



CITY OF
Yuma

CONSTRUCTION STANDARD DETAIL DRAWINGS

RESOLUTION NO. R2019-??

January 2019

Prepared By:
City of Yuma
City Engineering Department

1-000 SERIES: GENERAL INFORMATION

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| | |
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| | |
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| | |
|-------|---|
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|-------|---|
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10-000 SERIES: PAVEMENT MARKINGS

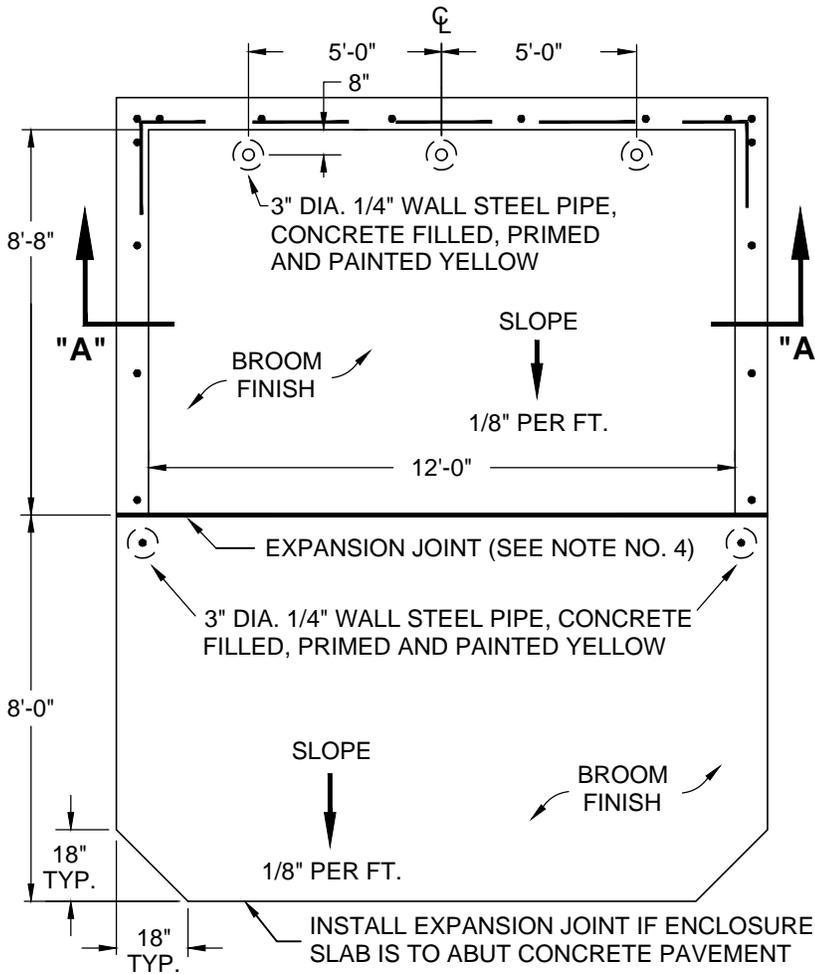
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| 10-005 | TAPER LENGTHS FOR PAVEMENT MARKING AND WORK ZONE/SPECIAL EVENT TRAFFIC CONTROL |
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11-000 SERIES: STORMWATER AND EROSION CONTROL

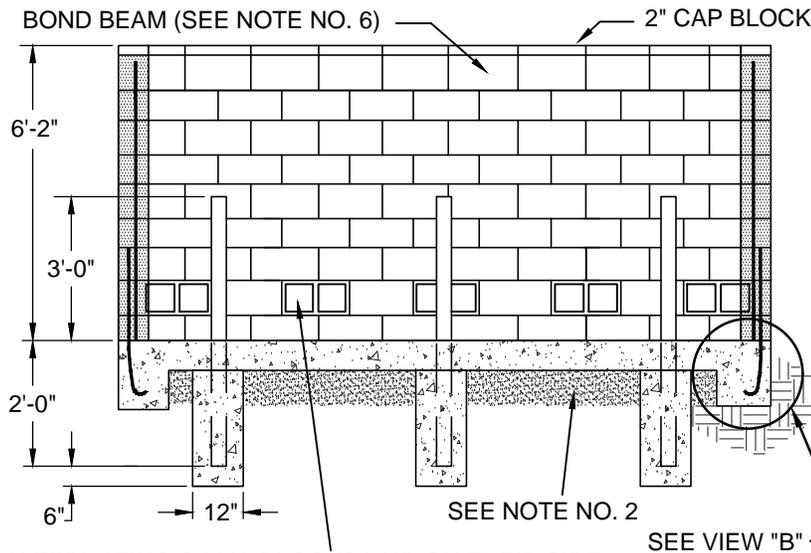
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| 11-005 | TYPE A CATCH BASIN FOR USE WITHOUT CURB AND GUTTER |
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| 11-105 | TEMPORARY DRAINAGE SWALE |
| 11-110 | CONCAVE MEDIAN |
| 11-115 | INLET PROTECTION (2 SHEETS) |
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| 11-125 | STORM DRAIN SAFETY GRATE |
| 11-130 | STORM SEWER LIFT STATION (3 SHEETS) |

12-000 SERIES: OVERHEAD UTILITIES

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|--------|---|
| 12-010 | OVERHEAD WIRE AND CABLE CLEARANCE AT SIGNIFICANT INTERSECTIONS (3 SHEETS) |
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PLAN VIEW



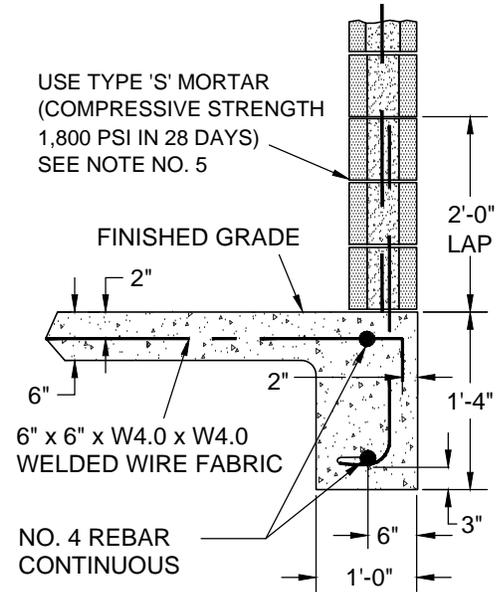
ALTERNATING C.M.U. BLOCKS LAID ON THEIR SIDE TO PROVIDE VISIBILITY ACCESS. TYPICAL ON ALL THREE SIDES OF ENCLOSURE.

SECTION "A - A"

NOTES

1. Enclosure constructed of 8" x 8" x 16" concrete masonry unit blocks.
2. Six inch (6") clean sand / A.B.C. (min.) shall be compacted to 100% (minimum).
3. Slab and footings shall be constructed of Class "B" concrete per MAG section 725.
4. Expansion joints shall be pre-formed 1/2" bituminous type, depth of slab
5. Mortar joints shall have a concave configuration.
6. Bond beam at top course with one #4 deformed continuous rebar. Lap around corners a minimum of 24".
7. A building permit is required prior to the start of construction.
8. A graffiti inhibiting coating is required on all exposed surfaces.
9. Restaurants: Grease containers that are stored within this type of enclosure shall be required to provide an additional 4' to the opening dimension (16' total width).
10. Inspection by City Building Official personnel is required prior to placing footing concrete and grout activities.

NOTE: USE DEFORMED NO. 4 REBAR AT 32" O.C. IN CELLS FILLED WITH GROUT (COMPRESSIVE STRENGTH: 2,000 PSI IN 28 DAYS)



VIEW "B"

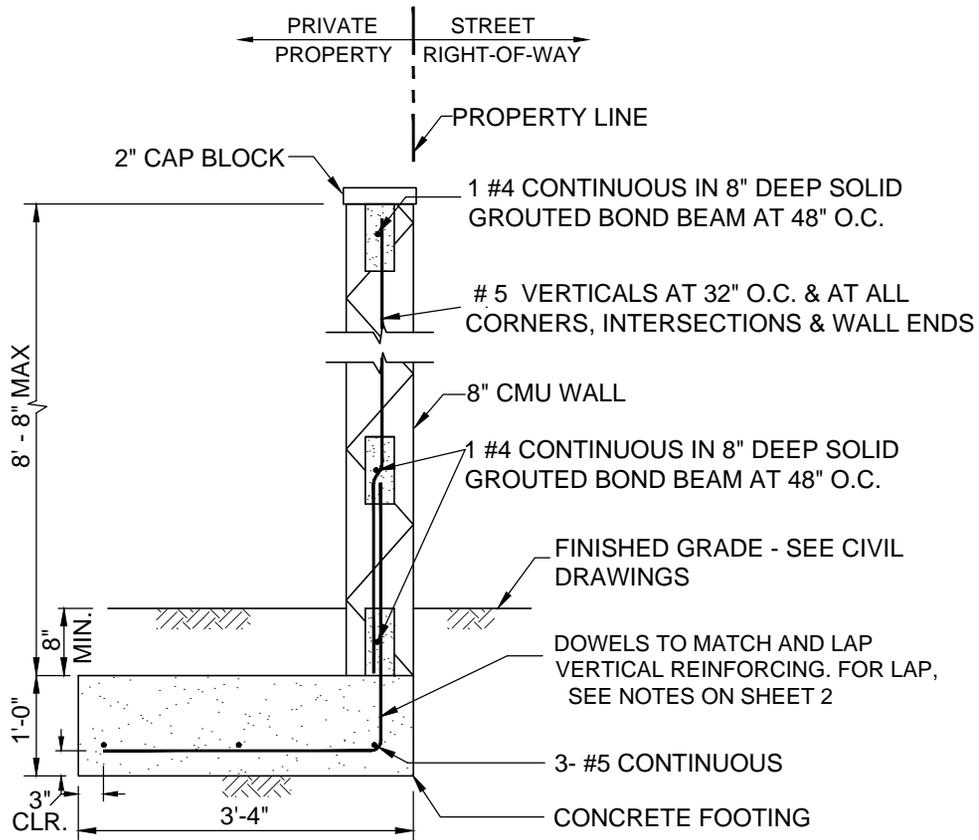
12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

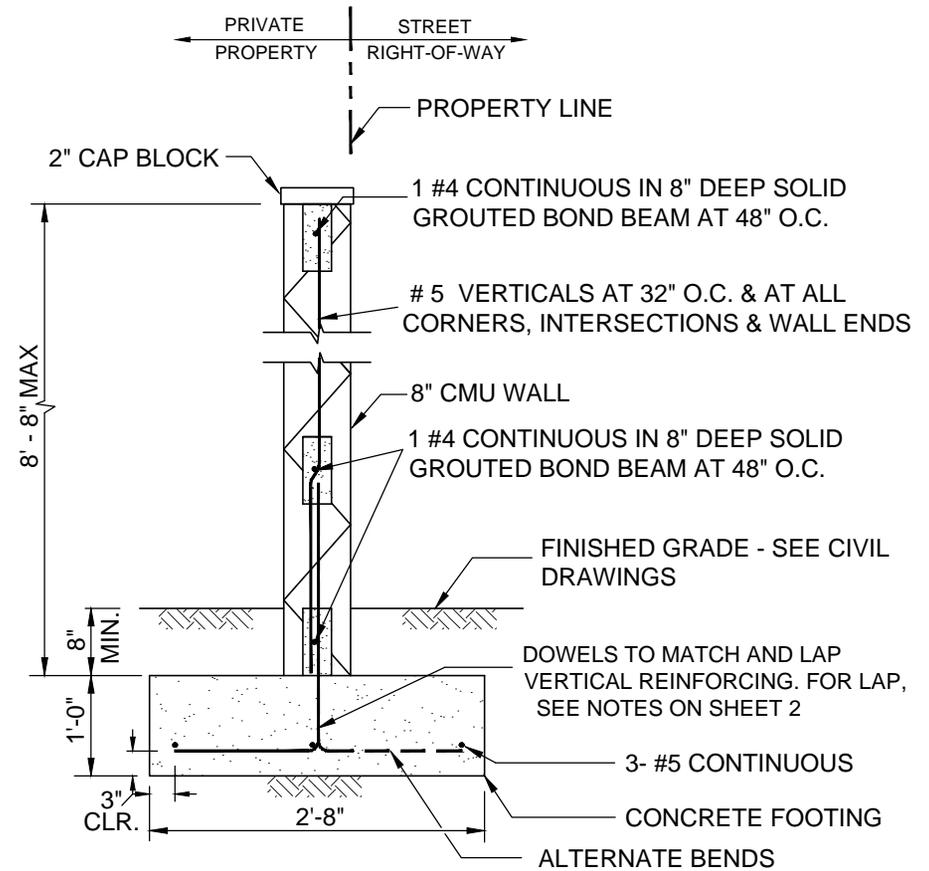
STANDARD NO. 1-005
TRASH ENCLOSURE

CAUTION

MAINTAIN 18' VERTICAL CLEARANCE (MIN.) ABOVE TRASH ENCLOSURE AND 20' IN FRONT OF ENCLOSURE (MIN.).



FREESTANDING CMU WALL



**FREESTANDING CMU WALL
w/ ALTERNATE BENDS**

NOTES

1. For location of site walls, see architectural and/or civil drawings.
2. Provide masonry control joints at 24'-0" o.c. max in site walls.
Bond beam shall be continuous through MCJ at top & bottom bond beam.
3. This wall is designed as a freestanding site wall with no retaining.
4. No utilities shall pass through footing.
5. Omit mortar in all vertical joints in first course above grade.

12-27-18 (Under Review)

Sheet 1 of 2

**CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS**

**STANDARD NO. 1-010
NON-RETAINING
8' TALL CMU SITE WALL**

1. All work shall conform to the 2018 International Building Code.
2. Notes and details on drawings shall take precedence over general structural notes and typical details. Where no specific details are shown, construction shall conform to similar work on the project.
3. Verify all dimensions with civil drawings prior to start of construction- resolve any discrepancy with the civil engineer. Do not scale drawings.
4. All footings shall bear on firm, undisturbed native soil. All soil below footings and slabs shall be compacted to 95% minimum in accordance with ASTM D698. Design soil bearing pressure=1500 PSF. The City of Yuma accepts no responsibility for existing soil conditions. Footing design is based upon minimum International Building Code soil bearing values as required by the Building Safety department in the absence of a soil report. It shall be the contractor's responsibility to verify the soil bearing pressure and to determine whether unsuitable soil conditions (I.E., expansive or collapsible soils, loose fill, etc.) exist.
5. The contractor shall take all measures necessary to protect the structure during construction, including, but not limited to, bracing, shoring, etc. The contractor shall be responsible for the design and implementation of all scaffolding, bracing and shoring. Observation visits to the site by the structural engineer shall not include inspection of the above items. The City will not be responsible for the contractor's means, methods, techniques, sequences or procedures of construction nor will the structural engineer be responsible for construction site safety, or the safety precautions and the programs incident thereto.
6. The contract structural drawings represent the finished structure. They do not indicate the method of construction.
7. Provide bent corner bars to match and lap horizontal reinforcing at corners and intersections in masonry wall bond beams and footings.
8. Design loads:
 - a. assumed soil properties
 - i. allowable soil bearing pressure= 1,500 PSF
 - b. wind pressure= 16.0 PSF (based on 90 mph, exposure C, Iw = 1.0
 - c. seismic design force= 0.22W (working stress level based on SDS=0.784
SDS= D, I_E = 1.0, category II
9. Materials of construction:
 - a. concrete:
 - i. ASTM C94, F'c = 3,000 PSI at 28 days (design is based on 2,500 PSI).
 - b. reinforcing:
 - i. ASTM A 615 grade 40 for #3 and smaller
 - ii. ASTM A 615 grade 60 for #4 and larger
 - iii. Lap length for #4 bars in concrete is 29"
 - iv. Lap length for #4 bars in CMU is 24"
 - v. Lap length for #5 bars in concrete is 36"
 - vi. Lap length for #5 bars in CMU is 30"
 - vii. Lap length for #6 bars in concrete is 43"

- c. CMU: Masonry work shall conform to ACI 530 "Building Code Requirements for Masonry Structures" and the 2018 International Building Code.
 - i. ASTM C90, grade N, type I, F'm=1500 PSI, laid in running bond.
- d. Grout:
 - i. ASTM C476, 2000 PSI at 28 days, tested per ASTM C1019.
 - ii. grout all cells and courses containing reinforcing.
- e. Mortar:
 - i. ASTM C270, Type S, 1800 PSI at 28 days, per ASTM C270 proportion specification.
10. All walls shall be plumb.
11. Backfill shall be compacted to a minimum of 95%.
12. Walls shall not extend into visibility triangles at alleys, driveways and street intersections.
13. Graffiti inhibiting coating required if wall is permitted within City or abutting right-of-way.
FOR ALL WALLS OVER 7'
14. Building permit required from City Building Official.
15. Building Safety inspection required prior to placing footing concrete and grouting activities.
16. Special inspections: special inspections shall be performed by a qualified inspector approved by the building official. The contractor shall be responsible for providing a minimum of 24 hours notice to the special inspector and the testing laboratory prior to beginning any work for which special inspection or testing is required.
 - a. Special inspection is required during the following operations per IBC chapter 17:
 - i. Structural masonry: during preparation of prisms, placement of reinforcing, inspection of footing rebar and vertical dowels prior to pouring footing concrete, inspection of grout space immediately prior to closing of cleanouts and during placement of all grout. Special inspection for placing of units may be performed on a periodic basis.
 - b. Duties and responsibilities of the special inspector:
 - i. The special inspector shall observe the work assigned for conformance with the approved design drawings and specifications.
 - ii. The special inspector shall furnish inspection reports to the building official. All discrepancies shall be brought to the immediate attention of the contractor for correction, then, if uncorrected, to the building official.
 - iii. Upon completion of the assigned work, the special inspector shall complete and sign a final report certifying that to the best of the inspector's knowledge, the work is in conformance with the approved plans and specifications, and the applicable workmanship provisions of the code.

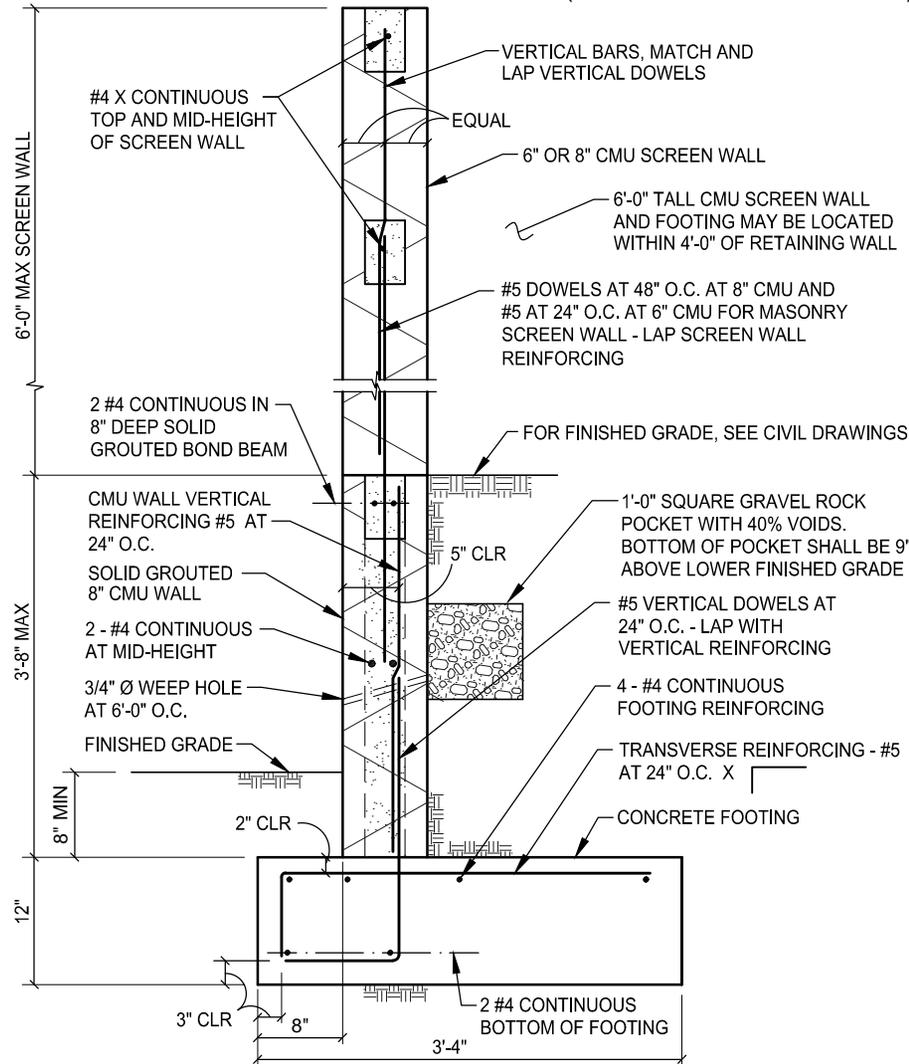
12-07-18 (Under Review)

Sheet 2 of 2

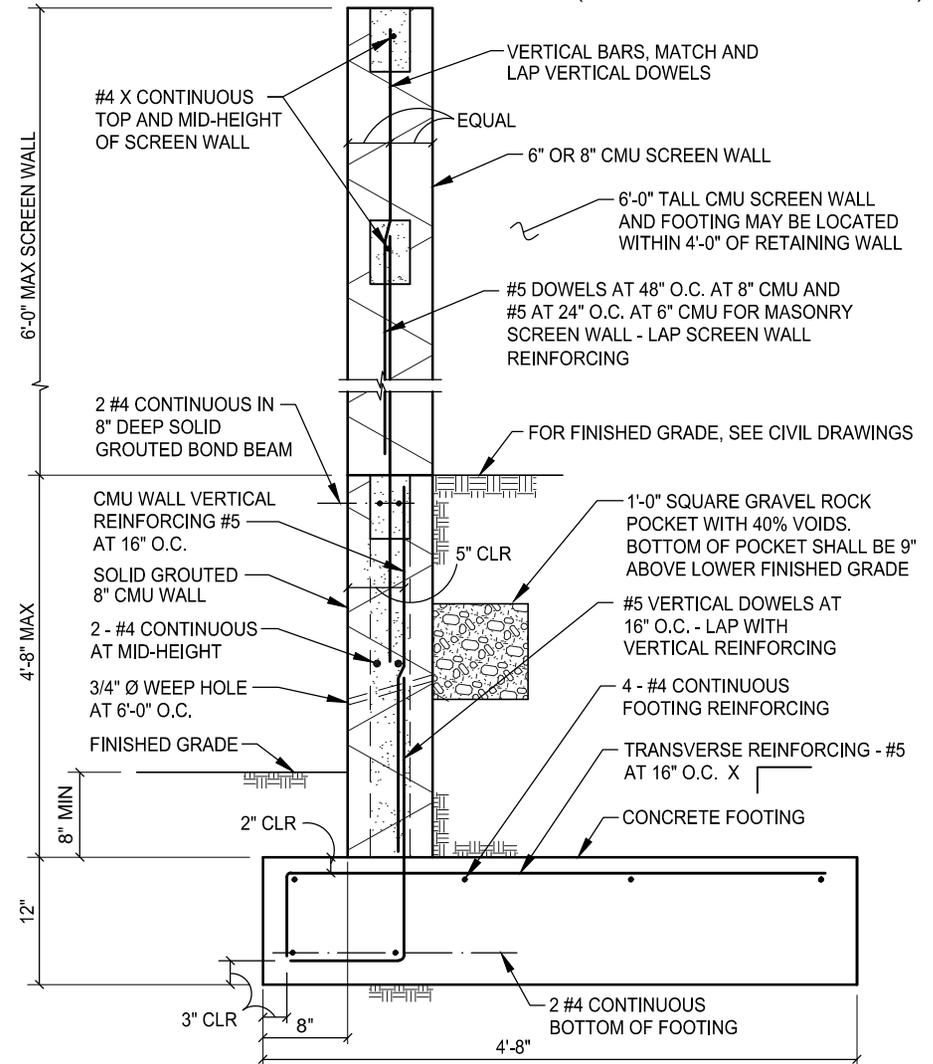
CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 1-010
GENERAL STRUCTURAL
NOTES- FREESTANDING WALL

DETAIL "A" (3'-0" GRADE DIFFERENCE)



DETAIL "B" (4'-0" GRADE DIFFERENCE)



NOTES

1. For location of site walls, see architectural and/or civil drawings.
2. Provide masonry control joints at 24'-0" o.c. maximum in site walls. Bond beam shall be continuous through MCJ at top of screen wall, top of retaining wall and at bottom bond beam.
3. No building footing, swimming pool, roadway, driveway, or parking lot, allowed within 4'-0" of wall. 6'-0" tall CMU screen walls may be located within 4'-0" of the wall.
4. See sheet 4 for utility and stepped footing details, and sheet 5 for general structural notes.
5. Swimming pools located on the high soil side, less than 10'-0" and greater than 4'-0" from the property line face of wall shall be designed with a negative edge pool shell.

12-27-18 (Under Review)

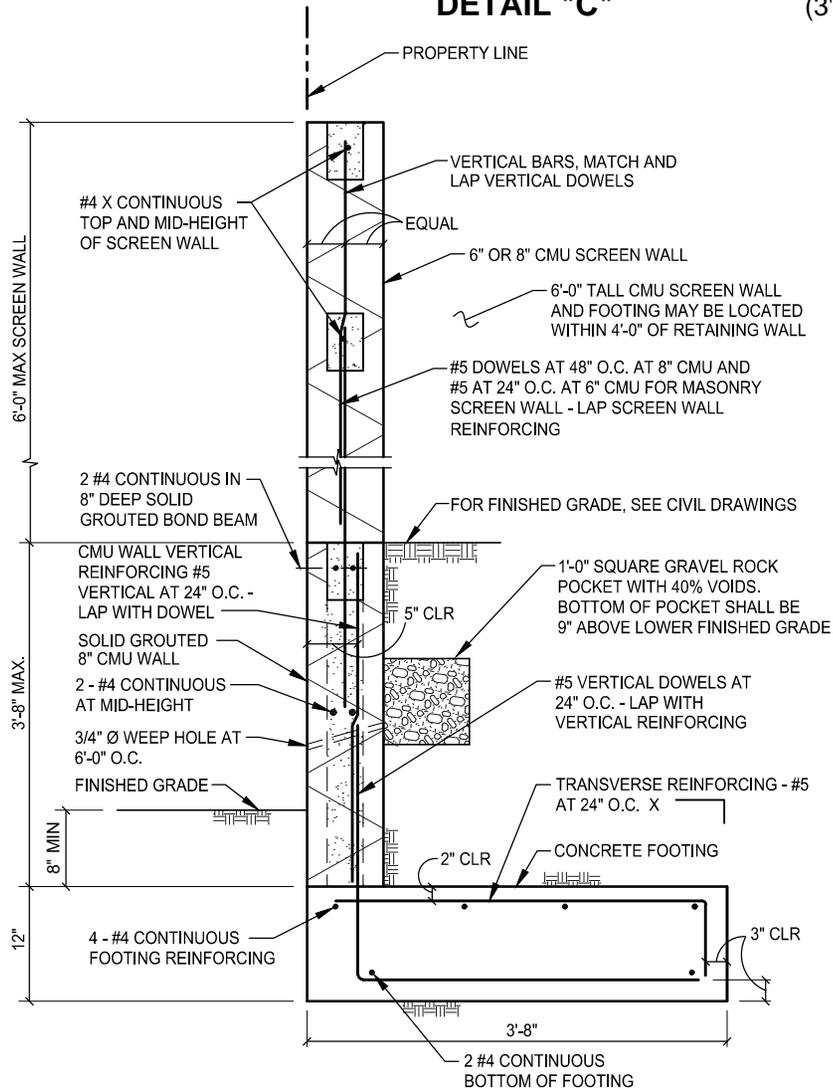
Sheet 1 of 5

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

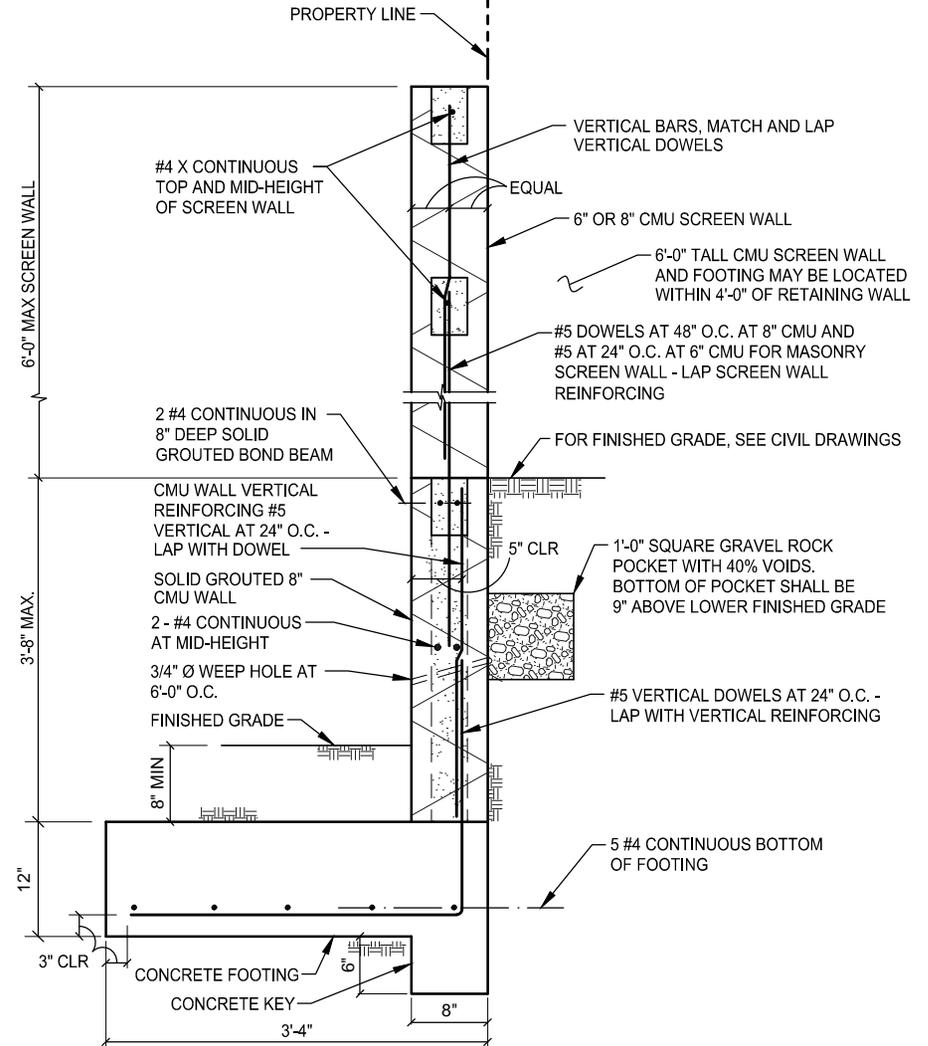
STANDARD NO. 1-020
CMU SITE RETAINING WALL
3'-0" AND 4'-0"

DETAIL "C"

(3'-0" GRADE DIFFERENCE)



DETAIL "D"



NOTES

1. For location of site walls, see architectural and/or civil drawings.
2. Provide masonry control joints at 24'-0" o.c. maximum in site walls. Bond beam shall be continuous through MCJ at top of screen wall, top of retaining wall and at bottom bond beam.
3. No building footing, swimming pool, roadway, driveway, or parking lot, allowed within 4'-0" of wall. 6'-0" tall CMU screen walls may be located within 4'-0" of the wall.
4. See sheet 4 for utility and stepped footing details, and sheet 5 for general structural notes.
5. Swimming pools located on the high soil side, less than 10'-0" and greater than 4'-0" from the property line face of wall shall be designed with a negative edge pool shell.

12-27-18 (Under Review)

Sheet 2 of 5

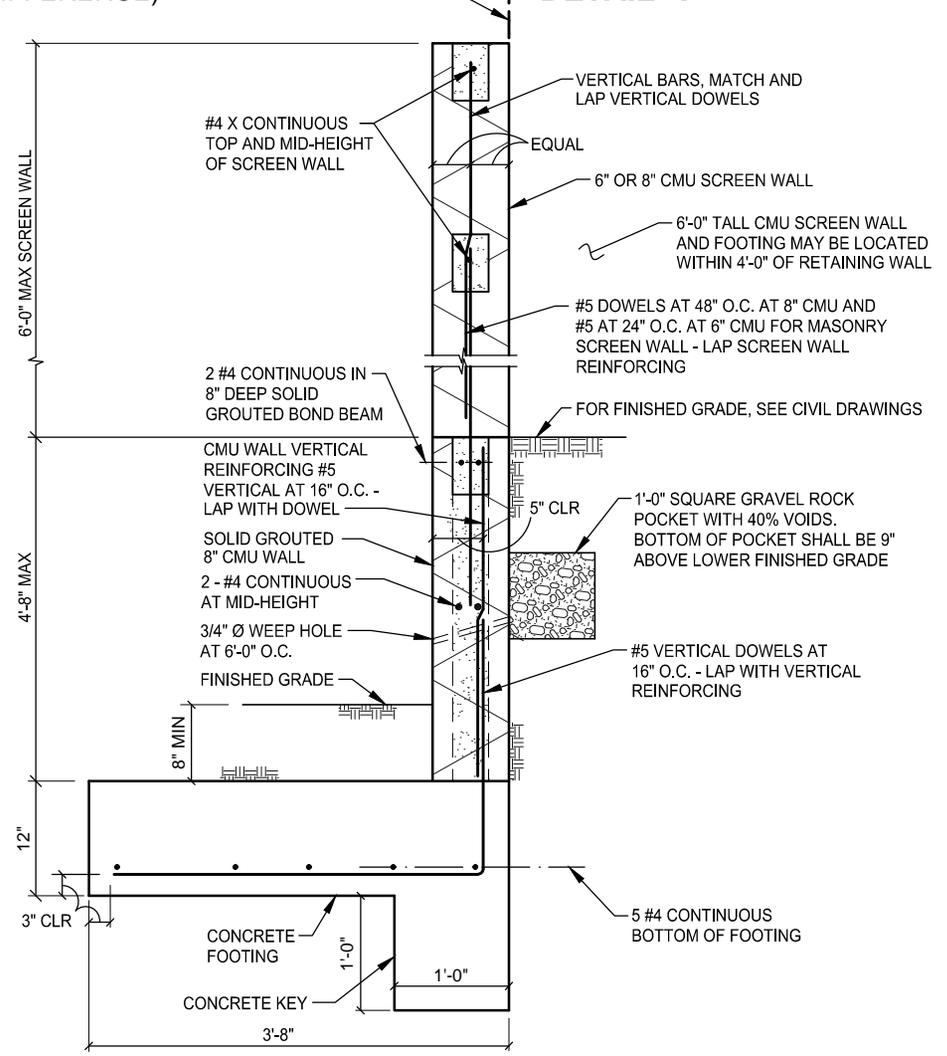
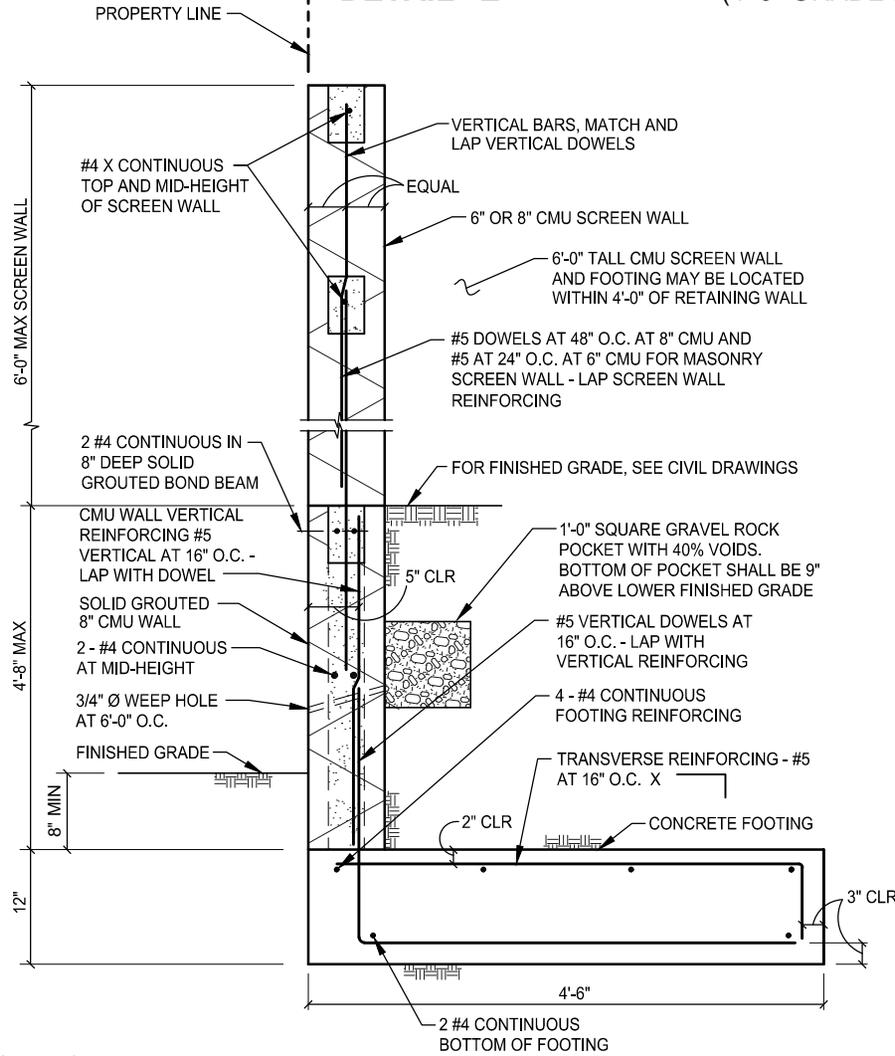
CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 1-020
CMU 3'-0" SITE RETAINING WALL
AT PROPERTY LINE

DETAIL "E"

(4'-0" GRADE DIFFERENCE)

DETAIL "F"



NOTES

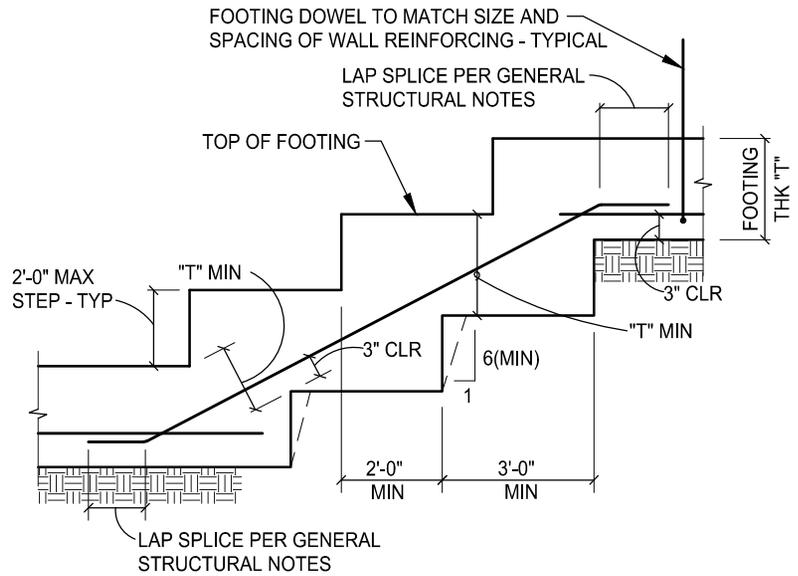
1. For location of site walls, see architectural and/or civil drawings.
2. Provide masonry control joints at 24'-0" o.c. maximum in site walls. Bond beam shall be continuous through MCJ at top of screen wall, top of retaining wall and at bottom bond beam.
3. No building footing, swimming pool, roadway, driveway, or parking lot, allowed within 4'-0" of wall. 6'-0" tall CMU screen walls may be located within 4'-0" of the wall.
4. See sheet 4 for utility and stepped footing details, and sheet 5 for general structural notes.
5. Swimming pools located on the high soil side, less than 10'-0" and greater than 4'-0" from the property line face of wall shall be designed with a negative edge pool shell.

12-27-18 (Under Review)

Sheet 3 of 5

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

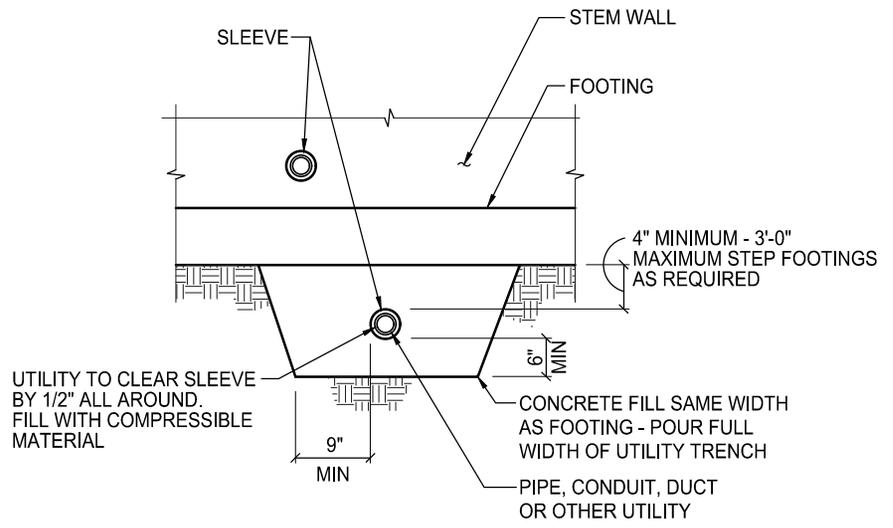
STANDARD NO. 1-020
CMU 4'-0" SITE RETAINING WALL
AT PROPERTY LINE



NOTES

1. This detail shall be used as required to maintain footing depths shown on details.
2. See details for reinforcing and footing sizes.
3. Bottom of footings shall be stepped - sloping footing bottoms are not permitted.

TYPICAL STEPPED FOOTING DETAIL



NOTES

1. No utilities shall pass through footing.
2. Provide 4" minimum spacing between multiple pipes.

UTILITIES THROUGH/UNDER FOUNDATION

| | |
|---|--------------|
| 12-27-18 (Under Review) | Sheet 4 of 5 |
| <p>CITY OF YUMA CONSTRUCTION STANDARD DETAIL DRAWINGS</p> <p>STANDARD NO. 1-020 RETAINING WALL TYPICAL DETAILS</p> | |

1. All work shall conform to the 2018 International Building Code.
2. Notes and details on drawings shall take precedence over general structural notes and typical details. Where no specific details are shown, construction shall conform to similar work on the project.
3. Verify all dimensions with civil drawings prior to start of construction - resolve any discrepancy with the civil engineer. Do not scale drawings.
4. All footings shall bear on firm, undisturbed native soil. All soil below footings and slabs shall be compacted to 95% minimum in accordance with ASTM D698. Design soil bearing pressure = 1500 PSF. The City of Yuma accepts no responsibility for existing soil conditions. Footing design is based upon minimum international building code soil bearing values as required by the building safety department in the absence of a soil report. It shall be the contractor's responsibility to verify the soil bearing pressure and to determine whether unsuitable soil conditions (I.E., expansive or collapsible soils, loose fill, etc.) exist.
5. The contractor shall take all measures necessary to protect the structure during construction, including, but not limited to, bracing, shoring, etc. The contractor shall be responsible for the design and implementation of all scaffolding, bracing and shoring. Observation visits to the site by the structural engineer shall not include inspection of the above items. The City will not be responsible for the contractor's means, methods, techniques, sequences or procedures of construction nor will the structural engineer be responsible for construction site safety, or the safety precautions and the programs incident thereto.
6. The contract structural drawings represent the finished structure. They do not indicate the method of construction.
7. Provide bent corner bars to match and lap horizontal reinforcing at corners and intersections in masonry wall bond beams and footings.
8. Design loads:
 - a. Assumed soil properties:
 - i. Allowable soil bearing pressure = 1,500 PSF
 - ii. Active soil pressure = 45 PCF
 - iii. Passive soil pressure = 200 PCF
 - iv. Footing/soil friction = 0.30
 - b. Wind pressure = 16.0 PSF (based on 90 MPH, exposure C, IW = 1.0)
 - c. Seismic design force = $0.22W$ (working stress level based on $SDS = 0.784$
 $SDS = D, I_E = 1.0$, category II)
 - d. Vertical surcharge = 40 PSF
9. Materials of construction:
 - a. Concrete:
 - i. ASTM C94, $F'_c = 3000$ PSI at 28 days (design is based on 2,500 PSI).
 - b. Reinforcing -
 - i. ASTM A615 grade 40 for #3 and smaller
 - ii. ASTM A615 grade 60 for #4 and larger
 - iii. Lap length for #4 bars in concrete is 29"
 - iv. Lap length for #4 bars in CMU is 24"
 - v. Lap length for #5 bars in concrete is 36"
 - vi. Lap length for #5 bars in CMU is 30"
 - vii. Lap length for #6 bars in concrete is 43"
 - c. CMU: masonry work shall conform to ACI 530 "Building Code Requirements for Masonry Structures" and the 2018 International Building Code.
 - i. ASTM C90, grade N, Type I, $F'm = 1500$ PSI, laid in running bond.
 - d. Grout:
 - i. ASTM C476, 2000 PSI at 28 days, tested per ASTM C1019.
 - ii. Grout all cells and courses containing reinforcing.
 - e. Mortar:
 - i. ASTM C270, Type S, 1800 PSI at 28 days, per ASTM C270 proportion specification.
10. All walls shall be plumb.
11. Backfill shall be compacted to a minimum of 95%.
12. Walls shall not extend into visibility triangles at alleys, driveways and street intersections.
13. Building permit required from City Building Official.
14. Graffiti inhibiting coating required within city right-of-way.
15. Building safety inspection required prior to placing footing concrete and grouting activities.
16. Special inspections: special inspections shall be performed by a qualified inspector approved by the building official. The contractor shall be responsible for providing a minimum of 24 hours notice to the special inspector and the testing laboratory prior to beginning any work for which special inspection or testing is required.
 - a. Special inspection is required during the following operations per IBC chapter 17:
 - i. Structural masonry: during preparation of prisms, placement of reinforcing, inspection of footing rebar and vertical dowels prior to pouring footing concrete, inspection of grout space immediately prior to closing of cleanouts and during placement of all grout. Special inspection for placing of units may be performed on a periodic basis.
 - b. Duties and responsibilities of the special inspector:
 - i. The special inspector shall observe the work assigned for conformance with the approved design drawings and specifications.
 - ii. The special inspector shall furnish inspection reports to the building official. All discrepancies shall be brought to the immediate attention of the contractor for correction, then, if uncorrected, to the building official.
 - iii. Upon completion of the assigned work, the special inspector shall complete and sign a final report certifying that to the best of the inspector's knowledge, the work is in conformance with the approved plans and specifications, and the applicable workmanship provisions of the code.

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 1-020
RETAINING WALL
GENERAL STRUCTURAL NOTES

ASPHALT VARIABLE THICKNESS

TYPE A OR B PAVEMENT REPAIR
FLUSH WITH EXISTING PAVEMENT

FINAL BACKFILL MATERIAL OPTIONS:

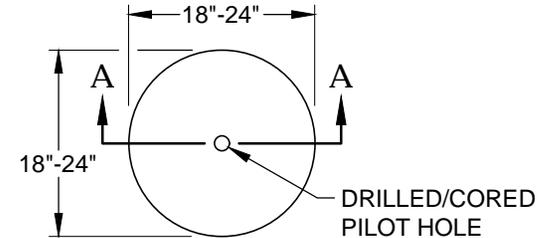
- NATIVE SOIL PER MAG SECTION 601 (TYPE B ONLY)
- ABC PER MAG SECTION 702 (TYPE B ONLY)
- 1/2-SACK CONTROLLED LOW STRENGTH MATERIAL PER MAG SECTION 728

HIGHEST EXISTING UTILITY(S)

MATERIAL TO CONFORM TO
MAG SECTION 601

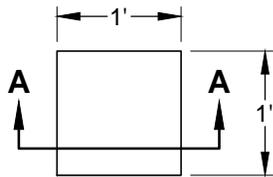
SECTION VIEW

TYPE B PAVEMENT REPAIR

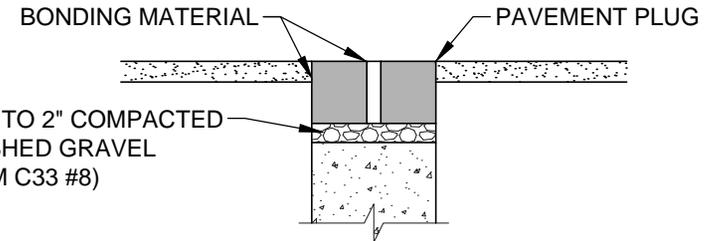


PLAN VIEW

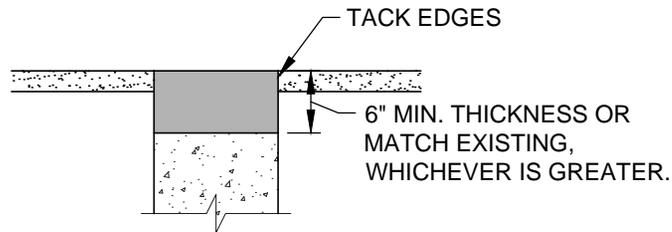
TYPE A PAVEMENT REPAIR



PLAN VIEW



SECTION A-A



SECTION A-A

NOTES

1. Cut, remove and replace pavement.
Plug in accordance with MAG Section 355.
2. Place backfill in accordance with MAG Section 355.
3. Bonding material shall be as specified in MAG Section 708.

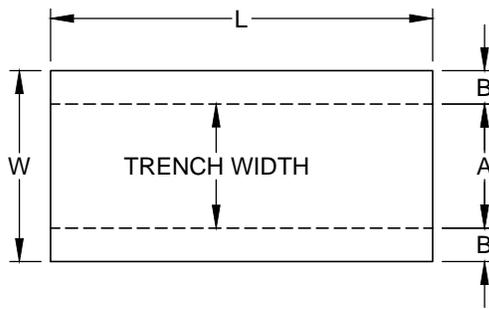
NOTES

1. Dimensions are nominal.
2. Edges shall be cut to a neat vertical face.
3. Place controlled low strength material backfill in accordance with MAG section 604.
4. Place agency-approved asphalt concrete in maximum 2" lifts.

