
subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Site: NW-A	Rater(s): MGL MAF	Date: 7/2/04

28
sublotal first page

0	28
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Prairies (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

~~#~~2	30
max 20 pts.	subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- [~~1~~] Aquatic bed
- [1] Emergent
- [ ] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] Open water
- [ ] Other____________

6b. horizontal (plan view) Interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [1] Low (1)
- [ ] None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [0] Nearly absent <5% cover (0)
- [ ] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- [0] Vegetated hummucks/tussucks
- [0] Coarse woody debris >15cm (6in)
- [0] Standing dead >25cm (10in) dbh
- [0] Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

30 **GRAND TOTAL (max 100 pts)**

1-2 gray zone

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

last revised 1 February 2001 jjm

Site: MAH-80-097 NLNW-C	Rater(s): MGL MAF	Date: 1/2/04

0	0
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [ ] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [0] <0.1 acres (0.04ha) (0 pts)

5	5
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [1] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

4
- [7] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [1] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

8	13
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [1] Precipitation (1)
- [ ] Seasonal/Intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [1] 100 year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g. forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [1] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [2] Seasonally inundated (2)
- [ ] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [x] road bed/RR track
- [ ] dredging
- [ ] other______

9	22
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [2] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [4] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [x] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

22
subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Site: NW-C	Rater(s): MGL MAF	Date: 7/2/04

22 subtotal first page

22 | 0 max 10 pts. subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Prairies (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

26 | 4 max 20 pts. subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [2] Emergent
- [ ] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] Open water
- [ ] Other__________________

6b. horizontal (plan view) Interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [1] Low (1)
- [ ] None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [1] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- [0] Vegetated hummucks/tussucks
- [0] Coarse woody debris >15cm (6in)
- [0] Standing dead >25cm (10in) dbh
- [0] Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

26 **GRAND TOTAL (max 100 pts)**

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

Site: MAH-80-0.97 WL NW-D	Rater(s): MGL MAF	Date: 7/2/04

0	0
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [ ] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [0] <0.1 acres (0.04ha) (0 pts)

8	8
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [4] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

4
- [7] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [1] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

7	15
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [1] Precipitation (1)
- [ ] Seasonal/Intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100 year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [1] Part of wetland/upland (e.g. forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [1] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [ ] Seasonally inundated (2)
- [1] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [3] Recovering (3)
- [✓] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [✓] road bed/RR track
- [ ] dredging
- [ ] other____________________

8	23
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [2] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [3] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [✓] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

23
subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Site: NW-D	Rater(s):	Date: 7/2/04

23
subtotal first page

23 | 0
max 10 pts. subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Prairies (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

4 | 27
max 20 pts. subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [x] Emergent
- [ ] Shrub
- 2 Forest
- [x] Mudflats
- [ ] Open water
- [ ] Other________________

6b. horizontal (plan view) Interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- 1 Low (1)
- [ ] None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- 1 Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- 0 Vegetated hummucks/tussucks
- 0 Coarse woody debris >15cm (6in)
- 0 Standing dead >25cm (10in) dbh
- 0 Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

27 **GRAND TOTAL (max 100 pts)**

Cat 1

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

last revised 1 February 2001 jjm

Site: MAH-80-0.97 WL NW-E	Rater(s): MGL MAF	Date: 7/21/04

0	0
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [ ] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [0] <0.1 acres (0.04ha) (0 pts)

4	4
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [1] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [5] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- 3 [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [1] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

4	8
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [1] Precipitation (1)
- [ ] Seasonal/Intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100 year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g. forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [1] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [ ] Seasonally inundated (2)
- [1] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [ ] Recovering (3)
- [1] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [✓] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] other________________

8	16
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [2] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [3] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [✓] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

16
subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Site: NW-E	Rater(s):	Date: 7/21/04

16 — subtotal first page

16 (max 10 pts.) | 0 (subtotal)

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Prairies (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

20 (max 20 pts.) | 4 (subtotal)

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

	Aquatic bed
2	Emergent
	Shrub
	Forest
	Mudflats
	Open water
	Other________________

6b. horizontal (plan view) Interspersion.
Select only one.

	High (5)
	Moderately high(4)
	Moderate (3)
	Moderately low (2)
1	Low (1)
	None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

	Extensive >75% cover (-5)
	Moderate 25-75% cover (-3)
	Sparse 5-25% cover (-1)
	Nearly absent <5% cover (0)
1	Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

0	Vegetated hummucks/tussucks
0	Coarse woody debris >15cm (6in)
0	Standing dead >25cm (10in) dbh
0	Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

20 **GRAND TOTAL (max 100 pts)**

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

Site: MAH-80-0.97 WLNW-F	Rater(s): MGL MAF	Date: 7/21/04

max 6 pts.	subtotal
0	0

Metric 1. Wetland Area (size).

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [ ] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [0] <0.1 acres (0.04ha) (0 pts)

max 14 pts.	subtotal
9	9

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [4] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

5
- [7] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [3] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [ ] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

max 30 pts.	subtotal
12	21

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [1] Precipitation (1)
- [3] Seasonal/Intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [1] 100 year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g. forest), complex (1)
- [1] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [1] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [2] Seasonally inundated (2)
- [ ] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [x] stormwater input
- [x] point source (nonstormwater)
- [x] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] other____________

max 20 pts.	subtotal
9	30

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [2] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [4] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [x] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [x] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

subtotal this page
30

ORAM v. 5.0 Field Form Quantitative Rating

Site: NW-7	Rater(s):	Date: 7/21/04

30

subtotal first page

30	0
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Prairies (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

3	33
max 20 pts.	subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

	Aquatic bed
2	Emergent
[illegible]	Shrub
	Forest
	Mudflats
	Open water
	Other

6b. horizontal (plan view) Interspersion.
Select only one.

	High (5)
	Moderately high(4)
	Moderate (3)
2	Moderately low (2)
	Low (1)
	None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

	Extensive >75% cover (-5)
-3	Moderate 25-75% cover (-3)
	Sparse 5-25% cover (-1)
	Nearly absent <5% cover (0)
	Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

	Vegetated hummucks/tussucks
1	Coarse woody debris >15cm (6in)
	Standing dead >25cm (10in) dbh
1	Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

33	**GRAND TOTAL (max 100 pts)**

1/2 GREY ZONE

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

Site: MAH-80-0.97 WL NE-1	Rater(s): MGL - MAF	Date: 2/1/04

1	1
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [ ] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [1] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

11	12
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [7] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [7] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- 4 [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [1] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

17	29
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [1] Precipitation (1)
- [ ] Seasonal/Intermittent surface water (3)
- [5] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [1] 100 year floodplain (1)
- [1] Between stream/lake and other human use (1)
- [1] Part of wetland/upland (e.g. forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 (27.6in) (3)
- [2] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [ ] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [ ] Semi- to permanently inundated/saturated (4)
- [3] Regularly inundated/saturated (3)
- [ ] Seasonally inundated (2)
- [ ] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [✓] filling/grading
- [✓] road bed/RR track
- [ ] dredging
- [ ] other____________

10	39
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [2] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [5] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [✓] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [✓] dredging
- [ ] farming
- [ ] nutrient enrichment

39
subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Site: NE-1	Rater(s):	Date: 7/1/04

39
subtotal first page

0 | 39 **Metric 5. Special Wetlands.**

max 10 pts. subtotal

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Prairies (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

6 ~~7~~ | 45 **Metric 6. Plant communities, interspersion, microtopography.**

max 20 pts. subtotal

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [2] Emergent
- [~~2~~] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] Open water
- [ ] Other________

6b. horizontal (plan view) Interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [2] Moderately low (2)
- [ ] Low (1)
- [ ] None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [1] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- [0] Vegetated hummucks/tussucks
- [1] Coarse woody debris >15cm (6in)
- [0] Standing dead >25cm (10in) dbh
- [0] Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

45 **GRAND TOTAL (max 100 pts)**

Cat. 2

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

last revised 1 February 2001 jjm

ORAM v. 5.0 Field Form Quantitative Rating

Site: MAH-80-0.97 WL NE-4	Rater(s): MGL MAF	Date: 7/1/04

1	1
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [ ] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [1] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

4	5
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [0] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [7] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [1] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

4

16	21
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [1] Precipitation (1)
- [ ] Seasonal/Intermittent surface water (3)
- [5] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [1] 100 year floodplain (1)
- [1] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g. forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [3] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [ ] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [4] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [ ] Seasonally inundated (2)
- [ ] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [ ] Recovering (3)
- [1] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [✓] filling/grading
- [✓] road bed/RR track
- [ ] dredging
- [ ] other____________________

6	27
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [ ] Recovering (2)
- [1] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [4] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [ ] Recovering (3)
- [1] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [✓] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [✓] nutrient enrichment

27
subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Site: NE-4	Rater(s):	Date: 7/1/04

21
subtotal first page

0	21
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

	Bog (10)
	Fen (10)
	Old growth forest (10)
	Mature forested wetland (5)
	Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
	Lake Erie coastal/tributary wetland-restricted hydrology (5)
	Lake Plain Sand Prairies (Oak Openings) (10)
	Relict Wet Prairies (10)
	Known occurrence state/federal threatened or endangered species (10)
	Significant migratory songbird/water fowl habitat or usage (10)
	Category 1 Wetland. See Question 1 Qualitative Rating (-10)

-2	25
max 20 pts.	subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

●	Aquatic bed
2	Emergent
	Shrub
	Forest
	Mudflats
	Open water
	Other________________

6b. horizontal (plan view) Interspersion.
Select only one.

	High (5)
	Moderately high(4)
	Moderate (3)
	Moderately low (2)
1	Low (1)
	None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

-5	Extensive >75% cover (-5)
	Moderate 25-75% cover (-3)
	Sparse 5-25% cover (-1)
	Nearly absent <5% cover (0)
	Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

0	Vegetated hummucks/tussucks
0	Coarse woody debris >15cm (6in)
0	Standing dead >25cm (10in) dbh
1	Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

46 **GRAND TOTAL (max 100 pts)** |
Cat

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

Site: MAH-80-0.97 WLNE-5	Rater(s): MGL MAF	Date: 7/1/04

max 6 pts.	subtotal
2	2

Metric 1. Wetland Area (size).

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [2] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

max 14 pts.	subtotal
5	7

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [1] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

4
- [7] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [1] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

max 30 pts.	subtotal
16	23

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [1] Precipitation (1)
- [ ] Seasonal/Intermittent surface water (3)
- [5] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [1] 100 year floodplain (1)
- [1] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g. forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [3] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [ ] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [4] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [ ] Seasonally inundated (2)
- [ ] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [ ] Recovering (3)
- [1] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [✓] filling/grading
- [✓] road bed/RR track
- [ ] dredging
- [ ] other______________

max 20 pts.	subtotal
9	32

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [2] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [4] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [✓] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [✓] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

32
subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Site: NE-5	Rater(s):	Date: 7/1/04

32 subtotal first page

0 (max 10 pts.) | 32 (subtotal)

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Prairies (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

3 (max 20 pts.) | 35 (subtotal)

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- 1 Aquatic bed
- 2 Emergent
- 1 Shrub
- Forest
- Mudflats
- Open water
- Other__________

6b. horizontal (plan view) Interspersion.
Select only one.

- High (5)
- Moderately high(4)
- Moderate (3)
- 2 Moderately low (2)
- Low (1)
- None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- -5 Extensive >75% cover (-5)
- Moderate 25-75% cover (-3)
- Sparse 5-25% cover (-1)
- Nearly absent <5% cover (0)
- Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- 0 Vegetated hummucks/tussucks
- 1 Coarse woody debris >15cm (6in)
- 0 Standing dead >25cm (10in) dbh
- 1 Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

35 **GRAND TOTAL (max 100 pts)**

MOD 2

ORAM v. 5.0 Field Form Quantitative Rating

Site: MAH-80-0.91 WL NE-6	Rater(s): MGL MAF	Date: 6/30/04

0	0
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [ ] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [0] <0.1 acres (0.04ha) (0 pts)

2	2
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [1] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [1] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

16	18
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [1] Precipitation (1)
- [ ] Seasonal/Intermittent surface water (3)
- [5] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [1] 100 year floodplain (1)
- [1] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g. forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [3] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [ ] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [4] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [ ] Seasonally inundated (2)
- [ ] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [ ] Recovering (3)
- [1] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [✓] weir
- [✓] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] other______________

6	24
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [ ] Recovering (2)
- [1] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [4] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [ ] Recovering (3)
- [1] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [✓] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [✓] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

24
subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Site: MAH 80-0.97 WL NE6	Rater(s): MGL MAF	Date: 6/30/04

24
subtotal this page

0	24
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Praires (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

4	28
max 20 pts.	subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- X Aquatic bed
- 2 Emergent
- - Shrub
- - Forest
- - Mudflats
- - Open water
- - Other________________

6b. horizontal (plan view) Interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- 1 Low (1)
- [ ] None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- 0 Nearly absent <5% cover (0)
- [ ] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- 0 Vegetated hummucks/tussucks
- 0 Coarse woody debris >15cm (6in)
- 0 Standing dead >25cm (10in) dbh
- 1 Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generallyw/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

28 **GRAND TOTAL(max 100 pts)** Cat 1

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

Site: MAH-80 NJL-NE-8	Rater(s): MGL MAF	Date: 7/21/04

Metric 1. Wetland Area (size).

max 6 pts.	subtotal
0	0

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [ ] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [0] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

max 14 pts.	subtotal
7	7

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [4] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [5] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- 3 [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [1] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

Metric 3. Hydrology.

max 30 pts.	subtotal
4	11

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [1] Precipitation (1)
- [ ] Seasonal/Intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100 year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g. forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [1] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [ ] Seasonally inundated (2)
- [1] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [ ] Recovering (3)
- [1] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [✓] road bed/RR track
- [ ] dredging
- [ ] other____________________

Metric 4. Habitat Alteration and Development.

max 20 pts.	subtotal
8	19

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [✓] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [3] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [✓] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [✓] woody debris removal
- [✓] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

subtotal this page
19

ORAM v. 5.0 Field Form Quantitative Rating

Site: NE-8	Rater(s):	Date: 7/21/04

19
subtotal first page

0	19
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Prairies (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

4	23
max 20 pts.	subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

	Aquatic bed
2	Emergent
	Shrub
	Forest
	Mudflats
	Open water
	Other______

6b. horizontal (plan view) Interspersion.
Select only one.

