LAKE HAVASU CITY

# ENGINEERING DIVISION

# STANDARD DETAILS

## 200 SERIES: ROADWAY DETAILS



## 300 SERIES: WATER DETAILS



## 300 SERIES: WATER DETAILS



## 400 SERIES: WASTEWATER DETAILS

## 400 SERIES: WASTEWATER DETAILS

415 HARNESSED SLEEVE COUPLING TIED-ROD
416 WALL PIPE SUPPORT
417 COMBINATION AIR/SEWER RELEASE VALVE MANHOLE
418 COMBINATION AIR/SEWER RELEASE VALVE
419 PUMP STATION SECTION
420 PUMP STATION PLAN VIEW
421 FORCE MAIN METER VAULT BASE SLAB PLAN
422 FORCE MAIN METER VAULT SECTION
423 FORCE MAIN METER VAULT TOP SLAB PLAN
424 TYPICAL PUMP STATION CMU SCREENED WALL

## 500 SERIES: STORMWATER DETAILS

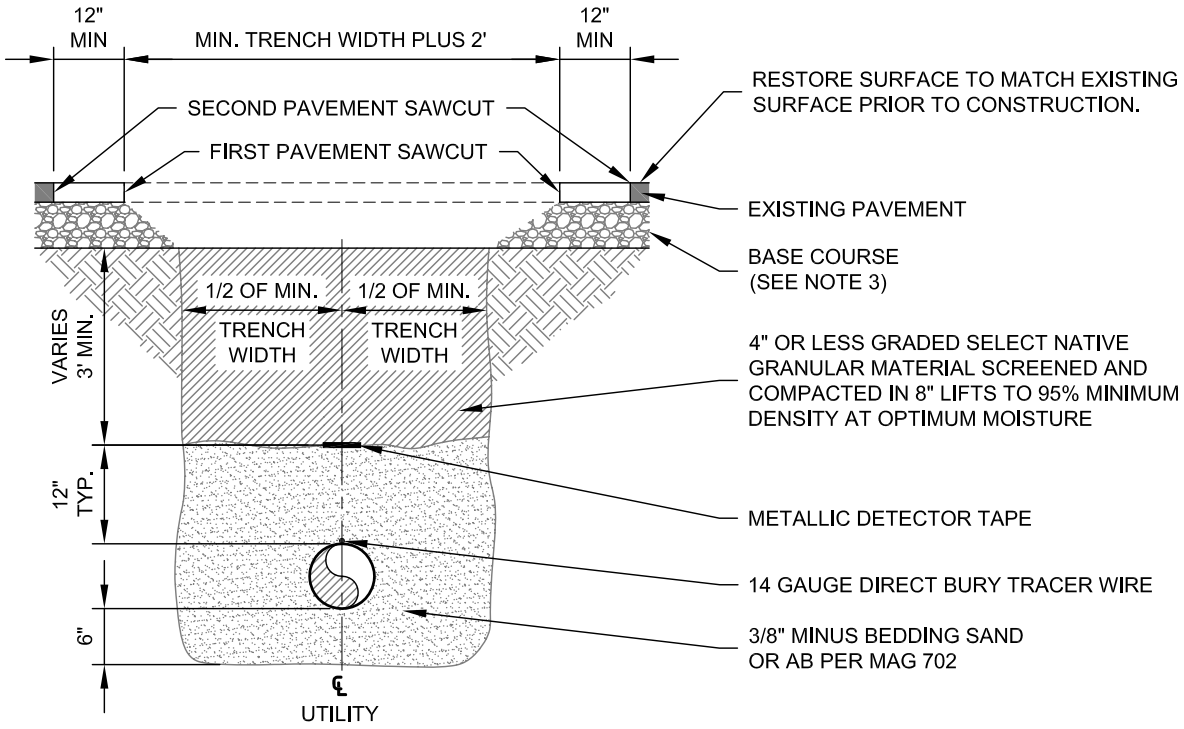
500 DEPRESSED CURB OPENING
501 SCUPPERS
502A STABILIZED CONSTRUCTION ENTRANCE (COMMERCIAL)
502B STABILIZED CONSTRUCTION ENTRANCE (RESIDENTIAL)
503 INSTALLATION OF EROSION CONTROL MATS
504A WATTLE NOTES
504B WATTLE DETAILS
504C WATTLE SECTION
505 ORGANIC FILTER BARRIER
506A CONCRETE WASHOUT (STRAW BALES)
506B CONCRETE WASHOUT (WOOD PLANKS - BERMS BELOW & ABOVE)
507 GRAVEL FILTER BERM (TRAFFIC AREAS)
508 SILT FENCE
509 STORM DRAIN DROP INLET PROTECTION
510 STORM DRAIN CURB INLET PROTECTION

## 600 SERIES: FIRE

600 FIRE DEPARTMENT STANDARD RISER DETAIL

LAKE HAVASU CITY

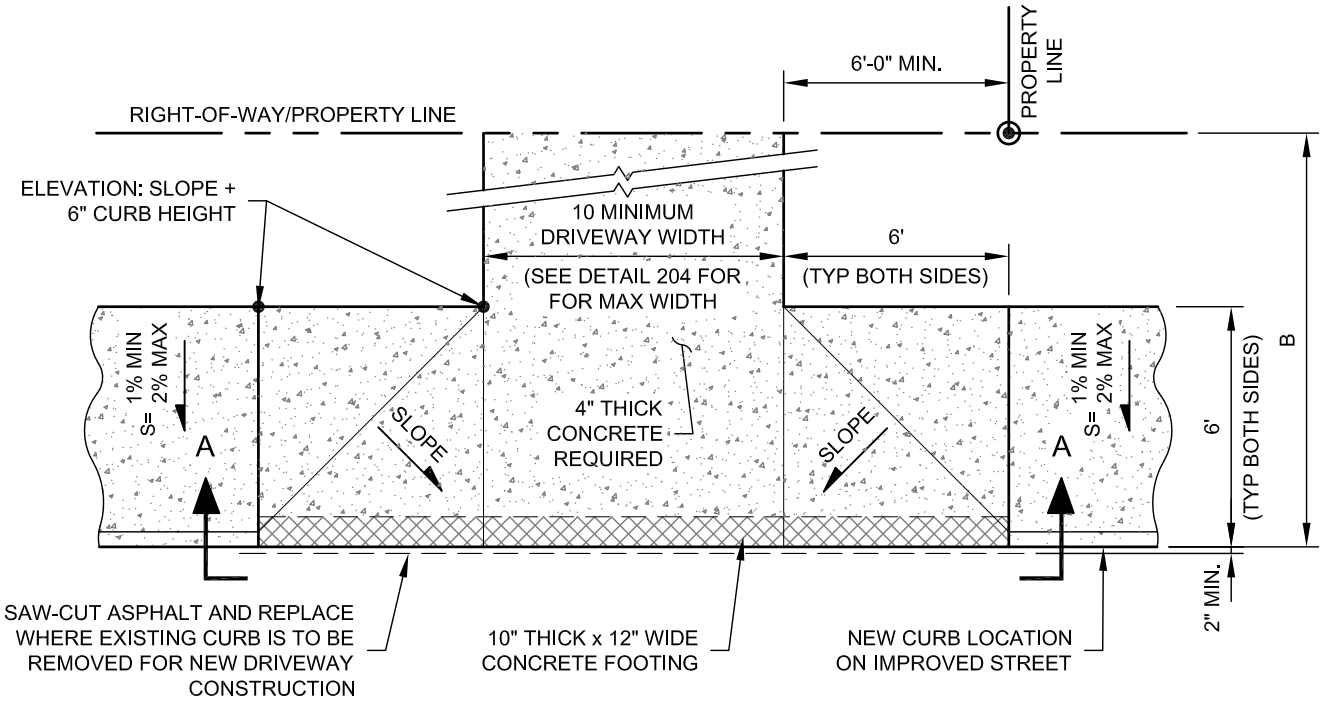
# ROADWAY IMPROVEMENTS



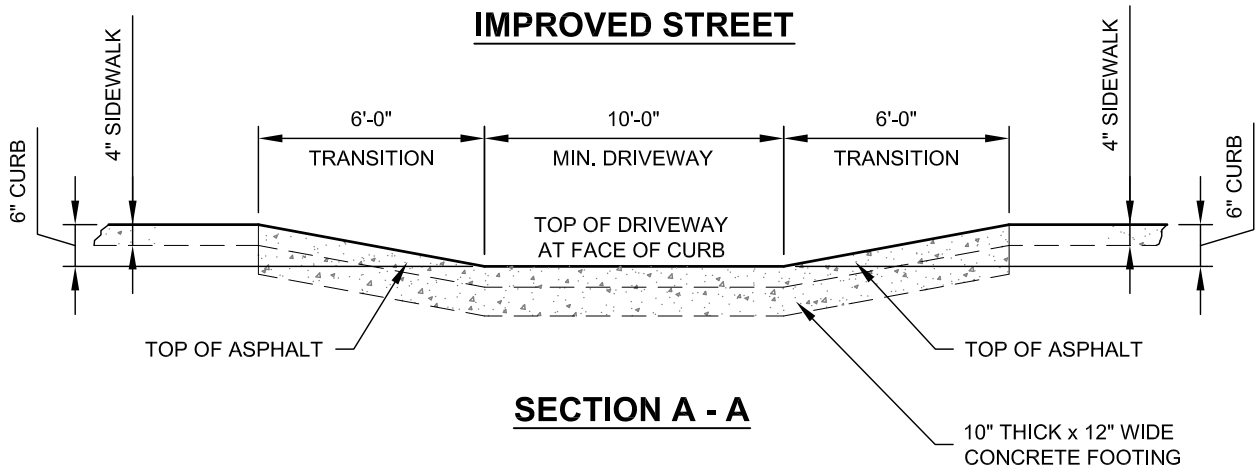

| MINIMUM TRENCH WIDTH TABLE | | | | |
|---|---|---|---|---|
| PIPE DIAMETER | MINIMUM WIDTH | MINIMUM BETWEEN FIRST SAWCUTS | MINIMUM BETWEEN SECOND SAWCUTS | CONCRETE PAVEMENT |
| <8 IN. | 24" | 4' | 6' | SECOND SAWCUT SHALL BE AT EXISTING JOINTS, SEE NOTE #5 |
| 8IN.-12IN. | 30" | 4'-6" | 6'-6" | |
| 14IN.-18IN. | 36" | 5' | 7' | |
| 20IN.-24IN. | 42" | 5'-6" | 7'-6" | |
| 24IN.-36IN. | 1.25 (PIPE OD) PLUS 12IN. | MIN. WIDTH PLUS 2' | MIN. WIDTH PLUS 4' | |
| >36IN. | PER PLANS | MIN. WIDTH PLUS 2' | MIN. WIDTH PLUS 4' | |

## NOTES:

1. ALL SAWCUTS TO BE FULL DEPTH OF PAVEMENT.
2. PATCH MATERIAL SHALL MATCH THE EXISTING PAVEMENT MATERIAL (eg CONCRETE PAVEMENT SHALL BE PATCHED WITH CONCRETE AND EXISTING ASPHALT PAVEMENT WITH ASPHALT).
3. FOR ASPHALT PATCHES, BASE COURSE & ASPHALT CONCRETE THICKNESS IS TO MATCH EXISTING BUT IN NO CASE LESS THAN 0" BASE 2" ASPHALT CONCRETE.
4. ALL EXISTING VERTICAL ASPHALT JOINTS SHALL BE TACK COATED.
5. FINAL CONCRETE PAVEMENT REMOVALS SHALL BE TO THE NEAREST EXISTING JOINT (eg FULL PANEL REMOVAL AND REPLACEMENT).
6. TRENCHES ARE SHOWN TO DIAGRAM PATCHING REQUIREMENTS. TRENCHES SHALL BE CONSTRUCTED TO MEET OSHA REQUIREMENTS.
7. PAVEMENT REMOVAL BETWEEN FIRST AND SECOND SAW CUT SHALL BE REMOVED AT TIME OF HOT MIX PATCHING . DENSITY TESTING SHALL BE AT THE EXPENSE OF THE CONTRACTOR AND A COPY OF RESULTS SHALL BE PROVIDED TO THE CITY.
9. MONITOR & MAINTAIN SURFACE CONDITION AND PERFORM ASPHALT REPAIRS UNDER 1-YEAR WARRANTY PROVIDED THROUGH PERMIT.
10. ALL PATCH JOINTS SHOULD BE HENRY ASPHALT RESURFACER SEALED OR APPROVED EQUAL.




## IMPROVED STREET



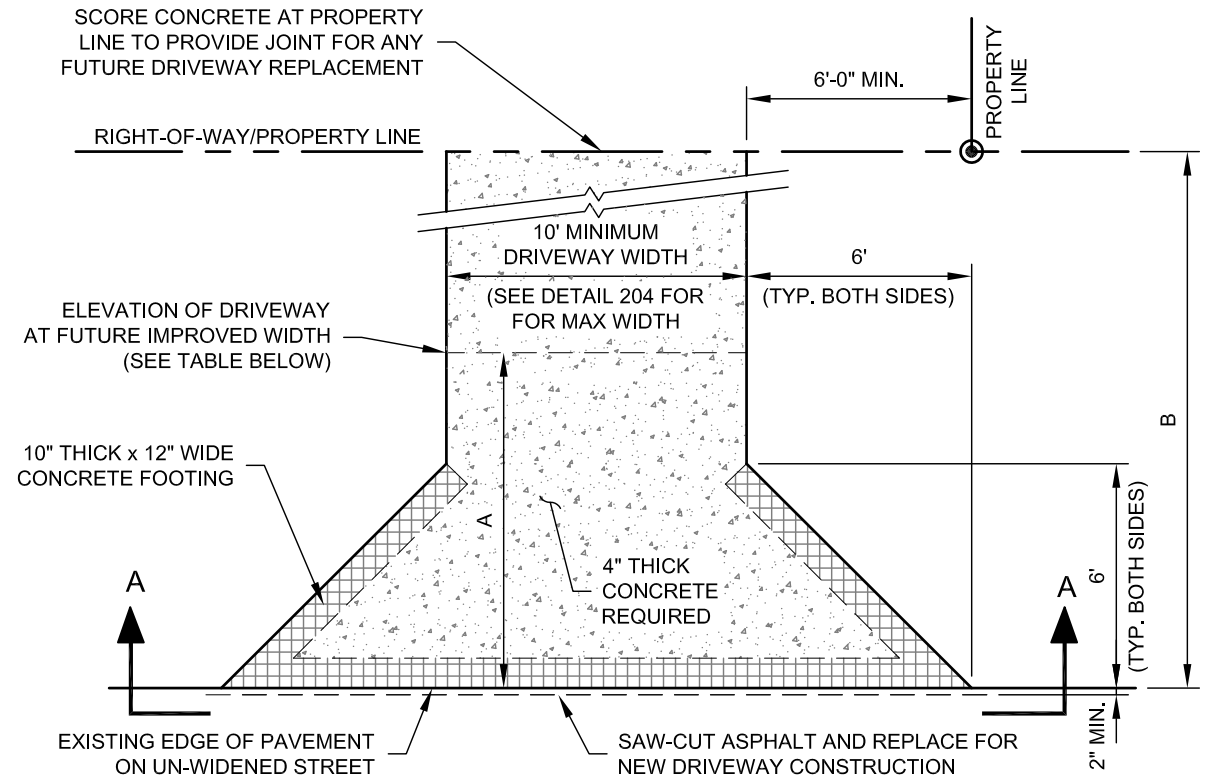

## SECTION A - A

| DISTANCE & ELEVATION TABLE ('W' SECTION) ABOVE EXISTING EDGE OF PAVEMENT AT 2% SLOPE (BASED ON 12" EXISTING ASPHALT LANE) | | |
|---|---|---|
| STREET | RISE | DISTANCE B |
| BOULEVARD | 4" | 15 FEET |
| AVENUE | 3" | 13 FEET |
| DRIVE | 3" | 9 FEET |

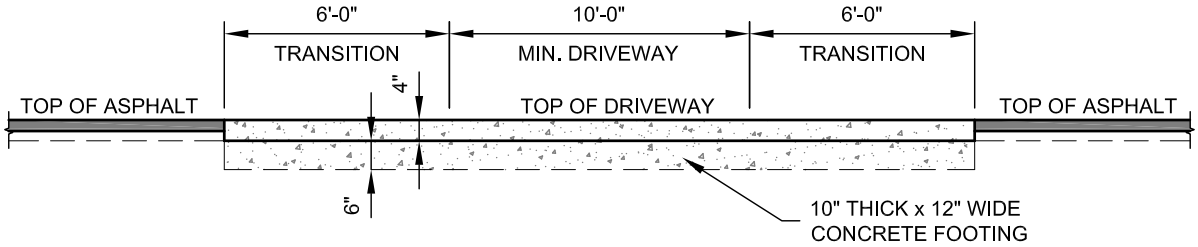
## NOTES:

1. ELEVATION AT PROPERTY LINE TO REMAIN 11" ABOVE EDGE OF STREET ON 'W' SECTIONS.
2. CONCRETE FOR STRUCTURES IN RIGHT-OF-WAY SHALL BE A 6 SACK PER CUBIC YARD MIX WITH A 4" MAXIMUM SLUMP AND BE ABLE TO PASS A 3,000 PSI COMPRESSIVE STRENGTH TEST AT 28 DAYS.
3. SIDEWALK CROSS-SLOPE (BACK OF SIDEWALK TO CURB) TO BE 1.5% MIN / 2% MAX.

| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details**<br>**Roadway Improvements** | **Driveway Improved Street** | Scale: N.T.S.<br>Detail No.<br>**201** |




## UNIMPROVED STREET




## SECTION A - A

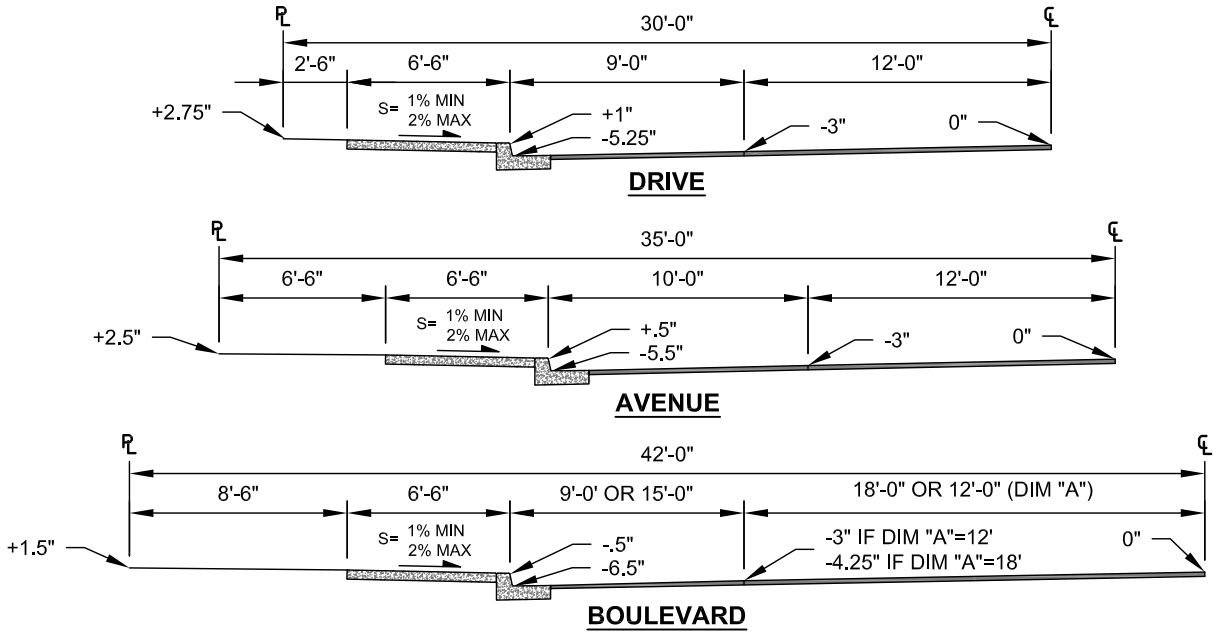
DISTANCE & ELEVATION TABLE ('W' SECTION)
ABOVE EXISTING EDGE OF PAVEMENT AT 2% SLOPE (BASED ON 12' EXISTING ASPHALT LANE)

| STREET | DISTANCE 'A' | RISE | DISTANCE 'B' |
|---|---|---|---|
| BOULEVARD | 15 FEET | 4" | 30 FEET |
| AVENUE | 10 FEET | 3" | 23 FEET |
| DRIVE | 9 FEET | 3" | 18 FEET |

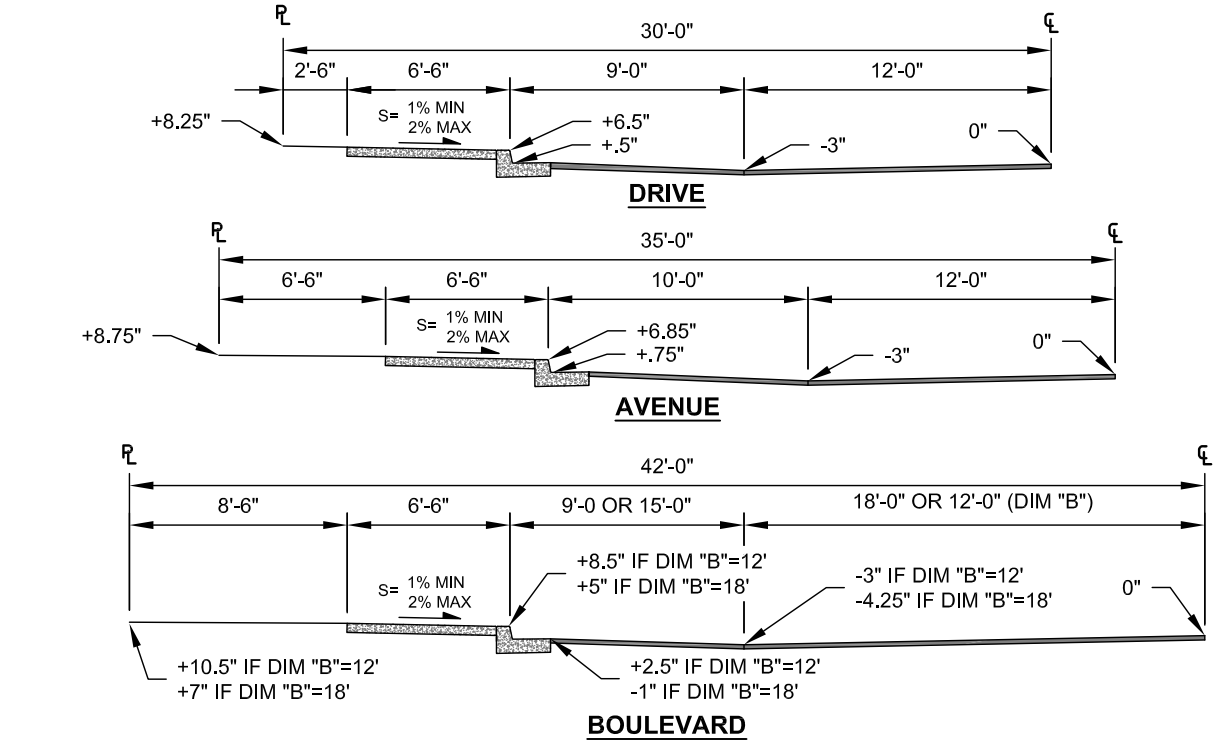
## NOTES:

1. ELEVATION AT PROPERTY LINE TO REMAIN 11" ABOVE EDGE OF STREET ON 'W' SECTIONS.
2. CONCRETE FOR STRUCTURES IN RIGHT-OF-WAY SHALL BE A 6 SACK PER CUBIC YARD MIX WITH A 4" MAXIMUM SLUMP AND BE ABLE TO PASS A 3,000 PSI COMPRESSIVE STRENGTH TEST AT 28 DAYS.
3. SIDEWALK CROSS-SLOPE (BACK OF SIDEWALK TO CURB) TO BE 1.5% MIN / 2% MAX.

| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details**<br>**Roadway Improvements** | **Driveway Unimproved Street** | Scale: N.T.S.<br>Detail No.<br>**202** |




## STANDARD SECTION

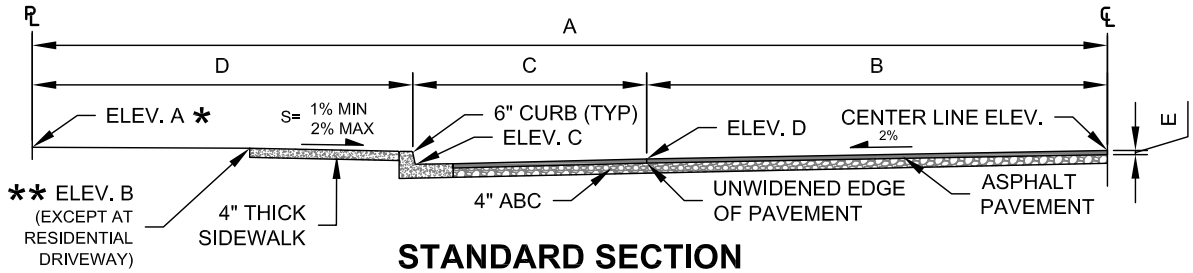



## "W" SECTIONS

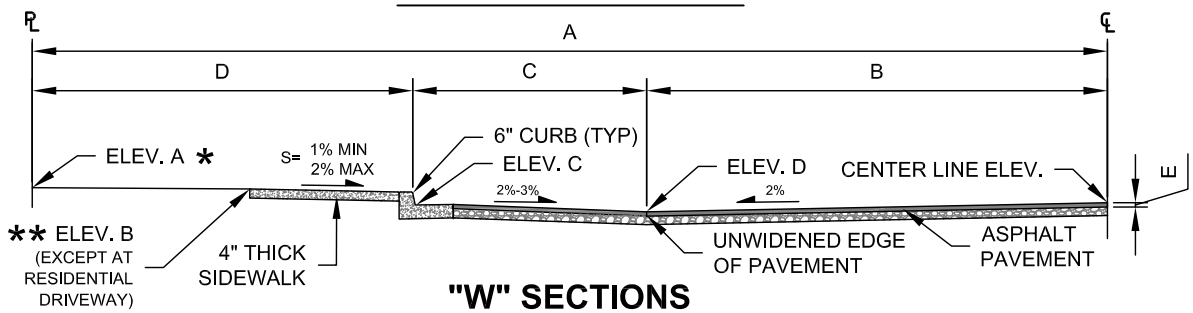
## NOTES:

1. ALL ELEVATIONS SHOWN IN INCHES.
2. ABOVE (+) AND BELOW (-) CENTERLINE ELEVATION.
3. SIDEWALK CROSS-SLOPE (BACK OF SIDEWALK TO CURB) TO BE 1% MIN / 2% MAX.
4. ELEVATION AT PROPERTY LINE TO REMAIN 11" ABOVE EDGE OF STREET ON 'W' SECTIONS.

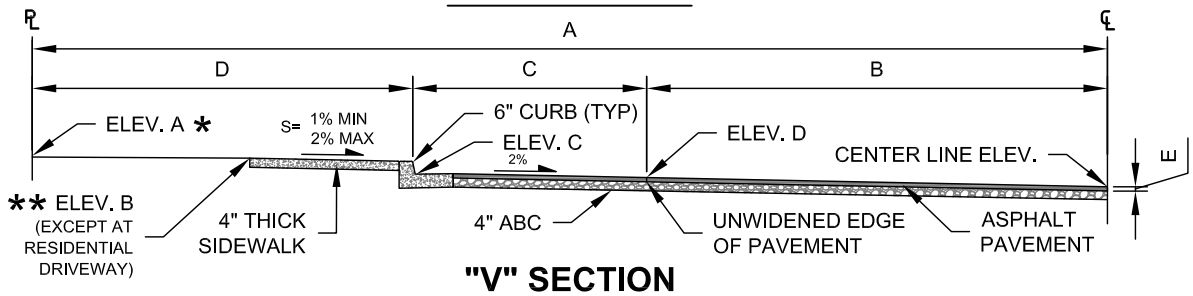
| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details**<br>**Roadway Improvements** | **Street & Sidewalk Cross Sections Elevations (all zones)** | Scale: N.T.S.<br>Detail No.<br>**203A** |




## STANDARD SECTION




## "W" SECTIONS




## "V" SECTION

**FINISHED ELEVATION**
(SHOWN IN INCHES ABOVE (+) OR BELOW (-) CENTER LINE)

| STREET | STANDARD SECTION | | | | 'W' SECTION | | | | 'V' SECTION | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A (MIN) | B | C | D | A (MIN) | B | C | D | A (MIN) | B | C | D |
| BOULEVARD | +1.5" | +1" | -6.5" | -4.25" | +7" | +6.5" | -1" | -4.25" | +14.5" | +14" | +6.5" | +4.25" |
| AVENUE | +2.5" | +2" | -5.5" | -3" | +8.75" | +8.25" | +0.75" | -3" | +13.5" | +13 | +5.5" | +3" |
| DRIVE | +2.75" | +2.75" | -5.25" | -3" | +8.25" | +8" | +0.5" | -3" | +13.25" | +12.75" | +5.25" | +3" |
| CUL-DE-SAC | +3.5" | +3" | -4.5" | -3" | N/A | N/A | N/A | N/A | +12.5" | +12" | +4.5 | +3 |

**DIMENSIONS**

| STREET | R/W | A | B | C | D | E |
|---|---|---|---|---|---|---|
| BOULEVARD | 84' | 42'☆ | 18'☆ | 9' | 15' | 2" |
| AVENUE | 70' | 35' | 12' | 10' | 13' | 2" |
| DRIVE | 60' | 30' | 12' | 9' | 9' | 2" |
| CUL-DE-SAC | 50' | 25' | 12' | 6' | 7' | 2" |

* UNLESS OTHERWISE APPROVED BY ENGINEERING DIVISION.
** ELEVATION 'B' AT RESIDENTIAL DRIVEWAY TO BE. ELEVATION 'C' + 6" OR EQUAL TO TOP OF CURB ELEVATION.
☆ FIELD-VERIFY UNWIDENED PAVEMENT WIDTH. ADJUST DIMENSION 'B' AND 'C' ACCORDINGLY TO EQUAL 27' TOTAL.

## NOTES:

1. ALL PAVEMENT WIDENING MUST INCLUDE CURBS.
2. SEE DETAIL 213-216 FOR APPLICABLE CURB DETAIL.
3. "V" SECTION ONLY ALLOWED WITH PRIOR APPROVAL BY THE ENGINEERING DIVISION.
4. INDICATED CURBS, SIDEWALKS AND WIDENING MAY BE EITHER EXISTING OR FUTURE.
5. SIDEWALK CROSS-SLOPE (BACK OF SIDEWALK TO CURB) TO BE 1% MIN / 2% MAX.

## SPECIAL NOTES:

1. ENGINEERING DIVISION TO DETERMINE STREET CROSS-SECTION.
2. MINIMUM ELEVATION AT PROPERTY LINE ALONG ENTIRE FRONTAGE OF LOT TO BE IN ACCORDANCE WITH ELEVATION 'A'.

LAKE HAVASU CITY

**Standard Details**

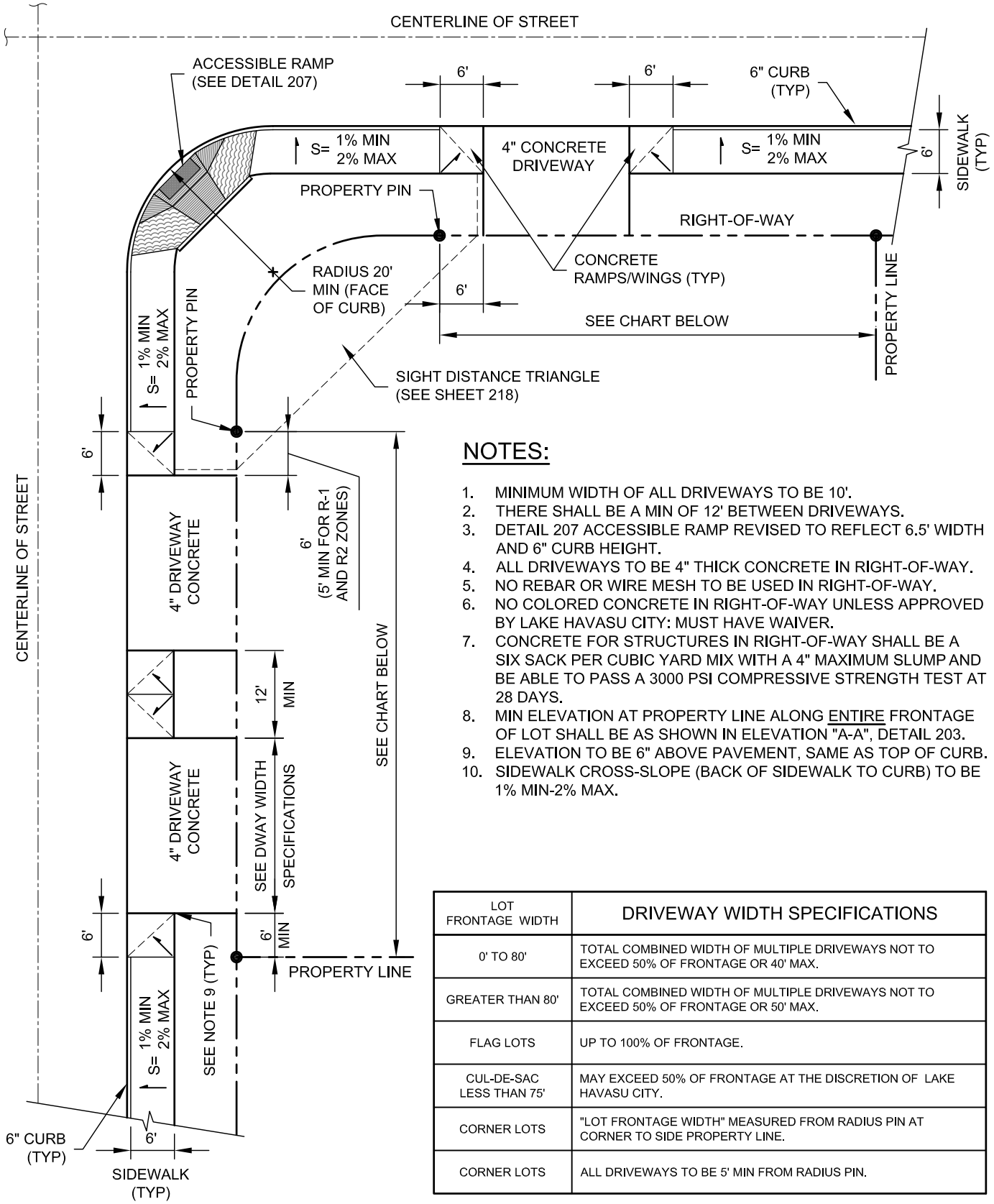
**Roadway Improvements**

**Standard Sections of Streets & Sidewalks**

Scale: N.T.S.

Detail No.

**203B**




## NOTES:

1. MINIMUM WIDTH OF ALL DRIVEWAYS TO BE 10'.
2. THERE SHALL BE A MIN OF 12' BETWEEN DRIVEWAYS.
3. DETAIL 207 ACCESSIBLE RAMP REVISED TO REFLECT 6.5' WIDTH AND 6" CURB HEIGHT.
4. ALL DRIVEWAYS TO BE 4" THICK CONCRETE IN RIGHT-OF-WAY.
5. NO REBAR OR WIRE MESH TO BE USED IN RIGHT-OF-WAY.
6. NO COLORED CONCRETE IN RIGHT-OF-WAY UNLESS APPROVED BY LAKE HAVASU CITY: MUST HAVE WAIVER.
7. CONCRETE FOR STRUCTURES IN RIGHT-OF-WAY SHALL BE A SIX SACK PER CUBIC YARD MIX WITH A 4" MAXIMUM SLUMP AND BE ABLE TO PASS A 3000 PSI COMPRESSIVE STRENGTH TEST AT 28 DAYS.
8. MIN ELEVATION AT PROPERTY LINE ALONG ENTIRE FRONTAGE OF LOT SHALL BE AS SHOWN IN ELEVATION "A-A", DETAIL 203.
9. ELEVATION TO BE 6" ABOVE PAVEMENT, SAME AS TOP OF CURB.
10. SIDEWALK CROSS-SLOPE (BACK OF SIDEWALK TO CURB) TO BE 1% MIN-2% MAX.

| LOT FRONTAGE WIDTH | DRIVEWAY WIDTH SPECIFICATIONS |
|---|---|
| 0' TO 80' | TOTAL COMBINED WIDTH OF MULTIPLE DRIVEWAYS NOT TO EXCEED 50% OF FRONTAGE OR 40' MAX. |
| GREATER THAN 80' | TOTAL COMBINED WIDTH OF MULTIPLE DRIVEWAYS NOT TO EXCEED 50% OF FRONTAGE OR 50' MAX. |
| FLAG LOTS | UP TO 100% OF FRONTAGE. |
| CUL-DE-SAC LESS THAN 75' | MAY EXCEED 50% OF FRONTAGE AT THE DISCRETION OF LAKE HAVASU CITY. |
| CORNER LOTS | "LOT FRONTAGE WIDTH" MEASURED FROM RADIUS PIN AT CORNER TO SIDE PROPERTY LINE. |
| CORNER LOTS | ALL DRIVEWAYS TO BE 5' MIN FROM RADIUS PIN. |

LAKE HAVASU CITY

**Standard Details**

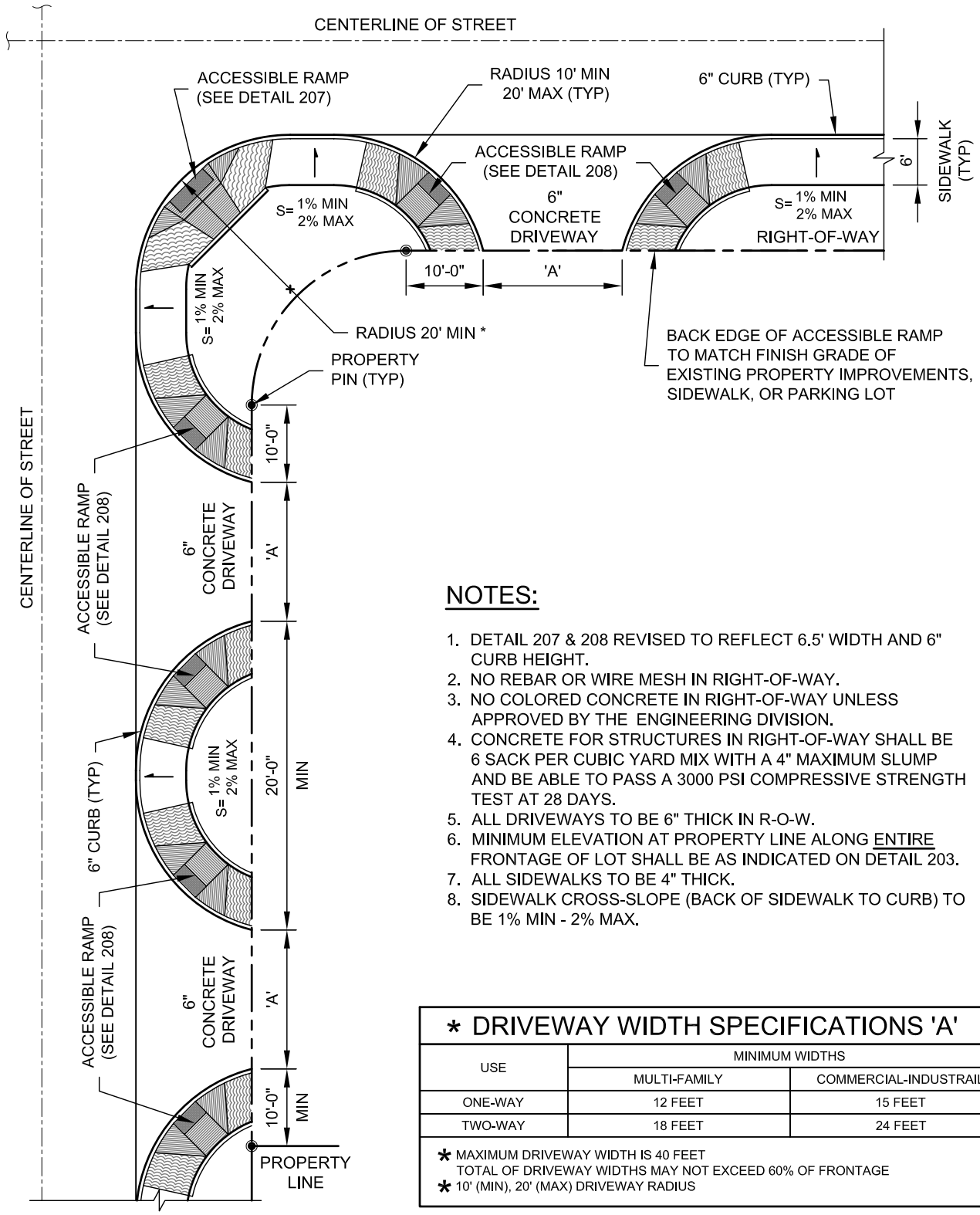
**Roadway Improvements**

**Street-Street Intersection Single & Multiple Driveways**
**(Zone R-1, R-2, R-E, R-A, R-MH)**

Scale: N.T.S.

Detail No.

**204**




## NOTES:

1. DETAIL 207 & 208 REVISED TO REFLECT 6.5' WIDTH AND 6" CURB HEIGHT.
2. NO REBAR OR WIRE MESH IN RIGHT-OF-WAY.
3. NO COLORED CONCRETE IN RIGHT-OF-WAY UNLESS APPROVED BY THE ENGINEERING DIVISION.
4. CONCRETE FOR STRUCTURES IN RIGHT-OF-WAY SHALL BE 6 SACK PER CUBIC YARD MIX WITH A 4" MAXIMUM SLUMP AND BE ABLE TO PASS A 3000 PSI COMPRESSIVE STRENGTH TEST AT 28 DAYS.
5. ALL DRIVEWAYS TO BE 6" THICK IN R-O-W.
6. MINIMUM ELEVATION AT PROPERTY LINE ALONG ENTIRE FRONTAGE OF LOT SHALL BE AS INDICATED ON DETAIL 203.
7. ALL SIDEWALKS TO BE 4" THICK.
8. SIDEWALK CROSS-SLOPE (BACK OF SIDEWALK TO CURB) TO BE 1% MIN - 2% MAX.

### * DRIVEWAY WIDTH SPECIFICATIONS 'A'

| USE | MINIMUM WIDTHS | |
|---|---|---|
| | MULTI-FAMILY | COMMERCIAL-INDUSTRAIL |
| ONE-WAY | 12 FEET | 15 FEET |
| TWO-WAY | 18 FEET | 24 FEET |

* MAXIMUM DRIVEWAY WIDTH IS 40 FEET
TOTAL OF DRIVEWAY WIDTHS MAY NOT EXCEED 60% OF FRONTAGE
* 10' (MIN), 20' (MAX) DRIVEWAY RADIUS

* UNLESS RECOMMENDED IN A TRAFFIC REPORT APPROVED BY LAKE HAVASU CITY.

LAKE HAVASU CITY

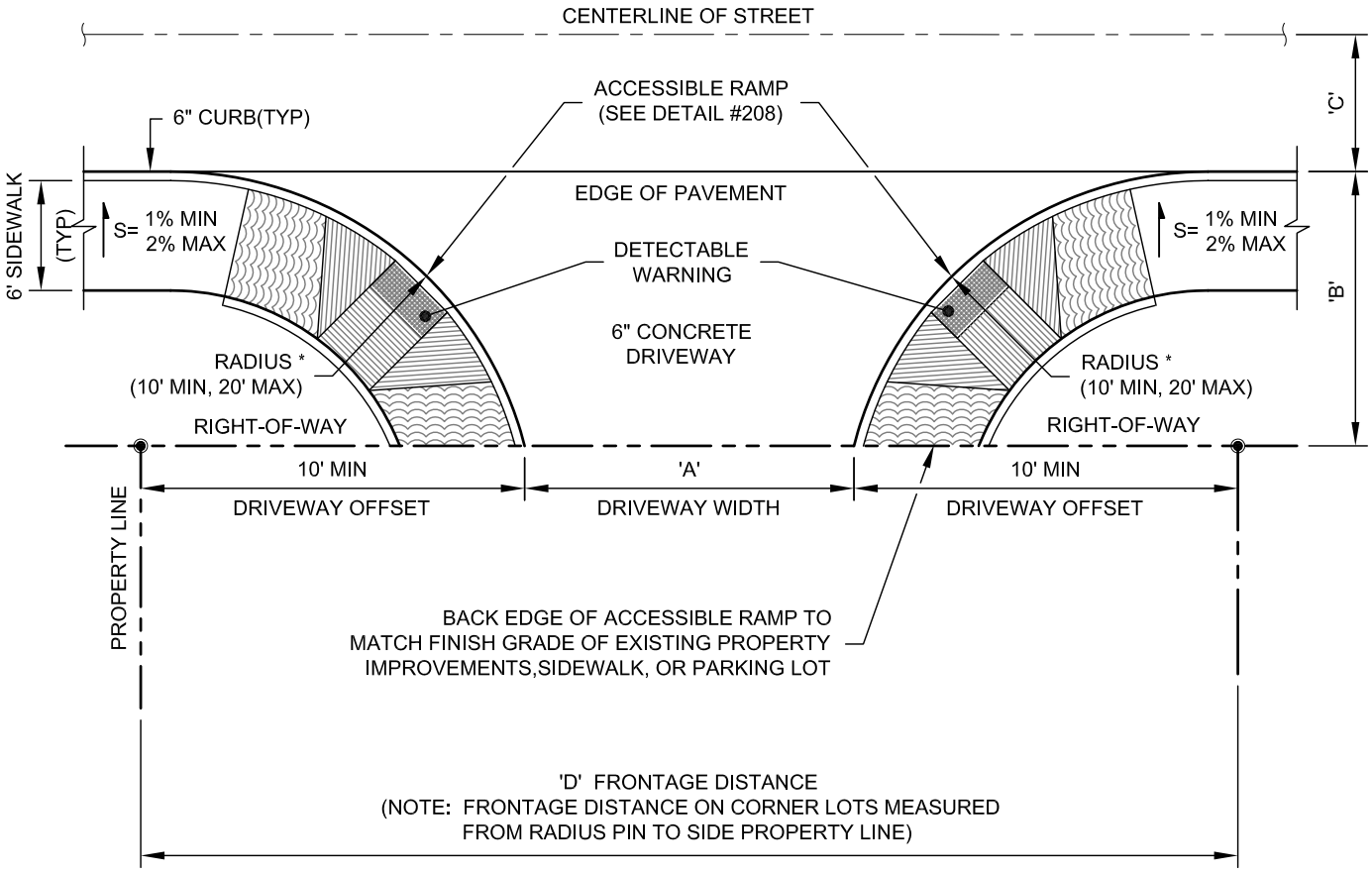
**Standard Details**

**Roadway Improvements**

**Intersection & Multiple Driveways**

Scale: N.T.S.

