9th Street

9th Street

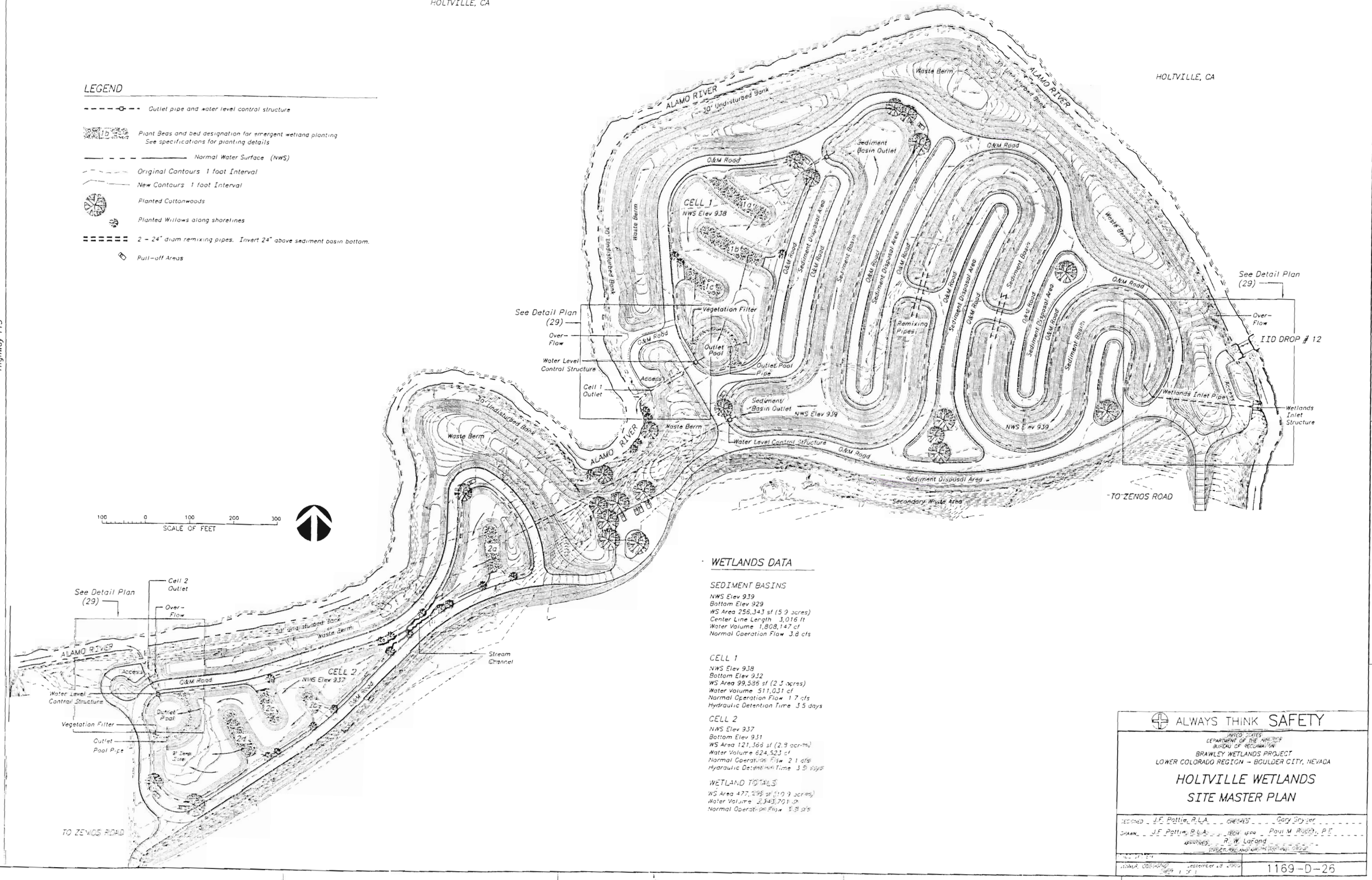
HOLTVILLE, CA

HOLTVILLE, CA

Highway 115

LEGEND

- Outlet pipe and water level control structure
- 1b — Plant Beds and bed designation for emergent wetland planting. See specifications for planting details
- Normal Water Surface (NWS)
- Original Contours 1 foot Interval
- New Contours 1 foot Interval
- Planted Cottonwoods
- Planted Willows along shorelines
- 2 – 24" diam remixing pipes. Invert 24" above sediment basin bottom.
- Pull-off Areas



WETLANDS DATA

SEDIMENT BASINS

NWS Elev 939
Bottom Elev 929
WS Area 256,343 sf (5.9 acres)
Center Line Length 3,016 ft
Water Volume 1,808,147 cf
Normal Operation Flow 3.8 cfs

CELL 1

NWS Elev 938
Bottom Elev 932
WS Area 99,586 sf (2.3 acres)
Water Volume 511,031 cf
Normal Operation Flow 1.7 cfs
Hydraulic Detention Time 3.5 days

CELL 2

NWS Elev 937
Bottom Elev 931
WS Area 121,366 sf (2.9 acres)
Water Volume 624,523 cf
Normal Operation Flow 2.1 cfs
Hydraulic Detention Time 3.5 days

WETLAND TOTALS

WS Area 477,295 sf (10.9 acres)
Water Volume 2,943,701 cf
Normal Operation Flow 3.9 cfs

