

**ST. JOHNS IMPROVEMENT DISTRICT
 PERMIT INFORMATION AND CRITERIA MANUAL
 FOR USE OF OR CONNECTION TO WORKS OF THE DISTRICT**

EXHIBIT IV – A

REQUIREMENTS FOR CULVERT CONNECTIONS TO DRAINAGE LATERALS

CULVERT DIAMETER (INCHES)	MAXIMUM ALLOWABLE AREA SERVED (ACRES)
30	40
36	60
42	90
48	120
54	160
60	200
72	300
84	415
96	550
108	710
120	890

Notes:

1. Design discharge for culvert connections to drainage laterals shall be based on a maximum flow of four inches per day over the drainage area. The rate of four inches per day is equivalent to 107.56 cubic feet per second per square mile (CSM).
2. Head losses as a result of a culvert crossing shall not exceed 0.1 foot.
3. Drainage culverts shall be of sufficient length to extend from a point in the canal, determined by the District Administrator, to a point in the landowner's canal without reducing the width of impairing the use of the canal right of way or maintenance berm.
4. Each culvert shall be set at an elevation which ensures that it will be fully submerged during its use, thereby utilizing the full cross sectional area of the culvert.
5. All culvert connections shall be a minimum diameter of 30 inches.
6. Alternate culvert diameters may be approved per the review of the District Administrator and District Engineer for compliance with minimum design criteria.

**ST. JOHNS IMPROVEMENT DISTRICT
 PERMIT INFORMATION AND CRITERIA MANUAL
 FOR USE OF OR CONNECTION TO WORKS OF THE DISTRICT**