Detail No. **205**




## STREET WIDTH DATA

| STREET | 'B' | 'C' |
|---|---|---|
| BOULEVARD | 15 FEET | 27 FEET |
| AVENUE | 13 FEET | 22 FEET |
| DRIVE | 9 FEET | 21 FEET |
| CUL-DE-SAC | 7 FEET | 18 FEET |

## DRIVEWAY WIDTH SPECIFICATIONS 'A' *

| USE | MINIMUM WIDTHS | |
|---|---|---|
| | MULTI-FAMILY | COMMERCIAL-INDUSTRAIL |
| ONE-WAY | 12 FEET | 15 FEET |
| TWO-WAY | 18 FEET | 24 FEET |

MAXIMUM DRIVEWAY WIDTH IS 40 FEET
* TOTAL OF DRIVEWAY WIDTHS MAY NOT EXCEED 60% OF FRONTAGE 'D'
* 10' (MIN), 20' (MAX) DRIVEWAY RADIUS

* UNLESS RECOMMENDED IN A TRAFFIC REPORT APPROVED BY LAKE HAVASU CITY.

## NOTES:

1. ALL SIDEWALKS TO BE 4" THICK CONCRETE.
2. ALL DRIVEWAYS TO BE 6" THICK CONCRETE.
3. NO REBAR OR WIRE MESH IN RIGHT-OF-WAY.
4. NO COLORED CONCRETE IN RIGHT-OF-WAY UNLESS APPROVED BY LAKE HAVASU CITY.
5. CONCRETE FOR STRUCTURES IN RIGHT-OF-WAY SHALL BE A 6 SACK PER CUBIC YARD MIX WITH A 4" MAXIMUM SLUMP AND BE ABLE TO PASS A 3000 PSI COMPRESSIVE STRENGTH TEST AT 28 DAYS.
6. SIDEWALK CROSS-SLOPE (BACK OF SIDEWALK TO CURB) TO BE 1% MIN / 2% MAX.

LAKE HAVASU CITY

**Standard Details**

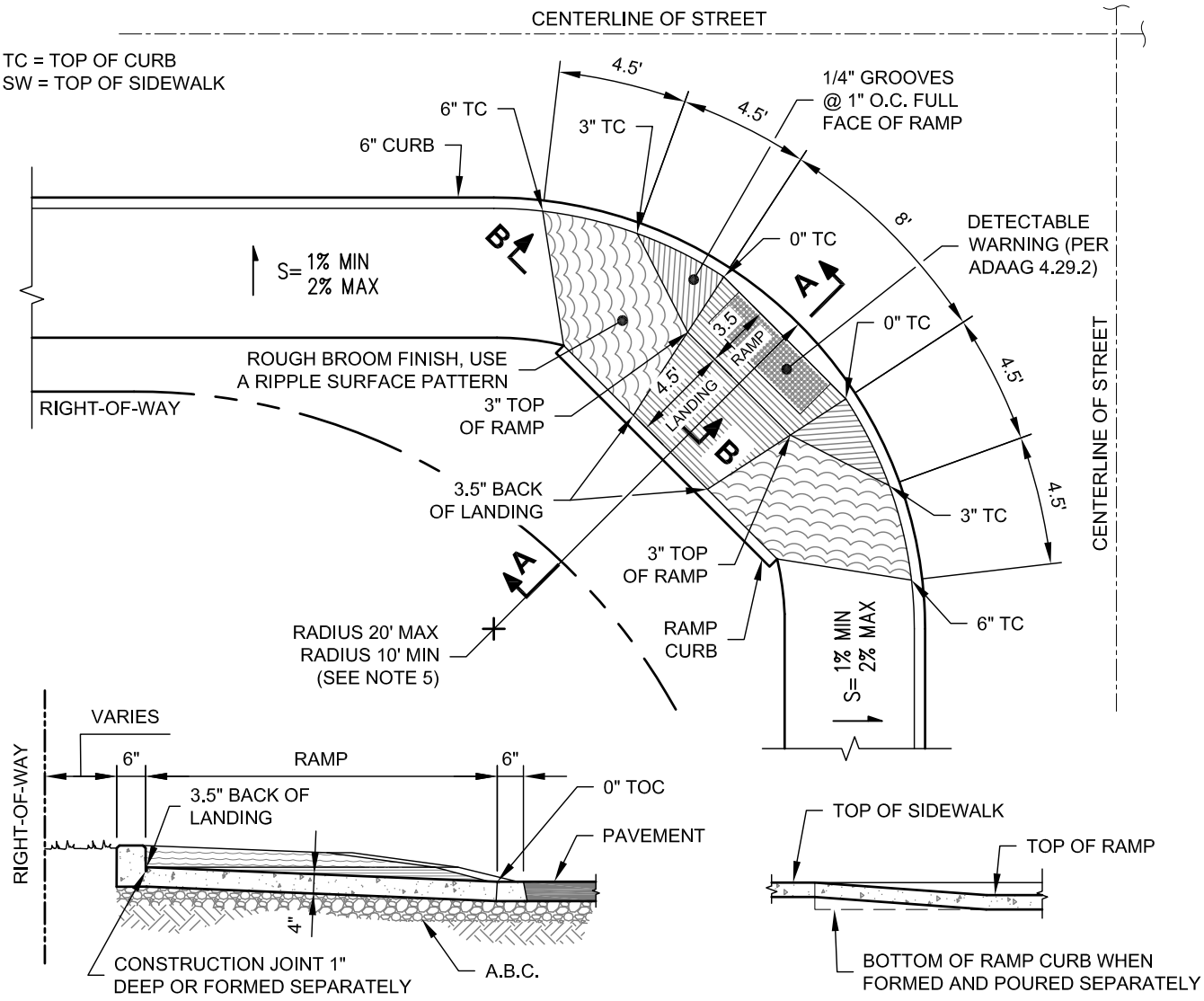
**Roadway Improvements**

**Street & Driveway Intersection**
**(Zone R-3 or Greater)**

Scale: N.T.S.

Detail No.

**206**




**SECTION A-A**

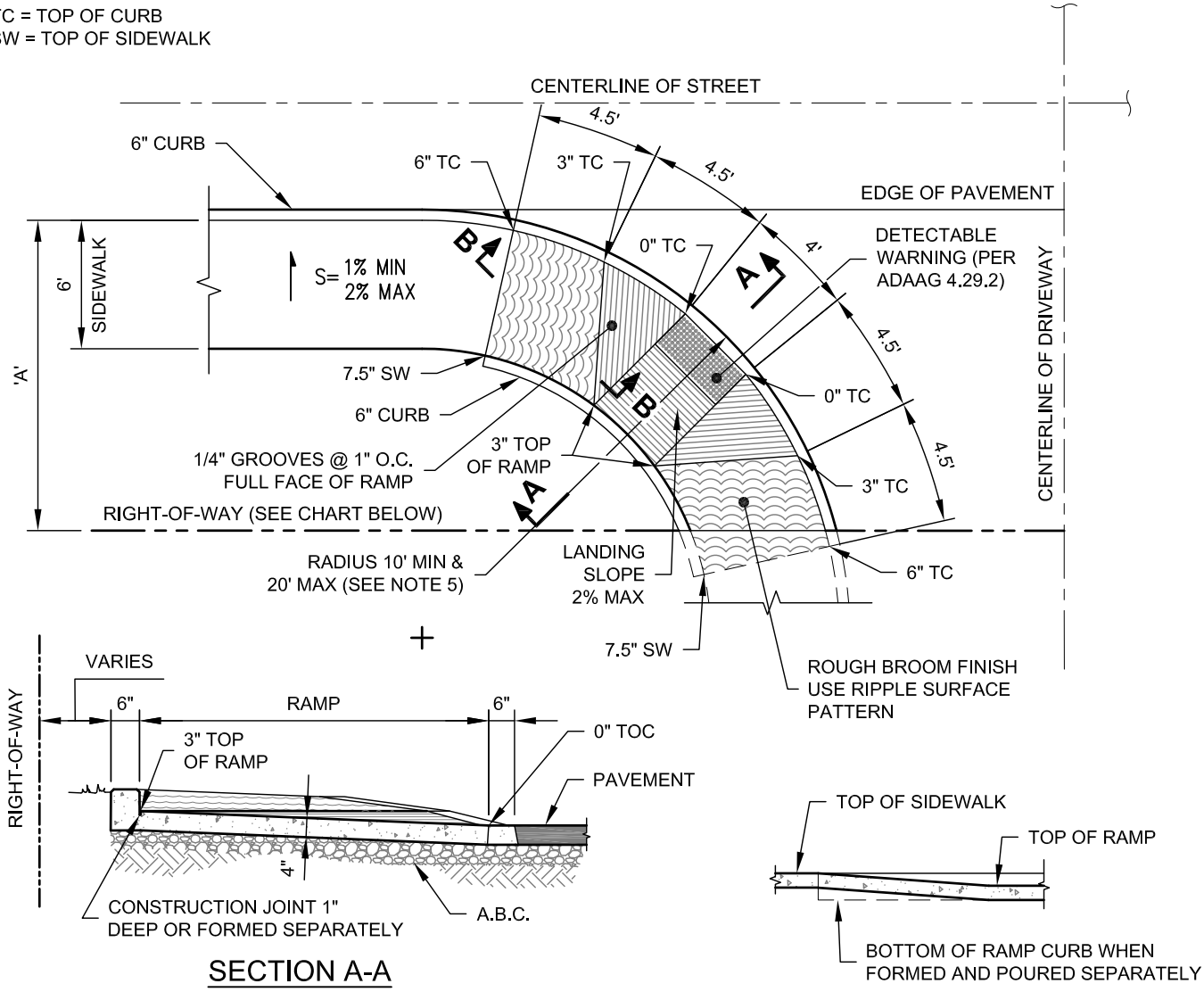
**SECTION B-B**

## NOTES:

1. REFERENCE MAG DETAIL 231 (MODIFIED).
2. RAMP MUST HAVE GROOVE SLOPING RAMP FACE. GROOVES TO BE PERPENDICULAR TO DIRECTION OF TRAVEL.
3. CENTER OF ACCESSIBLE RAMP TO BE ORIENTED 45° TO THE CENTERLINE OF STREET.
4. CONCRETE STRUCTURES IN RIGHT-OF-WAY SHALL BE A 6 SACK PER CUBIC YARD MIX WITH A 4" MAX SLUMP AND BE ABLE TO PASS A 3000 PSI COMPRESSIVE STRENGTH TEST AT 28 DAYS.
5. ALL SIDEWALKS TO BE 4" THICK CONCRETE.
6. ACCESSIBLE RAMP RADIUS TO BE 10' MIN TO 20' MAX UNLESS OTHERWISE RECOMMENDED IN A TRAFFIC REPORT APPROVED BY THE CITY.
7. NO COLORED CONCRETE IN RIGHT-OF-WAY UNLESS APPROVED BY LAKE HAVASU CITY.
8. NO REBAR OR WIRE MESH IN RIGHT-OF-WAY.
9. CONTROL ELEVATIONS SHOWN ARE IN RELATION TO TOP OF CURB AT 0" OR 6" FOR TOC AND ARE LOCATED RADIALLY.
10. SIDEWALK CROSS-SLOPE (BACK OF SIDEWALK TO CURB) TO BE 1% MIN / 2% MAX.

| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details**<br>**Roadway Improvements** | **Accessible Ramp Street/Street Intersections** | Scale: N.T.S.<br>**Detail No.**<br>**207** |

TC = TOP OF CURB
SW = TOP OF SIDEWALK




## SECTION A-A

## SECTION B-B

## NOTES:

1. REFERENCE MAG DETAIL 232 (MODIFIED).
2. RAMP MUST HAVE GROOVE SLOPING RAMP FACE. GROOVES TO BE PERPENDICULAR TO DIRECTION OF TRAVEL.
3. CENTER OF ACCESSIBLE RAMP TO BE ORIENTED 45° TO THE CENTERLINE OF STREET.
4. CONCRETE STRUCTURES IN RIGHT-OF-WAY SHALL BE A 6 SACK PER CUBIC YARD MIX WITH A 4" MAX SLUMP AND BE ABLE TO PASS A 3000 PSI COMPRESSIVE STRENGTH TEST AT 28 DAYS.
5. ALL SIDEWALKS TO BE 4" THICK CONCRETE.
6. ACCESSIBLE RAMP RADIUS TO BE 10' MIN TO 20' MAX UNLESS OTHERWISE RECOMMENDED IN A TRAFFIC REPORT APPROVED BY LAKE HAVASU CITY.
7. NO COLORED CONCRETE IN RIGHT-OF-WAY UNLESS APPROVED BY LAKE HAVASU CITY.
8. NO REBAR OR WIRE MESH IN RIGHT-OF-WAY.
9. CONTROL ELEVATIONS SHOWN ARE IN RELATION TO TOP OF CURB AT 0" OR 6" FOR TOP OF CURB AND ARE LOCATED RADIALLY.
10. SIDEWALK CROSS-SLOPE (BACK OF SIDEWALK TO CURB) TO BE 1% MIN / 2% MAX.
11. DIMENSION 'A' IS SUBJECT TO CHANGE, DEPENDING ON WIDENING AND SECTION CHANGES.

| DIM 'A' - RIGHT OF WAY | |
|---|---|
| STREET TYPE | WIDTH |
| BOULEVARD | 15 FEET |
| AVENUE | 13 FEET |
| DRIVE | 9 FEET |
| OTHER | 7 FEET |

LAKE HAVASU CITY

**Standard Details**

**Roadway Improvements**

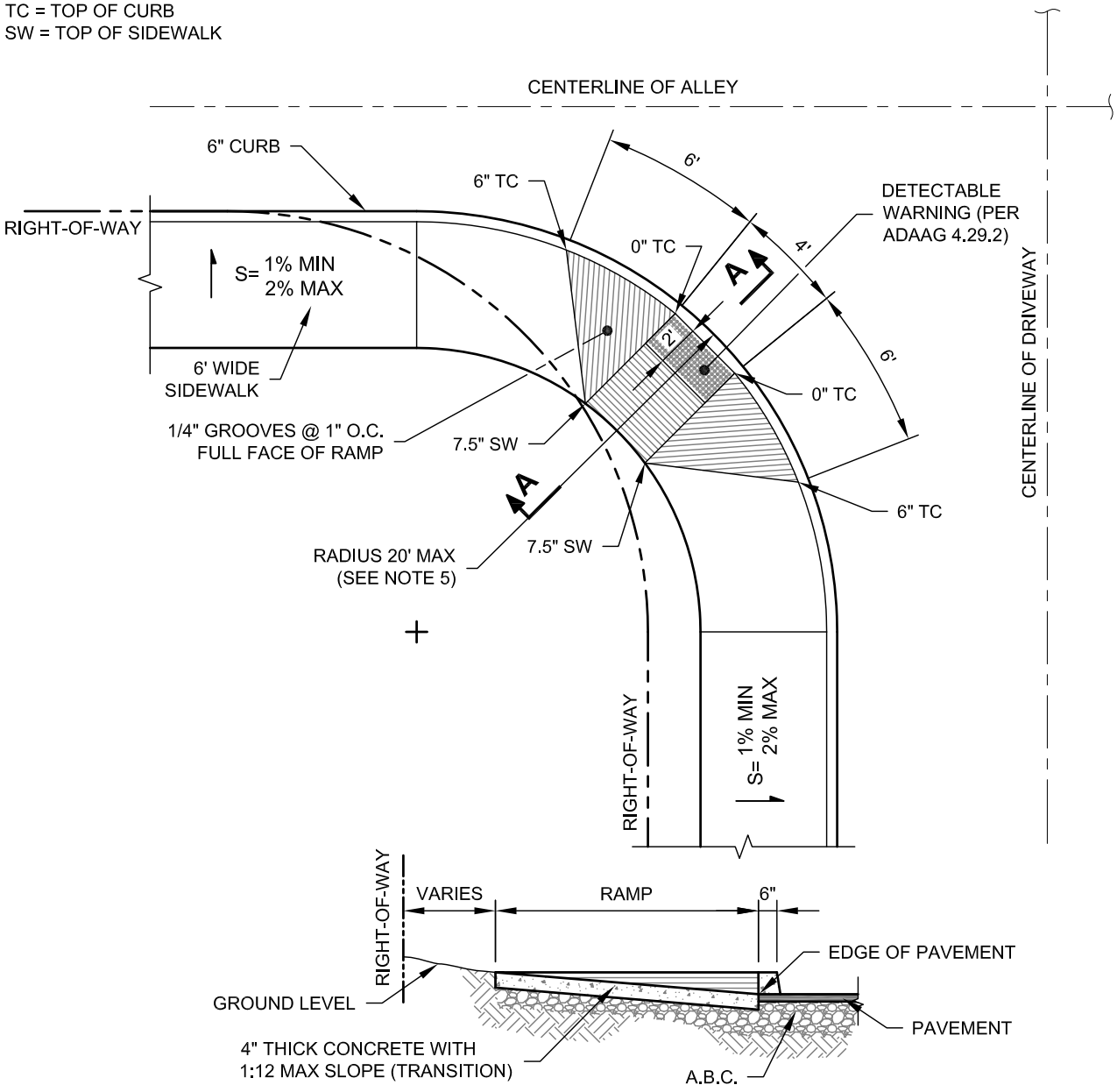
**Accessible Ramp Street/Driveway Intersection**

Scale: N.T.S.

Detail No.

**208**

TC = TOP OF CURB
SW = TOP OF SIDEWALK

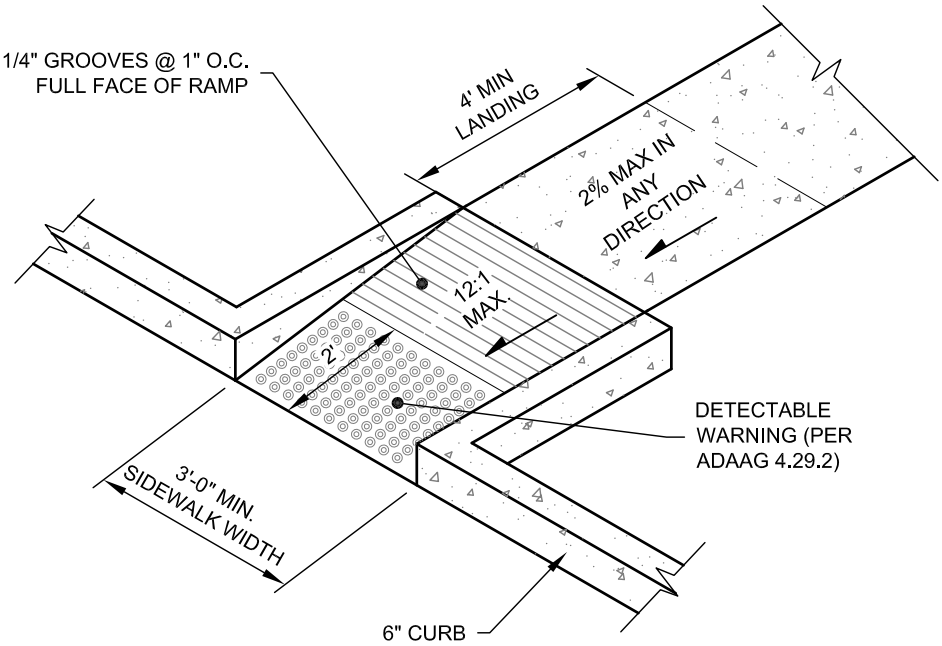



## SECTION A-A

## NOTES:

1. REFERENCE MAG DETAIL 234 (MODIFIED).
2. RAMP MUST HAVE GROOVE SLOPING RAMP FACE. GROOVES TO BE PERPENDICULAR TO DIRECTION OF TRAVEL.
3. CENTER OF ACCESSIBLE RAMP TO BE ORIENTED 45° TO THE CENTERLINE OF STREET.
4. CONCRETE STRUCTURES IN RIGHT-OF-WAY SHALL BE A 6 SACK PER CUBIC YARD MIX WITH A 4" MAX SLUMP AND BE ABLE TO PASS A 3000 PSI COMPRESSIVE STRENGTH TEST AT 28 DAYS.
5. ALL SIDEWALKS TO BE 4" THICK CONCRETE.
6. ACCESSIBLE RAMP RADIUS TO BE 20' MIN UNLESS OTHERWISE RECOMMENDED IN A TRAFFIC REPORT APPROVED BY LAKE HAVASU CITY.
7. NO COLORED CONCRETE IN RIGHT-OF-WAY UNLESS APPROVED BY LAKE HAVASU CITY.
8. NO REBAR OR WIRE MESH IN RIGHT-OF-WAY.

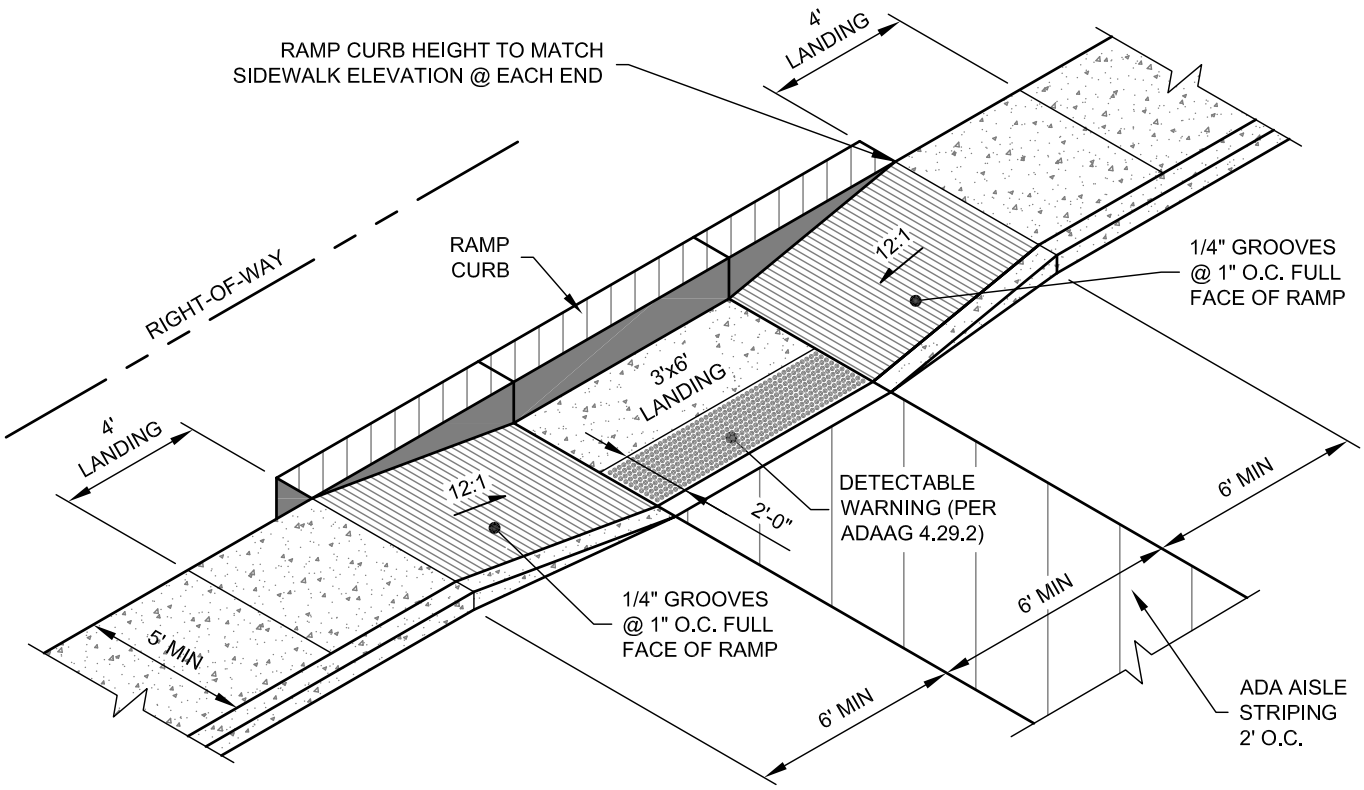
| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details**<br>**Roadway Improvements** | **Accessible Ramp Street/Alley Intersection** | Scale: N.T.S.<br>**Detail No.**<br>**209** |




## NOTES:

1. RAMP MUST HAVE GROOVE SLOPING RAMP FACE. GROOVES TO BE PERPENDICULAR TO DIRECTION OF TRAVEL.
2. ADAAG 4.29.2 DETECTABLE WARNINGS ON WALKING SURFACES. DETECTABLE WARNINGS SHALL CONSIST OF TRUNCATED DOMES WITH A DIAMETER OF NOMINAL 0.9 IN (23MM), A HEIGHT OF NOMINAL 0.2 IN (5MM) AND A CENTER-TO-CENTER SPACING OF NOMINAL 2.35 IN (60MM) AND SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT.
   THE MATERIAL USED TO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE. DETECTABLE WARNINGS USED ON INTERIOR SURFACES SHALL DIFFER FROM ADJOINING WALKING SURFACES IN RESILIENCY OR SOUND-ON-CANE CONTACT.
3. INSTALL TRUNCATED DOME MAT AS MANUFACTURED WITH DETECTABLE WARNING SYSTEMS (OR EQUAL) PER MANUFACTURER'S SPECIFICATIONS.

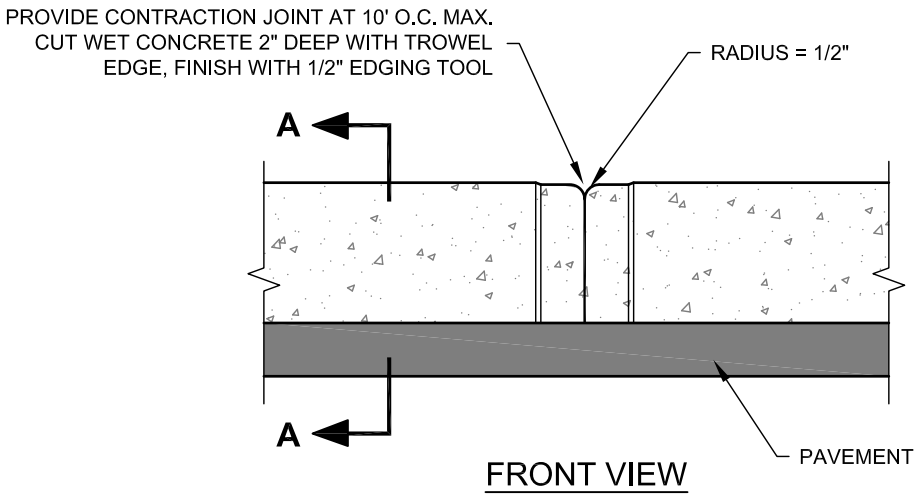
| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details**<br>**Roadway Improvements** | **Accessible Ramp Sidewalk/Street Intersection** | Scale: N.T.S.<br>**Detail No.**<br>**210** |



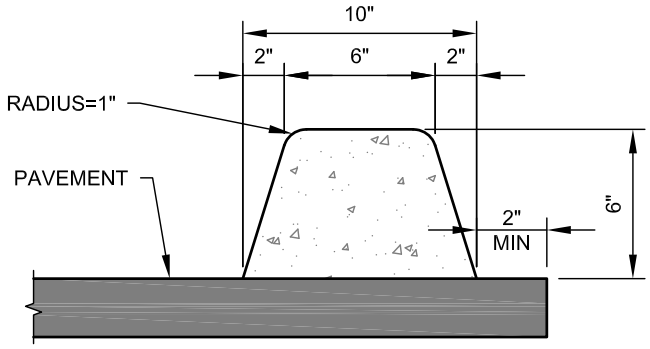

## NOTES:

1. RAMP MUST HAVE GROOVE SLOPING RAMP FACE. GROOVES TO BE PERPENDICULAR TO DIRECTION OF TRAVEL.
2. ADAAG 4.29.2 DETECTABLE WARNINGS ON WALKING SURFACES. DETECTABLE WARNINGS SHALL CONSIST OF TRUNCATED DOMES WITH A DIAMETER OF NOMINAL 0.9 IN (23MM), A HEIGHT OF NOMINAL 0.2 IN (5MM) AND A CENTER-TO-CENTER SPACING OF NOMINAL 2.35 IN (60MM) AND SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT.
   THE MATERIAL USED TO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE. DETECTABLE WARNINGS USED ON INTERIOR SURFACES SHALL DIFFER FROM ADJOINING WALKING SURFACES IN RESILIENCY OR SOUND-ON-CANE CONTACT.
3. INSTALL TRUNCATED DOME MAT AS MANUFACTURED WITH DETECTABLE WARNING SYSTEMS (OR EQUAL) PER MANUFACTURER'S SPECIFICATIONS.

| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details**<br>**Roadway Improvements** | **Parallel Curb Ramp** | Scale: N.T.S.<br>Detail No.<br>**211** |




FRONT VIEW

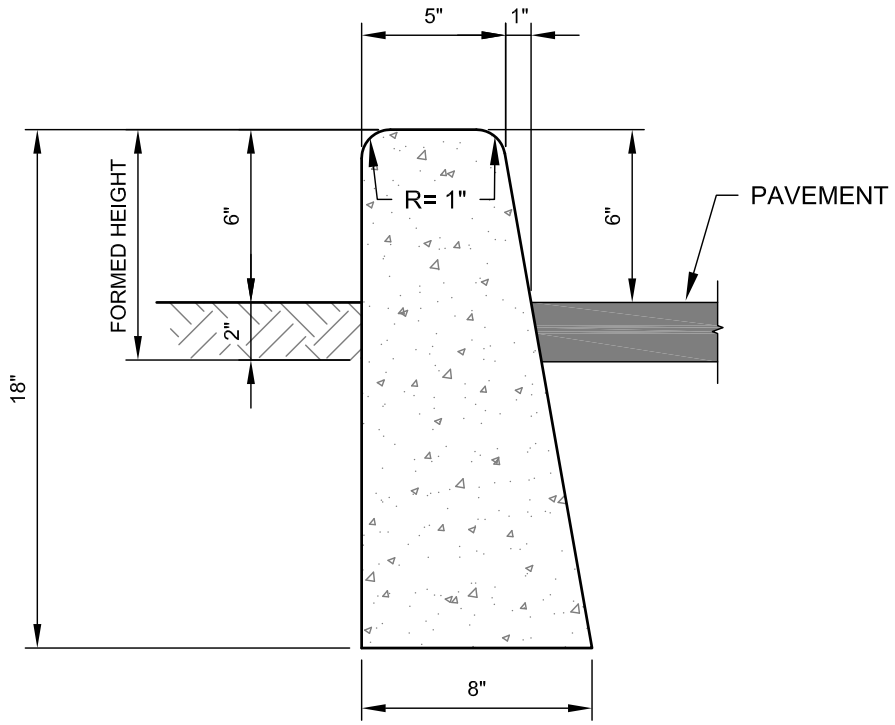



SECTION A-A

## NOTES:

1. TO BE USED FOR REPLACEMENT OF EXISTING EXTRUDED CURBS ONLY.
2. CLASS 'B' CONCRETE 2500 PSI.
3. ALL EXPOSED SURFACES TO BE TROWEL FINISHED.
4. H=6" OR AS SPECIFIED ON PLANS.
5. EXPANSION JOINTS PLACED AT INTERVALS NOT TO EXCEED 100 FEET.

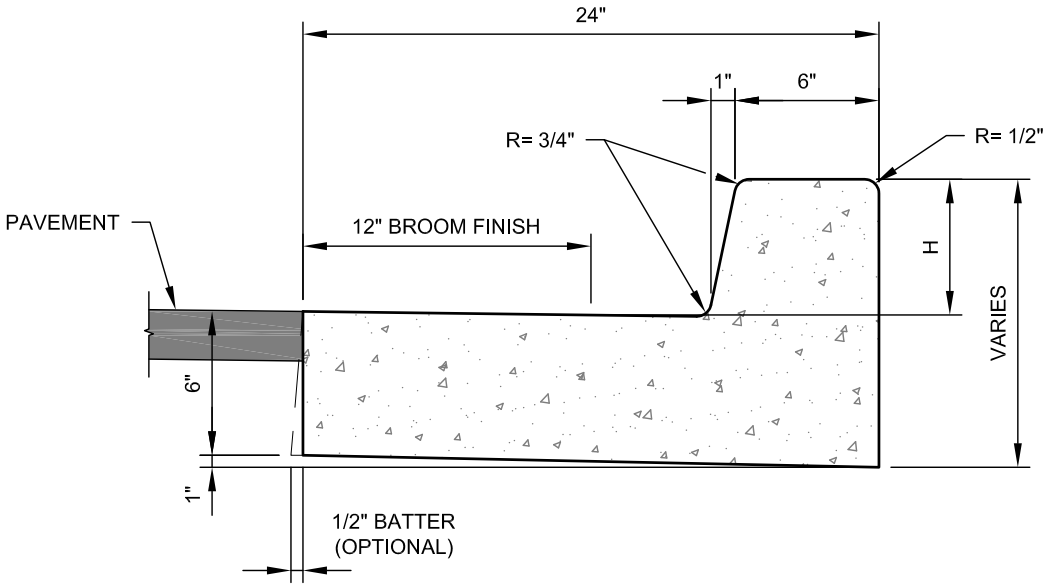
| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details** | **6" Extruded Vertical Curb** | Scale: N.T.S. |
| | **Roadway Improvements** | | Detail No. **212** |




## NOTES:

1. ALL VERTICAL SURFACES TO BE FORMED.
2. CLASS 'B' CONCRETE 2500 PSI.
3. ALL EXPOSED SURFACES TO BE TROWEL FINISHED EXCEPT AS SHOWN.
4. CONTRACTION JOINT SPACING 10' MAX.
5. H=6" OR AS SPECIFIED ON PLANS.
6. EXPANSION JOINTS PLACED AT INTERVALS NOT TO EXCEED 100 FEET.

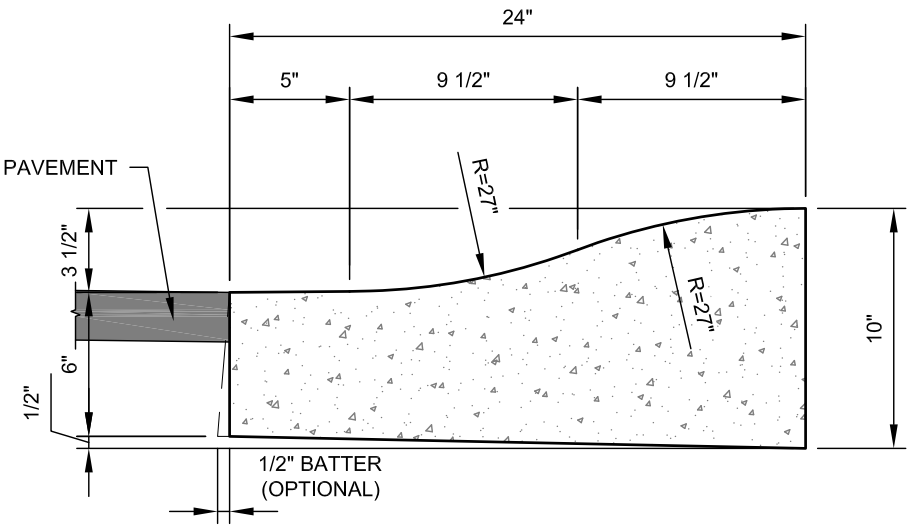
| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details** | **Vertical Curb** | Scale: N.T.S. |
| | **Roadway Improvements** | | Detail No. **213** |




## NOTES:

1. CLASS 'B' CONCRETE 2500 PSI.
2. ALL EXPOSED SURFACES TO BE TROWEL FINISHED EXCEPT AS SHOWN.
3. CONTRACTION JOINT SPACING 10' MAX.
4. H=6" OR AS SPECIFIED ON PLANS.
5. EXPANSION JOINTS PLACED AT INTERVALS NOT TO EXCEED 100 FEET.

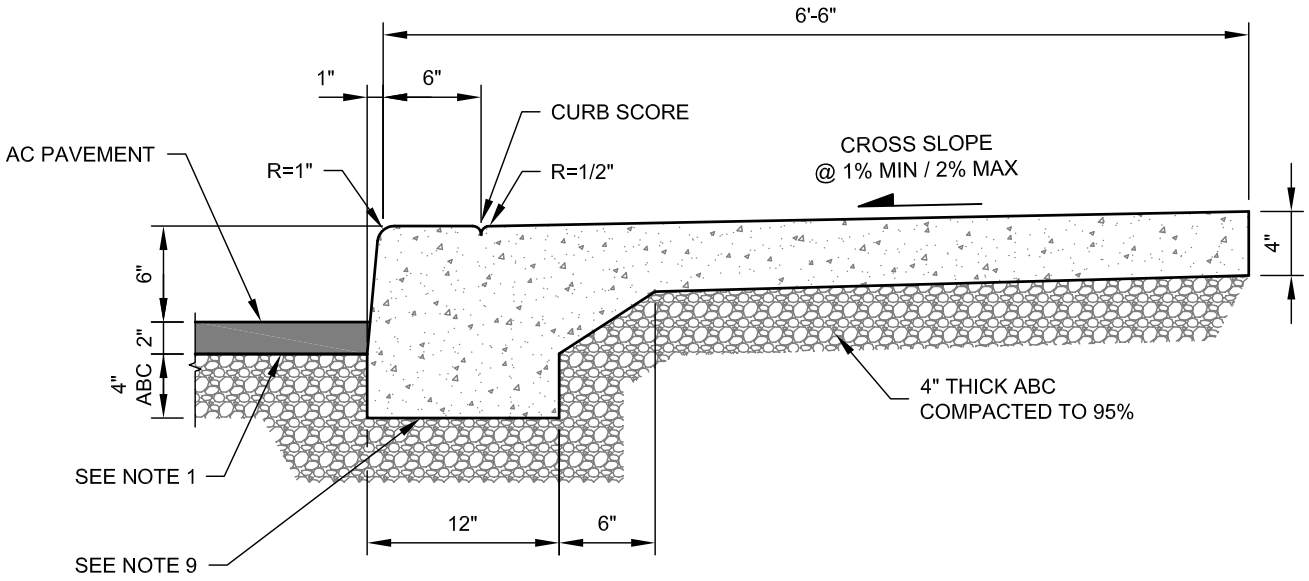
| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details**<br>**Roadway Improvements** | **Vertical Curb and Gutter** | Scale: N.T.S.<br>Detail No.<br>**214** |




## NOTES:

1. MODIFIED MAG 220 (TYPE D).
2. PRIOR APPROVAL FROM ENGINEERING DIVISION REQUIRED.
3. CLASS 'B' CONCRETE 2500 PSI.
4. PLACE 3/4" EXPANSION JOINTS WITH TWO-FOOT DOWELS AT RADIUS POINTS. THESE DOWELS SHALL BE GREASED AND WRAPPED ON ONE END WITH EXPANSION TUBES.
5. INSTALL 1 1/2"-DEEP CONTRACTION JOINTS AT APPROXIMATELY 15' INTERVALS.

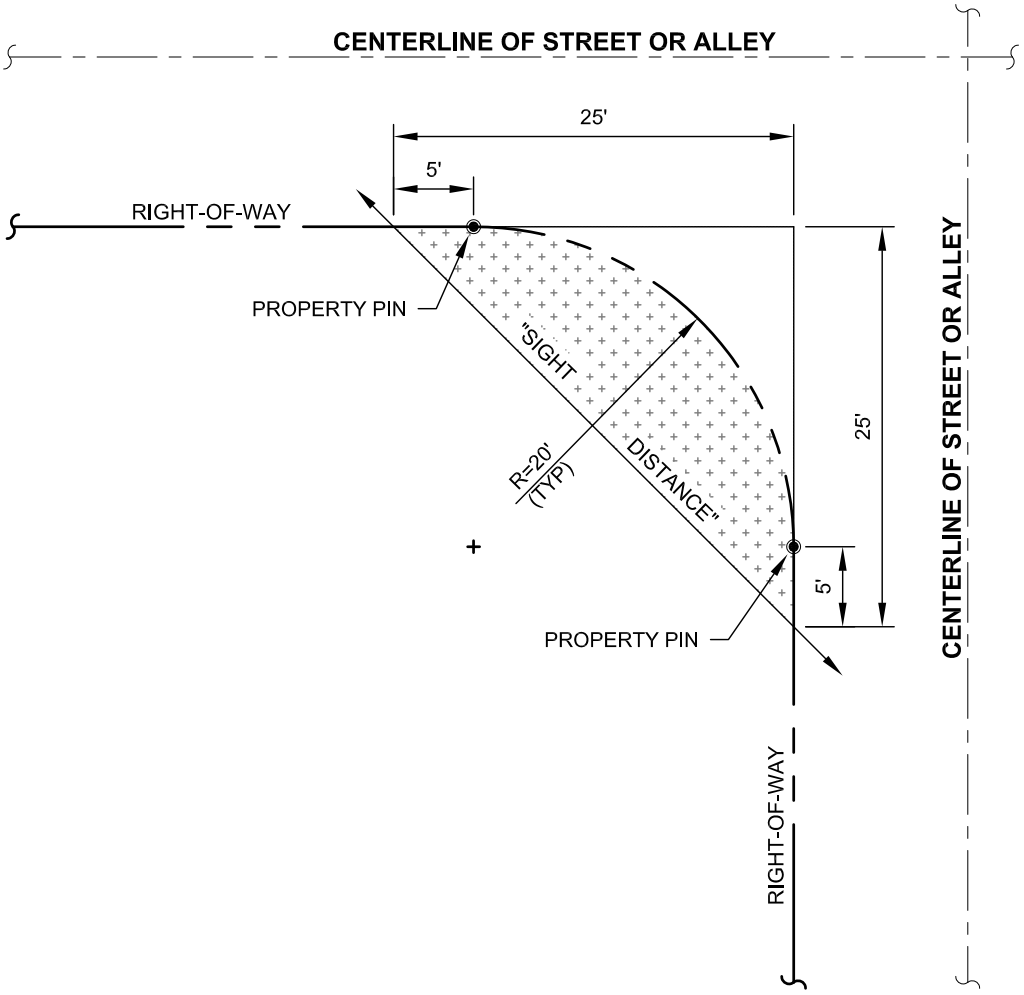
| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details**<br>**Roadway Improvements** | **Rolled Curb and Gutter** | Scale: N.T.S.<br>Detail No.<br>**215** |




## NOTES:

1. FOR NEW INSTALLATION, ASPHALT SHALL BE PLACED AGAINST CONCRETE.
2. CONSTRUCTION JOINTS SHALL BE DEPRESSED ONE INCH.
3. SIDEWALK AND CURB PLACED MONOLITHICALLY.
4. APPROVED CLASS 'A' 3000 PSI CONCRETE.
5. APPROVED CURING PRACTICES, NO DIESEL.
6. EXPANSION JOINTS PLACED AT INTERVALS NOT TO EXCEED 100 FEET.
7. CURB CONTRACTION JOINTS CONSTRUCTED TO DEPTH OF ONE INCH AT 12-FOOT MAX INTERVALS. SIDEWALK CONTRACTION JOINTS REQUIRED AT 6-FOOT INTERVALS.
8. ANY ABOVE-GROUND APPURTENANCE SHALL BE LOCATED OR RELOCATED OUT OF SIDEWALK.
9. BOTTOM OF SIDEWALK CURB SHALL BE PLACED TO SAME SUB-BASE ELEVATION AS ROADWAY.