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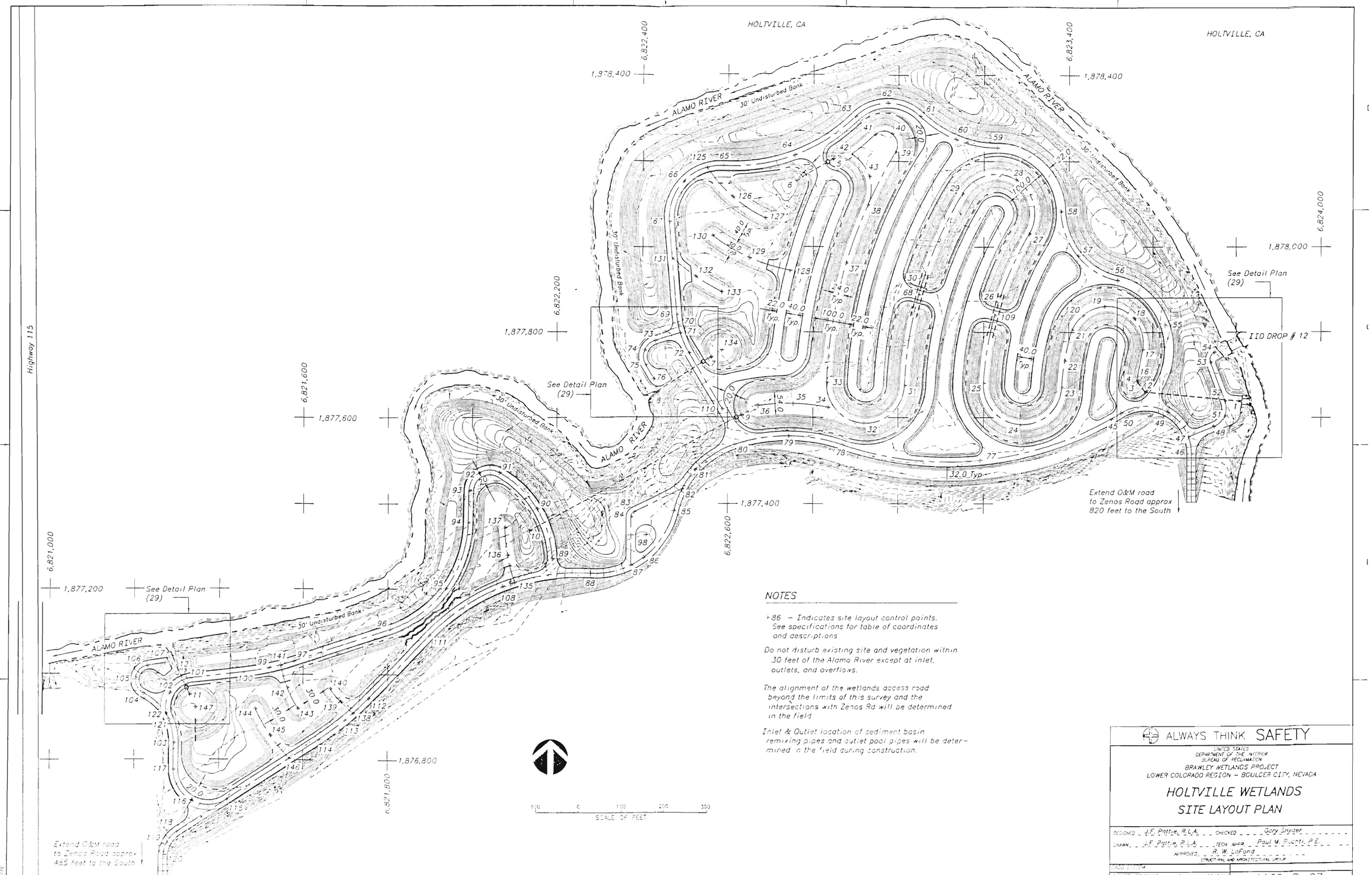
BRAWLEY WETLANDS PROJECT
LOWER COLORADO REGION – BOULDER CITY, NEVADA

HOLTVILLE WETLANDS SITE MASTER PLAN

DESIGNED J.F. Pattie, R.L.A. CHECKED Gary Snyder
DRAWN J.F. Pattie, R.L.A. TECH REV Paul M. Rugen, P.E.
APPROVED R. W. Lafond
CHIEF, WETLANDS WATER DESIGN GROUP

SCALE 1" = 1'-0" DATE SEPTEMBER 13, 2002 1169-D-26



NOTES

*86 – Indicates site layout control points. See specifications for table of coordinates and descriptions

Do not disturb existing site and vegetation within 30 feet of the Alamo River except at inlet, outlets, and overflows.

The alignment of the wetlands access road beyond the limits of this survey and the intersections with Zenos Rd will be determined in the field

Inlet & Outlet location of sediment basin remixing pipes and outlet pool pipes will be determined in the field during construction.

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BRAWLEY WETLANDS PROJECT
LOWER COLORADO REGION – BOULDER CITY, NEVADA

HOLTVILLE WETLANDS
SITE LAYOUT PLAN

DESIGNED J.F. Pattie, P.L.A. CHECKED Gary Snyder
DRAWN J.F. Pattie, P.L.A. TECH. MGR. Paul M. Ruchti, P.E.
APPROVED R. W. LaFond
STRUCTURAL AND ARCHITECTURAL GROUP

LOWER COLORADO September 28, 2005 SHEET 1 OF 1

1169-D-27

NOTES

• 941.2 Indicates elevation of finish grade surface.

