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CITY OF SCOTTSDALE
DESERT GREENBELT PROJECT

Pima Road Channel
Preferred Alternative

by: The Greiner Team

The Desert Greenbelt

Registered Professional Engineer (Civil)
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Date Signed 5/4/95
ARIZONA, U.S.A.

April 1995

A680.928

DESERT GREENBELT PROJECT
PIMA ROAD CHANNEL

PREFERRED ALTERNATIVE REPORT

Introduction

Scottsdale enjoys a wealth of natural beauty, history and Arizona culture that is embodied in its rugged mountains and desert environment. In keeping with its image, the City made the decision to implement a policy to effectively manage stormwaters on a regional basis, while providing passive recreational opportunities for the community in a natural desert setting. The concept of the Desert Greenbelt offers North Scottsdale the opportunity to blend effective flood control and open space amenities within the environmentally sensitive desert landscape, while balancing homeowner concerns, development objectives, public safety, public land-holder requirements and City-wide goals.

In November 1992, the Scottsdale City Council adopted an amendment to the Drainage Element of the ***General Plan*** which established the Desert Greenbelt concept and the proposed corridors. The Desert Greenbelt will use natural washes wherever possible and preserve the rugged character of the surrounding desert environment. The Desert Greenbelt system for this project is being designed to contain the 100-year alluvial fan flood hazard which currently exists in Scottsdale north of the Central Arizona Project (CAP) Canal.

In July, 1993, the City retained the Greiner Team to perform the ***Desert Greenbelt Preliminary Design and Analysis.*** The study includes three individual project corridors: Rawhide Wash, Pima Road Channel and Reata Pass/Beardsley Wash which includes the Upper Reata Pass Wash (Figure I-1). The project has included four phases: Identifying the Concepts; Developing the Concepts; Consolidating the Concepts; and Final Refinement/Preliminary Design. Each phase includes Public Participation; Environmental Analysis; Visual, Multi-Use Recreation and Land Use Evaluation; Hydrology/Hydraulic Engineering; and Funding Alternatives. These phases included:

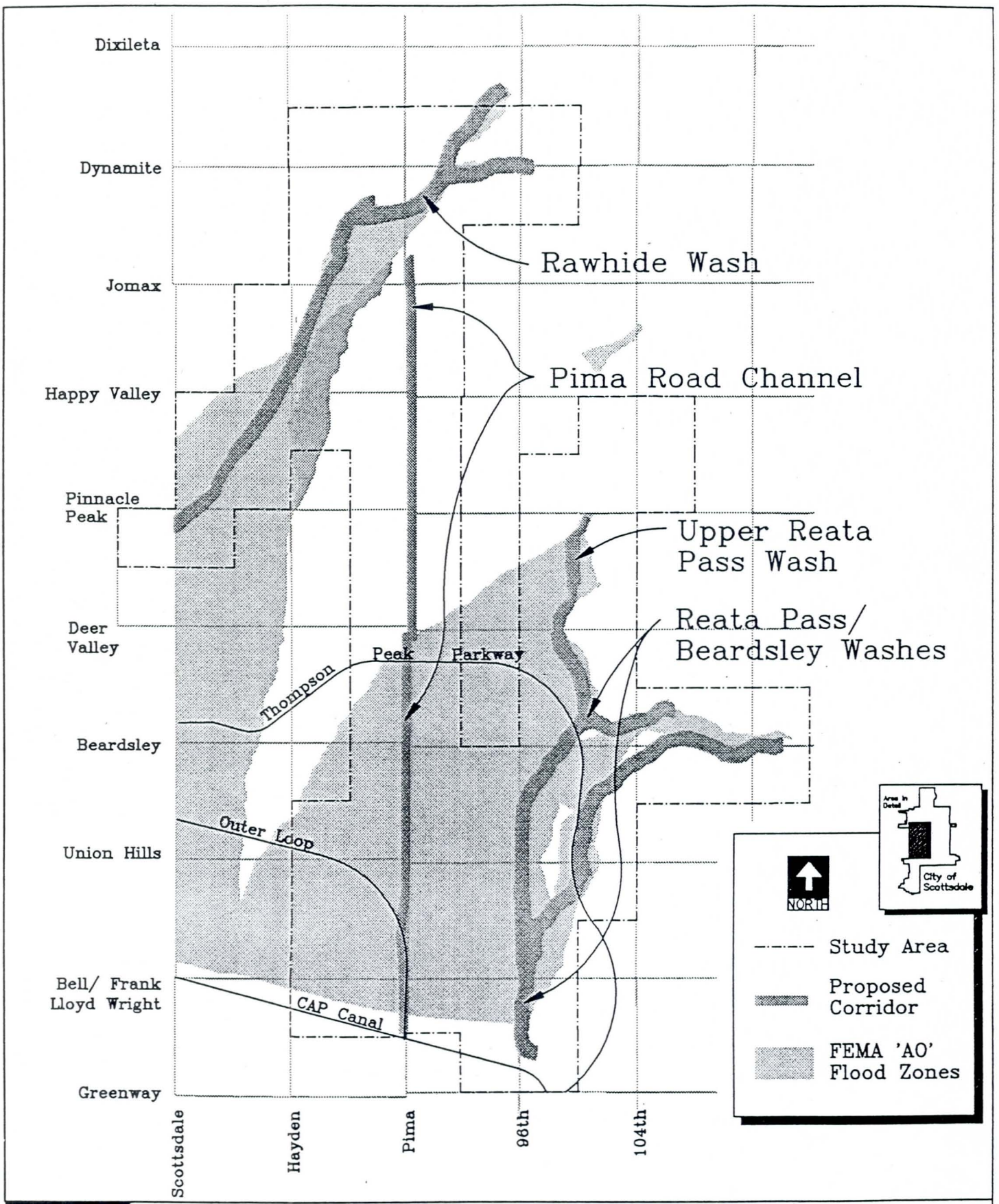
- Identifying Concepts – data gathering, survey/mapping, review of various treatments and alternatives

- Developing the Concepts – developed full-scale alternatives, developed, integrated pubic concerns, refined hydrologic/hydraulic analyses, produced the Snapshot Study.

- Consolidating the Concepts – identified specific issues and remedies, presented specific recommendations regarding identifiable environmental, aesthetic, planning, land-use, recreational and hydraulic issues, produced the Specific Option Reports.

- Final Refinement/Preliminary Design – preliminary 10-percent design drawings; final environmental analysis and mitigation plan; address public involvement issues; estimates of capital, operation and maintenance costs and funding mechanisms.

This Preferred Alternative Report, along with its accompanying addenda, represent the culmination of this effort. Upon receiving final public comment on these documents, the final 10-percent Preliminary Design Drawings will be completed and presented to Council, providing direction for the full implementation of the **Scottsdale Desert Greenbelt Projects**.



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The Desert Greenbelt

Scale: 1"=6000'

Principal Washes and Channels

City of Scottsdale and Greiner, Inc.

Figure I-1

PIMA ROAD CHANNEL
PREFERRED ALTERNATIVE

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PIMA_PA.GRE

Definition of the Alternative

The Pima Road Channel is the only totally manmade channel in the Desert Greenbelt. Construction of this channel must begin at Station 10+00 with improvements to the existing U.S. Bureau of Reclamation (USBR) Retention Basin which is located north of the CAP Canal. These improvements need to address drainage mitigation to the Tournament Players Club (TPC). A reinforced turf channel is planned from the outlet to the Outer Loop Freeway (Station 41+00). From the Outer Loop Freeway north, the channel is planned to parallel Pima Road. Between Union Hills Drive (Station 83+00) and the Deer Valley Road alignment (Station 190+00), the channel is located west of Pima Road. The alignment shifts to the east side of Pima Road near the Deer Valley Road alignment. Termination of the channel is at Station 360+00 just north of Jomax Road (Station 348+00). Throughout its length, the channel is completely depressed. The north-south channel alignment intercepts natural drainages which flow from the northeast. The purpose of the Pima Road Channel is to protect existing and future homes, businesses and infrastructure.

Selection Rationale

Station 10+00 to Station 84+00 (See Sheets PA1 to 4)

Objectives/Issues

- A specially designed structure is required at the outlet into the USBR retention basin at existing TPC Desert Course "Dry Lake"
  - The water velocity will be reduced
  - The energy dissipation helps to prevent scour
  - Aesthetic treatment of the structure is important due to high visibility from the TPC
  - Impacts to the TPC resulting from more concentrated inflow will need to be addressed in final design (opportunity to integrate with retention enhancement to improve playability of course)
- The need and selected technique for channel stabilization
  - The exposed slope condition is highly erodible
  - The area is highly visible

- Bridges are required at the Outer Loop Freeway, Pima Road and Union Hills Drive

Hydrology/Hydraulics Summary

- The alignment south of the Outer Loop Freeway is a reinforced turf trapezoidal channel with a bottom width of 55 feet and depths of about 8 to 9 feet with 2.5 to 1 side slopes

- At the outer loop, a near rectangular concrete channel with a bottom width of 50 feet conveys the flow

- North of the outer loop, the channel is trapezoidal and concrete lined with a bottom width of 50 feet and 2:1 side slopes for depths below existing ground of 10 to 12 feet

- The alignment conveys a supercritical flow increasing from 7,370 cubic feet per second (cfs) to 9,330 cfs at the Outer Loop Freeway

  - Velocities are between 17 and 20 feet per second (fps) in the turf portion and about 30 fps in the concrete reach for the 100-year flood

Constraints/Public Comment

- Locate outlet structure to minimize impact to existing TPC features

- Existing road and infrastructure will influence final channel alignment; plans call for an interim Outer Loop Highway before final construction

- Locate channel to maximize development viability of existing parcels

Benefits/Impacts

- Containment of the 100-year storm event within designated drainage corridor

- Roads will have all-weather crossings

Station 84+00 to 190+00 (See Sheets PA4 to 8)

Objectives/Issues

- A system of skeletal collector channels united with the Pima Road Channel intercept natural drainage from the northeast
- Retention of the natural desert character
- Provide passive recreational features within the corridor
- The need and selected technique for channel stabilization
  - The exposed slope condition is highly erodible
  - The area is highly visible
  - Recommend narrow concrete channel with wide, natural overbanks
- A specially designed structure is required for Pima Road channel crossing at Station 187+00
  - Confluence of main channel with interceptor channel from east must be upstream from road crossing
  - The road crossing will accommodate multi-use path/trail
- Bridges are required at Hualapai Drive, Thompson Peak Parkway and Pima Road

Hydrology/Hydraulic Summary

- The concrete trapezoidal channel has a top width of about 80 feet with a supercritical flow of 7,300 cfs, a depth of seven feet and velocities near 30 fps
- Locate drop structures upstream of bridges to provide ten feet of clearance for multi-use trails/paths

Constraints/Public Comment

- Channel design must be compatible with desert character and in keeping with the Pima Road scenic corridor

- All access points from Pima Road to proposed development west of the channel require a bridge

- The approved master plan for the adjacent development must be considered in the final design

Benefits/Impacts

- Containment of the 100-year storm event within designated drainage corridor

- Wide scenic corridor buffers narrow channel

- Protection of infrastructure from storm damage

- Extension of planned multi-use path/trail system

- Wildlife habitat and movement may be impacted

- Proposed channel will affect the view from Pima Road

Station 190+00 to 358+60 (See Sheets P8 to 16)

Objectives/Issues

- Above Happy Valley Road (Station 297+00) minimize channel depth and width

  - Use drop structure upstream of all bridged road crossings to gain clearance for multi-use path/trail

- Retain natural desert character

- Provide passive recreational features within the corridor

- The channel protects Pima Road and approximately three square miles of developed residential areas from flooding

Hydrology/Hydraulic Summary

- Flows increase from near 900 cfs at Jomax Road to about 5,300 cfs before confluencing with the collector channel at Deer Valley Road

- A narrow channel (about 40 feet) is found upstream of Happy Valley Road which contains drop structures and flows of about 13 fps and three to four feet deep

- Downstream of Happy Valley Road the channel is trapezoidal with a 40 feet wide sand bottom and 2:1 concrete side slopes

  - The overall channel depth varies from 7 to 12 feet with drop structures upstream of major roads

Constraints/Public Comment

- The City of Scottsdale pumping station at Station 220+00 forces the channel to the east which will impact the site plan for the adjacent parcel

- Along the Pima Road frontage for the commercial properties (Station 230+00 to 256+00) numerous points of access are desired by the landowners

  - Bridges are less costly with a narrower channel cross-section

- Both the multi-use path and trail must be accommodated

- The character of the scenic corridor must be maintained

- Access across the channel above Station 260+00 is limited to one-half mile intervals