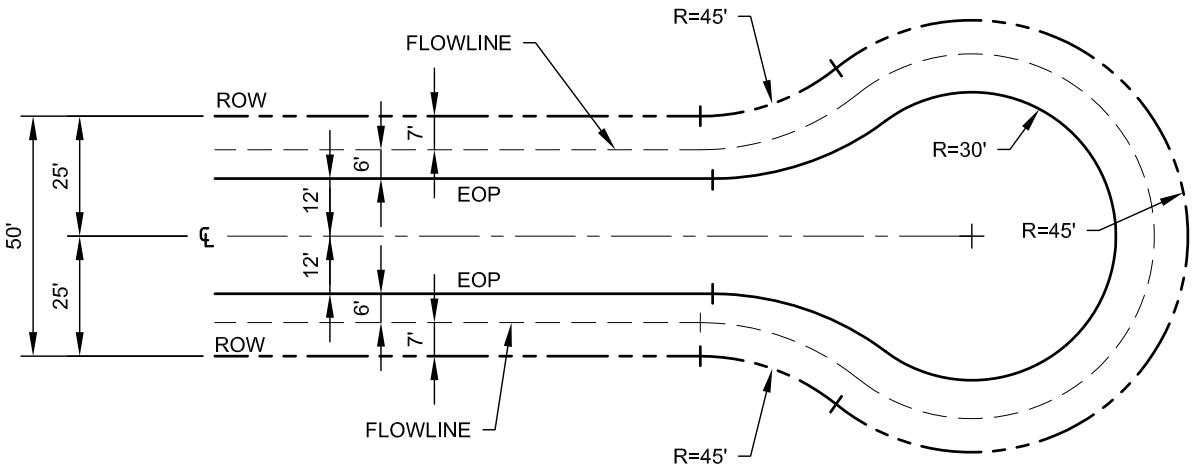
| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details**<br>**Roadway Improvements** | **Alternate Sidewalk/Curb** | Scale: N.T.S.<br>Detail No.<br>**216** |

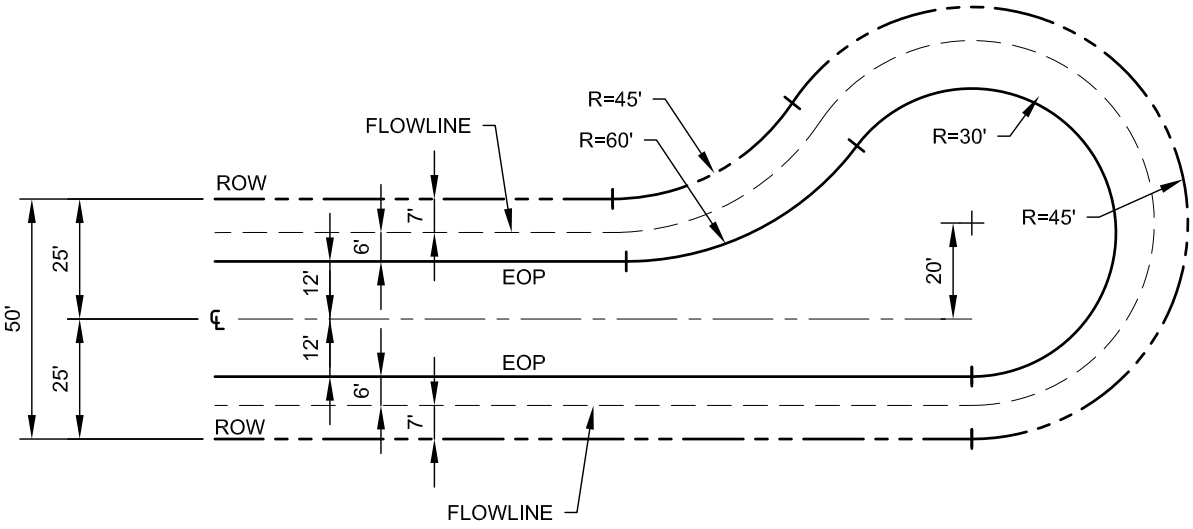



SECTION 14.04-03 D.

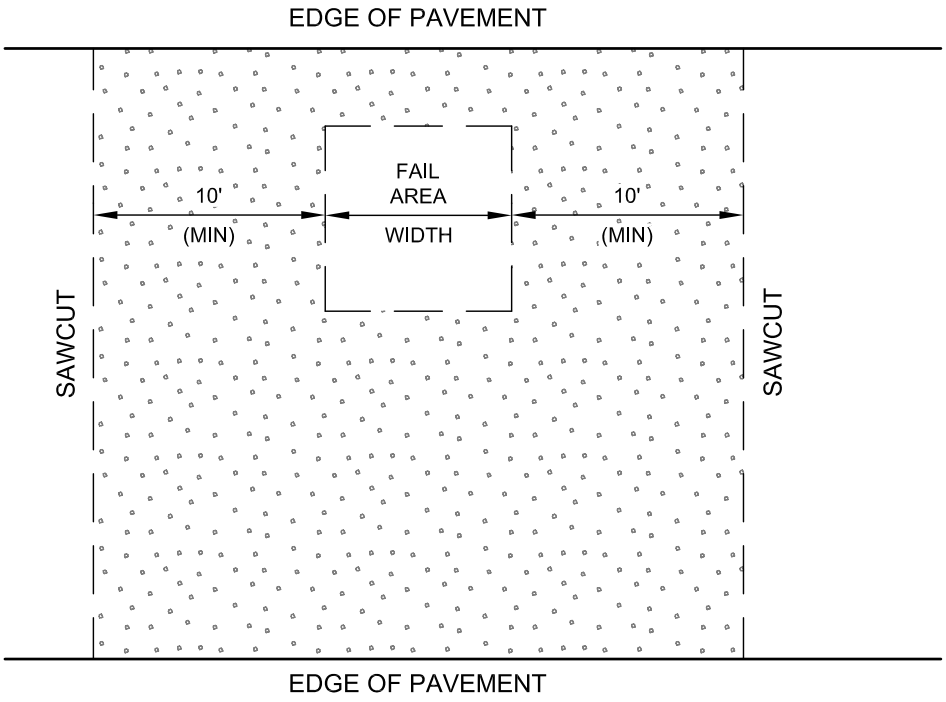
NO CONSTRUCTION INTERFERING WITH SIGHT LINES BETWEEN 2 AND 8 FEET ABOVE THE ELEVATION AT THE PROPERTY LINE.

| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details**<br>**Roadway Improvements** | **Sight Distance Triangle** | Scale: N.T.S.<br>Detail No.<br>**217** |




| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details**<br>**Roadway Improvements** | **CUL-DE-SAC Pavement** | Scale: N.T.S.<br>Detail No.<br>**218** |




## PAVEMENT REMOVAL AND REPLACEMENT IN EXISTING STREET

NOT TO SCALE

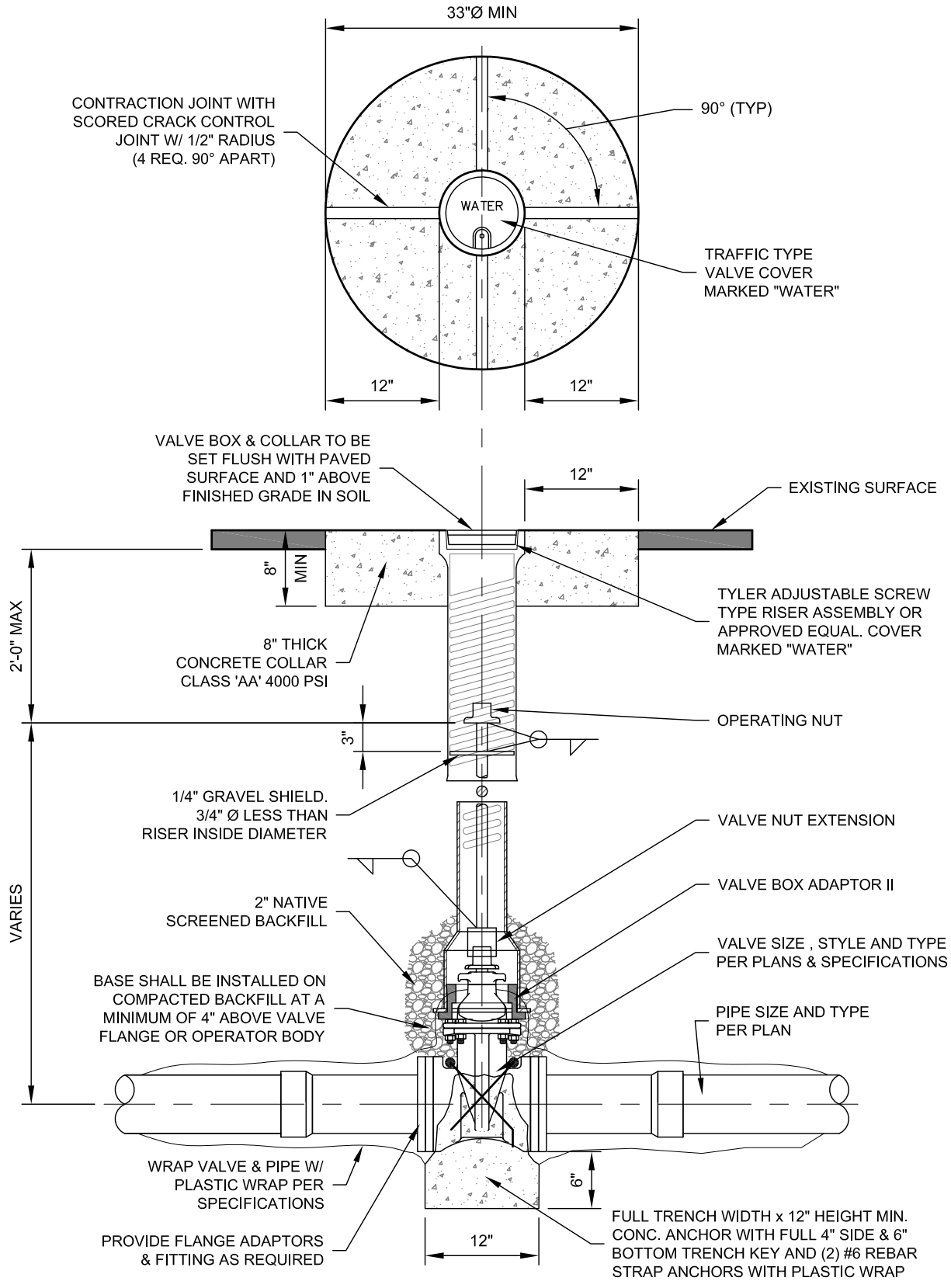
## NOTES:

1. IN AREAS WHERE PAVEMENT IS CRACKED, POTHOLED, FAILED, OR OTHERWISE PARTIALLY REMOVED, CONTRACTOR SHALL REPLACE PAVEMENT TO 10' EITHER SIDE OF LIMIT OF AREA. FOR THE FULL WIDTH OF THE STREET.

| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details**<br>**Roadway Improvements** | **AC Patch** | Scale: N.T.S.<br>**Detail No.**<br>**219** |

LAKE HAVASU CITY

# WATER IMPROVEMENTS




LAKE HAVASU CITY

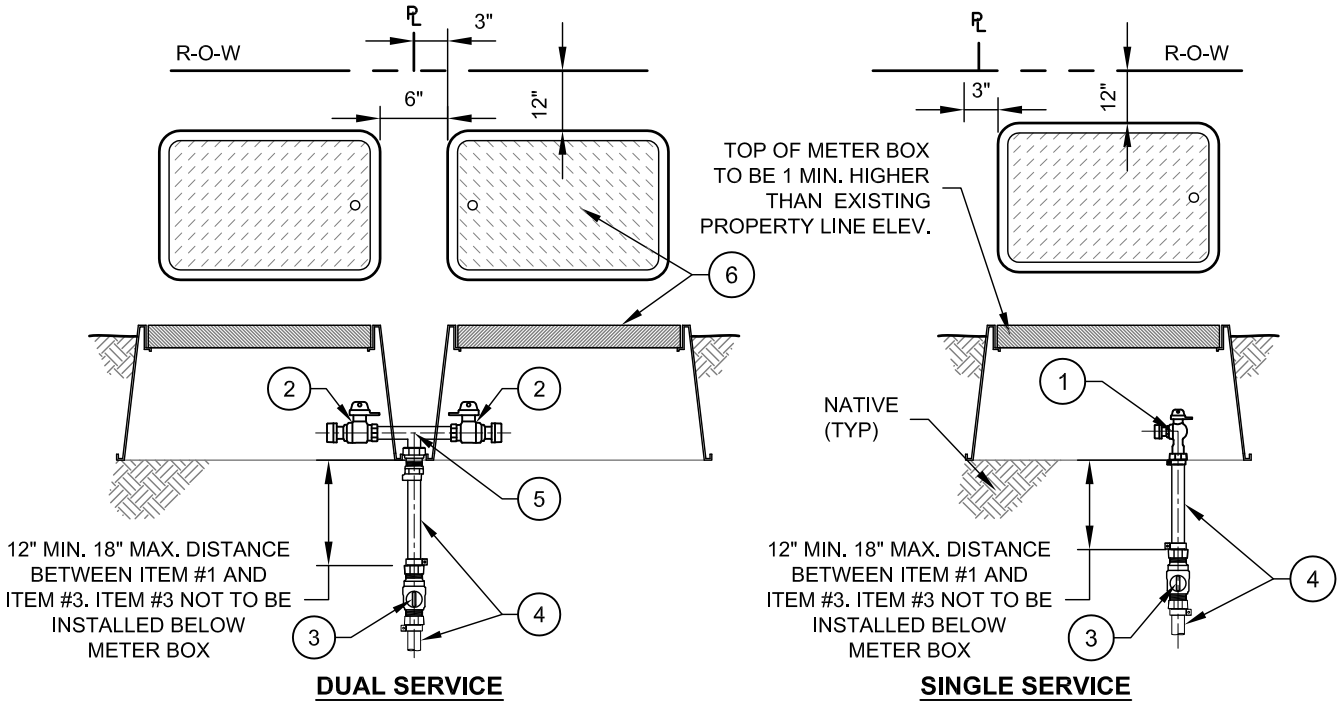
**Standard Details**

**Water Improvements**

**Valve / Valve Riser**

Scale: N.T.S.

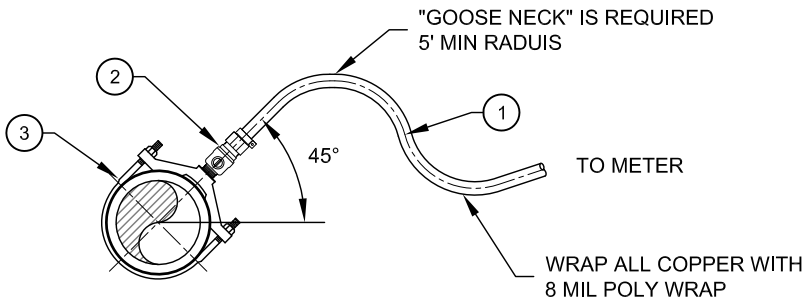
Detail No. **300**




**DUAL SERVICE** **SINGLE SERVICE**

| SERVICE TERMINATION DETAIL TABLE | | | |
|---|---|---|---|
| ITEM NO. | SIZE AND DESCRIPTION | MATERIAL SPECIFICATIONS | REMARKS |
| 1 | 1" ANGLE METER STOP | FORD BA43-342W-NL | OR EQUAL |
| 2 | 1" BALL METER VALVE | FORD B13-332W-NL | OR EQUAL |
| 3 | 1" CURB STOP | FORD B44-444-NL | OR EQUAL |
| 4 | 1" x REQUIRED LENGTH | COPPER TUBE TYPE "K" | OR EQUAL |
| 5 | 1" SERVICE TEE | FORD T884-334-9-NL | OR EQUAL |
| 6 | METER BOX | CARSON METER BOX 1220 (25 3/8"x19"x12")<br>TRAFFIC RATED BOX USE CHRISTY MAG 2 (25 1/2"x 17 3/4"x12") | OR EQUAL |

## SERVICE TERMINATION DETAILS




| SERVICE CONNECTION DETAIL TABLE | | | |
|---|---|---|---|
| ITEM NO. | SIZE AND DESCRIPTION | MATERIAL SPECIFICATIONS | REMARKS |
| 1 | 1" x REQUIRED LENGTH | COPPER TUBE TYPE "K" | OR EQUAL |
| 2 | 1" CORP STOP | FORD 1" FB1100-4-NL | OR EQUAL |
| 3 | 1" x MAIN SIZE BRASS STRAP SADDLE | FORD 202B-xxx-IP4 (AC) OR S91-xx4 (C900) SADDLE W/ 1" IP THREAD | OR EQUAL |

## SERVICE CONNECTION DETAILS

LAKE HAVASU CITY

**Standard Details**

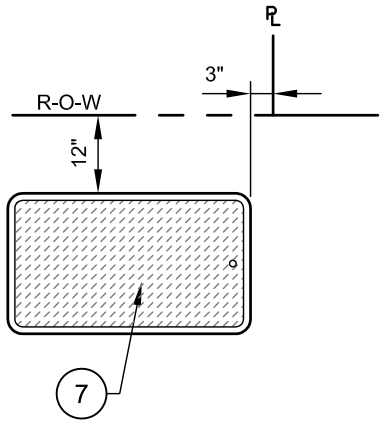
**Water Improvements**

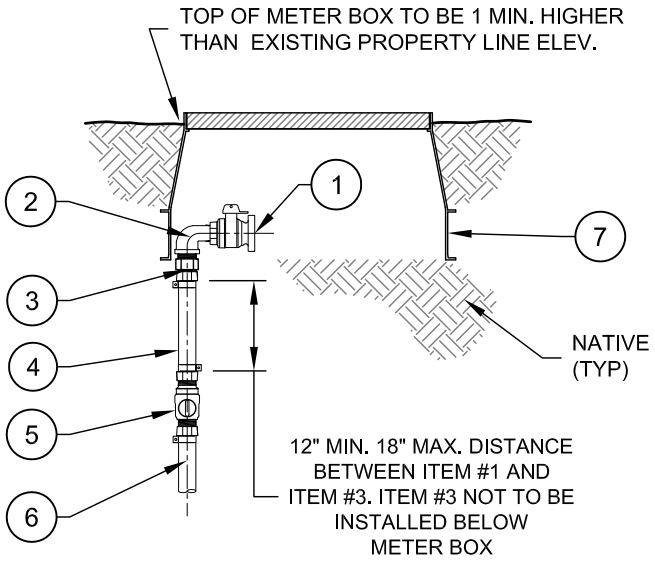
**1" Service Connection**

Scale: N.T.S.

Detail No. **301**

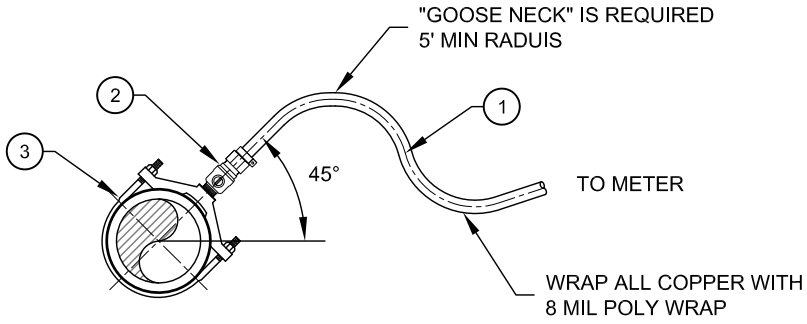
A:\City Operations and Development\Engineering\Programs\Standards\Developing Public Works Standards\LHC Standard Details\LHC Series 300 Water\DWG\DETAIL 301.dwg




| SERVICE TERMINATION DETAIL TABLE | | | |
|---|---|---|---|
| ITEM NO. | SIZE AND DESCRIPTION | MATERIAL SPECIFICATIONS | REMARKS |
| 1 | 2" BALL METER VALVE | FORD BF13-777W-NL | OR EQUAL |
| 2 | 2" 90 STREET ELL | BRASS STREET ELL | |
| 3 | 2" PACK JOINT COUPLING | 2" FORD C84-77-NL | OR EQUAL |
| 4 | 2" COPPER TUBE | TYPE - "K" COPPER 12" TO 18" LONG | |
| 5 | 2" CURB STOP | FORD B44-777-NL | OR EQUAL |
| 6 | 2" POLY TUBE | POLYETHYLENE PLASTIC TUBING (CTS) (200 PSI) | |
| 7 | METER BOX | CHRISTY FL36 METER BOX (37"x24"X18 7/16")<br>TRAFFIC RATED BOX USE CHRISTY MAG 2 (25 1/2"x 17 3/4"x12") | OR EQUAL |

## SERVICE TERMINATION DETAILS

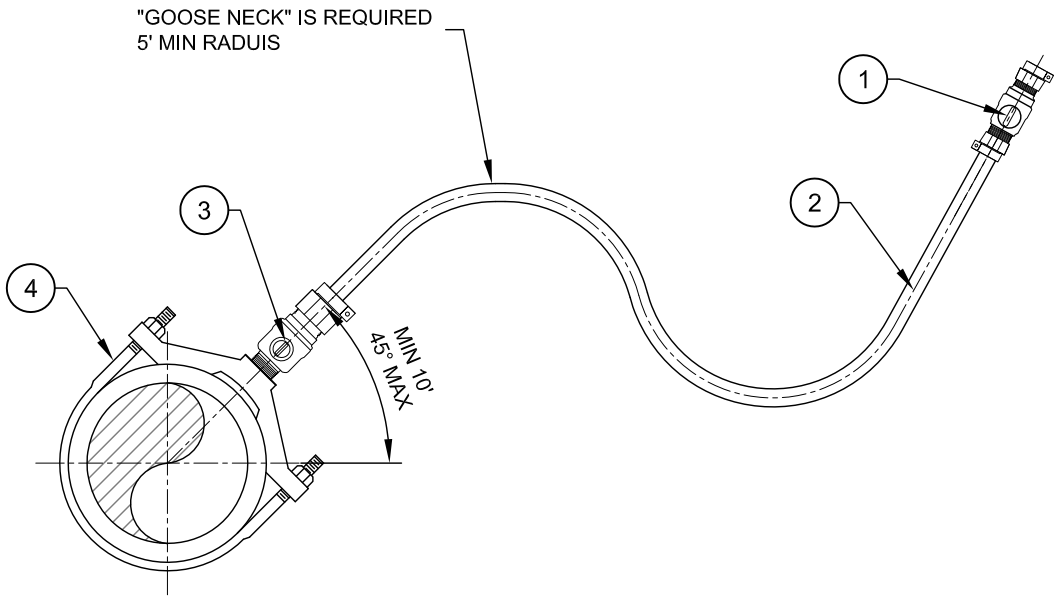



| SERVICE TERMINATION DETAIL TABLE | | | |
|---|---|---|---|
| ITEM NO. | SIZE AND DESCRIPTION | MATERIAL SPECIFICATIONS | REMARKS |
| 1 | 2" x REQUIRED LENGTH | POLYETHYLENE PLASTIC TUBING (CTS) (200 PSI) | |
| 2 | 2" CORP STOP | FORD FB1100-7-NL | OR EQUAL |
| 3 | 2" x MAIN SIZE BRASS SADDLE | FORD 202B-xxx-IP7 (AC) OR S91-xx7 (C900) SADDLE W/ 2" IP THREAD | OR EQUAL |

## SERVICE CONNECTION DETAILS

LAKE HAVASU CITY

| | | | |
|---|---|---|---|
| | **Standard Details** | **2" Service Connection** | Scale: N.T.S. |
| | **Water Improvements** | | Detail No. **302** |



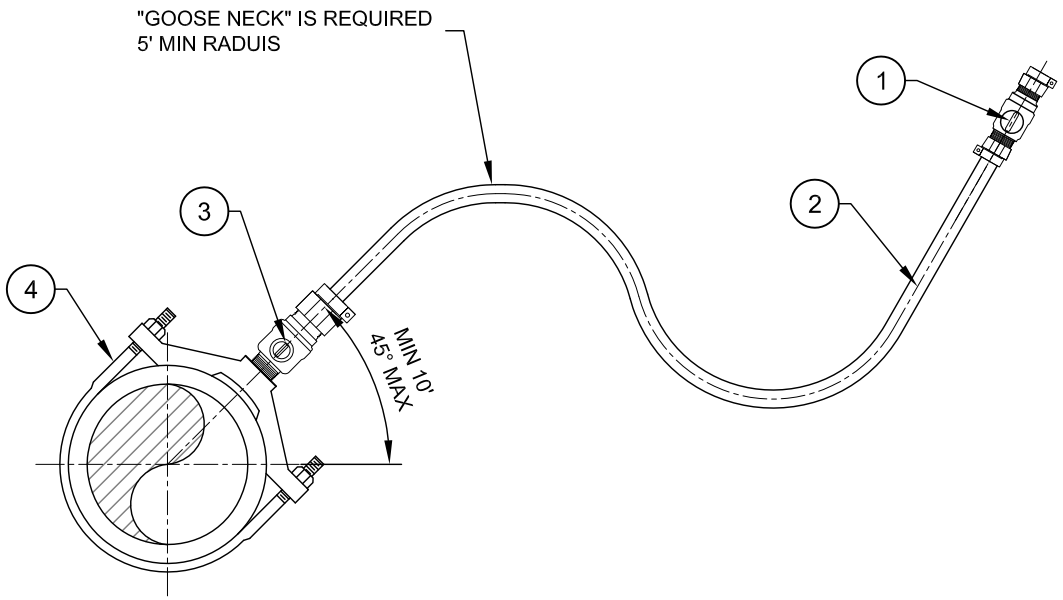

## SERVICE TAP

| SERVICE TAP DETAIL TABLE | | | |
|---|---|---|---|
| ITEM NO. | SIZE AND DESCRIPTION | MATERIAL SPECIFICATIONS | REMARKS |
| ① | 1" CURB STOP | FORD B44-444-NL | OR EQUAL |
| ② | 1" COPPER TUBE | TYPE - "K" SOFT COPPER | |
| ③ | 1" CORP STOP | FORD FB1100-4-NL | OR EQUAL |
| ④ | 1" x MAIN SIZE BRASS SADDLE | FORD 202B-xxx-IP4 (AC) OR S91-xx4 (C900) SADDLE W/ 1" IP THREAD | OR EQUAL |

## NOTE:

1. ALL PARTS ARE FROM FORD METER BOX COMPANY, EXCEPT THE COPPER PIPING.
2. ALL COPPER PIPE ENDS SHALL BE ROUNDED WITH A COPPER ROUNDING TOOL AND SHALL BE REAMED WITH A COPPER REAMING TOOL.
3. ALL COPPER TUBING WILL BE SLEEVED WITH MINIMUM 8 MIL. POLYWRAP.
4. ALL ASSEMBLIES TO BE LOCATED WITHIN CITY RIGHT-OF-WAY.

| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details**<br>**Water Improvements** | **1" Service Tap** | Scale: N.T.S.<br>Detail No.<br>**303** |




| SERVICE TERMINATION DETAIL TABLE | | | |
|---|---|---|---|
| ITEM NO. | SIZE AND DESCRIPTION | MATERIAL SPECIFICATIONS | REMARKS |
| (1) | 1.5" or 2" CURB STOP | FORD 1.5" B44-666-NL - 2" B44-777-NL | OR EQUAL |
| (2) | 1.5" or 2" POLY TUBING | POLYETHYLENE PLASTIC TUBING (CTS)(200 PSI) STAINLESS STEEL INSERTS MUST BE USED (1.5" FORD INSERT #54)(2" FORD INSERT #55) | |
| (3) | 1.5" or 2" CORP STOP | FORD 1.5" FB1100-6-NL - 2" FB1100-7-NL | OR EQUAL |
| (4) | 1.5" or 2" x MAIN SIZE BRASS SADDLE | FORD 202B-xxx-IP6 (AC) OR S91-xx6 (C900) SADDLE WITH IP THREAD<br>FORD 202B-xxx-IP7 (AC) OR S91-xx7 (C900) SADDLE WITH IP THREAD | OR EQUAL |

## NOTE:

1. ALL PARTS ARE FROM FORD METER BOX COMPANY, EXCEPT THE COPPER PIPING.
2. ALL ASSEMBLIES TO BE LOCATED WITHIN CITY RIGHT-OF-WAY.

LAKE HAVASU CITY

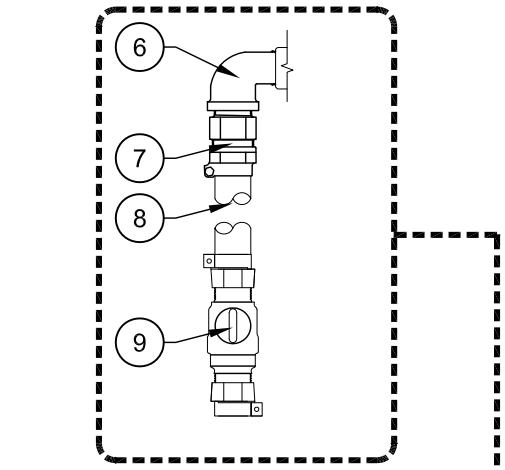
**Standard Details**

**Water Improvements**

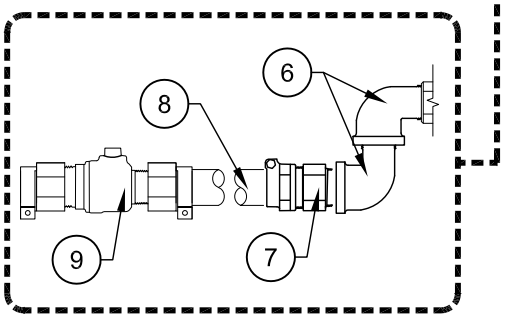
**1.5" - 2" Single Service Tap**

Scale: N.T.S.

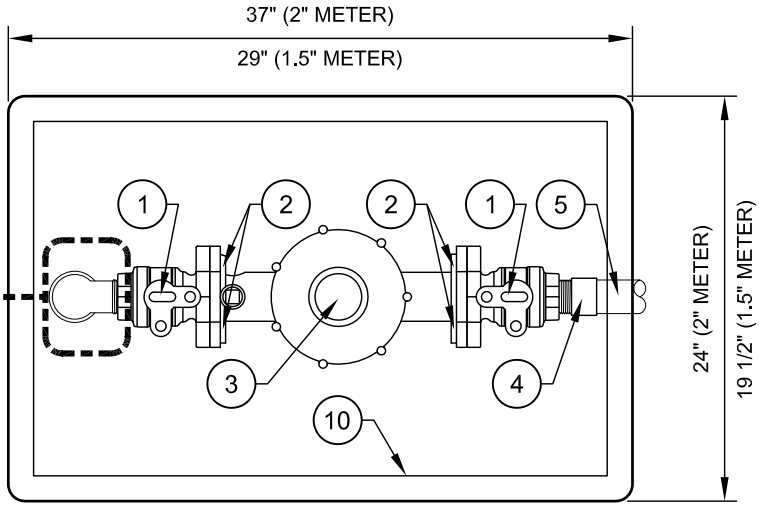
Detail No. **304**




SIDE VIEW




(OPTIONAL) TOP VIEW




(OPTIONAL) - IF USED MUST USE BRASS 90° STREET ELBOWS

| SERVICE METER DETAIL TABLE | | | |
|---|---|---|---|
| ITEM NO. | SIZE AND DESCRIPTION | MATERIAL SPECIFICATIONS | REMARKS |
| 1 | 1.5" or 2" BALL METER VALVE | FORD 1.5" BF13-666W-NL - 2" BF13-777W-NL | OR EQUAL |
| 2 | BOLTS & NUTS | STAINLESS STEEL | |
| 3 | 1.5" or 2" WATER METER | BADGER 1.5" M120-150LNSX-HL-GAXX - 2" M170-200LNSX-HL-GAXX | OR EQUAL |
| 4 | 1.5" or 2" ADAPTOR | FORD C84 PACK JOINT OR PVC MALE ADAPTOR | OR EQUAL |
| 5 | 1.5" or 2" COPPER TUBE/PVC | TYPE - "K" SOFT COPPER OR PVC (COPPER PIPE SHOULD BE USED IF BACKFLOW PREVENTOR ASSEMBLY IS INSTALLED) | |
| 6 | 1.5" or 2" 90° STREET ELBOW | BRASS 90° STREET ELBOW | |
| 7 | 1.5" or 2" PACK JOINT COUPLING | FORD 1.5" C84-66-NL - 2" C84-77-NL | OR EQUAL |
| 8 | 1.5" or 2" POLY TUBING | POLYETHYLENE PLASTIC TUBING (CTS)(200 PSI) STAINLESS STEEL INSERTS MUST BE USED (1.5" FORD INSERT #54)(2" FORD INSERT #55) | |
| 9 | 1.5" or 2" BALL CURB VALVE | FORD 1.5" B44-666-NL - 2" B44-777-NL | OR EQUAL |
| 10 | METER BOX | CHRISTY FL36 MODEL 17x30 (37"x24"x18 7/16") | OR EQUAL |

## NOTES:

1. COMMERCIAL AND IRRIGATION WATER METERS REQUIRE APPROVED BACKFLOW PREVENTED ASSEMBLIES PER LAKE HAVASU CITY SPECIFICATIONS.

LAKE HAVASU CITY

**Standard Details**

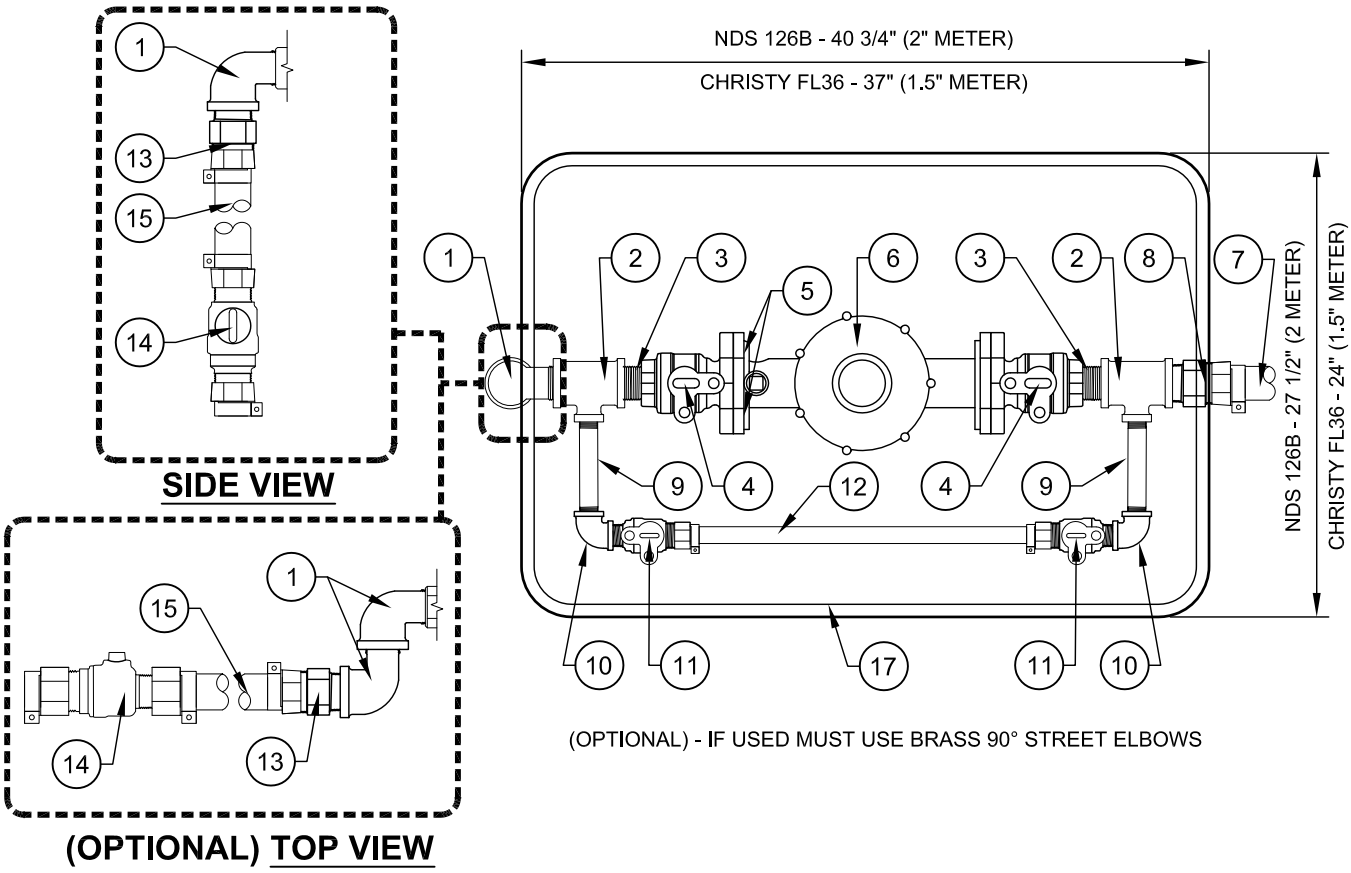
**Water Improvements**

**1.5" & 2" Water Meter Assembly**

Scale: N.T.S.

Detail No.

**305**




| SERVICE METER DETAIL TABLE | | | |
|---|---|---|---|
| ITEM NO. | SIZE AND DESCRIPTION | MATERIAL SPECIFICATIONS | REMARKS |
| ① | 1.5" or 2" 90° | BRASS 90° STREET ELBOW | |
| ② | 1.5"x1" or 2"x1" TEE | BRASS REDUCING TEE | |
| ③ | 1.5" or 2" NIPPLE | BRASS NIPPLE (CLOSE) | |
| ④ | 1.5" or 2" BALL METER VALVE | FORD 1.5" BF13-666W-NL - 2" BF13-777W-NL | OR EQUAL |
| ⑤ | BOLTS & NUTS | STAINLESS STEEL | |
| ⑥ | 1.5" or 2" WATER METER | BADGER 1.5" M120-150LNSX-HL-GAXX - 2" M170-200LNSX-HL-GAXX | |
| ⑦ | 1.5" or 2" COPPER TUBE/PVC | TYPE - "K" SOFT COPPER OR PVC (COPPER PIPE SHOULD BE USED IF BACKFLOW PREVENTOR ASSEMBLY IS INSTALLED) | |
| ⑧ | 1.5" or 2" ADAPTOR | FORD C84 PACK JOINT OR PVC MALE ADAPTOR | |
| ⑨ | 1" NIPPLE | BRASS 6" NIPPLE | |
| ⑩ | 1" 90° ELBOW | BRASS 90° ELBOW | |
| ⑪ | 1" CURB STOP | FORD 1" B84-444W-NL | OR EQUAL |
| ⑫ | 1" POLY TUBING | POLYETHYLENE PLASTIC TUBING (CTS)(200 PSI) STAINLESS STEEL INSERTS MUST BE USED (1" FORD INSERT #52) | |
| ⑬ | 1.5" or 2" PACK JOINT | FORD 1.5" C84-66-NL - FORD 2" C84-77-NL | OR EQUAL |
| ⑭ | 1.5" or 2" BALL CURB VALVE | FORD 1.5" B44-666-NL - 2" B44-777-NL | OR EQUAL |
| ⑮ | 1.5" or 2" POLY TUBING | POLYETHYLENE PLASTIC TUBING (CTS)(200 PSI) STAINLESS STEEL INSERTS MUST BE USED (1.5" FORD INSERT #54)(2" FORD INSERT #55) | |
| ⑯ | METER BOX | FOR 1.5" ASSEMBLY CHRISTY FL36 MODEL 17"X30" (37"x24"x18 7/16") FOR 2" ASSEMBLY NDS 126B W/ COVER (40 3/4"x27 1/2"x18") | OR EQUAL |

## NOTES:

1. RESIDENTIAL DOMESTIC WATER METERS REQUIRE CHECK VALVES ON OUTLET SIDE OF METER. COMMERCIAL AND IRRIGATION WATER METERS REQUIRE APPROVED BACKFLOW PREVENTED ASSEMBLIES PER L.H.C. SPECIFICATIONS.

LAKE HAVASU CITY

**Standard Details**

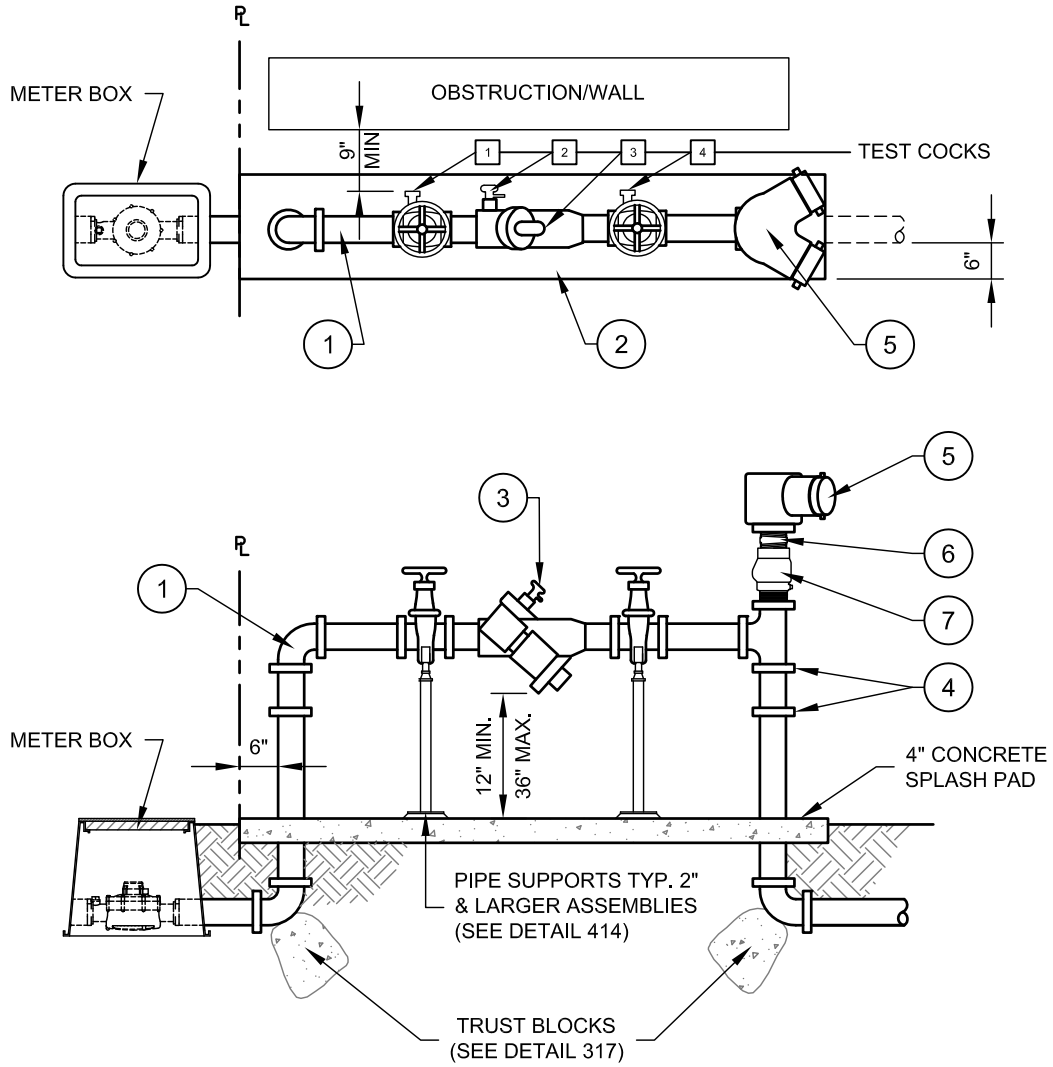
**Water Improvements**

**1.5" & 2" Water Meter Bypass Assembly**

Scale: N.T.S.

Detail No.

**306**




| DOUBLE CHECK VALVE DETAIL TABLE | |
|---|---|
| ITEM NO. | SIZE AND DESCRIPTION |
| (1) | ALL 2" OR 3" PIPING ABOVE GROUND TO BE BRASS OR COPPER (TYPE K). ASSEMBLIES 4" AND LARGER TO BE DUCTILE IRON. |
| (2) | 4" THICK CONCRETE PAD TO BE 2500 PSI FOR 1 1/2 INCH ASSEMBLIES AND ABOVE; NOT REQUIRED FOR LESS THAN 1 1/2 INCH ASSEMBLIES. |
| (3) | USC-FCCCHR APPROVED ASSEMBLY. |
| (4) | UNION/FLANGE REQUIRED FOR REMOVAL. |
| (5) | FIRE DEPARTMENT CONNECTION DOUBLE SNOOT PER LAKE HAVASU CITY FIRE DEPARTMENT. |
| (6) | NIPPLE (CLOSE) |
| (7) | 4" CHECK VALVE (UNITED BRASS WORKS MODEL 68) |

NOTE: ALL ASSEMBLIES TO BE LOCATED ON PRIVATE PROPERTY.