Original Contours 1 foot Interval

New Contours 1 foot Interval

Survey data by Davey-Cairo Engineering, Inc April 14, 2005

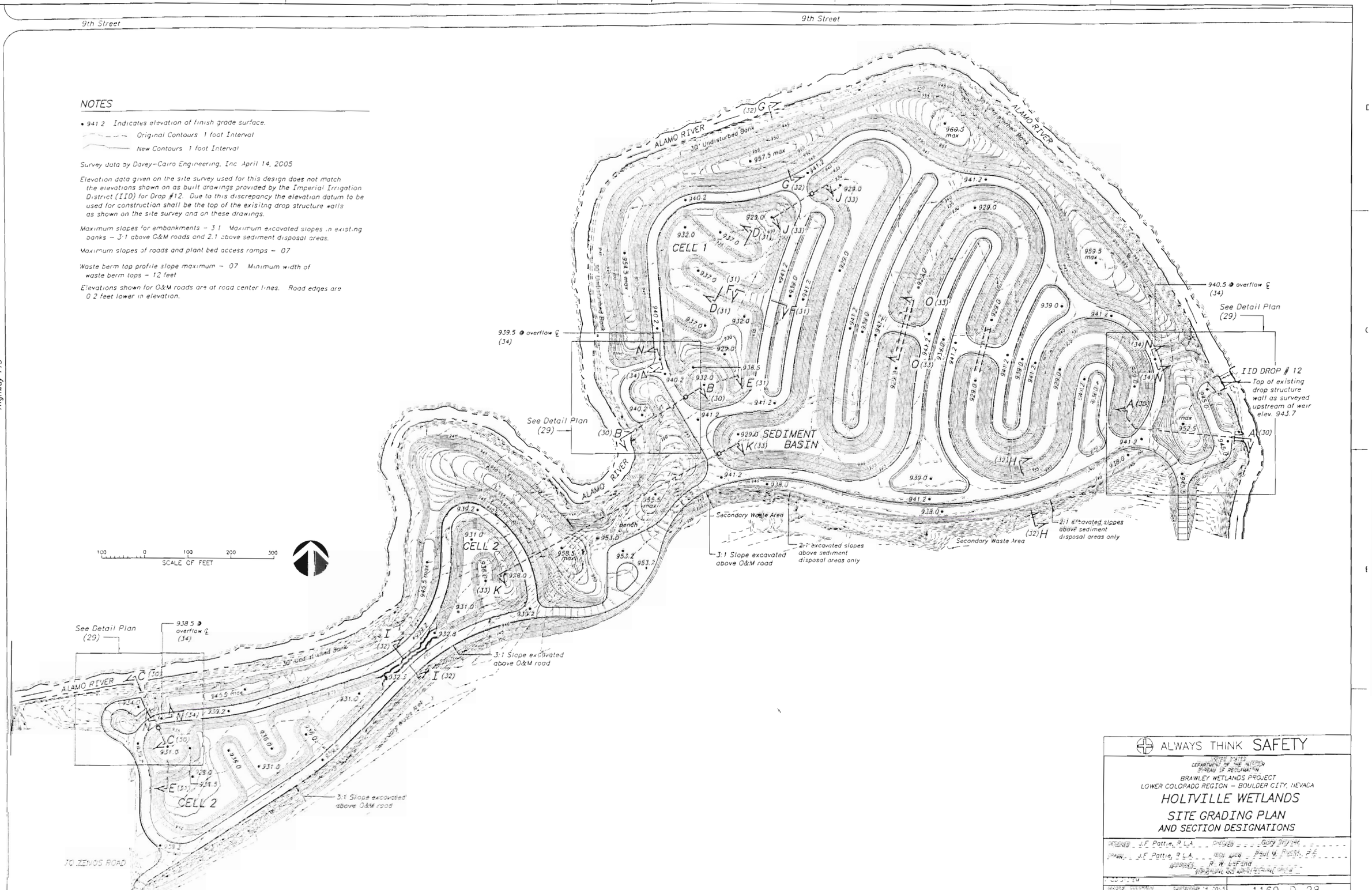
Elevation data given on the site survey used for this design does not match the elevations shown on as built drawings provided by the Imperial Irrigation District (IID) for Drop #12. Due to this discrepancy the elevation datum to be used for construction shall be the top of the exisitng drop structure walls as shown on the site survey and on these drawings.

Maximum slopes for embankments – 3:1 Maximum excavated slopes in existing banks – 3:1 above O&M roads and 2:1 above sediment disposal areas.

Maximum slopes of roads and plant bed access ramps – 07

Waste berm top profile slope maximum – 07 Minimum width of waste berm tops – 12 feet

Elevations shown for O&M roads are at road center lines. Road edges are 0.2 feet lower in elevation.



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BRAWLEY WETLANDS PROJECT
LOWER COLORADO REGION – BOULDER CITY, NEVADA

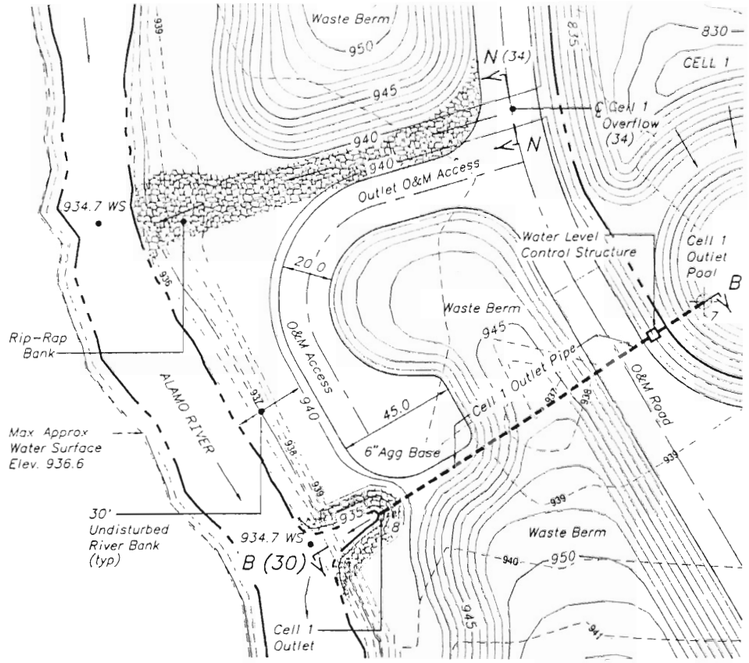
HOLTVILLE WETLANDS

SITE GRADING PLAN AND SECTION DESIGNATIONS

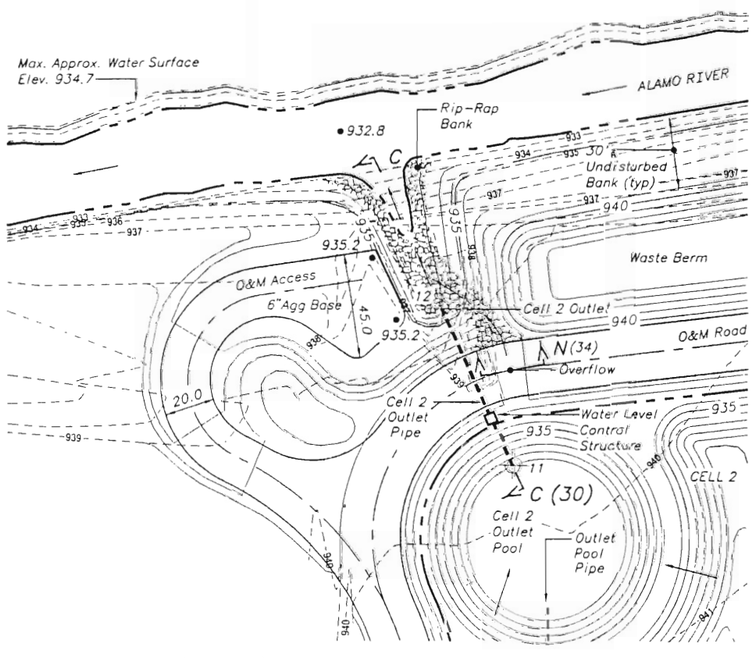
DESIGNED J.F. Pattie, P.L.A. CHECKED Gary Snyder
DRAWN J.F. Pattie, P.L.A. TECH. APPR. Paul M. Rusch, P.E.
APPROVED R. W. LaFond
STRUCTURAL AND APPROPRIATE GROUP