	High (5)
	Moderately high(4)
	Moderate (3)
	Moderately low (2)
1	Low (1)
	None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

	Extensive >75% cover (-5)
	Moderate 25-75% cover (-3)
	Sparse 5-25% cover (-1)
0	Nearly absent <5% cover (0)
	Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

1	Vegetated hummucks/tussucks
0	Coarse woody debris >15cm (6in)
0	Standing dead >25cm (10in) dbh
0	Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

23 **GRAND TOTAL (max 100 pts)**

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

last revised 1 February 2001 jjm

ORAM v. 5.0 Field Form Quantitative Rating

Site: MAH-80-0.97 WL NE-A	Rater(s): MGL MAF	Date: 7/12/04

0	0
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [ ] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [0] <0.1 acres (0.04ha) (0 pts)

7	7
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [4] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [5] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [1] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

3

18	25
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [1] Precipitation (1)
- [ ] Seasonal/Intermittent surface water (3)
- [5] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [1] 100 year floodplain (1)
- [1] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g. forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [3] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [ ] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [4] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [ ] Seasonally inundated (2)
- [ ] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] other_______________

9	34
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [2] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [4] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [x] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [x] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

34
subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Site: NE-A	Rater(s):	Date: 7/12/04

34
subtotal first page

0	34
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Prairies (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

3~~8~~	37
max 20 pts.	subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [1] Emergent
- [ ] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] Open water
- [ ] Other________________

6b. horizontal (plan view) Interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [1] Low (1)
- [ ] None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [1] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- [0] Vegetated hummucks/tussucks
- [0] Coarse woody debris >15cm (6in)
- [0] Standing dead >25cm (10in) dbh
- [0] Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

37 **GRAND TOTAL (max 100 pts)** MOD 2

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

ORAM v. 5.0 Field Form Quantitative Rating

Site: MAH-80.0.97 WLNE-B	Rater(s): MGL MAF	Date: 7/2/04

0 | 0 Metric 1. Wetland Area (size).

max 6 pts. subtotal

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [ ] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [0] <0.1 acres (0.04ha) (0 pts)

5 | 5 Metric 2. Upland buffers and surrounding land use.

max 14 pts. subtotal

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [1] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

4

- [7] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [1] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

19 | 24 Metric 3. Hydrology.

max 30 pts. subtotal

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [1] Precipitation (1)
- [ ] Seasonal/Intermittent surface water (3)
- [5] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [1] 100 year floodplain (1)
- [1] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g. forest), complex (1)
- [1] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [3] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [ ] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [4] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [ ] Seasonally inundated (2)
- [ ] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [✓] filling/grading
- [✓] road bed/RR track
- [ ] dredging
- [ ] other_______________

9 | 33 Metric 4. Habitat Alteration and Development.

max 20 pts. subtotal

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [2] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [4] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [✓] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [✓] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

33

subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Site: NE-B	Rater(s):	Date: 7/2/04

33 subtotal first page

0 (max 10 pts.) | **33** (subtotal)

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Prairies (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

-1 (max 20 pts.) | **32** (subtotal)

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [2] Emergent
- [ ] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] Open water
- [ ] Other________

6b. horizontal (plan view) Interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [1] Low (1)
- [ ] None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- [-5] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [ ] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- [0] Vegetated hummucks/tussucks
- [0] Coarse woody debris >15cm (6in)
- [0] Standing dead >25cm (10in) dbh
- [1] Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

32 GRAND TOTAL (max 100 pts) 1-2 gray zone

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

last revised 1 February 2001 jjm

Site: MAH-80 ·0.97 WL SW-1	Rater(s): MGL MAF	Date: 7/2/04

2	2
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [2] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

8	10
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [4] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

4
- [7] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [1] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

19	29
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [1] Precipitation (1)
- [ ] Seasonal/Intermittent surface water (3)
- [5] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [1] 100 year floodplain (1)
- [1] Between stream/lake and other human use (1)
- [1] Part of wetland/upland (e.g. forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [3] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [ ] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [4] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [ ] Seasonally inundated (2)
- [ ] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [3] Recovering (3)
- [1] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [✓] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [✓] road bed/RR track
- [ ] dredging
- [ ] other________________

11	40
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [2] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [3] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [6] Recovered (6)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [✓] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [✓] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

40
subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Site: SW-1	Rater(s):	Date: 7/2/04

40 subtotal first page

0 (max 10 pts.) | 40 (subtotal)

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Prairies (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

1 (max 20 pts.) | 41 (subtotal)

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- 2 Aquatic bed
- 1 Emergent
- Shrub
- Forest
- Mudflats
- Open water
- Other

6b. horizontal (plan view) Interspersion.
Select only one.

- High (5)
- Moderately high(4)
- Moderate (3)
- 2 Moderately low (2)
- Low (1)
- None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- -5 Extensive >75% cover (-5)
- Moderate 25-75% cover (-3)
- Sparse 5-25% cover (-1)
- Nearly absent <5% cover (0)
- Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- 0 Vegetated hummucks/tussucks
- 0 Coarse woody debris >15cm (6in)
- 1 Standing dead >25cm (10in) dbh
- 0 Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

41 **GRAND TOTAL (max 100 pts)**

MOD. 2

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

last revised 1 February 2001 jjm

ORAM v. 5.0 Field Form Quantitative Rating

Site: MAH-80.0.97 WLSW-3	Rater(s): MGL MAF	Date: 7/2/04

max 6 pts.	subtotal
0	0

Metric 1. Wetland Area (size).

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [ ] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [0] <0.1 acres (0.04ha) (0 pts)

max 14 pts.	subtotal
4	4

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [1] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- 3 [5] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [1] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

max 30 pts.	subtotal
17	21

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [1] Precipitation (1)
- [ ] Seasonal/Intermittent surface water (3)
- [5] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [1] 100 year floodplain (1)
- [1] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g. forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 (27.6in) (3)
- [2] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [ ] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [4] Semi- to permanently inundated/saturated (4)
- [|] Regularly inundated/saturated (3)
- [ ] Seasonally inundated (2)
- [ ] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [✓] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [✓] road bed/RR track
- [ ] dredging
- [ ] other________________

max 20 pts.	subtotal
9	30

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [✓] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [4] Moderately good (4)
- [1] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [✓] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

30
subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Site: SW-3	Rater(s):	Date: 7/2/04

30
subtotal first page

0	30
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Prairies (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

4	34
max 20 pts.	subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [2] Emergent
- [ ] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] Open water
- [ ] Other____________

6b. horizontal (plan view) Interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [1] Low (1)
- [ ] None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [1] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- [0] Vegetated hummucks/tussucks
- [0] Coarse woody debris >15cm (6in)
- [0] Standing dead >25cm (10in) dbh
- [0] Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

34 **GRAND TOTAL (max 100 pts)**

1-2 gray zone

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

ORAM v. 5.0 Field Form Quantitative Rating

Site: MAH-80-0.97 WL SW-A	Rater(s): MGL MAF	Date: 7/2/04

1	1
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [ ] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [1] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

8	9
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [4] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

4

- [7] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [1] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

16	25
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [1] Precipitation (1)
- [ ] Seasonal/Intermittent surface water (3)
- [5] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [1] 100 year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g. forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 (27.6in) (3)
- [2] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [ ] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [4] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [ ] Seasonally inundated (2)
- [ ] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [✓] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [✓] road bed/RR track
- [ ] dredging
- [ ] other________________

10	35
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [2] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [5] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [✓] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [✓] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

35
subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Site: SW-A	Rater(s):	Date: 7/2/04

35
subtotal first page

0 | 35
max 10 pts. | subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Prairies (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

6 | 41
max 20 pts. | subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- 2 Aquatic bed
- [illegible] Emergent
- 2 Shrub
- Forest
- Mudflats
- Open water
- Other

6b. horizontal (plan view) Interspersion.
Select only one.

- High (5)
- Moderately high(4)
- Moderate (3)
- Moderately low (2)
- 1 Low (1)
- None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- Extensive >75% cover (-5)
- Moderate 25-75% cover (-3)
- Sparse 5-25% cover (-1)
- Nearly absent <5% cover (0)
- 1 Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- 0 Vegetated hummucks/tussucks
- 1 Coarse woody debris >15cm (6in)
- 0 Standing dead >25cm (10in) dbh
- 1 Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

41 **GRAND TOTAL (max 100 pts)**

MOD. 2

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

last revised 1 February 2001 jjm

Site: MAH 80-0.97 SW BB	Rater(s): MGL MAF	Date: 9/2/04

1	1
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [ ] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [1] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

7	8
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [4] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [5] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- 3 [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [1] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

6	14
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [1] Precipitation (1)
- [ ] Seasonal/Intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100 year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g. forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [1] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [ ] Seasonally inundated (2)
- [1] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [✓] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [✓] road bed/RR track
- [ ] dredging
- [ ] other____________

8	22
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [2] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [3] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [✓] woody debris removal
- [✓] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [✓] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

22
subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Site: SW-BB	Rater(s):	Date: 7/2/04

22
subtotal first page

0	22
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Prairies (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

-1	21
max 20 pts.	subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

	Aquatic bed
2	Emergent
	Shrub
	Forest
	Mudflats
	Open water
	Other______

6b. horizontal (plan view) Interspersion.
Select only one.

	High (5)
	Moderately high(4)
	Moderate (3)
2	Moderately low (2)
	Low (1)
	None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

-5	Extensive >75% cover (-5)
	Moderate 25-75% cover (-3)
	Sparse 5-25% cover (-1)
	Nearly absent <5% cover (0)
	Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

0	Vegetated hummucks/tussucks
0	Coarse woody debris >15cm (6in)
0	Standing dead >25cm (10in) dbh
0	Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

21 **GRAND TOTAL (max 100 pts)**

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

ORAM v. 5.0 Field Form Quantitative Rating

Site: MAH-80-0.97 WL SE-1	Rater(s): MGL MAF	Date: 6/30/04

2	2
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [2] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

8	10
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [4] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

4
- [7] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [1] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

12	22
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [1] Precipitation (1)
- [3] Seasonal/Intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [1] 100 year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g. forest), complex (1)
- [1] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [1] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [2] Seasonally inundated (2)
- [ ] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [x] stormwater input
- [ ] point source (nonstormwater)
- [x] filling/grading
- [x] road bed/RR track
- [ ] dredging
- [ ] other________________

9	31
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [2] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [4] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [x] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

31
subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Site: 'SE-1	Rater(s):	Date: 6/30/04

31

subtotal first page

0	31
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Prairies (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

8	39
max 20 pts.	subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities. Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [3] Emergent
- [ ] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] Open water
- [ ] Other__________

6b. horizontal (plan view) Interspersion. Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [2] Moderately low (2)
- [ ] Low (1)
- [ ] None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [1] Absent (1)

6d. Microtopography. Score all present using 0 to 3 scale.

- [1] Vegetated hummucks/tussucks
- [1] Coarse woody debris >15cm (6in)
- [0] Standing dead >25cm (10in) dbh
- [0] Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

39 **GRAND TOTAL (max 100 pts)**

MOD 2

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

ORAM v. 5.0 Field Form Quantitative Rating

Site: MAH-80-0.97 WL SE-2/3	Rater(s): MGL MAF	Date: 6/30/04

2	2
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [2] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

4	6
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [1] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [5] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- 3 [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [1] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

13	19
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [1] Precipitation (1)
- [3] Seasonal/Intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [1] 100 year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g. forest), complex (1)
- [1] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 (27.6in) (3)
- [2] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [ ] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [2] Seasonally inundated (2)
- [ ] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [✓] filling/grading
- [✓] road bed/RR track
- [✓] dredging
- [ ] other__________

8	27
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [2] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [3] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [✓] mowing
- [ ] grazing
- [ ] clearcutting
- [✓] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [✓] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

27
subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Site: SE-2,3	Rater(s):	Date: 6/30/04

21 subtotal first page

0 max 10 pts. | 21 subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Prairies (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

0 max 20 pts. | 21 subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

	Aquatic bed
2	Emergent
	Shrub
	Forest
	Mudflats
	Open water
	Other______

6b. horizontal (plan view) Interspersion.
Select only one.

	High (5)
	Moderately high(4)
3	Moderate (3)
	Moderately low (2)
	Low (1)
	None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

-5	Extensive >75% cover (-5)
	Moderate 25-75% cover (-3)
	Sparse 5-25% cover (-1)
	Nearly absent <5% cover (0)
	Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

0	Vegetated hummucks/tussucks
0	Coarse woody debris >15cm (6in)
0	Standing dead >25cm (10in) dbh
0	Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

21 **GRAND TOTAL (max 100 pts)** (

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

Site: MAH-80-0.97 WLSE-5	Rater(s): MGL-MAF	Date: 6/30/04

2	2
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [2] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

11	13
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [7] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

4

- [7] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [1] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

17	30
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [1] Precipitation (1)
- [ ] Seasonal/Intermittent surface water (3)
- [5] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [1] 100 year floodplain (1)
- [1] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g. forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 (27.6in) (3)
- [2] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [ ] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [4] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [ ] Seasonally inundated (2)
- [ ] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [✓] road bed/RR track
- [ ] dredging
- [ ] other____________

14	44
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [3] Recovered (3)
- [ ] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [5] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [6] Recovered (6)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

44
subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Site: SE-5	Rater(s):	Date: 6/30/04

44
subtotal first page

0 | 44
max 10 pts. | subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Prairies (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

2 | 46
max 20 pts. | subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

	Aquatic bed
2	Emergent
	Shrub
	Forest
	Mudflats
	Open water
	Other

6b. horizontal (plan view) Interspersion.
Select only one.

