

# CITY OF IDAHO FALLS ENGINEERING DEPARTMENT



## STANDARD DRAWINGS

### 2010 Edition

**CITY OF IDAHO FALLS  
PUBLIC WORKS DIVISION  
ENGINEERING DEPARTMENT**

**STANDARD DRAWINGS**

**2010 Edition**

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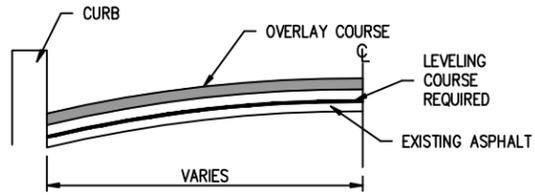
CITY ENGINEER  
CHRIS H FREDERICKSEN, P.E.

# STANDARD DRAWINGS

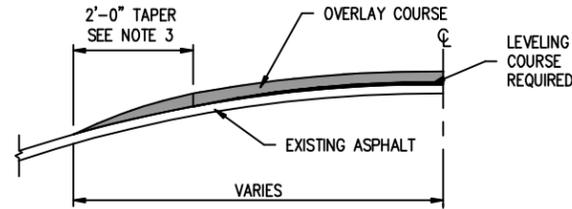
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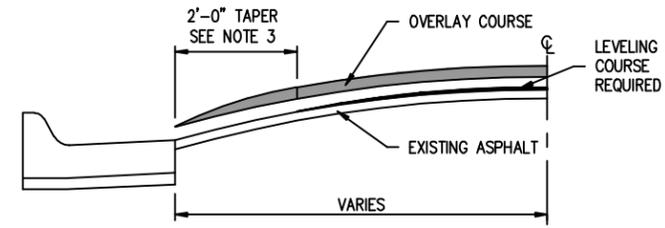
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CITY OF IDAHO FALLS																						
ENGINEERING DEPARTMENT STANDARD DRAWINGS 2010																						
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SCALE: NOT TO SCALE	DATE PLOTTED: 12/18/09																					
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**EDGE TREATMENT - CURB ONLY**



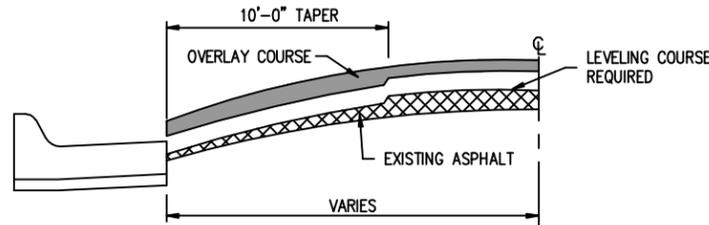
**EDGE TAPER - NO CURB & GUTTER**



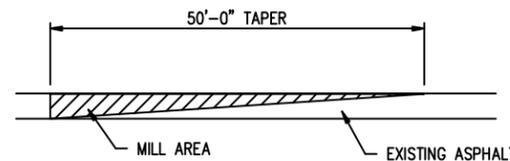
**EDGE TAPER - WITH CURB & GUTTER  
(NO MILLING)**

**NOTE:**

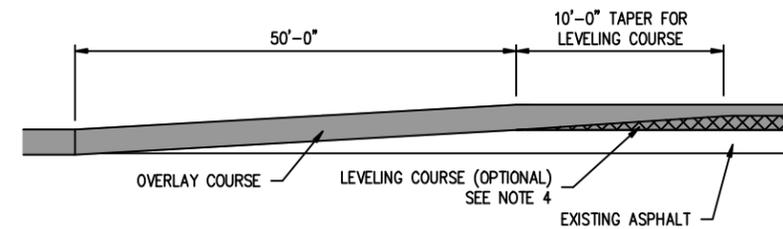
1. GRANULAR BORROW, SUB-EXCAVATING AND GEOTEXTILE FABRIC REQUIRED IF EXISTING BASE MATERIAL IS UNSUITABLE TO SUPPORT NEW ROADWAY SECTION.
2. GEOTEXTILE SHALL MEET THE MOST RECENT AASHTO REQUIREMENTS. NO SLIT FILM AND/OR HEAT ROLLED GEOTEXTILE SHALL BE ALLOWED.
3. EDGE TAPER AT STREET INTERSECTION TO BE 5'-0" MINIMUM.
4. THE CITY ENGINEER SHALL SPECIFY STREETS WHERE LEVELING COURSE SHALL BE USED.
5. MINIMUM ROAD WIDTH FOR FIRE ACCESS SHALL BE AS DEFINED IN THE APPLICABLE INTERNATIONAL FIRE CODE.
6. ALL MILLING SHALL BE COMPLETED WITH A FRONT LOADING MILL.
7. ALL ASPHALT SHALL BE FINISHED 1/4" ABOVE THE LIP OF GUTTER.



**COLD MILLING EDGE TREATMENT -  
WITH CURB & GUTTER**

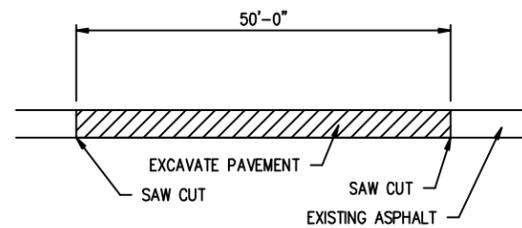


**REMOVAL DETAIL**

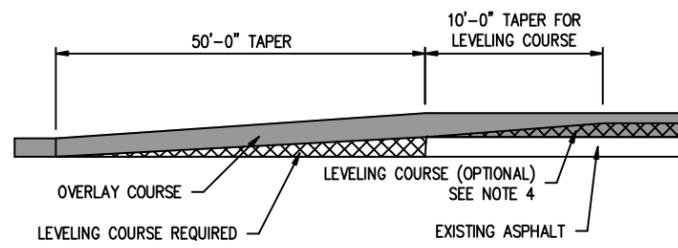


**PAVING DETAIL**

**COLD MILLING END TREATMENT**

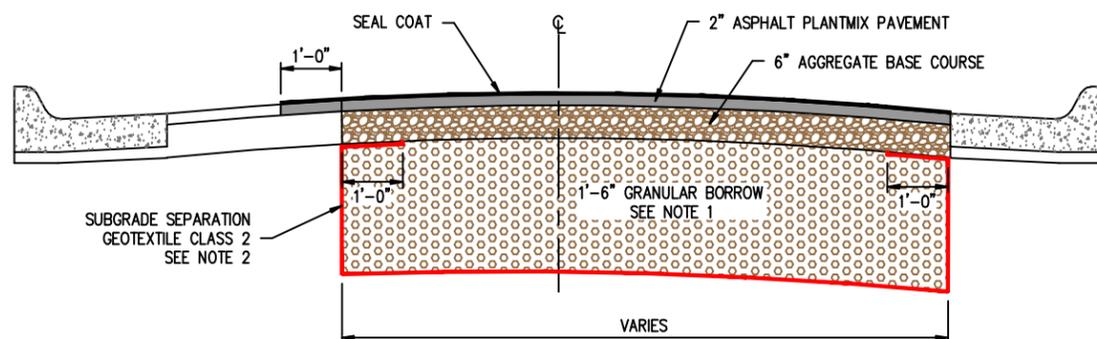


**REMOVAL DETAIL**

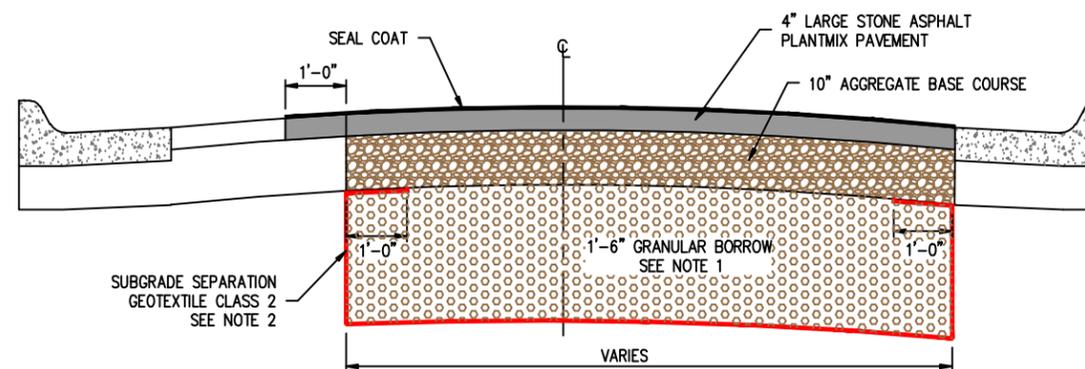


**PAVING DETAIL**

**EXCAVATION END TREATMENT**



**RESIDENTIAL SECTION**



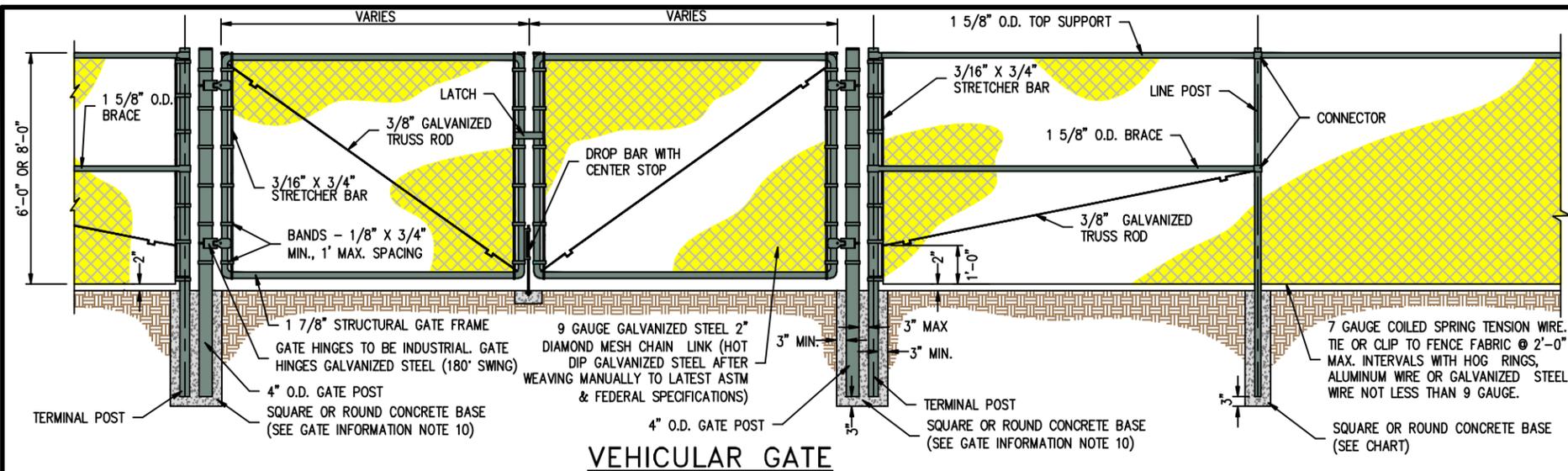
**COMMERCIAL SECTION**

**STREET RECONSTRUCTION**

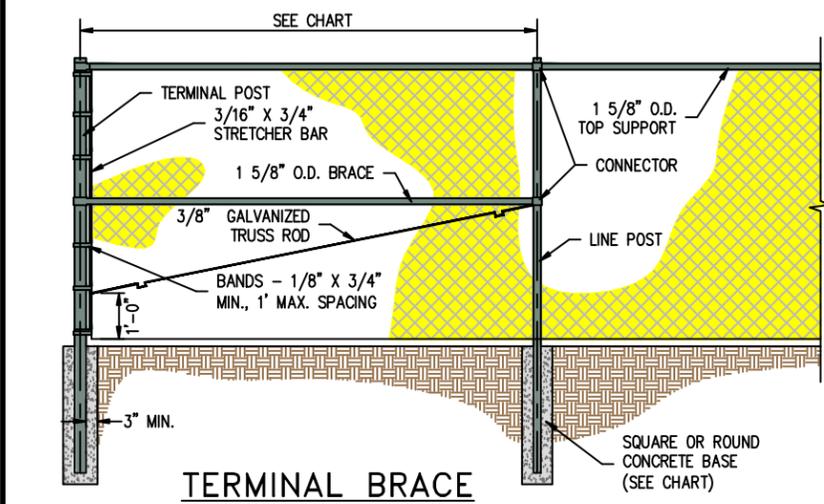
**TYPICAL OVERLAY CONSTRUCTION**



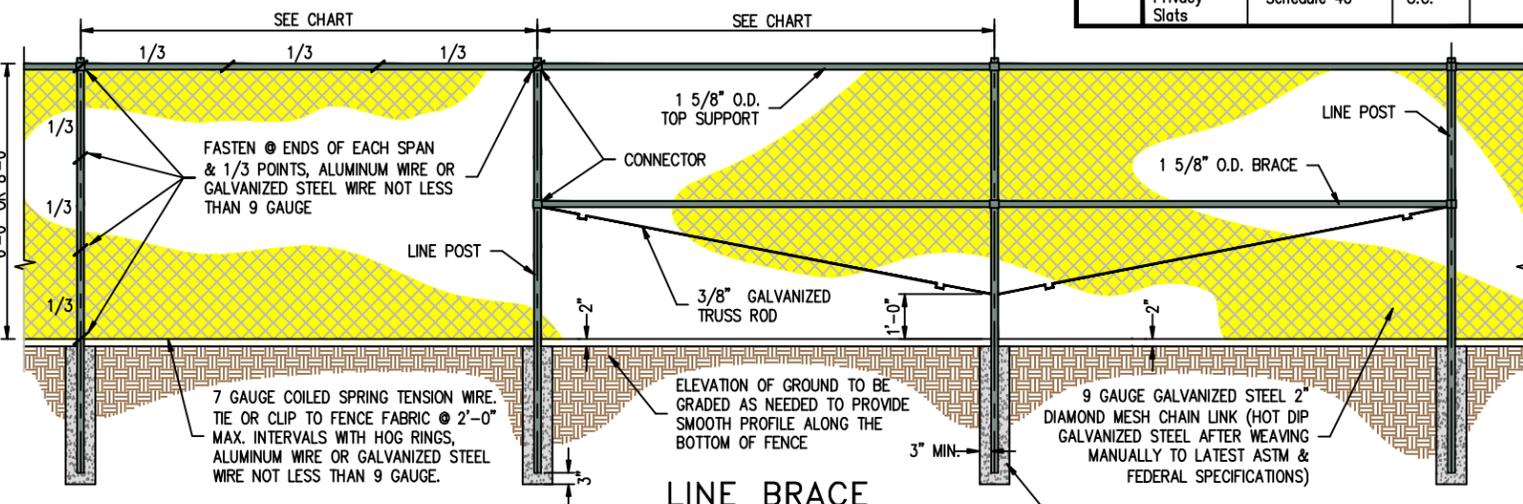
<b>CITY OF IDAHO FALLS</b> ENGINEERING DEPARTMENT STANDARD DRAWINGS 2010		
<b>STREET CONSTRUCTION</b> <b>SURFACE COURSES &amp; PAVEMENTS</b>		
DRAWN BY: T. WHITE FILE NO. 0-00-00-0-ENG-2009-06 SCALE: NOT TO SCALE	CHECKED BY: C.H. FREDERICKSEN FILE NAME: 300-1-2009 DATE PLOTTED: 12/18/09	SHEET NO. <b>300-1</b>



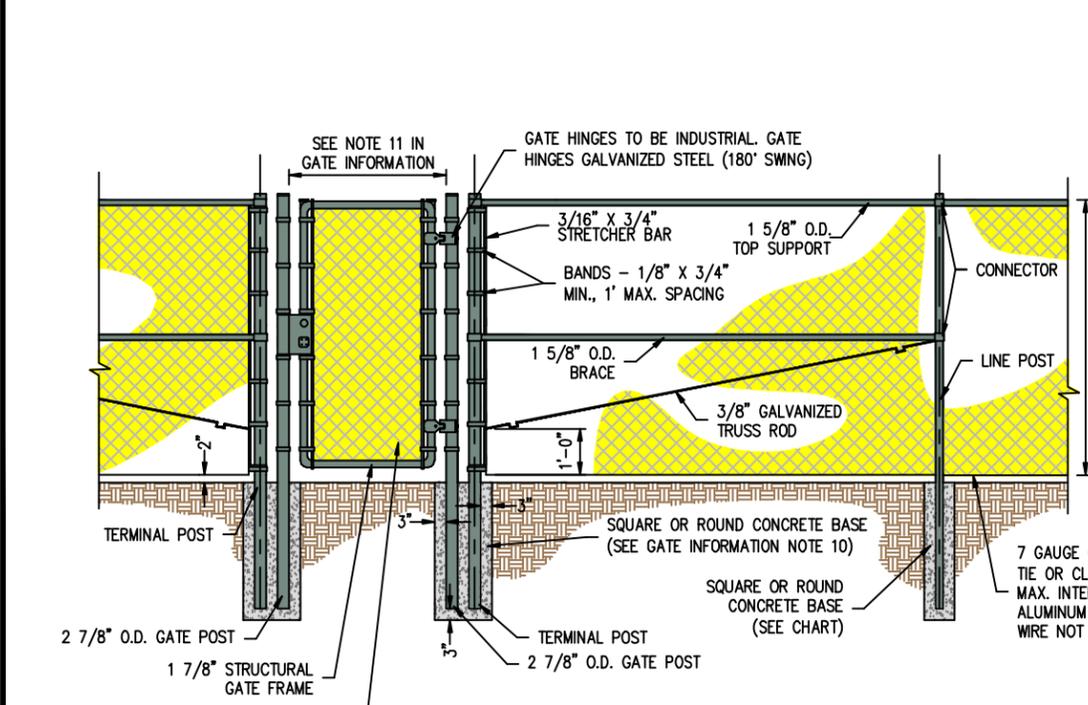
**VEHICULAR GATE**



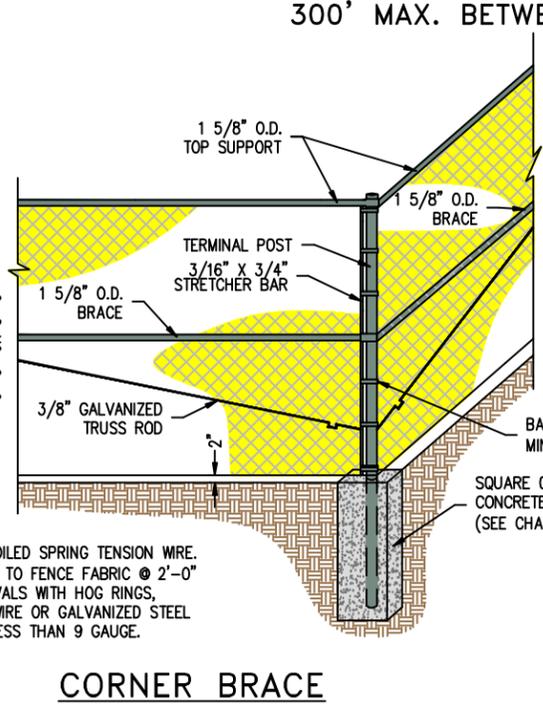
**TERMINAL BRACE**



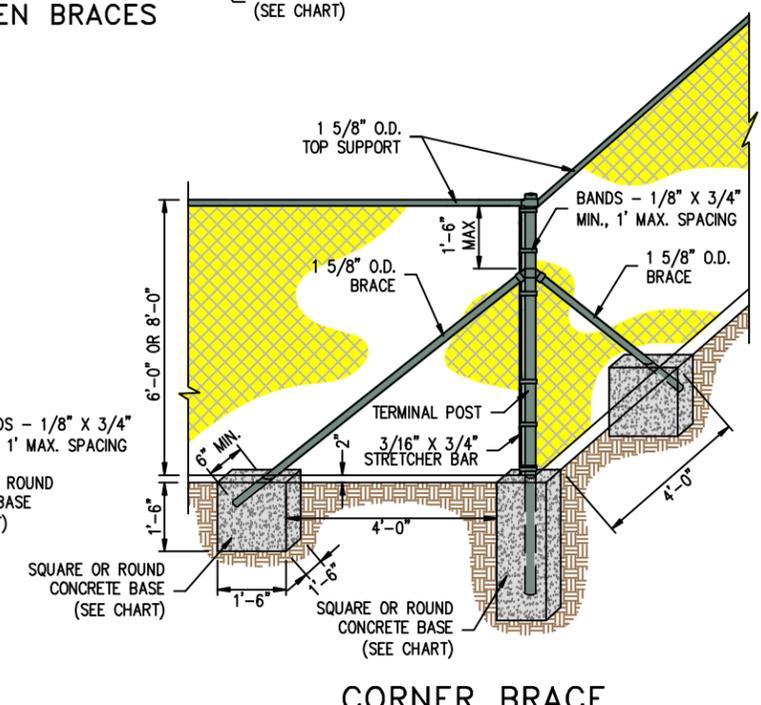
**LINE BRACE**  
300' MAX. BETWEEN BRACES



**PEDESTRIAN GATE**



**CORNER BRACE**



**CORNER BRACE**

Fence Height	Fence Type (9 Gauge Chain Link)	Line Posts & Terminal Post Size (Outside Dia.)	Post Spacing	Conc. Ftg. (Dia. x Depth)
8 Ft.	With Vinyl Privacy Slats	3 1/2" $\phi$ Schedule 40	8'-0" O.C.	12" $\phi$ x 4'-6" 16" $\phi$ x 3'-6"
		2 7/8" $\phi$ Schedule 40	5'-0" O.C.	12" $\phi$ x 4'-6" 16" $\phi$ x 3'-0"
8 Ft.	Without Vinyl Privacy Slats	2 3/8" $\phi$ Schedule 40	10'-0" O.C.	12" $\phi$ x 3'-0"
6 Ft.	With Vinyl Privacy Slats	2 7/8" $\phi$ Schedule 40	10'-0" O.C.	12" $\phi$ x 4'-6" 16" $\phi$ x 3'-6"
		2 3/8" $\phi$ Schedule 40	5'-0" O.C.	12" $\phi$ x 3'-6"
6 Ft.	Without Vinyl Privacy Slats	2 3/8" $\phi$ Schedule 40	10'-0" O.C.	12" $\phi$ x 3'-0"

- GATE INFORMATION:**
- ALL GATES TO BE FURNISHED WITH SUITABLE LENGTH OF DOUBLE 0, ZINC COATED, PASSING LINK CHAIN AND LOCK.
  - CHAIN TO BE FASTENED SECURELY TO UNHINGED GATE POST AT POSITIONS TO BE DETERMINED BY THE CITY ENGINEER.
  - MASTER KEYS WILL BE FURNISHED FOR ALL LOCKS.
  - CHAIN AND LOCK MENTIONED ABOVE TO BE USED ALONG WITH REGULAR TYPE GATE CATCH FOR LOCKING DEVICE.
  - ALL GATES ARE TO BE FURNISHED ACCORDING TO THE PLANS OR AN APPROVED EQUAL AS DETERMINED BY THE CITY ENGINEER.
  - ALL GATES ARE TO BE INDUSTRIAL 9-GAUGE, OR APPROVED EQUAL.
  - THE GATES SHALL BE HUNG ON GATE FITTINGS AS SHOWN OR AS APPROVED ON THE SHOP DRAWINGS OF THE GATES.
  - HINGES TO BE INDUSTRIAL TYPE, OR APPROVED EQUAL.
  - ALL CONCRETE USED FOR POSTS SHALL BE CITY'S CLASS 4 AND THE QUANTITY SHALL BE INCLUDED IN THE OTHER FENCE ITEMS.
  - VEHICULAR GATE POSTS SHALL BE 4"  $\phi$ , PEDESTRIAN GATE POST SHALL BE 2 7/8"  $\phi$ . BOTH SHALL BE SCHEDULE 40 AND SHALL HAVE AN 18"  $\phi$  X 3'6" CONCRETE FOOTING IN CONJUNCTION WITH TERMINAL POST FOR BOTH 8'-0" AND 6'-0" FENCE HEIGHTS.
  - GATE OPENING SHALL BE A MINIMUM OF 3'-0" IN WIDTH WITH GATE AT A 90° ANGLE FROM FENCE, OPENING IS THE CLEAR SPACE BETWEEN LATCHING MECHANISM AND DOOR AT A 90° ANGLE TO FENCE.

- GENERAL NOTES:**
- CORNER AND TERMINAL POSTS TO BE SCHEDULE 40.
  - LINE POST TO BE SCHEDULE 40.
  - ALL FENCING, POSTS, GATES, INSTALLATION WORK, ETC., SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE SPECIAL PROVISIONS OR AS DETERMINED BY THE CITY ENGINEER.
  - CONCRETE FOR POSTS SHALL BE THOROUGHLY COMPACTED AROUND POST BY TAMPING OR VIBRATING AND SHALL HAVE A SMOOTH FINISH, SLIGHTLY HIGHER THAN THE GROUND, SLOPED TO DRAIN AWAY FROM THE POST.
  - INSTALL ALL FENCING WITH "BARBED" ENDS ALONG TOP OF FENCE, UNLESS OTHERWISE NOTED.



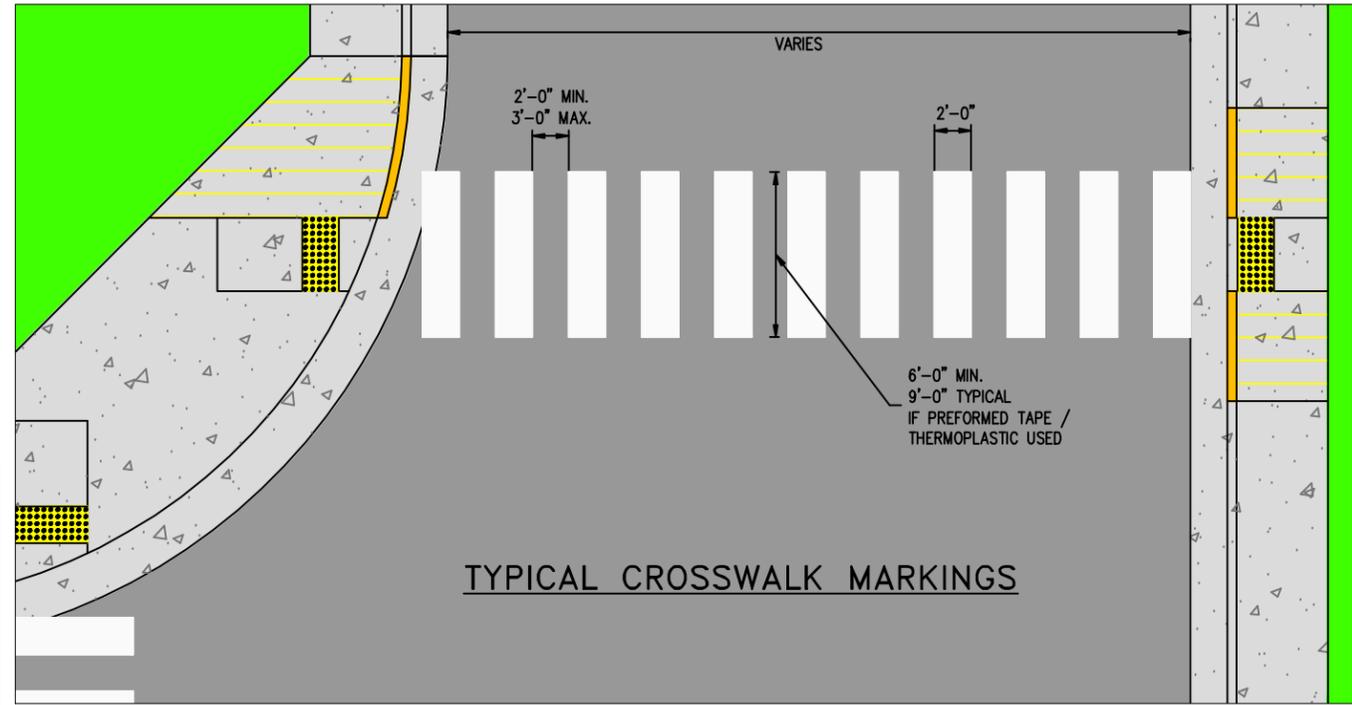
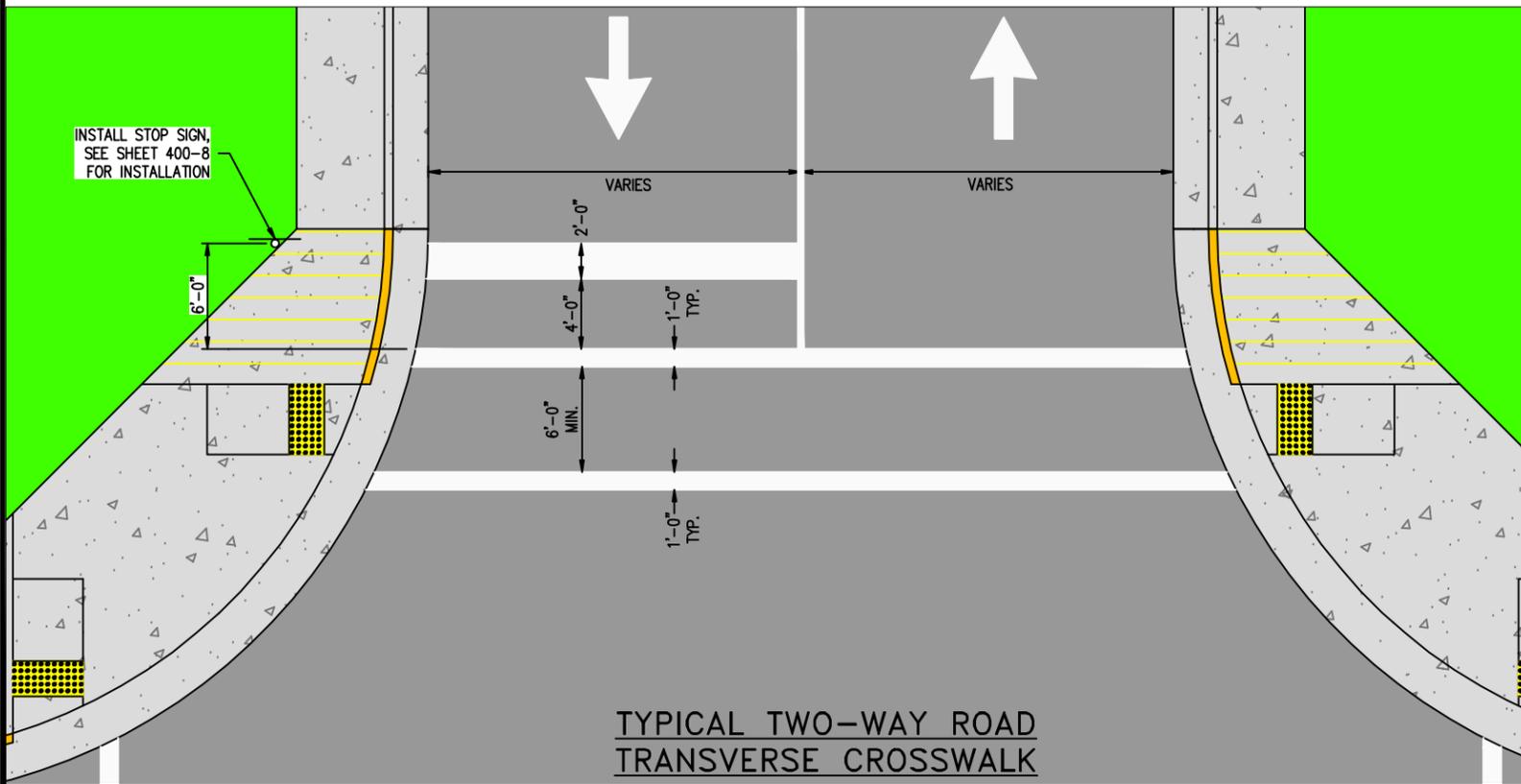
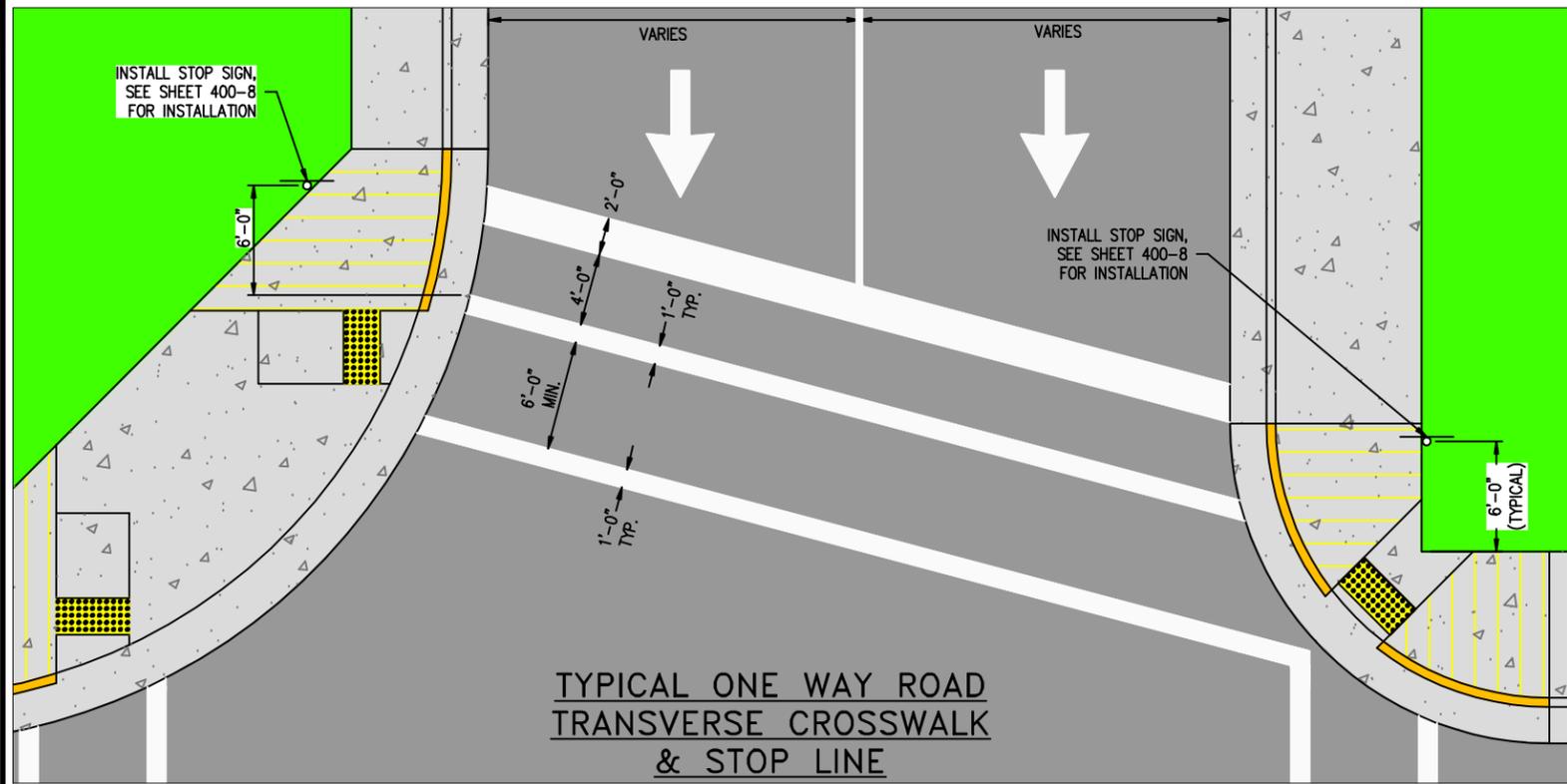
**CITY OF IDAHO FALLS**  
ENGINEERING DEPARTMENT  
STANDARD DRAWINGS 2010

**INCIDENTAL CONSTRUCTION**

**CHAIN LINK FENCE**

DRAWN BY: T. WHITE	CHECKED BY: C.H. FREDERICKSEN
FILE NO. 0-00-00-0-ENG-2009-06	FILE NAME: 400-1-2009
SCALE: 1"=4'	DATE PLOTTED: 12/18/09
	SHEET NO. <b>400-1</b>

9 GAUGE GALVANIZED STEEL 2" DIAMOND MESH CHAIN LINK (HOT DIP GALVANIZED STEEL AFTER WEAVING MANUALLY TO LATEST ASTM & FEDERAL SPECIFICATIONS)

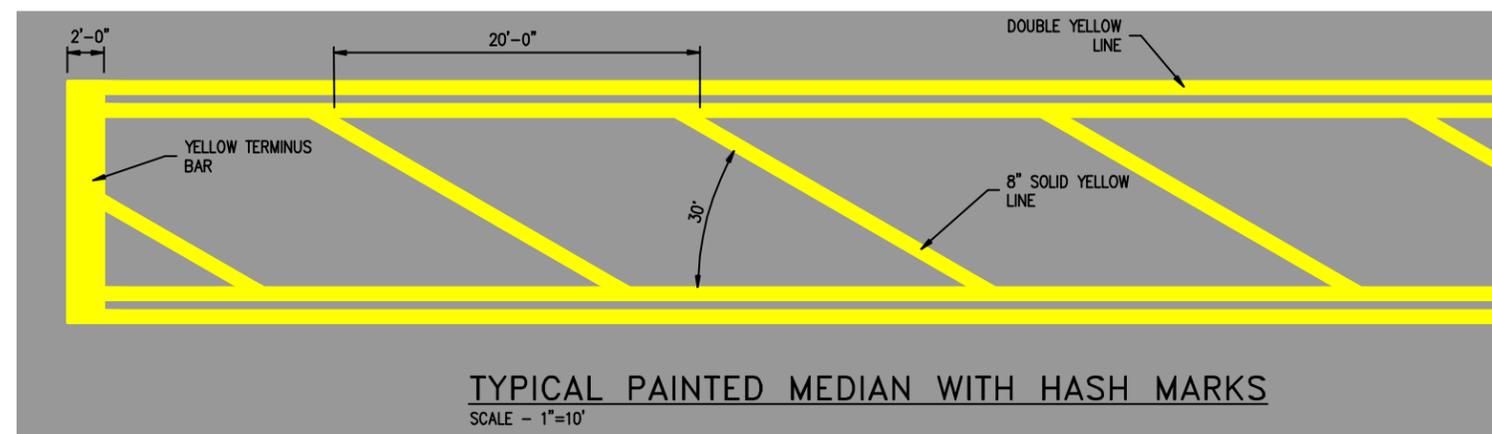
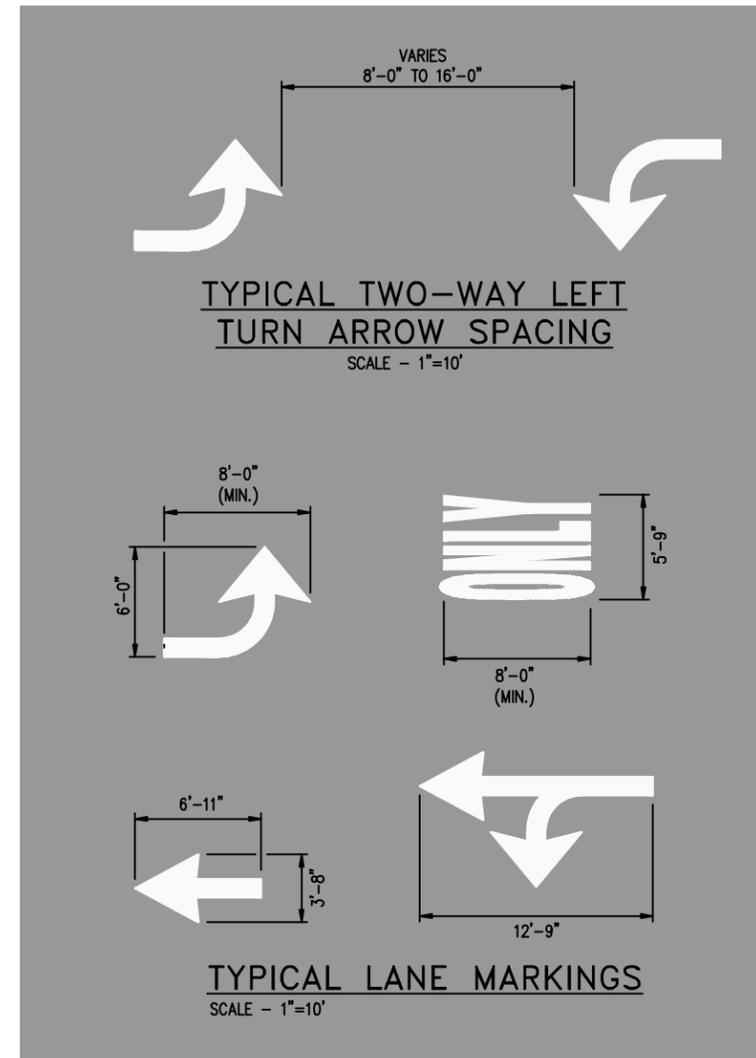
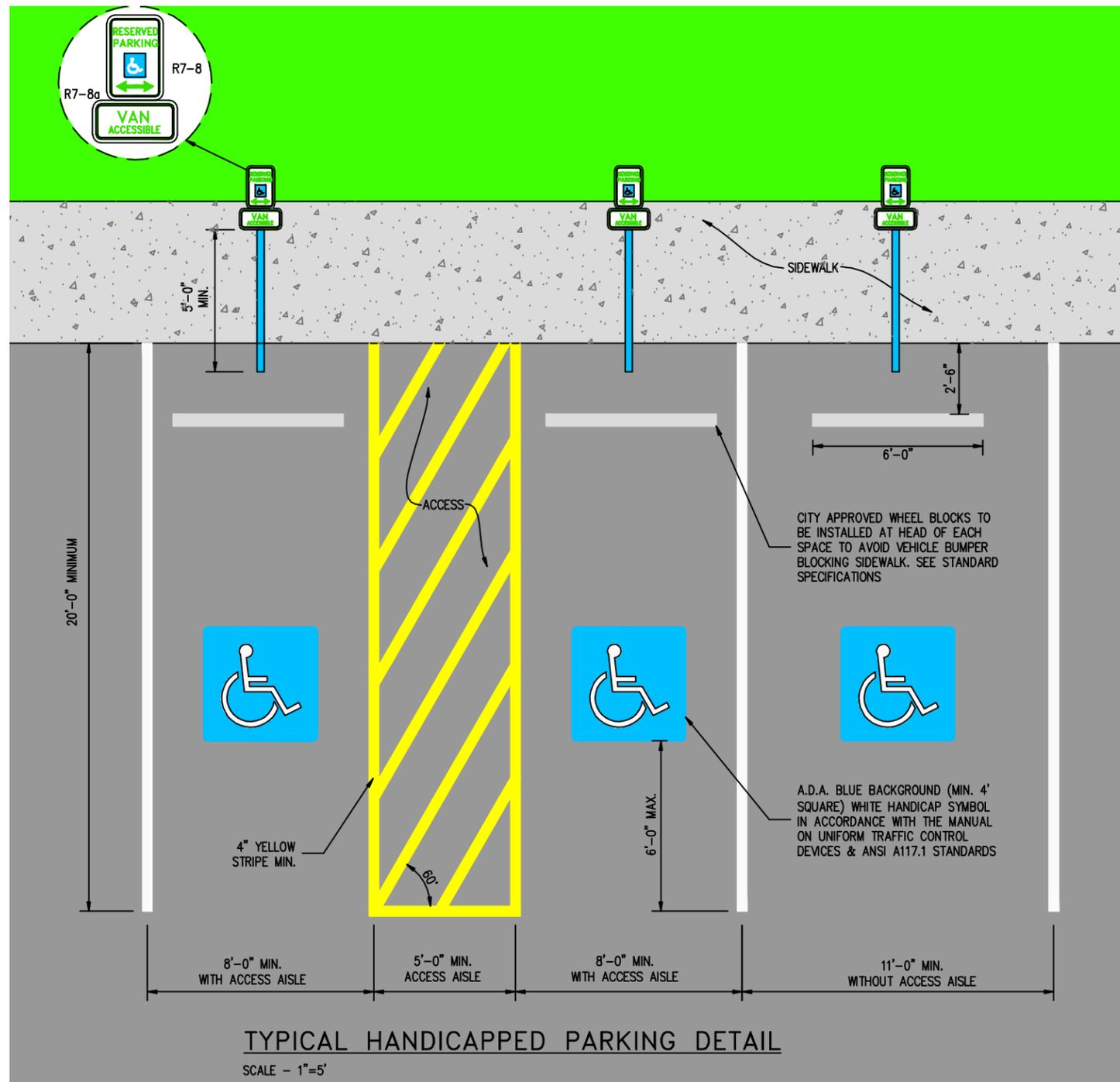


NOTE:

- CROSSWALKS SHALL ALIGN WITH DEPRESSED CURB SECTIONS FOR PEDESTRIAN ACCESS. STOP LINES SHALL BE INSTALLED (4) FEET IN ADVANCE OF CROSSWALK.
- ALL MATERIAL AND WORK SHALL BE IN ACCORDANCE WITH THE MOST RECENT M.U.T.C.D. OTHER PREFORMED TAPES AND CITY OF IDAHO FALLS APPROVED TRAFFIC PAINT MAY BE USED ON LOCAL AND MINOR ROADWAYS AS APPROVED BY CITY ENGINEER OR HIS DULY AUTHORIZED REPRESENTATIVE.
- ALL CROSSWALKS & STOP BARS SHALL BE PREFORMED THERMOPLASTIC FOR NEW CONSTRUCTION, ARTERIAL AND COLLECTOR ROADWAYS, OR AS SHOWN ON IMPROVEMENT DRAWINGS.
- THERMOPLASTIC MATERIAL AND INSTALLATION SHALL BE AS NOTED ON SHEET 400-3.



CITY OF IDAHO FALLS ENGINEERING DEPARTMENT STANDARD DRAWINGS 2010		
INCIDENTAL CONSTRUCTION PAVEMENT MARKINGS CROSSWALKS & STOP BARS		
DRAWN BY: T. WHITE	CHECKED BY: C.H. FREDERICKSEN	
FILE NO. 0-00-00-0-ENG-2009-06	FILE NAME: 400-2-2009	SHEET NO. 400-2
SCALE: 1"=10'	DATE PLOTTED: 12/18/09	

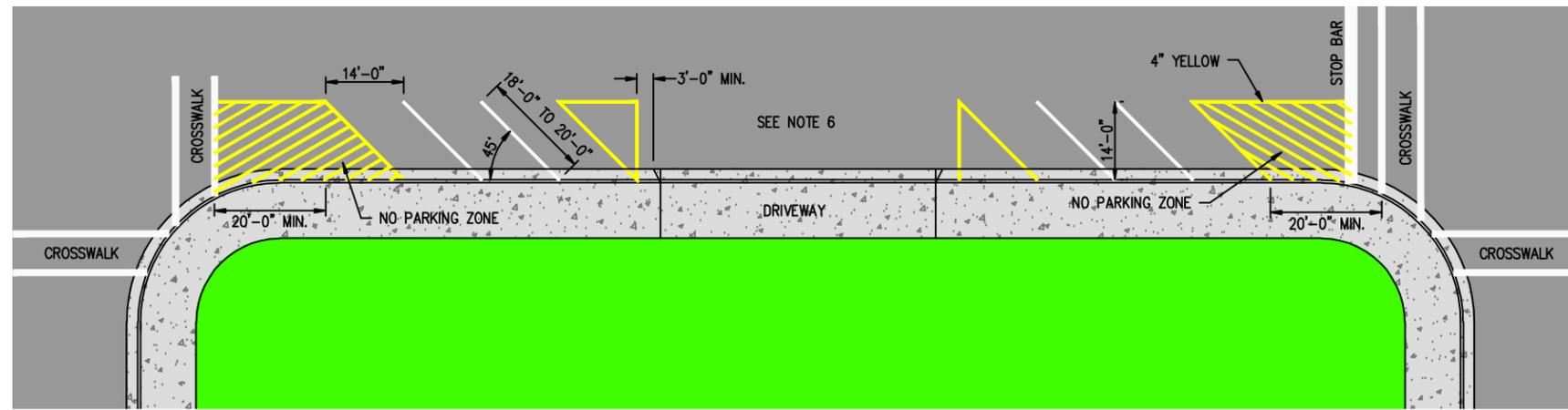


**NOTE:**

1. ALL ARROWS, STRIPES 1" OR MORE WIDE AND "ONLY" PAVEMENT MARKINGS SHALL BE THERMOPLASTIC.
2. THERMOPLASTIC PAVEMENT MARKINGS SHALL MEET THE FOLLOWING REQUIREMENTS:
  - A. ALL THERMOPLASTIC MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH THE MATERIAL MANUFACTURER'S GUIDELINES.
  - B. THICKNESS SHALL BE 125 MIL AND SHALL BE APPROVED BY THE CITY ENGINEER PRIOR TO INSTALLATION.
  - C. BIKE LANE SYMBOLS SHALL BE 90 MIL AND DESIGNED TO BE SKID RESISTANT. PREMARK VIZIGRIP OR EQUAL.
  - D. ROAD SURFACES SHALL BE CLEAN AND DRY PRIOR TO INSTALLATION OF THERMOPLASTIC MATERIALS.
  - E. ALL MATERIAL AND WORK SHALL BE IN ACCORDANCE WITH THE M.U.T.C.D. AND CITY OF IDAHO FALLS STANDARDS.
  - F. ALL MATERIAL SHALL BE RETROREFLECTIVE AND SUITABLE FOR USE ON ROADWAYS, INTERSECTIONS AND AIRPORTS. GLASS BEADS SHALL BE UNIFORMLY DISTRIBUTED THROUGHOUT THE ENTIRE CROSS SECTIONAL AREA.
  - G. MATERIALS SHALL BE RESILIENT WHITE OR YELLOW (UNLESS OTHERWISE NOTED) CAPABLE OF FUSING WITH ITSELF AND PREVIOUSLY APPLIED THERMOPLASTIC.
  - H. ALL PREFORMED PLASTIC SHALL BE CAPABLE OF CONFORMING TO PAVEMENT CONTOURS, BREAKS, AND FAULTS. LINES, LEGENDS AND SYMBOLS SHALL BE CAPABLE OF BEING AFFIXED TO BITUMINOUS AND OR PORTLAND CEMENT SURFACES.
  - I. PLASTIC MATERIALS SHALL NOT BE APPLIED OVER EXPANSION JOINTS. CUT MATERIAL AND INSTALL ON BOTH SIDES OF JOINT LINE.
3. HANDICAP PARKING SPACES SHALL BE LESS THAN 2% CROSS SLOPE AND 1:48 IN LENGTH SLOPE.

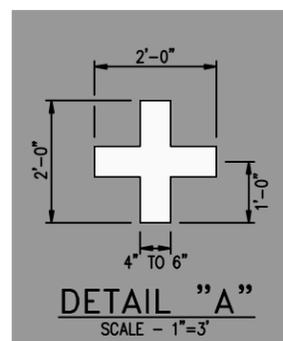
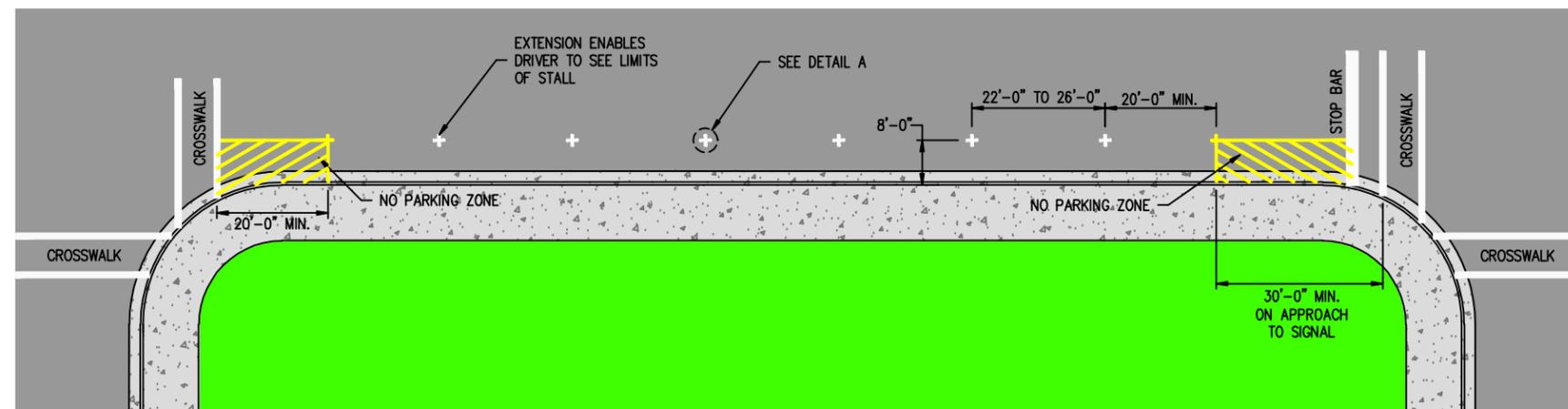
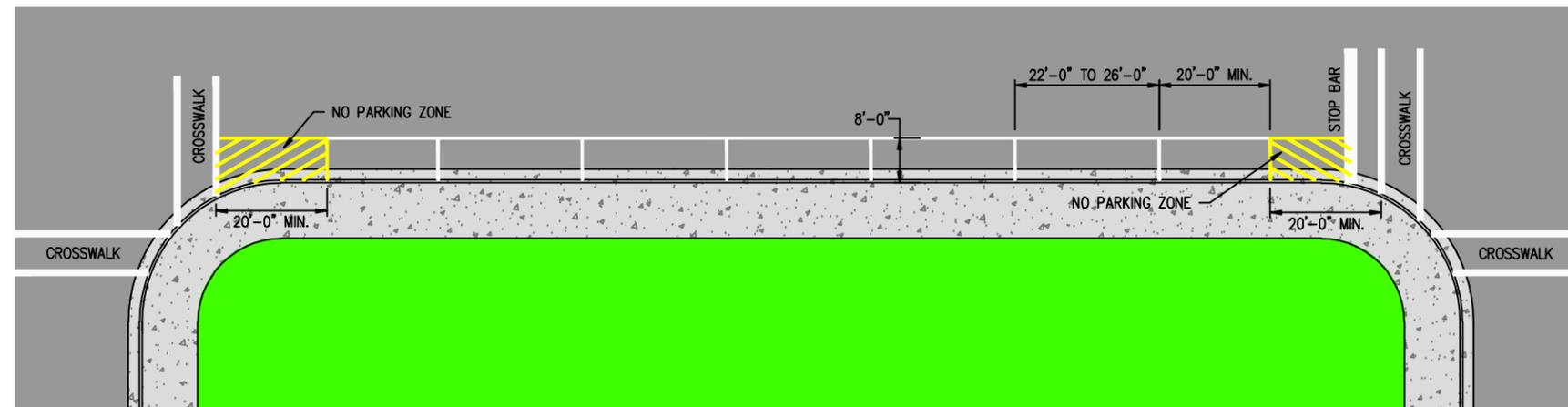


<b>CITY OF IDAHO FALLS</b> ENGINEERING DEPARTMENT STANDARD DRAWINGS 2010		
<b>INCIDENTAL CONSTRUCTION</b> <b>PAVEMENT MARKINGS</b> <b>MISCELLANEOUS</b>		
DRAWN BY: T. WHITE FILE NO. 0-00-00-0-ENG-2009-06 SCALE: VARIES	CHECKED BY: C.H. FREDERICKSEN FILE NAME: 400-3-2009 DATE PLOTTED: 12/18/09	SHEET NO. <b>400-3</b>

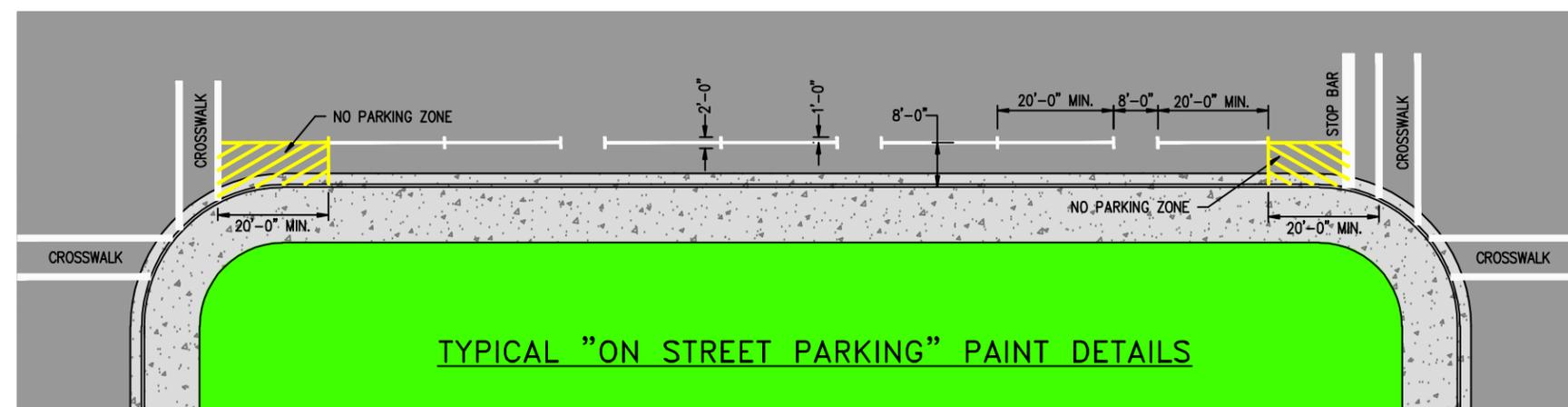


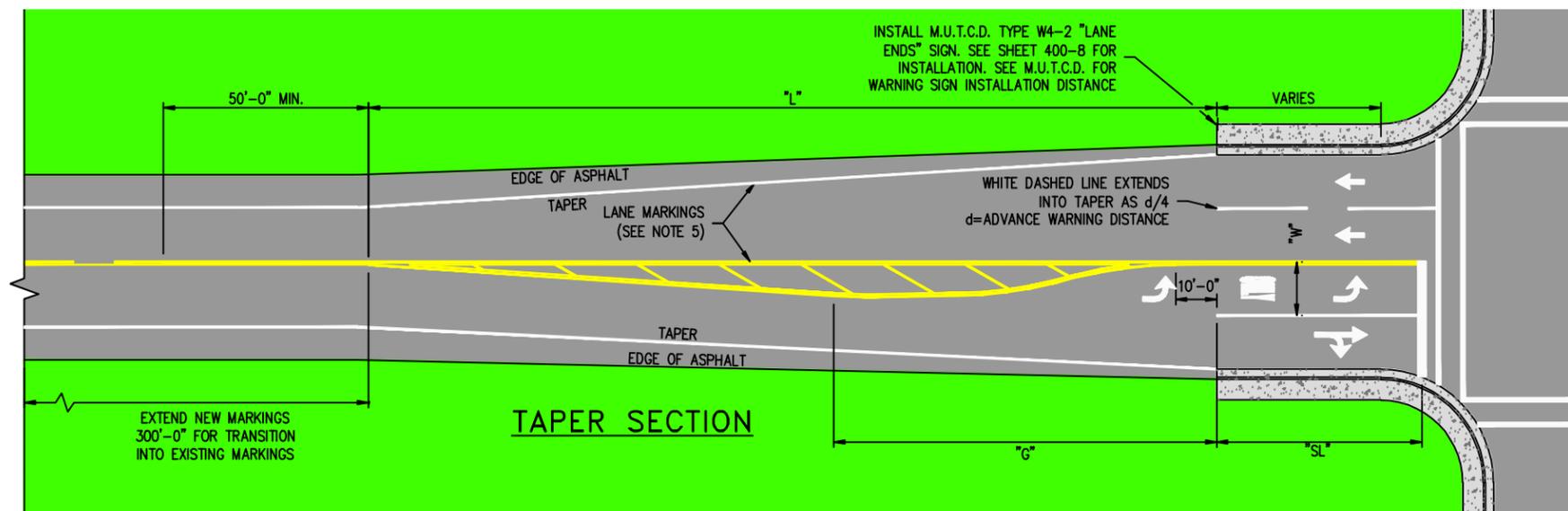
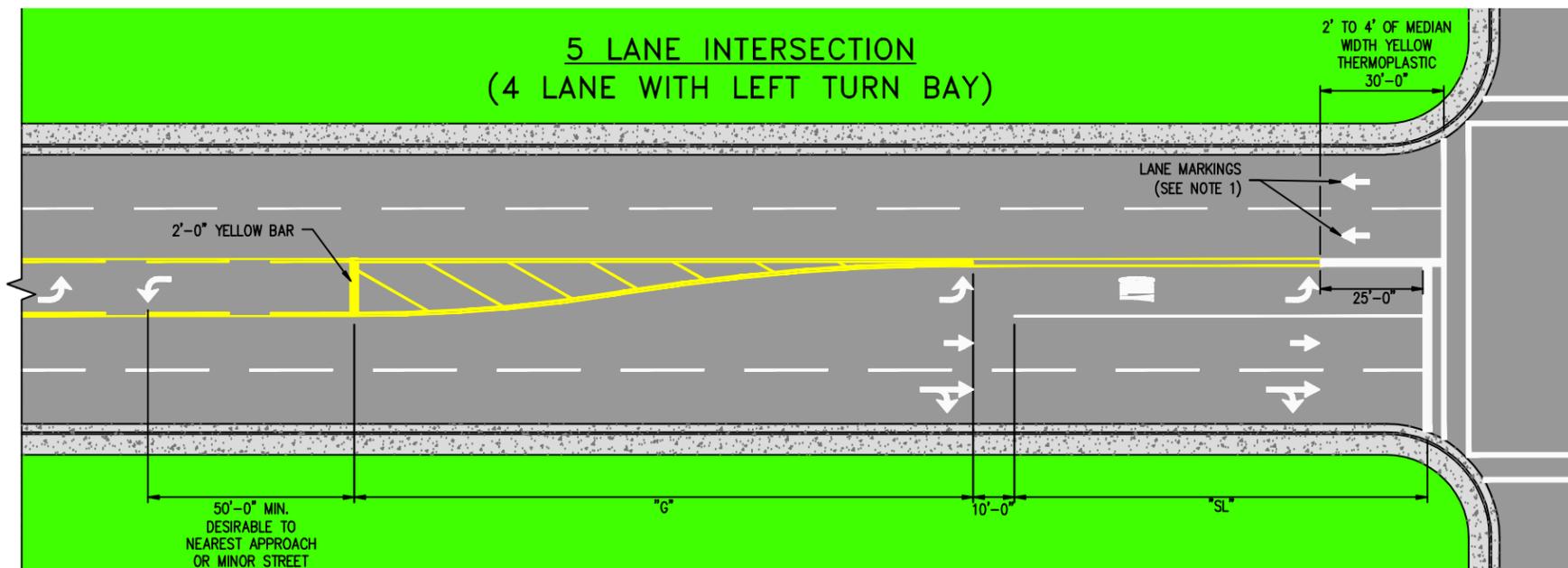
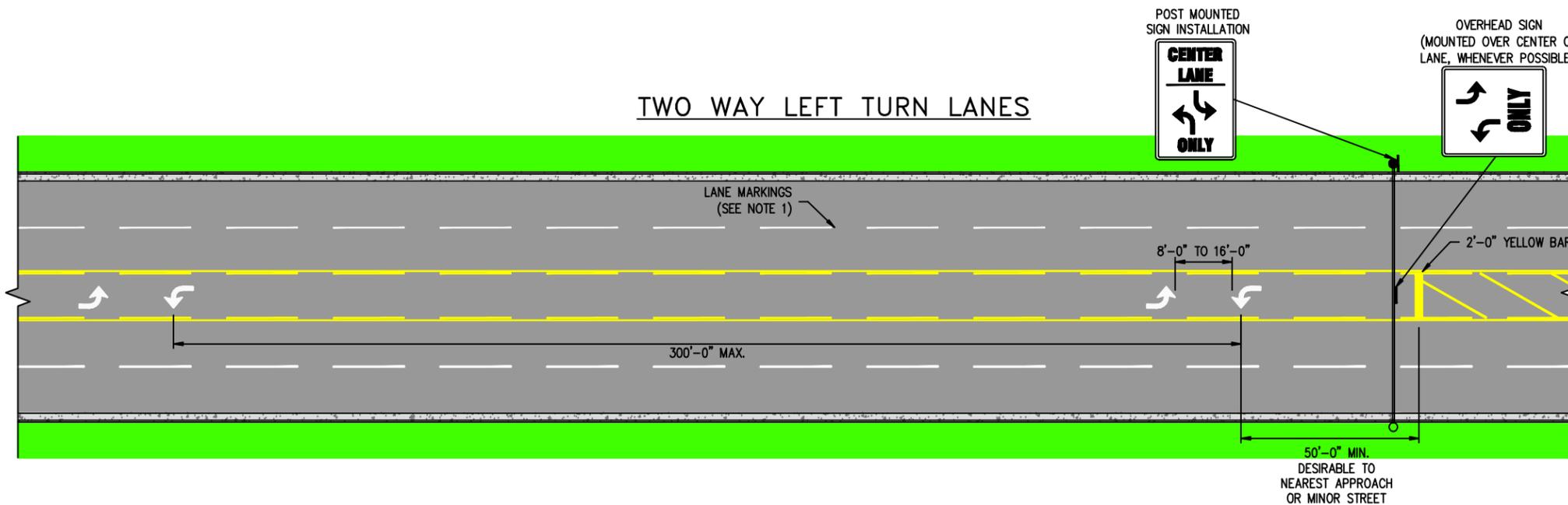
**NOTE:**

1. ALL "ON STREET PARKING" LINES SHALL BE PAINTED IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.).
2. ALL PARKING LINES SHALL BE 4" IN WIDTH UNLESS OTHERWISE INDICATED.
3. "NO PARKING" ZONES SHALL BE YELLOW IN COLOR AND SHALL BE INDICATED BY PAINTING THE ENTIRE CURB SECTION WITHIN THE NO PARKING ZONE.
4. PARALLEL PARKING SPACES SHALL BE 8 FT. WIDE FOR STANDARD PARKING AND 10 FT. WIDE FOR RV AND TRUCK PARKING ZONES.
5. PARKING SHALL BE APPROVED BY COUNCIL ACTION ONLY.
6. "ON STREET ANGLE PARKING" ONLY ALLOWED IN EXISTING PARKING AREAS, SEE ZONING ORDINANCE FOR INFORMATION.



<b>CITY OF IDAHO FALLS</b> ENGINEERING DEPARTMENT STANDARD DRAWINGS 2010		
<b>INCIDENTAL CONSTRUCTION</b> <b>PAVEMENT MARKINGS</b> <b>PARKING</b>		
DRAWN BY: T. WHITE FILE NO. 0-00-00-0-ENG-2009-06 SCALE: 1"=30'	CHECKED BY: C.H. FREDERICKSEN FILE NAME: 400-4-2009 DATE PLOTTED: 12/18/09	SHEET NO. <b>400-4</b>





**NOTE:**

- LANE MARKINGS IN THE THROUGH LANES ARE OPTIONAL AND SHOULD BE INSTALLED ONLY IF JUSTIFIED.
- TWO WAY LEFT TURN LANES SHOULD BE CONTINUOUS THROUGH "T" INTERSECTIONS BUT MAY BE BROKEN FOR 4-WAY INTERSECTIONS.
- ALL LANE ARROWS, WORD PAVEMENT MARKINGS AND ALL OTHER MARKINGS 8" OR WIDER SHALL BE THERMOPLASTIC.
- THERMOPLASTIC PAVEMENT MARKINGS SHALL MEET REQUIREMENTS SHOWN ON STANDARD DRAWING SHEET NUMBER 400-3.
- LANE TRANSITION (TAPER LENGTH) AND TURN LANE STORAGE LENGTH SHALL BE AS SPECIFIED IN THE MOST RECENT EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.).