EXHIBIT IV – B

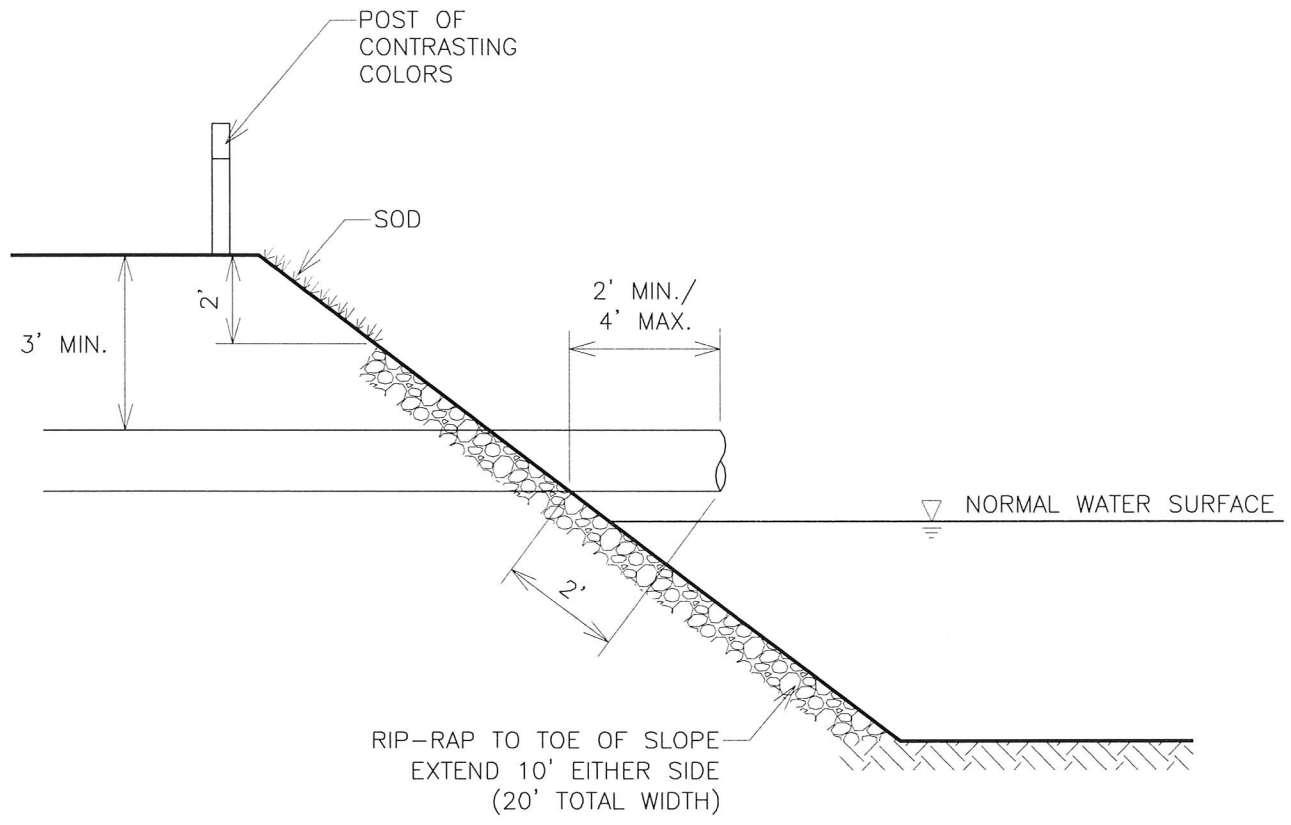
REQUIREMENTS FOR CULVERT CONNECTIONS TO IRRIGATION LATERALS

CULVERT DIAMETER (INCHES)	MAXIMUM ALLOWABLE AREA SERVED (ACRES)
24	40
30	80
36	125
42	180
48	245
54	315
60	400
72	600

Notes:

1. Design capacity for culvert connections to irrigation laterals shall be based on a maximum flow rate of two inches per day over the irrigated area. The rate of two inches per day is equivalent to 53.78 cubic feet per second per square mile (CSM). The flow rate is based on the maximum volume available in the event of a freeze. Connections to District canals for irrigation withdrawals shall be designed and installed in a manner that is consistent with the water control, operation and maintenance objectives of the District. Please refer to the *SJID Operations Guidelines* for additional information.
2. Head losses as a result of a culvert crossing shall not exceed 0.1 foot.