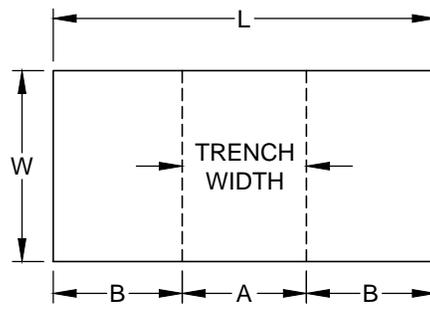
12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

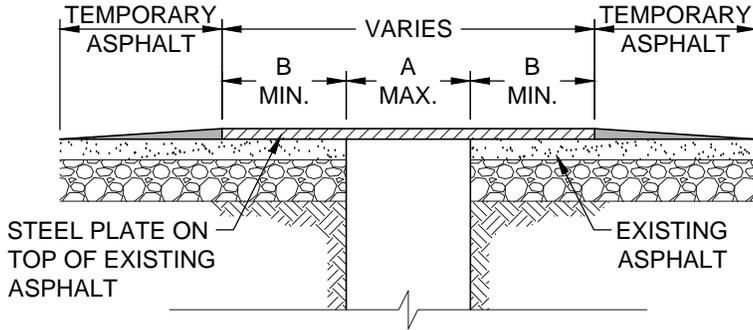
STANDARD NO. 1-025
UTILITY POTHOLE
REPAIR



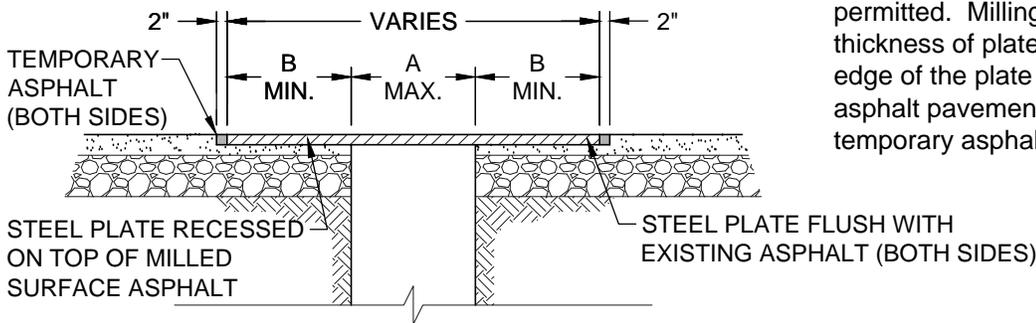
LONGITUDINAL STEEL PLATE



TRANSVERSE STEEL PLATE



TYPE 1



TYPE 2

NOTES

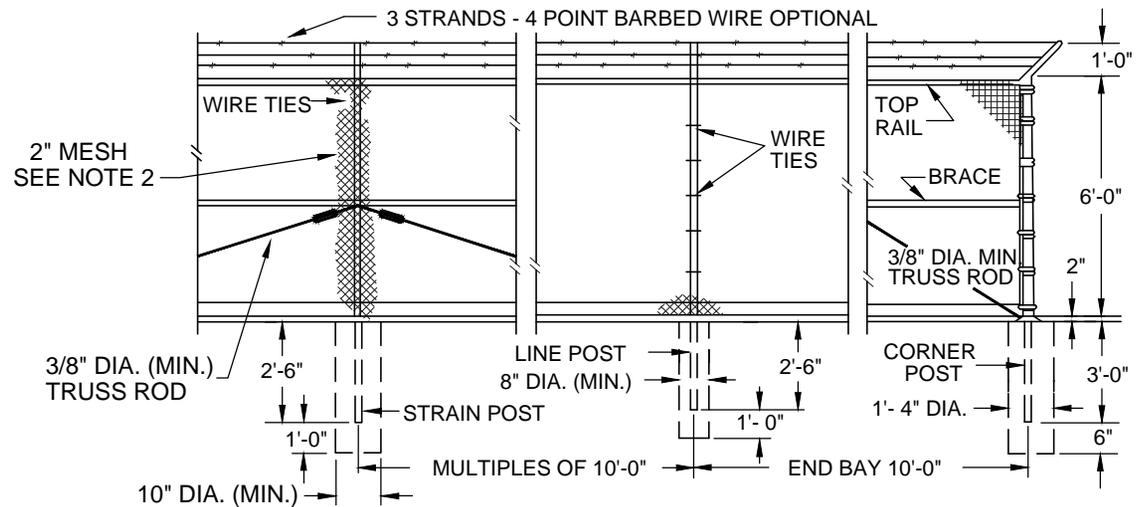
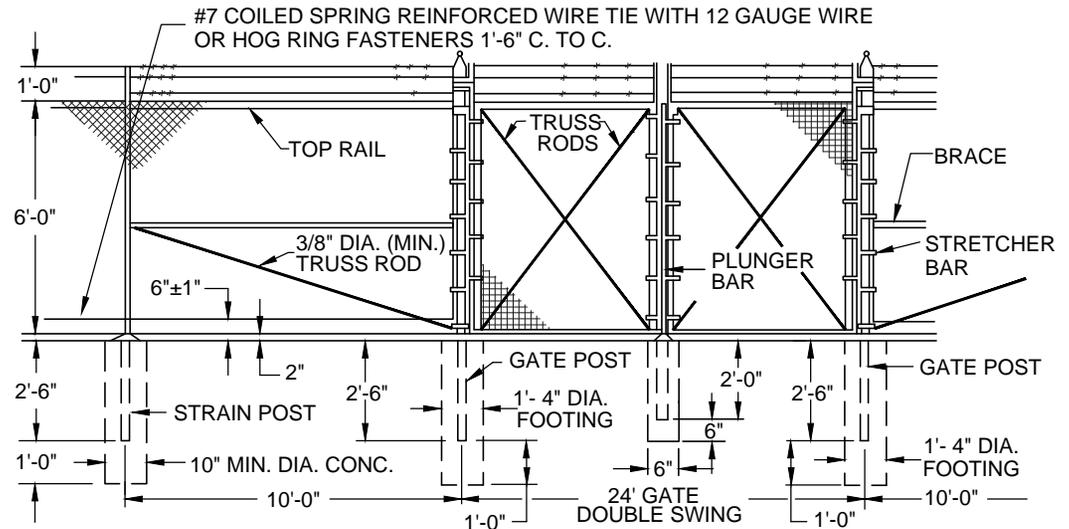
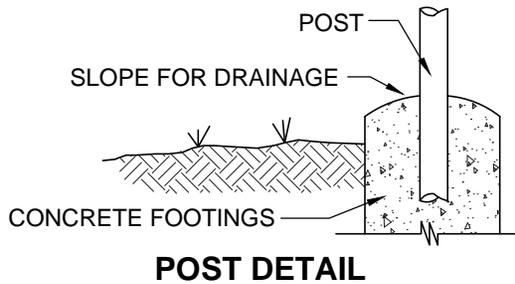
1. Use Type 1 plate installation where posted speed limit is less than 30 MPH. Use Type 2 installation where posted speed limit is 30 MPH or greater.
2. For Type 2 plate installation, the steel plate shall be recessed by milling into the existing asphalt to set flush with the surface of the existing asphalt. Full depth cutting of pavement section outside of trench is not permitted. Milling depth shall match thickness of plate. The gap between the edge of the plate and the adjacent existing asphalt pavement must be filled with temporary asphalt.
3. Trench widths are based on an analysis per the 14th edition of Standard Specifications for Highway Bridges by AASHTO. An assumed axle loading of 12 tons with a 30% impact factor was used. The axle length is 6 feet; therefore the number of wheels carried by a plate depends on the roadway width.
4. Steel plate must be able to withstand H-20 traffic loadings without any movement.
5. Plates shall be fabricated from ASTM A36 steel (min).
6. Plates shall be secured from lateral movement and vertical vibration (associated noise) while in use by temporary asphalt (cold mix.)

| PLATE SIZE | | | | | | |
|--------------|-----|-----------|-----|-----|------------|-----|
| LONGITUDINAL | | | | | TRANSVERSE | |
| (A) | (B) | THICKNESS | (W) | (L) | (A) | (B) |
| 12" | 18" | 1" | 4' | 8' | 58" | 19" |
| 12" | 18" | 1" | 4' | 10' | 58" | 31" |
| 24" | 18" | 1" | 5' | 10' | 70" | 25" |
| 36" | 18" | 1" | 6' | 10' | 44" | 38" |
| 48" | 18" | 1" | 7' | 10' | 52" | 34" |
| 60" | 18" | 1" | 8' | 10' | 58" | 31" |
| 12" | 18" | 1-1/4" | 4' | 15' | 88" | 47" |
| 24" | 18" | 1-1/4" | 5' | 12' | 104" | 20" |
| 36" | 18" | 1-1/4" | 6' | 12' | 66" | 39" |
| 36" | 18" | 1-1/4" | 6' | 16' | 66" | 63" |
| 48" | 18" | 1-1/4" | 7' | 12' | 76" | 33" |
| 48" | 18" | 1-1/4" | 7' | 16' | 76" | 58" |
| 60" | 18" | 1-1/4" | 8' | 12' | 86" | 29" |
| 60" | 18" | 1-1/4" | 8' | 15' | 86" | 47" |
| 60" | 18" | 1-1/4" | 8' | 16' | 86" | 63" |
| 60" | 18" | 1-1/4" | 8' | 20' | 86" | 77" |
| 60" | 18" | 1-3/8" | 8' | 20' | 102" | 69" |

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS
 STANDARD NO. 1-030
TRENCH PLATING
 DETAIL

| MEMBER | AISC SIZE | OUTSIDE DIA. | |
|--------|-------------|-------------------|-------------------|
| 1 | CORNER POST | 2 1/2" | 2.875" |
| 2 | LINE POST | 1 1/2" | 1.900" |
| 3 | STRAIN POST | 1 1/2" | 1.900" |
| 4 | BRACE | 1 1/4" | 1.666" |
| 5 | STRETCH BAR | 3/16" X 3/4" FLAT | 3/16" X 3/4" FLAT |
| 6 | GATE POST | 3 1/2" | 4.000" |
| 7 | TOP RAIL | 1 1/4" | 1.666" |

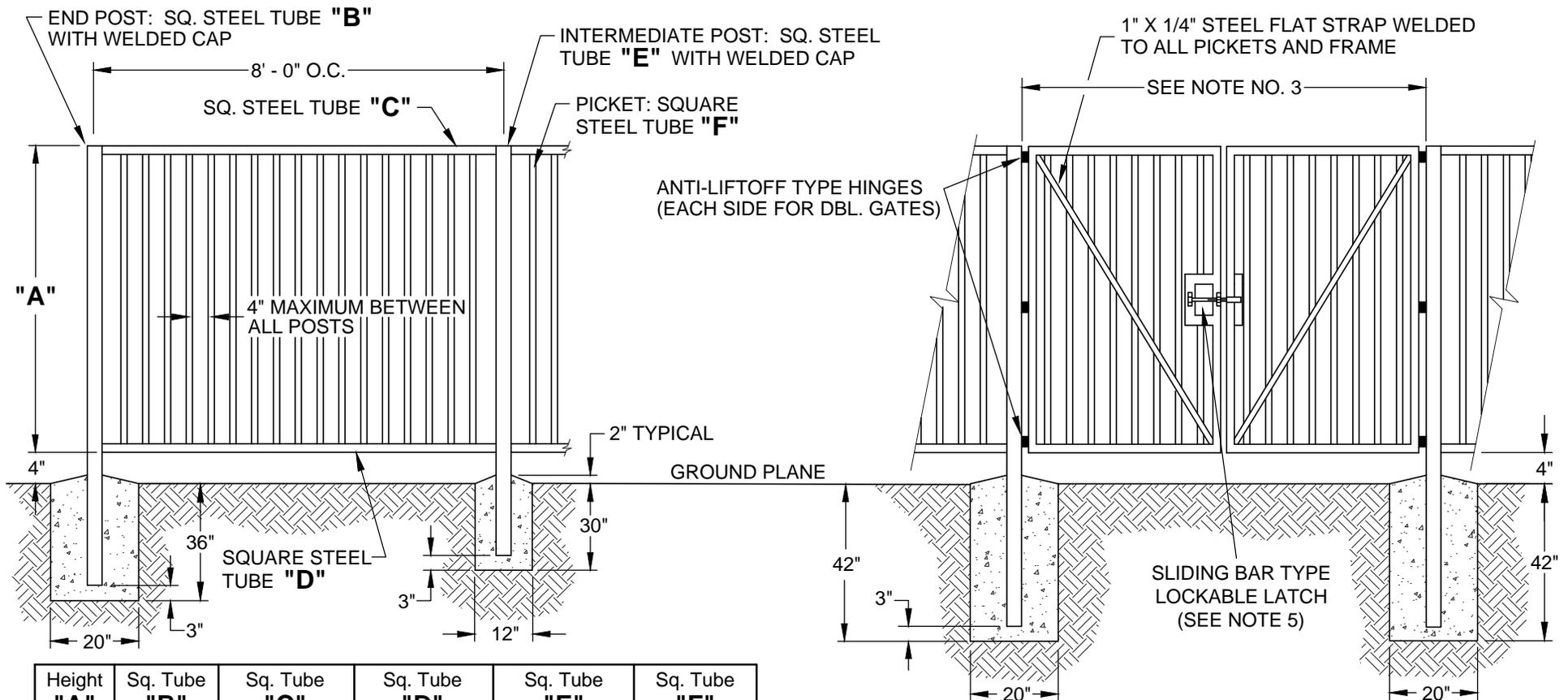


NOTES

1. All concrete shall be Class C per MAG Section 725.
2. Fence fabric shall be nine gauge / 2" mesh chain link.
3. Strain posts shall be spaced at 500' intervals (maximum).
4. Both corner and strain posts shall have at least one strain panel.
5. All posts shall be capped and plumb.
6. Fence shall not extend into visibility triangles at alleys, driveways and street intersections.
7. Fences built in front yard setbacks shall have a maximum height of three feet (3').
8. Construction and materials shall conform to MAG Sections 420 and 772 respectively.
See MAG Table 772-1 for weight of member

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS
 STANDARD NO. 1-035
6' CHAIN LINK FENCE & GATE
 (INDUSTRIAL USE ONLY)



| Height "A" | Sq. Tube "B" | Sq. Tube "C" | Sq. Tube "D" | Sq. Tube "E" | Sq. Tube "F" |
|---------------|-------------------------|-----------------------------|-----------------------------|-----------------------------|---------------------------|
| 4'-0" | 3" x 3" x 11 Gauge | 1 1/2" x 1 1/2" 14 Gauge | 1 1/2" x 1 1/2" 14 Gauge | 2 1/2" x 2 1/2" 14 Gauge | 3/4" x 3/4" x 14 Gauge |
| 6'-0" | 4" x 4" x 3/8" thick | 2" x 2" x 1/8" thick | 2" x 2" x 1/4" thick | 3" x 3" x 1/4" thick | 1" x 1" x 1/16" thick |

NOTES

1. All welded joints shall be free of sharp edges and/or burrs.
2. All metal surfaces shall be black powder coated.
3. Single access gate shall be four feet (4') wide (minimum) and vehicle access shall require two ten foot (10') wide gates (minimum).
4. Field verify all gate openings and fabricate gates to fit.
5. Contractor shall submit design drawings of the gate locking system to the City Engineer for approval.
6. Panels shall be welded to posts. Bolt-up assembly is not permitted.
7. All footings shall consist of class B concrete per MAG section 725.

12-27-18 (Under Review)

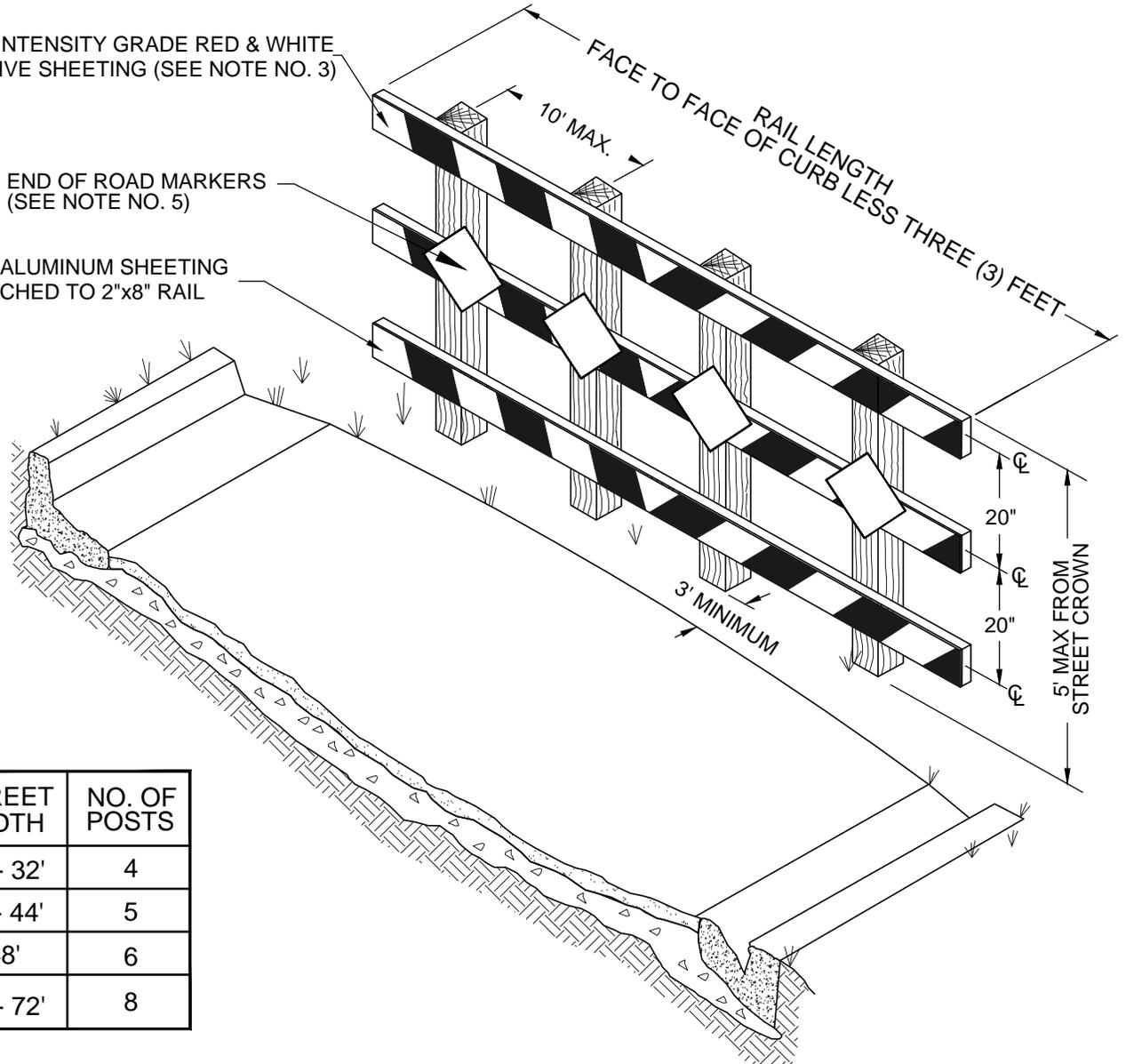
CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 1-040
STEEL TUBE FENCING

3M HIGH INTENSITY GRADE RED & WHITE REFLECTIVE SHEETING (SEE NOTE NO. 3)

END OF ROAD MARKERS (SEE NOTE NO. 5)

.080" ALUMINUM SHEETING ATTACHED TO 2"x8" RAIL

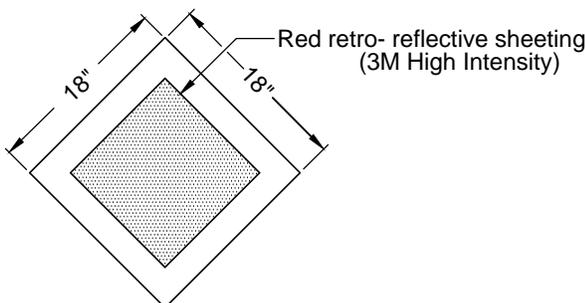


| STREET WIDTH | NO. OF POSTS |
|--------------|--------------|
| 26' - 32' | 4 |
| 38' - 44' | 5 |
| 48' | 6 |
| 68' - 72' | 8 |

NOTES

1. Barricade posts shall be 6" x 6" x 8' long (minimum) redwood, S4S, and shall be treated for direct burial. Posts shall be buried a minimum of two feet (2') deep and backfill shall be compacted to a minimum of 95%.
2. Rail timber shall be 2" x 8" No. 1 D.F., S4S, and shall receive two coats of exterior grade paint on all surfaces.
3. Barricade stripes shall be 3M Brand, high intensity prismatic grade, reflective tape applied on .080" thick aluminum sheeting or approved equal. Alternate six inch (6") wide red and white reflector tape at a 45° angle (stripes shall slope towards the center of the pavement).
4. Barricade rails are to be attached to the posts using two 3/8" x 10" long steel lag bolts at each contact point.
5. Install end of road markers (see detail below) on every post as per OM4-3 of the "Manual On Uniform Traffic Control Devices".

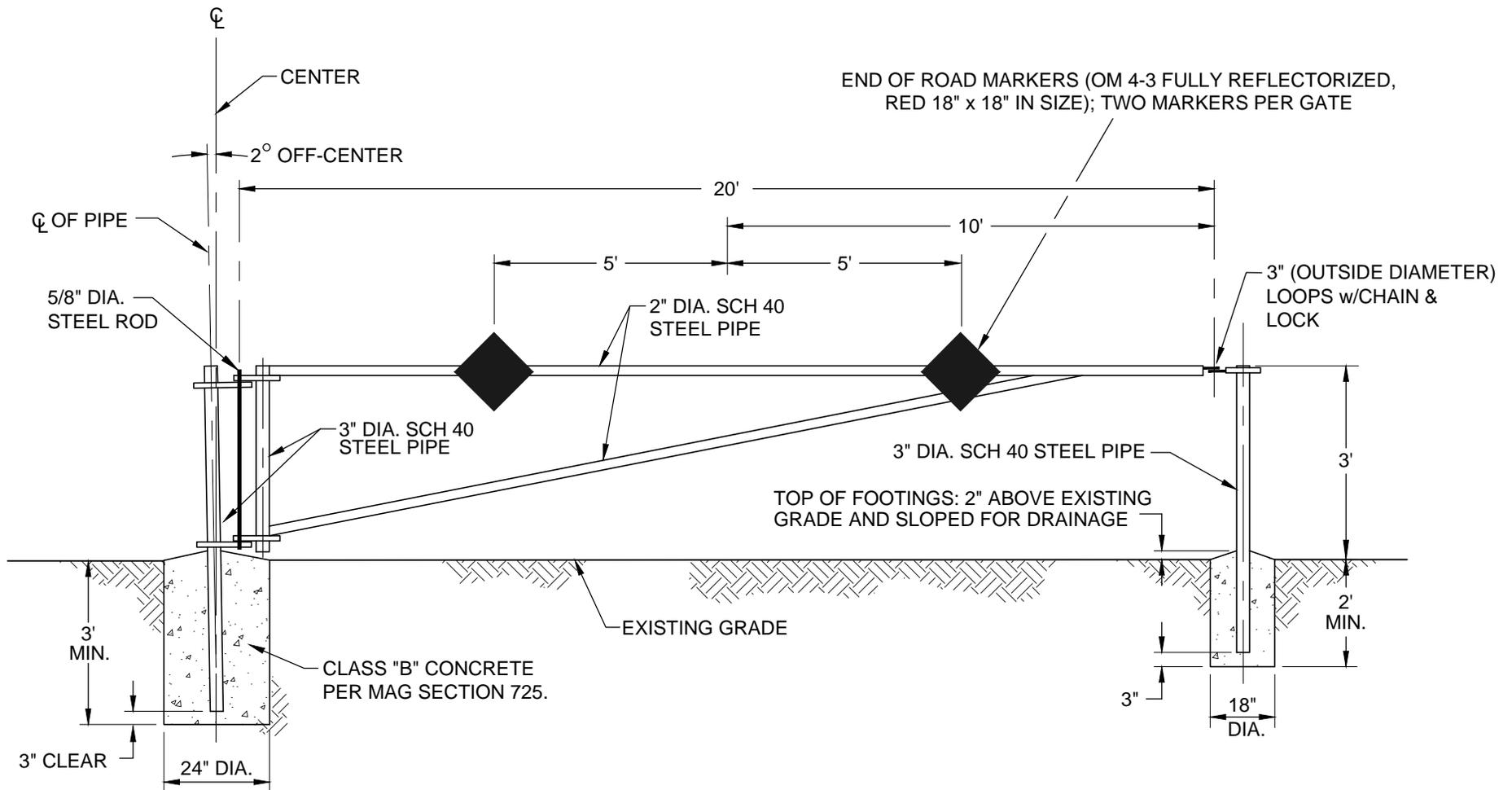
END OF ROAD MARKER (OM4-3)



11-01-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

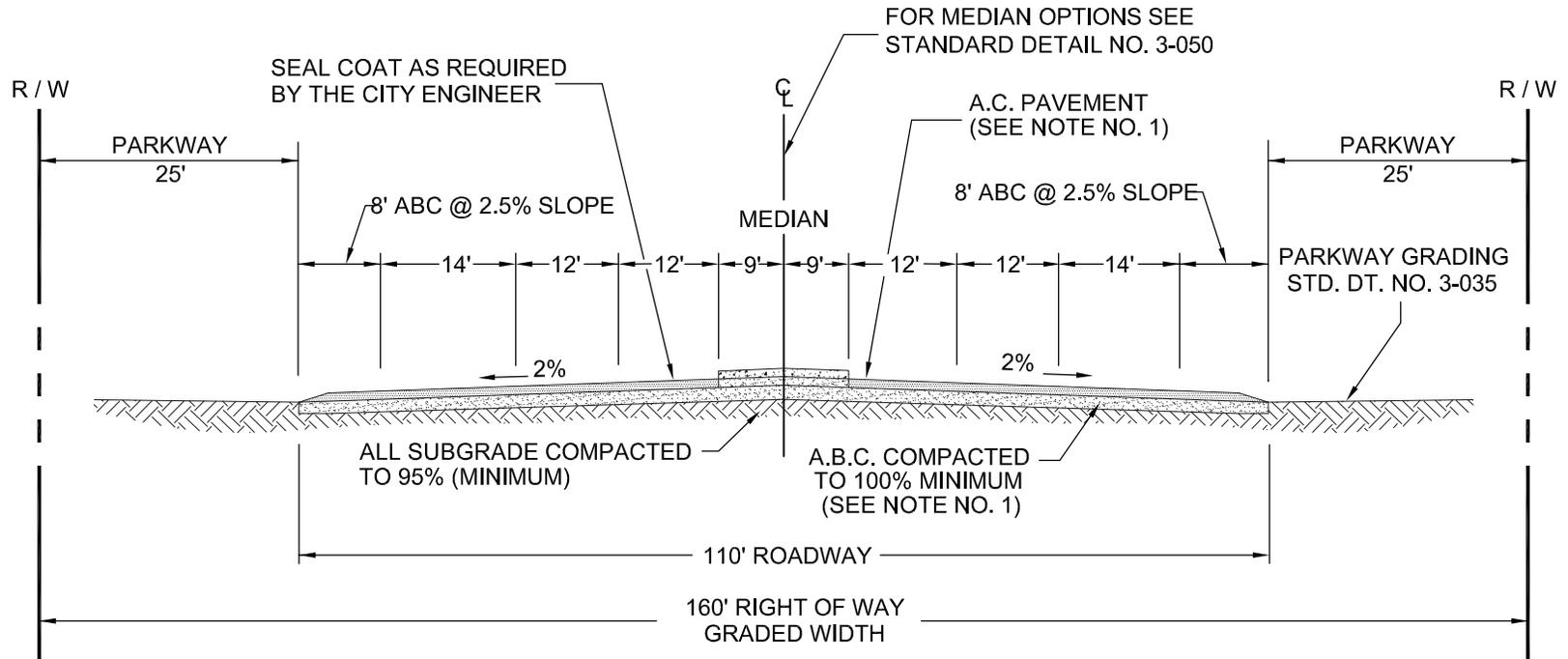
STANDARD NO. 1-045
TYPE III BARRICADE



NOTES

1. Gate shall be installed 2° off vertical as shown so it will remain open when unlocked.
2. This gate is for alley, emergency and commercial access.
3. Gate shall swing in the direction of access.
4. Completed assembly shall be painted "Safety Yellow" utilizing paint designed for this purpose.

| |
|---|
| 11-01-18 (Under Review) |
| <p>CITY OF YUMA CONSTRUCTION STANDARD DETAIL DRAWINGS</p> <p>STANDARD NO. 1-050 ACCESS GATE</p> |



6 TRAVEL LANE DESIGN

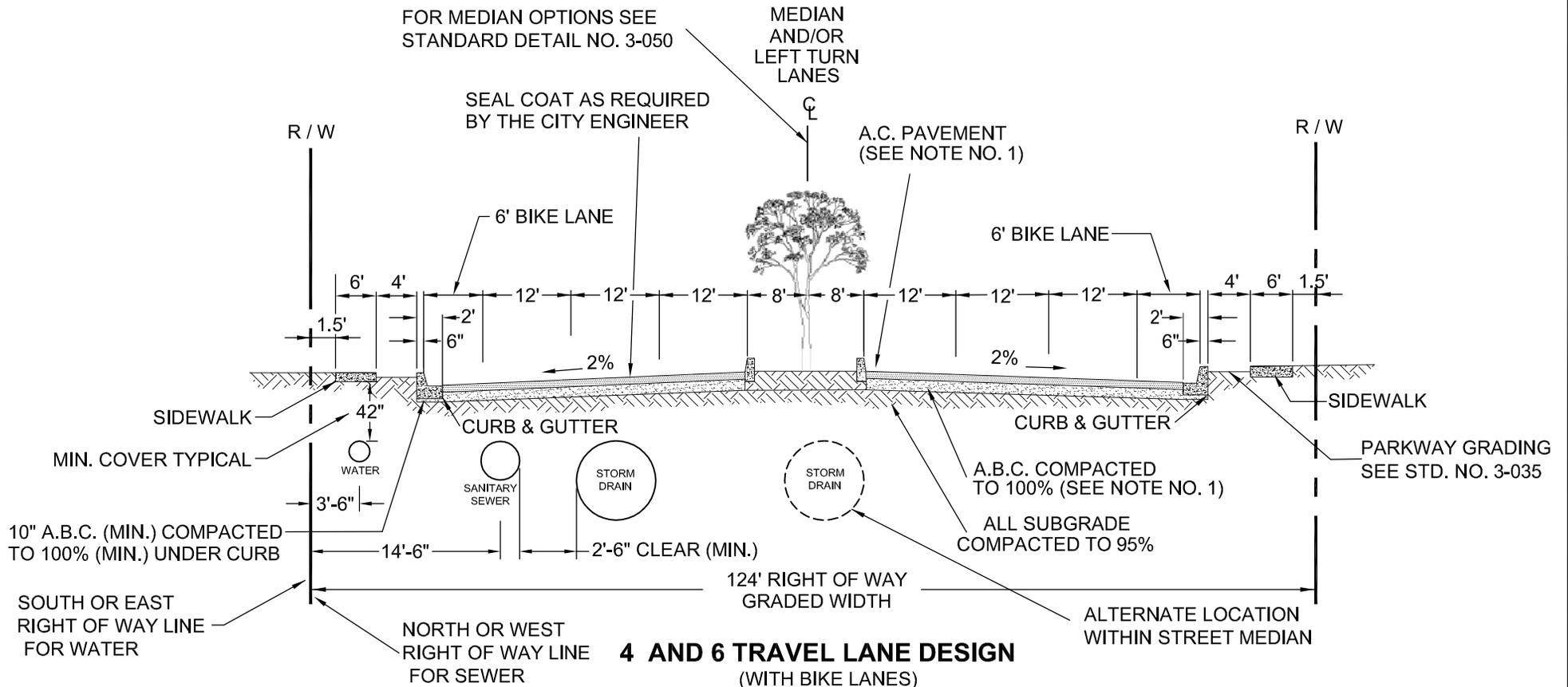
NOTES

1. Structural design of combined thickness of base and surface to be determined by soil tests. While the soil test may require a greater paving thickness, the following minimum paving thickness is required: four inches (4") for plant hot mix asphalt surfacing over twelve inches (12") of A.B.C. compacted to 100% of maximum density as determined by AASHTO T-99 method C or D.
2. All pavement marking and/or raised pavement markers shall be in accordance with the ADOT manual for signing and marking, latest edition.
3. 4" white edge road stripe at 1 1/2' from edge of pavement.
4. All A.B.C. shall be per MAG Specifications.
5. Utility locations shown in Standard Detail 2-010.

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

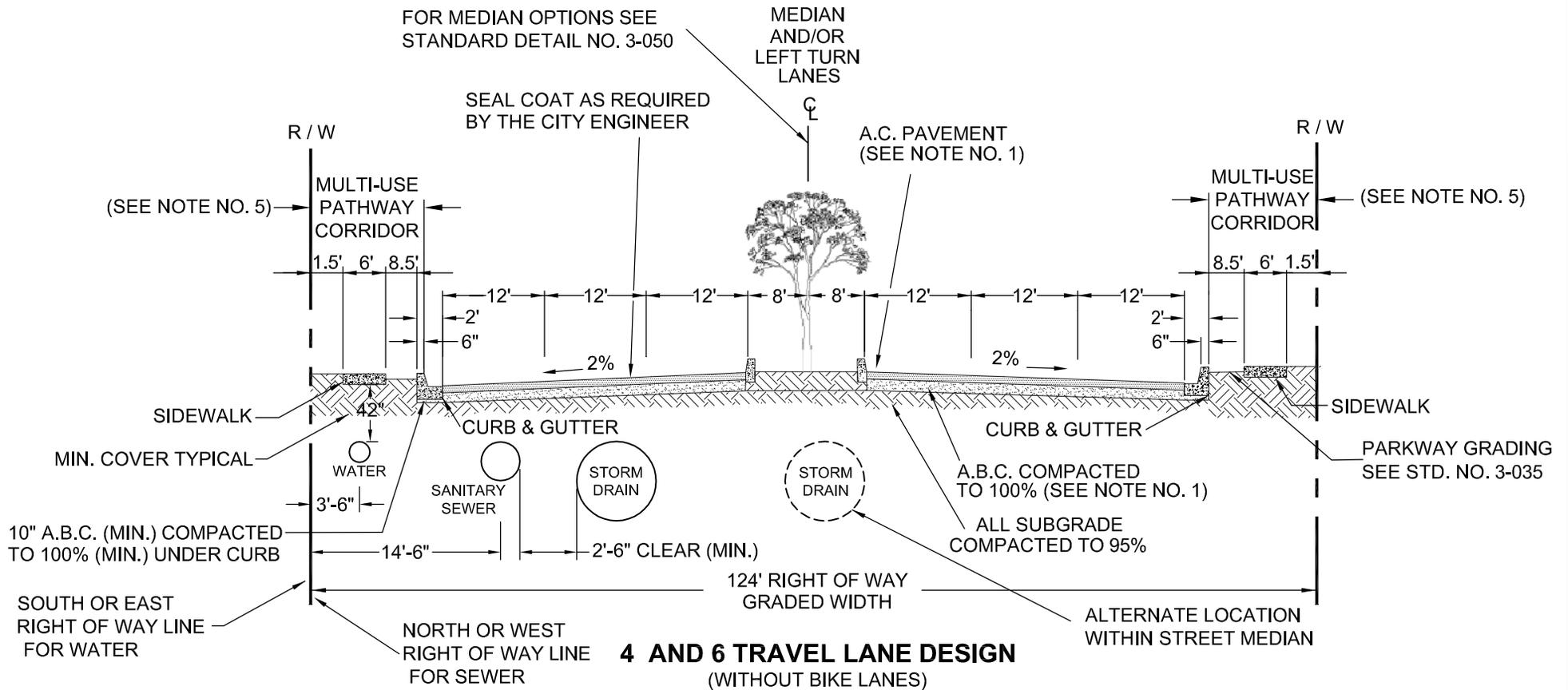
STANDARD NO. 2-005
EXPRESSWAY



NOTES

1. Structural design of combined thickness of base and surface to be determined by soil tests. While the soil test may require a greater paving thickness, the following minimum paving thickness is required: four inches (4") for plant hot mix asphalt surfacing over twelve inches (12") of A.B.C. compacted to 100% of maximum density as determined by AASHTO T-99 method C or D.
2. Sidewalk location detached from curb or as approved by the City Engineer.
3. All pavement marking and/or raised pavement markers shall be in accordance with the ADOT manual for signing and marking, latest edition.
4. Parkways and medians shall be planted in accordance with Yuma City Code, Title 15, Chapter 154, Article 20, Landscape Regulations.
5. Bicycle facilities according to the City of Yuma General Plan and most recently adopted supporting facility plans.

| | |
|---|--------------|
| 12-27-18 (Under Review) | Sheet 1 of 2 |
| <p>CITY OF YUMA</p> <p>CONSTRUCTION STANDARD DETAIL DRAWINGS</p> <p>STANDARD NO. 2-010</p> <p>PRINCIPAL ARTERIAL STREET</p> | |



NOTES

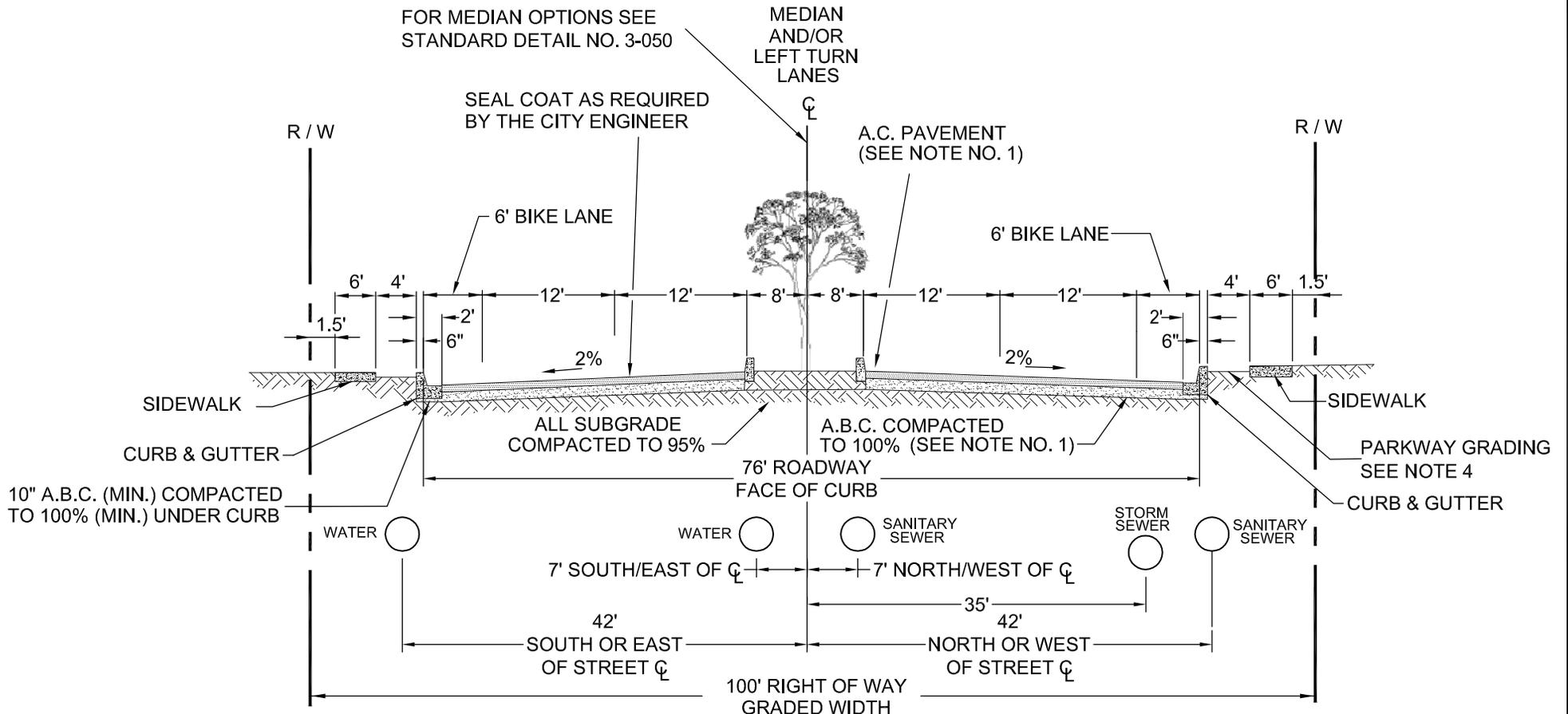
1. Structural design of combined thickness of base and surface to be determined by soil tests. While the soil test may require a greater paving thickness, the following minimum paving thickness is required: four inches (4") for plant hot mix asphalt surfacing over twelve inches (12") of A.B.C. compacted to 100% of maximum density as determined by AASHTO T-99 method C or D.
2. Sidewalk location detached from curb or as approved by the City Engineer.
3. All pavement marking and/or raised pavement markers shall be in accordance with the ADOT manual for signing and marking, latest edition.
4. Parkways and medians shall be planted in accordance with Yuma City Code, Title 15, Chapter 154, Article 20, Landscape Regulations.
5. Multi-use pathway adjacent to principal arterial streets may require shifting of street centerline 16' to accommodate 10' minimum width for multi-use pathway. Multi-use pathway will be within the 124' right of way needed for principal arterial street.

12-27-18 (Under Review)

Sheet 2 of 2

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 2-010
PRINCIPAL ARTERIAL STREET



NOTES

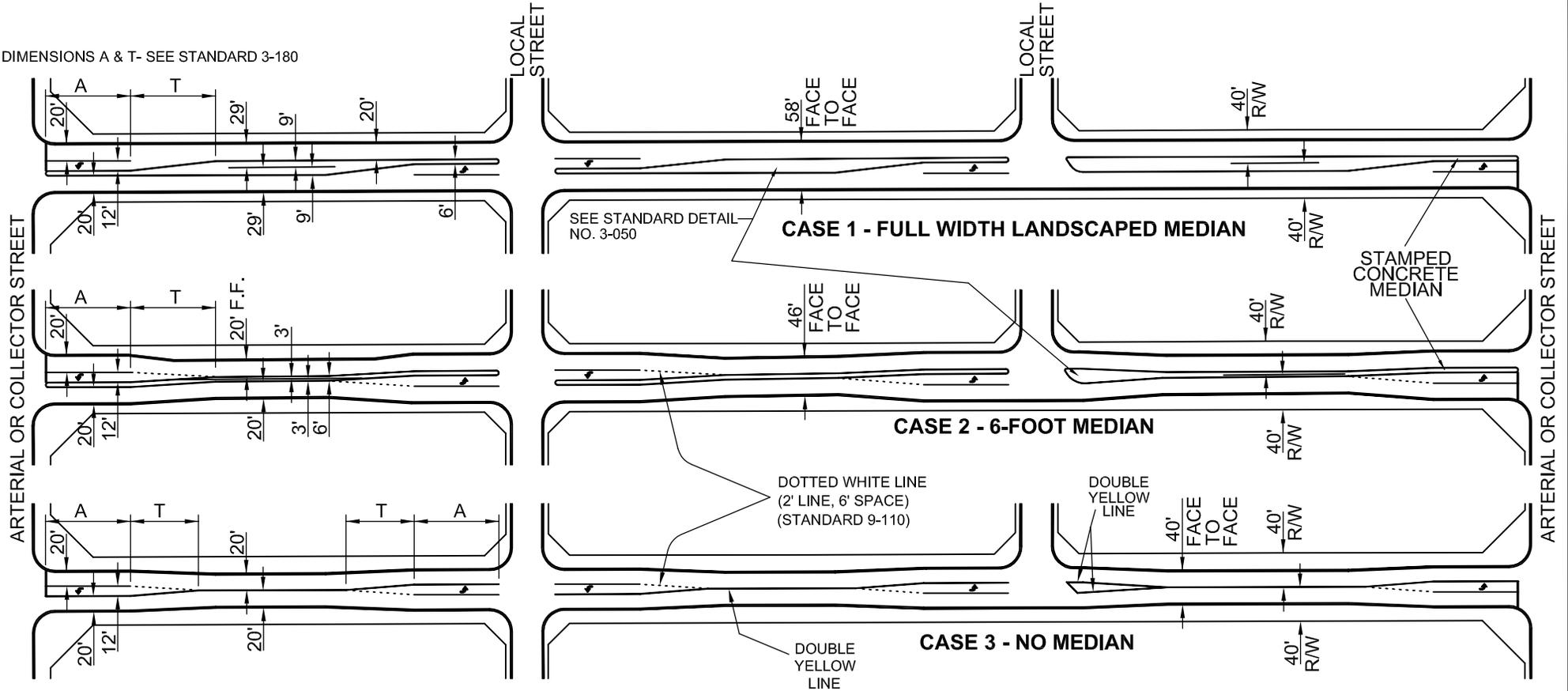
1. Structural design of combined thickness of base and surface to be determined by soil tests. While the soil test may require a greater paving thickness, the following minimum paving thickness is required: four inches (4") for plant hot mix asphalt surfacing over twelve inches (12") of A.B.C. compacted to 100% of maximum density as determined by AASHTO T-99 method C or D.
2. Sidewalk location detached from curb or as approved by the City Engineer.
3. All pavement marking and/or raised pavement markers shall be in accordance with the ADOT manual for signing and marking, latest edition.
4. Parkway and medians shall be planted in accordance with Yuma City Code, Title 15, Chapter 154, Article 20, Landscape Regulations.
5. Bicycle facilities according to the City of Yuma General Plan and most recently adopted supporting facility plans.
5. Multi-use pathway adjacent to minor arterial streets may require shifting of street centerline 16' to accommodate 10' minimum width for multi-use pathway. Multi-use pathway will be within the 100' right of way needed for minor arterial street.

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 2-015
MINOR ARTERIAL STREET

DIMENSIONS A & T- SEE STANDARD 3-180



NOTES (Notes continued from sheet 1 of 2)

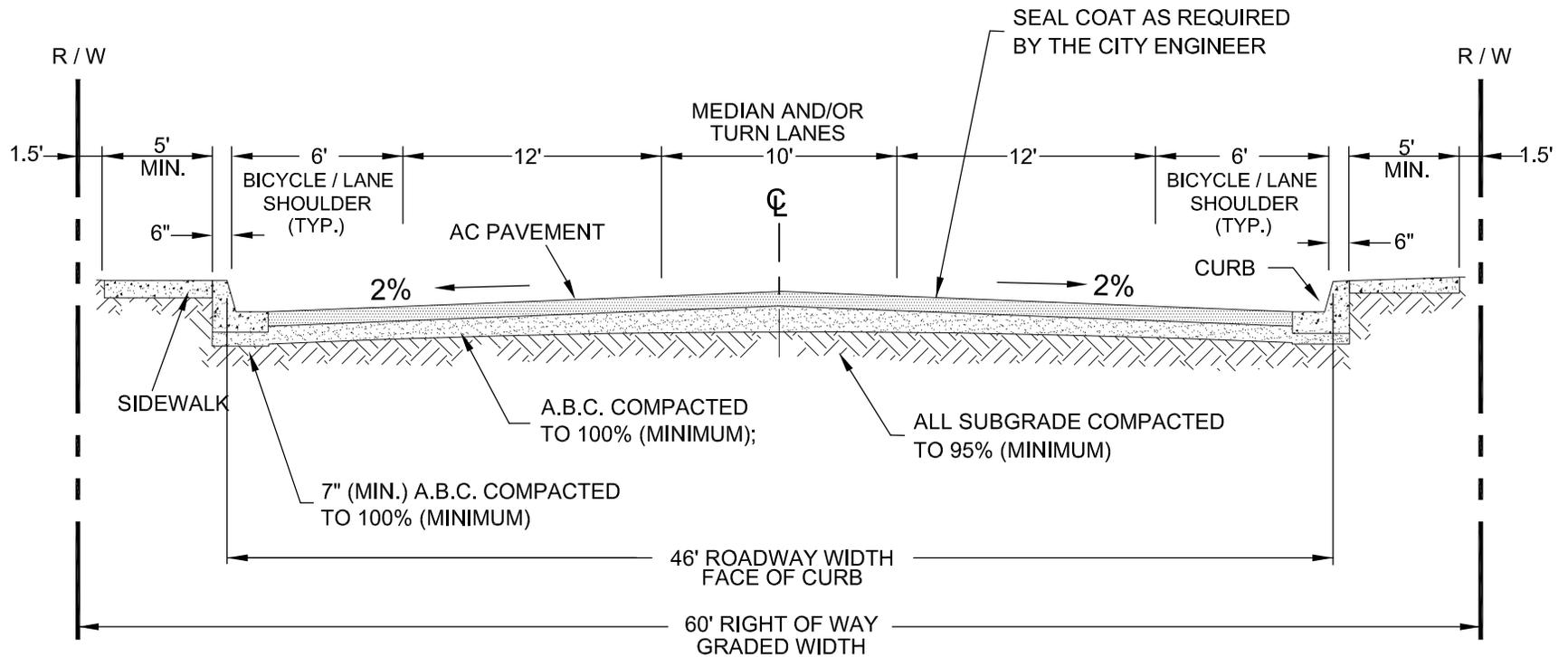
- 6. Case 1 or 2 must be used when there are driveways along collector.
- 7. Case 3 may be used when there are no driveways along collector.
- 8. Bike lanes provided but not striped.
- 9. Parkway and medians shall be planted in accordance with Yuma City Code, Title 15, Chapter 154, Article 20, Landscape Regulations.

12-27-18 (Under Review)

Sheet 2 of 2

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

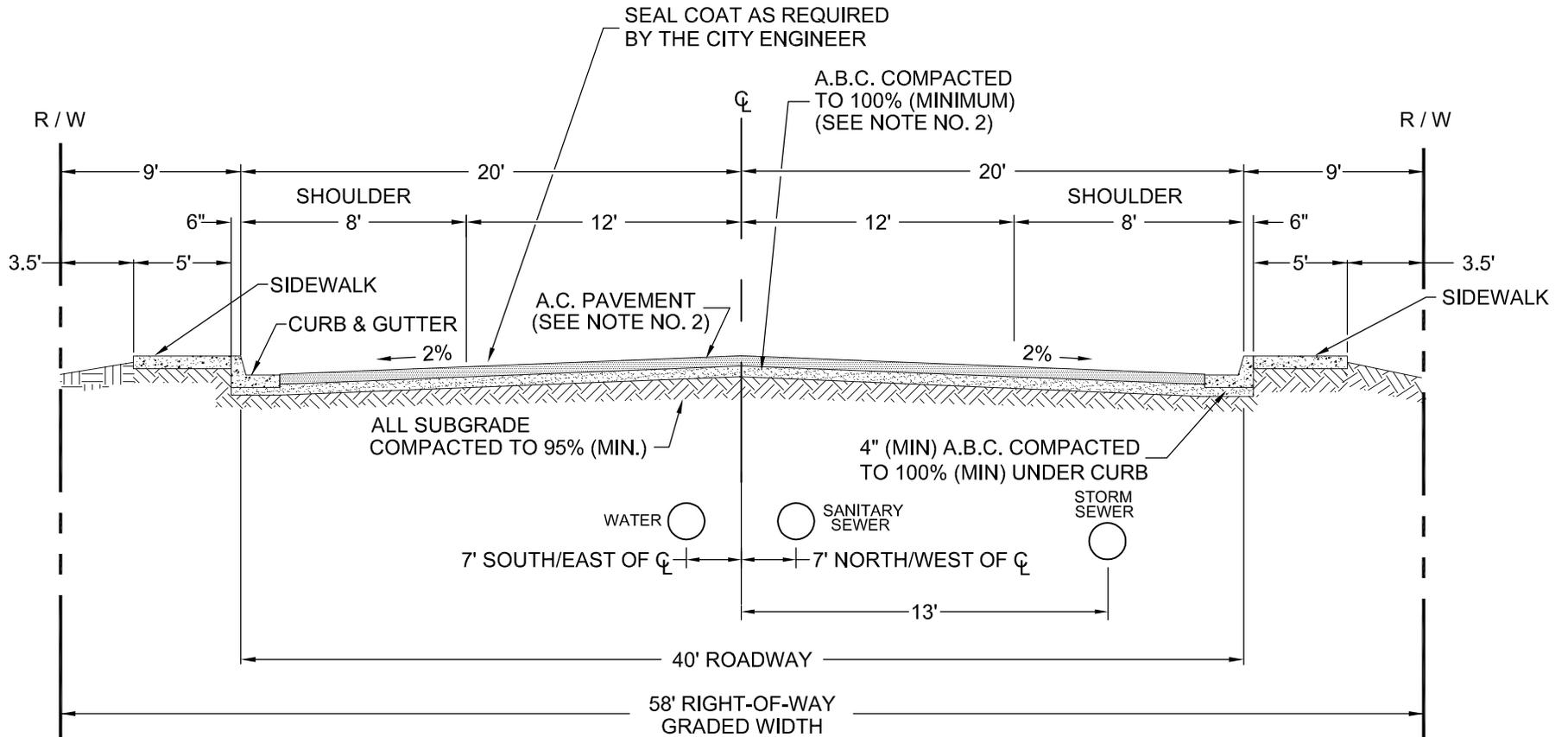
**STANDARD NO. 2-020
COLLECTOR STREET**



NOTES

1. Structural design of combined thickness of base and surface to be determined by soils test.
2. Minimum paving thickness : 3" for plant hot mix asphalt surfacing over 10" of A.B.C. compacted to 100% of maximum density as determined by AASHTO T-99 method C or D. A.B.C. shall be per MAG Specifications.
3. Sidewalk location adjacent to curb or as approved by the City Engineer.
4. All pavement marking and raised pavement marker material must be in accordance with ADOT manual for signing and marking, latest edition.
5. Not for new construction. To be used only when approved by City Engineer in existing developments, or street reconstruction projects.

