NAMPA & MERIDIAN IRRIGATION DISTRICT

LAND USE CHANGE/SITE DEVELOPMENT PACKET

OCTOBER 17, 2023

NMID
1503 1st ST S NAMPA, ID 83651

NAMPA & MERIDIAN IRRIGATION DISTRICT

Will your development affect one or more of NMID's facilities or have offsite drainage?

1. Call the Water Superintendent at (208) 466-0663 to set up a pre-application meeting.
2. Read and sign LAND USE CHANGE APPLICATION pages and return with all appropriate documentation.

Will your development require a License Agreement?

1. Call the Water Superintendent at (208) 466-0663 to set up a pre-application meeting.
2. Read requirements and instructions sheet before proceeding.

Will your development need a pressurized irrigation system, which will be owned and operated by NMID, installed?

1. Call the Water Superintendent at (208) 466-0663 to set up a pre-application meeting.
2. Read and sign PRESSURIZED IRRIGATION pages and return with all appropriate documentation.

All forms, requested plans, and documentation must be turned into the NMID office located at:

1503 1st Street South
Nampa, ID 83651

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MEMORANDUM

FROM: Nampa & Meridian Irrigation District

RE: Procedures for review and approval of projects affecting District facilities and pressurized irrigation.

DATE: October 17, 2023

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This memorandum outlines procedures for Nampa & Meridian Irrigation District's review and approval of projects affecting the District's canals, laterals, drains (District facilities) and pressurized irrigation. The District hopes that this information will assist you in planning future projects.

The steps of the District's review and approval process are:

1. Timely communication with the District's Water Superintendent and review of a Land Use Change Application by Water Superintendent and staff.

2. Submission of a Land Use Change Application, plans and drainage calculations and fee to the District's office.

3. Preparation of a Construction Contract for Pressure Urban Irrigation System (if applicable) which will allow the Irrigation District to own, operate and maintain a pressure urban irrigation system within the development.

4. Submission of the Construction Contract for Pressure Urban Irrigation System to the District's Board of Directors for consideration.

5. Preparation of a License Agreement for projects encroaching, crossing or modifying District canals, laterals, drains and relocated easements

6. Submission of the License Agreement to the District for consideration.

Each of these steps is explained on the following pages.

A. Land Use Change Application:

It is recommended that a meeting with the Water Superintendent and staff be arranged for prior to development of plans and/or submittal of an application. This will help in preparing the filing of a Land Use Change Application with the District. These applications are available at the District's office or on our website at www.nmid.org. A copy of the Land Use Change Application is enclosed. The District's office address and telephone number are:

Nampa & Meridian Irrigation District
1503 First Street South
Nampa, ID 83651
(208) 466-7861
www.nmid.org

Filing a Land Use Change Application with plans and fee is mandatory unless it is explicitly waived by the District's Water Superintendent in writing. Any additional phases of a subdivision must file a Land Use Change Application unless the original filing specifically included all necessary information for future phases in the plans and calculations submitted for review. The application **must** always be accompanied by **three (3) sets of plans, drainage calculations, landscape drawings, and the appropriate fee ($1,200.00)** in **the form of a cashier's check or money order. Please note once an approval letter is issued applications will be considered closed, if revised plans are submitted or other changes needed due to no fault by NMID another application and fee ($1,200.00) must be submitted.** If personal or business checks are submitted, it can take up to a month to clear the bank before processing the application will occur. The District recognizes that project development often involving many phases of planning and approval. Timely submission of complete and sufficiently detailed plans and other necessary information is critical to the District's review.

Project proposals must be submitted to the District's office for preliminary preparation and will then be submitted to the District's Water Superintendent for his review and response. All communications and construction plans should be sent to the District's office where they will be processed and directed to the District's Water Superintendent.

Projects affecting the water flow in the District's facilities cannot commence until after October 15th and must be completed no later than March 15th unless specified differently by Water Superintendent. Plans for projects affecting the water flow must be received for review no later than January 15th to be considered for construction prior to the March 15th cut off date.

B. Timely Communication with the District's Water Superintendent and Review of Land Use Change Application:

You are encouraged to call the District's Water Superintendent prior to submitting plans if you have any questions regarding the District's facilities, and to learn what specifications and level of detail the District's Water Superintendent will need to see when reviewing the plans. If you believe that you need not file a Land Use Change Application, you must contact the District's Water Superintendent for appropriate instructions on how to proceed.

If the District's Water Superintendent finds that the proposed construction will meet the District's requirements, a letter of approval of the plans will be written in which other requirements may be outlined, such as a License Agreement or Construction Contract for Pressure Urban Irrigation System.

License Agreements are required for the following reasons:

1. Relocation of a District facility which would also require a new easement or fee title and a relinquishment of the old easement once the relocation has been completed and approved by the Water Superintendent.
2. Piping of a District facility.
3. Encroachment on a District facility with gas, water and sewer lines, utility lines, roadways, bridges or any other structures or landscaping.
4. Drainage discharges into District facilities (predevelopment flows only, if the facility has the capacity).

Construction Contracts for Urban Irrigation System is required for the following reasons:

1 A pressure urban irrigation system is being installed by the developer who intends for the Irrigation District to own, operate and maintain the pressure urban irrigation system within the development. A Bill of Sale is also provided whereby all lines up to and including the tap on each lot as well as the pump station are turned over to the Irrigation District for ownership. A Warranty Deed should be issued to the Irrigation District for the lot the pump station itself located (unless the pump station is built upon the District's easement on a District facility).

2. A pump station only is being installed for ownership, operation and maintenance by the Irrigation District. The development will operate and maintain their own delivery lines.

The District's Water Superintendent submits project plans to the District's engineer for review and the Districts engineer makes recommendations to the District's Water Superintendent, but has no authority to represent the District's interest or position regarding any project. The District's Water Superintendent may request additional information or modification of the proposed project to conform with District requirements.

C. Preparation of a Construction Contract for Urban Irrigation System

If the developer of the property is installing a pressure urban irrigation system within the development and would like the Irrigation District to own, operate, maintain and repair the system up to and including the tap in the back of each lot, the developer must send a letter to the District's attorney, Laura Burri, requesting a construction contract to the following address:

Morrow & Fischer
4 Ogden Avenue
Nampa, ID 83651
(208) 475-2200

The letter to the District's attorney should contain the following:

1. completed questionnaire provided at the same time the Land Use Change Application is provided,
2. a legible copy of the legal description for the boundaries of the subdivision,
3. a copy of the recorded deed showing proof of the current ownership of the entire parcel that will comprise the development,
4. a copy of all CC & R's pertaining to this subdivision,
5. a copy of the preliminary plat,
6. if a new pump station is to be constructed for this development, the preliminary plat must show the location of the pump station as a separate, non-buildable lot.

The District's attorney first obtains confirmation: (1) that the Water Superintendent has reviewed the plans pertaining to this development and that the developer is adhering to all of the District's requirements, and, (2) the ownership of the property is by the individuals requesting the contract. Upon confirmation, the District's attorney prepares the Construction Contract for Urban Irrigation System (PUIS). The fees for preparation of the contract will be bourn by the property owners at the time of assessing the irrigation taxes on the parcels, unless the developer fails to complete the project. Then, the developer will be responsible for paying the fees for preparation of the contract.

Preparation of a Construction Contract for Urban Irrigation System (PUIS) can be accomplished in a matter of days if all of the correct information is provided to District's attorney. The District's attorney will send the original to you for your signature. Once signed, the contract must be returned to the District's attorney so that she may recommend placement on the agenda for the next available meeting of the District's Board of Directors.

It should be understood by the developer that the property subject to the pressurized urban irrigation system will be assessed for all costs of maintenance, operation and repair of the pressurized irrigation system upon recordation of the final plat and final approval of the contract documents by the Irrigation District. The assessments will be made by the Board of Directors of the Nampa & Meridian Irrigation District after the second Board Meeting in September of each year. Assessments will be issued to the owners of the property at the time of the assessment. Assessment will be made whether or not any or all lots in the subdivision have been sold by the developer to third parties.

D. Submission of the Construction Contract for Urban Irrigation (PUIS) to Board of Directors for Consideration

The District's Board of Directors meets on the first and third Tuesdays of the month. Construction Contract for Urban Irrigation System (PUIS) must be executed by the property owner and sent to the District's office no later than the Wednesday prior to the Tuesday meeting in order to be placed on the agenda. Once on the agenda, the Board of Directors vote to approve or disapprove the contract.

After the Construction Contract for Urban Irrigation (PUIS) has been approved, the documents will be recorded at the county in which the project is located.

E. Preparation of a License Agreement:

If a License Agreement is required, the next step is for the developer to send a letter to the District's attorney, Bryce Farris, requesting a License Agreement to the following address:

Sawtooth Law Office, PLLC
P.O. Box 7958
Boise, ID 83702
(208) 629-7447

The letter to the District's attorney should contain the following:

1. the owner's name of the property where the project will occur, with the owner's telephone number and address,
2. the name of the District's canal, lateral or drain,
3. each part of the project which affects the District's facility and related easement,
4. the dates such construction is planned to begin and end,
5. whether an entity (such as city or ACHD) will assume ownership or maintenance of any part of the project affecting the District's facility and easement,
6. a legal description of your property,
7. for relocations, a legal description of the District's easement to be relinquished and a legal description of the new easement or fee title for the ditch,
8. each page of the construction plans that pertain to the project and was approved by the District's Water Superintendent, and
9. a vicinity sketch showing the location of the property and the project.

The District's attorney first obtains confirmation: (1) that the property where the project will occur 1st owned by the person(s) or entity (ies) identified in the request, and (2) that the Water Superintendent has authorized preparation of a License Agreement. Upon confirmation, the District's attorney prepares the License Agreement. You are responsible for the fees charged by the attorney for the preparation of the License Agreement and other necessary documents and correspondence. Legal fees depend upon the nature and complexity of the project and whether there are unresolved issues.

Preparation of a License Agreement can be accomplished in a matter of days. The District's attorney will send duplicate originals of the License Agreement and any other documents (such as an easement in the case of a ditch relocation) to you for your signature. Both originals should be returned to the District's attorney who will then submit it to the District for review and approval.

F. Submission of License Agreement to Board of Directors for Consideration

The District's Board of Directors meets on the first and third Tuesdays of the month. License Agreements must be executed by the property owner ("licensee") and sent to the District's office no later than the Wednesday prior to the Tuesday meeting in order to be placed on the agenda. Once on the agenda, the District's Water Superintendent will present and explain the proposed License Agreement to the District's Board of Directors for consideration.

After the License Agreement has been approved, one original License Agreement will be recorded at the county in which the project is located and the other original will be returned to the District's attorney. Upon receipt, the District's attorney will send you the unrecorded original with a copy of the billing statement for legal fees.

General Information

The amount of time this process requires from submission of the Land Use Change Application or approval of a License Agreement or Construction Contract for Pressure Urban Irrigation System (PUIS) for approval by the District's Board of Directors depends upon the nature and extent of the project. Timely submission of clear and complete plans with the Land Use Change Application and fees in the form of a cashier's check or money order facilitates the District's review and saves time and expense. Standard review time from the date of submittal is roughly six weeks. Final approval for all submissions will not be issued until an electronic copy of the “Approved Plans” for projects requiring License Agreements or “As Built Plans” for Pressurized Systems is received.

Contact Information

Dave Duvall ---------- Water Superintendent, Nampa & Meridian Irrigation District

Joshua Bunton ---------- Asst. Secretary, Nampa & Meridian Irrigation District

Laura Burri ---------- Attorney, Morrow & Fischer Pressurized Urban Irrigation System (PUIS)

Bryce Farris ---------- Attorney, Sawtooth Law Office PLLC, License Agreement

1. DESIGN AND ANALYSIS OF LATERALS:
   a. Prior to revisions to the laterals either existing or new review, with Nampa & Meridian Irrigation District (NMID) should be made to obtain flow rates and possible impacts upon NMID facilities. If technical questions arise, NMID's engineer may need to be involved.

   b. The pipeline or ditches will need to be designed for the normal and anticipated flow rates as determined by NMID. Many of the laterals have deliveries associated with the laterals. These delivers, weirs and facilities will need to be reviewed by NMID personnel to maintain normal operation.

   c. The design and analysis of the pipeline or open ditches will be by normal hydraulic analysis and engineering. The elevations of the headwater and tail water of the lateral shall be surveyed as well as the flow line elevations at those locations. The design of the pipeline or ditch shall be such that the original headwater and tail water elevations will not be exceeded. The analysis and design shall include the design and working flow rates and energy grade line. Any delivery, check structures or irrigation boxes shall have calculations showing that the delivery can be made or that the check structure will function as the original system.

   d. When designing the pipeline, the top of the ditch bank vs the top of the pipe needs to be obtained to ensure that the available portion of the pipe barrel will handle the anticipated flow rate. In some cases the designer used the full pipe barrel size for flow calculation but only a portion of the barrel was at or below the ditch bank.

   e. All disturbed entrance and exits of the pipeline need to have rip rap armoring the disturbed ditch and bank.

   f. The pipe should be reviewed for adequate cover to handle wheel loads or minimum cover requirements required by NMID. Per pipe manufacturer recommendations.

   g. In some cases the size of pipe may be determined by the upstream and downstream pipes, if they are piped now.