Benefits/Impacts

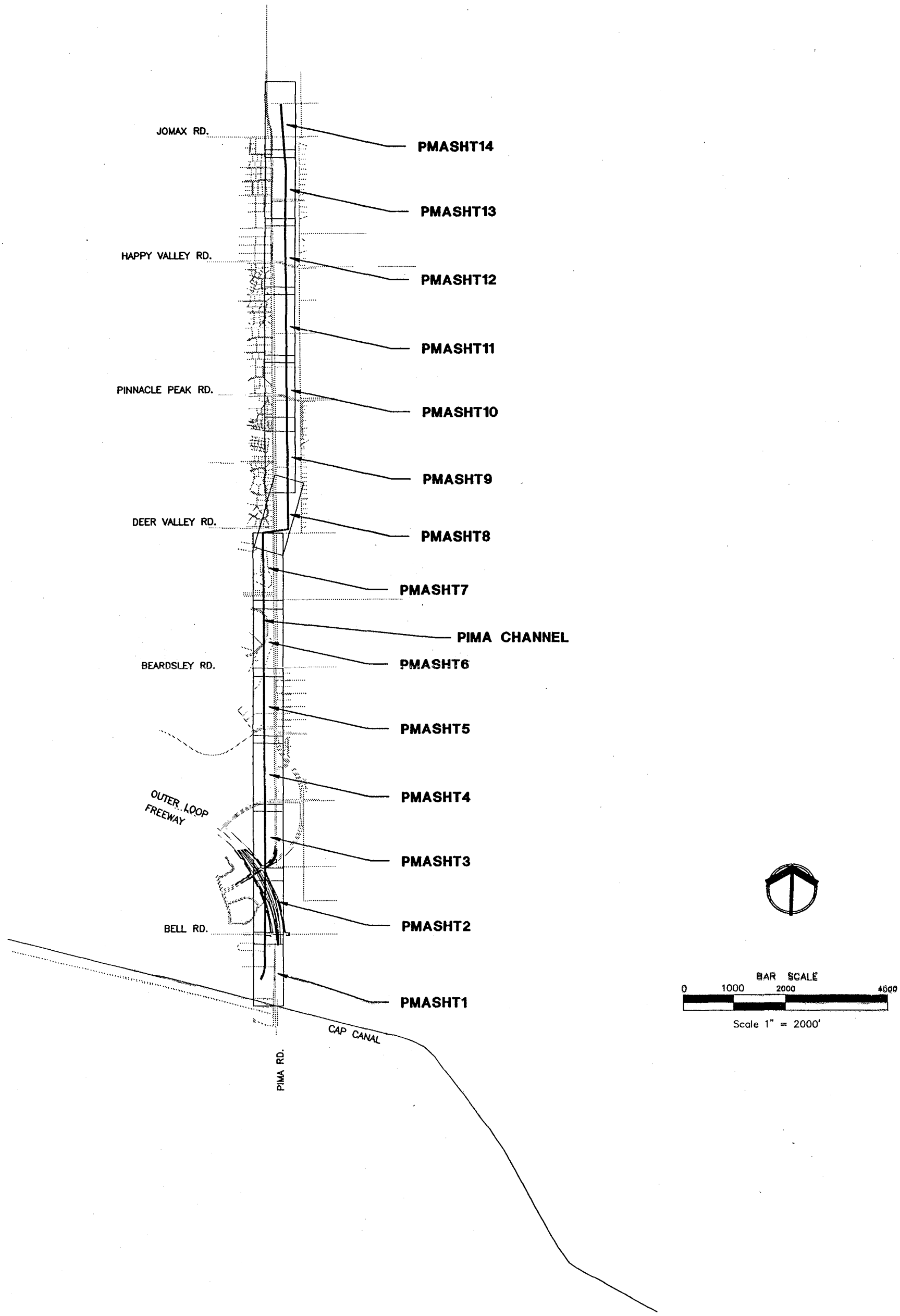
- Containment of the 100-year storm event within designated drainage corridor

- A scenic corridor buffers the channel from Pima Road

- All weather-crossings for roads and streets

- Grade separation for multi-use path/trail crossings
- Protection of infrastructure and existing development from storm damage
- Extension of planned multi-use path/trail system
- Wildlife habitat and movement may be impacted
- Proposed channel will affect the view from Pima Road

PIMA_PA.GRE



The Desert Greenbelt

DRAWING NO. Key1 of Key1

PROJECT NAME
Pima Road Channel

DRAWING TITLE
Preliminary 10% Plans

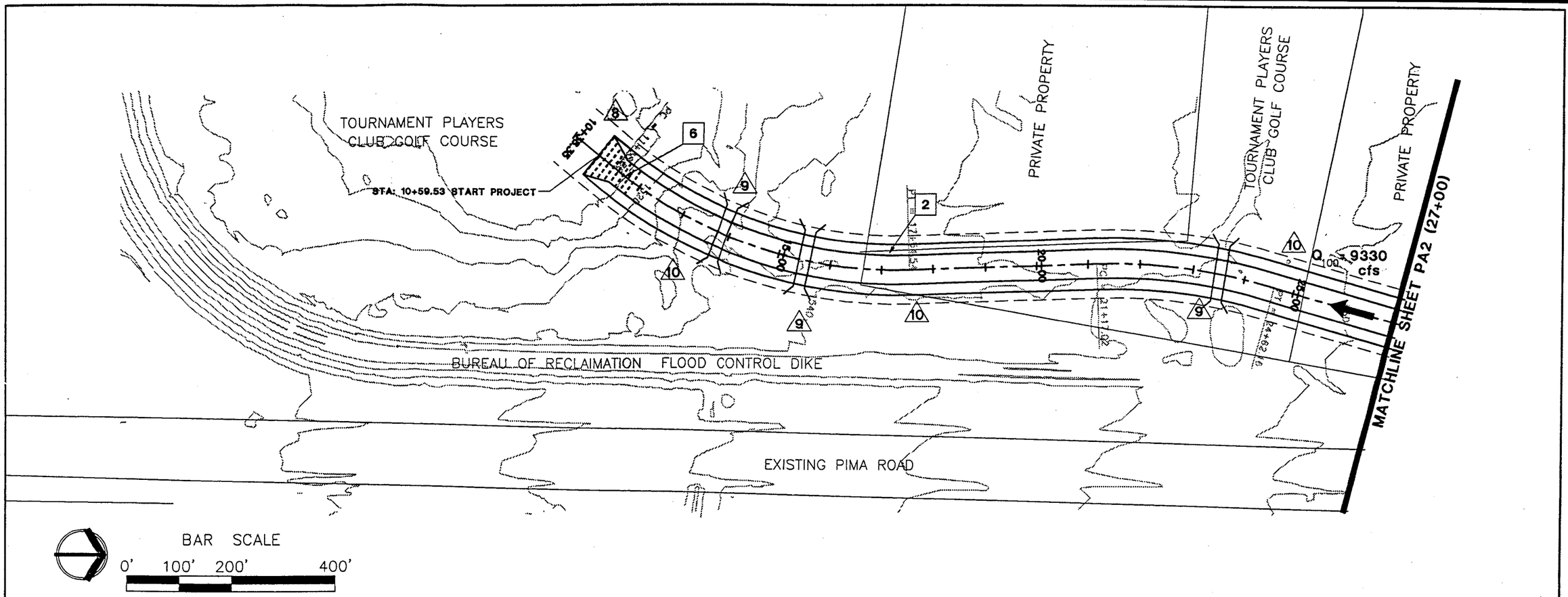
Greiner
Greiner, Inc.
Phoenix, AZ
Engineers, Architects and Planners

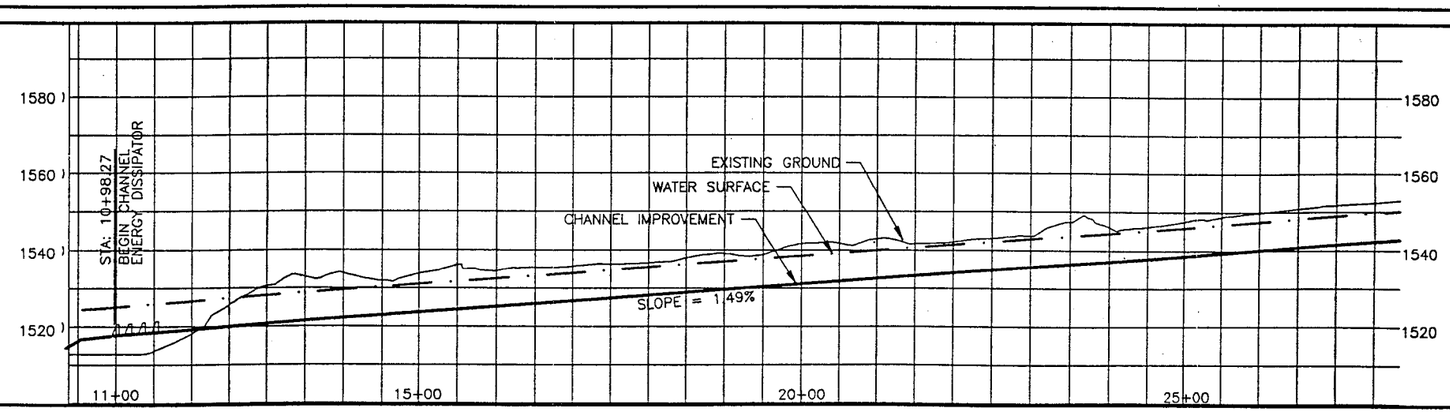
ENGINEERS

SEAL

PROJ. NO. E029102
JOB NO.
DESIGN W.C.L.
DRAWN M.T.C.
CHECKED R.E.P.
SCALE: AS NOTED

DATE	REVISIONS	BY	AUTH.





CHANNEL IMPROVEMENTS

2. REINFORCED TURF CHANNEL; 55' BOTTOM WIDTH, 2.5:1 SIDE SLOPES.
6. PROVIDE ENERGY DISSIPATOR AND REGRADE AT OUTLET.

PATHS / TRAILS

LAND USE

MITIGATION

8. ENERGY DISSIPATOR DESIGNED AS WATERFALL INTO DRY LAKE
9. BRIDGED CROSSING FOR CARTS & EQUIPMENT-CONSIDER LOW-FLOW IN FINAL DESIGN
10. ALIGN CHANNEL TO MINIMIZE IMPACT TO GOLF COURSE FEATURES

AESTHETIC APPLICATIONS

LEGEND

- MULTI-USE TRAIL
- MAINTENANCE ACCESS
- PATH
- FLOODWALL
- CHANNEL RIGHT OF WAY
- SOIL CEMENT LEVEE
- NATURAL CONTAINMENT
- ACCESS LEVEE
- CONCRETE SLOPE
- BANK PROTECTION
- REGRADE
- DROP STRUCTURE
- GRADE CUT
- 10+00 CHANNEL CENTERLINE AND STATIONING
- 5' CONTOURS

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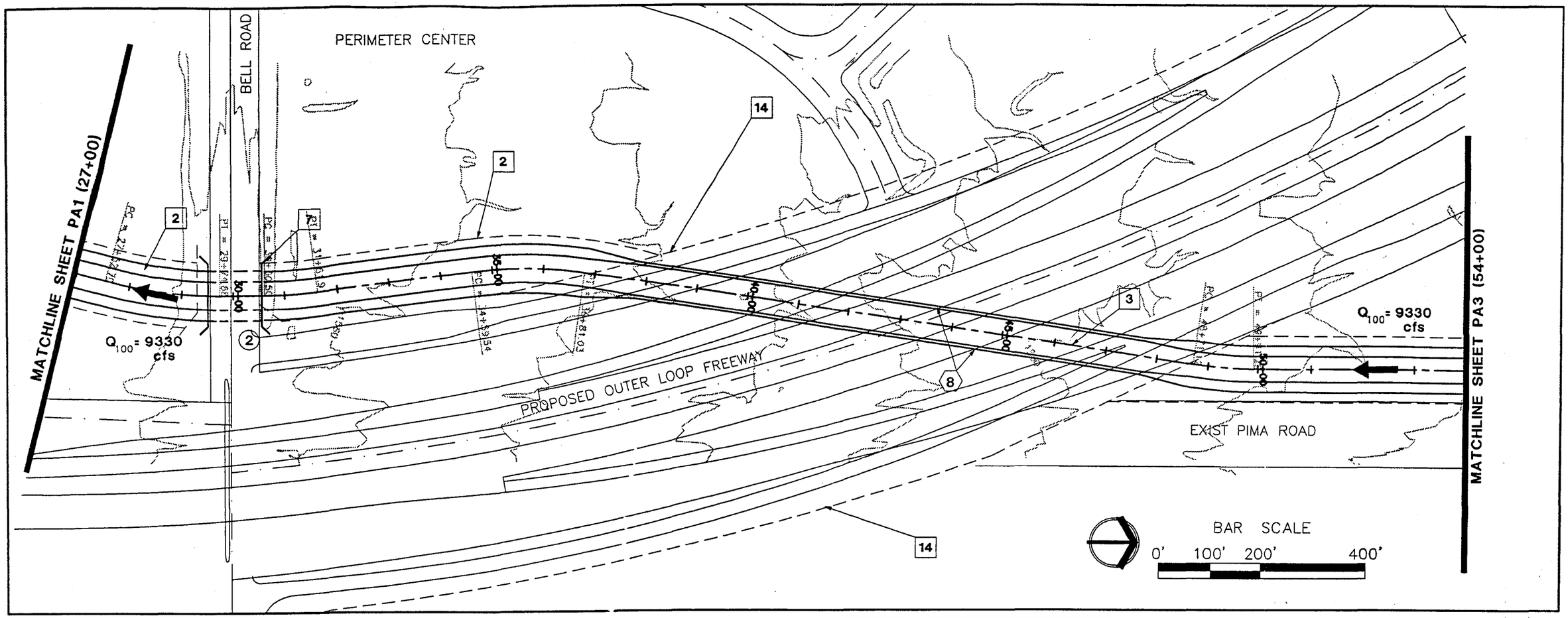
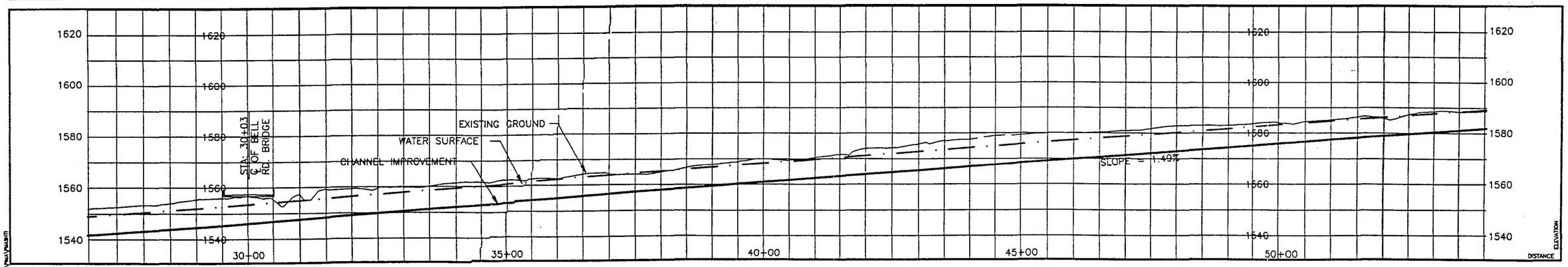
PROJECT NAME: Pima Road Channel

DRAWING TITLE: Preliminary 10% Plans

DRAWING NO.
PA1 of PA14

The Desert Greenbelt





CHANNEL IMPROVEMENTS

2. REINFORCED TURF CHANNEL; 55' BOTTOM WIDTH, 2.5:1 SIDE SLOPES.
3. CONCRETE CHANNEL; 60' BOTTOM WIDTH, 1:1.5 SIDE SLOPES.
7. CONSTRUCT BRIDGE.
14. OUTER LOOP FREEWAY R.O.W./ROADS.