LAKE HAVASU CITY

**Standard Details**

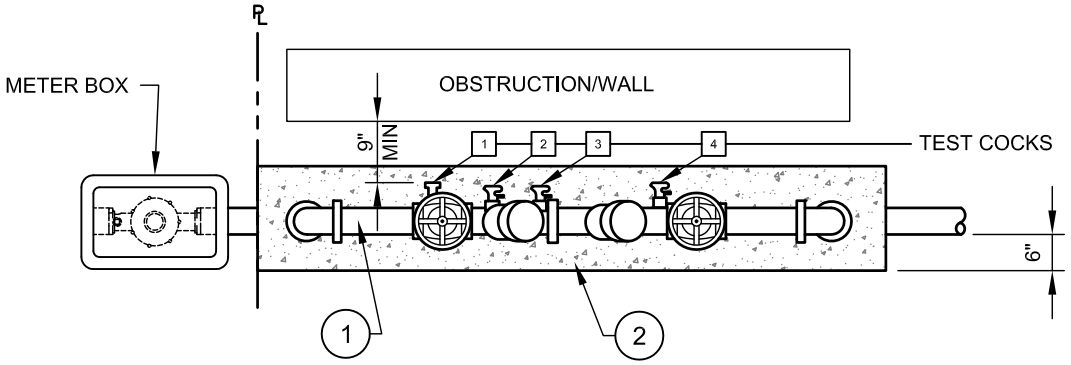
**Water Improvements**

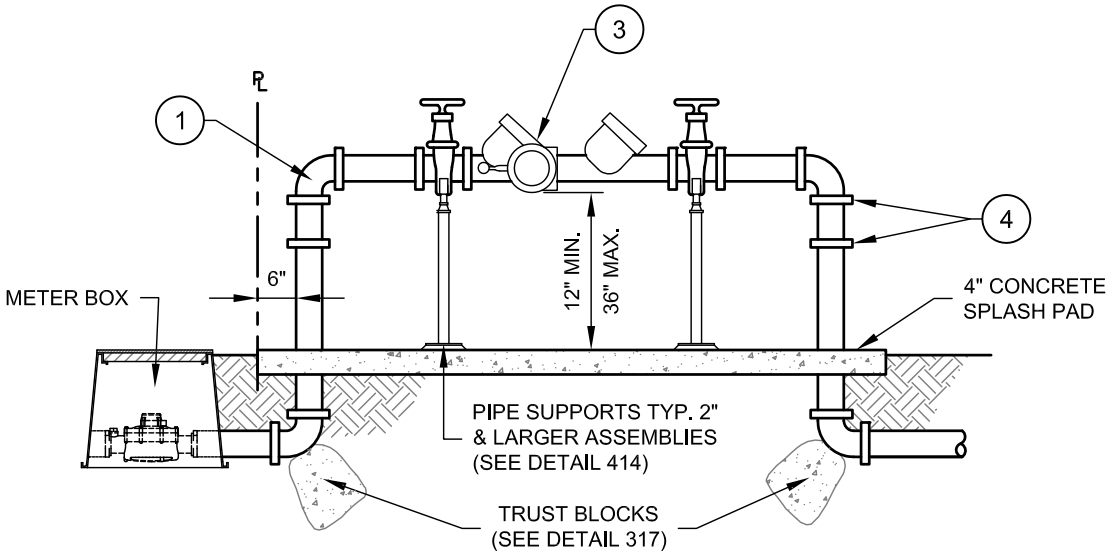
**Commercial Double Check Valve Assembly with Fire Dept. Connection**

Scale: N.T.S.

Detail No.

**307**




| PRESSURE REDUCING ASSEMBLY DETAIL TABLE | |
|---|---|
| ITEM NO. | SIZE AND DESCRIPTION |
| ① | ALL 2" OR 3" PIPING ABOVE GROUND TO BE BRASS OR COPPER (TYPE K). ASSEMBLIES 4" AND LARGER TO BE DUCTILE IRON. |
| ② | 4" THICKCONCRETE PAD TO BE 2500 PSI FOR 1 1/2 INCH ASSEMBLIES AND ABOVE; NOT REQUIRED FOR LESS THAN 1 1/2 INCH ASSEMBLIES. |
| ③ | USC-FCCCHR APPROVED ASSEMBLY. |
| ④ | UNION/FLANGE REQUIRED FOR REMOVAL. |

NOTE: ALL ASSEMBLIES TO BE LOCATED ON PRIVATE PROPERTY.

LAKE HAVASU CITY

**Standard Details**

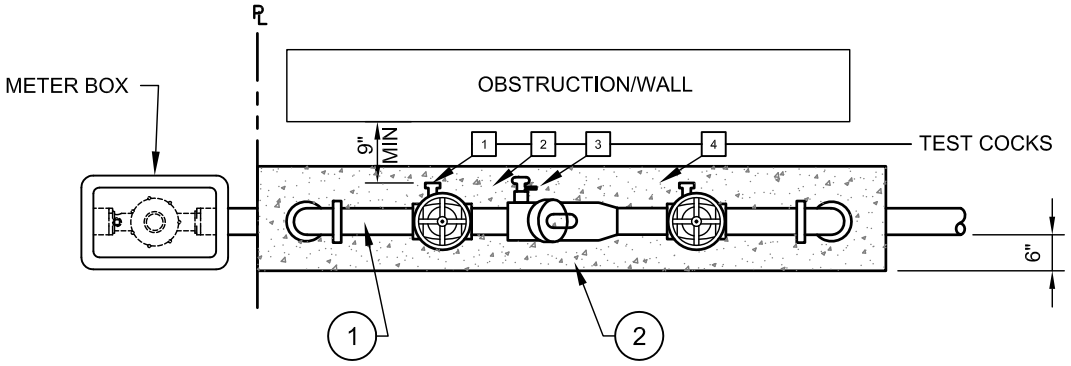
**Water Improvements**

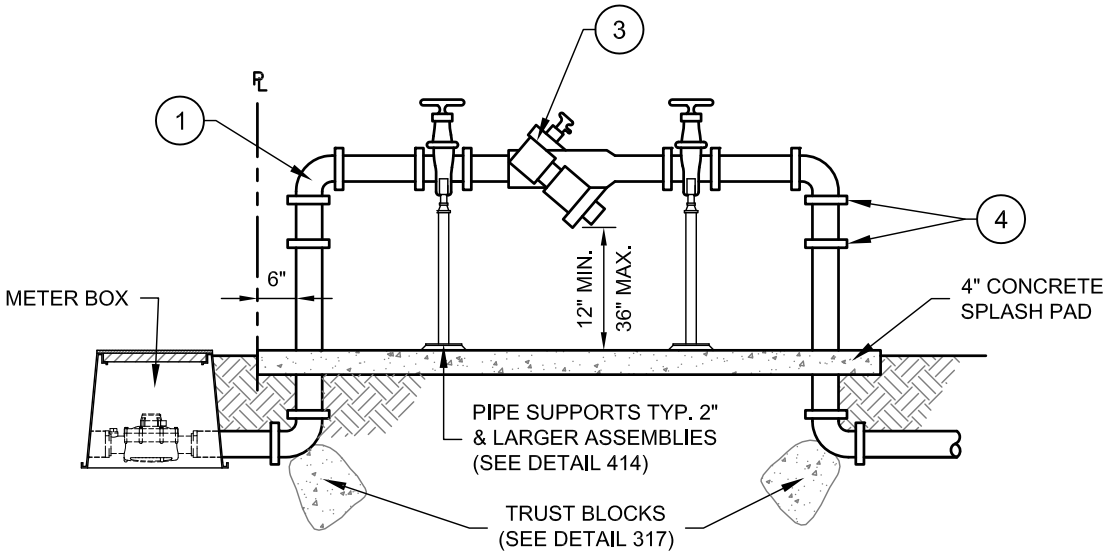
**Pressure Reducing Assembly**

Scale: N.T.S.

Detail No.

**308**




| PRESSURE REDUCING ASSEMBLY DETAIL TABLE | |
|---|---|
| ITEM NO. | SIZE AND DESCRIPTION |
| ① | ALL 2" OR 3" PIPING ABOVE GROUND TO BE BRASS OR COPPER (TYPE K). ASSEMBLIES 4" AND LARGER TO BE DUCTILE IRON. |
| ② | 4" THICKCONCRETE PAD TO BE 2500 PSI FOR 1 1/2 INCH ASSEMBLIES AND ABOVE; NOT REQUIRED FOR LESS THAN 1 1/2 INCH ASSEMBLIES. |
| ③ | USC-FCCCHR APPROVED ASSEMBLY. |
| ④ | UNION/FLANGE REQUIRED FOR REMOVAL. |

NOTE: ALL ASSEMBLIES TO BE LOCATED ON PRIVATE PROPERTY.

LAKE HAVASU CITY

**Standard Details**

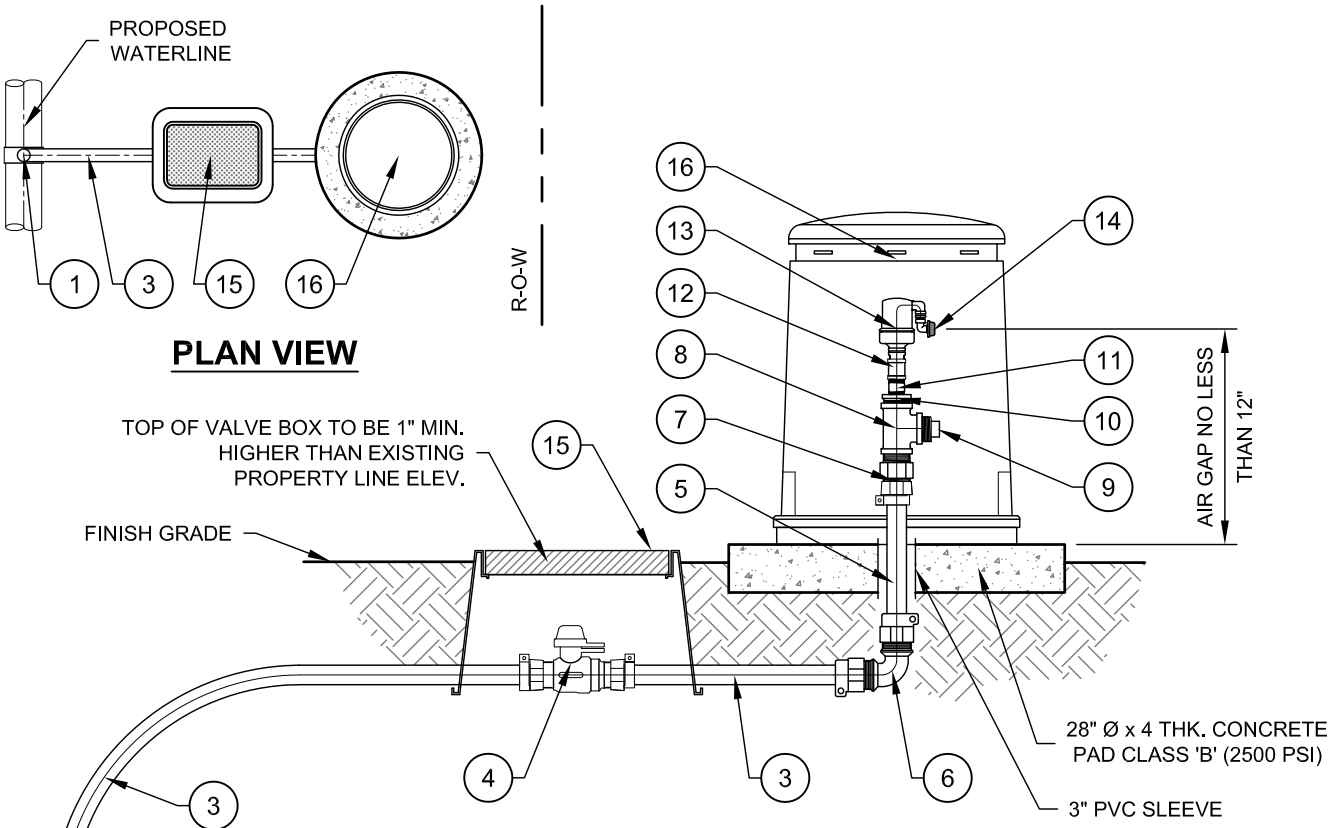
**Water Improvements**

**Double Check Valve Assembly**

Scale: N.T.S.

Detail No.

**309**




## NOTE:

1. WRAP ALL COPPER & BRASS WITH 8 MIL POLY WRAP.
2. COMPACT SUB-GRADE UNDER VALVE & ARV ENCLOSURE PAD.
3. IF BLOWOFF IS NOT USED ELIMINATE ITEMS 8 & 9.

**1" COMBINATION AIR/VAC - 2" BLOW OFF DETAIL TABLE**

| ITEM NO. | SIZE AND DESCRIPTION | MATERIAL SPECIFICATIONS |
|---|---|---|
| ① | 2" x MAIN SIZE BRASS SADDLE | FORD 202B-xxx-IP4 (AC) OR S91-xx4 (C900) SADDLE WITH IP THREAD |
| ② | 2" CORP STOP | FORD FB1100-7-NL |
| ③ | 2" POLY TUBING | POLYETHYLENE PLASTIC TUBING (CTS)(200 PSI) STAINLESS STEEL INSERTS (2" FORD INSERT #55) |
| ④ | 2" CURB STOP | FORD B44-777-NL |
| ⑤ | 2" COPPER TUBE | COPPER TYPE "K" SLEEVED WITH 8 MIL. POLY WRAP |
| ⑥ | 2" PACK JOINT ELL COUPLING | FORD L44-77-NL |
| ⑦ | 2" PACK JOINT COUPLING | FORD C84-77-NL |
| ⑧ | 2" TEE | BRASS TEE |
| ⑨ | 2" PLUG | BRASS PLUG MIPT |
| ⑩ | 2"x1" REDUCING BUSHING | BRASS REDUCING BUSHING 2" MIPT x 1" FIPT |
| ⑪ | 1" NIPPLE | BRASS NIPPLE 1x2 |
| ⑫ | 1" COUPLING | BRASS COUPLING 1" FIPT x FIPT |
| ⑬ | 1" ARV | ARI D-040 COMBINATION AIR/VACUUM RELEASE VALVE |
| ⑭ | 3/8 " SCREEN | BUG SCREEN 40 MESH |
| ⑮ | VALVE BOX | CARSON 1419 VALVE BOX (20 7/8"x15 3/4"x12")<br>TRAFFIC RATED BOX USE CHRISTY MAG 2 (25 1/2"x 17 3/4"x12") |
| ⑯ | POLYETHYLENE ENCLOSURE | PIPELINE PRODUCTS ADVANTAGE SERIES ENCLOSURE (VCAS-1830) |

LAKE HAVASU CITY

**Standard Details**

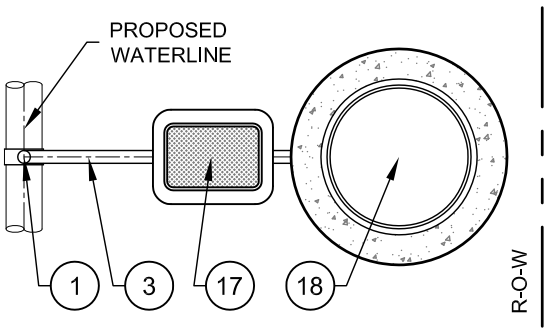
**Water Improvements**

**1" Combination Air/Vacuum Valve & 2" Blow-Off**

Scale: N.T.S.

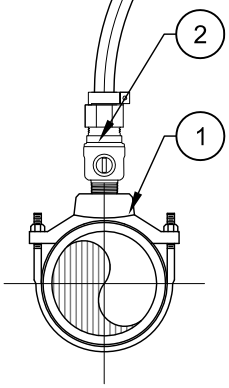
Detail No.

**310**




**PLAN VIEW**




## NOTE:

1. WRAP ALL COPPER & BRASS WITH 8 MIL POLY WRAP.
2. COMPACT SUB-GRADE UNDER VALVE PAD & ARV ENCLOSURE PAD.
3. IF BLOWOFF IS NOT REQUIRED USE ENCLOSURE & CONCRETE PAD FROM DETAIL 310 & ELIMINATE ITEMS 8 & 9.

**2" COMBINATION AIR/VAC - 2" BLOW OFF DETAIL TABLE**

| ITEM NO. | SIZE AND DESCRIPTION | MATERIAL SPECIFICATIONS |
|---|---|---|
| ① | 2" x MAIN SIZE BRASS SADDLE | FORD 202B-xxx-IP4 (AC) OR S91-xx4 (C900) SADDLE WITH IP THREAD |
| ② | 2" CORP STOP | FORD FB1100-7-NL |
| ③ | 2" POLY TUBING | POLYETHYLENE PLASTIC TUBING (CTS)(200 PSI) STAINLESS STEEL INSERTS (2" FORD INSERT #55) |
| ④ | 2" CURB STOP | FORD B44-777-NL |
| ⑤ | 2" COPPER TUBE | COPPER TYPE "K" SLEEVED WITH 8 MIL. POLY WRAP |
| ⑥ | 2" PACK JOINT ELL COUPLING | FORD L44-77-NL |
| ⑦ | 2" PACK JOINT COUPLING | FORD C84-77-NL |
| ⑧ | 2" TEE | BRASS TEE |
| ⑨ | 2" PLUG | BRASS PLUG MIPT |
| ⑩ | 2' NIPPLE | BRASS NIPPLE 2"x4" |
| ⑪ | 2" COUPLING | BRASS COUPLING FIPT |
| ⑫ | 2" ARV | ARI D-040 COMBINATION AIR/VACUUM RELEASE VALVE |
| ⑬ | 1 1/2" NIPPLE | PVC SCH 80 NIPPLE |
| ⑭ | 1 1/2" 90 | PVC SCH 80 90 FIPT x FIPT |
| ⑮ | 1 1/2"x1" REDUCING BUSHING | PVC SCH 80 REDUCING BUSHING 1 1/2" MIPT x 1" FIPT |
| ⑯ | 1" SCREEN | BUG SCREEN 40 MESH |
| ⑰ | VALVE BOX | CARSON 1419 VALVE BOX (20 7/8"x15 3/4"x12")<br>TRAFFIC RATED BOX USE CHRISTY MAG 2 (25 1/2"x 17 3/4"x12") |
| ⑱ | POLYETHYLENE ENCLOSURE | PIPELINE PRODUCTS ADVANTAGE SERIES ENCLOSURE (VCAS-2436) |

LAKE HAVASU CITY

**Standard Details**

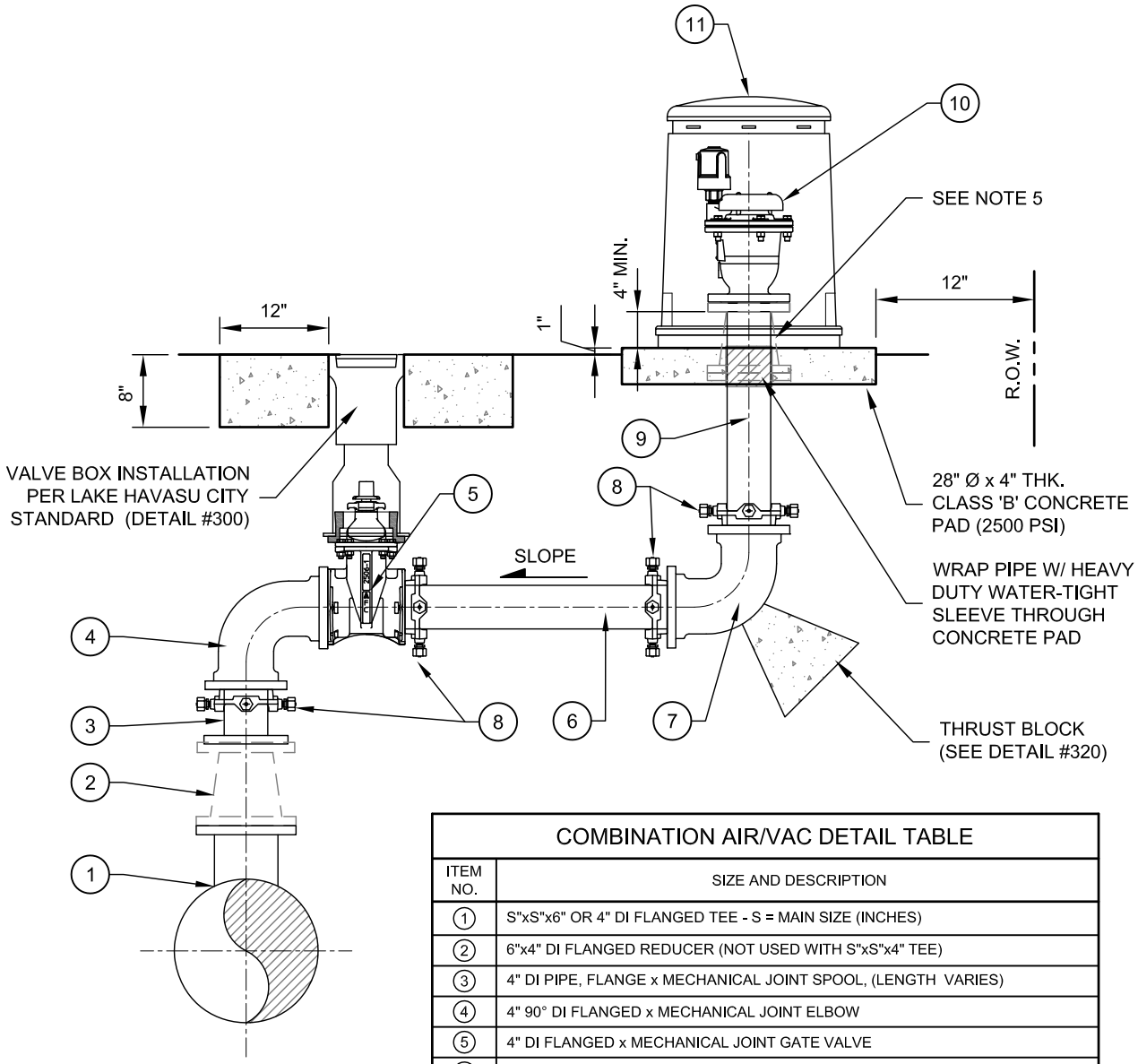
**Water Improvements**

**2" Combination Air/Vacuum Valve & 2" Blow-Off**

Scale: N.T.S.

Detail No.

**311**

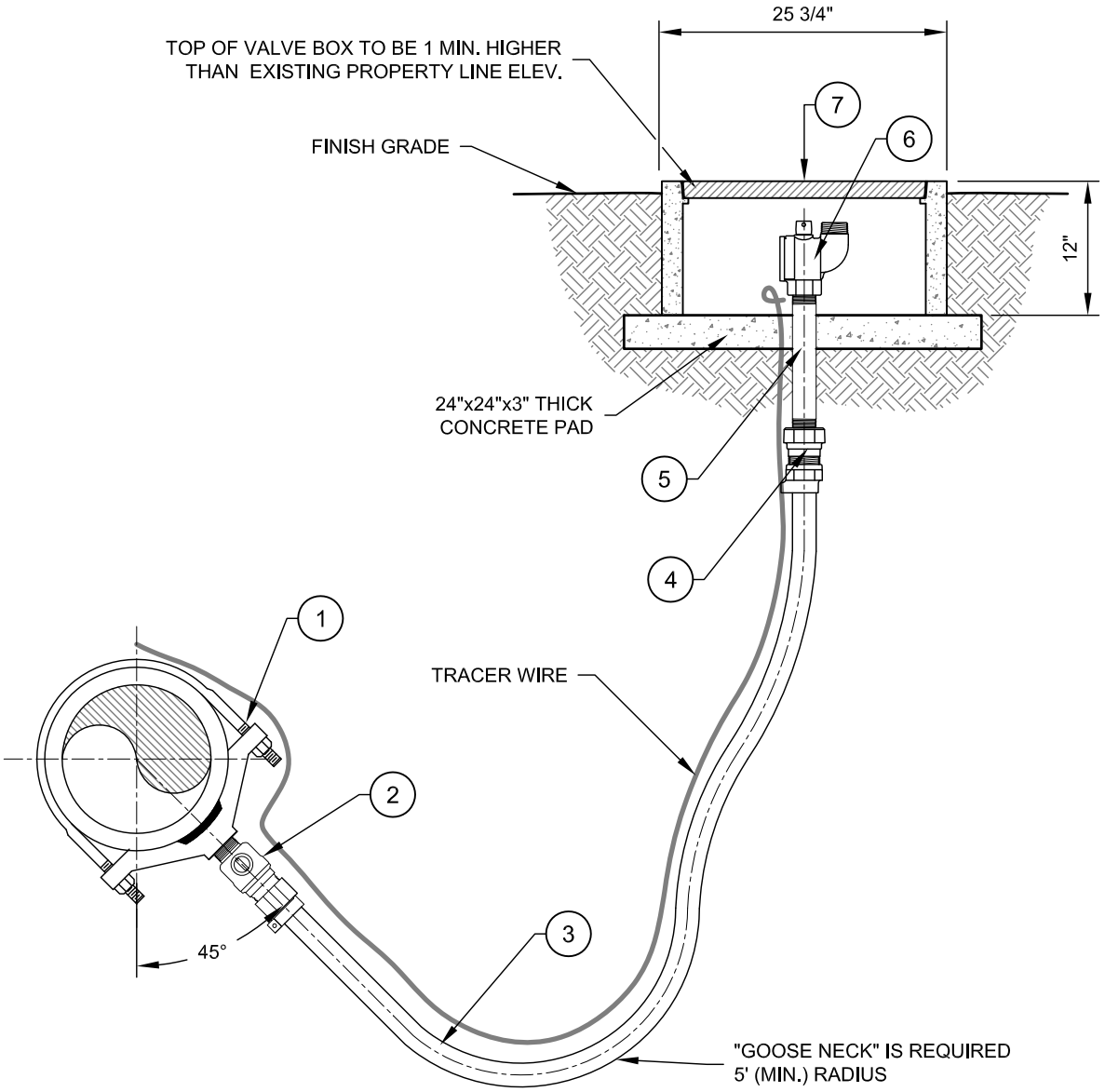



| COMBINATION AIR/VAC DETAIL TABLE | |
|---|---|
| ITEM NO. | SIZE AND DESCRIPTION |
| 1 | S"xS"x6" OR 4" DI FLANGED TEE - S = MAIN SIZE (INCHES) |
| 2 | 6"x4" DI FLANGED REDUCER (NOT USED WITH S"xS"x4" TEE) |
| 3 | 4" DI PIPE, FLANGE x MECHANICAL JOINT SPOOL, (LENGTH VARIES) |
| 4 | 4" 90° DI FLANGED x MECHANICAL JOINT ELBOW |
| 5 | 4" DI FLANGED x MECHANICAL JOINT GATE VALVE |
| 6 | 4" DI PIPE (LENGTH VARIES) |
| 7 | 4" 90° DI FLANG x MECHANICAL JOINT ELBOW |
| 8 | 4" MECHANICAL JOINT MEGALUG KIT PER PLANS & SPECIFICATIONS |
| 9 | 4" DI PIPE FLANGE x MECHANICAL JOINT (LENGTH VARIES) |
| 10 | ARI D-060 COMBINATION AIR VALVE OR APPROVED EQUAL |
| 11 | POLYETHYLENE ENCLOSURE VCAS-1830 OR APPROVED EQUAL. (CONTRACTOR VERIFY SIZE PRIOR TO INSTALLATION) |

## NOTE:

1. COMBINATION AIR VALVE SHOWN RESEMBLES A SINGLE MANUFACTURER TYPE. CONTRACTOR SHALL INCLUDE ALL PARTS AND SPECIFIC CONNECTION TYPES FOR MANUFACTURER TYPE INCLUDED WITHIN BID. ADDITIONALLY, IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE SELECTED STEEL ENCLOSURE FITS THE RESPECTIVE AIR VALVE MANUFACTURER TYPE.
2. FINAL LOCATION TO BE DETERMINED IN FIELD BY OWNER AT NO ADDITIONAL COST.
3. RESTRAINT JOINTS SHALL BE USED IN LIEU OF THRUST BLOCKS WHERE APPLICABLE.
4. ALL DUCTILE IRON PIPE TO BE WRAPPED WITH 8 MIL POLY WRAP PER LAKE HAVASU CITY SPECIFICATIONS.
5. IF SMALLER ARV IS SPECIFIED. APPROPRIATE REDUCER SHALL BE PLACED WITHIN SLAB.

| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details**<br>**Water Improvements** | **4" Combination Air/Vacuum Valve** | Scale: N.T.S.<br>Detail No.<br>**312** |




BLOW-OFF ASSEMBLY DETAIL TABLE

| ITEM NO. | SIZE AND DESCRIPTION | MATERIAL SPECIFICATIONS | REMARKS |
|---|---|---|---|
| 1 | 2" x MAIN SIZE BRASS SADDLE | FORD 202B-xxx-IP7 (AC) OR S91-xx7 (C900) SADDLE WITH IP THREAD | OR EQUAL |
| 2 | 2" CORP STOP | FORD 2" FB1100-7-NL | OR EQUAL |
| 3 | 2" POLY TUBING | POLYETHYLENE PLASTIC TUBING (CTS)(200 PSI) STAINLESS STEEL INSERTS (2" FORD INSERT #55) | |
| 4 | 2" PACK JOINT COUPLING | FORD 2" C14-77-NL OR EQUAL | |
| 5 | 2"x12" NIPPLE | 2"x12" BRASS NIPPLE | |
| 6 | 2" BLOW-OFF VALVE | FORD 2" BLA18-777-TA-NL | OR EQUAL |
| 7 | METER BOX | MAG SPEC 320 CONCRETE METER BOX (25 3/4"x18"x12") | |

LAKE HAVASU CITY

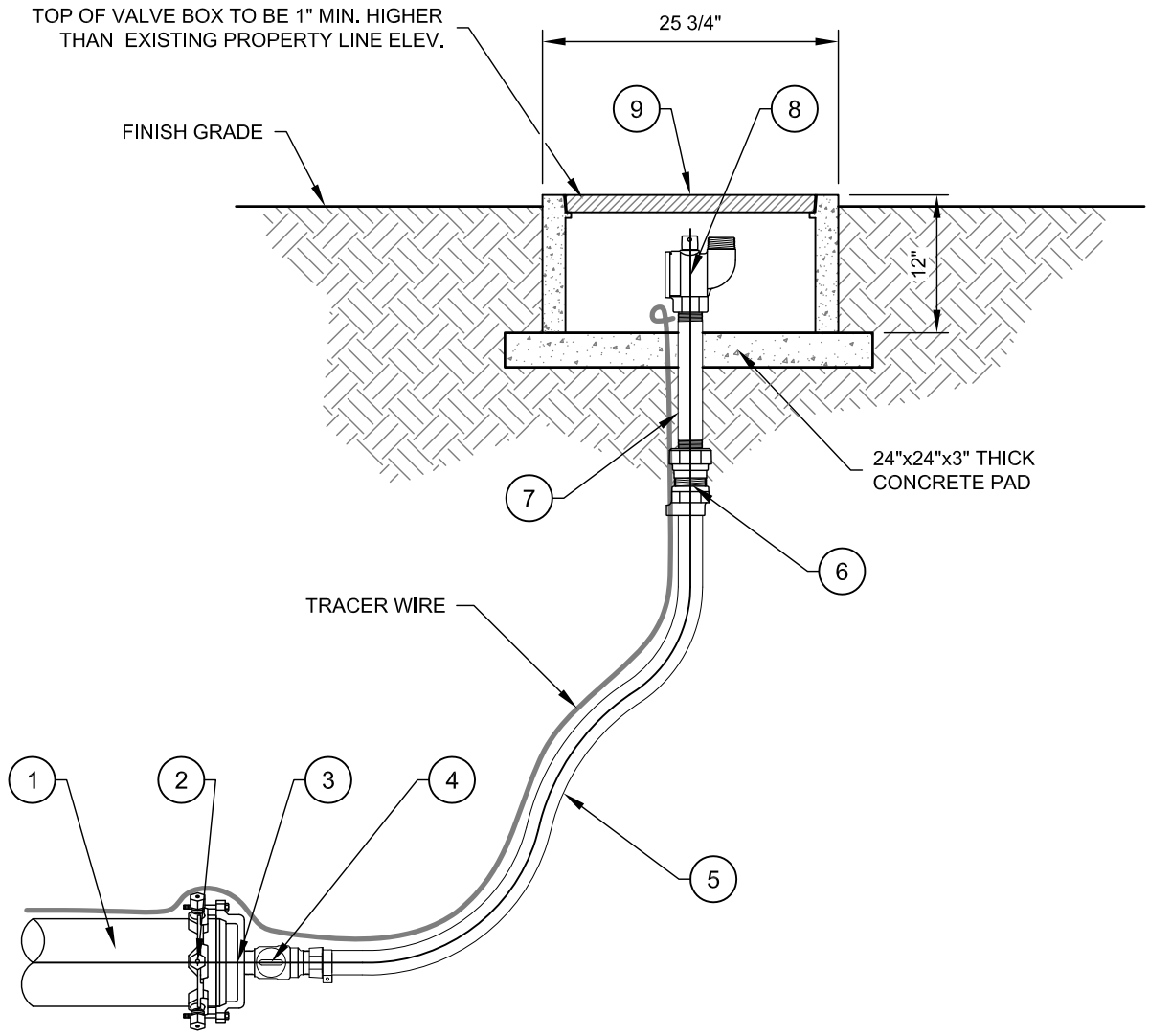
**Standard Details**

**Water Improvements**

**2" Blow-Off Assembly In Line**

Scale: N.T.S.

Detail No. **313**




NOTE: S = SIZE IN INCHES

| BLOW-OFF ASSEMBLY DETAIL TABLE | | |
|---|---|---|
| ITEM NO. | SIZE AND DESCRIPTION | MATERIAL SPECIFICATIONS |
| 1 | S" PVC PIPE | C900 PVC PIPE (S= SIZE IN INCHES) |
| 2 | S" JOINT RESTRAINT | EBAA 2000PV JOIST RESTRAINT OR EQUAL (S= SIZE IN INCHES) |
| 3 | S" MECHANICAL JOINT CAP | US PIPE MECHANICAL JOINT CAP WITH CENTER THREADED OPENING (S= SIZE IN INCHES) |
| 4 | 2" CORP STOP | FORD 2" FB1100-7-NL OR EQUAL |
| 5 | 2" POLY TUBING | POLYETHYLENE PLASTIC TUBING (CTS)(200 PSI) STAINLESS STEEL INSERTS (2" FORD INSERT #55) |
| 6 | 2" PACK JOINT COUPLING | 2" PACK JOINT COUPLING |
| 7 | 2"x12" NIPPLE | 2"x12" BRASS NIPPLE |
| 8 | 2" BLOW-OFF VALVE | FORD 2" BLA18-777-TA-NL OR EQUAL |
| 9 | METER BOX | MAG SPEC 320 CONCRETE METER BOX (25 3/4" x 18" x 12") |

LAKE HAVASU CITY

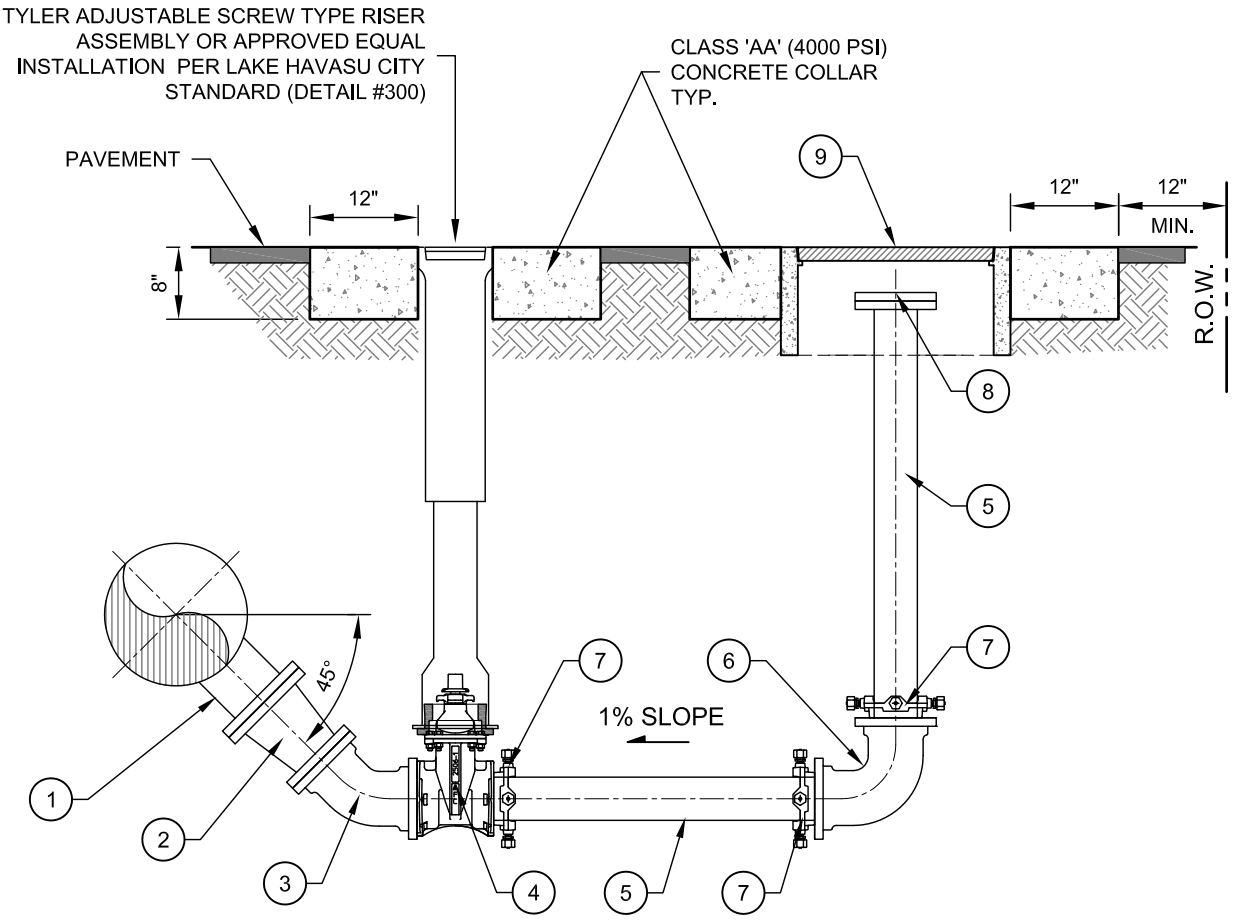
**Standard Details**

**Water Improvements**

**2" Blow-Off Assembly End of Line**

Scale: N.T.S.

Detail No. 314




| BLOW-OFF ASSEMBLY DETAIL TABLE | |
|---|---|
| ITEM NO. | SIZE AND DESCRIPTION |
| 1 | S"xS"x6" OR 4" DI FLANGED TEE |
| 2 | 6"x4" DI FLANGED REDUCER (NOT USED WITH S"xS"x4" TEE) |
| 3 | 4" 45° DI FLANGED ELBOW |
| 4 | 4" DI FLANGED x MECHANICAL JOINT GATE VALVE |
| 5 | 4" DI PIPE, FLANGE x MECHANICAL JOINT SPOOL, (LENGTH VARIES) |
| 6 | 4" 90° DI MECHANICAL JOINT ELBOW |
| 7 | 4" MECHANICAL JOINT EBAA MEGALUG KIT PER PLANS & SPECIFICATIONS OR APPROVED EQUAL |
| 8 | 4" DI BLIND FLANGE |
| 9 | CHRISTY MAG #2 (25 1/2"x17 3/4"x12") VALVE BOX OR APPROVED EQUAL. |

## NOTE:

1. S = SIZE IN INCHES
2. ALL DUCTILE IRON PIPE TO BE WRAPPED WITH 8 MIL POLY WRAP. PER SPECIFICATIONS.

LAKE HAVASU CITY

**Standard Details**

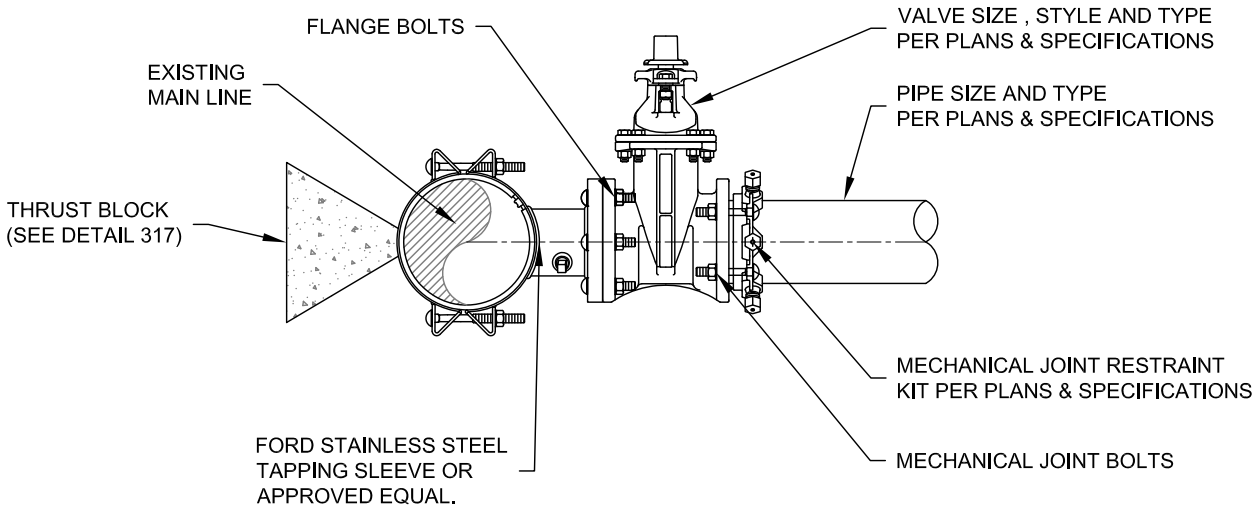
**Water Improvements**

**4" Blow-Off Assembly**

Scale: N.T.S.

Detail No.