2. DESIGN AND ANALYSIS OF DRAINS:
   a. Prior to revisions to the natural and man-made drainage channels within NMID boundaries, any developer must contact NMID to review the modifications or affects the development will have upon the drainage channels. If technical questions arise, NMID's engineer may need to be involved.

   b. The drainage facilities may be within the FEMA flood channels and may require approval of the City, County, Corps of Engineers and FEMA Flood Plain Administrator. Crossing of any NMID facility must be reviewed by NMID and may require lining of the facility.

   c. Any piping of NMID Drains will need to be designed to accommodate the anticipated flows or match surrounding (upstream or downstream) pipe sizes.

   d. Tiling of Subterranean drainage facilities are allowed at the sole discretion of NMID and must be done per NMID “Drain Pipe Open Joint Detail” Exhibit A if approved.

      The pipe type shall be approved and with open joints to allow for infiltration. The approved pipe type is RCP Class III or approved by NMID. The gaskets shall be removed at each joint and will require a filter fabric rap at the joints and drain rock except at road crossings (see standard drawing). The pipe class and cover will be designed to accommodate the earth loads and any superimposed loads or wheel loads.

3. DESIGN AND ANALYSIS OF CULVERTS

   a. Prior to revisions to the road crossing either existing or new, review with Nampa & Meridian Irrigation District (NMID) should be made to obtain flow rates or impact upon NMID facilities. If technical questions arise, NMID's engineer may need to be involved.

   b. The culverts will need to be designed for the normal and anticipated flow rates as determined by NMID. Many of the road crossings have deliveries associated with the crossings and head walls. These delivers, weirs and facilities will need to be reviewed by NMID personnel to maintain normal operation.

   c. The design and analysis of the culverts will be by normal hydraulic analysis and engineering. The Pipe size shall be such that no net rise in water surface elevation is incurred.

4. BRIDGES: All bridges on NMID systems will need free board and vertical clearance approval. The site may need to be reviewed for special considerations, such as; maintenance access, diversions structures, etc. The minimum clearances are two (2) feet for the Ridenbaugh Canal and one (1) foot for all other facilities. No center pillars or dual conduit designs will be allowed.

5. CROSSINGS: Crossing of any NMID facility must be reviewed by NMID on a case by case basis. Crossings below district facilities may require lining of the facility consisting of 5,000 psi concrete with 1.5 lb. of fiber mess reinforcing and of 5" thickness, extending a minimum of ten feet (10') beyond the area of disturbance. Crossings below NMID facilities are required to be a minimum of 3' under the bottom of the facility and must be sleeved if under pressure (steel or poly sleeves accepted). Overhead crossings are to be a minimum of 30' above easement area.

6. TRASH RACKS: Trash racks shall be sloped at 3:1 with vertical pipes placed on 6" centers and the horizontal bars shall be removed, (see standard drawing Exhibit B) on upstream or entrance side. **No trash racks allowed on downstream or exit side of crossings.**

7. CLEAN OUTS AND DIVERSION BOXES: Clean outs and diversion boxes are required on all new conduits. Clean out locations are dictated by the ability to clean obstructions from the conduit, and should be spaced no greater than 400 feet apart. Cleanout boxes will be placed at all angle points and at points of diversion of the conduit, (see standard drawing Exhibit C). All boxes shall be cast in place, no precast boxes. Boxes shall have a minimum inside dimension of 5 ft. X 5 ft. inside and have a 1 ft. sump below invert of pipe. Wall thickness of boxes shall be a minimum of 6 inches on pipelines 36 inch or smaller and 8 inches on pipelines above 36 inch or incorporating cast in check groves. Reinforcing steel grade 60 (60,000 psi is required). Lids on boxes shall be expanded metal or bar grating capable of supporting 250 lbs. per 6 ft. on center without exceeding ¼ inch deflection and shall have hinges for access to weirs, headgates or check structures. Lids shall be bolted down at all corners except for where hinged access is needed.

8. PIPING: When piping any canal or lateral all boxes must be cast in place, no precast boxes will be accepted. Class III RCP, 10 gauge CMP, or HDPE with SDR 21 rating are minimum requirements for tiling materials in NMID facilities. Bedding, backfill, and cover shall meet minimum requirements of pipe manufacturer to handle wheel loading by district equipment.

9. RELOCATION/DISTURBANCE: Any relocation or disturbance of the canal or lateral **will** require a minimum of concrete lining or piping of the channel at the discretion of Nampa & Meridian Irrigation District. Relocations also require a new grant of easement.

10. RIP-RAP: Rip-rap is required at the upstream and downstream end of bridges and conduits where the bank and bottom are disturbed. The rip-rap shall be sized to protect the channel by acceptable design (U.S. Bureau of Reclamation) methods but shall be minimum of 12" size and shall extend a minimum 10 feet beyond area of disturbance and 1 foot above high water mark. (see standard drawing Exhibit D) Erosion control rip-rap under all new and existing drain pipes placed into open channel is required.

11. LANDSCAPING: Landscaping along a Nampa & Meridian Irrigation District facility/easements may be allowed at the discretion of Nampa & Meridian Irrigation District on a case by case basis. The only landscaping to be considered shall be grasses, small shrubs, class 1 ornamental or conifer trees where the mature drip line of the foliage will not extend over the facility or maintenance road at full growth that impedes maintenance vehicles. Landscape plans shall show "full maturity growth" diameter on plans where adjacent to NMID easements and classification number.

12. GRADING ALONG SIDE OF FACILITIES: In order to protect the structural integrity, delivery of water, or seepage loss, all development along the facility shall be reviewed to determine if the grading will have any impact upon the facility, such as;

    a. Cutting into the bank of any facility which reduces the original cross section of the facility. Absolutely no cutting/disturbance of the adjacent support/slope of any facility will be tolerated inside or outside of easement!

    b. Lowering the natural ground near a facility that is on a fill near the toe (point at which the bank of the facility meets natural ground) of the embankment. Any grading in this area will require test holes to determine if any seepage or ground water is encountered which could affect the structural integrity of the bank of the facility. In addition during construction the excavation in this area will need to be monitored by Nampa & Meridian Irrigation District employees.

    c. Lowering the natural ground around a facility below the water surface elevation in the facility.

    d. Any grading of the natural ground within the easement area of the facility.

13. STREET CROSSINGS: over all district facilities shall have curb cuts or driveway approaches for full width of maintenance road. Sidewalks shall be thickened to accommodate NMID equipment loading where crossing.

14. HEAD GATES AND WEIR STRUCTURES: All head gates shall be C-10 type screw gates (such as X-Cad or Waterman) and must be sealed between the headwall structure and head gate frame with mastic or butyl rubber sealant such as Conseal CS-102. Weir structures shall be cipolletti type (see standard drawing Exhibit E & F Cippolletti Weir Box Structure).

INFORMATION REQUIRED FOR REVIEW:

1. Three (3) full sized sets of the plan drawings showing details of construction and alteration of NMID facilities or proposed storm-water handling procedures, to include Landscape Drawings at the time of original submittal, **submittals without Landscape drawings will be deemed incomplete and will delay the review process.** All drawings shall clearly identify easement boundaries and dimensions.

2. Contour map of pre-development area.

3. Calculations for storm-water runoff and proposed method of disposing or handling runoff.

4. Calculations for sizing irrigation alterations, or laterals.

5. Description of Easement for relocated and proposed relinquished NMID irrigation facilities, if applicable.

6. Before approval letter is issued, NMID will receive two full sized drawing sets with a pdf format copy.

STORM WATER MANAGEMENT OBJECTIVES: The design of a storm water management system needs to address two distinct objectives; peak discharge and water quality. The management of storm water discharges involves the design and implementation of a control system to achieve the following objectives:

1. Protect all downstream facilities from peak storm water flows resulting from land development by not exceeding pre-development flows.

2. Provide a method of maintaining water quality through best management practices.

PEAK DISCHARGE CALCULATIONS:

1. Storm water management requires the determination of two runoff parameters; peak rate of discharge and runoff volume. Both parameters shall be used in the comparison of pre-development and post-development conditions.

2. Peak rate of discharge calculations shall determine the size of sand/oil separators or pond sizing for separation of sands and oils. Runoff volume calculations shall be used to determine the size of detention/retention facilities.

3. Runoff peak rate of discharge shall be calculated using the appropriate methodology. The peak rate of runoff for areas less than twenty-five (25) acres shall be calculated by the rational method of derivatives. The SCS method shall be used for larger areas.

4. The equation for the rational method is:

[Q = CIA]
Q = the peak runoff rate in cubic feet per second (CFS)
C = the runoff coefficient
I = the average rainfall intensity in inches per hour (in/hr), occurring at the time of concentration (minutes).
tc = the time of concentration in minutes (min)
A = the size of drainage area (acres).

(a) Typical >/c- values are provided in Exhibit A. All predevelopment flows will be based upon a c value of 0.2.

(b) The time of concentration (tc) is defined as the time required for runoff to travel from the most distant point in the basin to the outlet. The time of concentration is related to the slope and the runoff coefficient may be estimated from the nomo-graph provided in Exhibit A. For overland travel distances greater than 1,000 feet, the Izzard (1946), the Federal Aviation Agency (1970), or a SCS lag equation or velocity chart may be used.

(c) Rainfall intensity shall be based upon the intensity-duration curves depicted in Exhibit 8. In all instances, a minimum time of concentration of five (5) minutes should be used. A frequency of twenty-five (25) years shall be used for storm water runoff calculations.

(d) The size of the drainage area shall be the entire area of the development.

(e) The peak rate of runoff for areas greater than twenty-five (25) acres shall be calculated by the hydrograph analysis method as outlined in TR No. 55 (SCS method) as supplemented and amended.

DETENTION/STORAGE FACILITIES:

1. Detention/storage facilities are used in storm drainage systems to either extend system capacities, to provide flow equalization, or to provide water quality enhancement. Design of storage requires knowledge of rainfall and runoff Volumes.

2. The following criteria shall apply to detention volume calculations.

   a. Storm duration shall be equal or greater than the time of concentration.
   b. Minimum free board shall be one (1) foot.
   c. Maximum outflow rate shall be equal to the predevelopment rate of runoff.

3. The sand/oil traps shall be designed to limit the velocity through traps to 9.5 fps. The width of opening in the trap should be limited to <10% of the length of the box.

4. Development designers shall use the best available technology to accommodate storm water management.

5. Type of facilities will be left up to the Developer but must be acceptable to Nampa & Meridian Irrigation District.

6. Where detention facilities are deemed necessary, they shall accommodate runoff generated from a minimum of a twenty-five (25) year storm using the modified Rational Design Method or an approved method. Detention will be provided such that, after Development the peak rate of outflow will not exceed the corresponding predevelopment runoff rate.

7. Detention facilities shall be located as far horizontally from surface water and as far vertically from groundwater as practical.

8. Detention facilities shall not intercept the seasonal groundwater table and should maintain a minimum two (2) foot vertical separation from that groundwater table unless constructed of impervious materials.

9. Detention outlets shall be designed to carry not more than the predevelopment flows and, if necessary, energy dissipaters shall be installed on the outlet to prevent excessive erosion.

INFILTRATION TRENCHES:

1. These facilities are sub-surface disposal units that include dry wells, percolation trenches and percolations beds.

2. Any flow returned to Nampa & Meridian Irrigation District facilities must go through standard sediment and grease trap when using infiltration trenches.

3. The design of infiltration facilities shall assume that the bottom of the trench is impervious.

4. Test holes must be dug and results sent to Nampa & Meridian Irrigation District to show the location of seasonal high groundwater.