3. Irrigation culverts shall be of sufficient length to extend from a point in the canal, determined by the District Administrator, to a point in the landowner's canal without reducing the width of impairing the use of the canal right of way or maintenance berm.
4. Each culvert shall be set at an elevation which ensures that it will be fully submerged during its use, thereby utilizing the full cross sectional area of the culvert.
5. All irrigation culvert connections shall be a minimum diameter of 24 inches (40 acres served).
6. Alternate culvert diameters may be approved per the review of the District Administrator and District Engineer for compliance with minimum design criteria.

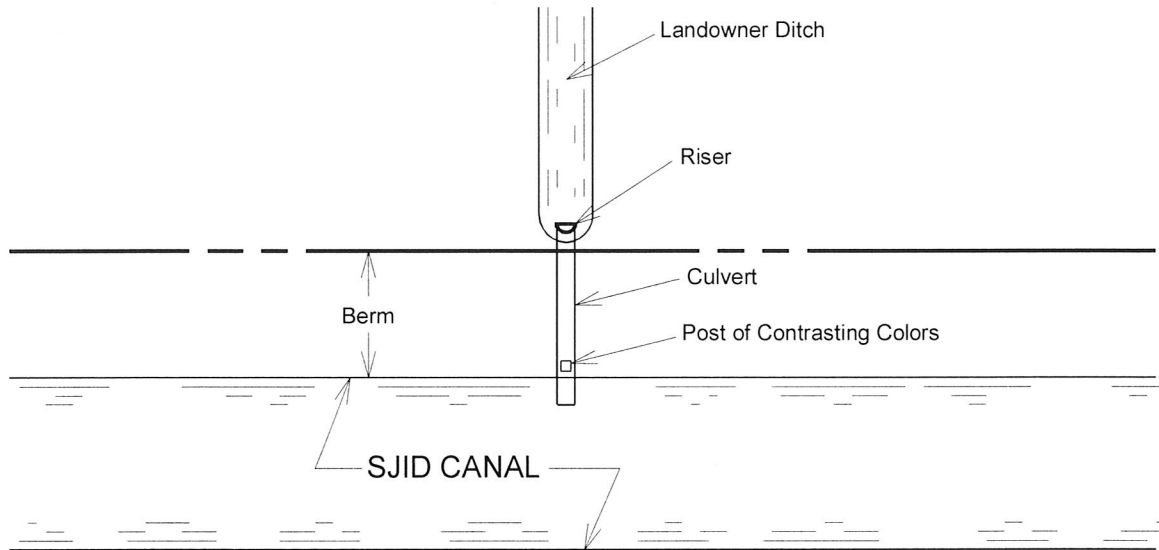
DWG. NO. P:\86-0271\60103392 GEN DIST ENG SVCS\400 TECHNICAL\401 GENERAL DIST ENG SVCS\SJD PERMIT MANUAL\EXHIBITS\EXHIBIT IV-C.DWG