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|--|
| 12-27-18 (Under Review) |
| CITY OF YUMA CONSTRUCTION STANDARD DETAIL DRAWINGS |
| STANDARD NO. 2-025 ALTERNATIVE COLLECTOR STREET |



LOCAL TWO LANE STREET

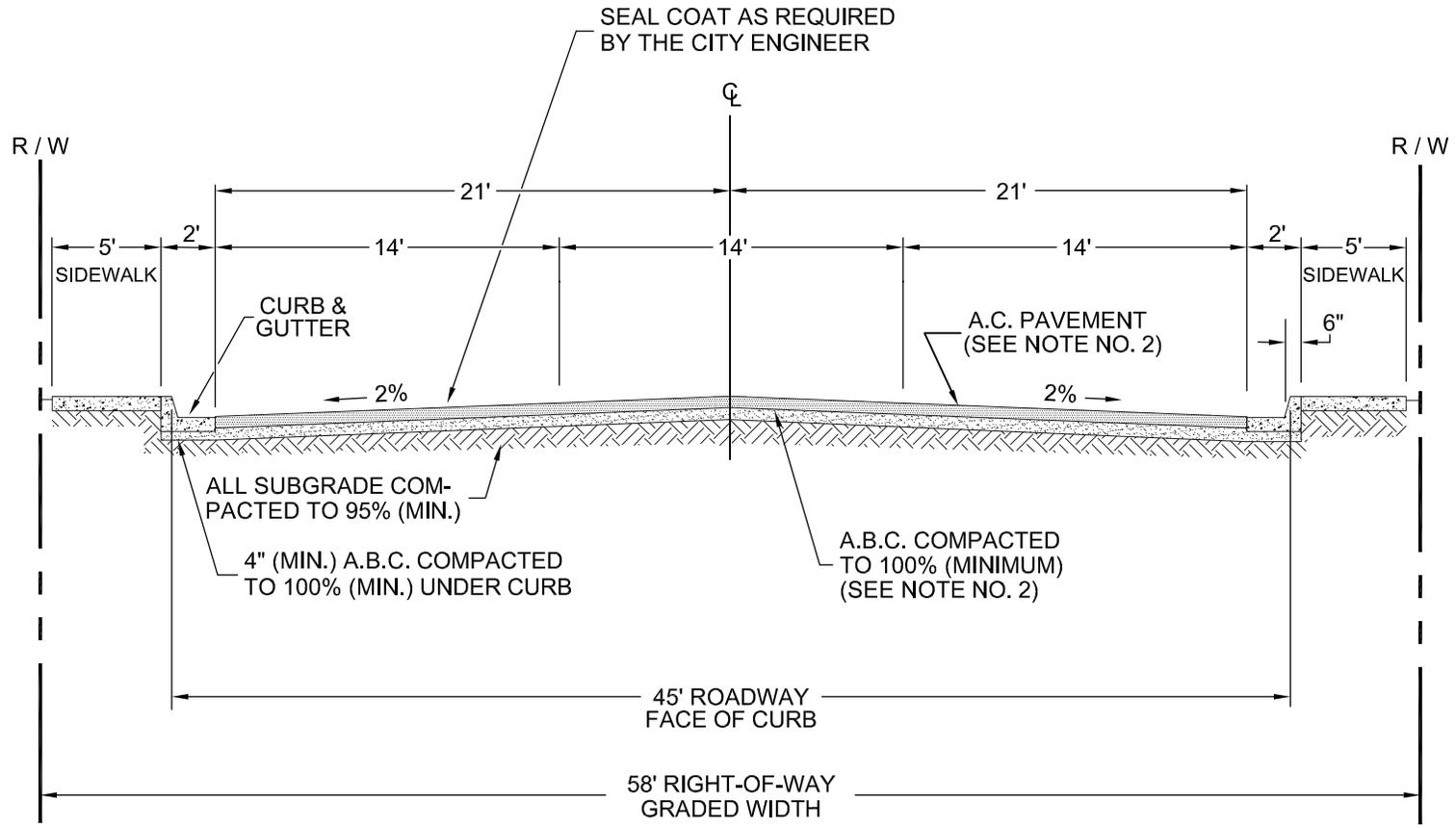
NOTES

1. Structural design of combined thickness of base and surface to be determined by soils test.
2. Minimum paving thickness shall be 3" for plant hot mixed asphalt surfacing over 6" of A.B.C. compacted to 100% of maximum density as determined by AASHTO T-99 method C or D. See Standard Detail 3-010 for A.B.C. thickness required. A.B.C. shall be per MAG Specifications.
3. Sidewalk location adjacent to curb or as approved by the City Engineer.
4. See Standard Detail 3-035 for grading behind sidewalk.
5. Extend aggregate base course beneath curb & gutter. See Standard Detail 3-060.

12-27-18 (Under Review)

CITY OF YUMA
 CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 2-030
LOCAL 2 LANE STREET



COMMERCIAL / INDUSTRIAL STREET

NOTES

1. Structural design of combined thickness of base and surface to be determined by soils test.
2. Minimum paving thickness shall be 3" for plant mixed surfacing over 10" of A.B.C. compacted to 100% of maximum density as determined by AASHTO T-99 method C or D. A.B.C. shall be per MAG Specifications.
3. Sidewalk location adjacent to curb or as approved by the City Engineer.
4. See Standard Detail 3-035 for grading behind sidewalk.
5. Extend aggregate base course beneath curb & gutter. See Standard Detail 3-060.

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 2-035
COMMERCIAL / INDUSTRIAL
STREET

CITY OF YUMA GUIDELINES FOR TRAFFIC IMPACT STUDIES

A traffic impact study may be required for new and expanded or changed developments at the rezoning stage, the platting or lot tie / lot split stage, and for conditional use permits. When state roads are adjacent, such studies must satisfy the requirements of the Arizona Department of Transportation's publication "Traffic Impact Analysis for Proposed Development" (current edition) and those additional requirements specified in the City Engineering Department "Traffic Impact Study Guidelines". If no State roads are involved, only the City's Engineering Department guidelines need to be satisfied.

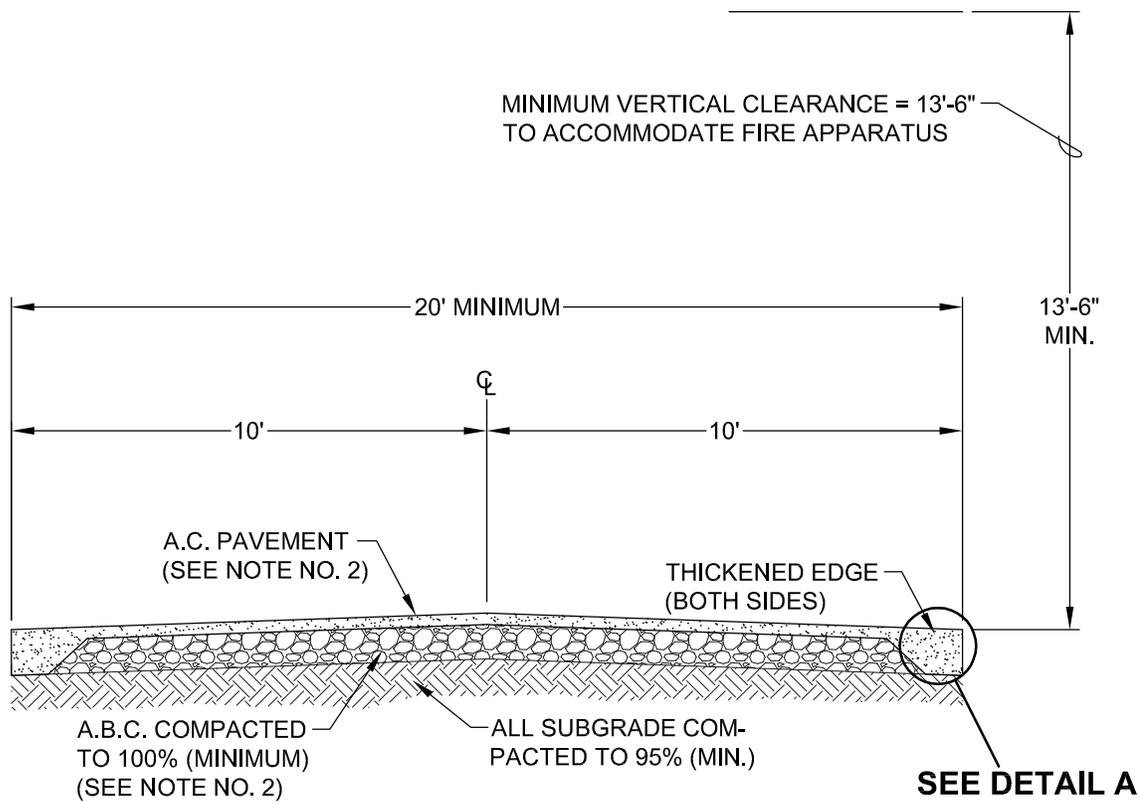
Traffic impact studies may be required for all developments and modifications to developments that are expected to generate 100 or more additional trips during any hour. Where staged or phased development is planned, the traffic impact study must include all development phases. If it becomes apparent that a request is being made for a development that is, in fact, an extension of a recent (less than 5 years) development that already exists or is in progress, and no traffic impact study has been accepted for the original development, the traffic impact study must also include the original development.

The amount of traffic expected to be generated by the development must be determined using the procedures set forth in "Trip Generation", current edition, published by the Institute of Transportation Engineers. In all cases, the trip data for a given land use must be at least the average rate for that land use as shown in the tables associated with the land use (the fitted curves data may not be used). The City Engineer may require that a value higher than the average rate be used depending on the specific use or business planned for the site. Said higher value, if required, will not exceed the average rate plus fifty percent (50%) of the difference between the average rate and the maximum rate for the range.

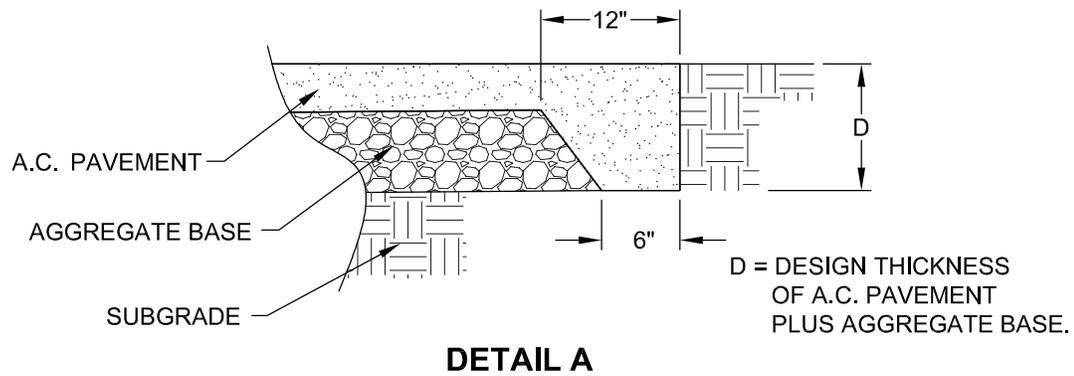
12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

**STANDARD NO. 2-040
GUIDELINES FOR TRAFFIC
IMPACT STUDIES**



FIRE DEPARTMENT ACCESS ROAD



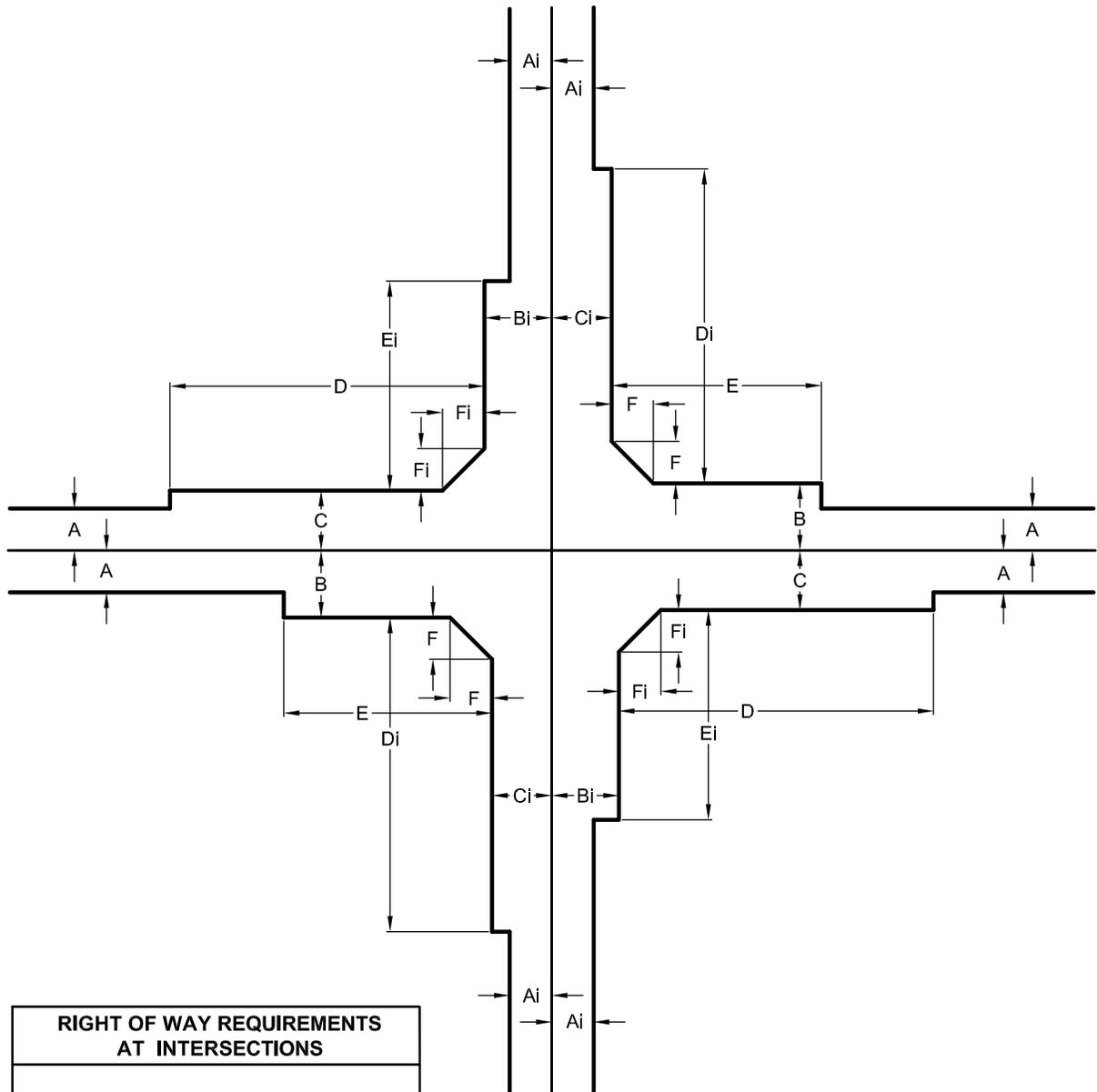
NOTES

1. Structural design of combined thickness of base and surface to be determined by soils test.
2. Minimum paving thickness shall be 2" for plant hot mixed asphalt surfacing over 6" of A.B.C. compacted to 100% of maximum density as determined by AASHTO T-99 method C or D.
3. The turning radius of a fire department access road shall be approved by the fire department, and shall maintain the minimum road width.
4. A.B.C. shall be per MAG Specifications.

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 2-045
FIRE DEPARTMENT
ACCESS ROAD



| RIGHT OF WAY REQUIREMENTS AT INTERSECTIONS | | | | | | | |
|--|--------------------------------|-----------|----------------|--------------------|------------|------|--|
| STREET DIMENSIONS | INTERSECTING STREET DIMENSIONS | | | | | | |
| LOCAL RESIDENTIAL | COMMERCIAL / INDUSTRIAL | COLLECTOR | MINOR ARTERIAL | PRINCIPAL ARTERIAL | EXPRESSWAY | | |
| A = 29' | 29' | 40' | 50' | 62' | 80' | = Ai | |
| B = 40.5' | 47' | 64' | 68' | 80' | 92' | = Bi | |
| C = 34' | 40' | 57' | 61' | 73' | 85' | = Ci | |
| D = N/A | 200' | 300' | 450' | 450' | 800' | = Di | |
| E = 200' | 200' | 200' | 250' | 300' | 500' | = Ei | |
| F = 25' | 50' | 40' | 75' | 75' | 75' | = Fi | |

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

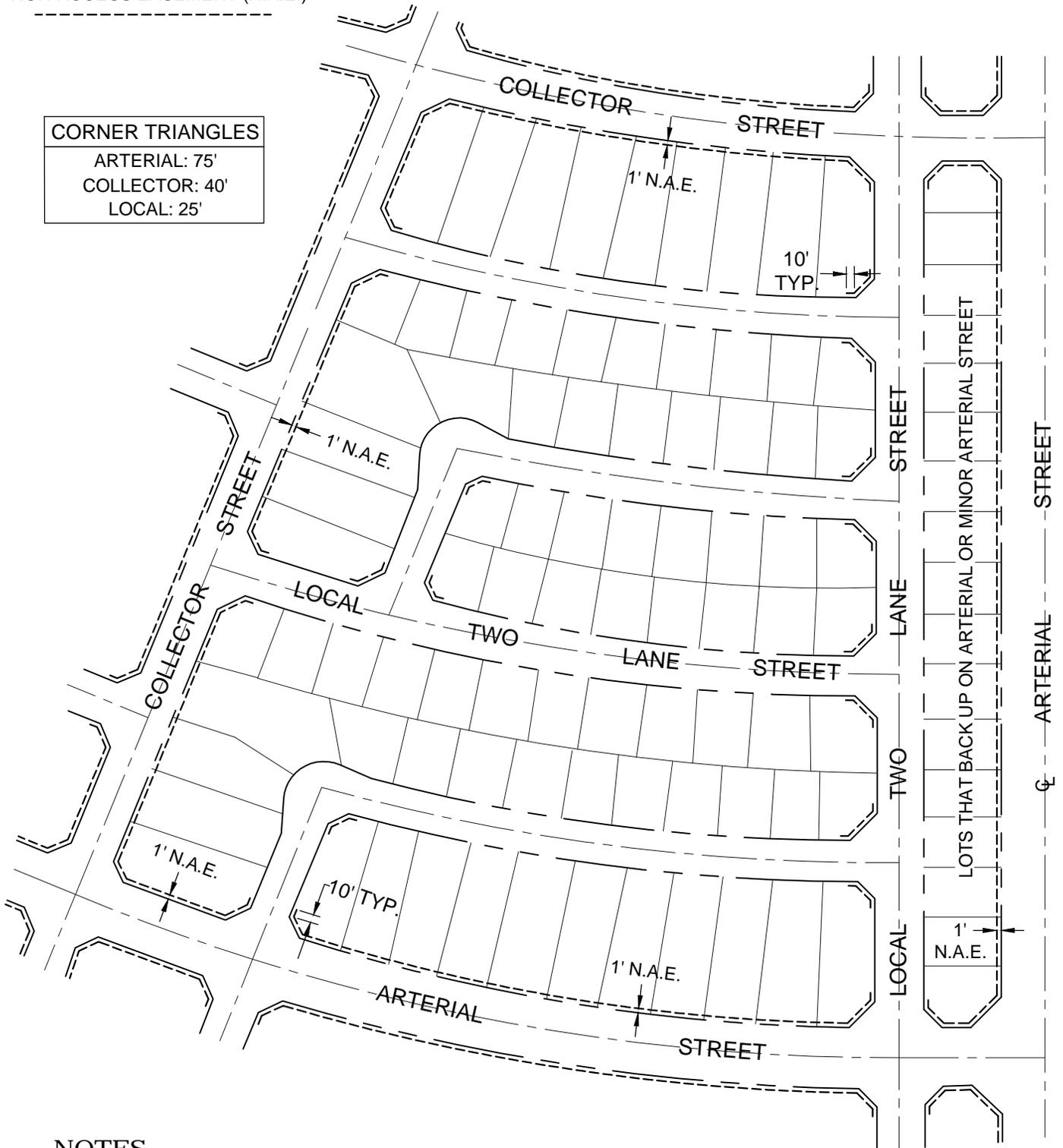
STANDARD NO. 2-050
R.O.W. REQUIREMENTS AT
INTERSECTIONS

NOTE: THIS DRAWING IS FOR ILLUSTRATIVE PURPOSES ONLY.

NON-ACCESS EASEMENT (N.A.E.)

CORNER TRIANGLES

ARTERIAL: 75'
 COLLECTOR: 40'
 LOCAL: 25'



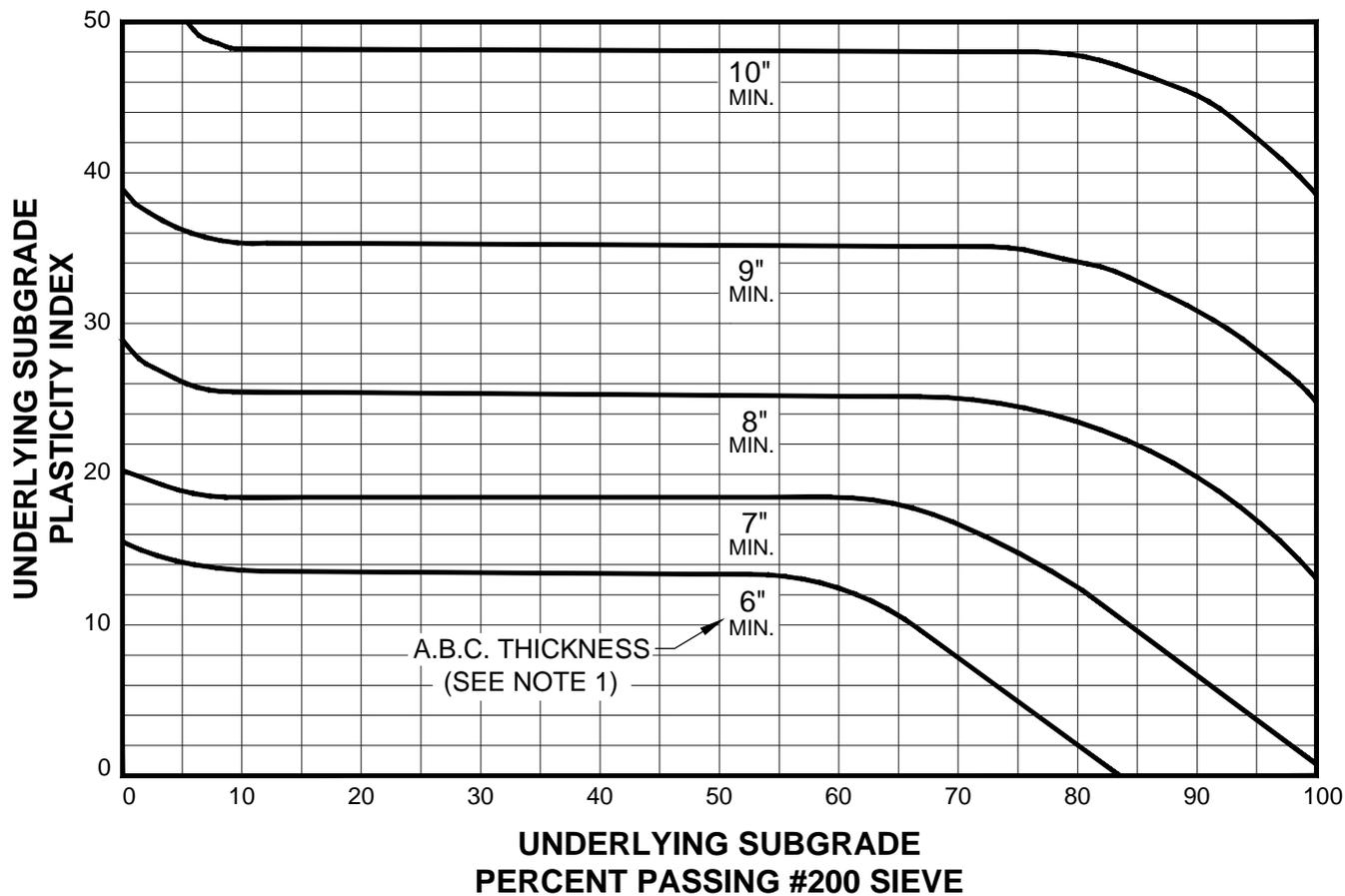
NOTES

1. Lots abutting arterial or collector streets shall have non-access easements (N.A.E.) to prevent direct access and driveways to those streets.
2. All corner lots shall have N.A.E.'s along corner triangles to prevent direct vehicle access through and over handicap ramps.
3. For corner triangles, where two streets of differing roadway classifications intersect, apply the smaller triangle.

12-27-18 (Under Review)

**CITY OF YUMA
 CONSTRUCTION STANDARD DETAIL DRAWINGS**

**STANDARD NO. 3-005
 SCHEMATIC STREET
 LAYOUT REQUIREMENTS**

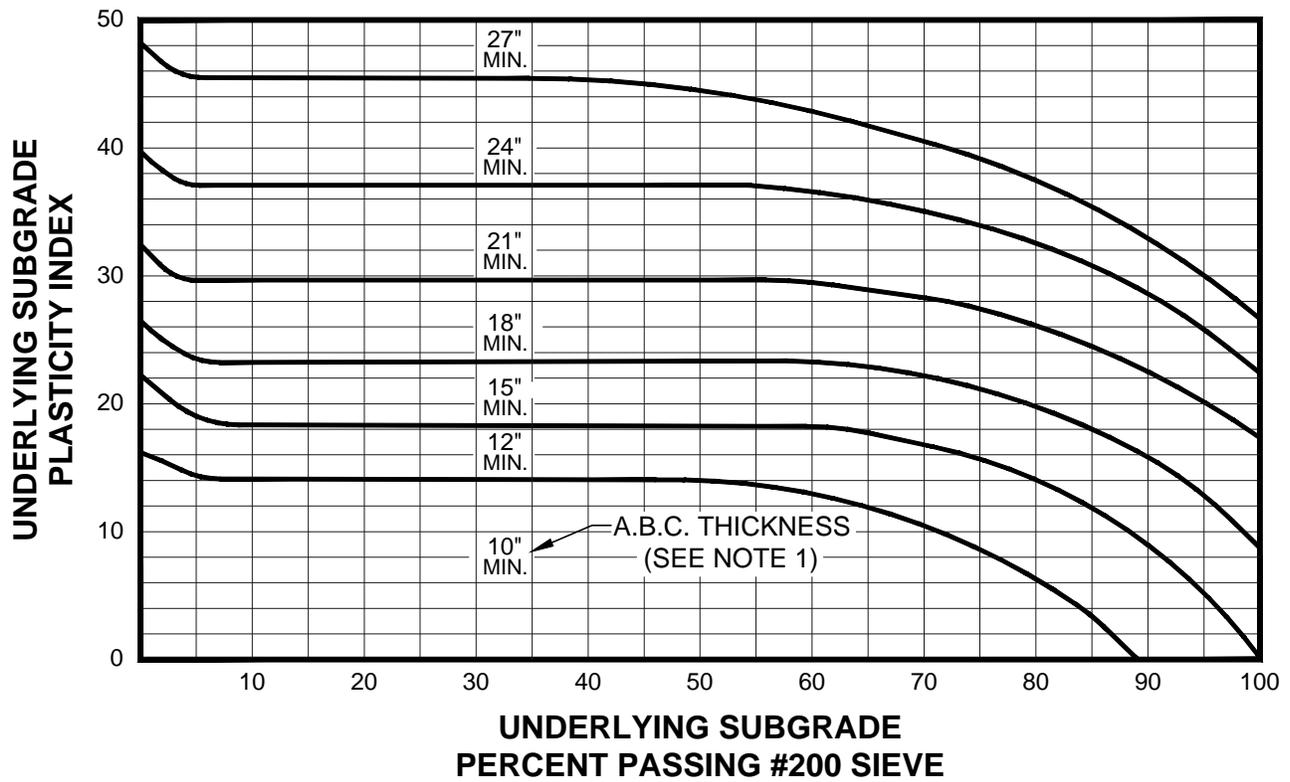


NOTES

1. Aggregate base course (A.B.C.) depth required under 3" (minimum) asphalt concrete hot plant mix surface course.
2. A.B.C. shall be compacted to 100% of the maximum density determined by AASHTO T99, method C or D.
3. A.B.C. shall be per MAG Section 310.

12-27-18 (Under Review)

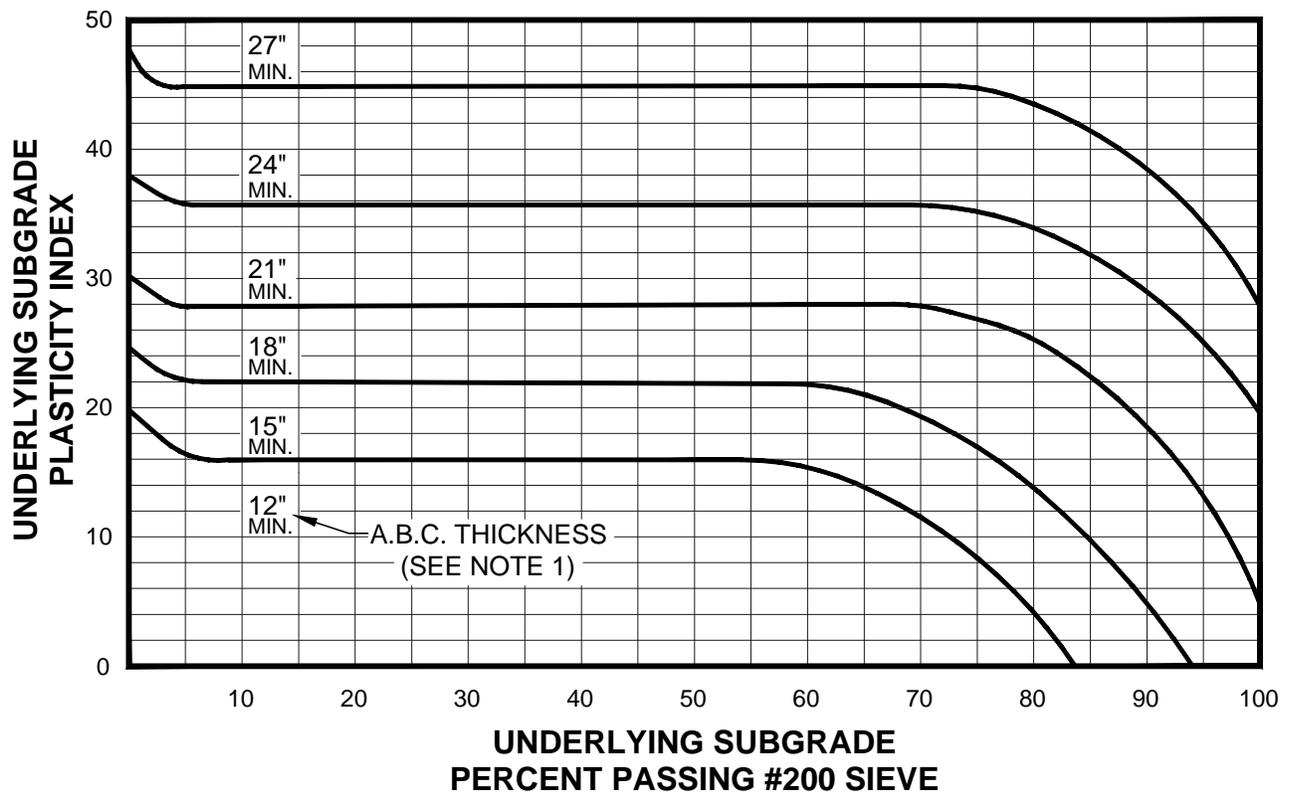
CITY OF YUMA
 CONSTRUCTION STANDARD DETAIL DRAWINGS
 STANDARD NO. 3-015
 DEPTH OF AGGREGATE BASE COURSE
 FOR LOCAL TWO LANE STREETS



NOTES

1. Aggregate base course (A.B.C.) depth required under 3" (minimum) asphalt concrete hot plant mix surface course.
2. A.B.C. shall be compacted to 100% of the maximum density determined by AASHTO T99, method C or D.
3. A.B.C. shall be per MAG Section 310.

| |
|--|
| 12-27-18 (Under Review) |
| <p>CITY OF YUMA CONSTRUCTION STANDARD DETAIL DRAWINGS STANDARD NO. 3-020 DEPTH OF AGGREGATE BASE COURSE FOR COLLECTOR STREETS</p> |

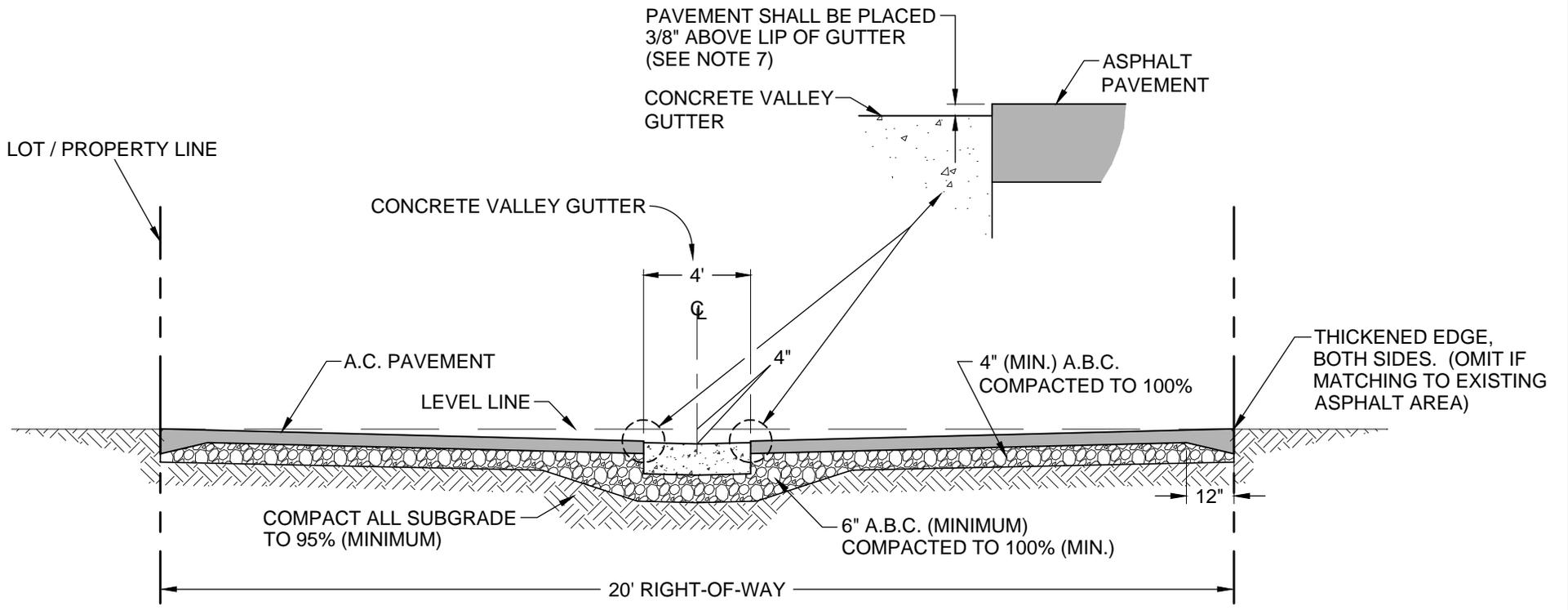


NOTES

1. Aggregate base course (A.B.C.) depth required under 4" (minimum) asphalt concrete hot plant mix surface course.
2. A.B.C. shall be compacted to 100% of the maximum density determined by AASHTO T99, method C or D.
3. A.B.C. shall be per MAG Section 310.

12-27-18 (Under Review)

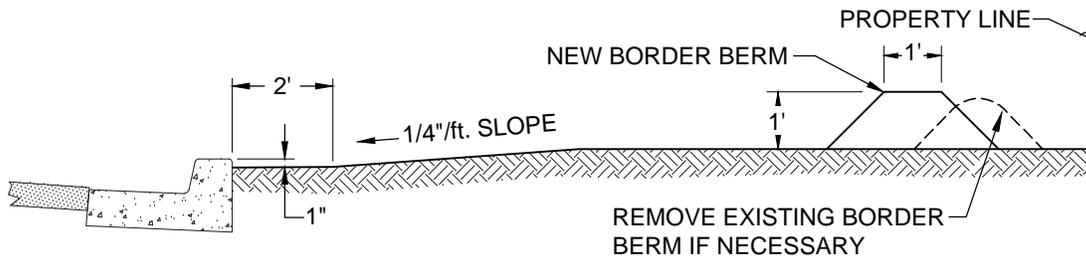
CITY OF YUMA
 CONSTRUCTION STANDARD DETAIL DRAWINGS
 STANDARD NO. 3-025
 DEPTH OF AGGREGATE BASE COURSE
 FOR PRINCIPAL, EXPRESSWAY AND
 MINOR ARTERIAL STREETS



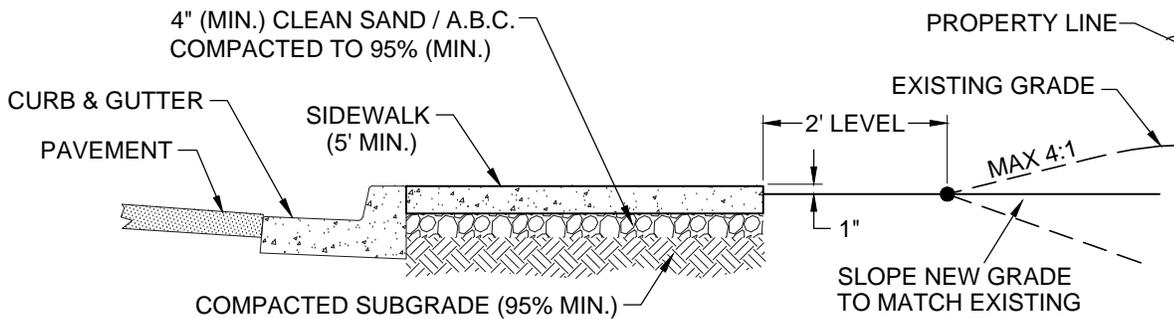
NOTES

1. Refer to Standard Detail 3-015.
2. Structural design of combined thickness of base and surface to be determined by soil test.
3. Minimum paving thickness: 3" for asphalt concrete hot plant mix surface course.
4. Fog seal coat required.
5. A.B.C. shall be per MAG Section 310.
6. Concrete shall be Class "B" per MAG Section 725.
7. Asphalt design thickness includes the 3/8" placed above lip of gutter.

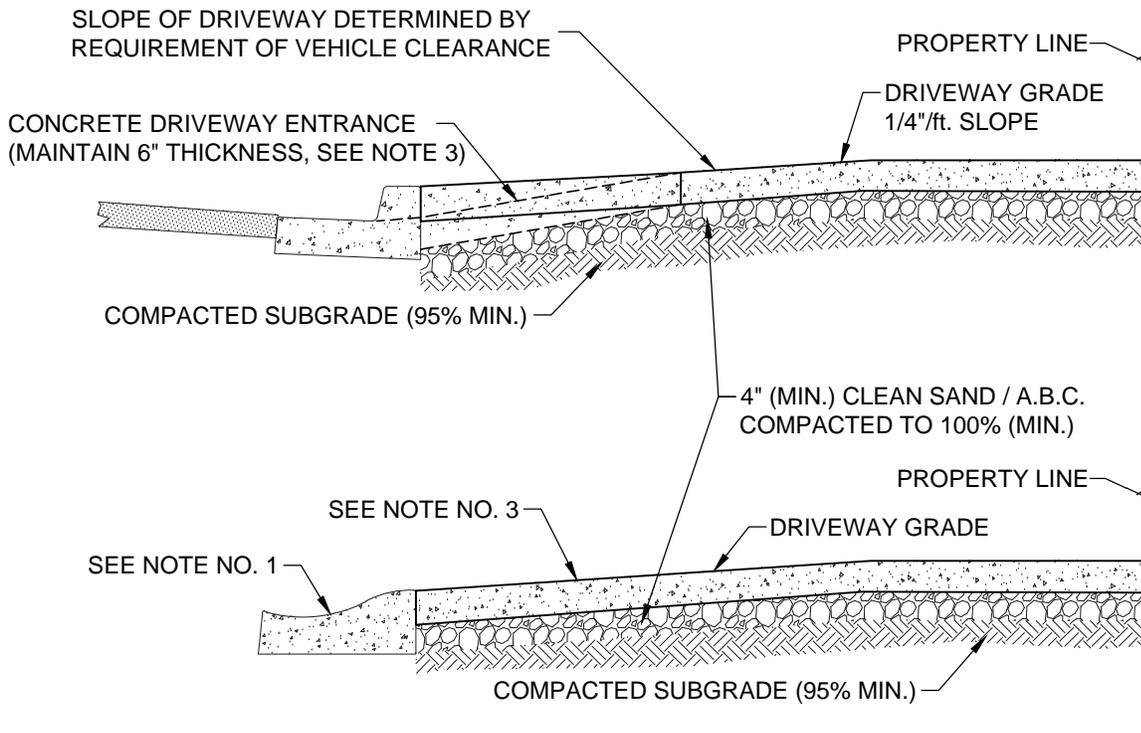
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|--|
| 12-27-18 (Under Review) |
| <p>CITY OF YUMA CONSTRUCTION STANDARD DETAIL DRAWINGS</p> |
| <p>STANDARD NO. 3-030 TYPICAL ALLEY</p> |



ROADWAY IMPROVEMENT ADJACENT TO IRRIGATED LAND



ROADWAY IMPROVEMENTS ADJACENT TO OPEN LAND



ROADWAY IMPROVEMENT ADJACENT TO EXISTING DRIVEWAY

NOTES

1. Roll curb only allowed with approval of the City Engineer.
2. These details apply to all curb types with or without sidewalks.
3. All driveways located within City right-of-way shall be constructed of 6" thick (minimum) Class "B" concrete and shall extend to the right-of-way and/or property line (Concrete shall be per MAG Section 725).

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 3-035
PARKWAY GRADING

PROPERTY LINE

DRAINAGE IN THE CUL-DE-SAC.
SLOPE OF 0.40% RECOMMENDED
MIN. SLOPE OF 0.25% REQUIRED

SURVEY MONUMENT
(STD. DET. 4-030)

VARIABLE

600' MAXIMUM

- R = 57' RADIUS MINIMUM
- R₁ = 48' RADIUS MINIMUM
- R₂ = 25' RADIUS MINIMUM
(COMMERCIAL & RESIDENTIAL)
- R₂ = 30' RADIUS MIN. (INDUSTRIAL)

NOTE

R₁ & R₂ MEASURED TO FRONT FACE
OF CURB

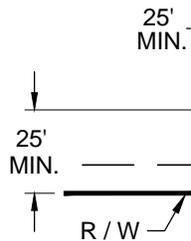
8' PUBLIC UTILITY EASEMENT
(TYPICAL)

DRAINAGE

SLOPE OF 0.40% RECOMMENDED.
MIN. SLOPE OF 0.20% REQUIRED.

DRAINAGE

8' P.U.E.



R/W

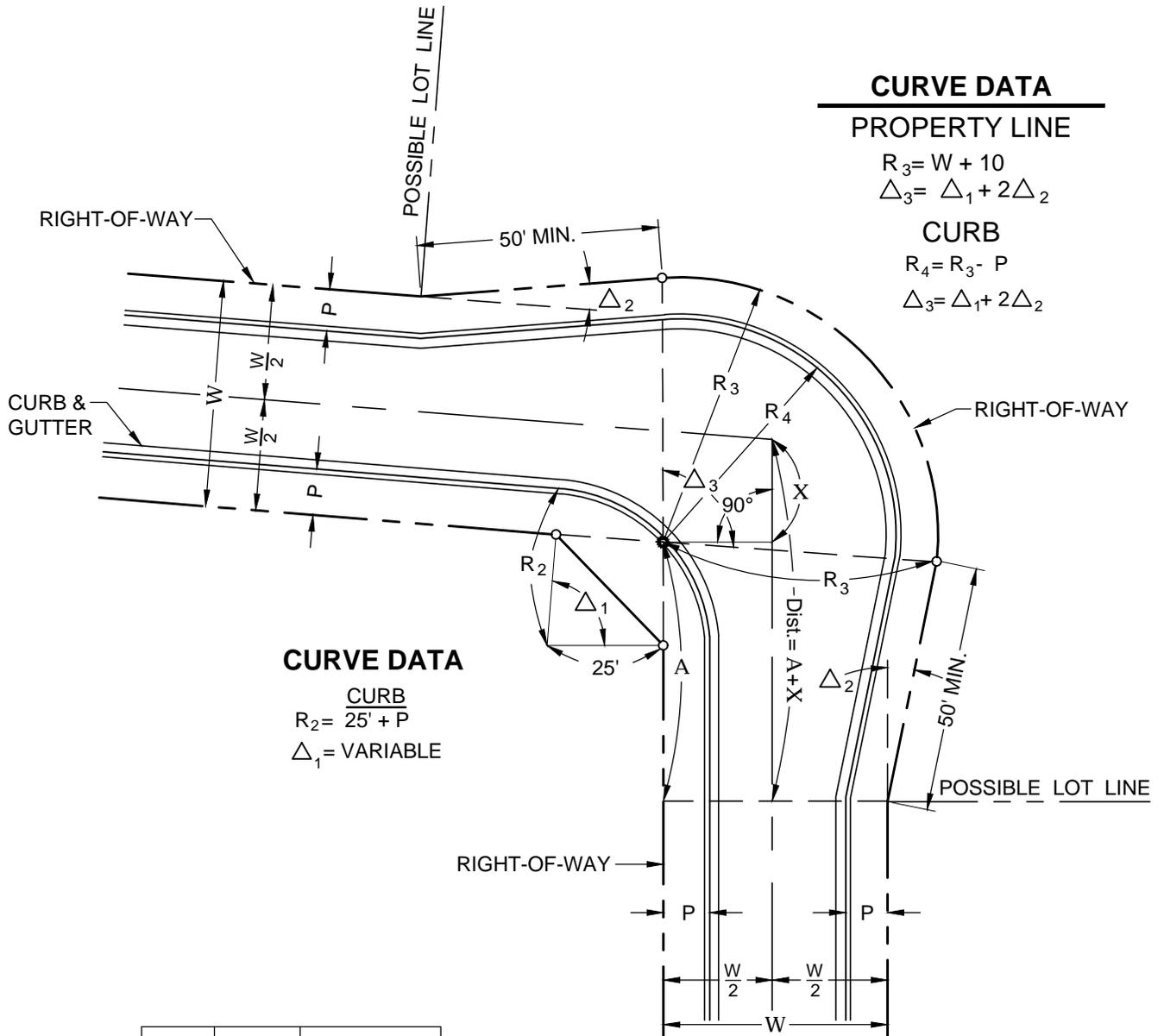
NOTE

SHOW RAD, Δ & LEN FOR ALL
CURVES ON DESIGN DRAWINGS.