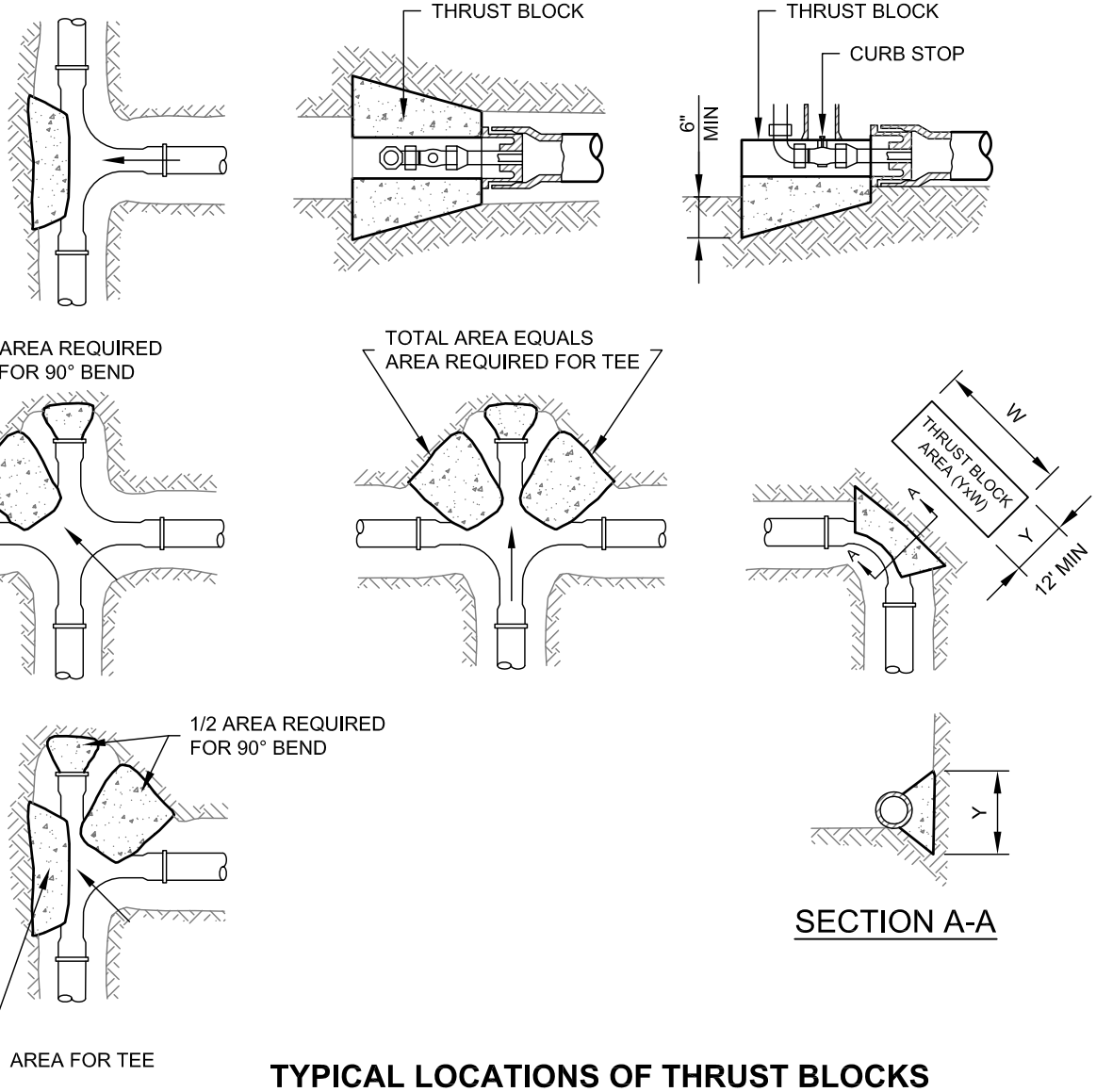
**315**




## NOTES:

1. **HOT TOP WITH LAKE HAVASU CITY ENGINEERING APPROVAL ONLY.**
2. INSTALL VALVE CAN PER LAKE HAVASU CITY STANDARD DETAIL #300
3. TAPPING SLEEVE AND VALVE SHALL BE INSPECTED AND PRESSURE TESTED BY LAKE HAVASU CITY WATER DIVISION.
4. HOT TAP SHALL BE DONE BY LAKE HAVASU CITY WATER DIVISION WITH AT LEAST 48 HOUR NOTICE.
5. UNIVERSAL COUPLINGS, TAPPING SLEEVE, GATE VALVES, DUCTILE IRON FITTINGS SHALL BE DOUBLE POLY WRAPPED AND TAPED PER LAKE HAVASU CITY STANDARDS SPECIFICATIONS.

| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details**<br>**Water Improvements** | **Hot Tap w/ Gate Valve** | Scale: N.T.S.<br>Detail No.<br>**316** |




# TYPICAL LOCATIONS OF THRUST BLOCKS

## NOTES:

1. TABLE IS BASED ON 2,000 P.S.I. TEST PRESSURE AND 3,000 LBS/SQ FT. SOIL. IF CONDITIONS ARE FOUND TO INDICATE SOIL BEARING IS LESS, THE AREAS SHALL BE INCREASED ACCORDINGLY.
2. AREAS FOR PIPES LARGER THAN 16" SHALL BE CALCULATED FOR EACH PROJECT.
3. FORM ALL NON-BEARING VERTICAL SURFACES.
4. THRUST BLOCKS ARE TO EXTEND TO UNDISTURBED GROUND. CONCRETE TO BE CLASS 'AA' 4000 PSI. FORM AS REQUIRED TO KEEP CLEAR OF JOINTS
5. ALL DI PIPE AND FITTINGS TO BE DOUBLE POLY WRAPPED BEFORE THRUST BLOCK INSTALLATION.

| MINIMUM TRUST BLOCK AREA REQUIRED (YxW) ( SQ. FT.) | | |
|---|---|---|
| PIPE SIZE | WATER PIPE | |
| | TEE, DEAD END, 90° BEND | 45° & 22 1/2" BENDS |
| 4" OR LESS | 3 | 3 |
| 6" | 4 | 3 |
| 8" | 6 | 3 |
| 10" | 10 | 5 |
| 12" | 14 | 7 |
| 16" | 24 | 12 |

LAKE HAVASU CITY

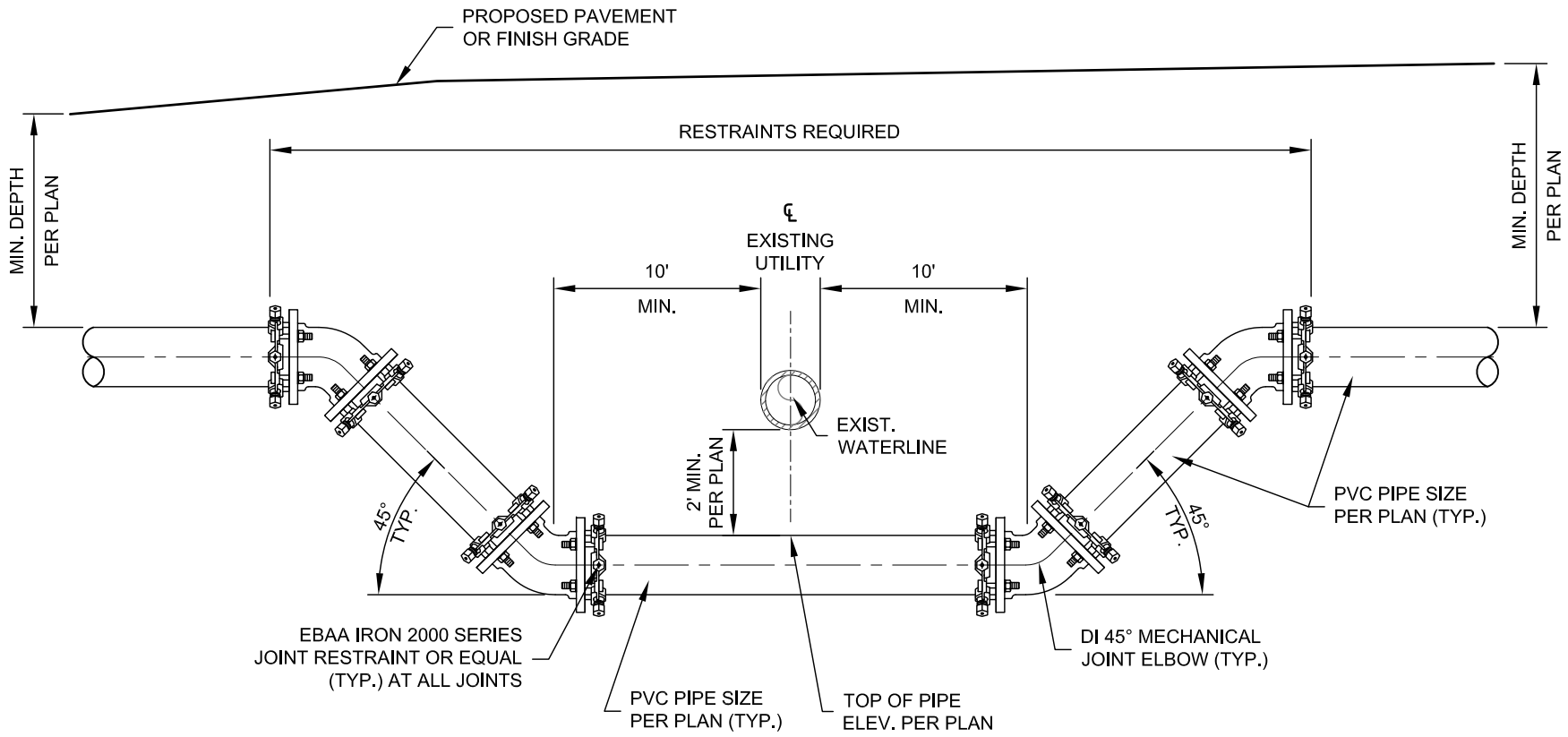
**Standard Details**

**Water Improvements**

**Thrust Blocks For Water Lines**

Scale: N.T.S.

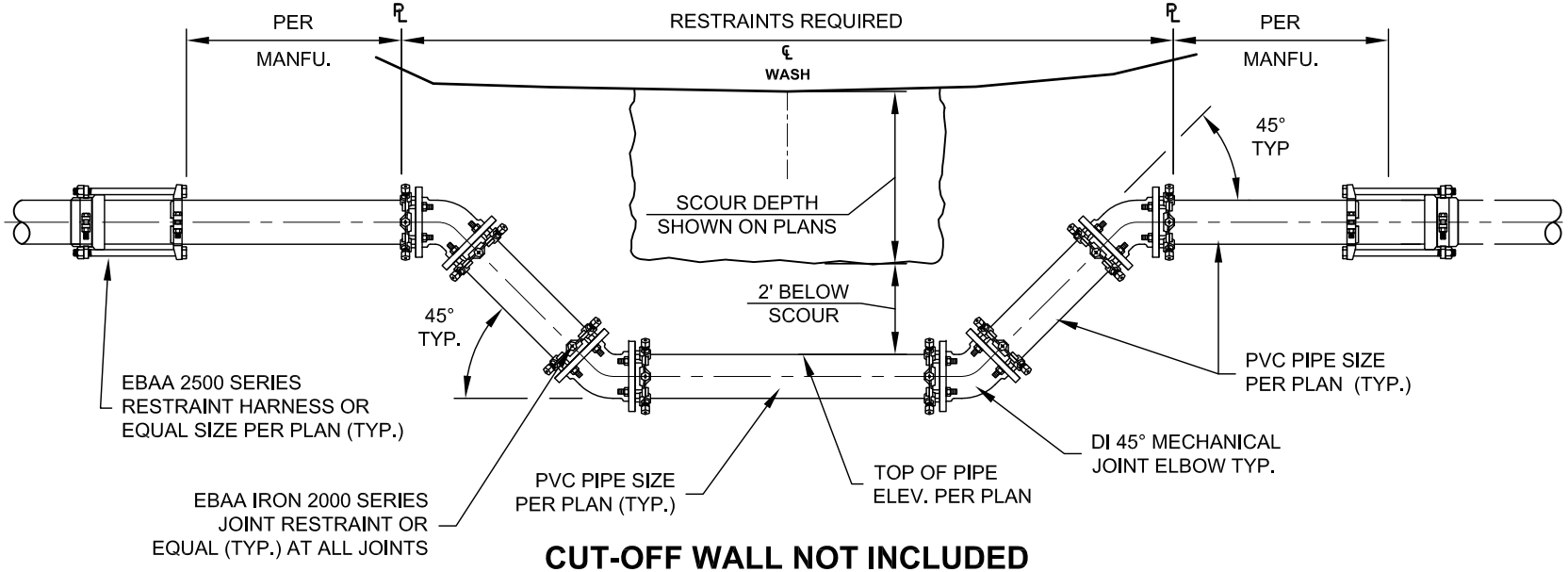
Detail No. 317



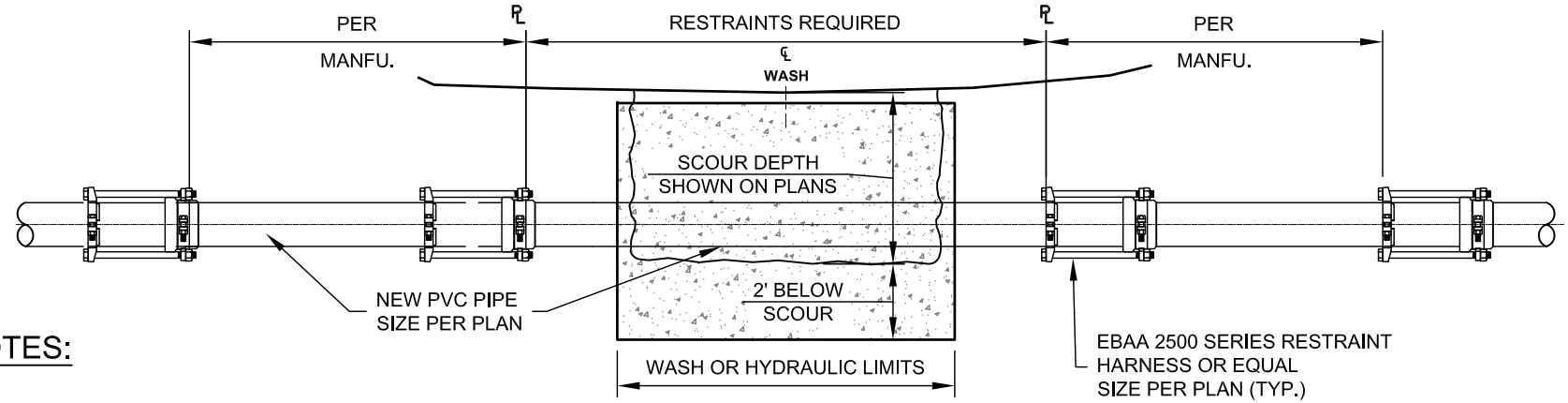

## NOTES:

1. CONTRACTOR SHALL FIELD VERIFY WATERLINE LOCATION.
2. ALL PIPE FITTINGS SHALL BE PVC, SIZE TO MATCH PLANS.
3. ALL PVC PIPE SHALL BE CONSTRUCTED WITH FLANGE RESTRAINTS.
4. ELBOWS ONLY REQUIRED IF SHOWN ON PLANS.
5. S = SIZE IN INCHES.

| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details**<br>**Water Improvements** | **Typical Drop Under Existing Waterline** | Scale: N.T.S.<br>Detail No.<br>**318** |




## CUT-OFF WALL NOT INCLUDED




## NOTES:

1. CONTRACTOR SHALL FIELD VERIFY SCOUR LOCATION.
2. ALL PIPE FITTINGS SHALL BE DUCTILE IRON, SIZE TO MATCH PLANS.
3. ALL DUCTILE IRON FITTINGS TO BE WRAPPED WITH 8 MIL POLY WRAP. PER SPECIFICATIONS.
4. ELBOWS ONLY REQUIRED IF SHOWN IN PLANS.

## CUT-OFF WALL INCLUDED

LAKE HAVASU CITY

**Standard Details**

**Water Improvements**

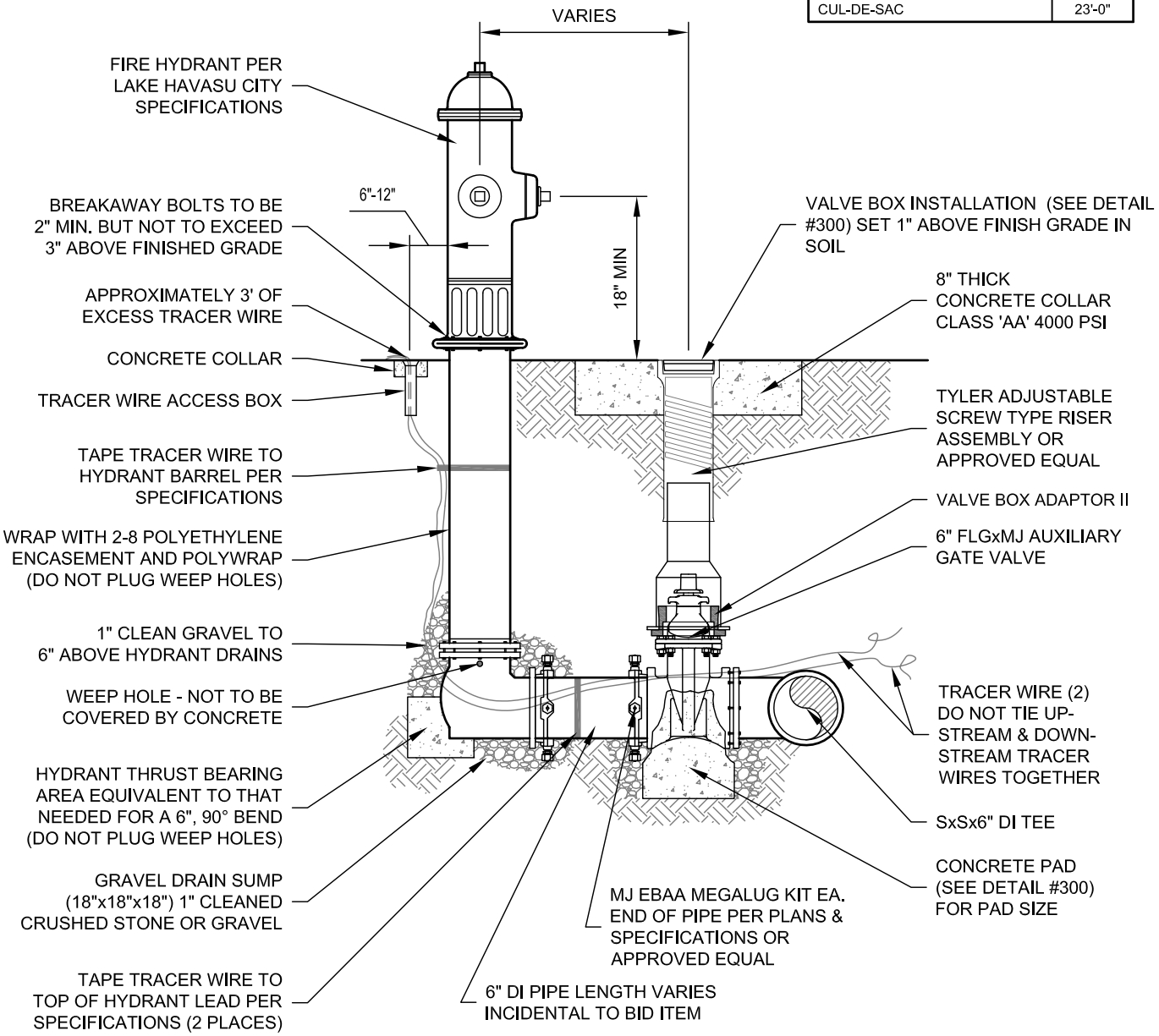
**Typical Wash Crossing**

Scale: N.T.S.

Detail No.

**319**

| STREET TYPE | 'D' |
|---|---|
| BOULEVARD | 34'-0" |
| AVENUE | 29'-0" |
| DRIVE | 28'-0" |
| CUL-DE-SAC | 23'-0" |




## NOTE:

1. THE CONTRACTOR SHALL VERIFY FIELD CONDITIONS PRIOR TO SUBMITTAL. APPROVAL SHALL BE OBTAINED PRIOR TO ORDERING OF PARTS. CONTRACTOR IS RESPONSIBLE FOR APPROPRIATE BARREL LENGTH TO ACCOMMODATE ANY CHANGE IN GRADE OR PIPE ELEVATION.
2. PUMPER CONNECTIONS TO FACE BUILDINGS OR STREET.
3. S = MAIN SIZE.

LAKE HAVASU CITY

**Standard Details**

**Water Improvements**

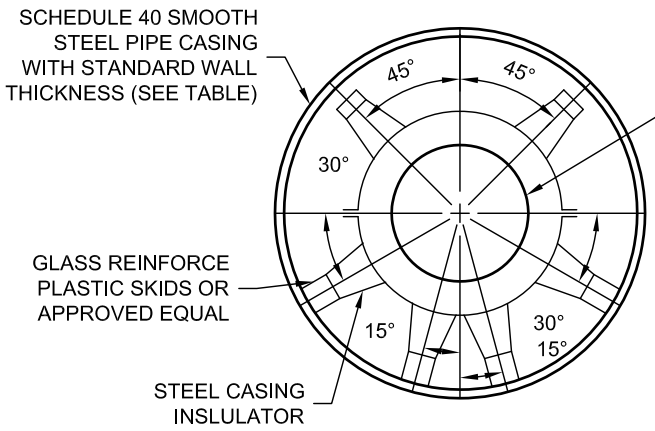
**6" Fire Hydrant**

Scale: N.T.S.

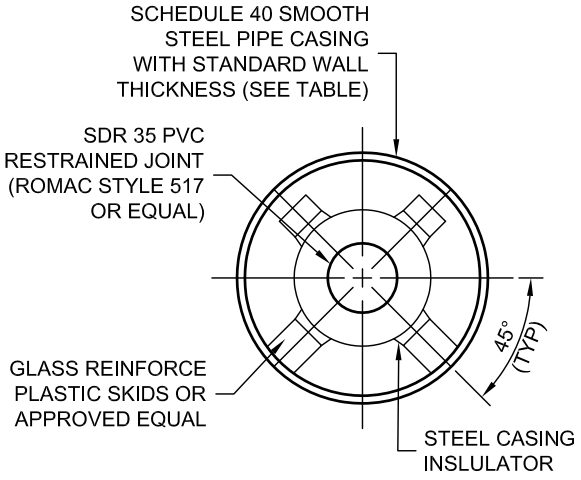
Detail No. **320**

LAKE HAVASU CITY

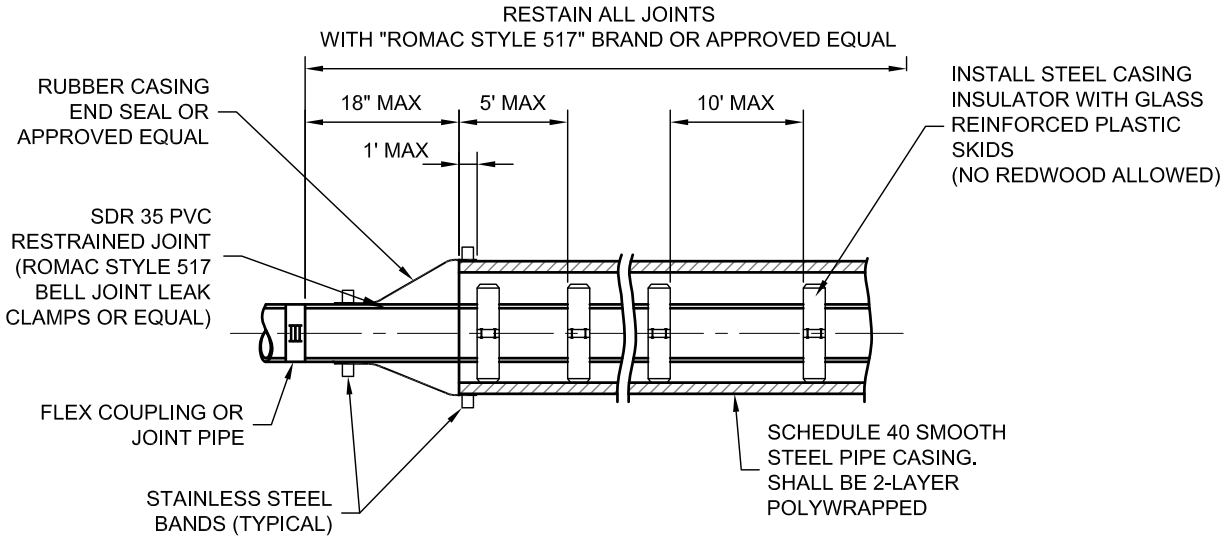
# WASTEWATER IMPROVEMENTS

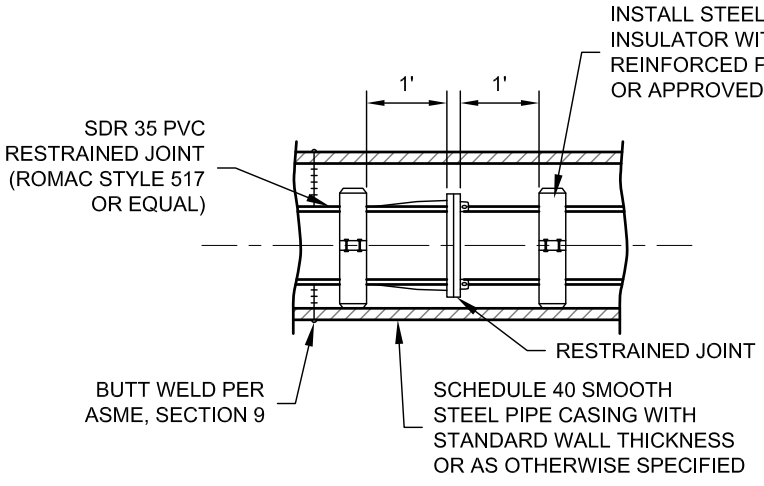



**CARRIER PIPE SIZES 15" THROUGH 24"**




**CARRIER PIPE SIZES 4" THROUGH 12"**




| MATERIAL | | |
|---|---|---|
| CARRIER PIPE SIZE (IN) | SCHEDULE 40 SMOOTH STEEL PIPE CASING | |
| | PIPE WALL THICKNESS (IN) | MIN. CASING SIZE (IN) |
| 6 | 3/16 | 16 |
| 8 | 1/4 | 20 |
| 10 | 1/4 | 54 |
| 12 | 9/32 | 54 |
| 15 | 9/32 | 28 |

LAKE HAVASU CITY

**Standard Details**

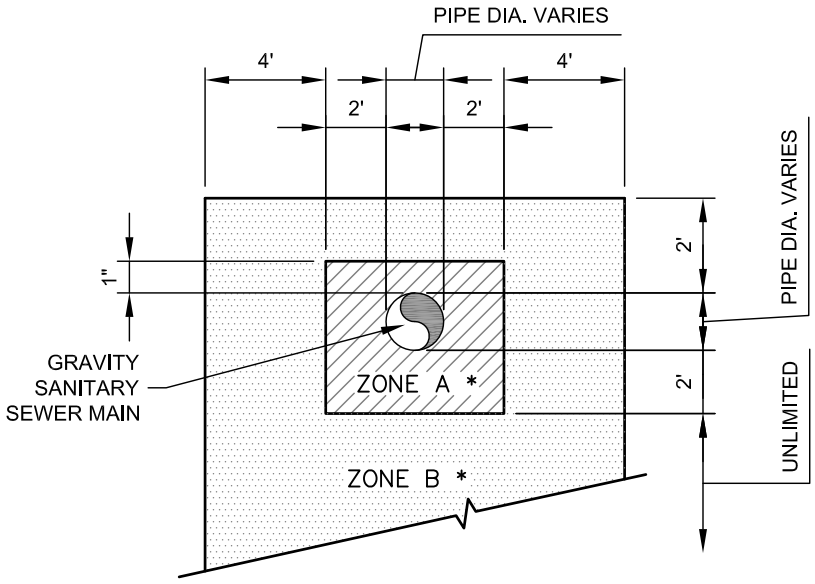
**Wastewater Improvements**

**Casing Pipe and End Seal**

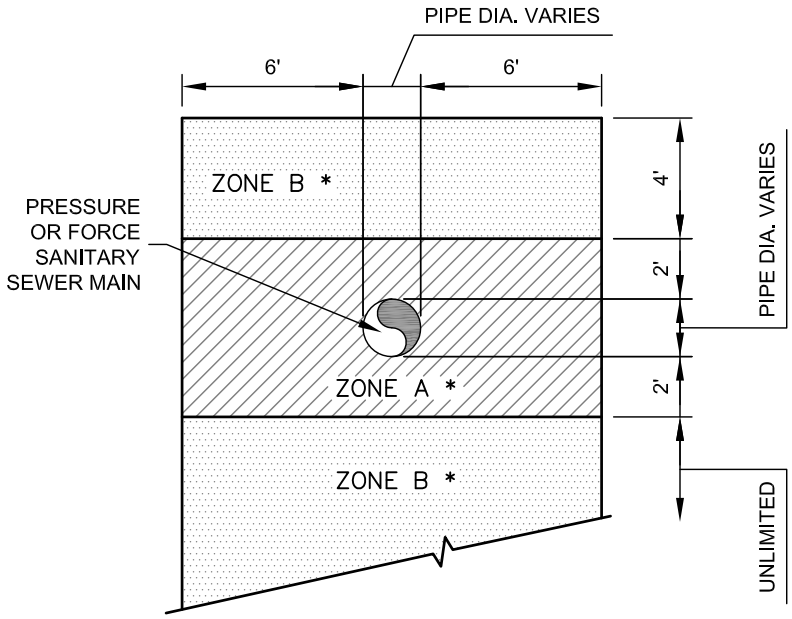
Scale: N.T.S.

Detail No.

**400**




## GRAVITY SANITARY SEWER MAIN




## PRESSURE OR FORCE SANITARY SEWER MAIN

| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details**<br>**Wastewater Improvements** | **Water/Sewer Zone Separation** | Scale: N.T.S.<br>Detail No.<br>**401A** |

## NOTES:

1. CONTRACTOR SHALL MAINTAIN SEPARATION DISTANCES OR PROVIDE OTHER EXTRA PROTECTION TO PROTECT WATER MAINS FROM CONTAMINATION BY SANITARY SEWER MAINS.

2. CRITERIA FOR SEPARATION AND/OR EXTRA PROTECTION APPLIES TO PARALLEL MAINS AS WELL AS CROSSINGS WITHIN ZONE B. (SEE DETAIL 401A)

3. SEE CROSS SECTION STANDARD DETAIL 401A FOR LIMITS OF SEPARATION/EXTRA PROTECTION. ALL DISTANCES ARE MEASURED PERPENDICULARLY FROM THE OUTSIDE OF THE PIPES.

   A. NO WATER MAINS SHALL FALL WITHIN ZONE A. (SEE DETAIL 401A)

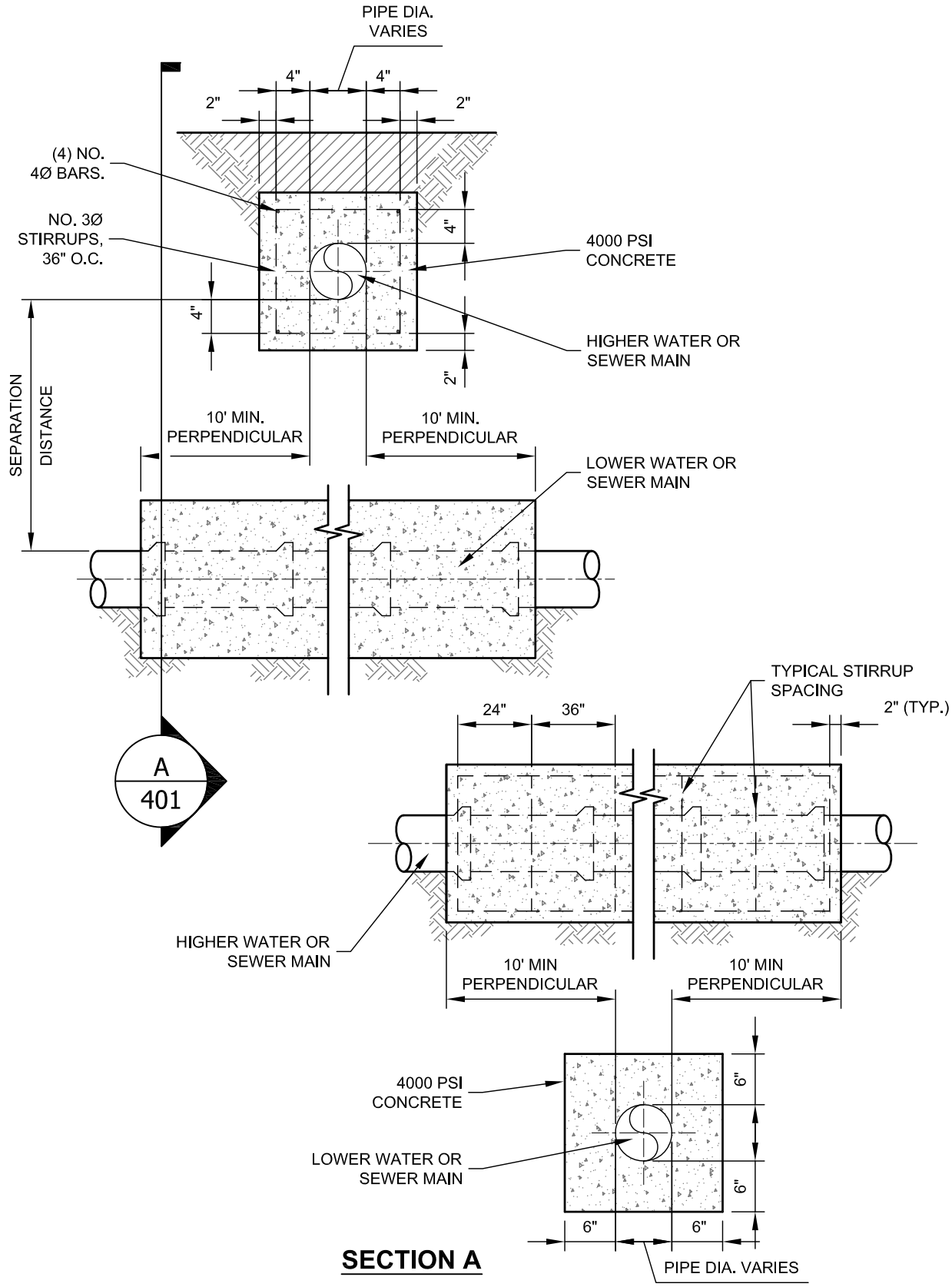
   B. EXTRA PROTECTION WILL BE REQUIRED WHEN THE WATER MAIN FALLS WITHIN ZONE B EXTRA PROTECTION SHALL CONSIST OF CONSTRUCTING THE SANITARY SEWER MAIN WITH MECHANICAL JOINT OR RESTRAINED JOINT DUCTILE IRON PIPE FOR A DISTANCE OF TEN FEET EITHER SIDE OF THE WATER MAIN. THE DUCTILE IRON PIPE SHALL COMPLY WITH THE AGENCY'S REQUIREMENTS FOR SEWER INSTALLATION. IN THE CASE OF A CROSSING, THE NUMBER OF JOINTS SHALL BE HELD TO A MINIMUM, WITH ONE FULL JOINT OF PIPE CENTERED OVER/UNDER THE OTHER. AN ALTERNATE PROTECTION MAY CONSIST OF ENCASING BOTH PIPES IN CONCRETE AS SHOWN IN STANDARD DETAIL 401A.

   C. NO ADDITIONAL PROTECTION WILL BE REQUIRED OUTSIDE ZONES A AND B. (SEE DETAIL 401A)

4. SEPARATION REQUIREMENTS FOR 4" OR 6" INDIVIDUAL SERVICE CONNECTIONS SHALL COMPLY WITH THE UNIFORM PLUMBING CODE.

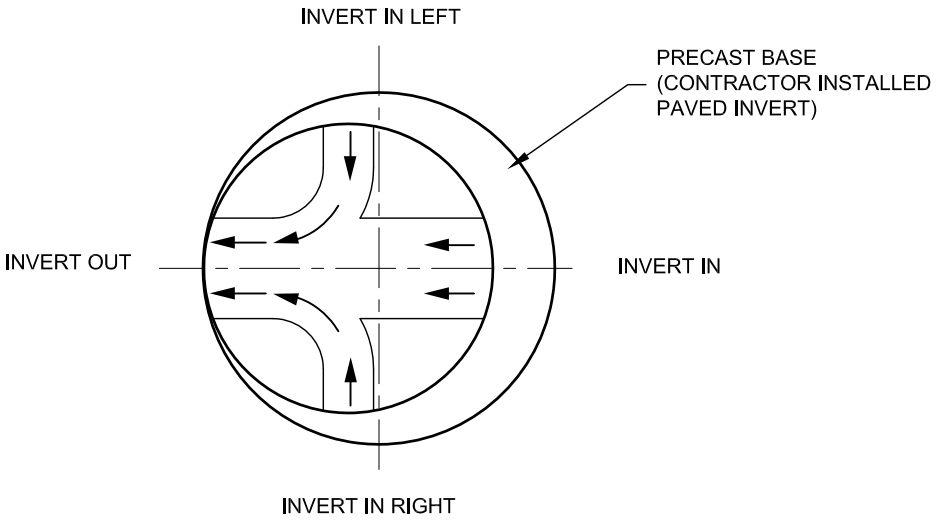
5. RECLAIMED WATER SHALL BE CONSIDERED AS POTABLE WATER WHEN PLACED NEXT TO A SANITARY SEWER AND CONSIDERED A SANITARY SEWER WHEN PLACED NEXT TO A POTABLE WATER MAIN UNLESS APPROVED IN WRITING BY THE CITY ENGINEER.

| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details**<br>**Wastewater Improvements** | **Water/Sewer Zone Separation Notes** | Scale: N.T.S.<br>Detail No.<br>**401B** |

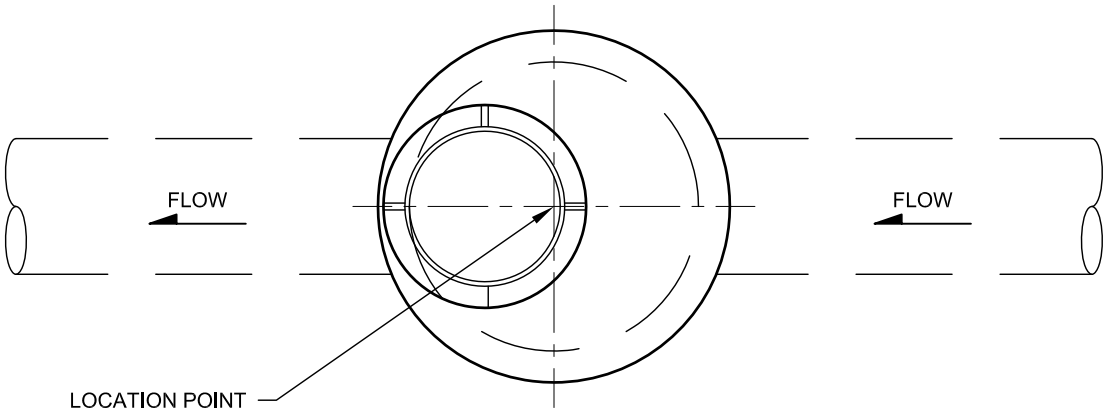



**SECTION A**

| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details**<br>**Wastewater Improvements** | **Water/Sewer Separation & Encasement for Pipe Crossing** | Scale: N.T.S.<br>Detail No.<br>**401C** |




**FLOW PLAN**

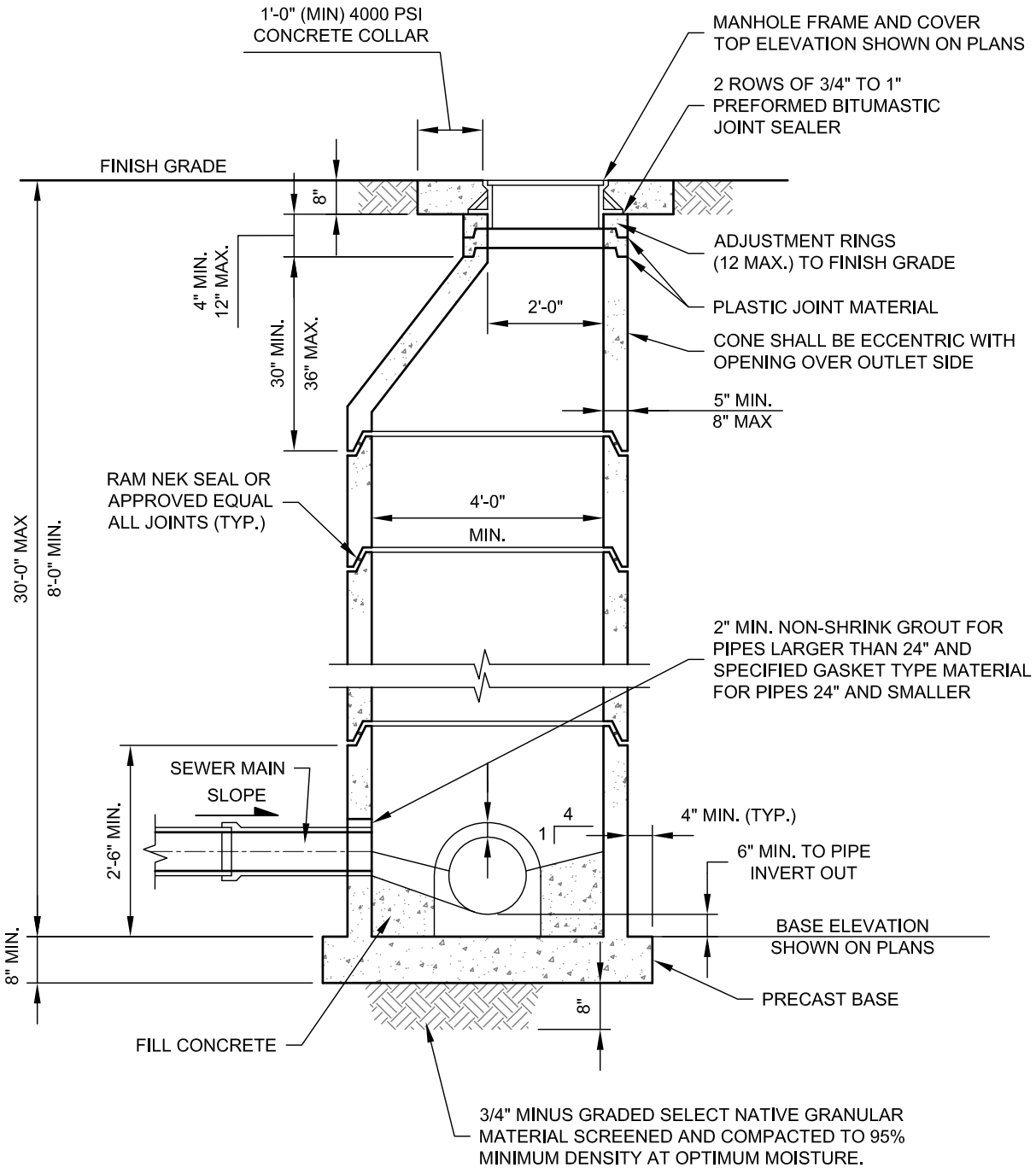



**PLAN VIEW**

## MANHOLE GENERAL NOTES:

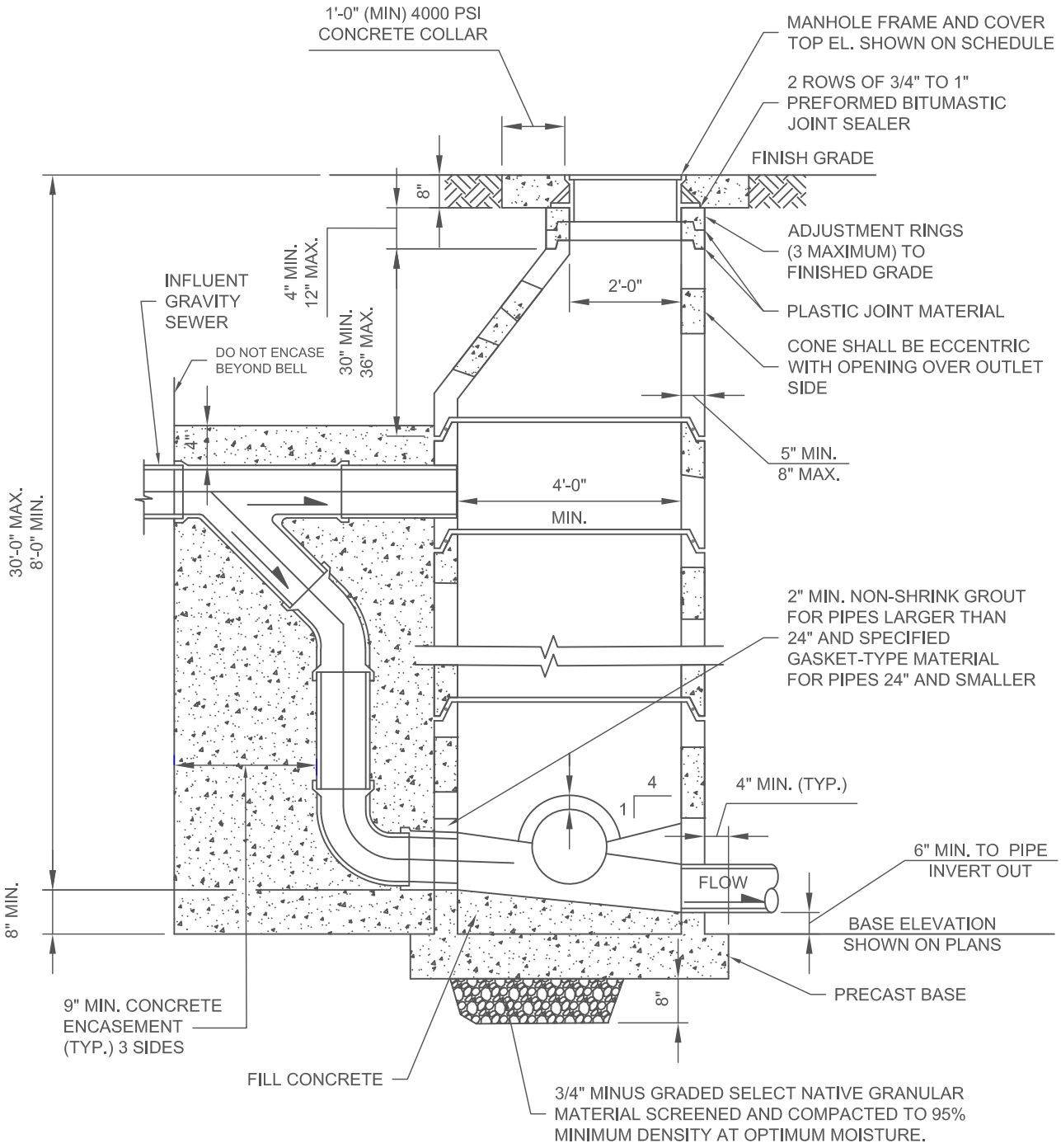
1. WATERSTOPS, RAM-NEK SEALS, OR AN APPROVED EQUAL SHALL BE USED ON ALL PIPE PENETRATIONS.
2. INTERIOR SURFACE OF THE MANHOLE SHALL BE SMOOTH, UNIFORM AND SELF-CLEANING. PRECAST CONCRETE MANHOLES SHALL HAVE AN INTERIOR COATING SYSTEM OF PPC AS MANUFACTURED BY POLYMORPHIC POLYMERS CORPORATION; LIFE LAST COATING SYSTEM, OR CITY APPROVED EQUAL AS LISTED.
   DROP MANHOLES,
   INTERCEPTORS.
   FIRST MANHOLES DOWNSTREAM OF A DROP MANHOLE.
   ANY MANHOLE WITH MORE THAN ONE INLET AND MORE THAN ONE OUTLET.
   ANY MANHOLE WHERE SEVERE CHANGES IN DIRECTION OCCUR, AS DEEMED NECESSARY BY CITY.
   FIRST MANHOLE DOWNSTREAM OF FORCE MAIN.
3. MINIMUM OF 0.2 FT DROP BETWEEN INVERTS SLOPE OR PIPE SLOPE SHALL MATCH WHICHEVER IS STEEPER.

| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details**<br>**Wastewater Improvements** | **Manhole Invert** | Scale: N.T.S.<br>Detail No.<br>**402** |



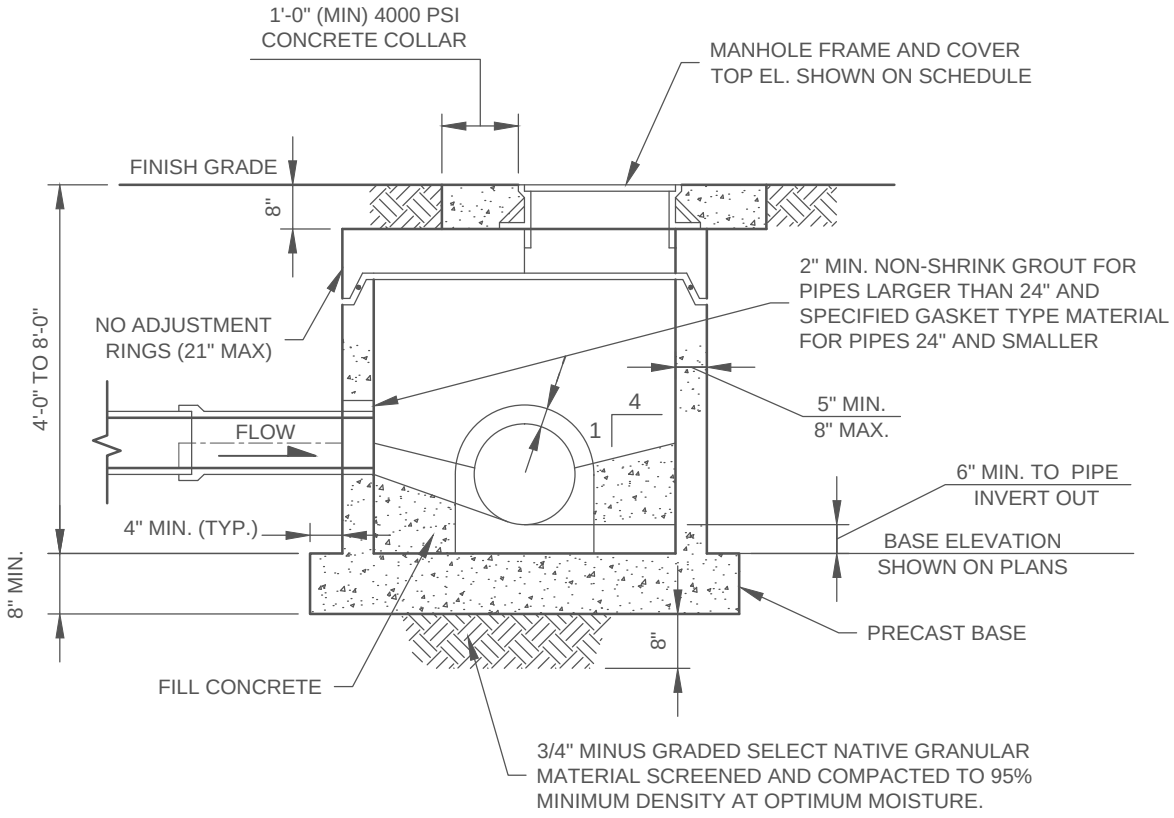

LAKE HAVASU CITY

| Standard Details | Precast Concrete Manhole | Scale: N.T.S. |
|---|---|---|
| Wastewater Improvements | | Detail No. 403 |