5. Return flow to Nampa & Meridian Irrigation District facilities shall be no more than the predevelopment flow prior to development, using a runoff coefficient of 0.2.

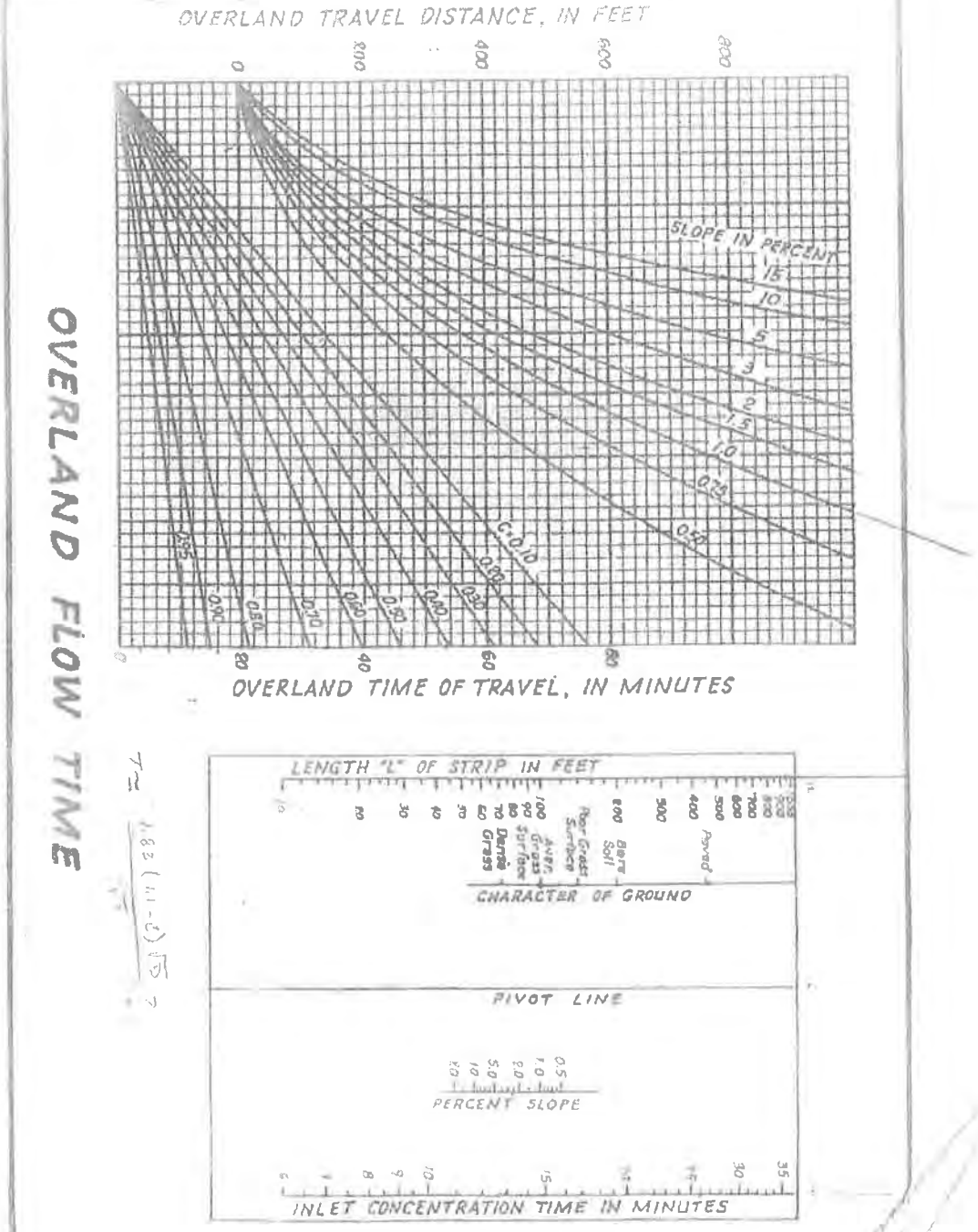
TABLE 1
RUNOFF COEFFICIENTS[2]

Description of Area	Runoff Coefficients
Business	
Downtown	0.70 to 0.95
Neighborhood	0.50 to 0.70
Residential	
Single Family	0.30 to 0.50
Multi-units, detached	0.40 to 0.60
Multi-units, attached	0.60 to 0.75
Residential (suburban)	0.25 to 0.40
Apartments	0.50 to 0.70
Industrial	
Light	0.50 to 0.80
Heavy	0.60 to 0.90
Parks, cemeteries	0.10 to 0.25
Railroad yard	0.20 to 0.35
Unimproved	0.10 to 0.30

Character of Surface	Runoff Coefficients
Pavement	
Asphalt or Concrete	0.70 to 0.95
Brick	0.70 to 0.85
Roofs	0.70 to 0.95
Lawns, sandy soil	
Flat, 2 percent	0.05 to 0.10
Average, 2 to 7 percent	0.10 to 0.15
Steep, 7 percent or more	0.15 to 0.20
Lawns, heavy soil	
Flat, 2 percent	0.13 to 0.17
Average, 2 to 7 percent	0.18 to 0.22
Steep, 7 percent or more	0.24 to 0.35

2) From Urban Runoff Control Ada & Canyon Counties (1979)

OVERLAND FLOW TIME



For small drainage areas without a defined channel and from which runoff behaves as a thin sheet of overland flow, the Izzard formula (Equation 2.6) can be used estimating the concentration time, t_c, where iL < 500:

$$t_c = \frac{41L^{1/3}}{i^{2/3}}\left[\frac{0.0007i + K}{S^{1/3}}\right] \qquad \text{Equation 2-6}$$

Where:

- t_c = concentration time, min
- L = length of overland flow travel, ft
- i = rainfall intensity, inches/hour
- S = slope of ground surface, ft/100 ft
- K = retardance coefficient

Values of retardance coefficient, K:

- 0.007 = for smooth asphalt surface
- 0.012 = for concrete pavement
- 0.017 = for tar and gravel pavement
- 0.046 = for closely clipped sod
- 0.60 = for dense blue grass turf

For sheet flow of less than 300 feet, Manning's kinematic solution can be used to compute T_t:

$$T_t = \frac{0.007(nL)^{0.8}}{(P_2)0.5\ S^{0.4}} \qquad \text{Equation 2-7}$$

Where:

- T_t = travel time, hours
- n = Manning's roughness coefficient (Table 2-4)
- L = flow length, ft
- P_2 = 2-year, 24-hour rainfall, in
- S = slope of hydraulic grade line (land slope), ft/100 ft

6. Kerby (1959)

a. based on Kathaway's 1945 article on drainage of military airfields.

b. t_c is for overland flow only. "If channelized flow occurs in a catchment area, the time of concentration will be the time of overland flow plus the time within the channel."

c. formula

$$t_c^{2.14} = 2NL/3S^{0.5}$$

$$t_c = 0.83(NL/S^{0.5})^{0.467}$$

t_c = time of concentration, minutes
L = length from the extremeity of the catchment area in a direction parallel to the slope until a defined channel is reached, feet.
S = slope, the difference in elevation between the extreme edge of the catchment area and the point in question, divided by the horizontal distance between the two points, feet per foot.

d. N = 0.02 for smooth impervious surfaces
= 0.10 for smooth bare packed soil, free of stone
= 0.20 for poor grass, cultivated row crops or moderately rough bare surfaces
= 0.40 for pasture or average grass cover
= 0.60 for deciduous timberland
= 0.80 for conifer timberland, deciduous timberland with deep forest litter or dense grass cover.

EQUATIONS USED IN CALCULATIONS

RATIONAL METHOD

$Q=CiA$

where: Q = Runoff Rate, cfs
C = Runoff Coefficient
I = Storm Intensity, in./hr.
A = Basin Area(s), acres

OVERLAND TIME OF CONCENTRATION (WRIGHT-McLAUGHLIN, 1969)

$t_c=1.8(1.1-C)L^{1/2} / S^{1/3}$

where: t_c = Overland Time of Concentration, min.
C = Runoff Coefficient
L = Overland Flow Length, ft.
S = Overland Slope, %

CHANNEL TIME OF CONCENTRATION

$t_c=(L/V) / 60$

where: t_c = Channel Time of Concentration, min.
L = Channel Length, ft.
V = Velocity, fps (from Manning Equations)

MANNING EQUATION

$V=1.49R^{2/3}S^{1/2} / n$

where: V = Velocity, fps
R = Hydraulic Radius, ft.
S = Channel Slope, ft./ft.
n = Manning Roughness Coefficient

MANNING'S KINEMATIC SOLUTION (OVERTON AND MEADOWS, 1976)

$t_t=0.007(nL)^{0.8} / (P_2)^{0.5}s^{0.4}$

where: t_t = Travel Time, hr.
n = Manning Roughness Coefficient
L = Flow Length, ft., 300' max.
P_2 = 2-Year, 24-Hour Rainfall, in.
s = Slope of Hydraulic Grade Line, ft./ft.

ORIFICE EQUATION

$Q=C_DA_2(2g\Delta h)^{1/2}$

where: C_D = Discharge Coefficient
A_2 = Orifice Area, sq. ft.
g = 32.2 ft./sec.^{2}
Δh = Head, ft.

VOLUME FROM THE SCS TRIANGULAR UNIT HYDROGRAPH

$V=2.67Qt_c60 / 2$

where: V = Volume, cu. ft.
Q = Flow, cfs
t_c = time of concentration, min.

OTHER EQUATIONS USED

$Q=VA$

where: Q = Flow, cfs
V = Velocity, fps
A = Cross Sectional Area, sq. ft.

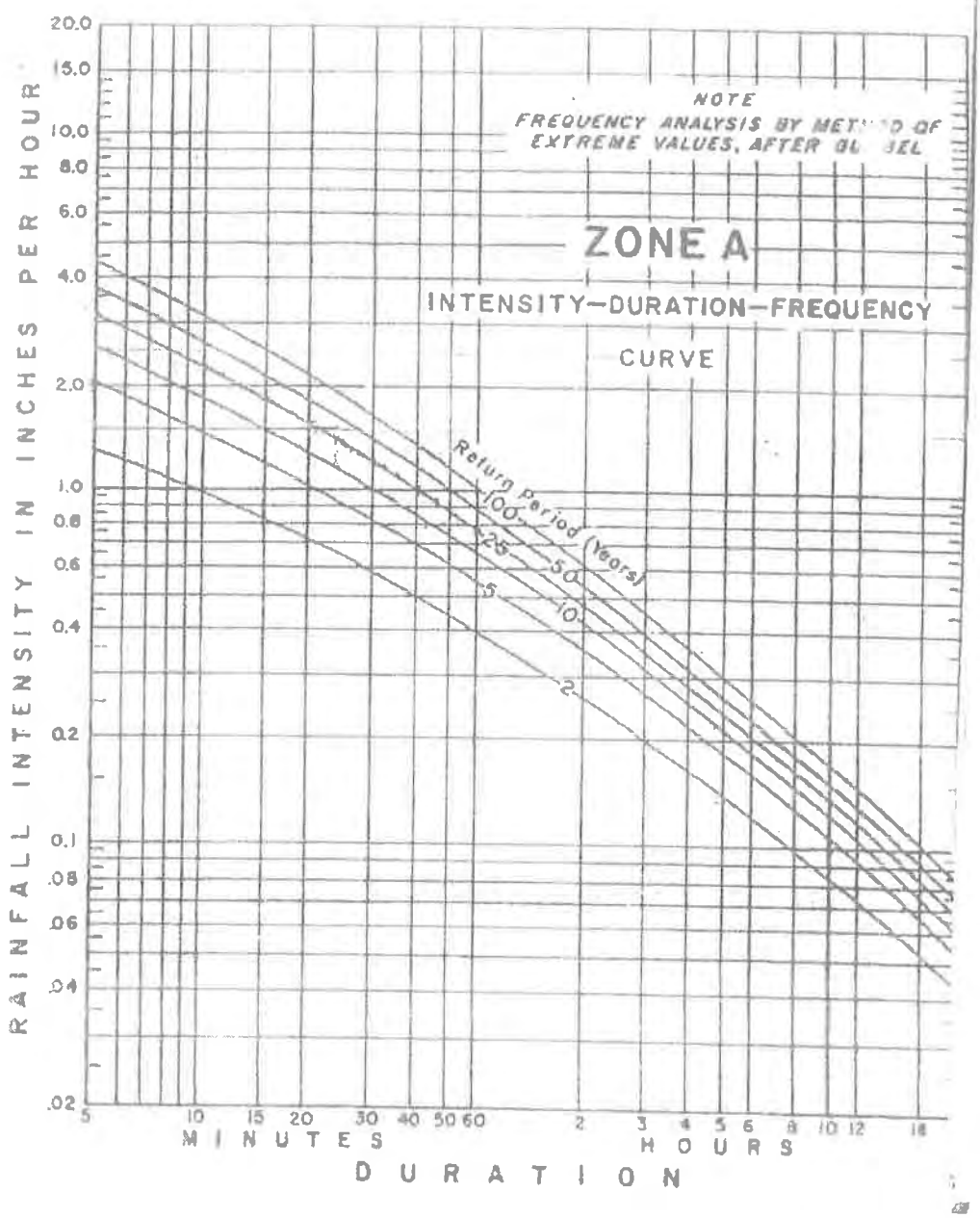
Table 1. Formulas for Time of Concentration (T_c)