UNSIGNALIZED

$$SL = \frac{5V}{6}, 50' \text{ MIN.}$$

SIGNALIZED

$$SL = \frac{50V}{N}, 50' \text{ MIN.}$$

SL = STORAGE LENGTH IN FEET  
 V = ESTIMATED LEFT-TURN VOLUME DURING DESIGN PEAK HOUR, IN VEHICLES PER HOUR  
 N = NUMBER OF SIGNAL CYCLES PER HOUR IN DESIGN PEAK HOUR

TAPER LENGTH

$$L = WS \quad (45 \text{ MPH OR GREATER})$$

$$L = \frac{WS^2}{60} \quad (40 \text{ MPH OR LESS})$$

L = TAPER LENGTH, IN FEET  
 W = OFFSET DISTANCE, IN FEET  
 S = OFF-PEAK 85 PERCENTILE SPEED, IN M.P.H.

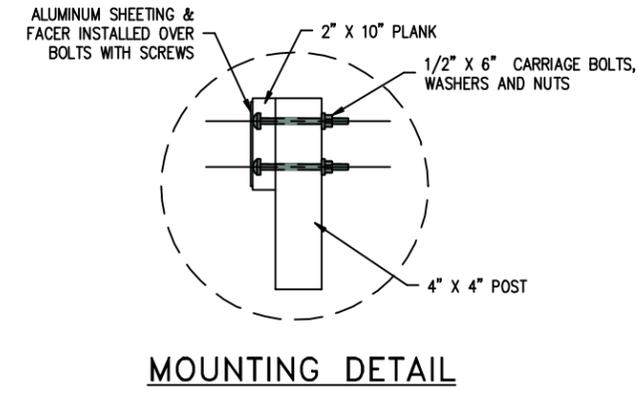
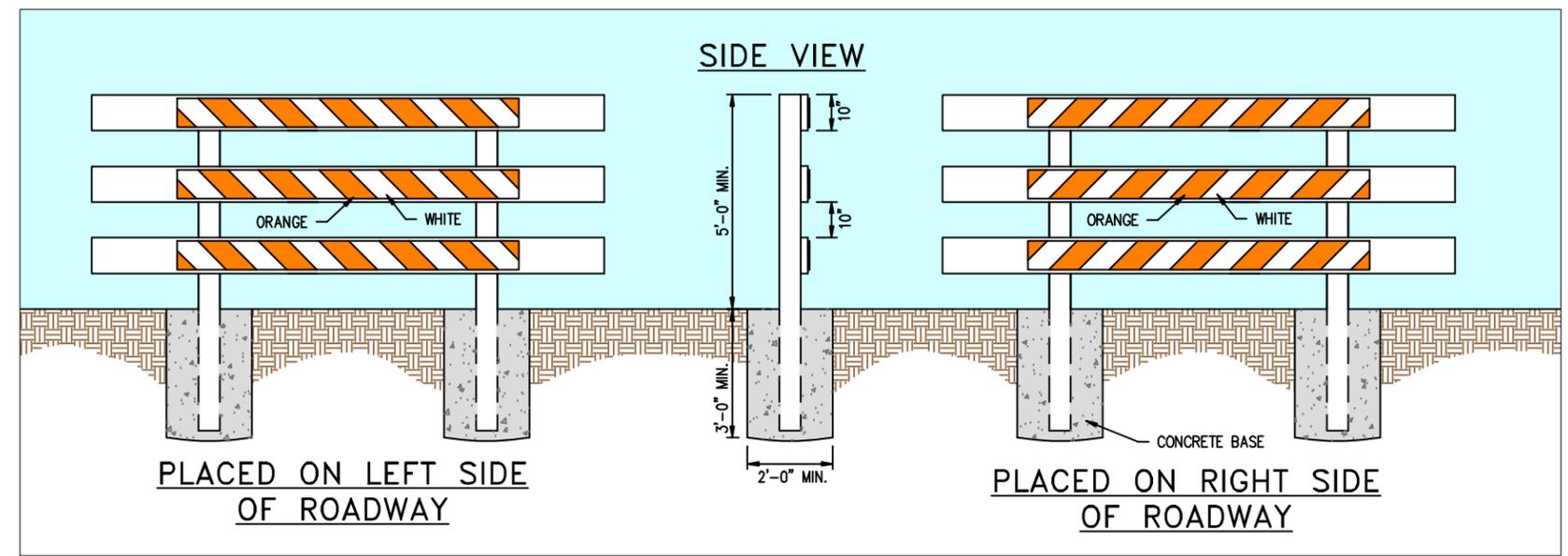
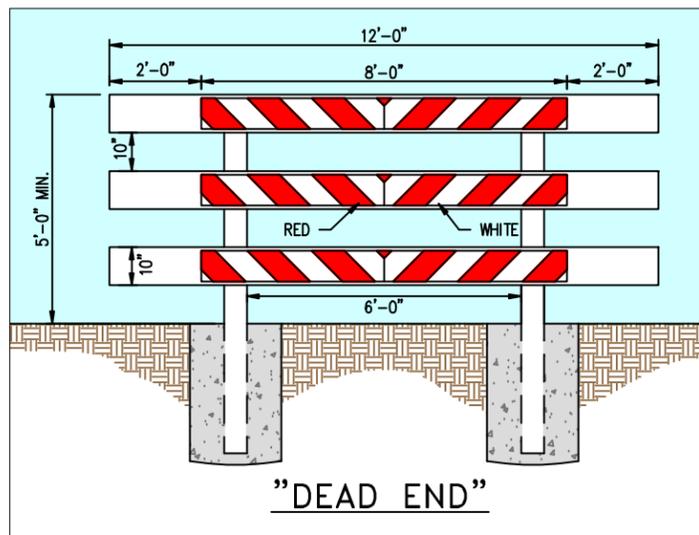
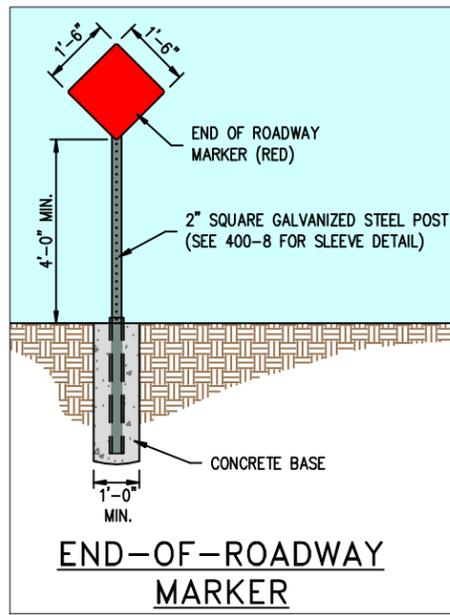
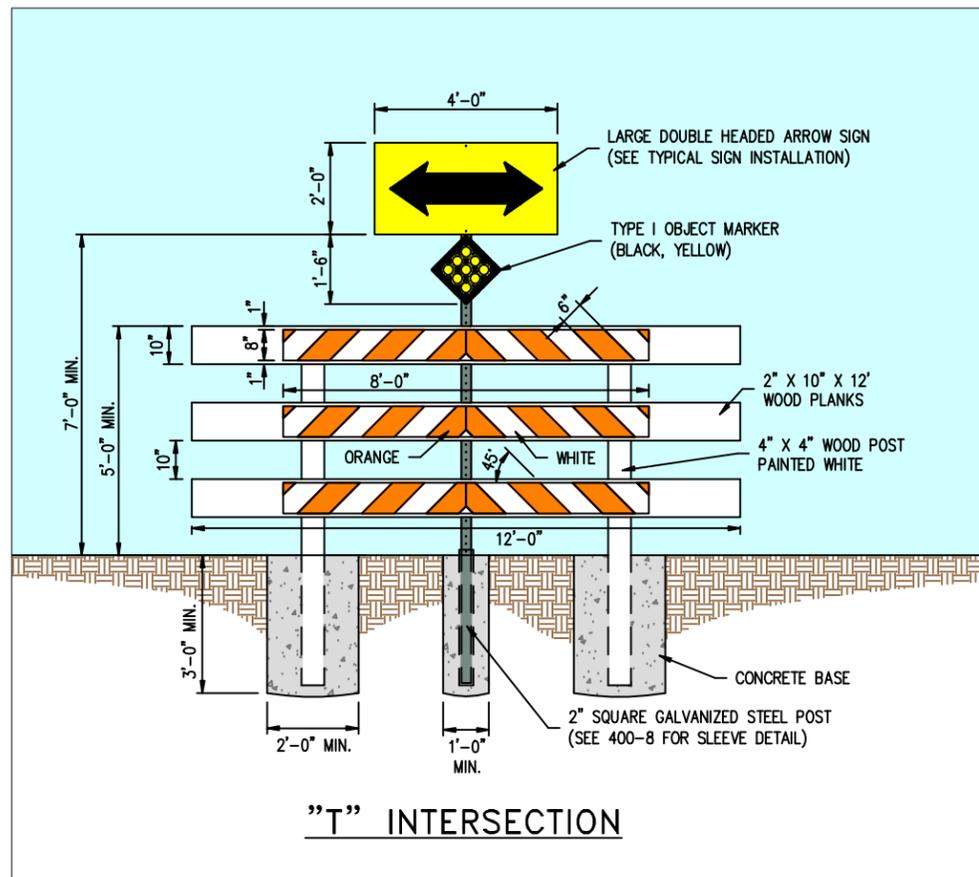
GAP LENGTH

$$G = S \times 5$$

G = GAP LENGTH, IN FEET  
 S = SPEED, IN M.P.H.



<b>CITY OF IDAHO FALLS</b> ENGINEERING DEPARTMENT STANDARD DRAWINGS 2010		
<b>INCIDENTAL CONSTRUCTION PAVEMENT MARKINGS CHANNELIZATION</b>		
DRAWN BY: T. WHITE	CHECKED BY: C.H. FREDERICKSEN	
FILE NO. 0-00-00-0-ENG-2009-06	FILE NAME: 400-5-2009	SHEET NO. 400-5
SCALE: 1"=40'	DATE PLOTTED: 12/18/09	



**BARRICADE MATERIALS LIST:**

- THREE 2" X 10" X 12' #2 OR BETTER FIR PLANKS.
- TWO 4" X 4" X 8' TREATED FIR OR CEDAR POSTS.
- 8" X 24 LINEAL FEET ENGINEER GRADE OR HIGH DENSITY SHEETING (IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES).
- 1/2" DIA. X 6" LONG GALVANIZED CARRIAGE BOLTS.
- 1/2" DIA. GALVANIZED HEX BOLTS.
- 1/2" GALVANIZED FLAT WASHERS - 1 1/2" O.D.
- EXTERIOR GRADE WITH HIGH GLOSS ENAMEL PAINT.
- SIX 8" X 4' .040 ALUMINUM PLATES.
- PHILIPS FLAT HEAD SCREWS 10 THREADS PER INCH MIN. 1 1/4" LONG (48 PER BARRICADE OR 16 PER PLANK).

**CONSTRUCTION SPECIFICATIONS:**

- ALL BARRICADES TO BE CONSTRUCTED AND INSTALLED ACCORDING TO THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" AND CITY OF IDAHO FALLS SPECIFICATIONS.
- ALL EXPOSED WOODEN SURFACES SHALL BE PAINTED WITH 2 (TWO) COATS OF HIGH GLOSS WHITE EXTERIOR ENAMEL PAINT PRIOR TO FACING WITH REFLECTIVE SHEETING.
- REFLECTIVE SHEETING SHALL BE APPLIED TO THE ALUMINUM PLATES, WHICH SHALL THEN BE MOUNTED TO THE PAINTED WOOD PLANKS USING PHILIPS FLAT HEAD SCREWS - 8 (EIGHT) PER ALUMINUM PLATE.
- BARRICADE PLANKS SHALL BE MOUNTED TO WOODEN POSTS USING CARRIAGE BOLTS, NUTS, AND WASHERS.
- SUPPORT POST SHALL BE BURIED APPROXIMATELY 3' AND SHALL HAVE APPROXIMATELY A 1/2 (ONE-HALF) C.Y. OF CONCRETE PER POST. CONCRETE SHALL BE CLASS 4 AND POURED SLIGHTLY HIGHER THEN GROUND TO DRAIN AWAY FROM POST.
- ALL TEMPORARY CONSTRUCTION BARRICADES ARE ORANGE AND WHITE. ALL PERMANENT CONSTRUCTION BARRICADES ARE RED AND WHITE.
- TEMPORARY CONSTRUCTION BARRICADES MAY BE MOUNTED ON WOOD OR METAL STAND AND WEIGHTED WITH SAND BAGS AS APPROVED BY THE CITY ENGINEER.



**CITY OF IDAHO FALLS**  
**ENGINEERING DEPARTMENT**  
**STANDARD DRAWINGS 2010**

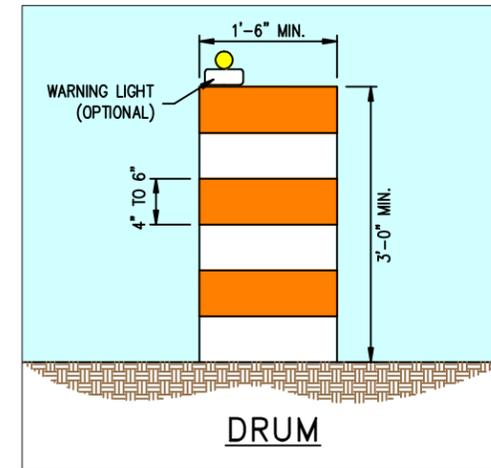
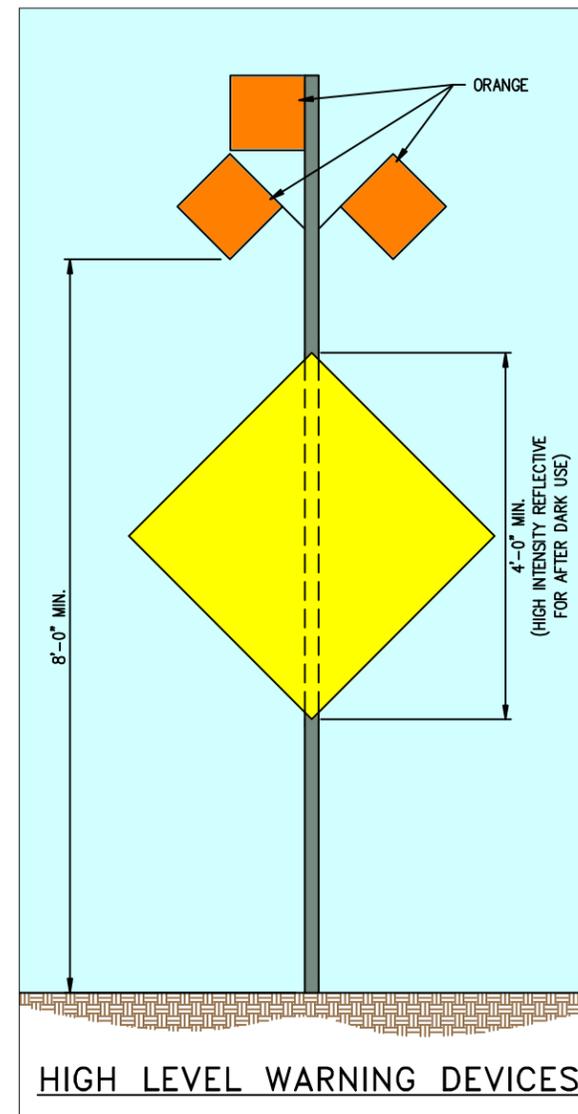
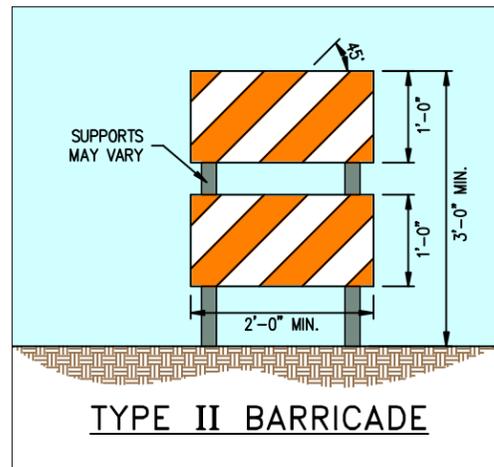
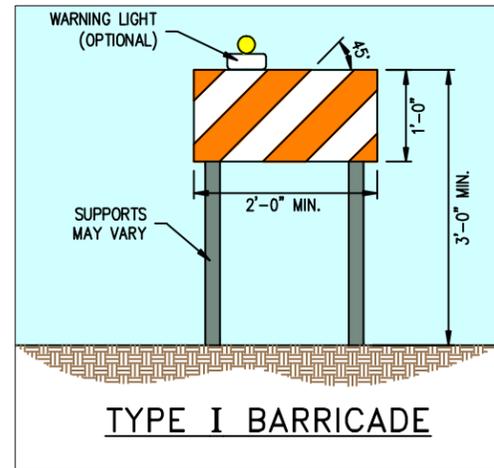
**INCIDENTAL CONSTRUCTION**

**BARRICADES - TYPE III**

<b>DRAWN BY:</b> T. WHITE	<b>CHECKED BY:</b> C.H. FREDERICKSEN
<b>FILE NO.:</b> 0-00-00-0-ENG-2009-06	<b>FILE NAME:</b> 400-6-2009
<b>SCALE:</b> 1"=4'	<b>DATE PLOTTED:</b> 12/18/09
	<b>SHEET NO.:</b> 400-6

## TEMPORARY TRAFFIC CONTROL ZONE NOTES

1. A TEMPORARY TRAFFIC CONTROL PLAN (TTC) SHALL BE SUBMITTED FOR REVIEW AND APPROVED BY THE CITY ENGINEER OR HIS AGENT(S) PRIOR TO ANY CONSTRUCTION OR WORK THAT MAY INTERRUPT TRAFFIC FLOW IN THE PUBLIC RIGHT-OF-WAY.
2. ALL MATERIALS AND THE USE OF THESE DEVICES SHALL BE IN ACCORDANCE WITH THE MOST RECENT ADDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND CITY OF IDAHO FALLS STANDARD SPECIFICATIONS.
3. TYPE I, II, OR III BARRICADES AND DRUMS SHALL BE USED ON PRINCIPAL ARTERIALS, MAJOR ARTERIALS, MULTILANE ROADWAYS AND HIGH SPEED ROADWAYS. THIS SHOULD INCLUDE ALL BUFFER AND WORK AREAS ON HIGH LEVEL WARNING DEVICES SHALL BE USED IN ADVANCE OF ALL WORK ZONE AREAS ON ALL MULTILANE ROADWAYS, COLLECTOR, MAJOR AND PRINCIPAL ARTERIALS.
4. ALL PERSONNEL WORKING IN THE PUBLIC RIGHT-OF-WAY SHALL WEAR THE PROPER SAFETY APPAREL CLASS TWO (2) MINIMUM AND CLASS THREE (3) ON PRINCIPAL ARTERIALS AND STATE HIGHWAYS AS OUTLINED IN THE M.U.T.C.D. AND FEDERAL HIGHWAY ADMINISTRATION'S STANDARDS.



## TRANSITION AREA TAPER LENGTH

TYPE OF TAPER	TAPER LENGTH
MERGING TAPER - THE NUMBER OF LANES IS REDUCED ON A MULTILANE ROAD	L MINIMUM
SHIFTING TAPER - A LATERAL SHIFT, BUT NO REDUCTION IN THE NUMBER OF TRAVEL LANES	0.5 L MINIMUM
SHOULDER TAPER - THE SHOULDER IS CLOSED.	0.33 MINIMUM
TWO-WAY TRAFFIC TAPER - OPPOSING DIRECTIONS OF TRAFFIC SHARE ONE OPEN LANE	50 FEET MINIMUM 100 FEET MAXIMUM
DOWNSTEAM TAPER - THE WORK AREA ENDS AND TRAFFIC RESUMES NORMAL DRIVING (USE IS OPTIONAL)	100 FEET PER LANE MINIMUM

### FORMULAS FOR L

SPEED LIMIT	FORMULA
40 M.P.H. OR LESS	$L = WS^2 / 60$
45 M.P.H. OR GREATER	$L = W \times S$

L = TAPER LENGTH IN FEET

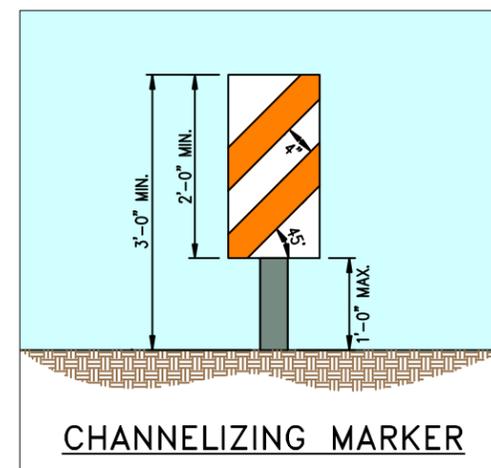
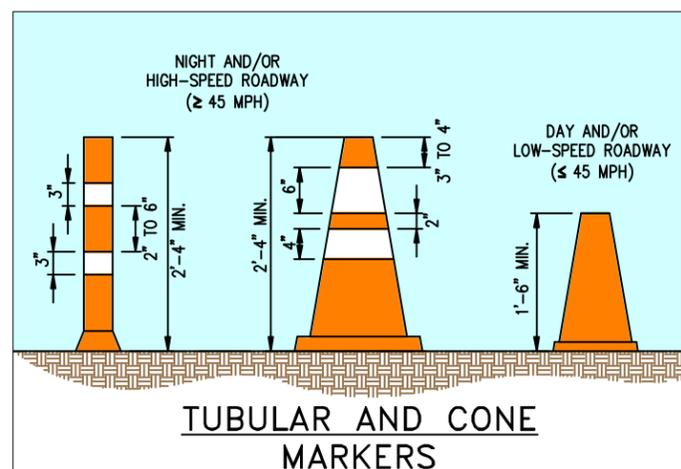
W = WIDTH OF OFFSET (LANE WIDTH OR LANE SHIFT) IN FEET

S = POSTED SPEED OFF-PEAK 85TH PERCENTILE SPEED PRIOR TO WORK STARTING OR THE ANTICIPATED OPERATING SPEED IN M.P.H.

### CHANNEL DEVICE SPACING

SPEED LIMIT (mph)	TRANSITION AREA		BUFFER AREA		WORK AREA	
	CONE	OTHER	CONE	OTHER	CONE	OTHER
25	25	25	25	50	25	50
30	30	30	30	60	60	60
35	35	35	35	70	70	70
40	40	40	40	80	80	80
45	45	45	45	90	90	90
50	50	50	50	100	100	100

CONES INCLUDE TUBULAR MARKERS. OTHER DEVICES INCLUDE VERTICAL PANELS, DRUMS AND BARRICADES.



### TAPER LENGTH (L) IN FEET

SPEED LIMIT (mph)	WIDTH OF OFFSET (FT)			
	10	11	12	15
25	105	115	125	160
30	150	165	180	225
35	205	225	245	310
40	270	295	320	400
45	450	495	540	675
50	500	550	600	750
55	550	605	660	825
65	650	715	780	975

### GUIDELINES FOR BUFFER LENGTHS

SPEED (MPH)	LENGTH (FT)
20	35
25	55
30	85
35	120
40	170
45	220
50	280

### ADVANCED WARNING SIGN SPACING

SPEED LIMIT (mph)	SIGN SPACING (FT)		
	A	B	C
25	100	100	100
30	150	150	150
35	350	350	350
40	350	350	350
45	500	500	500
50	1000	1500	2640



**CITY OF IDAHO FALLS**  
ENGINEERING DEPARTMENT  
STANDARD DRAWINGS 2010

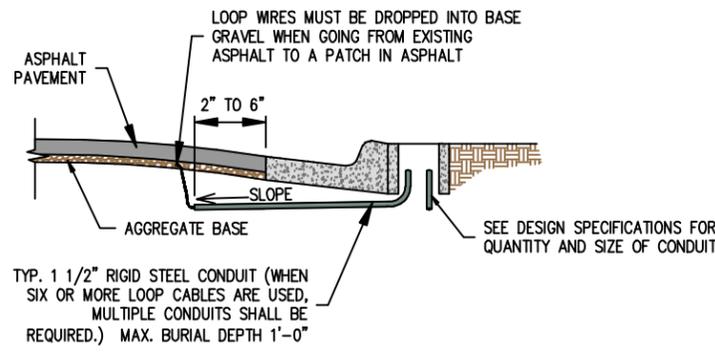
**INCIDENTAL CONSTRUCTION**  
**TEMPORARY TRAFFIC CONTROL DEVICES**

DRAWN BY: T. WHITE  
FILE NO. 0-00-00-0-ENG-2009-06  
SCALE: 1"=2'

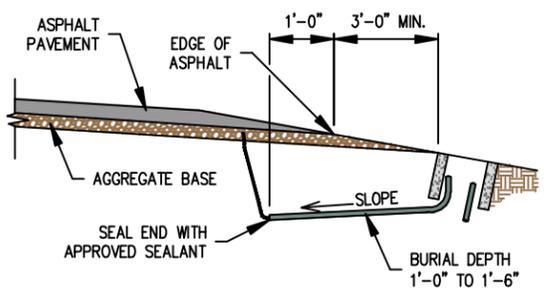
CHECKED BY: C.H. FREDERICKSEN  
FILE NAME: 400-7-2009  
DATE PLOTTED: 12/18/09

SHEET NO. **400-7**





IN SIDEWALK OR UTILITY STRIP

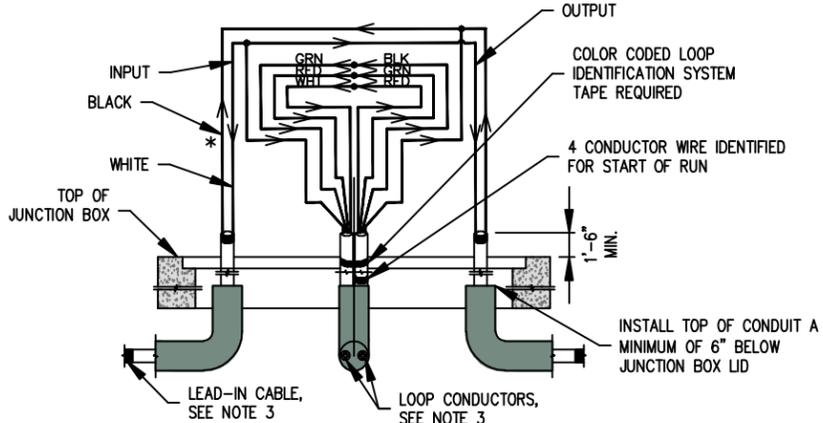


IN UNIMPROVED SHOULDER

**JUNCTION BOX AND CONDUIT LOCATION**  
SCALE - N.T.S.

EACH LANE SHALL HAVE A SEPARATE HOME RUN CABLE AND SPLICE.  
 • BLACK & WHITE USED TOGETHER ONLY  
 • RED & GREEN - SPARE ONLY

SPLICE SHALL BE WATERPROOF UTILIZING 3M BRAND SCOTCH CAST. INLINE RESIN SPLICE KITS ONLY, NO EXCEPTIONS.



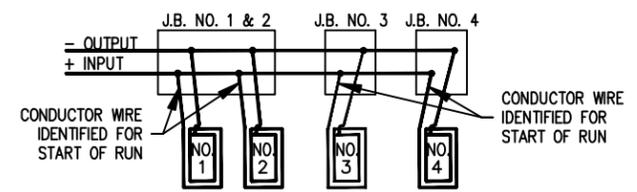
**LOOP SPLICE DETAIL AT JUNCTION BOX**  
SCALE - N.T.S.

LANE NO.	TAPE COLOR
1	BLUE
2	GREEN
3	ORANGE
4	RED
5	WHITE

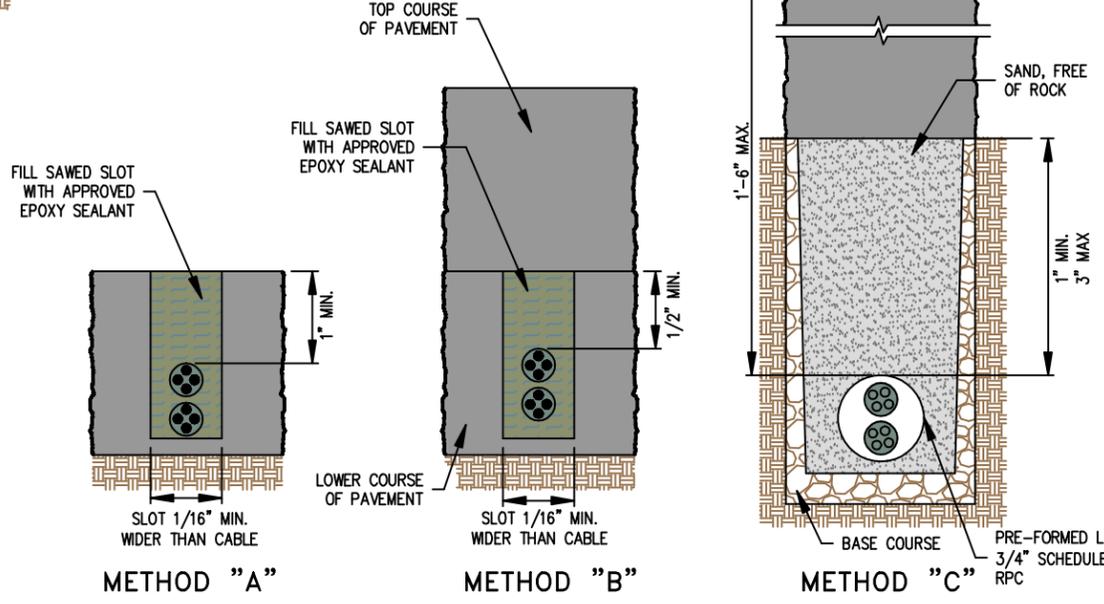
IN ASCENDING ORDER BLUE SHALL BE USED FOR THE CURB OR EDGE OF PAVEMENT.

TAIL ON STARTING WIRE IDENTIFIED THEN THE PAIR MARKED TOGETHER WITH APPROPRIATE COLORED TAPE.

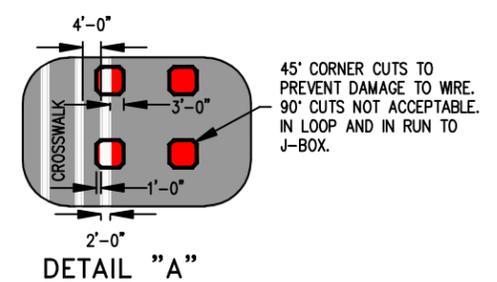
**COLOR CODED LOOP IDENTIFICATION SYSTEM**



**JUNCTION BOX WIRING DIAGRAM**

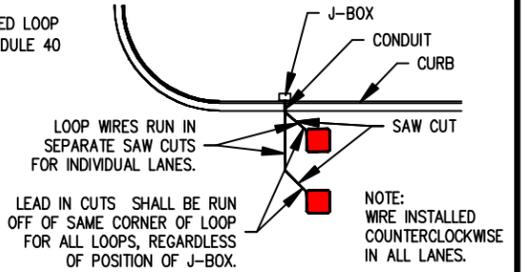


**INSTALLATION OF LOOP CABLE IN PAVEMENT**  
SCALE - N.T.S.



**NOTE:**  
ALL LOOPS ARE 6' X 6' SQUARE AND CENTERED IN THE TRAVEL LANE UNLESS OTHERWISE NOTED ON PLAN.

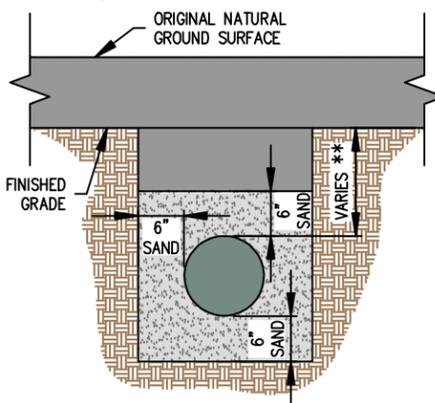
- NOTE:**
- JUNCTION BOX SHALL NOT BE LOCATED IN DRIVEWAYS OR DEPRESSED ACCESS AREAS.
  - METHOD "A" SHALL BE USED IN EXISTING PAVEMENT.  
METHOD "B" SHALL BE USED WHEN EXISTING PAVEMENT IS OVERLAID.  
METHOD "C" SHALL BE USED IN ALL NEW CONSTRUCTION.
  - ALL LOOPS, CONDUCTORS AND LEAD-IN CABLE BETWEEN J-BOXES AND CONTROLLER CABINET SHALL BE CANOGA #30003 (NO EXCEPTIONS, ONLY AUTHORIZED DEALER IS ADVANCED TRAFFIC PRODUCTS).
  - ELECTRICAL CONDUIT SHALL BE INSTALLED BY A LICENSED ELECTRICIAN. LOW VOLTAGE IRRIGATION CONTROL WIRE CONDUIT IS EXCLUDED FROM THIS REQUIREMENT.
  - DEPENDENT ON BURY DEPTH ALL ELECTRICAL CONDUIT AND ELBOWS SHALL BE SCHEDULE 40 RIGID P.V.C. UNLESS OTHERWISE SPECIFIED.
  - ALL JUNCTION BOXES SHALL BE QUAZITE COMPOSITE, CARSON INDUSTRIES COMPOSITE OR APPROVED EQUAL.
  - INSTALL TOP OF CONDUIT(S) A MINIMUM OF 6" BELOW JUNCTION BOX LID.
  - ALL TRAFFIC SIGNAL AND ELECTRICAL JUNCTION BOXES TO BE PLACED OUTSIDE OF PEDESTRIAN TRAVEL WAYS, IN LANDSCAPE AREA OR BEHIND SIDEWALK WHERE POSSIBLE. WHEN LOCATED IN SIDEWALK - 6" OF CONCRETE MINIMUM IS REQUIRED AROUND J-BOX.
  - GRADUAL SWEEP ELBOWS ONLY, PLUMBERS ELBOWS NOT ALLOWED.



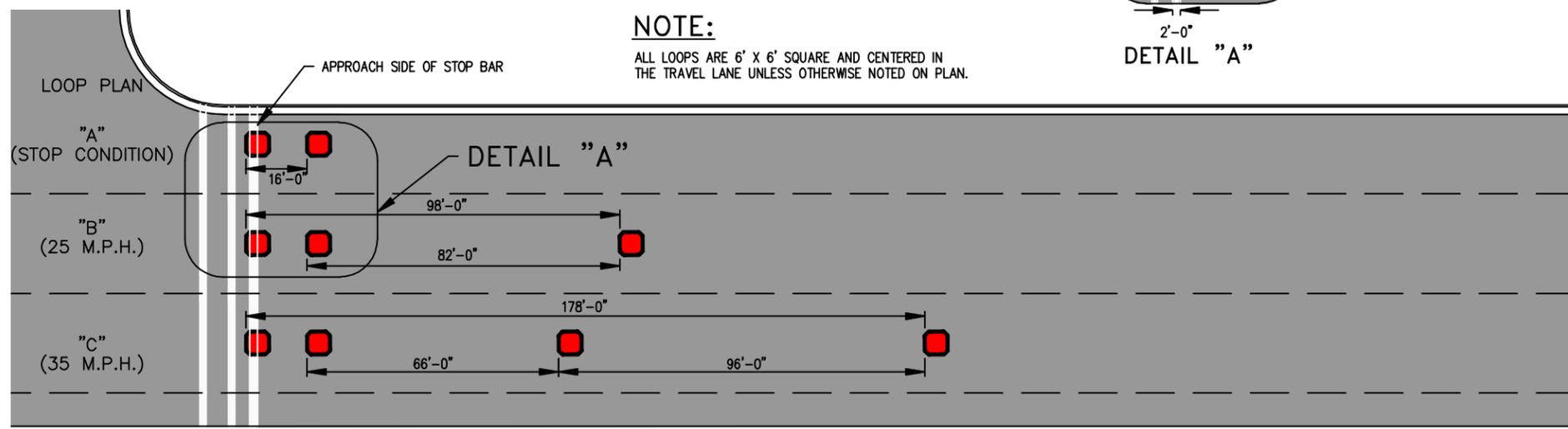
**LOOP INSTALLATION**  
SCALE - N.T.S.



- SECONDARY ELECTRICAL CONDUIT**
- 30" MIN. COVER FOR P.V.C.
  - 18" MIN. COVER FOR RIGID GALV. STEEL.
- PRIMARY ELECTRICAL CONDUIT**
- 48" MIN. COVER FOR P.V.C.
  - 18" MIN. COVER FOR RIGID GALV. STEEL.
- TRAFFIC SIGNAL CONDUIT**
- 30" MIN. COVER FOR P.V.C.
  - 18" MIN. COVER FOR RIGID GALV. STEEL.



**CONDUIT INSTALLATION**  
SCALE - N.T.S.



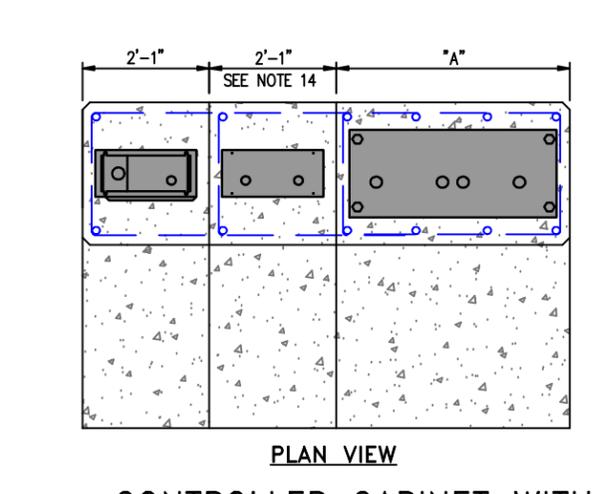
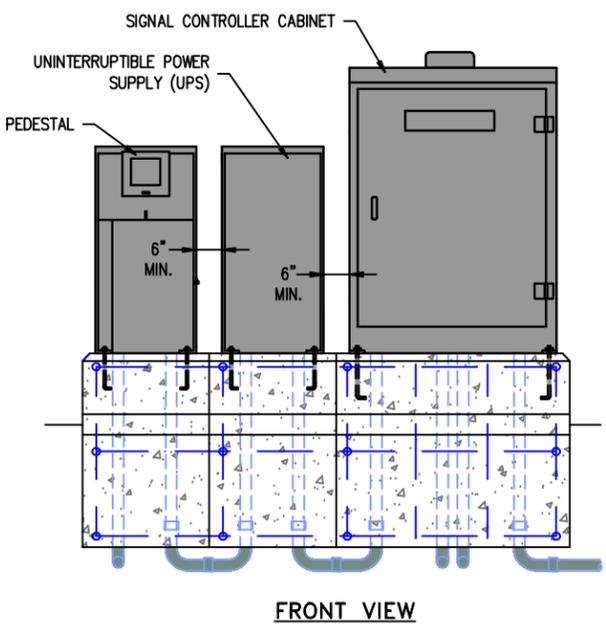
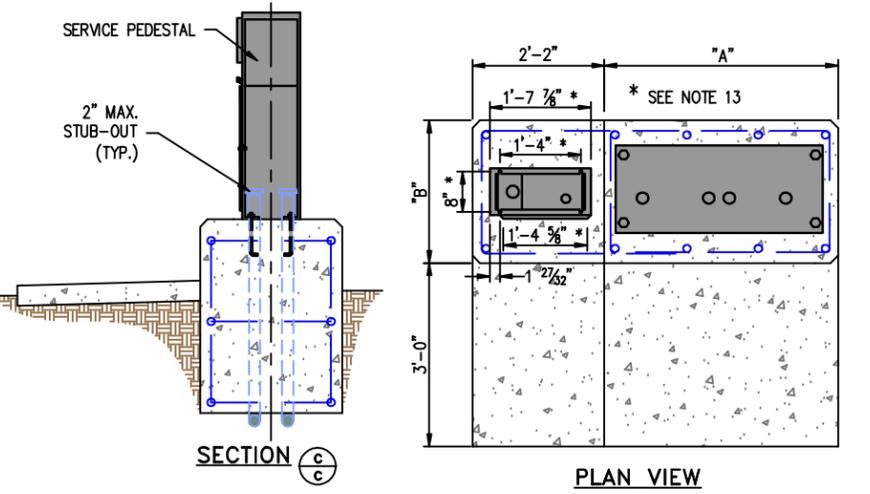
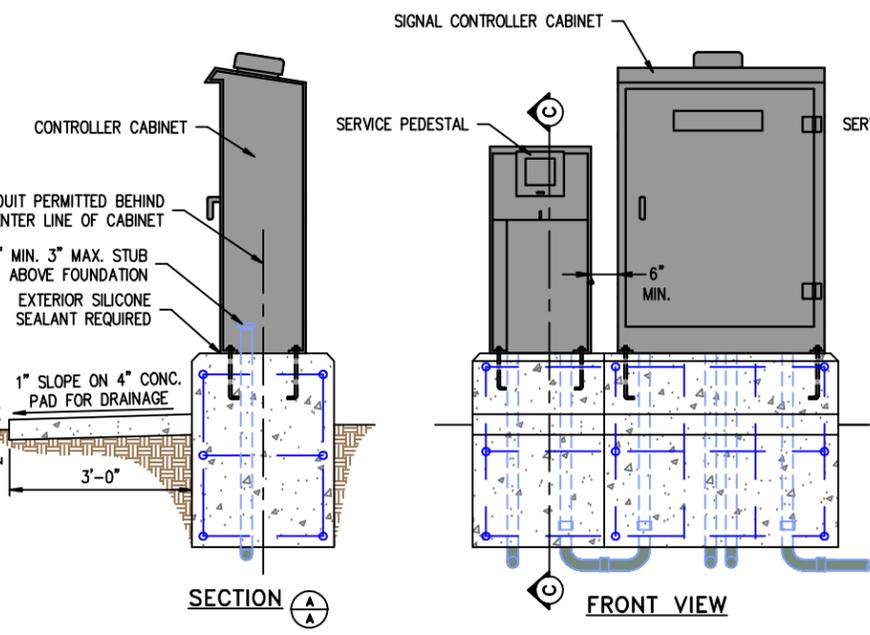
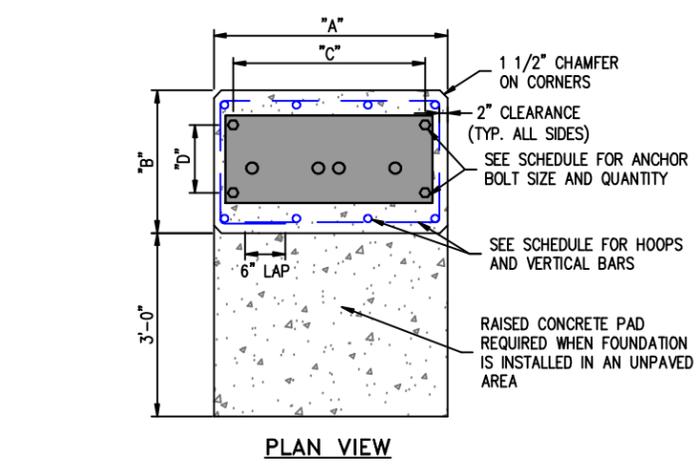
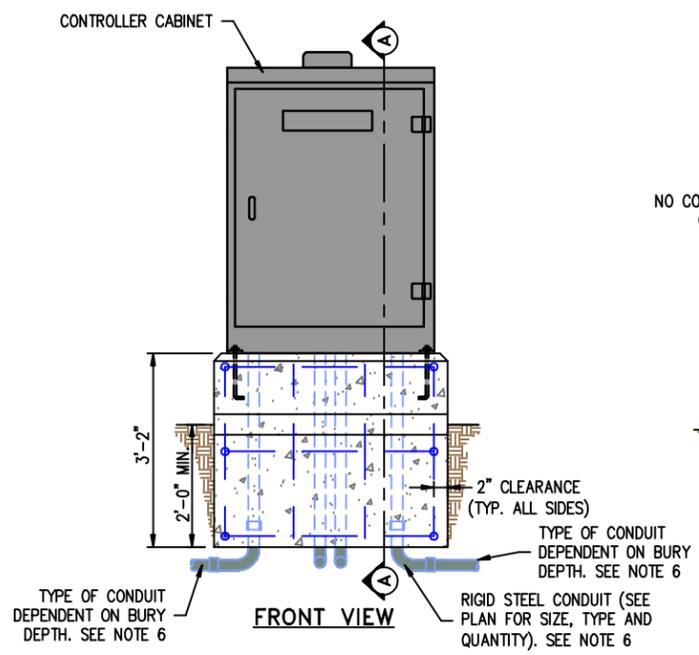
**DETECTOR LOOP SPACING PLAN**  
SCALE - 1"=40'

**CITY OF IDAHO FALLS**  
ENGINEERING DEPARTMENT  
STANDARD DRAWINGS 2010

<b>INCIDENTAL CONSTRUCTION</b>	
<b>TRAFFIC SIGNAL LOOPS</b>	
DRAWN BY: T. WHITE	CHECKED BY: C.H. FREDERICKSEN
FILE NO. 0-00-00-0-ENG-2009-06	FILE NAME: 400-9-2009
SCALE: VARIES	DATE PLOTTED: 12/18/09
	SHEET NO. <b>400-9</b>

**NOTE:**

- CONTACT THE CITY OF IDAHO FALLS ENGINEERING DEPT. IF SOIL IS CLAY, SANDY CLAY, SILTY CLAY, AND CLAYEY SILT OR IF SOIL IS ORGANIC CLAYS AND PEAT.
- CONCRETE SHALL BE CLASS 4 AND CONFORM TO SECTION 500 OF CITY'S STANDARD SPECIFICATIONS.
- REINFORCEMENT STEEL IN FOUNDATIONS SHALL BE GRADE 60.
- ALL BASES SHALL BE INSPECTED & APPROVED BY THE CITY ENGINEER PRIOR TO CONCRETE PLACEMENT.
- FOUNDATION REBAR CAGES MAY BE WELDED IF THE REBAR CONFORMS TO ASTM A706/ A706M AND ALL WELDING CONFORMS TO ANSI/ AWS D1.4 (STRUCTURAL WELDING CODE - REINFORCING STEEL).
- ALL CONDUITS, ELBOWS & COUPLINGS WITHIN & PROTRUDING FROM THE FOUNDATION SHALL BE RIGID STEEL. THE REMAINING CONDUITS SHALL BE AS SHOWN ON THE PLANS.
- STUB-OUTS SHALL BE TERMINATED WITH A STEEL BONDING BUSHING.
- USE DIMENSION "A" FOR CABINET FOUNDATION AND PAD WHEN THE SERVICE PEDESTAL IS NOT REQUIRED. USE DIMENSION IN SECTION D-D MINUS (-) "A" FOR SERVICE PEDESTAL ONLY.
- GROUND IN ACCORDANCE WITH N.E.C.
- CONDUIT SHALL BE INSTALLED IN SUCH MANNER AS TO NOT CAUSE MODIFICATION OF THE CABINETS. (SEE SECTION "A-A")
- GRADE AREA TO PROVIDE DRAINAGE AWAY FROM CABINET FOUNDATION.
- 6" WIDE ELECTRICAL HAZARD TAPE INSTALLED 1'-0" ABOVE CONDUIT (TYPICAL OF ALL CONDUIT PLACED IN GROUND).
- IF SUPPLIED, USE SERVICE PEDESTAL BASE FOR ANCHOR BASE TEMPLATE. USE MANUFACTURER'S STANDARD FOR DIMENSIONS, CONDUIT AND ANCHOR BOLT INSTALLATION IN SERVICE PEDESTAL AND U.P.S. DIMENSIONS SHOWN ARE FOR A TESCO MODEL NO. IDAHO 27-02 SERVICE PEDESTAL ONLY.
- IF SUPPLIED USE U.P.S. PEDESTAL MANUFACTURER'S STANDARD DIMENSIONS, CONDUITS AND ANCHOR BOLT INSTALLATION.
- GRADUAL SWEEP ELBOWS ONLY, PLUMBERS ELBOWS NOT ALLOWED.
- J-BOXES TO BE LOCATED IN LANDSCAPE AREA OR BEHIND SIDEWALK WHERE POSSIBLE. WHEN LOCATED IN SIDEWALK - 6" OF CONCRETE MINIMUM IS REQUIRED AROUND J-BOX.



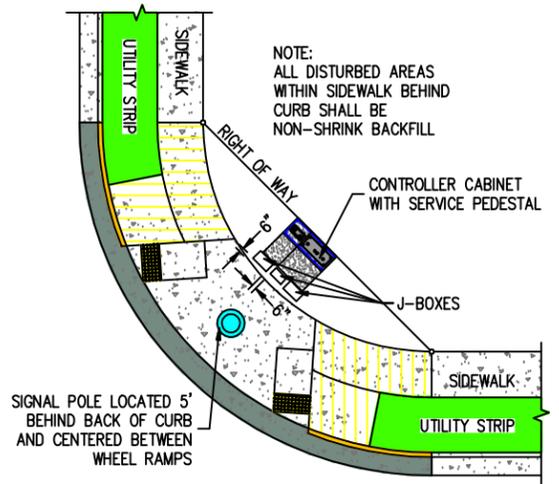
**CONTROLLER CABINET**

**ENCLOSURE CONSTRUCTION NOTES:**

- EXTERIOR 1/8" ALUMINUM, INTERIOR 14 GA. COLD ROLLED STEEL ELECTRICALLY WELDED AND REINFORCED WHERE REQUIRED.
- CONSTRUCTION SHALL BE NEMA 3R, RAIN-TIGHT.
- ALL NUTS, BOLTS & SCREWS SHALL BE STAINLESS STEEL.
- NUTS, BOLTS & SCREWS SHALL NOT BE VISIBLE FROM OUTSIDE ENCLOSURE.
- NAMEPLATES SHALL BE PROVIDED AS REQUIRED.
- CONTROL WIRING SHALL BE MARKED AT BOTH ENDS BY PERMANENT WIRE MARKERS.
- A PLASTIC COVERED WIRING DIAGRAM SHALL BE ATTACHED TO THE INSIDE OF THE FRONT DOOR.
- ENCLOSURE SHALL BE FACTORY WIRED AND CONFORM TO REQUIRED NEMA STANDARDS.
- ANODIZE AFTER FABRICATION.

**CONTROLLER CABINET WITH SERVICE PEDESTAL**

**CONTROLLER CABINET WITH SERVICE PEDESTAL AND UNINTERRUPTIBLE POWER SUPPLY**



	FOUNDATION TYPE	CONTROLLER FOUNDATION SCHEDULE					HOOPS		VERTICAL RODS		CU. YDS. CONC.		CABINET ANCHOR BOLTS			
		A	B	C	D	E	NO.	SIZE	NO.	SIZE	FOUNDATION	PAD	QTY.	SIZE		
		NO.	SIZE	NO.	SIZE	NO.	SIZE	NO.	SIZE	NO.	SIZE	NO.	SIZE			
CONTROLLER CABINET	M	2'-9"	1'-8"	---	---	1'-0"	3	#4	24'-6"	8	#4	22'-8"	0.6	0.1	2	1/2"x12"x3"
CONTROLLER CABINET & SERVICE PED.	P & R	3'-10"	2'-4"	3'-4 3/4"	1'-6 1/2"	---	3	#4	34'-6"	8	#6	24'-0"	1.1	0.2	4	5/8"x18"x4"
CONTROLLER CABINET, SERVICE PED. & U.P.S.	P & R	3'-10"	2'-4"	3'-4 3/4"	1'-6 1/2"	---	3	#4	59'-6"	12	#6	34'-0"	2.2	0.3	4	5/8"x18"x4"



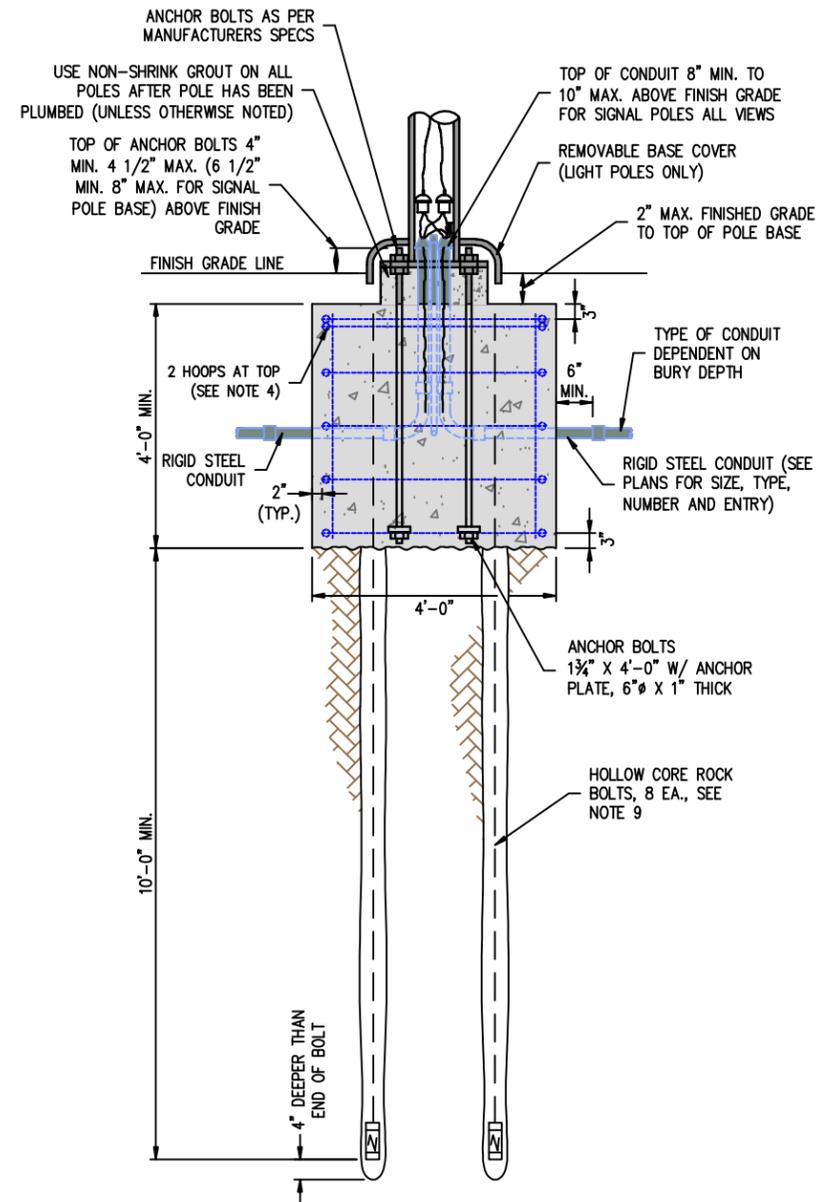
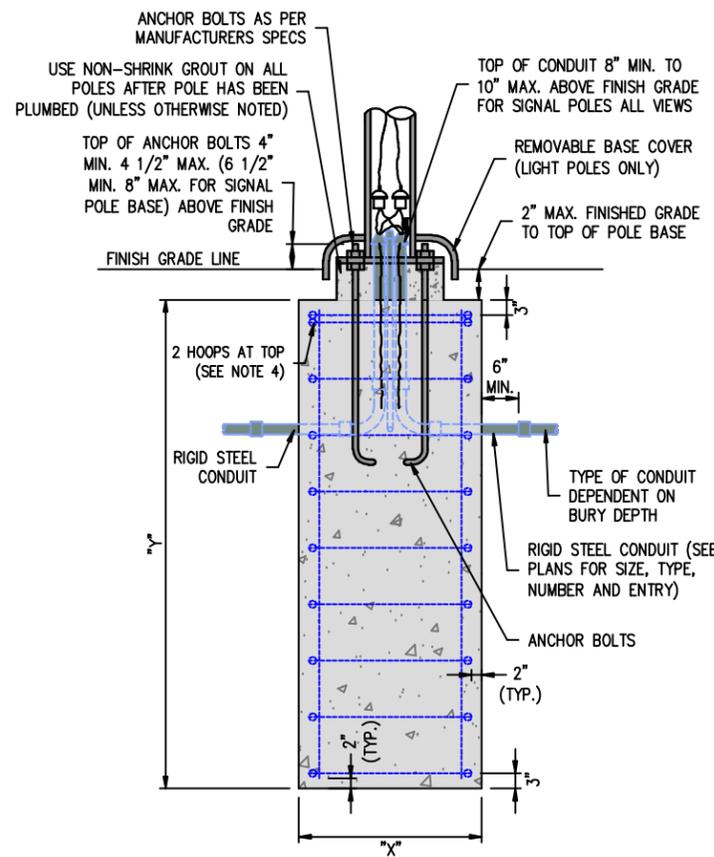
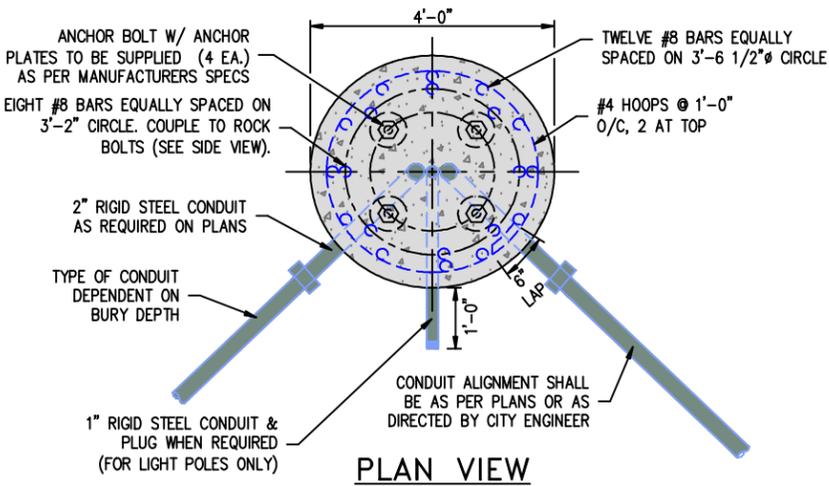
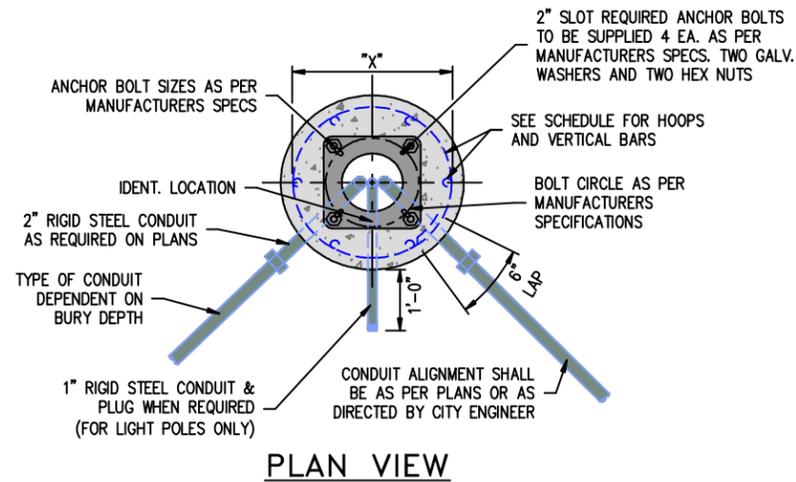
**CITY OF IDAHO FALLS**  
 ENGINEERING DEPARTMENT  
 STANDARD DRAWINGS 2010

**INCIDENTAL CONSTRUCTION**  
**TRAFFIC DEVICE FOUNDATIONS**

DRAWN BY: T. WHITE  
 CHECKED BY: C.H. FREDERICKSEN

FILE NO. 0-00-00-0-ENG-2009-06  
 FILE NAME: 400-10-2009  
 SHEET NO. 400-10

SCALE: 1"=3'  
 DATE PLOTTED: 12/18/09



SIGNAL POLE SCHEDULE			
VERTICAL POLE	SIGNAL ARM LENGTH		
CLASS 1	20'	SINGLE MAST	
	25'		
	30'		
	35'		
CLASS 2	40'	SINGLE MAST	
	45'		
CLASS 3	50'	SINGLE MAST	
	55'		
CLASS 4 (SEE NOTE 3)	ARM 1	ARM 2 (MAX.)	DOUBLE MAST
	20'	55'	
	25'	55'	
	30'	50'	
	35'	45'	
	40'	45'	
	45'	45'	
	50'	30'	
55'	25'		

POLE FOUNDATION SCHEDULE										
STRUCTURE TYPE	FOUNDATION TYPE	X	Y	HOOPS			VERTICAL RODS			CU. YDS. CONCRETE
				NO.	SIZE	LIN. FT.	NO.	SIZE	LIN. FT.	
30' LIGHT POLE	A	2'-0"	5'-0"	4	#4	23'-0"	6	#4	28'-0"	0.6
PEDESTRIAN SIGNAL POLE										
40' & 50' LIGHT POLE	C	3'-0"	8'-0"	5	#4	44'-2"	8	#6	61'-4"	2.1
PEDESTRIAN PUSHBUTTON POLE	E	1'-6"	2'-6"	2	#3	7'-6"	4	#4	8'-8"	0.2
TRAFFIC SIGNAL POLE (SEE NOTE 2)	G	3'-0"	12'-0"	12	#4	106'-6"	8	#8	93'-4"	3.1
TRAFFIC SIGNAL POLE IN BEDROCK	R	4'-0"	4'-0" MIN. VAR.	#4	VARIES	VARIES	12	#8	VARIES	VARIES

**SIDE VIEW**  
**POLE FOUNDATION DETAIL ON BEDROCK**

**NOTE:**

- CONTACT THE CITY OF IDAHO FALLS ENGINEERING DEPT. IF SOIL IS CLAY, SANDY CLAY, SILTY CLAY, AND CLAYEY SILT OR IF SOIL IS ORGANIC CLAYS AND PEAT.
- TRAFFIC SIGNAL POLES ARE LIMITED TO A MAXIMUM 50' LUMINAIRE MOUNTING HEIGHT, A MAXIMUM 20' LUMINAIRE MAST ARM LENGTH, AND MAXIMUM SIGNAL MAST ARM LENGTHS LISTED IN THE "SIGNAL POLE SCHEDULE".
- CONTRACTOR SHALL PROVIDE CUSTOM FOUNDATION DESIGN FOR TRAFFIC SIGNAL POLES THAT EXCEED LIMITATIONS IN NOTE 2. THE FOUNDATION SHALL BE DESIGNED AND SEALED BY A QUALIFIED ENGINEER CURRENTLY LICENSED TO PRACTICE ENGINEERING IN IDAHO.
- USE 2 HOOPS AT TOP FOR FOUNDATION TYPE "G" ONLY.
- IF BEDROCK IS ENCOUNTERED DURING THE INSTALLATION ON A TYPE "G" TRAFFIC SIGNAL POLE FOUNDATION SUCH THAT IT PREVENTS THE COMPLETE INSTALLATION OF THE TYPE "G" FOUNDATION, THEN THE TYPE "G" FOUNDATION SHALL BE REPLACED WITH TYPE "R" FOUNDATION.
- CONCRETE SHALL BE CLASS 4 AND CONFORM TO SECTION 500 OF CITY'S STANDARD SPECIFICATIONS.
- REINFORCEMENT STEEL IN FOUNDATIONS SHALL BE GRADE 60.
- ROCK SHALL BE THOROUGHLY CLEANED AND INSPECTED BY THE CITY ENGINEER PRIOR TO INSTALLATION OF ROCK BOLTS.
- HOLLOW CORE ROCK BOLTS SHALL BE PLACED ON 38" BOLT CIRCLE. 1" X 10' MIN. (WILLIAMS MODEL R1H11B18) USE NON-SHRINK GROUT IN-PLACE AFTER SPIN LOCKING. COUPLE TO #8 BAR USING STOP TYPE COUPLING (WILLIAMS MODEL C2T).
- ALL BASES SHALL BE INSPECTED & APPROVED BY THE CITY ENGINEER PRIOR TO CONCRETE PLACEMENT.
- USE MANUFACTURER'S STANDARD FOR ANCHOR BOLT INSTALLATION.
- TRAFFIC SIGNAL POLES SHALL HAVE A GROUND CONNECTED TO THE POWER SOURCE LOCATION ONLY. MULTIPLE GROUNDS ARE ONLY ALLOWED ON STREET LIGHT POLES.
- ALL CONDUITS, ELBOWS & COUPLINGS WITHIN & PROTRUDING FROM THE FOUNDATION SHALL BE RIGID STEEL. THE REMAINING CONDUITS SHALL BE AS SHOWN ON THE PLANS.
- IF SUPPLIED, USE SERVICE PEDESTAL BASE FOR ANCHOR BASE TEMPLATE. USE MANUFACTURER'S STANDARD FOR DIMENSIONS, CONDUIT AND ANCHOR BOLT INSTALLATION IN SERVICE PEDESTAL AND U.P.S. DIMENSIONS SHOWN ARE FOR A TESCO MODEL NO. IDAHO 27-02 SERVICE PEDESTAL ONLY. LISTED ON SHEET 400-10.
- GRADUAL SWEEP ELBOWS ONLY, PLUMBERS ELBOWS NOT ALLOWED.
- SEE SHEET 400-13 FOR PLACEMENT IN SIDEWALK, LANDSCAPE AND PAVEMENT



**CITY OF IDAHO FALLS**  
ENGINEERING DEPARTMENT  
STANDARD DRAWINGS 2010

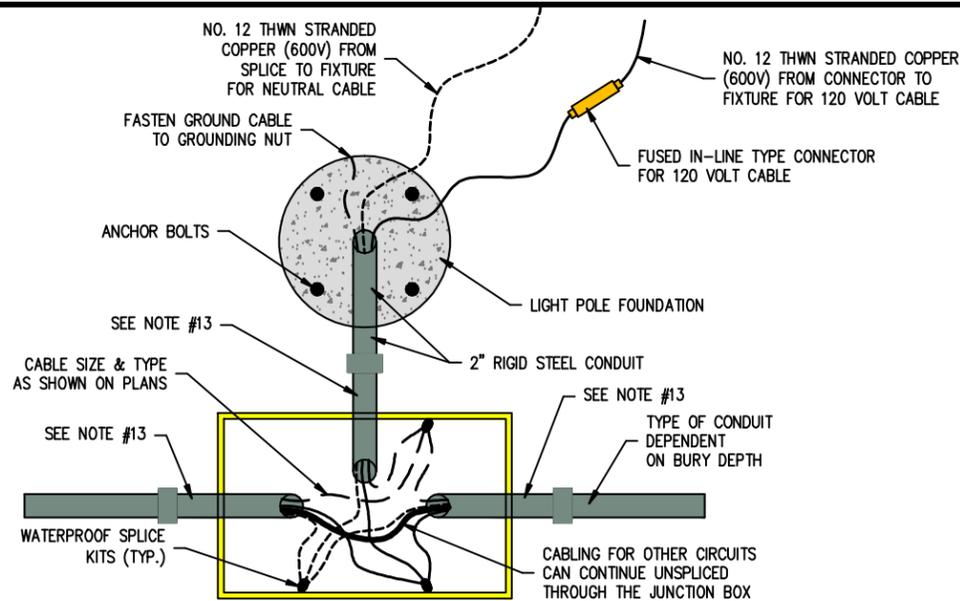
**INCIDENTAL CONSTRUCTION**

**POLE FOUNDATIONS**

DRAWN BY: T. WHITE      CHECKED BY: C.H. FREDERICKSEN

FILE NO. 0-00-00-0-ENG-2009-06      FILE NAME: 400-11-2009      SHEET NO. 400-11

SCALE: 1"=3'      DATE PLOTTED: 12/18/09

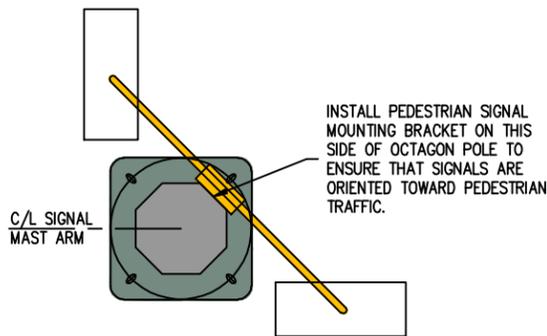


**ILLUMINATION JUNCTION BOX,  
CONDUIT AND CIRCUIT DETAIL**

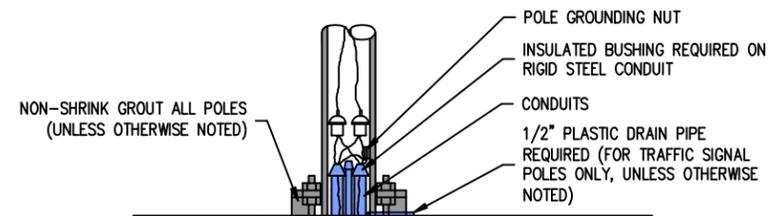
IN-LINE CONNECTOR INSTALLATION WHEN REQUIRED

(SEE PLANS AND SPECIFICATIONS FOR SIZE, TYPE, NUMBER, ALIGNMENT & ENTRY)

NOTE: ALL WIRING SHALL BE IDENTIFIED WITH STAMPED BRASS LABELS SHOWING PANEL & CIRCUIT INFORMATION IN EACH JUNCTION BOX. LABELS SHALL BE MINIMUM 1 INCH IN DIAMETER & SHALL BE ATTACHED TO WIRING WITH PLASTIC TIES.