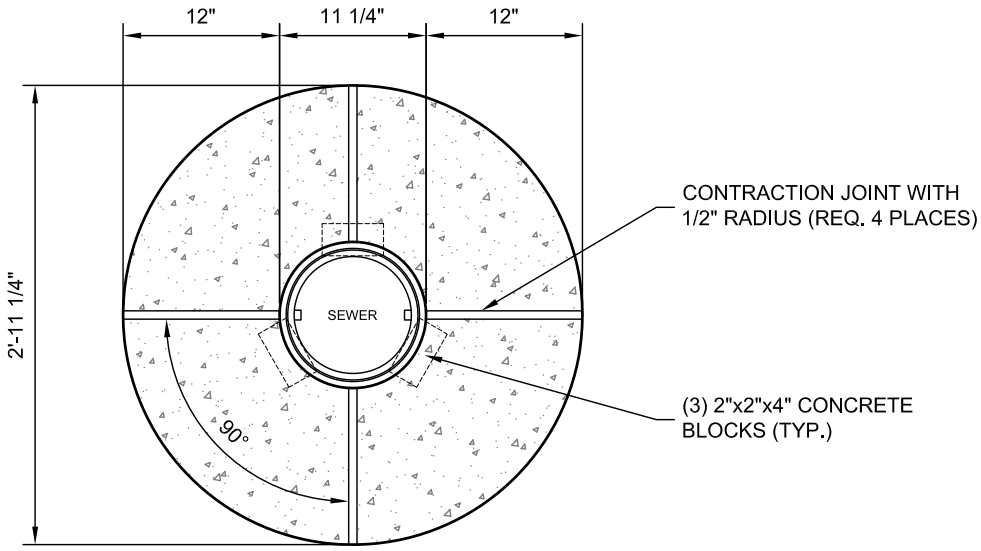

LAKE HAVASU CITY

| Standard Details | Outside Drop Manhole | Scale: N.T.S. |
|---|---|---|
| Wastewater Improvements | | Detail No. 404 |

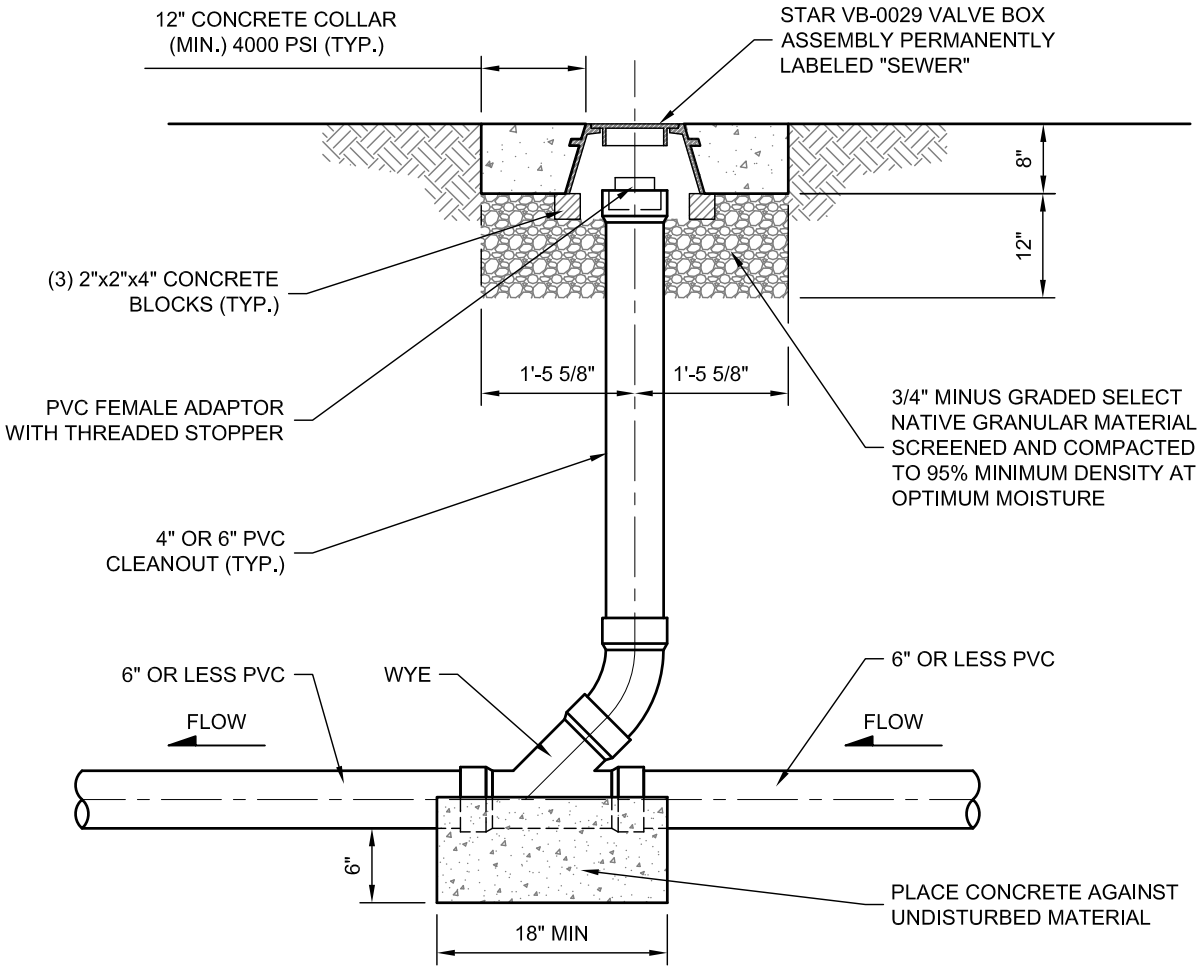



| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details**<br>**Wastewater Improvements** | **Shallow Precast Concrete Manhole** | Scale: N.T.S.<br>Detail No.<br>**405** |


| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details**<br>**Wastewater Improvements** | **Manhole Casting Cover** | Scale: N.T.S.<br>Detail No.<br>**406** |

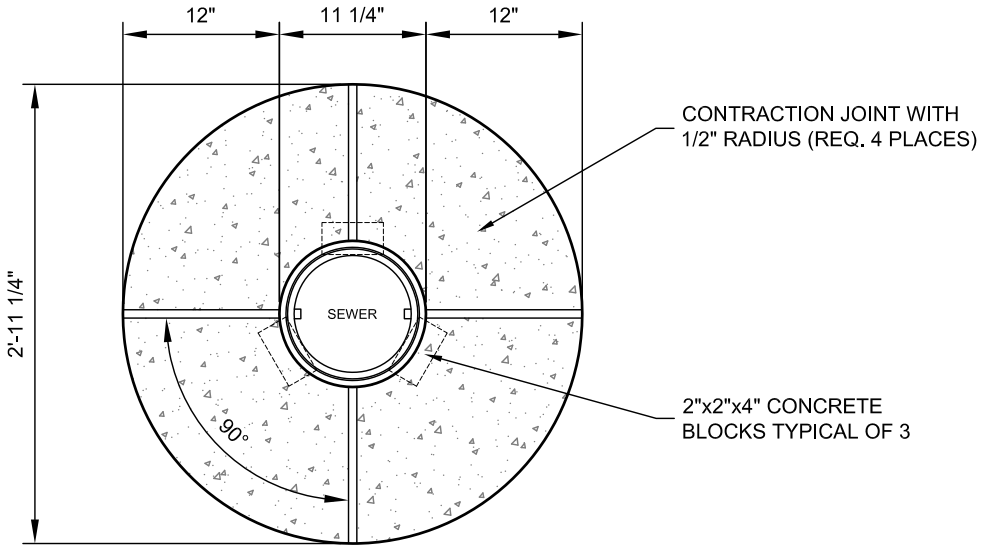



PLAN VIEW

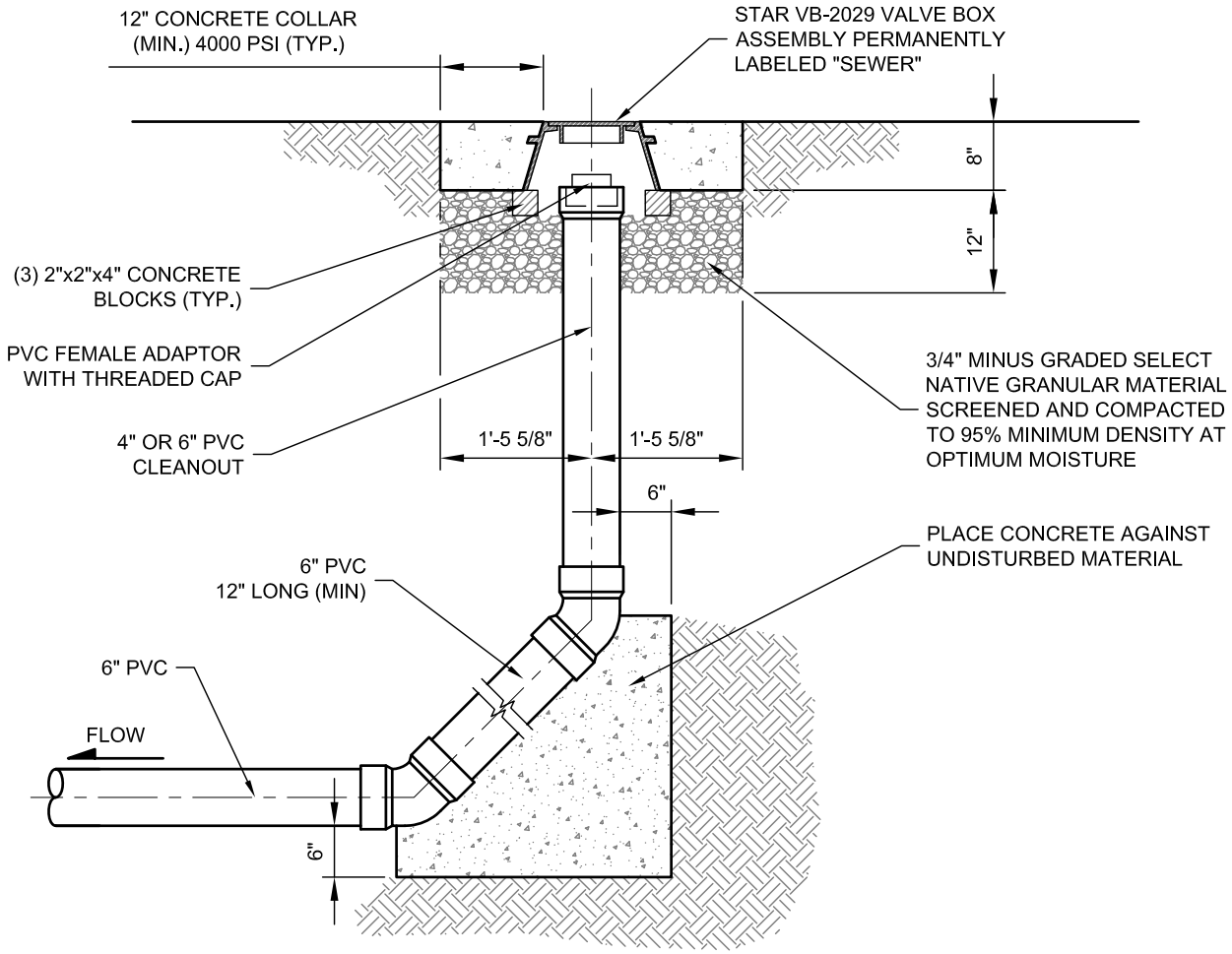



SECTION

| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details**<br>**Wastewater Improvements** | **Inline Cleanout** | Scale: N.T.S.<br>**Detail No.**<br>**407** |

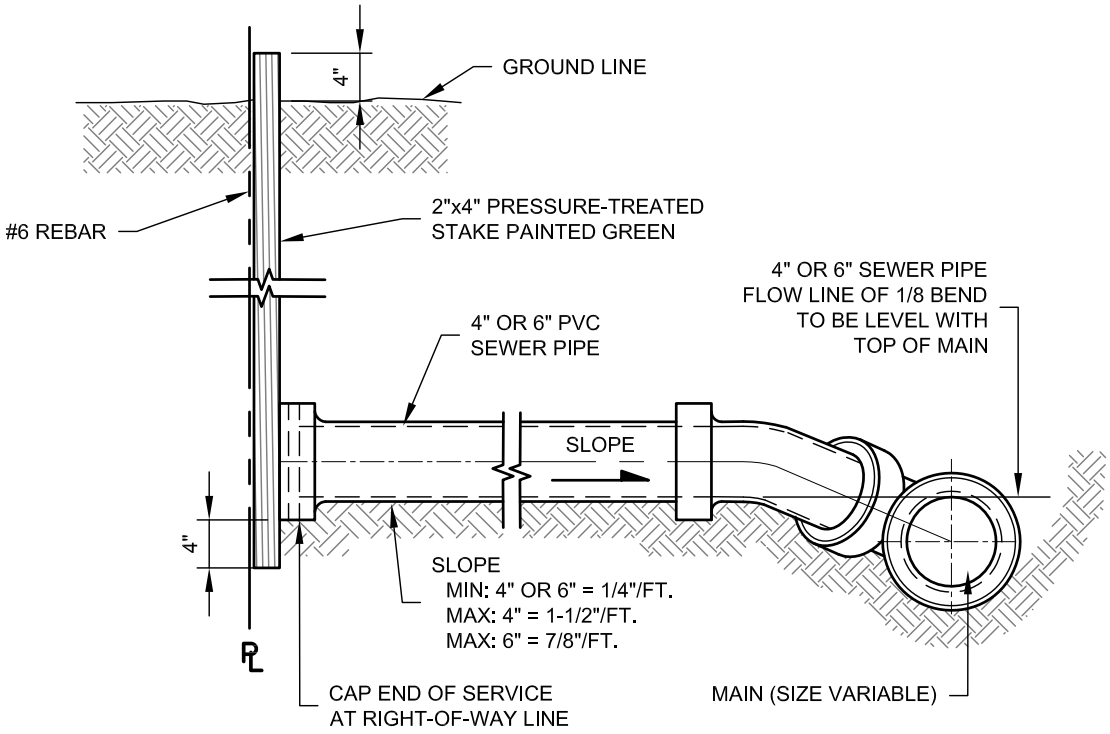



PLAN VIEW

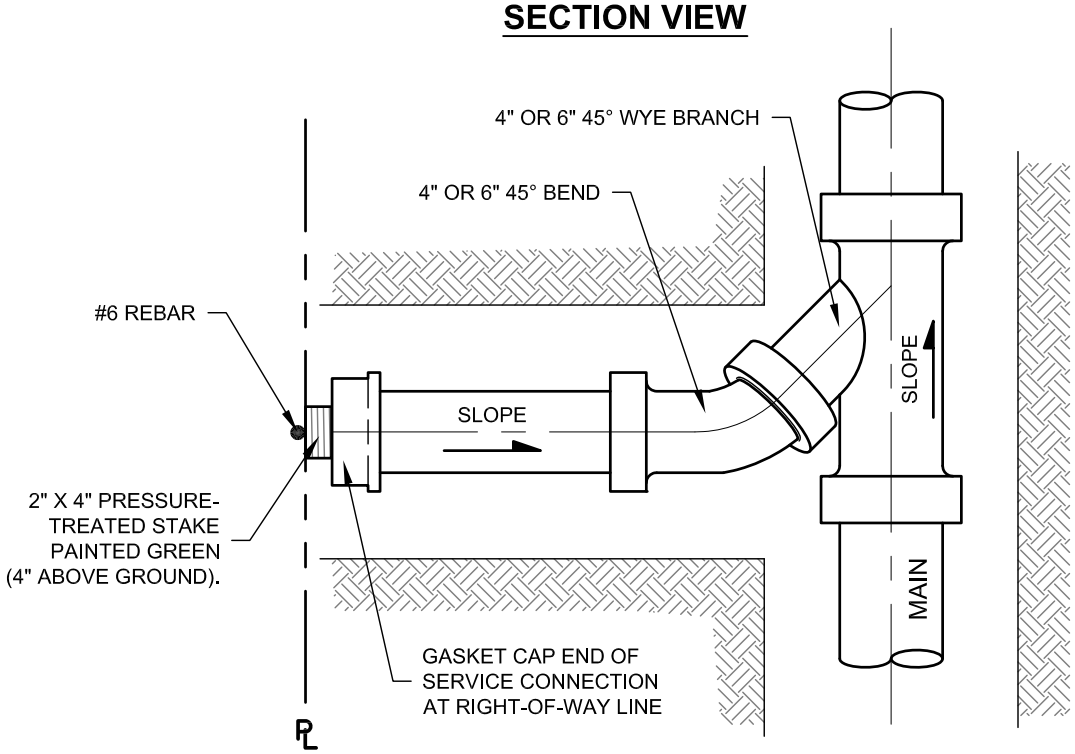



SECTION

| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details**<br>**Wastewater Improvements** | **Typical End of Main Cleanout** | Scale: N.T.S.<br>Detail No.<br>**408** |



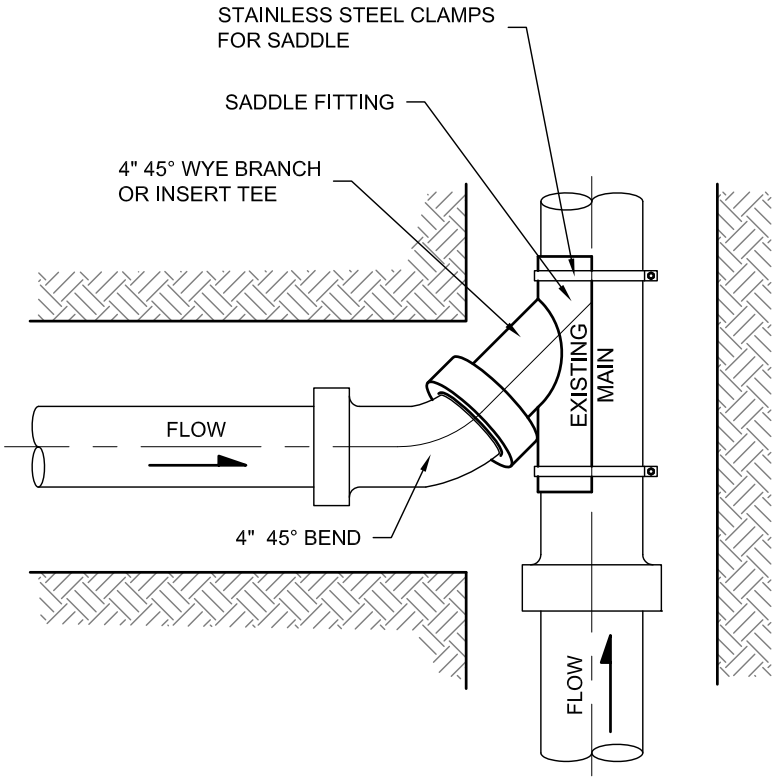

## SECTION VIEW




## PLAN VIEW

NOTE: USE FOR CONNECTION TO NEW SEWERS

| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details**<br>**Wastewater Improvements** | **Sewer Service Connection Vacant Lot** | Scale: N.T.S.<br>Detail No.<br>**409** |



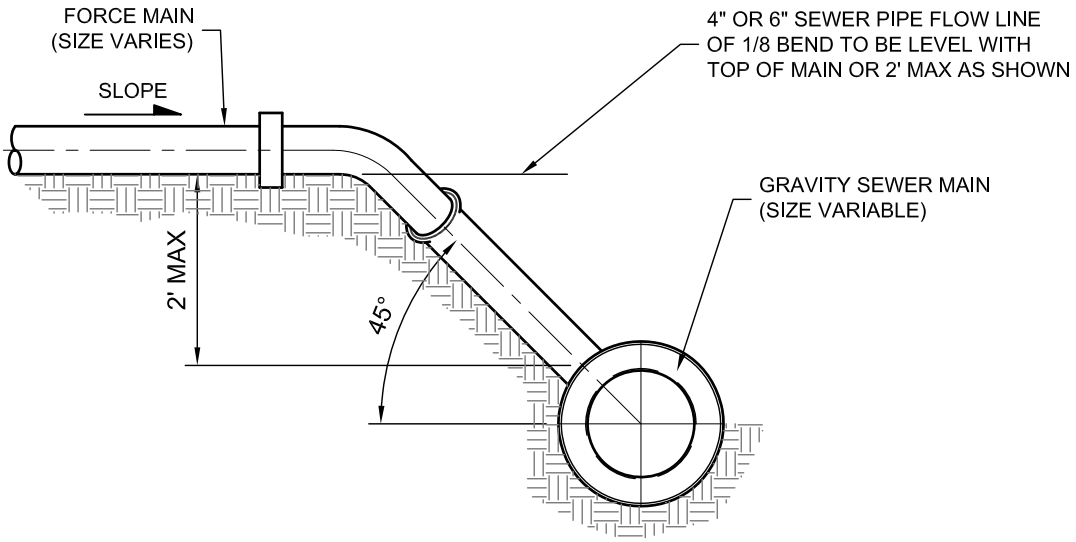

NOTE:

USE ONLY FOR SERVICES CONNECTING TO EXISTING SEWERS.

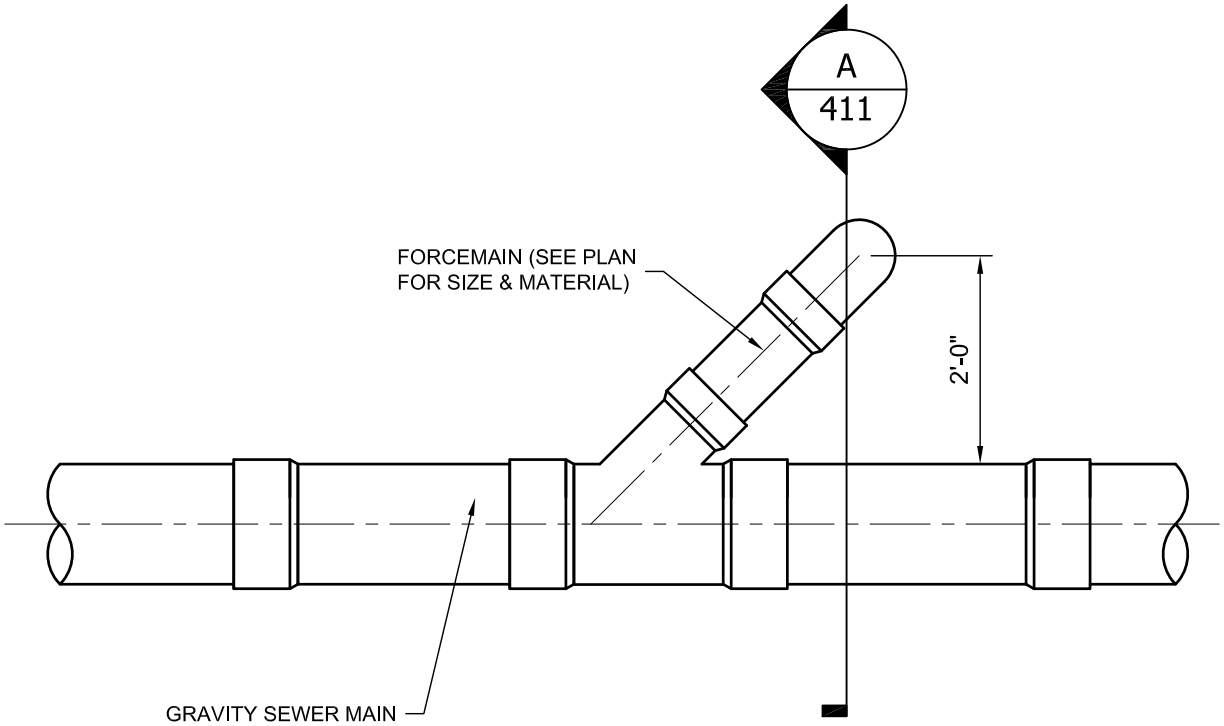
SERVICE LINE CONNECTION NOTES:

1. CONSTRUCTION DETAIL APPLIES WHERE CONTRACTOR BUILDS HOUSE CONNECTION. TAP EXTENDS TO PROPERTY LINE IN ALLEYS OR STREETS OR TO EASEMENT LINE.
2. SIZE OF SERVICE LINE SHALL BE 4" UNLESS INDICATED OTHERWISE ON PLANS.
3. CONSTRUCT SERVICE LINE AT MINIMUM SLOPE OF 1/4" PER FOOT.
4. FOR DEEPER LATERAL OR TRUNK SEWER CONDITION, THE WYE AND 1/8 BEND OR THE TEE AND 1/16 BEND SHALL BE ROTATED TOWARD THE VERTICAL POSITION AS REQUIRED TO OBTAIN 5'-0" COVER AT PROPERTY LINE OR EASEMENT LINE.
5. END OF SERVICE LINE TO BE CAPPED WITH GASKET CAP AND MARKED WITH 2" X 4" PRESSURE-TREATED STAKE PAINTED GREEN.
6. ROTATE WYE AND 45° ELBOW TO ALIGN FOR CONNECTION

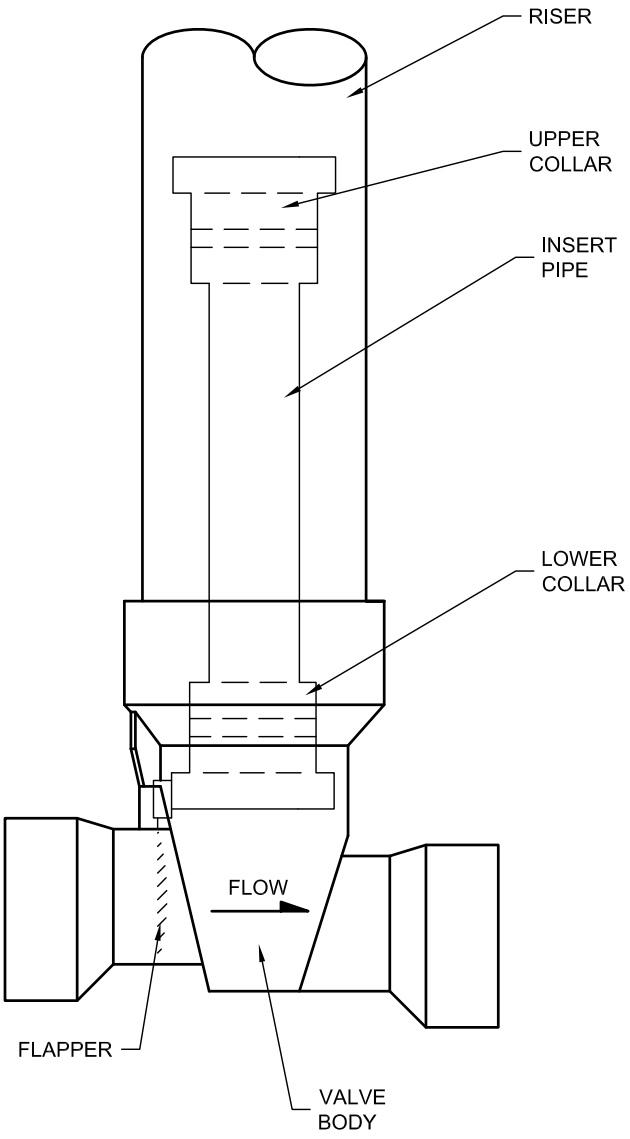
| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details**<br>**Wastewater Improvements** | **Sewer Service Connection to Existing Sewer** | Scale: N.T.S.<br>Detail No.<br>**410** |




## SECTION A



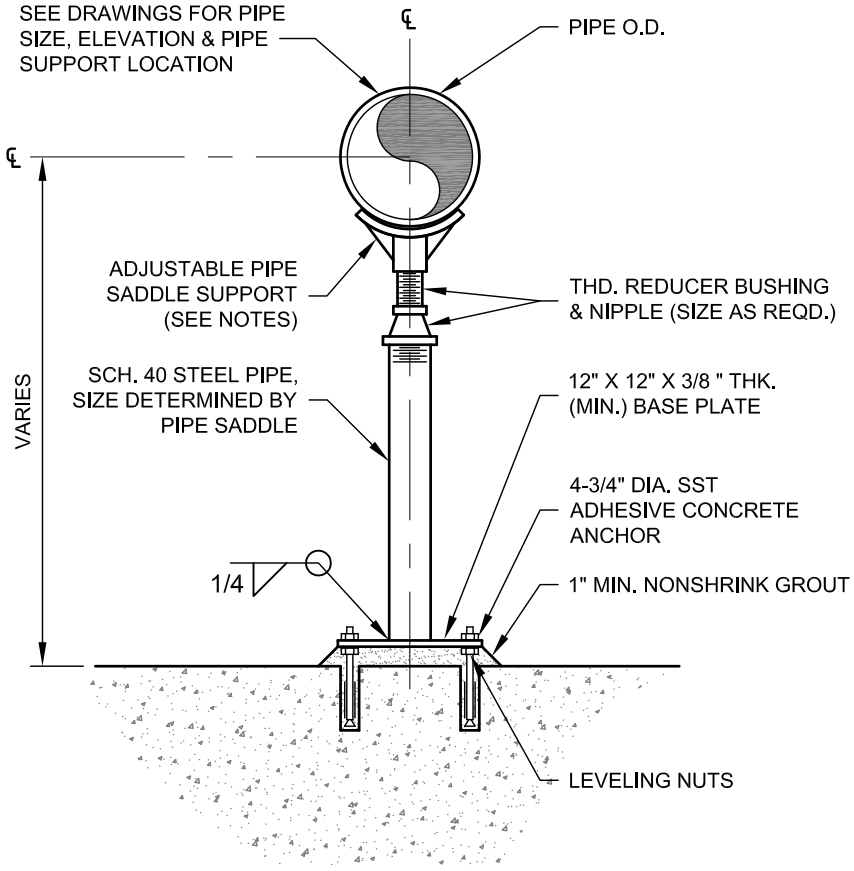

| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details**<br>**Wastewater Improvements** | **Force Main Connection** | Scale: N.T.S.<br>Detail No.<br>**411** |




## CONSTRUCTION NOTES:

1. CONTRACTOR SHALL INSTALL NEW PVC BACKWATER VALVE PER DETAIL AT A MAXIMUM SLOPE OF 1/4" PER FOOT. THE BACKWATER VALVE LOCATION MAY BE ADJUSTED TO ENSURE MAXIMUM SLOPE IS NOT EXCEEDED.
2. CONTRACTOR SHALL INSTALL 4" PVC CLEAN CHECK EXTENDABLE BACKWATER VALVE OR EQUAL.

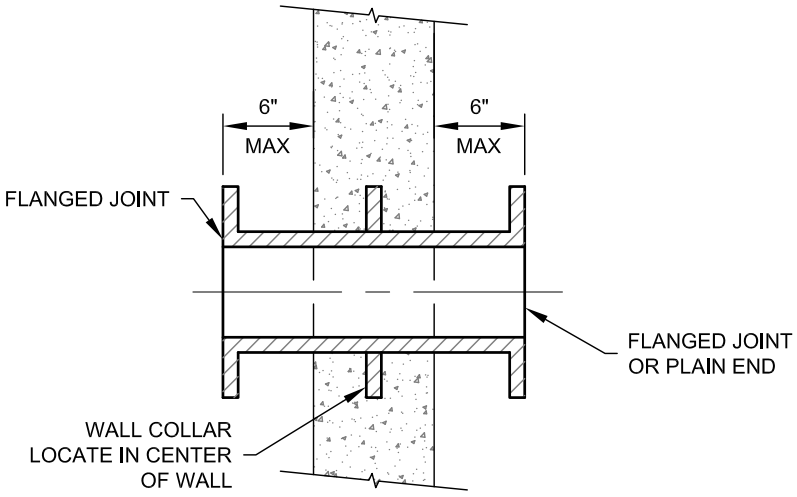
| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details**<br>**Wastewater Improvements** | **Backwater Valve** | Scale: N.T.S.<br>**Detail No.**<br>**412** |



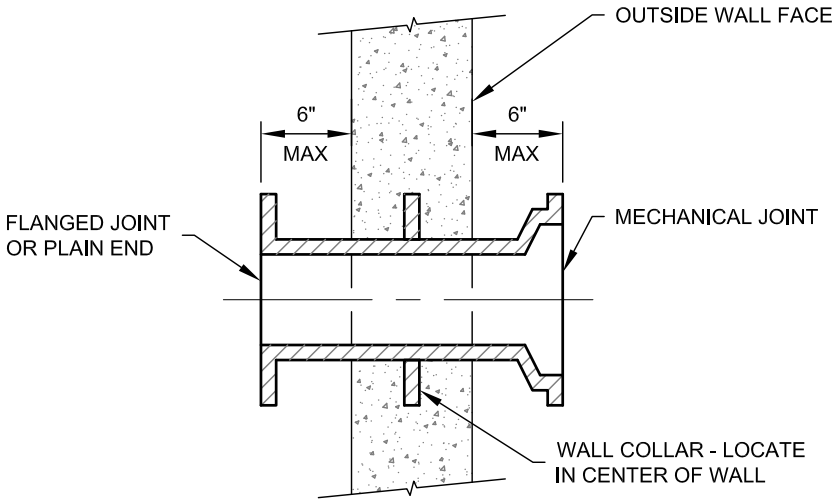

## NOTES:

1. WHERE PIPE SUPPORT IS INDICATED, LOCATED UNDER VALVE, PROVIDE ADJUSTABLE PLATE SUPPORT IN LIEU OF SADDLE SUPPORT.
2. COAT PIPE SYSTEM AS SPECIFIED.

| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details**<br>**Wastewater Improvements** | **Pipe Support Saddle** | Scale: N.T.S.<br>Detail No.<br>**413** |




## INTERIOR WALL

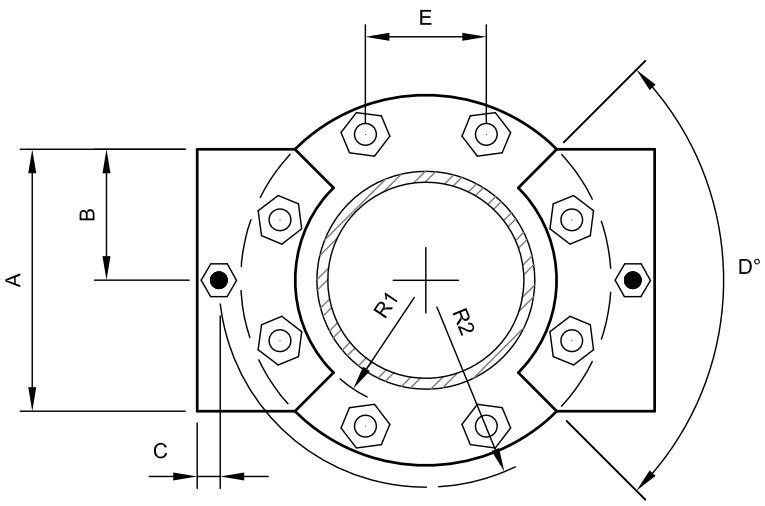



## EXTERIOR WALL

## NOTES:

1. UNLESS OTHERWISE NOTED, WALL PIPE MATERIALS SHALL BE THE SAME SIZE AS PIPING SYSTEM DESIGN.

| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details**<br>**Wastewater Improvements** | **Typical Wall Pipe** | Scale: N.T.S.<br>Detail No.<br>**414** |




| PIPE DIA. | PLATE THICKNESS | A | B | C | D° | E | R1 | R2 | NO. OF TIE RODS REQUIRED | (A-36) DIA. OF THE RODS | TEST PRESSURE PSI |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4" | .375" | 6.5" | 3.25" | .75" | 92.50 | 2.87" | 2.875" | 5.1875" | 2 | .375" | 200 |
| 6" | .375" | 8.0" | 4.00" | .75" | 93.33 | 3.64" | 3.875" | 6.1875" | 2 | .50" | 200 |
| 8" | .375" | 9.5" | 4.75" | .75" | 89.50 | 4.49" | 4.875" | 7.4375" | 2 | .75" | 200 |

## NOTE:

DIMENSIONS INDICATED IN TABLE ARE IN INCHES EXCEPT FOR COLUMN D, WHICH INDICATES DEGREES.

LAKE HAVASU CITY

**Standard Details**

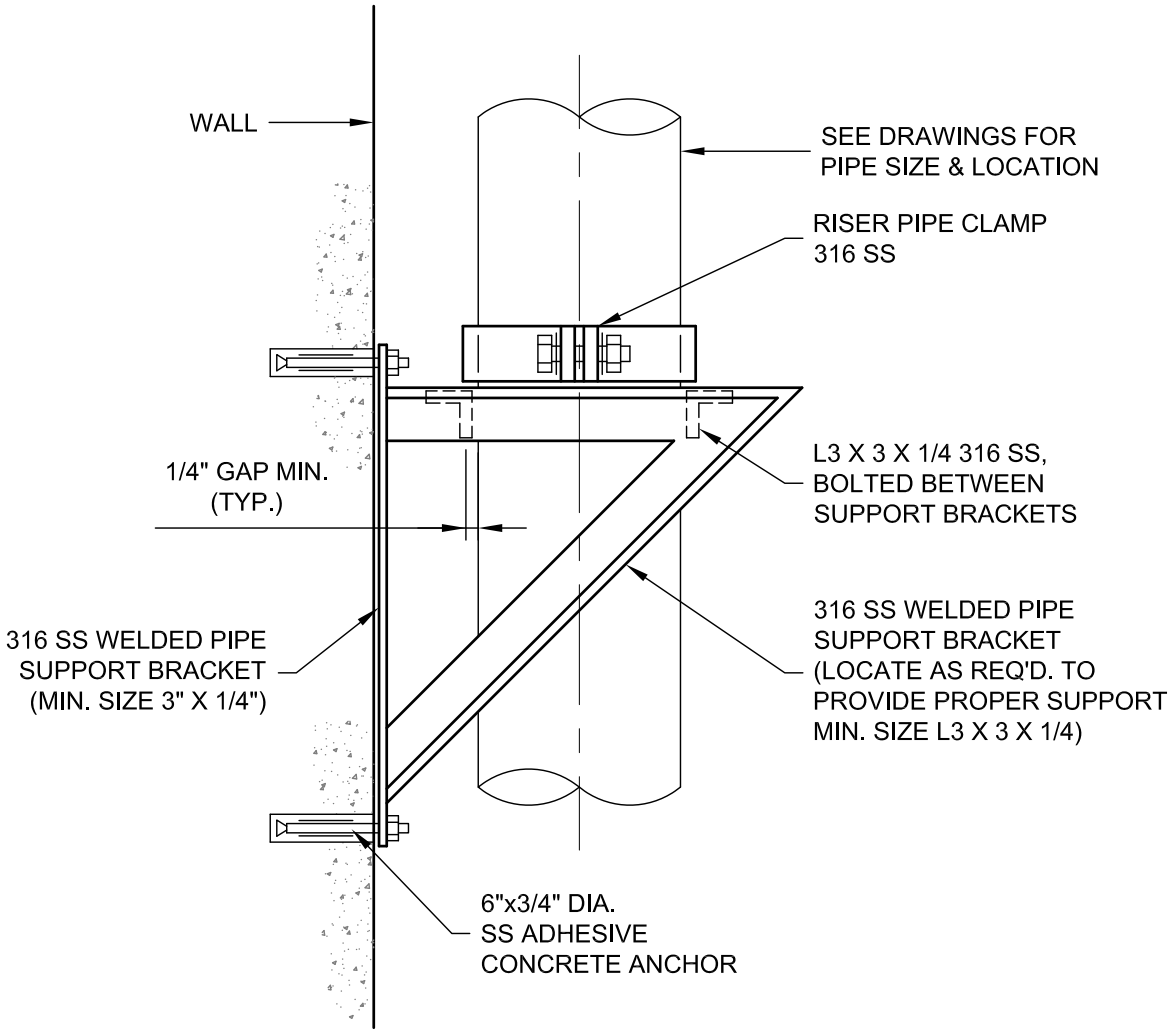
**Wastewater Improvements**

**Harnessed Sleeve Coupling Tied-Rod**

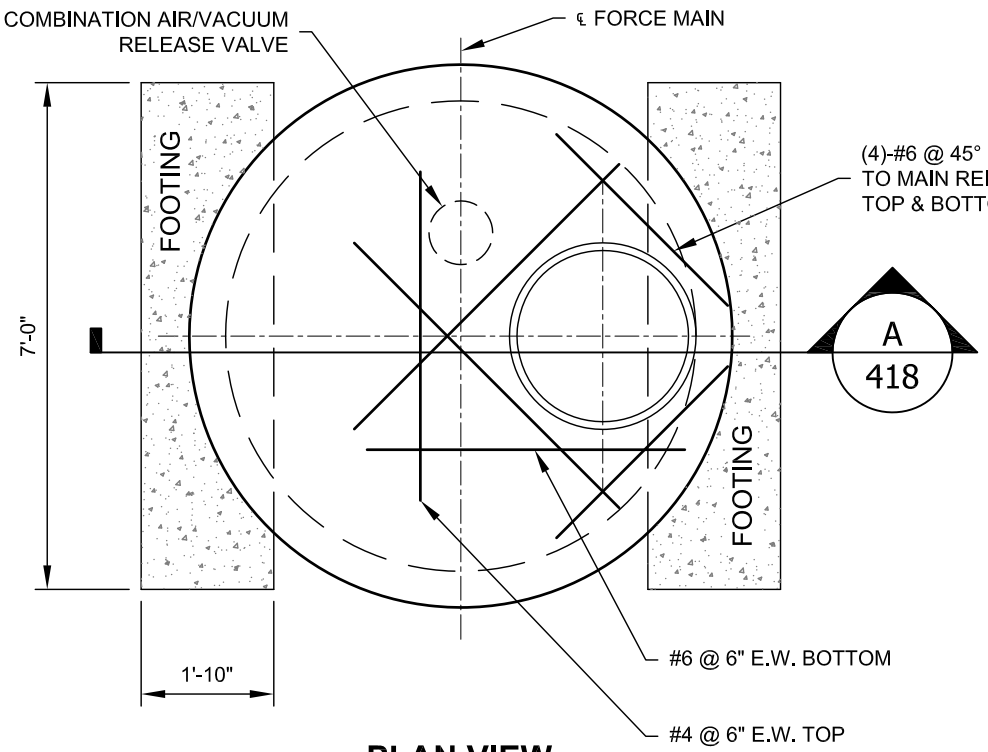
Scale: N.T.S.

Detail No.