Method	Formula for tc (min)	Remarks
Kirpich (1940)	$T_c = 0.0078L^{0.77}S^{-0.385}$	Steep slope: 3-10% Reduction factor applied for impervious area (0.4 for overland flow on concrete or asphalt surface)
Izzard (1946)	$T_c = \frac{41.025(0.0007i + c)L^{0.33}}{S^{0.333}i^{0.667}}$	Roadway and turf surfaces i×L <500
FAA (1970)	$T_c = 1.8(1.1-C)L^{0.50}/S^{0.333}$	Overland flow in urban basins
ASCE (1973)	$T_c = \frac{0.94L^{0.6}n^{0.6}}{i^{0.4}S^{0.3}}$	From kinematic wave analysis (L<300ft)
SCS lag (1972)	$T_c = \frac{1.67L^{0.8}[(1000/CN)-9]^{0.7}}{1900S^{0.5}}$	Small urban basins <2000acres
SCS avg. vel. charts (1975)	$T_c = \frac{1}{60}\sum\frac{L}{V}$	

is the rainfall intensity corresponding to a design return period and duration in the intensity-duration-frequency curve (I-D-F curve), which is developed using historical rainfall data. The IDF curve for Southern California is available in Bulletin No. 195 published by Caltrans, DWR, and FHWA in 1976. If iso-hyetal maps are available instead of I-D-F curves, SCS's graphical peak discharge method can be used for the peak flow calculation as follows:

$$q_p = q_u A_m Q F_p \tag{2}$$

where q_p = peak discharge (cfs), q_u = unit peak discharge (cfs/mi^2/in), A_m = drainage area (mi^2), Q = runoff (in), F_p = pond and swamp adjustment factor.


NOTE
FREQUENCY ANALYSIS BY METHOD OF EXTREME VALUES, AFTER GUMBEL
ZONE A
INTENSITY—DURATION—FREQUENCY CURVE
Return Period (Years)
100
25
50
10
5
2
RAINFALL INTENSITY IN INCHES PER HOUR
20.0
15.0
10.0
8.0
6.0
4.0
2.0
1.0
0.8
0.6
0.4
0.2
0.1
.08
.06
.04
.02
5 10 15 20 30 40 50 60
MINUTES
2 3 4 5 6 8 10 12 18
HOURS
DURATION

RAINFALL REPORT

RAINFALL TYPE : CUSTOM RAINFALL

RAINFALL FILENAME : BOISE.RND

INTERMEDIATE INTENSITIES (in/hr)

	5 min	15 min	30 min	60 min	6 hr	24 hr
2 yr	1.35	0.82	0.59	0.40	0.15	0.07
5 yr	2.00	1.25	0.81	0.55	0.17	0.07
10 yr	2.50	1.50	1.00	0.66	0.21	0.09
25 yr	3.10	1.80	1.25	0.75	0.20	0.07
50 yr	3.70	2.15	1.80	0.90	0.15	0.03
100 yr	4.40	3.00	1.65	1.00	0.15	0.03

BDE VALUES Intensity = B/(time_conc + D)^E

$$I = \frac{B}{[t + D]^E}$$

t = time in minutes

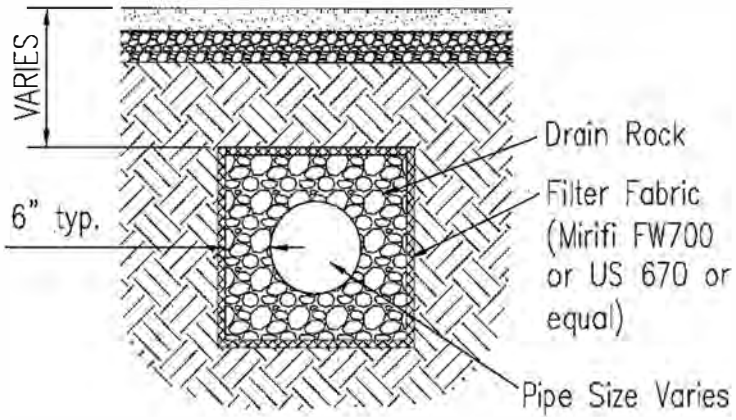
	B	D	E
2 yr	4.11	2.25	0.56
5 yr	8.98	4.25	0.67
10 yr	10.36	3.50	0.66
25 yr	18.00	5.25	0.76
50 yr	156.03	20.50	1.17
100 yr	141.12	15.00	1.15

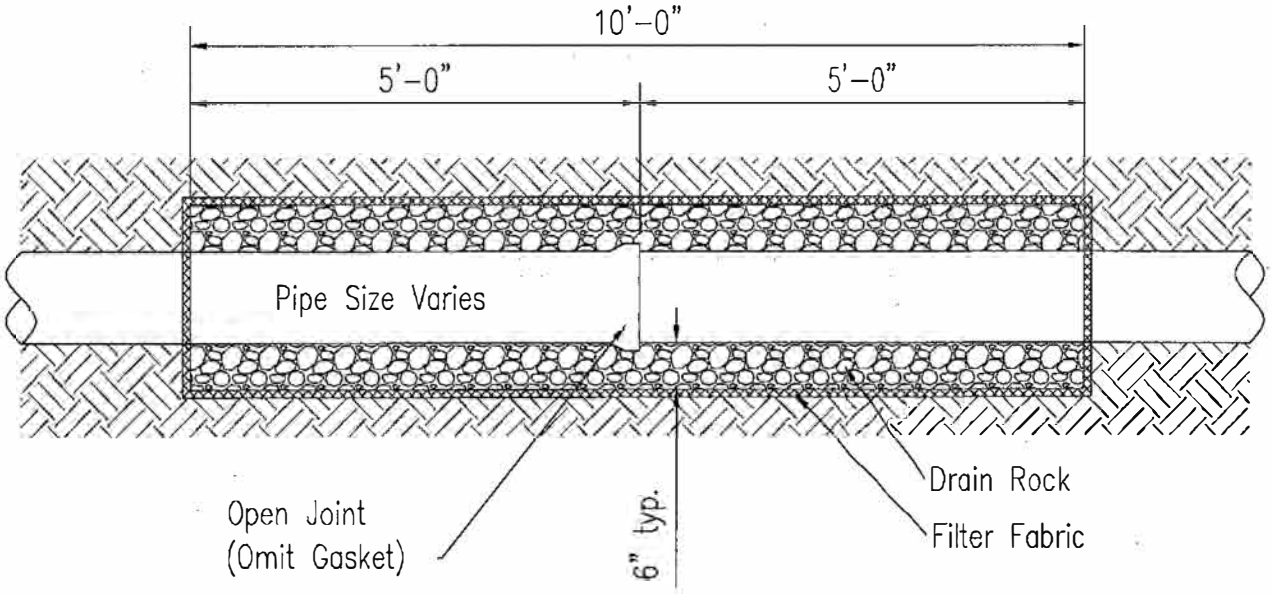
98 program

Volu... $t_c = \frac{t_c}{60}$

t = 1/hr

NAMPA & MERIDIAN IRRIGATION DISTRICT





NOTE:

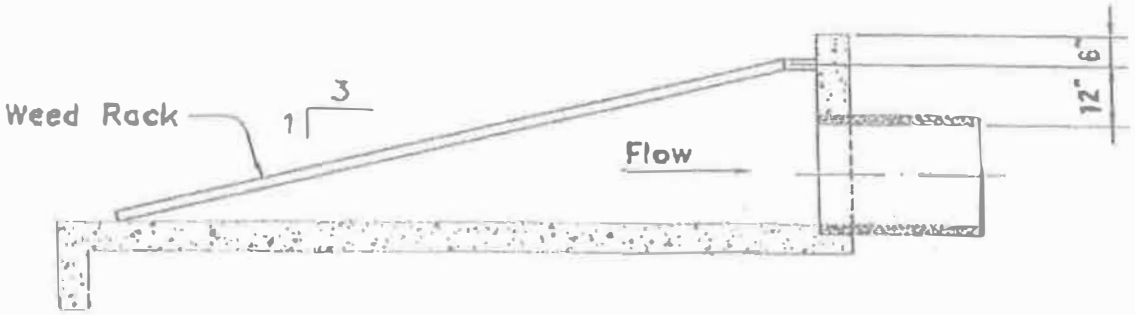
1. FOR PIPE LENGTH LESS THEN 6' WRAP FULL LENGTH
2. FOR PIPE LENGTH LONGER THEN 6' WRAP 5' EACH SIDE OF JOINT