ST. JOHNS IMPROVEMENT DISTRICT	
SKETCH TO ACCOMPANY	
CONNECTION DETAIL	
DATE:	APPLICATION NUMBER :
CANAL NO.:	APPLICANT:

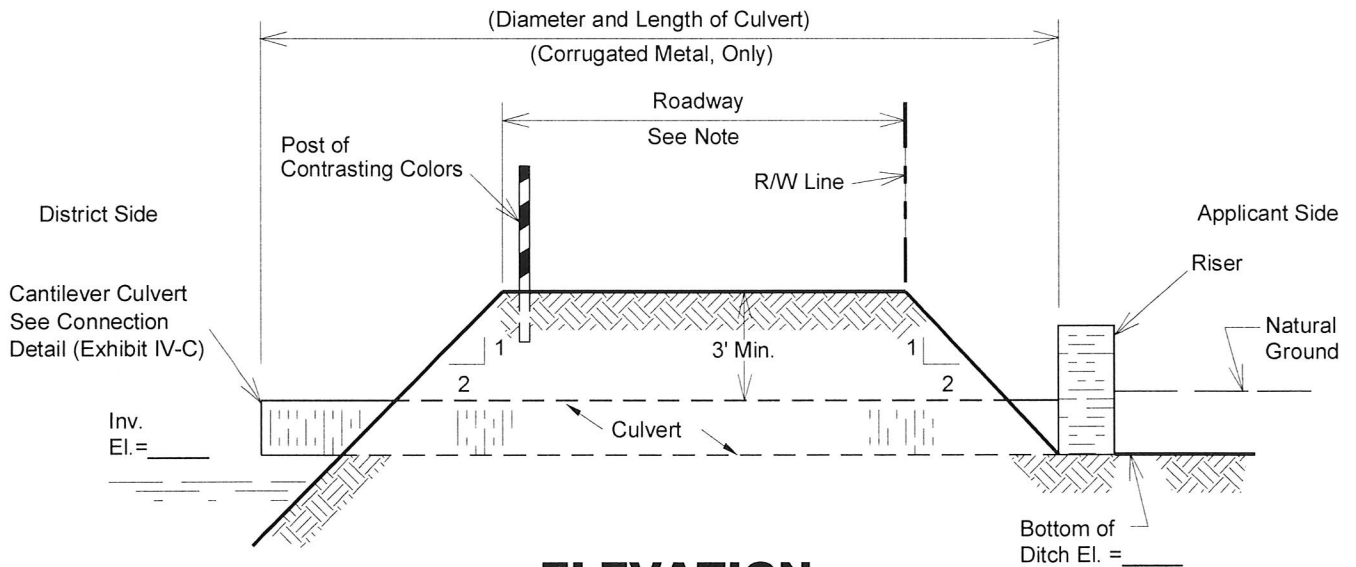
EXHIBIT "IV-C"

DWG. NO. P:\86-0271\60103392 GEN DIST ENG SVCS\400 TECHNICAL\401 GENERAL DIST ENG SVCS\SUID PERMIT MANUAL\EXHIBITS\EXHIBIT IV-D.DWG



PLAN VIEW

Not to Scale



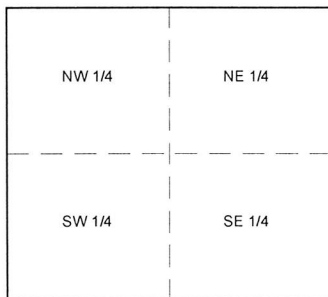
ELEVATION

Not to Scale

NOTES:

- Roadways shall be the greater of 25' from Top of Bank or 50' from centerline of Right of Way.
- All elevations refer to N.G.V.D.