DENVER, COLORADO SEPTEMBER 28, 2005 SHEET 1 OF 1

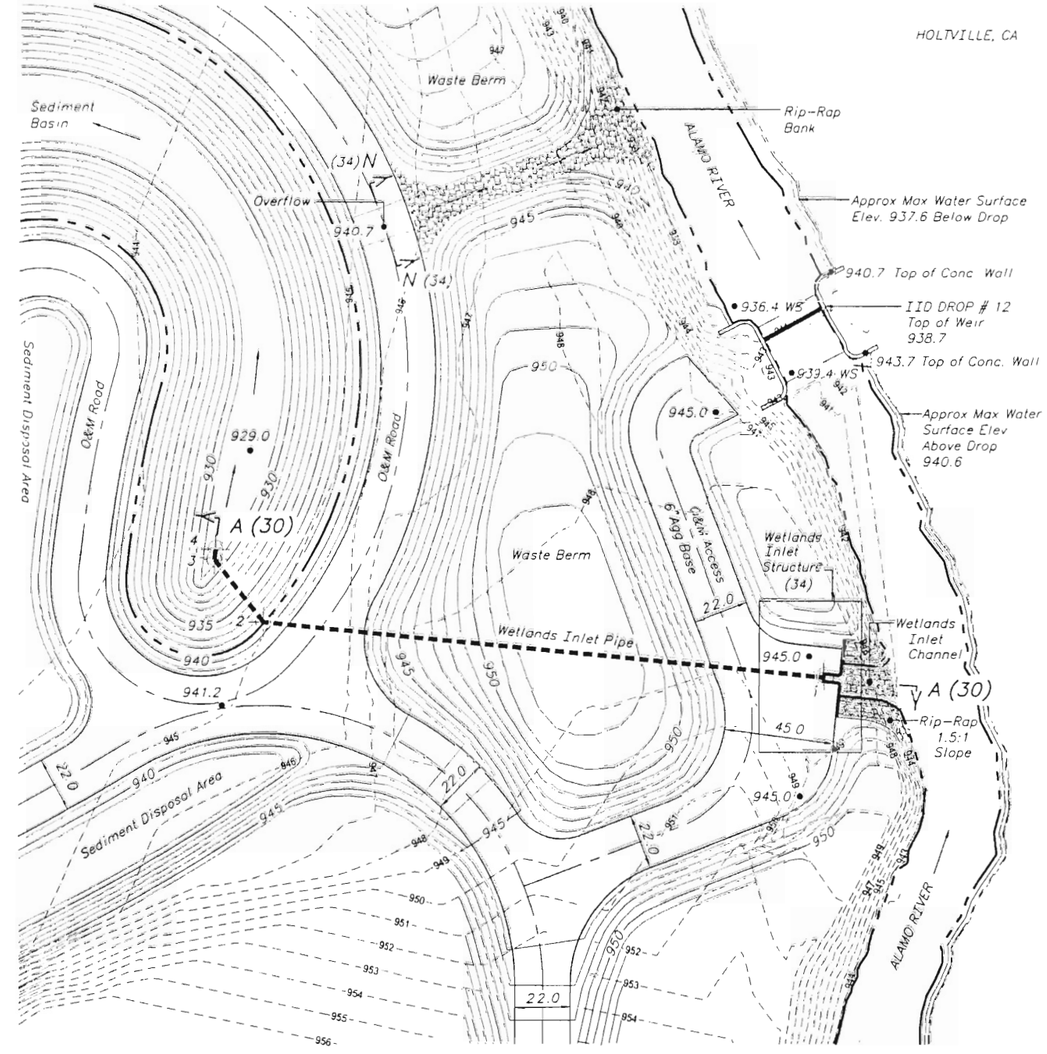
1169-D-28



DETAIL PLAN (27,28) Holtville Wetlands Cell 1 Outlet Area



DETAIL PLAN (27,28) Holtville Wetlands Cell 2 Outlet Area



DETAIL PLAN (27,28) Holtville Wetlands Wetlands Inlet Area

30 0 30 60 90
SCALE OF FEET

NOTES

- • 932.8 WS Indicates elevation of Alamo River water surface at time of site topographic survey.
- • 932.8 Indicates spot elevation
- Approximate Alamo River maximum water surface line.
- Alamo River water surface elevation line at time of site survey
- 12 Indicates horizontal control point See dwg (27) and specifications.

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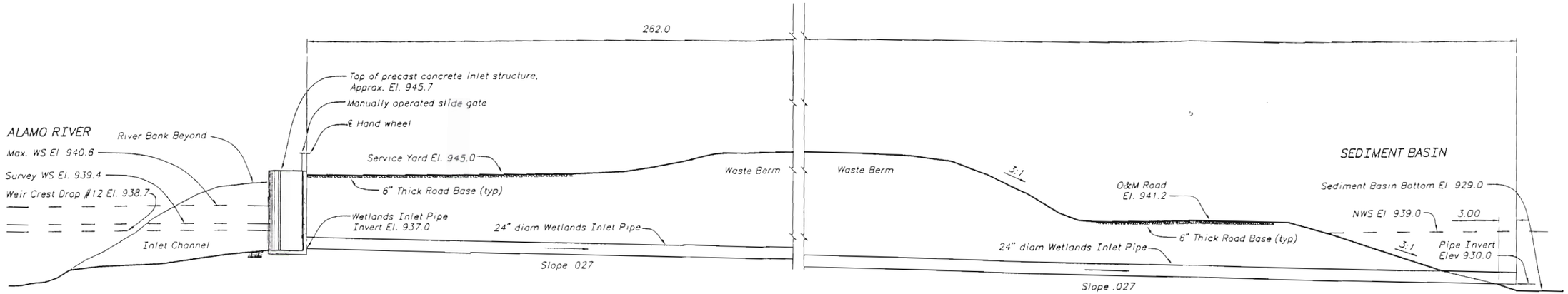
LOWER COLORADO REGION – BOULDER CITY, NEVADA