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 3-040
CUL-DE-SAC



| W | A | Δ_2 |
|-----|--------|-------------|
| 58' | 61.32' | 10° 15' 59" |

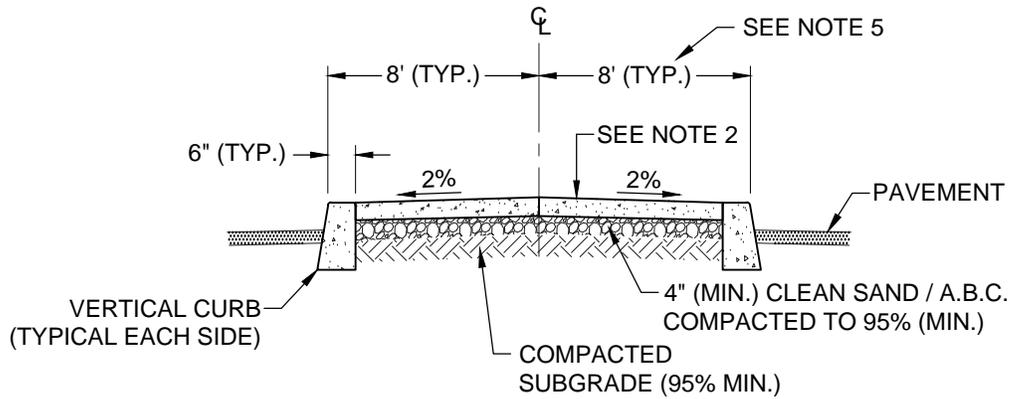
NOTE

1. This design to be used with local two-lane streets only.

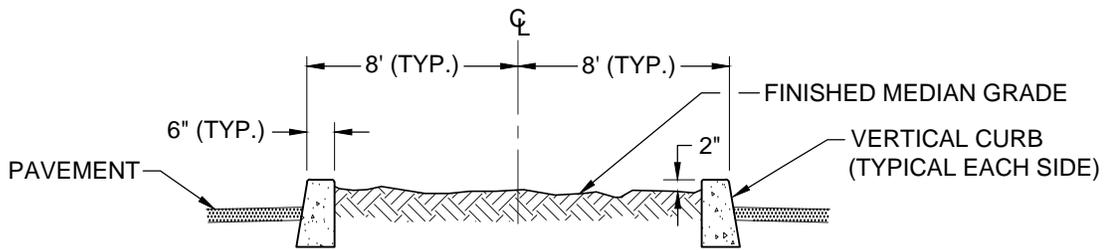
12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

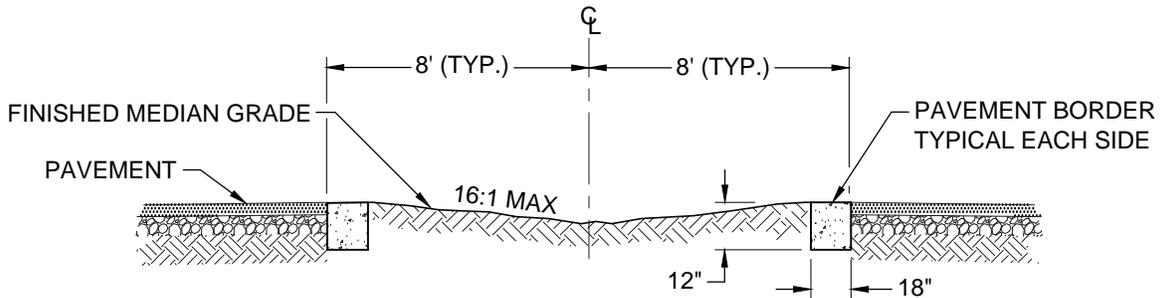
STANDARD NO. 3-045
LOCAL STREET KNUCKLE



TYPE 'A' MEDIAN



TYPE 'B' MEDIAN



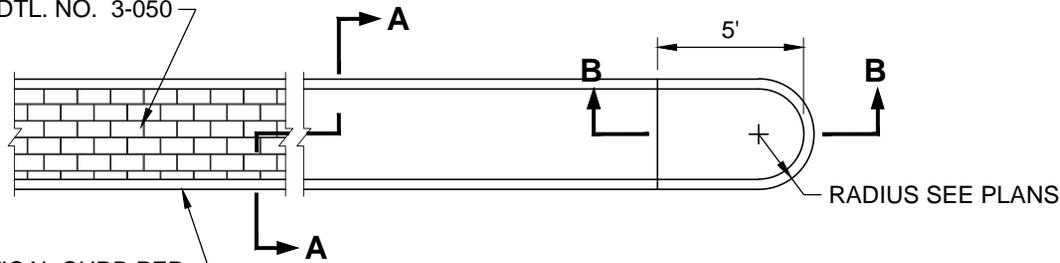
TYPE 'C' MEDIAN

NOTES

1. Unpaved medians shall meet the City of Yuma landscape regulations.
2. Median paving: decorative block / brick or integral colored stamped concrete (4" thick minimum).
3. All concrete shall be Class "B", per MAG Section 725.
4. A.B.C. shall be per MAG Section 310.
5. Median width varies depending on roadway classification.

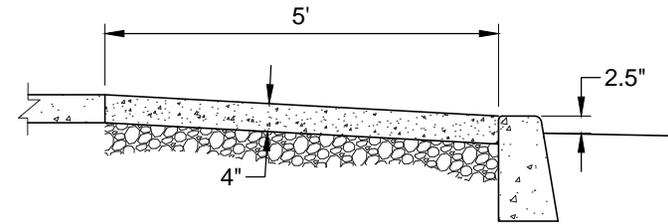
| |
|--|
| 12-27-18 (Under Review) |
| CITY OF YUMA |
| CONSTRUCTION STANDARD DETAIL DRAWINGS |
| STANDARD NO. 3-050 |
| MEDIAN OPTIONS |

MEDIAN PAVING PER
STD. DTL. NO. 3-050

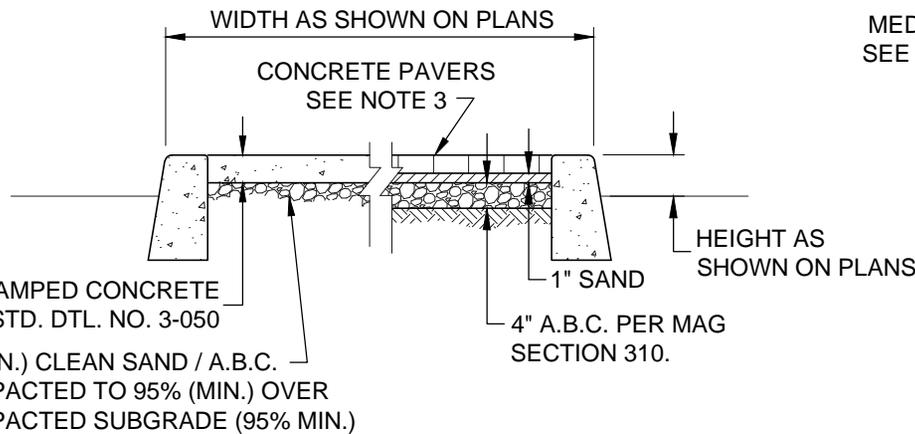


VERTICAL CURB PER
STD. DTL. NO. 3-075

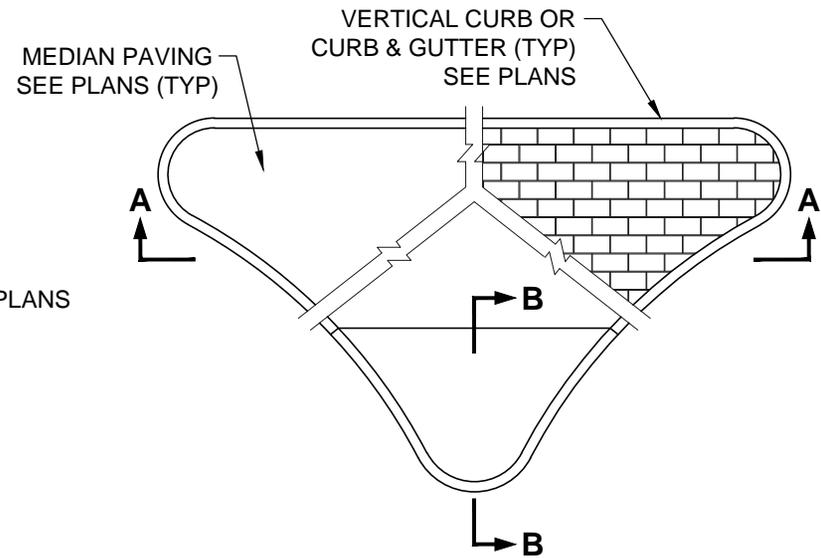
PLAN



SECTION B-B



SECTION A-A



NOSE LAYOUT

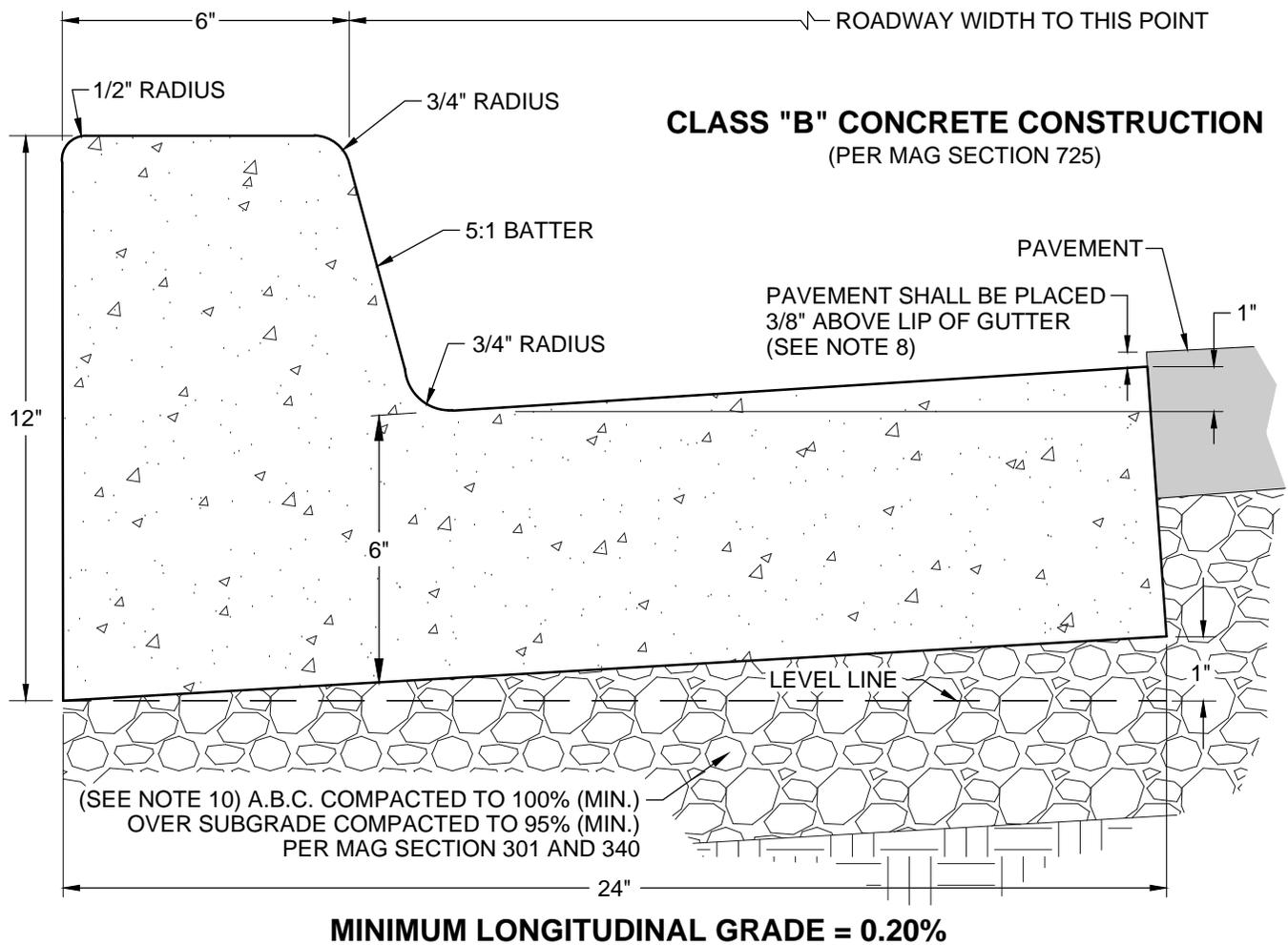
NOTES

1. Traffic signal foundations, traffic sign foundations and pull boxes for traffic signs and traffic signals shall be installed prior to placement of median paving.
2. Decorative median paving may be stamped concrete, concrete pavers, or as specified on the project plans.
3. Decorative median paving shall not be placed on a median nose transition or on a median island on a structure.
4. A 4"x6" concrete header shall be used to end decorative paving at locations when concrete sidewalk ramps are not present.
5. Median nose transitions shall not be placed on departure ends of raised medians.
6. Median paving shall be Class "B" concrete, per MAG Section 725.

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 3-055
SAFETY NOSE MEDIAN



NOTES

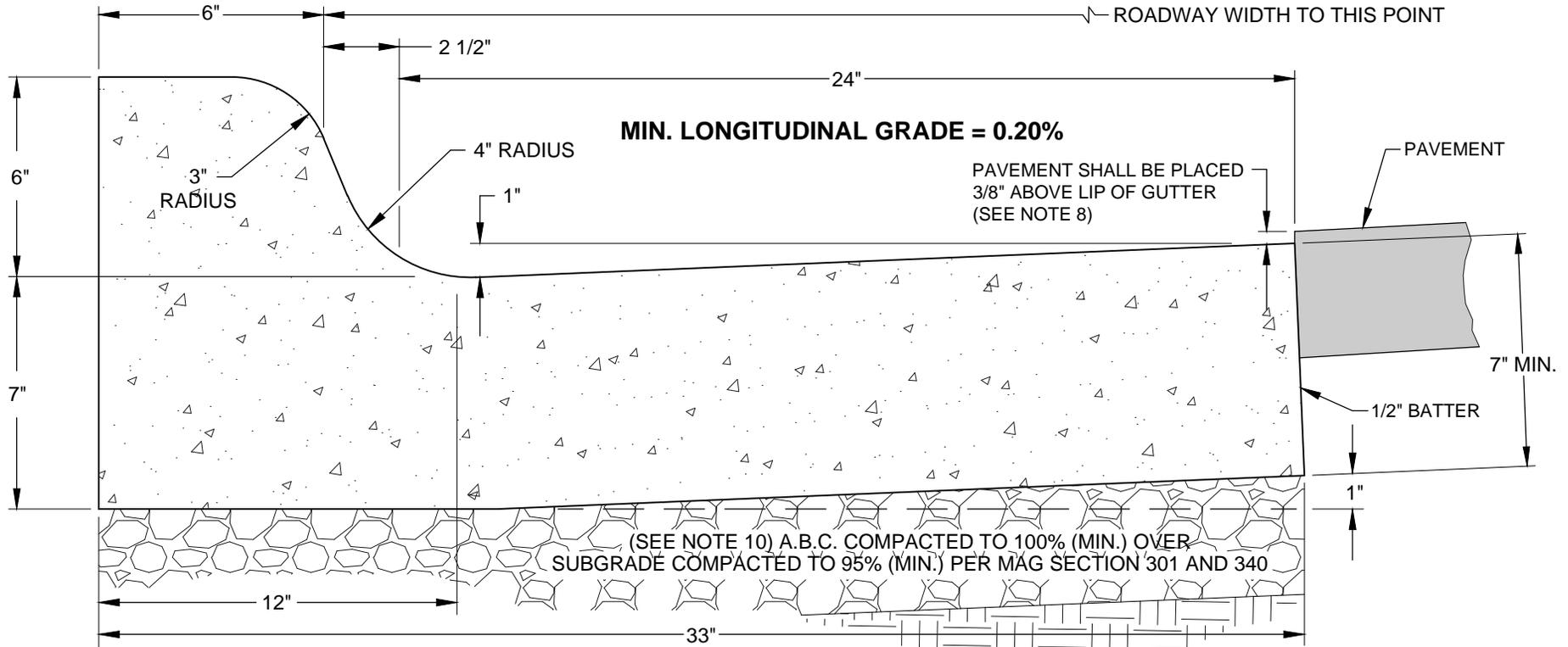
1. Vertical curb & gutter may be constructed by the use of forms or the concrete may be machine extruded.
2. When the pavement slopes away from the gutter, the slope of the gutter will match the pavement's cross slope. Gutter depression and 3/8" pavement above lip of gutter will not be needed.
3. Contraction joint spacing shall be either hand tooled and/or saw cut and shall be placed no further than ten feet (10') apart. Contraction joint shall have a minimum depth of two inches (2").
4. Expansion joints shall be located at tangent points, in curb returns, at structures and at a maximum of twenty foot (20') intervals. The one-half inch (1/2") joint filler material shall be the bituminous type meeting AASHTO M-33 or the ASTM D-1751 specifications and shall extend the full depth of the concrete.
5. Bituminous expansion joint material shall be placed with forms prior to concrete placement. Insertion into concrete after placement is not an allowable method.
6. Curb & gutter shall be finished per MAG Section 340. All exposed edges and hand tooled joints shall have a one-quarter inch (1/4") radius unless a larger radius is called for in the construction plans.
7. City of Yuma vertical curb & gutter shall be used on all city streets unless otherwise approved by the City Engineer.
8. Additional information regarding joint construction can be seen in Standard Detail 3-135.
9. The design thickness of the asphalt pavement includes the 3/8" placed above lip of gutter.
10. ABC thickness per street cross section Standard Details 2-005 to 2-035.

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 3-060
VERTICAL CURB AND GUTTER

THIS CURB IS FOR REPLACEMENT ONLY



CLASS "B" CONCRETE CONSTRUCTION
(PER MAG SECTION 725)

NOTES

1. Vertical curb & gutter may be constructed by the use of forms or the concrete may be machine extruded.
2. When the pavement slopes away from the gutter, the slope of the gutter will match the pavement's cross slope. Gutter depression and 3/8" pavement above lip of gutter will not be needed.
3. Contraction joint spacing shall be either hand tooled and/or saw cut and shall be placed no further than ten feet (10') apart. Depth of the contraction joint shall have a minimum depth of two inches (2").
4. Expansion joints shall be located at tangent points, in curb returns, at structures and at a maximum twenty foot (20') intervals. The one-half inch (1/2") joint filler material shall be bituminous type meeting AASHTO M-33 or the ASTM D-1751 specifications and shall extend the full depth of the concrete.
5. Bituminous expansion joint material shall be placed with forms prior to concrete placement. Insertion into concrete after placement is not an allowable method.
6. Curb & gutter shall be finished per MAG Section 340. All exposed edges and hand tooled joints shall have a one-quarter inch (1/4") radius unless a larger radius is indicated in the construction plans.
7. City of Yuma vertical curb & gutter shall be used on all city streets unless otherwise approved by the City Engineer.
8. Additional information regarding joint construction can be seen in Standard Detail 3-135.
9. Asphalt design thickness includes the 3/8" placed above lip of gutter.
10. ABC thickness per street cross section Standard Details 2-005 to 2-035.

12-27-18 (Under Review)

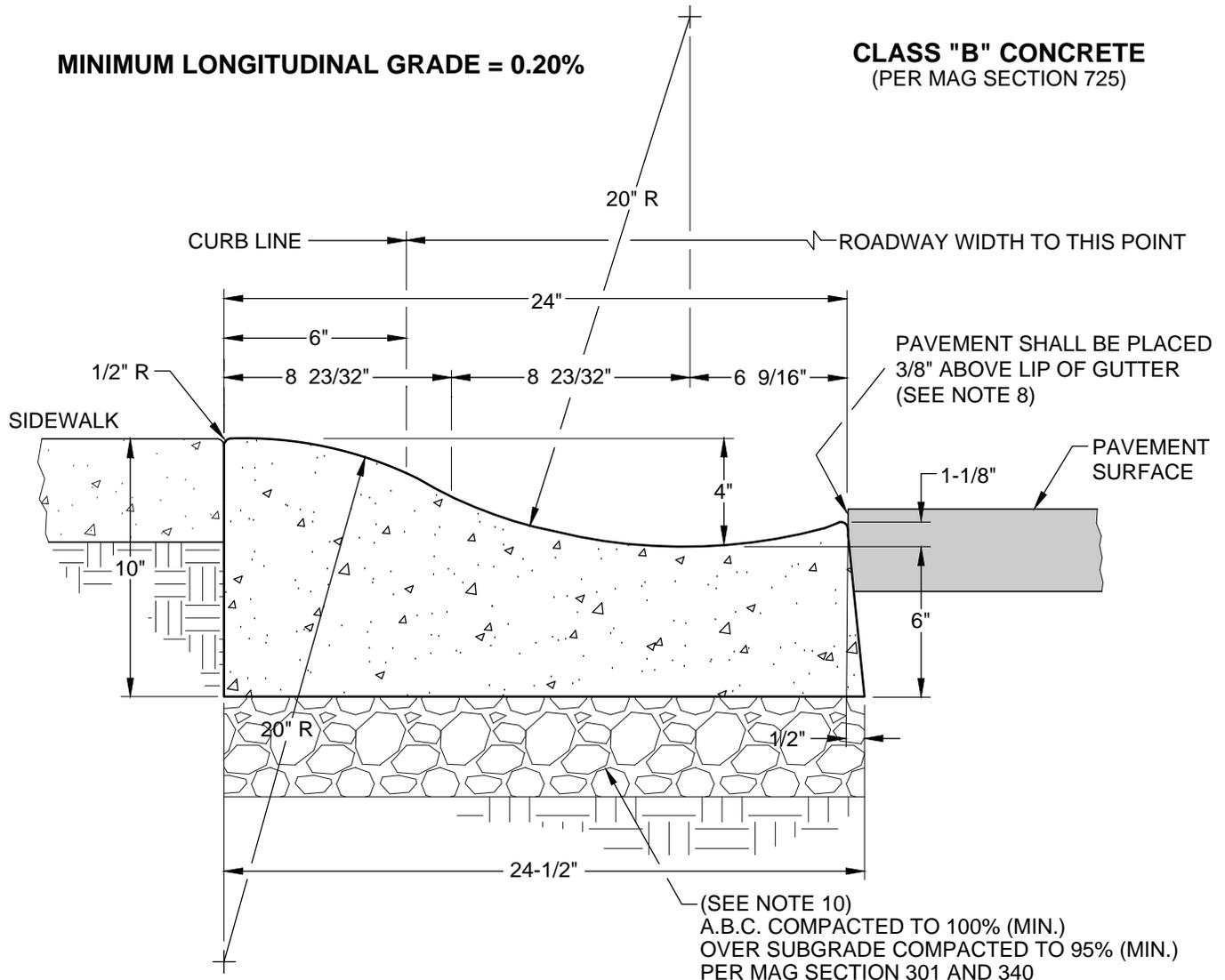
CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 3-065
ADOT TYPE
VERTICAL CURB AND GUTTER

THIS CURB IS FOR REPLACEMENT ONLY

MINIMUM LONGITUDINAL GRADE = 0.20%

CLASS "B" CONCRETE
(PER MAG SECTION 725)



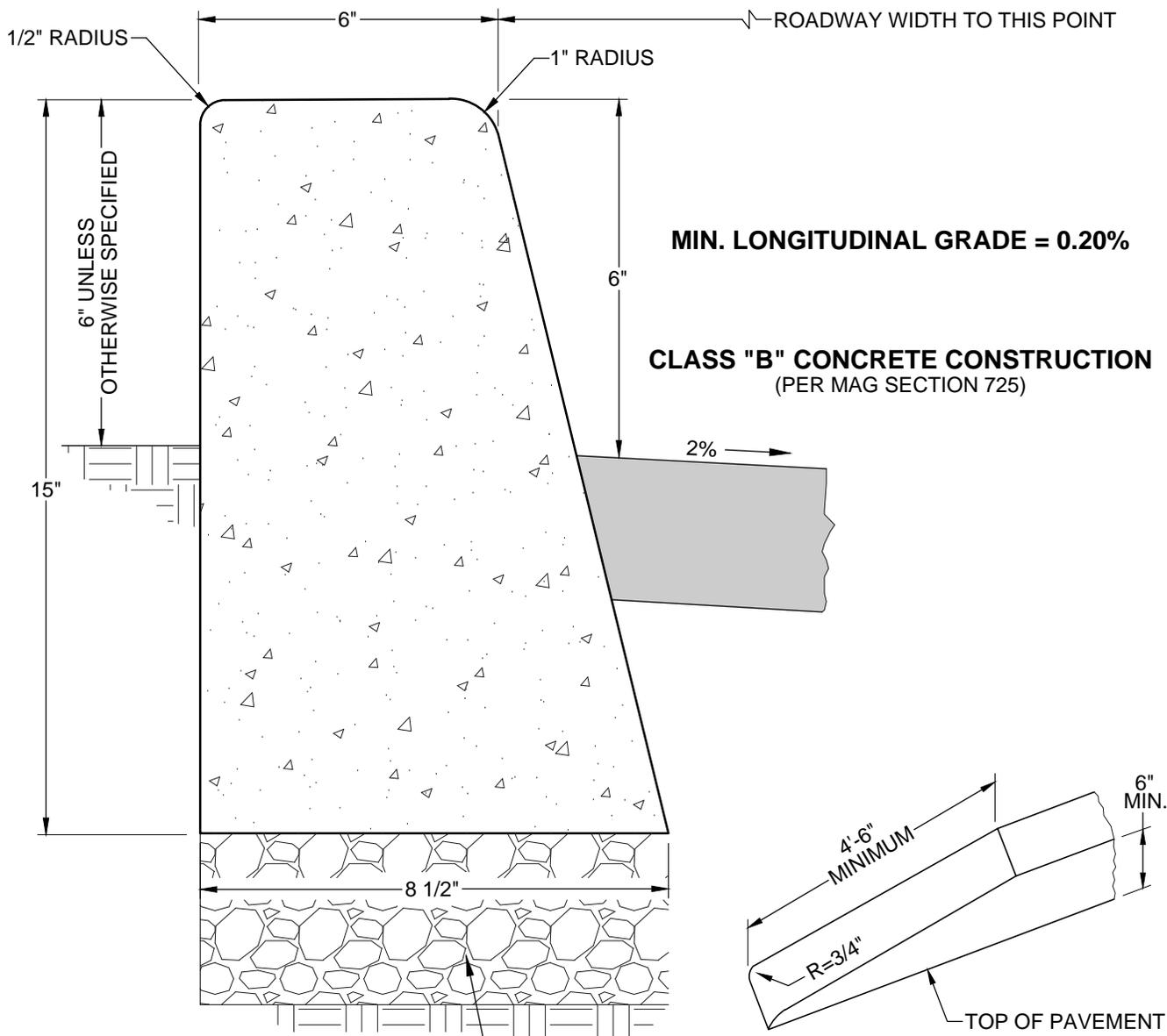
NOTES

1. Roll curb & gutter may be constructed by the use of forms or the concrete may be machine extruded.
2. When the pavement slopes away from the gutter, the slope of the gutter will match the pavement's cross slope. Gutter depression and 3/8" pavement above lip of gutter will not be needed.
3. Contraction joint spacing shall be either hand tooled and/or saw cut and shall be placed no further than ten feet (10') apart. Contraction joint shall have a minimum depth of two inches (2").
4. Expansion joints shall be located at tangent points, in curb returns, at structures and at a maximum of twenty foot (20') intervals. The one-half inch (1/2") joint filler material shall be the bituminous type meeting AASHTO M-33 or the ASTM D-1751 specifications and shall extend the full depth of the concrete.
5. Bituminous expansion joint material shall be placed with forms prior to concrete placement. Insertion into concrete after placement is not an allowable method.
6. Curb & gutter shall be finished per MAG Section 340. All exposed edges and hand tooled joints shall have a one-quarter inch (1/4") radius unless a larger radius is called for in the construction plans.
7. Roll curb & gutter shall only be used to replace existing roll curb & gutter unless otherwise approved by the City Engineer.
8. Additional information regarding joint construction can be seen in Standard Detail 3-135.
9. Asphalt design thickness includes the 3/8" placed above lip of gutter.
10. ABC thickness per street cross section Standard Details 2-005 to 2-035.

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 3-070
ROLL CURB & GUTTER



(SEE NOTE 7) A.B.C. COMPACTED TO 100% (MIN.)
OVER SUBGRADE COMPACTED TO 95% (MIN.)
PER MAG SECTION 301 AND 340

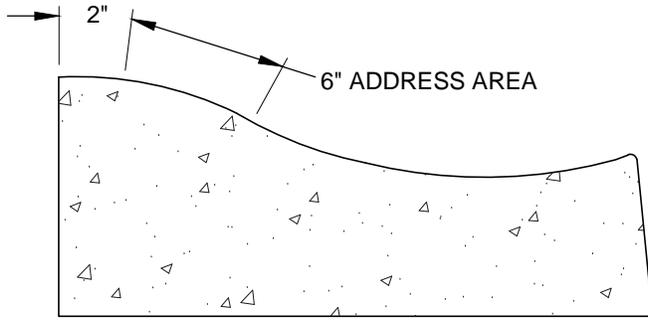
TYPICAL CURB TERMINATION

NOTES

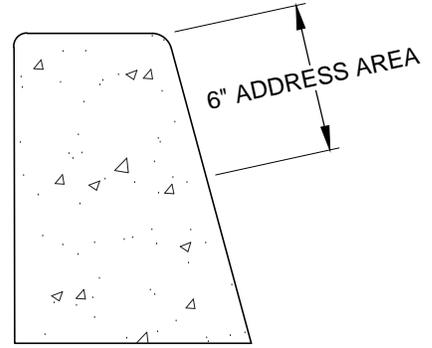
1. Vertical curb may be constructed by the use of forms or the concrete may be machine extruded.
2. Contraction joint spacing shall be either hand tooled and/or saw cut and shall be placed no further than ten feet (10') apart. Contraction joint shall have a minimum depth of two inches (2").
3. Expansion joints shall be located at tangent points in curb returns, at structures and at a maximum of twenty foot (20') intervals. The one-half inch (1/2") joint filler material shall be the bituminous type meeting AASHTO M-33 or the ASTM D-1751 specifications and shall extend the full depth of the concrete.
4. Vertical curb shall be finished per MAG Section 340. All exposed edges and hand tooled joints shall have a one-quarter inch (1/4") radius unless a larger radius is called for in the construction plans.
5. Bituminous expansion joint material shall be placed with forms prior to concrete placement. Insertion into concrete after placement is not an allowable method.
6. Additional information regarding joint construction can be seen in Standard Detail 3-135.
7. ABC thickness per street cross section Standard Details 2-005 to 2-035.

12-27-18 (Under Review)

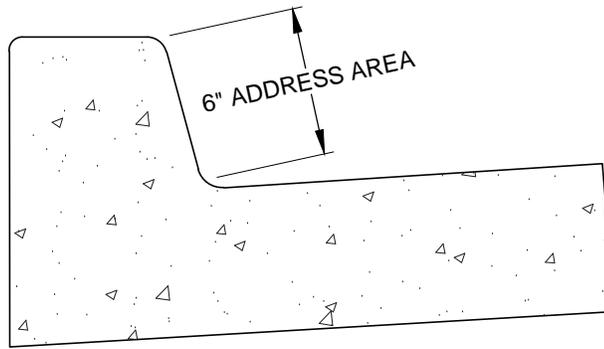
CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS
STANDARD NO. 3-075
VERTICAL CURB
AND
TYPICAL CURB TERMINATION



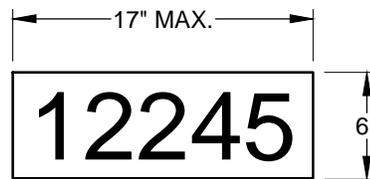
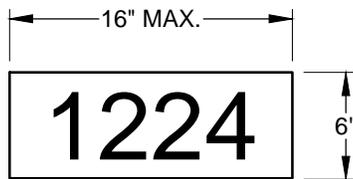
ROLL CURB & GUTTER



VERTICAL CURB



VERTICAL CURB & GUTTER



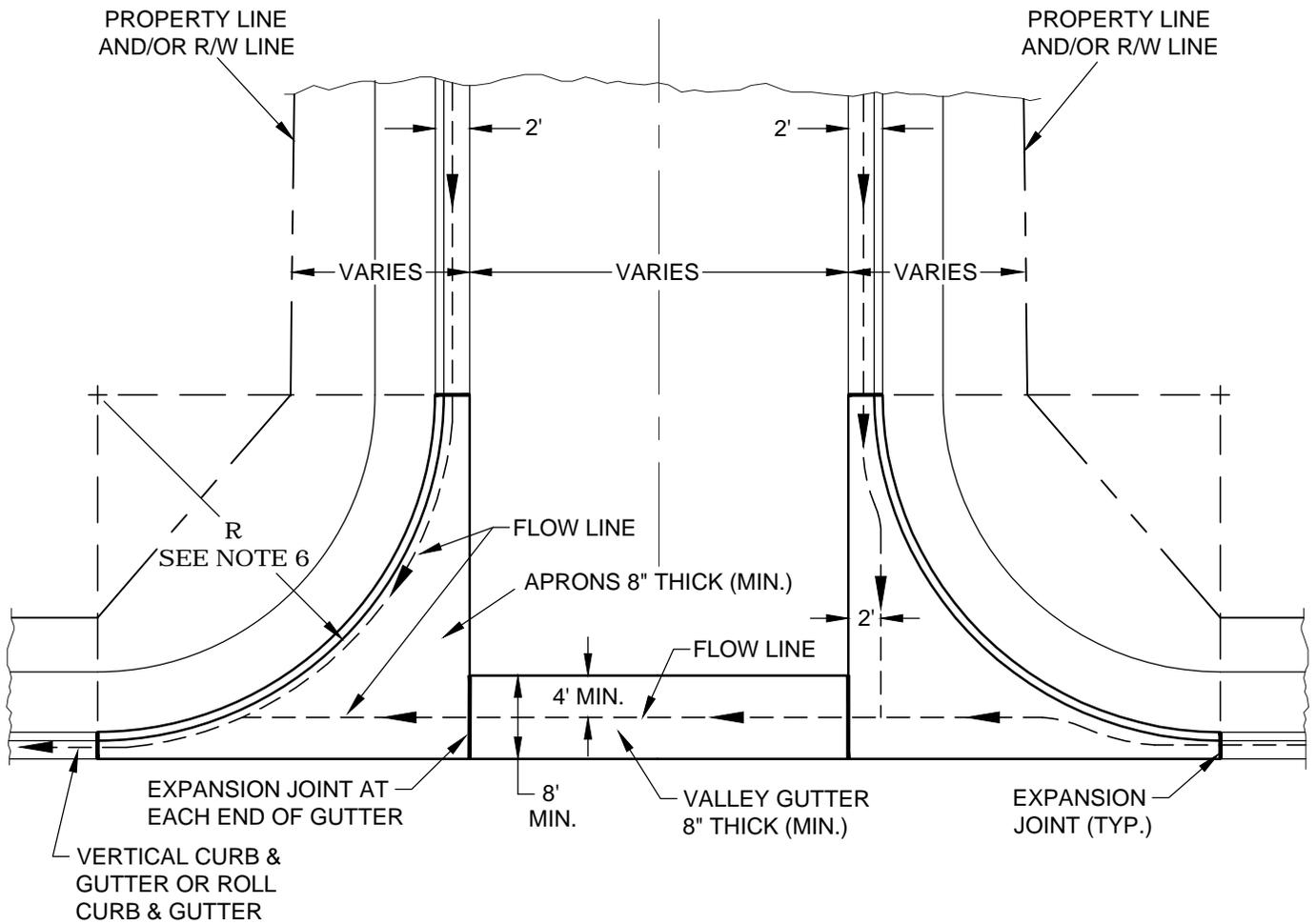
NOTES

1. Alternate location: adjacent to curbside mailbox.
2. Paint shall conform to ADOT specifications for street paint.
3. An encroachment permit is required.
4. If markings are put in for pay, then a business permit is required from the City Clerk.
5. Address area: 4" black numbers on a solid white background

12-27-18 (Under Review)

**CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS**

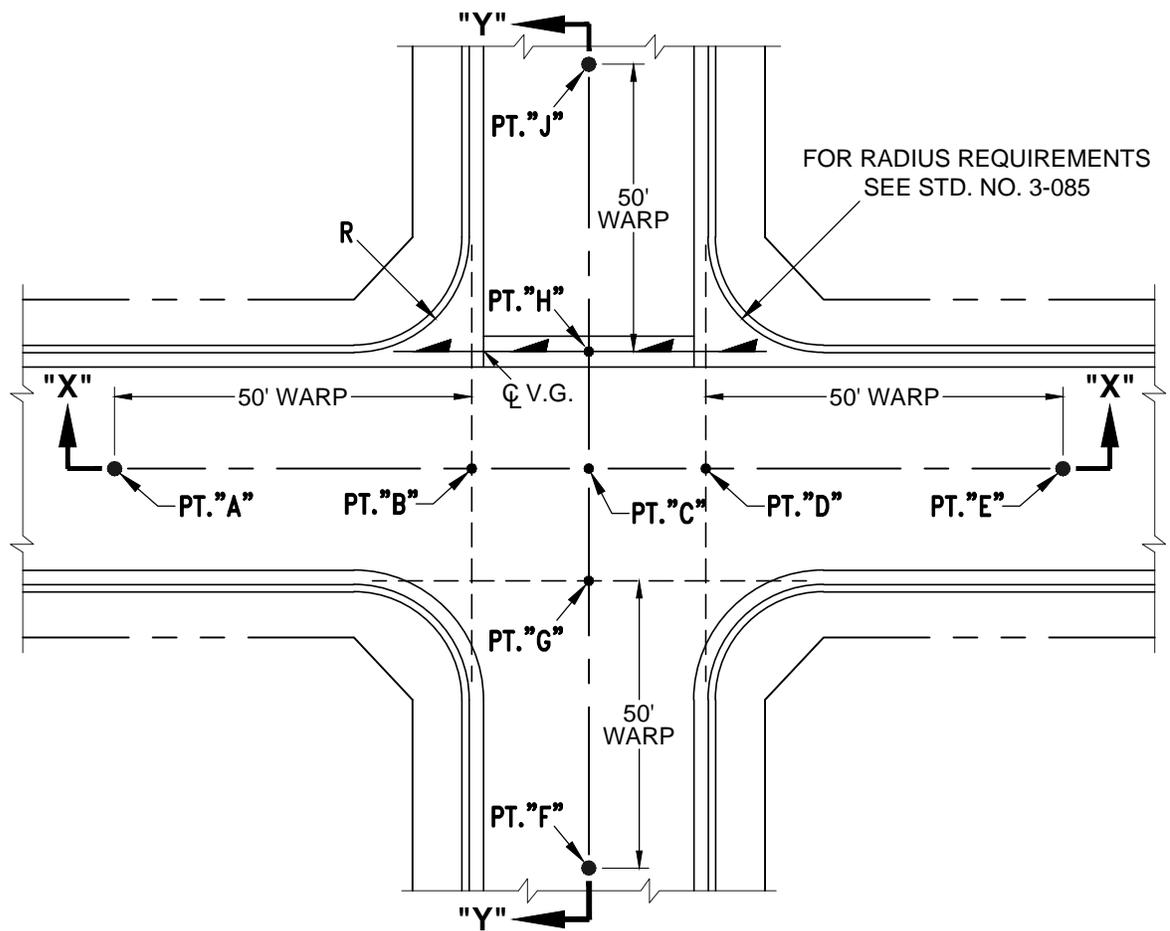
**STANDARD NO. 3-080
RESIDENTIAL
ADDRESSING ON CURBS**



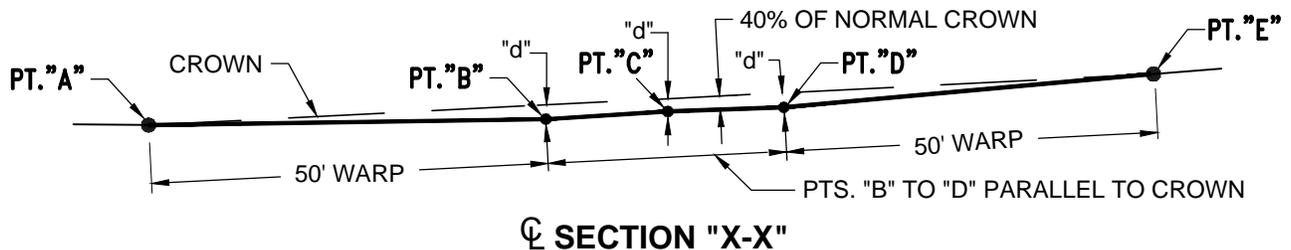
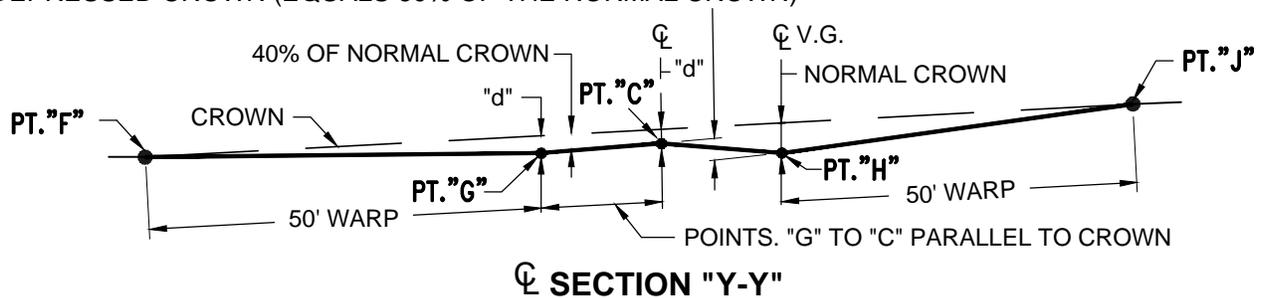
NOTES

1. Concrete shall receive a longitudinal broom finish on all exposed surfaces.
2. Asphalt valley gutters are not allowed.
3. Six inches (6") of A.B.C. shall be placed under both aprons and valley gutter and shall be compacted to 100% of the maximum dry density determined by AASHTO T99, method C or D. (See Standard Drawing No. 3-090)
4. Expansion joints shall be located at tangent points in curb returns, at structures and at a maximum twenty foot (20') intervals. The one-half inch (1/2") joint filler material shall be the bituminous type meeting the AASHTO M-33 or the ASTM D-1751 specifications and shall extend the full depth of the concrete. Expansion joints shall not be placed in front of sidewalk ramp landings.
5. Bituminous expansion joint material shall be placed with forms prior to concrete placement. Insertion into concrete after placement is not an allowable method.
6. Radius requirements (face of curb):
 - A. Local streets: 25' minimum
 - B. Collector streets: 40' minimum
 - C. Arterial streets: 50' minimum
7. The curb return and apron construction shall be a monolithic pour.
8. Aprons & gutters to be constructed of Class "B" concrete per MAG Section 725.

| |
|--|
| 12-27-18 (Under Review) |
| CITY OF YUMA |
| CONSTRUCTION STANDARD DETAIL DRAWINGS |
| STANDARD NO. 3-085 |
| VALLEY GUTTER LAYOUT |



DEPRESSED CROWN (EQUALS 60% OF THE NORMAL CROWN) "d" = 40% NORMAL CROWN



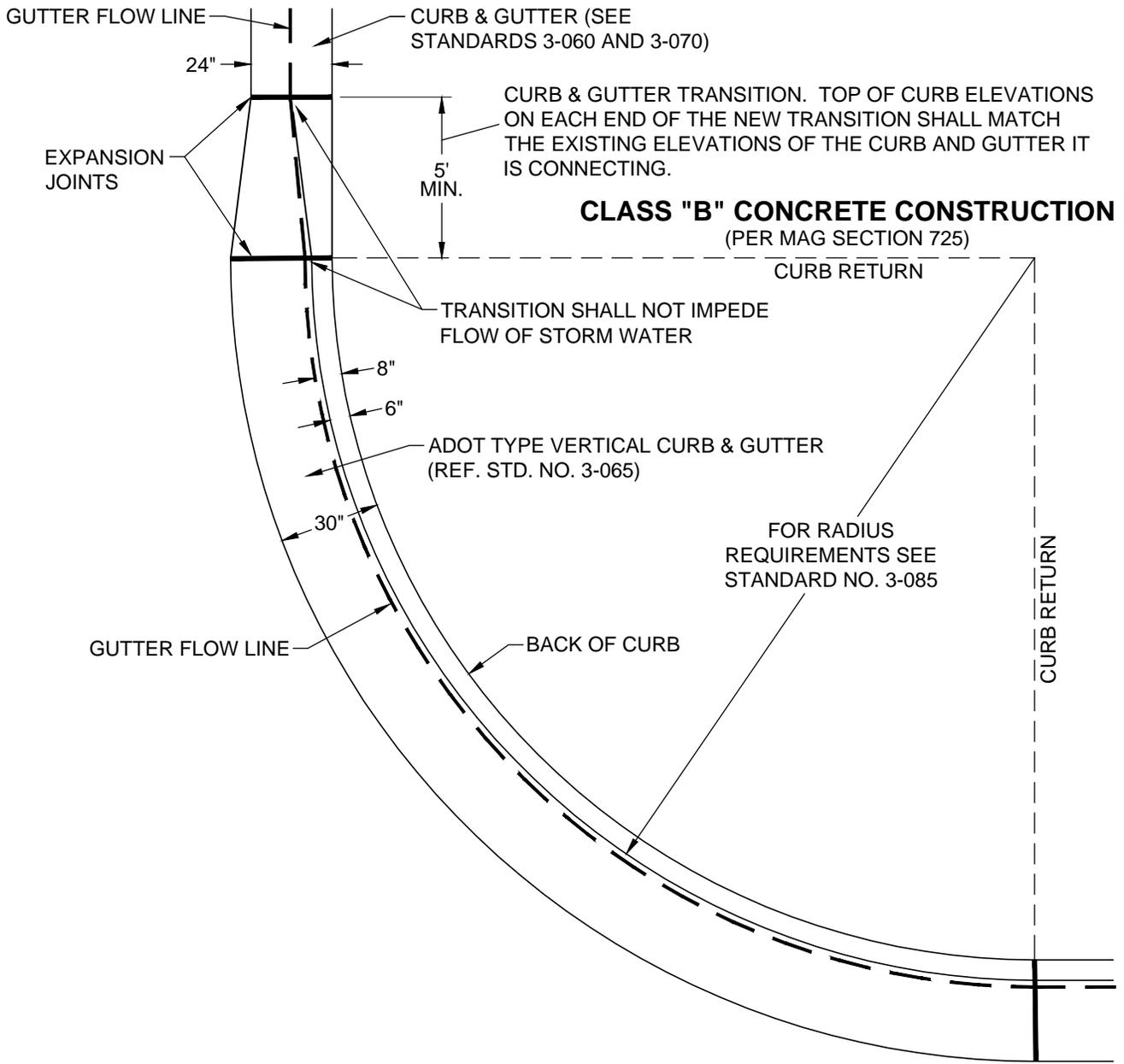
NOTES

1. Crown on centerline of intersection (PT's. "B" to "D") shall be depressed 40% of the normal crown and pavement shall be warped linearly parallel to the valley gutter 50' approaching and leaving points "B" and "D".
2. Show centerline profile of matching streets perpendicular to the valley gutter on the respective plan and profile sheets.