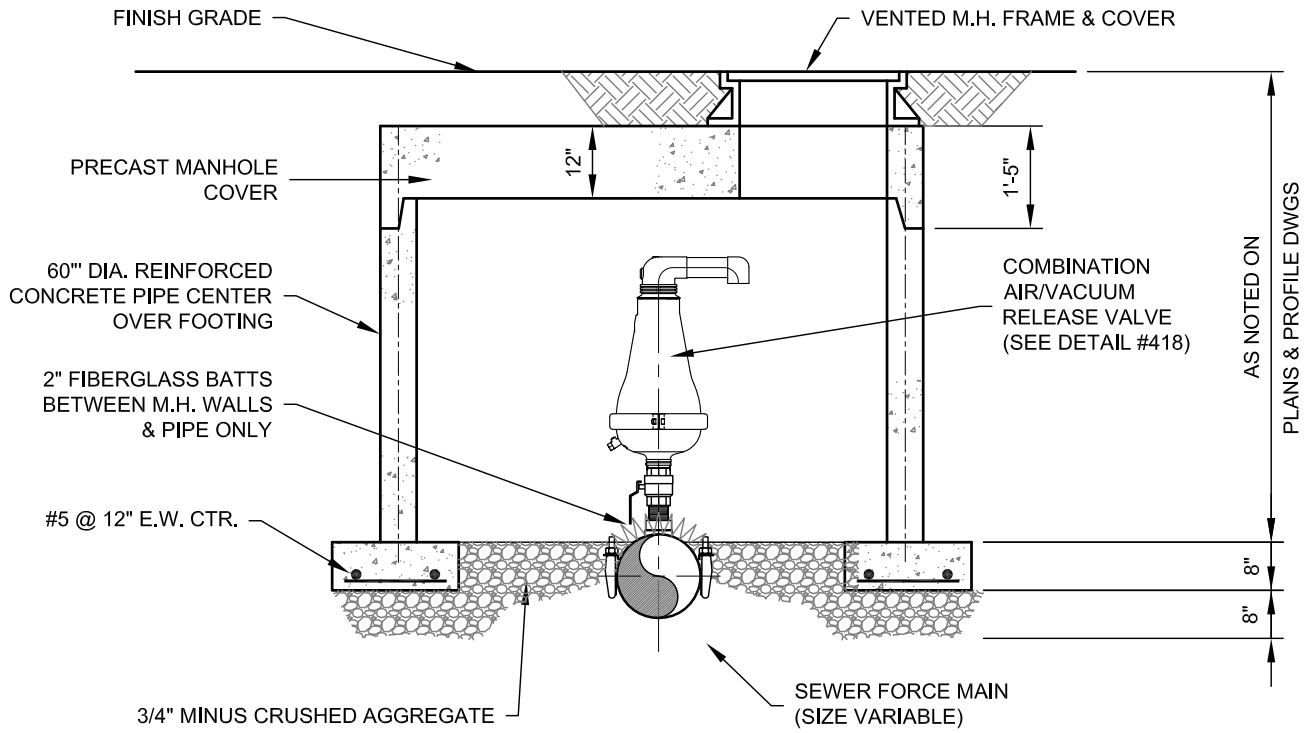
**415**




| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details**<br>**Wastewater Improvements** | **Wall Pipe Support** | Scale: N.T.S.<br>Detail No.<br>**416** |

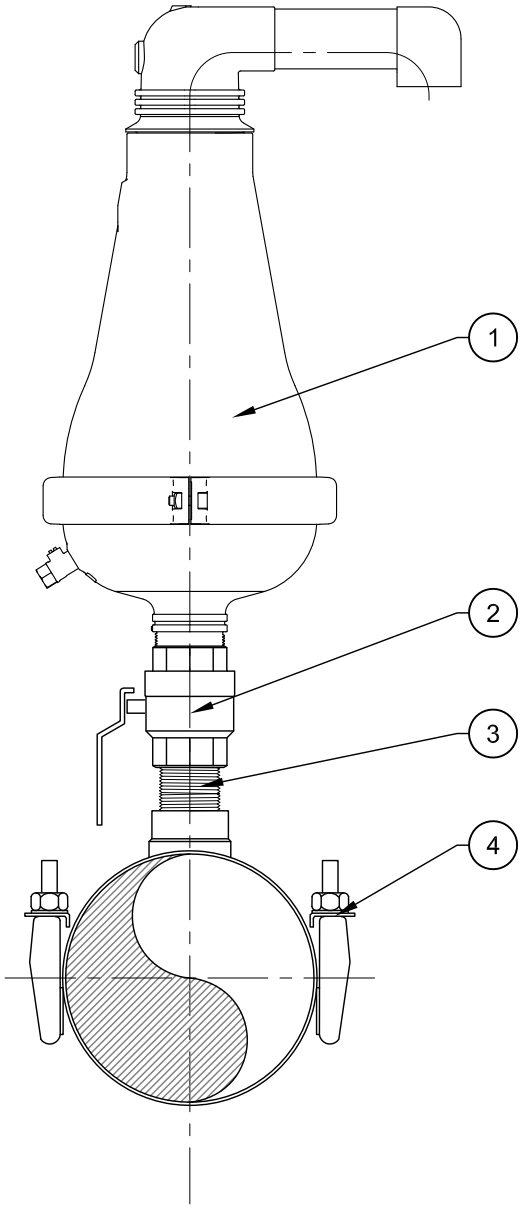



## PLAN VIEW




## SECTION A

| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details**<br>**Wastewater Improvements** | **Combination Air/Vaccum Sewer Release Valve Manhole** | Scale: N.T.S.<br>Detail No.<br>**417** |




| COMBINATION AIR/VACCUM VALVE DETAIL TABLE | | |
|---|---|---|
| ITEM NO. | SIZE AND DESCRIPTION | MATERIAL SPECIFICATIONS |
| (1) | COMBINATION AIR/VACCUM VALVE | A.R.I. D-025 OR ENGINEERED APPROVED EQUAL. |
| (2) | 2" BALL VALVE | 2" 316 STAINLESS STEEL THREADED BALL VALVE. |
| (3) | 2" NIPPLE | 2" 316 STAINLESS STEEL NIPPLE. USE TEFLON TAPE. |
| (4) | 2" x MAIN SIZE SADDLE | FORD FS323-***-IP7 STAINLESS STEEL SADDLE OR ENGINEER APPROVED EQUAL. DIP PIPE MAIN TO BE TAPPED AND THREADED. |

LAKE HAVASU CITY

**Standard Details**

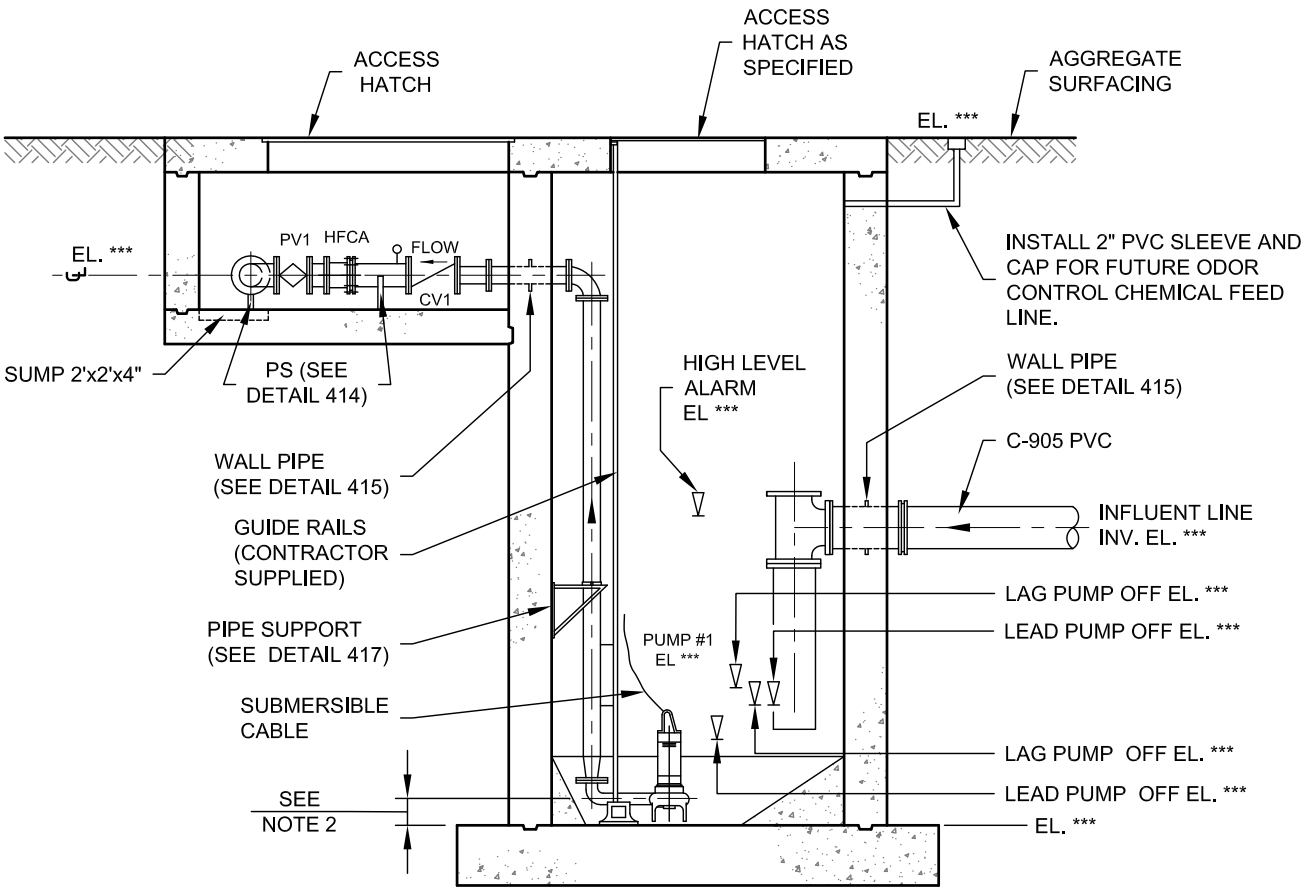
**Wastewater Improvements**

**Combination Air/Vaccum Sewer Release Valve**

Scale: N.T.S.

Detail No.

**418**




## SECTION A

## NOTES:

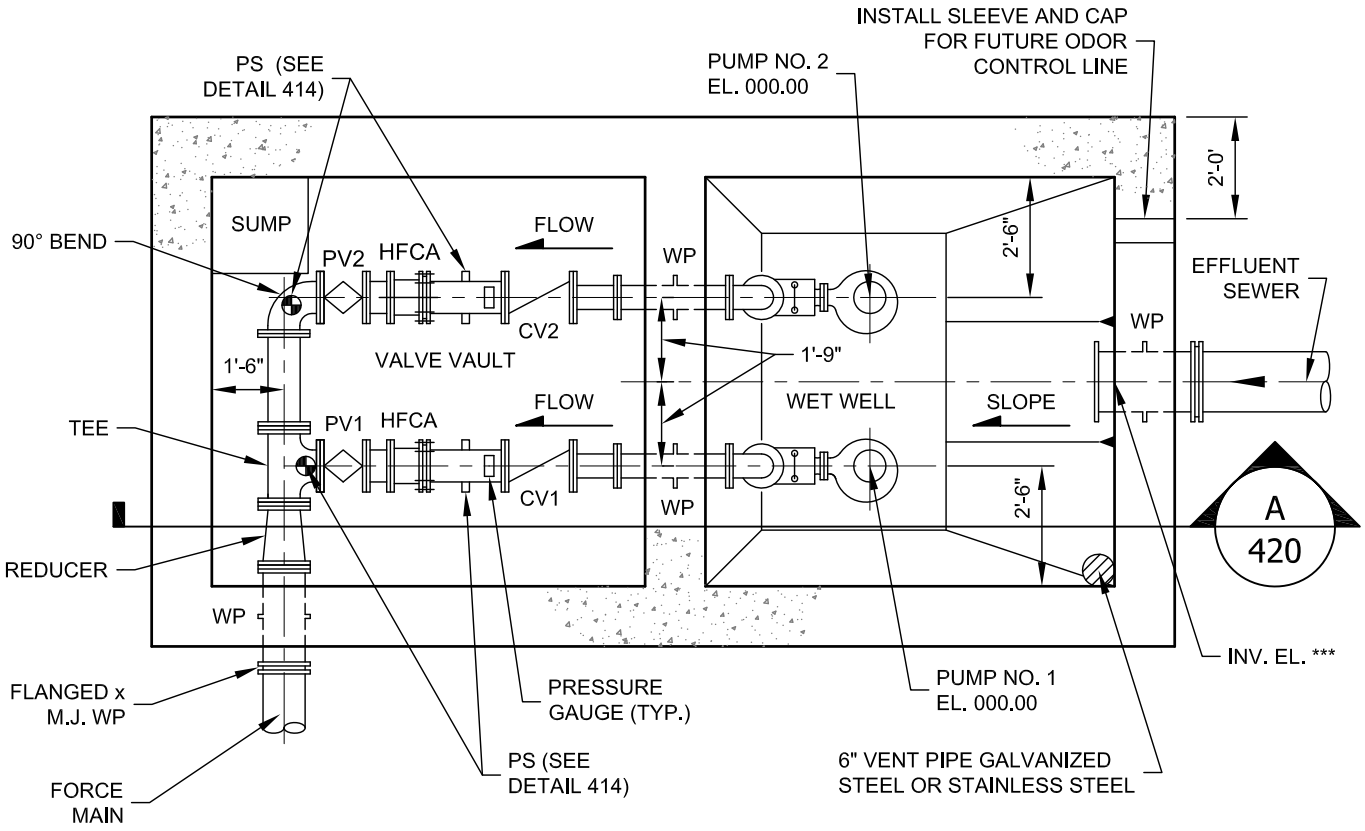
1. COATING SHALL BE APPLIED TO INTERIOR OF WET WELL AS PER LAKE HAVASU CITY STANDARD SPECIFICATIONS.
2. PROVIDE CLEARANCE BETWEEN FLOOR AND PUMP SUCTION AS RECOMMENDED BY MANUFACTURER.

## ABBREVIATIONS:

| | |
|---|---|
| PV1 | PLUG VALVE |
| CV1 | CHECK VALVE |
| PS | PIPE SUPPORT |
| EL | ELEVATION |
| HFCA | HARNESSED FLANGED COUPLING ADAPTER |

LAKE HAVASU CITY

| | | | |
|---|---|---|---|
| | **Standard Details** | **Pump Station Section** | Scale: N.T.S. |
| | **Wastewater Improvements** | | Detail No. **419** |




## PLAN VIEW

## NOTES:

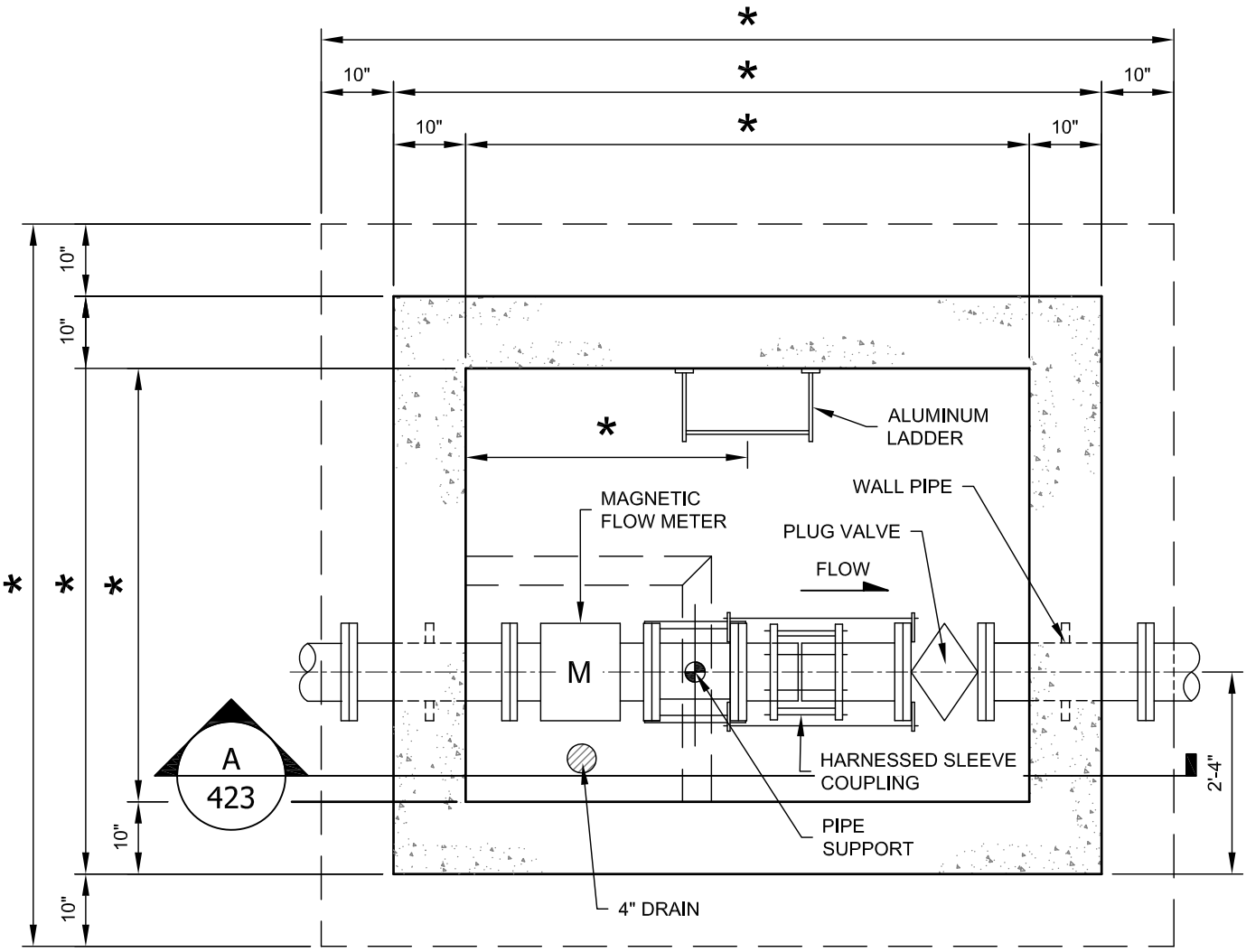
1. COATING SHALL BE APPLIED TO INTERIOR OF WET WELL AS PER LAKE HAVASU CITY STANDARD SPECIFICATIONS.
2. PROVIDE CLEARANCE BETWEEN FLOOR AND PUMP SUCTION AS RECOMMENDED BY MANUFACTURER.

## ABBREVIATIONS:

| | |
|---|---|
| PV1 | PLUG VALVE |
| CV1 | CHECK VALVE |
| PS | PIPE SUPPORT |
| EL | ELEVATION |
| HFCA | HARNESSED FLANGED COUPLING ADAPTER |
| WP | WALL PIPE |

LAKE HAVASU CITY

| | | | |
|---|---|---|---|
| | **Standard Details** | **Pump Station Plan View** | Scale: N.T.S. |
| | **Wastewater Improvements** | | Detail No. **420** |

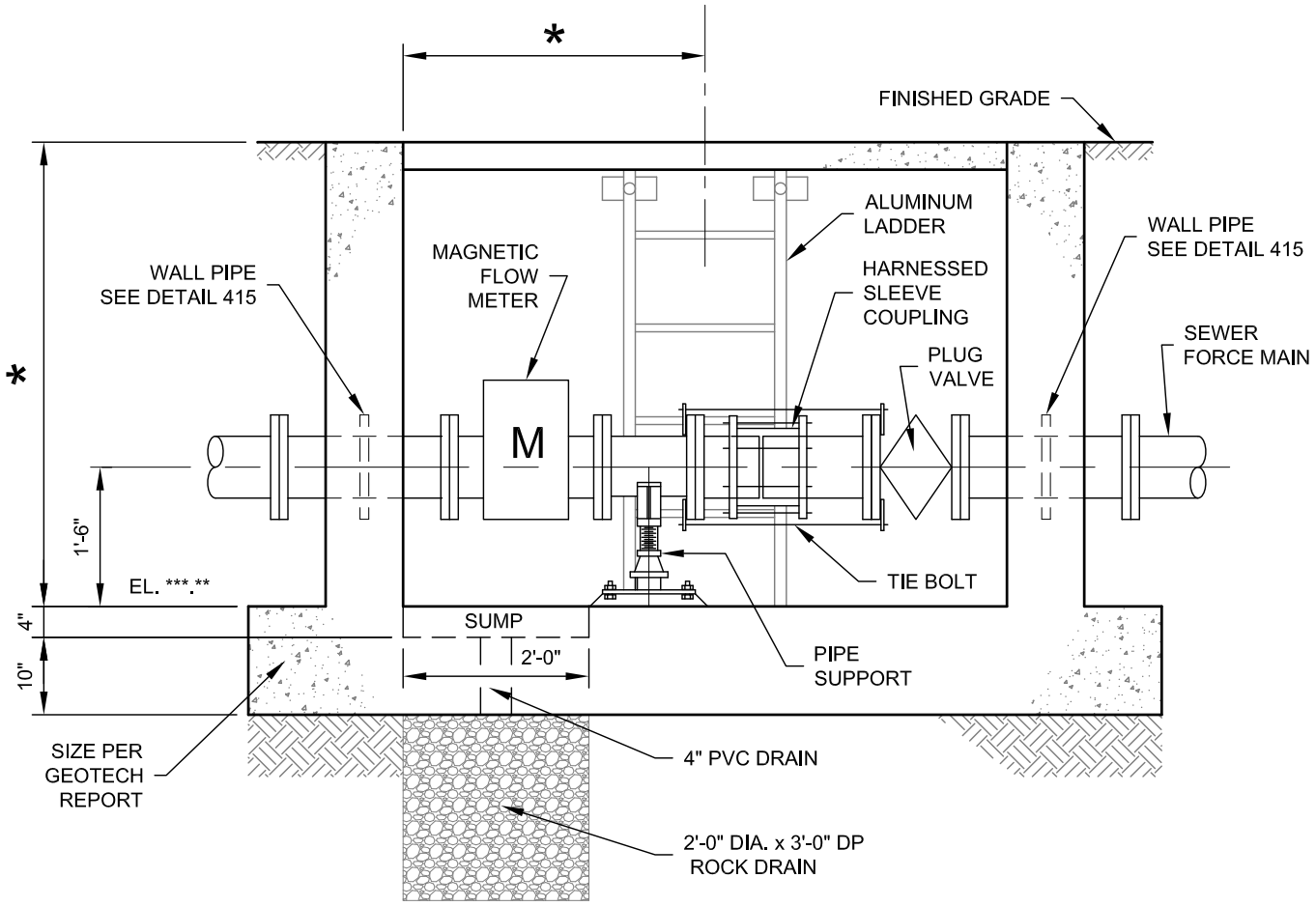



## BASE SLAB PLAN

# NOTE:

* DIMENSION TO BE PROJECT SPECIFIC.

| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details**<br>**Wastewater Improvements** | **Force Main Meter Vault Base Slab Plan** | Scale: N.T.S.<br>Detail No.<br>**421** |

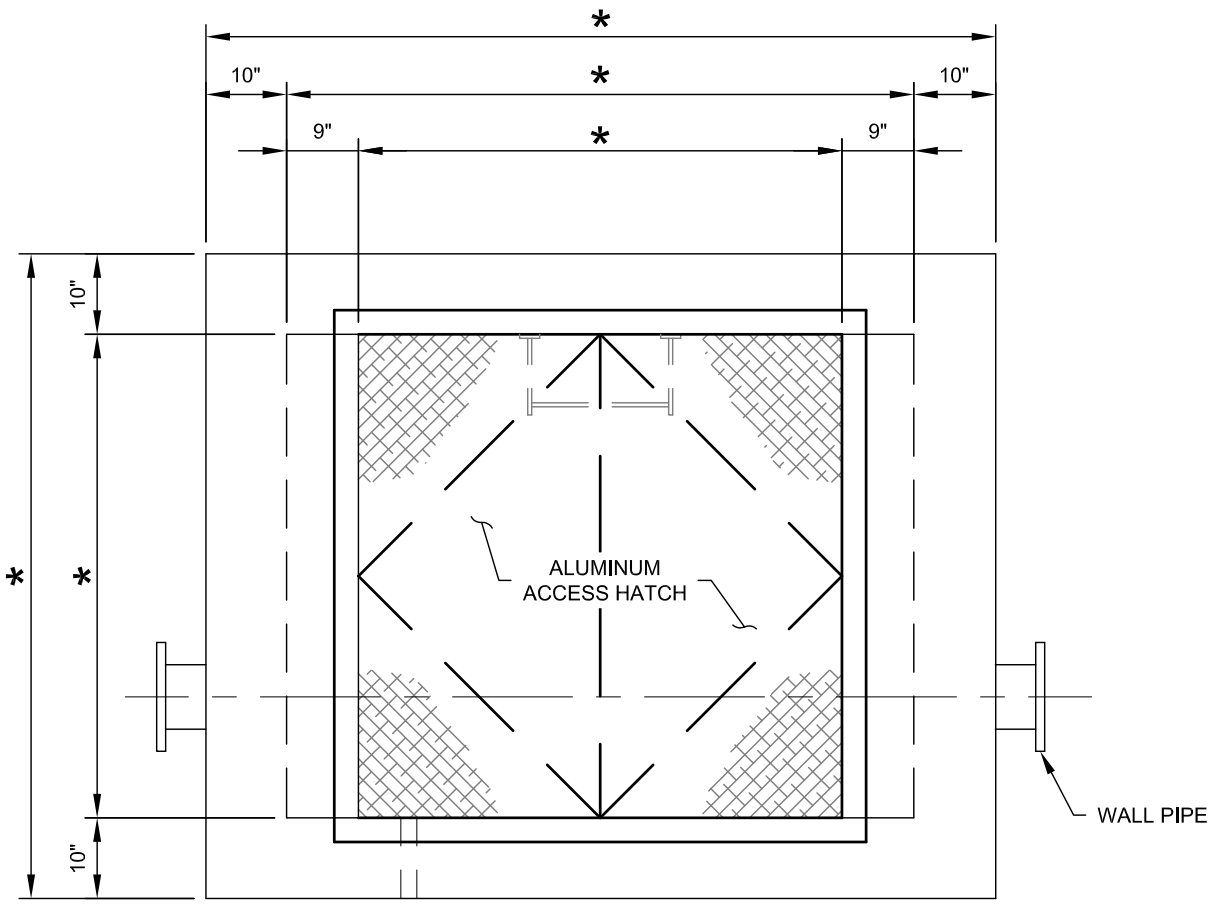



## SECTION A

NOTE:

* DIMENSION TO BE PROJECT SPECIFIC.

| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details**<br>**Wastewater Improvements** | **Force Main Meter Vault Section** | Scale: N.T.S.<br>Detail No.<br>**422** |

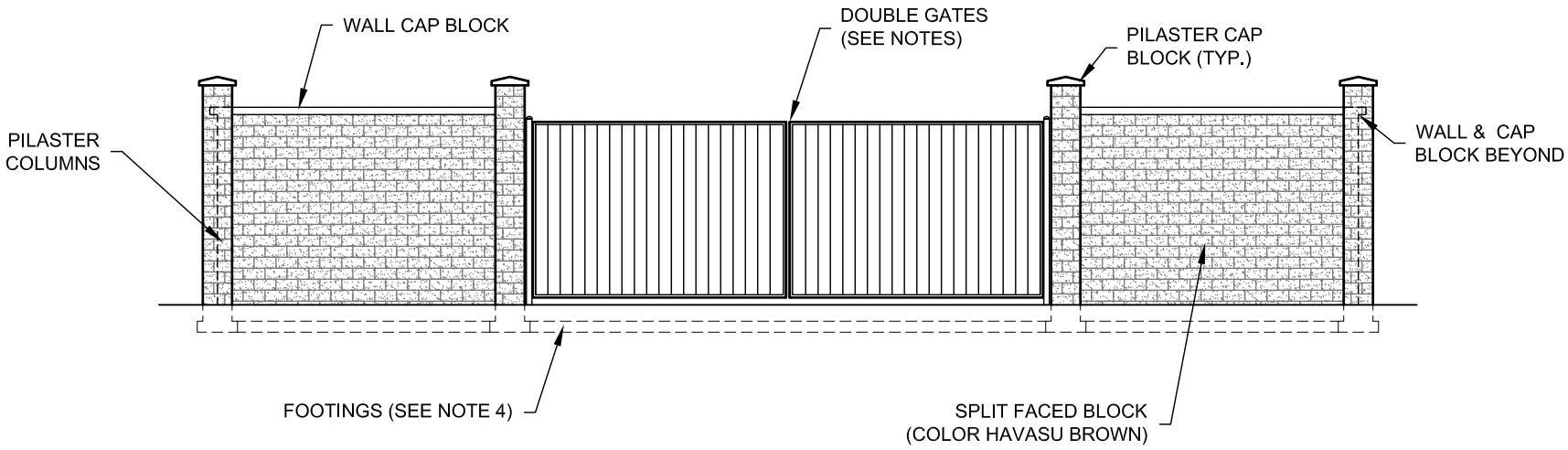



## TOP SLAB PLAN

NOTE:

* DIMENSION TO BE PROJECT SPECIFIC.

| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details**<br>**Wastewater Improvements** | **Force Main Meter Vault Top Slab Plan** | Scale: N.T.S.<br>**Detail No.**<br>**423** |



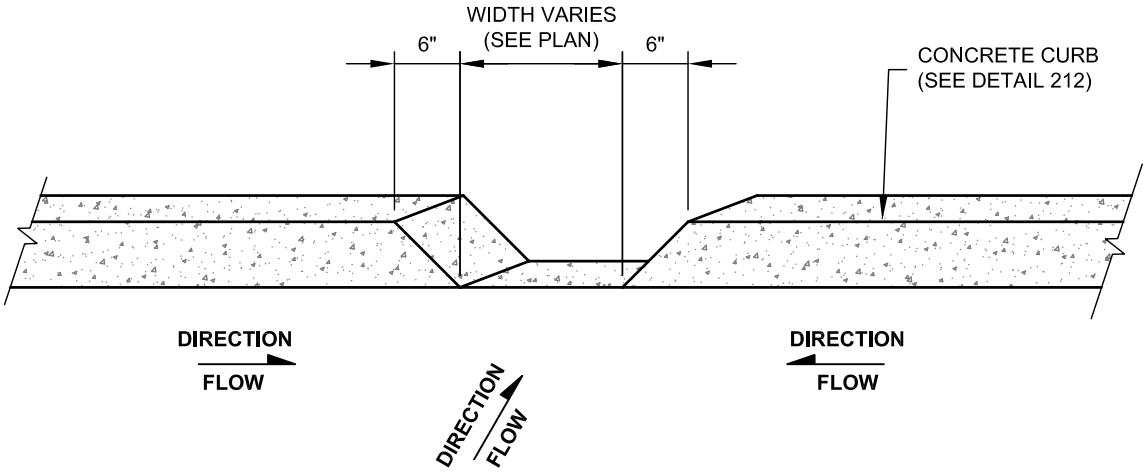

## NOTES:

1. PROVIDE TWO SWINGING GATE SECTIONS, EACH 8' HIGH GATE SECTIONS TO BE ROHN PRIVACY PANELING @ 1-800-447-2264. PANELS TO BE VERTICAL ROLL-FORMED .017 GRADE E STEEL. HORIZONTAL RAILS ARE 1 1/4" x 1 1/2", .074 MINIMUM STEEL. SIZE POSTS AS REQUIRED.
2. PROVIDE LOCKING SYSTEM AS STANDARD OF MANUFACTURER. ALL MATERIALS TO BE FINISHED WITH G-60 & G-90 GALVANIZING (AS STANDARD OF MANUFACTURER) AND DURANAR HIGH PERFORMANCE FLUOROCARBON OVEN-BAKED COLOR COATING GALVANIZED SURFACES.
3. REPRESENTATIVE FROM MANUFACTURER'S STANDARD COLORS. MANUFACTURER TO PROVIDE FIELD TOUCH-UP PAINT AND ALL ACCESSORIES REQUIRED.
4. ALL FOOTINGS TO BE ENGINEERED BY OTHERS.

| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details**<br>**Wastewater Improvements** | **Typical Pump Station CMU Screened Wall** | Scale: N.T.S.<br>Detail No.<br>**424** |

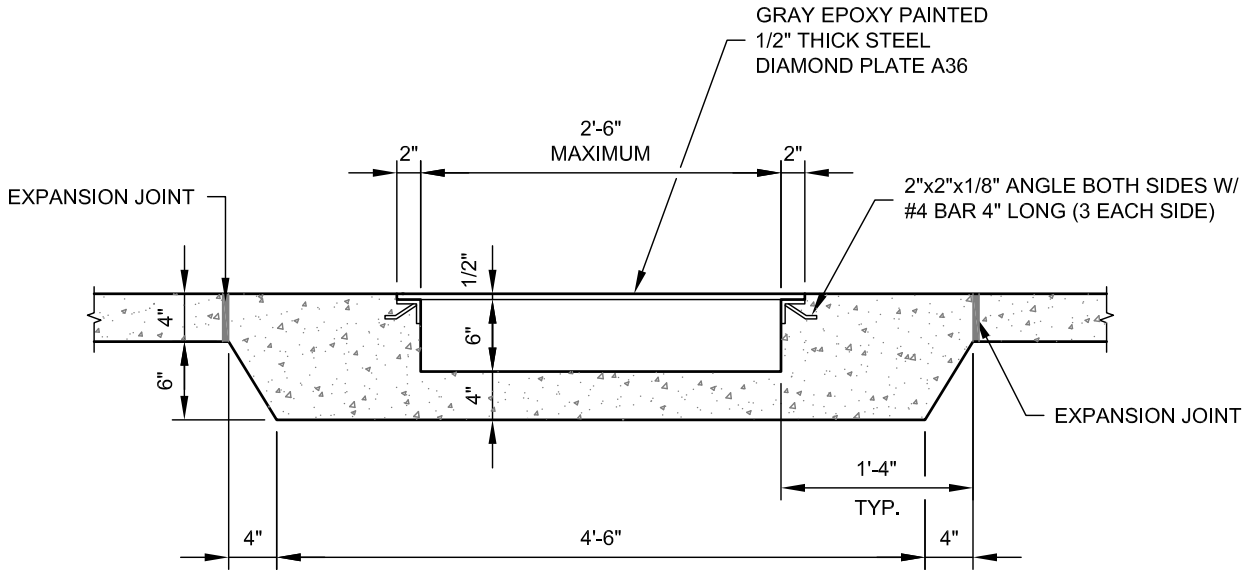
LAKE HAVASU CITY

# STORMWATER IMPROVEMENTS




LAKE HAVASU CITY

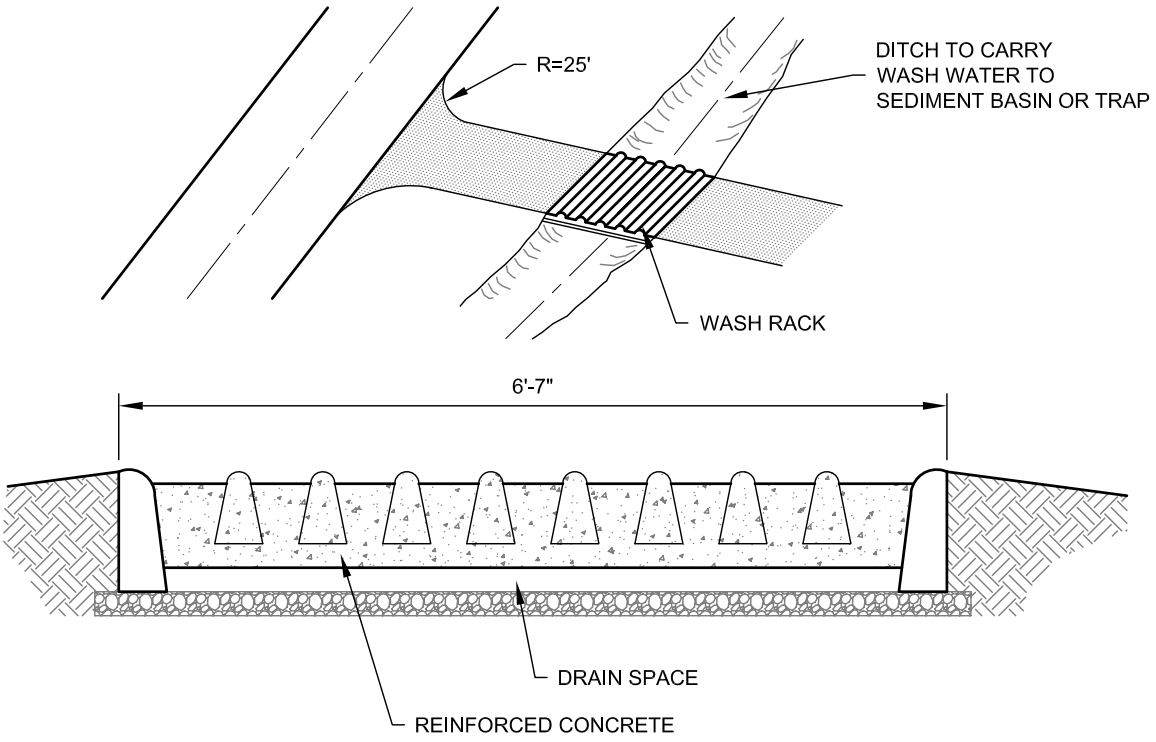
| | | | |
|---|---|---|---|
| | **Standard Details** | **Depressed Curb Opening** | Scale: N.T.S. |
| | **Stormwater Improvements** | | Detail No. **500** |



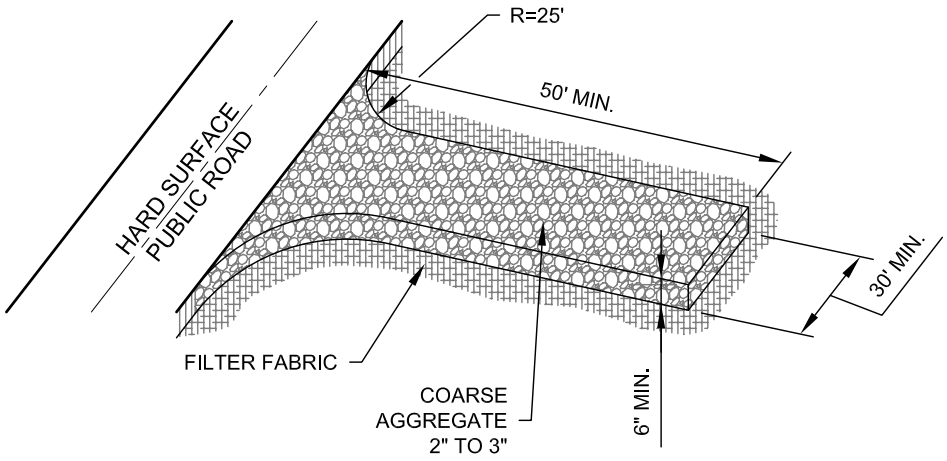

## NOTE:

1. CONCRETE TO BE CLASS 'AA' (4000 PSI).

| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details**<br>**Stormwater Improvements** | **Scuppers** | Scale: N.T.S.<br>**Detail No.**<br>**501** |




## WASH RACK

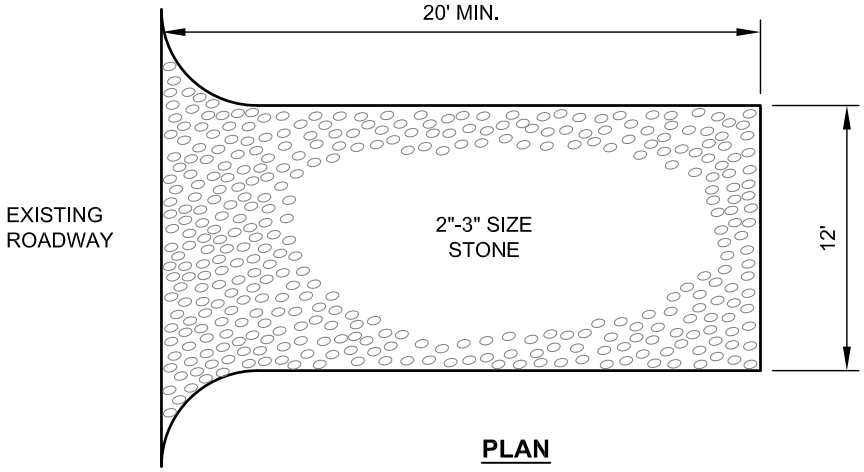



## STABILIZED CONSTRUCTION ENTRANCE

NOTES:

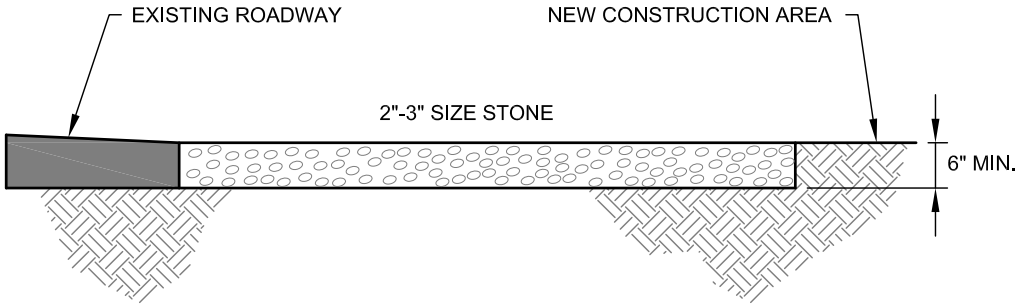
1. PUT SILT FENCE OR TREE PROTECTION FENCE UP TO ENSURE CONSTRUCTION ENTRANCE IS USED.
2. IF CONSTRUCTION ON THE SITES ARE SUCH THAT THE MUD IS NOT REMOVED BY THE VEHICLE TRAVELING OVER THE STONE, THEN THE TIRES OF THE VEHICLE MUST BE WASHED BEFORE ENTERING THE PUBLIC ROAD.
3. IF A PROJECT CONTINUES TO PULL MUD AND DEBRIS ON TO THE PUBLIC ROAD, THE GOVERNING AUTHORITY WILL CLEAN THE AREA AND INVOICE THE FINANCIALLY RESPONSIBLE PERSON AS INDICATED ON THE FINANCIAL RESPONSIBILITY FORM.

| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details**<br>**Stormwater Improvements** | **Stabilized Construction Entrance (Commercial)** | Scale: N.T.S.<br>Detail No.<br>**502A** |




**PLAN**

FABRIC MAY BE ADDED UNDER THE STONE
WHICH WOULD ADD TOTAL LIFE TO THE
CONSTRUCTION ENTRANCE.

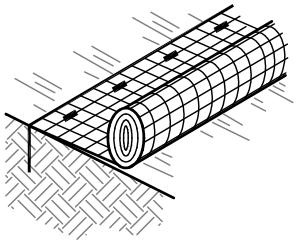



**CROSS SECTION**

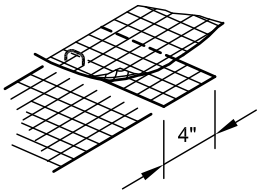
## NOTE:

1. THIS ENTRANCE APPLIES ONLY TO ENTRANCES OF INDIVIDUAL SINGLE FAMILY RESIDENTIAL UNITS.
2. PUT SILT FENCE OR WATTLE PROTECTION UP TO ENSURE CONSTRUCTION ENTRANCE IS USED.
3. CONSTRUCTION ENTRANCES SHOULD BE LOCATED ON THE SIDE OF THE PROPERTY WHERE FUTURE DRIVEWAYS ARE TO BE LOCATED. PROTECT ALL CURBS FROM DAMAGE WITH CURB RAMPS.
4. IF CONSTRUCTION ON THE SITES ARE SUCH THAT THE MUD IS NOT REMOVED BY THE VEHICLE
5. TRAVELING OVER THE STONE, THEN THE TIRES OF THE VEHICLE MUST BE WASHED BEFORE ENTERING THE PUBLIC ROAD.
6. IF A PROJECT CONTINUES TO PULL MUD AND DEBRIS ON TO THE PUBLIC ROAD, THE GOVERNING
7. AUTHORITY WILL CLEAN THE AREA AND INVOICE THE FINANCIALLY RESPONSIBLE PARTY.

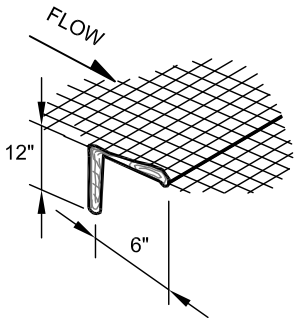
| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details**<br>**Stormwater Improvements** | **Stabilized Construction Entrance (Residential)** | Scale: N.T.S.<br>Detail No.<br>**502B** |



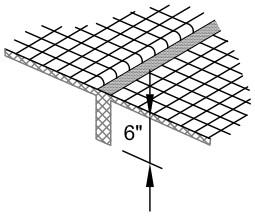
ANCHOR SLOT: BURY THE UP-CHANNEL END OF THE NET IN A 12" DEEP TRENCH. TAMP THE SOIL FIRMLY. STAPLE AT 12" INTERVALS ACROSS THE NET.



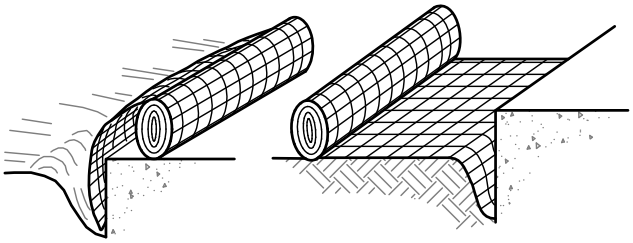

OVERLAP: OVERLAP EDGES OF THE STRIPS AT LEAST 4". STAPLE EVERY 12" DOWN THE CENTER OF THE STRIP.




JOINING STRIPS: INSERT THE NEW ROLL OR NET IN A TRENCH, AS WITH THE ANCHOR SLOT. OVERLAP THE UP-CHANNEL END OF THE PREVIOUS ROLL 18" AND TURN THE END OF THE PREVIOUS ROLL, JUST BELOW THE ANCHOR SLOT, LEAVING 6" OVERLAP.




CHECK SLOTS: ON ERODIBLE SOILS OR STEEP SLOPES, CHECK SLOTS SHOULD BE MADE EVERY 15 FEET. INSERT A FOLD OF THE NET INTO A 6" TRENCH AND TRAMP FIRMLY. STAPLE AT 12" INTERVALS ACROSS THE NET. LAY THE NET SMOOTHLY ON THE SURFACE OF THE SOIL - DO NOT STRETCH THE NET, AND DO NOT ALLOW WRINKLES.



ANCHORING ENDS AT STRUCTURES: PLACE THE END OF THE NET IN A 12" SLOT ON THE UP-CHANNEL SIDE OF THE STRUCTURE. FILL THE TRENCH AND TAMP FIRMLY. ROLL THE NET UP THE CHANNEL. PLACE STAPLES AT 12" INTERVALS ALONG THE ANCHOR END OF THE NET.

| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details**<br>**Stormwater Improvements** | **Installation of Erosion Control Mats** | Scale: N.T.S.<br>Detail No.<br>**503** |

## NOTES:

1. INSTALL SEDIMENT WATTLES AS SLOPES ARE CONSTRUCTED TO GRADE OR AS DIRECTED BY ENGINEER. SELECT, INSTALL AND MAINTAIN IN CONFORMANCE WITH MFG'S SPECIFICATIONS TO MEET SITE CONDITIONS FOR SLOPE PROTECTION AND IN ACCORDANCE WITH GOOD ENGINEERING PRACTICES. NO SEDIMENT WATTLES SHALL BE INSTALLED IN URBAN FREEWAY MEDIANS, NOR WHERE CABLE BARRIER SYSTEMS ARE INSTALLED.