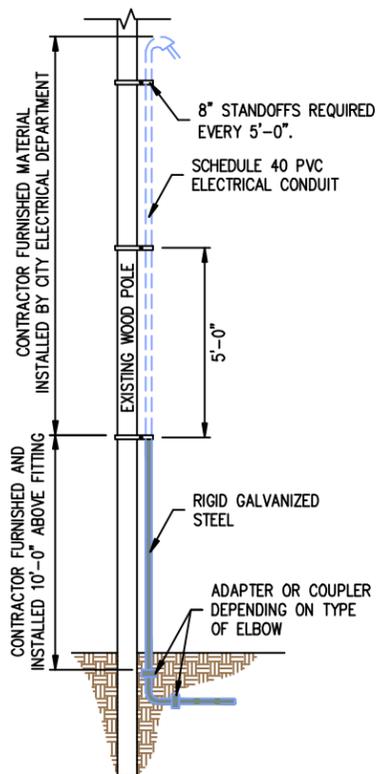
**PEDESTRIAN SIGNAL ORIENTATION**



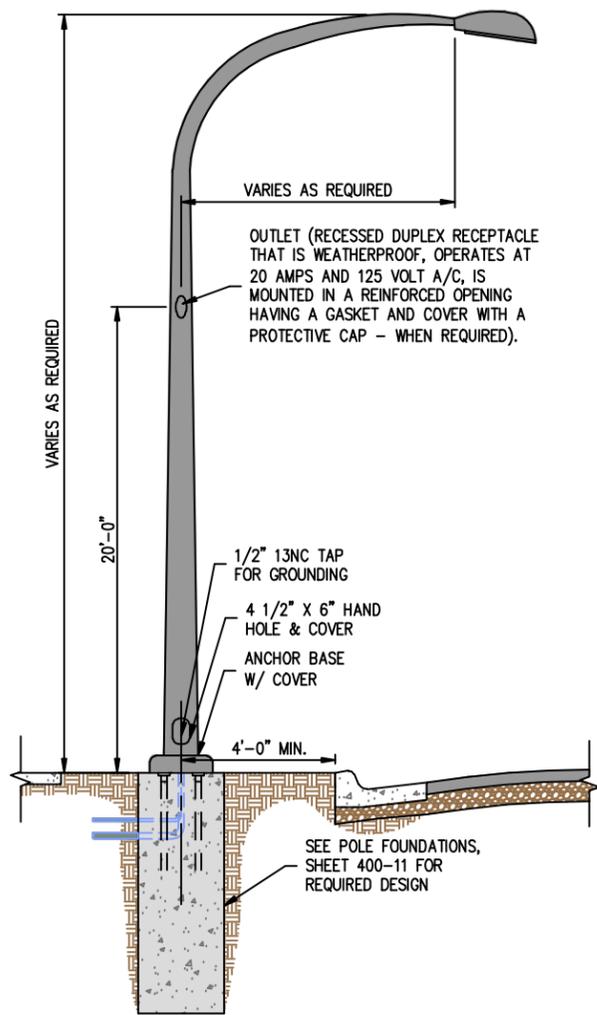
**POLE INSTALLATION DETAIL**

**NOTE:**

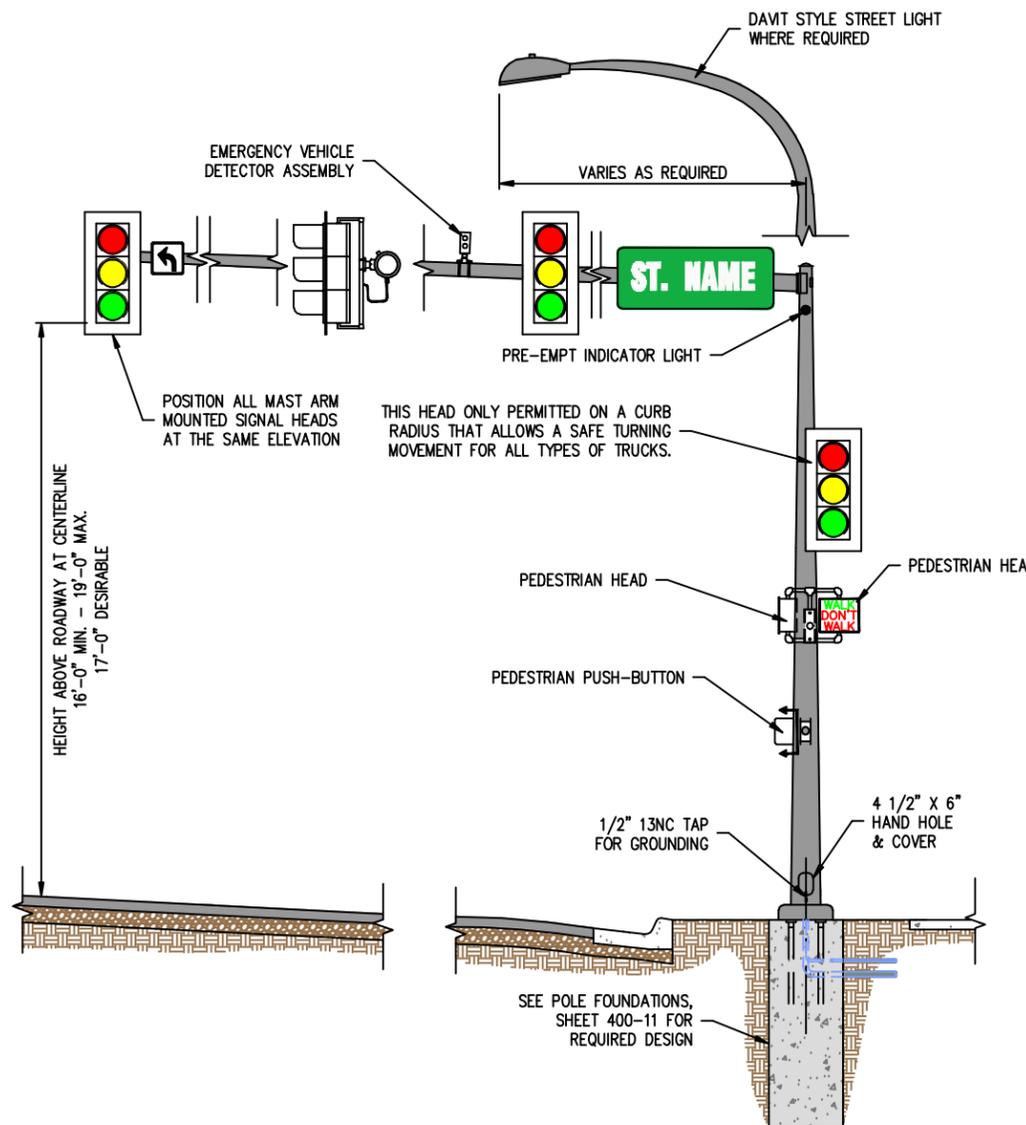
1. CONTRACTOR SHALL VERIFY ALL UTILITIES PRIOR TO EXCAVATION.
2. STREET LIGHT POLES:  
ALL STREET LIGHT POLES SHALL BE DAVIT STYLE WITH ROUND STEEL MONOTONE SHAFT WITH A HOT DIP GALVANIZED FINISH. POLES SHALL BE EQUIPPED WITH A 2" TENDON FOR SLIP FIT LUMINAIRES, AND HAND HOLES. THE MOUNTING HEIGHT, DAVIT ARM LENGTH AND RADIUS SHALL BE APPROVED BY IDAHO FALLS POWER. ALL POLES SHALL BE EQUIPPED WITH ANCHOR BOLTS, DOUBLE NUTS AND WASHERS, AND A FULL METAL BASE PLATE COVER.
3. LUMINAIRES:  
ALL LUMINAIRES SHALL BE SPECIFIED BY IDAHO FALLS POWER.
4. LAMPS:  
ALL LAMPS SHALL BE HIGH PRESSURE SODIUM, TWIN ARC TUBE, MOGUL BASE, OR AS SPECIFIED BY IDAHO FALLS POWER.
5. ANCHOR BOLTS FOR STREET LIGHT POLES:  
THE TOP OF ALL ANCHOR BOLTS SHALL BE A MINIMUM OF 4" AND A MAXIMUM OF 4 1/2" ABOVE FINISHED GRADE.
6. STREET LIGHT CONDUITS:  
EXTEND ALL CONDUITS A MINIMUM OF 4" AND A MAXIMUM OF 6" ABOVE TOP OF ANCHOR BOLT.
7. ALL BASES SHALL BE INSPECTED & APPROVED BY THE CITY ENGINEER PRIOR TO CONCRETE PLACEMENT.
8. FINAL DESIGN AND MATERIALS TO BE APPROVED BY IDAHO FALLS POWER.
9. NON-SHRINK GROUT REQUIRED FOR TRAFFIC SIGNAL AND LIGHT POLES UNLESS OTHERWISE NOTED.
10. ALL JUNCTION BOXES SHALL BE QUAZITE COMPOSITE, CARSON INDUSTRIES COMPOSITE OR APPROVED EQUAL.
11. INSTALL TOP OF CONDUIT(S) A MINIMUM OF 6" BELOW JUNCTION BOX LID.
12. CONTRACTOR MUST SUPPLY MEANS TO GROUND EACH LIGHT POLE.
13. DEPENDENT ON BURY DEPTH ALL ELECTRICAL CONDUIT AND ELBOWS SHALL BE SCHEDULE 40 RIGID P.V.C. UNLESS OTHERWISE SPECIFIED.
14. ALL CONDUITS, ELBOWS & COUPLINGS WITHIN & PROTRUDING FROM THE FOUNDATION SHALL BE RIGID STEEL. THE REMAINING CONDUITS SHALL BE AS SHOWN ON THE PLANS.
15. ALL 90° ELBOWS TO HAVE GRADUAL SWEEP ONLY, PLUMBERS ELBOWS NOT ALLOWED.



**POWER SUPPLY ON  
EXISTING POLE DETAIL**



**TYPICAL LIGHT POLE**



**TYPICAL TRAFFIC SIGNAL POLE**

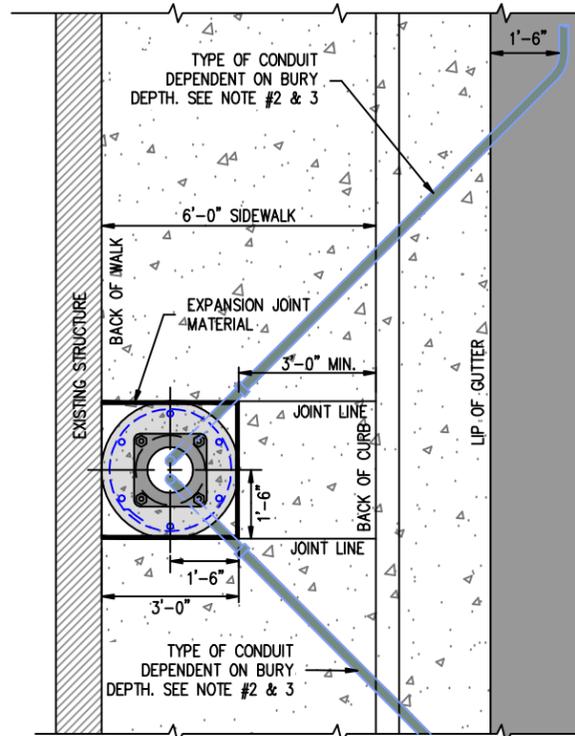


**CITY OF  
IDAHO FALLS**  
ENGINEERING DEPARTMENT  
STANDARD DRAWINGS 2010

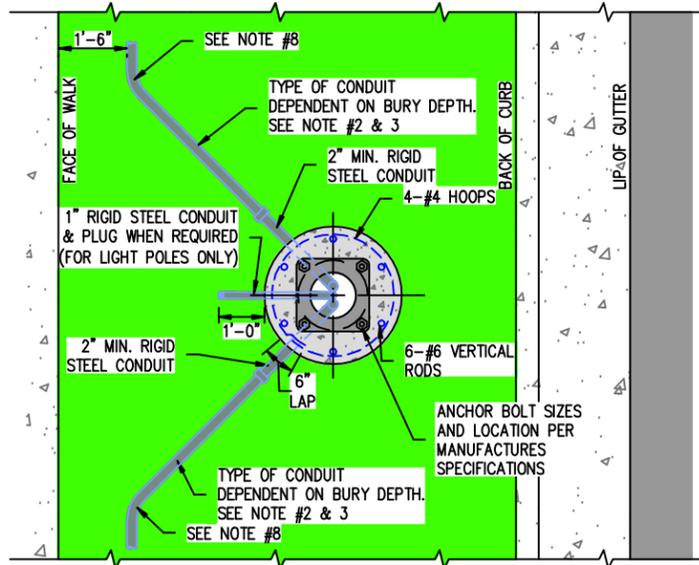
**INCIDENTAL CONSTRUCTION**

**POLES**

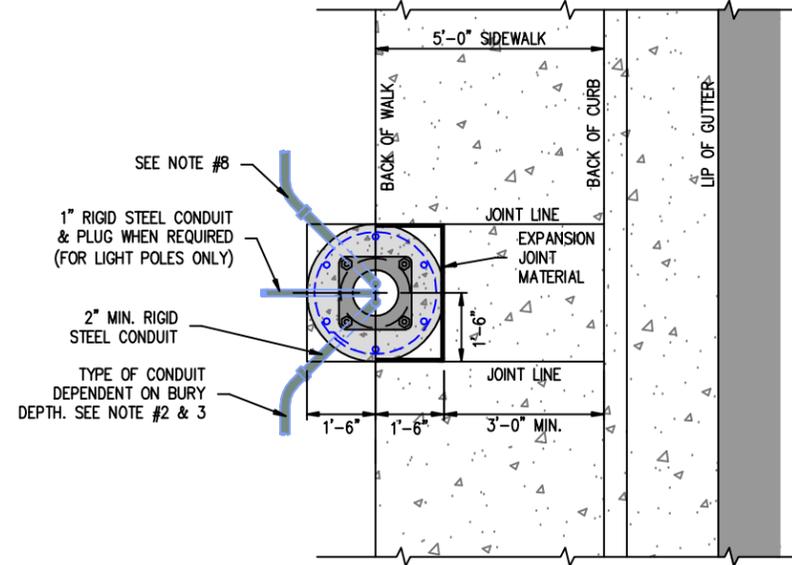
DRAWN BY: T. WHITE	CHECKED BY: C.H. FREDERICKSEN
FILE NO. 0-00-00-0-ENG-2009-06	FILE NAME: 400-12-2009
SCALE: NOT TO SCALE	DATE PLOTTED: 12/18/09
	SHEET NO. <b>400-12</b>



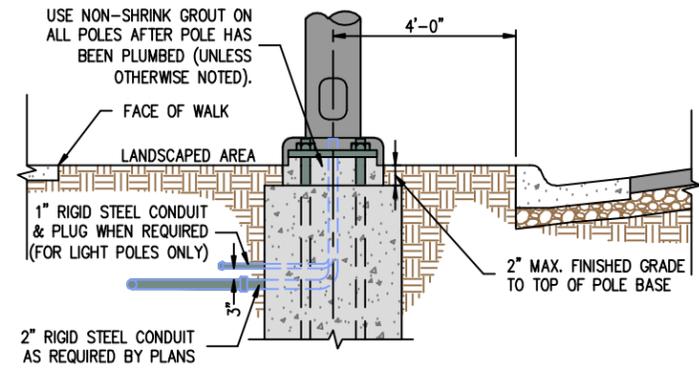
PLAN VIEW



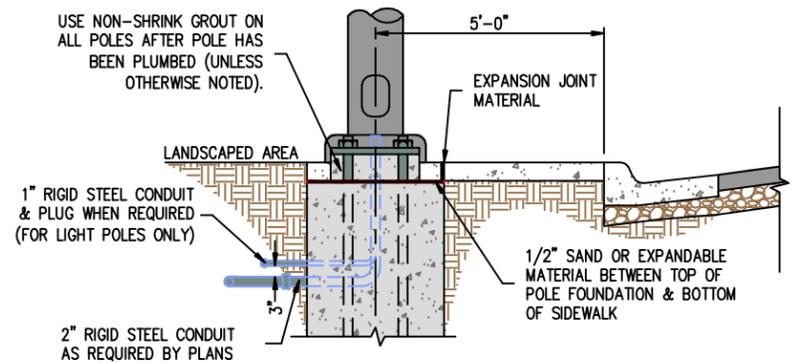
PLAN VIEW



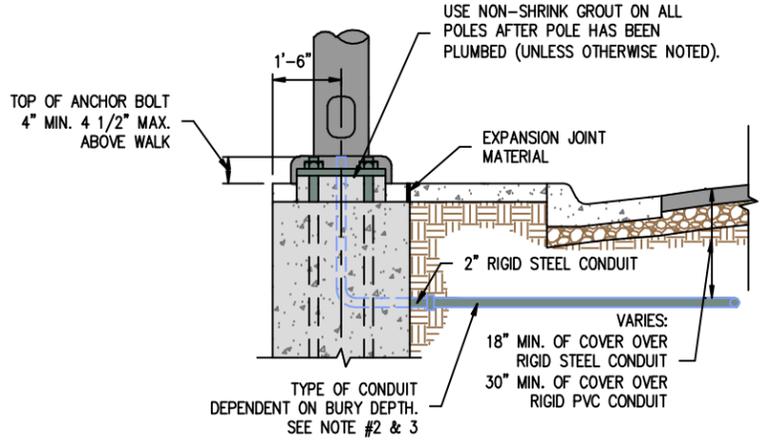
PLAN VIEW



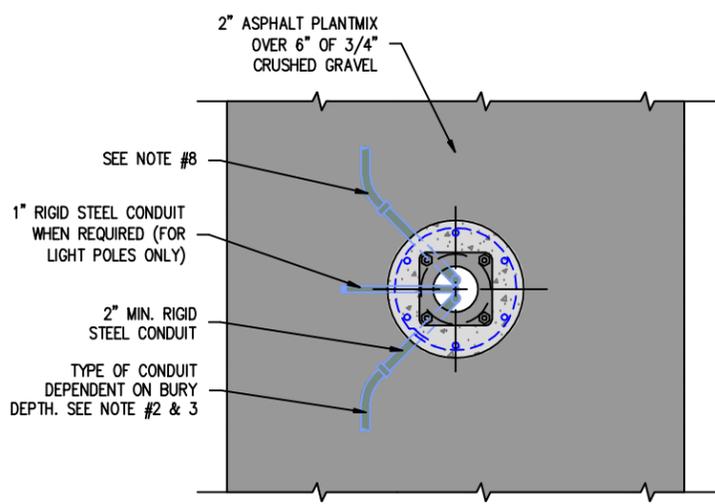
SIDE VIEW  
POLE BASE - LANDSCAPE AREA



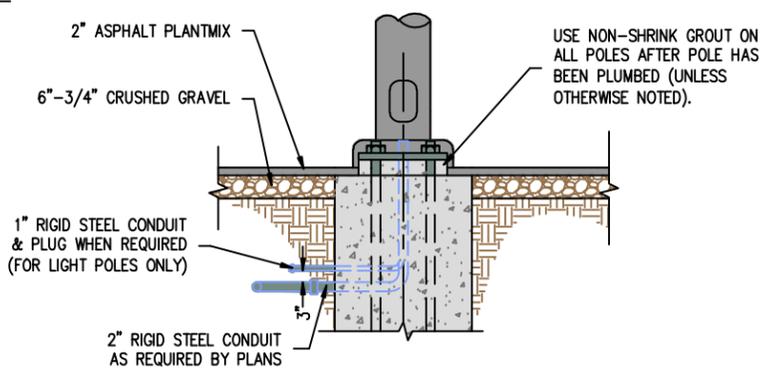
SIDE VIEW  
POLE BASE - SIDEWALK WITH LANDSCAPE



SIDE VIEW  
POLE BASE - SIDEWALK WITH STRUCTURE



PLAN VIEW



SIDE VIEW

POLE BASE - PAVEMENT AREA

NOTE:

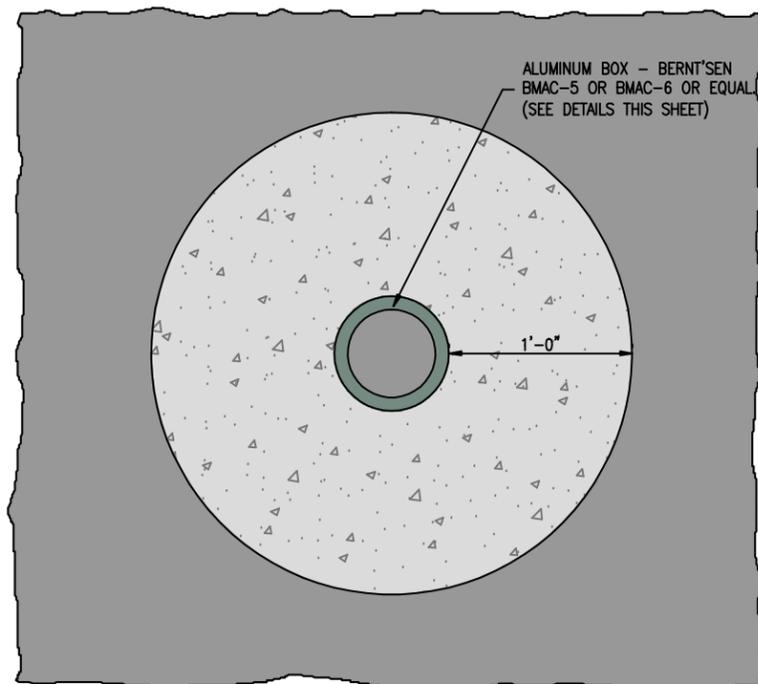
1. CONTRACTOR SHALL VERIFY ALL UTILITIES PRIOR TO EXCAVATION.
2. DEPENDENT ON BURY DEPTH ALL ELECTRICAL CONDUIT AND ELBOWS SHALL BE SCHEDULE 40 RIGID P.V.C. UNLESS OTHERWISE SPECIFIED.
3. CONDUIT ALIGNMENT SHALL BE AS PER PLANS OR AS DIRECTED BY CITY ENGINEER.
4. ALL JUNCTION BOXES SHALL BE QUAZITE COMPOSITE, CARSON INDUSTRIES COMPOSITE OR APPROVED EQUAL.
5. INSTALL TOP OF CONDUIT(S) A MINIMUM OF 6" BELOW JUNCTION BOX LID.
6. CONTRACTOR MUST SUPPLY MEANS TO GROUND EACH LIGHT POLE.
7. ALL CONDUITS, ELBOWS & COUPLINGS WITHIN & PROTRUDING FROM THE FOUNDATION SHALL BE RIGID STEEL. THE REMAINING CONDUITS SHALL BE AS SHOWN ON THE PLANS.
8. USE GRADUAL SWEEP ELBOWS ONLY, PLUMBERS ELBOWS NOT ALLOWED.



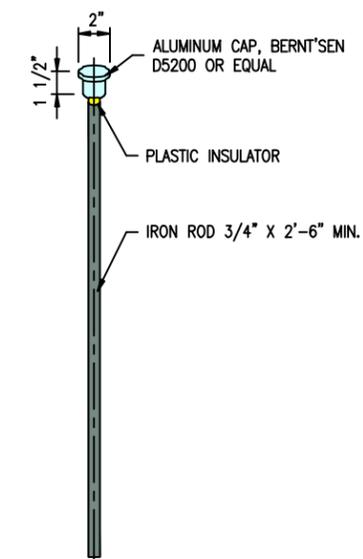
<b>CITY OF IDAHO FALLS</b> ENGINEERING DEPARTMENT STANDARD DRAWINGS 2010		
<b>INCIDENTAL CONSTRUCTION</b> <b>ILLUMINATION - POLE LOCATIONS</b>		
DRAWN BY: T. WHITE FILE NO. 0-00-00-0-ENG-2009-06 SCALE: 1"=4'	CHECKED BY: C.H. FREDERICKSEN FILE NAME: 400-13-2009 DATE PLOTTED: 12/18/09	SHEET NO. <b>400-13</b>

**NOTES:**

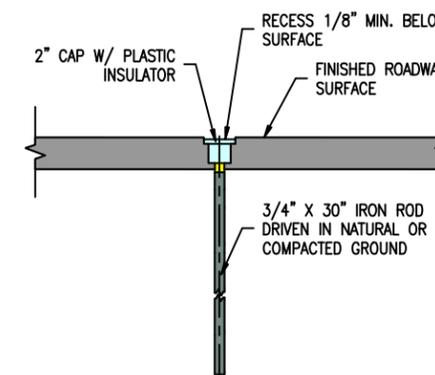
1. IN AREAS OF SOLID ROCK THE CONTRACTOR SHALL DRILL THE HOLE TO DEPTH, POUR NON-SHRINK GROUT TO FILL THE HOLE AND THEN INSTALL ROD WITH CAP.
2. MARKING OF ALL MONUMENTS SHALL BE PERFORMED BY PROFESSIONAL LAND SURVEYOR.
3. MONUMENT INSPECTION FOR SUBDIVISION ACCEPTANCE: ALL MONUMENTS SHALL BE A MINIMUM AS PER 50-1303 IDAHO CODE.



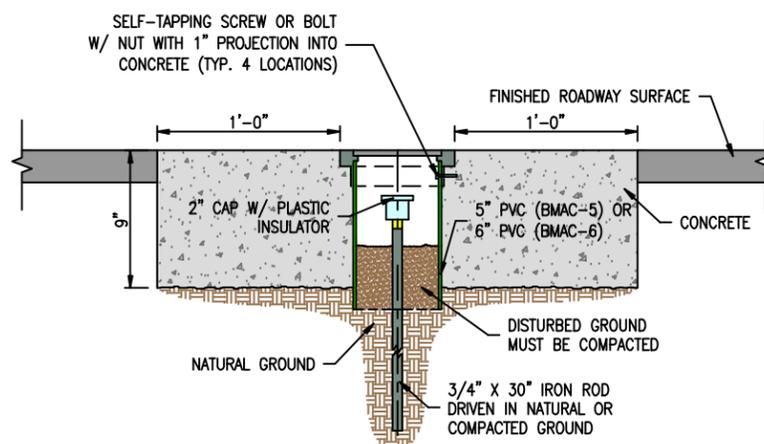
**PLAN VIEW**



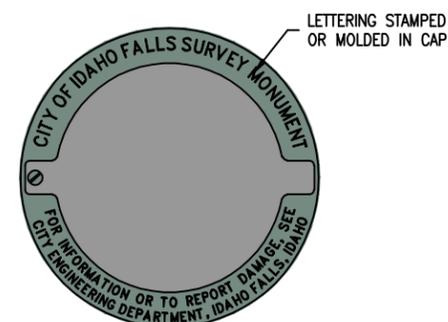
**MONUMENT  
DETAIL**



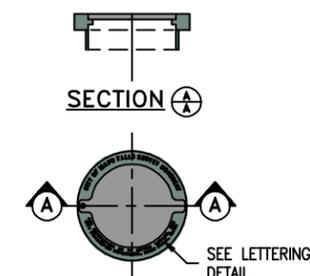
**STREET MONUMENT INSTALLATION  
FOR STREET P.I.'S**



**STREET MONUMENT INSTALLATION  
FOR CONTROL MONUMENTS**



**ALUMINUM BOX  
LETTERING DETAIL**

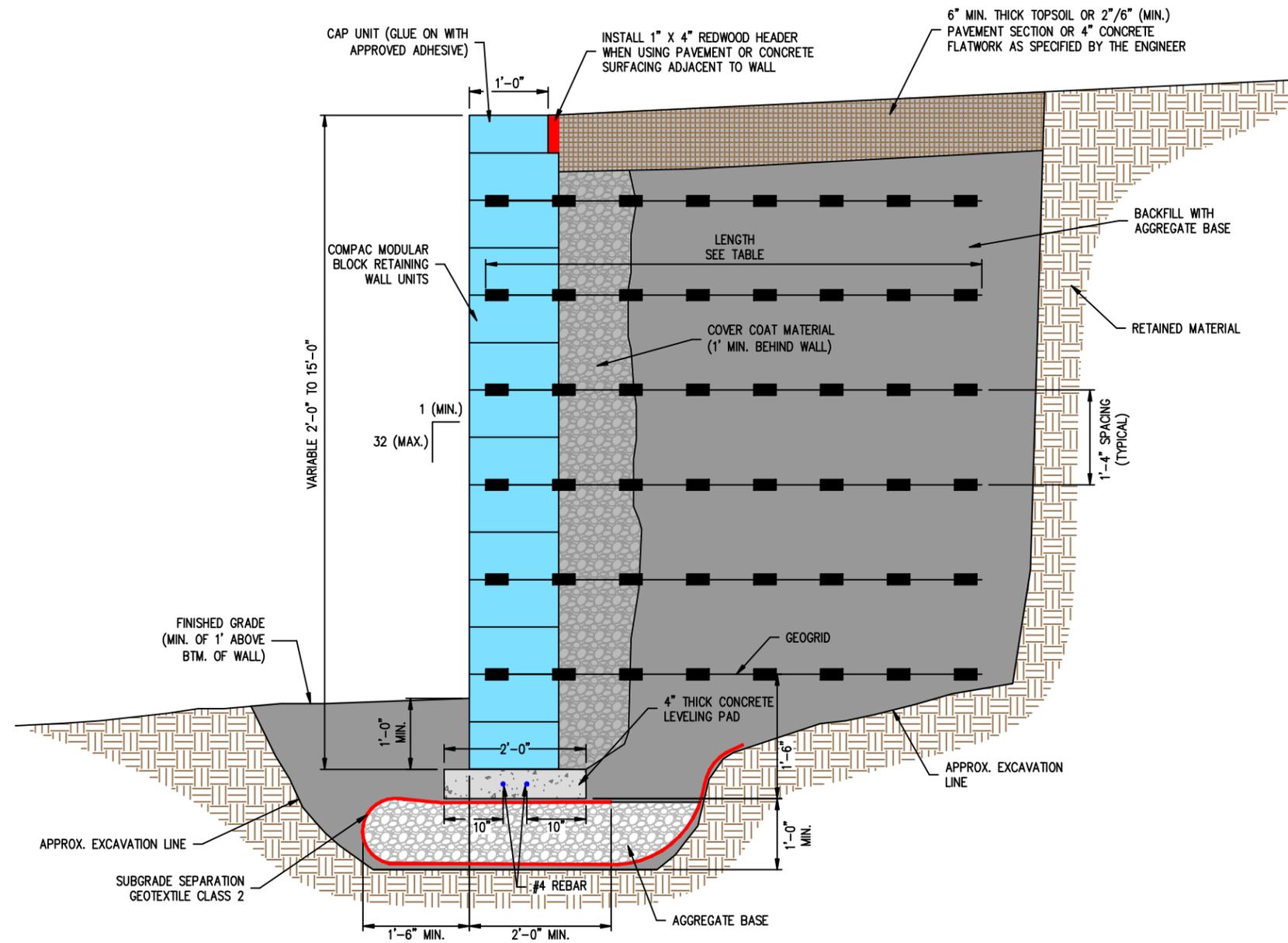


**ALUMINUM BOX DETAIL**  
BOX SHALL BE BERNT'SEN BMAC-5 OR BMAC-6 OR EQUAL.



<b>CITY OF IDAHO FALLS</b> ENGINEERING DEPARTMENT STANDARD DRAWINGS 2010		
<b>INCIDENTAL CONSTRUCTION</b>  <b>STREET MONUMENTS</b>		
DRAWN BY: T. WHITE FILE NO. 0-00-00-0-ENG-2009-06 SCALE: 1"=1'	CHECKED BY: C.H. FREDERICKSEN FILE NAME: 400-14-2009 DATE PLOTTED: 12/18/09	SHEET NO. <b>400-14</b>

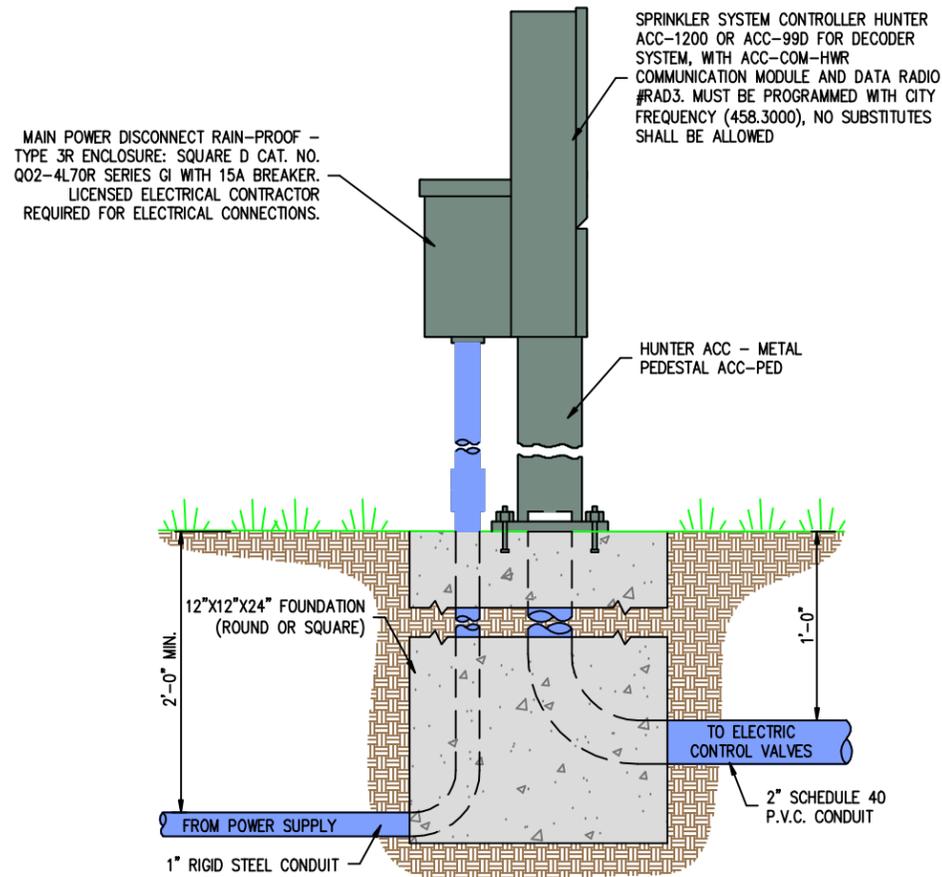
WALL HT. (FT)	GEOGRID LENGTH (FT)
4.30 OR LESS	5'-0"
4.40 - 5.70	6'-0"
5.80 - 7.00	7'-0"
7.10 - 8.30	8'-0"
8.40 - 9.70	9'-0"
9.80 - 11.0	10'-0"
11.1 - 15.0	12'-0"



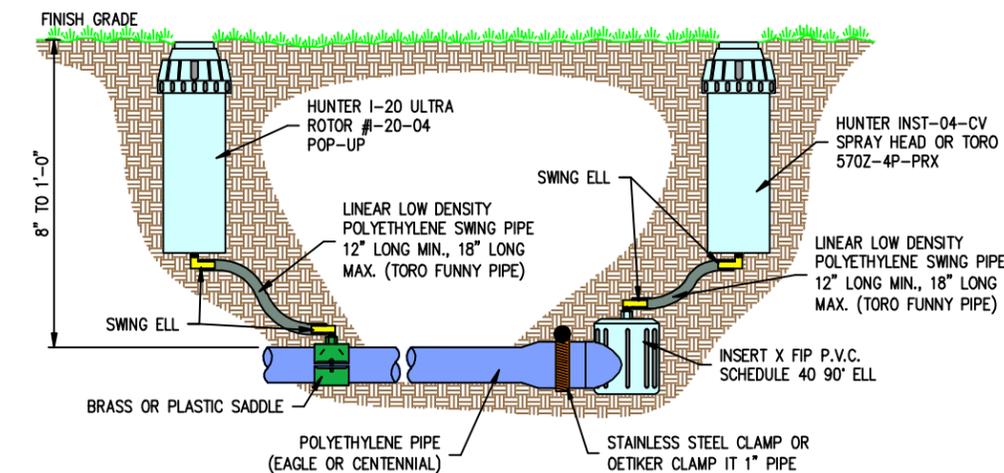
MODULAR BLOCK RETAINING WALL CROSS SECTION



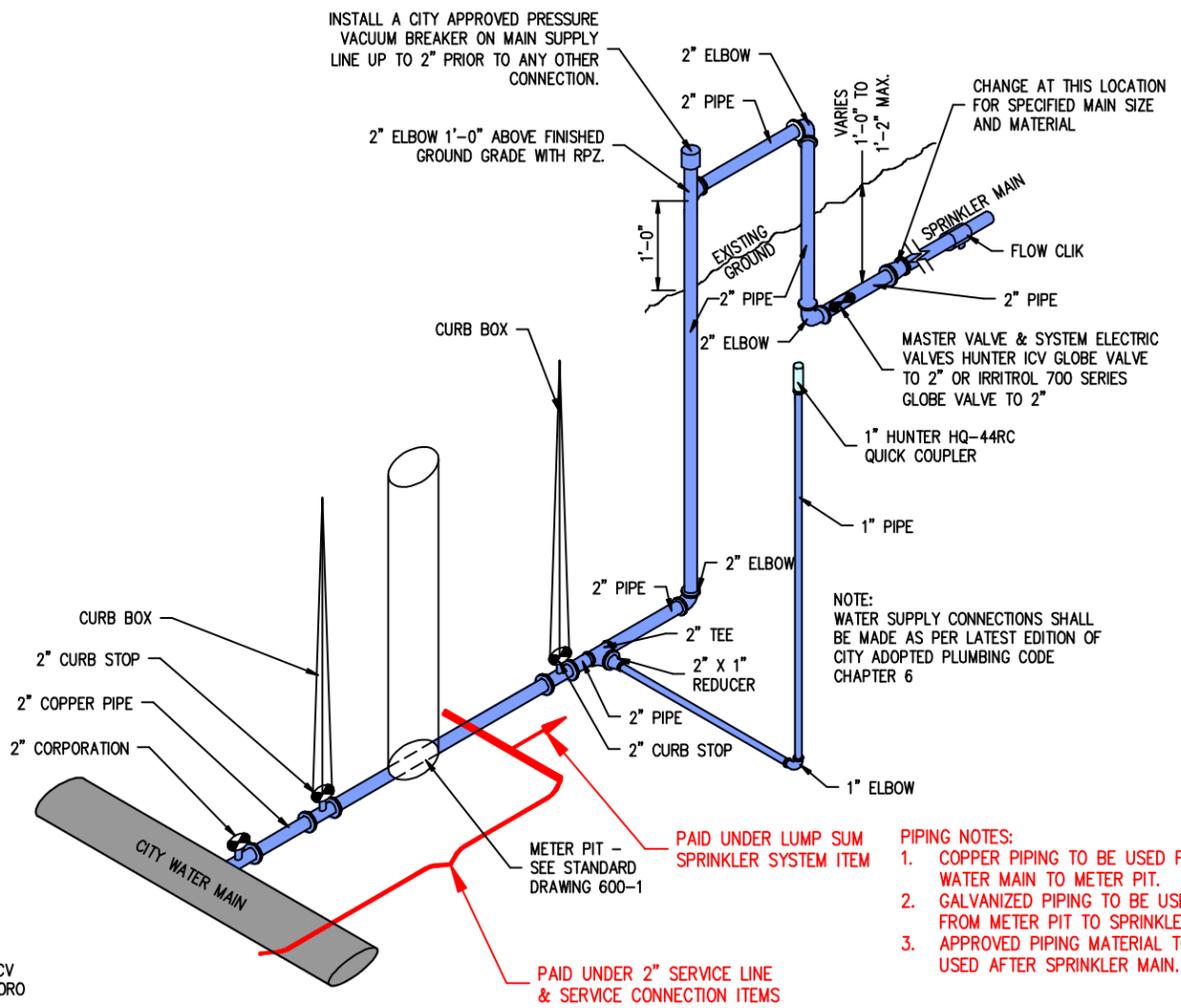
CITY OF IDAHO FALLS		
ENGINEERING DEPARTMENT STANDARD DRAWINGS 2010		
INCIDENTAL CONSTRUCTION		
<b>MODULAR BLOCK RETAINING WALL</b>		
DRAWN BY: T. WHITE	CHECKED BY: C.H. FREDERICKSEN	
FILE NO. 0-00-00-0-ENG-2009-06	FILE NAME: 400-15-2009	SHEET NO. 400-15
SCALE: 1"=2'	DATE PLOTTED: 12/18/09	



**TYPICAL CONTROLLER, PEDESTAL & MAIN POWER DISCONNECT INSTALLATION**



**TYPICAL LATERAL LINE & HEAD INSTALLATION USING POLYETHYLENE PIPE & LOW DENSITY FUNNY PIPE**



**WATER SUPPLY**

INSTALL A CITY APPROVED PRESSURE VACUUM BREAKER ON MAIN SUPPLY LINE UP TO 2" PRIOR TO ANY OTHER CONNECTION.

2" ELBOW 1'-0" ABOVE FINISHED GROUND GRADE WITH RPZ.

CHANGE AT THIS LOCATION FOR SPECIFIED MAIN SIZE AND MATERIAL

VARIES 1'-0" TO 1'-2" MAX.

MASTER VALVE & SYSTEM ELECTRIC VALVES HUNTER ICV GLOBE VALVE TO 2" OR IRRITROL 700 SERIES GLOBE VALVE TO 2"

NOTE: WATER SUPPLY CONNECTIONS SHALL BE MADE AS PER LATEST EDITION OF CITY ADOPTED PLUMBING CODE CHAPTER 6

**PIPING NOTES:**  
 1. COPPER PIPING TO BE USED FROM WATER MAIN TO METER PIT.  
 2. GALVANIZED PIPING TO BE USED FROM METER PIT TO SPRINKLER MAIN.  
 3. APPROVED PIPING MATERIAL TO BE USED AFTER SPRINKLER MAIN.

**SPRINKLER SYSTEM PARTS LIST**

- MAIN VALVE HOOK-UP BALL VALVES (STOP ONLY-APPROPRIATE SIZE)
- BACK FLOW DEVICE - CITY APPROVED DEVICE
  - PVB OR RPZ FOR LARGER PIPE INSTALLATIONS (APPROPRIATE SIZE)
- PIPE - POLYETHYLENE -
  - MAIN LINES AND LATERALS - EAGLE OR CENTENNIAL
  - LATERALS 1-1/2" OR SMALLER
  - SCHEDULE 40 PVC - MAIN LINES ONLY
  - POLYETHYLENE SWING PIPE (FUNNY PIPE)
- VALVES (APPROPRIATE SIZE)
  - HUNTER ICV GLOBE
  - IRRITROL 700 SERIES ULTRA FLOW
- FLOW SENSOR BODY - HUNTER FCT (APPROPRIATE SIZE)
- SADDLES (APPROPRIATE SIZE)
  - BRASS
  - PLASTIC
- SPRAYS
  - HUNTER INSTITUTIONAL SPRAY - HUNTER INST-04
  - TORO 570Z-4P-PRX
- SPRINKLERS
  - ROTORS HUNTER I-20 ULTRA
  - HUNTER I-20 ADV
  - HUNTER I-20 36V
- CONTROL WIRE
  - 18 GAUGE BRAIDED (1000 FT. OR LESS)
  - 14 GAUGE SINGLE STRAND (OVER 1000 FT.)
- PEDESTAL - HUNTER ACC-PED
- CONTROLLER - HUNTER ACC-1200 OR ACC-99D CONTROLLER FOR USE WITH DECODER SYSTEMS
- COMMUNICATION MODULES
  - HUNTER ACC-COM-HWR
  - DATA RADIO MODEL #RAD3 (RADIO MUST BE PROGRAMMED WITH CITY FREQUENCY (458.3000))

**NOTES:**

1. MASTER VALVE  
HUNTER ICV GLOBE VALVE TO 2" OR IRRITROL 700 SERIES ULTRA FLOW VALVE TO 2".
2. SYSTEM ELECTRIC VALVES  
HUNTER ICV GLOBE VALVE TO 2" OR IRRITROL 700 SERIES ULTRA FLOW VALVE TO 2".
3. SENSOR BODY HUNTER FCT SCHEDULE 40 (TEE) SHALL BE INSTALLED DOWNSTREAM FROM MASTER VALVE A DISTANCE 10 TIMES THE DIAMETER OF THE PIPE USED. THE NEXT FITTING (BEND, ELBOW OR TEE) DOWNSTREAM SHALL BE A DISTANCE 5 TIMES THE DIAMETER OF THE PIPE USED. FLOW SENSOR INSIDE TEE SHALL BE HUNTER FLOW SENSOR. NO SUBSTITUTES SHALL BE ALLOWED.
4. HUNTER ID WIRE - 14 AWG DECODER WIRE FOR DECODER SYSTEMS.
5. PRIOR TO INSTALLATION OF SPRINKLER HEADS, OPEN ELECTRIC CONTROL VALVES AND USE FULL HEAD OF WATER TO FLUSH OUT SYSTEM.
6. SEPARATE SYSTEMS MUST BE SET UP ON THE BOTTOM OF AREAS FROM THE SYSTEMS ON BERMS, HILLS, AND PONDS.
7. ALL BALL VALVES THAT ARE 24" AND DEEPER SHALL HAVE CURB BOX AND RODS.
8. IRRIGATION SYSTEMS REQUIRING MORE THAN 12 STATIONS SHALL HAVE CONTROLLER EXPANSION MODULE HUNTER ACM-600 (6 STATION INCREMENTS UP TO 42 STATIONS).
9. PIPE FROM CURB STOP TO MASTER VALVE SHALL BE COPPER OR GALVANIZED.
10. MAIN LINES INSTALLED 1'-0" TO 1'-2" MAXIMUM BELOW GRADE.
11. ELECTRICAL CONDUIT SHALL BE INSTALLED BY A LICENSED ELECTRICIAN. LOW VOLTAGE IRRIGATION CONTROL WIRE CONDUIT IS EXCLUDED FROM THIS REQUIREMENT.
12. DECODER SYSTEM MASTER AND ELECTRIC VALVES:
  - ICD-100 DECODER
  - HFS SENSOR
  - ICD-SEN DECODER
 NEEDED FOR USE WITH DECODER WIRE.



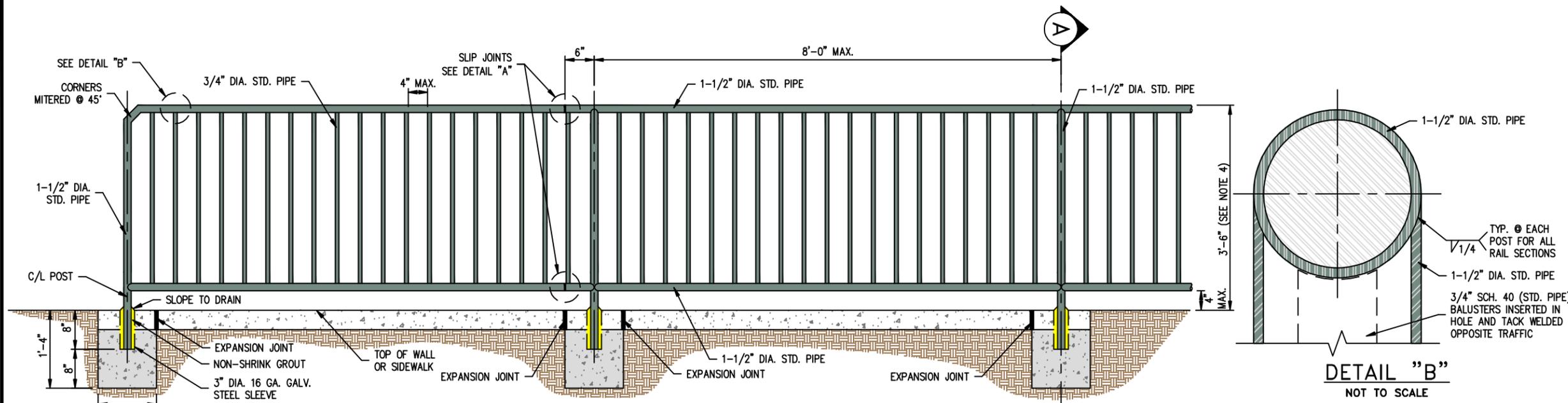
**CITY OF IDAHO FALLS**  
 ENGINEERING DEPARTMENT  
 STANDARD DRAWINGS 2010

**INCIDENTAL CONSTRUCTION**

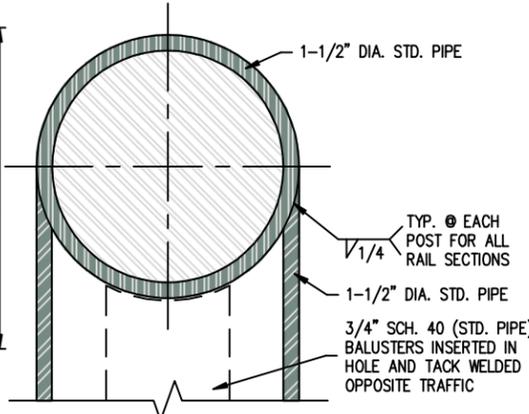
**SPRINKLER SYSTEM (UP TO 2")**

DRAWN BY: T. WHITE	CHECKED BY: C.H. FREDERICKSEN
FILE NO. 0-00-00-0-ENG-2009-06	FILE NAME: 400-16-2009
SCALE: NOT TO SCALE	DATE PLOTTED: 12/18/09
	SHEET NO. 400-16

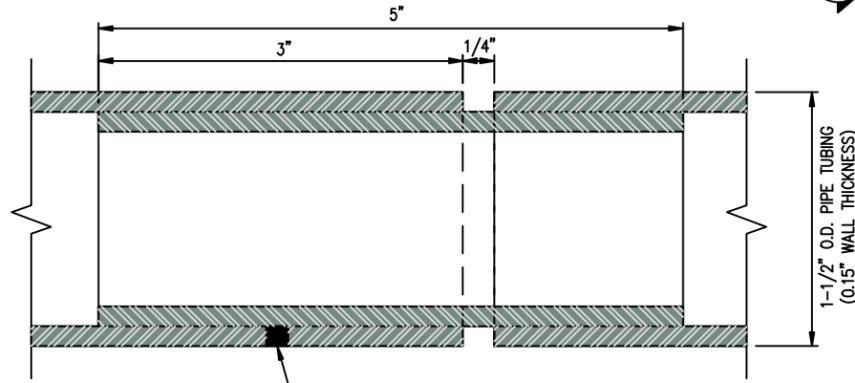




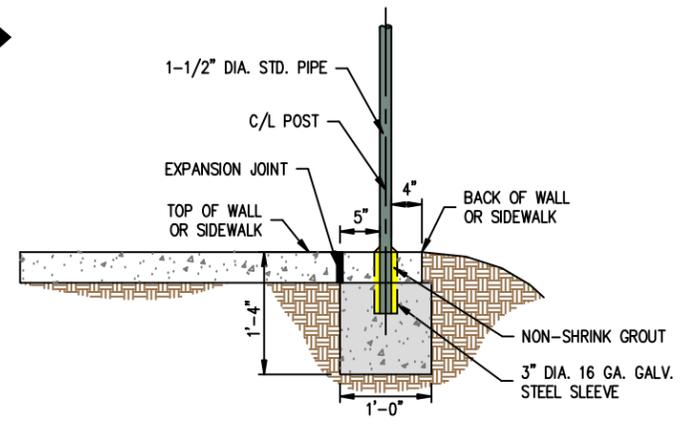
**SIDE VIEW**



**DETAIL "B"**  
NOT TO SCALE



**DETAIL "A" - SLIP JOINT**  
NOT TO SCALE

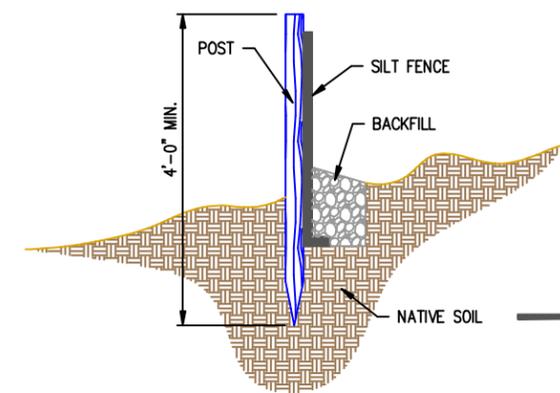


**SECTION A-A**

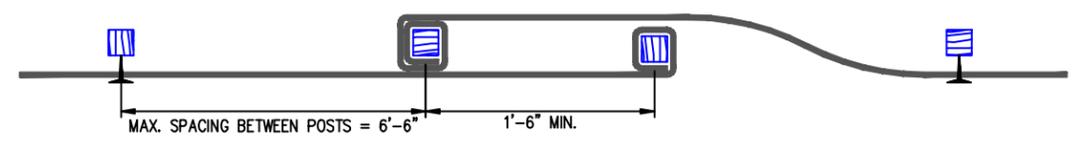
**HANDRAIL**

**NOTES:**

1. MATERIAL FOR HANDRAIL SHALL BE ALUMINUM (ASTM B-429) OR GALVANIZED STEEL (ASTM 120) AS APPROVED BY THE CITY ENGINEER.
2. OTHER TYPES OF HANDRAIL MAY BE APPROVED ON A CASE-BY-CASE BASIS. CONTACT THE CITY OF IDAHO FALLS ENGINEER (208) 612-8250.
3. PROVIDE SLIP JOINTS AS EXPANSION JOINTS AT EVERY 24'-0" FEET ON CENTER MAXIMUM.
4. HANDRAILS FOR STAIRS AND RAMPS SHALL BE 2'-10" TO 3'-2" IN HEIGHT.
5. RAIL EXTENSIONS TO EXTEND A MINIMUM OF 1'-0" BEYOND GRADE CHANGE.
6. CLEAR PATH DISTANCE BETWEEN TWO RAILING SYSTEMS TO BE A MINIMUM OF 3'-0".



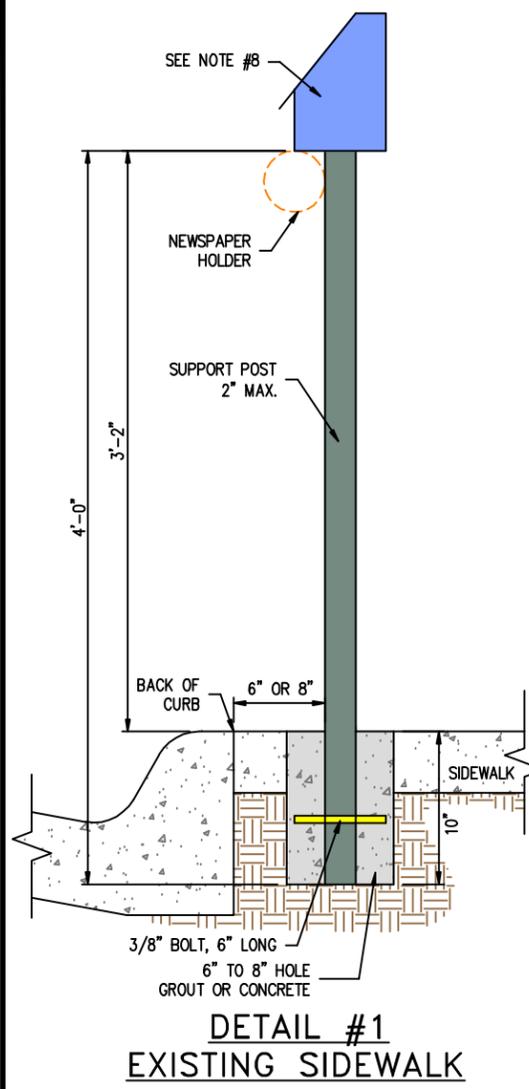
**SILT FENCE DETAIL**  
NOT TO SCALE



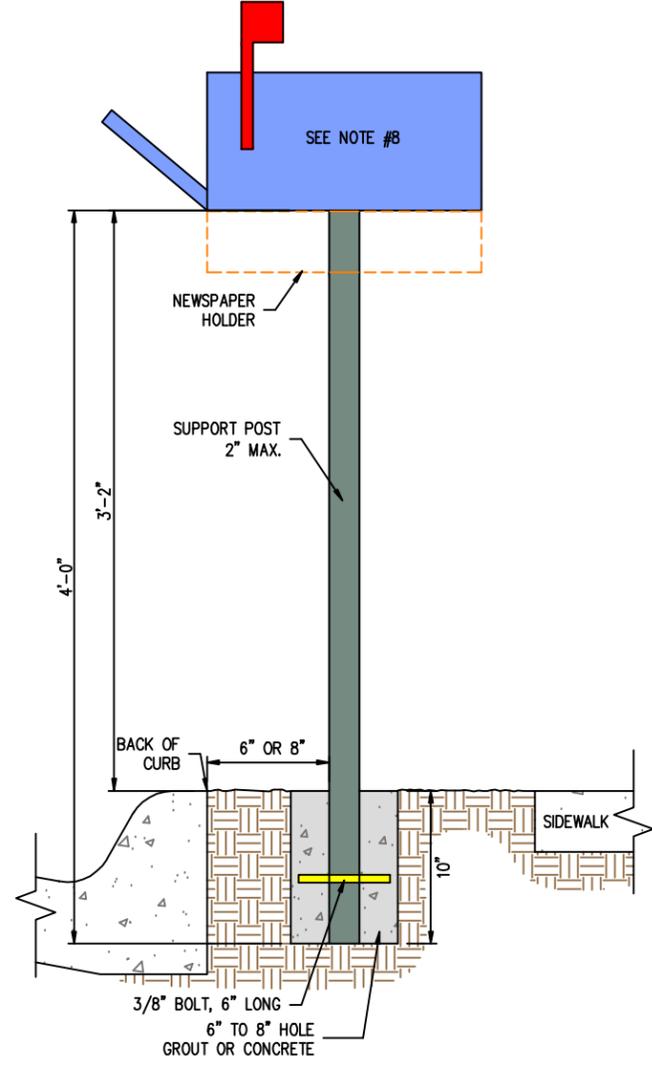
**SILT FENCE SPLICE JOINT**  
NOT TO SCALE



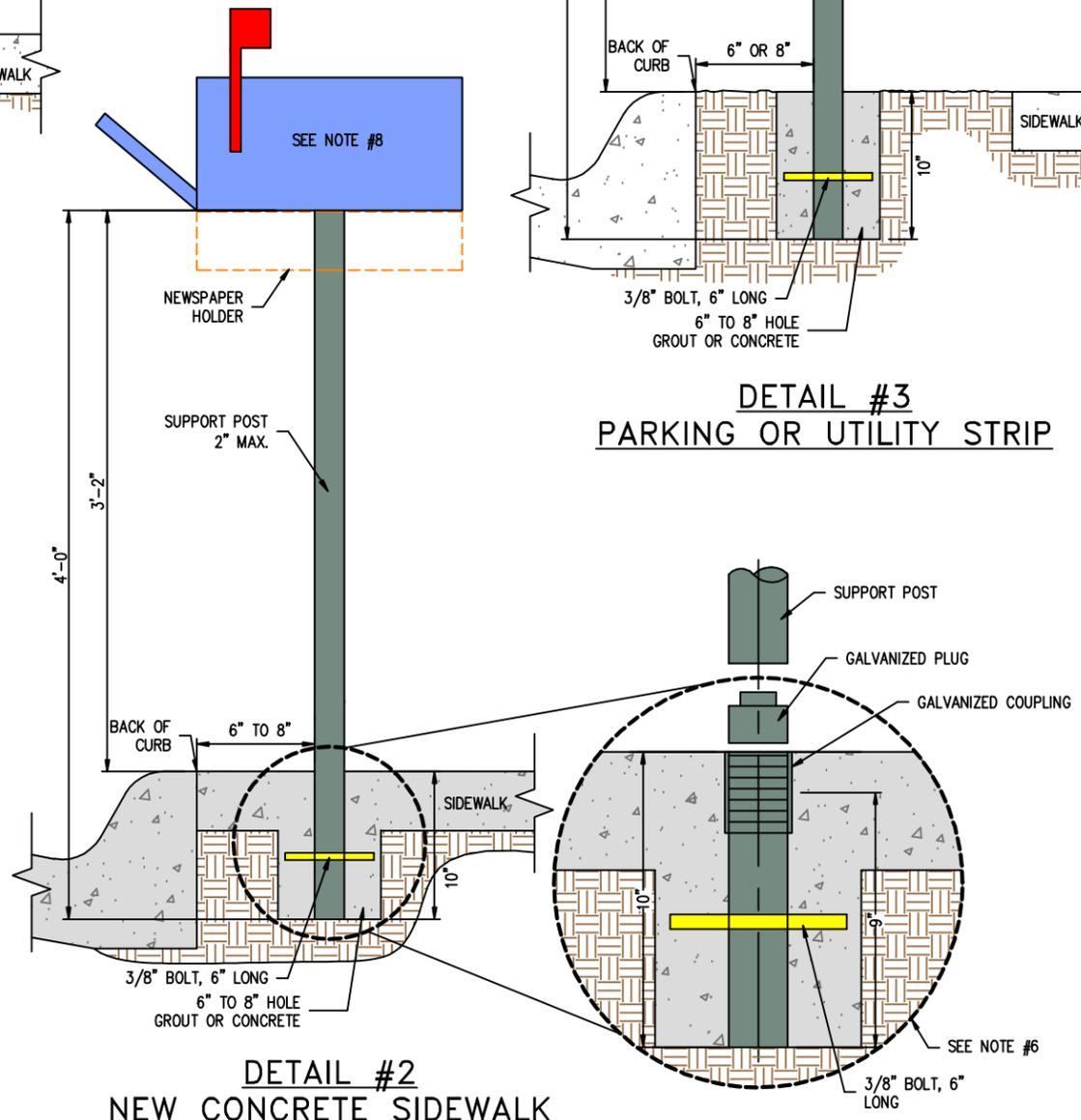
<b>CITY OF IDAHO FALLS</b> ENGINEERING DEPARTMENT STANDARD DRAWINGS 2010		
<b>INCIDENTAL CONSTRUCTION</b> <b>HANDRAIL AND SILT FENCE DETAILS</b>		
DRAWN BY: T. WHITE FILE NO. 0-00-00-0-ENG-2009-06 SCALE: 1"=2'	CHECKED BY: C.H. FREDERICKSEN FILE NAME: 400-18-2009 DATE PLOTTED: 12/18/09	SHEET NO. <b>400-18</b>



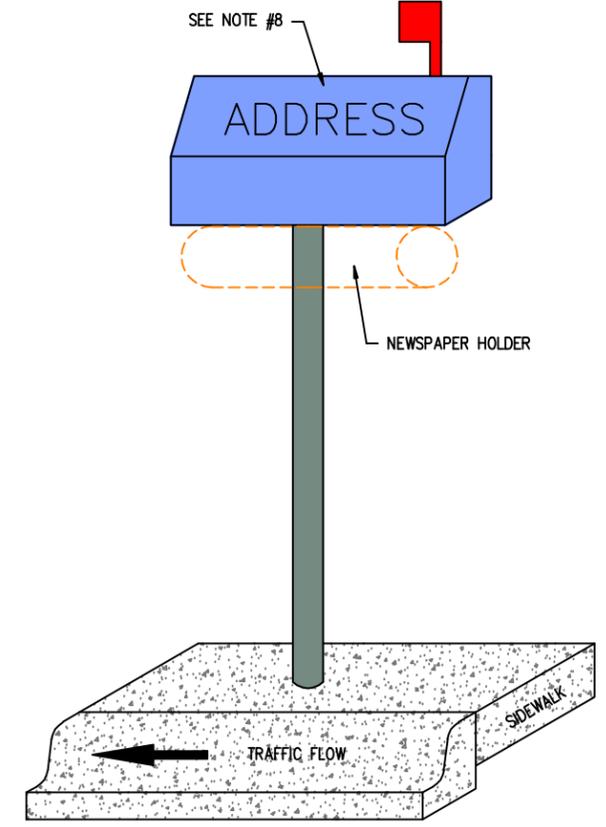
**DETAIL #1**  
EXISTING SIDEWALK



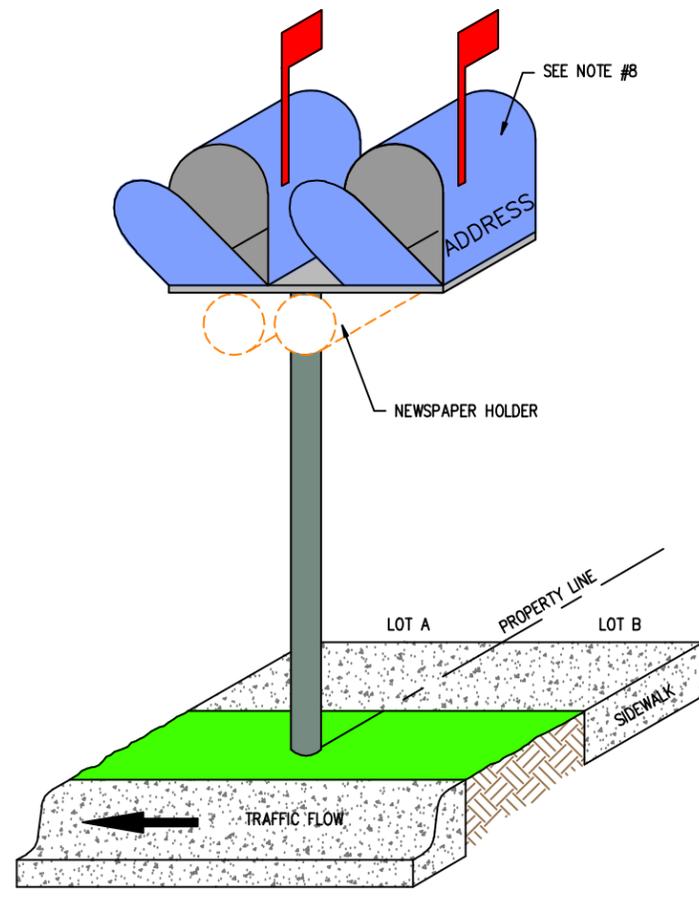
**DETAIL #3**  
PARKING OR UTILITY STRIP



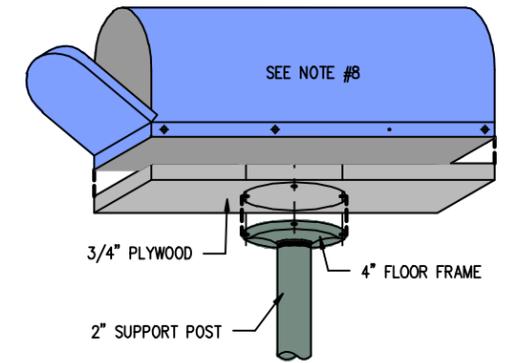
**DETAIL #2**  
NEW CONCRETE SIDEWALK



**DETAIL #4**



**DETAIL #5**

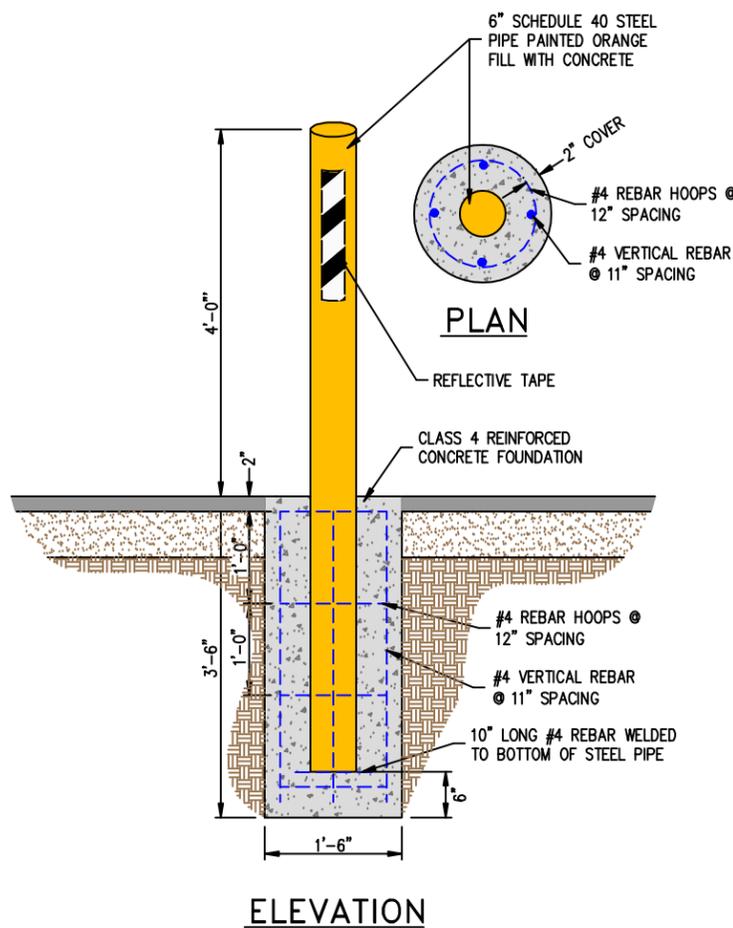


**DETAIL #6**  
NOT TO SCALE

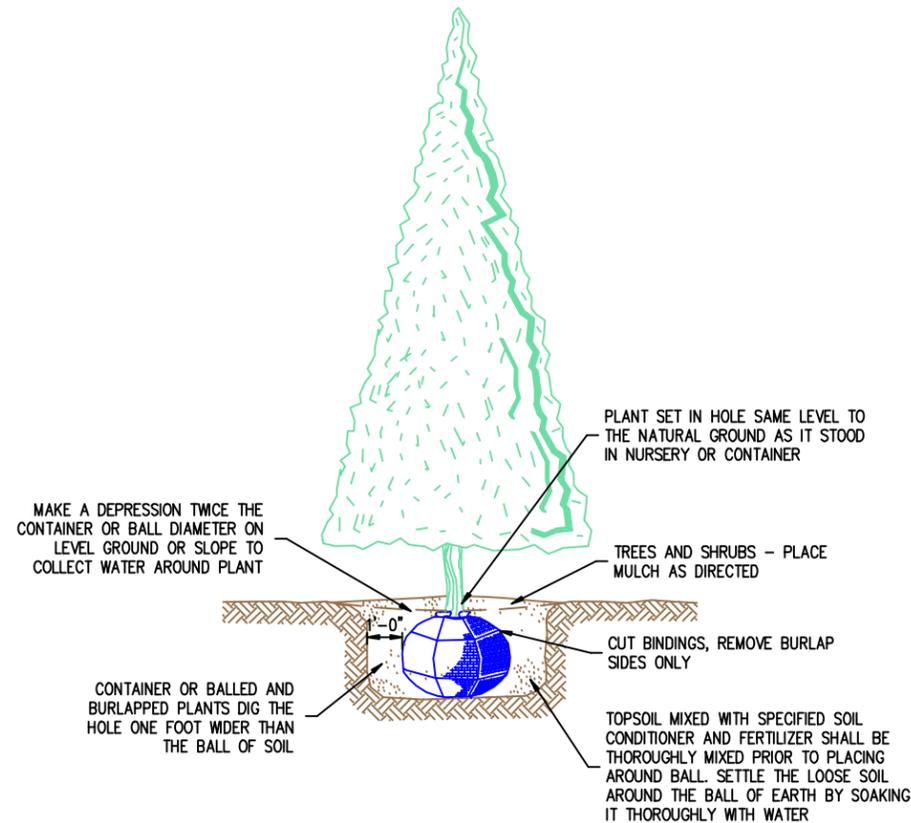
- NOTES:**
- FRONT OF MAILBOX SHALL NOT EXCEED BEYOND THE BACK OF CONCRETE CURB.
  - EXISTING SIDEWALK DETAIL #1. - THE 6" TO 8" HOLE SHALL BE DRILLED IN THE EXISTING CONC. SIDEWALK, THE SUPPORT POST INSTALLED AND THE HOLE GROUTED.
  - IF A NEWSPAPER BOX IS USED IT SHALL BE ATTACHED TO THE SUPPORT POST AS SHOWN.
  - MAILBOX SHALL BE INSTALLED WITH THE OPENING FACING STREET.
  - SUGGESTED MAILBOX LOCATIONS WOULD BE ON ADJACENT PROPERTY LINES SO THAT THE POSTAL EMPLOYEE CAN SERVE TWO OR MORE HOMES WITH ONE STOP. SEE DETAIL #5.
  - ON NEW INSTALLATIONS THE 2" GALVANIZED PLUG SHOWN IN DETAIL #2 SHALL BE INSTALLED PRIOR TO POURING CONCRETE SIDEWALK.
  - MAILBOX SHALL BE POSTMASTER GENERAL APPROVED.
  - MIN. MAILBOX SIZE SHALL BE 7" WIDE X 10" HIGH, NO MAILBOXES OVER 20" LONG SHALL BE ALLOWED.