PATHS / TRAILS

LAND USE

2. IMPROVEMENTS DESIGNED TO FACILITATE WASH ACCESS TO ADJACENT PROPERTY OWNERS

MITIGATION

AESTHETIC APPLICATIONS

8. COLOR STAINED CONCRETE

LEGEND

- MULTI-USE TRAIL
- MAINTENANCE ACCESS
- PATH
- FLOODWALL
- CHANNEL RIGHT OF WAY
- SOIL CEMENT LEVEE
- NATURAL CONTAINMENT
- ACCESS LEVEE
- CONCRETE SLOPE
- BANK PROTECTION
- REGRADE
- DROP STRUCTURE
- GRADE CUT
- 10+00 CHANNEL CENTERLINE AND STATIONING
- 5' CONTOURS

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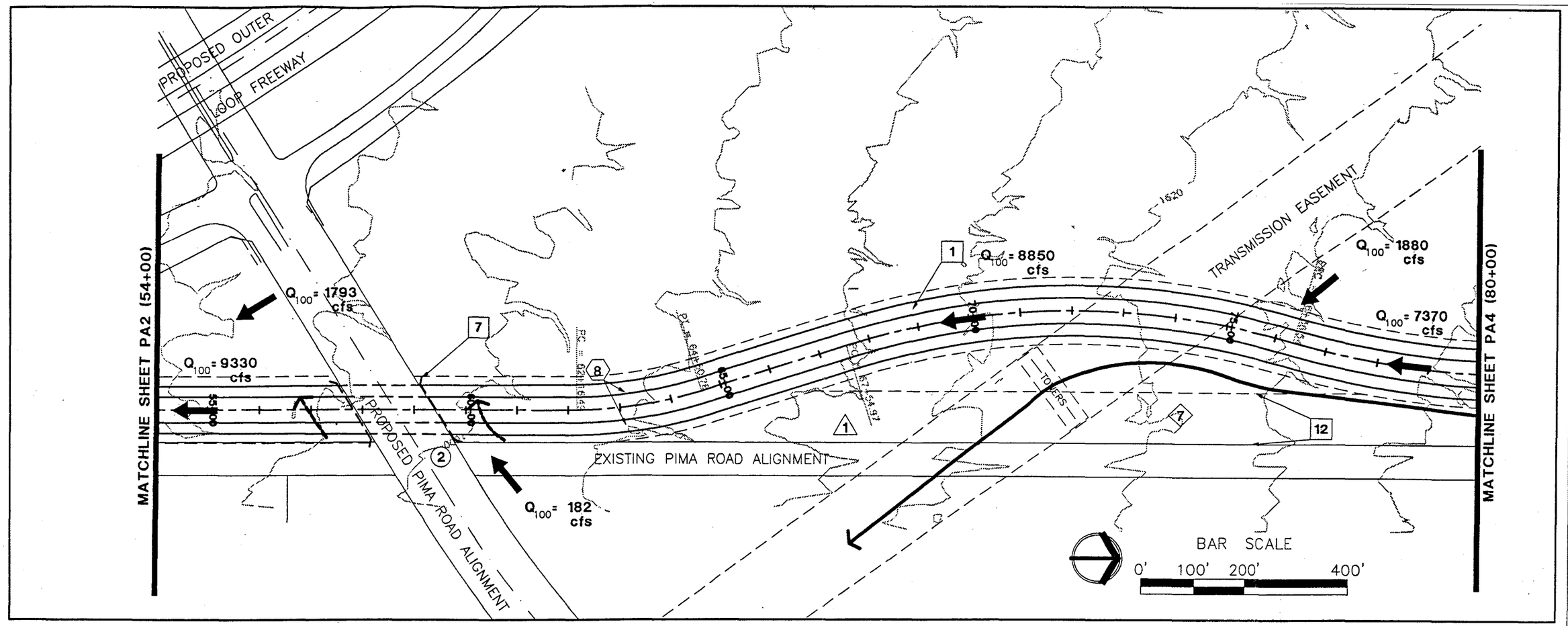
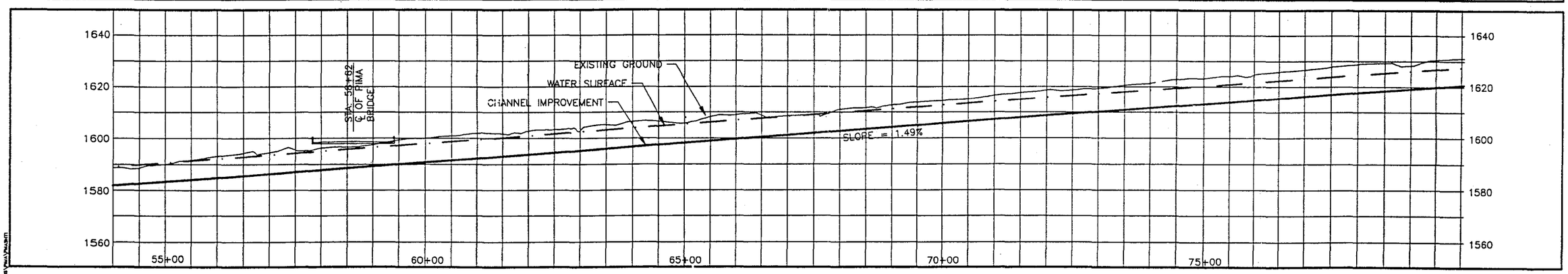
PA2 of PA14





CHANNEL IMPROVEMENTS □
1. CONCRETE CHANNEL; 50' BOTTOM WIDTH, 2:1 SIDE SLOPES.
7. CONSTRUCT BRIDGE.
12. 100' SCENIC CORRIDOR.

PATHS / TRAILS ◇
7. PATH/TRAIL LINKS TO EXISTING REGIONAL SYSTEMS

LAND USE ○
2. BRIDGE/BOX CULVERT PROVIDES AN ALL WEATHER CROSSING.

MITIGATION △
1. 100' SCENIC CORRIDOR ADJACENT TO PIMA ROAD

AESTHETIC APPLICATIONS ⬡
8. COLOR STAINED CONCRETE

LEGEND
- MULTI-USE TRAIL
- MAINTENANCE ACCESS
- PATH
- FLOODWALL
- CHANNEL RIGHT OF WAY
- SOIL CEMENT LEVEE
- NATURAL CONTAINMENT
- ACCESS LEVEE
- CONCRETE SLOPE
- BANK PROTECTION
- REGRADE
- DROP STRUCTURE
- GRADE CUT
- 10+00 CHANNEL CENTERLINE AND STATIONING
- 5' CONTOURS

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Pima Road Channel

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Preliminary 10% Plans

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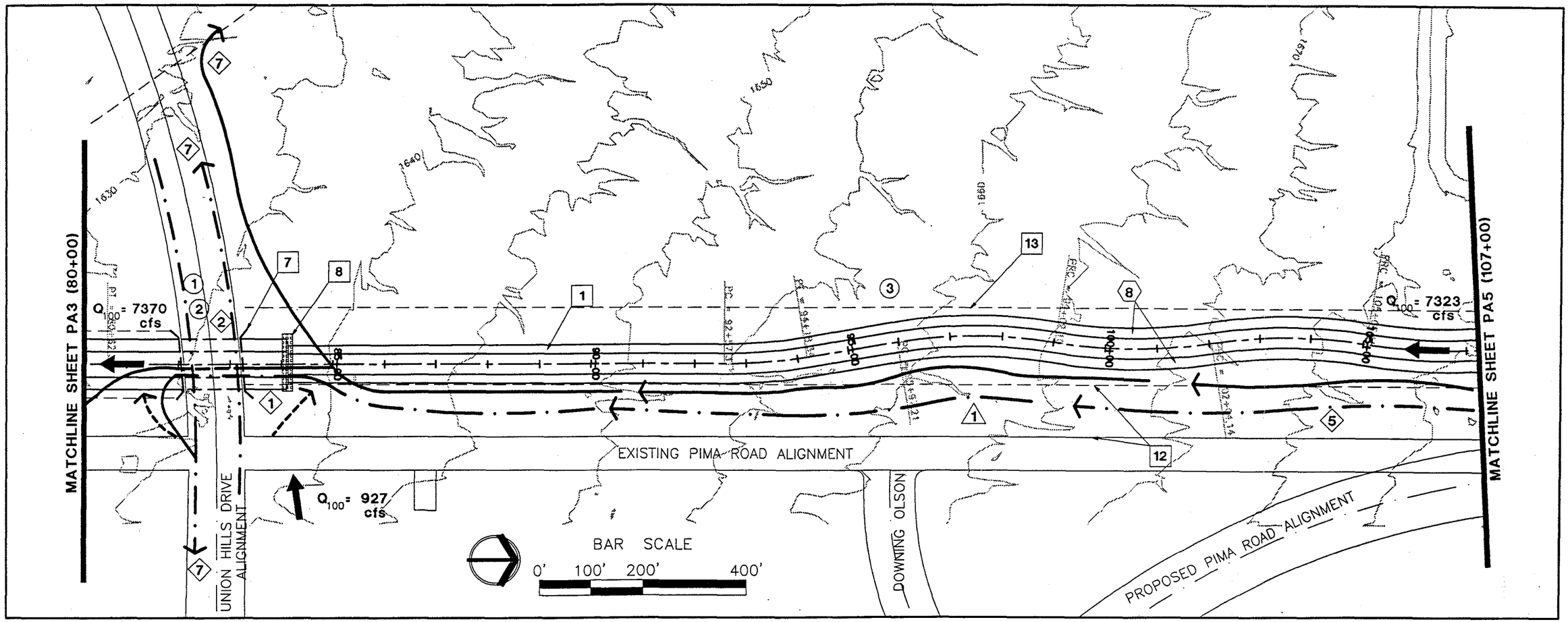
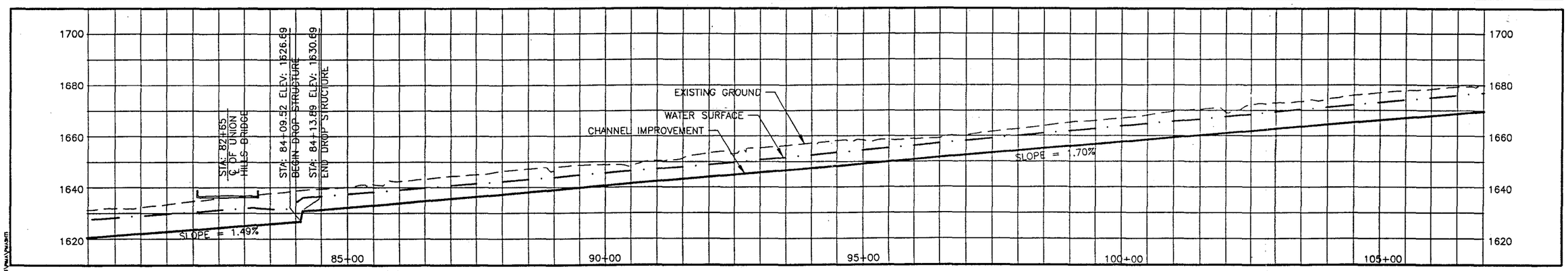
PA3 of PA14





CHANNEL IMPROVEMENTS

1. CONCRETE CHANNEL; 40' BOTTOM WIDTH,2:1 SIDE SLOPES.
7. CONSTRUCT BRIDGE.
8. CONSTRUCT CONCRETE DROP STRUCTURE.
12. 100' SCENIC CORRIDOR.
13. DESERT GREENBELT BOUNDARY.

PATHS / TRAILS

1. INSTALL SIGNS TO DIRECT PATH/TRAIL USERS
2. 10' CLEARANCE UNDER BRIDGE
5. PATH LOCATED ON NATURAL GRADE EXCEPT AT STREET CROSSINGS
7. PATH/TRAIL LINKS TO EXISTING REGIONAL SYSTEMS

LAND USE

1. IMPROVEMENTS DESIGNED TO FACILITATE WASH ACCESS FOR ADJACENT PROPERTY OWNERS.
2. BRIDGE/BOX CULVERT PROVIDES AN ALL WEATHER CROSSING.
3. SCENIC CORRIDOR & CHANNEL PROVIDE BUFFER FROM PIMA ROAD

MITIGATION

1. 100' SCENIC CORRIDOR ADJACENT TO PIMA ROAD

AESTHETIC APPLICATIONS

8. COLOR STAINED CONCRETE

LEGEND

- MULTI-USE TRAIL
- MAINTENANCE ACCESS
- PATH
- FLOODWALL
- CHANNEL RIGHT OF WAY
- SOIL CEMENT LEVEE
- NATURAL CONTAINMENT
- ACCESS LEVEE
- CONCRETE SLOPE
- BANK PROTECTION
- REGRADE
- DROP STRUCTURE
- GRADE CUT
- 10+00 CHANNEL CENTERLINE AND STATIONING
- 5' CONTOURS