	High (5)
	Moderately high(4)
	Moderate (3)
	Moderately low (2)
1	Low (1)
	None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

	Extensive >75% cover (-5)
-3	Moderate 25-75% cover (-3)
	Sparse 5-25% cover (-1)
	Nearly absent <5% cover (0)
	Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

0	Vegetated hummucks/tussucks
0	Coarse woody debris >15cm (6in)
0	Standing dead >25cm (10in) dbh
2	Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

46 **GRAND TOTAL (max 100 pts)** 2

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

last revised 1 February 2001 jjm

ORAM v. 5.0 Field Form Quantitative Rating

Site: MAH-80-0.97 WLSE-8	Rater(s): MGL MAF	Date: 6/30/04

2	2
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [2] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

8	10
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [4] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

4

- [7] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [1] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

18	28
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [1] Precipitation (1)
- [ ] Seasonal/Intermittent surface water (3)
- [5] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [1] 100 year floodplain (1)
- [1] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g. forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [3] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [ ] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [4] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [ ] Seasonally inundated (2)
- [ ] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [✓] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [✓] road bed/RR track
- [ ] dredging
- [ ] other____________

14	42
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [3] Recovered (3)
- [ ] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [5] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [6] Recovered (6)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [✓] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [✓] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

42
subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Site: SE-8	Rater(s):	Date: 6/30/04

42
subtotal first page

0	42
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Prairies (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

6	48
max 20 pts.	subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

1	Aquatic bed
2	Emergent
	Shrub
	Forest
	Mudflats
	Open water
	Other______________

6b. horizontal (plan view) Interspersion.
Select only one.

	High (5)
	Moderately high(4)
	Moderate (3)
2	Moderately low (2)
	Low (1)
	None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

	Extensive >75% cover (-5)
	Moderate 25-75% cover (-3)
	Sparse 5-25% cover (-1)
0	Nearly absent <5% cover (0)
	Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

0	Vegetated hummucks/tussucks
0	Coarse woody debris >15cm (6in)
0	Standing dead >25cm (10in) dbh
1	Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

48 **GRAND TOTAL (max 100 pts)** 2

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

ORAM v. 5.0 Field Form Quantitative Rating

Site: MAH-80-0.97 WL SE-9	Rater(s): MGL MAF	Date: 6/30/04

1	1
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [ ] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [1] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

8	9
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [4] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

4

- [7] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [1] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

18	27
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [1] Precipitation (1)
- [ ] Seasonal/Intermittent surface water (3)
- [5] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [1] 100 year floodplain (1)
- [1] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g. forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [3] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [ ] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [4] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [ ] Seasonally inundated (2)
- [ ] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [✓] road bed/RR track
- [ ] dredging
- [ ] other_______________

11	38
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [3] Recovered (3)
- [ ] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [5] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [✓] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [✓] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

38
subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Site: SE-9	Rater(s):	Date: 6/30/04

38
subtotal first page

0 | 38
max 10 pts. | subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Prairies (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

4 | 42
max 20 pts. | subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [1] Emergent
- [1] Shrub
- [2] Forest
- [ ] Mudflats
- [ ] Open water
- [ ] Other______

6b. horizontal (plan view) Interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [1] Low (1)
- [ ] None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [-1] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [1] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- [0] Vegetated hummucks/tussucks
- [0] Coarse woody debris >15cm (6in)
- [1] Standing dead >25cm (10in) dbh
- [1] Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

46 **GRAND TOTAL (max 100 pts)**

Mod. 2

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

last revised 1 February 2001 jjm

ORAM v. 5.0 Field Form Quantitative Rating

Site: MAH-80-0.97 WL SE-A	Rater(s): MGL MAF	Date: 7/21/04

1	1
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [ ] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [1] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

12	13
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [7] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

5

- [7] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [3] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [ ] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

22	35
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [1] Precipitation (1)
- [ ] Seasonal/Intermittent surface water (3)
- [5] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [1] 100 year floodplain (1)
- [1] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g. forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [3] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [ ] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [4] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [ ] Seasonally inundated (2)
- [ ] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [7] Recovered (7)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [✓] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] other____________

14	49
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [3] Recovered (3)
- [ ] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [5] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [6] Recovered (6)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [✓] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

49
subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Site: SE-A	Rater(s):	Date: 7/21/04

49
subtotal first page

0	49
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Prairies (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

1	50
max 20 pts.	subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [2] Emergent
- [ ] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] Open water
- [ ] Other______________

6b. horizontal (plan view) Interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [ ] Low (1)
- [0] None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- [ ] Extensive >75% cover (-5)
- [■] Moderate 25-75% cover (-3)
- [-1] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [ ] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- [0] Vegetated hummucks/tussucks
- [0] Coarse woody debris >15cm (6in)
- [0] Standing dead >25cm (10in) dbh
- [0] Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

50 **GRAND TOTAL (max 100 pts)** 2

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

ORAM v. 5.0 Field Form Quantitative Rating

Site: MAH-80.097 WL SE-I	Rater(s): MGK MAF	Date: 7/21/04

0	0
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [ ] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [0] <0.1 acres (0.04ha) (0 pts)

4	4
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [1] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [5] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- 3 [1] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

4	8
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [1] Precipitation (1)
- [ ] Seasonal/Intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100 year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g. forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [1] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [ ] Seasonally inundated (2)
- [1] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [ ] Recovering (3)
- [1] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [✓] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] other_______________

8	16
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [2] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [3] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [✓] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [✓] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

16
subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Site: MAH-80-0.97 WL SE-I	Rater(s): MGL MAF	Date: 7/21/04

16 subtotal this page

0 | 16 **Metric 5. Special Wetlands.**

max 10 pts. subtotal

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Praires (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

-1 | 15 **Metric 6. Plant communities, interspersion, microtopography.**

max 20 pts. subtotal

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- [-] Aquatic bed
- [1] Emergent
- [-] Shrub
- [-] Forest
- [-] Mudflats
- [-] Open water
- [-] Other________________

6b. horizontal (plan view) Interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [1] Low (1)
- [ ] None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- [ ] Extensive >75% cover (-5)
- [-3] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [ ] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- [-] Vegetated hummucks/tussucks
- [-] Coarse woody debris >15cm (6in)
- [-] Standing dead >25cm (10in) dbh
- [-] Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generallyw/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

15 **GRAND TOTAL(max 100 pts)** |

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

Site: MAH-80-0.97 WL B	Rater(s): MGL MAF	Date: 1/27/04

Metric 1. Wetland Area (size).

2 (max 6 pts.) | 2 (subtotal)

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [2] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

7 (max 14 pts.) | 9 (subtotal)

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [4] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [3] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [ ] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

Metric 3. Hydrology.

8 (max 30 pts.) | 17 (subtotal)

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [1] Precipitation (1)
- [ ] Seasonal/Intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [1] 100 year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g. forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [1] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [2] Seasonally inundated (2)
- [ ] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [✓] road bed/RR track
- [ ] dredging
- [ ] other____________

Metric 4. Habitat Alteration and Development.

9 (max 20 pts.) | 26 (subtotal)

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [2] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [4] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [✓] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [✓] nutrient enrichment

26 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Site: B	Rater(s):	Date: 7/27/04

26 subtotal first page

0 (max 10 pts.) | 26 (subtotal)

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Prairies (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

6 (max 20 pts.) | 32 (subtotal)

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

	Aquatic bed
2	Emergent
1	Shrub
	Forest
	Mudflats
	Open water
	Other________

6b. horizontal (plan view) Interspersion.
Select only one.

	High (5)
	Moderately high(4)
	Moderate (3)
2	Moderately low (2)
	Low (1)
	None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

	Extensive >75% cover (-5)
-3	Moderate 25-75% cover (-3)
	Sparse 5-25% cover (-1)
	Nearly absent <5% cover (0)
	Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

0	Vegetated hummucks/tussucks
2	Coarse woody debris >15cm (6in)
2	Standing dead >25cm (10in) dbh
0	Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

32 **GRAND TOTAL (max 100 pts)** 1-2 gray zone

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

last revised 1 February 2001 jjm

ORAM v. 5.0 Field Form Quantitative Rating

Site: MAH-80-0.97 WL D	Rater(s): MGL MAF	Date: 7/21/04

1	1
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [ ] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [1] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

5	6
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [4] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [1] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

8	14
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [1] Precipitation (1)
- [ ] Seasonal/Intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100 year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g. forest), complex (1)
- [1] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [1] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [2] Seasonally inundated (2)
- [ ] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [✓] road bed/RR track
- [ ] dredging
- [ ] other______

7	21
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [2] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [4] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [ ] Recovering (3)
- [1] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [✓] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [✓] nutrient enrichment

21
subtotal this page

Site: D	Rater(s):	Date: 7/27/04

21 subtotal first page

0 (max 10 pts.) | 21 (subtotal)

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Prairies (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

-2 (max 20 pts.) | 19 (subtotal)

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [2] Emergent
- [ ] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] Open water
- [ ] Other________________

6b. horizontal (plan view) Interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [1] Low (1)
- [ ] None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- [-5] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [ ] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- [2] Vegetated hummucks/tussucks
- [0] Coarse woody debris >15cm (6in)
- [0] Standing dead >25cm (10in) dbh
- [2] Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

19 **GRAND TOTAL (max 100 pts)** (

ORAM v. 5.0 Field Form Quantitative Rating

Site: MAH-80-0.97 WL E	Rater(s): MGC MAF	Date: 7/21/04

0	0
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [ ] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [0] <0.1 acres (0.04ha) (0 pts)

2	2
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [0] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [3] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- 2 [1] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

4	6
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [1] Precipitation (1)
- [ ] Seasonal/Intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100 year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g. forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [1] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [ ] Seasonally inundated (2)
- [1] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [ ] Recovering (3)
- [1] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [✓] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [✓] road bed/RR track
- [ ] dredging
- [ ] other________

5	11
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [ ] Recovering (2)
- [1] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [3] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [ ] Recovering (3)
- [1] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [✓] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

11
subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Site: E	Rater(s):	Date: 7/27/04

11
subtotal first page

0	11
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Prairies (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

-1	10
max 20 pts.	subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

	Aquatic bed
1	Emergent
	Shrub
	Forest
	Mudflats
	Open water
	Other_______________

6b. horizontal (plan view) Interspersion.
Select only one.

	High (5)
	Moderately high(4)
	Moderate (3)
	Moderately low (2)
1	Low (1)
	None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

	Extensive >75% cover (-5)
-3	Moderate 25-75% cover (-3)
	Sparse 5-25% cover (-1)
	Nearly absent <5% cover (0)
	Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

0	Vegetated hummucks/tussucks
0	Coarse woody debris >15cm (6in)
0	Standing dead >25cm (10in) dbh
0	Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

10	GRAND TOTAL (max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

ORAM v. 5.0 Field Form Quantitative Rating

Site: MAH-80-0.97 WLF	Rater(s): MGL MAF	Date: 7/21/04

3	3
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [3] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [ ] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

7	10
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [4] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

3
- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [5] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [1] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

14	24
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [1] Precipitation (1)
- [ ] Seasonal/Intermittent surface water (3)
- [5] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [1] 100 year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [1] Part of wetland/upland (e.g. forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [1] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [2] Seasonally inundated (2)
- [ ] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [x] road bed/RR track
- [ ] dredging
- [ ] other__________________

10	34
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [2] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [5] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [3] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [x] selective cutting
- [ ] woody debris removal
- [x] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

24
subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Site: F	Rater(s):	Date: 7/27/04

34 subtotal first page

0 (max 10 pts.) | 34 (subtotal)

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Prairies (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

1 (max 20 pts.) | 35 (subtotal)

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [2] Emergent
- [ ] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] Open water
- [ ] Other____________

6b. horizontal (plan view) Interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [2] Moderately low (2)
- [ ] Low (1)
- [ ] None (0)

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

- [-5] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [ ] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- [0] Vegetated hummucks/tussucks
- [1] Coarse woody debris >15cm (6in)
- [1] Standing dead >25cm (10in) dbh
- [0] Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

35 **GRAND TOTAL (max 100 pts)** Mod 2

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

ORAM v. 5.0 Field Form Quantitative Rating

Site: MAH-80-0.97 WL I	Rater(s): MGL MAF	Date: 7/21/04

0	0
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [ ] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [0] <0.1 acres (0.04ha) (0 pts)

1	1
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [0] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [1] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

4	5
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [1] Precipitation (1)
- [ ] Seasonal/Intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100 year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g. forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [1] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [ ] Seasonally inundated (2)
- [1] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [ ] Recovering (3)
- [1] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [✓] filling/grading
- [✓] road bed/RR track
- [ ] dredging
- [ ] other_______________

3	8
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [ ] Recovering (2)
- [1] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [1] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [ ] Recovering (3)
- [1] Recent or no recovery (1)

Check all disturbances observed

- [✓] mowing
- [ ] grazing
- [✓] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [✓] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

8
subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Site: I	Rater(s):	Date: 7/27/04

8
subtotal first page

0	8
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-unrestricted hydrology (10)
- [ ] Lake Erie coastal/tributary wetland-restricted hydrology (5)
- [ ] Lake Plain Sand Prairies (Oak Openings) (10)
- [ ] Relict Wet Prairies (10)
- [ ] Known occurrence state/federal threatened or endangered species (10)
- [ ] Significant migratory songbird/water fowl habitat or usage (10)
- [ ] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

-3	5
max 20 pts.	subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

	Aquatic bed
1	Emergent
	Shrub
	Forest
	Mudflats
	Open water
	Other

6b. horizontal (plan view) Interspersion.
Select only one.