<b>CITY OF IDAHO FALLS</b> ENGINEERING DEPARTMENT STANDARD DRAWINGS 2010		
<b>INCIDENTAL CONSTRUCTION</b> <b>MAILBOX LOCATION &amp; INSTALLATION DETAILS</b>		
DRAWN BY: T. WHITE FILE NO. 0-00-00-0-ENG-2009-06 SCALE: 1"=1'	CHECKED BY: C.H. FREDERICKSEN FILE NAME: 400-19-2009 DATE PLOTTED: 12/18/09	SHEET NO. <b>400-19</b>

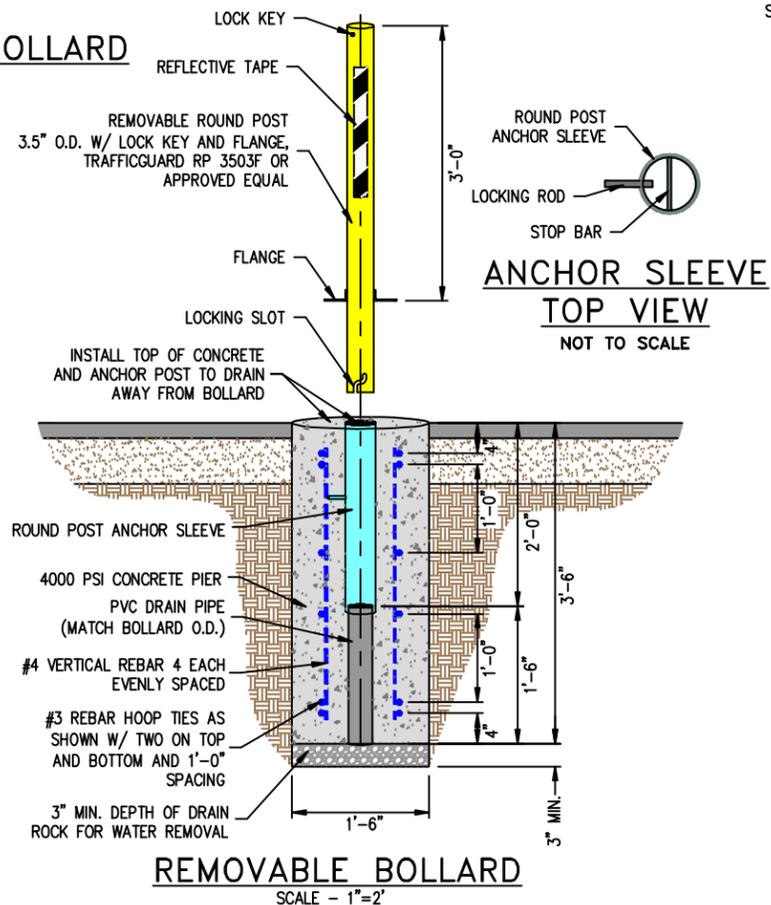


**METHOD OF PLANTING CONTAINER OR BALLED AND BURLAPPED TREES AND SHRUBS**  
SCALE - 1"=5'



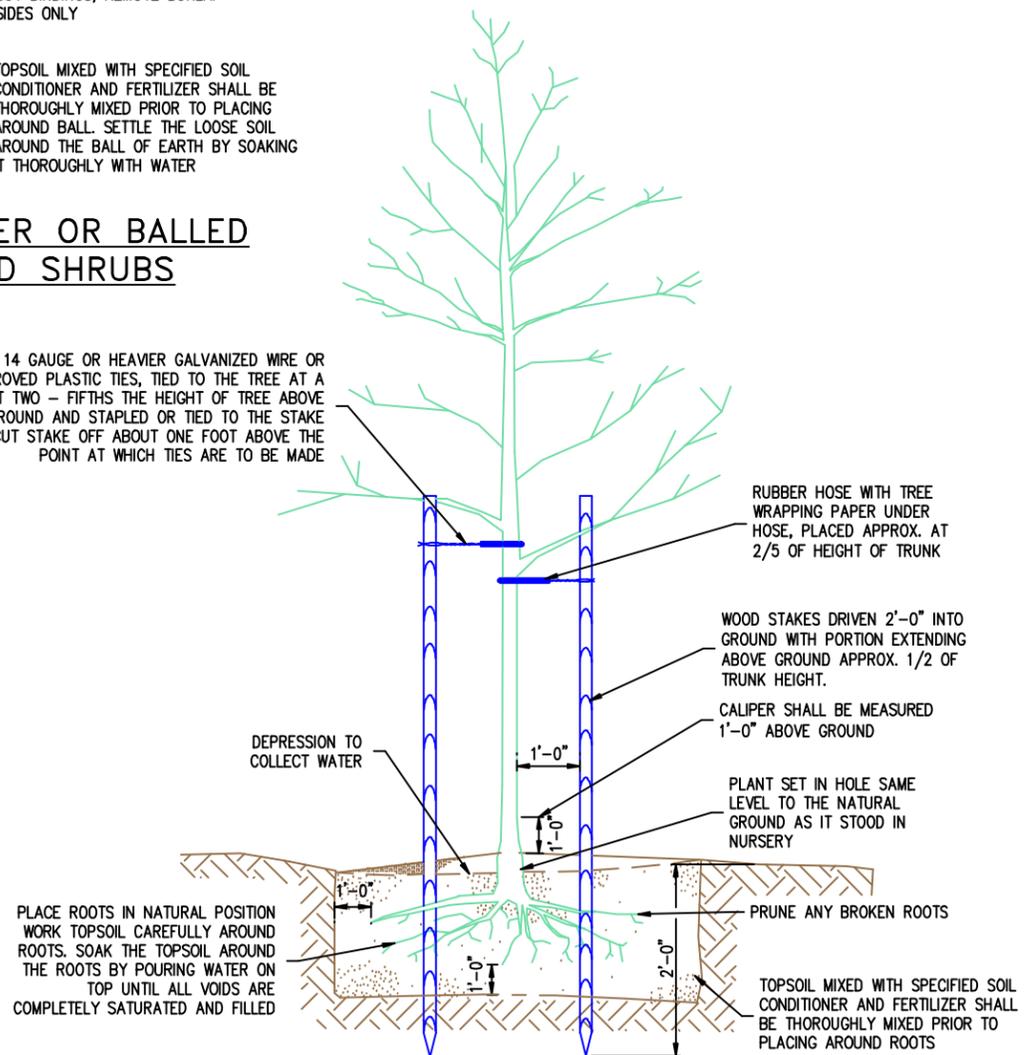
- TREE PLANTING NOTES:**
1. ALL WOOD STAKES SHALL BE CONSTRUCTION GAUGE, ROUGH OR DRESSED.
  2. WIRE TIES SHALL BE PROVIDED WITH A ONE FOOT PIECE OF RUBBER HOSE, APPROVED PLASTIC TIES OR APPROVED SUBSTITUTE, PLACED TO PREVENT INJURY TO THE BARK.
  3. STAKES FOR TREES SHALL BE REMOVED ONE GROWING SEASON AFTER PLANTING.

**PERMANENT BOLLARD**  
SCALE - 1"=2'



14 GAUGE OR HEAVIER GALVANIZED WIRE OR APPROVED PLASTIC TIES, TIED TO THE TREE AT A POINT TWO - FIFTHS THE HEIGHT OF TREE ABOVE GROUND AND STAPLED OR TIED TO THE STAKE CUT STAKE OFF ABOUT ONE FOOT ABOVE THE POINT AT WHICH TIES ARE TO BE MADE

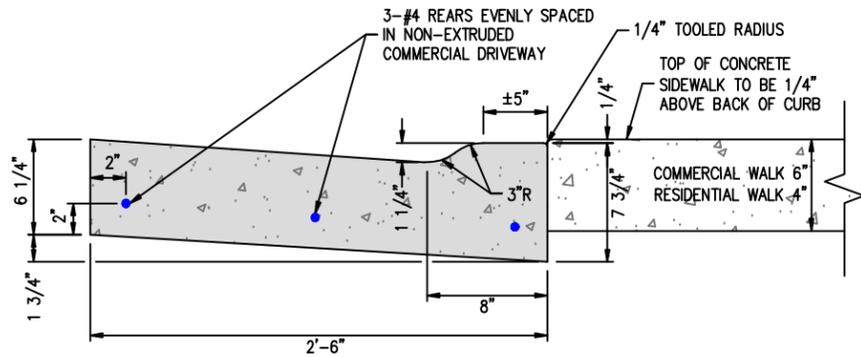
**METHOD OF PLANTING BARE ROOT TREES AND METHOD OF STAKING DECIDUOUS TREES UNDER 12'**  
SCALE - 1"=5'



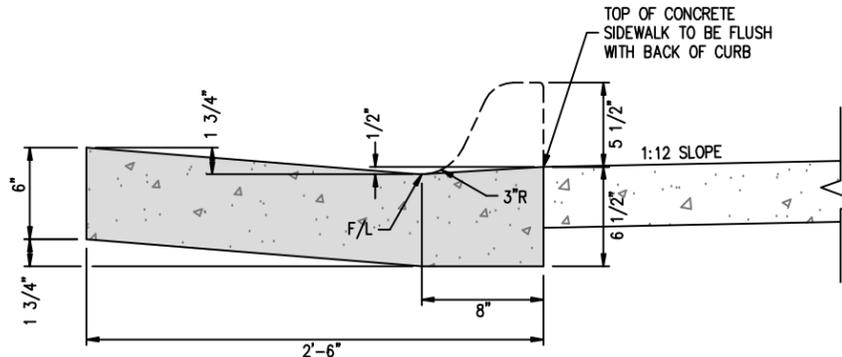
**CITY OF IDAHO FALLS**  
ENGINEERING DEPARTMENT  
STANDARD DRAWINGS 2010

**INCIDENTAL CONSTRUCTION**  
**BOLLARD AND TREE PLANTING DETAILS**

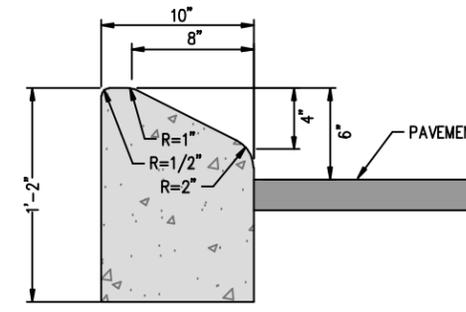
DRAWN BY: T. WHITE	CHECKED BY: C.H. FREDERICKSEN
FILE NO. 0-00-00-0-ENG-2009-06	FILE NAME: 400-20-2009
SCALE: VARIES	DATE PLOTTED: 12/18/09
	SHEET NO. 400-20



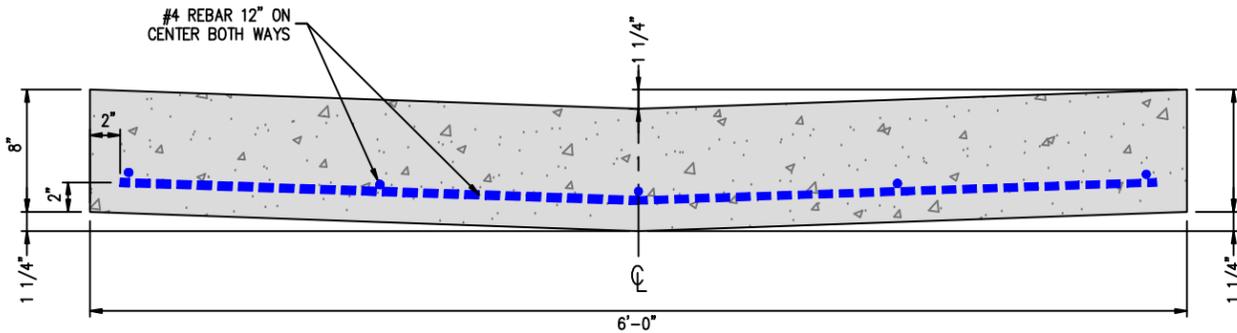
**DRIVEWAY CURB & GUTTER SECTION**



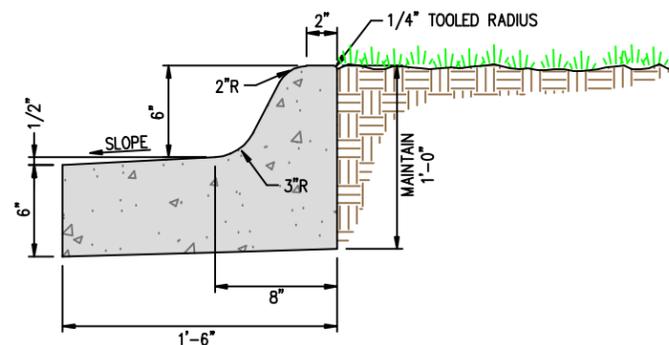
**DEPRESSED CURB & GUTTER SECTION**



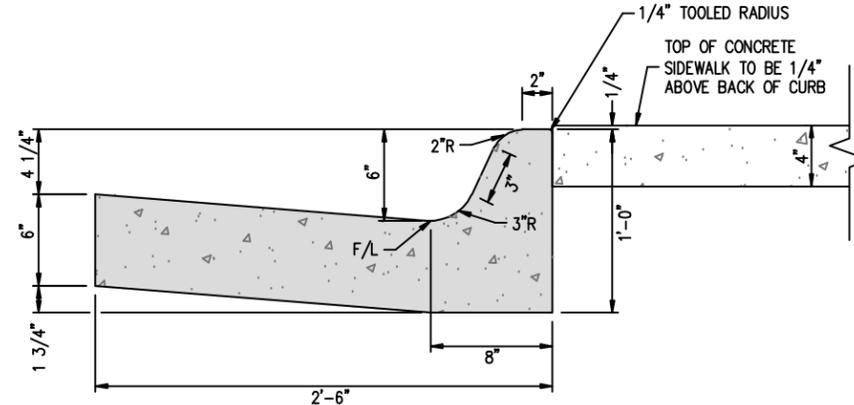
**CURB**



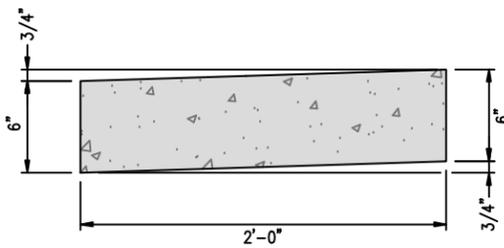
**VALLEY GUTTER SECTION**



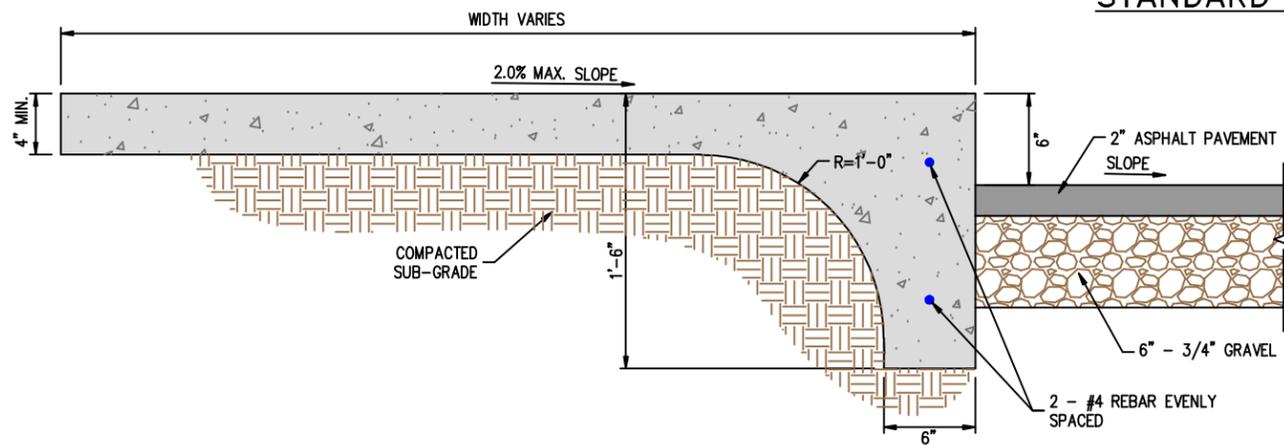
**LIP DOWN CURB & GUTTER SECTION**



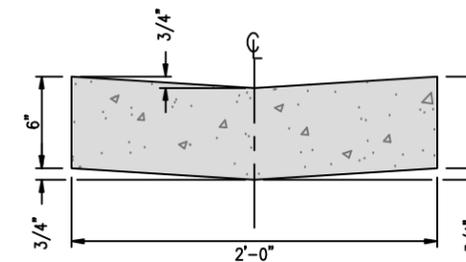
**STANDARD CURB & GUTTER SECTION**



**ALLEY FLAT GUTTER SECTION**



**COMBINATION CURB AND SIDEWALK SECTION**



**ALLEY "V" GUTTER SECTION**

**NOTES:**

1. ALL CONCRETE SHALL BE CURED WITH A CURING COMPOUND AS SPECIFIED IN THE STANDARD SPECIFICATIONS OR AS DIRECTED BY THE CITY ENGINEER.
2. SIDEWALK GEOMETRY SHALL COMPLY WITH THE FOLLOWING OR AS APPROVED BY THE CITY ENGINEER:
  - 2.1. MAX. SLOPE ON HANDICAP CURB RAMPS SHALL BE 1:12 (VERT. : HORIZ.).
  - 2.2. MAX. CROSS SLOPE SHALL BE 2% ON ALL SIDEWALKS.
3. 4 INCHES OF 3/4" COMPACTED AGGREGATE BASE SHALL BE REQUIRED UNDER ALL CONCRETE WHERE UNSUITABLE BASE MATERIAL IS ENCOUNTERED, IF FILL MATERIAL IS REQUIRED, OR WHERE DIRECTED BY CITY ENGINEER.
4. RESIDENTIAL DRIVEWAY APPROACHES ARE PERMITTED FOR THE ENTIRE BULBED END OF A RESIDENTIAL CUL-DE-SAC.
5. STANDARD CURB & GUTTER MAY BE SAW CUT TO CONSTRUCT A RESIDENTIAL DRIVEWAY CURB & GUTTER SECTION.



CITY OF IDAHO FALLS  
ENGINEERING DEPARTMENT  
STANDARD DRAWINGS 2010

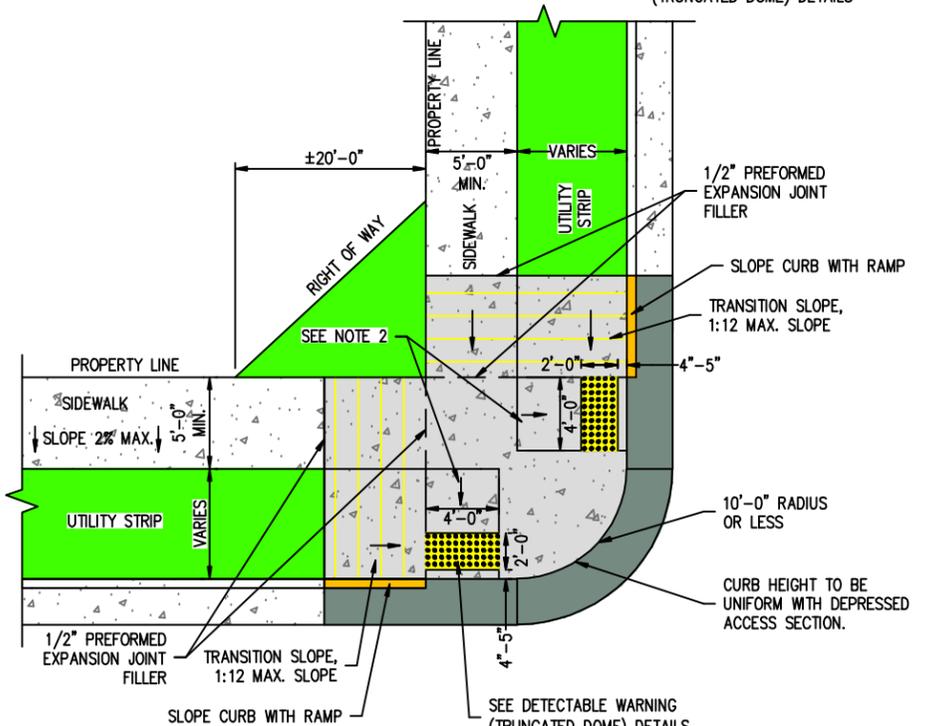
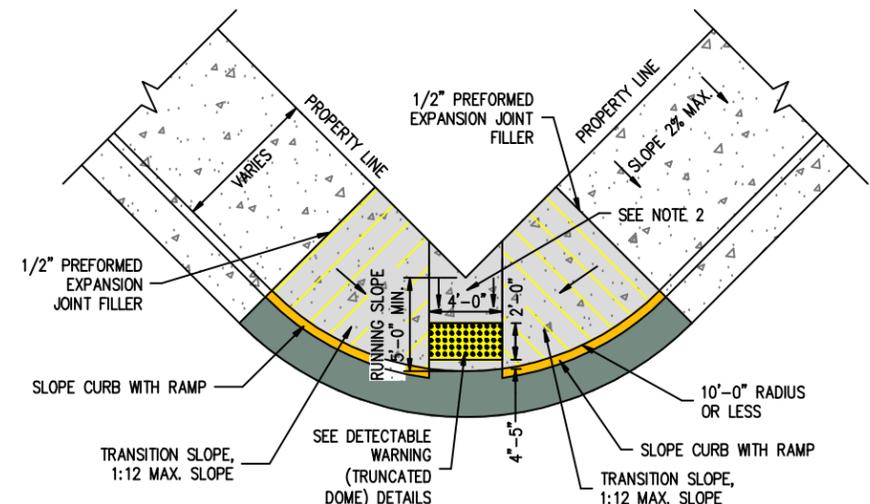
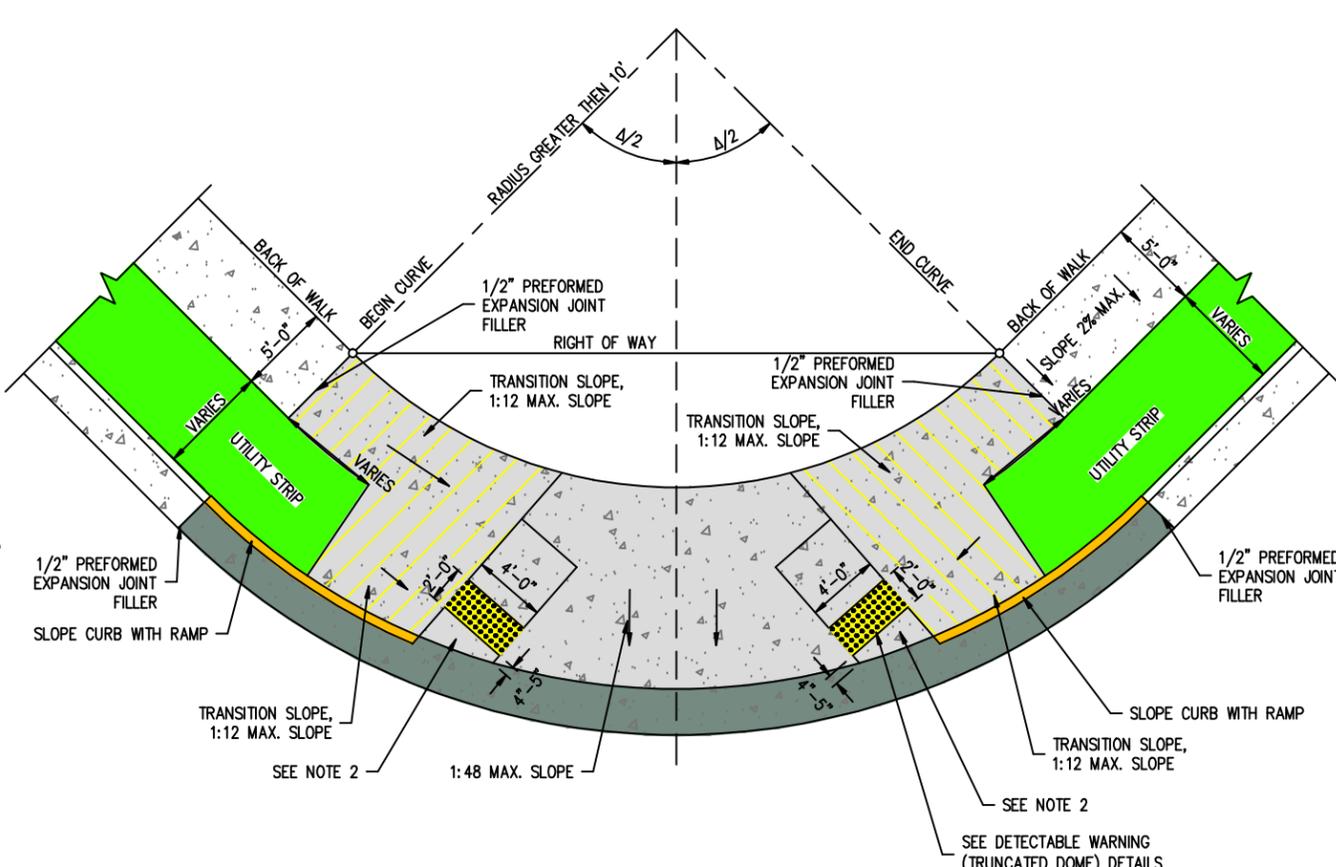
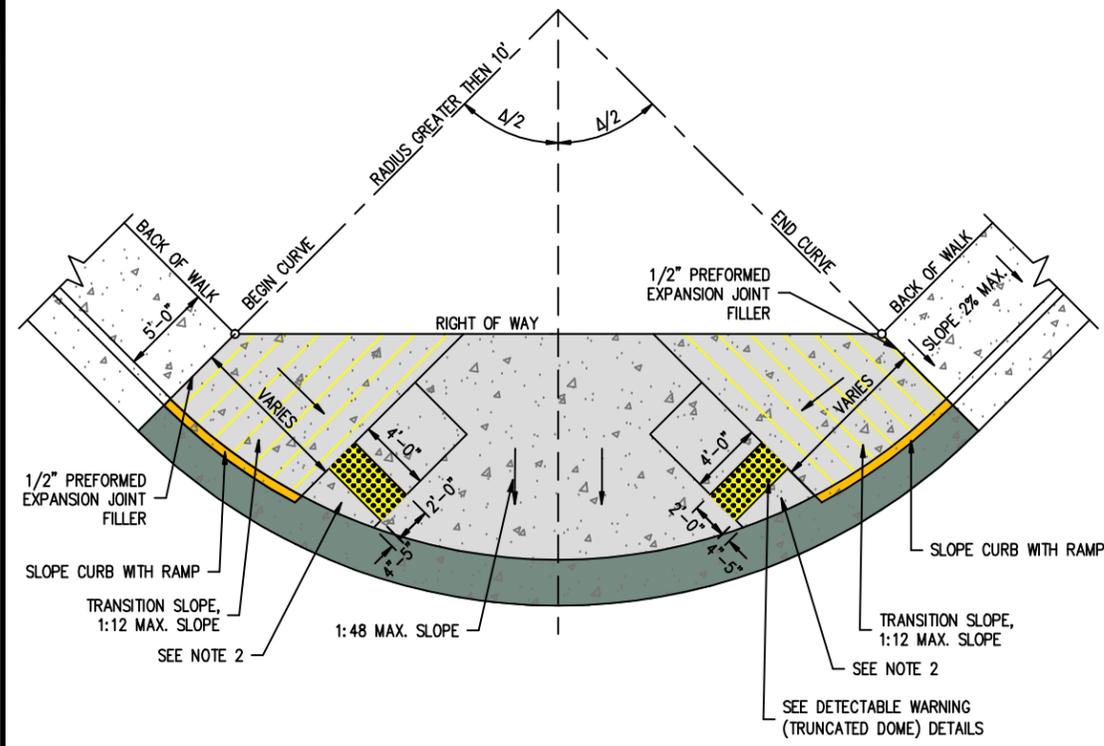
PORTLAND CEMENT CONCRETE

**CURB AND GUTTER SECTIONS**

DRAWN BY: T. WHITE	CHECKED BY: C.H. FREDRICKSEN
FILE NO. 0-00-00-0-ENG-2009-06	FILE NAME: 500-1-2009
SCALE: 1"=1'	DATE PLOTTED: 12/18/09
	SHEET NO. 500-1

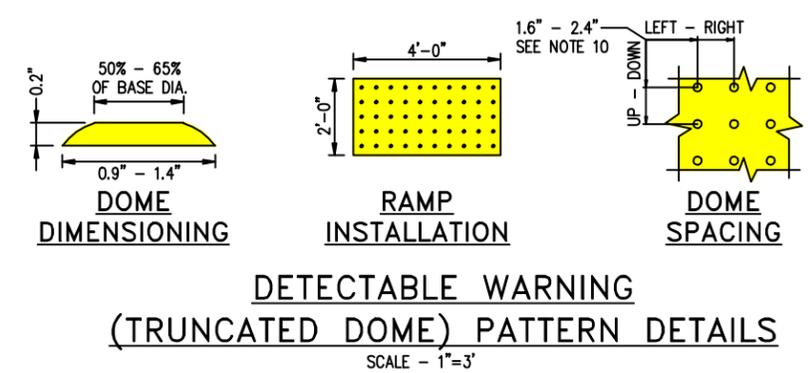
**NOTES:**

- ALL DEPRESSED ACCESSES SHALL MEET THE LATEST REVISION OF A.N.S.I. (AMERICAN NATIONAL STANDARDS INSTITUTE), A.D.A. (AMERICANS WITH DISABILITIES ACT) AND COUNCIL OF AMERICAN BUILDING OFFICIALS.
- THE MAXIMUM RUNNING SLOPE OF RAMPS IN NEW CONSTRUCTION SHALL BE 1:12 (VERT. : HORIZ.), UNLESS THE RAMPS ARE WITHIN THE ACCESSIBLE ROUTE, THEN THE MAXIMUM SLOPE SHALL BE 1:48 (VERT. : HORIZ.).
- INLET BOXES SHALL BE LOCATED AWAY FROM THE PEDESTRIAN CROSSWALK AND HANDICAP RAMPS.
- THE CONCRETE SURFACE FINISH FOR THE SLOPED AREAS SHOULD BE SLIGHTLY ROUGHER THAN THE FINISH FOR THE ADJACENT SIDEWALK.
- SCORING LINES SHALL BE A MINIMUM OF 3/4" DEEP AND LOCATED AT TRANSITION AREAS (HIGH & LOW EDGES) AND EVERY 10' IN THE CURB & GUTTERS.
- ALL CONCRETE SHALL BE CURED WITH A CURING COMPOUND AS SPECIFIED IN THE STANDARD SPECIFICATIONS OR AS DIRECTED BY THE ENGINEER.
- ALL RAMPS SHALL BE ALIGNED WITH CROSS WALKS AS CLOSELY AS POSSIBLE.
- MINIMUM RADIUS AT INTERSECTIONS IN NEW CONSTRUCTION SHALL BE AT LEAST 25' MEASURED TO THE BACK OF CURB.
- THE BOTTOM 24" OF ALL RAMPS SHALL BE FITTED WITH DETECTABLE WARNING PATTERN "ARMOUR TILE" OR APPROVED EQUAL YELLOW IN COLOR (TILED, FORMED IN CONCRETE OR LAMINATED TO THE RAMP SURFACE).
- RAISED TRUNCATED DOME SPACING MAY VARY 1.6" TO 2.4", BUT THE UP - DOWN SPACING SHALL BE EQUAL TO LEFT - RIGHT SPACING.
- CURB EXPANSION JOINTS REQUIRED AT ALL PC'S AND PT'S ON EXTRUDED CURB. POURED IN PLACE CURB EXPANSION JOINTS WILL MATCH SIDEWALK EXPANSION JOINTS.
- CROSS SLOPE OF ALL SIDEWALKS TO BE A MAXIMUM OF 2%.



**DEPRESSED ACCESS WITH NO UTILITY STRIP**  
(NOT ALLOWED EXCEPT WHERE RETROFITTING IN LIMITED RIGHT-OF-WAY)

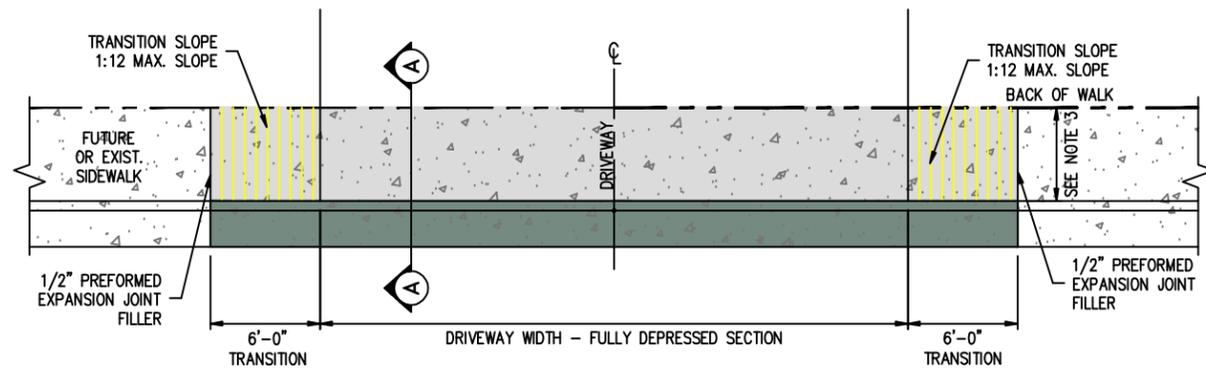
**DEPRESSED ACCESS WITH UTILITY STRIP (PREFERRED)**  
(NOT ALLOWED EXCEPT WHERE RETROFITTING IN LIMITED RIGHT-OF-WAY)



<b>CITY OF IDAHO FALLS</b> ENGINEERING DEPARTMENT STANDARD DRAWINGS 2010		
<b>PORTLAND CEMENT CONCRETE</b> <b>DEPRESSED ACCESS</b>		
DRAWN BY: T. WHITE FILE NO. 0-00-00-0-ENG-2009-06 SCALE: 1"=10'	CHECKED BY: C.H. FREDERICKSEN FILE NAME: 500-2-2009 DATE PLOTTED: 12/18/09	SHEET NO. <b>500-2</b>

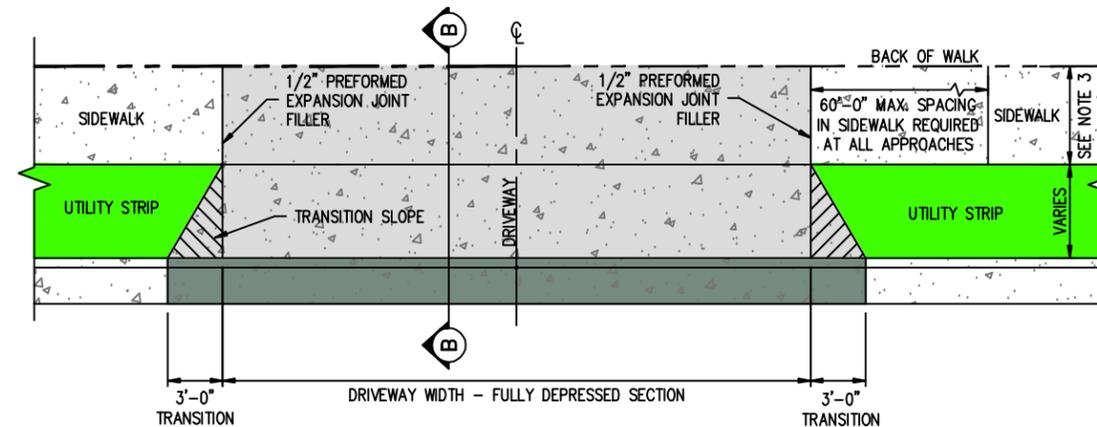
NOTES:

- 4 INCHES OF 3/4" COMPACTED AGGREGATE BASE SHALL BE REQUIRED UNDER ALL COMMERCIAL AND RESIDENTIAL DRIVEWAYS, AND ALL CONCRETE WHERE UNSUITABLE BASE MATERIAL IS ENCOUNTERED, IF FILL MATERIAL IS REQUIRED, OR WHERE DIRECTED BY THE CITY ENGINEER.
- ALL CONCRETE SHALL BE CURED WITH A CURING COMPOUND AS SPECIFIED IN THE STANDARD SPECIFICATIONS OR AS DIRECTED BY THE CITY ENGINEER.
- STANDARD SIDEWALK WIDTH IS 5 FOOT UNLESS OTHERWISE SPECIFIED IN NEW CONSTRUCTION. STANDARD CROSS SLOPE IS 2% MAXIMUM.
- PLACE PREFORMED EXPANSION JOINT FILLER AT DRIVEWAY CONSTRUCTION (BOTH SIDES) AND AT MAXIMUM SPACING OF 60 FEET FOR NEW SIDEWALK CONSTRUCTION.
- RESIDENTIAL DRIVEWAY APPROACHES ARE PERMITTED FOR THE ENTIRE BULBED END OF A RESIDENTIAL CUL-DE-SAC. CITY OF IDAHO FALLS RECOMMENDS DEPRESSING THE ENTIRE CUL-DE-SAC.
- FULL HEIGHT CURB MAY BE SAW CUT TO PROVIDE RESIDENTIAL DRIVEWAY APPROACH.
- WHEREVER PRACTICAL PROVIDE ADEQUATE DISTANCE FROM BACK OF DRIVEWAY CURB TO SIDEWALK SO THAT A MINIMUM PATHWAY WITH A MAX. CROSS SLOPE OF 2% IS AVAILABLE FOR HANDICAP ACCESSIBILITY.

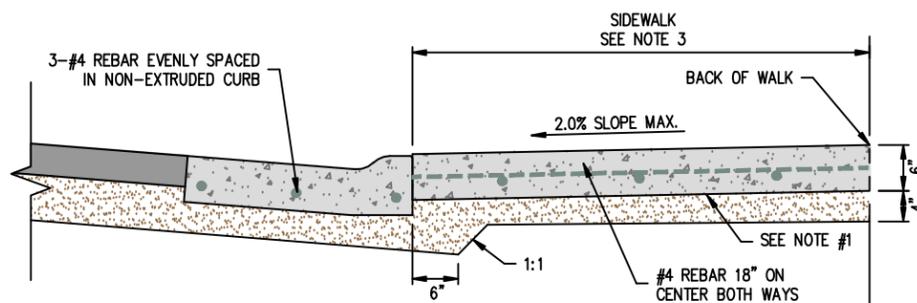


**DRIVEWAY (SIDEWALK)**

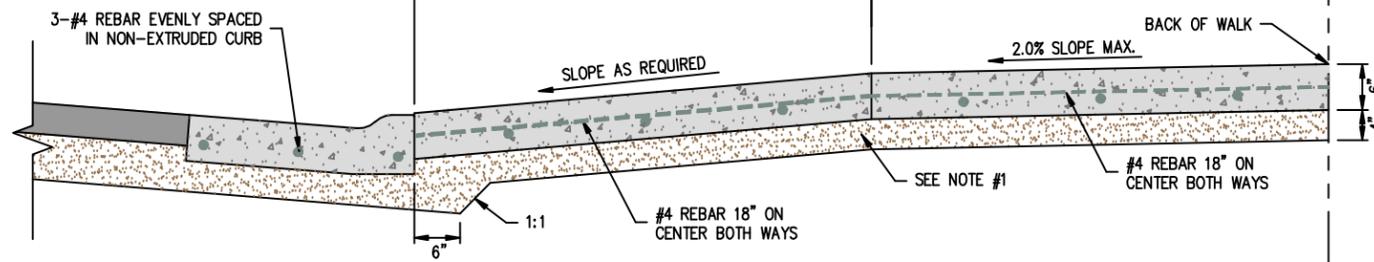
(NOT ALLOWED WHERE ADEQUATE RIGHT-OF-WAY IS AVAILABLE FOR A UTILITY STRIP - SEE NOTE 7)



**DRIVEWAY (UTILITY STRIP)**

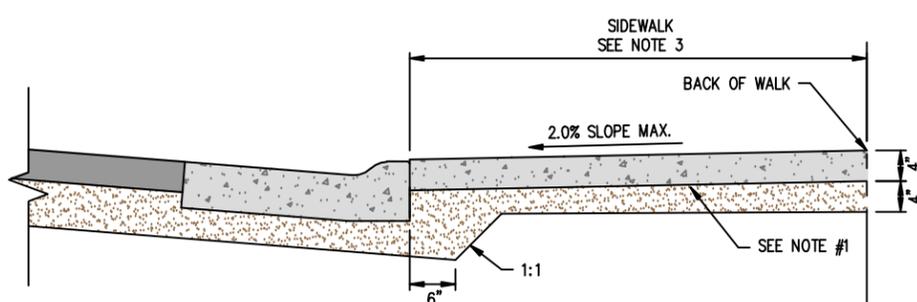


SECTION **A**

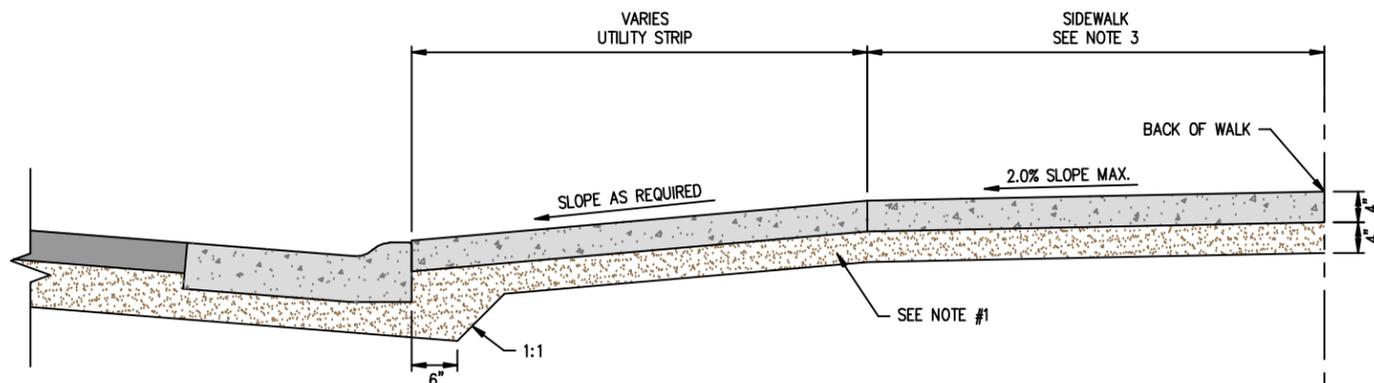


SECTION **B**

**COMMERCIAL DRIVEWAY**  
SCALE - 1"=2'



SECTION **A**



SECTION **B**

**RESIDENTIAL DRIVEWAY**  
SCALE - 1"=2'



CITY OF IDAHO FALLS  
ENGINEERING DEPARTMENT  
STANDARD DRAWINGS 2010

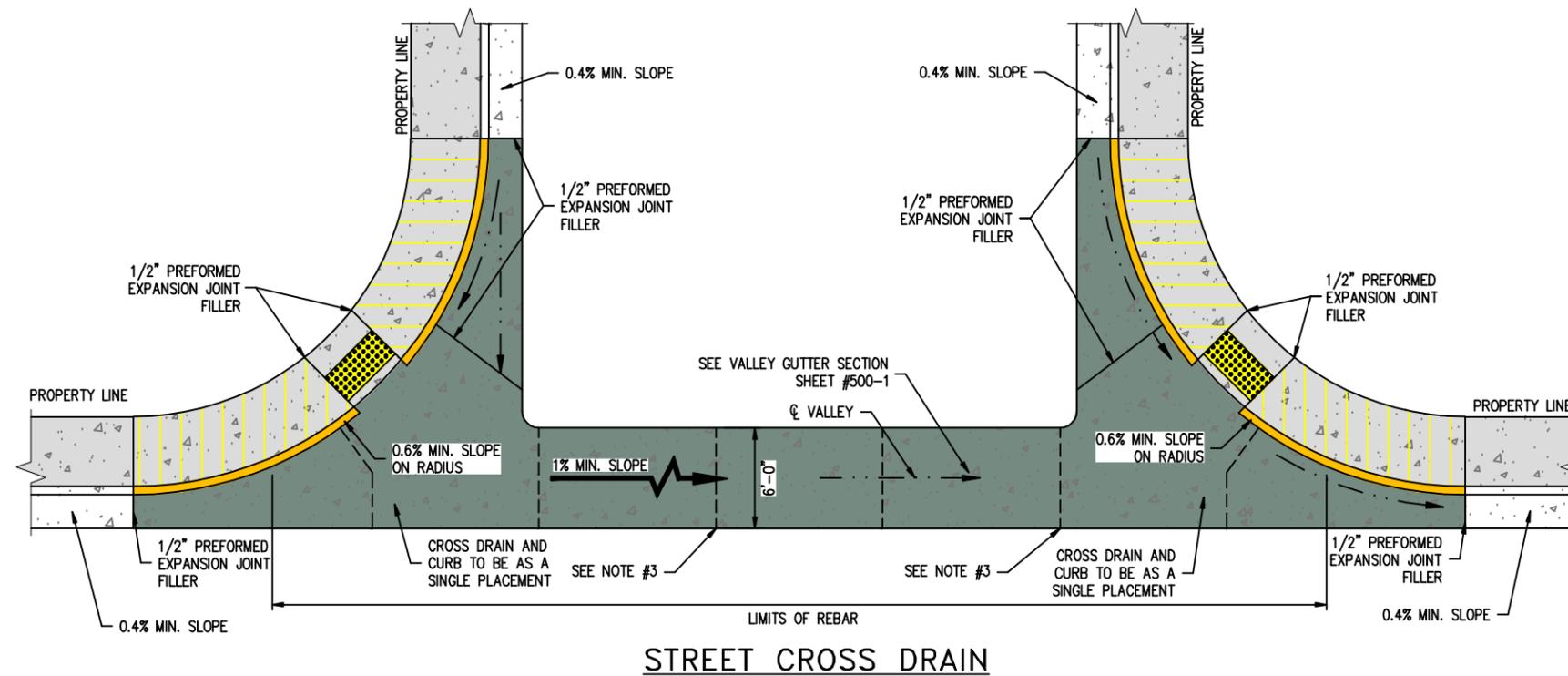
PORTLAND CEMENT CONCRETE

**APPROACHES**

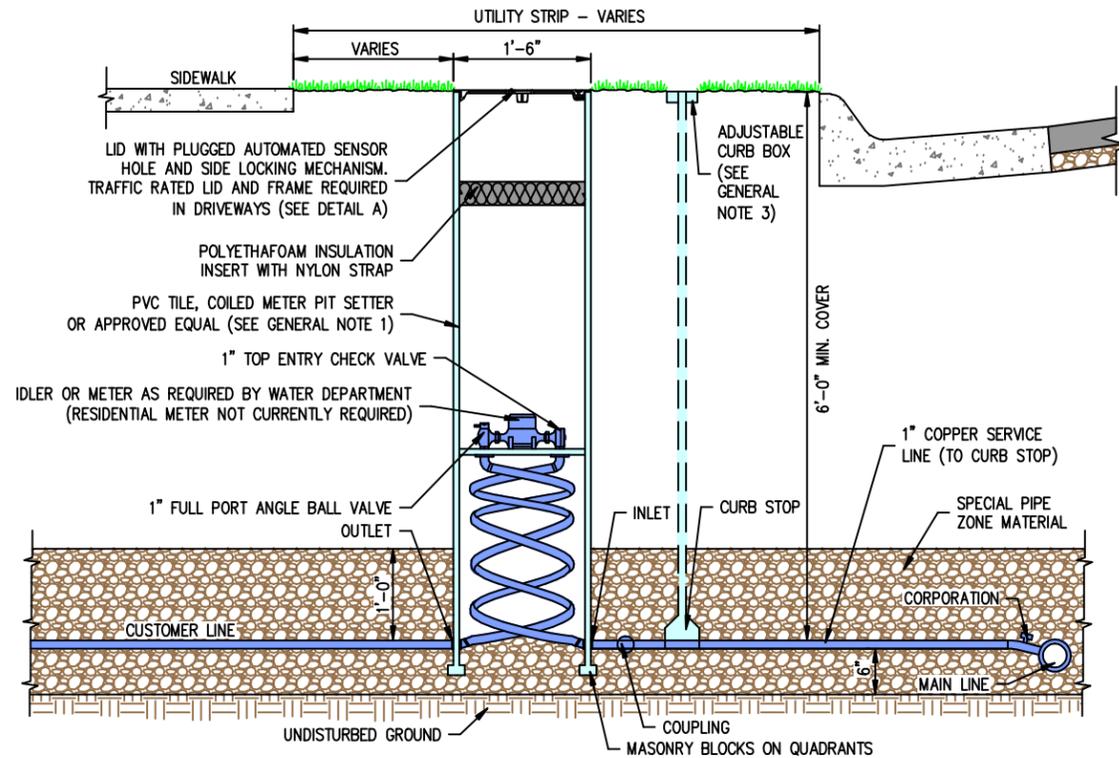
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FILE NO. 0-00-00-0-ENG-2009-06	FILE NAME: 500-3-2009
SCALE: 1"=10'	DATE PLOTTED: 12/18/09
	SHEET NO. <b>500-3</b>

NOTES:

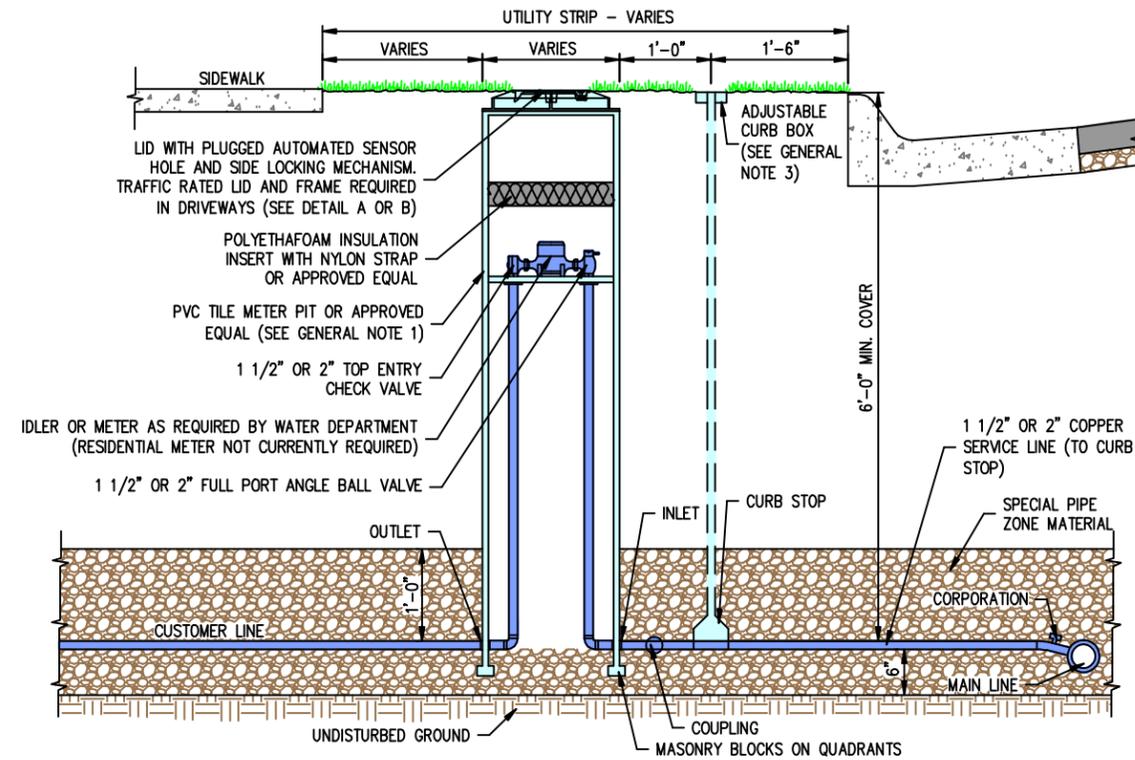
1. 4 INCHES OF 3/4" COMPACTED AGGREGATE BASE SHALL BE REQUIRED UNDER ALL CROSS DRAINS AND CONCRETE WHERE UNSUITABLE BASE MATERIAL IS ENCOUNTERED, IF FILL MATERIAL IS REQUIRED, OR WHERE DIRECTED BY CITY ENGINEER.
2. ALL CONCRETE SHALL BE CURED WITH A CURING COMPOUND AS SPECIFIED IN THE STANDARD SPECIFICATIONS OR AS DIRECTED BY THE CITY ENGINEER.
3. SCORING LINES SHALL BE A MINIMUM OF 2" DEEP AND LOCATED EVERY 10' IN ALL VALLEY GUTTER SECTIONS.
4. MINIMUM RUNNING SLOPE OF CROSS DRAINS SHALL BE 1% OR AS APPROVED BY THE CITY ENGINEER.
5. VALLEY GUTTER SHALL BE USED ONLY AS A LAST RESORT. ALL OTHER OPTIONS MUST BE EVALUATED BEFORE INSTALLING VALLEY GUTTER.



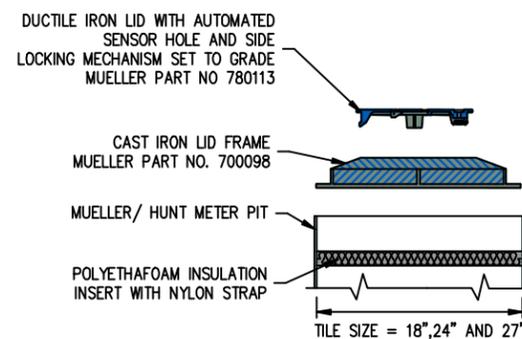
CITY OF <b>IDAHO FALLS</b> ENGINEERING DEPARTMENT STANDARD DRAWINGS 2010		
<b>PORTLAND CEMENT CONCRETE</b>  <b>CROSS DRAIN</b>		
DRAWN BY: T. WHITE FILE NO. 0-00-00-0-ENG-2009-06 SCALE: 1"=10'	CHECKED BY: C.H. FREDERICKSEN FILE NAME: 500-4-2009 DATE PLOTTED: 12/18/09	SHEET NO. <b>500-4</b>



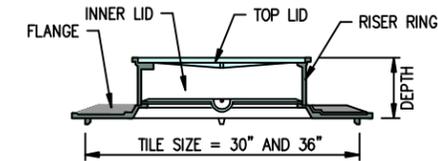
**1" WATER SERVICE WITH  
18" DIAMETER METER PIT**



**1 1/2" OR 2" WATER SERVICE WITH  
24", 27", 30" OR 36" DIAMETER METER PIT**



**DETAIL A  
TRAFFIC RATED RING AND LID  
18", 24" AND 27" DIAMETER  
METER PITS**



**DETAIL B  
MONITOR STYLE RING AND LID  
30" AND 36" DIAMETER METER PIT  
FOR 1 1/2" AND 2" METERS**

**GENERAL NOTES:**

1. APPROVED WATER LINE MATERIALS LIST MAINTAINED BY CITY OF IDAHO FALLS WATER DEPARTMENT (208) 612-8471.
2. CONTRACTOR SHALL NOTIFY CITY OF IDAHO FALLS WATER DEPARTMENT OF ANY WATER LINE CLOSURES.
3. CURB BOXES LOCATED IN CONCRETE SHALL BE EQUIPPED WITH A CURB BOX SLEEVE (MUELLER PART #: H-10342 OR APPROVED EQUAL).

**WATER METER NOTES:**

1. ALL BRASS FITTINGS AND VALVES FOR METER PIT AND SERVICE LINE SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR AND CONFORM TO AWWA C800 AND NSF 61.
2. BACKING WRENCH REQUIRED FOR CONNECTION OF METER PIT TO THE CITY SERVICE LINE AND CUSTOMER SERVICE LINE TO PREVENT DAMAGE TO PIT AND ASSOCIATED PIPING.
3. METER PIT LIDS SHALL BE SET WITHIN VERTICAL RANGE OF 0" TO 5" ABOVE TOP BACK OF CURB (-1" TO 4" OF FINISHED GRADE) IN UTILITY STRIP AND LANDSCAPING AREAS. LIDS SHALL BE SET TO GRADE IN CONCRETE AND ASPHALT SURFACES.
4. METER PITS AND CURB STOPS SHALL BE LOCATED IN LANDSCAPED AREAS WHERE POSSIBLE.
5. METER PITS LOCATED IN ASPHALT, CONCRETE, OR OTHER DRIVABLE SURFACES, SHALL BE EQUIPPED WITH TRAFFIC RATED LIDS AND FRAMES (SEE DETAIL A OR B).
6. 1 1/2" AND 2" METER PITS MAY BE ORDERED WITH BY-PASS LINES WITH WRITTEN APPROVAL FROM WATER DEPARTMENT. FOR APPROVAL, CONTACT WATER DEPARTMENT AT (208) 612-8471.