HOLTVILLE WETLANDS
DETAIL PLANS

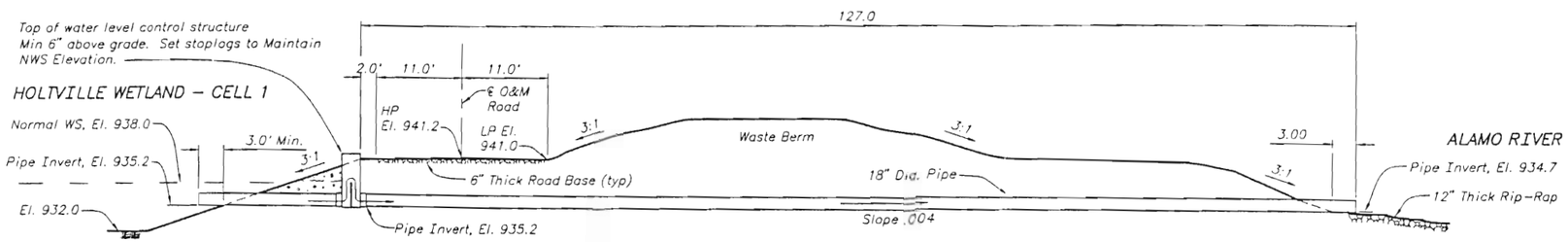
DESIGNED J.F. Pattie, R.L.A. CHECKED Gary Snyder
DRAWN J.F. Pattie, R.L.A. TECH APPR Paul M. Rucnti, P.E.
APPROVED R. W. LaFond
STRUCTURAL AND ARCHITECTURAL GROUP
LADD SYSTEM
DENVER, COLORADO September 28, 2005
SHEET 1 OF 1
1169-D-29

AutoCAD Rel. 14.01
CAD FILENAME
SITE LAYOUT PLAN
DATE AND TIME PLOTTED
SEPTEMBER 6, 2005
PLOTTED BY
JPATTIE



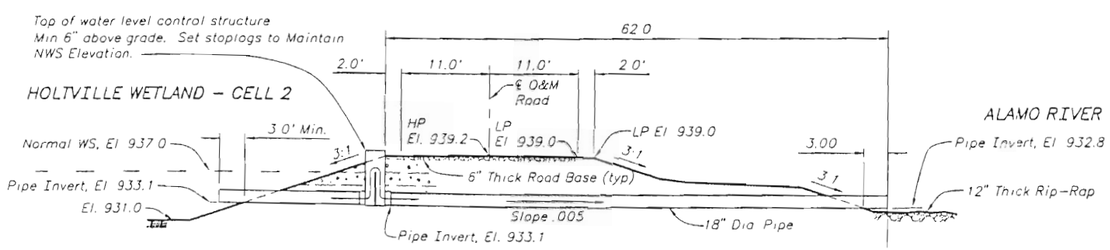
SECTION A–A (28, 29) – Inlet Structure – Alamo River to Sediment Basin

(No Scale)



SECTION B–B (28, 29) Water Level Control Structure – Cell 1 to Alamo River

(No Scale)



SECTION C–C (28, 29) Water Level Control Structure – Cell 2 to Alamo River

(No Scale)

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LOWER COLORADO REGION – BOULDER CITY, NEVADA

HOLTVILLE WETLANDS

SECTIONS A–A to C–C

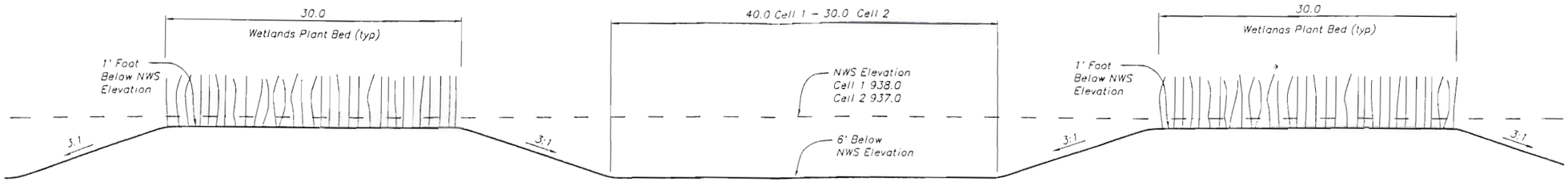
DESIGNED J.F. Pattie, R.L.A. CHECKED Gary Snyder
DRAWN J.F. Pattie, R.L.A. TECH APPR Paul M. Ruchti, P.E.
APPROVED R. W. LaFond
STRUCTURAL AND ARCHITECTURAL GROUP

CADD SYSTEM
DENVER, COLORADO September 29, 2005
SHEET 1 OF 1

1169-D-30

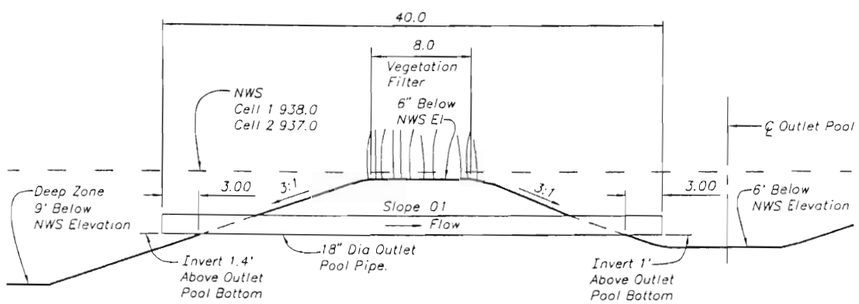
SECTIONS.DWG

AUTOCAD REL 16.0a
CAD FILE NAME: 1169-D-30.DWG
DATE AND TIME PLOTTED: SEPTEMBER 29, 2005
PLOTTED BY: Mel Phillips



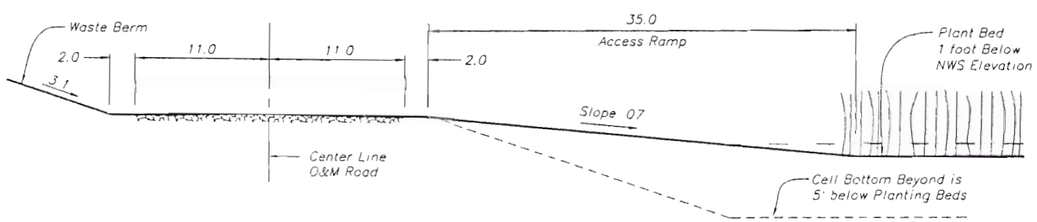
SECTION D–D (28) – Plant Bed Cross Section (typ)