	High (5)
	Moderately high(4)
	Moderate (3)
	Moderately low (2)
1	Low (1)
	None (0).

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage

-3	Extensive >75% cover (-5)
	Moderate 25-75% cover (-3)
	Sparse 5-25% cover (-1)
	Nearly absent <5% cover (0)
	Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

0	Vegetated hummucks/tussucks
0	Coarse woody debris >15cm (6in)
0	Standing dead >25cm (10in) dbh
0	Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Low 0.1 to <1ha (0.247 to 2.47 acres)
2	Moderate 1 to <4ha (2.47 to 9.88 acres)
3	High 4ha (9.88 acres) or more

Microtopography Cover Scale

0	Absent
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

5 **GRAND TOTAL (max 100 pts)**

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

Section 404 Department of Army Permit and Section 401 Water Quality Certification

APPENDIX G

Ohio EPA HHEI Data Forms

CLASS II PHWH

OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 46

SITE NAME/LOCATION STR-1 WEST OF CELL TOWER DS OF CULVERT UNDER 76/80 SITE NUMBER ______ RIVER BASIN MAHONING DRAINAGE AREA (mi^2) 0.370

LENGTH OF STREAM REACH (ft) 300' LAT. 41° 6' 38" LONG. 80° 49' 29" RIVER CODE ______ RIVER MILE ______

DATE 8/5/04 SCORER MGL COMMENTS ______

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

[redacted]

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐☐	[redacted]		☐☐	[redacted]	
☐☐			☐☐		
☐☐			☐☐		
☐☐			☐☐		
☒☐		20	☐☐		
☐☐			☒☐		50

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 20

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 9

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 2

HHEI Metric Points — Substrate Max = 40: 11 (A + B)

2. Maximum Pool Depth *(Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes)* (Check *ONLY* one box):

☑ [redacted]
☐
☐

☐ [redacted]
☐
☐

COMMENTS ______ MAXIMUM POOL DEPTH (centimeters): 20

Pool Depth Max = 30: 31

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

☐ [redacted]
☐
☐

☑ [redacted]
☐

COMMENTS ______ AVERAGE BANKFULL WIDTH (meters) 15

Bankfull Width Max=30: 46

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH L R	(Per Bank)	FLOODPLAIN QUALITY L R	(Most Predominant per Bank)	L R	
☐☒	Wide >10m	☐☒	Mature Forest, Wetland	☐☐	Conservation Tillage
☐☐	Moderate 5-10m	☐☐	Immature Forest, Shrub or Old Field	☐☐	Urban or Industrial
☒☐	Narrow <5m	☒☐	Residential, Park, New Field	☐☐	Open Pasture, Row Crop
☐☐	None	☐☐	Fenced Pasture	☐☐	Mining or Construction

COMMENTS ______

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☒ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☐ Moist Channel, isolated pools, no flow (Intermittent)
☐ Dry channel, no water (Ephemeral)

COMMENTS ______

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☒ None ☐ 0.5 ☐ 1.0 ☐ 1.5 ☐ 2.0 ☐ 2.5 ☐ 3.0 ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☒ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

October 24, 2002 Revision

STR-1

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☒ No QHEI Score ________ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☐ WWH Name: ____________ Distance from Evaluated Stream ______

☐ CWH Name: ____________ Distance from Evaluated Stream ______

☐ EWH Name: ____________ Distance from Evaluated Stream ______

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: CANFIELD NRCS Soil Map Page: 4 NRCS Soil Map Stream Order 1

County: MAHONING Township / City: JACKSON TWP.

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: ________ Quantity: ________

Photograph Information: ____________

Elevated Turbidity? (Y/N): N Canopy (% open): 60

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: ______

Field Measures: Temp (°C) 19.5 Dissolved Oxygen (mg/l) 8 pH (S.U.) 8.0 Conductivity (µmhos/cm) 1300

Is the sampling reach representative of the stream (Y/N) N If not, please explain: ARTIFICIAL SUBSTRATE ADDED TO NATURAL STREAM BOTTOM

Additional comments/description of pollution impacts: ____________

BIOTIC EVALUATION

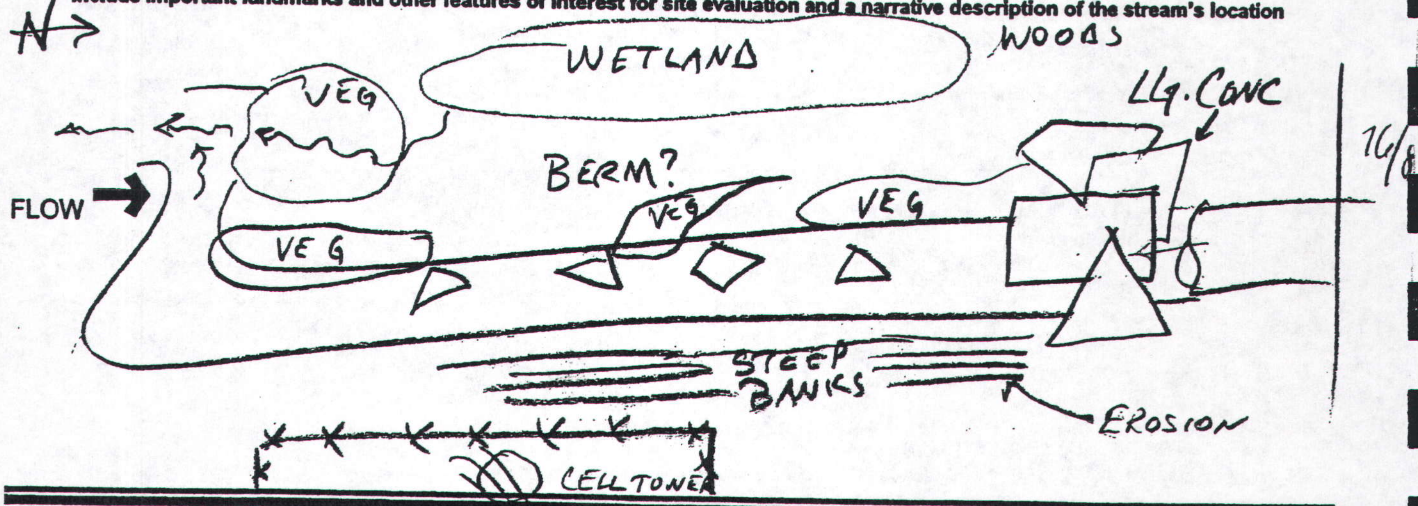
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) Y Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N
Frogs or Tadpoles Observed? (Y/N) Y Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: ____________

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



CLASS II PHWH

OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 37

SITE NAME/LOCATION SR-3 N OF 76/80 E. OF LIPKEY RD

SITE NUMBER ______ RIVER BASIN MAHONING DRAINAGE AREA (mi²) 0.190

LENGTH OF STREAM REACH (ft) 300 LAT. 41° 6' 44" LONG. 80° 49' 12" RIVER CODE ______ RIVER MILE ______

DATE 8/5/04 SCORER MGL COMMENTS ______

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☒ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐☐	[illegible]		☐☐	[illegible]	
☐☐	[illegible]		☐☐	[illegible]	
☐☐	[illegible]		☐☐	[illegible]	
☐☐	[illegible]		☐☐	[illegible]	
☒☒	[illegible]	20/30	☐☐	[illegible]	
☒☐	[illegible]	80/70	☐☐	[illegible]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 0

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 15

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 2

HHEI Metric Points

Substrate Max = 40: 17 (A + B)

2. Maximum Pool Depth ***(Measure the maximum pool depth within the 61 meter (200 ft)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐ [illegible] ☒ [illegible]
☐ [illegible] ☐ [illegible]
☐ [illegible] ☐ [illegible]

COMMENTS ______ MAXIMUM POOL DEPTH (centimeters): 15

Pool Depth Max = 30: 32

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

☐ [illegible] ☐ [illegible]
☐ [illegible] ☒ [illegible]
☐ [illegible]

COMMENTS ______ AVERAGE BANKFULL WIDTH (meters) 5

Bankfull Width Max=30: 37

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH

L	R	(Per Bank)
☒	☒	Wide >10m
☐	☐	Moderate 5-10m
☐	☐	Narrow <5m
☐	☐	None

FLOODPLAIN QUALITY

L	R	(Most Predominant per Bank)	L	R	
☒	☒	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS ______

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☒ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☐ Moist Channel, isolated pools, no flow (Intermittent)
☐ Dry channel, no water (Ephemeral)

COMMENTS ______

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐ None ☐ 1.0 ☒ 2.0 ☐ 3.0
☐ 0.5 ☐ 1.5 ☐ 2.5 ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☒ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

October 24, 2002 Revision

9TR-3

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☒ No QHEI Score ________ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☐ WWH Name: ____________________ Distance from Evaluated Stream ________

☐ CWH Name: ____________________ Distance from Evaluated Stream ________

☐ EWH Name: ____________________ Distance from Evaluated Stream ________

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: CANFIELD NRCS Soil Map Page: 4 NRCS Soil Map Stream Order 1

County: MAHONING Township / City: JACKSON TWP

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: ________ Quantity: ________

Photograph Information: ____________________

Elevated Turbidity? (Y/N): N Canopy (% open): 20

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: ________

Field Measures: Temp (°C) 20.2 Dissolved Oxygen (mg/l) 7.6 pH (S.U.) 8 Conductivity (µmhos/cm) 750

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: ____________________

Additional comments/description of pollution impacts: ____________________

BIOTIC EVALUATION

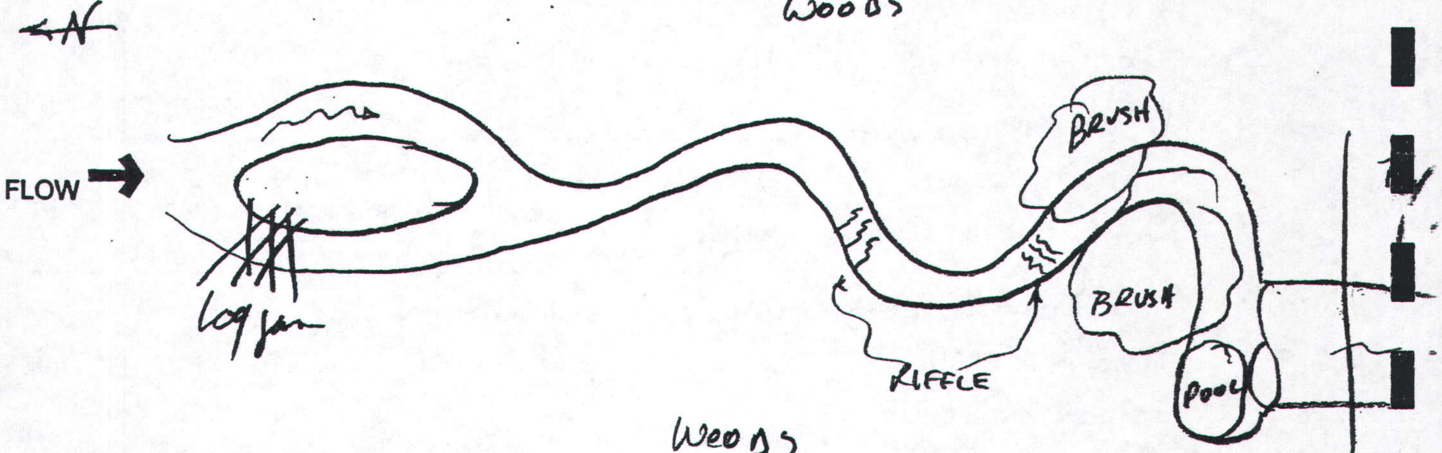
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) N Voucher? (Y/N)____ Salamanders Observed? (Y/N) N Voucher? (Y/N)____
Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N)____ Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N)____

Comments Regarding Biology: ____________________

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



October 24, 2002 Revision

CLASS II PHWH

OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 51

SITE NAME/LOCATION STR-5 S OF 76/80 E OF MEANDER RES

SITE NUMBER ________ RIVER BASIN MAHONING DRAINAGE AREA (mi²) ________

LENGTH OF STREAM REACH (ft) 150 LAT. 41°07'03" LONG. 80°47'55" RIVER CODE ________ RIVER MILE ________

DATE 8/5/04 SCORER MGL COMMENTS ________

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

[redacted]

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐☐	[redacted]		☐☐	[redacted]	
☐☐			☐☐		
☒☐		20	☐☐		
☐☐			☐☐		
☐☐			☐☐		
☐☐			☒☐		

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 20

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 19

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 2

HHEI Metric Points

Substrate Max = 40: 21 (A + B)

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes*) (Check *ONLY* one box):

☐ ☐ ☒ [redacted]

☐ ☐ ☐ [redacted]

COMMENTS ________ MAXIMUM POOL DEPTH (centimeters): 25

Pool Depth Max = 30: 46

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

☐ ☐ ☐ [redacted]

☐ ☒ [redacted]

COMMENTS ________ AVERAGE BANKFULL WIDTH (meters) 5

Bankfull Width Max=30: 51

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH		FLOODPLAIN QUALITY			
L R	(Per Bank)	L R	(Most Predominant per Bank)	L R	
☐☒	Wide >10m	☐☒	Mature Forest, Wetland	☐☐	Conservation Tillage
☐☐	Moderate 5-10m	☐☐	Immature Forest, Shrub or Old Field	☒☐	Urban or Industrial
☒☐	Narrow <5m	☐☐	Residential, Park, New Field	☐☐	Open Pasture, Row Crop
☐☐	None	☐☐	Fenced Pasture	☐☐	Mining or Construction

COMMENTS ________

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐ Stream Flowing

☒ Subsurface flow with isolated pools (Interstitial)

☐ Moist Channel, isolated pools, no flow (Intermittent)

☐ Dry channel, no water (Ephemeral)