DRAIN PIPE OPEN JOINT DETAIL

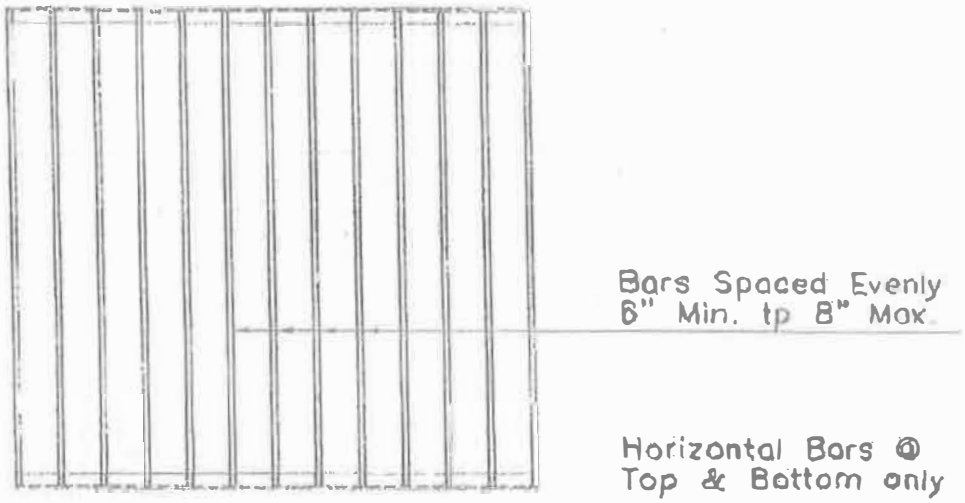
Revised 10-02-2025

EXHIBIT A

NAMPA & MERIDIAN IRRIGATION DISTRICT

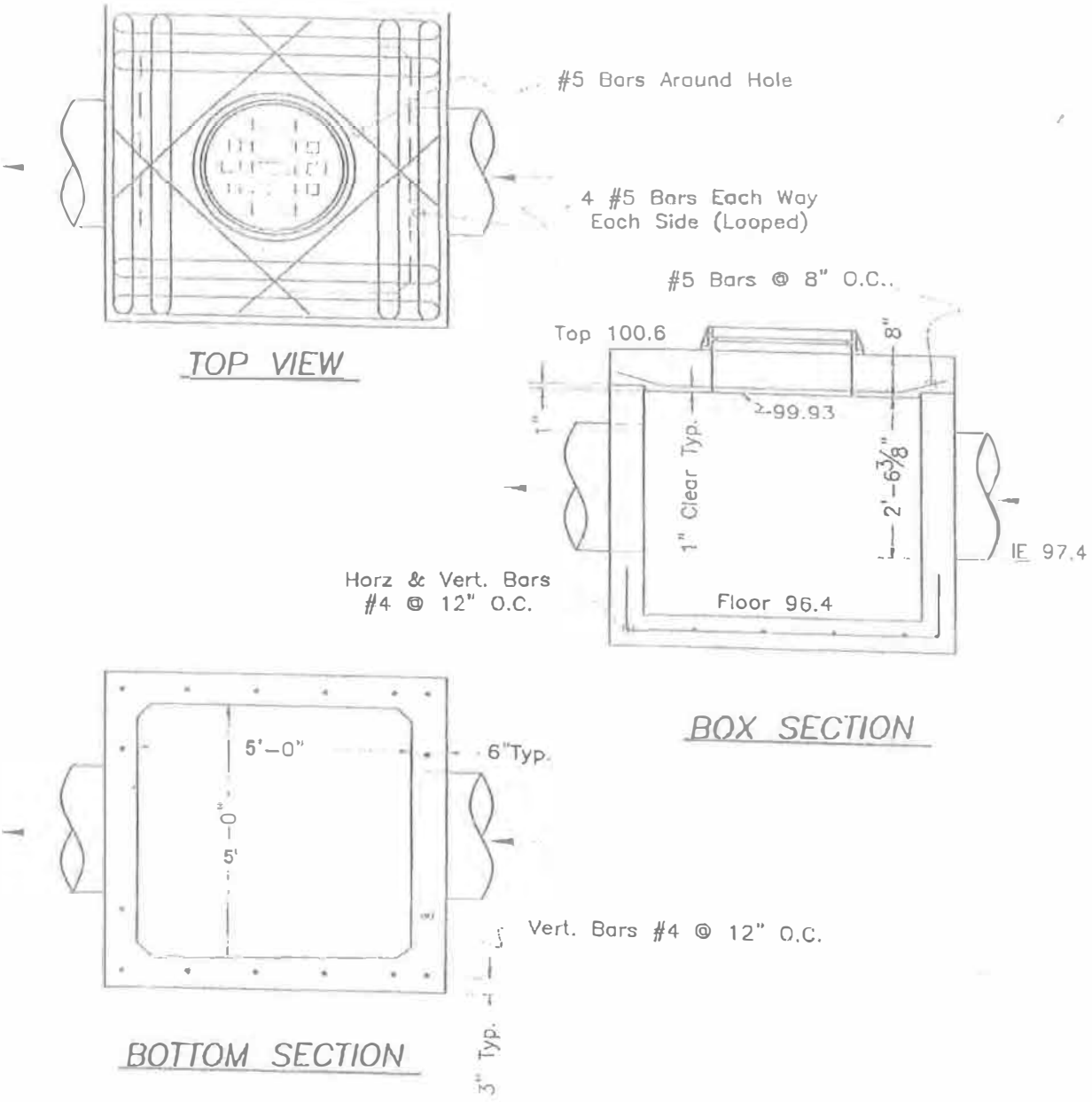


HEADWALL WITH WEED RACK
TYPICAL SECTION



INLET GRATE
TYPICAL

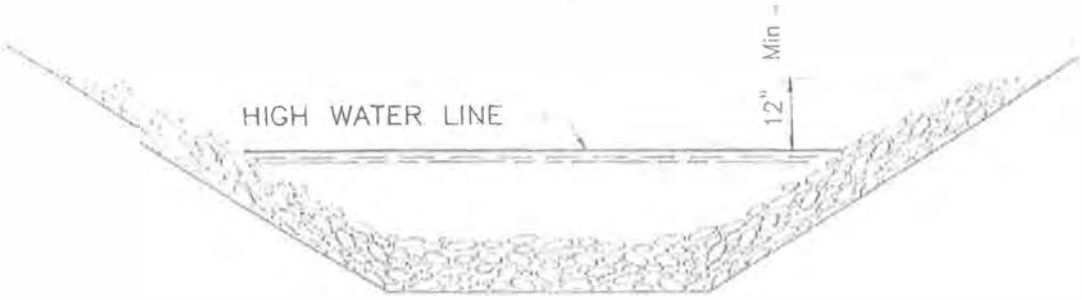
NAMPA & MERIDIAN IRRIGATION DISTRICT



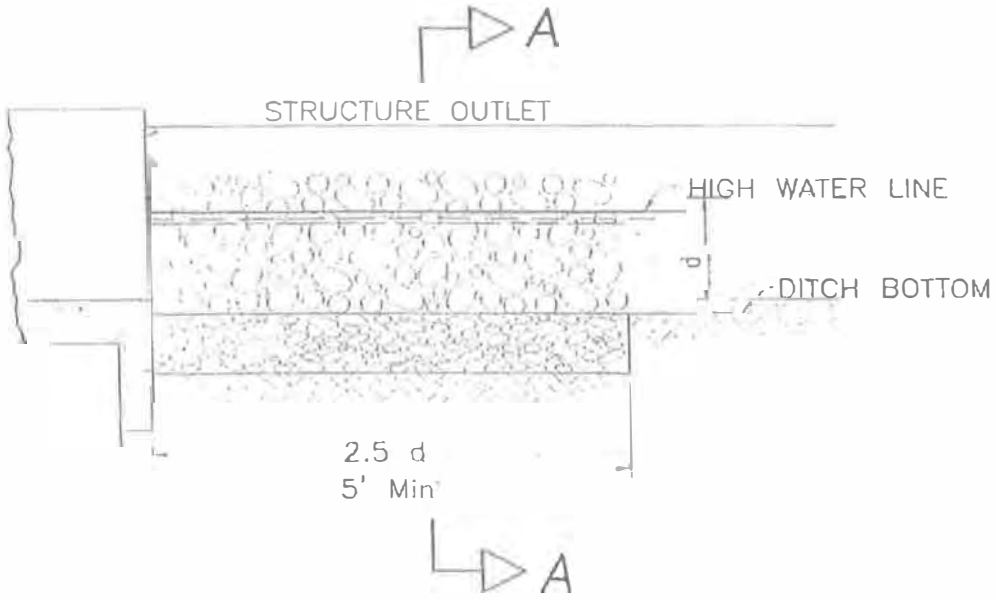
Vault Lid*

* **Manhole lids are only allowed in limited situations. NMID usually requires 1/4" plate with hook for lids.**

NAMPA & MERIDIAN IRRIGATION DISTRICT



SECTION A–A



RIPRAP DETAILS

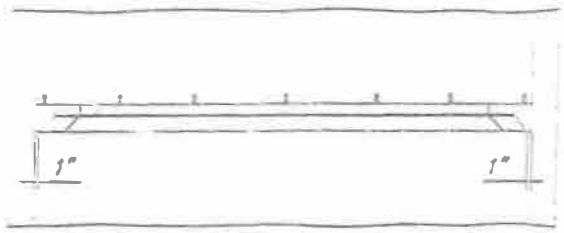
CIPPOLLETTI WEIR BOX STRUCTURE

A. This box must be a minimum of eight feet (8') long by four feet (4') wide with #3 rebar on one foot (1') centers using 4000 psi concrete with one and one-half (1 ½) pounds of fiber mesh per yard.

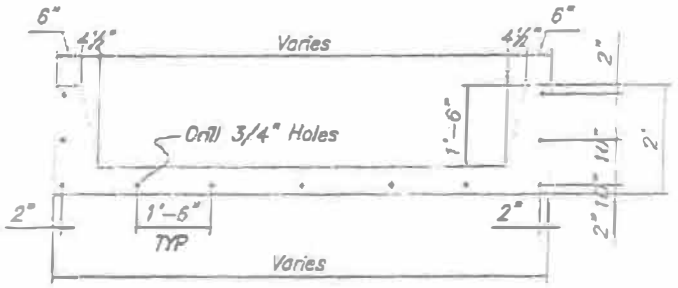
B. You must place groove strips inside of the box from top to bottom two inch (2") wide x one and one-half inches (1 1/2") deep placed approximately two feet (2') from outlet.

Revised 1 January 2011

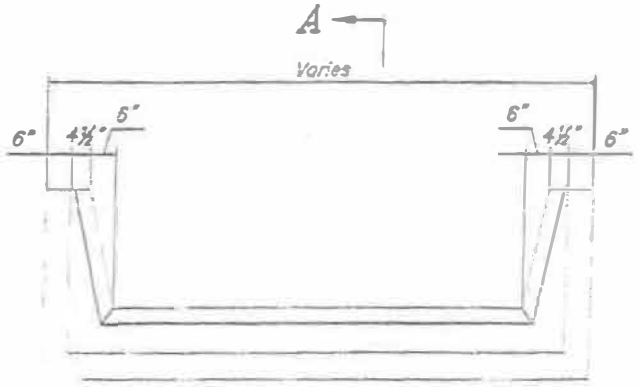
NAMPA & MERIDIAN IRRIGATION DISTRICT



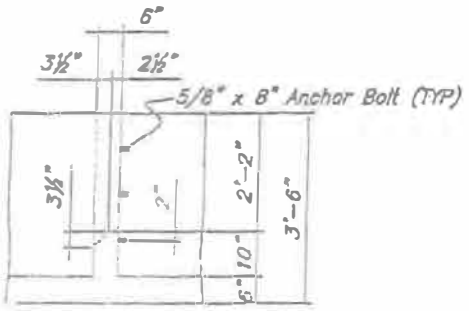
PLAN



WEIR BLADE



ELEVATION



SECTION A–A

TYPICAL WEIR

LAND USE CHANGE / SITE DEVELOPMENT APPLICATION

Before filing the Land Use Change Application (LUC) with the District, please make sure the following has been completed.

- ☐ Call the Water Superintendent at (208) 466-0663 to schedule a preliminary meeting prior to submitting plans.
- ☐ Read the Gravity, Canal or Drain Procedures for Site Development with NMID Lands and Conveyance System.
- ☐ Fill out the Land Use Change Application
- ☐ Have 3 full size sets of plans including landscape drawings and PDF format files ready to submit with LUC application.
- ☐ Have 2 sets of drainage calculations.
- ☐ A $1,200.00 check or money order written out to Nampa & Meridian Irrigation District for the Land Use Change Application fee.
- ☐ Attach copy of recorded Warranty Deed with a metes & bounds description as recorded.

Filing a Land Use Change Application with plans and fee is mandatory unless it is explicitly waived by the District's Water Superintendent in writing. Any additional phases of a subdivision must file a Land Use Change Application unless the original filing specifically included all necessary information for future phases in the plans and calculations that were submitted for review. The application must always be accompanied by 3 sets of plans, landscape drawings, drainage calculations and the appropriate fee of $1,200.00. Preliminary plans will NOT be considered. Before the final approval is given, an electronic version of the final plans MUST be submitted to the Water Superintendent.

Projects affecting the water flow in the District's facilities cannot commence until after October 15th and must be completed no later than March 15th unless specified differently by Water Superintendent. Plans for projects affecting the water flow must be received for review no later than January 15th to be considered for construction prior to the March 15th cut off date.

LAND USE CHANGE / SITE DEVELOPMENT APPLICATION

(Reproduction of this form is not acceptable!)

SITE INFORMATION:

Subdivision/Development Name: _____

Site Address: _____

Total Acres: _____

Legal Description: _____
(Attach metes & bounds description as recorded)

Owner of Record: _____
(Attach copy of Warranty Deed)

Owner of Record Address: _____

DEVELOPER/ENGINEER INFORMATION:

Developer Name: _____

Mailing Address: _____ **City:** _____ **State:** _____ Zip**:** _____

Telephone: _____ **Email:** _____

Engineer Name: _____

Mailing Address: _____ **City:** _____ **State:** _____ **Zip:** _____

Telephone: _____ **Email:** _____

Person of Contact: _____

PROJECT INFORMATION:

Proposed Storm Drainage Discharge: Retained on-site ☐ Discharged off site ☐

Name of Drainage Facility: _____

NMID facility impacted: _____

NMID facility easement width total feet: _____

Is irrigation water to be provided to property? Yes ☐ No ☐

Present Delivery Point: _____

Proposed Delivery Point: _____
(Canal or Lateral)

Type of System:

Gravity ☐ **Piped** ☐ **Open Ditch** ☐

Private Pressurized System ☐

Is pressure system to be owned, operated and maintained by NMID? Yes ☐ No ☐

If so, please complete the attached Questionnaire for Construction Contract for the Pressurized Urban Irrigation System.

_____ _____

Signature **Date**

PRESSURIZED IRRIGATION WATER DISTRIBUTION SYSTEMS
STANDARD SPECIFICATIONS
NAMPA & MERIDIAN IRRIGATION DISTRICT
Updated: September 2023

All items unless otherwise modified herein shall conform to the "Idaho Standards for Public Works Construction" (I.S.P.W.C.), latest edition.