(No Scale)



SECTION E–E (28) – Vegetation Filter and Outlet Pool (typ)

(No Scale)



SECTION F–F (28) – Plant Bed Access Ramp (typ)

(No Scale)

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BRAWLEY WETLANDS PROJECT
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HOLTVILLE WETLANDS
SECTIONS D–D to F–F

DESIGNED J.F. Pattie, R.L.A. CHECKED Gary Snyder
DRAWN M.L. Pierce TECH APPR Paul M. Ruchti, P.E.
APPROVED R. W. LaFond
STRUCTURAL AND ARCHITECTURAL GROUP

CADD SYSTEM
DENVER, COLORADO September 28, 2005
SHEET 1 OF 1

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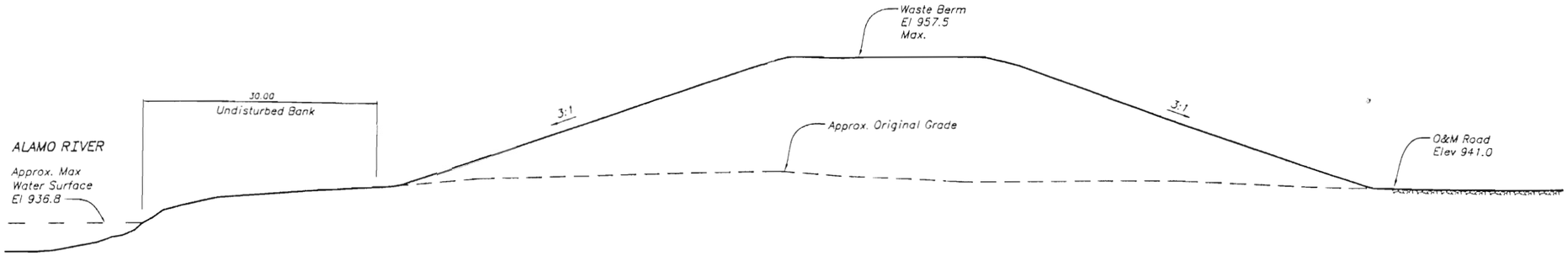
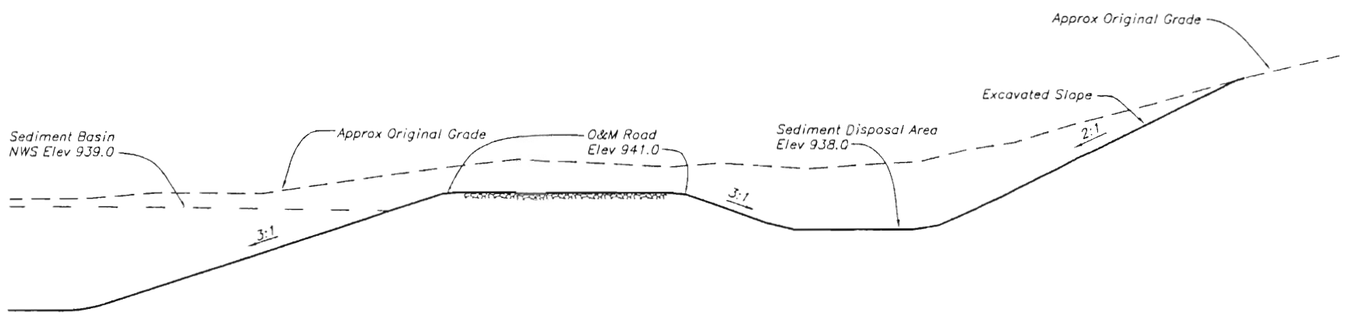


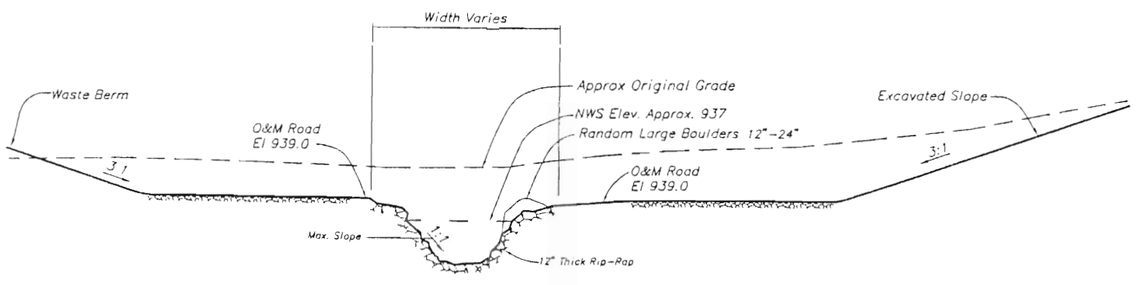
SECTION G–G (28) – Waste Berm

(No Scale)



SECTION H–H (28) – O&M Road/Sediment Disposal Area

(No Scale)



SECTION I–I (28) – Cell 2 Stream Channel

(No Scale)