COMMENTS ________

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐ None ☒ 1.0 ☐ 2.0 ☐ 3.0

☐ 0.5 ☐ 1.5 ☐ 2.5 ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☒ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

STR-5

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☒ No QHEI Score ________ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☐ WWH Name: ________ Distance from Evaluated Stream ________

☐ CWH Name: ________ Distance from Evaluated Stream ________

☐ EWH Name: ________ Distance from Evaluated Stream ________

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: CANFIELD NRCS Soil Map Page: 5 NRCS Soil Map Stream Order 1

County: MAHONING Township / City: AUSTINTOWN TWP

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: ________ Quantity: ________

Photograph Information: ________

Elevated Turbidity? (Y/N): N Canopy (% open): 20

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: ________

Field Measures: Temp (°C) 22.5 Dissolved Oxygen (mg/l) 6.1 pH (S.U.) 8.0 Conductivity (µmhos/cm) 1557

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: ________

Additional comments/description of pollution impacts: ________

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

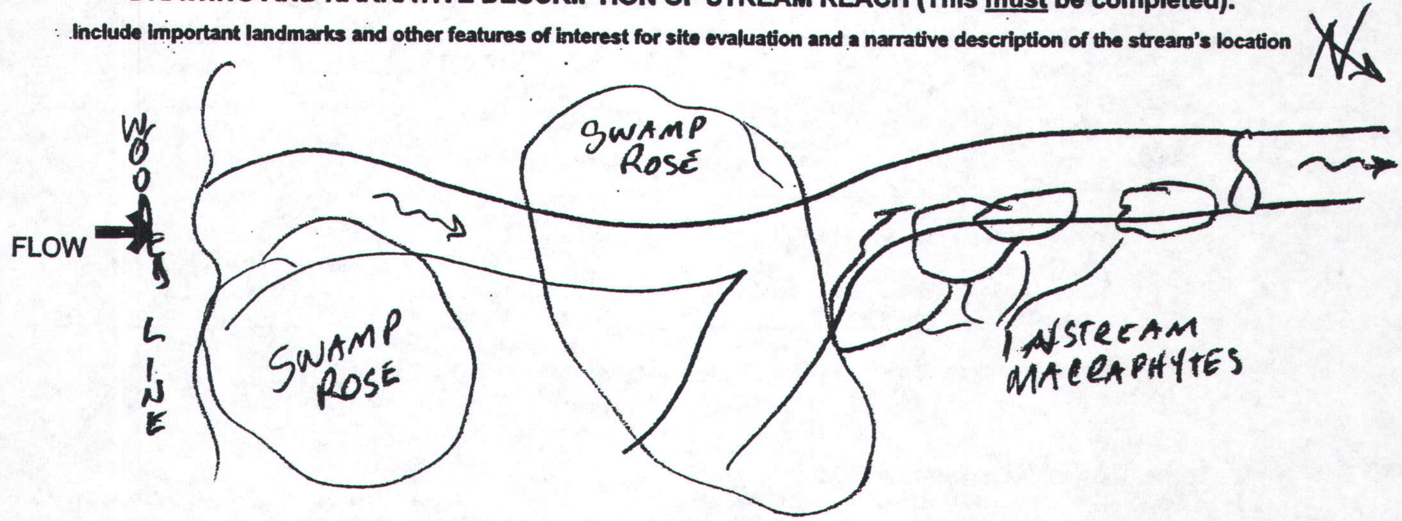
Fish Observed? (Y/N) N Voucher? (Y/N) ____ Salamanders Observed? (Y/N) N Voucher? (Y/N) ____

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) ____ Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) ____

Comments Regarding Biology: ________

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



Class I PHWH

OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 9

SITE NAME/LOCATION STR-6 N OF 76/80 E OF MEANDER RES.

SITE NUMBER ____ RIVER BASIN MAHONING DRAINAGE AREA (mi^2) 0.072

LENGTH OF STREAM REACH (ft) 600 LAT. 41°07'11" LONG. 80°47'41" RIVER CODE ____ RIVER MILE ____

DATE 8/5/04 SCORER MGL COMMENTS ____

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☐☐	SILT [3 pt]	
☐☐	BOULDER (>256 mm) [16 pts]		☐☐	LEAF PACK/WOODY DEBRIS [3 pts]	
☐☐	BEDROCK [16 pt]		☐☐	FINE DETRITUS [3 pts]	
☐☐	COBBLE (65-256 mm) [12 pts]		☐☐	CLAY or HARDPAN [0 pt]	
☐☐	GRAVEL (2-64 mm) [9 pts]		☐☐	MUCK [0 pts]	
☐☐	SAND (<2 mm) [6 pts]		☒☒	ARTIFICIAL [3 pts]	100

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock ____

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 3

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 1

HHEI Metric Points — Substrate Max = 40: 4 (A + B)

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 ft)* evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐ [illegible]
☐ [illegible]
☐ [illegible]
☐ [illegible]
☐ [illegible]
☑ [illegible]

COMMENTS ____ MAXIMUM POOL DEPTH (centimeters): 0

Pool Depth Max = 30: 4

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

☐ [illegible]
☐ [illegible]
☐ [illegible]
☐ [illegible]
☑ [illegible]

COMMENTS ____ AVERAGE BANKFULL WIDTH (meters) 5

Bankfull Width Max=30: 9

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH L R	(Per Bank)	FLOODPLAIN QUALITY L R	(Most Predominant per Bank)	L R	
☑☒	Wide >10m	☒☐	Mature Forest, Wetland	☐☐	Conservation Tillage
☐☐	Moderate 5-10m	☐☐	Immature Forest, Shrub or Old Field	☐☐	Urban or Industrial
☐☐	Narrow <5m	☐☒	Residential, Park, New Field	☐☐	Open Pasture, Row Crop
☐☐	None	☐☐	Fenced Pasture	☐☐	Mining or Construction

COMMENTS ____

FLOW REGIME (*At Time of Evaluation*) (Check *ONLY* one box):

☐ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☐ Moist Channel, isolated pools, no flow (Intermittent)
☒ Dry channel, no water (Ephemeral)

COMMENTS ____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☒ None ☐ 0.5 ☐ 1.0 ☐ 1.5 ☐ 2.0 ☐ 2.5 ☐ 3.0 ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☒ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

October 24, 2002 Revision

JIK-6

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☒ No QHEI Score ________ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☐ WWH Name: ______________________ Distance from Evaluated Stream ________

☐ CWH Name: ______________________ Distance from Evaluated Stream ________

☐ EWH Name: ______________________ Distance from Evaluated Stream ________

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: MAHONING NRCS Soil Map Page: 5 NRCS Soil Map Stream Order 1

County: MAHONING Township / City: AUSTINTOWN TWP

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: ________ Quantity: ________

Photograph Information: ______________________

Elevated Turbidity? (Y/N): ________ Canopy (% open): ________

Were samples collected for water chemistry? (Y/N): ________ (Note lab sample no. or id. and attach results) Lab Number: ________

Field Measures: Temp (°C) — Dissolved Oxygen (mg/l) — pH (S.U.) — Conductivity (µmhos/cm) —

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: ______________________

Additional comments/description of pollution impacts: ______________________

BIOTIC EVALUATION

Performed? (Y/N): ________ (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

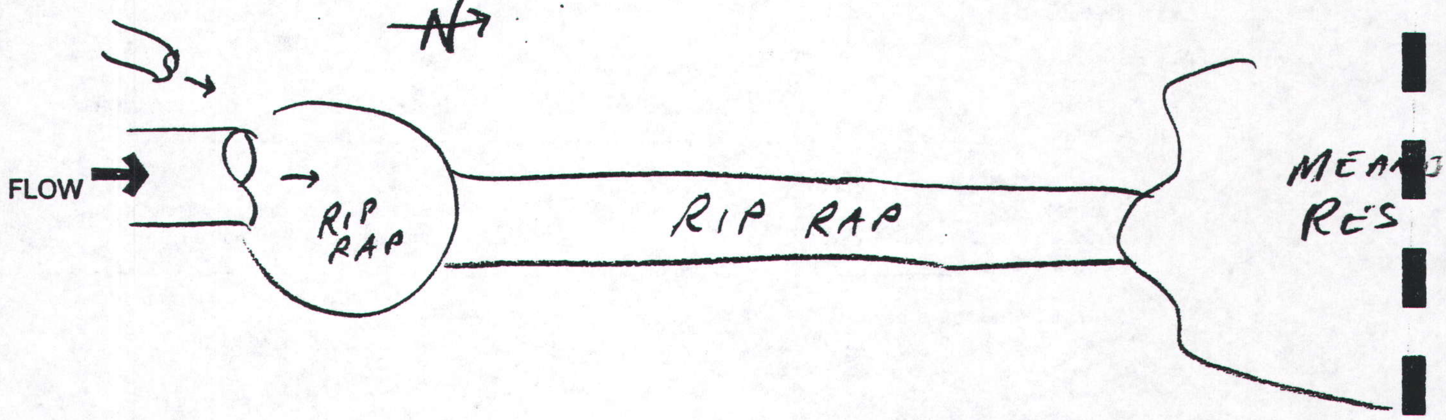
Fish Observed? (Y/N)____ Voucher? (Y/N)____ Salamanders Observed? (Y/N)____ Voucher? (Y/N)____

Frogs or Tadpoles Observed? (Y/N)____ Voucher? (Y/N)____ Aquatic Macroinvertebrates Observed? (Y/N)____ Voucher? (Y/N)____

Comments Regarding Biology: ______________________

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



CLASS II PHWH

Ohio EPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 33

SITE NAME/LOCATION 5TR-8 S 76/80 E of TURNER RD SEBASTIANI

SITE NUMBER ______ RIVER BASIN MAHONING DRAINAGE AREA (mi^2) 0.045

LENGTH OF STREAM REACH (ft) 600' LAT. 41°07'17" LONG. 80°47'18" RIVER CODE ______ RIVER MILE ______

DATE 8/10/04 SCORER MGL COMMENTS ______

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

[redacted]

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐☐	[redacted]		☐☐	[redacted]	
☐☐			☐☐		
☐☐			☐☐		
☒☐		30	☐☐		
☒☐		50	☐☐		
☒☐		70	☐☐		

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 30

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 15

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 3

HHEI Metric Points — Substrate Max = 40: 18 (A + B)

2. Maximum Pool Depth *(Measure the maximum pool depth within the 61 meter (200 ft)* evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐ ☐ ☐ [redacted] ☐ ☐ ☒ [redacted]

COMMENTS ______ MAXIMUM POOL DEPTH (centimeters): 0

Pool Depth Max = 30: 18

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

☐ ☐ ☐ [redacted] ☒ ☐ [redacted]

COMMENTS ______ AVERAGE BANKFULL WIDTH (meters) 15

Bankfull Width Max=30: 33

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank)

L	R	
☒	☐	Wide >10m
☐	☒	Moderate 5-10m
☐	☐	Narrow <5m
☐	☐	None

FLOODPLAIN QUALITY (Most Predominant per Bank)

L	R		L	R	
☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Immature Forest, Shrub or Old Field	☐	☒	Urban or Industrial
☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	Fenced Pasture	☒	☐	Mining or Construction

COMMENTS ______

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☒ Dry channel, no water (Ephemeral)

COMMENTS ______

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐ None ☐ 0.5 ☐ 1.0 ☐ 1.5 ☒ 2.0 ☐ 2.5 ☐ 3.0 ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☒ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

October 24, 2002 Revision

STR-8

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☒ No QHEI Score ________ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☐ WWH Name: ________ Distance from Evaluated Stream ________

☐ CWH Name: ________ Distance from Evaluated Stream ________

☐ EWH Name: ________ Distance from Evaluated Stream ________

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: CANFIELD NRCS Soil Map Page: 5 NRCS Soil Map Stream Order 1

County: MAHONING Township / City: AUSTINTOWN TWP

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: ________ Quantity: ________

Photograph Information: ________

Elevated Turbidity? (Y/N): — Canopy (% open): ________

Were samples collected for water chemistry? (Y/N): ________ (Note lab sample no. or id. and attach results) Lab Number: ________

Field Measures: Temp (°C) — Dissolved Oxygen (mg/l) — pH (S.U.) — Conductivity (µmhos/cm) —

Is the sampling reach representative of the stream (Y/N) ________ If not, please explain: ________

Additional comments/description of pollution impacts: ________

BIOTIC EVALUATION

Performed? (Y/N): — (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

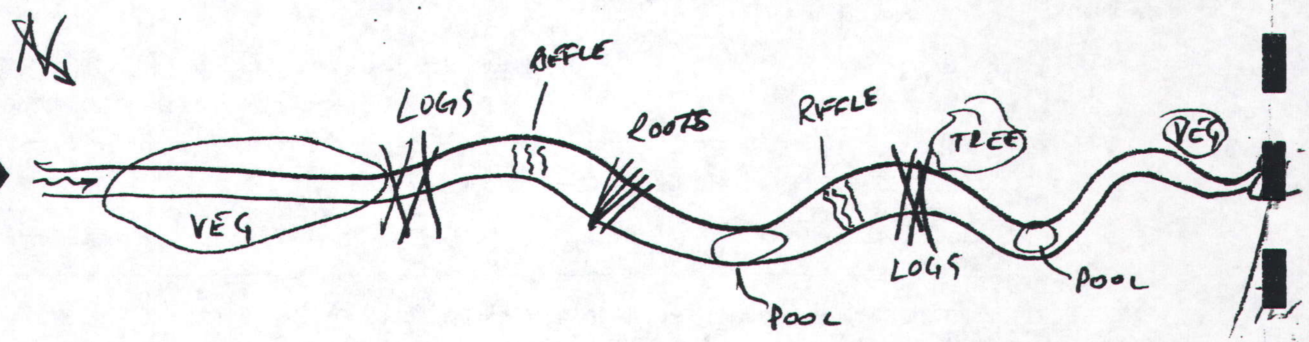
Fish Observed? (Y/N)____ Voucher? (Y/N)____ Salamanders Observed? (Y/N)____ Voucher? (Y/N)____
Frogs or Tadpoles Observed? (Y/N)____ Voucher? (Y/N)____ Aquatic Macroinvertebrates Observed? (Y/N)____ Voucher? (Y/N)____