Indicate Location of Proposed Improvement Below:

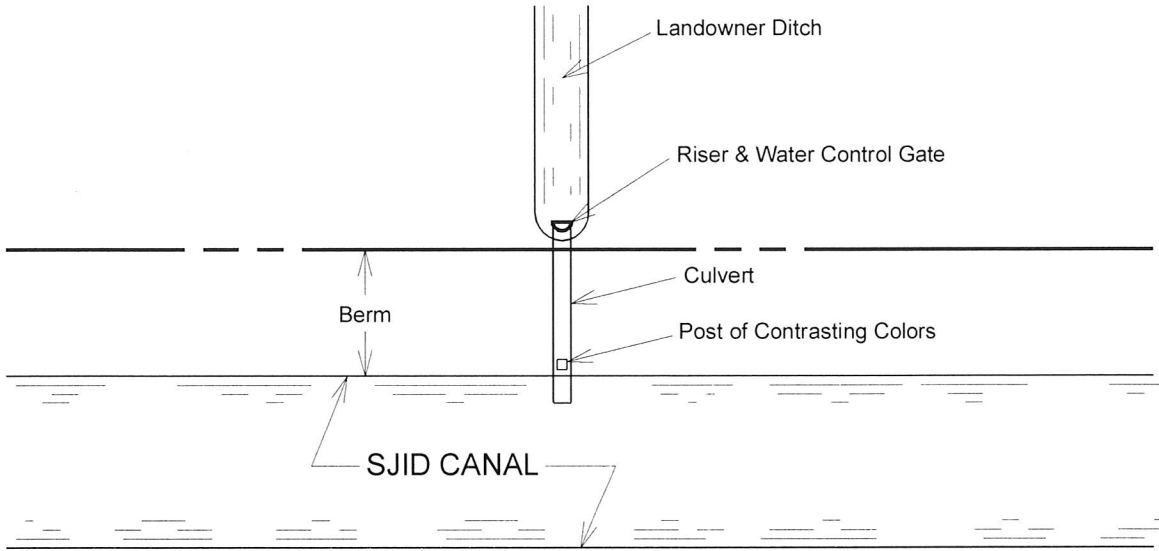


SEC. __, TWP. __, RGE. __
VICINITY PLAN

ST. JOHNS IMPROVEMENT DISTRICT	
SKETCH TO ACCOMPANY	
TYPICAL PLAN AND PROFILE OF CONNECTIONS TO DRAINAGE LATERALS	
DATE:	APPLICATION NUMBER:
CANAL NO.:	APPLICANT:

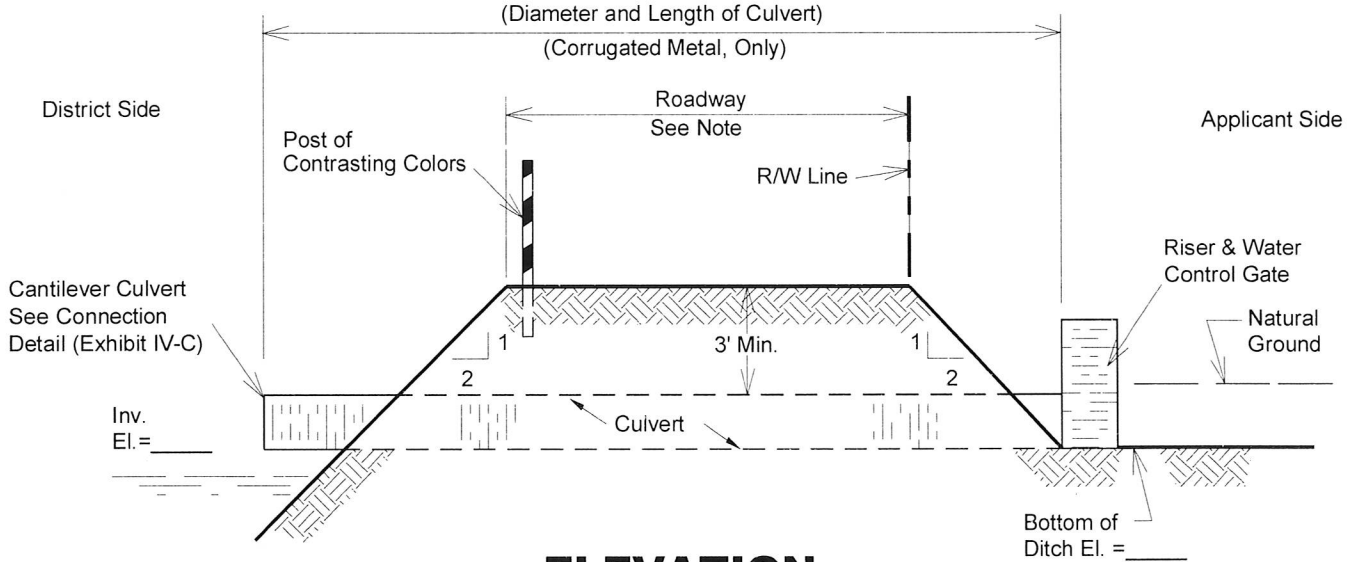
EXHIBIT "IV-D"