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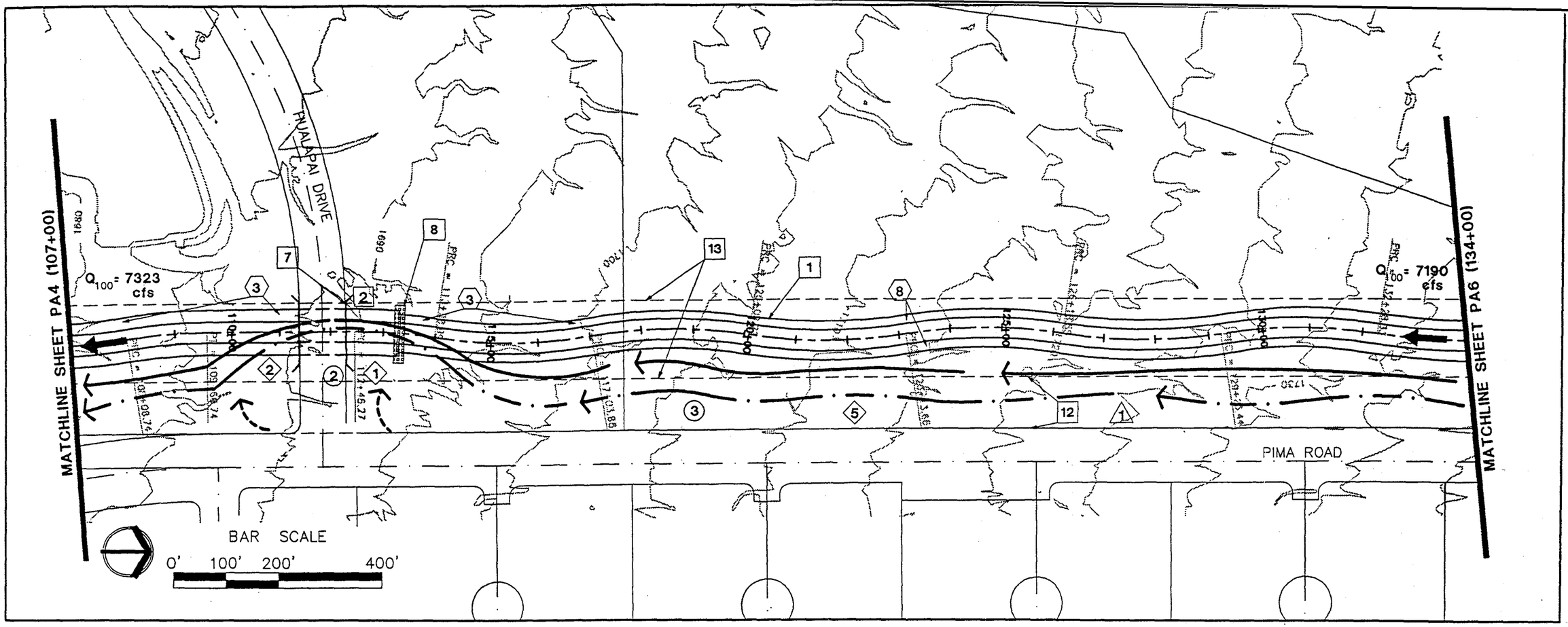
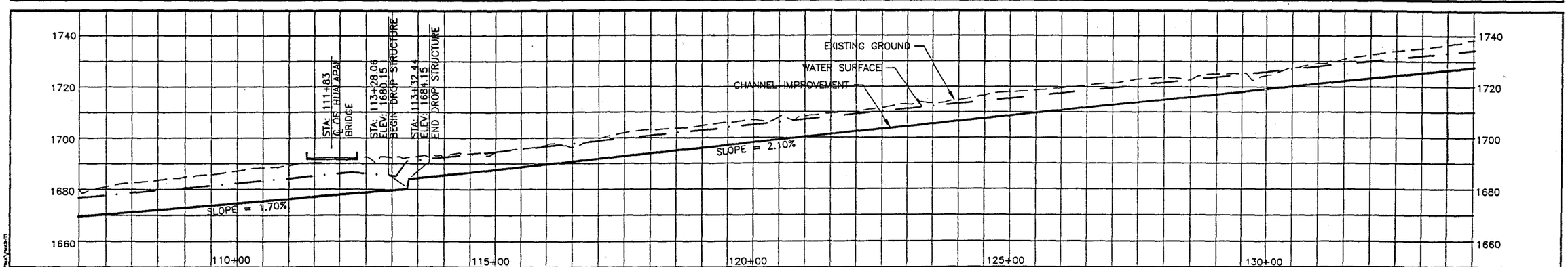
Desert Greenbelt





CHANNEL IMPROVEMENTS

1. CONCRETE CHANNEL; 40' BOTTOM WIDTH,2:1 SIDE SLOPES.
7. CONSTRUCT BRIDGE.
8. CONSTRUCT CONCRETE DROP STRUCTURE.
12. 100' SCENIC CORRIDOR.
13. DESERT GREENBELT BOUNDARY.

PATHS / TRAILS

1. INSTALL SIGNS TO DIRECT PATH/TRAIL USERS
2. 10' CLEARANCE UNDER BRIDGE
5. PATH LOCATED ON NATURAL GRADE EXCEPT AT STREET CROSSINGS

LAND USE

2. BRIDGE/BOX CULVERT PROVIDES AN ALL WEATHER CROSSING.
3. SCENIC CORRIDOR & CHANNEL PROVIDE BUFFER FROM PIMA ROAD

MITIGATION

1. 100' SCENIC CORRIDOR ADJACENT TO PIMA ROAD

AESTHETIC APPLICATIONS

3. BENCHING INTO SLOPE
8. COLOR STAINED CONCRETE

LEGEND

- MULTI-USE TRAIL
- MAINTENANCE ACCESS
- PATH
- FLOODWALL
- CHANNEL RIGHT OF WAY
- SOIL CEMENT LEVEE
- NATURAL CONTAINMENT
- ACCESS LEVEE
- CONCRETE SLOPE
- BANK PROTECTION
- REGRADE
- DROP STRUCTURE
- GRADE CUT
- 10+00 CHANNEL CENTERLINE AND STATIONING
- 5' CONTOURS

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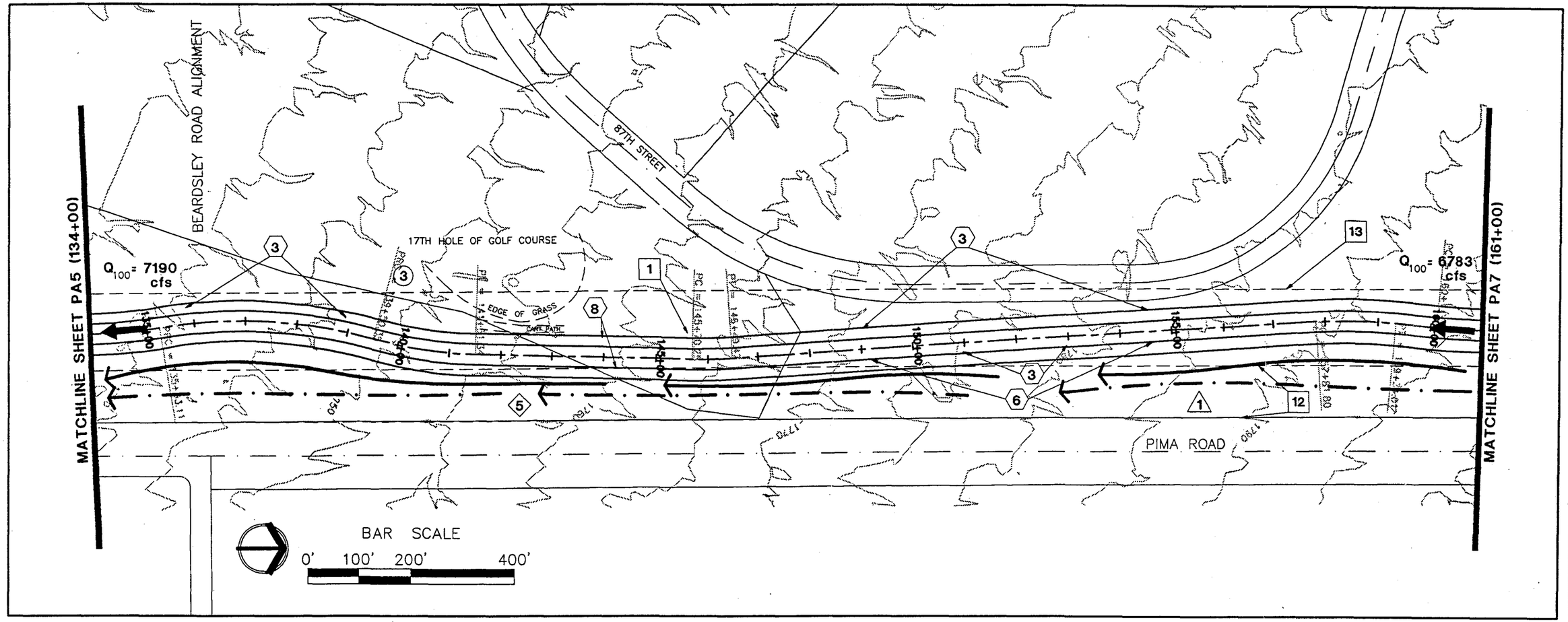
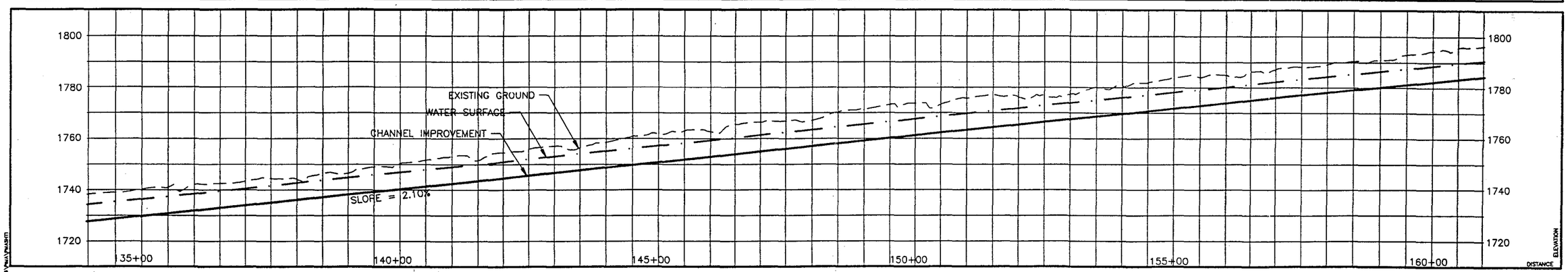
The Desert Greenbelt





CHANNEL IMPROVEMENTS
1. CONCRETE CHANNEL; 40' BOTTOM WIDTH,2:1 SIDE SLOPES.
12. 100' SCENIC CORRIDOR.
13. DESERT GREENBELT BOUNDARY.

PATHS / TRAILS
5. PATH LOCATED ON NATURAL GRADE EXCEPT AT STREET CROSSINGS

LAND USE
3. SCENIC CORRIDOR & CHANNEL PROVIDE BUFFER FROM PIMA ROAD

MITIGATION
1. 100' SCENIC CORRIDOR ADJACENT TO PIMA ROAD

AESTHETIC APPLICATIONS
3. BENCHING INTO SLOPE
6. FAUX ROCK
8. COLOR STAINED CONCRETE

LEGEND
- MULTI-USE TRAIL
- MAINTENANCE ACCESS
- PATH
- FLOODWALL
- CHANNEL RIGHT OF WAY
- SOIL CEMENT LEVEE
- NATURAL CONTAINMENT
- ACCESS LEVEE
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- 10+00 CHANNEL CENTERLINE AND STATIONING
- 5' CONTOURS

DATE	REVISIONS	BY	AUTH.

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SCALE: AS NOTED

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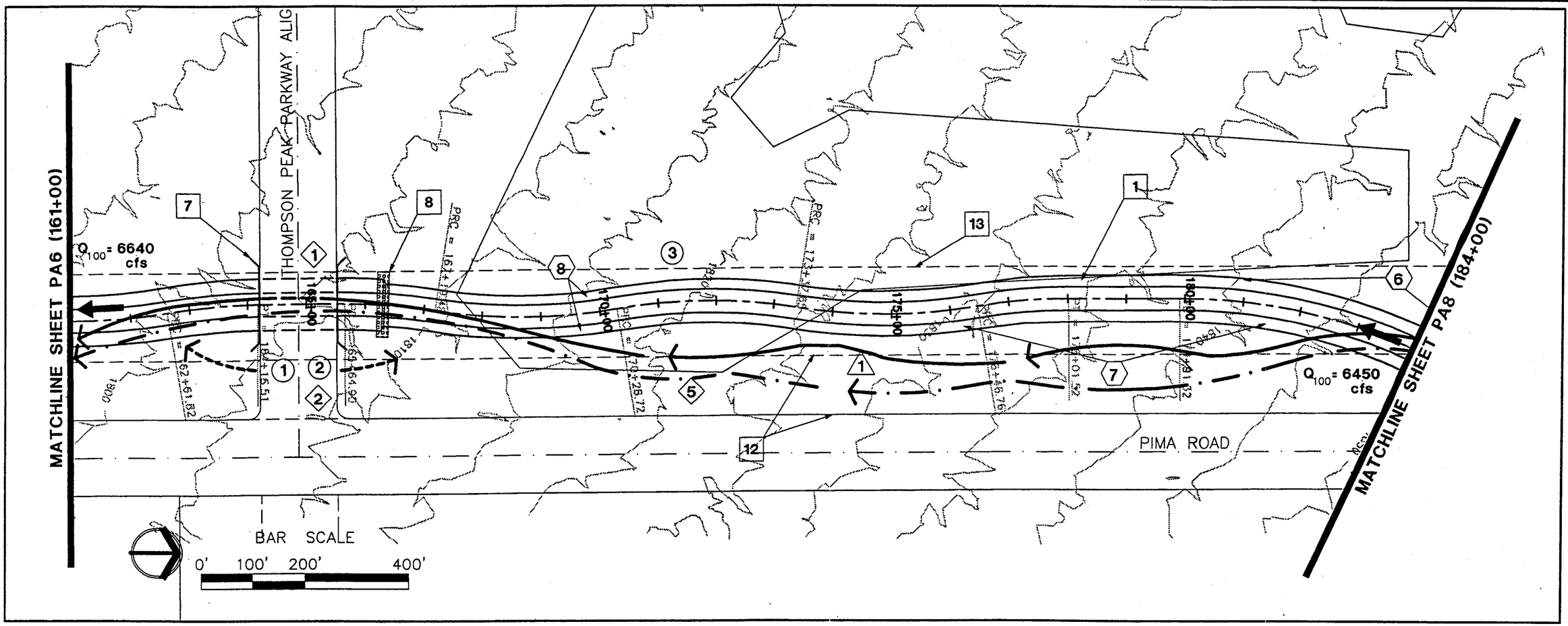
Phoenix, AZ
Engineers, Architects and Planners

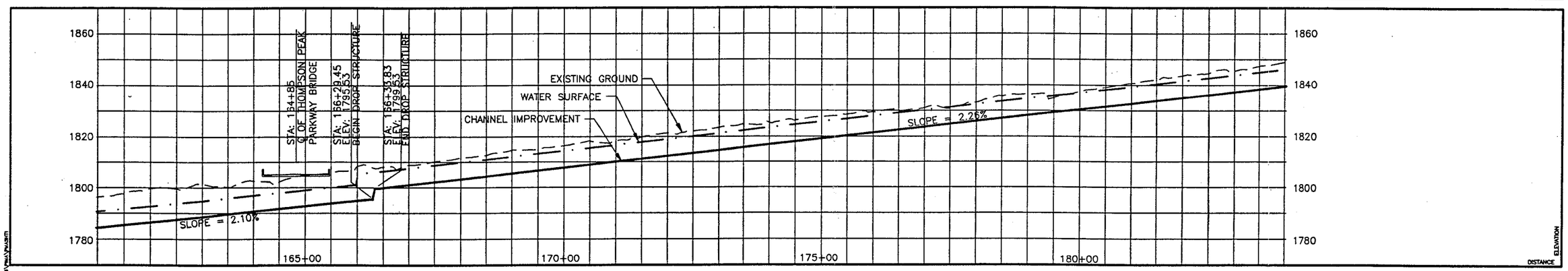
PROJECT NAME: Pima Road Channel

DRAWING TITLE: Preliminary 10% Plans

DRAWING NO. PA6 of PA14

The Desert Greenbelt





CHANNEL IMPROVEMENTS □

1. CONCRETE CHANNEL; 40' BOTTOM WIDTH,2:1 SIDE SLOPES.
7. CONSTRUCT BRIDGE.
8. CONSTRUCT CONCRETE DROP STRUCTURE.
12. 100' SCENIC CORRIDOR.
13. DESERT GREENBELT BOUNDRY.