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

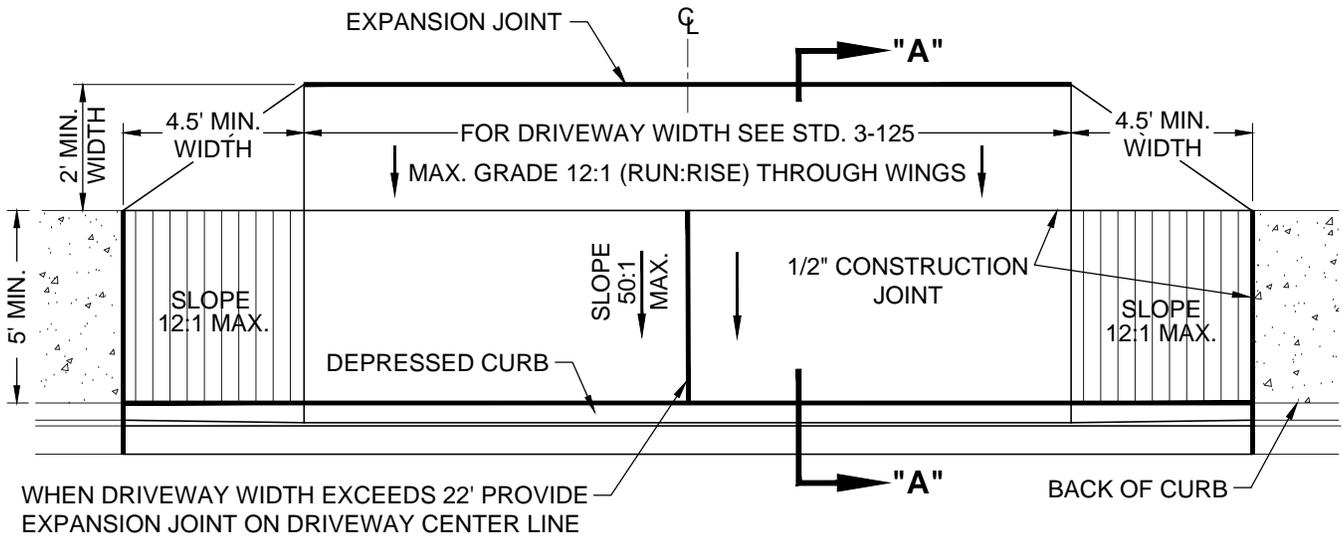
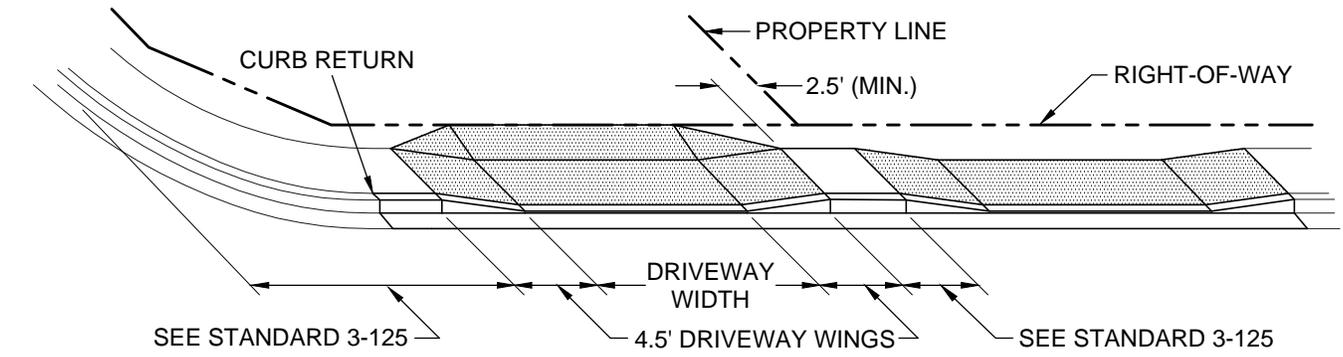
STANDARD NO. 3-095
INTERSECTION WITH
STANDARD VALLEY GUTTERS



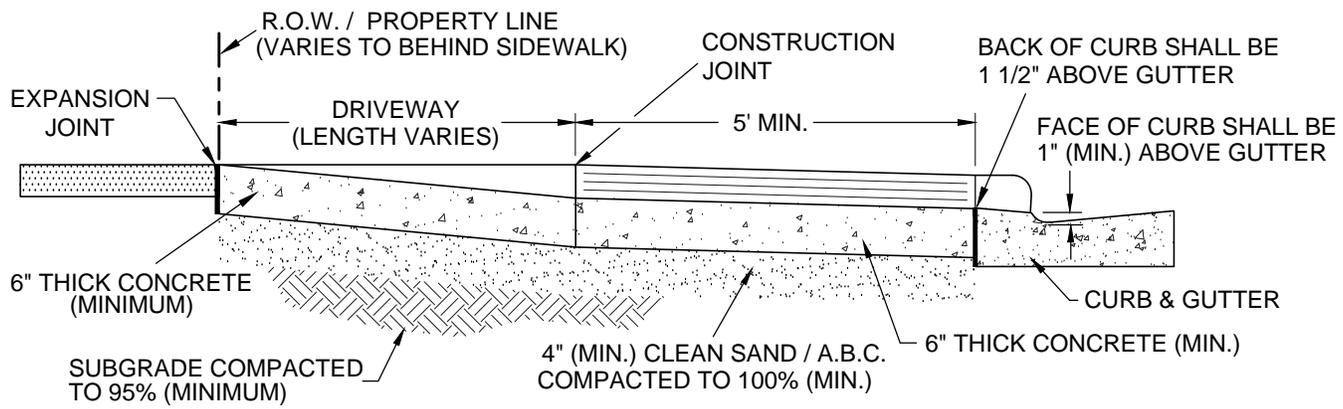
NOTES

1. Vertical curb & gutter may be constructed by the use of forms or the concrete may be machine extruded.
2. When the pavement slopes away from the gutter, the slope of the gutter will match the pavement's cross slope. Gutter depression will not be needed.
3. Contraction joint spacing shall be either hand tooled and/or saw cut and shall be placed no further than ten feet (10') apart. Contraction joint shall have a minimum depth of two inches (2").
4. Expansion joints shall be located at tangent points in curb returns, at structures and at a maximum of twenty foot (20') intervals. The one-half inch (1/2") joint filler material shall be the bituminous type meeting AASHTO M-33 or the ASTM D-1751 specifications and shall extend the full depth of the concrete.
5. Bituminous expansion joint material shall be placed with forms prior to concrete placement. Insertion into concrete after placement is not an allowable method.
6. Curb & gutter shall be finished per MAG Section 340. All exposed edges and hand tooled joints shall have a one-quarter inch (1/4") radius unless a larger radius is called for in the construction plans.
7. Additional information regarding joint construction can be seen in Standard Drawing No. 3-135.

| |
|---|
| 12-27-18 (Under Review) |
| <p>CITY OF YUMA CONSTRUCTION STANDARD DETAIL DRAWINGS STANDARD NO. 3-100 TRANSITION FROM ADOT TYPE CURB & GUTTER TO CITY CURB & GUTTER</p> |



PLAN VIEW



SECTION "A - A"

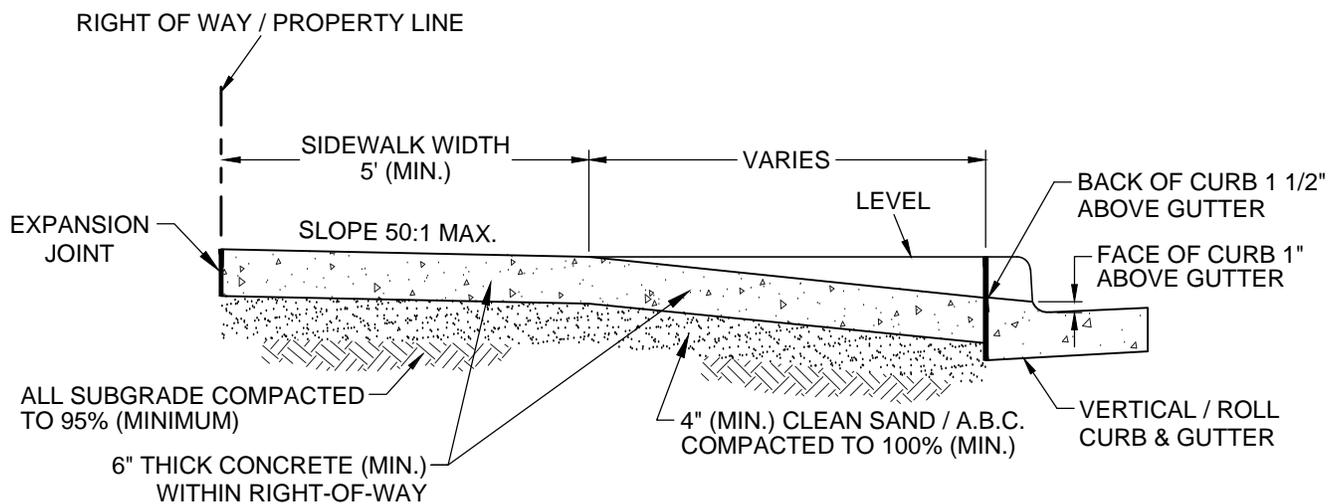
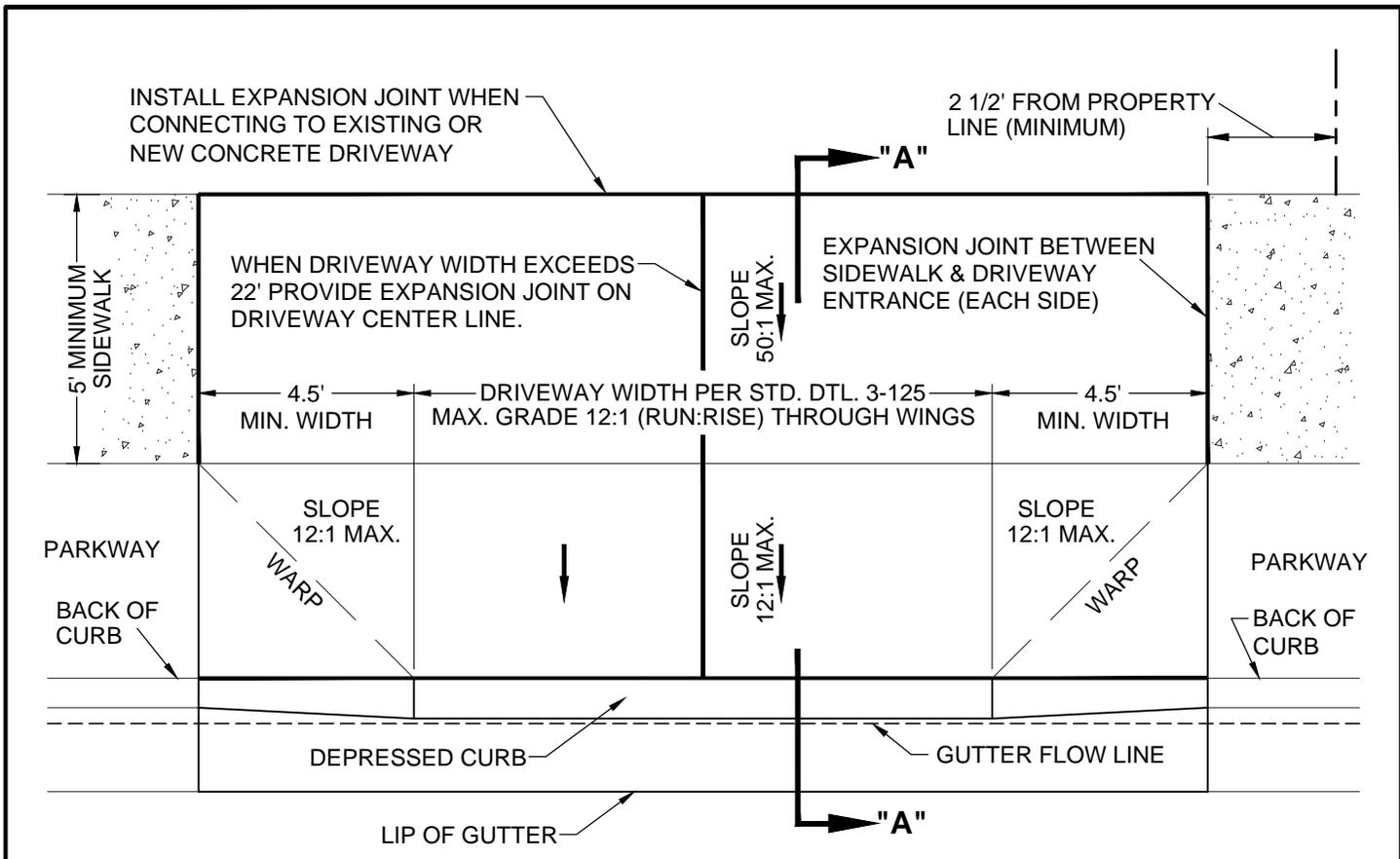
NOTES

1. Expansion joints shall be located at tangent points in curb returns, at structures and placed at 20' intervals (maximum). The one-half inch (1/2") joint filler shall be the bituminous type meeting AASHTO M-33 or ASTM D-1751 specifications and shall extend the the full depth of the concrete.
2. Bituminous expansion joint material shall be placed with forms prior to concrete placement. Insertion into concrete after placement is not an allowable method.
3. Approved driveway locations can be found in Standard Detail 3-125.
4. All concrete shall be Class B per MAG Section 725.

12-27-18 (Under Review)

CITY OF YUMA
 CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 3-105
 DRIVEWAY ENTRANCE WITH
 SIDEWALK ADJACENT TO CURB



SECTION "A - A"

NOTES

1. Expansion joints shall be located at tangent points in curb returns, at structures and placed at 20' intervals (maximum). The one-half inch (1/2") joint filler shall be the bituminous type meeting AASHTO M-33 or ASTM D-1751 specifications and shall extend the the full depth of the concrete.
2. Bituminous expansion joint material shall be placed with forms prior to concrete placement. Insertion into concrete after placement is not an allowable method.
3. Approved driveway locations can be found in Standard Detail 3-125.
4. All concrete shall be Class B per MAG Sec 725.

12-27-18 (Under Review)

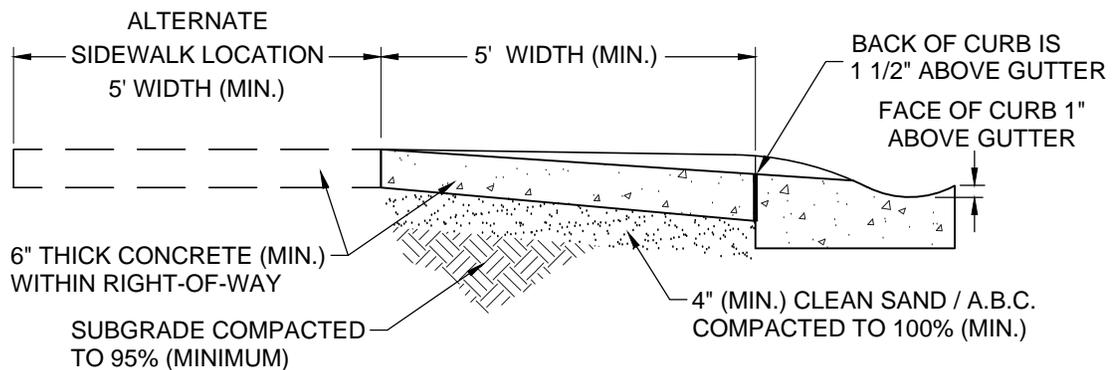
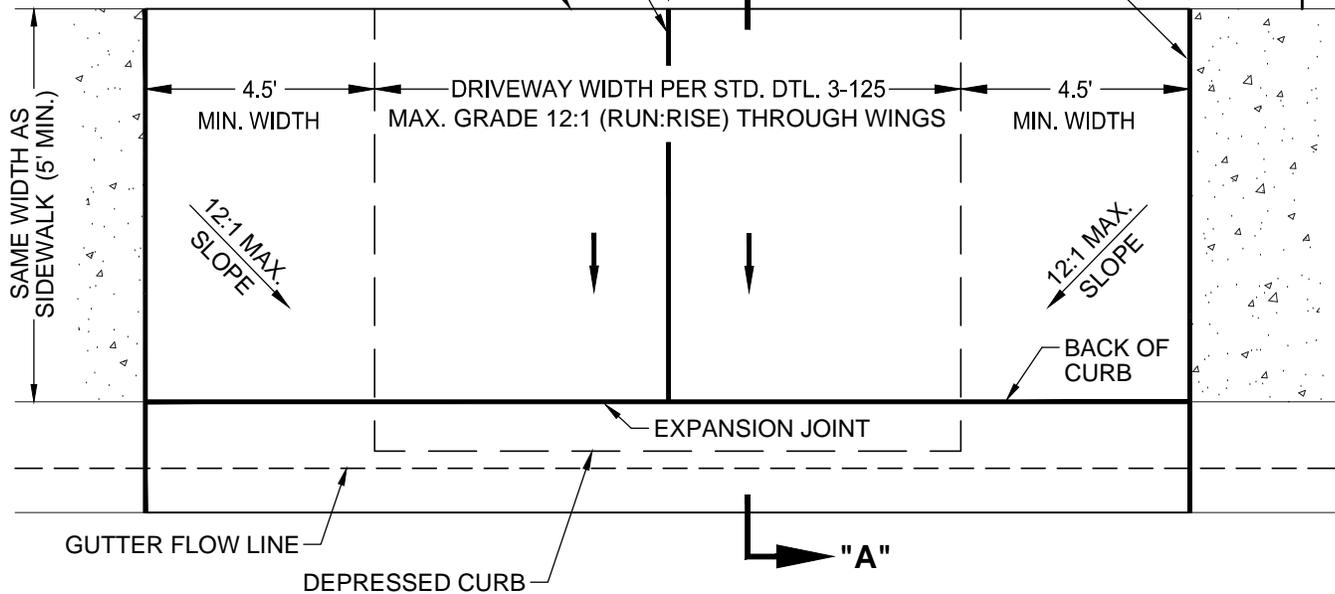
CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 3-110
**DRIVEWAY ENTRANCE
 WITH PARKWAY**

WHEN DRIVEWAY WIDTH EXCEEDS 22' PROVIDE EXPANSION JOINT ON DRIVEWAY CENTERLINE

2 1/2' (MIN.) FROM PROPERTY LINE

INSTALL EXPANSION JOINT WHEN CONNECTING TO EXISTING OR NEW CONCRETE DRIVEWAY



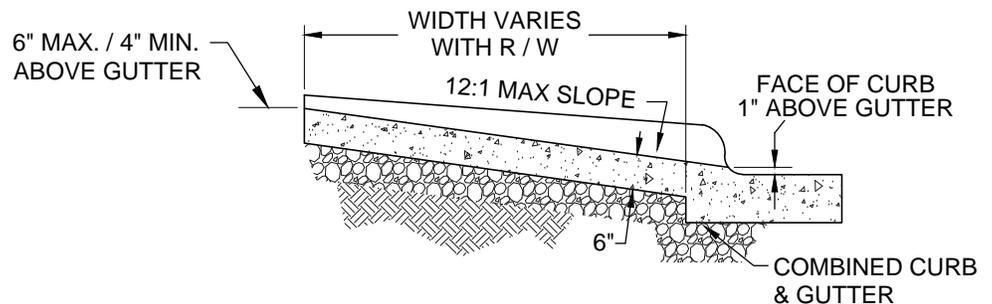
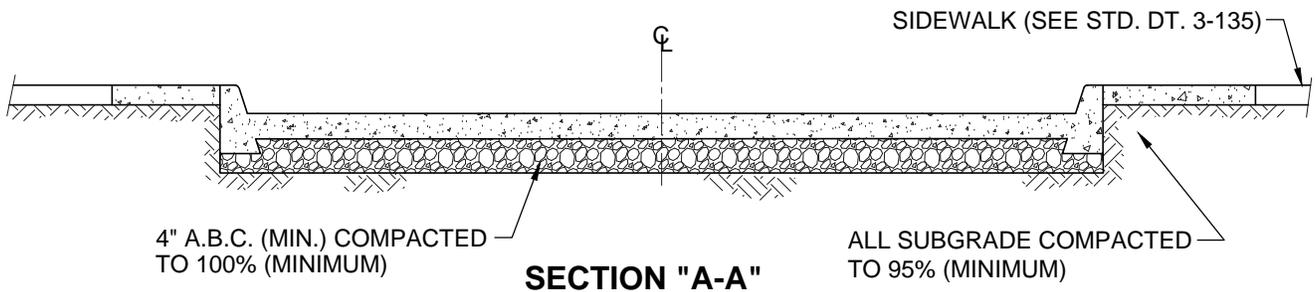
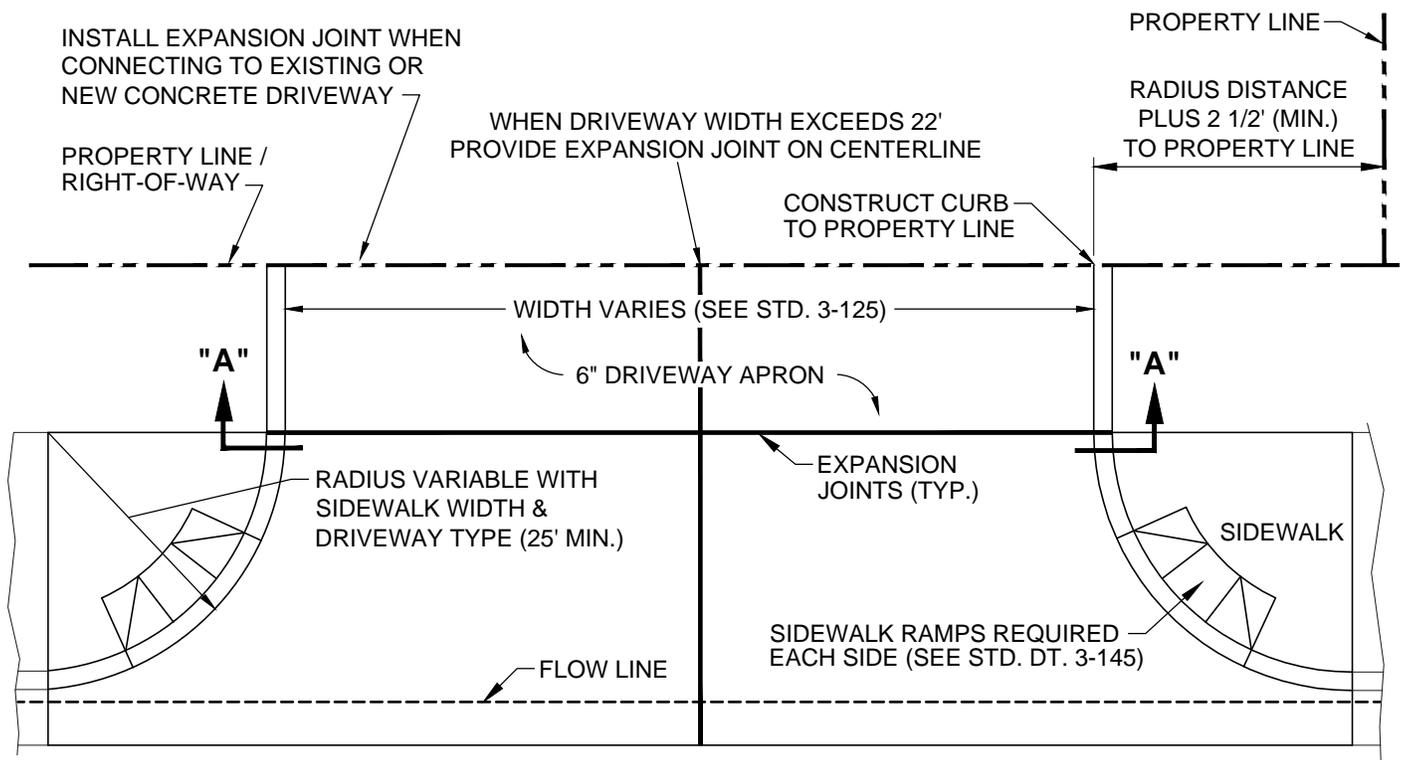
SECTION "A - A"

NOTES

1. Expansion joints shall be located at tangent points in curb returns, at structures and placed at 20' intervals (maximum). The one-half inch (1/2") joint filler shall be the bituminous type meeting AASHTO M-33 or ASTM D-1751 specifications and shall extend the the full depth of the concrete.
2. Bituminous expansion joint material shall be placed with forms prior to concrete placement. Insertion into concrete after placement is not an allowable method.
3. Approved driveway locations can be found in Standard Detail 3-125.
4. New roll curb and gutter can only be used to replace existing roll curb or with the approval of the City Engineer.
5. All concrete shall be Class B per MAG Sec 725.

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS
STANDARD NO. 3-115
RESIDENTIAL DRIVEWAY
WITH ROLL CURB & GUTTER



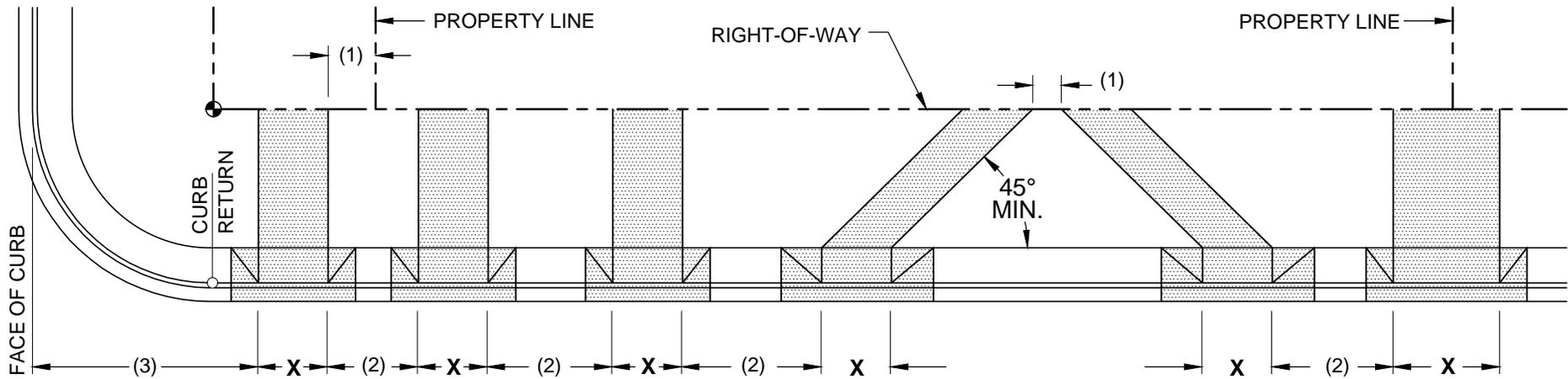
NOTES

1. This standard is to be used on commercial, industrial and emergency access driveways.
2. The access turning radii shall accommodate the largest vehicle using this access on a daily basis.
3. Expansion joints shall be located at tangent points in curb returns, at structures and placed at 20' intervals (maximum). The one-half inch (1/2") joint filler shall be the bituminous type meeting AASHTO M-33 or ASTM D-1751 specifications and shall extend the full depth of the concrete.
4. Bituminous expansion joint material shall be placed with forms prior to concrete placement. Insertion into concrete after placement is not an allowable method.
5. A minimum of four inches (4") of A.B.C., compacted to a minimum of 100% shall be used under aprons, curb and gutter.
6. All concrete shall be Class B per MAG Sec 725.

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 3-120
DRIVEWAY ENTRANCES
WITH CURB RETURNS



| STREET CLASSIFICATION | MINIMUM DIMENSION | | |
|-----------------------|-------------------|------|------|
| | (1) | (2) | (3) |
| LOCAL | 7' | 25' | 40' |
| COLLECTOR | 10' | 100' | 150' |
| ARTERIAL | 25' | 150' | 300' |
| PRIME ARTERIAL | 25' | 350' | 500' |

| X DIMENSION | |
|---------------------|-----------------------------|
| RESIDENTIAL: | |
| PRIMARY DRIVEWAY: | 16' MIN., 30' MAX. |
| SECONDARY DRIVEWAY: | 12' MIN., 30' MAX. |
| COMMERCIAL: | ONE WAY: 20' MIN., 30' MAX. |
| | TWO WAY: 30' MIN., 40' MAX. |
| INDUSTRIAL: | 20' MIN., 40' MAX. |
| JOINT USE: | 40' MAX. |

NOTES

1. Driveway definitions:
 - Residential - providing access to a single family residence, duplex or to an apartment building containing five or fewer dwelling units.
 - Commercial - providing access to an office, retail or institutional building or to an apartment building having more than five dwelling units.
 - Industrial - directly serves a substantial number of truck movements to and from loading docks of an industrial facility, warehouse or truck terminal.
2. Joint use driveways may become desirable for land owners of adjacent properties to service both properties. Should this be the case only one of the two adjacent land owners need apply for the encroachment permit. A notarized written mutual agreement, signed by all parties involved, must accompany the application form and will be recorded by the owner of record.
3. Driveway designs are subject to review and approval by the City Engineer.
4. Commercial and industrial driveways shall have curb returns (see Standard Detail 3-120).
5. Driveways and depressed curbs shall be located as noted or as directed by the City Engineer.
6. Drainage structures shall be provided under driveways where necessary.
7. Base material shall be the same as that shown for main roadways unless otherwise noted. All subgrade shall be compacted to 95% (minimum). Clean sand and A.B.C. shall also be compacted to 100% (minimum).

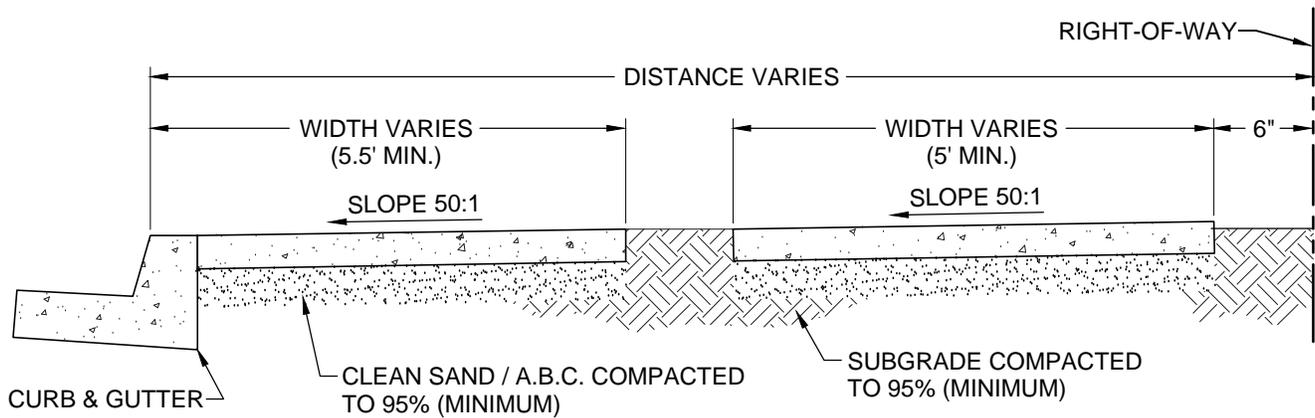
12-27-18 (Under Review)

CITY OF YUMA
 CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 3-125
 DRIVEWAY ENTRANCE
 LOCATIONS

ALL SIDEWALK 4" (MIN.) CLASS "B" CONCRETE CONSTRUCTION
(SEE NOTE NO. 2)

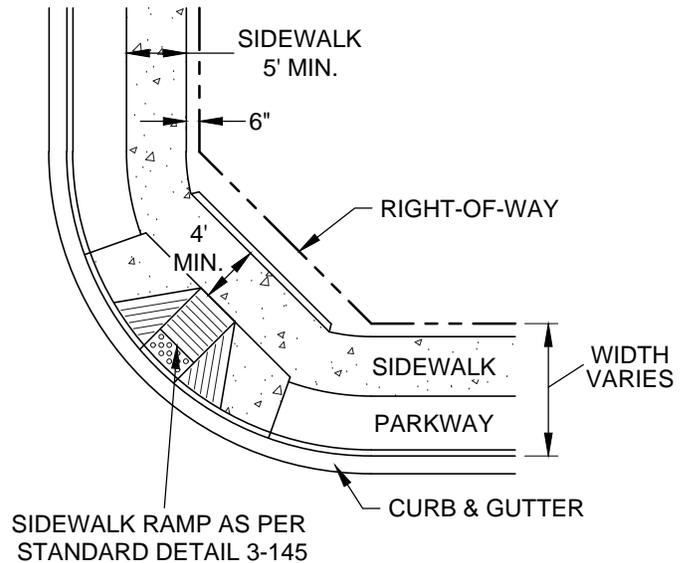
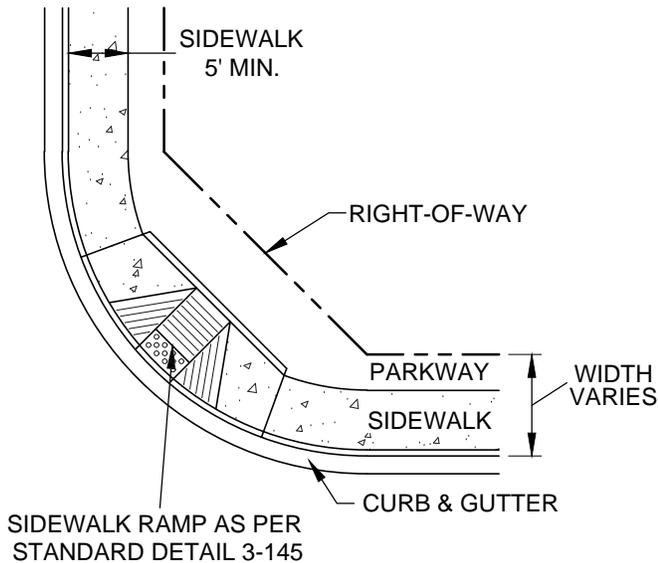
OPTIONAL SIDEWALK LOCATIONS



PREFERRED SIDEWALK LOCATION

ALTERNATE SIDEWALK LOCATION

PROFILE VIEW



PREFERRED SIDEWALK LOCATION

ALTERNATE SIDEWALK LOCATION

PLAN VIEW

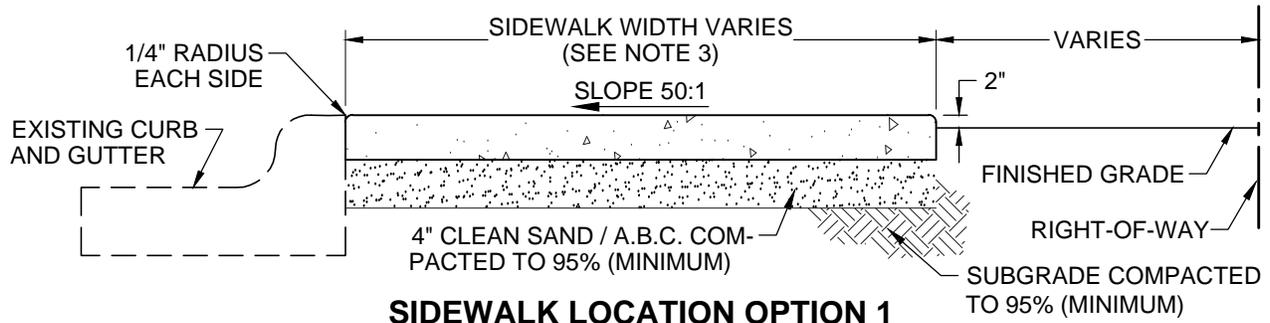
NOTES

1. A 50:1 cross slope per ADA requirements is required for drainage from back of sidewalk to curb.
2. Sidewalk shall be a minimum of 4" thick, Class "B" concrete construction per MAG Section 725.
3. Sidewalks containing power poles, light standards, mailboxes or other such obstructions shall be widened sufficiently to meet current ADA clearance requirements.
4. Reconfigure sidewalk in intersection so that ramp slope and lengths achieve no steeper than a 12:1 (run:rise) slope approaching/departing ramp.
5. All new development shall be required to construct sidewalks adjacent to all streets.
6. Expansion joint material shall be placed between curb and gutter and sidewalk when the back of the sidewalk abuts concrete driveways or other concrete paving.

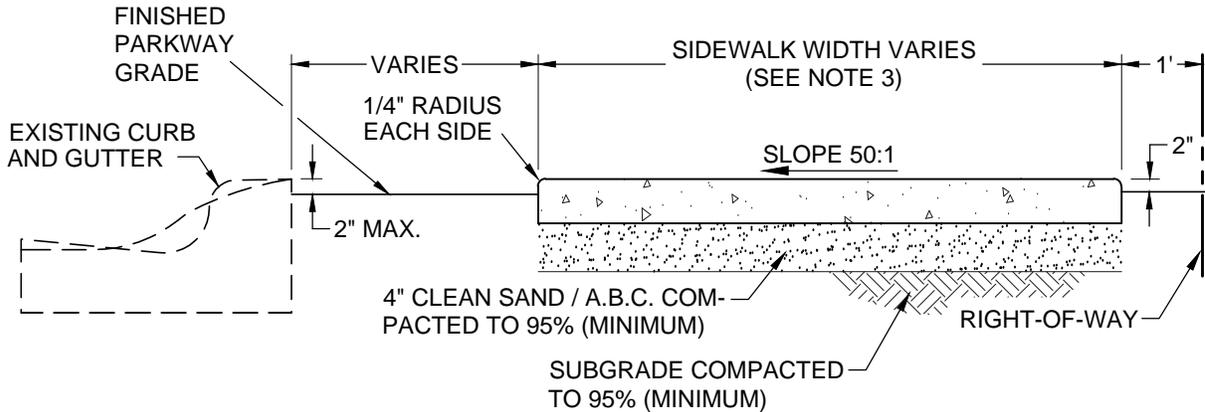
12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

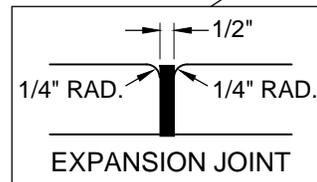
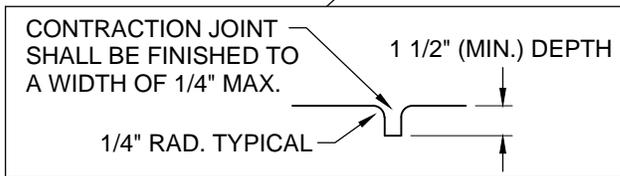
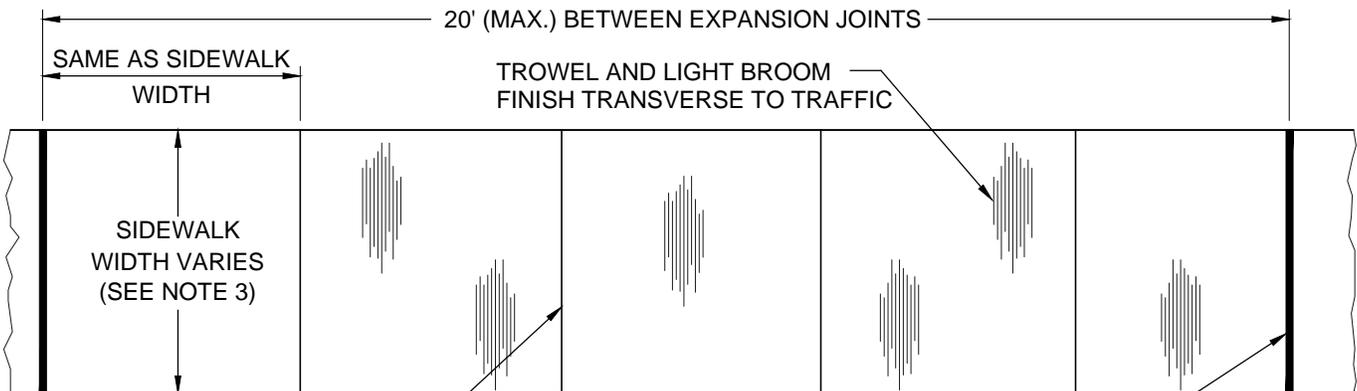
STANDARD NO. 3-130
SIDEWALK LOCATIONS



SIDEWALK LOCATION OPTION 1



SIDEWALK LOCATION OPTION 2



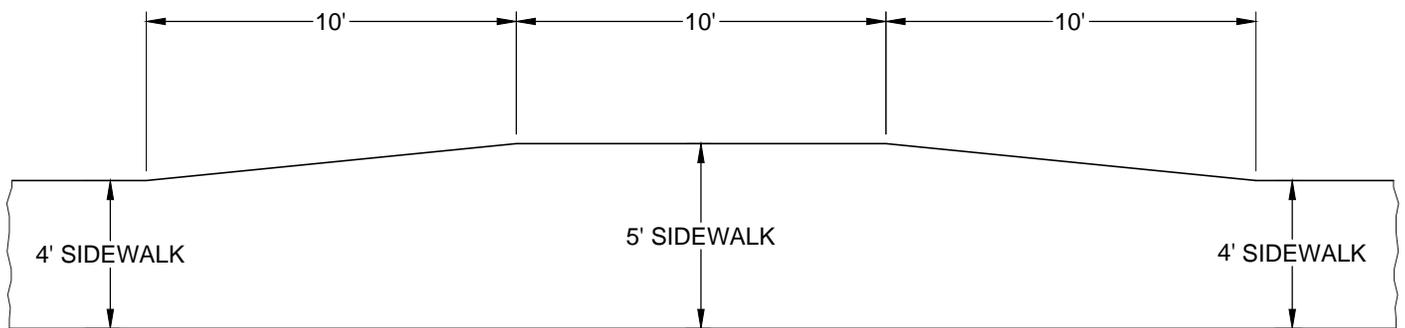
NOTES

1. Expansion joints shall be located at tangent points, in curb returns, at structures and placed at 20' intervals (maximum). The one-half inch (1/2") joint filler shall be the bituminous type meeting AASHTO M-33 or the ASTM D-1751 specifications and shall extend the full depth of the concrete.
2. Bituminous expansion joint material shall be placed with forms prior to concrete placement. Insertion into concrete after placement is not an allowable method.
3. When the back of the sidewalk abuts a concrete driveway or any other concrete paving or structure, an expansion joint shall be placed between the back of the sidewalk and such driveway or structure.
4. Sidewalk width varies with type of street. See Std. Details 2-010 to 2-040.
5. All sidewalks shall be 4" thick (min.) Class "B" concrete construction per MAG Section 725.
6. Sidewalks shall meet MAG Section 340.

12-27-18 (Under Review)

CITY OF YUMA
 CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 3-135
 SIDEWALKS



PLAN VIEW

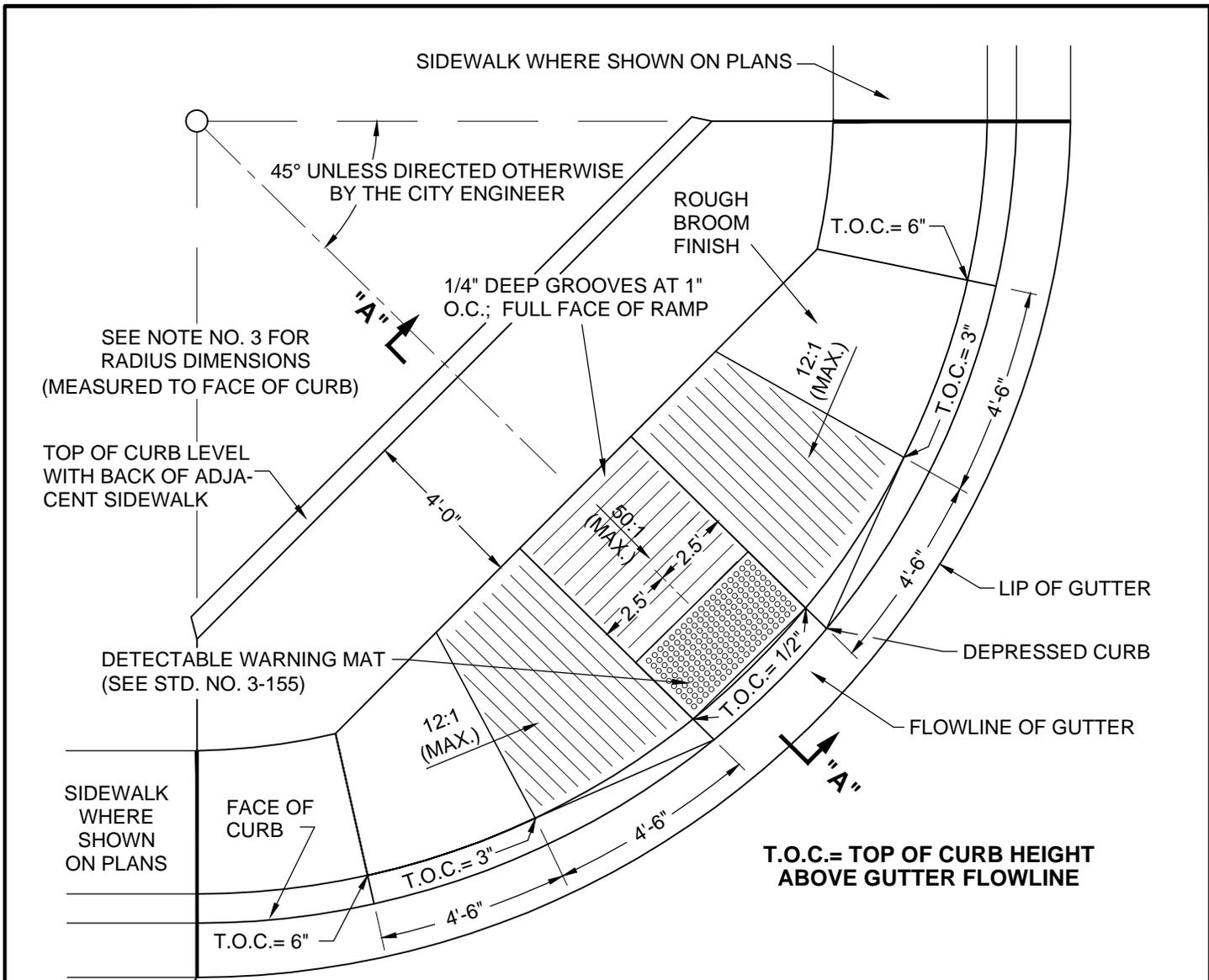
NOTES

1. Passing zones shall be located every 200' (Maximum)
2. This standard is for replacement or retrofit applications only.

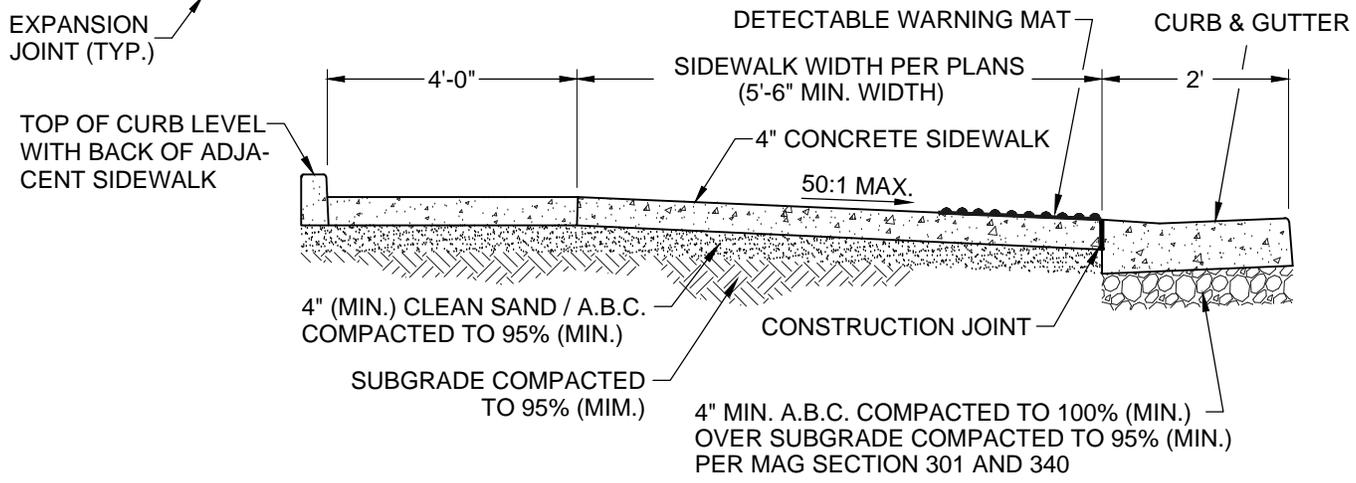
12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

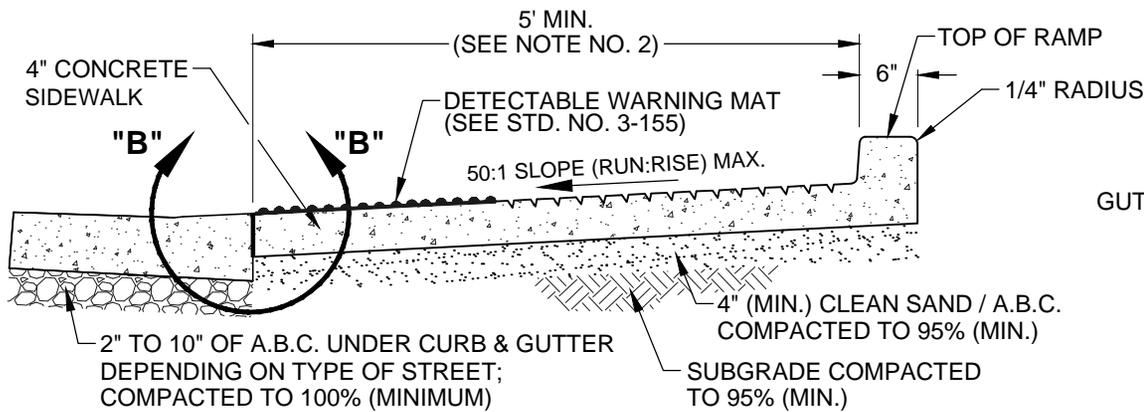
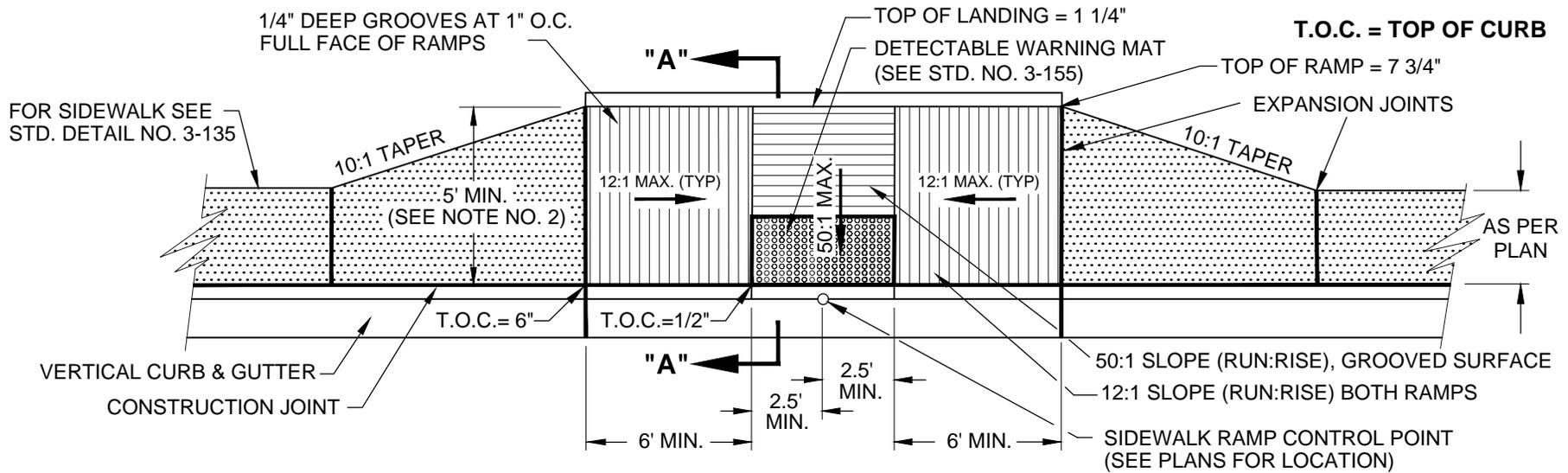
STANDARD NO. 3-140
SIDEWALK
ADA PASSING ZONE



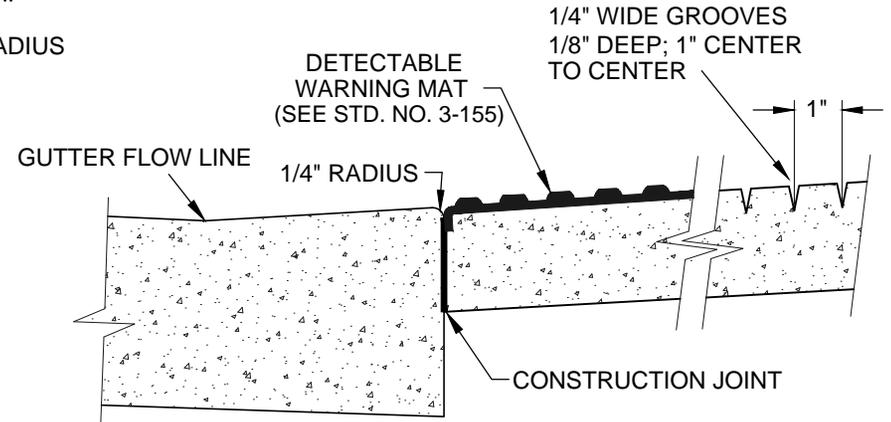
T.O.C.= TOP OF CURB HEIGHT ABOVE GUTTER FLOWLINE



SECTION "A-A"



SECTION "A - A"



VIEW "B - B"

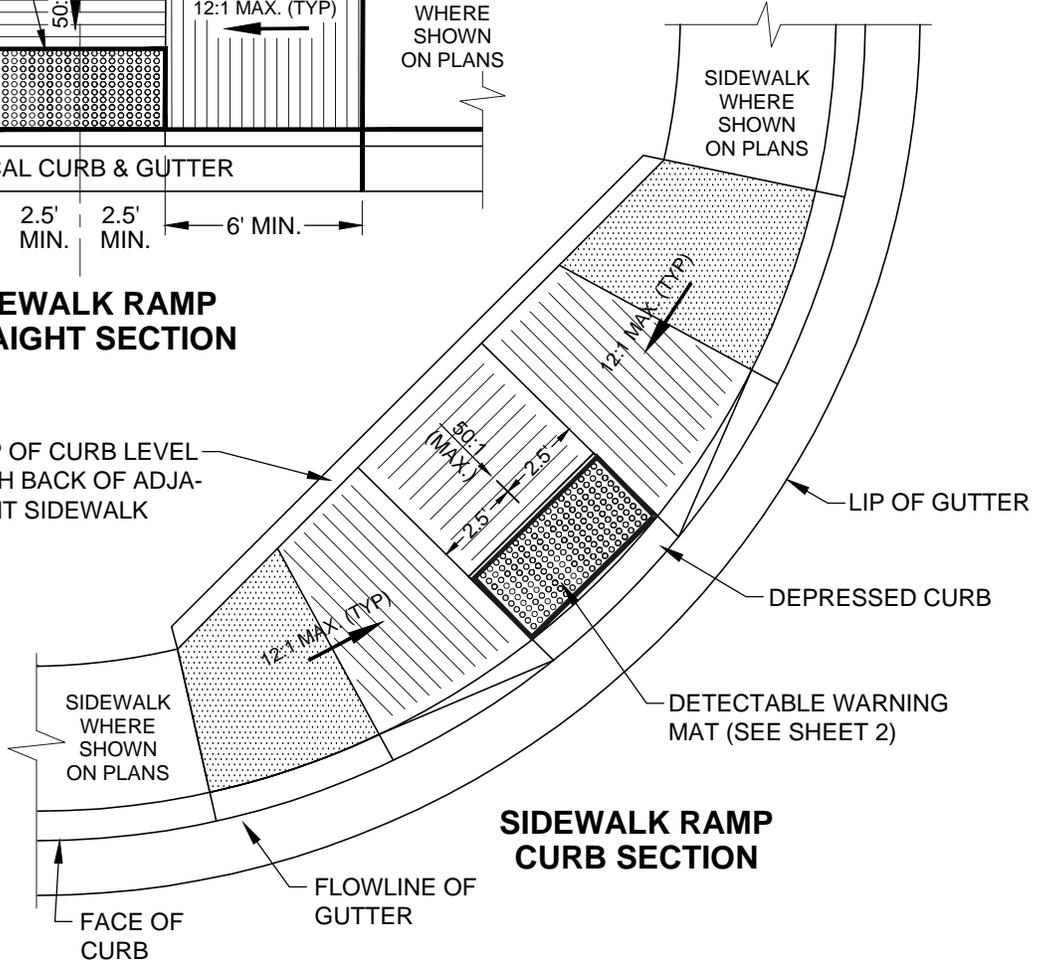
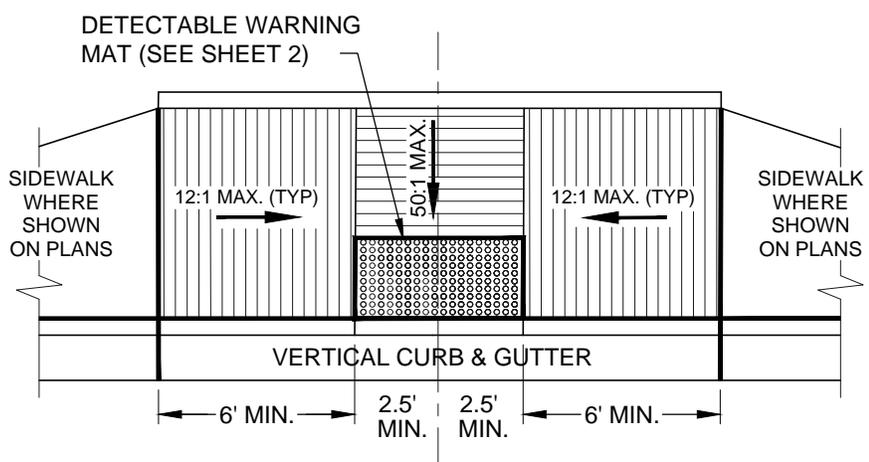
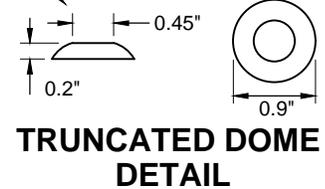
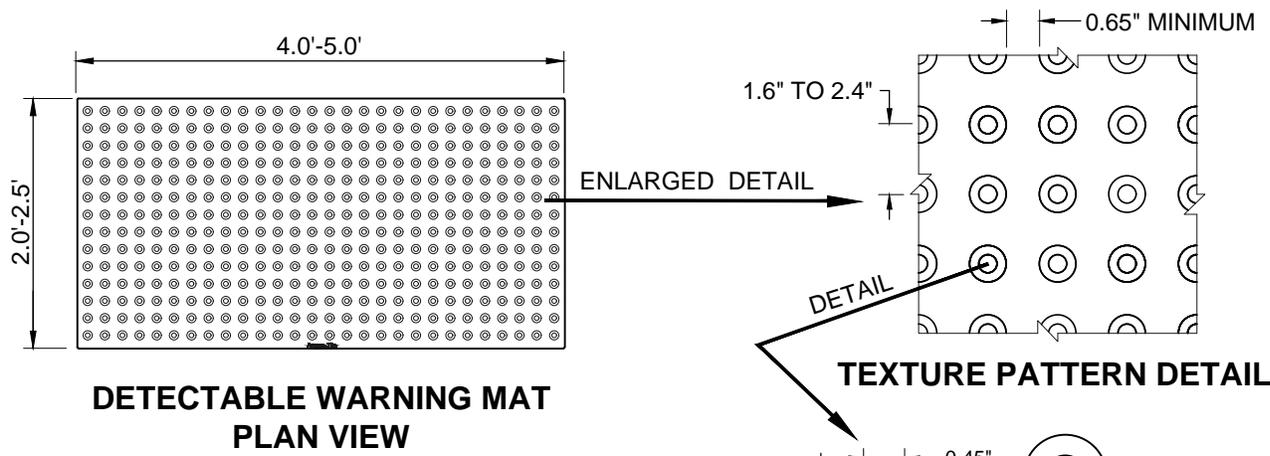
NOTES

1. Top of curb (T.O.C.) and top of ramp elevations shown are measured from the flow line of the gutter. Gutter elevation = 0.00.
2. Sidewalks greater in width than five feet (5') the overall sidewalk ramp length shall match the sidewalk width.
3. Expansion joints shall be located at tangent points, in curb returns, at structures and placed at 20' intervals (maximum). The 1/2" joint filler material shall be the bituminous type meeting AASHTO M-33 or the ASTM D-1751 specifications and shall extend the full depth of the concrete.
4. Bituminous expansion joint material shall be placed with forms prior to concrete placement. Insertion into concrete after placement is not an allowable method.
5. Ramp and sidewalks shall be constructed of Class "B" concrete per MAG Section 725.