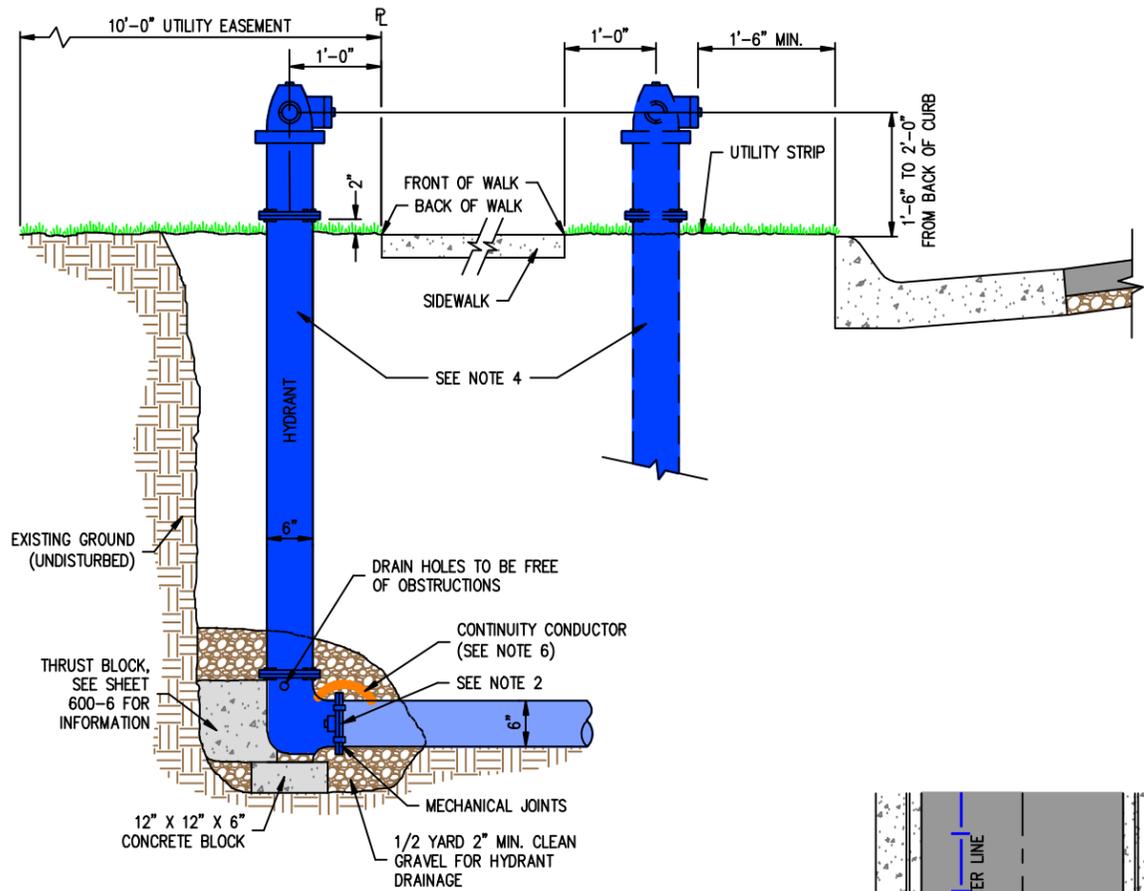


**CITY OF  
IDAHO FALLS  
ENGINEERING DEPARTMENT  
STANDARD DRAWINGS 2010**

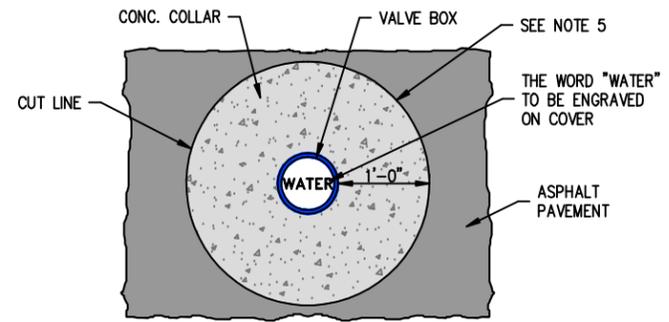
**WATER LINES**

**WATER SERVICE WITH METER PIT**

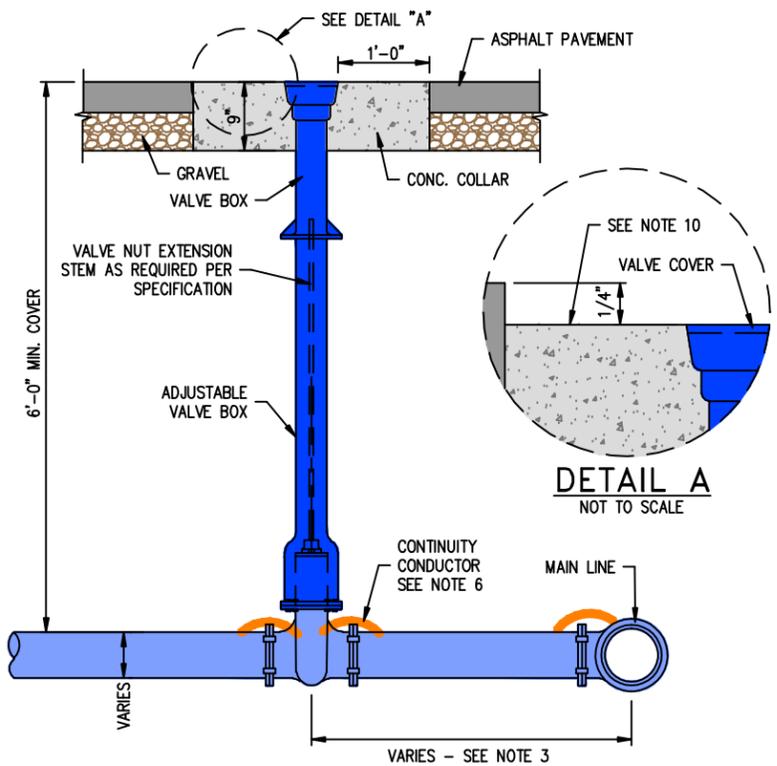
DRAWN BY: T. WHITE	CHECKED BY: C.H. FREDERICKSEN
FILE NO. 0-00-00-0-ENG-2009-06	FILE NAME: 600-1-2009
SCALE: 1"=2'	DATE PLOTTED: 12/18/09
	SHEET NO. <b>600-1</b>



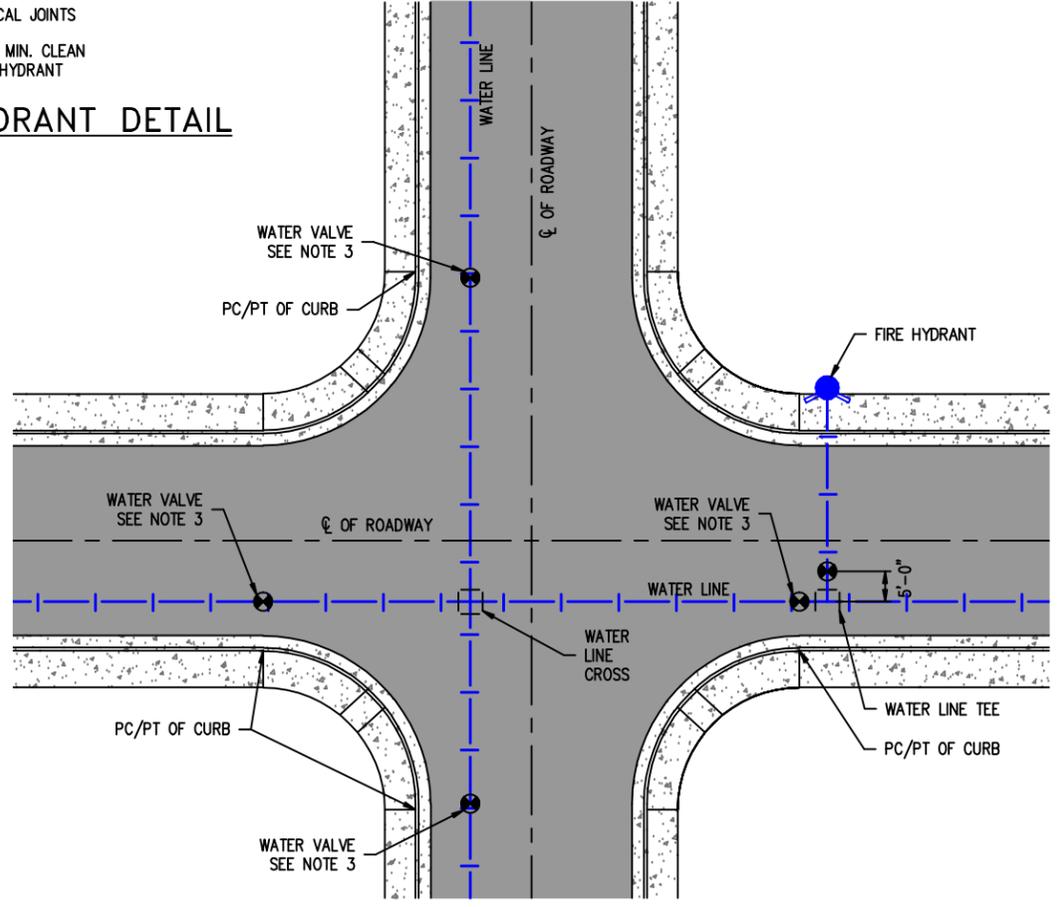
**FIRE HYDRANT DETAIL**



**PLAN VIEW**



**WATER MAIN VALVE INSTALLATION**



**WATER VALVE LOCATION AT INTERSECTIONS DETAIL**

SCALE - 1"=40'

**NOTES:**

1. ALL APPURTENANCES SHALL BE WRAPPED WITH 8 MIL. PLASTIC TO PREVENT CONCRETE THRUST-BLOCKING FROM ADHERING TO ANY PART OF FITTINGS.
2. JOINT RESTRAINTS REQUIRED IF WATER LINE IS PLACED IN SERVICE PRIOR TO THRUST BLOCK ATTAINING REQUIRED STRENGTH.
3. WATER VALVES ON MAIN LINES AT INTERSECTIONS SHALL BE LOCATED AT P.C./P.T. OF CURB WHERE POSSIBLE. NO SERVICE CONNECTIONS SHALL BE ALLOWED BETWEEN WATER VALVES WITHIN THE INTERSECTION. WATER VALVES ON THE FIRE LINES SHALL BE 5' FROM THE CENTERLINE OF THE WATER MAIN OR AS DIRECTED BY THE ENGINEER.
4. FIRE HYDRANTS AND CURB STOPS SHALL BE LOCATED OUT OF SIDEWALK AREA WHERE POSSIBLE. LOCATE FIRE HYDRANTS 1'-0" BEHIND WALK IN UTILITY EASEMENT AS SHOWN OR 1'-0" IN FRONT OF WALK IF NO EASEMENT IS AVAILABLE BEHIND WALK.
5. ASPHALT CUT SHALL BE NEAT & VERTICAL IN A CIRCLE SYMMETRICALLY AROUND VALVE BOX.
6. ALL CONTINUITY CONDUCTORS SHALL BE A MINIMUM #2 STRANDED COPPER WIRE WITH END SLEEVES.
7. CONTINUITY CONNECTION SHALL BE A CAD WELD TYPE HB OR EQUAL.
8. APPROVED WATER LINE MATERIALS LIST MAINTAINED BY CITY OF IDAHO FALLS WATER DEPARTMENT (208) 612-8471.
9. CONTRACTOR SHALL NOTIFY CITY OF IDAHO FALLS WATER DEPARTMENT OF ANY WATER LINE CLOSURES.
10. CONCRETE COLLAR SHALL BE FINISHED WITH A WOOD TROWEL, APPROXIMATELY 1/4" BELOW THE ADJACENT PAVEMENT ELEVATION.
11. ANY VALVE BOXES INSTALLED PERMANENTLY OUTSIDE OF PAVEMENT MUST HAVE CONCRETE COLLARS INSTALLED, SLOPE SURFACE MATERIAL AWAY FROM COLLAR APPROX. 1" - 1 1/2" BELOW BOX ELEVATION.



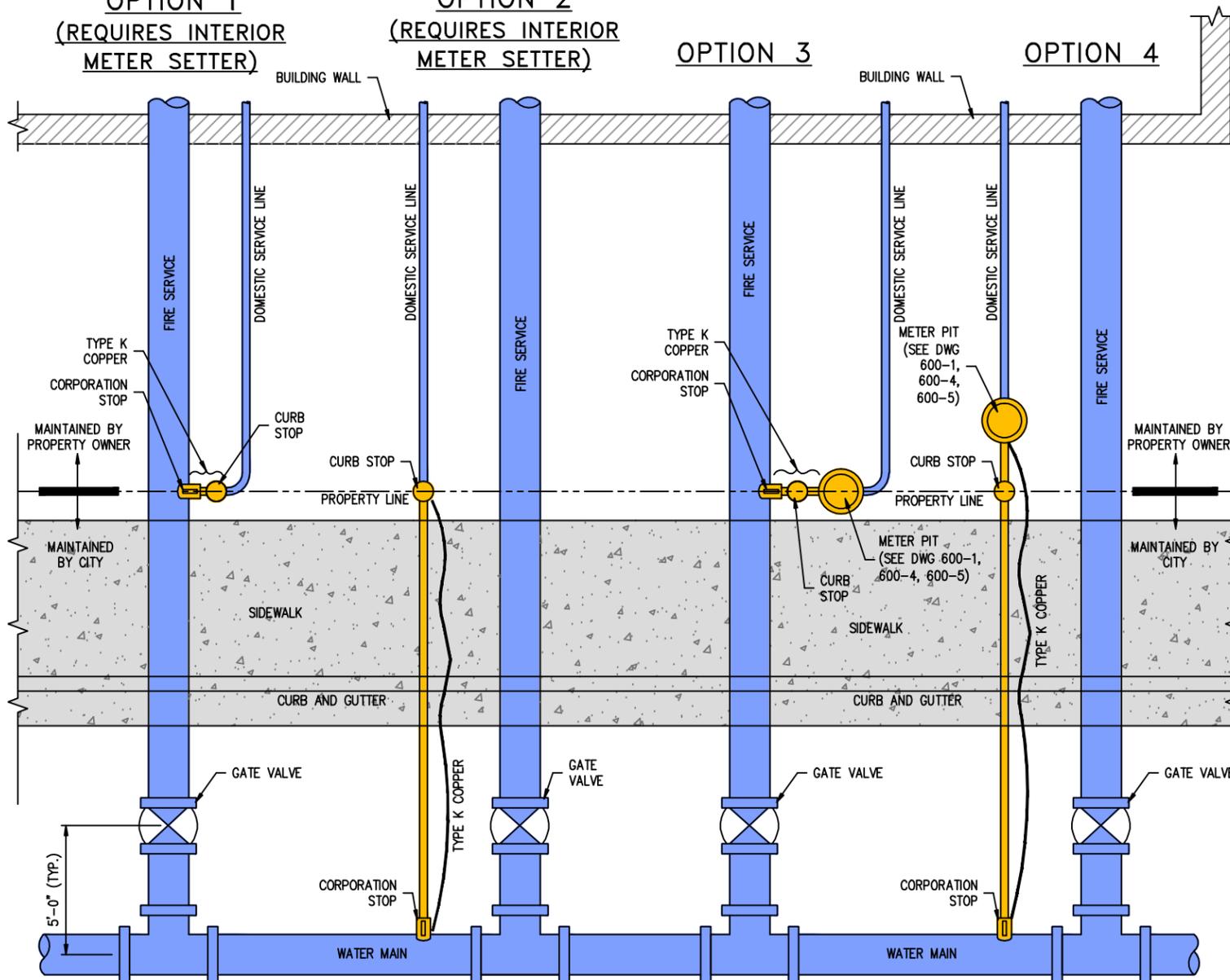
<b>CITY OF IDAHO FALLS</b> ENGINEERING DEPARTMENT STANDARD DRAWINGS 2010		
<b>WATER LINES</b> <b>FIRE HYDRANT &amp; WATER VALVE</b>		
DRAWN BY: T. WHITE FILE NO. 0-00-00-0-ENG-2009-06 SCALE: 1"=2'	CHECKED BY: C.H. FREDERICKSEN FILE NAME: 600-2-2009 DATE PLOTTED: 12/18/09	SHEET NO. <b>600-2</b>

**OPTION 1  
(REQUIRES INTERIOR  
METER SETTER)**

**OPTION 2  
(REQUIRES INTERIOR  
METER SETTER)**

**OPTION 3**

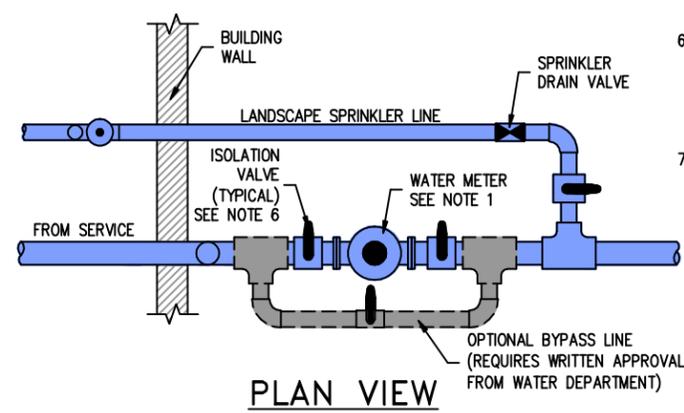
**OPTION 4**



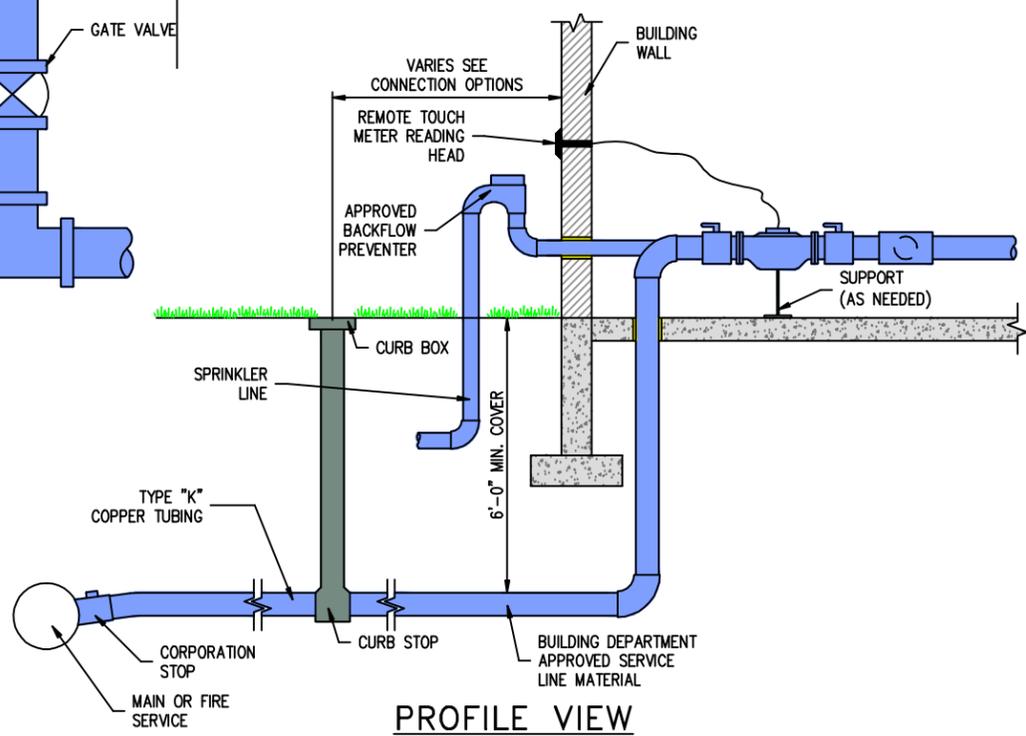
**INSTALLATION OPTIONS FOR  
WATER SERVICE CONNECTIONS**  
NOT TO SCALE

**NOTES:**

- PER IDAHO ADMINISTRATIVE CODE (IDAPA 58.01.08) ALL NEW WATER SERVICE LINE INSTALLATIONS SHALL INSTALL PROVISIONS FOR A WATER METER (EITHER A METER PIT OR A COMMERCIAL INTERIOR METER SETTER) TO CAPTURE BOTH DOMESTIC AND LANDSCAPE SPRINKLING USES.
- WHENEVER POSSIBLE, WATER METERS FOR COMMERCIAL INTERIOR METER SETTERS MUST BE MOUNTED IN A HORIZONTAL POSITION.
- LANDSCAPE SPRINKLER LINES MUST CONNECT TO SERVICE LINE AFTER WATER METER, OR CONTRACTOR WILL BE REQUIRED TO INSTALL A SEPARATE METER PIT FOR LANDSCAPE SPRINKLER LINE.
- COMMERCIAL INTERIOR METER SETTER SHALL BE LOCATED IN A HEATED MECHANICAL ROOM.
- METER BY-PASS LINES REQUIRE PRIOR WRITTEN APPROVAL FROM THE WATER DEPARTMENT. FOR APPROVAL, CONTACT WATER DEPARTMENT (208) 612-8471.
- ISOLATION VALVES SHALL BE INSTALLED IMMEDIATELY UP AND DOWNSTREAM OF THE WATER METER ON COMMERCIAL INTERIOR METER SETTERS. ISOLATION VALVES SHALL BE FULL PORT BALL VALVES FOR LINES SIZES UP TO 2" AND RESILIENT SEAT GATE VALVES FOR LINE SIZES OVER 2".
- WATER METERS SHALL BE PURCHASED AT THE CITY OF IDAHO FALLS WATER DEPARTMENT. CONTACT WATER DEPARTMENT (208) 612-8471 FOR APPROVED METERS.



**PLAN VIEW**



**PROFILE VIEW**

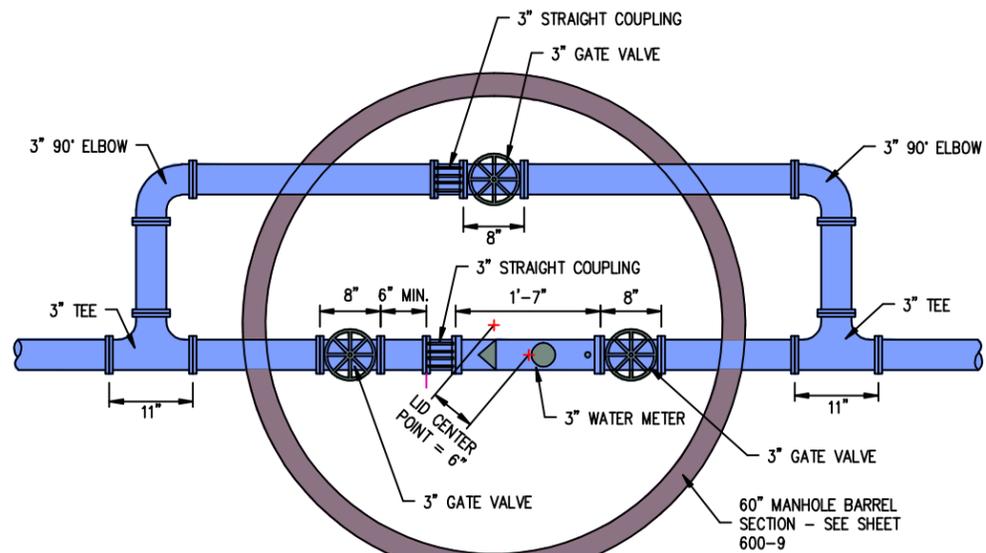
**COMMERCIAL INTERIOR METER SETTER**



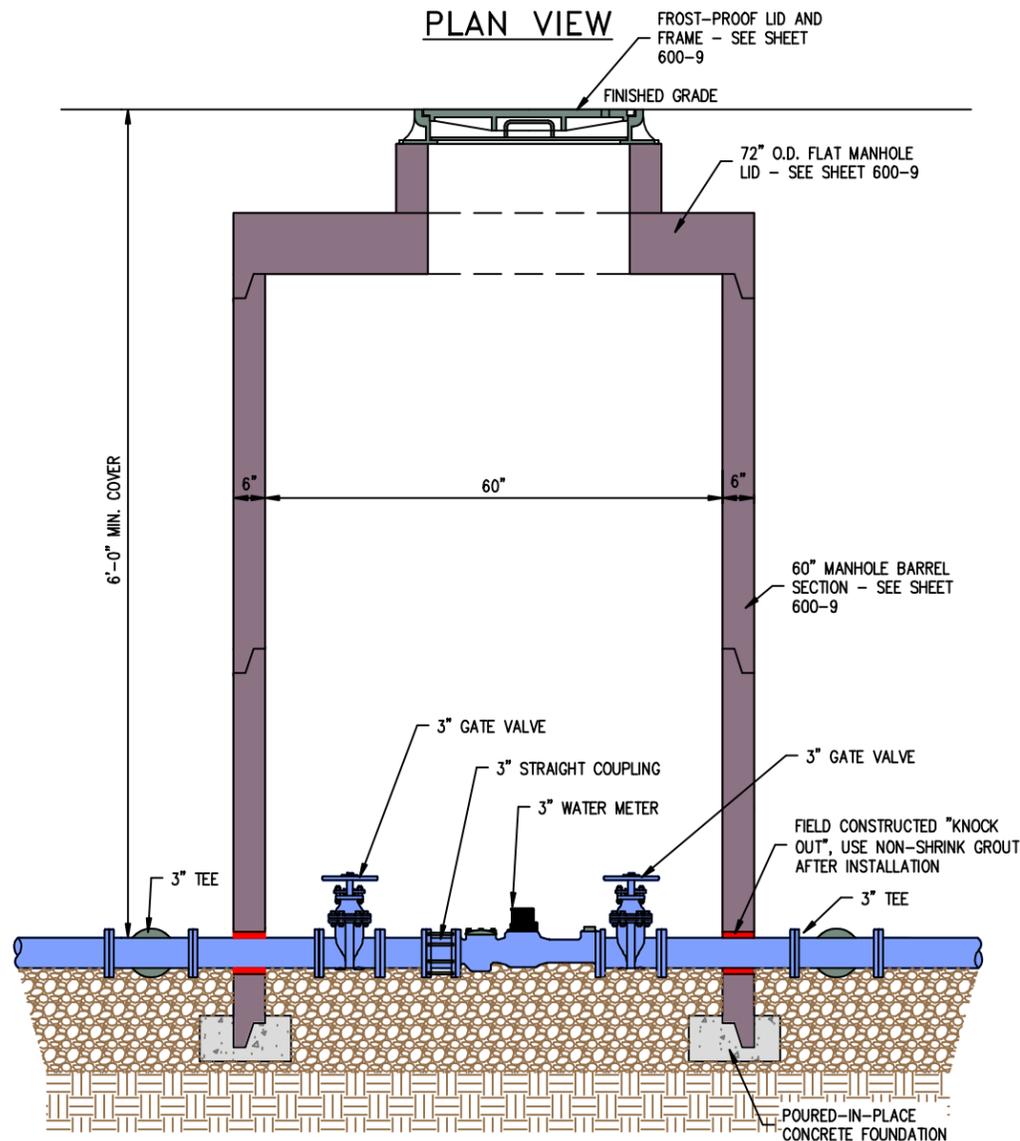
**CITY OF  
IDAHO FALLS**  
ENGINEERING DEPARTMENT  
STANDARD DRAWINGS 2010

**WATER LINES**  
**SERVICE LINES**

DRAWN BY: T. WHITE	CHECKED BY: C.H. FREDERICKSEN
FILE NO. 0-00-00-0-ENG-2009-06	FILE NAME: 600-3-2009
SCALE: 1"=4'	DATE PLOTTED: 12/18/09
	<b>SHEET NO. 600-3</b>

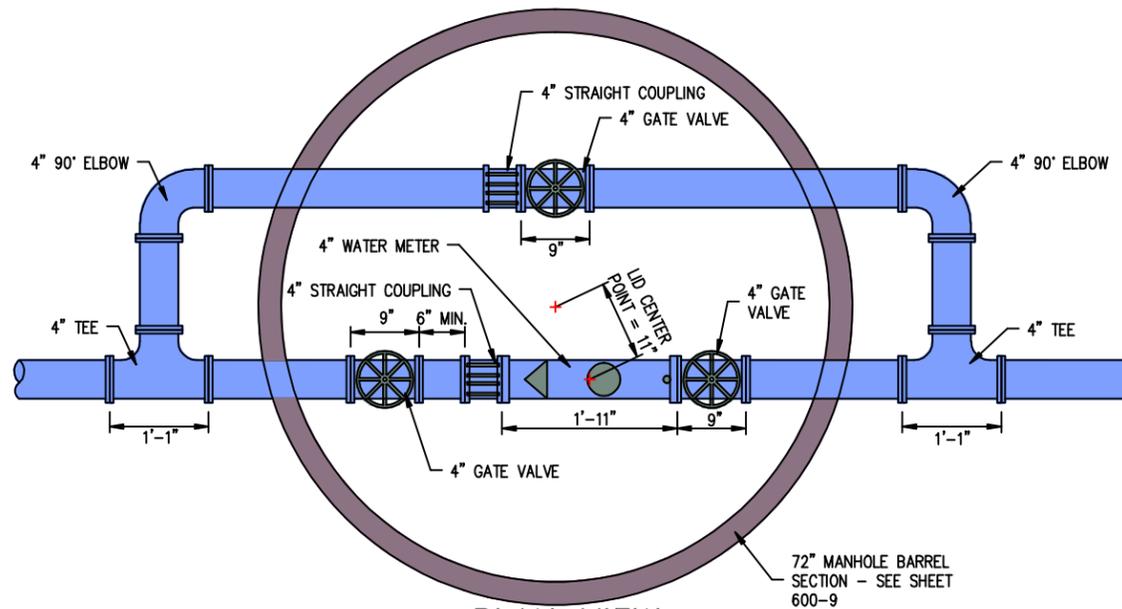


PLAN VIEW

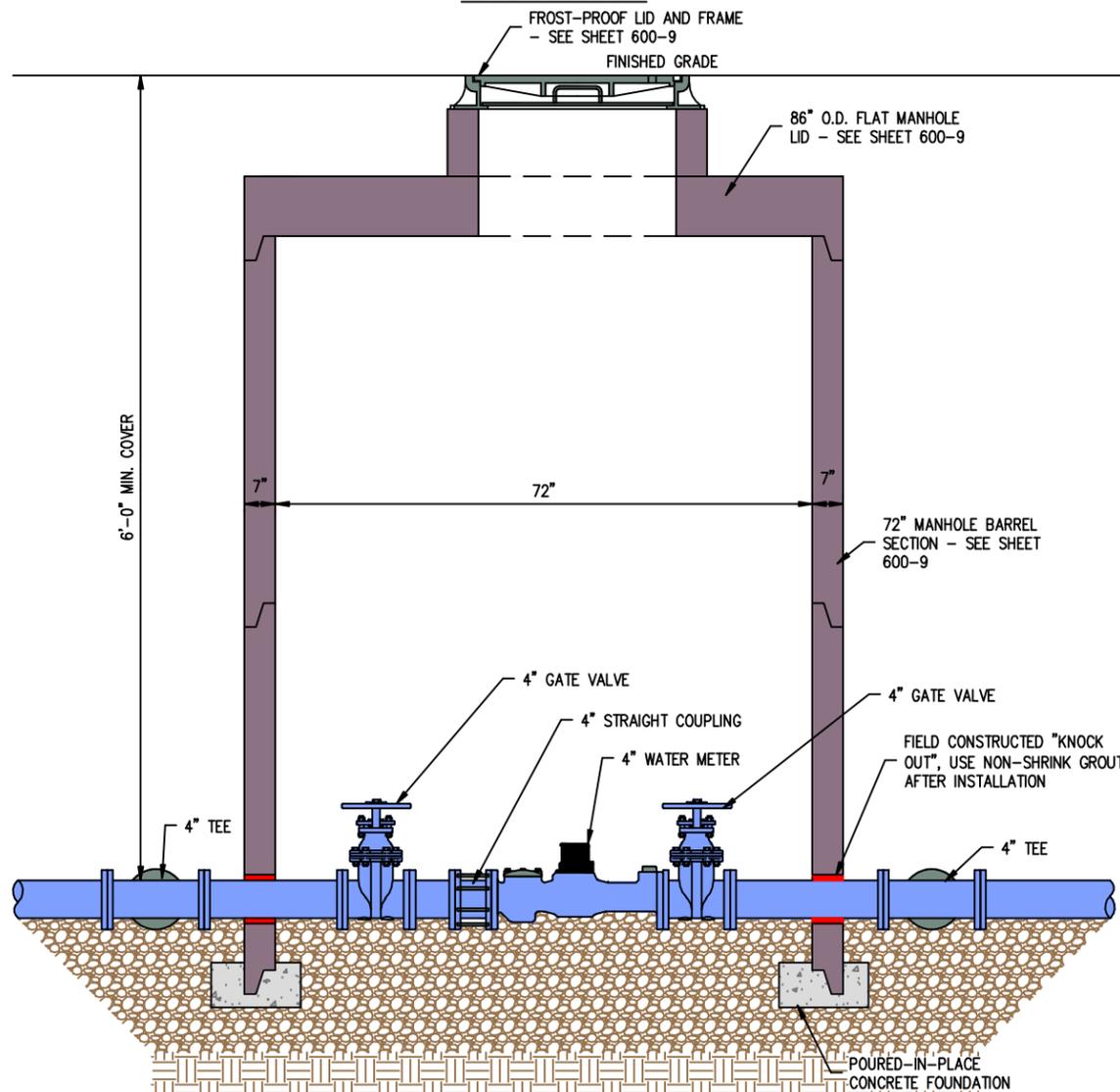


PROFILE VIEW

3" WATER LINE W/ 60" MANHOLE



PLAN VIEW



PROFILE VIEW

4" WATER LINE W/ 72" MANHOLE

NOTES:

1. ALL FITTINGS AND VALVES SHOWN IN METER ASSEMBLY SHALL BE RESTRAINED BY FLANGED CONNECTIONS OR MECHANICAL JOINT RESTRAINTS (MEGA-LUG).
2. RESTRAINED FLANGED COUPLING ADAPTERS SHALL BE ROMAC RFCA SERIES OR APPROVED EQUAL.
3. METER BY-PASS LINES REQUIRE PRIOR WRITTEN APPROVAL FROM THE WATER DEPARTMENT. FOR APPROVAL, CONTACT WATER DEPARTMENT AT (208) 612-8471.
4. ALL METER MANHOLE LIDS TO BE ORIENTED DIRECTLY ABOVE WATER METER, NO EXCEPTIONS.



CITY OF IDAHO FALLS  
ENGINEERING DEPARTMENT  
STANDARD DRAWINGS 2010



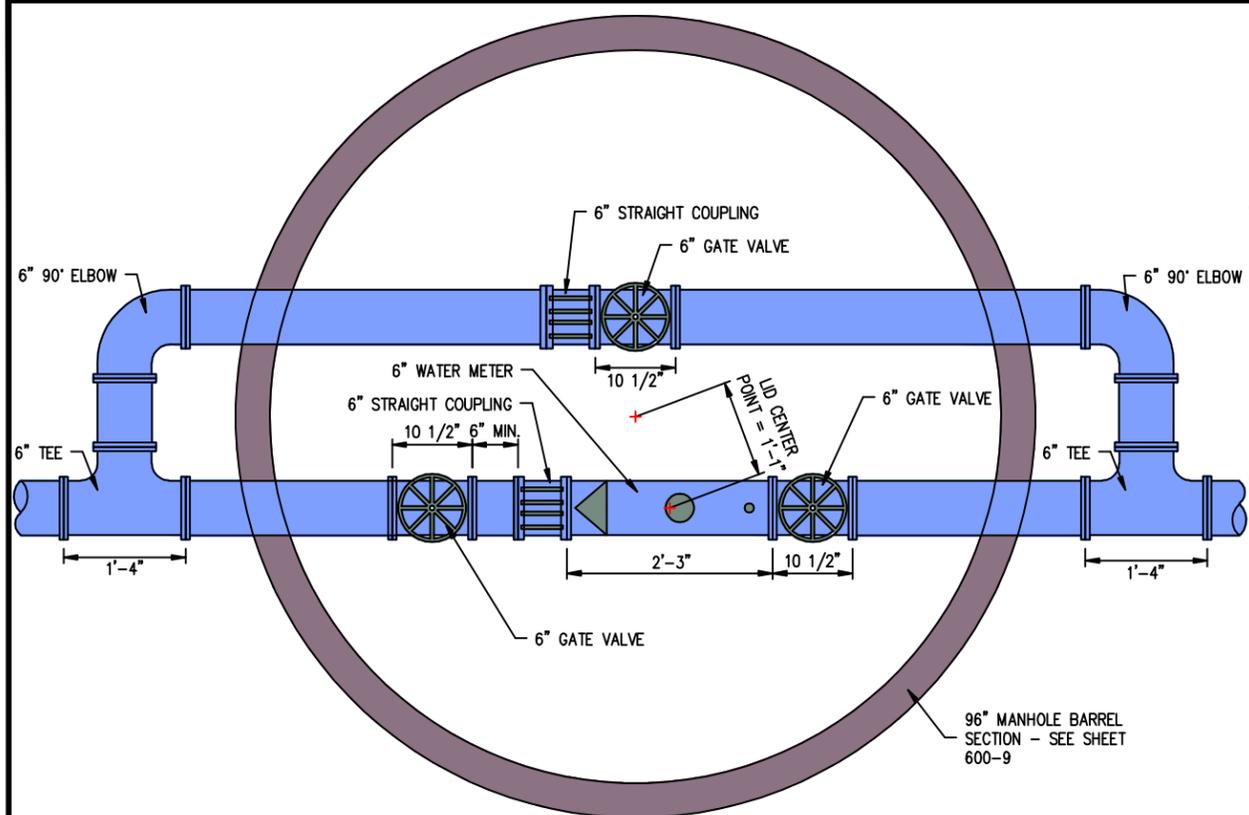
WATER LINES

WATER METER MANHOLES (3" & 4")

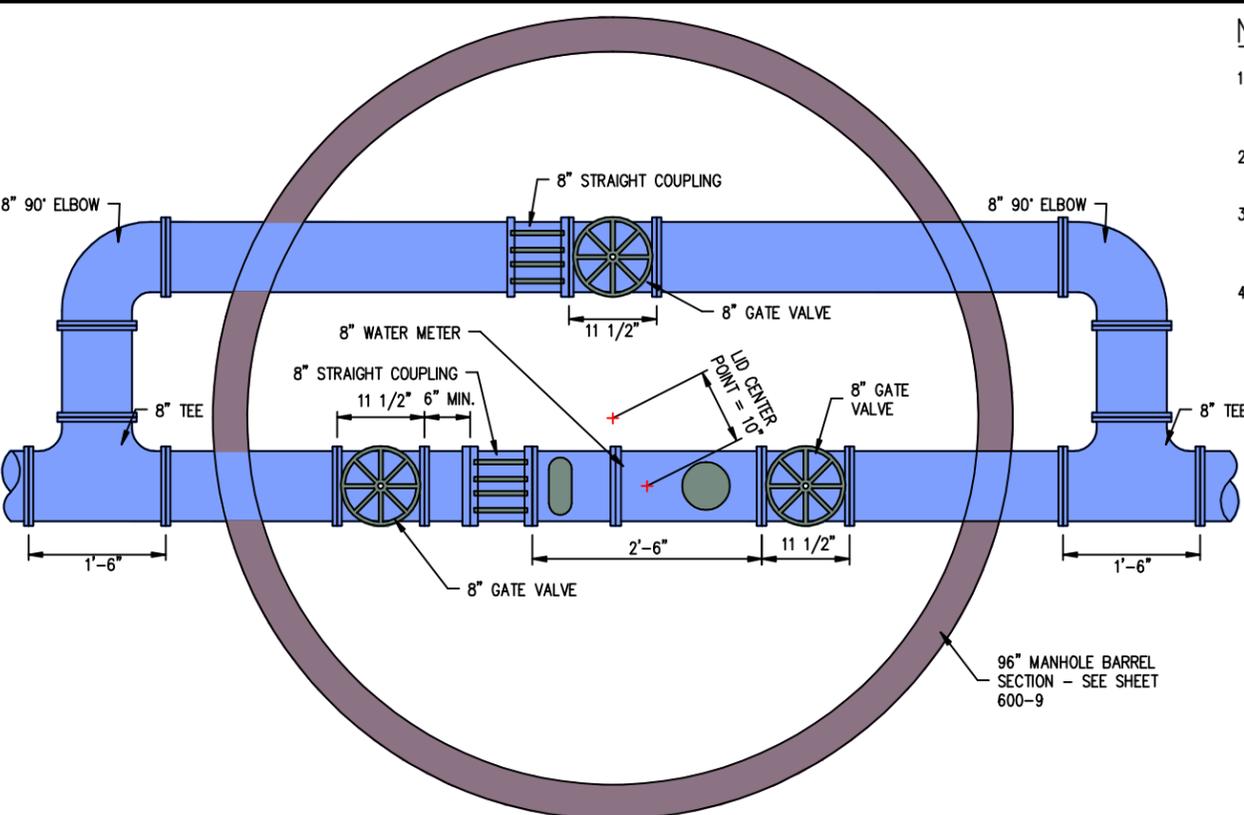
DRAWN BY: T. WHITE	CHECKED BY: C.H. FREDERICKSEN
FILE NO. 0-00-00-0-ENG-2009-06	FILE NAME: 600-4-2009
SCALE: 1"=2'	DATE PLOTTED: 12/18/09
	SHEET NO. 600-4

**NOTES:**

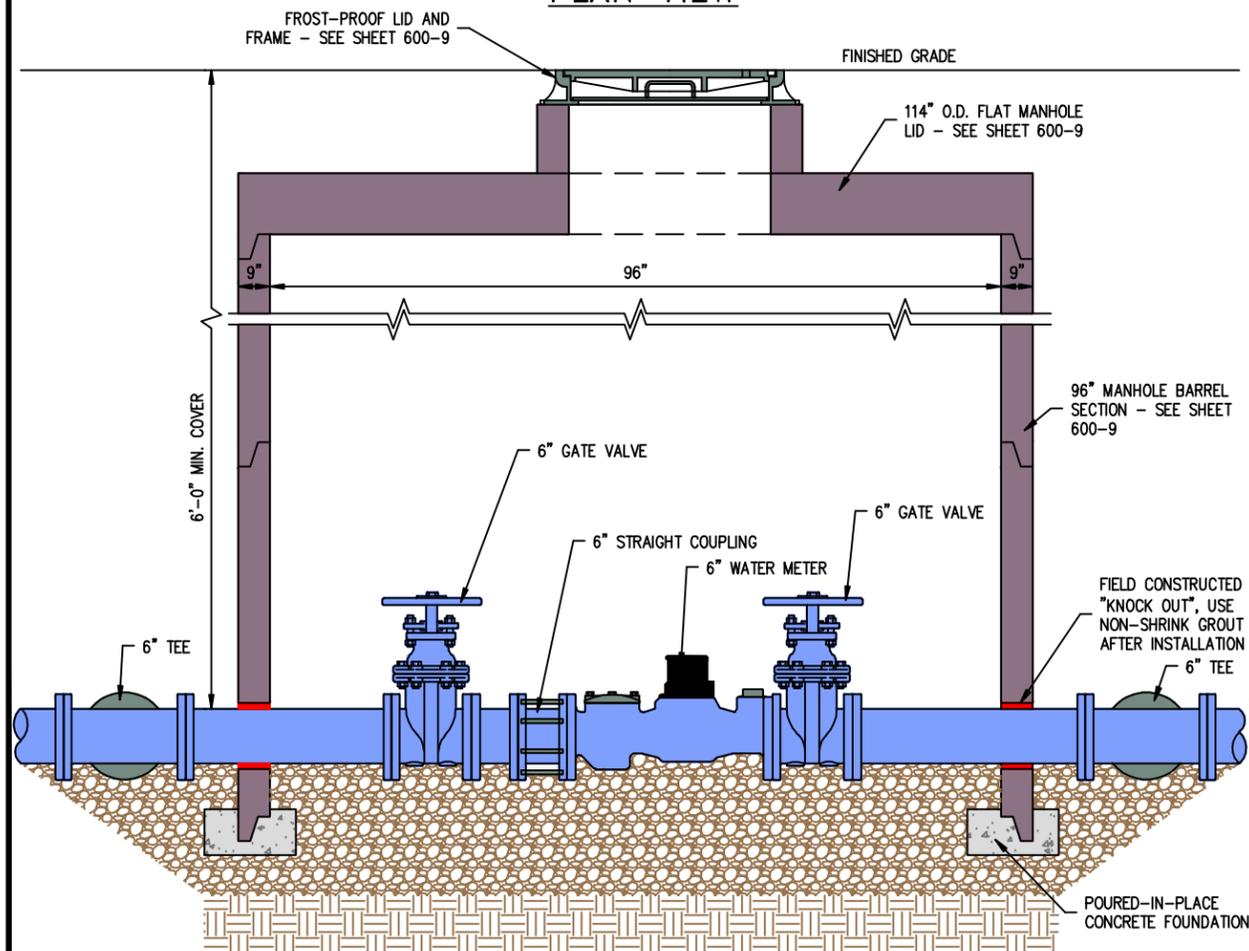
1. ALL FITTINGS AND VALVES SHOWN IN METER ASSEMBLY SHALL BE RESTRAINED BY FLANGED CONNECTIONS OR MECHANICAL JOINT RESTRAINTS (MEGA-LUG).
2. RESTRAINED FLANGED COUPLING ADAPTERS SHALL BE ROMAC RFCA SERIES OR APPROVED EQUAL.
3. METER BY-PASS LINES REQUIRE PRIOR WRITTEN APPROVAL FROM THE WATER DEPARTMENT. FOR APPROVAL, CONTACT WATER DEPARTMENT AT (208) 612-8471.
4. ALL METER MANHOLE LIDS TO BE ORIENTED DIRECTLY ABOVE WATER METER, NO EXCEPTIONS.



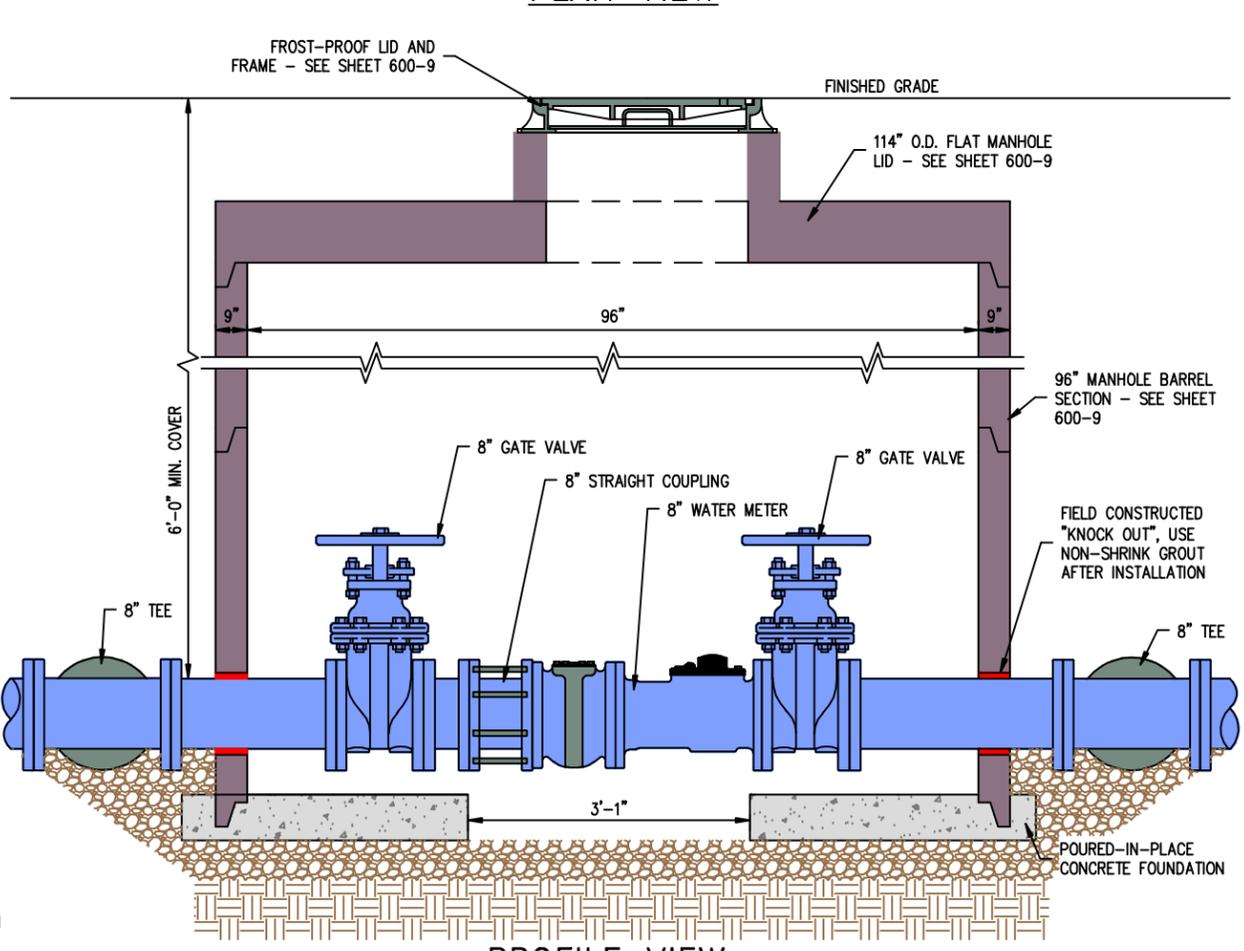
**PLAN VIEW**



**PLAN VIEW**



**PROFILE VIEW**  
**6" WATER LINE W/ 96" MANHOLE**



**PROFILE VIEW**  
**8" WATER LINE W/ 96" MANHOLE**



**CITY OF IDAHO FALLS**  
ENGINEERING DEPARTMENT  
STANDARD DRAWINGS 2010



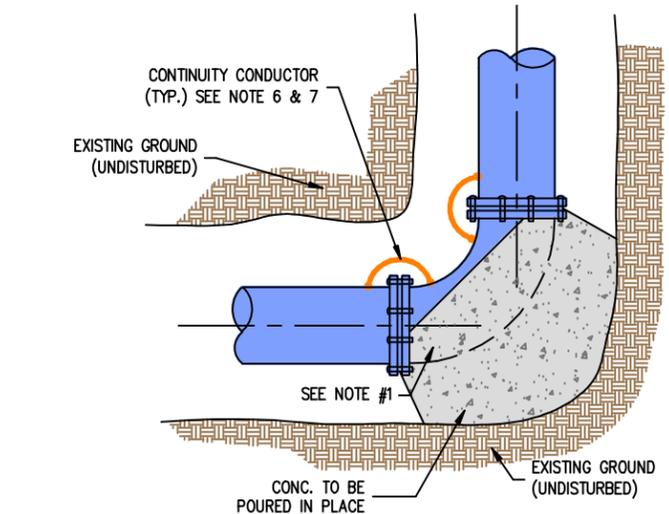
**WATER LINES**

**WATER METER MANHOLES (6" & 8")**

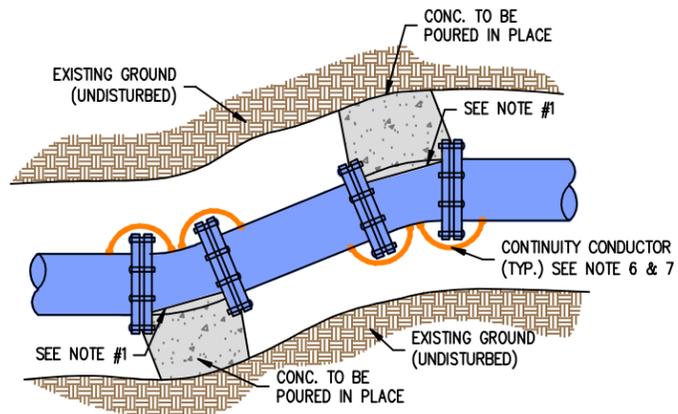
DRAWN BY: T. WHITE	CHECKED BY: C.H. FREDERICKSEN
FILE NO. 0-00-00-0-ENG-2009-06	FILE NAME: 600-5-2009
SCALE: 1"=2'	DATE PLOTTED: 12/18/09
	<b>SHEET NO. 600-5</b>



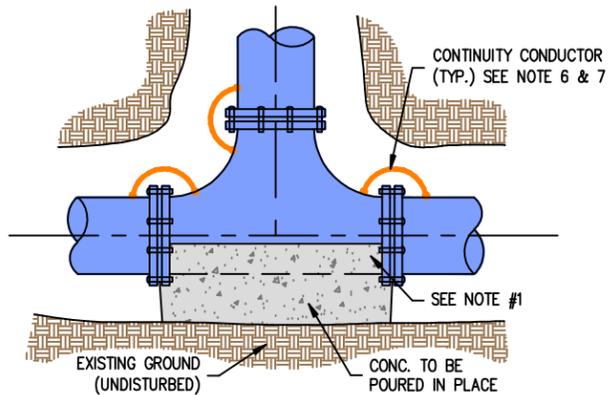
**TEE BLOCKING  
(SMALLER LINE OR PLUG)**



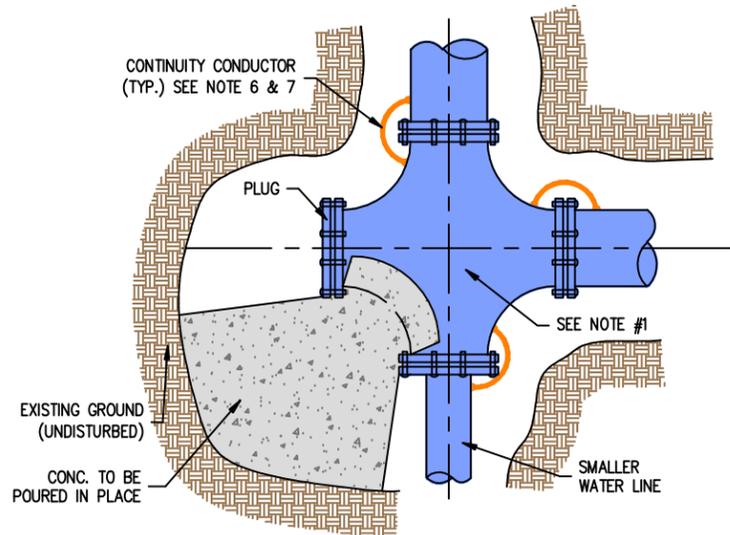
**BEND BLOCKING**



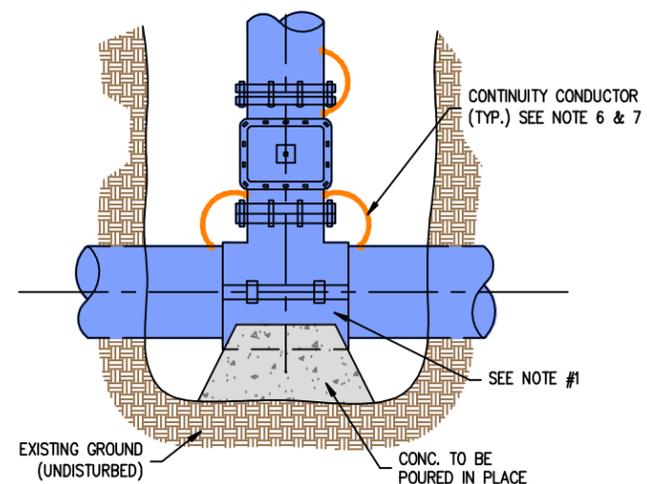
**HORIZONTAL BEND BLOCKING**



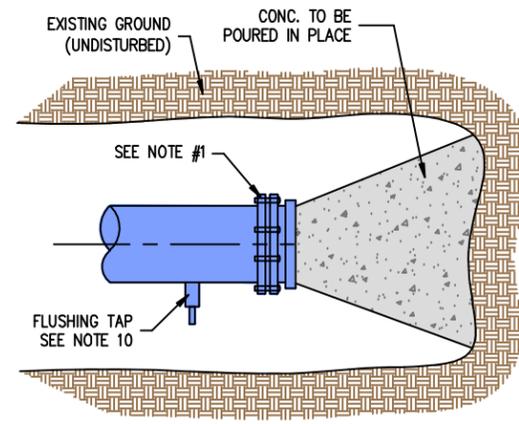
**TEE BLOCKING**



**CROSS BLOCKING  
(SMALLER LINE OR PLUG)**



**TAPPING TEE BLOCKING**



**PLUG BLOCKING**

**NOTES:**

- ALL APPURTENANCES TO BE WRAPPED WITH 8 MIL PLASTIC TO PREVENT CONCRETE FROM ADHERING TO ANY PART OF FITTINGS.
- ALL THRUST BLOCKING SHALL BE POURED AGAINST UNDISTURBED EARTH.
- REQUIRED AREA OF CONCRETE SURFACE BEARING AGAINST TRENCH WALL, FOR THRUST BLOCKS.
 

4" FITTING	3.0 SQ. FT.
6" FITTING	3.0 SQ. FT.
8" FITTING	5.3 SQ. FT.
10" FITTING	8.4 SQ. FT.
12" FITTING	11.8 SQ. FT.
14" FITTING	16.2 SQ. FT.
16" FITTING	21.1 SQ. FT.
18" FITTING	26.7 SQ. FT.
20" FITTING	33.0 SQ. FT.
24" FITTING	47.3 SQ. FT.
- JOINT RESTRAINTS REQUIRED IF WATER LINE IS PLACED IN SERVICE PRIOR TO THRUST BLOCK ATTAINING REQUIRED STRENGTH.
- ALL THRUST BLOCKS TO BE CLASS 4 CONCRETE.
- ALL CONTINUITY CONDUCTORS SHALL BE A MINIMUM #2 STRANDED COPPER WIRE WITH END SLEEVES.
- CONTINUITY CONNECTION SHALL BE A CAD WELD TYPE HB OR EQUAL.
- APPROVED WATER LINE MATERIALS LIST MAINTAINED BY CITY OF IDAHO FALLS WATER DEPARTMENT (208) 612-8471.
- CONTRACTOR TO NOTIFY CITY OF IDAHO FALLS WATER DEPARTMENT OF ANY WATER LINE CLOSURES.
- FLUSHING TAP TO BE INSTALLED ON WATER LINE PIPE AWAY FROM THRUST BLOCK. INSTALLATION OF FLUSHING TAP ON PLUG CAP OF WATER LINE WILL NOT BE ALLOWED. FLUSHING TAP MUST BE OF ALL BRASS CONSTRUCTION.
- FLUSHING TAPS SHALL ONLY BE INSTALLED ON TEMPORARY DEAD-END LINES THAT ARE PLANNED FOR FUTURE EXTENSION. UPON EXTENSION OF TEMPORARY DEAD-END LINES, FLUSHING TAP SHALL BE REMOVED AND REPLACED WITH A BRASS PLUG.
- FLUSH HYDRANTS (SEE DWG 600-8) SHALL BE INSTALLED ON ALL PERMANENT DEAD-END LINES (I.E. CUL-DE-SACS).



**CITY OF IDAHO FALLS**  
ENGINEERING DEPARTMENT  
STANDARD DRAWINGS 2010

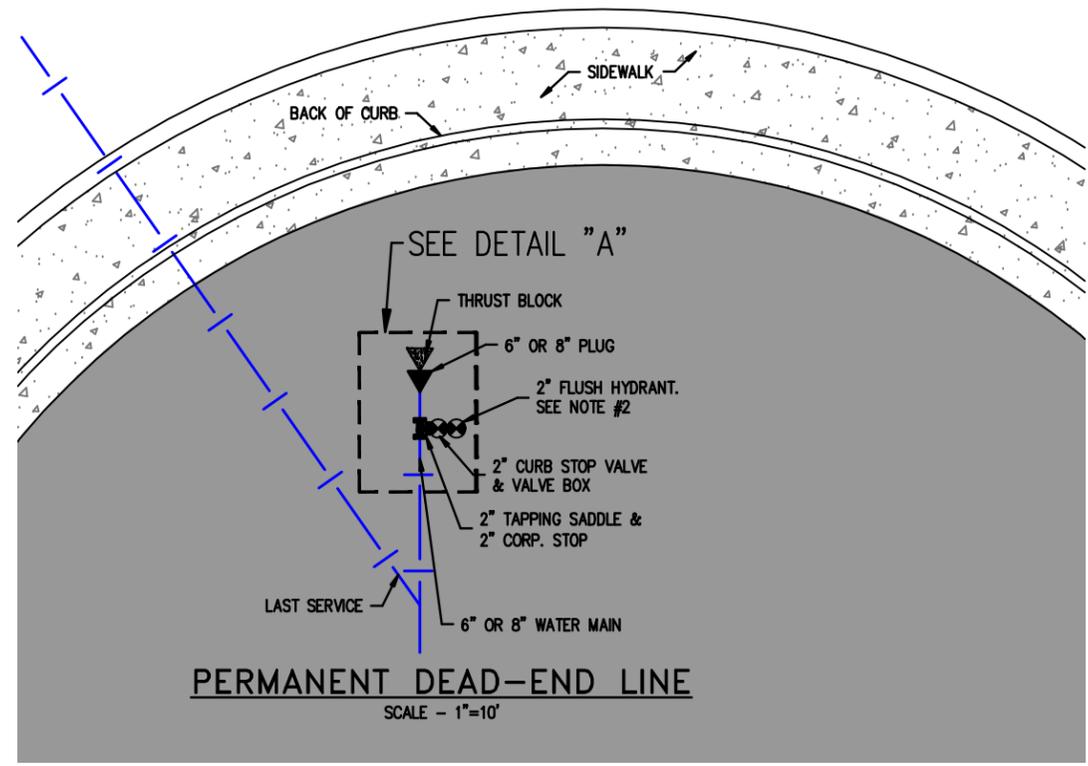
<b>WATER LINES</b>		
<b>THRUST BLOCKS &amp; CONTINUITY CONDUCTORS</b>		
DRAWN BY: T. WHITE	CHECKED BY: C.H. FREDERICKSEN	
FILE NO. 0-00-00-0-ENG-2009-06	FILE NAME: 600-6-2009	SHEET NO.
SCALE: 1"=2'	DATE PLOTTED: 12/18/09	<b>600-6</b>

**TYPICAL THRUST BLOCKING DETAILS**

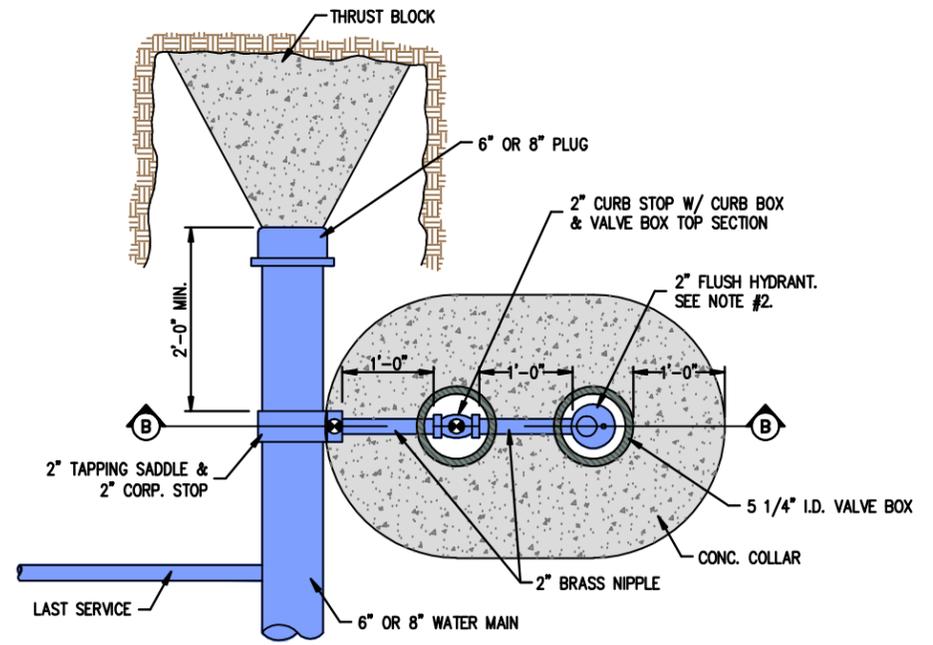


**NOTES:**

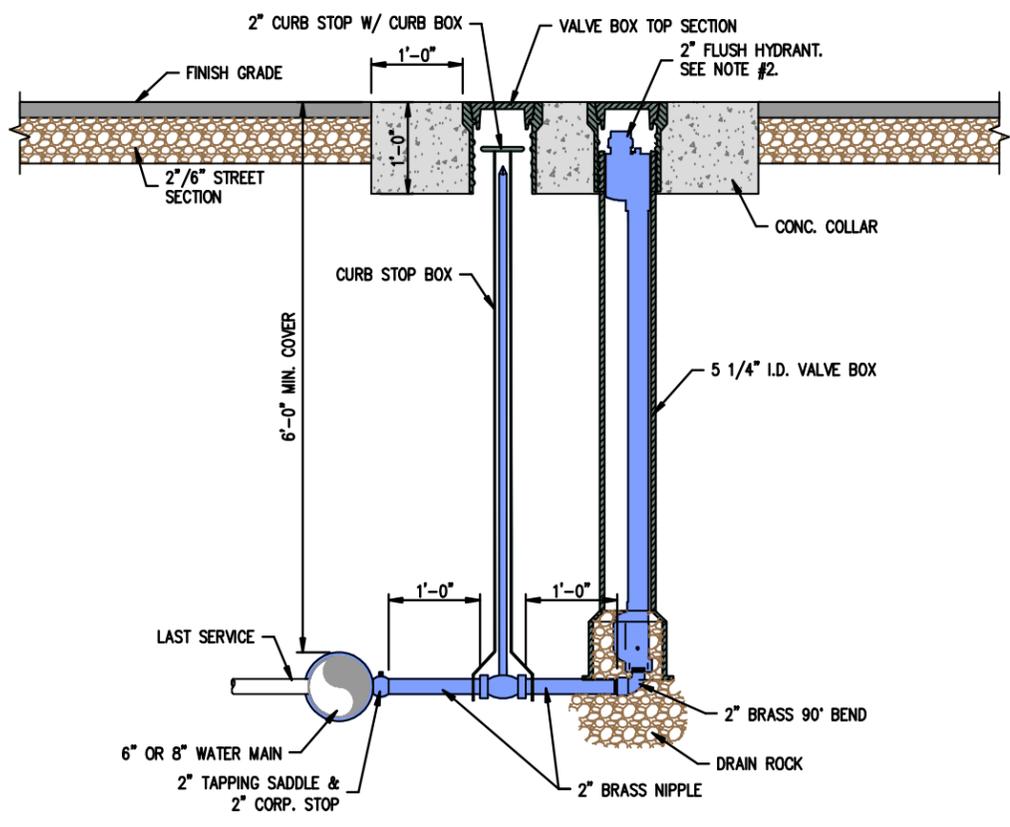
1. PER IDAHO ADMINISTRATIVE CODE (IDAPA 58.01.08.K) ALL PERMANENT DEAD-END WATERLINES SHALL BE EQUIPPED WITH A METHOD TO FLUSH THE LINE.
2. ALL DEAD-END LINES 6" - 8" IN DIAMETER SHALL BE FURNISHED WITH A 2" FLUSH HYDRANT, MODEL TF-500 FROM THE KUPFERLE FOUNDRY OR APPROVED EQUAL.
3. FLUSH HYDRANTS SHALL BE SELF-DRAINING AND SHALL BE DESIGNED FOR BELOW-GRADE APPLICATION, DESIGNED TO FIT WITHIN A STANDARD 5 1/4" I.D. VALVE BOX.
4. HYDRANT NOZZLE SHALL BE 2" NPS BRASS WITH MALE THREADS.
5. ALL NIPPLES AND FITTINGS USED FOR INSTALLATION SHALL BE OF BRASS CONSTRUCTION THAT IS NSF 61 CERTIFIED FOR POTABLE WATER.
6. BURIAL DEPTH OF FLUSH HYDRANT SHALL BE 6'-0" WITH BRASS NIPPLES USED TO SET THE HYDRANT NOZZLE BETWEEN 6" TO 1'-0" BELOW FINAL GRADE.
7. APPROVED WATER LINE MATERIALS LIST MAINTAINED BY CITY OF IDAHO FALLS WATER DEPARTMENT (208) 612-8471.
8. CONTRACTOR SHALL NOTIFY CITY OF IDAHO FALLS WATER DEPARTMENT OF ANY WATER LINE CLOSURES.
9. FLUSHING HYDRANTS SHALL BE INSTALLED ON ALL PERMANENT DEAD-END LINES (I.E. CUL-DE-SACS).