PATHS / TRAILS ◇

1. INSTALL SIGNS TO DIRECT TRAIL/PATH USERS
2. 10' CLEARANCE UNDER BRIDGE
5. PATH LOCATED ON NATURAL GRADE EXCEPT AT STREET CROSSINGS

LAND USE ○

1. IMPROVEMENTS DESIGNED TO FACILITATE WASH ACCESS FOR ADJACENT PROPERTY OWNERS.
2. BRIDGE/BOX CULVERT PROVIDES AN ALL WEATHER CROSSING.
3. SCENIC CORRIDOR & CHANNEL PROVIDE BUFFER FROM PIMA ROAD

MITIGATION △

1. 100' SCENIC CORRIDOR ADJACENT TO PIMA ROAD

AESTHETIC APPLICATIONS ⬡

6. FAUX ROCK
7. INTERPRETIVE ART
8. COLOR STAINED CONCRETE

LEGEND

- MULTI-USE TRAIL
- MAINTENANCE ACCESS
- PATH
- FLOODWALL
- CHANNEL RIGHT OF WAY
- SOIL CEMENT LEVEE
- NATURAL CONTAINMENT
- ACCESS LEVEE
- CONCRETE SLOPE
- BANK PROTECTION
- REGRADE
- DROP STRUCTURE
- GRADE CUT
- 10+00 CHANNEL CENTERLINE AND STATIONING
- 5' CONTOURS

REVISIONS	DATE	BY	AUTH.

ENGINEERS

PROJ. NO. E029102
JOB NO.
DESIGN W.C.L.
DRAWN M.T.C.
CHECKED S.E.S.
SCALE: AS NOTED

SEAL

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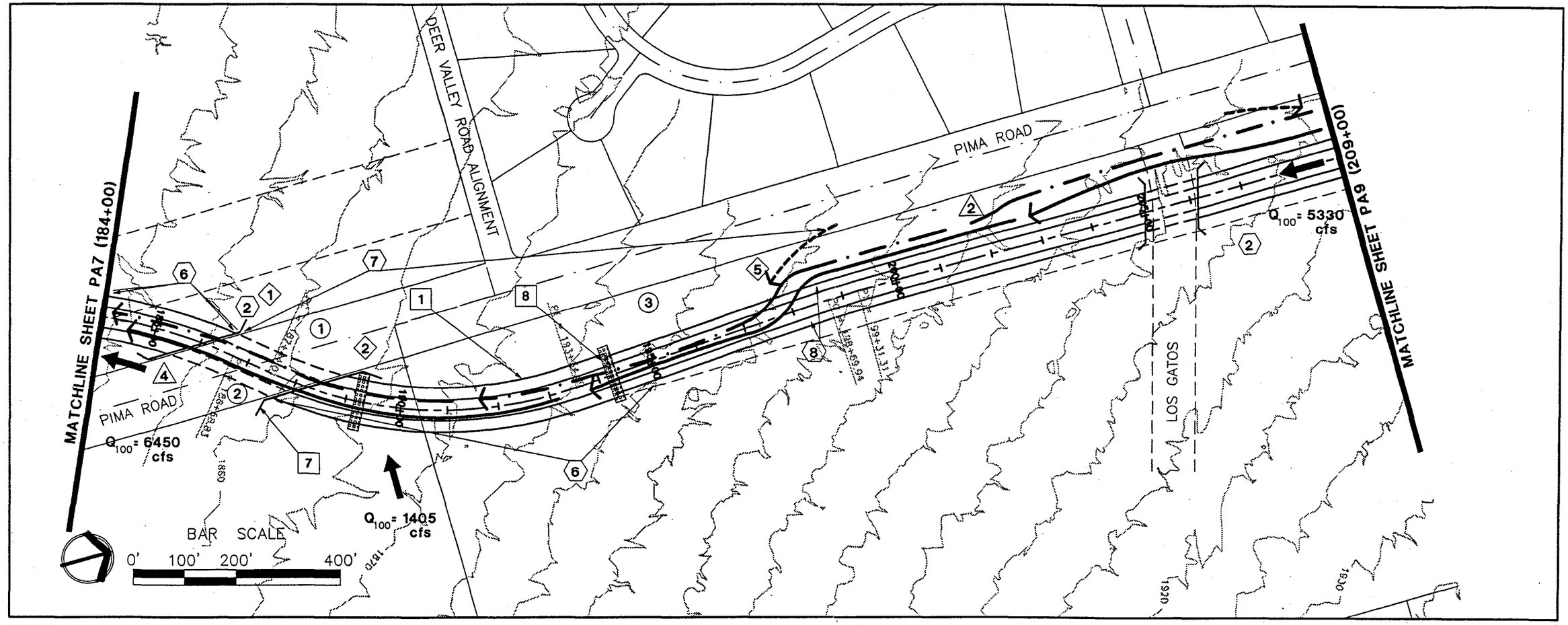
Greiner, Inc.
Phoenix, AZ
Engineers, Architects and Planners

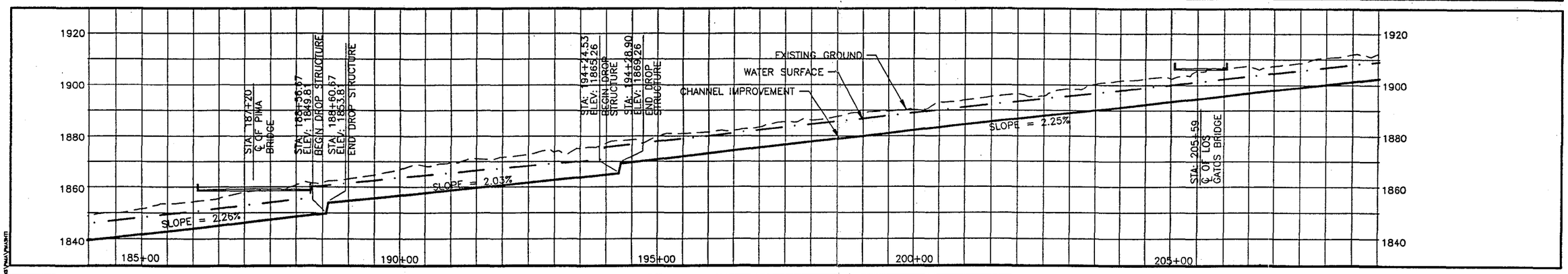
PROJECT TITLE: Pima Road Channel

DRAWING TITLE: Preliminary 10% Plans

DRAWING NO. PA7 of PA14

Desert Greenbelt





CHANNEL IMPROVEMENTS □

1. CONCRETE CHANNEL; 40' BOTTOM WIDTH, 2:1 SIDE SLOPES.
4. 40' WIDE SAND CHANNEL BOTTOM; 2:1 CONCRETE SIDE SLOPES.
7. CONSTRUCT BRIDGE.
8. CONSTRUCT CONCRETE DROP STRUCTURE.

PATHS / TRAILS ◇

1. INSTALL SIGNS TO DIRECT PATH/TRAIL USERS
2. 10' CLEARANCE UNDER BRIDGE
5. PATH LOCATED ON NATURAL GRADE EXCEPT AT STREET CROSSINGS

LAND USE ○

1. IMPROVEMENTS DESIGNED TO FACILITATE WASH ACCESS FOR ADJACENT PROPERTY OWNERS.
2. BRIDGE/BOX CULVERT PROVIDES AN ALL WEATHER CROSSING.
3. SCENIC CORRIDOR & CHANNEL PROVIDE BUFFER FROM PIMA ROAD

MITIGATION △

2. 50' SCENIC CORRIDOR ADJACENT TO PIMA ROAD
4. CHANNEL CROSSES UNDER PIMA ROAD

AESTHETIC APPLICATIONS ⬡

2. EXTENDED WING WALL.
6. FAUX ROCK.
7. INTERPRETIVE ART.

LEGEND

- MULTI-USE TRAIL
- MAINTENANCE ACCESS
- PATH
- FLOODWALL
- CHANNEL RIGHT OF WAY
- SOIL CEMENT LEVEE
- NATURAL CONTAINMENT
- ACCESS LEVEE
- CONCRETE SLOPE
- BANK PROTECTION
- REGRADE
- DROP STRUCTURE
- GRADE CUT
- 10+00 CHANNEL CENTERLINE AND STATIONING
- 5' CONTOURS

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PROJECT NAME: Pima Road Channel

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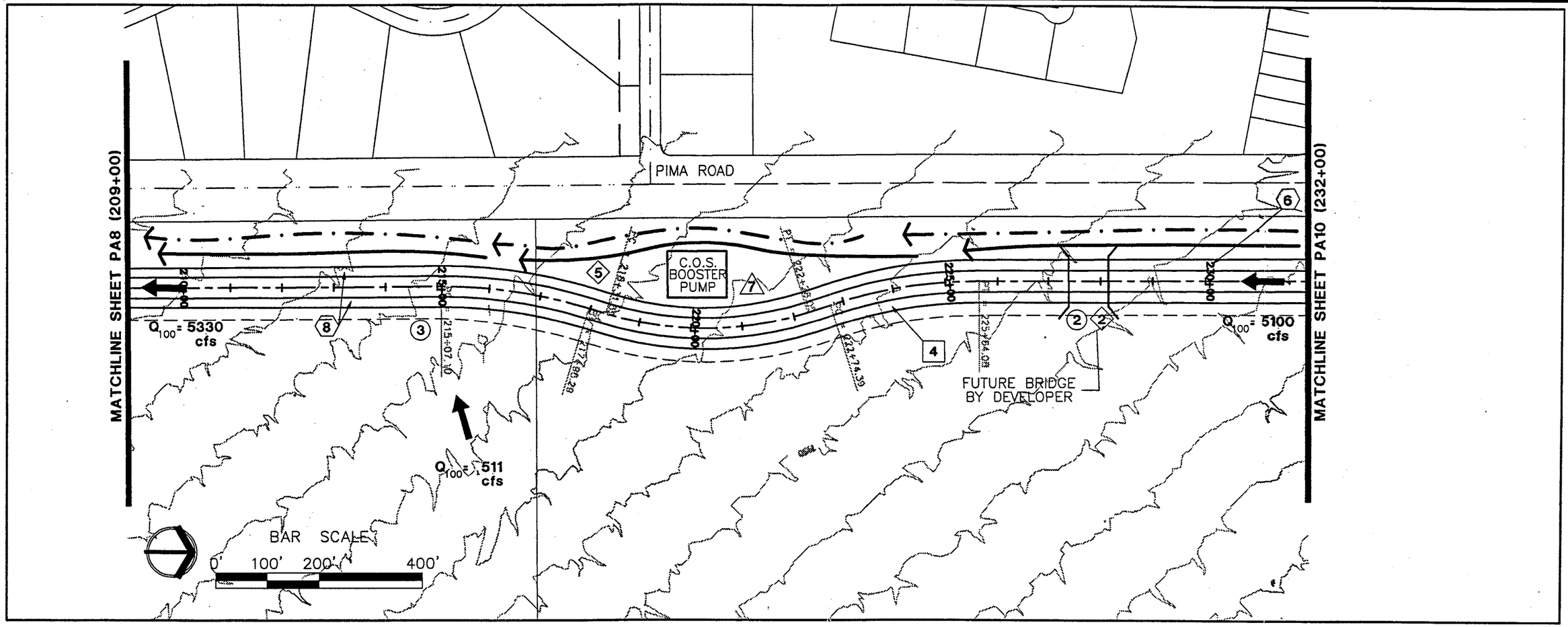
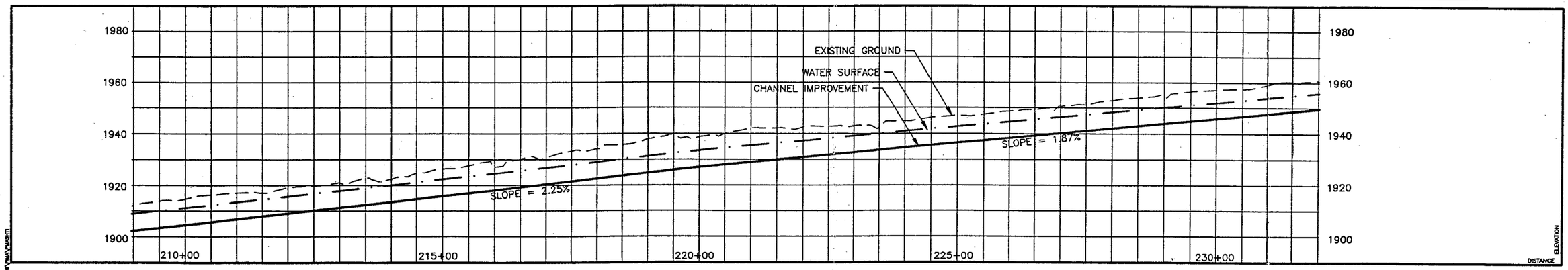
DRAWING NO.
PA8 of PA14

Desert Greenbelt





CHANNEL IMPROVEMENTS

4. 40' WIDE SAND CHANNEL BOTTOM; 2:1 CONCRETE SIDE SLOPES.