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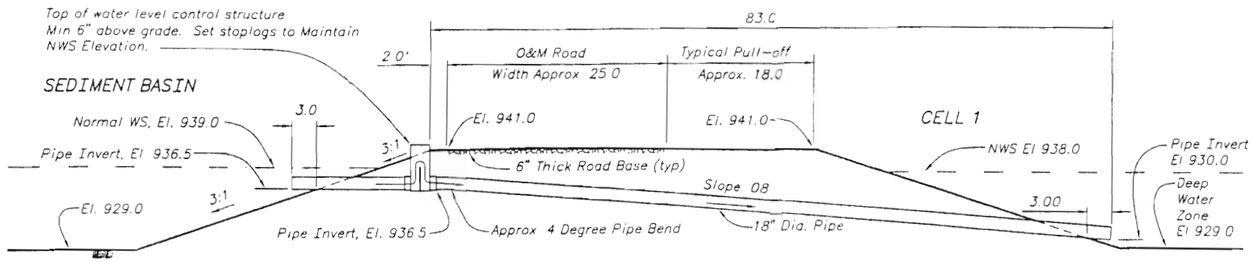
HOLTVILLE WETLANDS
SECTIONS G–G to I–I

DESIGNED J.F. Pattie, R.L.A. CHECKED Gary Snyder
DRAWN M.L. Pierce TECH APPR Paul M. Ruchti, P.E.
APPROVED R. W. LaFond
STRUCTURAL AND ARCHITECTURAL GROUP

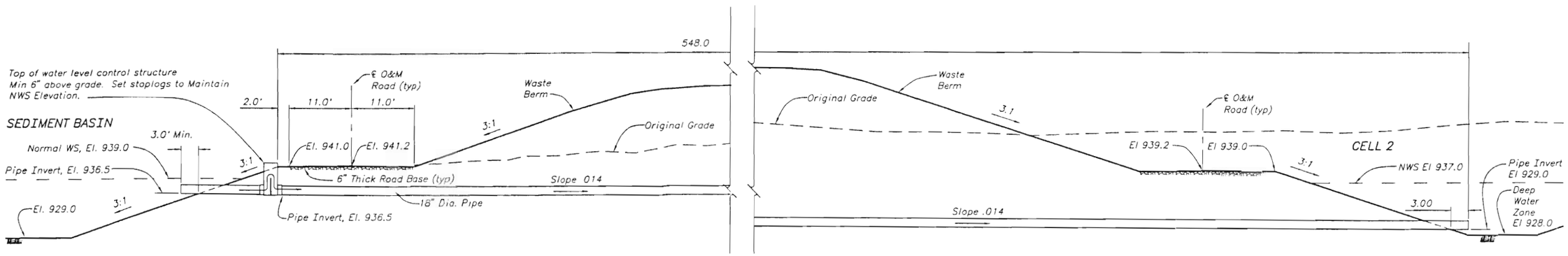
CADD SYSTEM
DENVER, COLORADO September 28, 2005
SHEET 1 OF 1

1169–D–32



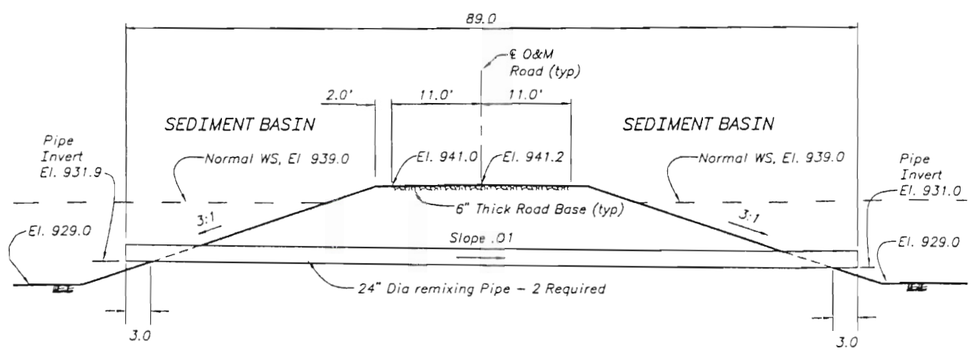
SECTION J–J (28) Water Level Control Structure – Sediment Basin to Cell 1

(No Scale)



SECTION K–K (28) Water Level Control Structure – Sediment Basin to Cell 2

(No Scale)



SECTION O–O (28) Typical Remixing Pipe – Sediment Basin to Sediment Basin

(No Scale)

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LOWER COLORADO REGION – BOULDER CITY, NEVADA

HOLTVILLE WETLANDS

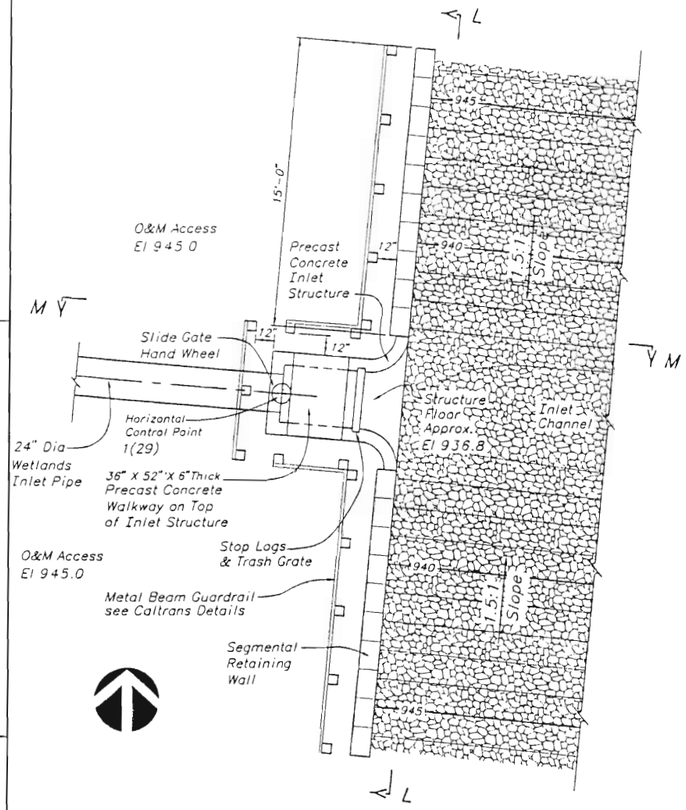
SECTIONS J–J, K–K, and O–O

DESIGNED J.F. Pattie, R.L.A. CHECKED Gary Snyder
DRAWN J.F. Pattie, R.L.A. TECH. APPR Paul M. Ruchti, P.E.
APPROVED R. W. LaFond
STRUCTURAL AND ARCHITECTURAL GROUP