**PERMANENT DEAD-END LINE**  
SCALE - 1"=10'



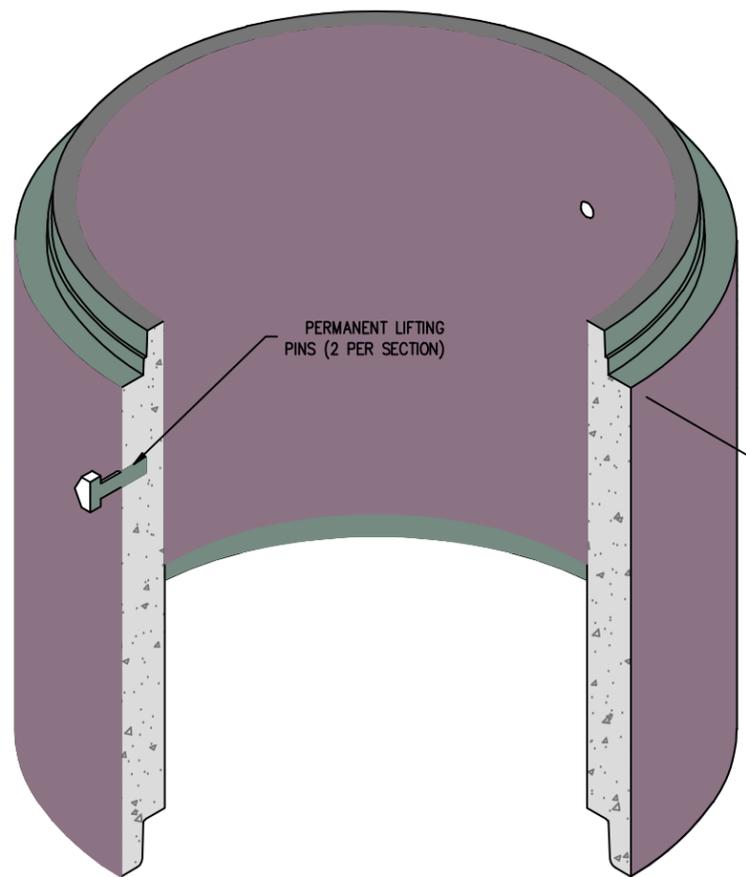
**DETAIL "A" PLAN VIEW**  
SCALE - 1"=2'



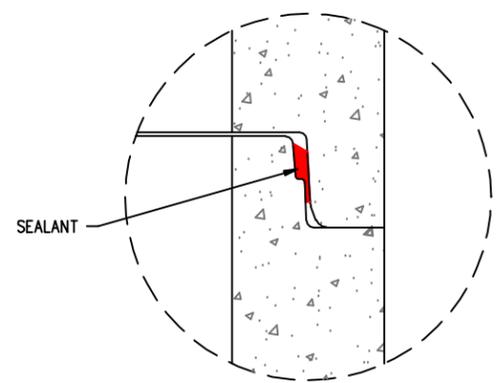
**SECTION B**  
SCALE 1"=2'



<b>CITY OF IDAHO FALLS</b> ENGINEERING DEPARTMENT STANDARD DRAWINGS 2010		
<b>WATER LINES</b>  <b>FLUSH HYDRANT</b>		
DRAWN BY: T. WHITE FILE NO. 0-00-00-0-ENG-2009-06 SCALE: VARIES	CHECKED BY: C.H. FREDERICKSEN FILE NAME: 600-8-2009 DATE PLOTTED: 12/18/09	SHEET NO. <b>600-8</b>

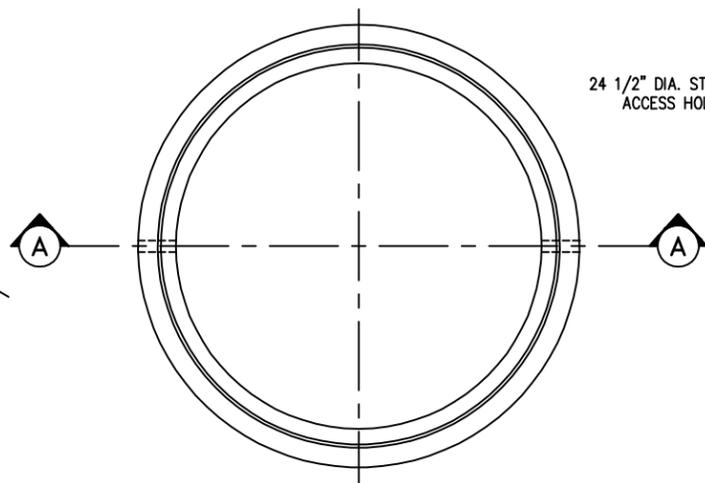


- NOTES:
1. MANHOLE SECTIONS ARE DESIGNED TO MEET ASTM C478.
  2. OPENINGS MAY BE SIZED AND LOCATED AS REQUIRED.
  3. FOR OPTIONAL ACCESSORIES CHECK ACCESSORIES / HARDWARE SECTION.

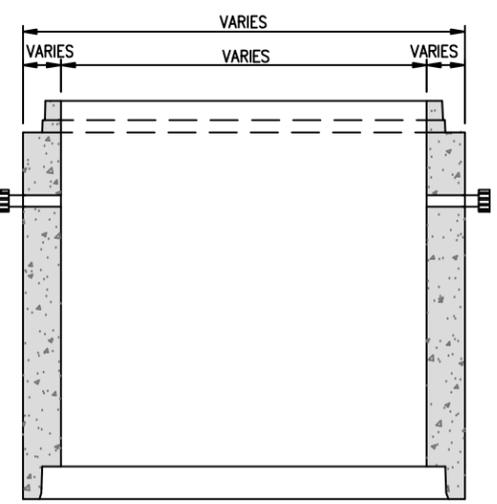


**JOINT DETAIL**

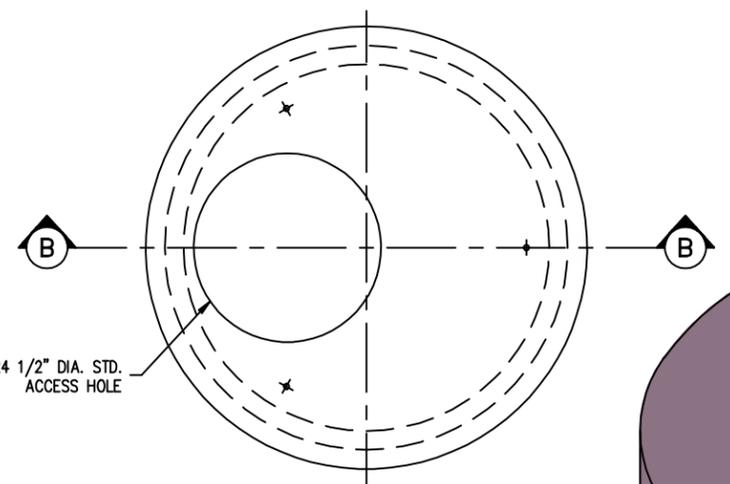
**PRECAST MANHOLE BARREL**



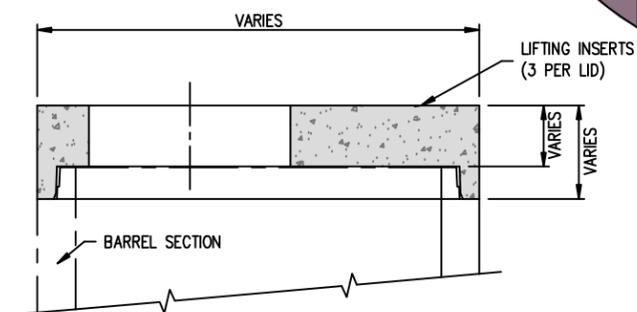
**PLAN VIEW**



**SECTION "A"-A"**



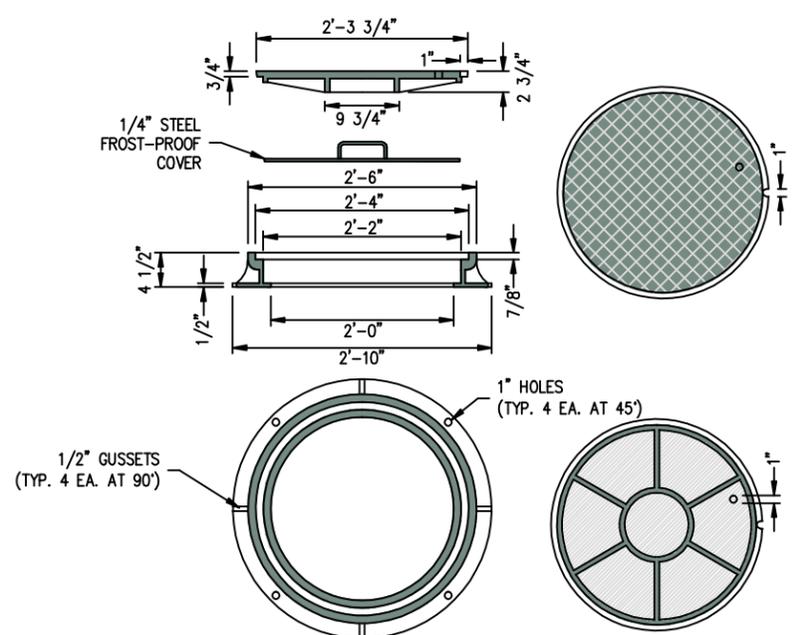
**PLAN VIEW**



**SECTION "B"-B"**

**PRECAST FLAT LID**

- NOTES:
1. LIDS ARE DESIGNED TO MEET ASTM C478 WITH AASHTO HS-20 LOADING.
  2. OPENINGS MAY BE SIZED AND LOCATED AS REQUIRED.
  3. OPTIONAL ACCESSORIES MAY BE CAST IN AS REQUIRED.
  4. FOR OPTIONAL ACCESSORIES CHECK ACCESSORIES / HARDWARE SECTION.



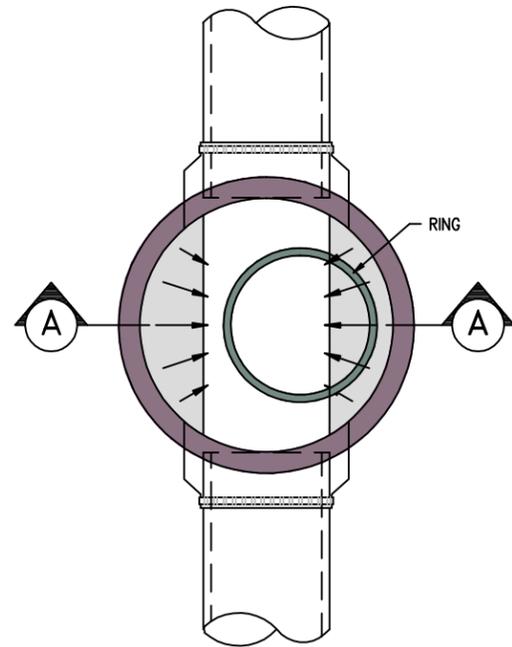
**METER PIT RING AND COVER DETAIL**  
(FROST PROOF)



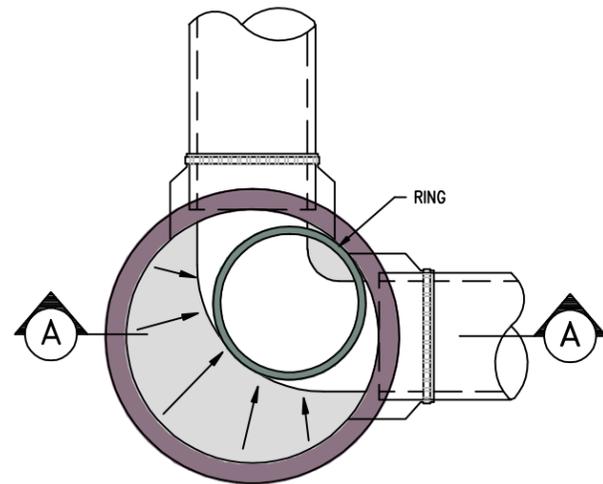
<b>CITY OF IDAHO FALLS</b> ENGINEERING DEPARTMENT STANDARD DRAWINGS 2010		
<b>WATER LINES</b> <b>WATER METER MANHOLE DETAILS</b>		
DRAWN BY: T. WHITE FILE NO. 0-00-00-0-ENG-2009-06 SCALE: 1"=2'	CHECKED BY: C.H. FREDERICKSEN FILE NAME: 600-9-2009 DATE PLOTTED: 12/18/09	SHEET NO. <b>600-9</b>

**NOTES:**

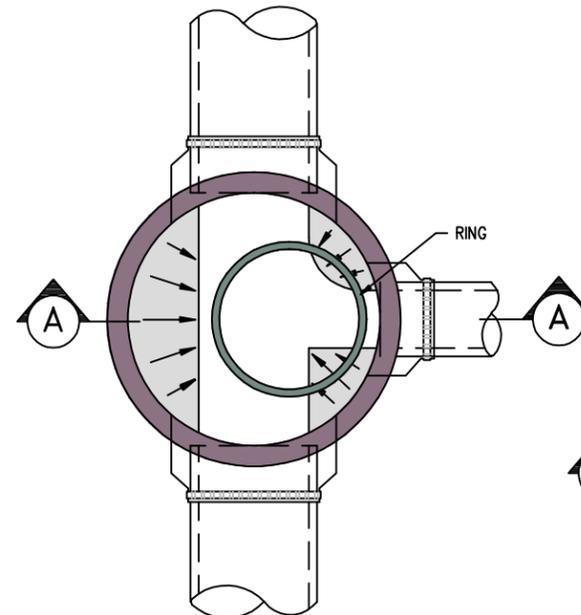
1. ALL MANHOLE FLOW LINES SHALL BE CONSTRUCTED TO PROVIDE SMOOTH FLOW THROUGH CHARACTERISTIC.
2. JOINTS, ETC., THAT MUST BE GROUTED, SHALL BE "DRY PACKED" WITH A NON-SHRINKING, NON-METALLIC, TYPE GROUT, SUCH AS THORITE (STANDARD DRY WALL PRODUCTS, INC.) OR EQUAL.
3. MATCH TOP OF PIPES WHEN THE INLET IS SMALLER IN DIAMETER THAN THE OUTLET, DISSIMILAR PIPE DIAMETERS, OR AS DIRECTED BY THE CITY ENGINEER.
4. MAXIMUM SPACING BETWEEN MANHOLES SHALL BE 300'-0" OR AS DIRECTED BY THE CITY ENGINEER.
5. ALL CONCRETE PIPES (24" OR LESS IN DIA.) CONNECTED TO MANHOLES OR INLET BOXES SHALL HAVE A BELL AND SPIGOT JOINT LOCATED WITHIN 24" OF THE OUTSIDE WALL OF STRUCTURE. THIS PROTRUDING PORTION OF PIPE SHALL BE SUPPORTED WITH CONCRETE UP TO, BUT NOT INCLUDING THE JOINT.
6. FLOW LINE OF OUTLET PIPE SHALL BE 0.10' BELOW FLOW LINE OF SAME SIZE INLET PIPE. IF PIPE IS INSTALLED THROUGH MANHOLE WITHOUT ANY JOINTS, PIPES CAN BE INSTALLED AT DESIGN GRADE.



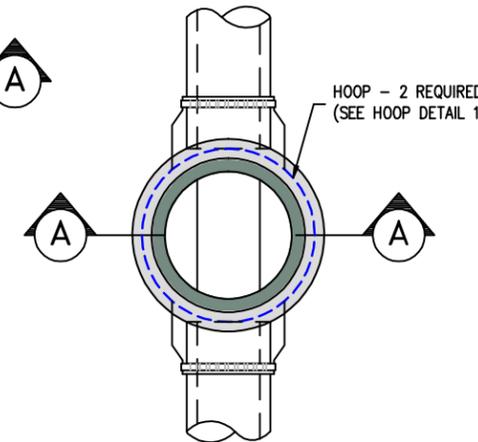
**PLAN VIEW WITH RING PLACEMENT**



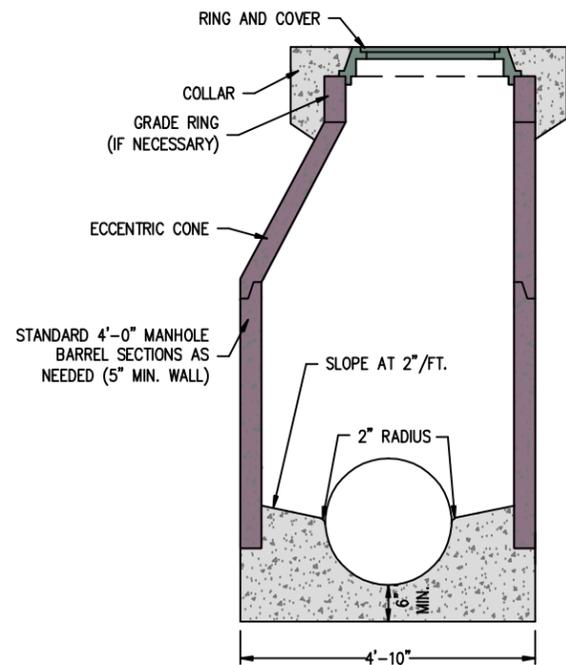
**PLAN VIEW WITH RING PLACEMENT**



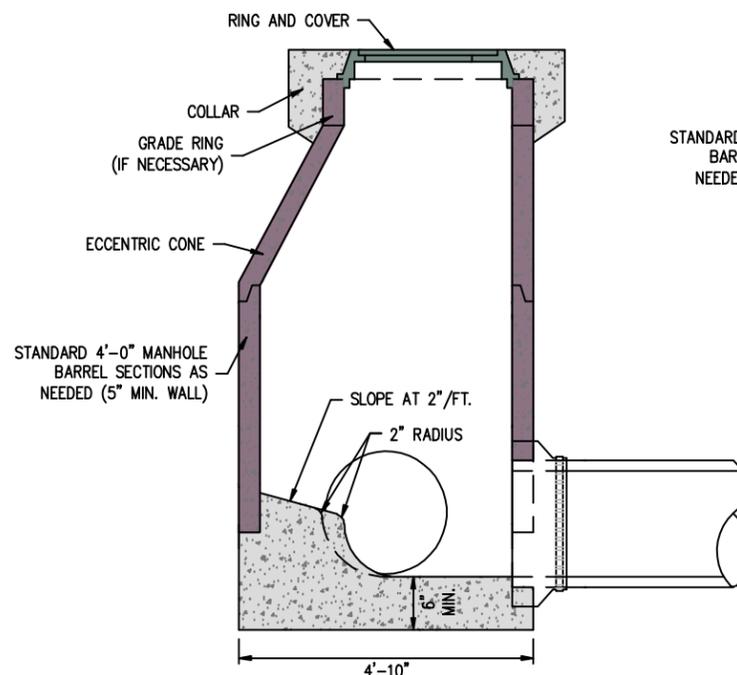
**PLAN VIEW WITH RING PLACEMENT**



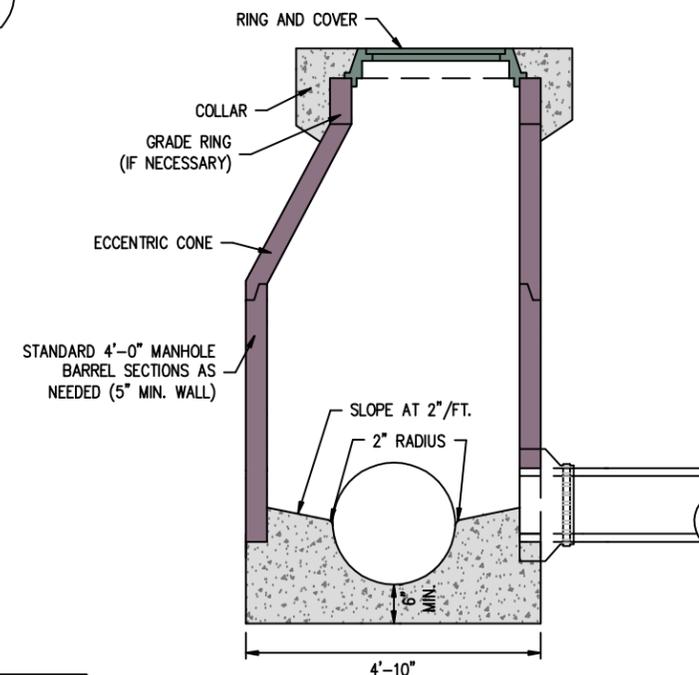
**PLAN VIEW WITH RING PLACEMENT**



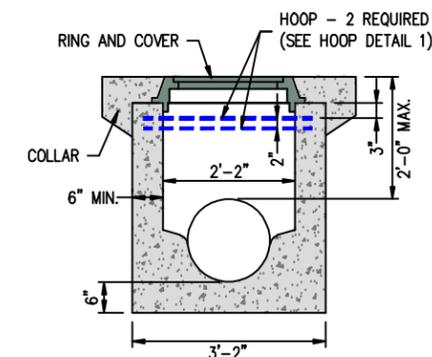
**SECTION A-A**



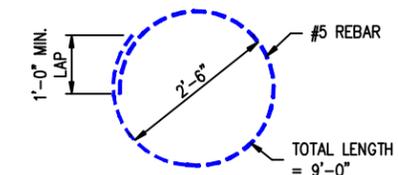
**SECTION A-A**



**SECTION A-A**



**SECTION A-A**

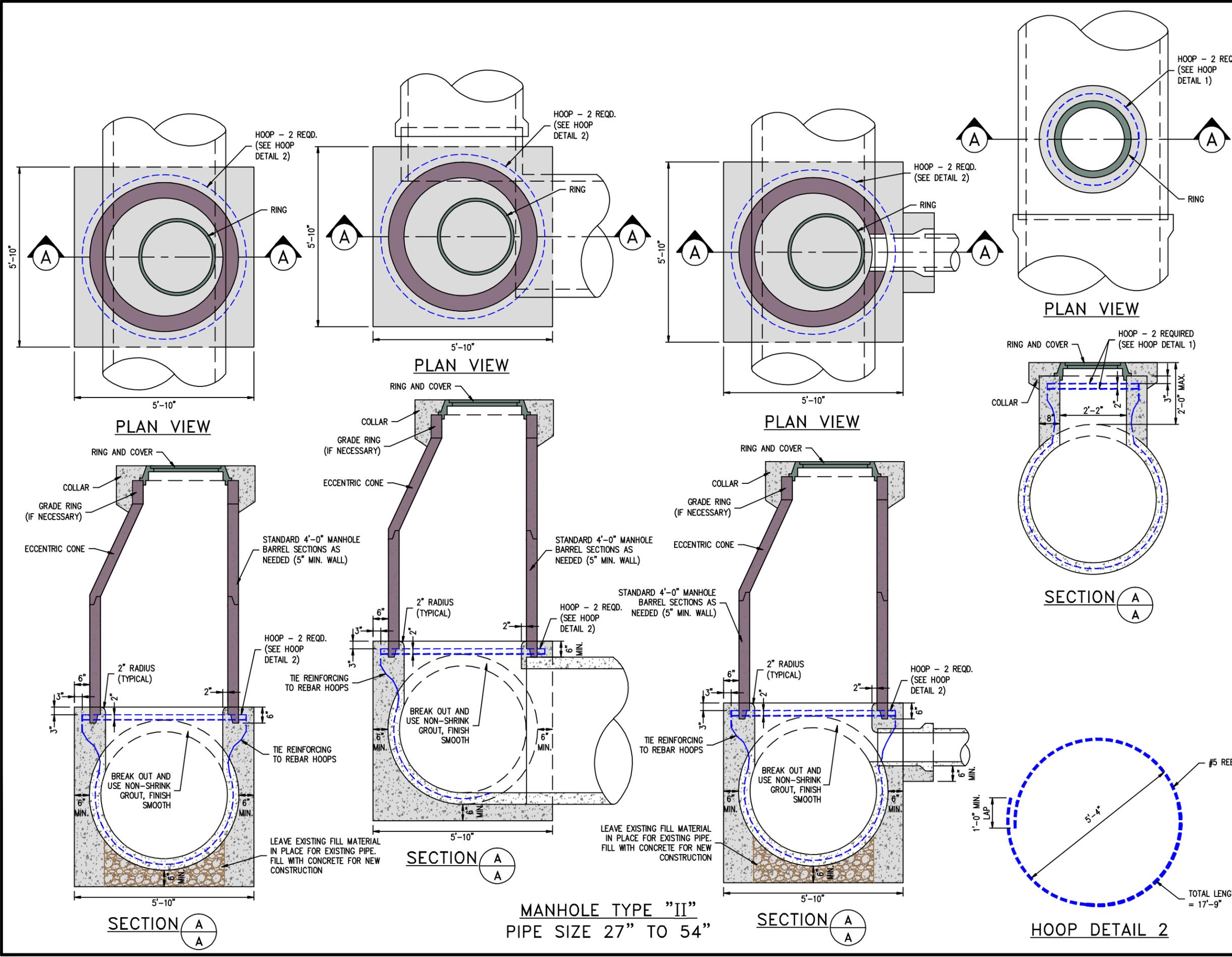


**HOOP DETAIL 1**

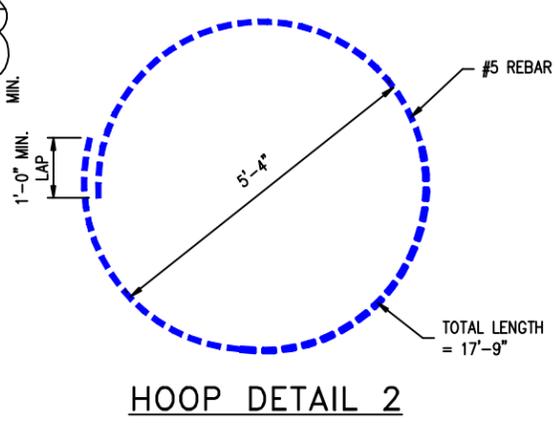
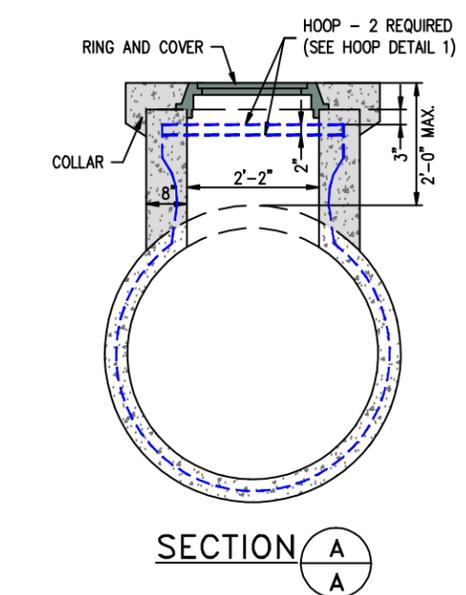
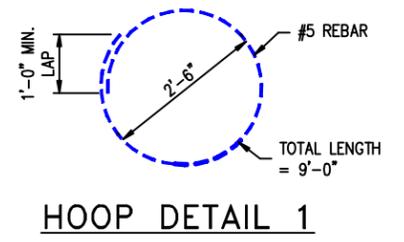


<b>CITY OF IDAHO FALLS</b> ENGINEERING DEPARTMENT STANDARD DRAWINGS 2010		
<b>SANITARY SEWER &amp; STORM DRAIN</b>  <b>MANHOLE TYPE I</b>		
DRAWN BY: T. WHITE FILE NO. 0-00-00-0-ENG-2009-06 SCALE: 1"=3'	CHECKED BY: C.H. FREDERICKSEN FILE NAME: 700-1-2009 DATE PLOTTED: 12/18/09	SHEET NO. <b>700-1</b>

**MANHOLE TYPE "I"**  
 MAXIMUM PIPE SIZE = 24"



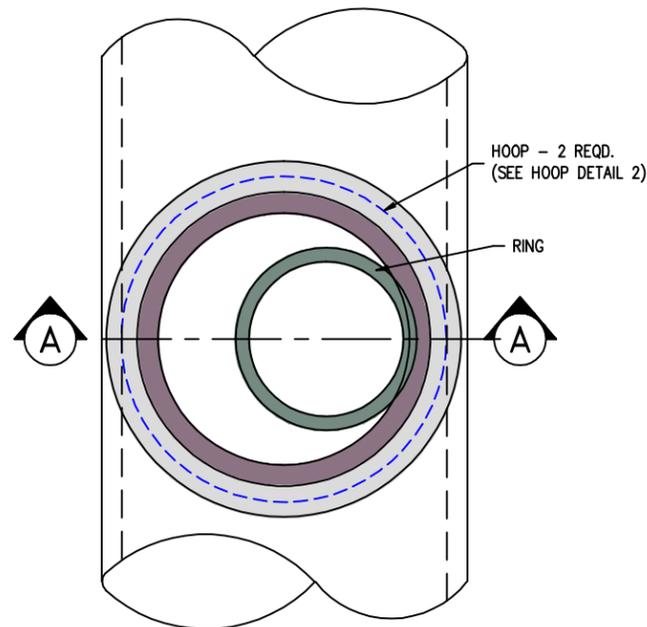
- NOTES:**
1. ALL MANHOLE FLOW LINES SHALL BE CONSTRUCTED TO PROVIDE SMOOTH FLOW THROUGH CHARACTERISTIC.
  2. ALL SURFACES (AGAINST WHICH CONCRETE OR NON-SHRINK GROUT IS TO BE PLACED) SHALL FIRST BE COATED WITH AN EPOXY BONDING AGENT SUCH AS SONNO BOND (SONNE BORN CO.), PROBOND EPOXY ET-150 (PROTEX INDUSTRIES CO.) OR EQUAL.
  3. JOINTS, ETC., THAT MUST BE GROUTED, SHALL BE "DRY PACKED" WITH A NON-SHRINKING, NON-METALLIC TYPE GROUT, SUCH AS THORITE (STANDARD DRY WALL PRODUCTS, INC.) OR EQUAL.
  4. ALL BROKEN PIPE FACES TO BE SMOOTHED OFF WITH NON-SHRINK GROUT.
  5. MATCH TOP OF PIPES WHEN THE INLET IS SMALLER IN DIAMETER THAN THE OUTLET OR AS DIRECTED BY THE CITY ENGINEER.



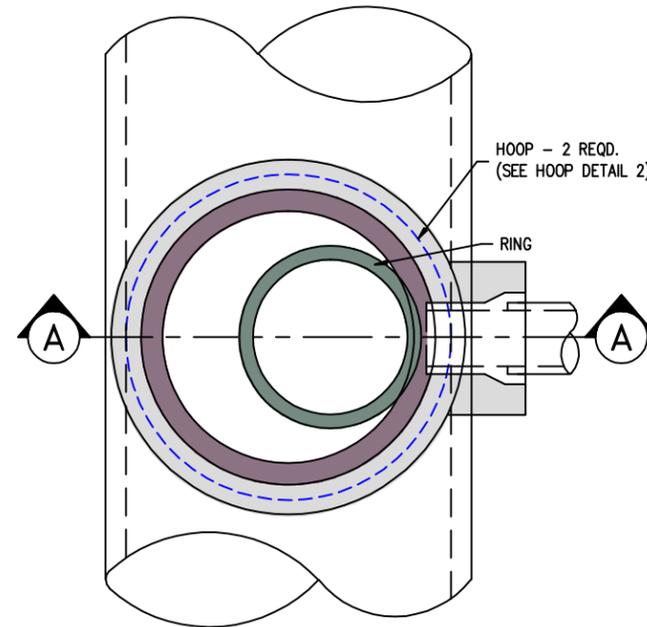
<b>CITY OF IDAHO FALLS</b> ENGINEERING DEPARTMENT STANDARD DRAWINGS 2010		
<b>SANITARY SEWER &amp; STORM DRAIN</b>  <b>MANHOLE TYPE II</b>		
DRAWN BY: T. WHITE FILE NO. 0-00-00-0-ENG-2009-06 SCALE: 1"=3'	CHECKED BY: C.H. FREDERICKSEN FILE NAME: 700-2-2009 DATE PLOTTED: 12/18/09	SHEET NO. <b>700-2</b>

**NOTES:**

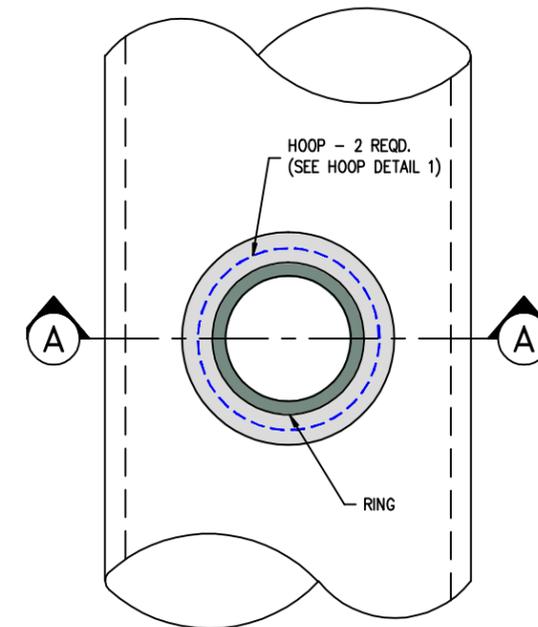
1. ALL MANHOLE FLOW LINES SHALL BE CONSTRUCTED TO PROVIDE SMOOTH FLOW THROUGH CHARACTERISTIC.
2. ALL SURFACES (AGAINST WHICH CONCRETE OR NON-SHRINK GROUT IS TO BE PLACED) SHALL FIRST BE COATED WITH AN EPOXY BONDING AGENT SUCH AS SONNO BOND (SONNE BORN CO.), PROBOND EPOXY ET-150 (PROTEX INDUSTRIES CO.) OR EQUAL.
3. JOINTS, ETC., THAT MUST BE GROUTED, SHALL BE "DRY PACKED" WITH A NON-SHRINKING, NON-METALLIC TYPE GROUT, SUCH AS THORITE (STANDARD DRY WALL PRODUCTS, INC.) OR EQUAL.
4. ALL BROKEN PIPE FACES TO BE SMOOTHED OFF WITH NON-SHRINK GROUT.
5. MATCH TOP OF PIPES WHEN THE INLET IS SMALLER IN DIAMETER THAN THE OUTLET OR AS DIRECTED BY THE CITY ENGINEER.
6. STRUCTURES FOR BENDS IN TYPE III MANHOLES SHALL BE DESIGNED BY A LICENSED STRUCTURAL ENGINEER FOR EACH SPECIFIC LOCATION.



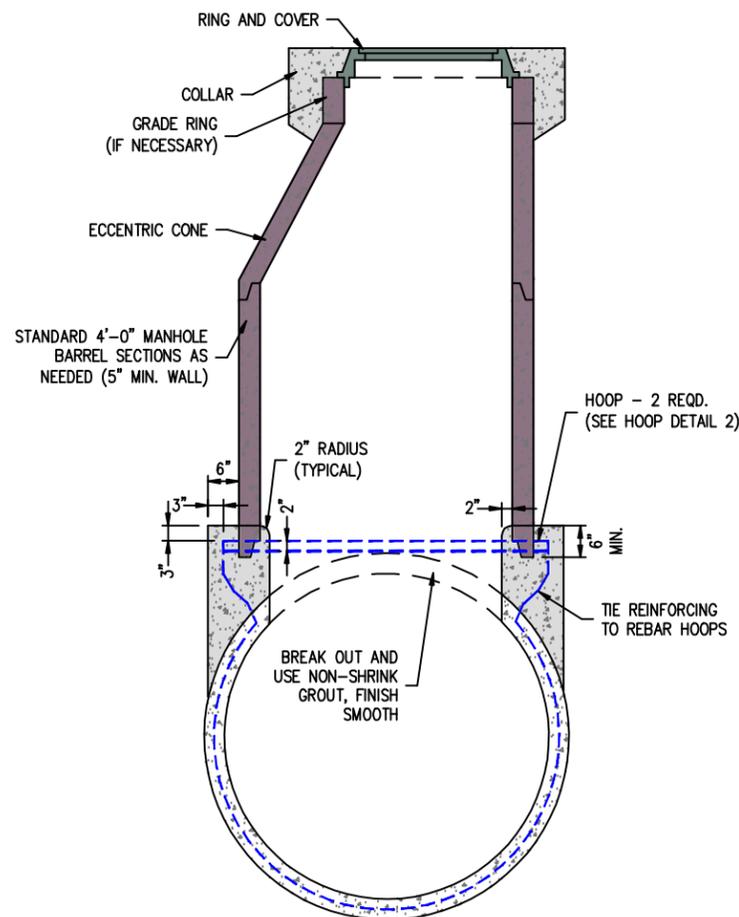
**PLAN VIEW**



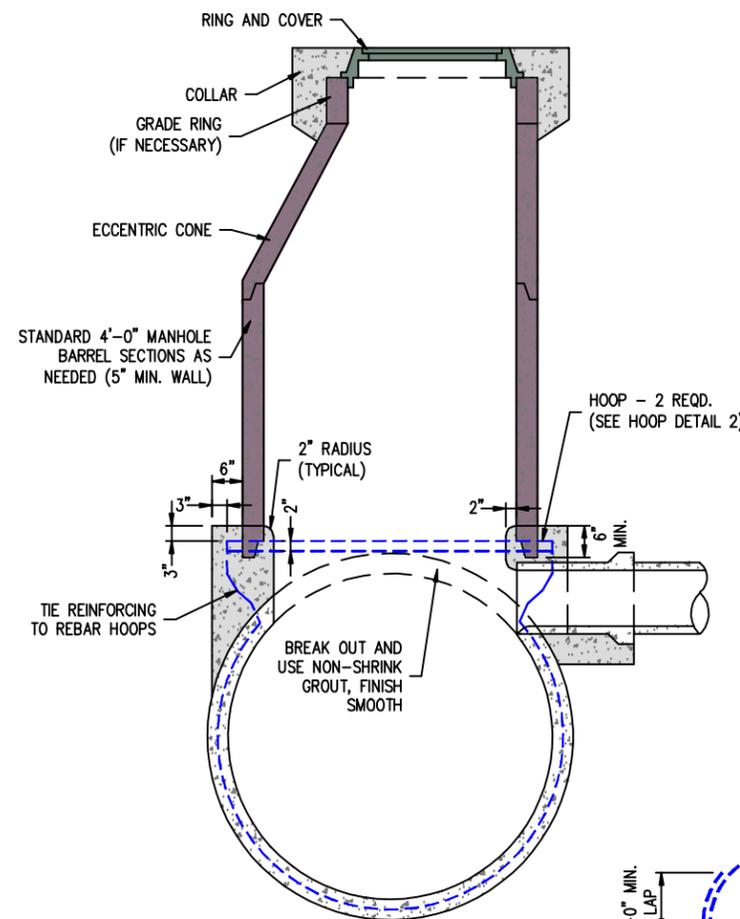
**PLAN VIEW**



**PLAN VIEW**

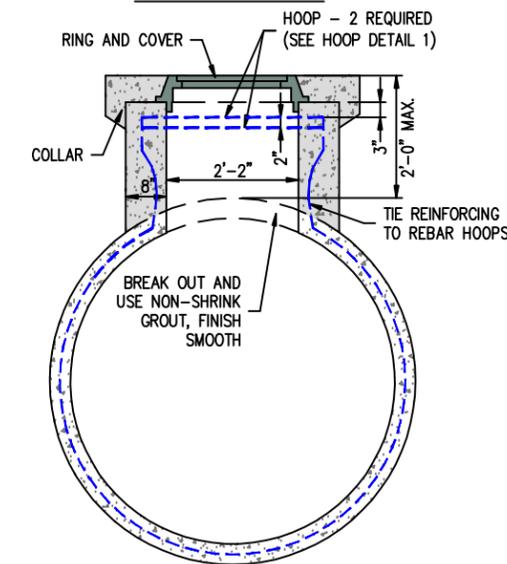


**SECTION A**

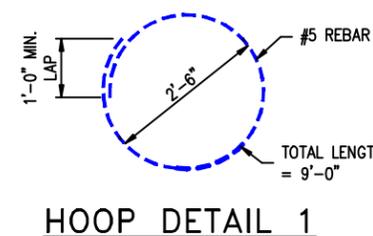


**SECTION A**

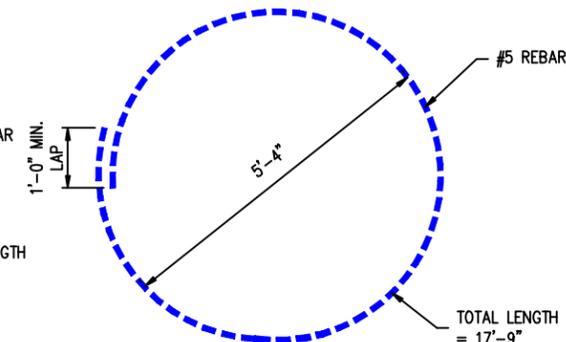
**MANHOLE TYPE "III"  
PIPE SIZE 60" OR LARGER**



**SECTION A**



**HOOP DETAIL 1**



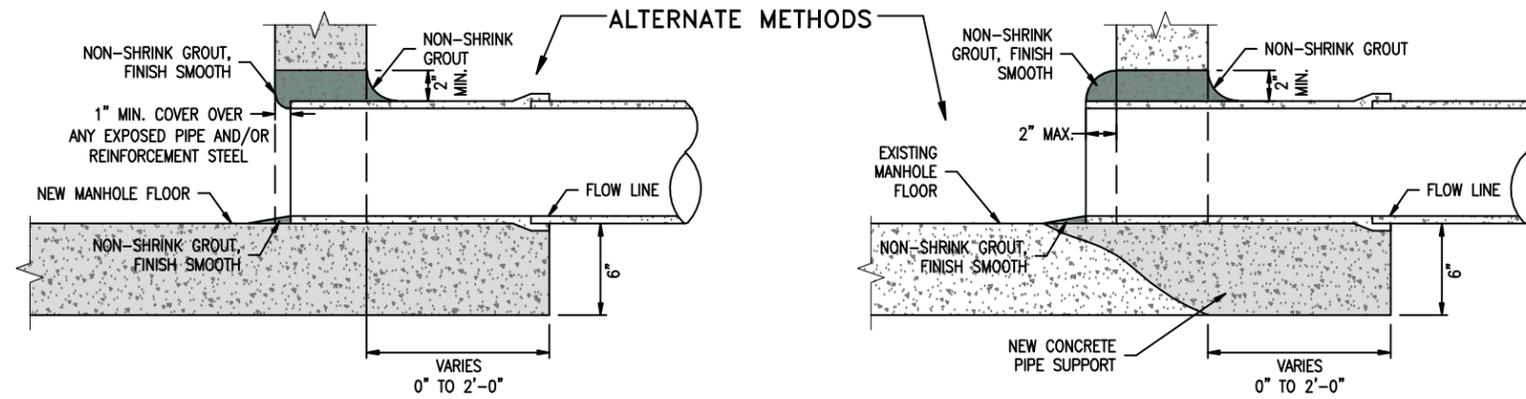
**HOOP DETAIL 2**



<b>CITY OF IDAHO FALLS</b> ENGINEERING DEPARTMENT STANDARD DRAWINGS 2010		
<b>SANITARY SEWER &amp; STORM DRAIN</b>  <b>MANHOLE TYPE III</b>		
DRAWN BY: T. WHITE FILE NO. 0-00-00-0-ENG-2009-06 SCALE: 1"=3'	CHECKED BY: C.H. FREDERICKSEN FILE NAME: 700-3-2009 DATE PLOTTED: 12/18/09	SHEET NO. <b>700-3</b>

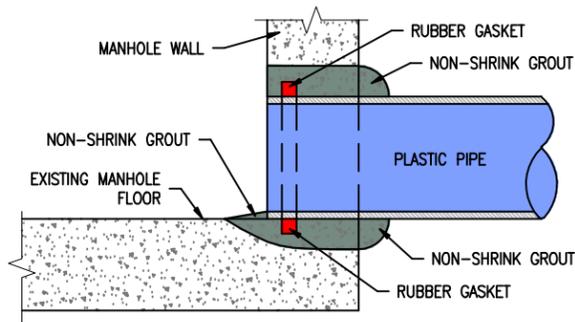
NOTES:

1. ALL MANHOLE FLOW LINES SHALL BE CONSTRUCTED TO PROVIDE SMOOTH FLOW THROUGH CHARACTERISTIC.
2. ALL CONCRETE PIPES (24" OR LESS IN DIA.) CONNECTED TO MANHOLES OR INLET BOXES SHALL HAVE A BELL AND SPIGOT JOINT LOCATED WITHIN 24" OF THE OUTSIDE WALL OF STRUCTURE. THIS PROTRUDING PORTION OF PIPE SHALL BE SUPPORTED WITH CONCRETE UP TO, BUT NOT INCLUDING THE JOINT.
3. ALL SURFACES (AGAINST WHICH CONCRETE OR NON-SHRINK GROUT IS TO BE PLACED) SHALL FIRST BE COATED WITH AN EPOXY BONDING AGENT SUCH AS SONNO BOND (SONNE BORN CO.), PROBOND EPOXY ET-150 (PROTEX INDUSTRIES CO.) OR EQUAL.
4. JOINTS, ETC., THAT MUST BE GROUTED, SHALL BE "DRY PACKED" WITH A NON-SHRINKING, NON-METALLIC TYPE GROUT, SUCH AS THORITE (STANDARD DRY WALL PRODUCTS, INC.) OR EQUAL.
5. ALL BROKEN PIPE FACES TO BE SMOOTHED OFF WITH NON-SHRINK GROUT.
6. IF NEW PIPE IS CONCRETE, A SUPPORT BLOCK IS REQUIRED TO THE NEXT JOINT PAST THE CONCRETE Banded JOINT.
7. DROP MANHOLE REQUIRED IN SANITARY SEWER SYSTEM ONLY WHEN DROP BETWEEN INVERT AND MANHOLE FLOW LINE EXCEEDS 1'-6".



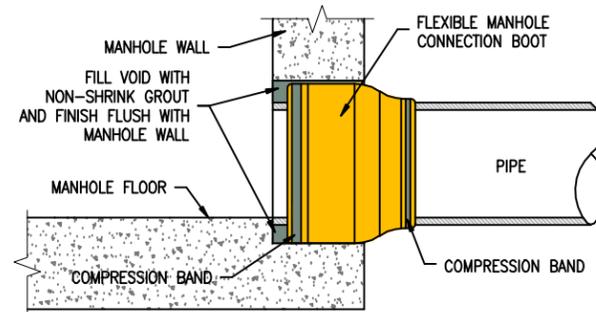
**CONCRETE PIPE CONNECTION TO CONCRETE STRUCTURE**

SCALE - 1"=1'



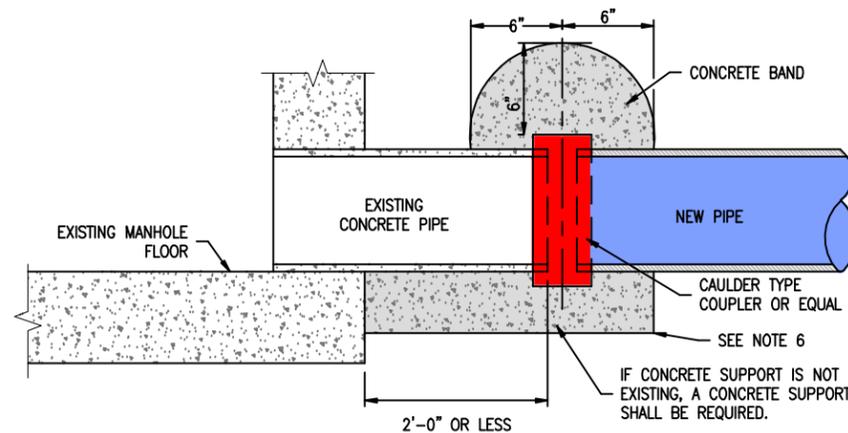
**PLASTIC PIPE CONNECTION TO CONCRETE STRUCTURE**

SCALE - 1"=1'



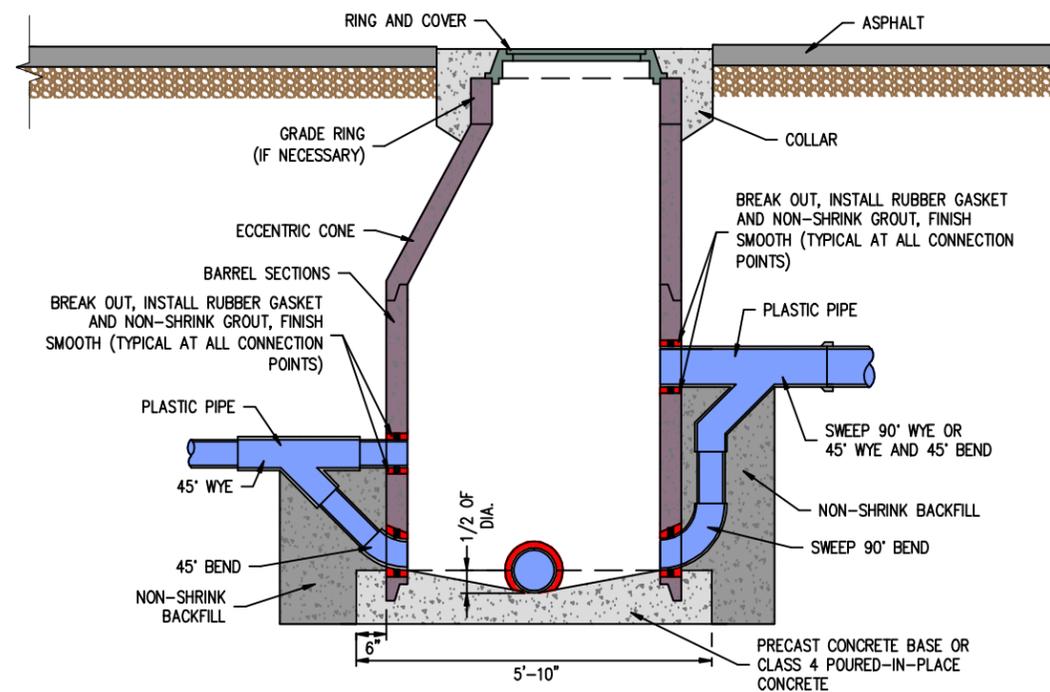
**FLEXIBLE MANHOLE CONNECTION**

SCALE - 1"=1'



**PLASTIC OR CONCRETE PIPE CONNECTION TO EXISTING PIPE AT MANHOLE**

SCALE - 1"=1'



**DROP MANHOLE CONNECTION**

SCALE - 1"=3'

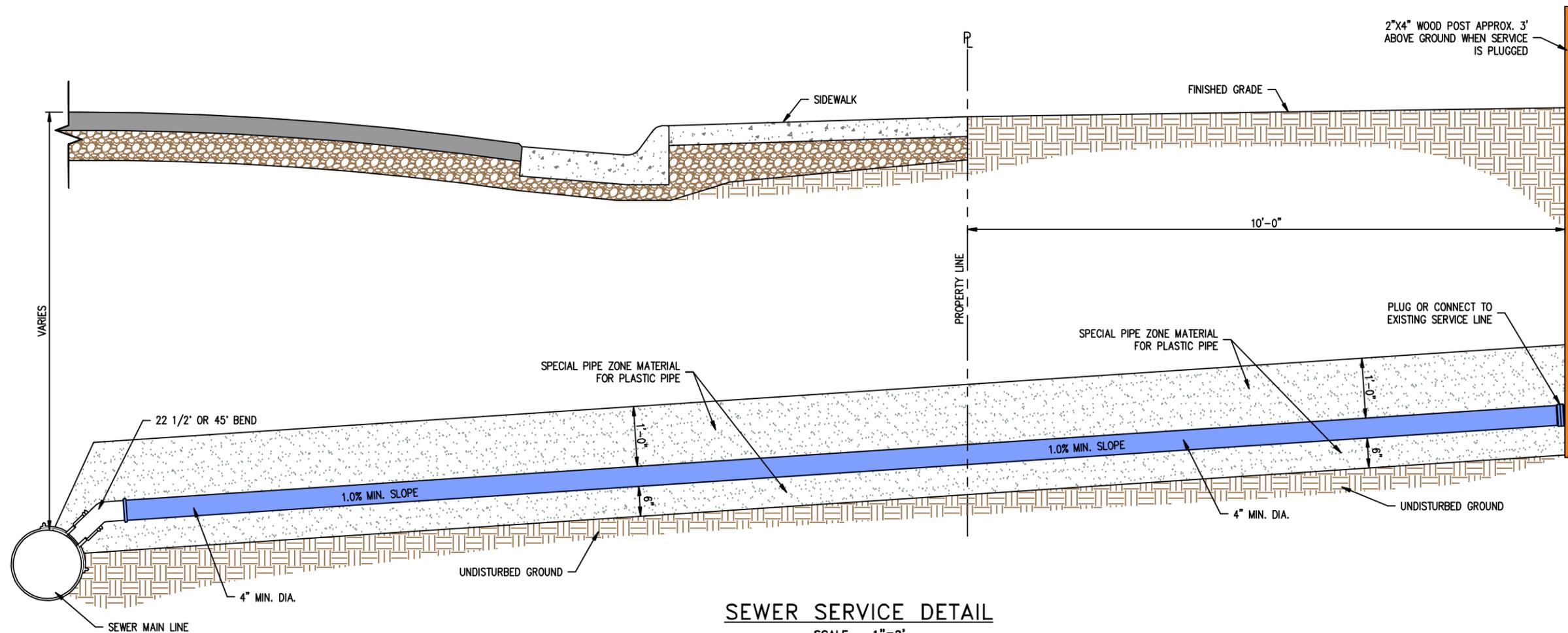


**CITY OF IDAHO FALLS**  
ENGINEERING DEPARTMENT  
STANDARD DRAWINGS 2010

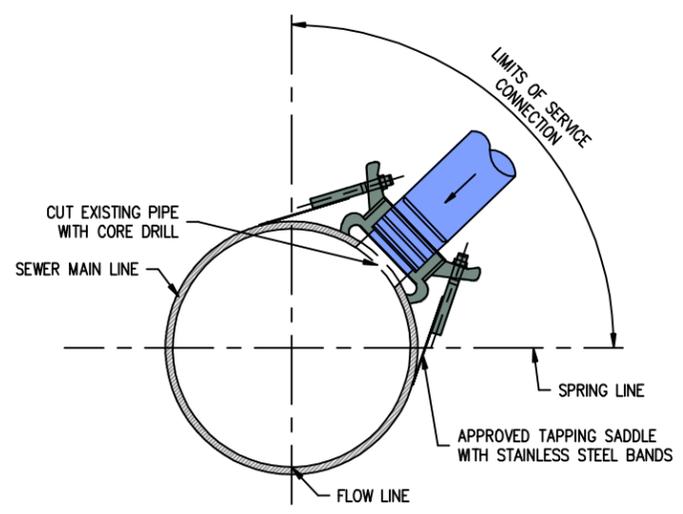
**SANITARY SEWER & STORM DRAIN**

**PIPE CONNECTIONS**

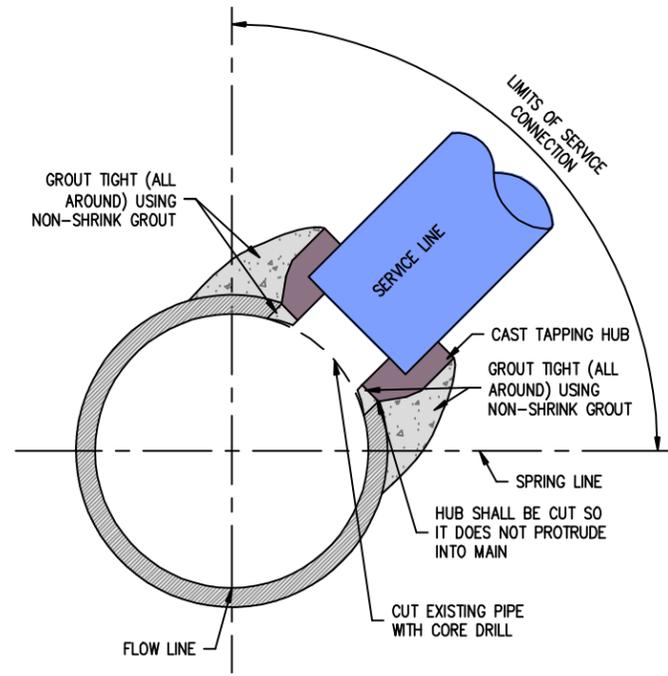
DRAWN BY: T. WHITE	CHECKED BY: C.H. FREDERICKSEN
FILE NO. 0-00-00-0-ENG-2009-06	FILE NAME: 700-4-2009
SCALE: VARIES	DATE PLOTTED: 12/18/09
	SHEET NO. <b>700-4</b>



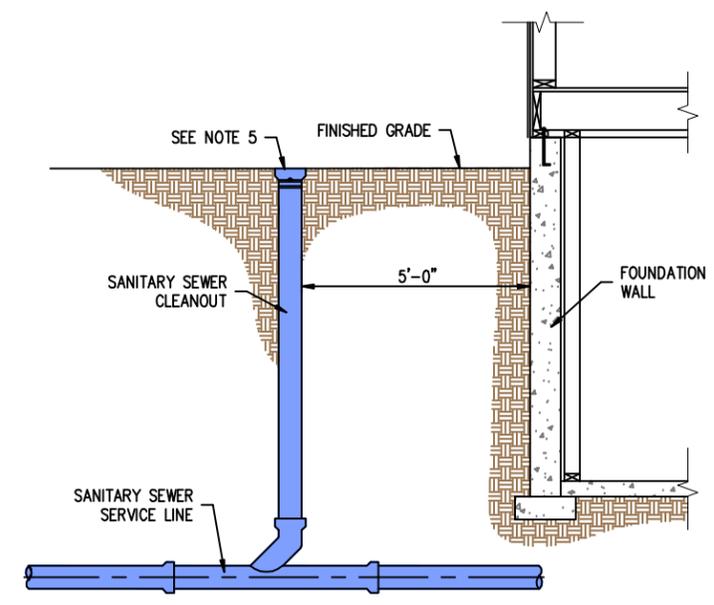
**SEWER SERVICE DETAIL**  
SCALE - 1"=2'



**SANITARY SEWER SERVICE LINE  
FIELD TAP FOR MAIN LINES  
15" OR SMALLER IN SIZE**  
NOT TO SCALE



**SANITARY SEWER SERVICE LINE  
FIELD TAP FOR MAIN LINES  
LARGER THAN 15" IN SIZE**  
NOT TO SCALE



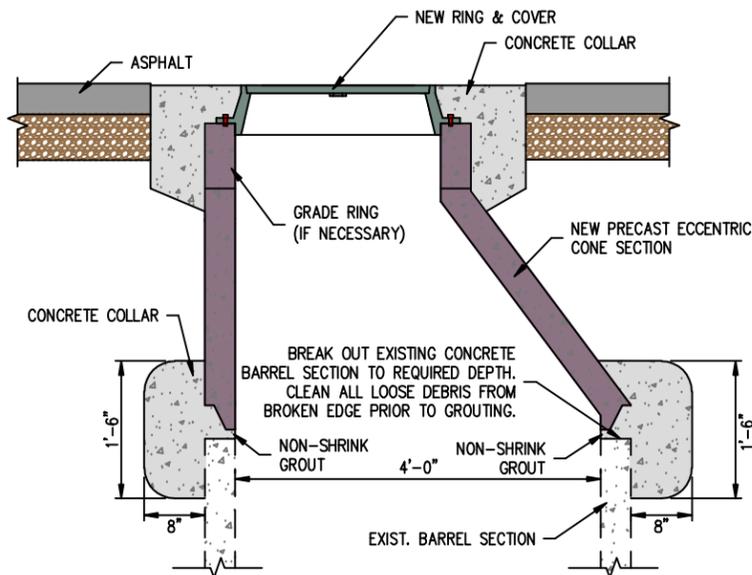
**SANITARY SEWER CLEANOUT DETAIL**  
SCALE - 1"=4'

**NOTES:**

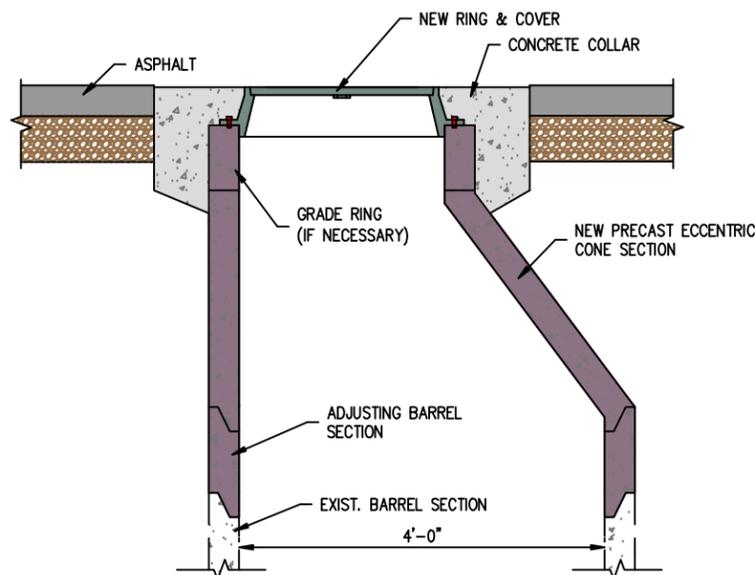
1. ALL SURFACES (AGAINST WHICH CONCRETE OR NON-SHRINK GROUT IS TO BE PLACED) SHALL FIRST BE COATED WITH AN EPOXY BONDING AGENT SUCH AS SONNO BOND (SONNE BORN CO.), PROBOND EPOXY ET-150 (PROTEX INDUSTRIES CO.) OR EQUAL.
2. JOINTS, ETC., THAT MUST BE GROUTED, SHALL BE "DRY PACKED" WITH A NON-SHRINKING, NON-METALLIC TYPE GROUT SUCH AS THORITE (STANDARD DRY WALL PRODUCTS, INC.) OR EQUAL.
3. ALL BROKEN FACES TO BE SMOOTHED OFF WITH NON-SHRINK GROUT.
4. ALL CONNECTIONS SHALL BE LOCATED WITHIN THE LIMITS OF SERVICE CONNECTION SHOWN ON THESE DRAWINGS.
5. CLEANOUTS SHALL BE INSTALLED PER CURRENT CITY OF IDAHO FALLS ADOPTED PLUMBING CODE. CLEANOUTS SHALL NOT BE LOCATED IN PUBLIC RIGHT-OF-WAY WITHOUT WRITTEN PERMISSION OF THE CITY ENGINEER.
6. ALL SEWER TAPS SHALL BE CAST IN PLACE BY THE MANUFACTURER OF THE MAIN LINE OR SHALL BE FIELD INSTALLED AS SPECIFIED IN THE STANDARD SPECIFICATIONS AND THESE DRAWINGS.