NMID shall make the determination on whether a new pressurized irrigation system shall be offered a contract for "Full Operation and Maintenance" or "Pump Station Only" based on the design of the overall development and access to the main lines and valves.

NMID standard service valve size is ¾ inch, lots larger than 1 acre shall be evaluated by NMID on a case by case basis for any deviation from this for larger valves to be installed.

The acreage allotment shall be determined by the existing water rights for all land served by the system. Irrigable acreage shall be determined by NMID.

The main line is to make a complete loop of the subdivision from the pump station with the first T-joint having the isolation valve accessible in the pump station or immediately beside it.

Mainline cover shall be a minimum of 30 inches and shall **not** exceed 48 inches in depth to finished grade.

Main line tube shall be a minimum four inches (4").

Any line serving more than one (1) lot is considered main line.

1. PIPELINE CONSTRUCTION:

1.1 MATERIALS

1. PIPE: All pipe shall be polyvinyl chloride (PVC) Class 200, SDR 21 or better, with ring gasket joints only, **no solvent weld accepted**.

2. FITTINGS:
PVC pipe fittings

Fittings four inches (4") and larger shall be cast iron. Cast iron fittings must meet current AWWA (American Water Works Association) requirements.

3. THRUST BLOCKING: Thrust blocks are required at tees, bends and dead ends on all pipe and fittings with rubber gasket joints. Thrust blocks are also required at elbows and tees before and after any compression type couplet and where shown on drawings. Concrete for thrust blocks shall conform to ISPWC (Idaho Standards for Public Works Construction), CL-3000 and shall have a minimum 28-day compressive strength of 3,000 psi. Concrete thrust blocks are to be placed against undisturbed earth.

Thrust blocks shall have the following bearing areas unless otherwise called for on the drawings:

4" and small pipe fittings	1.3 sq. ft.
6" pipe fittings	2.0 sq. ft.
8" pipe fittings	3.5 sq. ft.
12 pipe fittings	8.0 sq. ft.

4. FINDER WIRE/WARNING TAPE: Number 12 direct burial single strand copper wire (Type THHN or THWN) shall be laid adjacent to all water main and service lines. The wire shall be placed along the North and East side of the main and service lines. The finder wire shall also be extended up the valve boxes. All wire joints shall be connected with a King "One Step" 30 V twist on the water tight wire nut enclosure or prior approved equal and shall pass a continuity test. Warning tape that is two inches (2") wide and five (5) mils thick minimum, placed directly over the centerline of the pipe, between 18 – 24 inches below the finish grade with a minimum number of splices.

5. FLEXIBLE COUPLERS: Coupling center ring shall be constructed of cast iron having a minimum yield of 30,000 psi. End rings shall be constructed of cast or malleable iron. Cast iron couplers shall have the manufacturer's standard coating. High strength, low alloy steel track head bolts and heavy hex nuts shall be used. (Examples: Romac 101, Rockwell 311)

6. TAPPING SADDLES: Saddles shall be cast or malleable iron. Straps or bands shall be galvanized or stainless steel. Gaskets and coatings shall be the standard of the manufacturer. (Examples: Romac 101, Rockwell 311)

1.2 PIPE INSTALLATION:

GENERAL: All PVC pipe shall be assembled and installed in accordance with the pipe manufacturer's recommendations and as shown on the drawings.

1. PIPE INSTALLATION WITHIN STREET RIGHT-OF-WAYS

GENERAL: All work within street right-of-ways shall meet both the specifications of the agency having jurisdiction over the right-of-ways and current ISPWC specifications.

LOCATION: Main line shall be located five feet (5') from the property line or as approved on the plans. The main line shall have an easement width of ten feet (10') total, five feet (5') on each side, free of all encroachments.

EXCAVATION: All pipelines shall have a minimum of 30 inches and a maximum of 48 inches finished grade. Utilities encountered in the pipe zone shall be crossed below by a minimum of three feet (3'). Topsoil shall be stockpiled and used for the top layer during backfill.

PIPE BASE AND PIPE ZONE MATERIALS AND PLACEMENT: Pipe base and pipe zone shall include the full width of the trench from four inches (4") below the bottom of the pipe to six inches (6") above the top of the pipe. Backfill materials may be excavated native material containing no rock, organic matter or materials larger than ½ an inch. Where the volume or quality of native excavated materials is inadequate, sand will be used for pipe base and pipe zone backfill. Pipe base material shall be placed and compacted sufficiently to preclude future settlement. Compaction of pipe zone and trench backfill material shall begin when there is sufficient cover to protect the pipe from damage. Pipe base and pipe zone shall be backfilled with a commercial type bedding material or an approved alternate free of humus, organic material, frozen material and debris conforming to the gradation specified below:

U.S. Standard Sieve Size	Percent Passing By Weight
¾"	100
3/8"	95-100
#4	90-100
#10	90-100
#40	15-80
#100	0-25
#200	1-10

Bedding shall be placed in lifts not to exceed six inches (6”), except for the initial lift, which shall be four inches (4”). Pipe base material shall be placed and compacted. Compaction of pipe zone and trench backfill material shall begin when there is sufficient cover to protect the pipe from damage. Pipe base and zone materials shall be compacted to 95% of maximum density in accordance with AASHTO (American Association of State Highway and Transportation Officials) T-99 by means of mechanical compaction. A minimum three-inch (3”) sand cushion shall be installed between the irrigation pipe and any existing pipes or conduits encountered.

FOUNDATION STABILIZATION: If unsuitable soil material is encountered in the floor of the trench, the floor shall be over-excavated and backfilled with three-inch (3”) minus granular material. The backfill material shall be uniformly graded from coarse to fine and free of excessive dirt and organic material. Backfill shall be compacted to 95% of maximum density in accordance with AASHTO T-99.

BACKFILL ABOVE PIPE ZONE: Where the pipe is located within the street right-of-way but outside areas to be overlaid with asphalt, suitable native material shall be used as backfill from the pipe zone to finish grade. Areas in which pavement repair is required shall be backfilled with ¾ of an inch minus crushed aggregate from the pipe zone to a point that is two inches (2”) below finished pavement grade. Backfill shall be placed in lifts not to exceed six inches (6”) and compacted to 95% of maximum density in accordance with AASHTO T-99. Compaction shall be done using mechanical compactors.

1.3 SYSTEM FLUSHING: The completed system shall be flushed of dirt and foreign material and all air shall be vented from any high points prior to placing the system in operation.

2. ISOLATION VAVLES:

2.1 MATERIALS:

1. VALVES: Valve size unless otherwise noted on the drawings shall equal that of the pipe on which it is installed.

GATE VALVES:

2. VALVES TWO INCHES (2”) AND LARGER: All gate valves shall meet requirements of AWWA C 509 latest revision specifications for resilient wedge valves and shall be manufactured by Waterous, Clow or Mueller. The gate valves shall be 200 psi working pressure; non-rising bronze stem with o-ring rubber gaskets and with a two inch (2”) square operating nut opening to the left.

3. VALVE BOXES: All gate valves shall be fitted with a standard adjustable cast iron valve box and five and one quarter (5 ¼) locking lid as manufactured by Tyler No. 6855.

4. FLANGES/STEEL FLANGES: Steel companion flanges shall be AWWA Class D Ring flanges.

5. CONCRETE: Concrete for valve box collars shall conform to ISPWC, CI-3000 and shall have a minimum 28-day compressive strength of 3,000 psi.

2.2 CONSTRUCTION: Isolation valves shall be installed where shown on the plans. Valve boxes located in unpaved traffic bearing areas shall be provided with a six inch (6”) thick concrete collar 24 inches square. Valve boxes shall be installed flush with surrounding ground.

3. PAVEMENT REMOVAL AND RESTORATION:

3.1 REMOVAL OF PAVEMENT: Neatly cut all bituminous and concrete pavement regardless of the thickness prior to excavation of the trenches with an approved pavement saw or cutter. Pavement cuts shall be made a minimum of 12 inches away from each side of the trench over material, which is to be left undisturbed.

3.2 PAVEMENT RESTORATION:

1. ASHPALT CONCRETE: Asphalt concrete used in conjunction with this project shall be furnished and placed in accordance with I.S.P.W.C.

2. CONSTRUCTION: The pavement shall be cut to provide clean, solid, vertical joints. Whenever possible, cut line shall be parallel to or at right angles to the street centerline.

Immediately before applying the tack coat, the surface to be treated shall be swept clean of all loose material, dirt, excess dust or other objectionable material. No application will be permitted when the surface is appreciable damp or when weather conditions are unsuitable.

Following the preparation of the base course and abutting edges, the Contractor shall apply CSS-1 emulsified asphalt (tack coat) to all joined surfaces. Asphalt concrete shall be placed to a minimum compacted depth of two inches (2”), providing a smooth, even surface conforming to adjacent surfaces.

4. SERVICE RISERS:

4.1 MATERIALS:

1. PIPE: Pipe shall be 200 psi Poly.

2. VALVES: Curb Stop valves shall be Class 200, quarter turn, no stop and waste valves with non-rising stem, all bronze or brass construction, and screwed ends.

3. FITTINGS: All fittings to be Brass.

4. Modified Type A risers.

4.2 CONSTRUCTION: Service risers are to be constructed in conformance with the attached standard details. Service risers located along property lines adjacent to public roads shall be Type “A” only. Lateral pipelines extending to single service risers shall be 200 psi poly, one inch (1”) in diameter, with a three quarter inch (¾”) curb stop valve.

Joint compound or Teflon tape shall be used on all threaded joints.

All risers shall be labeled “Irrigation Water-Not for Drinking.” All valve boxes and risers to be marked with seven foot (7’) steel T-bar fence posts driven 24 inches in the ground with top 24 inches painted purple.

5. DRAINS AND AIR RELEASE VALVES:

5.1 DRAIN VALVES: Will be a minimum of one and one-half inch (1 ½) curb stop valve or equivalent AWWA approved valve extended from the side of the main line, not the bottom.

5.2 AIR RELEASE VALVE: Must be a minimum one and one-half inch (1 ½”) 200 psi rated and must extend from the top of the main line <u>not</u> the sides.

5.3 DRAIN VAULT: Twenty inch PVC vault with Ford X 43 cast iron frame and 13 ½ inch locking lid. Obliterate words “water meter” on lid. Drain and air release valves to be located in common area and marked with a purple fiberglass marker.

5.4 CONSTRUCTION: Drains, air release and blow-off are to be constructed in conformance with the attached standard detail. Drain and air release shall be installed at the end of all pipelines serving more than three (3) service risers or as indicated by NMID. All fittings shall be brass.

6. ADDITIONAL REQUIREMENTS:

6.1 DELIVERY POINT:
The Nampa & Meridian Irrigation District will designate the site within the proposed subdivision, short subdivision, lot, tract, parcel or site for water delivery into the new system. Where NMID delivery facilities are located on the property being divided, piping shall be designed for delivery from that point. Where NMID facilities do not exist on the property being divided, NMID will designate the delivery point and size based on proximity to NMID facilities and ease of future delivery pipe installation. All costs for new delivery point will be paid by developer.

6.2 CROSS CONNECTS:
Any cross connects made to potable water supplies must meet the specifications of the entity providing the potable water. Sizing of backflow must meet the size of the demand. No multiples at one location. When a cross-connection is installed a meter must be set before acceptance and must have a shut-off valve (AWWA approved-wedge type two inch (2”) nut) between backflow assemblies and the main line with a drain installed on the supply side.

6.3 ISOLATION VALVES:
Isolation valves shall be located in common areas and two feet (2’) from sidewalks off of road side each time mainline crosses road or common area. All main lines are to be looped. All isolation valves shall be mark by purple fiberglass stakes.

6.4 AS-CONSTRUCTED DRAWINGS:
As-constructed drawings detailing pipe location, service riser locations and types and isolation valves shall be provided to NMID following construction. Drawings shall be provided on two (2) reproducible copies and shall be clean, neat and legible along with a digitized drawing in PDF format. FINAL APPROVAL WILL NOT BE ISSUED UNTIL THE DATA IS RECEIVED!

6.5 INSPECTION:
The contractor or individual installing the facilities must contact the NMID inspector 48 hours prior to beginning any work. All trenches shall be left open for inspection Monday through Thursday.

6.6 SEALING OPEN ENDS OF PIPE:
Where the system is installed in sections or will not immediately be connected to the NMID delivery point, the open end(s) of the system shall be capped prior to backfill.