Comments Regarding Biology: ________

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW



Class II PHWH

OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 35

SITE NAME/LOCATION STR-9 S OF 76/80 NEAR SOCCER FIELDS

SITE NUMBER ______ RIVER BASIN MAHONING DRAINAGE AREA (mi²) 0.369

LENGTH OF STREAM REACH (ft) 200' LAT. 41°07'24" LONG. 80°46'45" RIVER CODE ______ RIVER MILE ______

DATE 8/10/04 SCORER MGL COMMENTS ______

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

[redacted]

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐☐	[redacted]		☒☐	[redacted]	50
☐☐			☐☐		
☐☐			☐☐		
☐☐			☐☐		
☐☐			☒☐		50
☐☐			☐☐		

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock ______

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 3

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 2

HHEI Metric Points

Substrate Max = 40: 5 (A + B)

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes*) (Check *ONLY* one box):

☐ ☐ ☒ [redacted] ☐ ☐ ☐ [redacted]

COMMENTS ______ MAXIMUM POOL DEPTH (centimeters): 25

Pool Depth Max = 30: 30

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

☐ ☐ ☐ [redacted] ☐ ☒ [redacted]

COMMENTS ______ AVERAGE BANKFULL WIDTH (meters) 5

Bankfull Width Max=30: 35

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH L R	(Per Bank)	FLOODPLAIN QUALITY L R	(Most Predominant per Bank)	L R	
☐☐	Wide >10m	☐☐	Mature Forest, Wetland	☐☐	Conservation Tillage
☐☐	Moderate 5-10m	☐☐	Immature Forest, Shrub or Old Field	☐☒	Urban or Industrial
☒☒	Narrow <5m	☒☐	Residential, Park, New Field	☐☐	Open Pasture, Row Crop
☐☐	None	☐☐	Fenced Pasture	☐☐	Mining or Construction

COMMENTS ______

FLOW REGIME (*At Time of Evaluation*) (Check *ONLY* one box):

☒ Stream Flowing
☐ Subsurface flow with isolated pools (Interstitial)
☐ Moist Channel, isolated pools, no flow (Intermittent)
☐ Dry channel, no water (Ephemeral)

COMMENTS ______

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☒ None ☐ 0.5 ☐ 1.0 ☐ 1.5 ☐ 2.0 ☐ 2.5 ☐ 3.0 ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☒ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

STR-7

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☒ No QHEI Score ________ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☐ WWH Name: ________ Distance from Evaluated Stream ________

☐ CWH Name: ________ Distance from Evaluated Stream ________

☐ EWH Name: ________ Distance from Evaluated Stream ________

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: CANFIELD NRCS Soil Map Page: 5 NRCS Soil Map Stream Order 1

County: MAHONING Township / City: AUSTINTOWN TWP.

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: ________ Quantity: ________

Photograph Information: ________

Elevated Turbidity? (Y/N): N Canopy (% open): ________

Were samples collected for water chemistry? (Y/N): ____ (Note lab sample no. or id. and attach results) Lab Number: ________

Field Measures: Temp (°C) 21.4 Dissolved Oxygen (mg/l) 2.8 pH (S.U.) 8.1 Conductivity (µmhos/cm) 550

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: ________

Additional comments/description of pollution impacts: ________

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

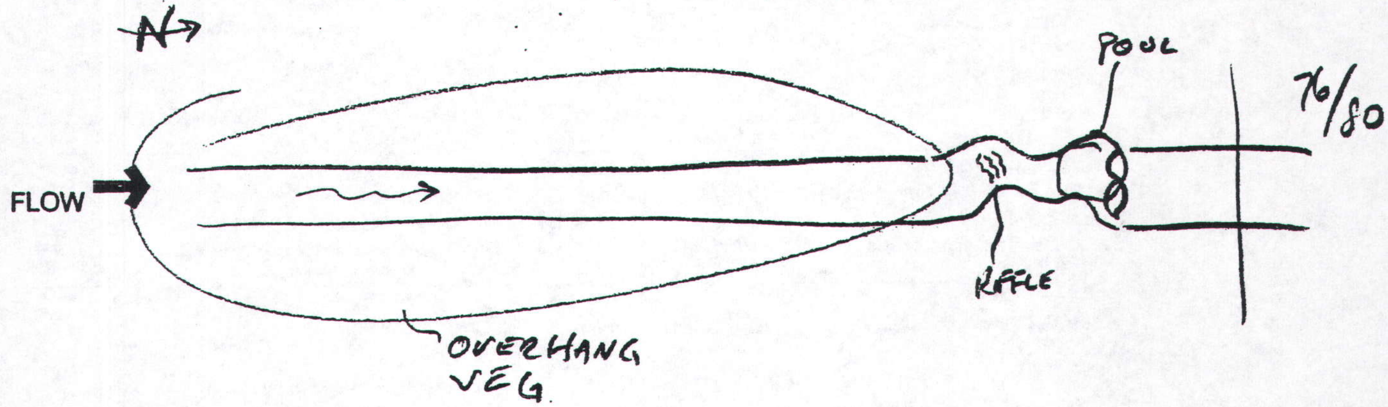
Fish Observed? (Y/N) N Voucher? (Y/N) ____ Salamanders Observed? (Y/N) N Voucher? (Y/N) ____

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) ____ Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) ____

Comments Regarding Biology: ________

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



October 24, 2002 Revision

Section 404 Department of Army Permit and Section 401 Water Quality Certification

APPENDIX H

Agency Coordination

March 3, 1993 – U.S. Fish and Wildlife Service
April 15, 1993 – Ohio Department of Natural Resources
May 4, 1994 – ODNR Crane Creek Research Station
October 12, 1994 – U.S. Environmental Protection Agency
October 13, 1994 – Ohio Department of Natural Resources
October 20, 1994 – U.S. Army Corps of Engineers, Pittsburgh District
October 28, 1994 – U.S. Fish and Wildlife Service
March 3, 1995 – Ohio Environmental Protection Agency
January 14, 1998 - U.S. Army Corps of Engineers, Pittsburgh District
September 2, 2004 – ODNR Division of Natural Areas and Preserves
April 27, 2005 - U.S. Army Corps of Engineers, Pittsburgh District

United States Department of the Interior
Fish and Wildlife Service
Reynoldsburg Field Office
6950-H Americana Parkway
Reynoldsburg, Ohio 43068-4115

COMM: 614/469-6923 FAX: 614/469-6919

TAKE PRIDE IN AMERICA

ENVIRO...

MAR 08 1993

RAA ☐
WBF ☐
JEA ☐
TEL ☐

In Reply Refer to:

March 5, 1993

Mr. Theodore J. Stitt, P.E.
Bureau of Environmental Services
Ohio Department of Transportation
25 South Front Street, PO Box 899
Columbus, Ohio 43216-0899

Re: MAH-80-0-97 (PID 6080)
Ecological Coordination

Dear Mr. Stitt:

This responds to your March 1, 1993 letter regarding the above referenced project. Your cover letter indicates that two alternatives are under consideration. The north alternative would impact 0.3 acres of probable jurisdictional wetlands and the south alternative would impact a total of 0.8 acres of wetlands.

I suggest that you contact the Ohio Wetlands Foundation regarding using the Foundation as the vehicle to achieve wetlands mitigation. The Foundation currently is designed to handle wetland mitigation requirements for Section 404 permitted projects authorized under Nationwide Permit #26 that do not require individual 401 certification. You can contact Mr. John Marshall, Ohio Division of Wildlife, at 614-265-6306 for information about the Foundation. Another option you might want to pursue would be to use the Foundation as a mechanism to establish a separate wetland mitigation bank solely for the use of the Ohio Department of Transportation and the Federal Highway Administration. The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) allows for the expenditure of National Highway System (NHS) and Surface Transportation Program (STP) funds for wetland mitigation purposes including the establishment of wetland mitigation banks. On May 1, 1992, the Department of Transportation, Environmental Protection Agency, and the Department of the Army signed a joint memorandum regarding implementation of ISTEA. Action item #6 in the enclosure to this joint memorandum reads as follows:

> The Corps, FHWA, EPA and other Federal agencies will work to establish wetlands mitigation banks for Federal and state highway projects.

Sincerely,

Kent E. Kroonemeyer

Kent E. Kroonemeyer, Supervisor

cc: ODNR, Division of Wildlife, Environmental Review Section, Columbus, OH
(Attn: John Marshall)
ODNR, Division of Realty and Land Management, Columbus, OH (Attn: Dave Bergman)
Ohio EPA, Water Quality Monitoring, Columbus, Ohio (Attn: Gail Hesse)
USEPA, Office of Environmental Review, Chicago, IL

OHIO
Department of Natural Resources

RECEIVED
APR 30 1993

INTER-OFFICE COMMUNICATION

George V. Voinovich • Governo
Frances S. Buchholzer • Directo

TO: Theodore J. Stitt, Acting Administrator
Bureau of Environmental Services, ODOT

April 15, 1993

FROM: Jeffrey F. Nogawick, Chief
Office of Real Estate and Land Management

RE: Ecological Coordination MAH -I80 - 0.97

The Ohio Department of Natural Resources has completed a review of the above referenced bridge replacement over the Meander Reservoir in Mahoning County.

The Meander Reservoir system is owned by the Mahoning Valley Sanitation District which prohibits public access to the property. Therefore, while we are somewhat limited in our input to this project, we do recommend the North Alignment due to the lesser amount of impacts to wetlands and upland forest areas if no other alternatives are available. We would expect mitigation for the wetlands that are lost as a result of this project.

In addition, we are concerned with the disposition of the existing structure. There is no mention in the report of what will happen to the existing bridge upon completion of the new bridge. We assume that it will be removed and disposed of at a suitable upland site or recycled and reused where possible.

The report also indicates that both alternatives are designed to accommodate six lanes of pavement. The current structure consists of two lanes in each direction. Is the addition of two additional lands necessary considering the approaches to either end of the existing bridge are only two lanes? Was refurbishing of the existing structure considered? This was not an alternative that was mentioned in the report. This would have much less impact on the environment than the two presented alternatives.

Our Division of Wildlife indicates that an eagle nest has recently been discovered less than 4,000 feet to the north of the study area. Since the proposed highway project is potentially several years away from construction, we recommend that ODNR's Division of Wildlife be contacted prior to scheduling of construction for recommendations on how to minimize disturbance to the nesting site and surrounding area. Circumstances with the nesting site may change in the interim making precautions unnecessary, however, we don't know this at this time.

We appreciate the opportunity to provide these comments. If you have any questions, please contact Dave Bergman of the Environmental Review Section of this office at 265-6410.

JFN/DMB/cag

cc: John Marshall, Division of Wildlife

APR 21 1993

Fountain Square • Columbus, Ohio 43224-1387

OHIO
Department of Natural Resources

George V. Voinovich • Governor
Frances S. Buchholzer • Director

Crane Creek Wildlife Research Station
13229 West State Rt. 2
Oak Harbor, Ohio 43449
419-898-0960
4 May 1994

Karel Cubick
MS Consultants, Inc.
4150 Belden Village St. NW
Canton, OH 44718

Dear Karel:

Enclosed is a map of Meander Reservoir indicating the present eagle nest. This location is protected under the Endangered Species Act and is not for public information. I wish to caution that this pair has been on the reservoir for two years and have had a different nest each year. We do not have high hopes that the 1994 nest will survive until 1995. The entire reservoir is within this pair's territory and a new nest could show up anywhere. Evaluation of human activities will be made each year on conditions at that time by the Ohio Division of Wildlife.

Sincerely,

Mark C Shieldcastle

Mark C. Shieldcastle

PROTECTION ZONES

Some activities close to a bald eagle nest may disturb the eagles when they are building their nests, sitting on eggs, and raising their young (Fig. 3). Other activities may change the habitat around the nest so that the eagles do not return to the nest the following year. On the following pages are recommendations for establishing Protection Zones around nest sites on your property. Three different Protection Zones are recommended for each nest site, and suggestions for ways you can avoid disturbing the eagles are listed. These Protection Zones should be established for nests currently being used and for alternate nest sites that have been used in the past three years.

Zone 1

Zone 1 is the area in which eagles are most sensitive to disturbance, and the greatest degree of protection is necessary. The boundary of this zone should be a minimum of 330 feet from the nest (Fig. 4).

Recommendations:

1. Year-round

These habitat changes should be prevented:
Timber cutting of any kind
Land clearing
Building, road, or trail construction

2. February 1 to July 15

Unauthorized people should not be allowed in this zone.
Foot traffic kept to an absolute minimum.

3. July 16 to August 15

Activity should be kept to a minimum.

Zone 2

Zone 2 covers an area in which the eagles are still sensitive to disturbance during the nesting season (February 1 to July 15) but less likely to be affected at other times of the year. The boundary of this zone should be a minimum of 660 feet from the nest (fig. 4).

Recommendations

1. February 1 to July 15

Human activity should be kept to a minimum.
Consult a wildlife manager.

2. July 16 to August 15

These activities are possible:
Hunting
Fishing
Hiking
Farming

3. August 16 to February 1

These activities are possible:
Standard farming practices
Maintenance of existing buildings and roads
Hunting and trapping

Zone 3

Most activities are possible in Zone 3 outside of the breeding season. However, the management of this zone should include the protection of any bald eagle roosts or feeding sites in the area. The boundary of this zone should be a minimum of one-quarter mile from the nest (Fig. 4).

Recommendations

Activities in this zone that are within sight of the eagles on the nest may need to be conducted outside the breeding season. Consult a wildlife manager.