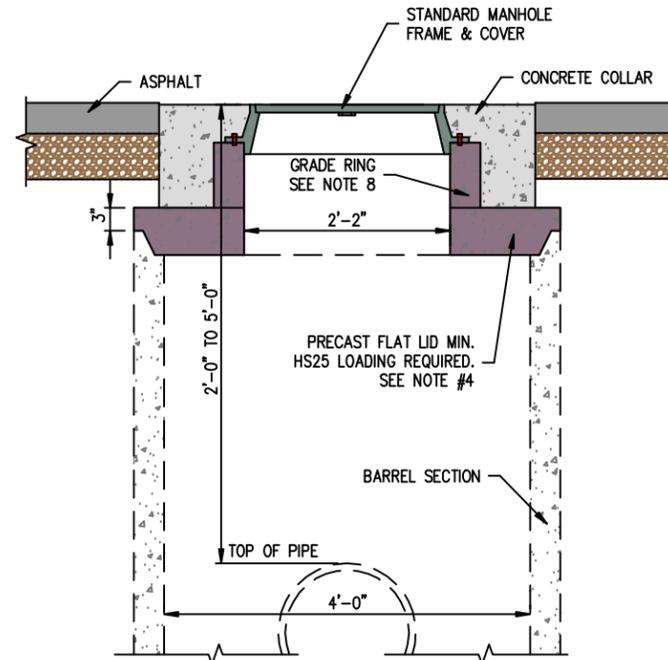
<b>CITY OF IDAHO FALLS</b> ENGINEERING DEPARTMENT STANDARD DRAWINGS 2010		
<b>SANITARY SEWER &amp; STORM DRAIN</b> <b>SERVICE LINE</b>		
DRAWN BY: T. WHITE FILE NO. 0-00-00-0-ENG-2009-06 SCALE: VARIES	CHECKED BY: C.H. FREDERICKSEN FILE NAME: 700-5-2009 DATE PLOTTED: 12/18/09	SHEET NO. <b>700-5</b>



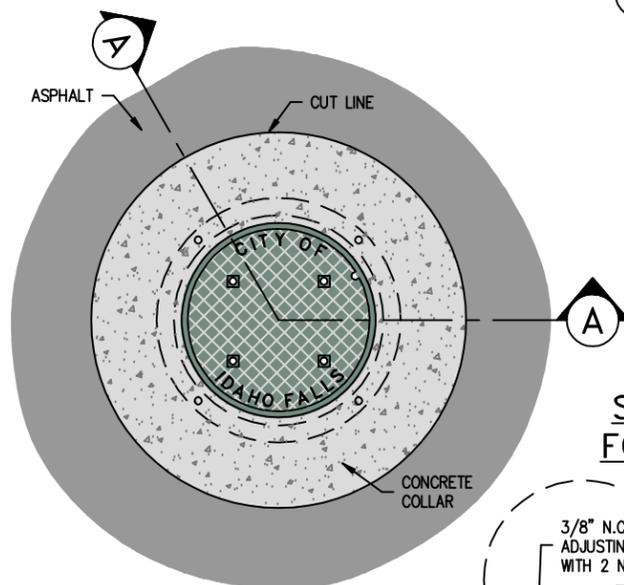
MANHOLE RING ADJUSTMENT  
DETAIL ("LOWERING")



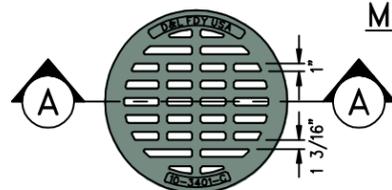
MANHOLE RING ADJUSTMENT  
DETAIL ("RAISING")



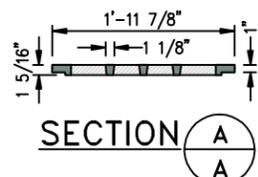
FLAT LID DETAIL FOR  
STANDARD MANHOLE



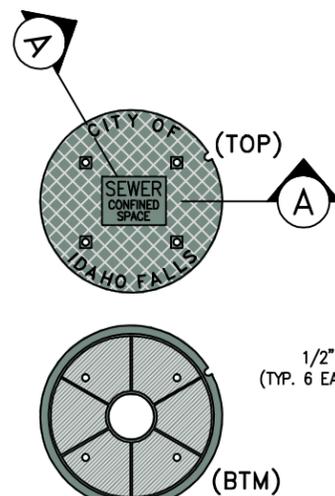
PLAN VIEW  
SECTION A-A  
SLOTTED FLAT GRATE  
FOR INLET STRUCTURE  
TYPE 5 DETAIL



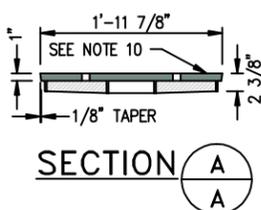
PLAN VIEW



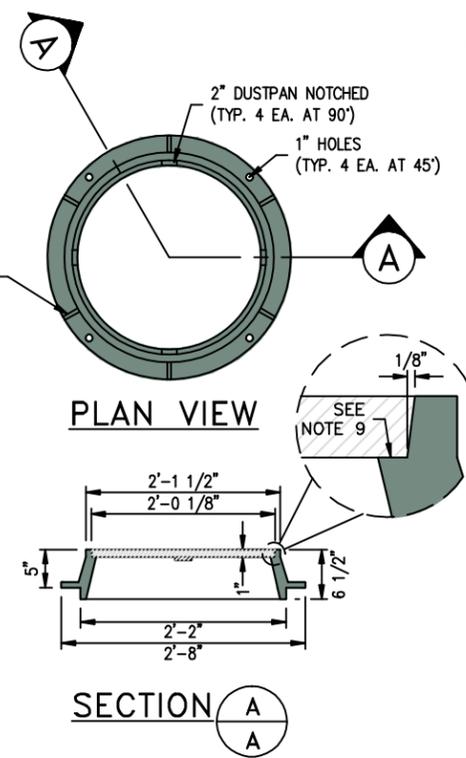
SECTION A-A



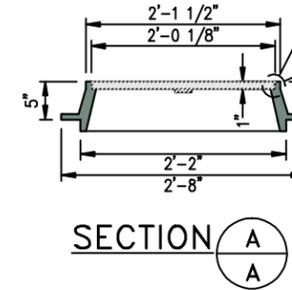
MANHOLE COVER DETAIL



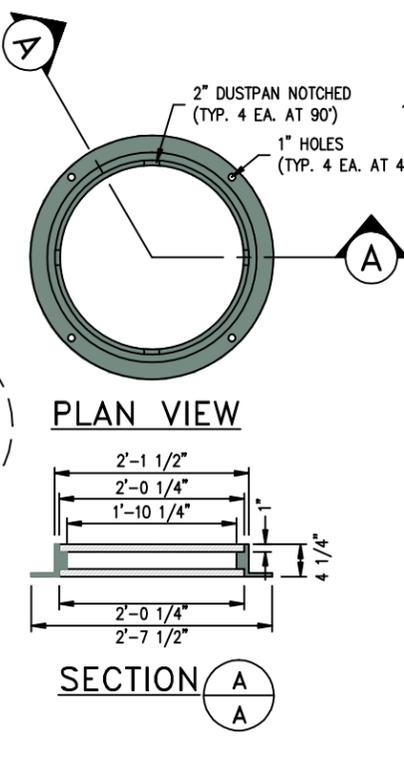
SECTION A-A



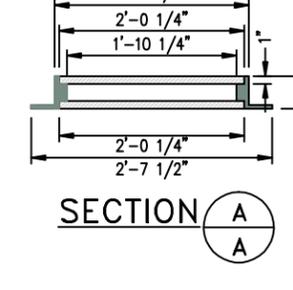
STANDARD MANHOLE  
RING DETAIL



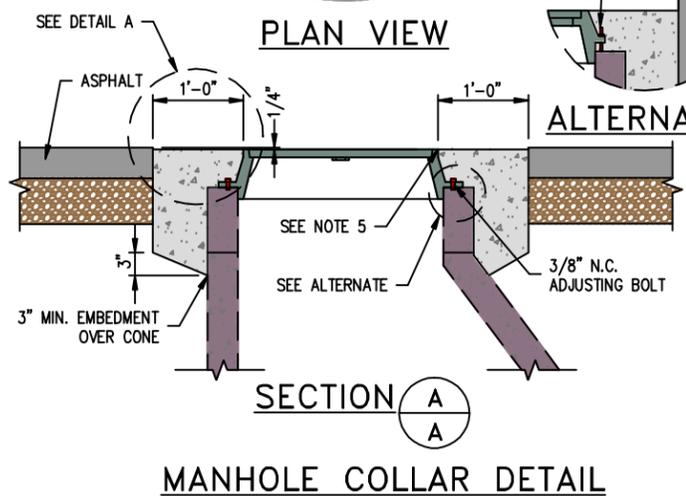
SECTION A-A



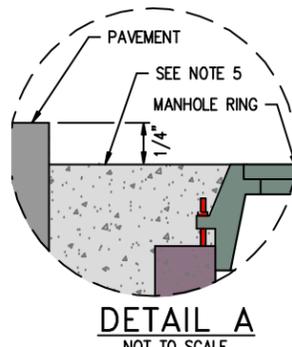
REVERSIBLE MANHOLE  
RING DETAIL



SECTION A-A



MANHOLE COLLAR DETAIL



DETAIL A  
NOT TO SCALE

NOTES:

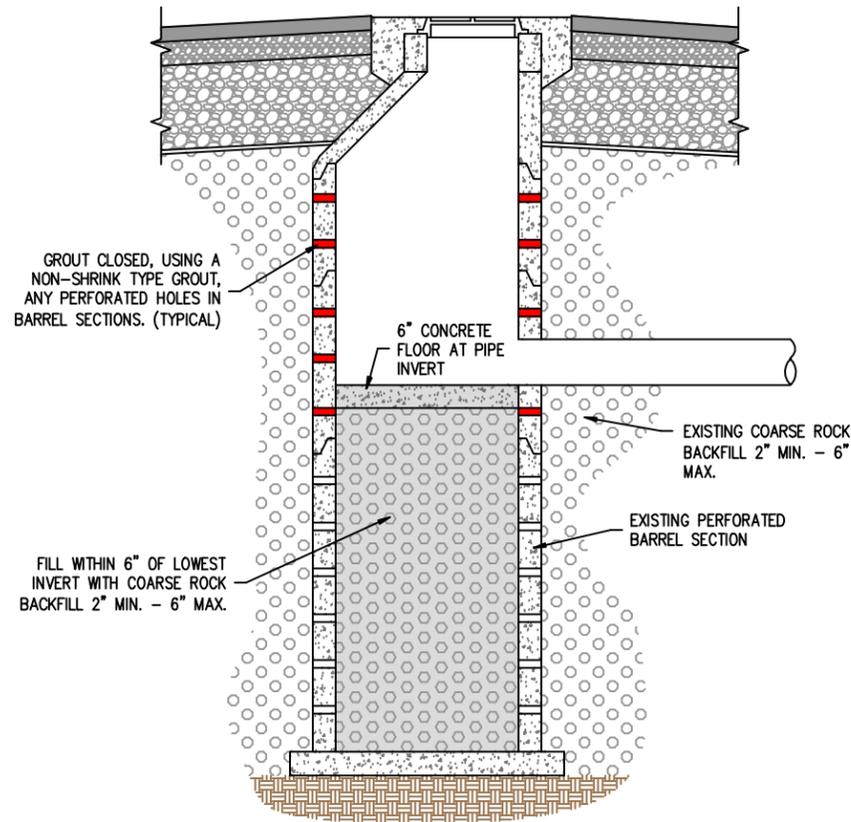
1. ALL SURFACES (AGAINST WHICH CONCRETE OR NON-SHRINK GROUT IS TO BE PLACED) SHALL FIRST BE COATED WITH AN EPOXY BONDING AGENT SUCH AS SONNO BOND (SONNE BORN CO.), PROBOND EPOXY ET-150 (PROTEX INDUSTRIES CO.) OR EQUAL.
2. JOINTS, ETC., TO BE GROUTED, SHALL BE "DRY PACKED" WITH A NON-SHRINKING, NON-METALLIC, TYPE GROUT, SUCH AS THORITE (STANDARD DRY WALL PRODUCTS, INC.) OR EQUAL.
3. ALL BROKEN PIPE FACES TO BE SMOOTHED OFF WITH NON-SHRINK GROUT.
4. A FLAT LID SHALL ONLY BE USED WHEN THE DIFFERENCE BETWEEN THE FINISH GRADE AND TOP OF PIPE IS BETWEEN 2'-0" AND 5'-0".
5. CONCRETE COLLAR SHALL BE FINISHED WITH A WOOD TROWEL, APPROXIMATELY 1/4" BELOW THE ADJACENT PAVEMENT ELEVATION.
6. THE ASPHALT PAVEMENT SHALL BE CUT WITH A SPADE OR LARGE FLAT CHISEL IN A CIRCLE SYMMETRICAL AROUND THE MANHOLE.
7. THE CONTRACTOR SHALL KEEP ALL CONCRETE OFF OF ASPHALT PAVEMENT SO THE COMPLETED WORK IS CLEAN AND NEAT.
8. IF EXTENSION IS STILL NECESSARY AFTER BARREL EXTENSION HAVE BEEN INSTALLED, THEN GRADE RINGS MAY BE USED, BUT IN NO CASE SHALL MORE THAN TWELVE (12) INCHES TOTAL HEIGHT OF GRADE RINGS BE ALLOWED.
9. ALL BEARING SURFACES BETWEEN RING AND COVER SHALL BE MACHINED.
10. ALL SEWER LIDS SHALL BE LABELED "CITY OF IDAHO FALLS - SEWER CONFINED SPACE" AS SHOWN.
11. USE CROSSHATCHED PATTERN ON LID.
12. ANY MANHOLE INSTALLED PERMANENTLY OUTSIDE OF PAVEMENT MUST HAVE CONCRETE COLLARS INSTALLED, SLOPE SURFACE MATERIAL AWAY FROM COLLAR APPROX 2" BELOW RING ELEVATION - MANHOLES INSTALLED AT THE END OF A PROJECT TO BE PAVED IN THE FUTURE WOULD NOT REQUIRE A CONCRETE COLLAR UNTIL THE TIME IT IS ADDED INTO THE FUTURE IMPROVEMENTS.
13. REVERSIBLE MANHOLE RING USED ONLY BY PRIOR APPROVAL OF THE CITY ENGINEER.



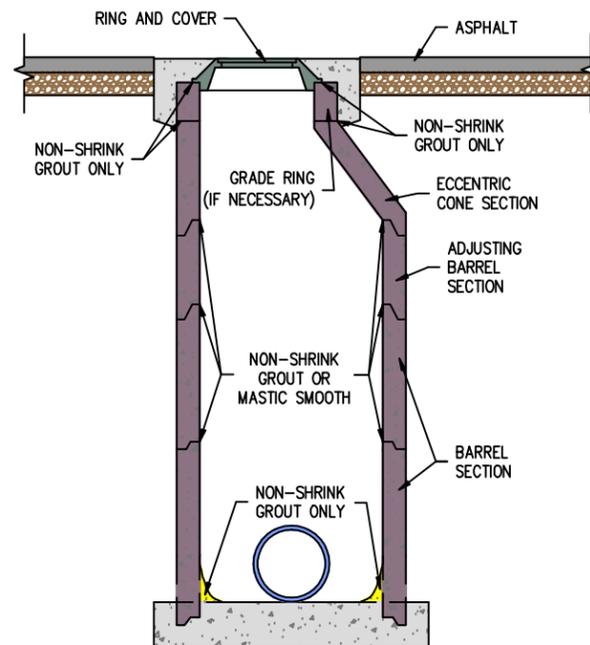
CITY OF IDAHO FALLS ENGINEERING DEPARTMENT STANDARD DRAWINGS 2010		CITY OF IDAHO FALLS
SANITARY SEWER & STORM DRAIN		
<b>MANHOLE DETAILS</b>		
DRAWN BY: T. WHITE	CHECKED BY: C.H. FREDERICKSEN	
FILE NO. 0-00-00-0-ENG-2009-06	FILE NAME: 700-6-2009	SHEET NO.
SCALE: 1"=2'	DATE PLOTTED: 12/18/09	<b>700-6</b>

NOTES:

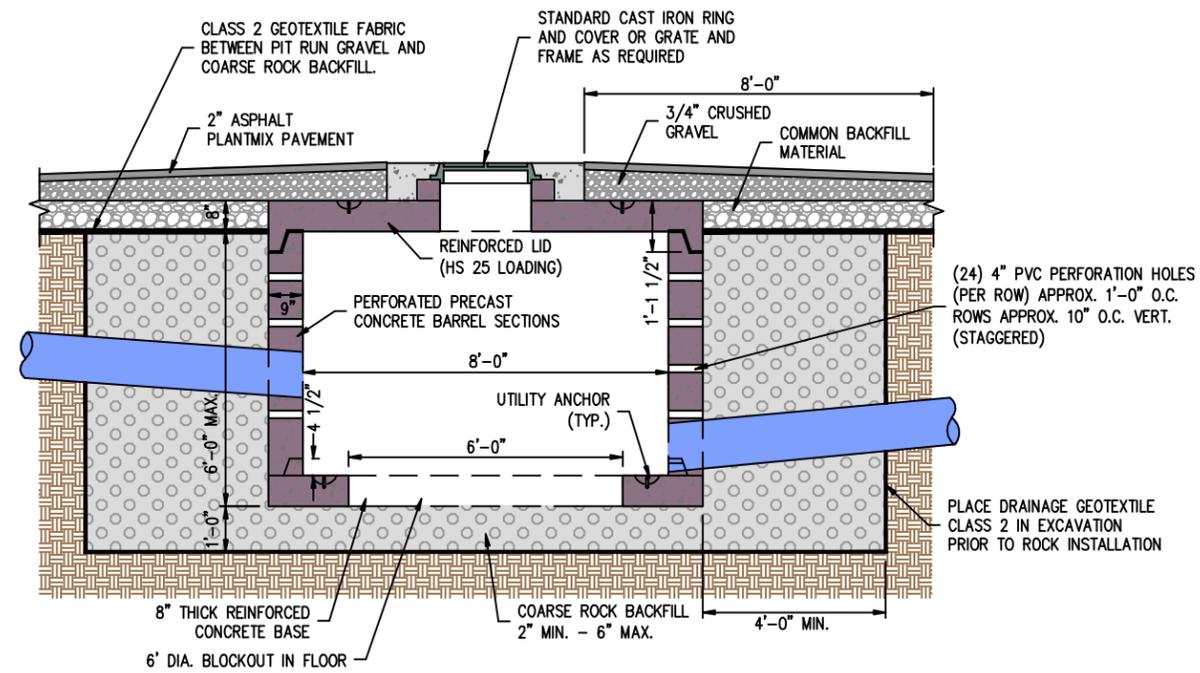
1. ALL MANHOLE FLOW LINES SHALL BE CONSTRUCTED TO PROVIDE SMOOTH FLOW THROUGH CHARACTERISTIC.
2. ALL CONCRETE PIPES (24" OR LESS IN DIA.) CONNECTED TO MANHOLES OR INLET BOXES SHALL HAVE A BELL AND SPIGOT JOINT LOCATED WITHIN 24" OF THE OUTSIDE WALL OF STRUCTURE. THIS PROTRUDING PORTION OF PIPE SHALL BE SUPPORTED WITH CONCRETE UP TO, BUT NOT INCLUDING THE JOINT.
3. ALL SURFACES (AGAINST WHICH CONCRETE OR NON-SHRINK GROUT IS TO BE PLACED) SHALL FIRST BE COATED WITH AN EPOXY BONDING AGENT SUCH AS SONNO BOND (SONNE BORN CO.), PROBOND EPOXY ET-150 (PROTEX INDUSTRIES CO.) OR EQUAL.
4. JOINTS, ETC., THAT MUST BE GROUTED, SHALL BE "DRY PACKED" WITH A NON-SHRINKING, NON-METALLIC TYPE GROUT, SUCH AS THORITE (STANDARD DRY WALL PRODUCTS, INC.) OR EQUAL.
5. ALL BROKEN PIPE FACES TO BE SMOOTHED OFF WITH NON-SHRINK GROUT.



TYPICAL FRENCH DRAIN CONVERSION TO MANHOLE



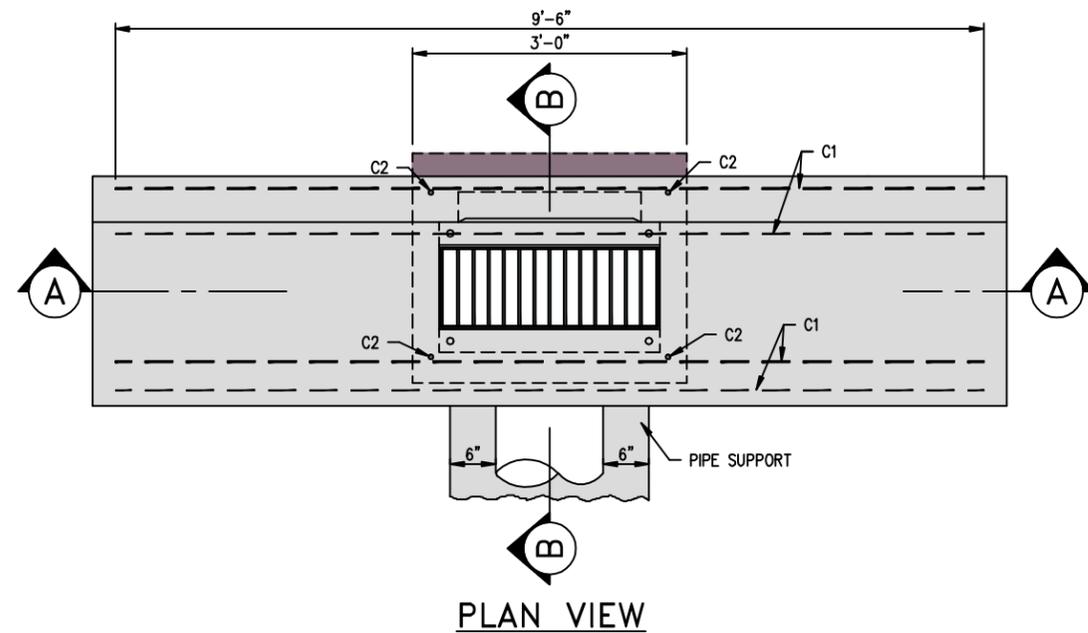
COMPLETE MANHOLE SECTION WITH SEALED JOINTS



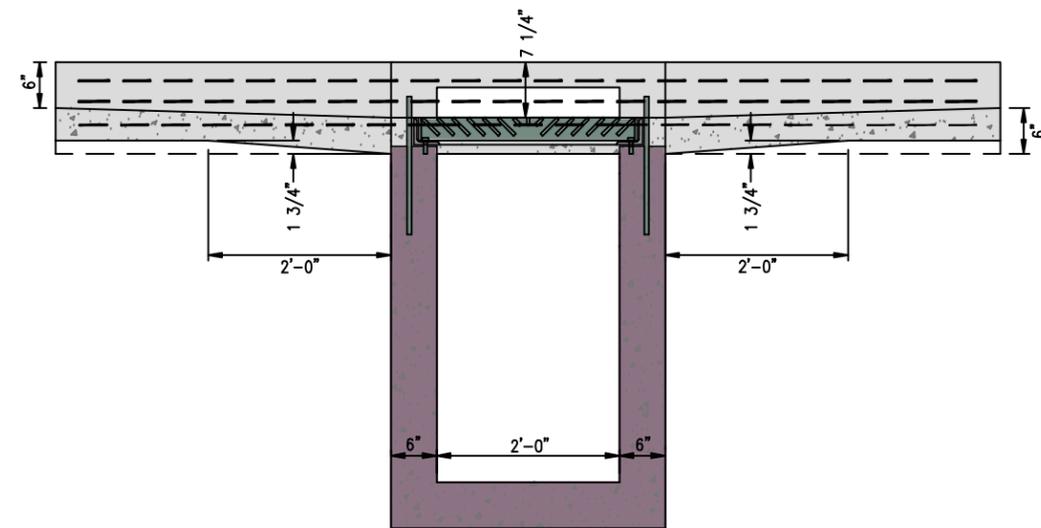
FRENCH DRAIN



CITY OF IDAHO FALLS ENGINEERING DEPARTMENT STANDARD DRAWINGS 2010		CITY OF IDAHO FALLS
SANITARY SEWER & STORM DRAIN FRENCH DRAIN, MANHOLES & FRENCH DRAIN CONVERSION		
DRAWN BY: T. WHITE	CHECKED BY: C.H. FREDERICKSEN	SHEET NO. <b>700-7</b>
FILE NO. 0-00-00-0-ENG-2009-06	FILE NAME: 700-7-2009	
SCALE: 1"=4'	DATE PLOTTED: 12/18/09	

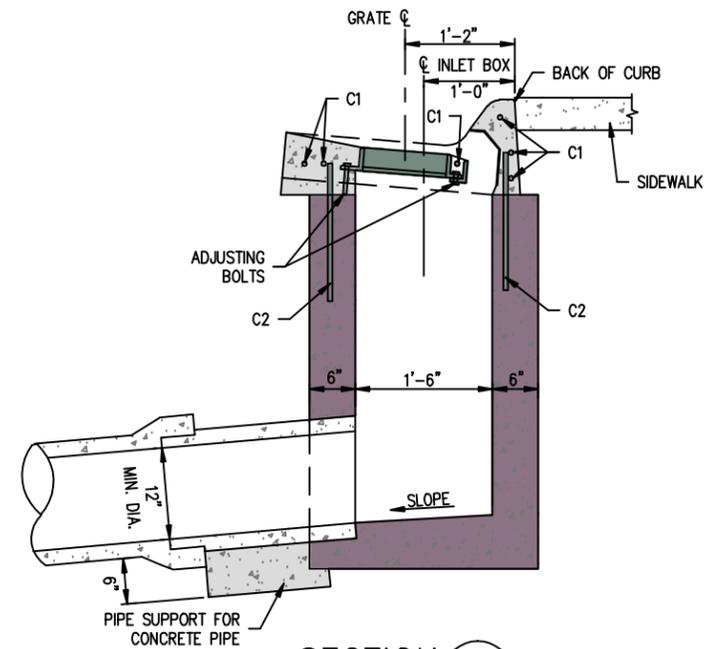


PLAN VIEW

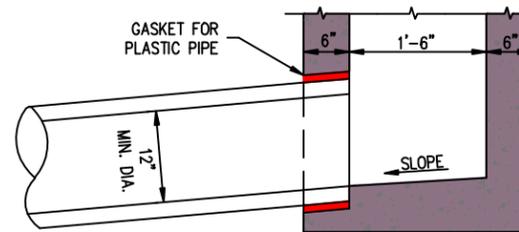


SECTION A A

INLET BOX TYPE 1  
POURED IN PLACE



SECTION B B  
CONCRETE PIPE CONNECTION



SECTION B B  
PLASTIC PIPE CONNECTION

NOTES:

- ALL INLETS INSTALLED WITHIN PUBLIC RIGHT-OF-WAY SHALL BE SIDE OPENERS UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
- ALL CONCRETE PIPES (24" OR LESS IN DIA.) CONNECTED TO MANHOLES OR INLET BOXES SHALL HAVE A BELL AND SPIGOT JOINT LOCATED WITHIN 24" OF THE OUTSIDE WALL OF STRUCTURE. THIS PROTRUDING PORTION OF PIPE SHALL BE SUPPORTED WITH CONCRETE UP TO, BUT NOT INCLUDING THE JOINT.
- ALL EXPOSED SURFACES TO BE GROUTED SHALL FIRST BE COATED WITH AN EPOXY BONDING AGENT.
- JOINTS, ETC., THAT MUST BE GROUTED, SHALL BE "DRY PACKED" WITH A NON-SHRINK, TYPE GROUT SUCH AS THORITE (STANDARD WALL PRODUCTS, INC.) OR EQUIVALENT.
- INLET BOX REBAR SHALL BE TIED TO REBAR IN CURB AND GUTTER WITH STANDARD TIE WIRE.
- REBAR TO BE INCLUDED IN THE COST OF INLET BOX.
- REBAR C2 SHALL BE AS PER REBAR SCHEDULE TO BE WIRED TO REBAR C1, AND SHALL BE EMBEDDED IN THE BOX A MINIMUM OF 10 INCHES.
- THE SPACING FOR THE C1 REBAR SHALL BE MAINTAINED WITH 9 GAUGE WIRE OR ADDITIONAL #4 REBAR AT THE ENDS.
- SEE STANDARD DRAWING NO. 500-1 FOR DIMENSIONS OF CURB AND GUTTER.
- ALL CONCRETE SHALL BE CLASS 4 AND CURED WITH A CURING COMPOUND AS SPECIFIED IN THE STANDARD SPECIFICATION OR AS DIRECTED BY THE ENGINEER.
- ALL EXPOSED STEEL SURFACES (FRAME & GRATE) SHALL BE PAINTED WITH TWO COATS OF OIL BASE PRIMER AND FINAL COAT OF RED OIL BASE PAINT. APPLICATION RATE & PAINTING MATERIALS SHALL BE IN ACCORDANCE WITH THE "STATE OF IDAHO STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, LATEST EDITION AND AMENDMENTS".
- CITY WILL PROVIDE STORM DRAIN MARKERS FOR ALL INLET BOXES. INSTALLATION OF MARKER AS PER MANUFACTURERS RECOMMENDATIONS. CALL (208) 612-8491 FOR INFORMATION. SEE SHEET 700-14 FOR DETAIL.

REBAR SCHEDULE

MARK	LOCATION	SIZE	LENGTH	QUANTITY
C1	CURB & BOX	4	9'-6"	6
C2	CURB	4	2'-0"	4



CITY OF  
IDAHO FALLS  
ENGINEERING DEPARTMENT  
STANDARD DRAWINGS 2010



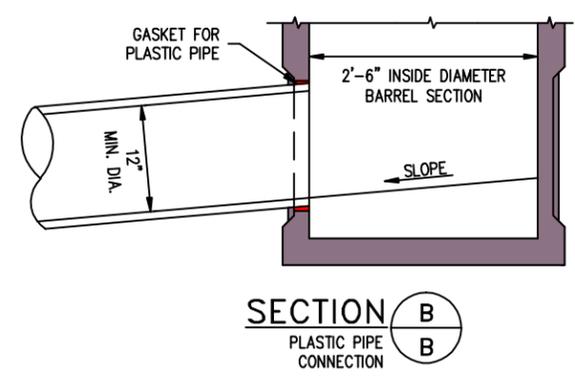
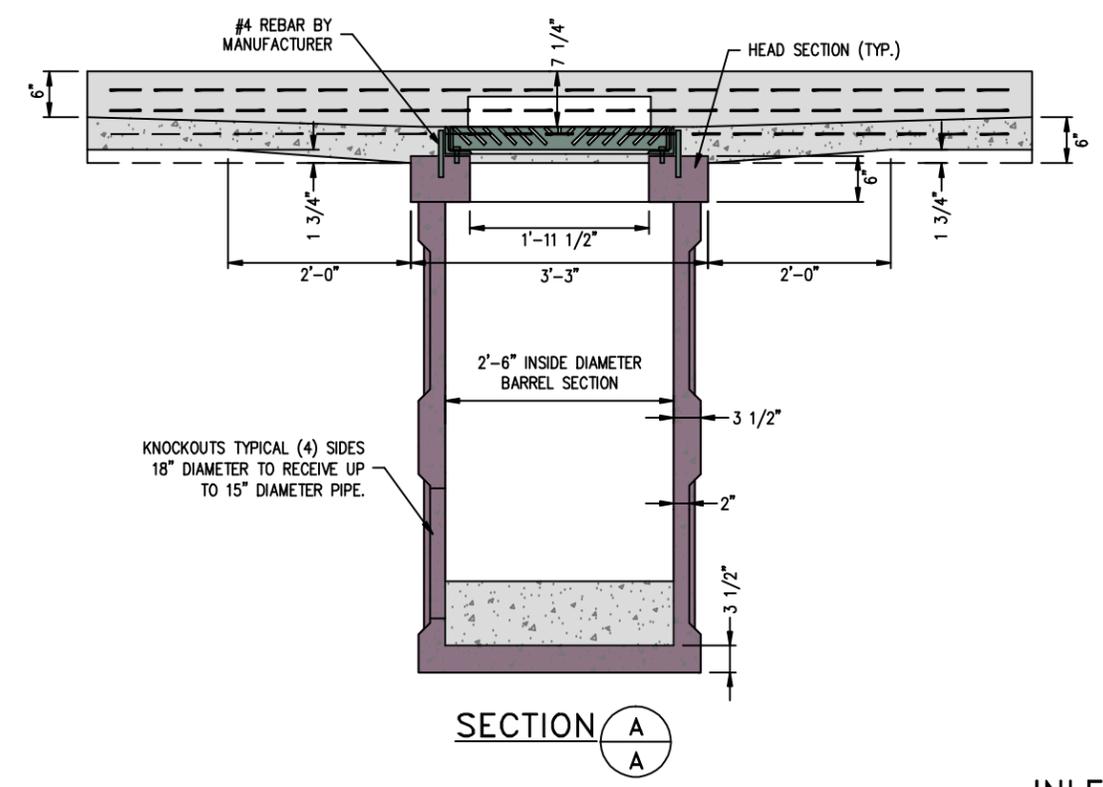
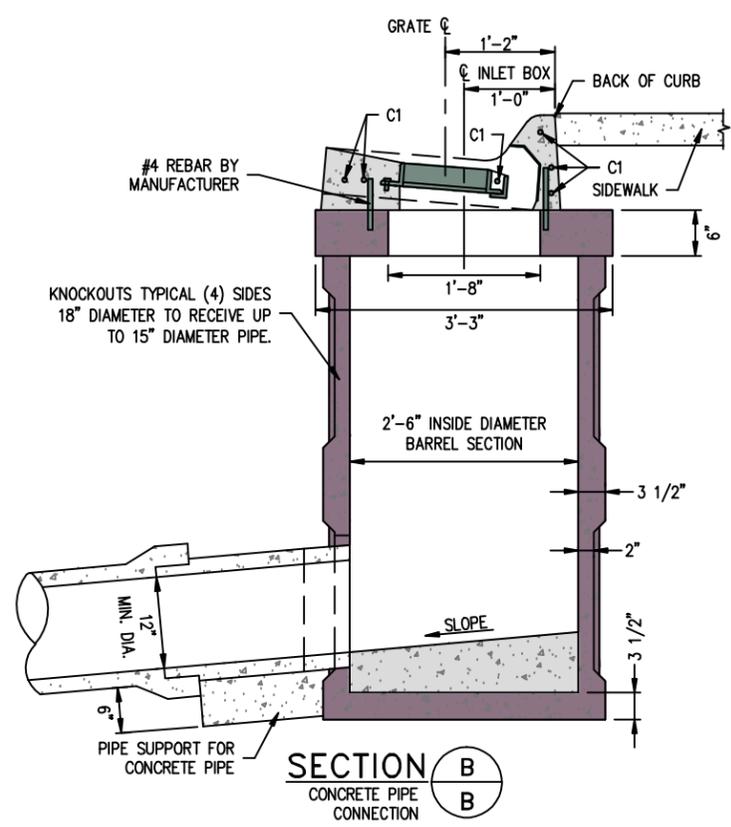
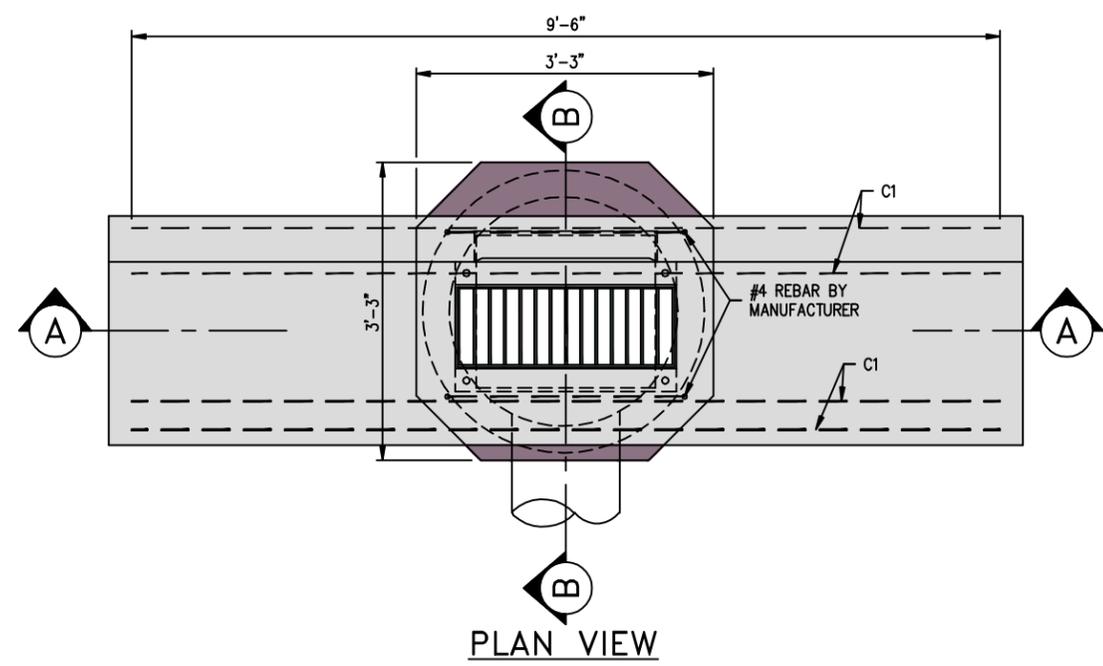
SANITARY SEWER & STORM DRAIN

INLET BOX TYPE 1 - POURED

DRAWN BY: T. WHITE	CHECKED BY: C.H. FREDERICKSEN
FILE NO. 0-00-00-0-ENG-2009-06	FILE NAME: 700-8-2009
SCALE: 1"=2'	DATE PLOTTED: 12/18/09
	SHEET NO. 700-8

**NOTES:**

1. ALL INLETS INSTALLED WITHIN PUBLIC RIGHT-OF-WAY SHALL BE SIDE OPENERS UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
2. ALL CONCRETE PIPES (24" OR LESS IN DIA.) CONNECTED TO MANHOLES OR INLET BOXES SHALL HAVE A BELL AND SPIGOT JOINT LOCATED WITHIN 24" OF THE OUTSIDE WALL OF STRUCTURE. THIS PROTRUDING PORTION OF PIPE SHALL BE SUPPORTED WITH CONCRETE UP TO, BUT NOT INCLUDING THE JOINT.
3. ALL EXPOSED SURFACES TO BE GROUTED SHALL FIRST BE COATED WITH AN EPOXY BONDING AGENT.
4. JOINTS, ETC., THAT MUST BE GROUTED, SHALL BE "DRY PACKED" WITH A NON-SHRINK, TYPE GROUT SUCH AS THORITE (STANDARD WALL PRODUCTS, INC.) OR EQUIVALENT.
5. INLET BOX REBAR SHALL BE TIED TO REBAR IN CURB AND GUTTER WITH STANDARD TIE WIRE.
6. REBAR TO BE INCLUDED IN THE COST OF INLET BOX.
7. THE SPACING FOR THE C1 REBAR SHALL BE MAINTAINED WITH 9 GAUGE WIRE OR ADDITIONAL #4 REBAR AT THE ENDS.
8. SEE STANDARD DRAWING NO. 500-1 FOR DIMENSIONS OF CURB AND GUTTER.
9. ALL CONCRETE SHALL BE CLASS 4 AND CURED WITH A CURING COMPOUND AS SPECIFIED IN THE STANDARD SPECIFICATION OR AS DIRECTED BY THE ENGINEER.
10. ALL EXPOSED STEEL SURFACES (FRAME & GRATE) SHALL BE PAINTED WITH TWO COATS OF OIL BASE PRIMER AND FINAL COAT OF RED OIL BASE PAINT. APPLICATION RATE & PAINTING MATERIALS SHALL BE IN ACCORDANCE WITH THE "STATE OF IDAHO STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, LATEST EDITION AND AMENDMENTS".
11. CITY WILL PROVIDE STORM DRAIN MARKERS FOR ALL INLET BOXES. INSTALLATION OF MARKER AS PER MANUFACTURER'S RECOMMENDATIONS. CALL (208) 612-8491 FOR INFORMATION. SEE SHEET 700-14 FOR DETAIL.



**REBAR SCHEDULE**

MARK	LOCATION	SIZE	LENGTH	QUANTITY
C1	CURB	4	9'-6"	6

**INLET BOX TYPE 1  
PRECAST**

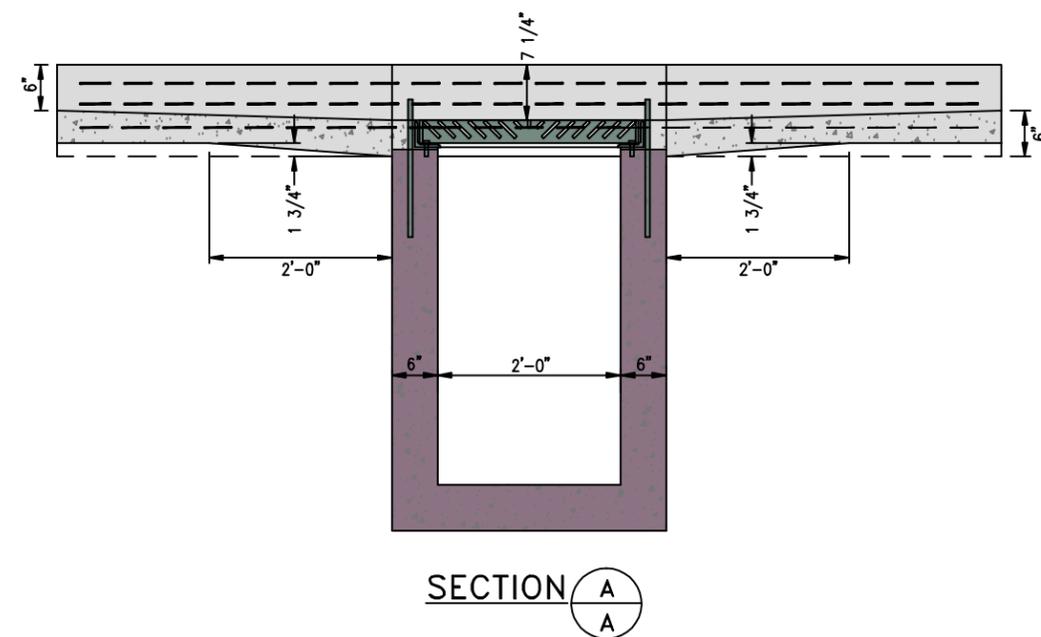
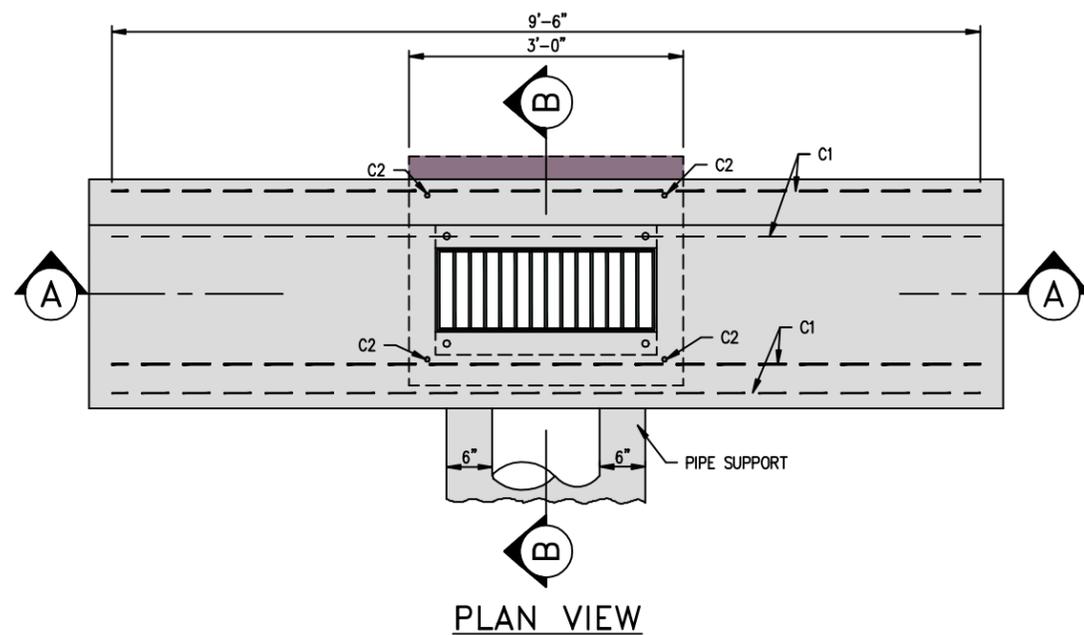


**CITY OF IDAHO FALLS**  
ENGINEERING DEPARTMENT  
STANDARD DRAWINGS 2010

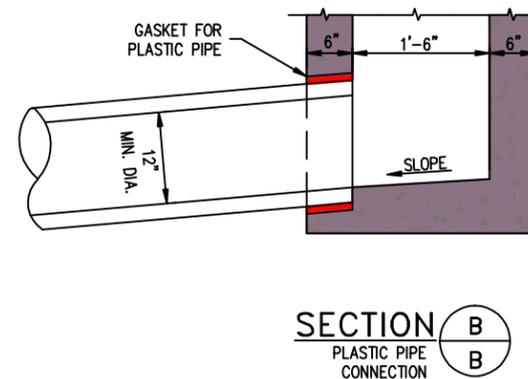
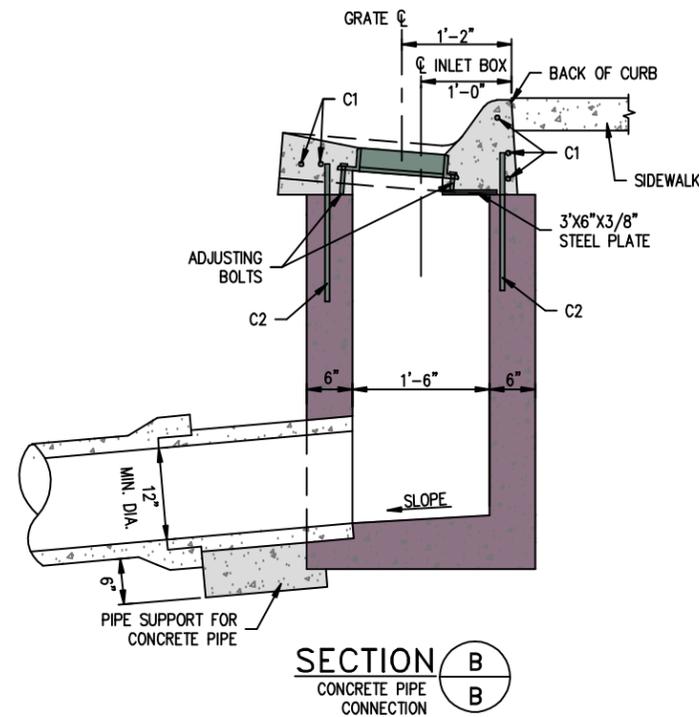
**SANITARY SEWER & STORM DRAIN**

**INLET BOX TYPE 1-PRECAST**

DRAWN BY: T. WHITE	CHECKED BY: C.H. FREDERICKSEN
FILE NO. 0-00-00-0-ENG-2009-06	FILE NAME: 700-9-2009
SCALE: 1"=2'	DATE PLOTTED: 12/18/09
	SHEET NO. <b>700-9</b>



INLET BOX TYPE 2  
POURED IN PLACE



NOTES:

- ALL INLETS INSTALLED WITHIN PUBLIC RIGHT-OF-WAY SHALL BE SIDE OPENERS UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
- ALL CONCRETE PIPES (24" OR LESS IN DIA.) CONNECTED TO MANHOLES OR INLET BOXES SHALL HAVE A BELL AND SPIGOT JOINT LOCATED WITHIN 24" OF THE OUTSIDE WALL OF STRUCTURE. THIS PROTRUDING PORTION OF PIPE SHALL BE SUPPORTED WITH CONCRETE UP TO, BUT NOT INCLUDING THE JOINT.
- ALL EXPOSED SURFACES TO BE GROUTED SHALL FIRST BE COATED WITH AN EPOXY BONDING AGENT.
- JOINTS, ETC., THAT MUST BE GROUTED, SHALL BE "DRY PACKED" WITH A NON-SHRINK, TYPE GROUT SUCH AS THORITE (STANDARD WALL PRODUCTS, INC.) OR EQUIVALENT.
- INLET BOX REBAR SHALL BE TIED TO REBAR IN CURB AND GUTTER WITH STANDARD TIE WIRE.
- REBAR TO BE INCLUDED IN THE COST OF INLET BOX.
- REBAR C2 SHALL BE AS PER REBAR SCHEDULE TO BE WIRED TO REBAR C1, AND SHALL BE EMBEDDED IN THE BOX A MINIMUM OF 10 INCHES.
- THE SPACING FOR THE C1 REBAR SHALL BE MAINTAINED WITH 9 GAUGE WIRE OR ADDITIONAL #4 REBAR AT THE ENDS.
- SEE STANDARD DRAWING NO. 500-1 FOR DIMENSIONS OF CURB AND GUTTER.
- ALL CONCRETE SHALL BE CLASS 4 AND CURED WITH A CURING COMPOUND AS SPECIFIED IN THE STANDARD SPECIFICATION OR AS DIRECTED BY THE ENGINEER.
- ALL EXPOSED STEEL SURFACES (FRAME & GRATE) SHALL BE PAINTED WITH TWO COATS OF OIL BASE PRIMER AND FINAL COAT OF RED OIL BASE PAINT. APPLICATION RATE & PAINTING MATERIALS SHALL BE IN ACCORDANCE WITH THE "STATE OF IDAHO STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, LATEST EDITION AND AMENDMENTS".
- CITY WILL PROVIDE STORM DRAIN MARKERS FOR ALL INLET BOXES. INSTALLATION OF MARKER AS PER MANUFACTURES RECOMMENDATIONS. CALL (208) 612-8491 FOR INFORMATION. SEE SHEET 700-14 FOR DETAIL.

REBAR SCHEDULE

MARK	LOCATION	SIZE	LENGTH	QUANTITY
C1	CURB & BOX	4	9'-6"	6
C2	CURB	4	2'-0"	4



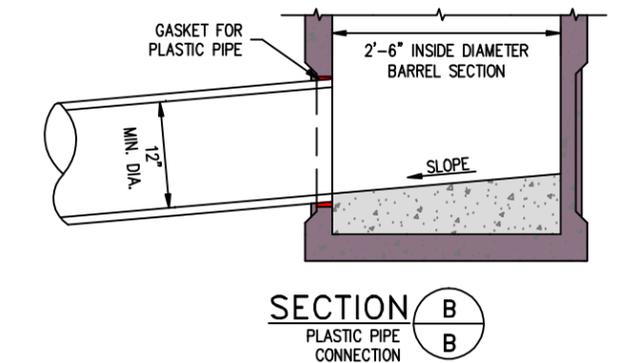
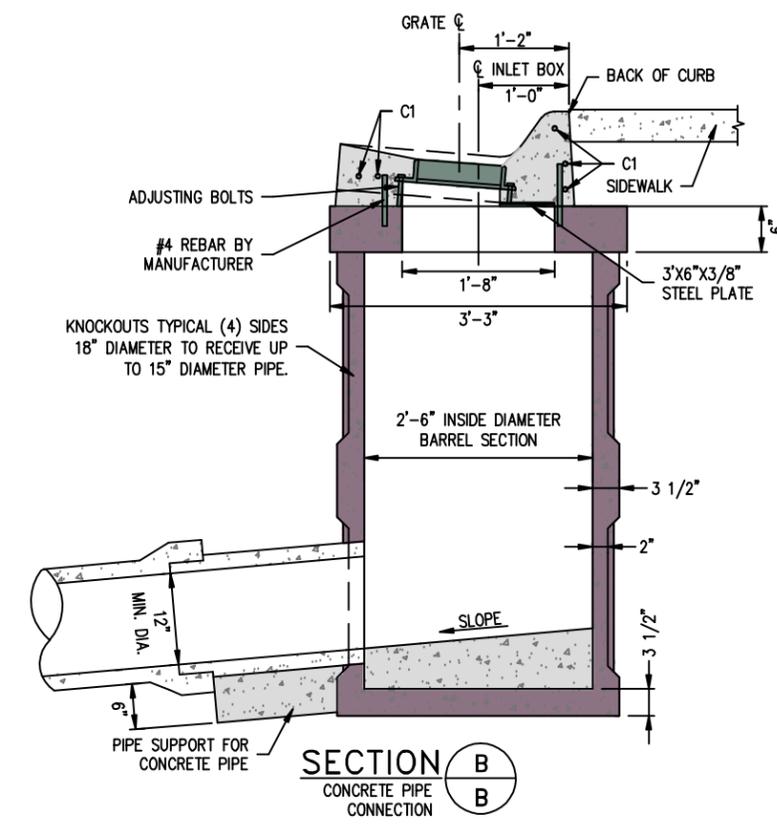
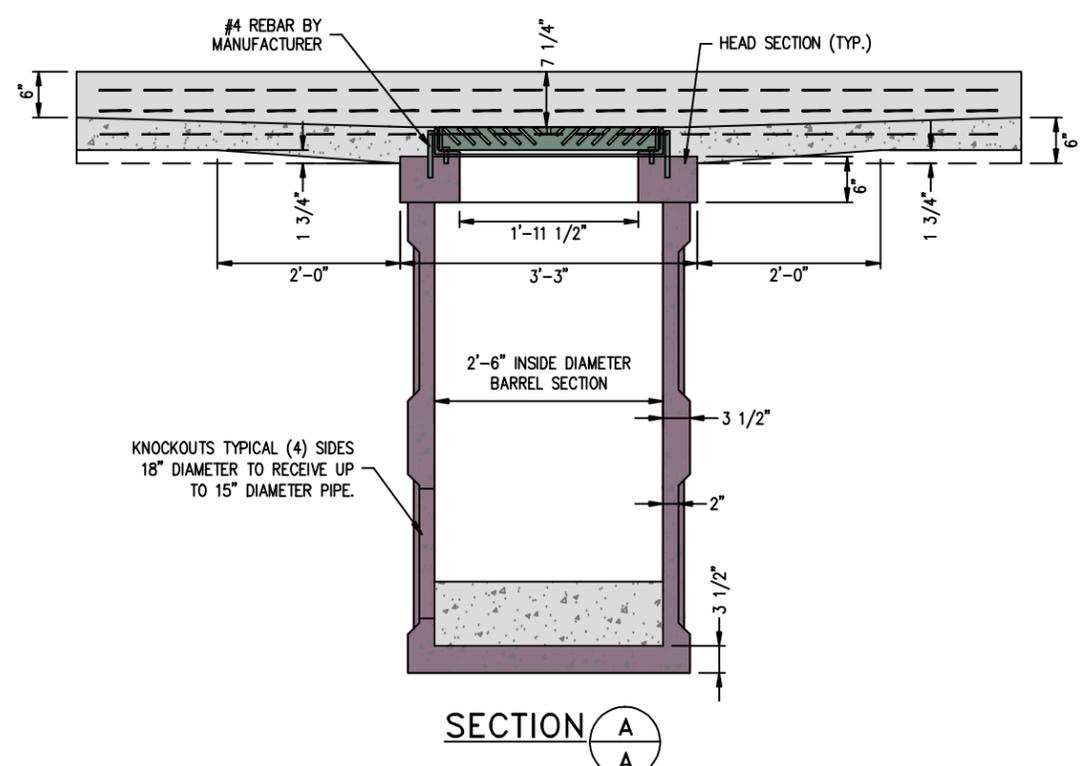
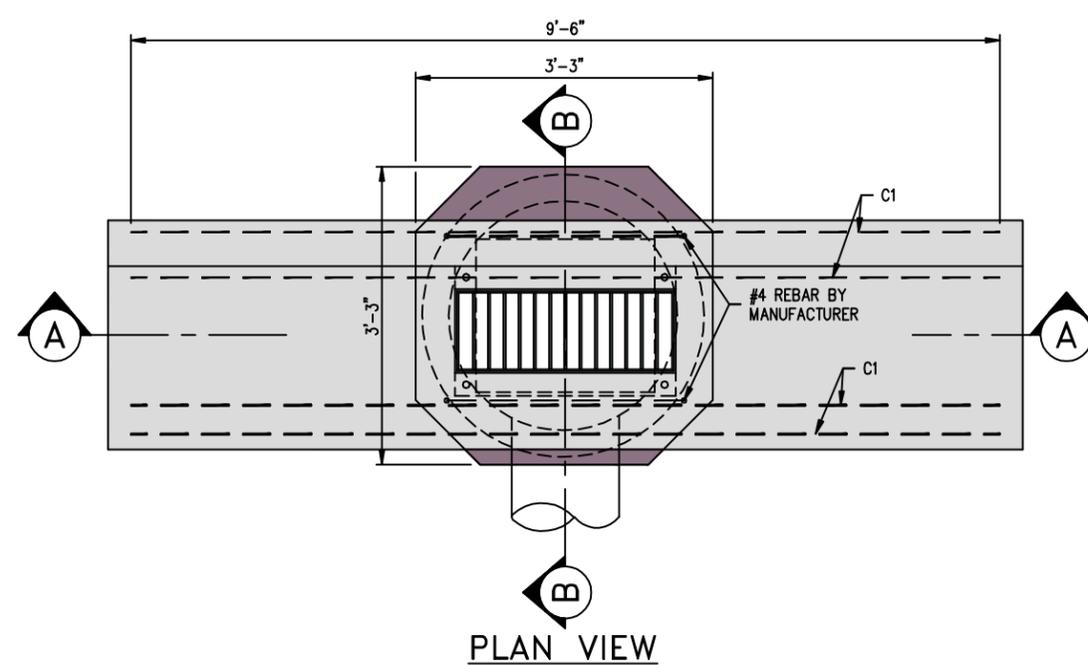
CITY OF  
IDAHO FALLS  
ENGINEERING DEPARTMENT  
STANDARD DRAWINGS 2010



SANITARY SEWER & STORM DRAIN

INLET BOX TYPE 2 - POURED

DRAWN BY: T. WHITE	CHECKED BY: C.H. FREDERICKSEN
FILE NO. 0-00-00-0-ENG-2009-06	FILE NAME: 700-10-2009
SCALE: 1"=2'	DATE PLOTTED: 12/18/09
	SHEET NO. 700-10



INLET BOX TYPE 2  
PRECAST

NOTES:

1. ALL INLETS INSTALLED WITHIN PUBLIC RIGHT-OF-WAY SHALL BE SIDE OPENERS UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
2. ALL CONCRETE PIPES (24" OR LESS IN DIA.) CONNECTED TO MANHOLES OR INLET BOXES SHALL HAVE A BELL AND SPIGOT JOINT LOCATED WITHIN 24" OF THE OUTSIDE WALL OF STRUCTURE. THIS PROTRUDING PORTION OF PIPE SHALL BE SUPPORTED WITH CONCRETE UP TO, BUT NOT INCLUDING THE JOINT.
3. ALL EXPOSED SURFACES TO BE GROUTED SHALL FIRST BE COATED WITH AN EPOXY BONDING AGENT.
4. JOINTS, ETC., THAT MUST BE GROUTED, SHALL BE "DRY PACKED" WITH A NON-SHRINK, TYPE GROUT SUCH AS THORITE (STANDARD WALL PRODUCTS, INC.) OR EQUIVALENT.
5. INLET BOX REBAR SHALL BE TIED TO REBAR IN CURB AND GUTTER WITH STANDARD TIE WIRE.
6. REBAR TO BE INCLUDED IN THE COST OF INLET BOX.
7. THE SPACING FOR THE C1 REBAR SHALL BE MAINTAINED WITH 9 GAUGE WIRE OR ADDITIONAL #4 REBAR AT THE ENDS.
8. SEE STANDARD DRAWING NO. 500-1 FOR DIMENSIONS OF CURB AND GUTTER.
9. ALL CONCRETE SHALL BE CLASS 4 AND CURED WITH A CURING COMPOUND AS SPECIFIED IN THE STANDARD SPECIFICATION OR AS DIRECTED BY THE ENGINEER.
10. ALL EXPOSED STEEL SURFACES (FRAME & GRATE) SHALL BE PAINTED WITH TWO COATS OF OIL BASE PRIMER AND FINAL COAT OF RED OIL BASE PAINT. APPLICATION RATE & PAINTING MATERIALS SHALL BE IN ACCORDANCE WITH THE "STATE OF IDAHO STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, LATEST EDITION AND AMENDMENTS".
11. CITY WILL PROVIDE STORM DRAIN MARKERS FOR ALL INLET BOXES. INSTALLATION OF MARKER AS PER MANUFACTURERS RECOMMENDATIONS. CALL (208) 612-8491 FOR INFORMATION. SEE SHEET 700-14 FOR DETAIL.

REBAR SCHEDULE

MARK	LOCATION	SIZE	LENGTH	QUANTITY
C1	CURB	4	9'-6"	6



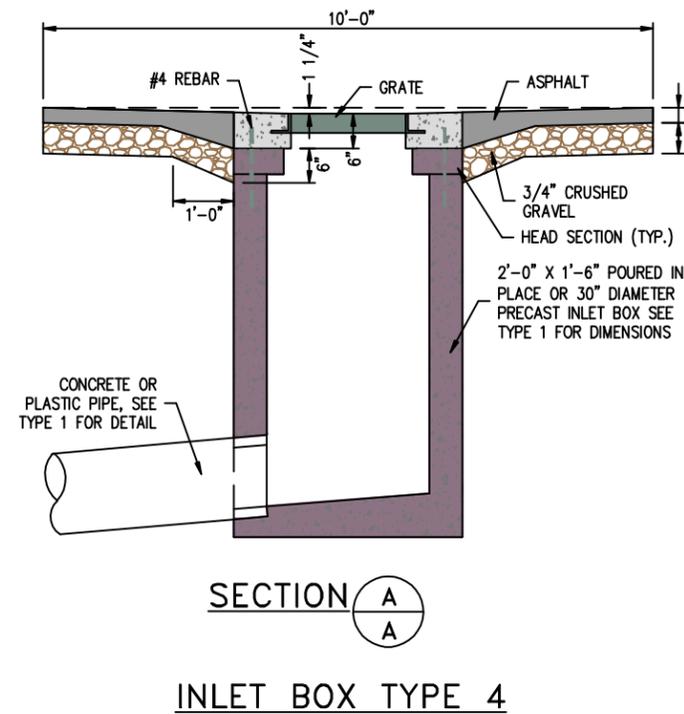
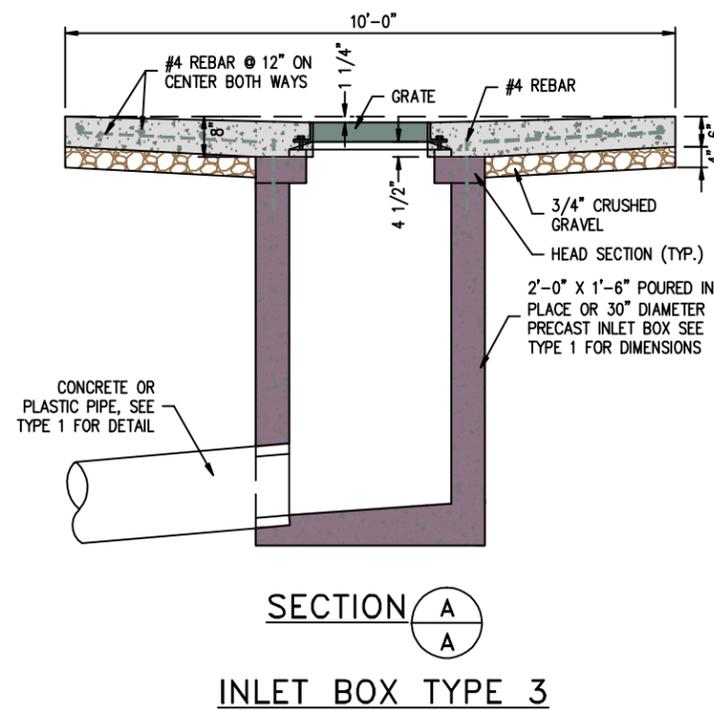
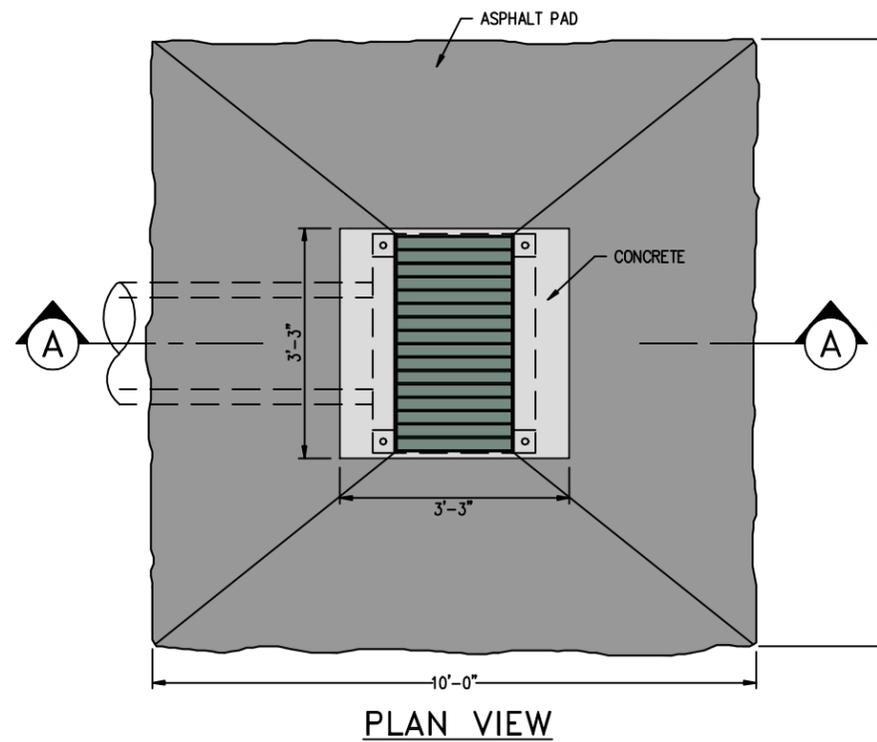
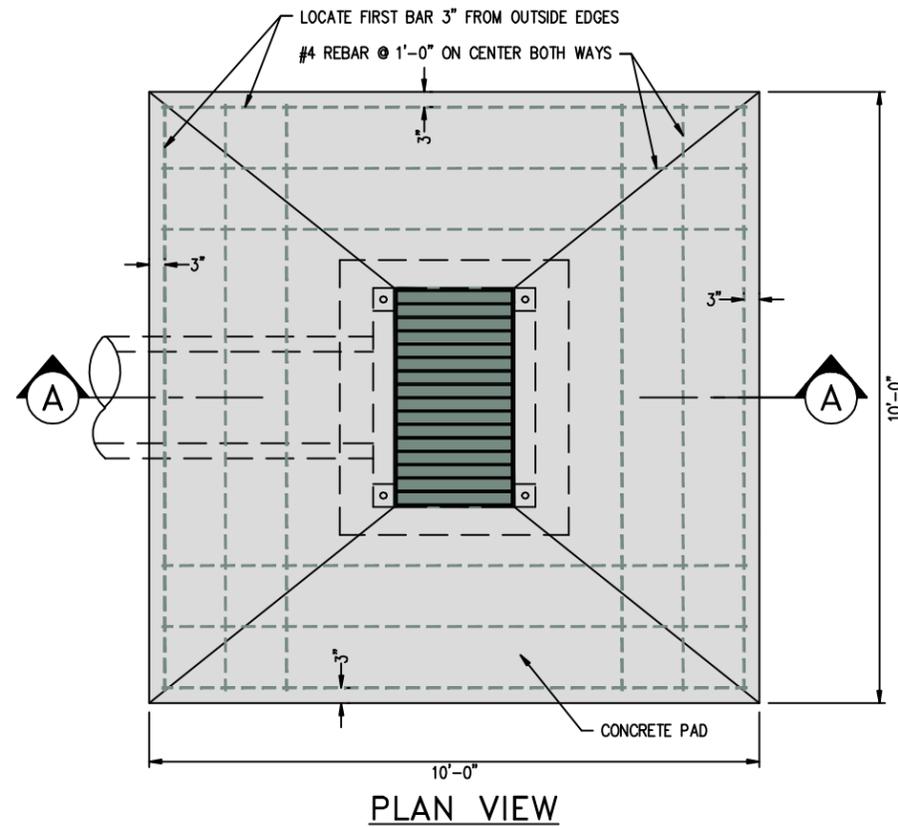
CITY OF IDAHO FALLS  
ENGINEERING DEPARTMENT  
STANDARD DRAWINGS 2010