6.7 STREET CROSSINGS:
All street crossings will be marked on each side with purple fiberglass stakes saying pressure irrigation present. All crossing shall be sleeved in C900 PVC or equivalent material, extending from valve to valve behind sidewalk(s).

6.8 PROFESSIONAL ENGINEERING REQUIREMENT:
Any short plat, plat or subdivision containing in excess of five (5) lots will be required to have irrigation system designed and stamped by a professional engineer licensed in the State of Idaho.

7. LARGE LOT, INDIVIDUAL PARCELS ONE (1) ACRE AND LARGER:
GENERAL: All design, material and construction requirements for large lot irrigation systems shall be the same as those for small lot irrigation systems with the following exceptions:

7.1 SYSTEM CAPACITY: Design flow rates for pipe sizing shall be determined by NMID based on parcel sizes. The maximum design flow rate, regardless of lot size shall be eight (8) gpm per irrigable acre. Irrigable acreage shall be determined by NMID.

8. TESTING:

8.1 HYDROSTATIC TESTS: Pressure and leakage tests shall be made on all newly laid pipe or any valve section of it or both. NMID will monitor the tests as conducted by the Contractor. The Contractor shall furnish all necessary assistance, equipment and material and shall make all taps in the pipe as required for the tests. The Contractor prior to placement of final surface coverings shall test the finder wire for continuity.

When any section of pipe is provided with concrete thrust blocking, the pressure test shall not be made until at least five (5) days have elapsed after the concrete thrust blocking is installed. If high-early cement is used for the concrete thrust blocking, the time may be reduced to two (2) days.

The pressure test shall be 150 pounds per square inch.

a. DURATION: The duration of each pressure test shall be a minimum of 120 minutes.

b. EXPELLING AIR: Before applying the specified test pressure, all air shall be expelled from the pipe and each service valve.

c. PRODEDURE: Each valve section of pipe shall be slowly filled with water to replace any water lost and the specified test pressure, measured at the point of lowest elevation by a gauge of at least 255 psi measuring capability divided into two (2) psi increments shall be applied by means of a pump connected to the pipe in a satisfactory manner.

d. LEAKAGE: Leakage shall be defined as the quantity of water necessary to restore the specified test pressure at the end of the test period. No pipe installation will be accepted until the leakage is less than the number of gallons per hour as determined by the following formula.

$$L = \frac{ND\sqrt{P}}{7400}$$

in which

L = allowable leakage in gallons per hour
N = number of joints in the length of pipe tested
D = nominal diameter of pipe in inches
P = average test pressure during the leakage test in pounds per square inch

Should any test of pipe laid disclose leakage greater than that allowed above, the Contractor shall, at his own expense, locate and repair the defective joints or pipe until the leakage is within the specified allowance.

9. PUMPS AND PUMP APURTENANCES:

9.1 PUMPS:

All pumps to be high electrical efficient submersible or vertical turbines not to exceed 1800 rpm unless otherwise approved by NMID and controlled **only** by ABB variable frequency drive. Any pump system 10 hp or larger shall be of vertical turbine type. Jockey pumps to run clear water screen continuously, minimum three (3) hp controlled by its own VFD. Pumps are to be minimum of 3 phase and 460 volts unless otherwise approved by NMID. **No PLC or skid-mounted control panels.**

9.2 MANIFOLDS:

All manifolds must be Schedule 40 pipe minimum. The manifold piping going into the ground shall be a minimum of 8 inch (8") ductile iron to the first fitting and have restraints installed.

9.3 FILTER SYSTEMS:

All systems must have automatic self-cleaning suction scanning type filter systems installed. Screen to be 200 micron (i.e. Orival, VFD, Amiad).

9.4 PUMP STATION/Building:

Pump house shall be constructed of concrete block construction. Steel reinforced concrete masonry units shall meet or exceed ASTM C90 with a minimum 2000 psi compressive strength or as required by local code requirements whichever is greater. All steel reinforcement requirements or best building practices shall be compliant with local and national building codes. Grout shall meet or exceed compressive strength ASTM C 1019 or local code requirements whichever is greater. The masonry lintels over doorways or exhaust vents shall be made from bond beam concrete masonry units with reinforcing bars placed as indicated and filled with coarse grout. All sheet metal flashing and trim at masonry wall openings shall be installed in masonry joints and not surface mounted. Units shall be a lightweight moisture controlled Type I units having a nominal 8" x 8" x 16" dimension. Units shall also be constructed with an integral water repellent made with liquid polymeric, integral water-repellent admixture that does not reduce flexural bond strength for all exposed units. A finish texture of smooth face and split faced CMU with an integral color shall be provided as approved by the Water Superintendent in a case by case selection. Mortar and Grout shall comply with ASTM C 150 Type 1 or 2 with Masonry Cement compliant with ASTM C 91. Available manufacturers and products shall be subject to compliance with requirements of Nampa and Meridian Irrigation District. A full foundation with six inches (6") of the wall extending above the final finish grade of the surrounding area.

The interior of the enclosed building shall be sized large enough to provide four foot (4') minimum clearance between walls and pump manifolds and control boxes.

The roof shall be a minimum of 22 gauge steel, have one wind driven turbine type vent, and have an access through the roof directly above the pumps for their removal.

The floor of the building shall be concrete six inches (6") thick.
The pump building and dimensions must be submitted to NMID prior to construction for approval of dimensions and setbacks. The subgrade for the building, footings, and wet well must be inspected by NMID for compaction before placing concrete.

Each end of the building is to have a **minimum** of a 12 inch x 12 inch vent – one of which will have a 12 inch thermostat controlled exhaust fan (the exhaust fan will be minimum of 1600 cfm). In addition 2 vents will be installed at floor level and location approved by the District.

Outside perimeter of building shall have a 3 ft. concrete sidewalk (4 inches thick) extending from face of walls without vegetation and the final grade shall drain/slope away from building.

All electrical wiring and connections in the pump station are to be in water tight boxes and fittings unless otherwise approved.

A minimum 36 inch door, roll up shall be provided.
Direct access shall be provided to the pump house for maintenance vehicles.

Self-contained pump systems **must** have prior NMID approval prior to installation or acceptance. If acceptance is granted, the system must have fluorescent lighting, an 30 amp 110v dual power outlet and have access to the wet well for cleaning.

9.5 LIGHTING:

Two (2) four foot (4') LED 4500 Lumens minimum tubes with cold weather ballast. The pump station shall include at least one (1) 30 amp 110 V dual outlet power supply. Light switch shall be located within reach of the door.

9.6 WET WELLS:

For pump station up to 50 hp, the minimum vault size is 60 inch diameter concrete sized to the number of pumps keeping 20 inches of clearance (minimum) from the pump to the wall and pump to pump. For 50 hp systems or larger, the minimum vault size is 72 inches. The vault will have a steel plate cover with access door 25 inches x 25 inches minimum aligned with standard manhole steps to the bottom of the well. The steps to be copolymer polypropylene coated one-half inch (1/2") ASTM A-615 grade 60 steel. The pre-cast vault to meet or exceed ASTM C478 or C913 or AASTHO M-199 specifications.

9.7 SCREENS:

All systems must have either a Clemens or First Street Clearwater screen.

1. Clemens Screen:
Intake screen structures will be concrete having 25 inches clearance on each side and non-flanged of screen and 12 inches minimum between screen and floor. Overflow pipe invert will be six inches (6") above the top of the screen. Screens will have 18 mesh stainless steel wire and sealed bearings on rotating assembly.

2. First Street Welding Screen:
Intake screen structures will be concrete having 25 inch clearance to each side and a minimum of 12 inches above the floor. Screens will have 18 mesh stainless steel wire.

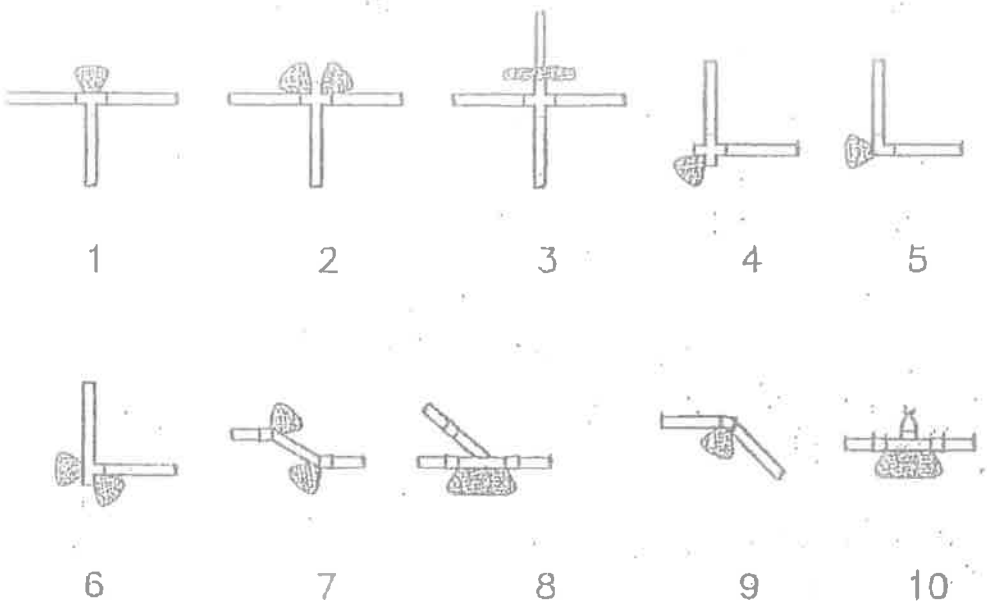
3. Other Screens:
Any screen other the then the two previously mentioned, will require prior approval in writing and will only be by a case-by-case basis.

9.9 FLOW METER:

All systems must have a magnetic type flow meter installed with an A.C. powered head or converter – **no battery powered readouts.**

9.10 HARMONIC FILTERS:

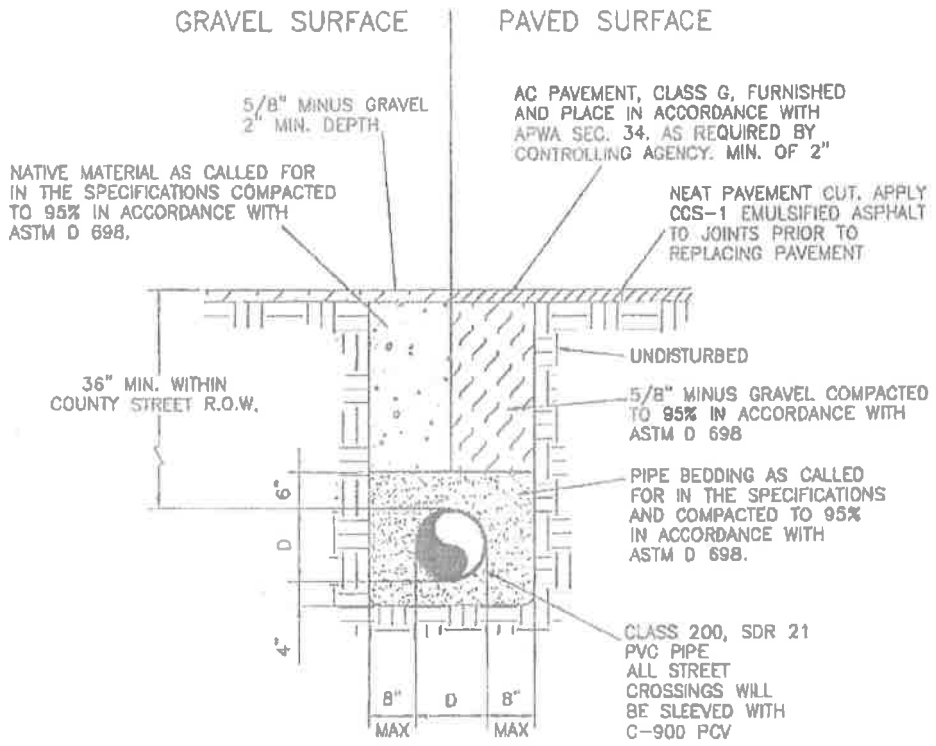
All systems must meet Idaho Power Rule K and comply with IEEE 519-2004 and as approved by Idaho Public Utilities Commission which require the installation of harmonic filters when necessary.