12-27-18 (Under Review)

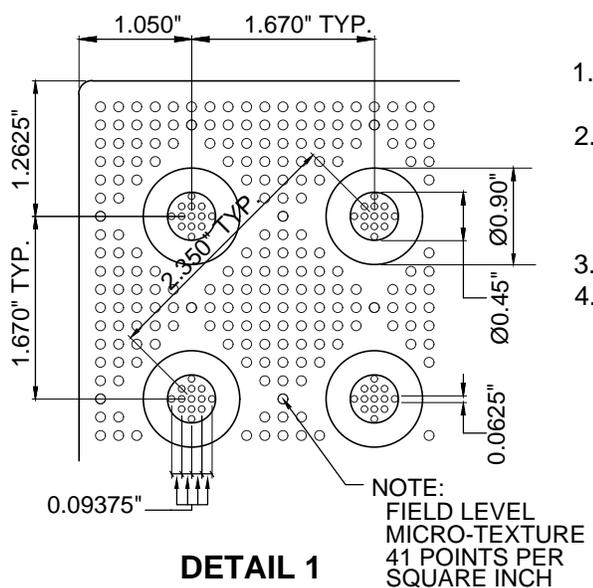
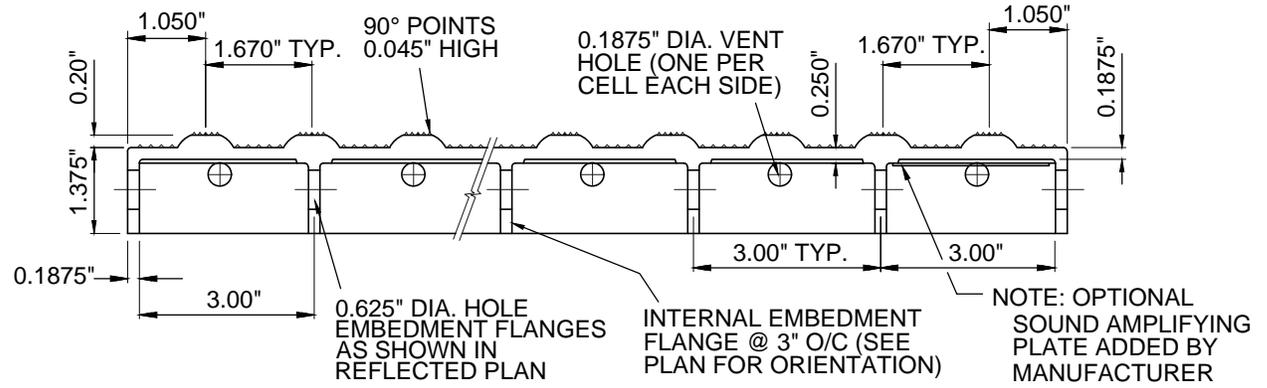
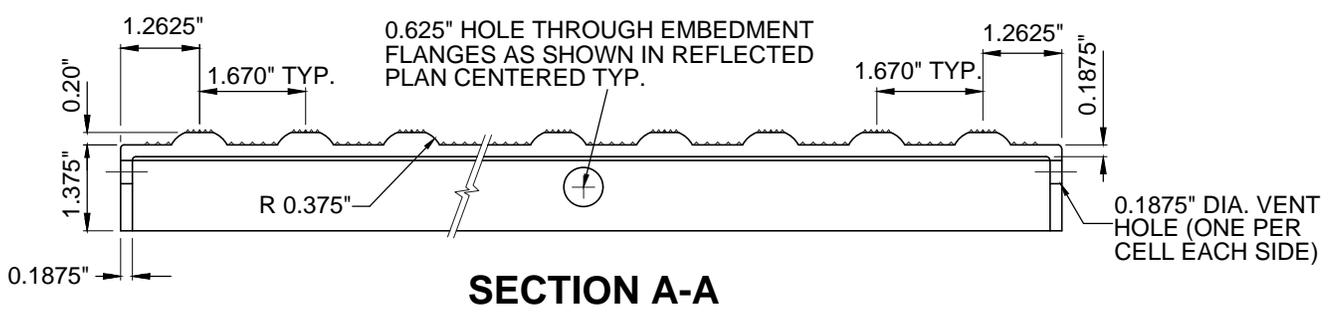
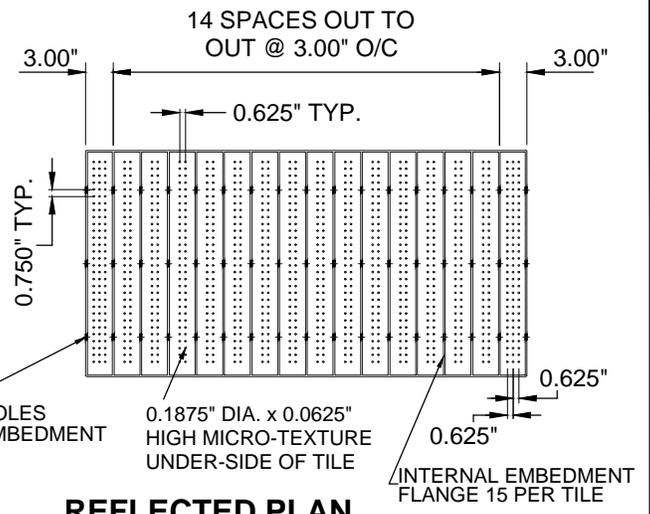
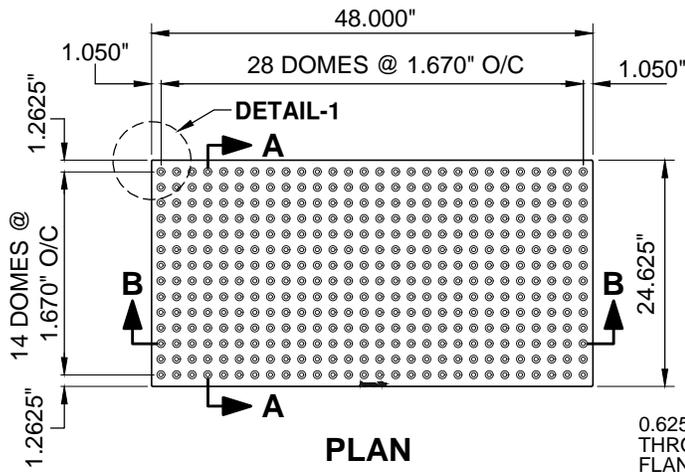
CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 3-150
SIDEWALK RAMP
(STRAIGHT SECTION)



NOTE

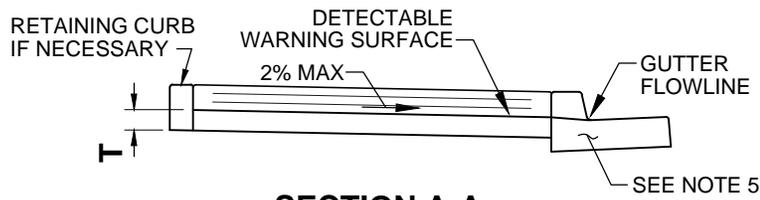
1. See sheet 2 of this standard for additional details about the detectable warning mat.



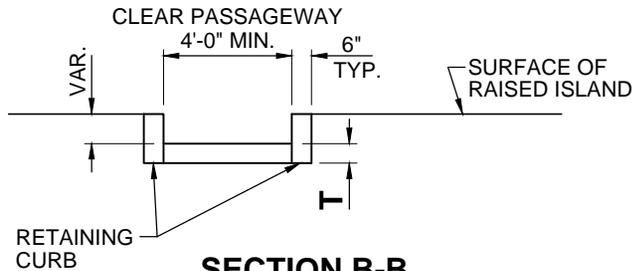
NOTES

1. ADA Solutions, Inc., cast-in-place tactile panels are approved commercial products.
2. The approved items are not necessarily exclusive. If a similar product of comparable and equal quality and performance is desired, a request supported by appropriate information and data may be submitted to the City Engineer for review.
3. Embedments shall be as per manufacturers recommendations.
4. Color shall be federal yellow.

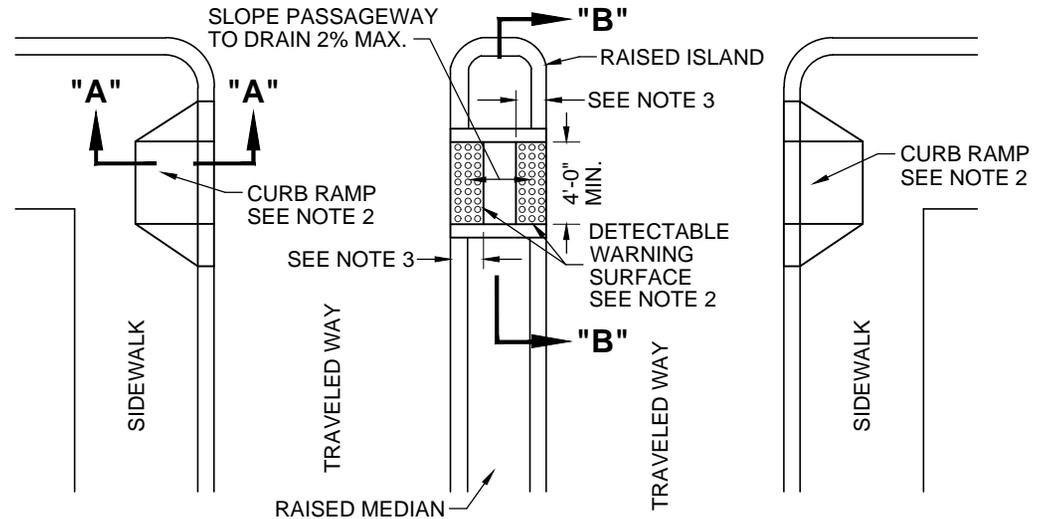
| | |
|--|--------------|
| 12-27-18 (Under Review) | Sheet 2 of 2 |
| <p>CITY OF YUMA CONSTRUCTION STANDARD DETAIL DRAWINGS STANDARD NO. 3-155 SIDEWALK RAMP DETECTABLE WARNING MAT</p> | |



SECTION A-A



SECTION B-B



PASSAGEWAY

NOTES

1. Sidewalk, ramp and passageway thickness, "T", shall be 4" minimum.
2. For details of detectable warning surfaces, see Standard No. 3-155.
3. Where an island is less than 6'-0" wide, the detectable warning surface shall extend the full width and full length of the passage way. Where an island width is greater than or equal to 6'-0", but less than 8'-0", each detectable warning surface shall extend the full width of the passageway for a distance of 2' from each curb face. Where an island width is greater than or equal to 8'-0", each detectable warning surface shall extend the full width of the passageway for a distance of 3' from each curb face.
4. Transitions from ramps to walks, gutters or streets shall be flush and free of abrupt changes.
5. Max. slopes of adjoining gutters, the road surface immediately adjacent to the curb ramp or accessible route shall not exceed 5 percent within 4'-0" of the top and bottom of the curb ramp.
6. Utility pullboxes, manholes, vaults and all other utility facilities within the boundaries of the curb ramp will be relocated or adjusted to grade by the facility owner prior to, or in conjunction with, curb ramp construction.

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

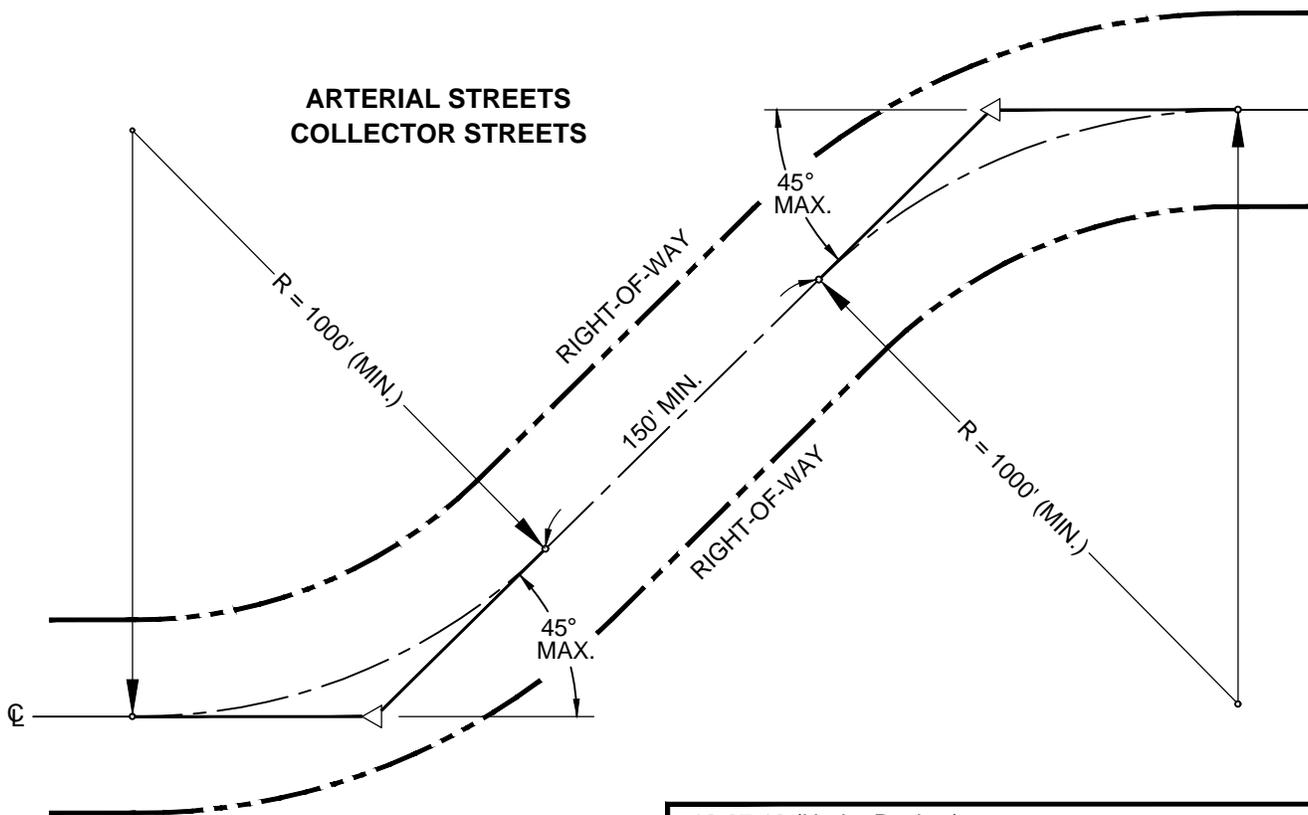
STANDARD NO. 3-160
CURB RAMP & ISLAND
PASSAGEWAY DETAILS

LOCAL STREETS

RESIDENTIAL STREETS IN HILLSIDE LOCATIONS
REQUIRE A SMALLER C/L RADIUS AS APPROVED
BY CITY ENGINEER.



ARTERIAL STREETS COLLECTOR STREETS



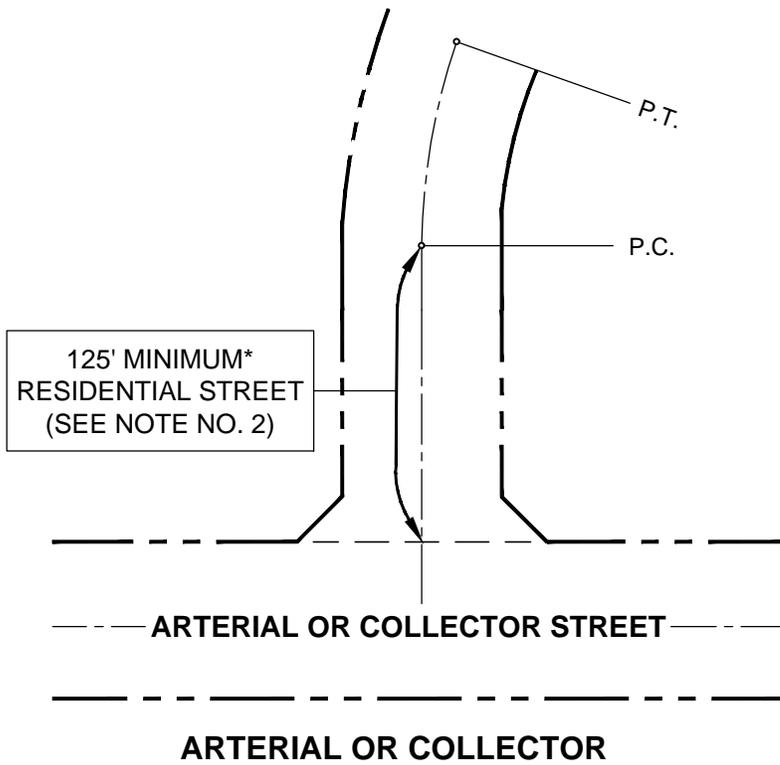
NOTE

1. Arterial and collector streets shall have a minimum centerline radius of 1,000'.

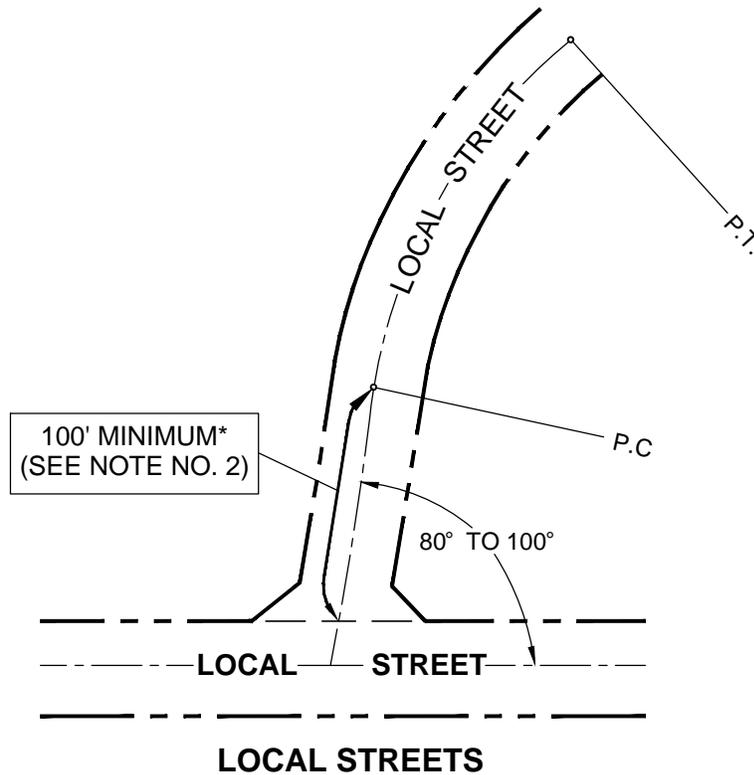
12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 3-165
REVERSE CURVES



| DESIGN SPEED (MPH) | DISTANCE |
|--------------------|-------------|
| 20 | 125' |
| 25 | 150' |
| 30 | 200' |
| 35 | 225' - 250' |
| 40 | 275' - 325' |
| 45 | 325' - 400' |
| 50 | 400' - 475' |
| 55 | 450' - 550' |



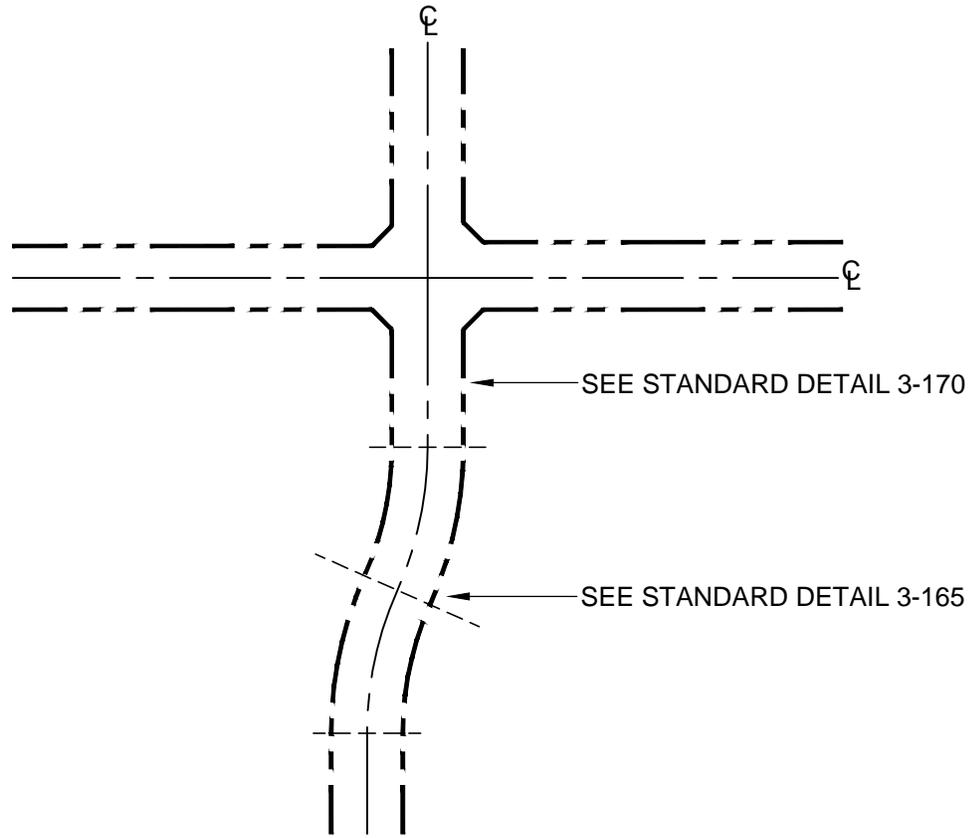
NOTES

1. All intersections with arterials or collector streets shall be at right angles.
2. Denotes minimum centerline distance from cross street right-of-way line to point of curvature.
3. Street intersections shall be carefully designed as to eliminate conflicting traffic movements and odd shaped lots.

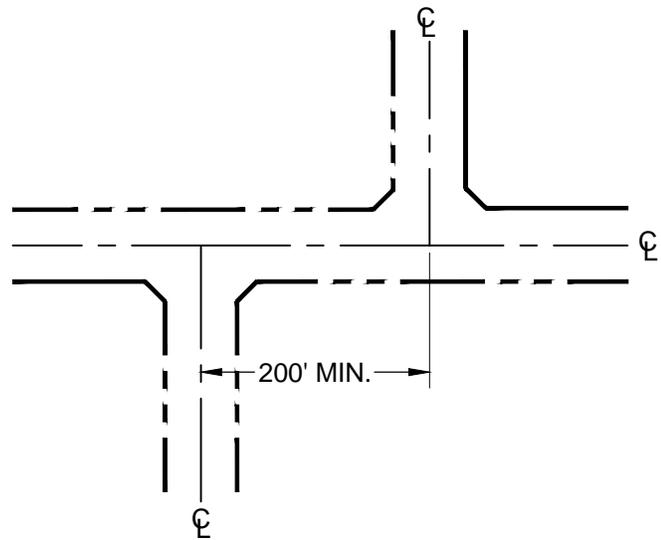
12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 3-170
ANGLE OF INTERSECTIONS



PREFERRED



ACCEPTABLE - LOCAL STREETS ONLY

NOTE

1. Arterial and collector streets shall not have offsets.

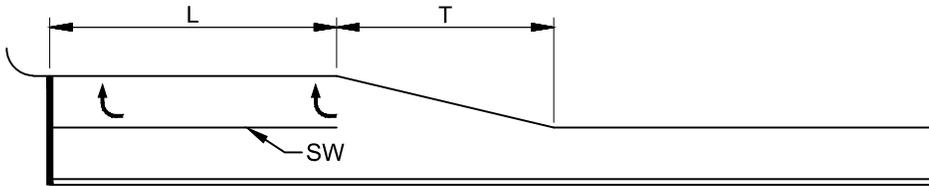
12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

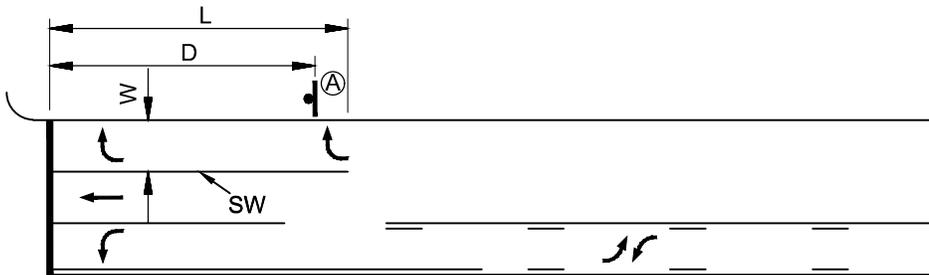
STANDARD NO. 3-175
LOCAL STREET OFFSETS

RIGHT TURN LANES

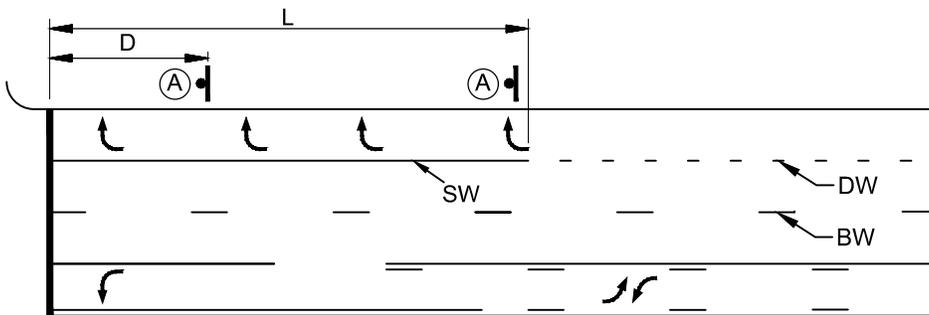
CASE 1R - RECESSED RIGHT-TURN LANE



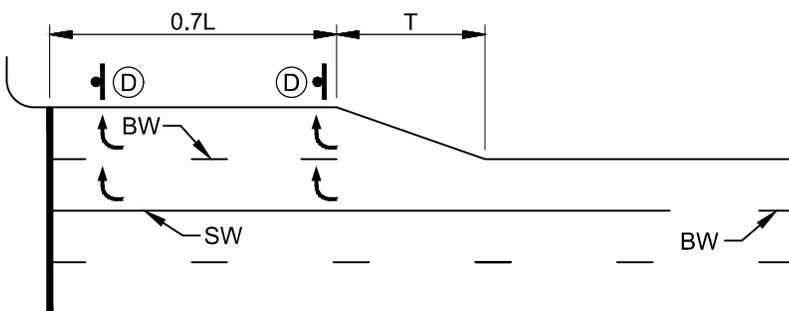
CASE 2R - CREATED RIGHT-TURN LANE



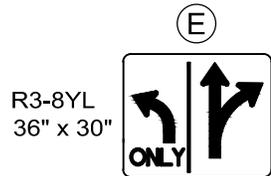
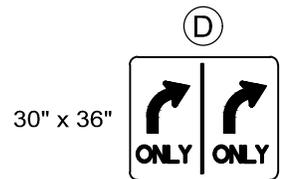
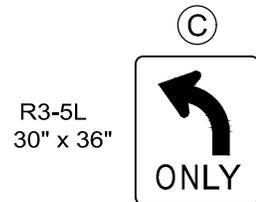
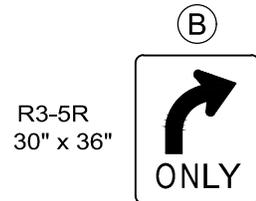
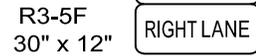
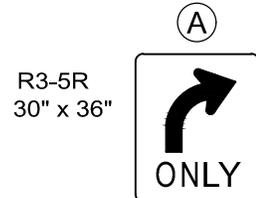
CASE 3R - RIGHT-TURN TRAP LANE



CASE 4R - DUAL RIGHT-TURN LANE



SIGN LEGEND



See Standard 8-065

LINE LEGEND

(See Standard 10-025)

- SW = 6" SOLID WHITE
- DW = 6" DOTTED WHITE, 3' LINE, 9' SPACE
- BW = 6" BROKEN WHITE, 10' LINE, 30' SPACE
- 2Y = DOUBLE 6" SOLID YELLOW
- 8W = 8" SOLID WHITE
- 12W = SOLID WHITE
- CY = COMBINATION YELLOW LINE

NOTES

1. Drawings are schematic, not to scale.
2. Adapt as necessary for specific sites.
3. Do not use ONLY pavement message.
4. Pavement arrows to be 75' to 100' apart.
5. Normal 2-lane approaches on the stem of a T-intersection do not require lane use signs or pavement arrows.
6. Lanes are typically 12' wide to lip of gutter. Use 13.5' where no gutter.
7. See sheet 3 for dimensions.

12-27-18 (Under Review)

Sheet 1 of 3

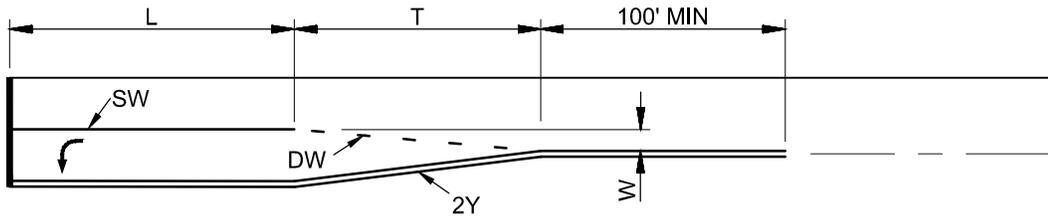
CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 3-180
TURN LANE TREATMENT

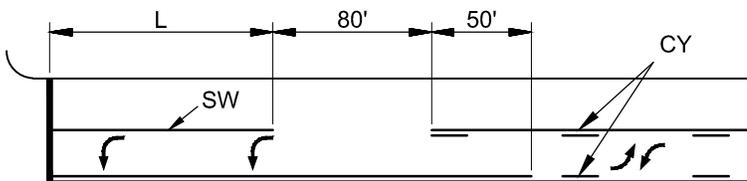
LEFT TURN LANES

(Continued on Sheet 3)

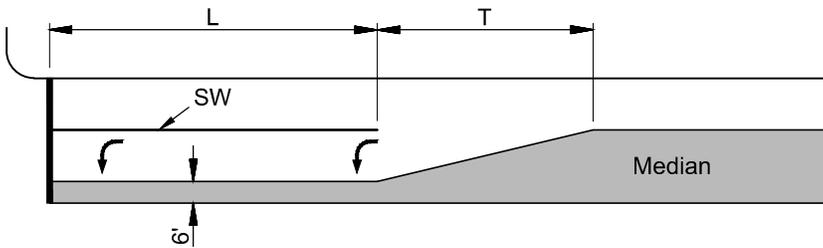
CASE 1L-LEFT - TURN LANE ON STREET WITH NO CENTER LINE



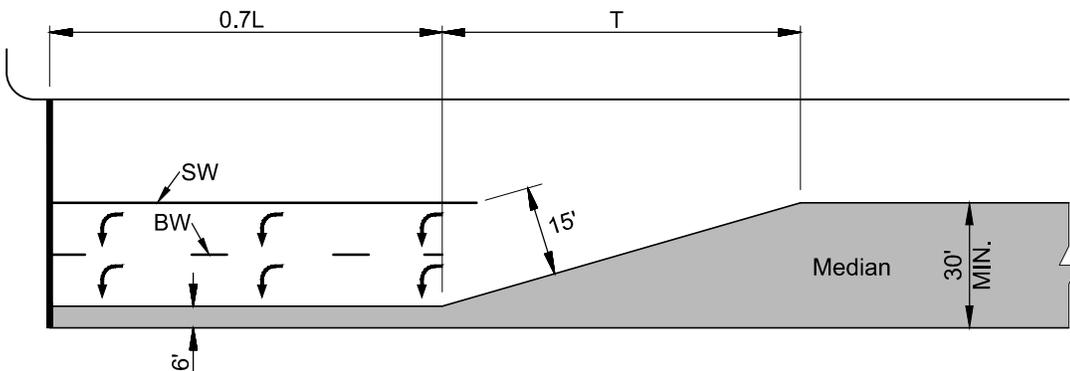
CASE 2L - 2 - WAY LEFT-TURN LANE CHANGES TO DEDICATED LEFT-TURN LANE



CASE 3L - SINGLE LEFT-TURN LANE IN MEDIAN



CASE 4L - DUAL LEFT-TURN LANES IN MEDIAN



NOTES

1. See Sheet 1 notes.
2. Median tapers are to be straight.
Do not use reverse curves.
3. See Line Legend on Sheet 1.
4. See Sign Legend on Sheet 1.

12-27-18 (Under Review)

Sheet 2 of 3

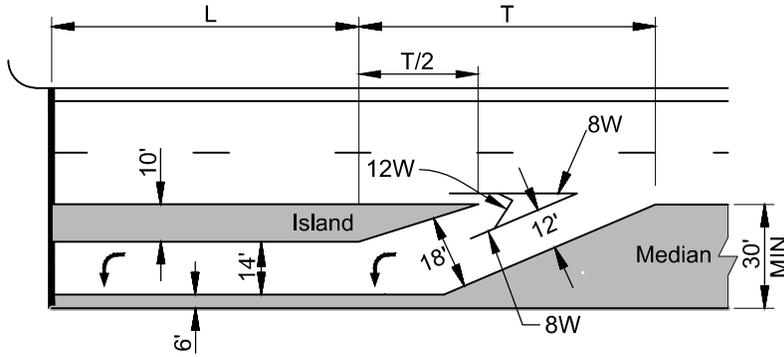
CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 3-180
TURN LANE TREATMENT

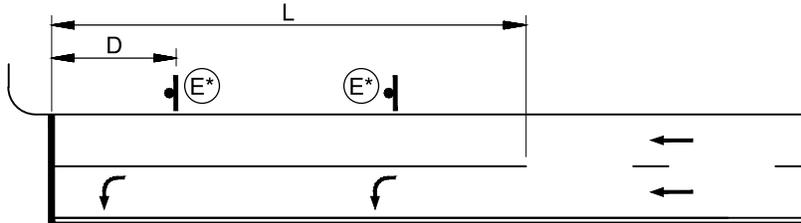
LEFT TURN LANES

(Continued)

CASE 5L - SINGLE LEFT-TURN LANE IN WIDE MEDIAN



CASE 6L - LEFT-TURN TRAP LANE



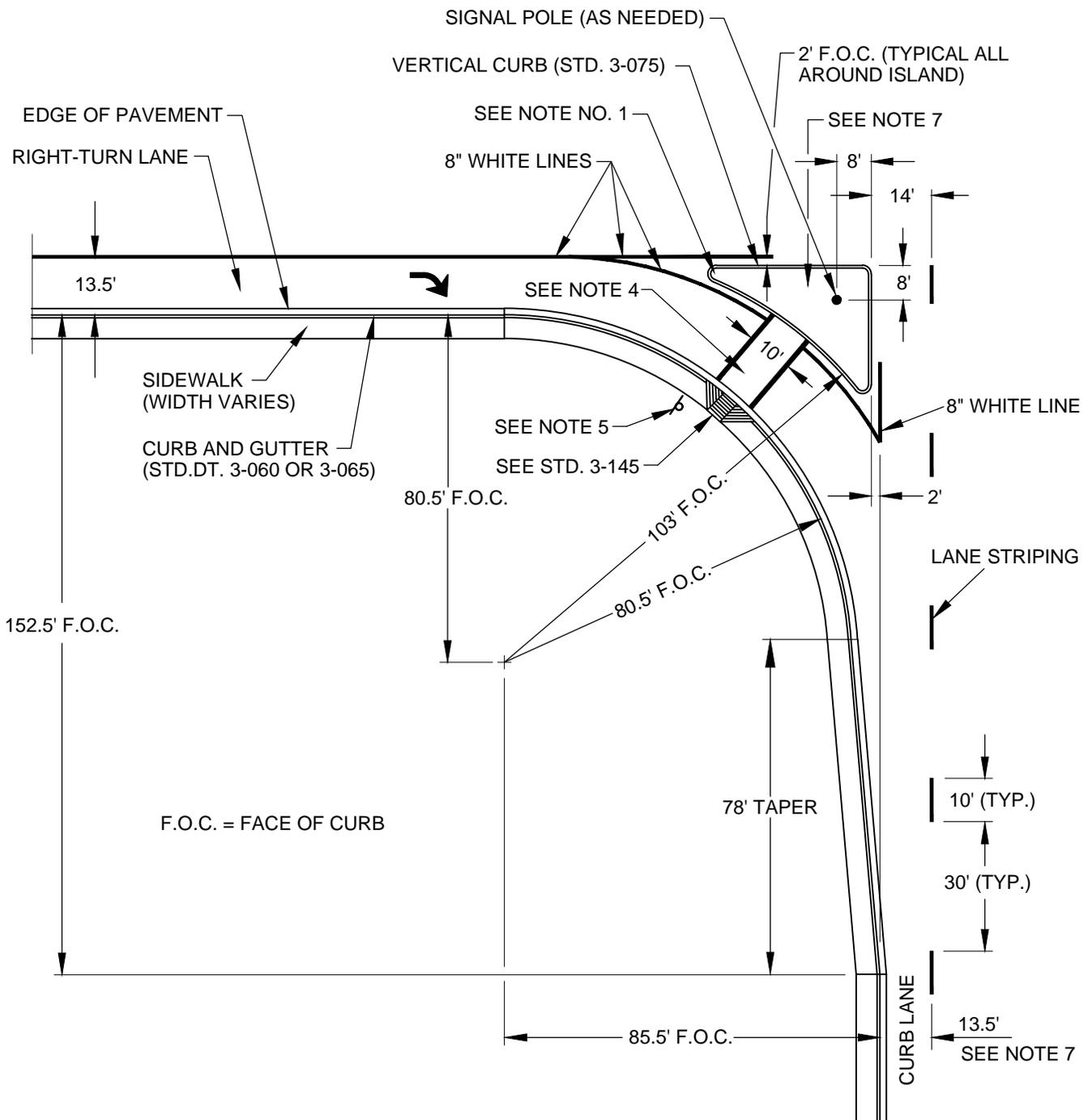
*Note: Adjust sign (E) to match actual lane use.

NOTES

1. See Sheet 1 notes.
2. Median tapers are to be straight. Do not use reverse curves.
3. See Line Legend on Sheet 1.
4. See Sign Legend on Sheet 1.

| Table 1 | | | | |
|------------|------|------------------|---|-------|
| Type Lane | Case | Dimension (feet) | | |
| | | L | T | D |
| Right-Turn | 1R | 0.65V, 100 min. | 100, 80 min. | |
| | 2R | 0.65V, 100 min. | See Taper Lengths table in Standard 9-010 | 0.75L |
| | 3R | 0.65V, 100 min. | | 100 |
| | 4R | 0.6V, 500 min. | 200, 160 min. | |
| Left-Turn | 1L | 0.87V, 100 min. | 100, 80 min. | |
| | 2L | 0.87V, 100 min. | | |
| | 3L | 0.87V, 100 min. | 100, 80 min. | |
| | 4L | 0.6V, 100 min. | 200, 160 min. | |
| | 5L | 0.87V | 200 min. | |
| | 6L | 0.87V, 500 min. | 200 min. | 100 |

V = design turning volume in vehicles per hour.
 S = estimated 85th-percentile speed, mph
 W = width of transition, feet



NOTES

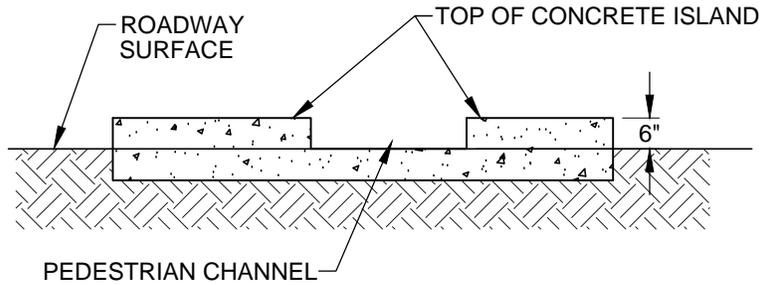
1. Island corners: 2' radius at F.O.C. (typical).
2. Adapt design as necessary to accommodate WB-50 design vehicles where intersection angle is other than 90 degrees.
3. Refer to Standard Detail 10-030 for crosswalk markings.
4. Bicycle lane permitted with approval by the City Engineer.
5. STOP or YIELD sign as approved by the City Engineer.
6. The location of ramps may vary depending upon the site conditions.
7. If bike lane, add 6' to curb lane.

12-27-18 (Under Review)

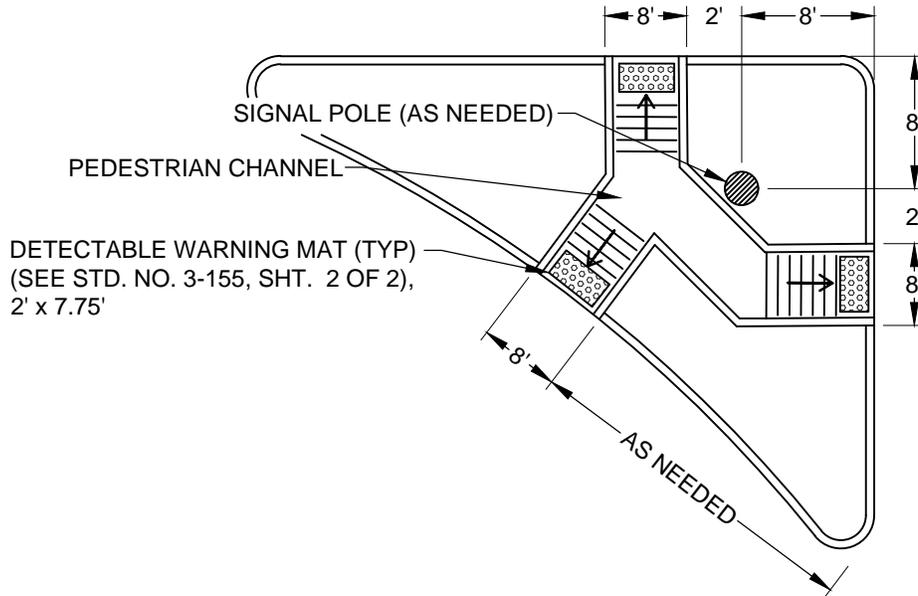
Sheet 1 of 2

CITY OF YUMA
 CONSTRUCTION STANDARD DETAIL DRAWINGS
 STANDARD NO. 3-185
 RIGHT TURN
 CHANNELIZATION

PEDESTRIAN CHANNEL REQUIREMENTS



SCHEMATIC ELEVATION



NOTES

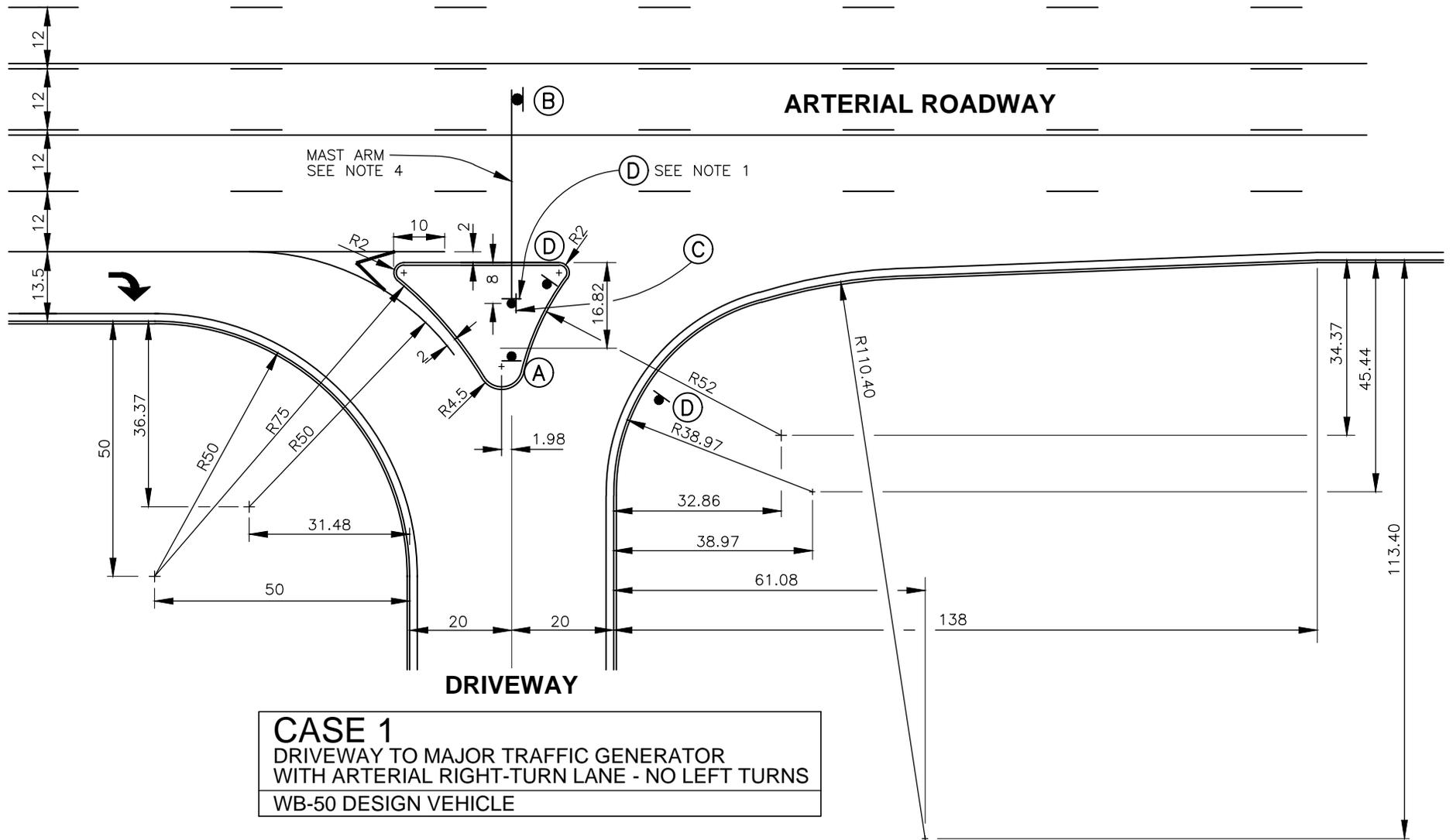
1. Pedestrian channels in island must be a minimum of 8' wide with the ends centered on the associated crosswalks. The center of the traffic signal pole, if needed, must be within 2.5' of the face of the channel edges. The location of ramps may vary depending upon the site conditions.
2. Island corners: 2' radius at F.O.C. (typical).
3. Pedestrian channel to match slope of adjacent pavement. Adjust slightly as directed by Engineer to achieve drainage.
4. Ramp interconnection-S/W 1" Above highest adjacent gutter.