SANITARY SEWER & STORM DRAIN  
INLET BOX TYPE 2 - PRECAST

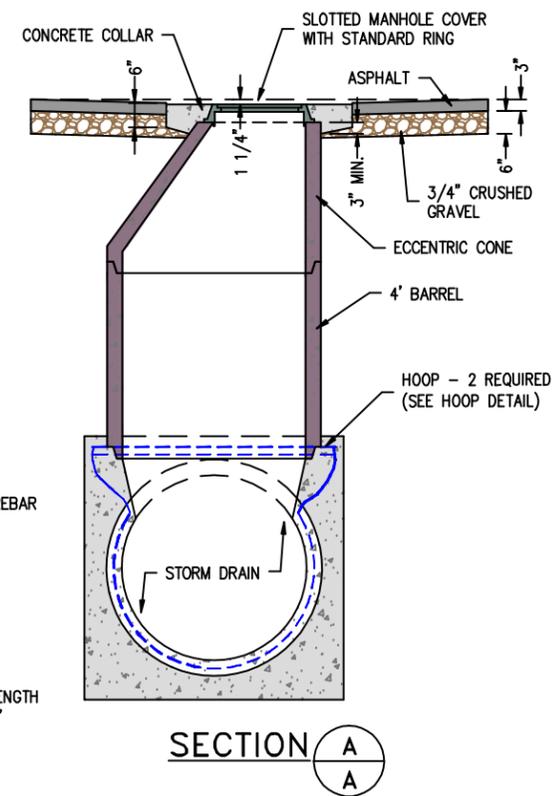
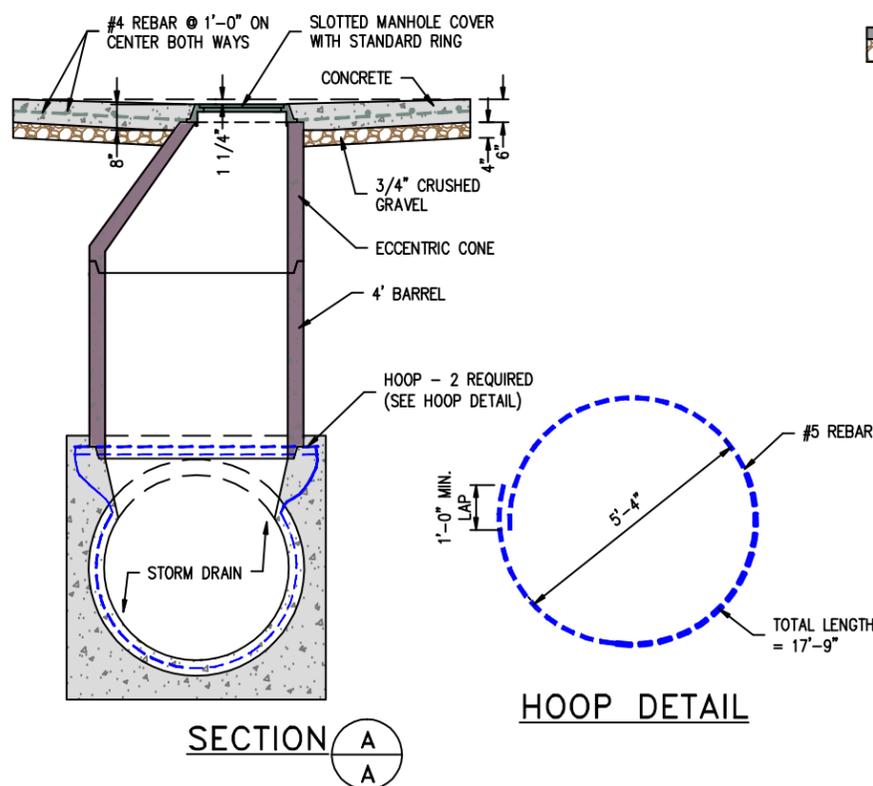
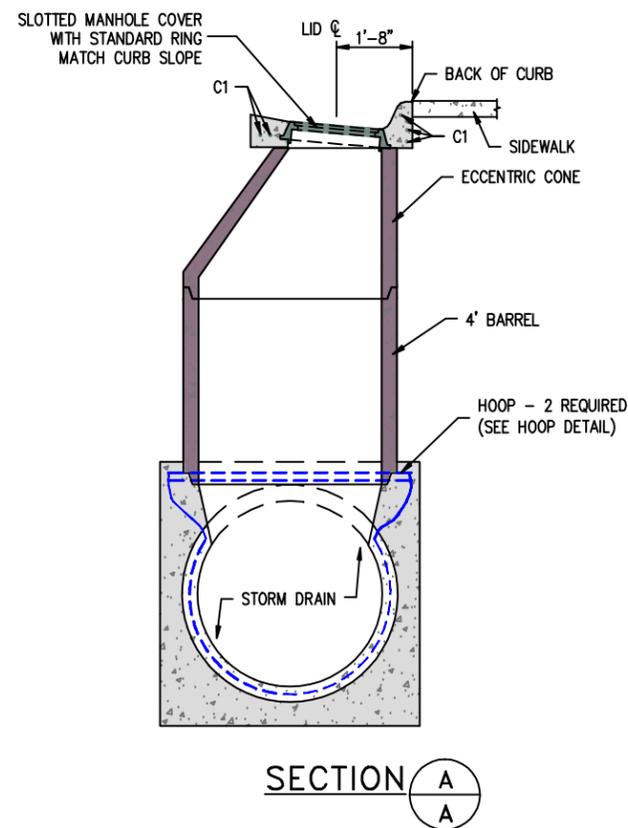
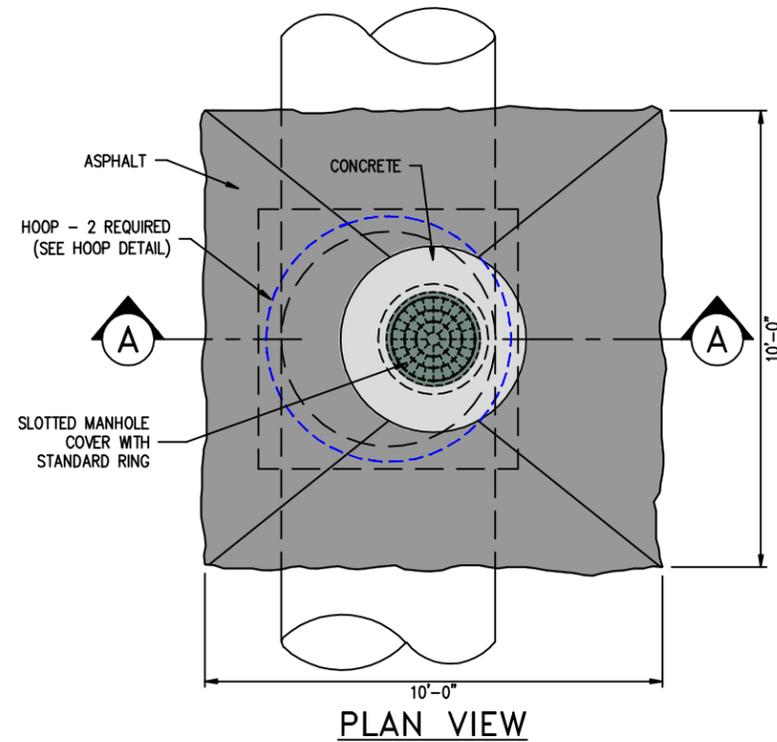
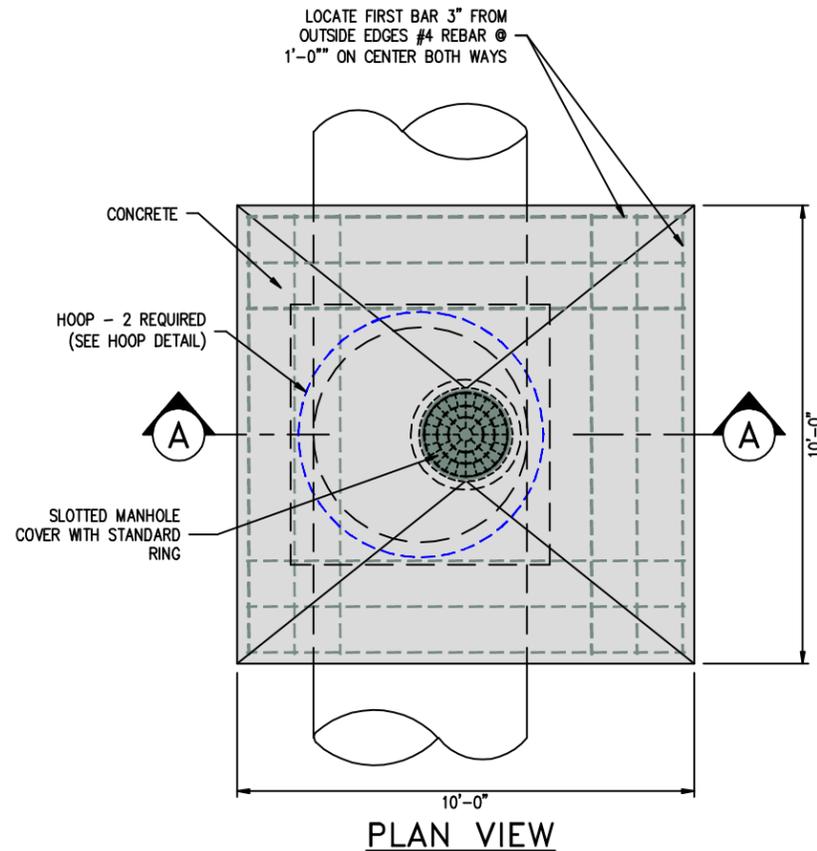
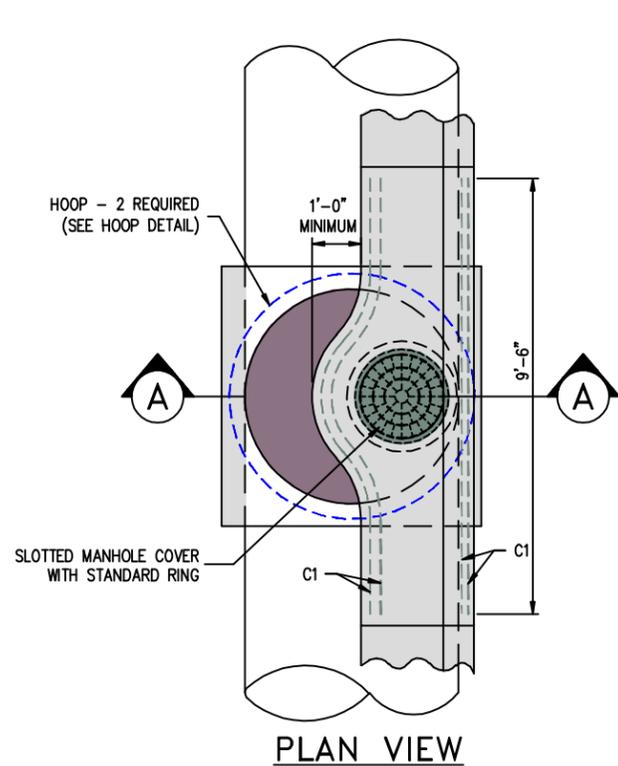
DRAWN BY: T. WHITE	CHECKED BY: C.H. FREDERICKSEN
FILE NO. 0-00-00-0-ENG-2009-06	FILE NAME: 700-11-2009
SCALE: 1"=2'	DATE PLOTTED: 12/18/09
	SHEET NO. 700-11

**NOTES:**

1. ALL CONCRETE PIPES (24" OR LESS IN DIA.) CONNECTED TO MANHOLES OR INLET BOXES SHALL HAVE A BELL AND SPIGOT JOINT LOCATED WITHIN 24" OF THE OUTSIDE WALL OF STRUCTURE. THIS PROTRUDING PORTION OF PIPE SHALL BE SUPPORTED WITH CONCRETE UP TO, BUT NOT INCLUDING THE JOINT.
2. ALL EXPOSED SURFACES TO BE GROUTED SHALL FIRST BE COATED WITH AN EPOXY BONDING AGENT.
3. JOINTS, ETC., THAT MUST BE GROUTED, SHALL BE "DRY PACKED" WITH A NON-SHRINK, TYPE GROUT SUCH AS THORITE (STANDARD WALL PRODUCTS, INC.) OR EQUIVALENT.
4. INLET BOX REBAR SHALL BE TIED TO REBAR IN CURB AND GUTTER WITH STANDARD TIE WIRE.
5. REBAR TO BE INCLUDED IN THE COST OF INLET BOX.
6. REBAR C3 SHALL BE OF ADEQUATE LENGTH TO BE WRED TO REBAR C1, AND SHALL BE EMBEDDED IN THE BOX A MINIMUM OF 10 INCHES.
7. THE SPACING FOR THE C1 REBAR SHALL BE MAINTAINED WITH 9 GAUGE WIRE OR ADDITIONAL #4 REBAR AT THE ENDS.
8. SEE STANDARD DRAWING NO. 500-1 FOR DIMENSIONS OF CURB AND GUTTER.
9. ALL CONCRETE SHALL BE CURED WITH A CURING COMPOUND AS SPECIFIED IN THE STANDARD SPECIFICATION OR AS DIRECTED BY THE ENGINEER.
10. ALL EXPOSED STEEL SURFACES (FRAME & GRATE) SHALL BE PAINTED WITH TWO COATS OF OIL BASE PRIMER AND FINAL COAT OF RED OIL BASE PAINT. APPLICATION RATE & PAINTING MATERIALS SHALL BE IN ACCORDANCE WITH THE STATE OF IDAHO STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION LATEST EDITION AND AMENDMENTS.
11. CITY WILL PROVIDE STORM DRAIN MARKERS FOR ALL INLET BOXES. INSTALLATION OF MARKER AS PER MANUFACTURES RECOMMENDATIONS. CALL (208) 612-8491 FOR INFORMATION. SEE SHEET 700-14 FOR DETAIL.



CITY OF IDAHO FALLS ENGINEERING DEPARTMENT STANDARD DRAWINGS 2010		
SANITARY SEWER & STORM DRAIN <b>INLET BOX TYPE 3 &amp; 4</b>		
DRAWN BY: T. WHITE FILE NO. 0-00-00-0-ENG-2009-06 SCALE: 1"=3'	CHECKED BY: C.H. FREDERICKSEN FILE NAME: 700-12-2009 DATE PLOTTED: 12/18/09	SHEET NO. <b>700-12</b>



**INLET ACCESS STRUCTURE  
IN CURB & GUTTER  
TYPE 5**

**INLET ACCESS STRUCTURE  
IN CONCRETE PAD  
TYPE 6**

**INLET ACCESS STRUCTURE  
IN ASPHALT PAD  
TYPE 7**

**NOTES:**

- ALL CONCRETE PIPES (24" OR LESS IN DIA.) CONNECTED TO MANHOLES OR INLET BOXES SHALL HAVE A BELL AND SPIGOT JOINT LOCATED WITHIN 24" OF THE OUTSIDE WALL OF STRUCTURE. THIS PROTRUDING PORTION OF PIPE SHALL BE SUPPORTED WITH CONCRETE UP TO, BUT NOT INCLUDING THE JOINT.
- ALL EXPOSED SURFACES TO BE GROUTED SHALL FIRST BE COATED WITH AN EPOXY BONDING AGENT.
- JOINTS, ETC., THAT MUST BE GROUTED, SHALL BE "DRY PACKED" WITH A NON-SHRINK, TYPE GROUT SUCH AS THORITE (STANDARD WALL PRODUCTS, INC.) OR EQUIVALENT.
- INLET ACCESS STRUCTURE REBAR SHALL BE TIED TO REBAR IN CURB AND GUTTER WITH STANDARD TIE WIRE.
- REBAR TO BE INCLUDED IN THE COST OF INLET ACCESS STRUCTURE.
- THE SPACING FOR THE C1 REBAR SHALL BE MAINTAINED WITH 9 GAUGE WIRE OR ADDITIONAL #4 REBAR AT THE ENDS.
- SEE STANDARD DRAWING NO. 500-1 FOR DIMENSIONS OF CURB AND GUTTER.
- ALL CONCRETE SHALL BE CURED WITH A CURING COMPOUND AS SPECIFIED IN THE STANDARD SPECIFICATION OR AS DIRECTED BY THE CITY ENGINEER.
- ALL EXPOSED STEEL SURFACES (FRAME & GRATE) SHALL BE PAINTED WITH TWO COATS OF OIL BASE PRIMER AND FINAL COAT OF RED OIL BASE PAINT. APPLICATION RATE & PAINTING MATERIALS SHALL BE IN ACCORDANCE WITH THE STATE OF IDAHO STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION LATEST EDITION AND AMENDMENTS.
- CITY WILL PROVIDE STORM DRAIN MARKERS FOR ALL INLET BOXES. INSTALLATION OF MARKER AS PER MANUFACTURERS RECOMMENDATIONS. CALL (208) 612-8491 FOR INFORMATION. SEE SHEET 700-14 FOR DETAIL.

**REBAR SCHEDULE**

MARK	LOCATION	SIZE	LENGTH	QUANTITY
C1	CURB	4	9'-6"	5



**CITY OF  
IDAHO FALLS**  
ENGINEERING DEPARTMENT  
STANDARD DRAWINGS 2010

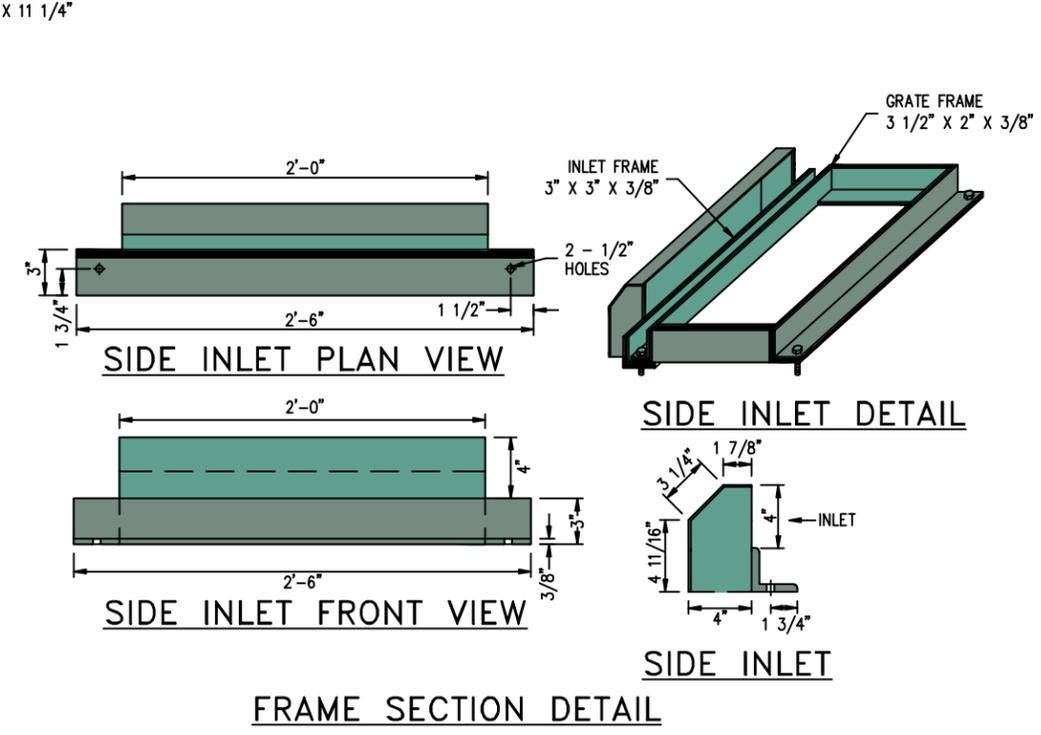
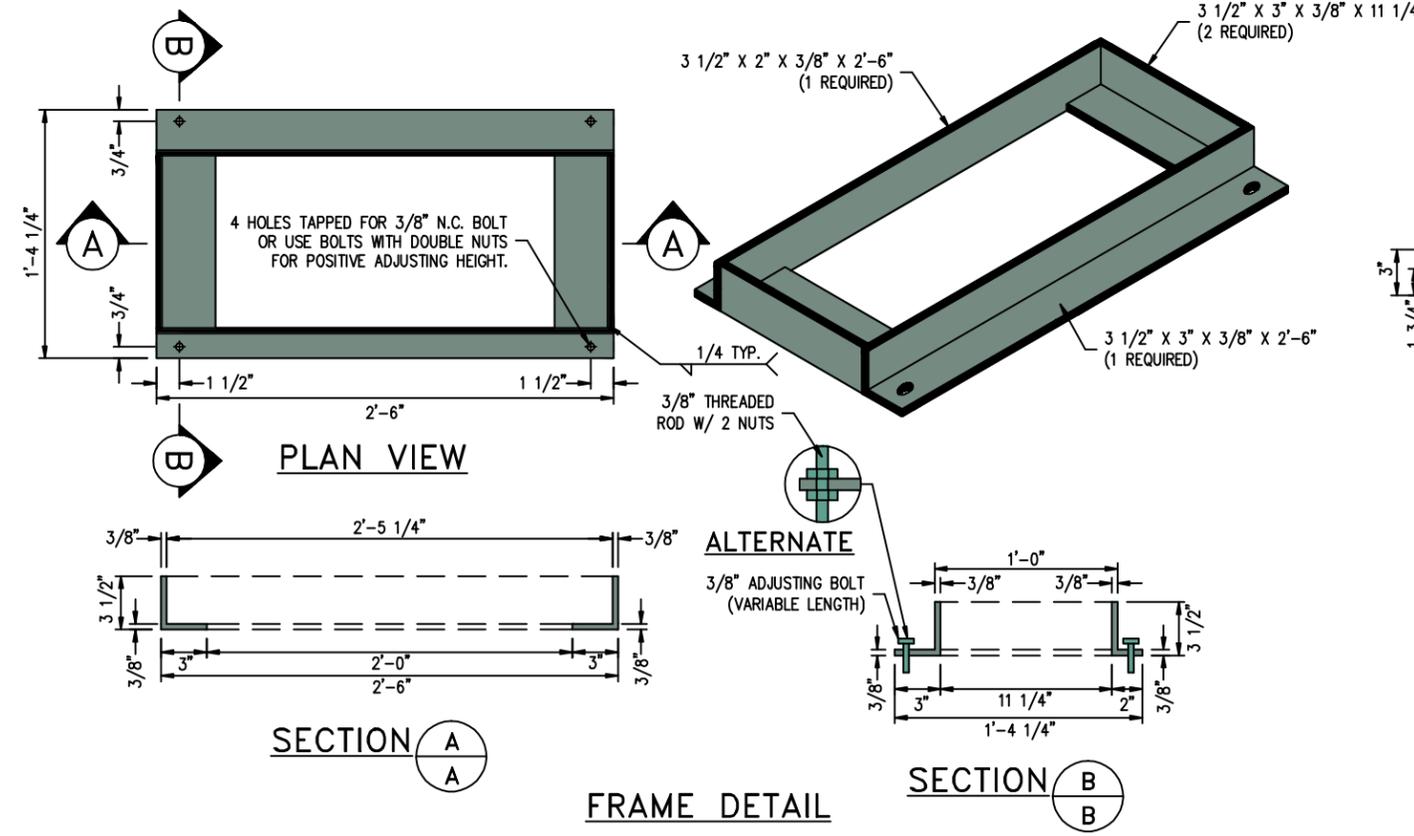
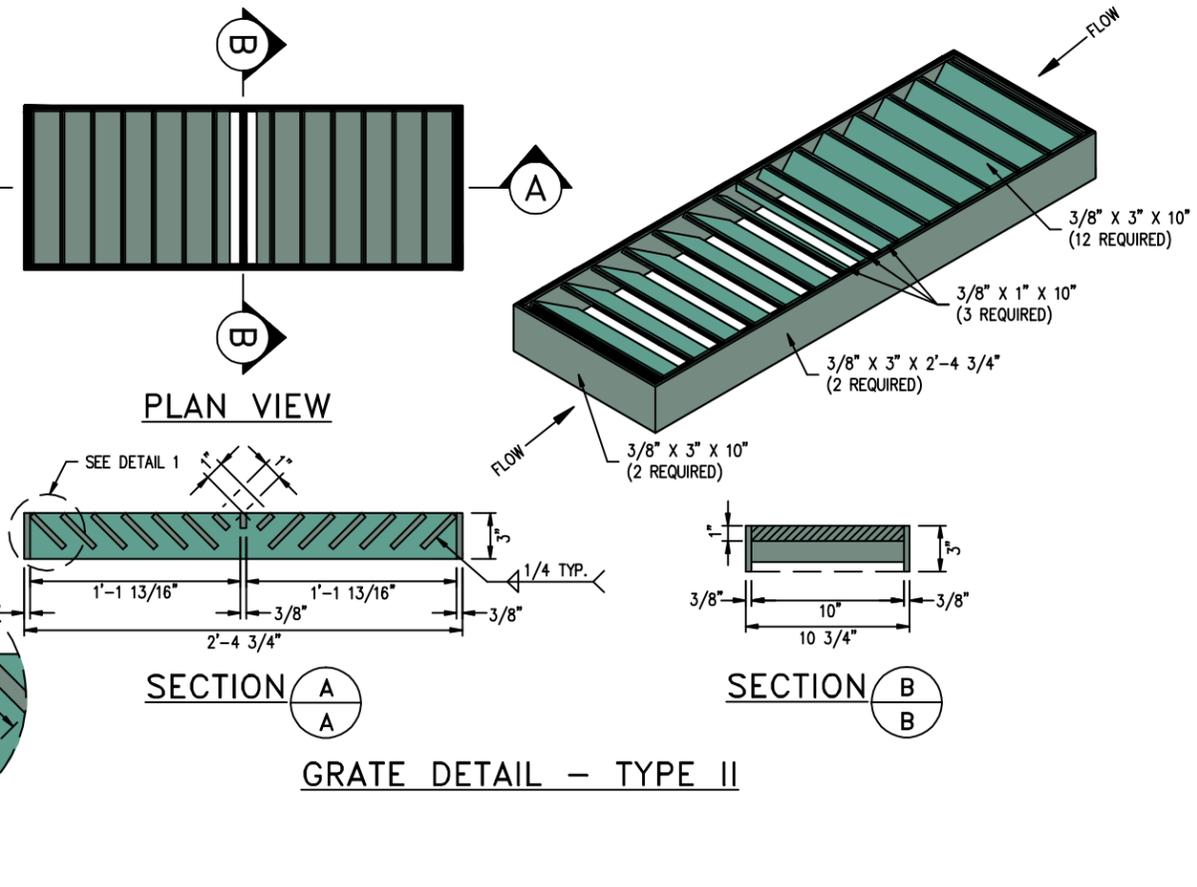
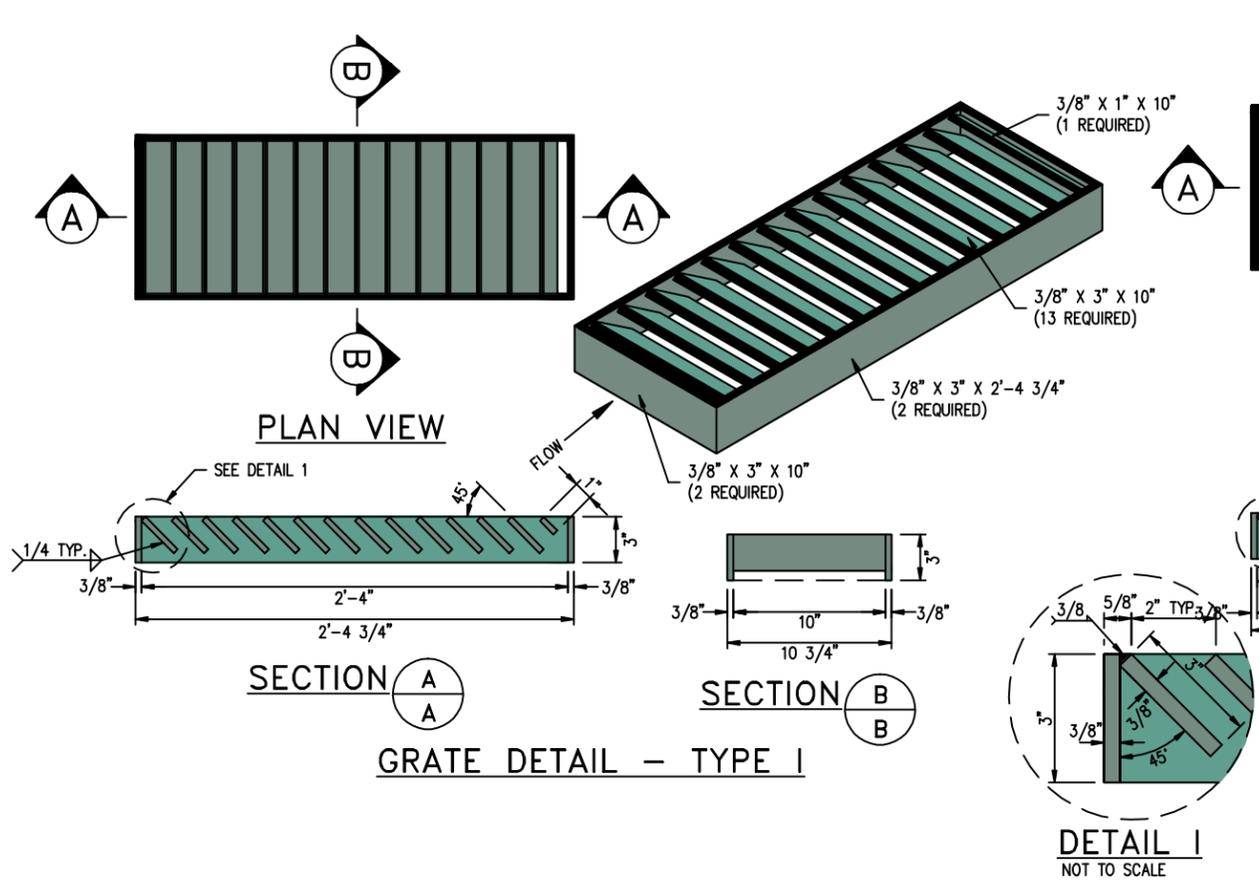


**SANITARY SEWER & STORM DRAIN  
INLET ACCESS STRUCTURES  
TYPE 5, 6, & 7**

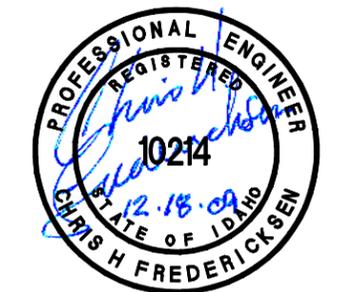
DRAWN BY: T. WHITE	CHECKED BY: C.H. FREDERICKSEN
FILE NO. 0-00-00-0-ENG-2009-06	FILE NAME: 700-13-2009
SCALE: 1"=4'	DATE PLOTTED: 12/18/09
	SHEET NO. 700-13

**NOTES:**

1. ALL EXPOSED STEEL SURFACES (FRAME & GRATE) SHALL BE PAINTED WITH TWO COATS OF OIL BASE PRIMER AND FINAL COAT OF OIL BASE PAINT. APPLICATION RATE & PAINTING MATERIALS SHALL BE IN ACCORDANCE WITH THE STATE OF IDAHO STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION LATEST EDITION AND AMENDMENTS. FIRST TWO COATS SHALL BE PRIMED, FINAL COAT SHALL BE GRAY.
2. CITY WILL PROVIDE STORM DRAIN MARKERS FOR ALL INLET BOXES. INSTALLATION OF MARKER AS PER MANUFACTURERS RECOMMENDATIONS. CALL (208) 612-8491 FOR INFORMATION



**STORM DRAIN MARKER**  
NOT TO SCALE

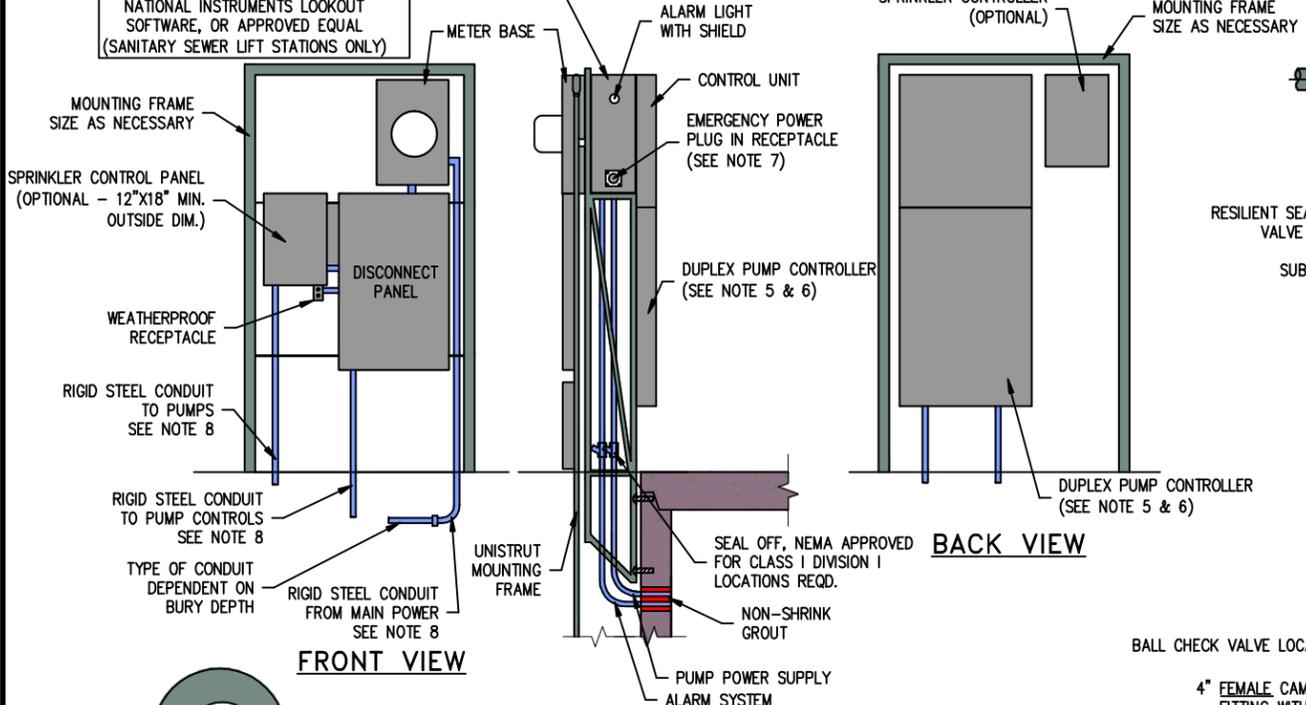


<b>CITY OF IDAHO FALLS</b> ENGINEERING DEPARTMENT STANDARD DRAWINGS 2010		
<b>SANITARY SEWER &amp; STORM DRAIN</b> <b>FRAME &amp; GRATE - FABRICATED</b> <b>AND STORM DRAIN MARKER</b>		
DRAWN BY: T. WHITE FILE NO. 0-00-00-0-ENG-2009-06 SCALE: 1"=1'	CHECKED BY: C.H. FREDERICKSEN FILE NAME: 700-14-2009 DATE PLOTTED: 12/18/09	SHEET NO. <b>700-14</b>

CONTROL CENTER SUBJECT TO ENGINEER'S SPECIFICATIONS (MOUNTED TO SIDE OF LIFT STATION)

JUNCTION BOXES FOR THE PUMP CABLES MUST BE LOCATED ABOVE THE FLOOD ELEVATION.

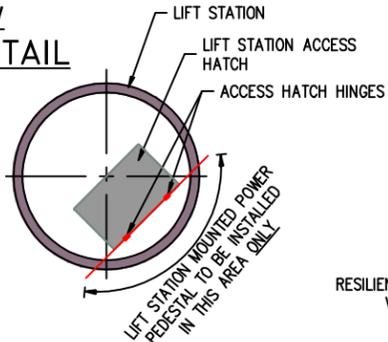
THE TELEMETRY SYSTEM SHALL BE FURNISHED BY TETON COMMUNICATIONS INC. - ZETRON 1700 SERIES AND NATIONAL INSTRUMENTS LOOKOUT SOFTWARE, OR APPROVED EQUAL (SANITARY SEWER LIFT STATIONS ONLY)



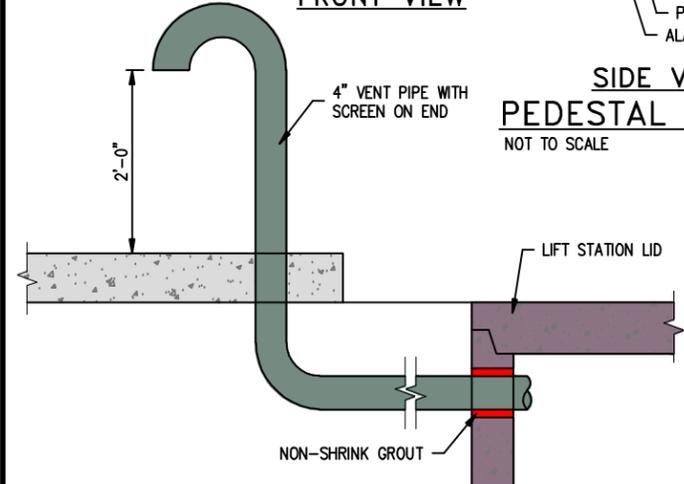
**FRONT VIEW**

**BACK VIEW**

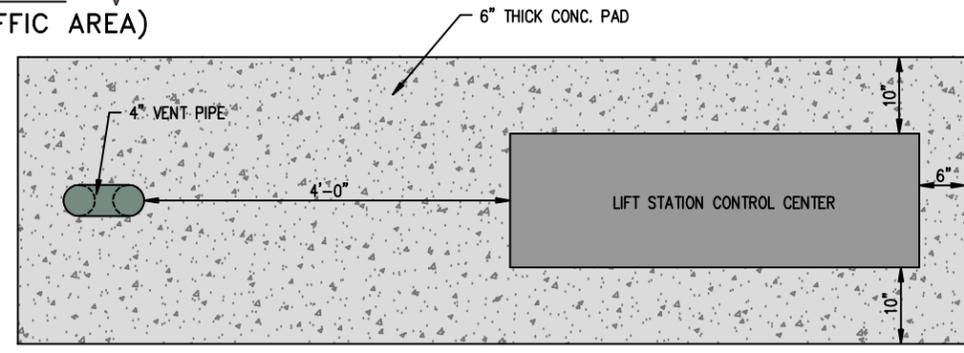
**SIDE VIEW PEDESTAL DETAIL**  
NOT TO SCALE



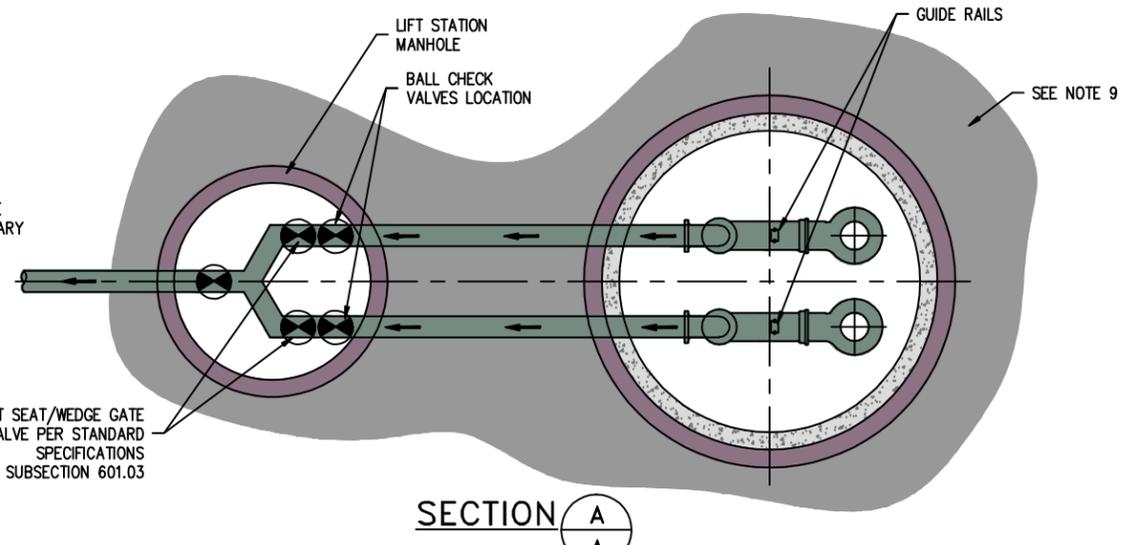
**POWER PEDESTAL LOCATION DETAIL**  
SCALE - 1"=4'



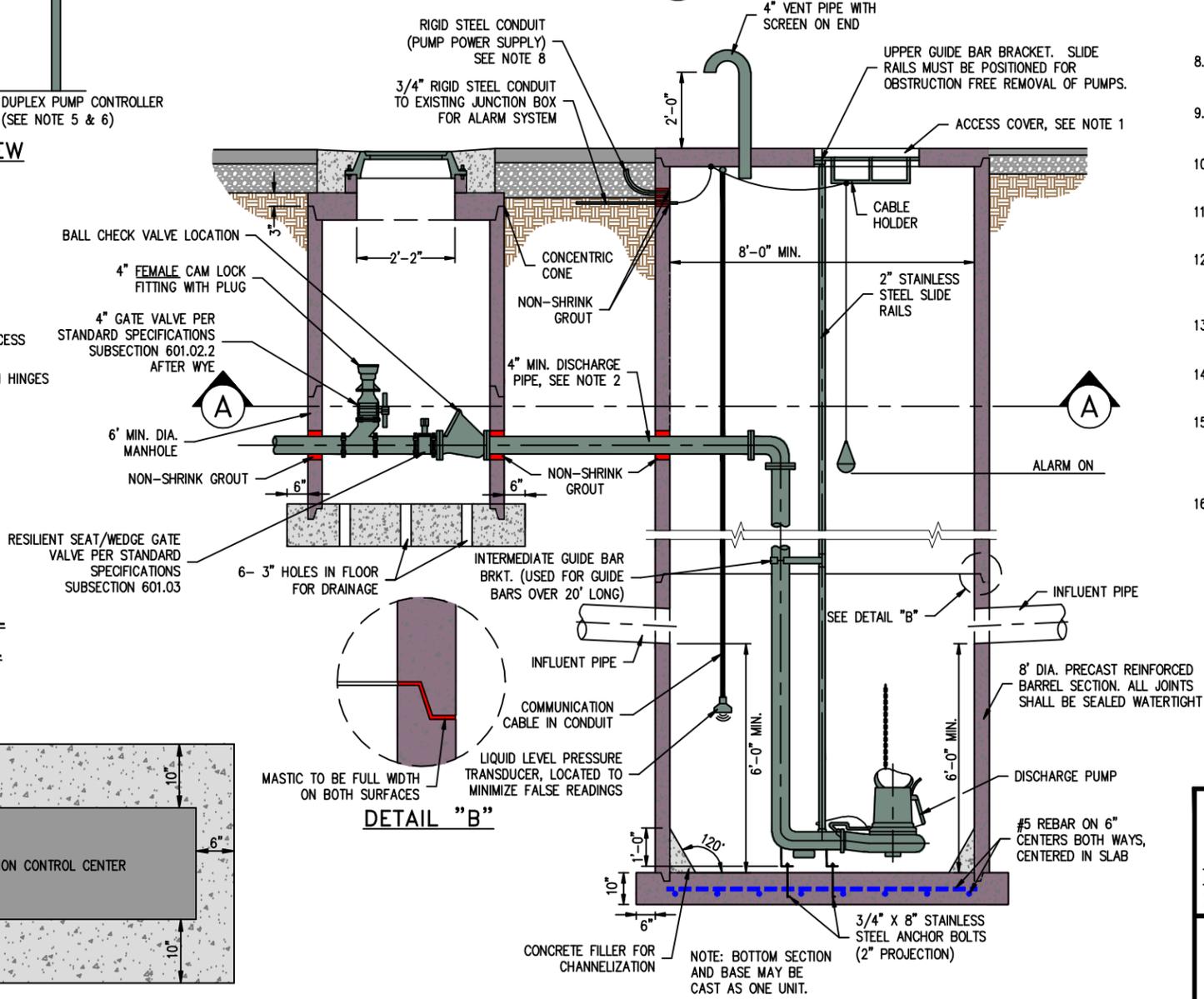
**VENT PIPE DETAIL**  
(IF LIFT STATION IN TRAFFIC AREA)  
SCALE - 1"=2'



**CONCRETE PAD LAYOUT**  
(IF PEDESTAL NOT ATTACHED TO LIFT STATION)  
SCALE - 1"=2'



**SECTION A**



**LIFT STATION DETAIL**  
SCALE - 1"=4'

- NOTE:**
- ACCESS COVER FOR LIFT STATION AND MANHOLE SHALL BE DESIGNED FOR HS 25 LOADING.
  - CLASS 50 OR HIGHER DUCTILE IRON REQUIRED FOR DISCHARGE PIPES & APPURTENANCES INSIDE AND BETWEEN LIFT STATION AND MANHOLE.
  - SEE PROJECT SPECIFICATIONS OR PLANS FOR PUMP CAPACITIES AND OTHER HARDWARE AS REQUIRED FOR EACH SPECIFIC INSTALLATION.
  - THE CITY OF IDAHO FALLS SEWER DEPARTMENT SHALL SPECIFY THE CONTROL LEVEL SETTING FOR THE FOLLOWING LIQUID LEVELS:  
A) PUMP OFF (MIN. LIQUID LEVEL)  
B) LEAD PUMP ON  
C) LAG PUMP ON  
D) ALARM ON
  - PROVIDE A 1.5' X 1.5' BLOCK OUT IN THE DUPLEX CONTROLLER CABINET.
  - INSTALL A 110 VOLT RECEPTACLE BRACKET ADJACENT TO BLOCK OUT AREA (SEE NOTE 5) IN DUPLEX PUMP CONTROLLER CABINET.
  - EMERGENCY POWER PLUG RECEPTACLE, APPLETON CAT. #ADJA604415ORS 60A 4W 4P STY. 1 OR AS REQUIRED ON ALL STORM DRAIN AND SANITARY SEWER LIFT STATIONS. MUST HAVE A MALE END INSIDE RECEPTACLE.
  - SIZE OF CONDUIT TO BE DETERMINED BY SIZE OF INSTALLED PUMPS (MIN. 2").
  - ASPHALT ACCESS TO LIFT STATION SHALL BE 15' WIDE 2" PLANTMIX OVER 6" OF CRUSHED GRAVEL.
  - ALL HARDWARE (BOLTS, NUTS, ETC.) SHALL BE STAINLESS STEEL. NO GALVANIZED HARDWARE WILL BE ALLOWED.
  - NO ELECTRICAL CONNECTIONS, SPLICES OR JUNCTION BOXES SHALL BE INSIDE LIFT STATION.
  - LIFT STATION CIRCULATION DEVICE REQUIRED FOR GREASE AND SEDIMENTATION CONTROL SHALL BE ATTACHED TO PUMP (APPLICABLE TO SANITARY SEWERS ONLY).
  - LIFT STATION LID AND CONTROLLER ORIENTATION AS DIRECTED BY SEWER DEPARTMENT SUPERINTENDENT.
  - SANITARY SEWER PIPES OVER 30" ARE REQUIRED TO HAVE TRASH RACKS INSTALLED.
  - ALL FORCED MAIN LINES SHALL HAVE A FLOW RATE OF 2'-0" PER SECOND MINIMUM. TRACER WIRE REQUIRED WITH CONNECTION ENDS AT VALVE VAULT AND DISCHARGE MANHOLE.
  - PUMP SPEEDS AS PER I.D.A.P.A. REQUIREMENTS.

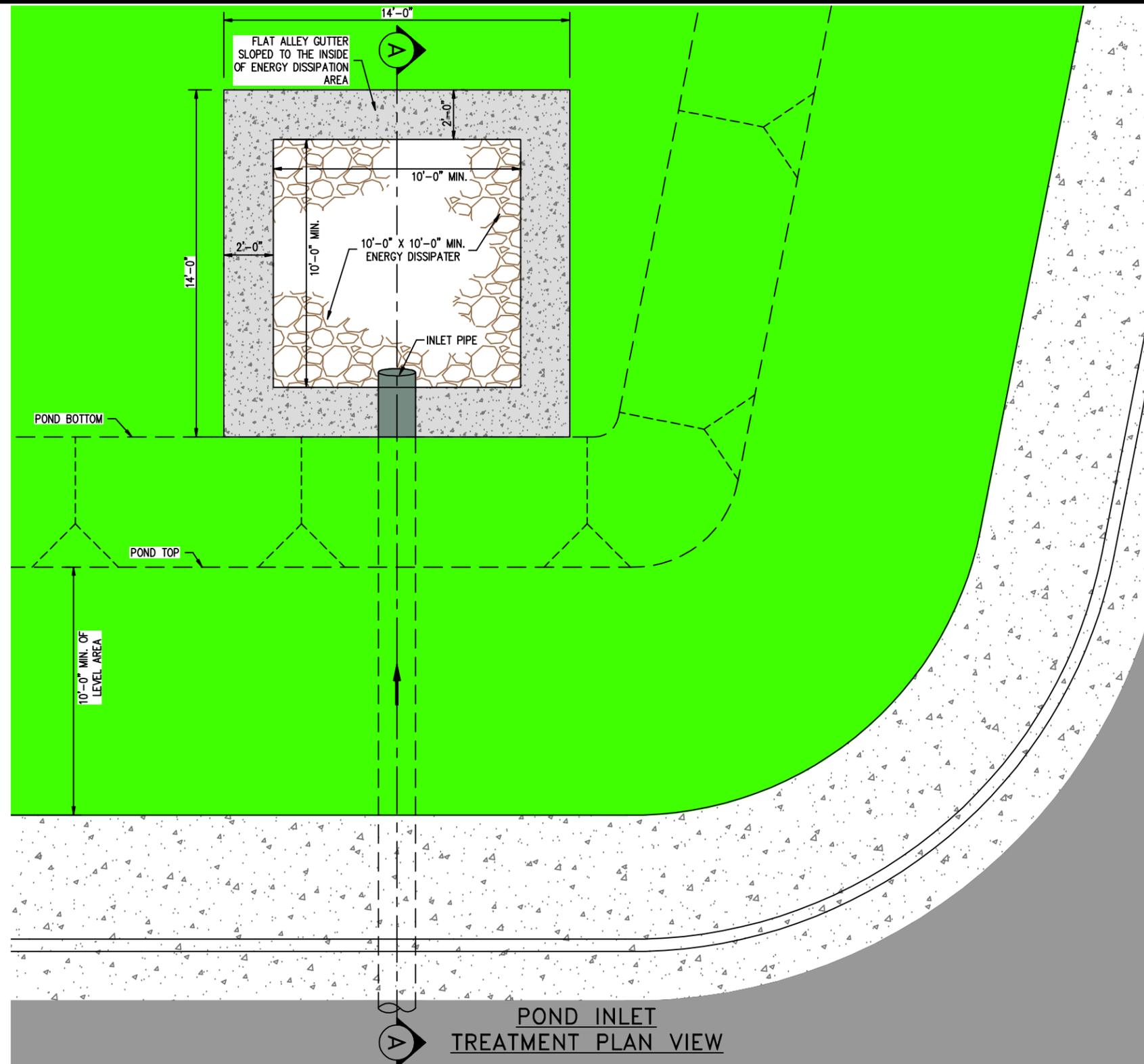


**CITY OF IDAHO FALLS**  
ENGINEERING DEPARTMENT  
STANDARD DRAWINGS 2010

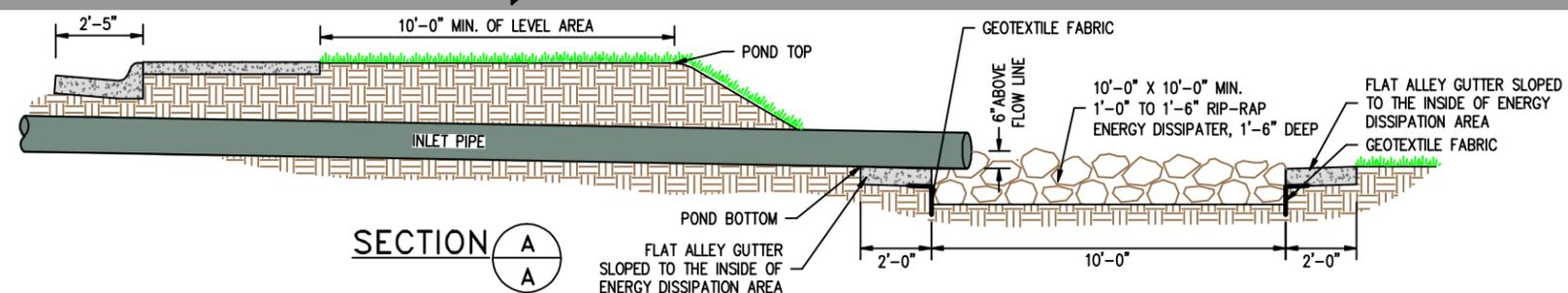
**SANITARY SEWER & STORM DRAIN**

**LIFT STATION**

DRAWN BY: T. WHITE	CHECKED BY: C.H. FREDERICKSEN
FILE NO. 0-00-00-0-ENG-2009-06	FILE NAME: 700-15-2009
SCALE: VARIES	DATE PLOTTED: 12/18/09
	SHEET NO. 700-15



POND INLET  
TREATMENT PLAN VIEW



SECTION A-A

NOTE:

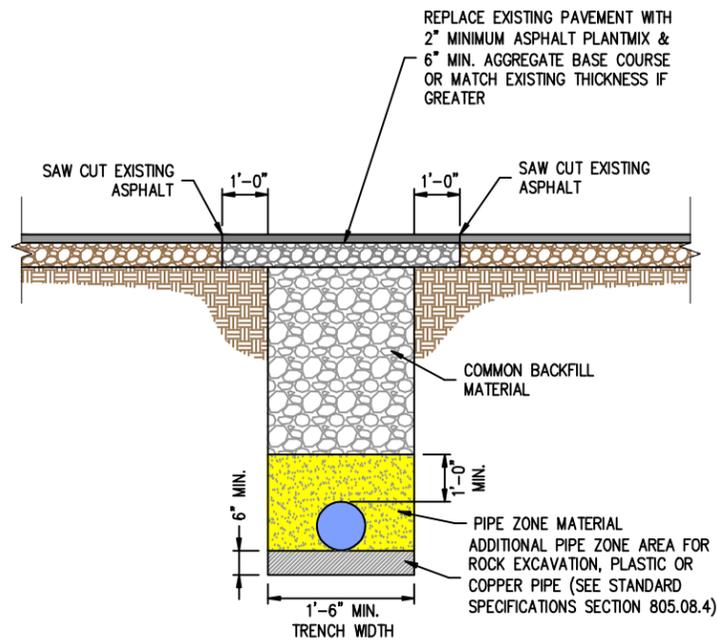
1. PIPE INLETS LARGER THAN 15" IN SIZE SHALL REQUIRE A GRATE TO BE INSTALLED INSIDE OF PIPE AT OUTFALL END.



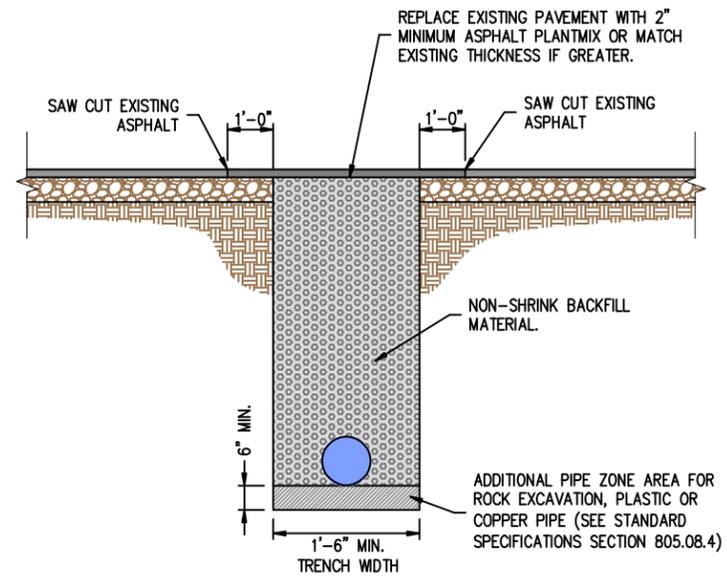
 <p>CITY OF IDAHO FALLS ENGINEERING DEPARTMENT STANDARD DRAWINGS 2010</p>	
<p><b>SANITARY SEWER &amp; STORM DRAIN</b></p> <p><b>POND INLET TREATMENT</b></p>	
<p>DRAWN BY: T. WHITE</p> <p>FILE NO. 0-00-00-0-ENG-2009-06</p> <p>SCALE: 1"=5'</p>	<p>CHECKED BY: C.H. FREDERICKSEN</p> <p>FILE NAME: 700-162009</p> <p>DATE PLOTTED: 12/18/09</p> <p>SHEET NO. 700-16</p>

**NOTES:**

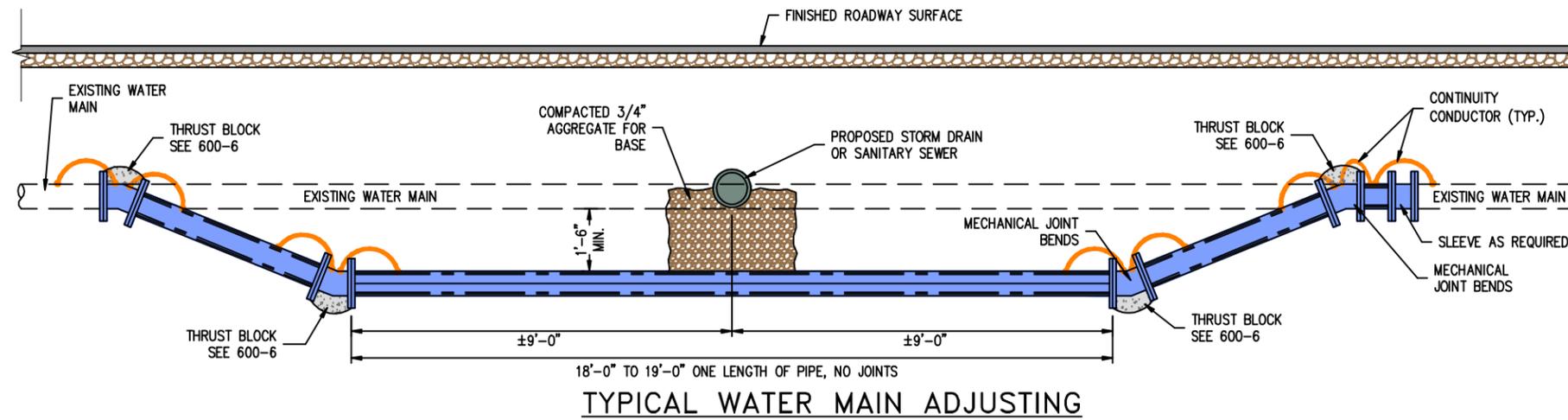
1. TRENCH WIDTH AT SURFACE TO BE KEPT TO A MINIMUM. SLOPING OF TRENCH IN EXISTING ASPHALT SURFACES SHALL NOT BE ALLOWED WITHOUT WRITTEN PERMISSION OF THE CITY ENGINEER. ALL TRENCHING SHALL BE DONE IN STRICT ACCORDANCE OF THE OCCUPATIONAL SAFETY AND HEALTH ACT (O.S.H.A.) REQUIREMENTS.
2. ALL CONTINUITY CONDUCTORS SHALL BE A MINIMUM #2 STRANDED COPPER WIRE WITH END SLEEVES.
3. CONTINUITY CONNECTION SHALL BE A CAD WELD TYPE HB OR EQUAL.



**STANDARD BACKFILL  
TRENCH & RESURFACING**



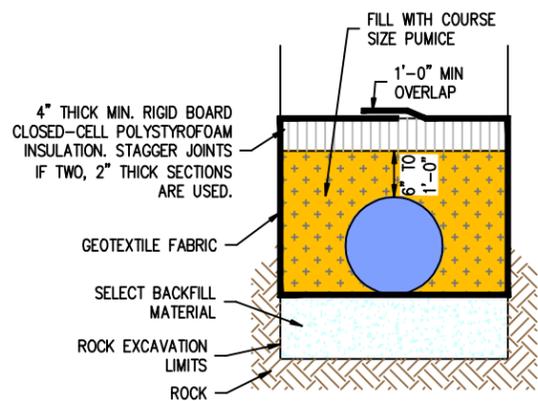
**NON-SHRINK BACKFILL  
TRENCH & RESURFACING**  
STATE OF IDAHO RIGHT-OF-WAY AND CITY OF IDAHO FALLS RIGHT-OF-WAY IN ARTERIAL, COLLECTOR, SUBDIVISION (NEWER THAN 15 YEARS) AND OVERLAYED STREETS OR WHEN REQUIRED BY THE CITY ENGINEER.



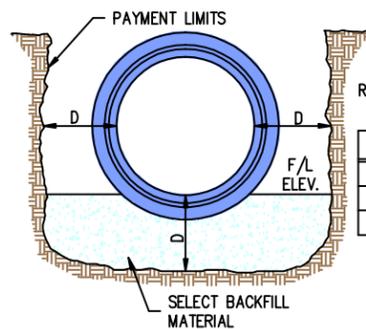
**TYPICAL WATER MAIN ADJUSTING**



<p>CITY OF IDAHO FALLS ENGINEERING DEPARTMENT STANDARD DRAWINGS 2010</p>		
<p><b>TRENCH EXCAVATION &amp; BACKFILL</b> <b>TRENCHING AND WATER MAIN ADJUSTING</b></p>		
<p>DRAWN BY: T. WHITE</p>	<p>CHECKED BY: C.H. FREDERICKSEN</p>	<p>SHEET NO.</p>
<p>FILE NO. 0-00-00-0-ENG-2009-06</p>	<p>FILE NAME: 800-1-2009</p>	<p>800-1</p>
<p>SCALE: 1"=4'</p>	<p>DATE PLOTTED: 12/18/09</p>	



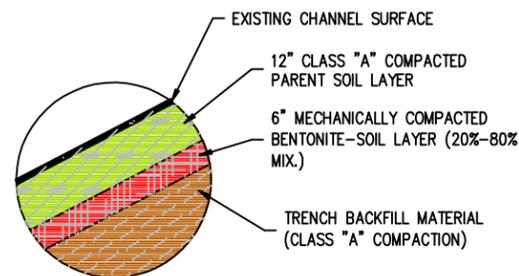
**PIPE INSULATION FOR ROCK LOCATION ONLY**



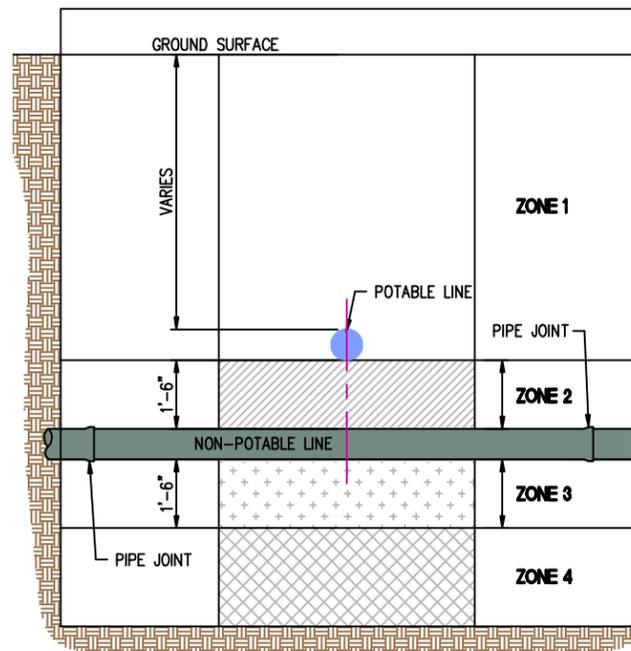
**ROCK EXCAVATION & SELECT BACKFILL QUANTITY COMPUTATION CHART**

PIPE SIZE	D
0" - 30"	1'-0"
31" - 54"	1'-3"
55" - 84"	1'-6"

**ROCK EXCAVATION AND SELECT BACKFILL DIAGRAM**



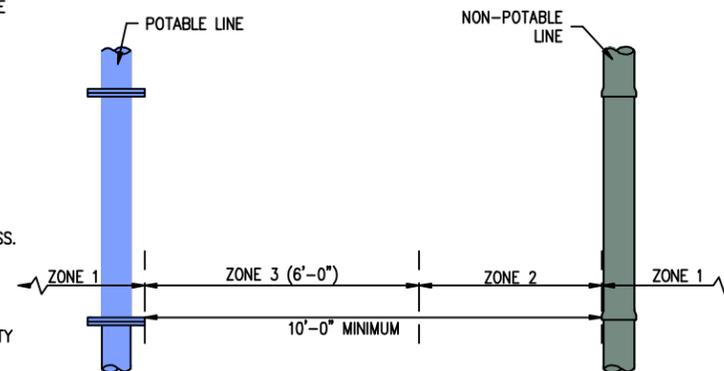
**REPAIR OF EXISTING WATERWAYS**



**POTABLE AND NON-POTABLE VERTICAL LINE CROSSINGS**

- ZONE 1:**
- POTABLE WATER AND NON-POTABLE MAINS AND SERVICE LINES MUST BE SEPARATED BY AT LEAST 1'-6" VERTICALLY AND
  - ONE FULL, UNCUT LENGTH OF NON-POTABLE PIPE MUST BE CENTERED ON THE CROSSING SO THAT THE JOINTS ARE AS FAR AS POSSIBLE FROM THE CROSSING.
- ZONE 2: (POTABLE LINE < 1'-6" OVER TOP OF NON-POTABLE LINE)**
- ONE FULL, UNCUT LENGTH OF NON-POTABLE WATER PIPE MUST BE CENTERED ON THE CROSSING SO THAT THE JOINTS ARE AS FAR AS POSSIBLE FROM THE NON-POTABLE LINE AND
- (EITHER)
- NON-POTABLE LINE MUST BE CONSTRUCTED TO POTABLE WATER PIPE STANDARDS AND PRESSURE TESTED FOR WATER TIGHTNESS FOR A HORIZONTAL DISTANCE OF 10'-0" ON BOTH SIDES OF THE CROSSING.
- (OR)
- NON-POTABLE OR POTABLE LINE MUST BE CASED IN A LARGER DIAMETER CARRIER PIPE FOR A HORIZONTAL DISTANCE OF 10'-0" ON BOTH SIDES OF THE CROSSING, WITH NO JOINTS.
- ZONE 3:**
- SAME REQUIREMENTS AS ZONE 2 EXCEPT THE NON-POTABLE LINE MUST ALSO BE SUPPORTED ABOVE THE CROSSING TO PREVENT SETTLING.
- ZONE 4:**
- SAME REQUIREMENTS AS ZONE 1 EXCEPT THE NON-POTABLE LINE MUST ALSO BE SUPPORTED ABOVE THE CROSSING TO PREVENT SETTLING.

- ZONE 1: (MORE THAN 10'-0" APART)**
- NO SPECIAL REQUIREMENTS.
- ZONE 2: (FROM 6'-0" TO 10'-0")**
- NO SPECIAL REQUIREMENTS FOR SERVICE LINES.
  - POTABLE AND NON-POTABLE MAINS SEPARATED BY AT LEAST 6'-0" AT OUTSIDE WALLS AND.
  - POTABLE MAINS HIGHER IN ELEVATION THAN THE NON-POTABLE MAINS AND.
  - NON-POTABLE MAINS CONSTRUCTED TO WITH POTABLE WATER CLASS PIPE AND PRESSURE TESTED FOR WATER TIGHTNESS.
- ZONE 3: (ALL OTHER CASES)**
- FOR MAINS AND SERVICES, DESIGN ENGINEER TO SUBMIT DATA TO DEPARTMENT OF ENVIRONMENTAL QUALITY FOR REVIEW AND APPROVAL THAT THIS INSTALLATION WILL PROTECT PUBLIC HEALTH AND ENVIRONMENT AND NON-POTABLE LINE CONSTRUCTED WITH POTABLE WATER CLASS PIPE.
  - SITE SPECIFIC APPROVAL BY THE DEPARTMENT OF ENVIRONMENTAL QUALITY IS REQUIRED BEFORE SEPARATION LESS THAN 6'-0" (ZONE 3) IS INSTALLED.



**POTABLE AND NON-POTABLE HORIZONTAL LINE SEPARATION**

**NOTES:**

- TRENCH WIDTH AT SURFACE TO BE KEPT TO A MINIMUM. SLOPING OF TRENCH IN EXISTING ASPHALT SURFACES SHALL NOT BE ALLOWED WITHOUT WRITTEN PERMISSION OF THE CITY ENGINEER. ALL TRENCHING SHALL BE DONE IN STRICT ACCORDANCE OF THE OCCUPATIONAL SAFETY AND HEALTH ACT (O.S.H.A.) REQUIREMENTS.
- SEWAGE FORCE MAINS SHALL HAVE AT LEAST 1'-6" VERTICAL OF CLEARANCE FROM POTABLE WATER MAINS AND ZONE 2 AND 3 PLACEMENTS ARE PROHIBITED. SEPARATION REQUIREMENTS ALSO APPLY TO POTABLE AND NON-POTABLE SERVICE LINES CONTROLLED BY THE SYSTEM OWNER AND EXTENDED TO THE PROPERTY LINE, SERVICE METER, OR CLEANOUT. REFER TO IDAPA 58.01.08.542.07: "IDAHO RULES FOR PUBLIC DRINKING WATER SYSTEMS" AND IDAPA 58.01.16.430.0: "IDAHO WASTEWATER RULES".



**CITY OF IDAHO FALLS**  
ENGINEERING DEPARTMENT  
STANDARD DRAWINGS 2010

**TRENCH EXCAVATION & BACKFILL**  
**INSULATION, REPAIR, EXCAVATION,**  
**LINE SEPARATION AND CROSSING**

DRAWN BY: T. WHITE	CHECKED BY: C.H. FREDERICKSEN
FILE NO. 0-00-00-0-ENG-2009-06	FILE NAME: 800-2-2009
SCALE: 1"=4'	DATE PLOTTED: 12/18/09
	SHEET NO. <b>800-2</b>