Management of roost and feeding sites.

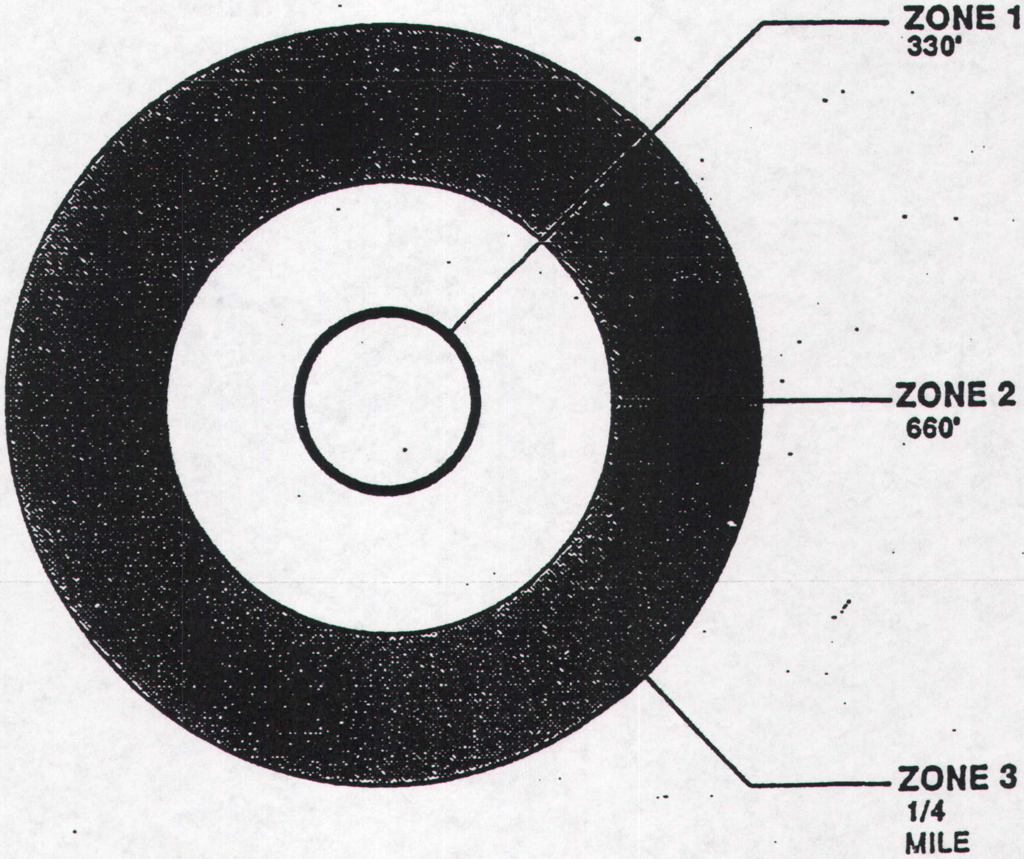
Protection zones

Mature live trees and dead trees necessary for perches and protection from the wind should be maintained in a zone 100 yards wide around each roost. This area should be closed to timber cutting and land clearing. Human activities within sight of the eagles should be restricted within 200 yards of the roost.

Shoreline

Land within 30 yards of the shoreline should be protected from timber cuts of one acre or more. As many dead trees as possible should be left standing, and trees with a diameter of 12 inches or greater left for use as perch trees. Recreational boating should be kept to a minimum within 100 yards of the shore, in areas identified as important feeding sites.

Fig. 4. ZONES OF PROTECTION FOR OHIO BALD EAGLE NESTS



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

ENVIRONMENTAL SERVICES
OCT 20 1994
TJS DGG CAK
WBF KKY EWP
SEA NAB LGH
TEL JLC FKS
FILE

REPLY TO THE ATTENTION OF:

OCT 12 1994

ME-19J

Mr. Theodore J. Stitt, P.E.
Administrator
Bureau of Environmental Services
Ohio Department of Transportation
25 South Front Street
P.O. Box 899
Columbus, Ohio 43216-0899

Dear Mr. Stitt:

We have reviewed the Ecological Survey Report (ESR) for the Bridge over Meander Reservoir. The proposed action calls for replacement of twin 2-lane 2500 foot bridges across Meander Reservoir in Mahoning County, Ohio. The preferred alternative involves widening the bridges to 3-lanes apiece, the incorporation of hazardous spill containment measures, the relocation of the new bridges north of the current alignment, and the utilization of a causeway to shorten bridge length.

As indicated in the ESR, the existing bridges do not meet current design standards and are in need of continual extensive repairs which cause congestion and delays. Maintenance costs average $250,000 per year. Many vehicles traveling on the bridge carry hazardous materials such as petroleum products, corrosives, compressed gases, and pesticides/herbicides. The existing bridges do not provide protection for Meander Reservoir in the event of a hazardous material spill.

(1) Meander Reservoir serves primarily as a domestic water supply. The area is enclosed by a fence and also serves as a fish and game refuge. Clean water is mandatory for the reservoir to fulfill these functions. Therefore, the purpose and need to replace the existing bridges with ones that incorporate spill containment measures is justified.

Three alternatives were included in the ESR in addition to the no-build alternative. They include bridge replacement at the same location without spill containment measures, and a northern and southern alignment that widens the bridges to 3-lanes apiece and incorporates spill containment measures. The ESR indicated that the north alternative is the preferred alternative and fills about 830,000 cubic yards of the reservoir (1.4% of the reservoir's volume) and 0.3 acres of wetland. The south alternative fills about 691,000 cubic yards of the reservoir

(1.2% of the reservoir's volume) and 0.8 acres of wetland.

The preferred alternative widens the new bridges from two lanes
to three. It is assumed that this will be done to reduce
congestion and ease traffic demands. It should be determined
whether or not new, two-lane bridges without continual
maintenance work would adequately meet traffic demands. Little
is said about highway I-80 connecting with the bridges. The
report states that "It has been suggested that I-80 be widened
from the I-76 interchange to the SR 46 interchange in order to
2 reduce these frequent congestion problems (See Figure 1B)." If
this is an official plan, our agency would like to review the
environmental impact statement that would be required by NEPA for
such a project. Figure 1B of the report is not legible, and it
is unclear as to where these improvements are suggested. If the
bridge is to be widened to three lanes, it should be clearly
placed within the context of I-80 for the entire project area.
Constructing three-lane bridges would not be very beneficial if
the remaining I-80 is to remain at two-lanes.

The ESR describes minimal adverse wetland impacts for the
proposed action. The preferred alternative fills 0.3 acres of
wetland. Nothing is said about a wetland compensation plan.
Section 404 (b)(1) Guidelines of the Clean Water Act (CWA)
require that wetland impacts must be avoided or minimized, and
compensation be provided for any unavoidable impacts. We
recommend that a minimum of 1.5 acres of compensatory wetland be
provided for each acre of naturally occurring wetland that is
unavoidably lost. This also holds true for wetlands previously
3 created as a result of human impacts on the landscape. The
compensatory wetlands should be located as close as possible to
the area where the project-related impacts are likely to occur,
and should be designed to replicate, as closely as possible, the
types, functions, and values of the impacted wetlands. Where
feasible, the compensatory wetlands should be provided by the
process of restoration. If restoration proves infeasible,
compensation should be provided by the process of creation.
Under these guidelines, roughly one-half acre of compensatory
wetlands should be provided, and our agency would like to review
the mitigation plan.

The proposed action calls for the construction of a causeway to
reduce bridge length. The preferred alternative will fill
830,000 cubic yards (1.4% of the volume) of Meander Reservoir.
The majority of this volume (depths greater than 6 feet) does not
4 require compensation. However, compensation would further
diminish any adverse impacts. Our agency suggests restoration as
close as possible to the area of impact by replacing both volume
and habitat types to the extent possible.

5 In addition, shallow ponds and reservoirs with depths less than 6
feet are considered inland, open fresh water wetlands.
Vegetation may include pondweeds, naiads, wildcelery, coontail,
watermilfoils, muskgrasses, waterlilies, and spatterdocks. These

areas are used as brood areas and the borders for nesting. Where vegetation is plentiful, they are used in all sections of the country as feeding and resting areas by ducks, geese, and coots, especially during the migration period. The amount of impact to these wetlands should be determined and compensated for.

5

We appreciate the opportunity to review the Ecological Survey Report for the Bridge Over Meander Reservoir. If you have any questions regarding our comments, or if we can be of further assistance, please contact Amy Nerbun of my staff at (312) 886-3512.

Sincerely yours,

Shirley Mitchell

Shirley Mitchell, Chief
Planning and Assessment Branch
Planning and Management Division

OHIO Department of Natural Resources

George V. Voinovich • *Governor*
Frances S. Buchholzer • *Director*

INTEROFFICE COMMUNICATION

DATE: October 13, 1994

TO: Theodore J. Stitt, Administrator,
Bureau of Environmental Services, ODOT

FROM: James R. Morris, P.E., Chief,
Office of Real Estate and Land Management, ODNR

RE: Ecological Coordination; MAH-80-0.97 (PID 6080)

The Ohio Department of Natural Resources (ODNR) has completed a review of the above referenced project.

The ODNR concurs with the reasonableness of the alternatives with regards to waters of the United States. ODNR stresses the importance of coordination with the Division of Wildlife prior to construction scheduling for recommendations on minimizing disturbance to bald eagles and their nesting site. The nesting site and/or other circumstances may change prior to project initiation. Recommendations offered by Division of Wildlife will reflect conditions at the time of the proposed construction schedule. Mr. Bob Fletcher, Division of Wildlife (614/265-6308), serves as the appropriate contact.

We appreciate the opportunity to provide these comments. If you have any questions or need for additional information, please contact Ms. Kim Baker, Environmental Program, at 614/265-6411.

JRM/kab/cag

cc: Wildlife Environmental Section

RECEIVED
MAR 21 1995

ENVIRONMENTAL SERVICES
OCT 18 1994
TJS ☐ DGG ☐ CAK ☐
WBF ☐ KKY ☐ EWP ☐
JEA ☐ NAB ☐ LGH ☐
TEL ☐ JLC ☐ FKS ☐
FILE ☐

DEPARTMENT OF THE ARMY
PITTSBURGH DISTRICT, CORPS OF ENGINEERS
WILLIAM S. MOORHEAD FEDERAL BUILDING
1000 LIBERTY AVENUE, PITTSBURGH, PA 15222

REPLY TO
ATTENTION OF

October 20, 1994

ENVIRONMENTAL SERVICES
OCT 24 1994
TJS ☐ DCG ☐ CAK ☐
YGF ☐ NKY ☐ EMP ☐
JEA ☐ NAB ☐ LCH ☐
TEL ☐ JLC ☐ FKG ☐
FILE ☐

Regulatory Branch

Mr. Theodore J. Stitt, P.E.
Administrator
Bureau of Environmental Services
Ohio Department of Transportation
25 South Front Street
P. O. Box 899
Columbus, Ohio 43216-0899

Dear Mr. Stitt:

I refer to your letter of September 22, 1994 concerning MAH-80-0.97 (PID 6080), replacement of a bridge across Meander Creek Reservoir, Mahoning County, Ohio.

We have reviewed your purpose and needs statement and ecological report concerning the reservoir fill and wetland mapping.

We concur with your purpose and needs statement and the reasonableness of alternatives considered. In addition to the review of the Ecological Survey Report, the following comments are offered:

a. A Department of the Army Permit is required for the fill in the reservoir.

b. An analysis of bridge hydraulics for the selected alternative must be prepared.

c. Detailed hydraulic computations for existing and proposed conditions (range of flows and pool(s)) and surcharge to flood flows and possible scour/deposition must be prepared.

Any questions concerning the hydraulics should be addressed to Walter Leput at 412-644-3137. Regulatory matters should be addressed to this office at 412-644-6874.

Sincerely,

E. Ray Beringer

E. Raymond Beringer
Chief, Regulatory Branch

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
6950-H Americana Parkway
Reynoldsburg, Ohio 43068

IN REPLY REFER TO:

Comm: 614/469-6923/FAX: 614/469-6919

October 28, 1994

ENVIRONMENTAL SERVICES
NOV 02 1994

Mr. Theodore J. Stitt, P.E.
Administrator
Bureau of Environmental Services
25 South Front Street
P.O. Box 899
Columbus, Ohio 43216-0899

Attention: Fred Steck

Dear Mr. Stitt:

Re: MAH-80-0.97 (PID 6080)

This responds to your September 22, 1994 letter requesting Fish and Wildlife Service comments, particularly relating to the Federally endangered bald eagle, on the referenced project.

The Service has reviewed your September 22 letter and attachments including the Bald Eagle Coordination Package. We have also received and reviewed the October 13, 1994 comments from the Ohio Division of Wildlife. The Service agrees with the comments of the Division. The Service requests that when you contact the Division prior to scheduling construction, you also contact the Service so we can provide our input regarding the endangered bald eagle.

Sincerely,

Kent E. Kroonemeyer

Kent E. Kroonemeyer
Supervisor

cc: ODNR, DOW, Wildlife Environmental Section, Columbus, OH
ODNR, Division of Realty and Land Management, Columbus, OH

OhioEPA
State of Ohio Environmental Protection Agency

STREET ADDRESS: 300 WaterMark Drive, [C]olumbus, OH 43215-1099
TELE: (614) 644-3020 FAX: (614) 644-2329
MAILING ADDRESS: P.O. Box 1049, Columbus, OH 43216-1049

INTEROFFICE COMMUNICATION

Date: March 30, 1995

To: Theodore J. Stitt, P.E., Administrator, Bureau of Environmental Services, ODOT

From: Tom Harcarik, 401 Coordinator through Colleen S. Crook, Supervisor, 401 Unit

Re: MAH-80-0.97 - Comments on Purpose and Need, Alternatives, and Ecological Survey

Attached are the Ohio EPA's comments to the above referenced project as requested by your letter dated September 22, 1994. Please direct your responses to these questions to me at the above listed address.