DWG. NO. P:\86-0271\60103392 GEN DIST ENG SVCS\400 TECHNICAL\401 GENERAL DIST ENG SVCS\SJD PERMIT MANUAL\EXHIBITS\EXHIBIT IV-E.DWG



PLAN VIEW

Not to Scale



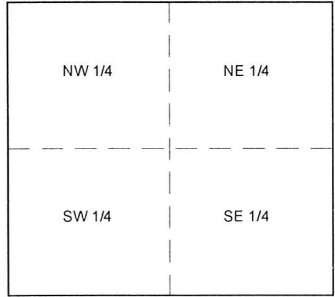
ELEVATION

Not to Scale

NOTES:

- Roadways shall be the greater of 25' from Top of Bank or 50' from centerline of Right of Way.
- All elevations refer to N.G.V.D.

Indicate Location of Proposed Improvement Below:

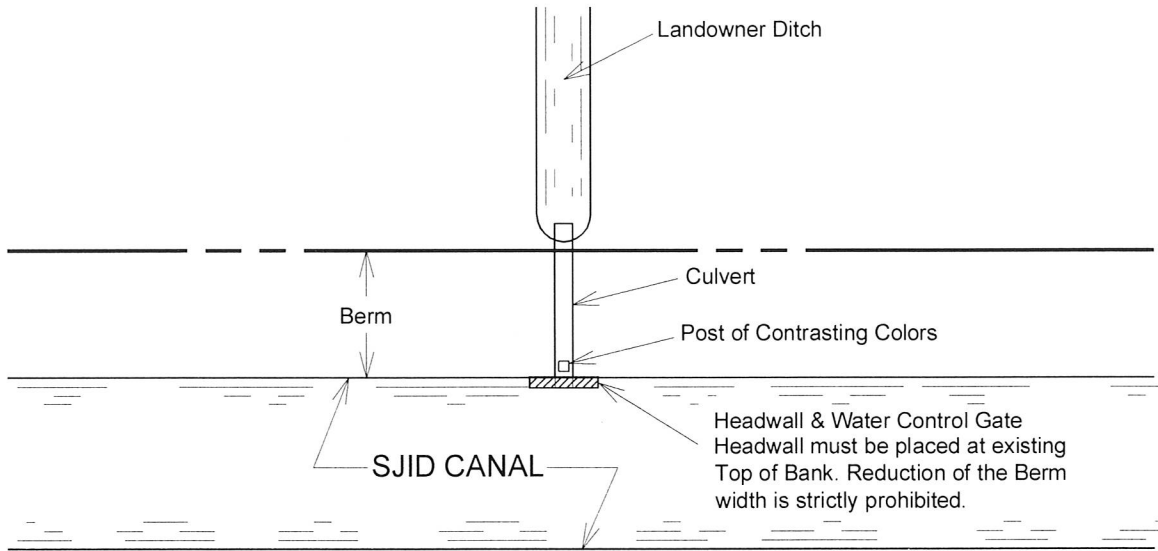


SEC. __, TWP. __, RGE. __

VICINITY PLAN

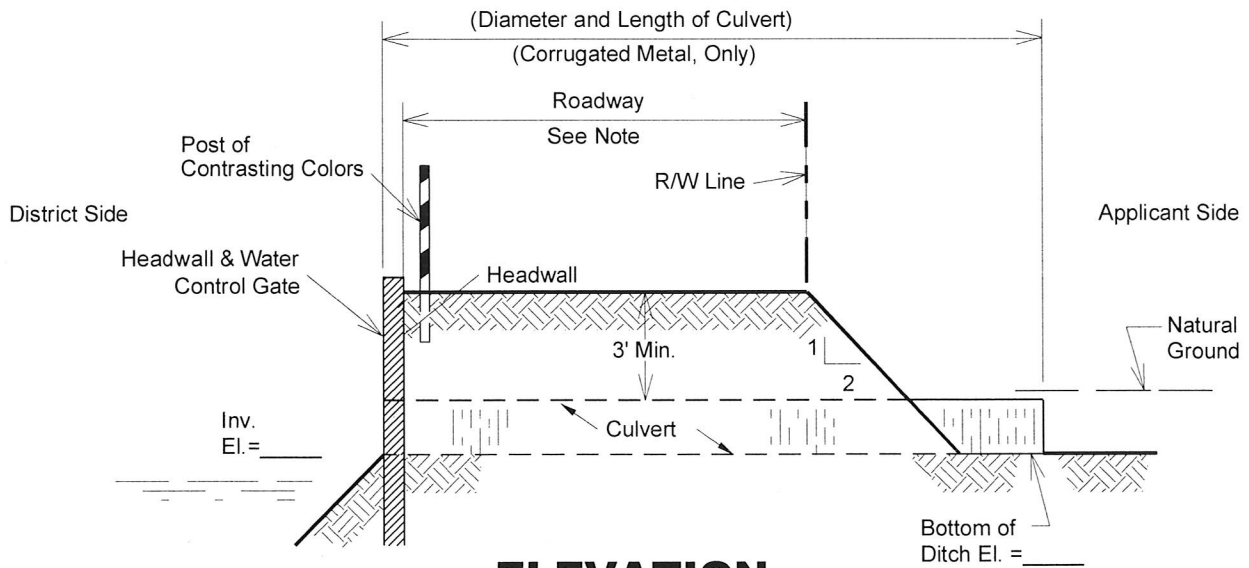
ST. JOHNS IMPROVEMENT DISTRICT	
SKETCH TO ACCOMPANY	
TYPICAL PLAN AND PROFILE OF CONNECTIONS TO IRRIGATION LATERALS (RECOMMENDED)	
DATE:	APPLICATION NUMBER:
CANAL NO.:	APPLICANT:

DWG. NO. P:\86-0271\60103392 GEN DIST ENG SVCS\400 TECHNICAL\401 GENERAL DIST ENG SVCS\SJID PERMIT MANUAL\EXHIBITS\EXHIBIT IV-E.DWG



PLAN VIEW

Not to Scale



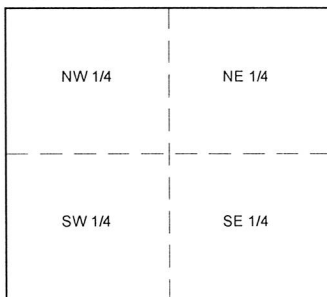
ELEVATION

Not to Scale

NOTES:

- Roadways shall be the greater of 25' from Top of Bank or 50' from centerline of Right of Way.
- All elevations refer to N.G.V.D.

Indicate Location of Proposed Improvement Below:

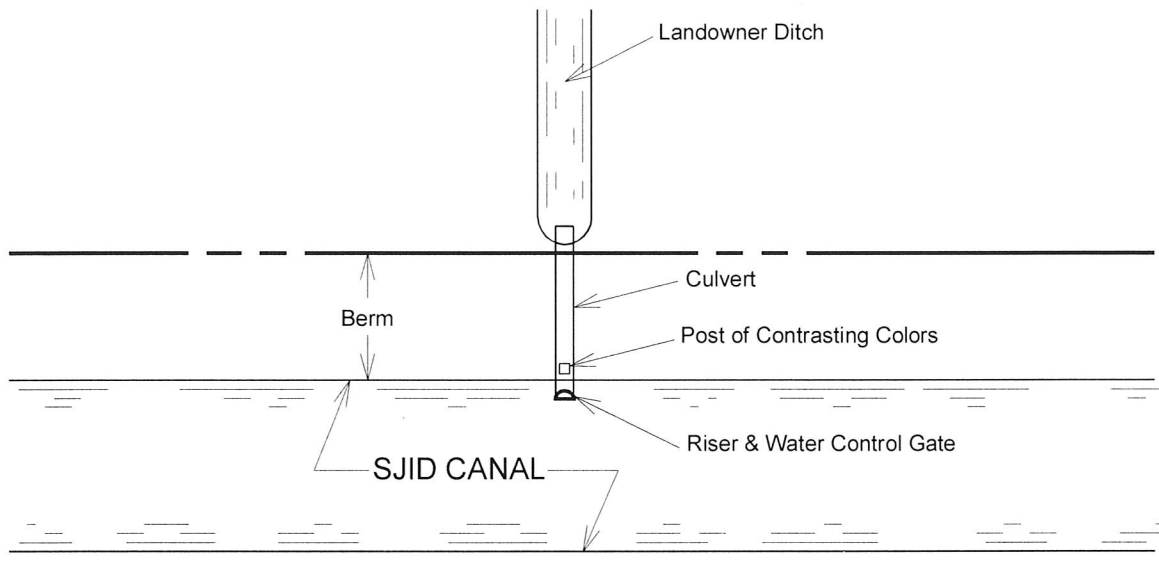


SEC. ____, TWP. ____, RGE. ____

VICINITY PLAN

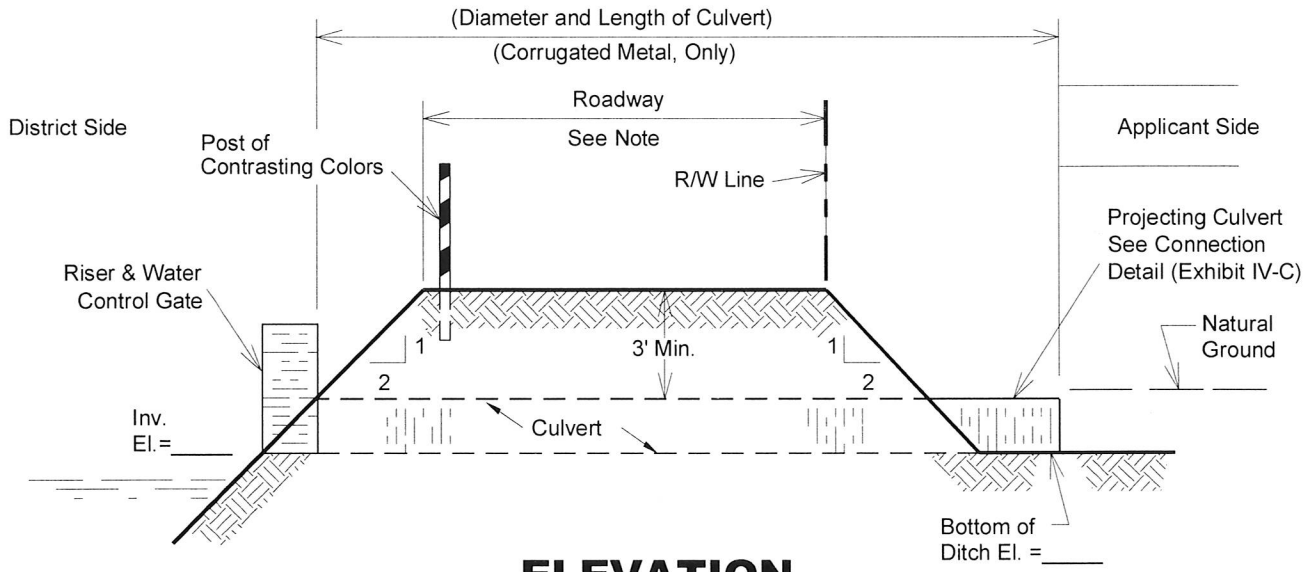
ST. JOHNS IMPROVEMENT DISTRICT	
SKETCH TO ACCOMPANY	
TYPICAL PLAN AND PROFILE OF CONNECTIONS TO IRRIGATION LATERALS (ALTERNATIVE 1)	
DATE:	APPLICATION NUMBER:
CANAL NO.:	APPLICANT:

DWG. NO. P:\B6-0271\60103392 GEN DIST ENG SVCS\400 TECHNICAL\401 GENERAL DIST ENG SVCS\SJID PERMIT MANUAL\EXHIBITS\EXHIBIT IV-E.DWG



PLAN VIEW

Not to Scale



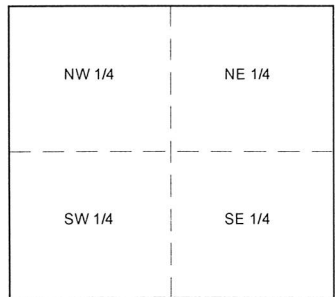
ELEVATION

Not to Scale

NOTES:

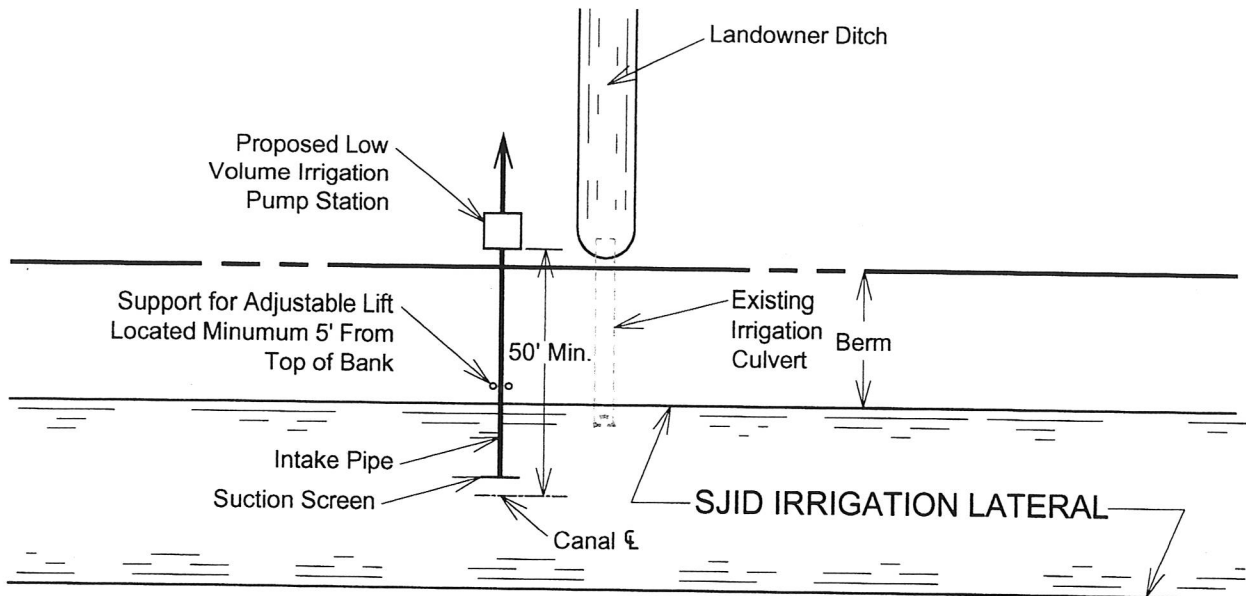
- Roadways shall be the greater of 25' from Top of Bank or 50' from centerline of Right of Way.
- All elevations refer to N.G.V.D.

Indicate Location of Proposed Improvement Below:



SEC. ____, TWP. ____, RGE. ____
VICINITY PLAN

ST. JOHNS IMPROVEMENT DISTRICT	
SKETCH TO ACCOMPANY	
TYPICAL PLAN AND PROFILE OF CONNECTIONS TO IRRIGATION LATERALS (ALTERNATIVE 2)	
DATE:	APPLICATION NUMBER:
CANAL NO.:	APPLICANT:



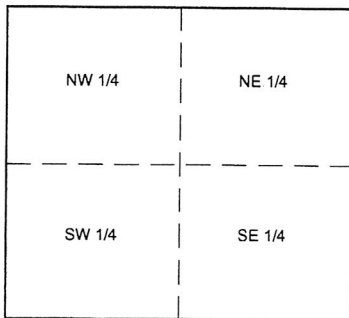
PLAN VIEW

Not to Scale

NOTES:

- No irrigation pumps will be allowed except at existing irrigation intake culvert locations upon approval by the District.
- Irrigation pump intakes must be clearly marked.
- Irrigation pump stations shall be setback a minimum of 50' from the centerline of the irrigation lateral and outside of District Right of Way.
- Minimum cover for all pipe within District Canal Right of Way shall be 30".
- Adjustable Davit System for suction screen is required. No bridge systems will be allowed.
- Suction screens shall be removed from the canal when notified by the District of pending canal cleaning.
- The District Director of Operations and Maintenance shall review the proposed installation and location prior to construction.

Indicate Location of Proposed Improvement Below:



SEC. ____, TWP. ____, RGE. ____

VICINITY PLAN

ST. JOHNS IMPROVEMENT DISTRICT	
SKETCH TO ACCOMPANY LOW VOLUME IRRIGATION PUMP CONNECTION TO IRRIGATION LATERALS	
DATE:	APPLICATION NUMBER :
CANAL NO.:	APPLICANT:

EXHIBIT "IV-F"