PATHS / TRAILS

2. 10' CLEARANCE UNDER BRIDGE.
5. PATH LOCATED ON NATURAL GRADE EXCEPT AT STREET CROSSINGS

LAND USE

2. BRIDGE/BOX CULVERT PROVIDES AN ALL WEATHER CROSSING.
3. SCENIC CORRIDOR & CHANNEL PROVIDE BUFFER FROM PIMA ROAD

MITIGATION

7. 10' CLEARANCE FROM PUMP STATION

AESTHETIC APPLICATIONS

8. COLOR STAINED CONCRETE

LEGEND

- MULTI-USE TRAIL
- MAINTENANCE ACCESS
- PATH
- FLOODWALL
- CHANNEL RIGHT OF WAY
- SOIL CEMENT LEVEE
- NATURAL CONTAINMENT
- ACCESS LEVEE
- CONCRETE SLOPE
- BANK PROTECTION
- REGRADE
- DROP STRUCTURE
- GRADE CUT
- 10+00 CHANNEL CENTERLINE AND STATIONING
- 5' CONTOURS

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ENGINEERS

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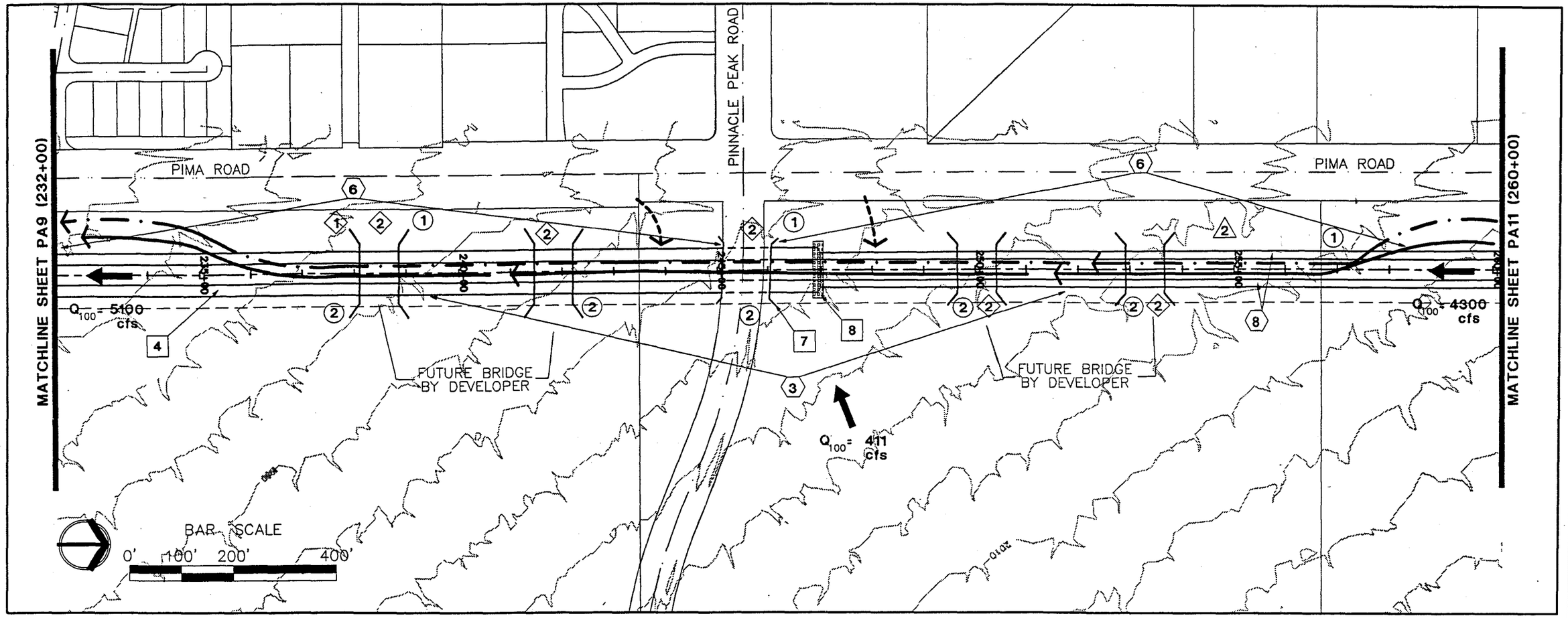
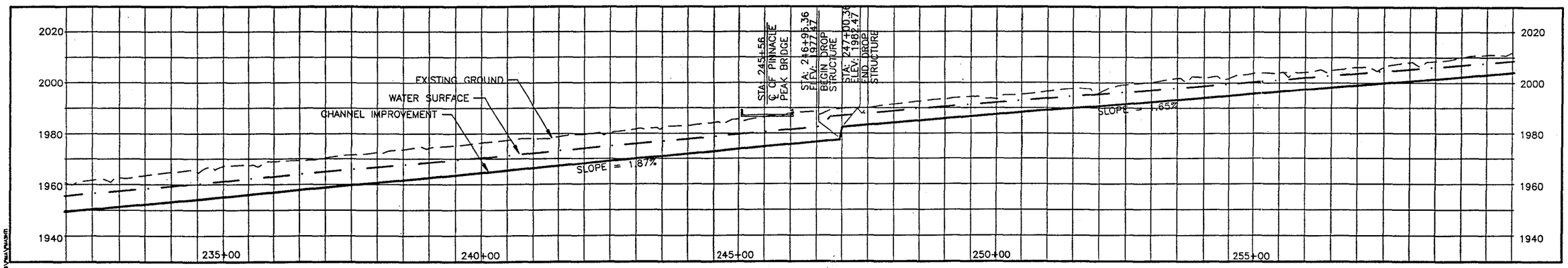
PROJECT NAME: Pima Road Channel
DRAWING TITLE: Preliminary 10% Plans

DRAWING NO.
PA9 of PA14

The Desert Group





CHANNEL IMPROVEMENTS

4. 40' WIDE SAND CHANNEL BOTTOM; 2:1 CONCRETE SIDE SLOPES.
7. CONSTRUCT BRIDGE.
8. CONSTRUCT CONCRETE DROP STRUCTURE.

PATHS / TRAILS

1. INSTALL SIGNS TO DIRECT TRAIL/PATH USERS
2. 10' CLEARANCE UNDER BRIDGE

LAND USE

1. IMPROVEMENTS DESIGNED TO FACILITATE WASH ACCESS FOR ADJACENT PROPERTY OWNERS.
2. BRIDGE/BOX CULVERT PROVIDES AN ALL WEATHER CROSSING.

MITIGATION

2. 50' SCENIC CORRIDOR ADJACENT TO PIMA ROAD

AESTHETIC APPLICATIONS

3. BENCHING INTO SLOPE
6. FAUX ROCK
8. COLOR STAINED CONCRETE

LEGEND

- MULTI-USE TRAIL
- MAINTENANCE ACCESS
- PATH
- FLOODWALL
- CHANNEL RIGHT OF WAY
- SOIL CEMENT LEVEE
- NATURAL CONTAINMENT
- ACCESS LEVEE
- CONCRETE SLOPE
- BANK PROTECTION
- REGRADE
- DROP STRUCTURE
- GRADE CUT
- 10+00 CHANNEL CENTERLINE AND STATIONING
- 5' CONTOURS

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SCALE: AS NOTED

ENGINEERS

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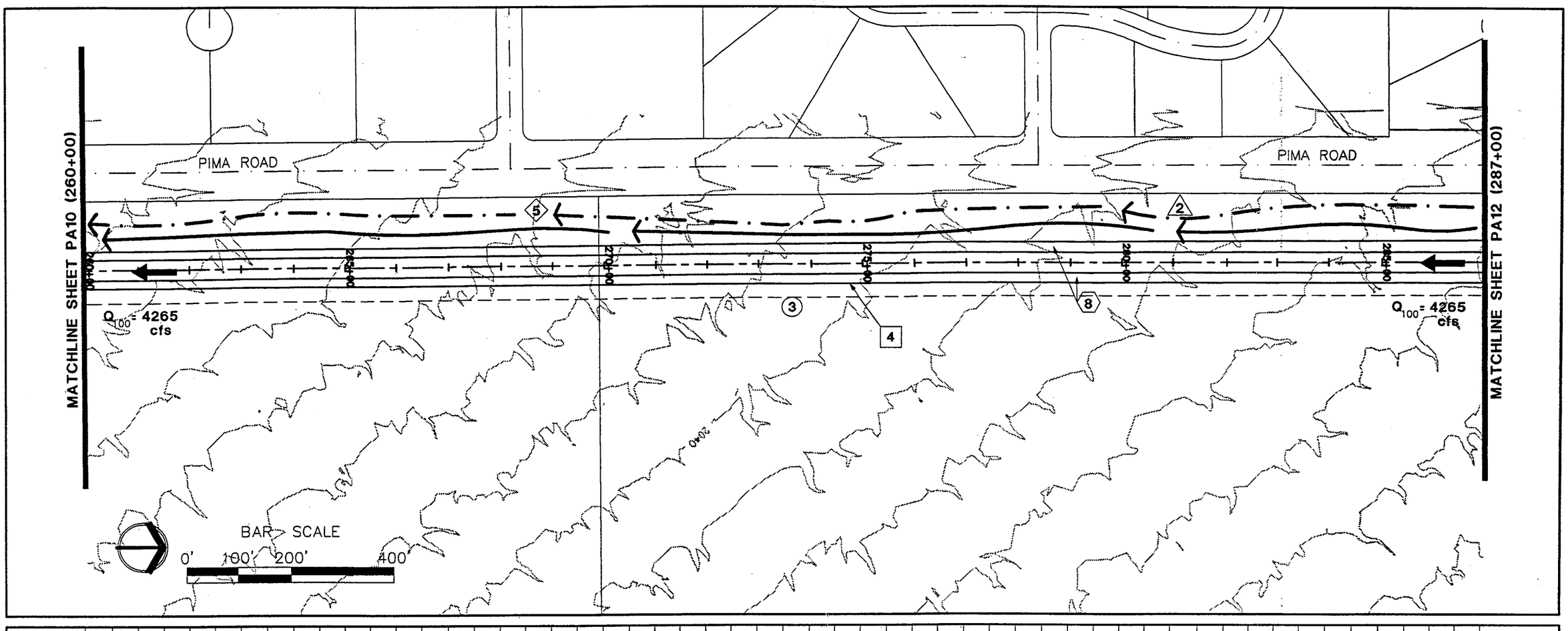
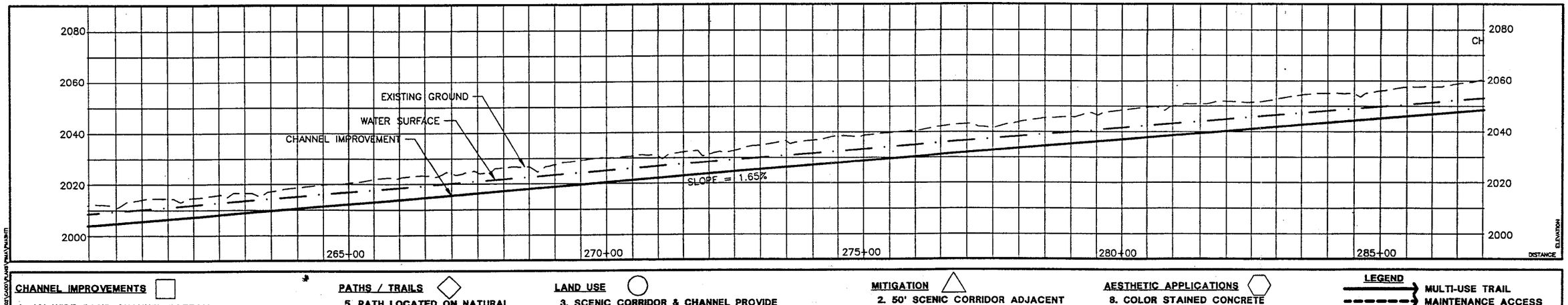
PROJECT TITLE: Pima Road Channel

DRAWING TITLE: Preliminary 10% Plans

DRAWING NO.
PA10 of PA14





CHANNEL IMPROVEMENTS

4. 40' WIDE SAND CHANNEL BOTTOM; 2:1 CONCRETE SIDE SLOPES.