CADD SYSTEM
DENVER, COLORADO September 28, 2005
SHEET 1 OF 1

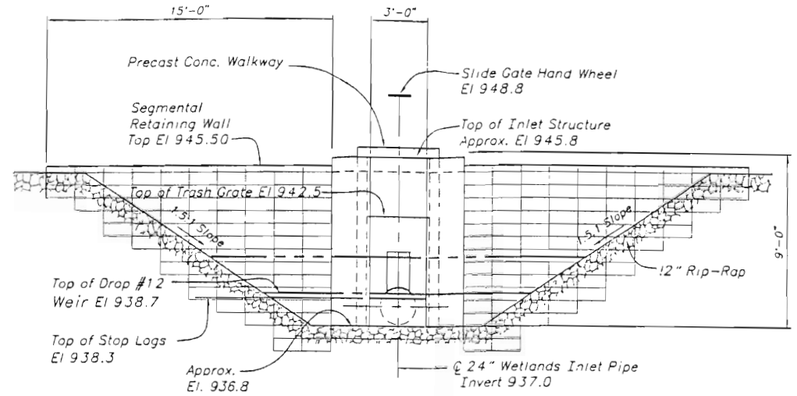
1169-D-33

SECTIONS.DWG
CAD FILENAME
LAYOUT NAME (MODEL)
DATE AND TIME PLOTTED
SEPTEMBER 26, 2005
PLOTTED BY
Neil Pulled



PLAN (29) – Inlet Structure

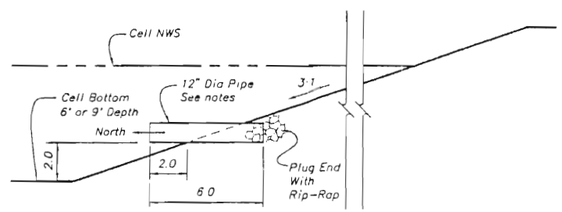
SCALE OF FEET



SECTION L–L – Inlet Structure & Segmental Retaining Wall

SCALE OF FEET

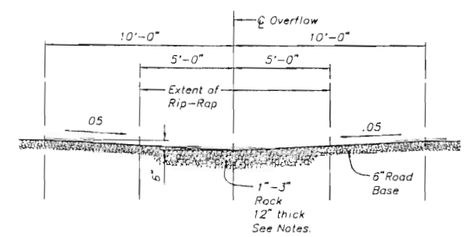
Caltrans 2002 Dual Unit Standard Plans (Caltrans Details)			
Title	No.	Applicable Details	Applicable Notes
Metal Beam Guard Railing Typical Wood Post with Wood Block	A77A	Metal Beam Guard Railing With Wood Post And Blocks Typical Wood Line Post Istallation, Rail Element Splice Detail, Section Thru Rail Element	2 thru 5
Metal Beam Guard Railing Standard Hardware	A77B	Terminal Section, Type C Section Thru Rail Element 16 mm ø Recess Nut 16 mm ø Button Head Bolt	x
Metal Beam Guard Railing Wood Post And Wood Details	A77C	150 mm x 200 mm Wood Post 150 mm x 200 mm Wood Block	1, 2
Metal Beam Guard Railing Typical Line Post Installation	A77FA	Installation at Earth Retaining Walls	x



FISH SHELTER – Section (typ)

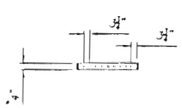
6 – Required

(No Acale)

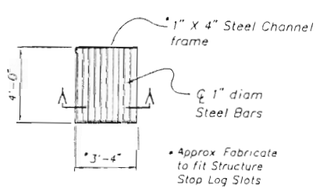


SECTION N–N (28,29) – Overflow (typ)

SCALE OF FEET

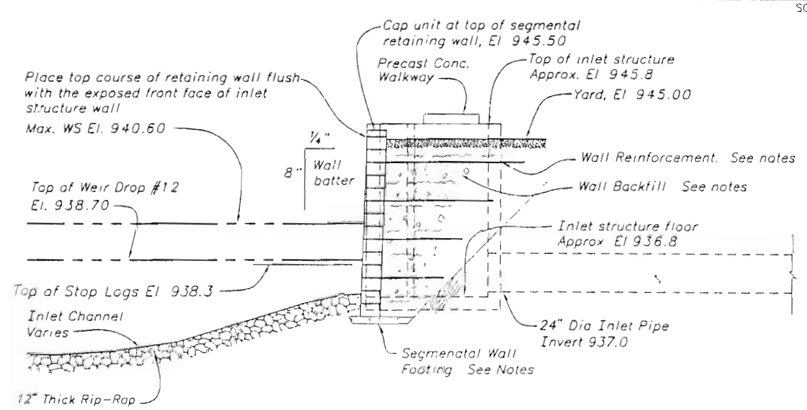


SECTION – Trash Grate



ELEVATION – Trash Grate

SCALE OF FEET



SECTION M–M Inlet Structure & Segmental Retaining Wall

SCALE OF FEET

NOTES

Stop logs to be provided by inlet structure manufacturer Place trash rack on top of stop logs.

Connect inlet pipe to inlet structure in accordance with inlet structure manufacturer's recommendations.

Construct, reinforce, and backfill segmental retaining wall in accordance with manufacturer's recommendations.

12" diameter pipe for fish shelters may be HDPE, corrugated PE, CMP or any other type approved by the COTR Place 3 pipes each in north facing slopes of Cells 1 and 2. Do not place shelters in sediment basin or outlet pools.

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BRAWLEY WETLANDS PROJECT
LOWER COLORADO REGION – BOULDER CITY, NEVADA

HOLTVILLE WETLANDS
SECTIONS L–L to N–N
AND DETAILS

DESIGNED J.F. Pattie, R.L.A. CHECKED Gary Snyder
DRAWN J.F. Pattie, R.L.A. TECH APPR Paul M. Ruotti, P.E.
APPROVED R. W. LaFond
STRUCTURAL AND ARCHITECTURAL GROUP

CADD SYSTEM

DENVER, COLORADO September 28, 2005
SHEET 1 OF 1

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