THROUGH LINE CONNECTION, TEE
THROUGH LINE CONNECTION, CROSS USED AS TEE
CHANGE IN LINE SIZE WITH REDUCER
DIRECTION CHANGE, CROSS USED AS ELBOW
DIRECTION CHANGE 90° ELBOW
DIRECTION CHANGE, TEE USED AS ELBOW
DIRECTION CHANGE
THROUGH LINE CONNECTION, WYE
VERTICAL DIRECTION CHANGE, BEND ANCHOR, SEE NOTE BELOW
VALVE ANCHOR, SEE NOTE BELOW

E: IF THRUST, DUE TO HIGH PRESSURE, ARE EXPECTED, ANCHOR VALVES AS SHOWN IN DETAIL #10, AT VERTICAL BENDS, ANCHOR TO RESIST OUTWARD THRUSTS.

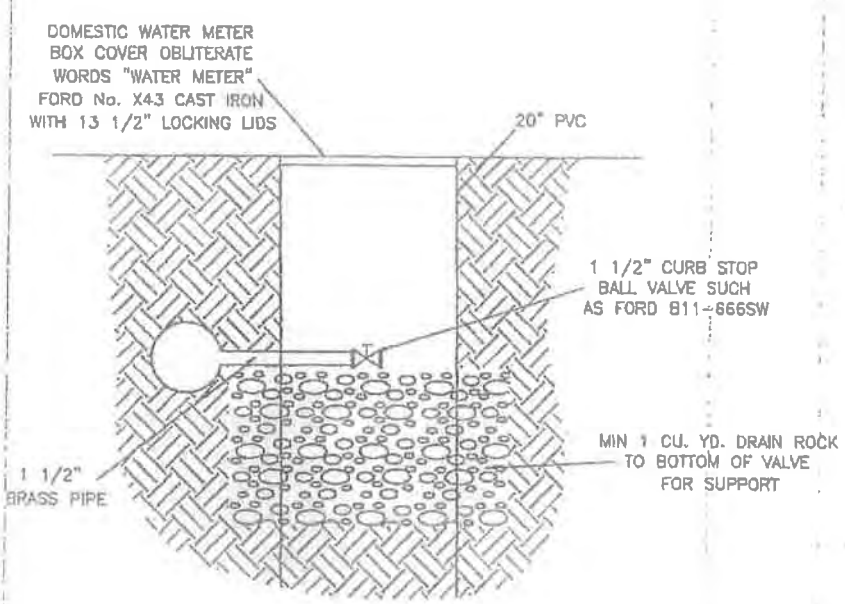
NAMPA & MERIDIAN IRRIGATION DISTRICT



TYPICAL STREET CROSSING

SCALE 1" = 1' - 0"
(SEE NOTES 1 THRU 4)

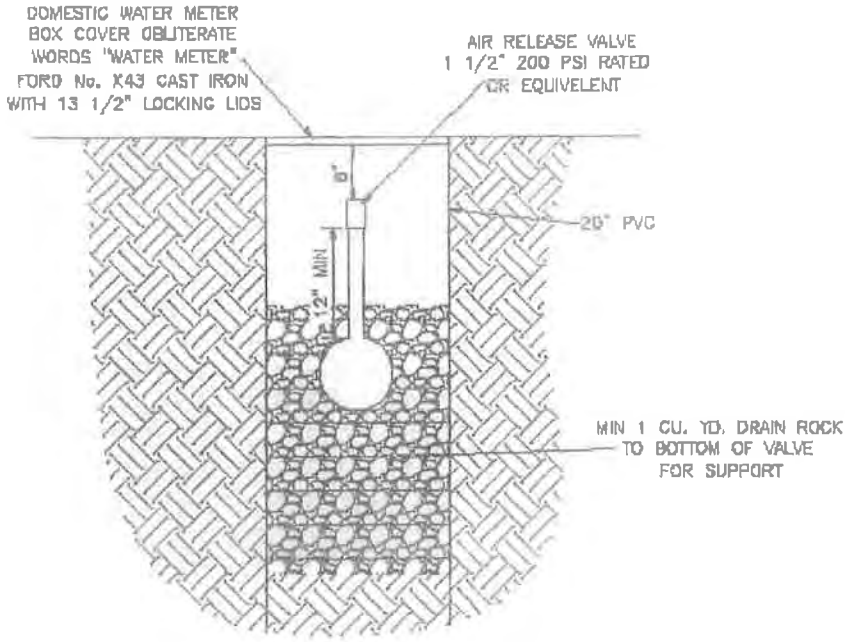
NAMPA & MERIDIAN IRRIGATION DISTRICT



DRAIN VALVE

--NTS--

NAMPA & MERIDIAN IRRIGATION DISTRICT

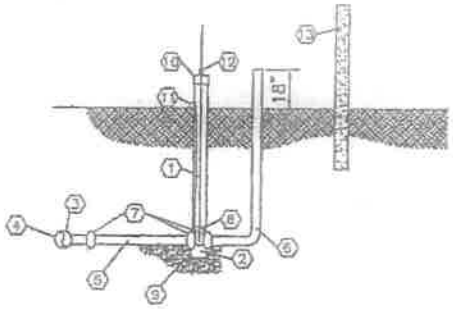


AIR RELEASE

--NTS--

NAMPA & MERIDIAN IRRIGATION DISTRICT

1. 3" SDR 21" PVC RISER EXTEND 18" ABOVE GROUND
2. 3" x 4" x 6" CINDER BLOCK (OR EQUAL)
3. 4" x ¾" SADDLE MINIMUM
4. 4" MAIN LINE MINIMUM
5. ¾" POLY PIPE 200 PSI
6. 6" x ¾" 200 PSI POLY 18" ABOVE GROUND
7. ¾" BRASS COMP. COUPLINGS
8. ¾" BRASS CURB STOP
9. ROCK CHIPS
10. 3" FEMALE ADD.
11. LOCATOR WIRE
12. 3" PVC PLUG
13. MARKER STEEL 'T' POST

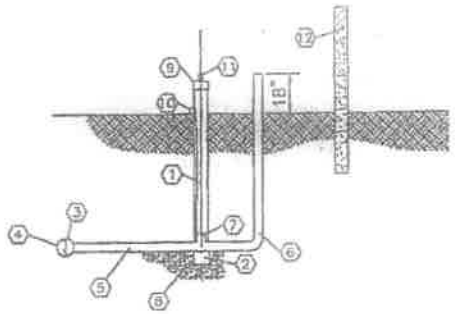


LONG SIDE SERVICE

"MODIFIED"
TYPE A RISER
LONG SIDE SERVICE
--NTS--
SINGLE FAMILY RESIDENT
NAMPA MERIDIAN IRRIGATION DISTRICT

NAMPA & MERIDIAN IRRIGATION DISTRICT

1. 3" SDR 21" PVC RISER EXTEND 18" ABOVE GROUND
2. 3" x 4" x 6" CINDER BLOCK (OR EQUAL)
3. 4" x ¾" SADDLE MINIMUM
4. 4" MAIN LINE MINIMUM
5. 8" x ¾" BRASS NIPPLE
6. 6" x ¾" 200 PSI POLY 18" ABOVE GROUND
7. ¾" BRASS CURB STOP
8. ROCK CHIPS
9. 3" FEMALE ADD.
10. LOCATOR WIRE
11. 3" PVC PLUG
12. MARKER STEEL "T" POST



LONG SIDE SERVICE

"MODIFIED"
TYPE A RISER
SHORT SIDE SERVICE
--NTS--
SINGLE FAMILY RESIDENT
NAMPA MERIDIAN IRRIGATION DISTRICT

PRESSURIZED URBAN IRRIGATION SYSTEM

Construction Contracts for Pressurized Urban Irrigation System (PUIS) are required for the following reasons:

1. A PUIS system is being installed by the developer who intends for the irrigation District to own, operate and maintain the PUIS within the development; or

2. A pump station only is being installed for ownership, operation and maintenance by NMID. The development will operate and maintain their own delivery lines.

If the developer of the property is installing a PUIS within the development, for either reason, the developer must complete the following:

☐ Call the Water Superintendent at (208) 466-0663 to set up a preliminary meeting prior to submitting plans.

☐ Read PUIS Standard Specifications for NMID Water Distribution Systems.

☐ Read Gravity, Canal or Drain Procedures for Site Development with NMID Lands and Conveyance System.

☐ Complete PUIS questionnaire

☐ Complete Land Use Change Application

☐ Provide a legible copy of the legal description for the boundaries of the subdivision and a copy of the recorded deed showing proof of the current ownership of the entire parcel that will comprise the development.

☐ Provide a copy of the preliminary plat.

☐ If a new PUIS pump station is to be constructed for this development, the preliminary plat must show the location of the pump station as a separate, non-buildable lot.

Once all required documentation is submitted to the District Office, NMID will submit documentation to District's attorney, Laura Burri, to prepare the Construction Contract for the Urban Irrigation System (PUIS). It is necessary to have the construction contract written and approved by you and the District prior to beginning construction. Without a fully signed contract, the District is severely limited in its activity relative to a PUIS which may result in excessive delays in your development.

PRESSURIZED URBAN IRRIGATION SYSTEM QUESTIONNAIRE FOR CONSTRUCTION CONTRACT

CONTACT INFORMATION:

Owner(s) of Record: _____
(Attach copy of Warranty Deed)

Individual ☐ Partnership ☐ Corporation ☐

If the property owner(s) are a business entity, include business entity documents, including those that indicate the persons(s) who are eligible to sign documents.

Address: _____ **City:** _____ **State:** _____ **Zip:** _____

Telephone: _____ **Email:** _____

Person to Contact: _____

Is owner/developer represented by an attorney? Yes ☐ No ☐

Attorney Name: _____

Mailing Address: _____ **City:** _____ **State:** _____ **Zip:** _____

Telephone: _____ **Email:** _____

Is owner/developer represented by an engineer? Yes ☐ No ☐

Engineer Name: _____

Mailing Address: _____ **City:** _____ **State:** _____ **Zip:** _____

Telephone: _____ **Email:** _____

PLEASE ANSWER ALL QUESTIONS RELEVANT TO YOUR PROJECT

1. **When do you expect final plat approval?** _____

2. **From what municipality/county do you expect final plat approval?** _____

3. **Do you possess a preliminary plat?** Yes ☐ No ☐ If a final plat has been recorded provide:

   Instrument number _____ in Book _____ of Plats,

   at pages _____, records of _____ County, Idaho.

4. **When do you expect to begin construction of the PUIS?** _____

5. **Have any lots in the subdivision been sold?** Yes ☐ No ☐

   List each lot and block that has been sold: _____

   _____

6. **Do you intend to share a pump station with another subdivision?** Yes ☐ No ☐

   Subdivision Name(s): _____

7. **Do you intend to exclude any lots in the subdivision to be served by the PUIS to be operated and maintained by NMID?** Yes ☐ No ☐

   List each lot and block to be excluded: _____

   _____

8. **Do you intend to include lots in the PUIS that are not in your subdivision?** Yes ☐ No ☐

   List each lot and block to be included: _____

   _____

9. **Do you intend to have a backup water source (water before/after the normal irrigation season)?** Yes ☐ No ☐

   Source of backup water: _____

10. Is there an existing well on the property? Yes ☐ No ☐

11. Do you intend to use the well for irrigation or backup water? Yes ☐ No ☐

12. Is there an existing home on the property? Yes ☐ No ☐

13. Is the developer of the property different than the current owner of the parcel as listed on page 1? Yes ☐ No ☐

If developer is a different party, please fill out contact information below:

Owner(s) of Record: _____

Address: _____ **City:** _____ **State:** _____ **Zip:** _____

Telephone: _____ **Email:** _____

By signing this Questionnaire, I the undersigned, authorize NMID and its attorney to prepare a contract for pressurized urban irrigation system within_____ to transfer ownership of the PUIS to NMID. I understand that, if final plat approval of the subdivision is not granted, the contract will be null and void, but I will be responsible to pay NMID for costs associated with preparation of the contract including attorney's fees and engineering fees. I further understand that the property subject to the pressurized urban irrigation system will be assessed for all costs of maintenance, operation and repair of the pressurized irrigation system upon recordation of the final plat and final approval of the contact documents by Nampa & Meridian Irrigation District. The assessments will be made after the second Board meeting of Nampa & Meridian Irrigation District in September. Assessments will issue to the owners of the property at the time of assessment. Assessments will be made whether or not any or all lots in the subdivision have been sold by the developer to third parties.

DATED this _____ day of _____, 20_____.

_____
[Print Name]

_____
[Signature]