PATHS / TRAILS

5. PATH LOCATED ON NATURAL GRADE EXCEPT AT STREET CROSSINGS

LAND USE

3. SCENIC CORRIDOR & CHANNEL PROVIDE BUFFER FROM PIMA ROAD

MITIGATION

2. 50' SCENIC CORRIDOR ADJACENT TO PIMA ROAD

AESTHETIC APPLICATIONS

8. COLOR STAINED CONCRETE

LEGEND

- MULTI-USE TRAIL
- MAINTENANCE ACCESS
- PATH
- FLOODWALL
- CHANNEL RIGHT OF WAY
- SOIL CEMENT LEVEE
- NATURAL CONTAINMENT
- ACCESS LEVEE
- CONCRETE SLOPE
- BANK PROTECTION
- REGRADE
- DROP STRUCTURE
- GRADE CUT
- 10+00 CHANNEL CENTERLINE AND STATIONING
- 5' CONTOURS

AUTH.	BY	REVISIONS	DATE

PROJ. NO. E029102
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SCALE AS NOTED

ENGINEERS

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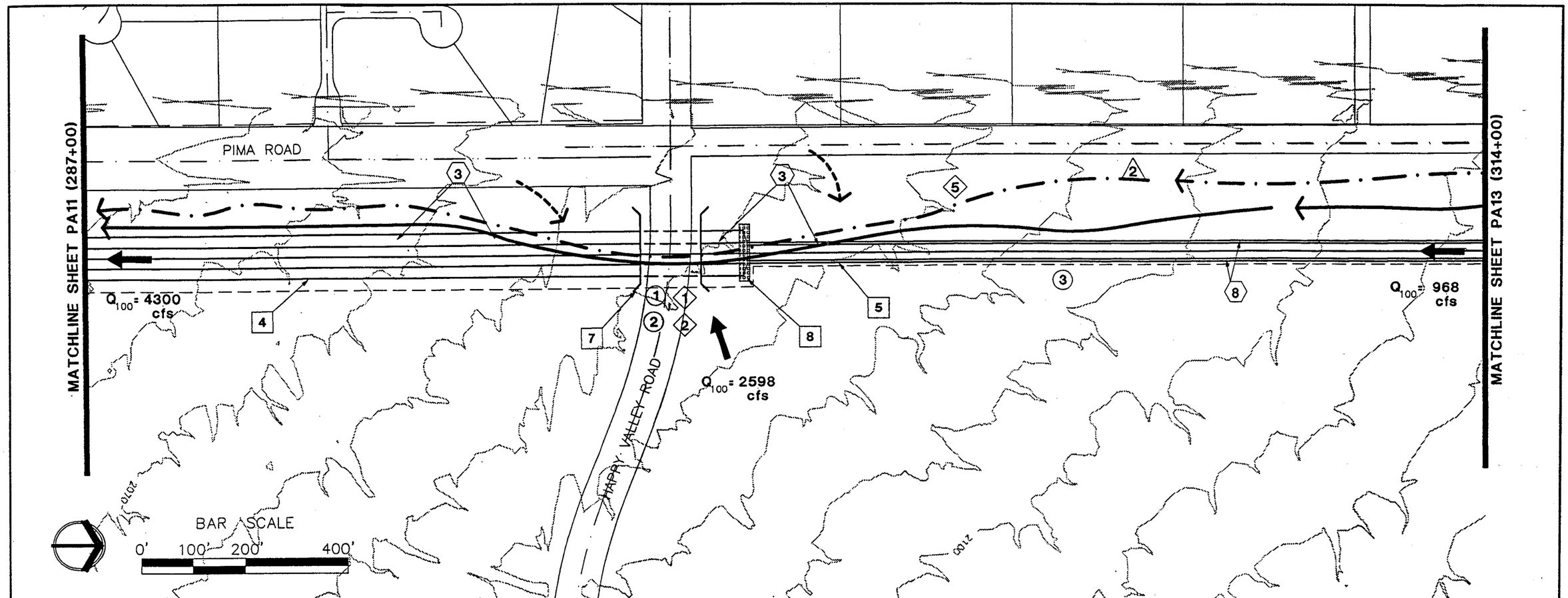
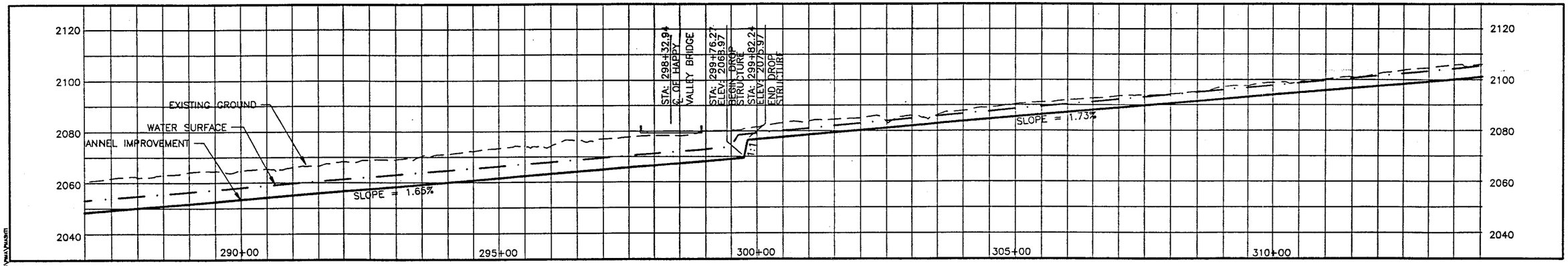
Greiner, Inc.
Phoenix, AZ
Engineers, Architects

PROJECT NAME
Pima Road Channel

DRAWING TITLE
Preliminary 10% Plans

DRAWING NO.
PA11 of PA14





CHANNEL IMPROVEMENTS

4. 40' WIDE SAND CHANNEL BOTTOM; 2:1 CONCRETE SIDE SLOPES.
5. 30' WIDE SAND CHANNEL BOTTOM; 1:1 CONCRETE SIDE SLOPES.
7. CONSTRUCT BRIDGE.
8. CONSTRUCT CONCRETE DROP STRUCTURE.

PATHS / TRAILS

1. INSTALL SIGNS TO DIRECT PATH/TRAIL USERS
2. 10' CLEARANCE UNDER BRIDGE
5. PATH LOCATED ON NATURAL GRADE EXCEPT AT STREET CROSSINGS

LAND USE

1. IMPROVEMENTS DESIGNED TO FACILITATE WASH ACCESS FOR ADJACENT PROPERTY OWNERS.
2. BRIDGE/BOX CULVERT PROVIDES AN ALL WEATHER CROSSING.
3. SCENIC CORRIDOR & CHANNEL PROVIDE BUFFER FROM PIMA ROAD

MITIGATION

2. 50' SCENIC CORRIDOR ADJACENT TO PIMA ROAD

AESTHETIC APPLICATIONS

3. BENCHING INTO SLOPE
8. COLOR STAINED CONCRETE

LEGEND

- MULTI-USE TRAIL
- MAINTENANCE ACCESS
- PATH
- FLOODWALL
- CHANNEL RIGHT OF WAY
- SOIL CEMENT LEVEE
- NATURAL CONTAINMENT
- ACCESS LEVEE
- CONCRETE SLOPE
- BANK PROTECTION
- REGRADE
- DROP STRUCTURE
- GRADE CUT
- 10+00 CHANNEL CENTERLINE AND STATIONING
- 5' CONTOURS

DATE	REVISIONS	BY	AUTH.

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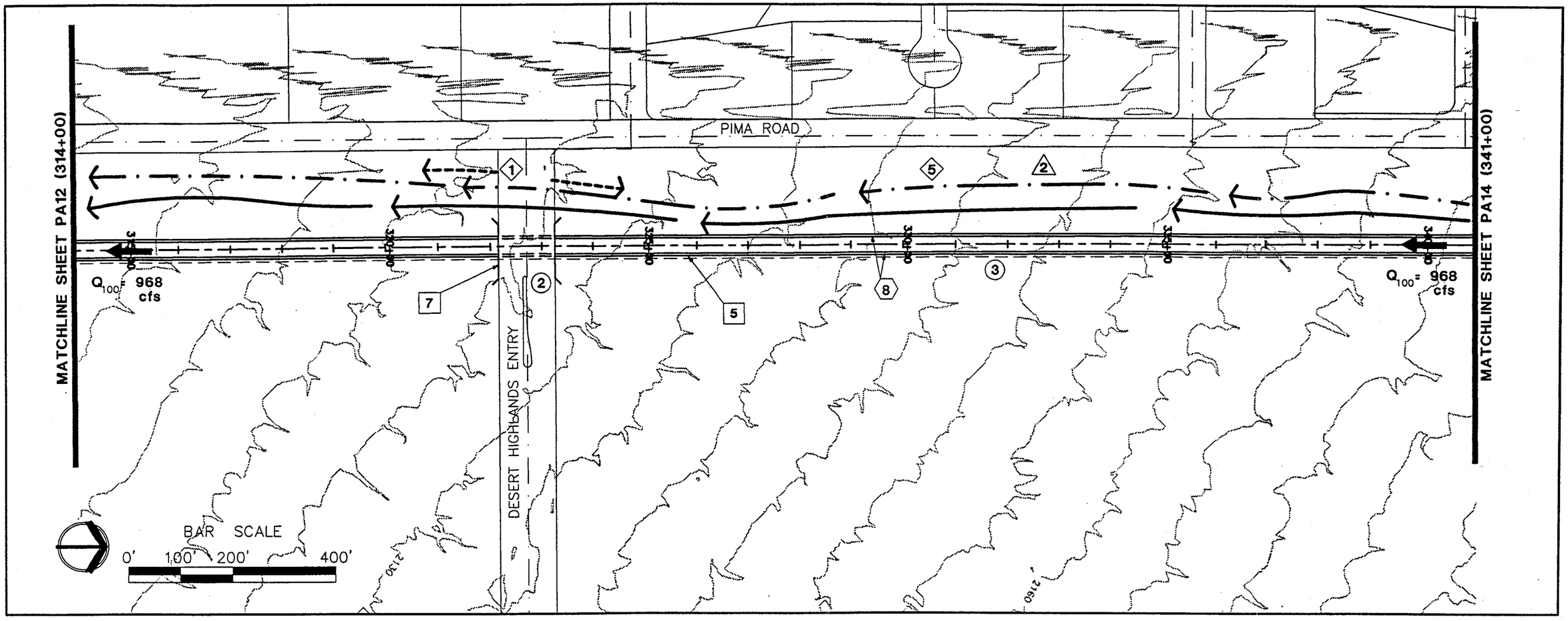
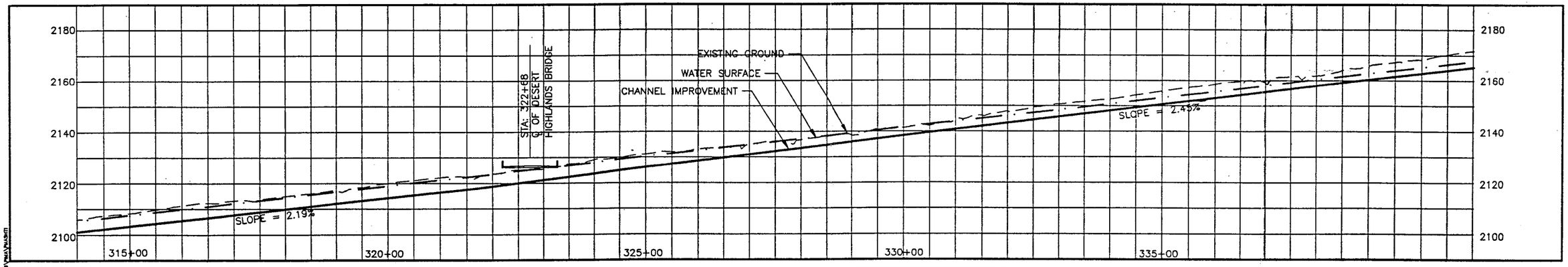
Engineers, Architects

PROJECT NAME
Pima Road Channel

DRAWING TITLE
Preliminary 10% Plans

DRAWING NO.
PA12 of PA14





CHANNEL IMPROVEMENTS

5. 30' WIDE SAND CHANNEL BOTTOM; 1:1 CONCRETE SIDE SLOPES.
7. CONSTRUCT BRIDGE.

PATHS / TRAILS

1. INSTALL SIGNS TO DIRECT PATH/TRAIL USERS
5. PATH LOCATED ON NATURAL GRADE EXCEPT AT STREET CROSSINGS

LAND USE

2. BRIDGE/BOX CULVERT PROVIDES AN ALL-WEATHER CROSSING
3. SCENIC CORRIDOR & CHANNEL PROVIDE BUFFER FROM PIMA ROAD

MITIGATION

2. 50' SCENIC CORRIDOR ADJACENT TO PIMA ROAD

AESTHETIC APPLICATIONS

8. COLOR STAINED CONCRETE

LEGEND

- MULTI-USE TRAIL
- MAINTENANCE ACCESS
- PATH
- FLOODWALL
- CHANNEL RIGHT OF WAY
- SOIL CEMENT LEVEE
- NATURAL CONTAINMENT
- ACCESS LEVEE
- CONCRETE SLOPE
- BANK PROTECTION
- REGRADE
- DROP STRUCTURE
- GRADE CUT
- 10+00 CHANNEL CENTERLINE AND STATIONING
- 5' CONTOURS

AUTH.	BY	REVISIONS	DATE

PROJ. NO. E029102
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SCALE: AS NOTED