12-27-18 (Under Review)

Sheet 2 of 2

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 3-185
RIGHT TURN
CHANNELIZATION

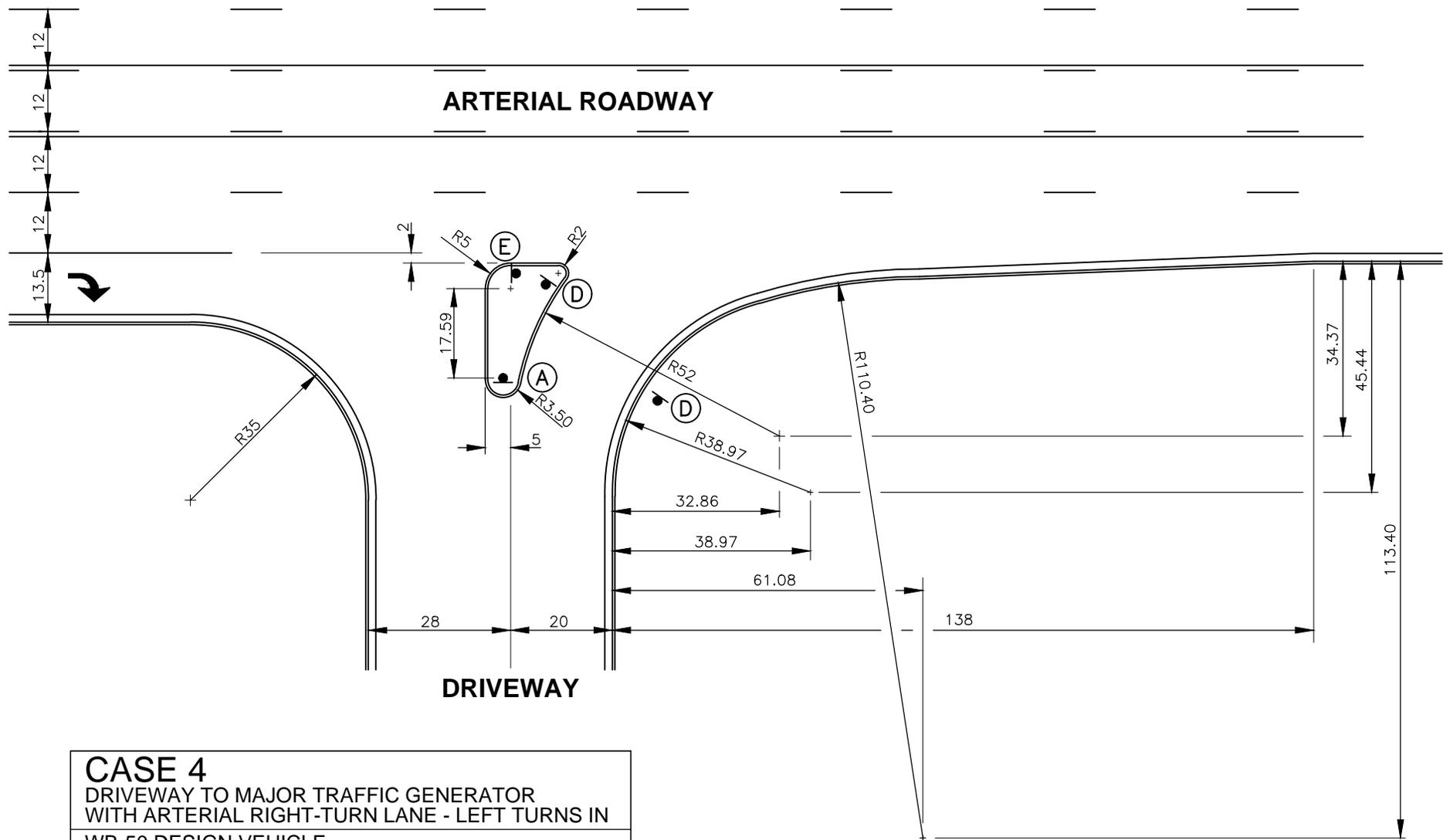


CASE 1
 DRIVEWAY TO MAJOR TRAFFIC GENERATOR
 WITH ARTERIAL RIGHT-TURN LANE - NO LEFT TURNS
 WB-50 DESIGN VEHICLE

NOTES

1. Use "DO NOT ENTER" sign facing perpendicular to arterial traffic flow only if there is a roadway or driveway directly opposite the subject driveway.
2. Adapt as needed to match site conditions.
3. All dimensions in feet and to face of curb.
4. See Standard No. 6-203 for overhead sign pole and mast arm.
5. See sign legend on sheet 7 of 7.
6. See Standard No. 10-030 for pavement markings.

| | |
|---|--------------|
| 12-27-18 (Under Review) | Sheet 1 of 7 |
| CITY OF YUMA CONSTRUCTION STANDARD DETAIL DRAWINGS | |
| STANDARD NO. 3-190 DRIVEWAY CHANNELIZATION | |

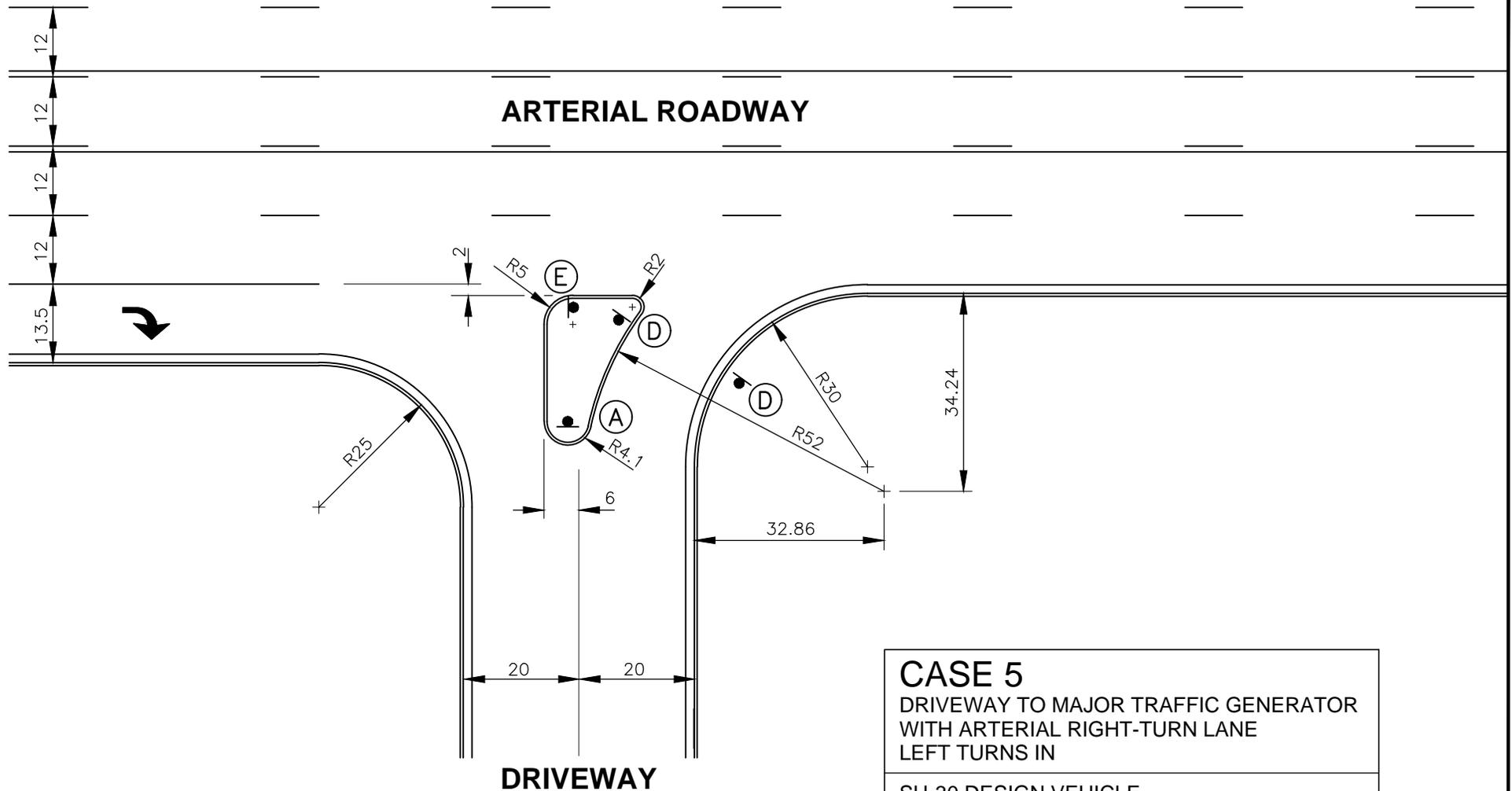


CASE 4
 DRIVEWAY TO MAJOR TRAFFIC GENERATOR
 WITH ARTERIAL RIGHT-TURN LANE - LEFT TURNS IN
 WB-50 DESIGN VEHICLE

NOTES

1. Adapt as needed to match site conditions.
2. All dimensions in feet and to face of curb.
3. See sign legend on sheet 7 of 7.
4. See Standard No. 10-030 for pavement markings.

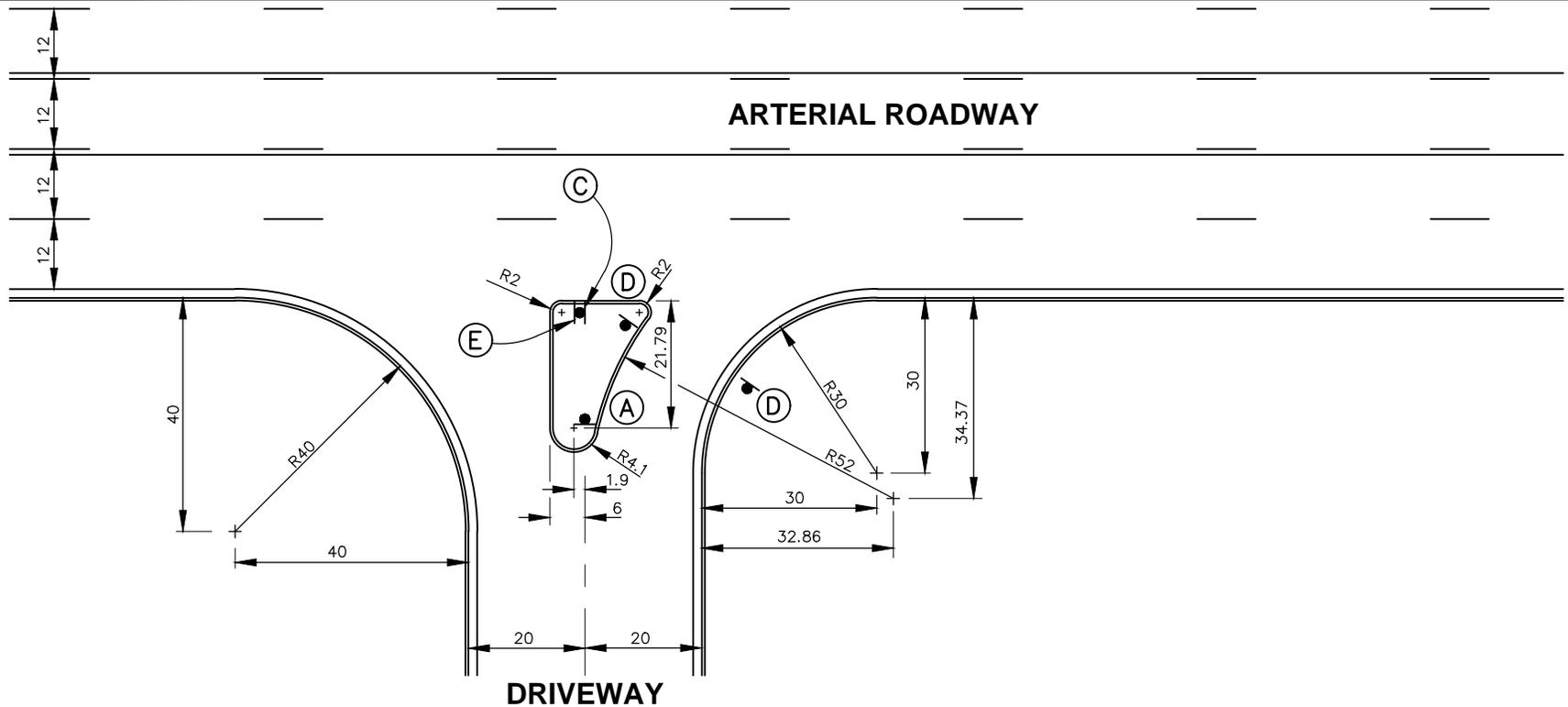
| | |
|--|--------------|
| 12-27-18 (Under Review) | Sheet 4 of 7 |
| CITY OF YUMA CONSTRUCTION STANDARD DETAIL DRAWINGS STANDARD NO. 3-190 DRIVEWAY CHANNELIZATION | |



NOTES

1. Adapt as needed to match site conditions.
2. All dimensions in feet and to face of curb.
3. See sign legend on sheet 7 of 7.
4. See Standard No. 10-030 for pavement markings.

| | |
|---|--------------|
| 12-27-18 (Under Review) | Sheet 5 of 7 |
| <p>CITY OF YUMA CONSTRUCTION STANDARD DETAIL DRAWINGS</p> <p>STANDARD NO. 3-190 DRIVEWAY CHANNELIZATION</p> | |



(A)
R3-5R
30" x 36"



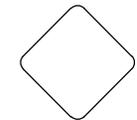
(B)
R3-2
30" x 30"



(C)
R3-2
24" x 24"



(D)
R5-1
30" x 30"



(E)
OM1-3
18" x 18"
MOUNT WITH
BOTTOM 4'
ABOVE ISLAND

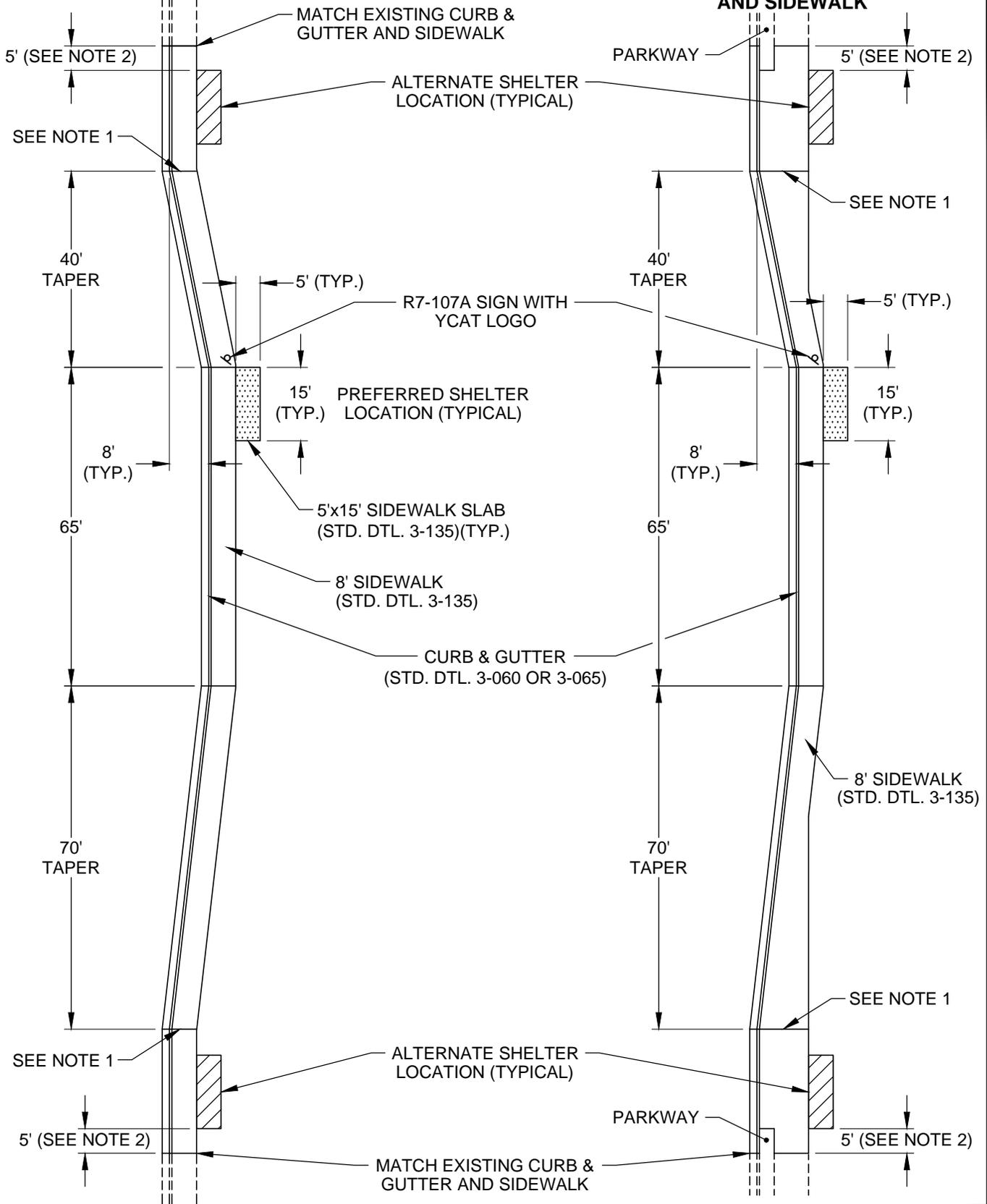
12-27-18 (Under Review) Sheet 7 of 7

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 3-190
DRIVEWAY CHANNELIZATION

SIDEWALK ADJACENT TO CURB

PARKWAY BETWEEN CURB AND SIDEWALK



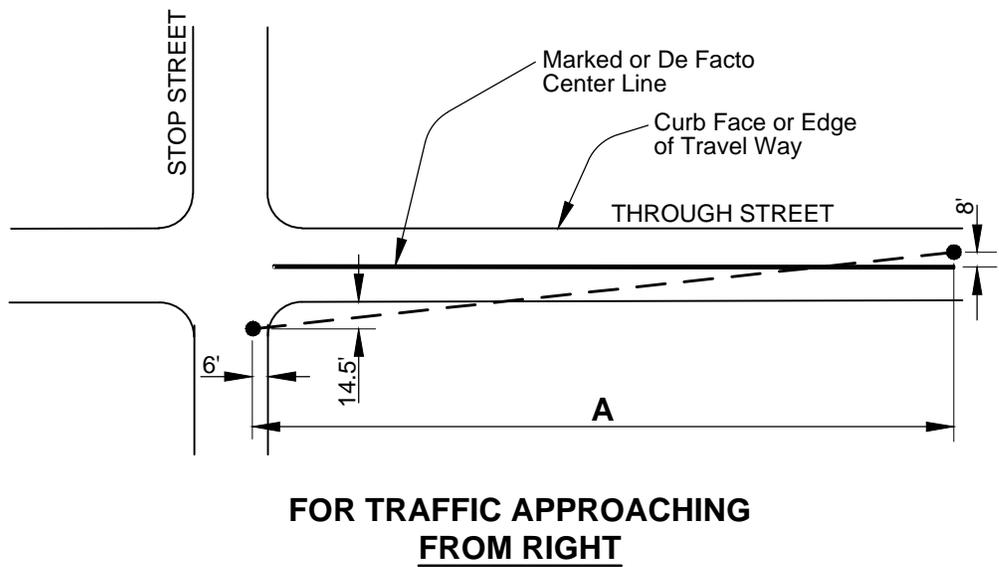
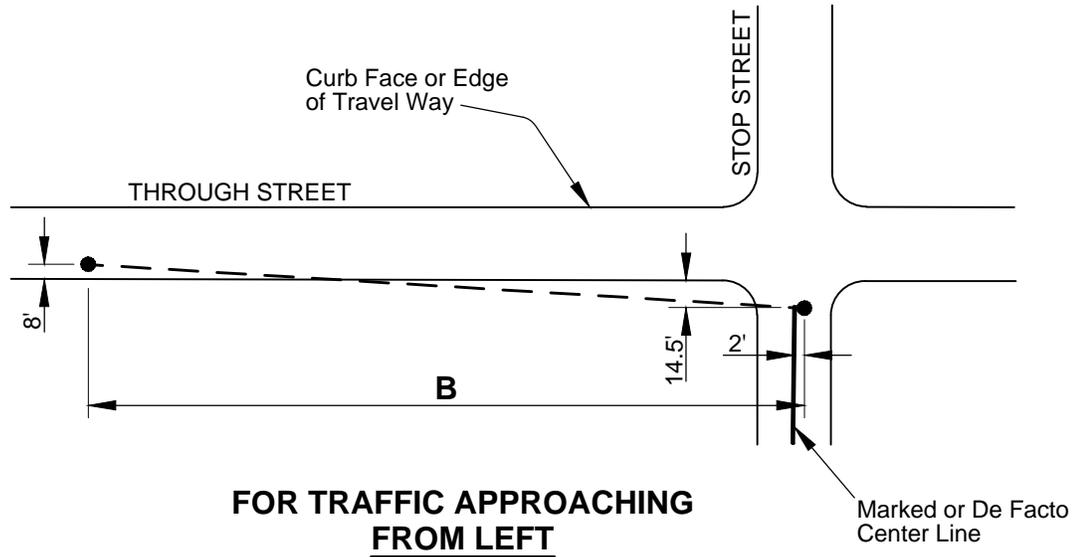
NOTES

1. If no existing sidewalk, the new sidewalk must extend to where the curb return ends.
2. If a bus bay is constructed in an area where sidewalk does not exist and the ALTERNATIVE SHELTER is used, the new sidewalk must extend five feet (5') past the ALTERNATIVE SHELTER.

12-27-18 (Under Review)

**CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS**

**STANDARD NO. 3-195
BUS BAY DESIGN**



| 85%-ile or Design Speed (mph) | Intersection sight distance for passenger cars (A) - left | Intersection sight distance for passenger cars (B) - right |
|-------------------------------|---|--|
| 15 | 170 | 145 |
| 20 | 225 | 195 |
| 25 | 280 | 240 |
| 30 | 335 | 290 |
| 35 | 390 | 335 |
| 40 | 445 | 385 |
| 45 | 500 | 430 |
| 50 | 555 | 480 |
| 55 | 610 | 530 |
| 60 | 665 | 575 |
| 65 | 720 | 625 |
| 70 | 775 | 670 |
| 75 | 830 | 720 |
| 80 | 885 | 765 |

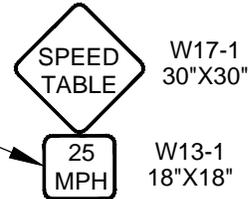
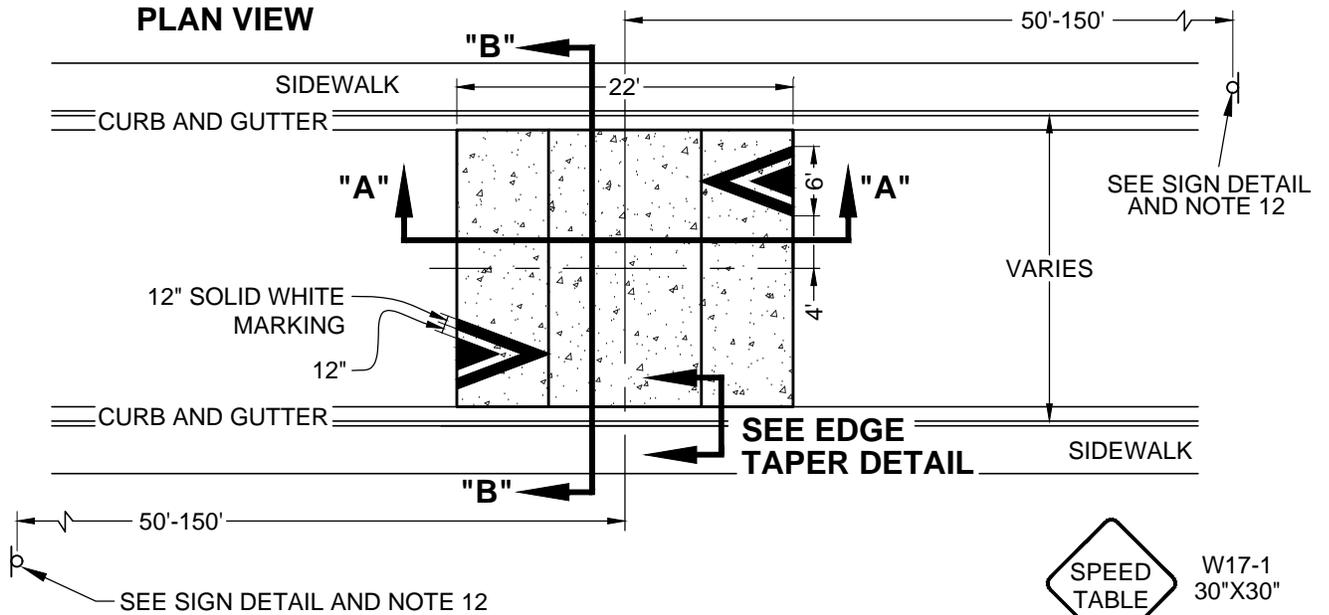
NOTES

1. Good for up to 3% grade. Use for grade < or = to 3%.
2. For existing conditions, base on 85th-percentile speed, not speed limit.
3. Adapted from "A Policy on Geometric Design of Streets and Highways," American Association of State Highway and Transportation Officials, 2011.

12-27-18 (Under Review)

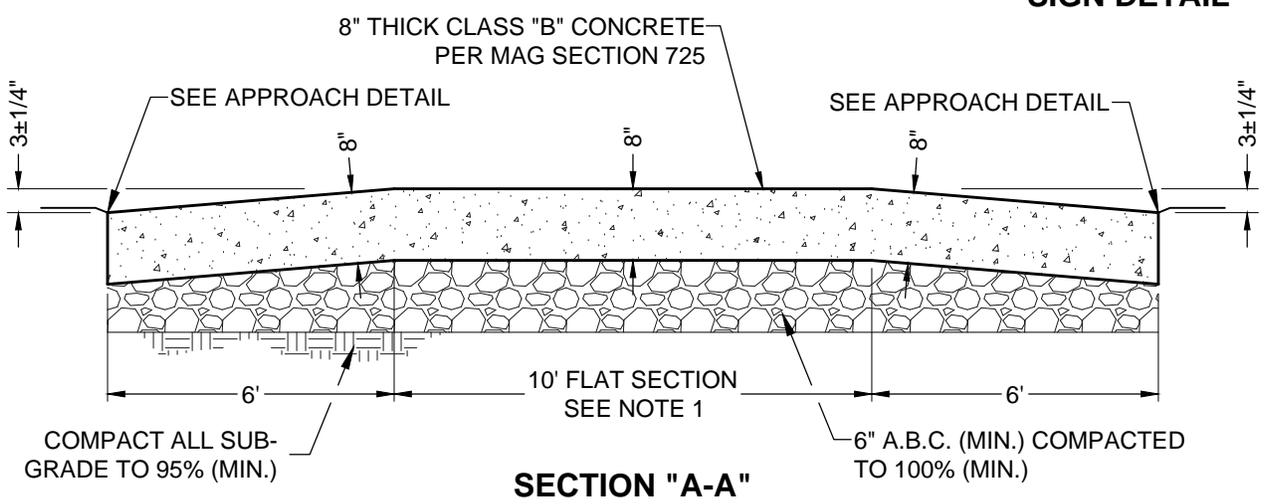
CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS
STANDARD NO. 3-200
CLEAR SIGHT TRIANGLES AT
TYPICAL STOP INTERSECTIONS

PLAN VIEW

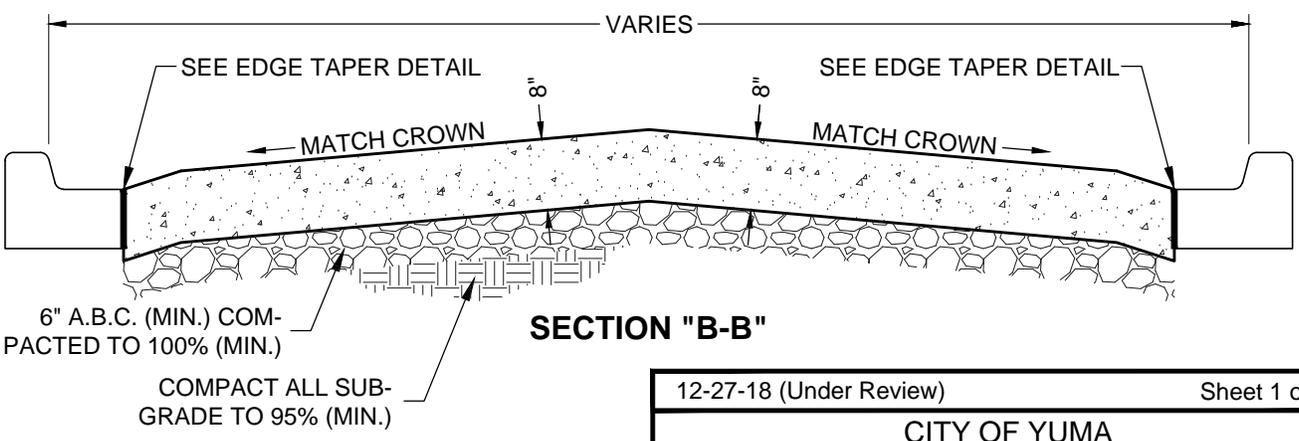


ADVISORY SPEED PLATE NOT
REQUIRED IF POSTED SPEED
LIMIT IS 25 MPH

SIGN DETAIL

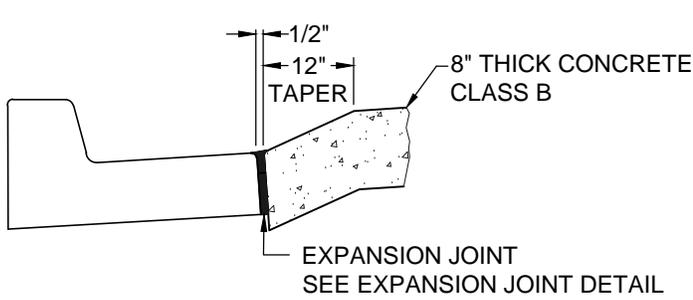


SECTION "A-A"

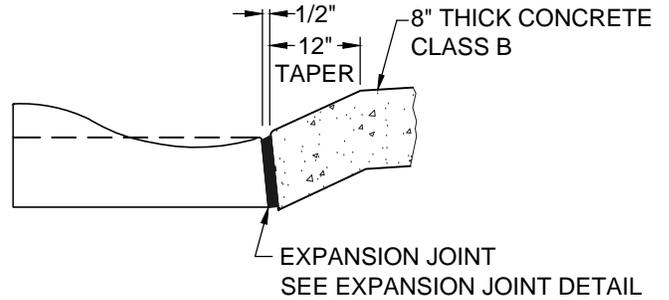


SECTION "B-B"

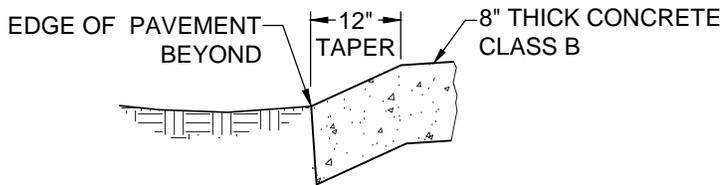
12-27-18 (Under Review) Sheet 1 of 2
CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS
STANDARD NO. 3-205
SPEED TABLE



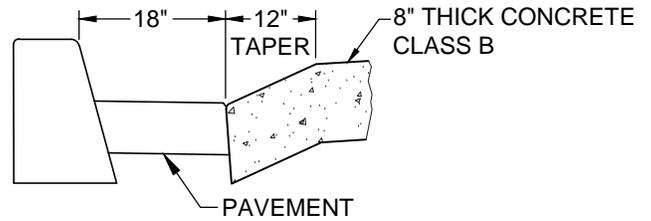
CURB & GUTTER



FLAT/ROLL CURB & GUTTER

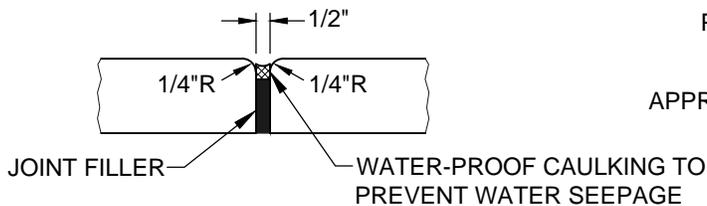


EDGE OF PAVEMENT

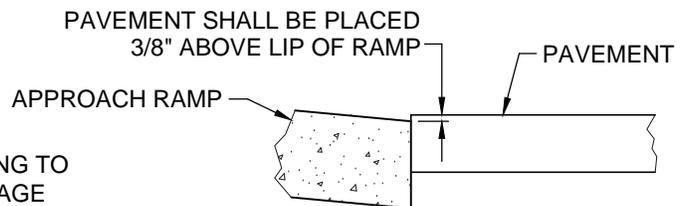


VERTICAL CURB

EDGE TAPER DETAILS



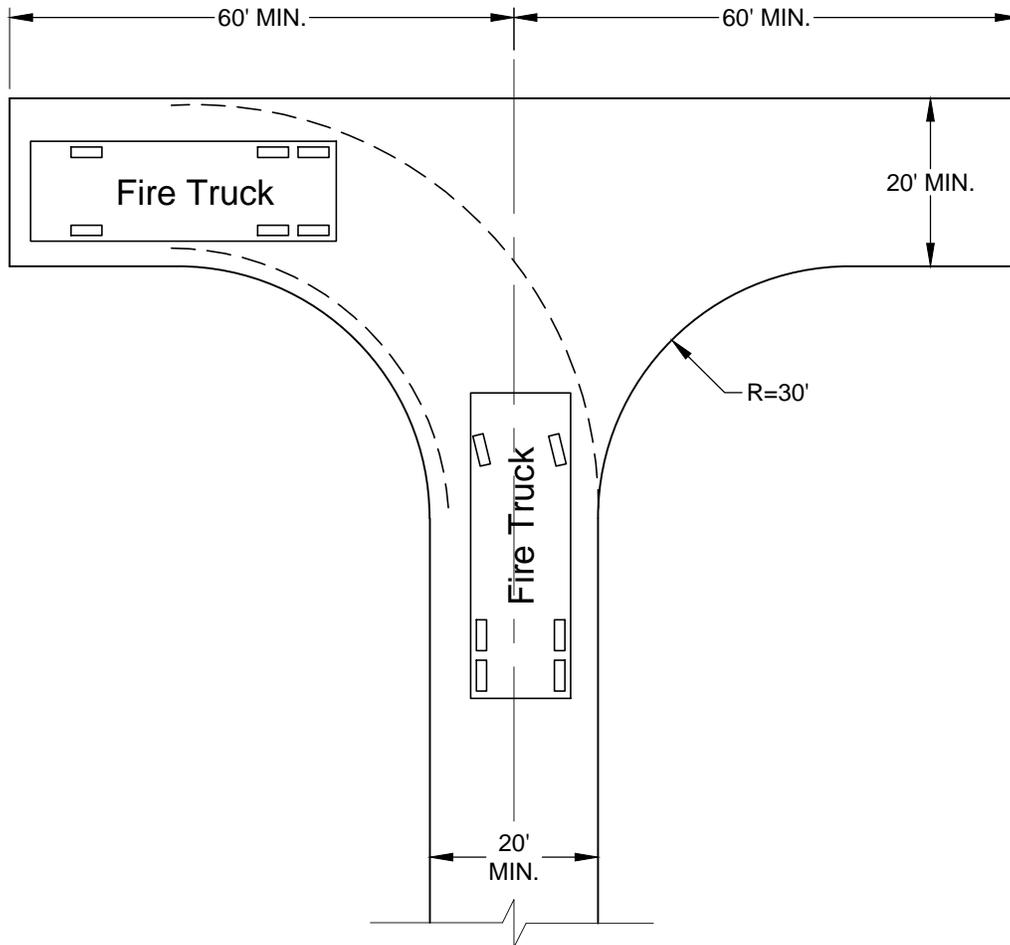
EXPANSION JOINT DETAIL



APPROACH/DEPARTURE DETAIL

NOTES

1. Speed table shall follow roadway grade and crown.
2. Speed table shall not be installed in a location that drainage or accessibility is compromised.
3. Speed tables shall not be placed over manholes, water valves, survey monuments, etc.
4. Speed table shall be placed at least twenty-five feet (25') from fire hydrants and manholes.
5. Where possible, speed table should be placed adjacent to street lights.
6. Where possible, edge of speed table should be a minimum of ten feet (10') from edge of driveways.
7. For use in existing roadways full depth asphalt replacement shall extend five feet (5') on both approaches.
8. Expansion joints shall be placed no further than twenty feet (20') apart. One-half inch (1/2") joint filler shall be the bituminous type meeting AASHTO M-33 or ASTM D-1751 specifications and shall extend the full depth of the concrete.
9. Contraction joint spacing shall be either hand tooled and/or saw cut and shall be placed no further than ten feet (10') apart beginning at centerline. Contraction joint shall have a minimum depth of two inches (2").
10. Surfaces outside approved work areas shall be kept clean and free of bituminous and asphaltic material and debris.
11. Where possible, place warning sign on common lot line within specified range.
12. See Standard Detail 9-020 for sign mounting details.



12-27-18 (Under Review)

CITY OF YUMA
 CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 3-210
 HAMMERHEAD TEE
 TURNAROUND

SURVEY MONUMENTS

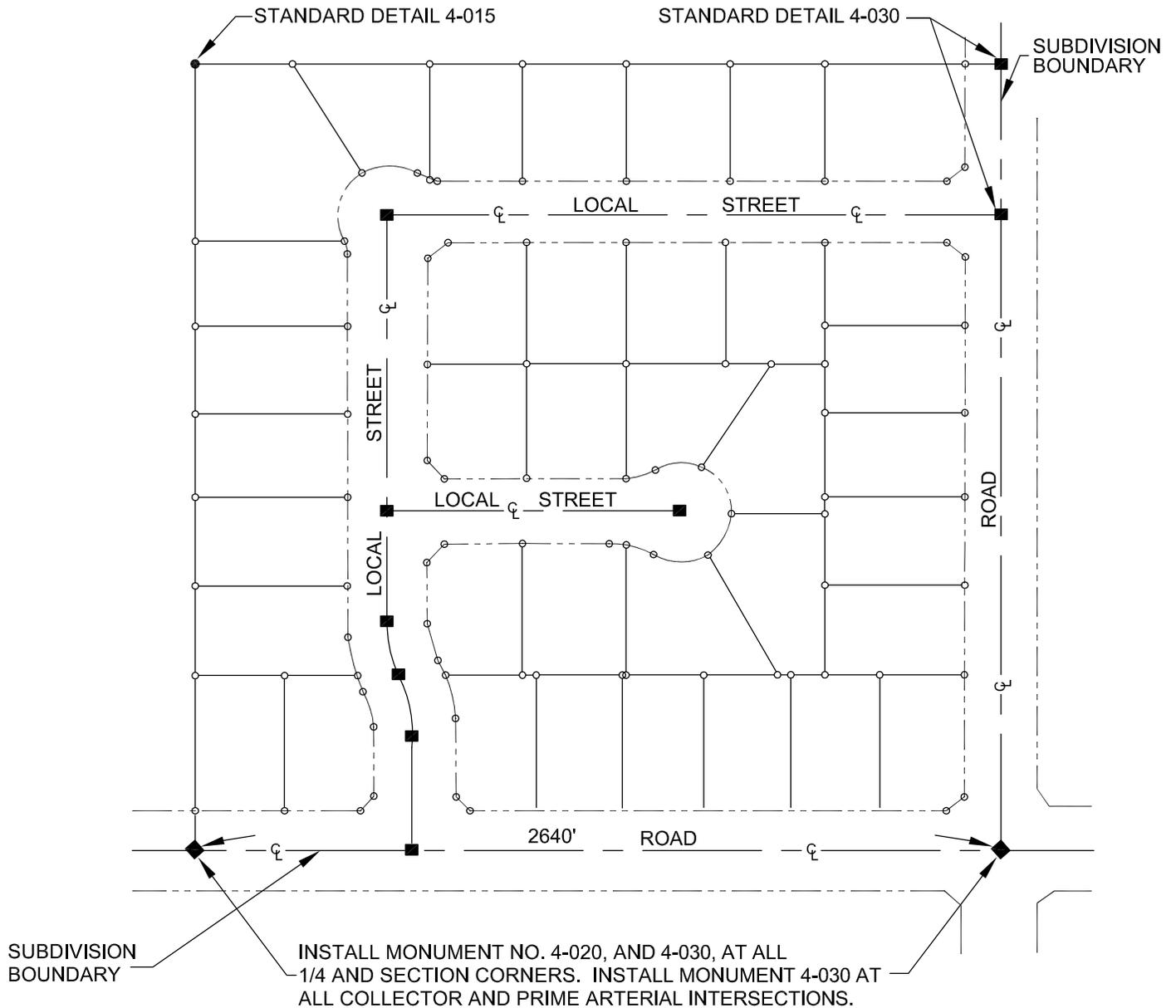
1. All street centerline intersections, street centerline angle points, street centerline beginning of curve points, street centerline end of curve points and public land survey system, (PLSS), corners shall be monumented as shown in standard detail No. 4-010.
2. All subdivision boundary corners not in pavement shall be monumented as shown on standard detail No. 4-010 using standard detail No. 4-015, (boundary monument).
3. Subdivision boundary monuments not in roadways shall be subsurface as shown in standard detail No. 4-015, (boundary monument).
4. Upon completion of all required improvements, an Arizona Licensed Surveyor shall furnish to the City Engineer and the City's Registered Land Surveyor a complete and accurate set of field notes, or field sketches, which will clearly indicate the ties between the subsurface monument and the surface monuments.
5. Any subdivision boundary, street control line, or right of way centerline survey monument having characteristics other than as described and shown in standard detail No. 4-010, (typical subdivision monuments), may only be set upon written approval from the City Engineer and the City's Registered Land Surveyor.
6. In locations where pavement has been laid but there will be a "significant" time delay in setting a standard No. 4-030 survey monument the contractor will have an Arizona Licensed Land Surveyor define the correct precise position of the future survey monument location by setting a standard survey monument per. No. 4-025 temporary survey monument.
7. All survey monuments set shall meet the minimum criteria as listed in the Arizona Boundary Survey Minimum Standards, and the AAC R4-30-301 as per ARS 41-1012.

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

**STANDARD NO. 4-005
SURVEY MONUMENT
SPECIFICATIONS**

TYPICAL SUBDIVISION MONUMENTING BOUNDARY, STREET, AND LOTS



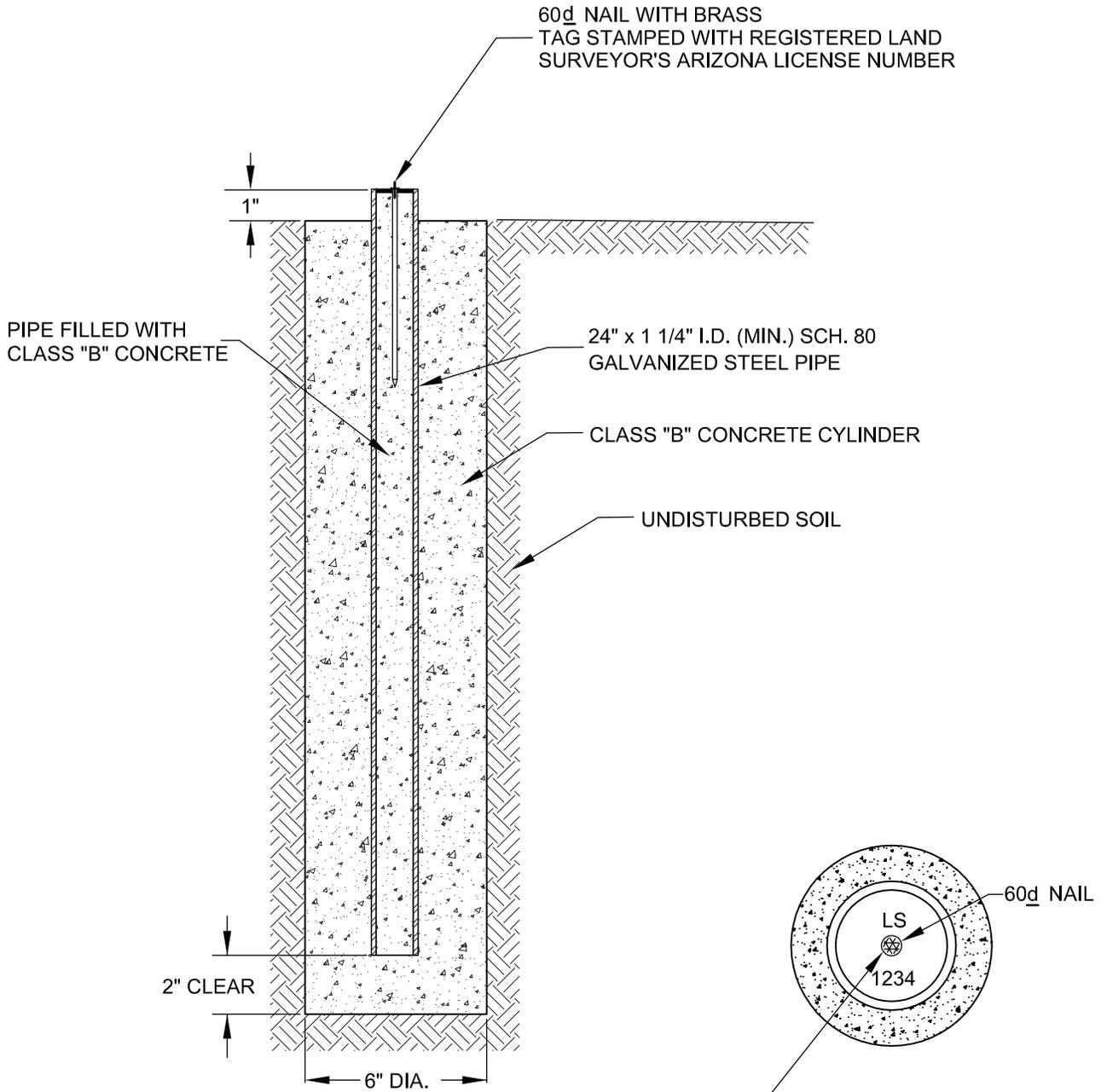
LEGEND

- Indicates tagged property corner rebar or wooden stake
- ◆ Indicates standard survey monument (Standard Detail 4-020, and 4-030)
- Indicates standard subdivision monument (Standard Detail 4-015 Boundary Monument)
- Indicates standard survey monument (Standard Detail 4-030 Survey Monument)

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

**STANDARD NO. 4-010
TYPICAL SUBDIVISION MONUMENTS**

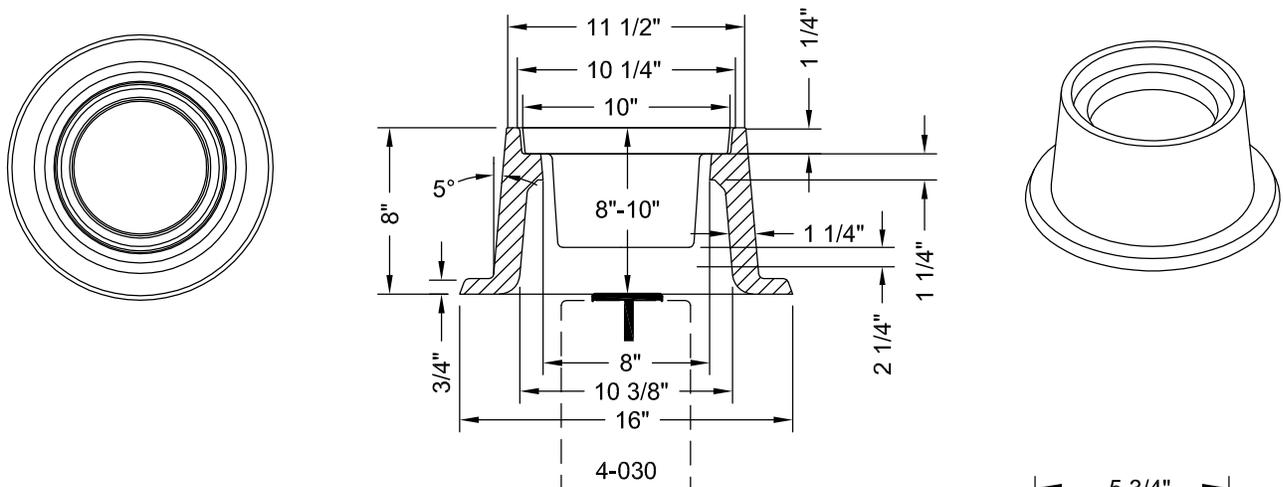


TOP VIEW OF PIPE WITH BRASS TAG STAMPED WITH THE REGISTERED LAND SURVEYOR'S ARIZONA LICENSE NUMBER. IMPRINTS TO BE APPROXIMATELY 1/32" WIDE AND 1/32" DEEP (MINIMUM).

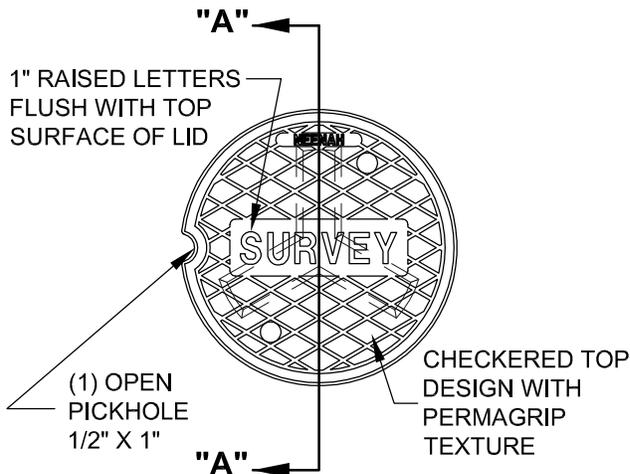
NOTES

1. Top of concrete shall be set 14-inches below surface when constructed in an unpaved street or road.
2. Top of concrete shall be set flush with surface when constructed in a paved street or roadway.
3. Concrete shall be per MAG Section 725.