If you have any questions or comments, please feel free to contact me at 644-2139.

attachment

cc: Kent Kroonemeyer, Supervisor, USFWS
Shirley Mitchell, Chief, Planning and Assessment Branch, USEPA, Reg. V
E. Raymond Beringer, Chief, Regulatory Branch, ACOE, Pittsburgh District
Kim Baker, REALM, ODNR
George Elmaraghy, DSW
Paul Novak, DSW

TCH\f\wp\401\MAH-80com.th

ENVIRONMENTAL SERVICES
APR 06 '95

Ohio EPA Comment Letter
Purpose and Need/Alternatives/Ecological Survey Report
MAH-80-0.97 (PID 6080)
March 30, 1995

---

1. Ohio EPA accepts the Purpose and Need Statement for the replacement of the existing bridges.

2. Ohio EPA accepts the description and reasonableness of the alternatives considered, and concurs with ODOT's stated preference for North Alignment Alternative provided that questions regarding impacts to water quality can be adequately addressed.

3. Ohio EPA accepts the wetland delineation report.

4. Ohio EPA has the following comments on the Ecological Survey Report (ESR):

   a. The Meander Reservoir, which is owned by the Mahoning Valley Sanitary District, is considered to be waters of the State. Pursuant to Rule 3745-1-05 of the Ohio Administrative Code (OAC), the Antidegradation Policy of the Water Quality Standards (WQS), the Meander Reservoir is also considered to be a State Resource Water. OAC Rule 3745-1-05(C) states in pertinent part that, "Present ambient water quality in state resource waters will not be degraded for all substances determined to be toxic or to interfere with any designated use as determined by the director of Ohio environmental protection." The ESR does not define the water quality impacts that will be associated with North Alignment.

   b. ODOT should discuss the short term and long term impacts to both the water chemistry and biota of the Reservoir that will result from the construction of the North Alignment.

   c. ODOT should include a discussion of the basin morphology, particularly in the area of the proposed footprint of the causeway to ensure that adequate circulation will be maintained between the north and south portions of the reservoir.

   d. ODOT should discuss the effects of the displacement of 813,000 cubic yards of water that will result from the construction of the causeway. In the event that dredging will be conducted to offset the placement of 813,000 cubic yards of fill, ODOT will be required to analyze the contents of the dredged material, identify the impacts that would result from the dredging, and identify the disposal location for the dredge spoil.

   e. ODOT should discuss the nature of the material that will be used for construction of the causeway.

   f. ODOT must propose to compensate for the wetland acreage to be impacted from the project. Ohio EPA requires that mitigation be conducted at a ration 1.5 to 1.

5. The project will require a separate 401 certification from the State of Ohio.

TCH\f\wp\401\MAH-80com.th

DEPARTMENT OF THE ARMY
PITTSBURGH DISTRICT, CORPS OF ENGINEERS
WILLIAM S. MOORHEAD FEDERAL BUILDING
1000 LIBERTY AVENUE
PITTSBURGH, PA 15222-4186

REPLY TO ATTENTION OF

January 14, 1998

Operations and Readiness Division
Regulatory Branch
199800024

Mr. Chris Yoder
Ohio Dep't of Transportation
Central Office
25 S. Front St., P.O. Box 899
Columbus, Ohio 43216-0899

Dear Mr. Yoder:

Reference is made to your request for review of a wetland delineation prepared by M.S. Consultants in 1994 to address impacts of the widening of Route I-80 and the replacement of the existing bridge over Meander Reservoir in Austintown, Portage County, Ohio.

On January 6, 1998 Richard Sobol of this office met with you and Guy Miranda, Ohio Department of Transportation, Tom Harcarick, Ohio Environmental Protection Agency, Bill Malson, MS Consultants, Inc. and Ralph Miller, Mahoning Valley Sanitation District, to review the wetland delineation previously completed in February 1993. Based on the wetlands inspection, we have determined that no significant changes in wetland boundaries have occurred at this time. In view of this, we can accept the delineation as originally presented.

We therefore agree with the wetland delineation and report. This delineation will remain valid for a period of five years from the date of this letter, unless new information warrants revision of the delineation.

As the northern alternative for this project will avoid and minimize the wetland impacts, we agree that the northern alternative should be selected as the preferred alternative. At such time the Environmental Assessment for this project is developed, a pre-application meeting and wetland inspection should be arranged with this office and the Ohio Environmental Protection Agency to review the plans and to identify any wetland boundary changes which could occur over time. At that time, we will discuss the applicable permit requirements and wetland mitigation plans.

If you have any questions, please contact Mr. Sobol at (412) 395-7153.

Sincerely,

Albert H. Rogalla
Chief, Regulatory Branch

CF:

Linda Merchant
Ohio EPA
1800 Watermark Drive
Columbus, OH 43266-0149

RECEIVED

FEB 03 1998

[illegible] consultants, inc.
CANTON, OHIO

Kim Baker
Environmental Program Coordinator
Ohio DNR
Fountain Square
Columbus, OH 43222-1387

Ohio Department of Natural Resources

BOB TAFT, GOVERNOR | SAMUEL W. SPECK, DIRECTOR

Division of Natural Areas and Preserves
Nancy Strayer, Acting Chief
2045 Morse Rd., Bldg. F-1
Columbus, OH 43229-6605
Phone: (614) 265-6453; Fax: (614) 267-3096

September 2, 2004

William Malson
ms consultants, inc.
4150 Belden Village St., NW
Suite 300
Canton, OH 44718-2539

Dear Mr. Malson:

I have reviewed our Natural Heritage maps and files for the MAH-80-0.97 project area, including a half mile radius, on the Canfield Quad in Mahoning County. We have one record in the immediate vicinity of the project route. The location for a nesting Bald Eagle (*Haliaeetus leucocephalus*), state endangered and federal threatened, is marked by the red circle on the attached map. This site is known as the Meander Nest. For up-to-date information on eagle nest locations and how this may impact the project, please contact Mark Shieldcastle at the Crane Creek Wildlife Unit at 419-898-0960.

There are no existing or proposed state nature preserves or scenic rivers at the project site. We are also unaware of any geologic features, breeding or non-breeding animal concentrations or state parks, forests or wildlife areas in the project vicinity.

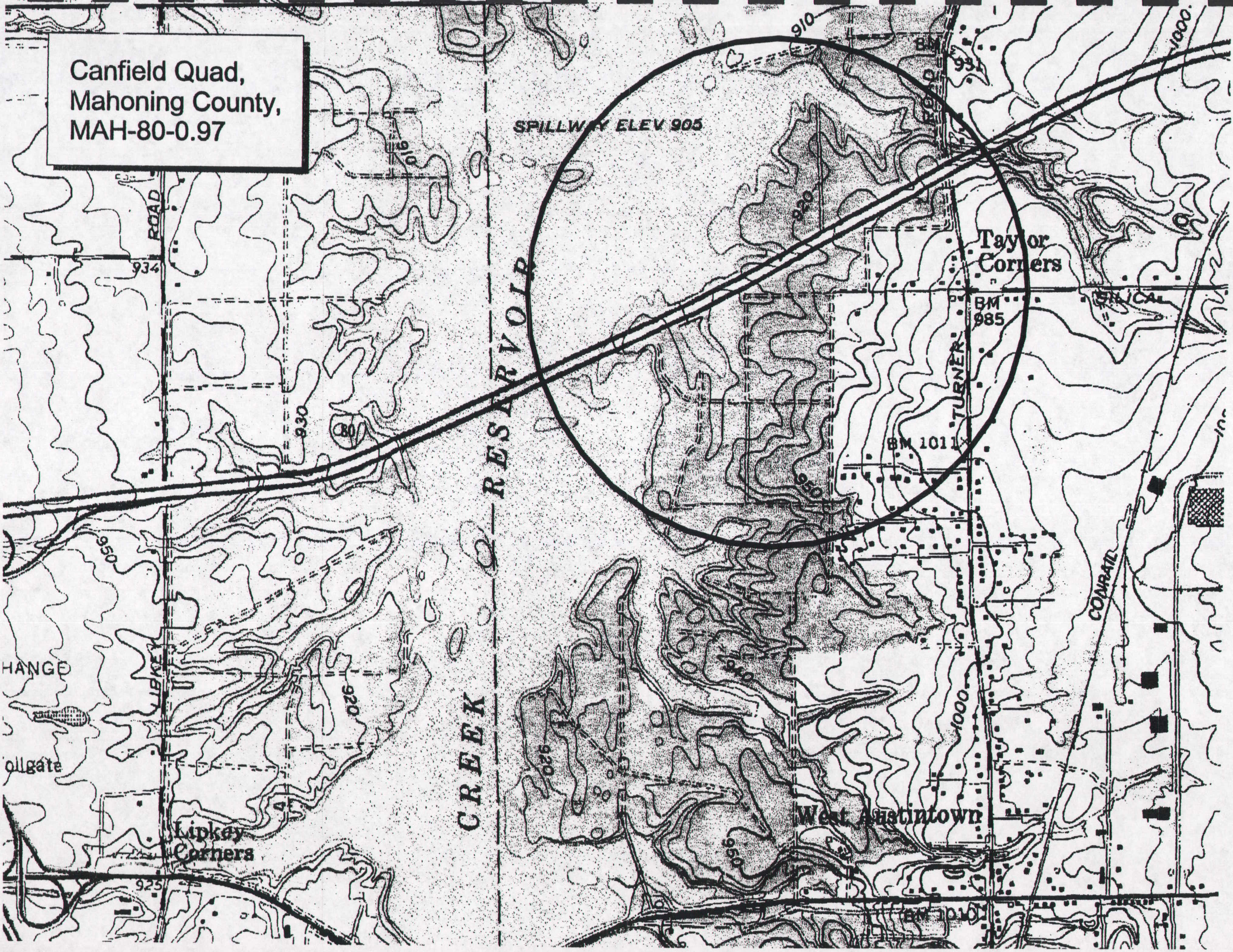
Our inventory program has not completely surveyed Ohio and relies on information supplied by many individuals and organizations. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. Please note that although we inventory all types of plant communities, we only maintain records on the highest quality areas. Also, we do not have data for all Ohio wetlands. For National Wetlands Inventory maps, please contact Madge Fitak in the Division of Geological Survey at 614-265-6576.

Please contact me at 614-265-6818 if I can be of further assistance.

Sincerely,

Debbie Woischke

Debbie Woischke, Ecological Analyst
Natural Heritage Program



Canfield Quad,
Mahoning County,
MAH-80-0.97
SPILLWAY ELEV 905
RESERVOIR
CREEK
Taylor Corners
BM 985
BM 1011
TURNER
ROAD
SILICA
CONRAIL
West Austintown
Lipkey Corners
LIPKEY
HANGE
ollgate
80

DEPARTMENT OF THE ARMY
PITTSBURGH DISTRICT, CORPS OF ENGINEERS
WILLIAM S. MOORHEAD FEDERAL BUILDING
1000 LIBERTY AVENUE
PITTSBURGH, PA 15222-4186

RECEIVED
APR 29 2005
OFFICE OF
ENVIRONMENTAL SERVICES

REPLY TO
ATTENTION OF:

April 27, 2005

Operations Division
Regulatory Branch
200401923

Ohio Department of Transportation
Central Office
Attn: Timothy M. Hill
P.O. Box 899
Columbus, Ohio 43216-0899

Dear Mr. Hill:

Reference is made to your request for a review of the wetland delineation report prepared by MS Consultants, Inc., for the I-80 widening project located in Mahoning County, Ohio. The project will widen the current 4 lane highway to 6 lanes from the Ohio Turnpike Interchange to the IR680/SR11 Interchange, and will include replacing the twin bridges over Meander Creek Reservoir.

On March 22, 2005, Marcia Haberman of this office met with Chris Staron, Don Rostofer and Ed Deley of ODOT, Mike Krokonko of Gannett Fleming, and Mark Fedosik and Milt Lenhart of MS Consultants, Inc. to review the project area and verify the wetland delineation. Twenty-eight wetland areas are located within the approximate 125 foot project work limit area. Twenty-six of these areas, containing 1.86 acres of wetlands, are located adjacent to Meander Creek Reservoir or one of the 12 unnamed tributaries located within the project area and are jurisdictional under the Clean Water Act. Two wetland areas, NW-1 and NW-D containing 0.16 acres, are considered isolated and not regulated by this office, however they may be regulated by the Ohio Department of Environmental Protection (OEPA). Eight of the identified wetlands extend beyond the project work limit area. Additionally, 13 wetland areas were identified adjacent to, but outside of, the project area and will not be impacted by this project. Four areas, SE-C, SE-B, SE-I, and C, that were delineated within the project area are part of the stormwater management system for I-80, and are therefore not considered regulated wetlands.

At this time we agree with this wetland delineation report with the updated wetland table and the revised MAH-80-0.97 aquatic resource map received in this office on April 7, 2005. This delineation will remain valid for a period of five years from the date of this letter, unless new information warrants revision of the delineation.

In regards to the proposed project, every effort should be made to avoid and minimize the wetland impacts to the fullest extent practicable. Once a final development plan is established you should again contact this office to verify permit requirements.

Unavoidable impacts to the aquatic resources will require compensatory mitigation. The mitigation ratio will be dependent upon the wetland category and stream classification as determined by the OEPA. Mitigation within the Meander Creek watershed is the preferred first option. However, if this is not feasible, a mitigation site within the expanded Mahoning River or Upper Ohio River watersheds may be considered.

We will continue to work with you in your development plans in order to protect the aquatic resources. If you have any questions, please contact Marcia H. Haberman at (412) 395-7361.

Sincerely,

Marcia Haberman

for Michael J. Cummings, Jr.
Chief, Regulatory Branch

CF:

OEPA, Dan Osterfeld