ENGINEERS

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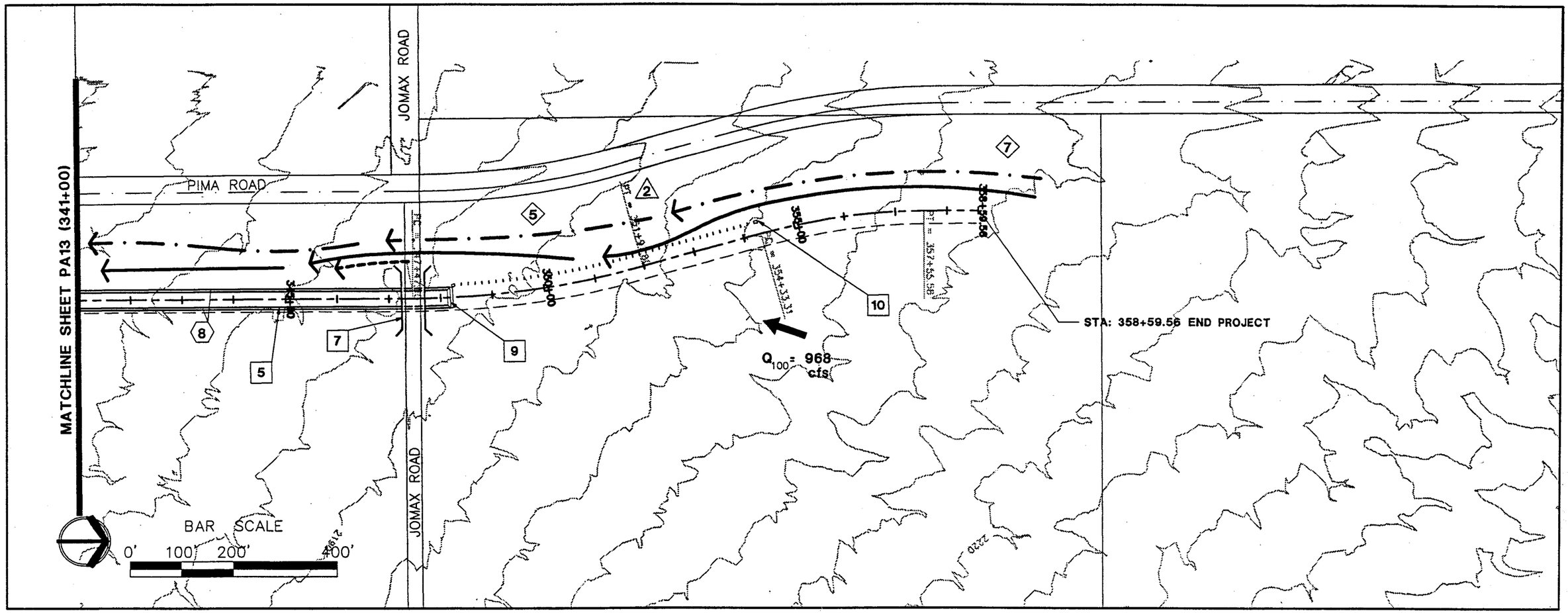
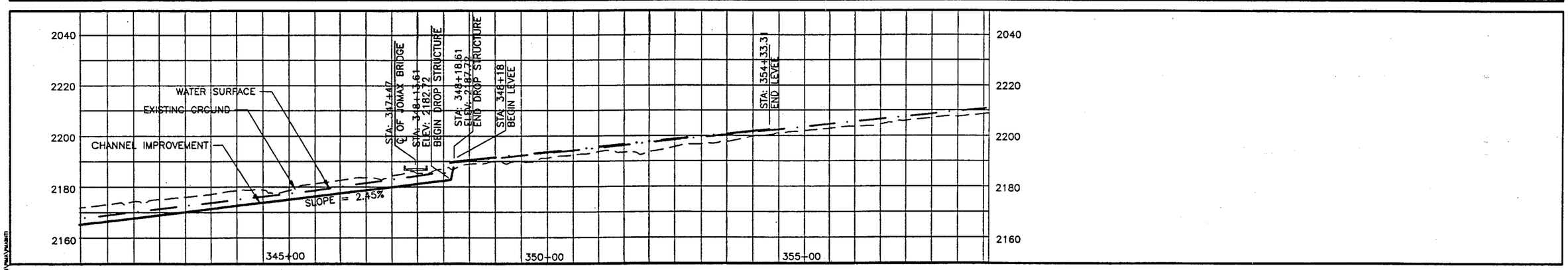
Greiner, Inc.
Phoenix, AZ
Engineers, Architects

PROJECT NAME: Pima Road Channel

DRAWING TITLE: Preliminary 10% Plans

DRAWING NO.
PA13 of PA14





CHANNEL IMPROVEMENTS

5. 30' WIDE SAND CHANNEL BOTTOM; 1:1 CONCRETE SIDE SLOPES.
7. CONSTRUCT BRIDGE.
9. CONSTRUCT CONCRETE DROP INLET.
10. LEVEE TO DIRECT FLOW INTO DROP INLET.

PATHS / TRAILS

5. PATH LOCATED ON NATURAL GRADE EXCEPT AT STREET CROSSINGS
7. PATH/TRAIL LINKS TO EXISTING REGIONAL SYSTEMS

LAND USE

MITIGATION

2. 50' SCENIC CORRIDOR ADJACENT TO PIMA ROAD

AESTHETIC APPLICATIONS

8. COLOR STAINED CONCRETE

LEGEND

- MULTI-USE TRAIL
- MAINTENANCE ACCESS
- PATH
- FLOODWALL
- CHANNEL RIGHT OF WAY
- SOIL CEMENT LEVEE
- NATURAL CONTAINMENT
- ACCESS LEVEE
- CONCRETE SLOPE
- BANK PROTECTION
- REGRADE
- DROP STRUCTURE
- GRADE CUT
- 10+00 CHANNEL CENTERLINE AND STATIONING
- 5' CONTOURS

REVISIONS	DATE	BY	AUTH.

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ENGINEERS

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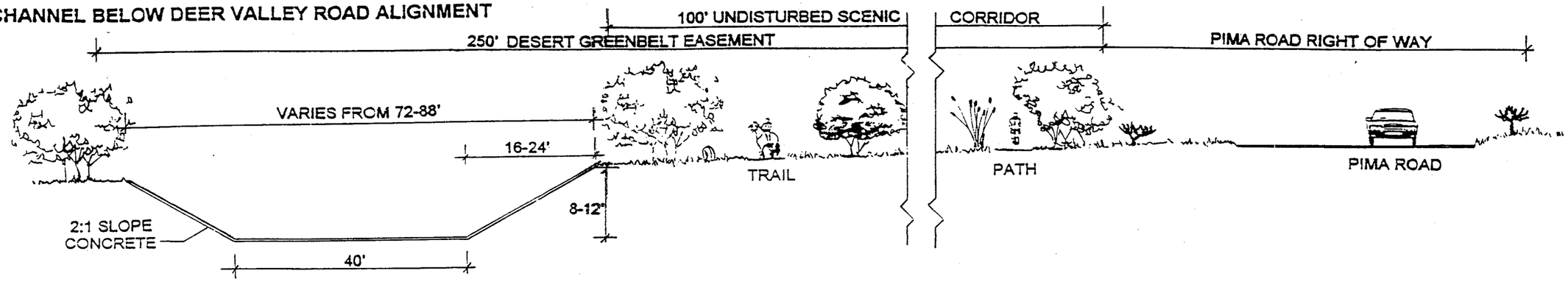
PROJECT NAME: Pima Road Channel

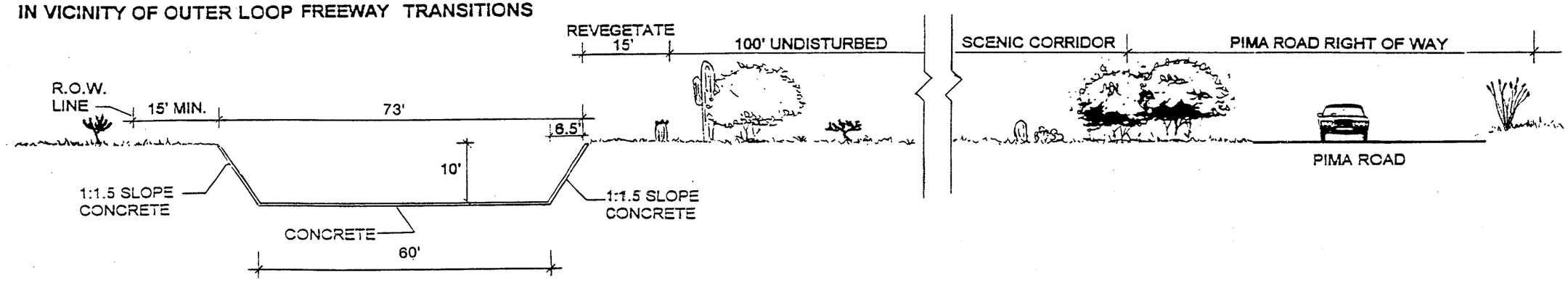
DRAWING TITLE: Preliminary 10% Plans

DRAWING NO.
PA14 of PA1

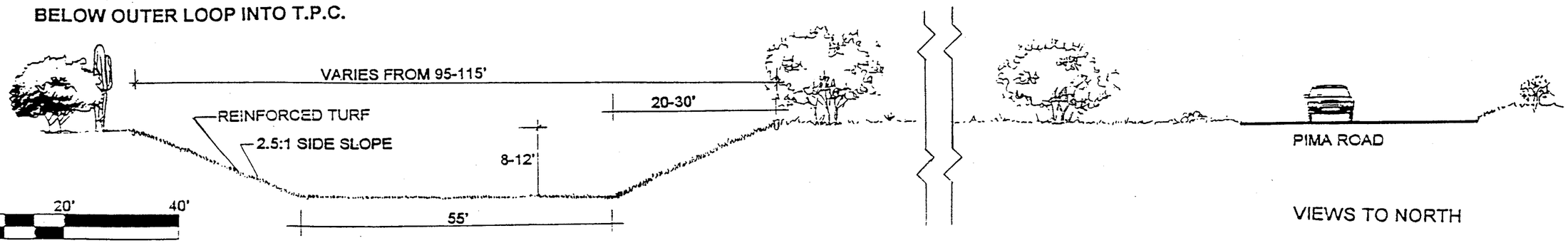
CHANNEL BELOW DEER VALLEY ROAD ALIGNMENT



IN VICINITY OF OUTER LOOP FREEWAY TRANSITIONS



BELOW OUTER LOOP INTO T.P.C.



0 20' 40'

SCALE: 1" = 20'

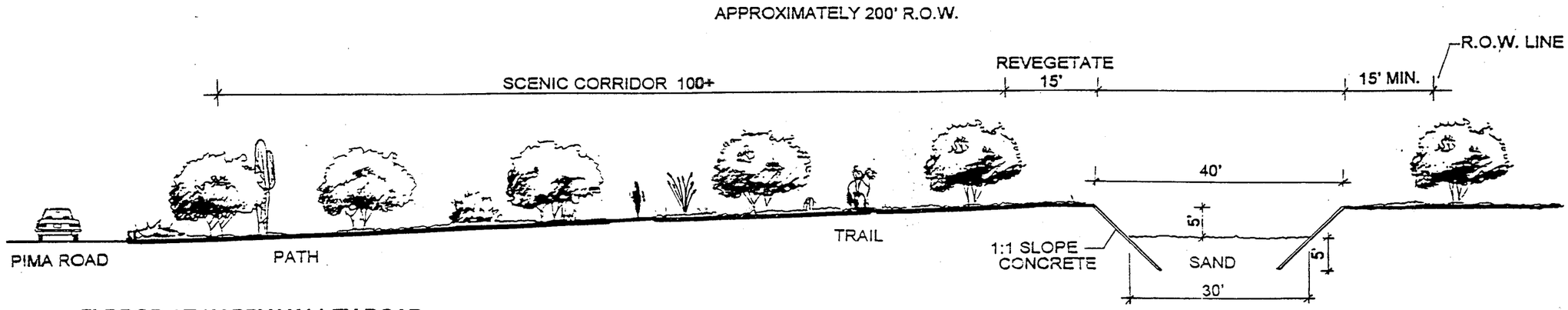
VIEWS TO NORTH

CROSS SECTIONS OF PIMA CHANNEL DROPS SOUTH OF DEER VALLEY ROAD

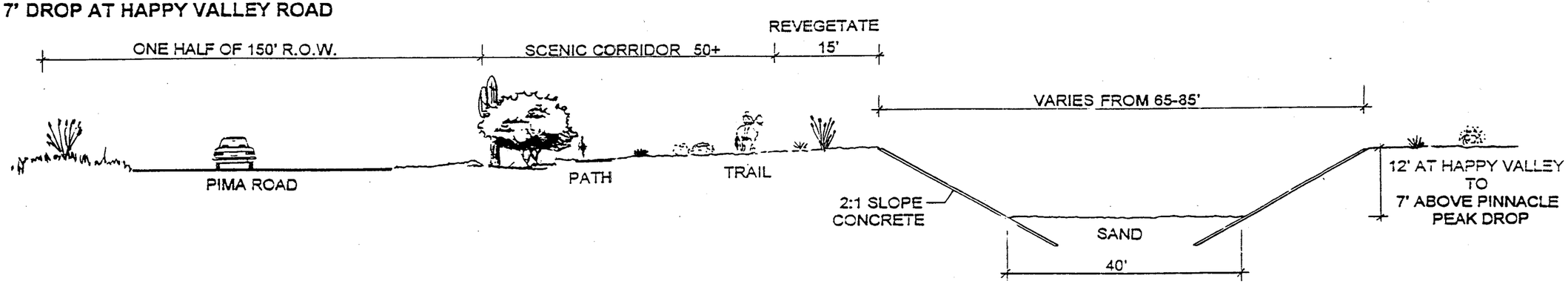
The Desert Greenbelt

CROSS SECTIONS OF PIMA CHANNEL DROPS NORTH OF DEER VALLEY ROAD

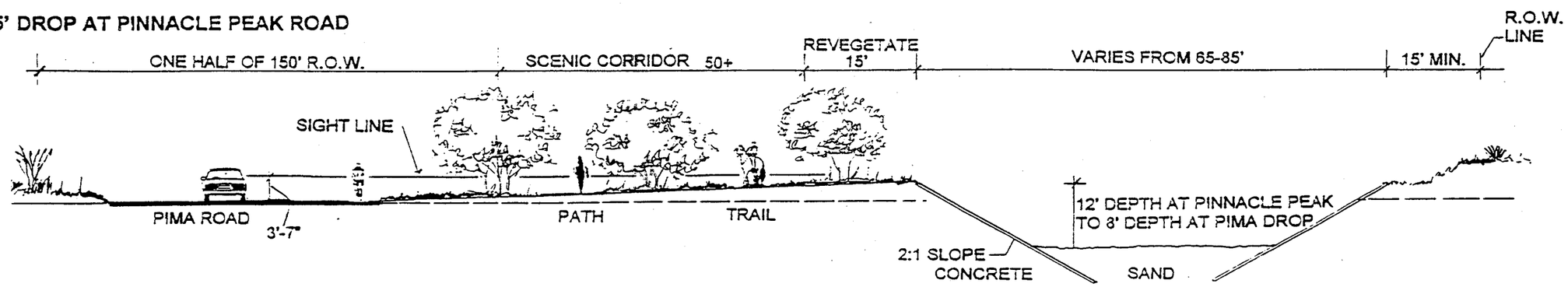
FROM DROP AT JOMAX ROAD



7' DROP AT HAPPY VALLEY ROAD



5' DROP AT PINNACLE PEAK ROAD



VIEWS TO NORTH

0 20 40

SCALE IN FEET

The Desert Greenbelt