2. SEDIMENT WATTLES SHALL BE IN CONTINUOUS CONTACT WITH TRENCH BOTTOM AND SIDES. DO NOT OVERLAP WATTLES ENDS ON TOP OF EACH OTHER. A 20" DIA. WATTLE MAY BE MADE FROM 2-3 ROLLED EXCELSIOR OR STRAW BLANKETS.

3. BUTT ADJOINING WATTLES TIGHTLY AGAINST EACH OTHER. DRIVE FIRST END STAKE OF THE SECOND WATTLE AT THE ANGLE TOWARD THE FIRST WATTLE TO HELP ABUT THEM TIGHTLY.

4. REPAIR ANY RILLS OR GULLIES PROMPTLY. FIELD ADJUST AND CORRECT WATTLE BMP IMMEDIATELY IF IT IS CAUSING FLOODING, EROSION, AND/OR AFFECTING ROADWAY SAFETY.

5. CONSTRUCTION OF CUT SLOPES 2:1 AND STEEPER IN SOIL AND RACK MATERIALS THAT CAN BE RIPPED SHALL BE CONSTRUCTED, WHENEVER POSSIBLE, BY MINIBENCHING. REFER TO SLOPE MINIBENCHING DETAIL.

6. LOOSENING SURFACE SOIL IS NOT REQUIRED WHERE MINIBENCHES ARE USED. FOR SEEDED AREAS, TILLAGE SHALL BE PERFORMED TO FORM MINOR RIDGES AND FURROWS PARALLEL TO NEW SLOPES CONTOURS AND AS SPECIFIED IN SECTION 805 OF THE STANDARDS SPECIFICATIONS.

7. DIVERT AND DIRECT RUN-ON WATER FROM OUTSIDE OF THE SLOPES TO THE SPILLWAYS AND/OR ROCK RIPRAP/ROCK MULCH. DIVERSION DIKES AND/OR DITCHES ARE NECESSARY ON NATURAL UNDISTURBED SLOPES BEYOND THE TOP LIMITS OF NEW SLOPES TO DIVERT RUN-ON WATER.

8. INSTALLATION AND MAINTENANCE OF SEDIMENT WATTLE BMP'S SHALL NOT NEGATIVELY IMPACT TRAFFIC SAFETY, NOR THE DESIGNED FUNCTION OF THE ROADWAY OR BRIDGE DRAINAGE FACILITIES.

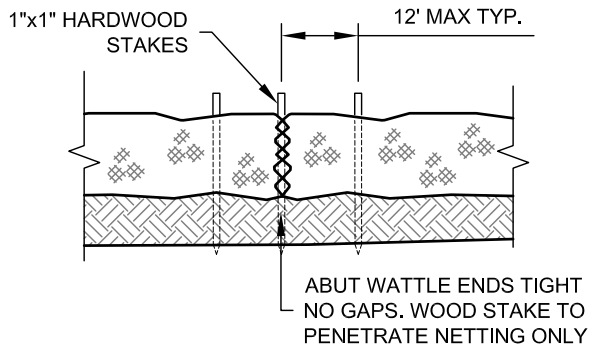
9. INSTALL AND MAINTAIN SEDIMENT WATTLE BMP'S TO CARRY THE STORMWATER OF AT LEAST 2-YEA, 24 HOUR EVENTS.

10. THE SEDIMENT WATTLE BMP'S PAY/BID ITEM SHALL INCLUDE ALL MATERIALS USED FOR THIS BMP: ALL GROUND PREPARATION, FURNISHING, INSTALLING, MAINTENANCE, FINAL REMOVAL, AND DISPOSAL OF THIS TEMPORARY BMP, AS WELL AS RETURNING THE AREA TO AN ACCEPTABLE CONDITION AS APPROVED BY THE ENGINEER.

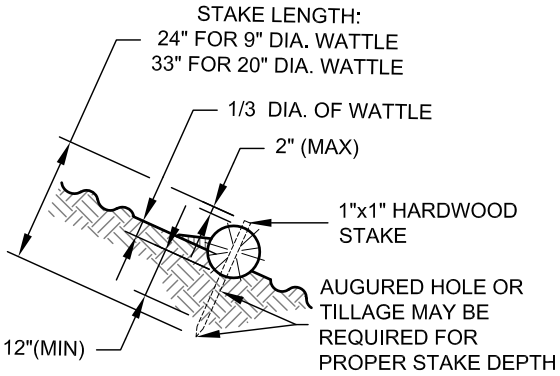
11. REFER TO STANDARD SPECIFICATION SECTION 810-2.06(C) FOR SEDIMENT WATTLE MATERIAL SPECIFICATIONS.

12. MAKE FIELD ADJUSTMENTS AND CORRE3CTIONS TO ENSURE NO SENSITIVE BIOLOGICAL RESOURCE (NATIVE SPECIES/ HABITATS) WILL BE ADVERSELY IMPACTED.

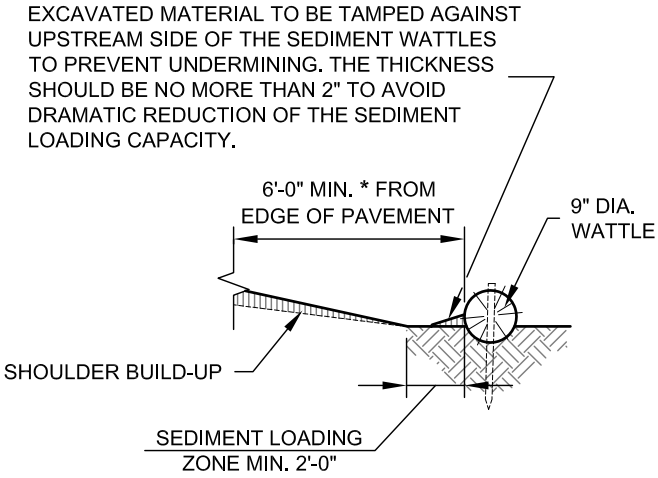
| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details**<br>**Stormwater Improvements** | **Wattle Notes** | Scale: N.T.S.<br>Detail No.<br>**504A** |



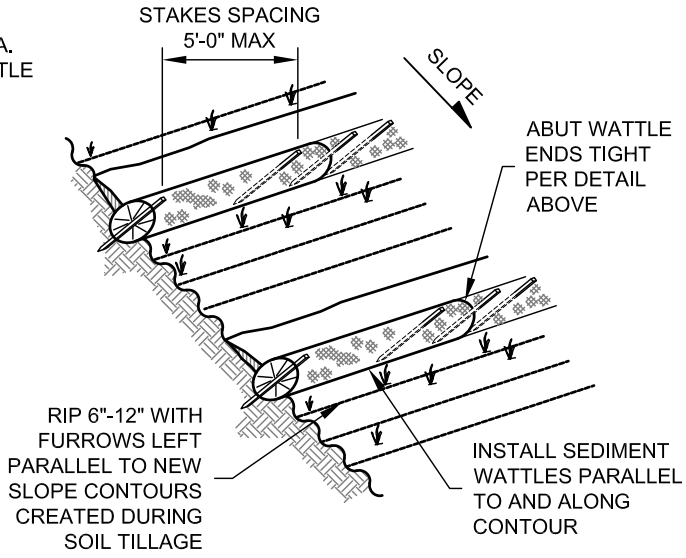

## SEDIMENT WATTLE OVERLAP




## SEDIMENT WATTLE STAKING



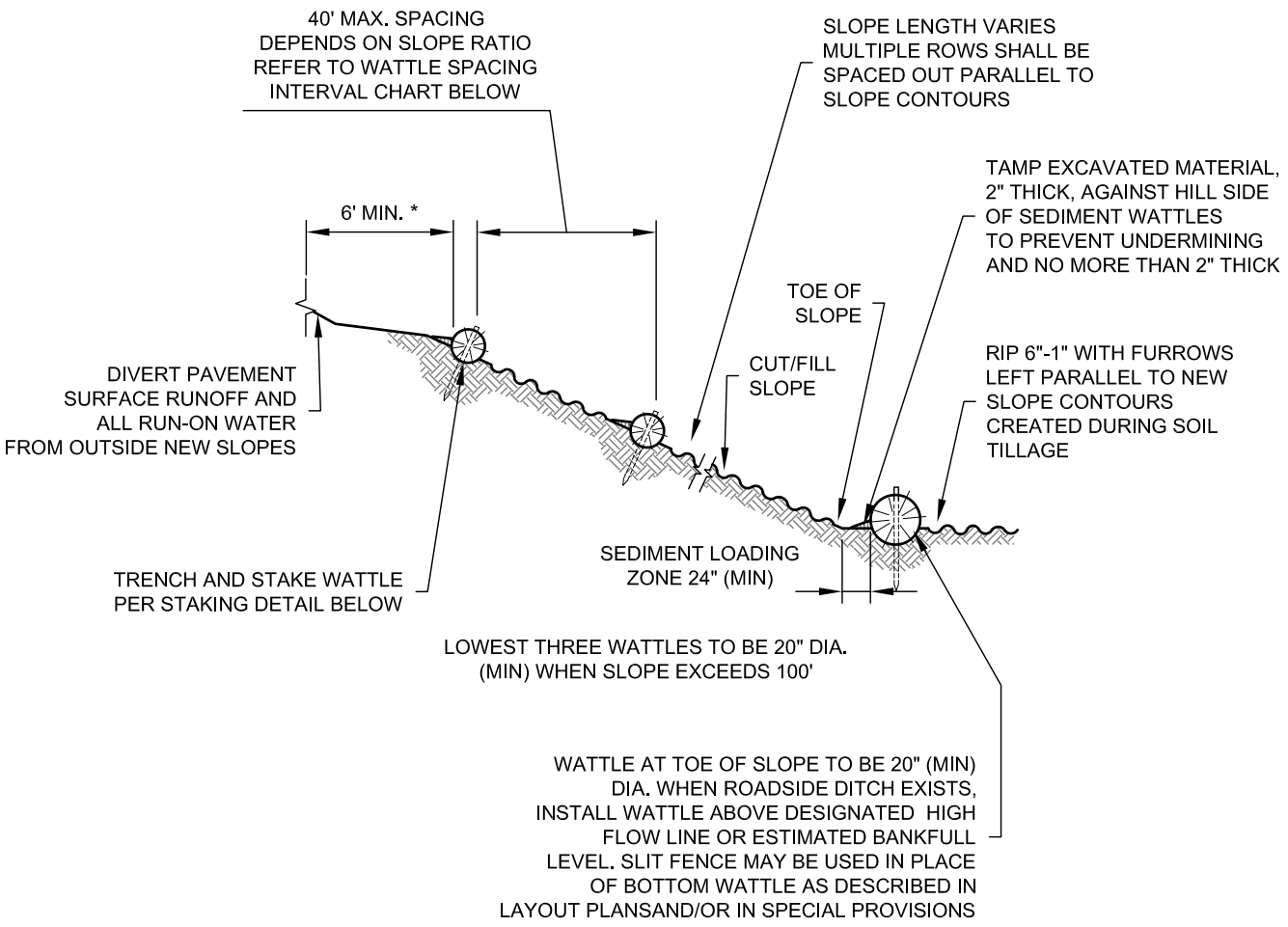

## NEW SHOULDER ** BUILDUP PROTECTION




## SEDIMENT WATTLE LAYOUT

** NOTE:
APPLICABLE ONLY IN THE AREAS OF CONCENTRATED FLOW - TO INCLUDE BUT NOT BE LIMITED TO ROADWAY SAG SPOTS AND DROP-OFF REPAIR LOCATIONS AS PER THE DIRECTION OF THE ENGINEER.

| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details**<br>**Stormwater Improvements** | **Wattle Detail** | Scale: N.T.S.<br>Detail No.<br>**504B** |




## SEDIMENT WATTLE SECTION

| WATTLE SPACING INTERVALS | |
|---|---|
| SLOPE RATIO (H:V) | MAXIMUM SPACING INTERVALS |
| 2:1 | 10' |
| 3:1 | 20' |
| 4:1 | 30' |
| 5:1 | 40' |
| 6:1 | 40' |

*** NOTE:**

TOP ROW SHALL NOT BE PLACED WITHIN 6'-0 OF EDGE OF PAVEMENT AND 9'-0" FROM OUTSIDE SURFACE OF BARRIER.

LAKE HAVASU CITY

**Standard Details**

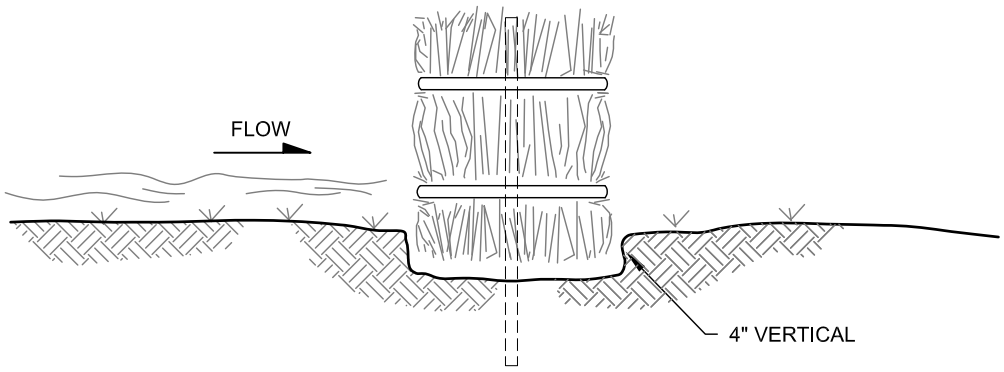
**Stormwater Improvements**

**Wattle Section**

Scale: N.T.S.

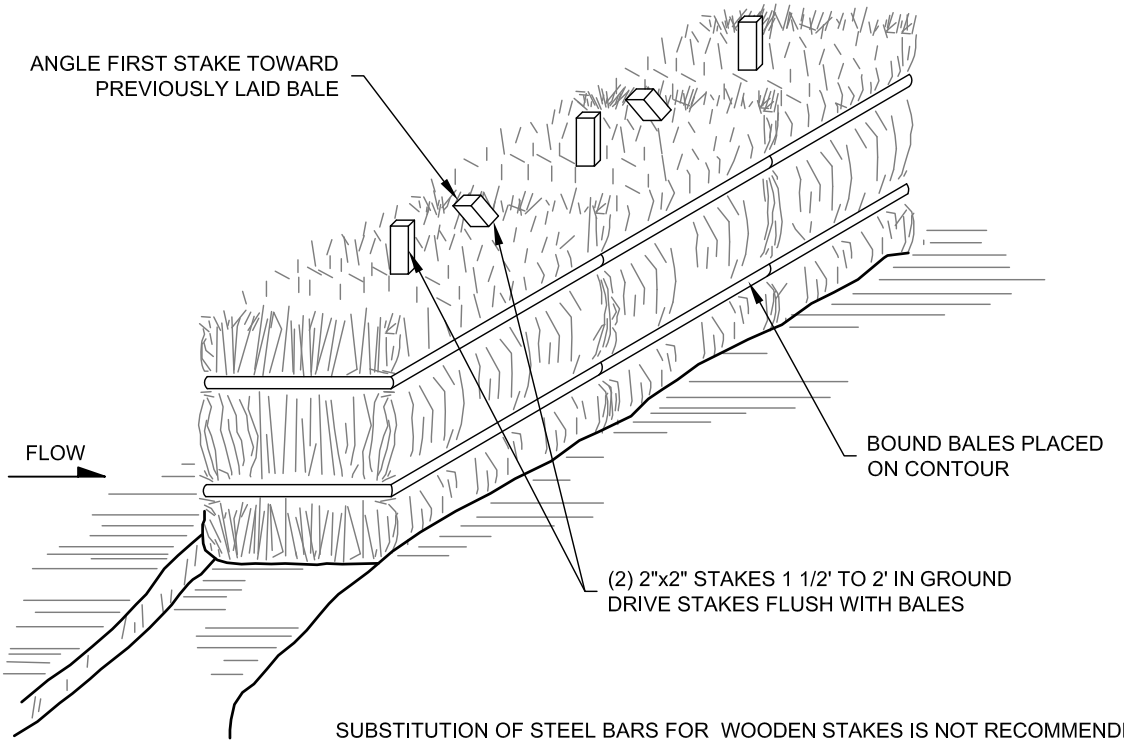
Detail No.

**504C**




* PROMOTES ON SITE SEDIMENTATION
BY CREATING A TEMPORARY POND.

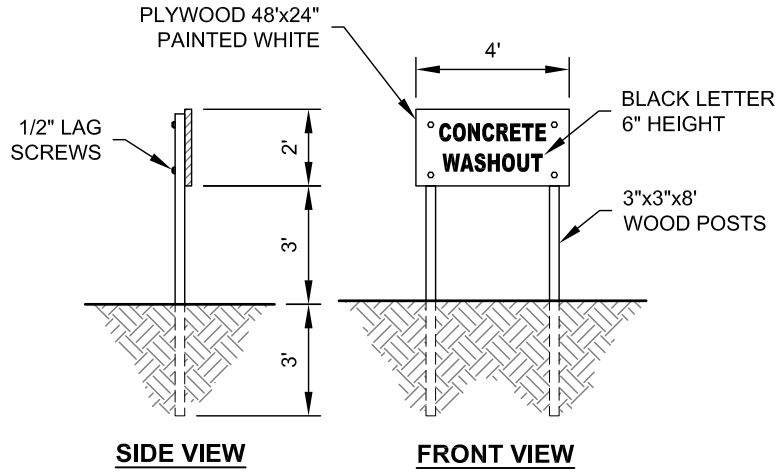
## BEDDING DETAIL



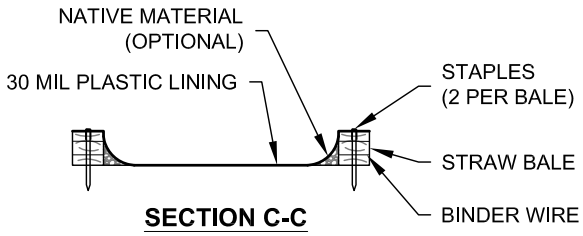

SUBSTITUTION OF STEEL BARS FOR WOODEN STAKES IS NOT RECOMMENDED
DUE TO POTENTIAL FOR DAMAGING CONSTRUCTION EQUIPMENT

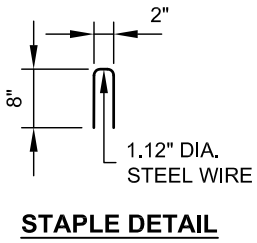
## ANCHORING DETAIL

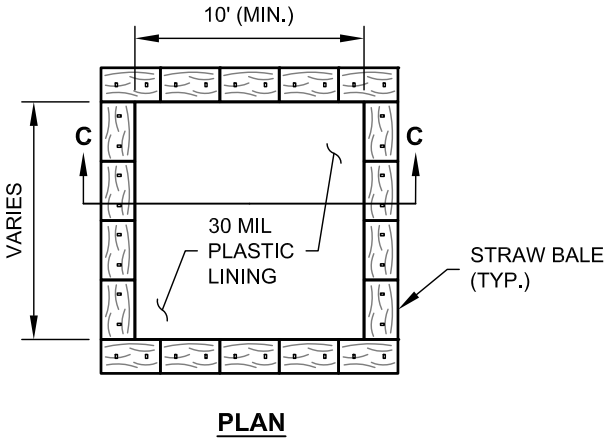
| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details**<br>**Stormwater Improvements** | **Organic Filter Barrier** | Scale: N.T.S.<br>Detail No.<br>**505** |




## "CONCRETE WASHOUT" SIGN DETAILS



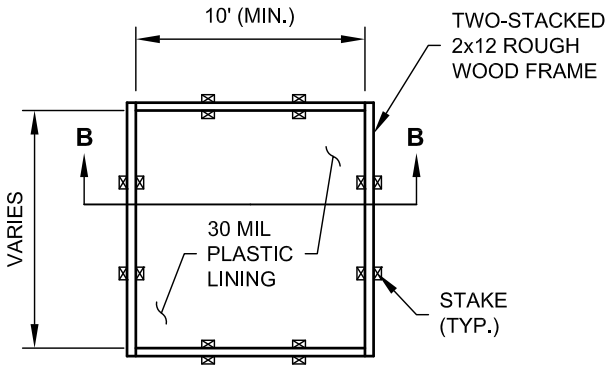




## TYPE "ABOVE GRADE" WITH STRAW BALES

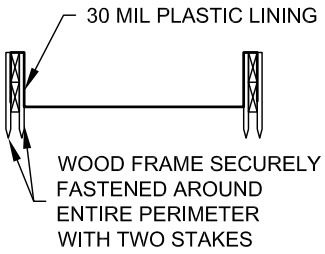
NOTE:

1. WASHOUTS AREAS FOR CONCRETE, PAINT OR STUCCO MUST BE LOCATE ON-SITE. LOCATE WASHOUT AREAS 50 FEET FROM DRAINS AND WATERCOURSES.
2. ACTUAL LAYOUT TO BE DETERMINED IN THE FIELD.
3. A CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30' OF THE TEMPORARY CONCRETE WASHOUT FACILITY.
4. LINING MATERIAL SHOULD BE A MINIMUM OF 30 MIL POLYETHYLENE SHEETING AND SHOULD BE FREE OF HOLES, TEARS, OPEN SEAMS OR OTHER DEFECTS THAT COMPROMISE THE IMPERMEABILITY OF THE MATERIAL.
5. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE REMOVED FROM THE SITE OF THE WORK AND DISPOSED OF OR RECYCLED.
6. HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCE CAUSED BY THE REMOVAL OF THE TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE BACKFILLED, REPAIRED, AND STABILIZED TO PREVENT EROSION.

| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details**<br>**Stormwater Improvements** | **Concrete Washout Straw Bales** | Scale: N.T.S.<br>Detail No.<br>**506A** |

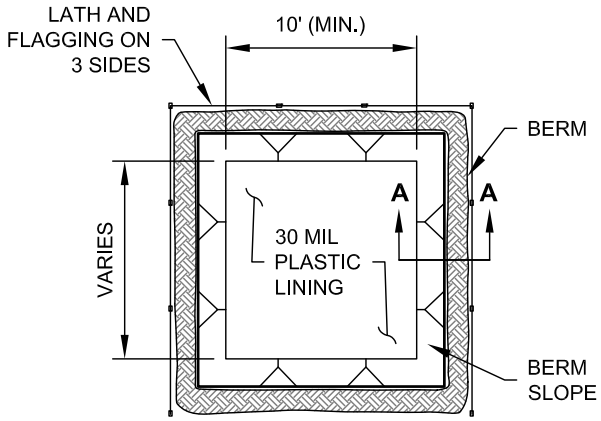



PLAN

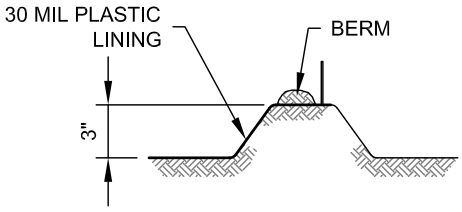



SECTION B-B

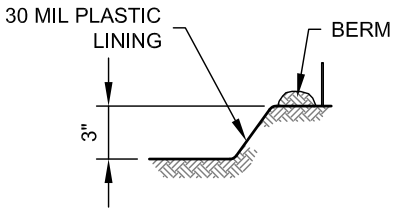
## TYPE "ABOVE GROUND"WITH WOOD PLANKS




PLAN




BELOW GROUND
SECTION A-A



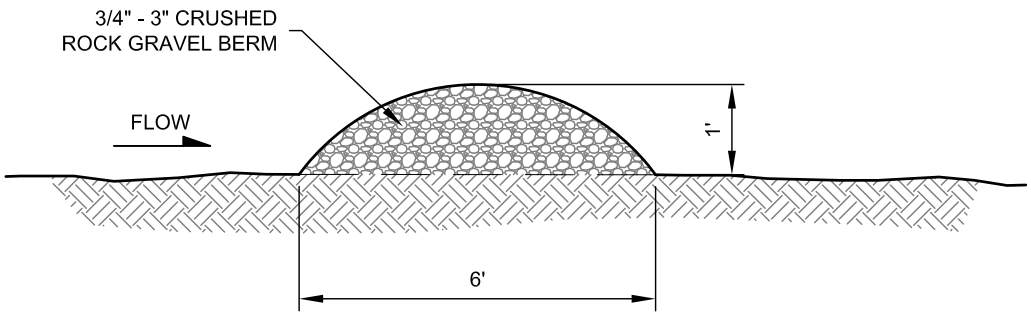

BELOW GROUND
SECTION A-A

## TYPE "BELOW & ABOVE GRADE"

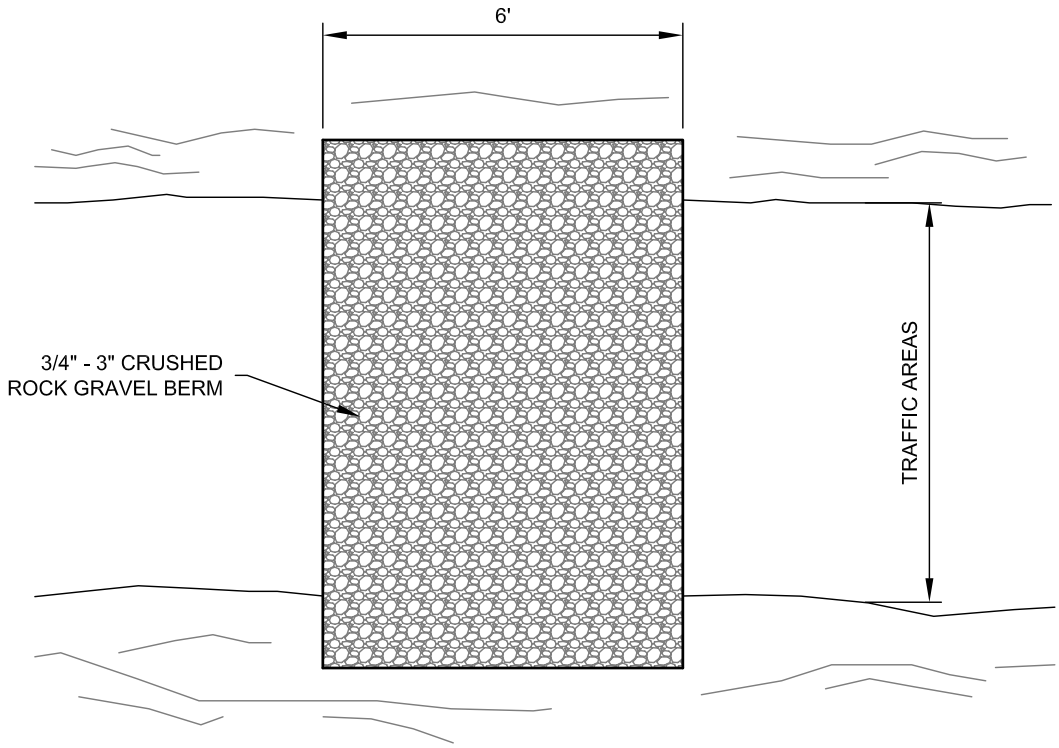
## NOTE:

1. WASHOUTS AREAS FOR CONCRETE, PAINT OR STUCCO MUST BE LOCATE ON-SITE. LOCATE WASHOUT AREAS 50 FEET FROM DRAINS AND WATERCOURSES.
2. ACTUAL LAYOUT TO BE DETERMINED IN THE FIELD.
3. A CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30' OF THE TEMPORARY CONCRETE WASHOUT FACILITY.
4. LINING MATERIAL SHOULD BE A MINIMUM OF 30 MIL POLYETHYLENE SHEETING AND SHOULD BE FREE OF HOLES, TEARS, OPEN SEAMS OR OTHER DEFECTS THAT COMPROMISE THE IMPERMEABILITY OF THE MATERIAL.
5. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE REMOVED FROM THE SITE OF THE WORK AND DISPOSED OF OR RECYCLED.
6. HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCE CAUSED BY THE REMOVAL OF THE TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE BACKFILLED, REPAIRED, AND STABILIZED TO PREVENT EROSION.

| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details**<br>**Stormwater Improvements** | **Concrete Washouts Wood Planks - Berms Below/Above** | Scale: N.T.S.<br>Detail No.<br>**506B** |

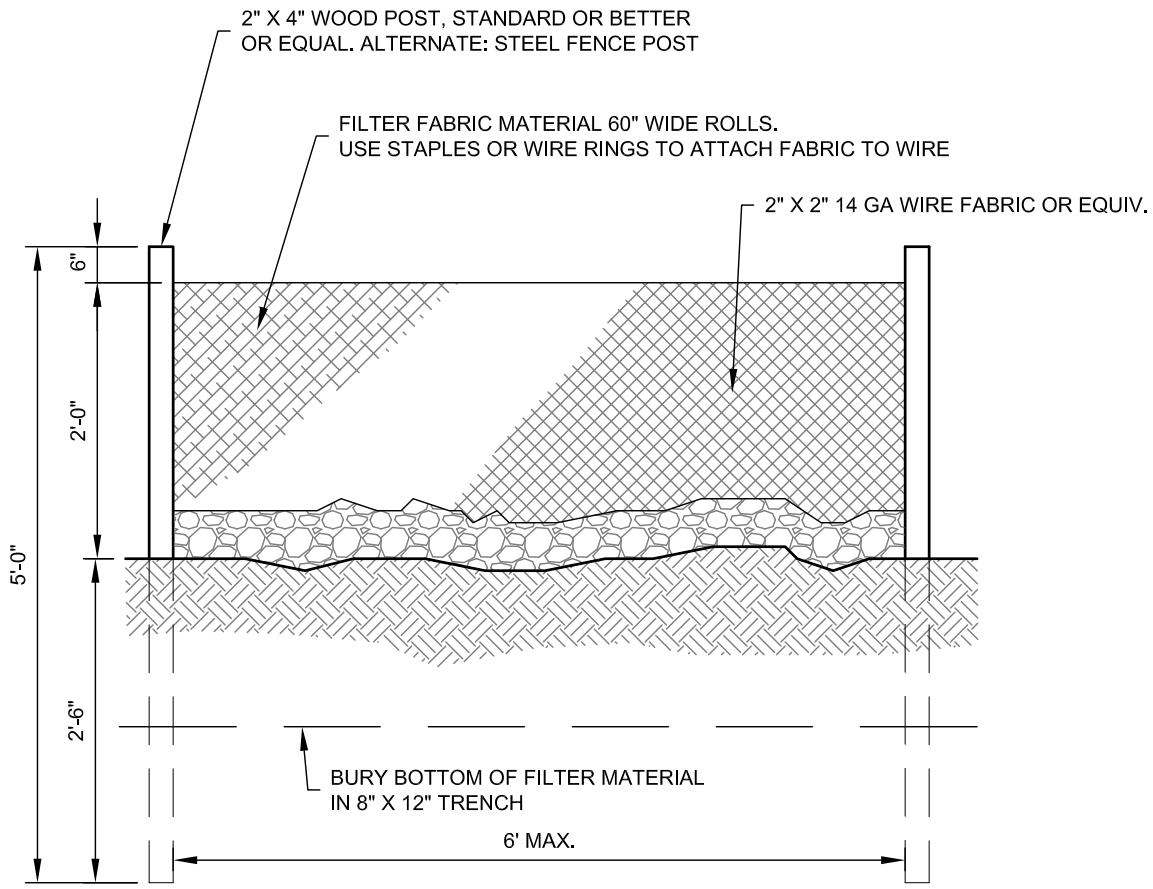


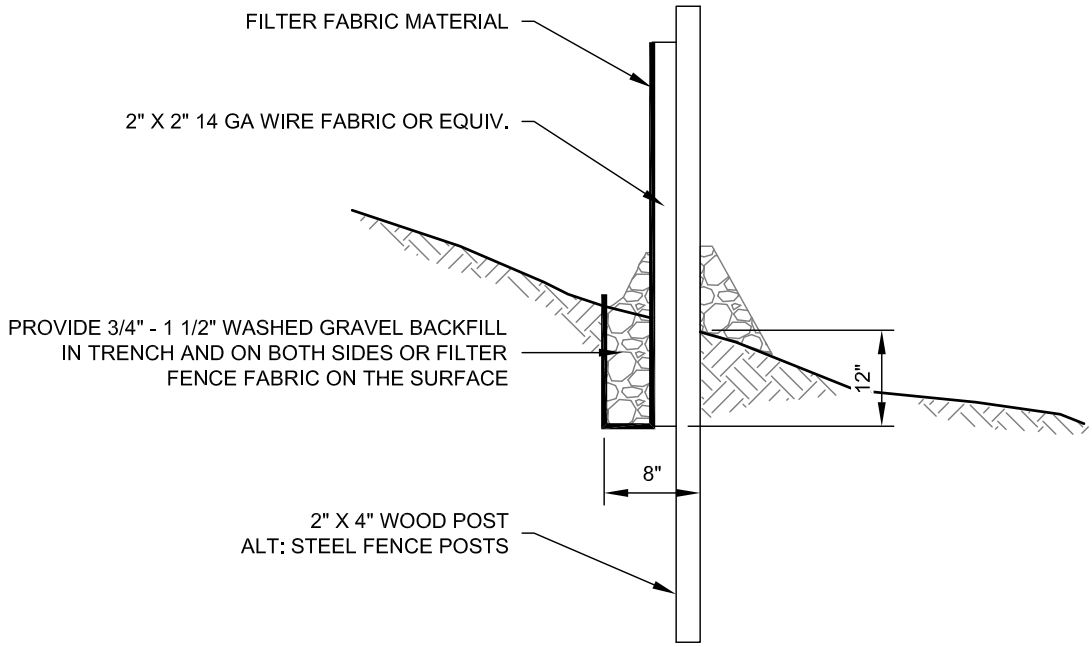

## SECTION



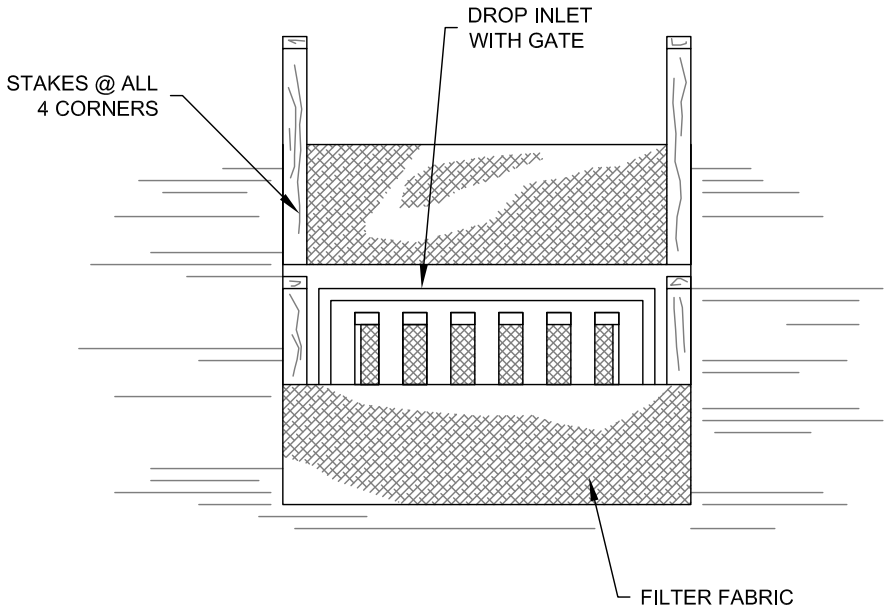

## PLAN

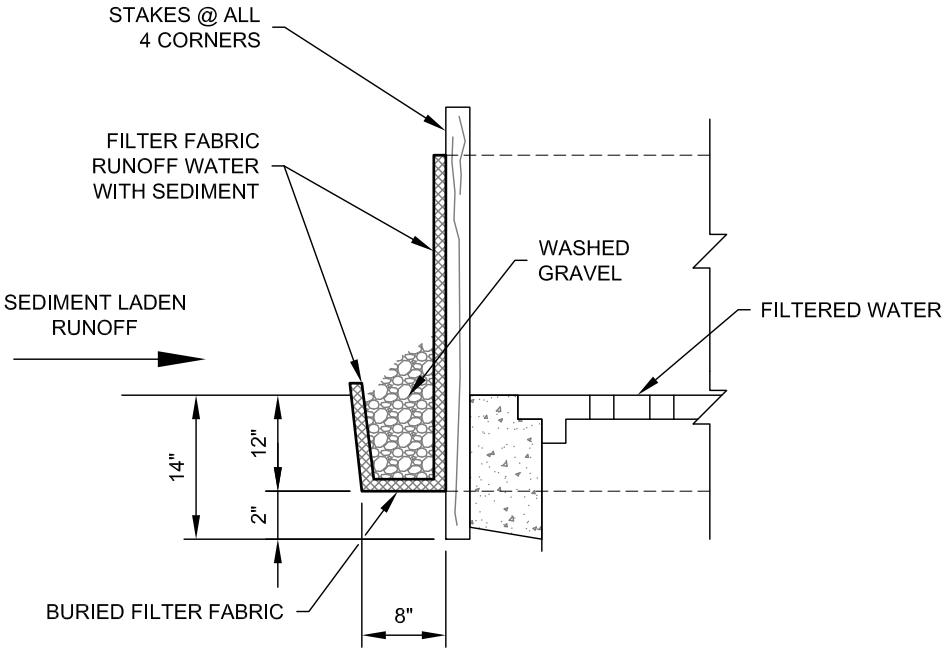
| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details**<br>**Stormwater Improvements** | **Gravel Filter Berm (Traffic Areas)** | Scale: N.T.S.<br>Detail No.<br>**507** |



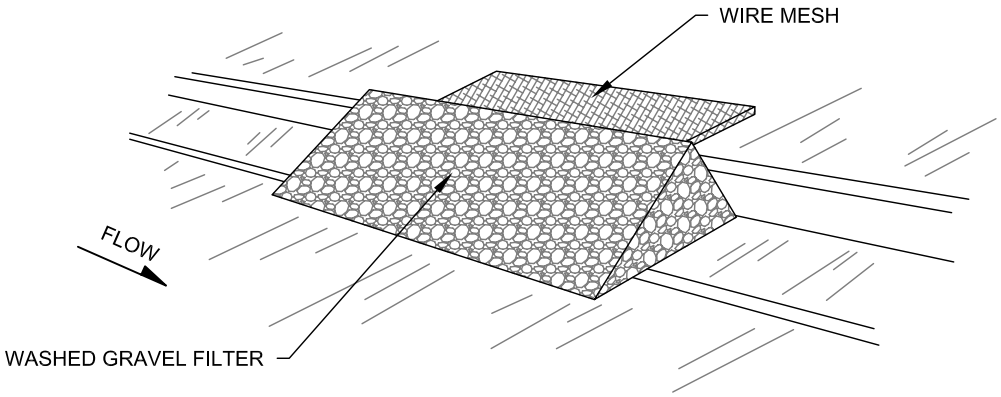

| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details**<br>**Stormwater Improvements** | **Silt Fence** | Scale: N.T.S.<br>**Detail No.**<br>**508** |

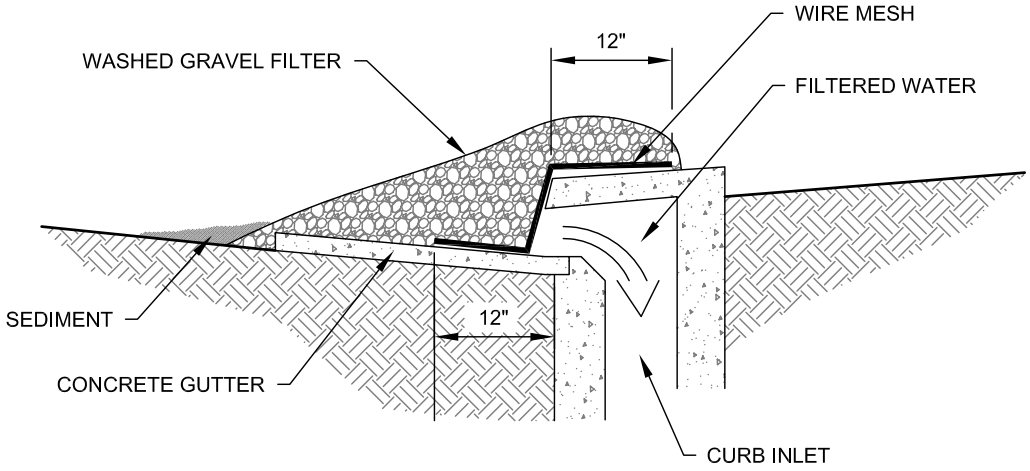



## FILTER FABRIC FENCE DROP INLET FILTER

| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details**<br>**Stormwater Improvements** | **Storm Drain Drop Inlet Protection** | Scale: N.T.S.<br>Detail No.<br>**509** |



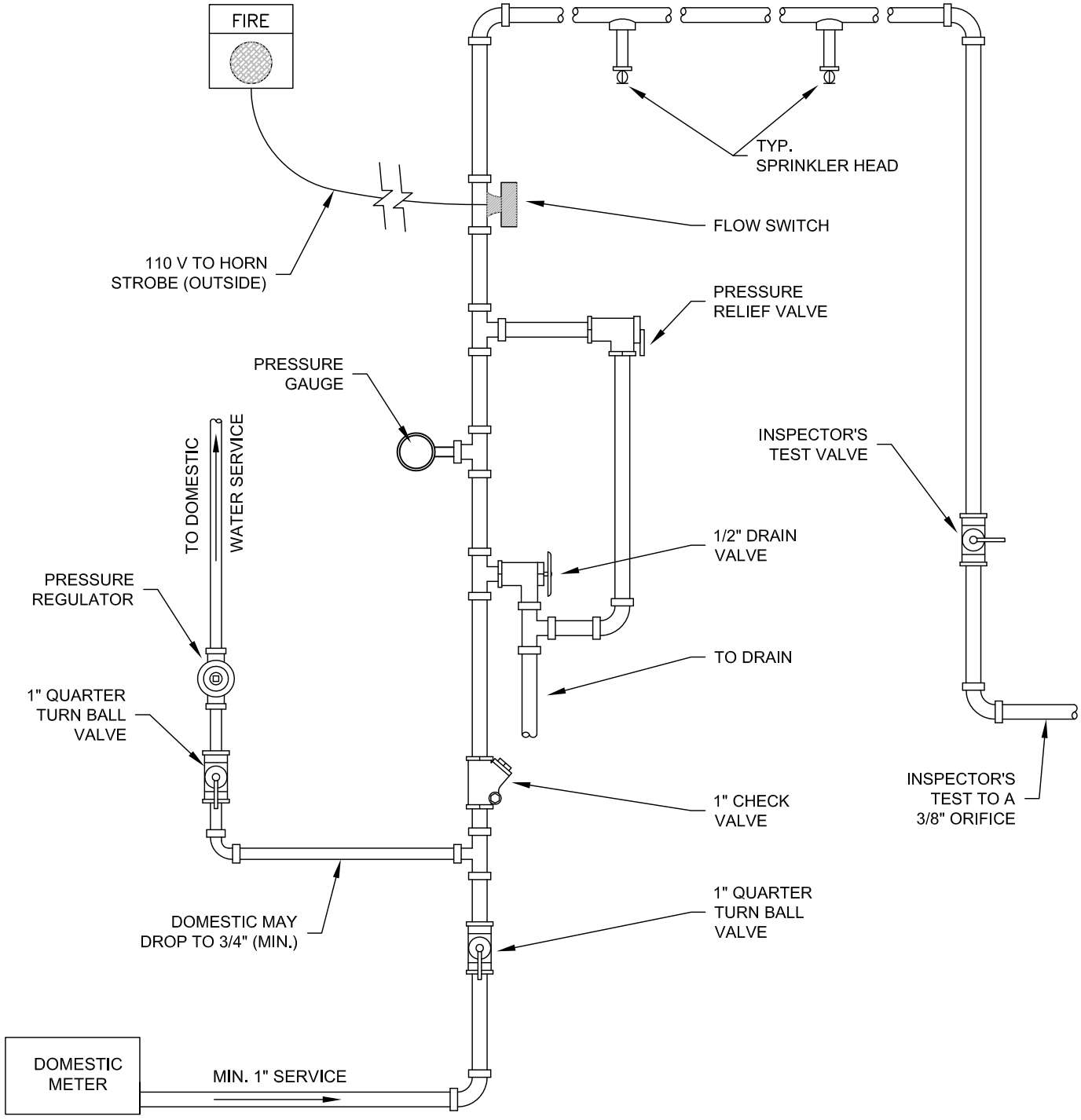




## CURB INLET PROTECTION

| | | | |
|---|---|---|---|
| LAKE HAVASU CITY | **Standard Details**<br>**Stormwater Improvements** | **Storm Drain Curb Inlet protection** | Scale: N.T.S.<br>Detail No.<br>**510** |

LAKE HAVASU CITY

# FIRE IMPROVEMENTS




METER 3/4 STEP-UP MINIMUM SIZE REQ.

LAKE HAVASU CITY

| Standard Details | Fire Department Standard Riser Detail | Scale: N.T.S. |
|---|---|---|
| Fire Improvements | | Detail No. 600 |