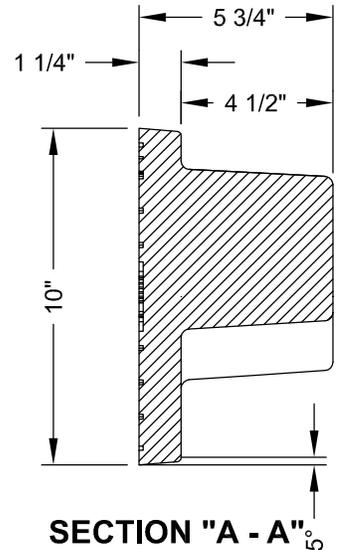
| |
|---|
| 12-27-18 (Under Review) |
| CITY OF YUMA CONSTRUCTION STANDARD DETAIL DRAWINGS |
| STANDARD NO. 4-015 BOUNDARY MONUMENT |



FRAME WEIGHT: 101 POUNDS

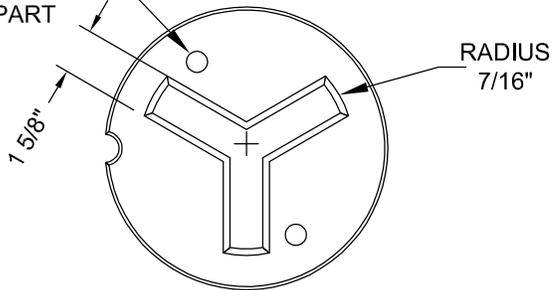


TOP VIEW



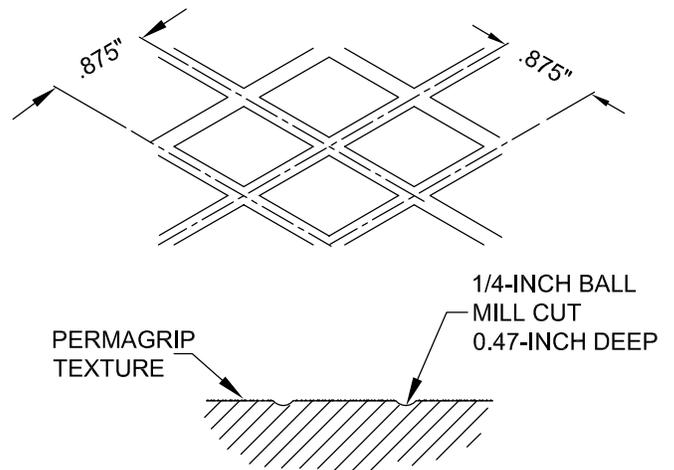
SECTION "A - A"

(2) 3/4-INCH DIAMETER LIFT HOLES 180 DEGREES APART



BOTTOM VIEW

COVER WEIGHT: 40 POUNDS



CHECKERED TOP DETAIL

MATERIAL

CAST GRAY IRON
ASTM A-48,
CLASS 35B

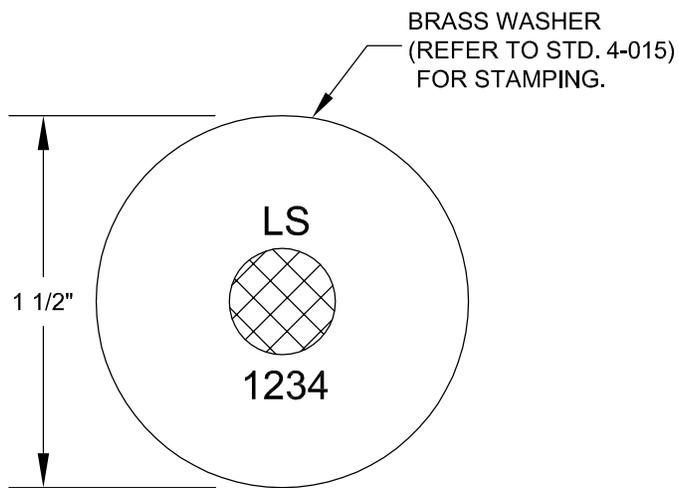
NOTE

Manufactured by: Neenah Foundry, Inc. and Deeter Foundry, Inc. as survey monument frame and cover identification number DF 1838

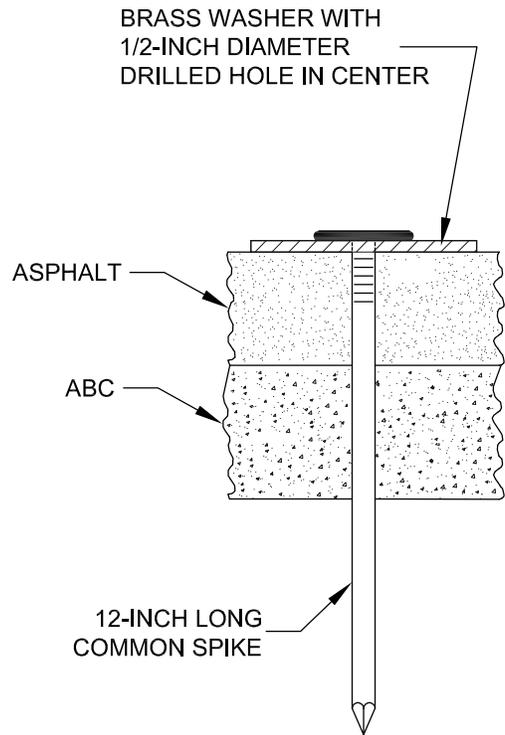
12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

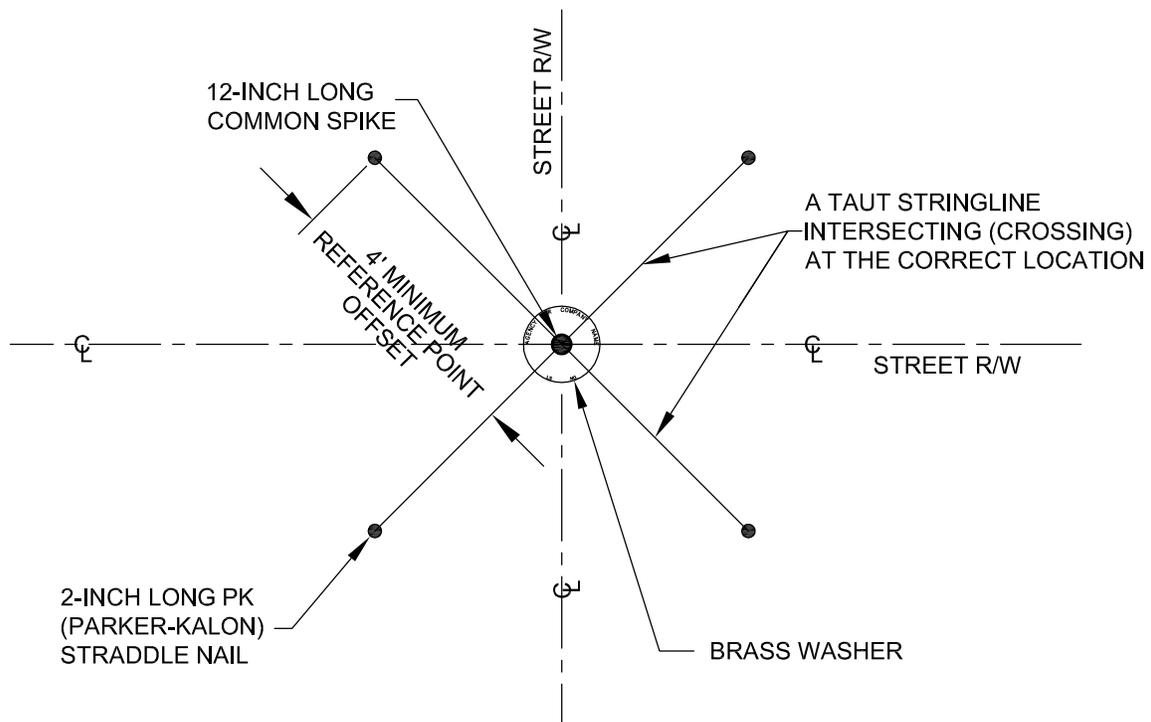
STANDARD NO. 4-020
SURVEY FRAME AND COVER



TOP VIEW



SIDE VIEW

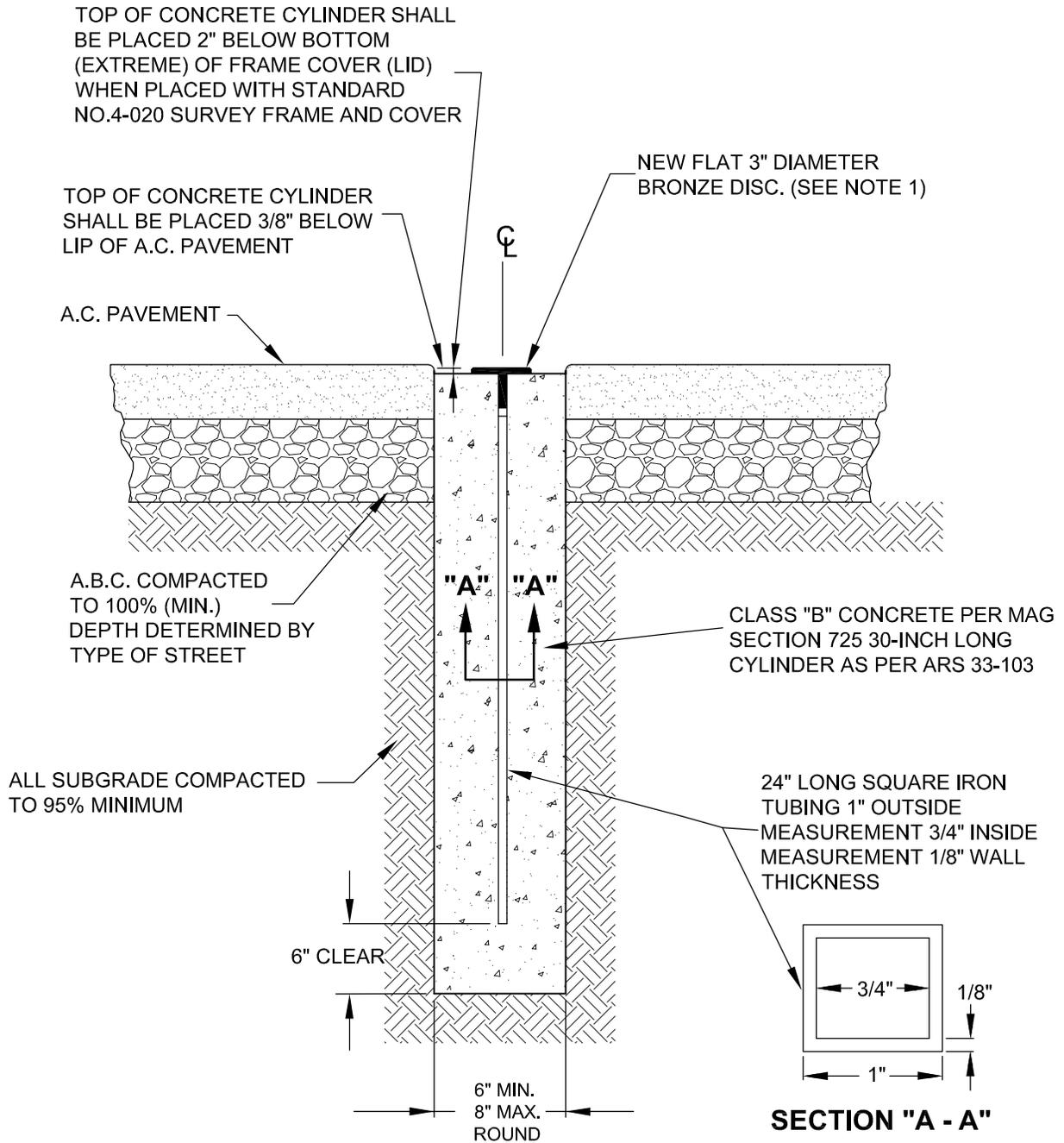


AERIAL VIEW

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 4-025
TEMPORARY SURVEY MONUMENT



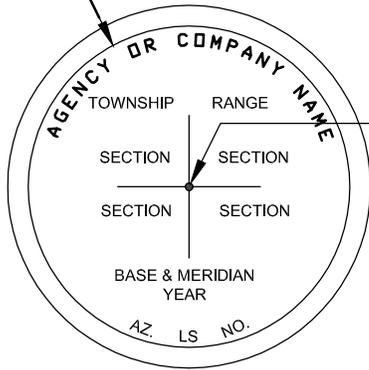
NOTES

1. See the City of Yuma standard no. 4-035, for proper stamping.
2. The stem of the bronze disc is to be driven into the open end of the 24-inch long square iron tubing until the bottom of the disk is flush with the iron tubing.

12-27-18 (Under Review)

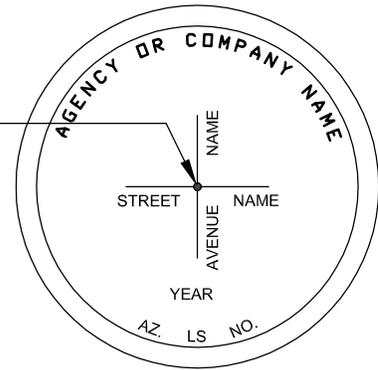
CITY OF YUMA
 CONSTRUCTION STANDARD DETAIL DRAWINGS
STANDARD NO. 4-030
SURVEY MONUMENT AND PLACEMENT
 WHICH ARE ALSO PUBLIC LAND
 SURVEY SYSTEM CORNERS

LETTERS TO BE NOT LESS THAN $\frac{1}{8}$ " HIGH (TYPICAL). IMPRINTS TO BE APPROXIMATELY $\frac{1}{32}$ " WIDE AND $\frac{1}{32}$ " DEEP

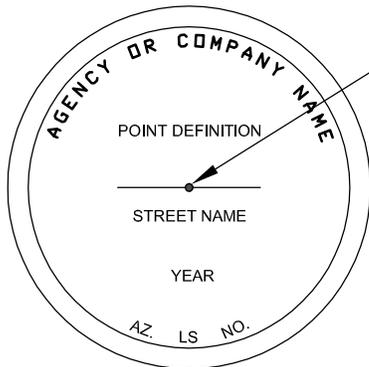


EXAMPLE #1

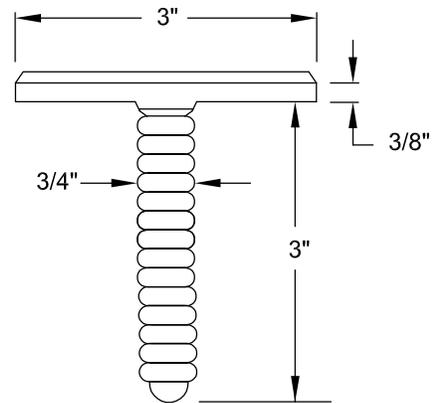
A DOMINANT, DISTINCT, CENTERED PUNCHMARK



EXAMPLE #2



EXAMPLE #3



FLAT 3" DIAMETER BRONZE DISC

POINT DEFINITIONS FOR CONSTRUCTION CENTERLINES

- AP/CC=Angle point in construction centerline.
- PC/CC=Point of curvature (begin curve) in construction centerline.
- PT/CC=Point of tangency (end curve) in construction centerline.
- PRC/CC= Point of reverse curve in construction centerline.

POINT DEFINITIONS

- AP/RW=Angle point.
- PC/RW=Point of curvature (begin curve).
- PT/RW=Point of tangency (end curve).
- PRC/RW= Point of reverse curve.

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 4-035
SURVEY MONUMENT STAMPING

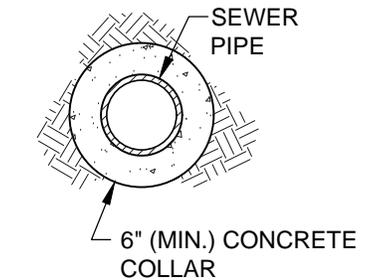
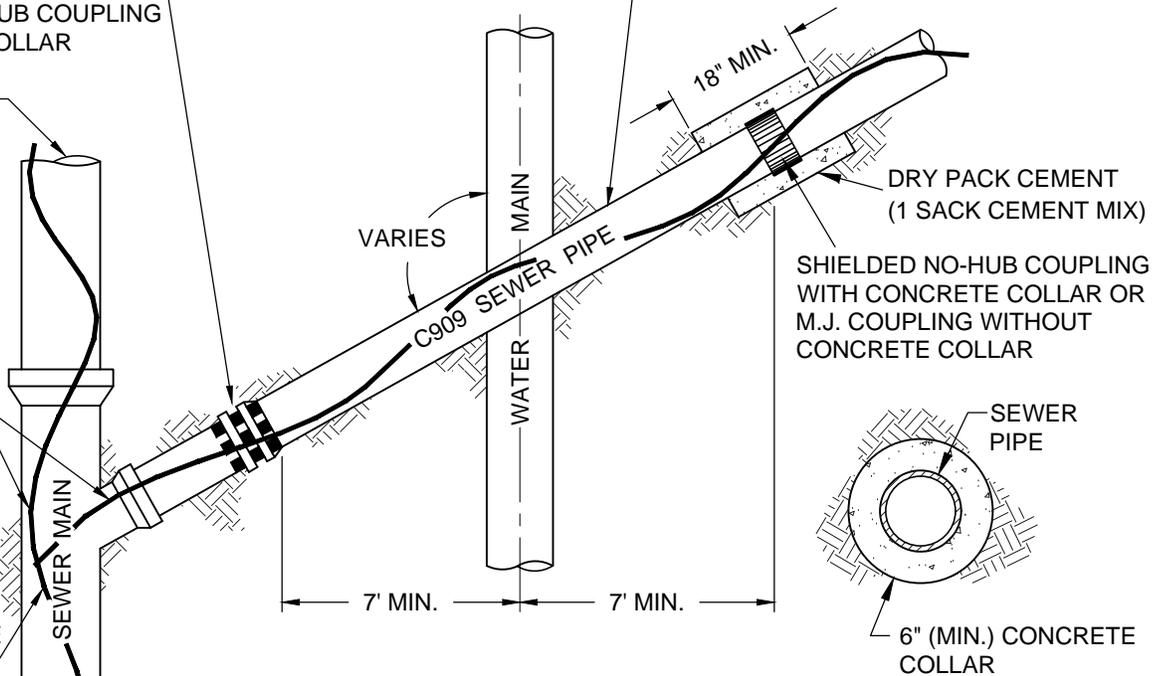
MECHANICAL JOINT COUPLING WITHOUT CONCRETE COLLAR OR SHIELDED NO-HUB COUPLING WITH CONCRETE COLLAR

P.V.C. OR V.C.P. SEWER LINE

12 GAUGE, HMWPE COATED, SOLID COPPER TRACER WIRE

CONNECTION MADE AND INSULATED FROM GROUND

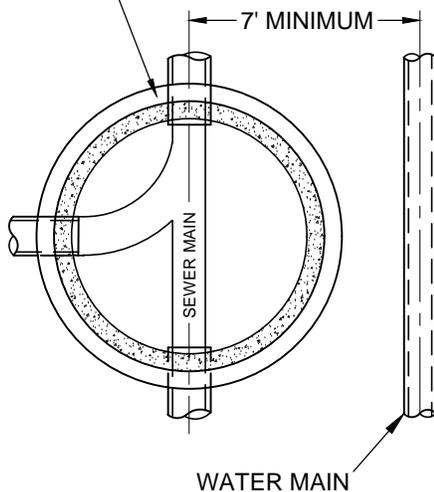
SINGLE LENGTH (14' MIN.) OF SEWER PIPE, SEE NOTES NO. 2 AND 3



NOTES

1. In order to protect the public water systems from possible contamination, a water main and/or water service line shall not be placed:
 - A. Within seven (7) feet, horizontal distance of either side of a sewer manhole, sewer main or sewer service, and below two (2) feet vertical distance, above the top of the sewer line unless extra protection is provided. Extra protection shall consist of constructing the sewer main with mechanical joints or with approved no-hub joints encased in a minimum of 6" thick by 18" long concrete collar centered on the joint.
 - B. Within 2 feet horizontally and 2 feet below the sewer main.
2. For extra protection use molecularly oriented polyvinyl chloride (PVC0) which meets ANSI/AWWA C909 installed at crossing location per drawing.
3. Water over sewer:
 - 2' or less separation: C909 required
 - Over 2' separation: C909 not required.
 Sewer over water:
 - C909 is required no matter the distance of separation.
4. All ferrous fittings, pipe, connectors and appurtenances shall receive a 10mil (minimum) polyethylene wrap to prevent direct contact with soil.
5. All sewer lines shall have tracer wire in accordance with State Law and City utility department policy.

SEWER MANHOLE (TOP VIEW)

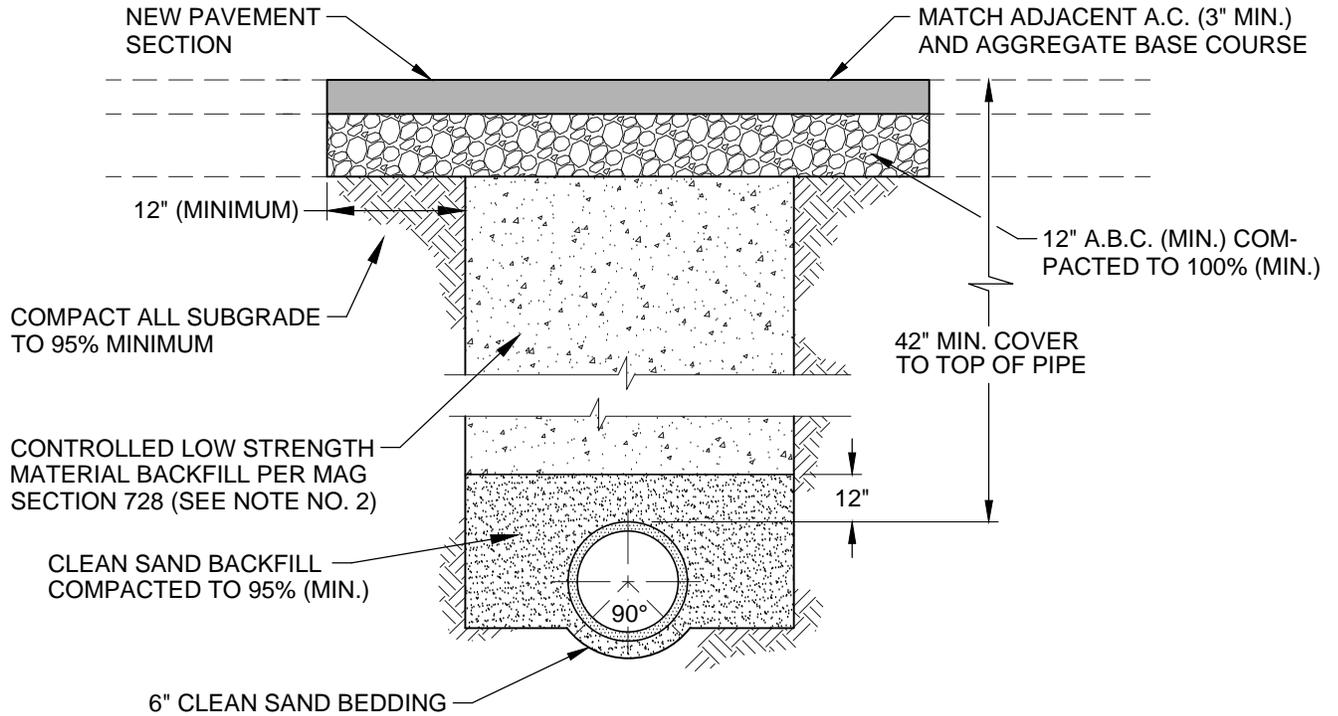


12-27-18 (Under Review)

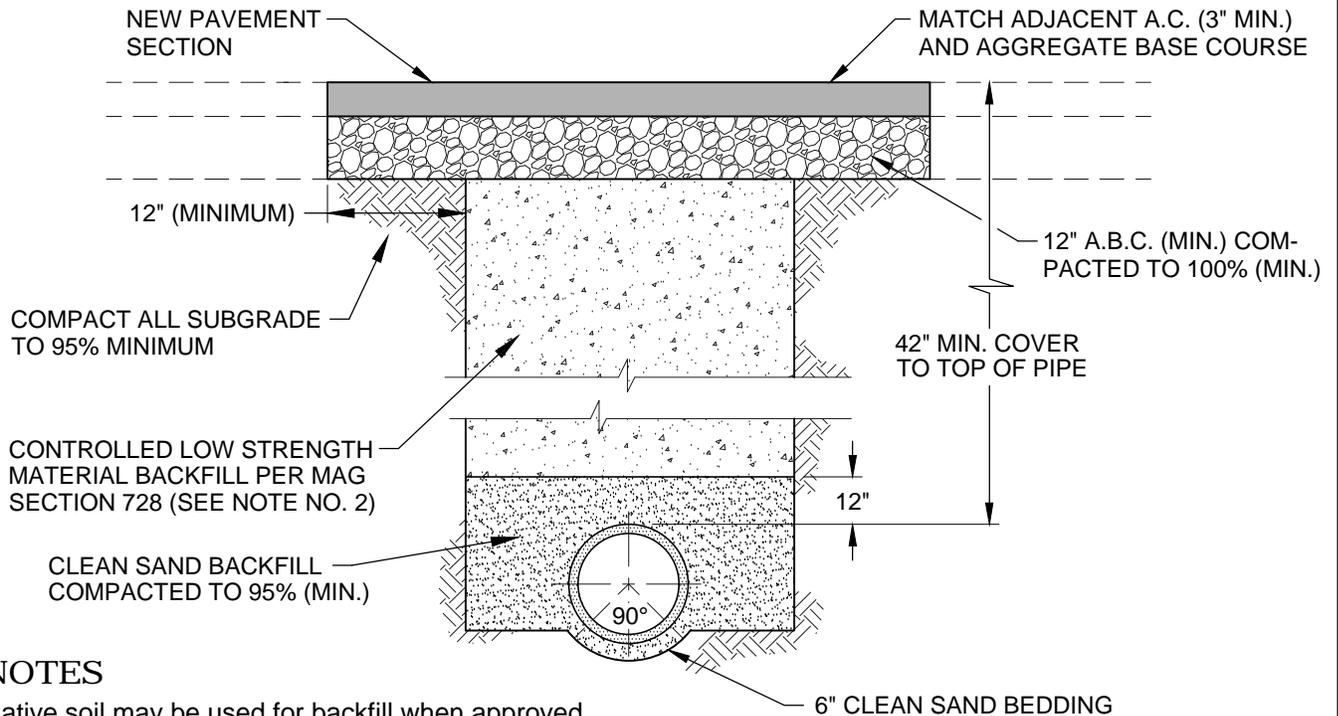
CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 5-005
TYPICAL WATER & SEWER
CROSSINGS

WATER MAIN TRENCH



SEWER MAIN TRENCH



NOTES

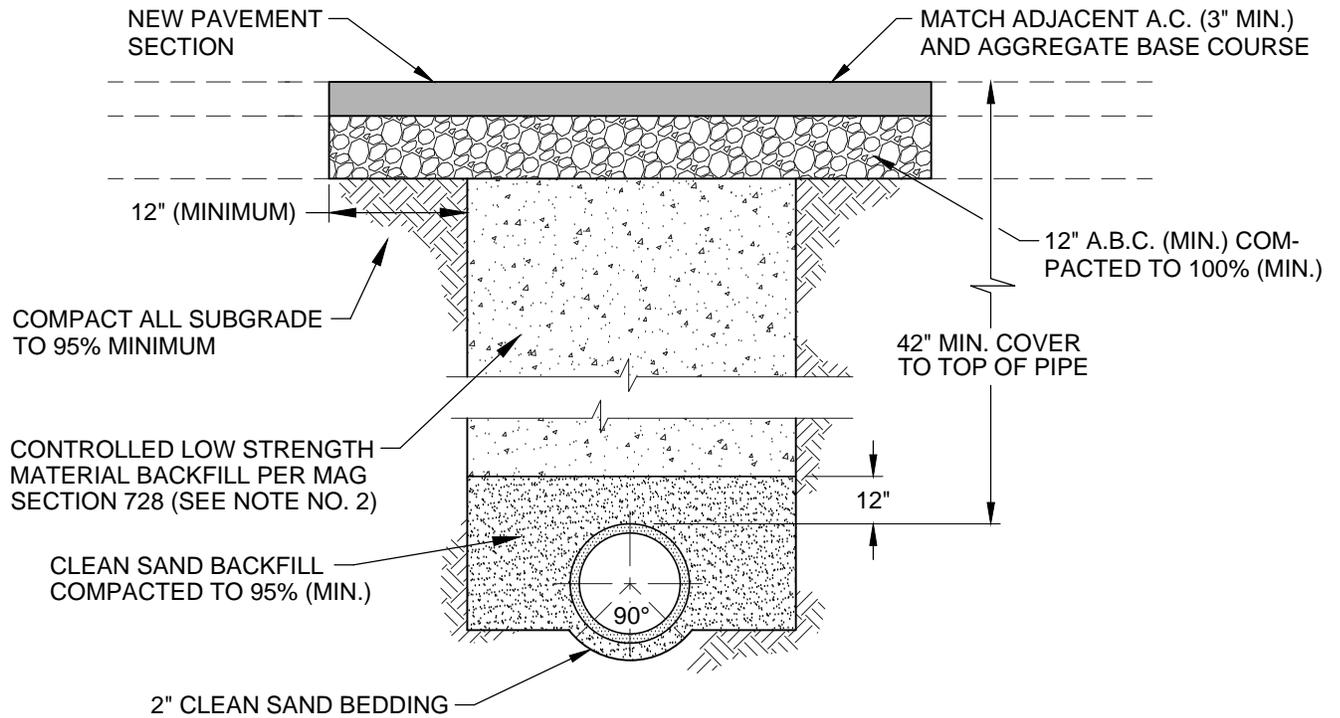
1. Native soil may be used for backfill when approved by the City Engineer.
2. Controlled low strength material shall consist of one sack of cement per cubic yard of clean sand.
3. Bedding shown is a minimum standard for shallow trenches and acceptable native base. Exact type of bedding shall be determined by the City Engineer.
4. Ditch sides shall be sloped or shored as required per OSHA standards.
5. All trenches shall be cold-patched if left open to traffic. All trenches shall be hot-mix paved within two (2) weeks of its excavation.

12-27-18 (Under Review)

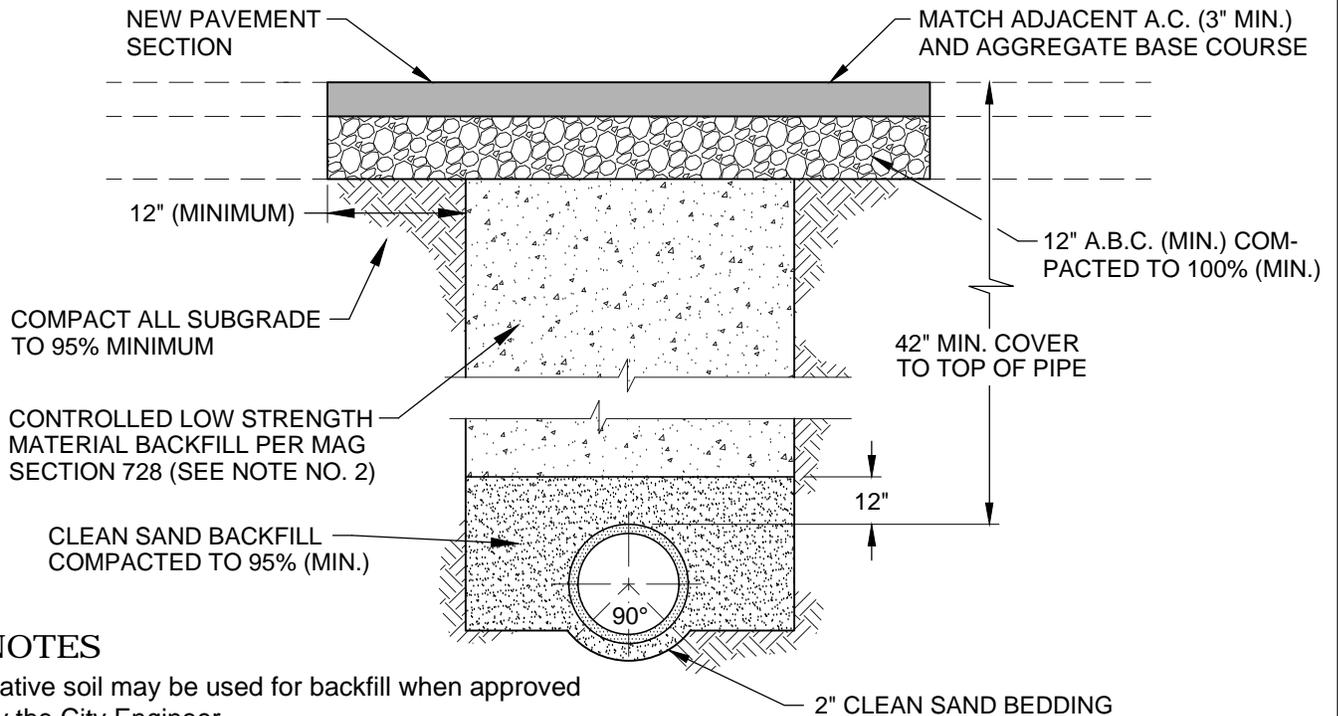
CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 5-010
TYPICAL WATER & SEWER
MAIN TRENCH BACKFILL

WATER SERVICE TRENCH



SEWER SERVICE TRENCH



NOTES

1. Native soil may be used for backfill when approved by the City Engineer.
2. Controlled low strength material shall consist of one sack of cement per cubic yard of clean sand.
3. Bedding shown is a minimum standard for shallow trenches and acceptable native base. Exact type of bedding shall be determined by the City Engineer.
4. Ditch sides shall be sloped or shored as required per OSHA standards.
5. All trenches shall be cold-patched if left open to traffic. All trenches shall be hot-mix paved within two (2) weeks of its excavation.
6. Minimum cover for service line is 42 inches.

12-27-18 (Under Review)

CITY OF YUMA
 CONSTRUCTION STANDARD DETAIL DRAWINGS
 STANDARD NO. 5-015
 TYPICAL WATER & SEWER
 SERVICE LINE
 TRENCH BACKFILL

**THRUST AT FITTINGS IN POUNDS
AT 150 POUNDS PER SQUARE INCH OF WATER PRESSURE
ALL PIPE & FITTINGS SHALL BE CLASS 150 (MINIMUM)**

| Size | Tee's & Dead Ends | 90° Bend | 45° Bend | 22 1/2" Bend | Per Degrees of Deflection |
|------|-------------------|----------|----------|--------------|---------------------------|
| 2" | 1,740 | 2,460 | 1,335 | 675 | 30.3 |
| 4" | 2,715 | 3,840 | 2,085 | 1,065 | 47.3 |
| 6" | 5,625 | 7,950 | 4,320 | 2,190 | 98.3 |
| 8" | 9,780 | 13,800 | 7,500 | 3,795 | 171.0 |
| 10" | 16,050 | 22,650 | 12,300 | 6,225 | 280.5 |
| 12" | 22,800 | 32,250 | 17,550 | 8,850 | 399.0 |
| 14" | 31,050 | 42,300 | 23,850 | 12,075 | 543.0 |
| 16" | 40,200 | 57,000 | 30,750 | 15,600 | 705.0 |

| Soil | Safe Bearing Load Pounds Per Square Foot |
|----------------------------------|---|
| MUCK, PEAT, ETC. | 0 |
| SOFT CLAY | 1000 |
| SAND | 2000 |
| SAND & GRAVEL | 3000 |
| SAND & GRAVEL CEMENTED WITH CLAY | 4000 |

TO CALCULATE THE NEEDED AREA OF A THRUST BLOCK

Divide thrust by safe bearing load. Note: Thrust block area for 6" and larger pipe shall not be less than three (3) square feet in size.

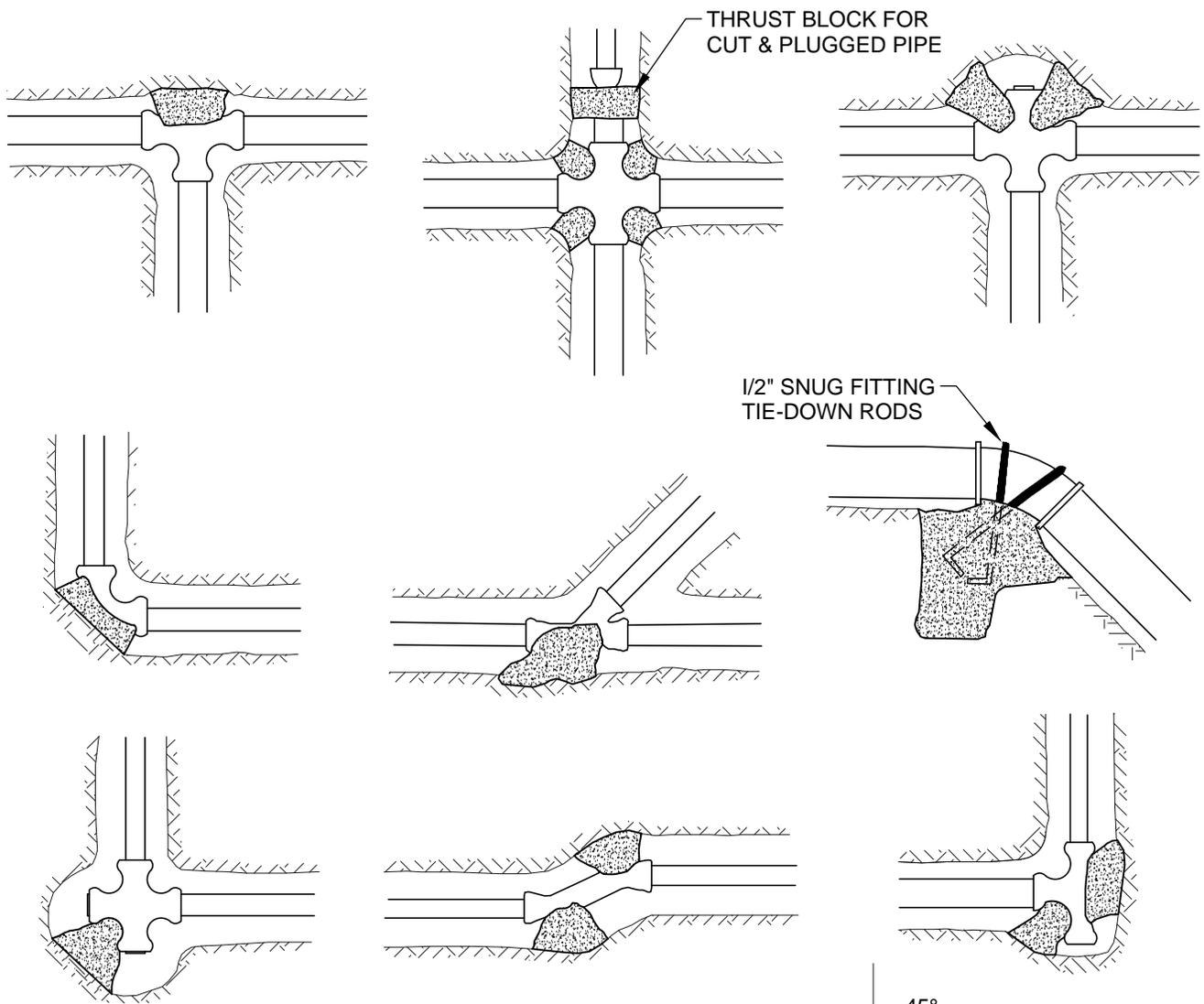
NOTES

1. All domestic pipe and fittings shall be Class 150 (min.) unless otherwise noted.
2. All private fire suppression pipe shall have a minimum class of 150 (P.S.I.).
3. Thrust block area will be determined by soil tests for pipe greater in size than 16".
4. Concrete shall not come in direct contact with pipe.

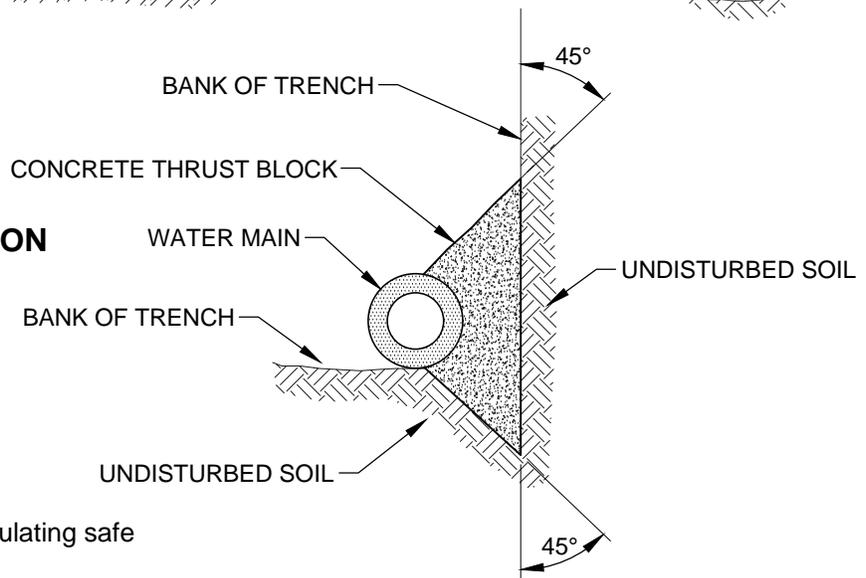
12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 5-020
THRUST BLOCK DATA



TYPICAL SECTION



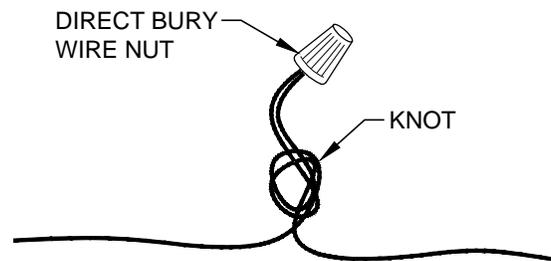
NOTES

1. See Standard Detail 5-020 for calculating safe bearing areas.
2. All ferrous fittings, pipe, connectors and appurtenances shall receive a 10mil (min.) polyethylene wrap to prevent direct contact with the soil.
3. Thrust blocks shall consist of Class B concrete per MAG Section 725.
4. Concrete shall not come in direct contact with pipe.
5. 316-stainless steel tie-down rods required for pipe larger than 8".
6. Place a minimum of 8" concrete under all fittings.

| |
|--|
| 12-27-18 (Under Review) |
| CITY OF YUMA |
| CONSTRUCTION STANDARD DETAIL DRAWINGS |
| STANDARD NO. 5-025 |
| TYPICAL |
| THRUST BLOCK INSTALLATION |

TRACER WIRE

Only 12 gauge, HMWPE coated, solid copper wire is to be used, do not use thin wire. Bring tracer wire to surface at every meter box, vault, valve riser, dead end hydrants, and as called out in the drawings. Tracer wire shall be brought to the surface at least every one thousand (1,000) feet. Take care not to damage the wire coating. Repair damaged coating with electrical tape.



DIRECT BURY WIRE NUT CONNECTION

TRACER WIRE CONNECTIONS

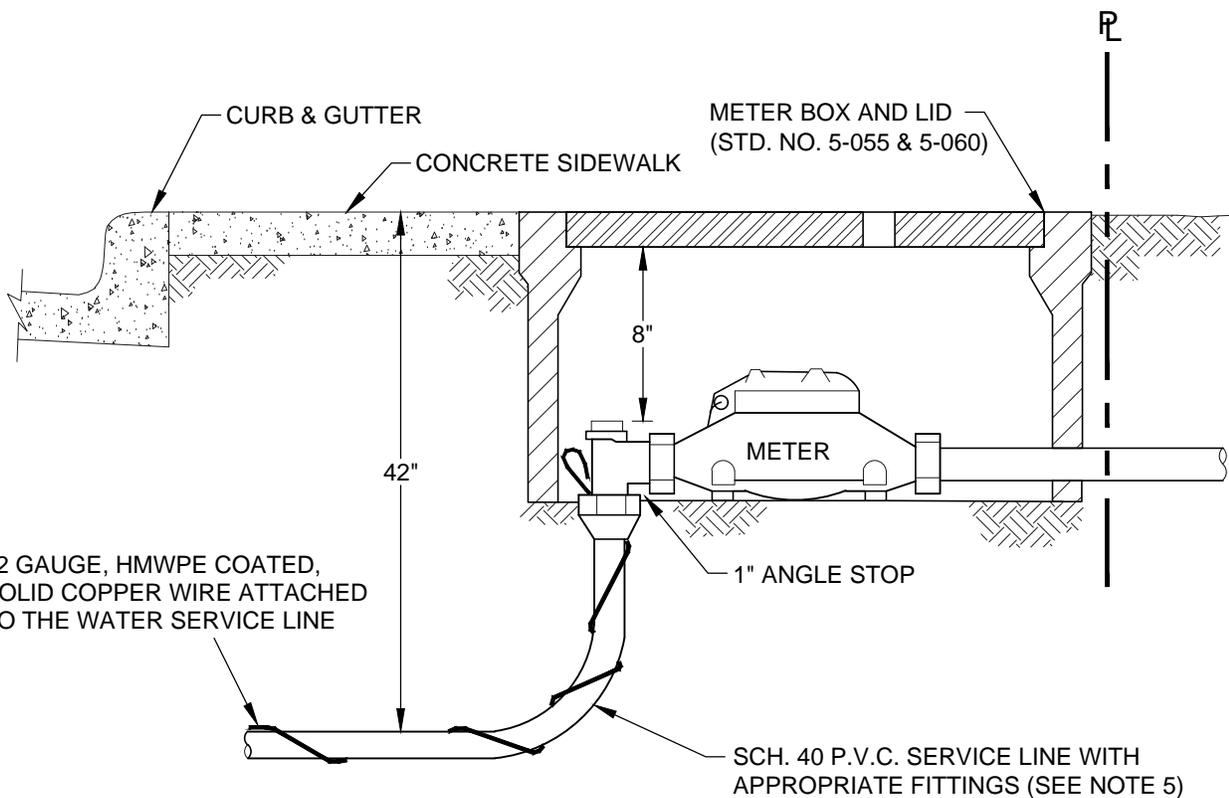
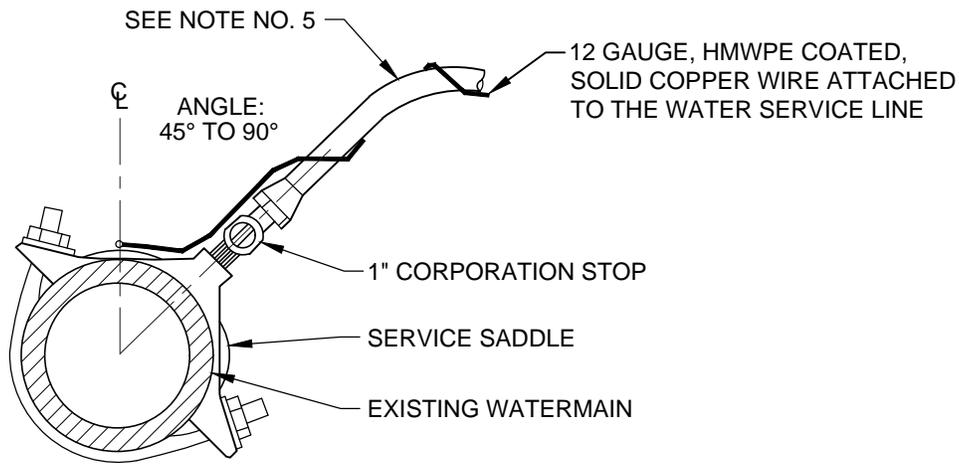
Joining ends of tracer wire: Connections into existing tracer wire, connections into tracer wire used during water main bores, connections between one spool of tracer wire to another, and other similar connections shall be made using a silicone filled, direct bury wire nut.

When connecting tracer wire ends together, strip 5/8" of insulation from the end of each wire. Insert the two ends firmly into the direct bury wire nut. Twist the wire nut clockwise while pushing the wire firmly into the nut. Do not over torque. Twist wires in a knot as shown.

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

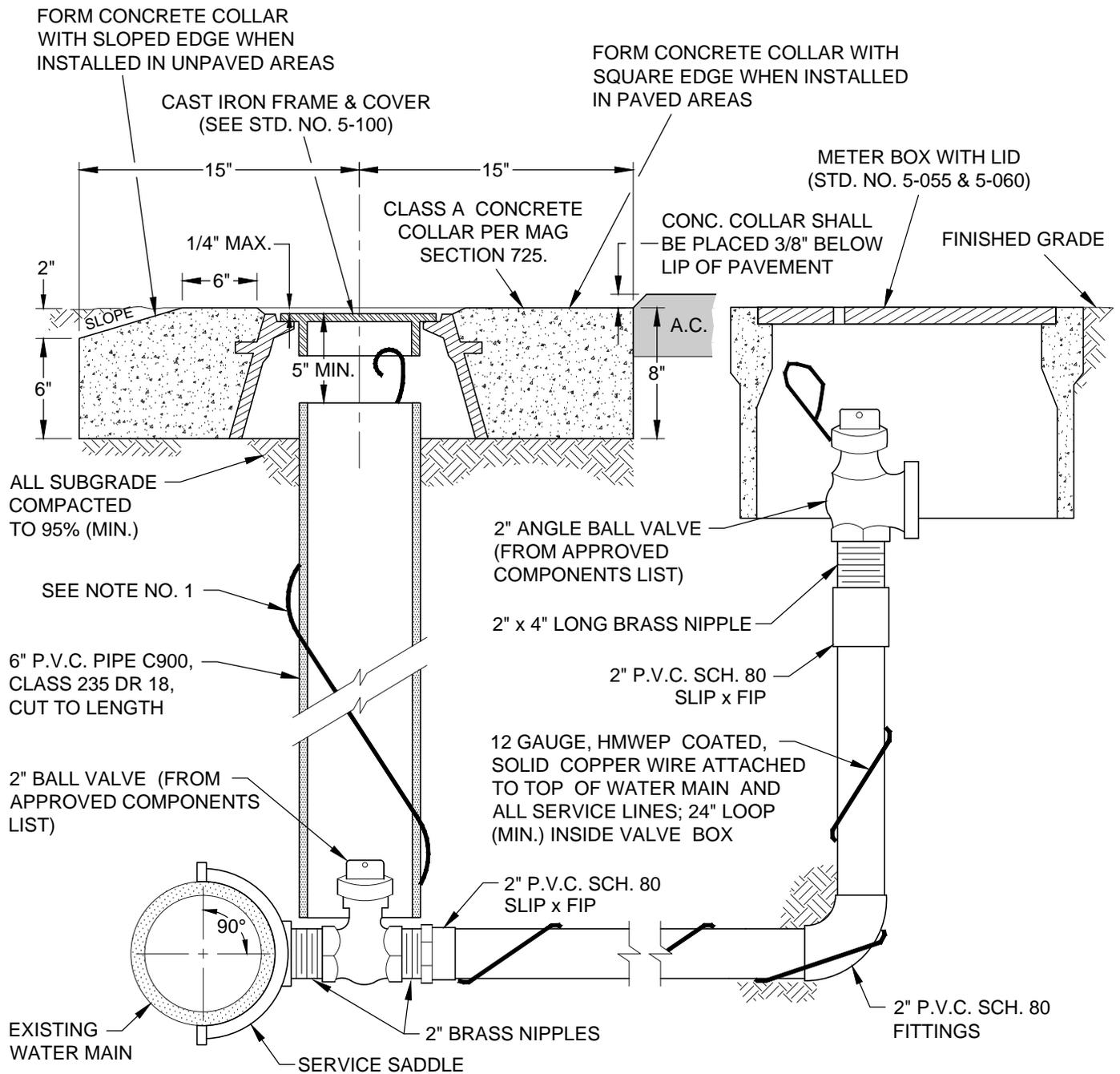
STANDARD NO. 5-030
TRACER WIRE



NOTES

1. Tracer wire required on all service lines between watermain and meter.
2. Meter box to be set adjacent to the public right-of-way line.
3. Water meter boxes shall not be subject to vehicular traffic. They shall not be placed in driveways, parking spots or traffic areas.
4. Meter boxes shall not be located in sidewalks.
5. Do not bend or crimp water service line. Use 45° bends and/or appropriate fittings.
6. Each meter must have its own dedicated 1" water service line. Dual meters off a single 1" service line are not allowed.
7. All new water services 2" and smaller off of an existing water main will be installed by City of Yuma utilities personnel.

| |
|---|
| 12-27-18 (Under Review) |
| <p>CITY OF YUMA CONSTRUCTION STANDARD DETAIL DRAWINGS STANDARD NO. 5-035 WATER METER INSTALLATION 1" AND SMALLER</p> |



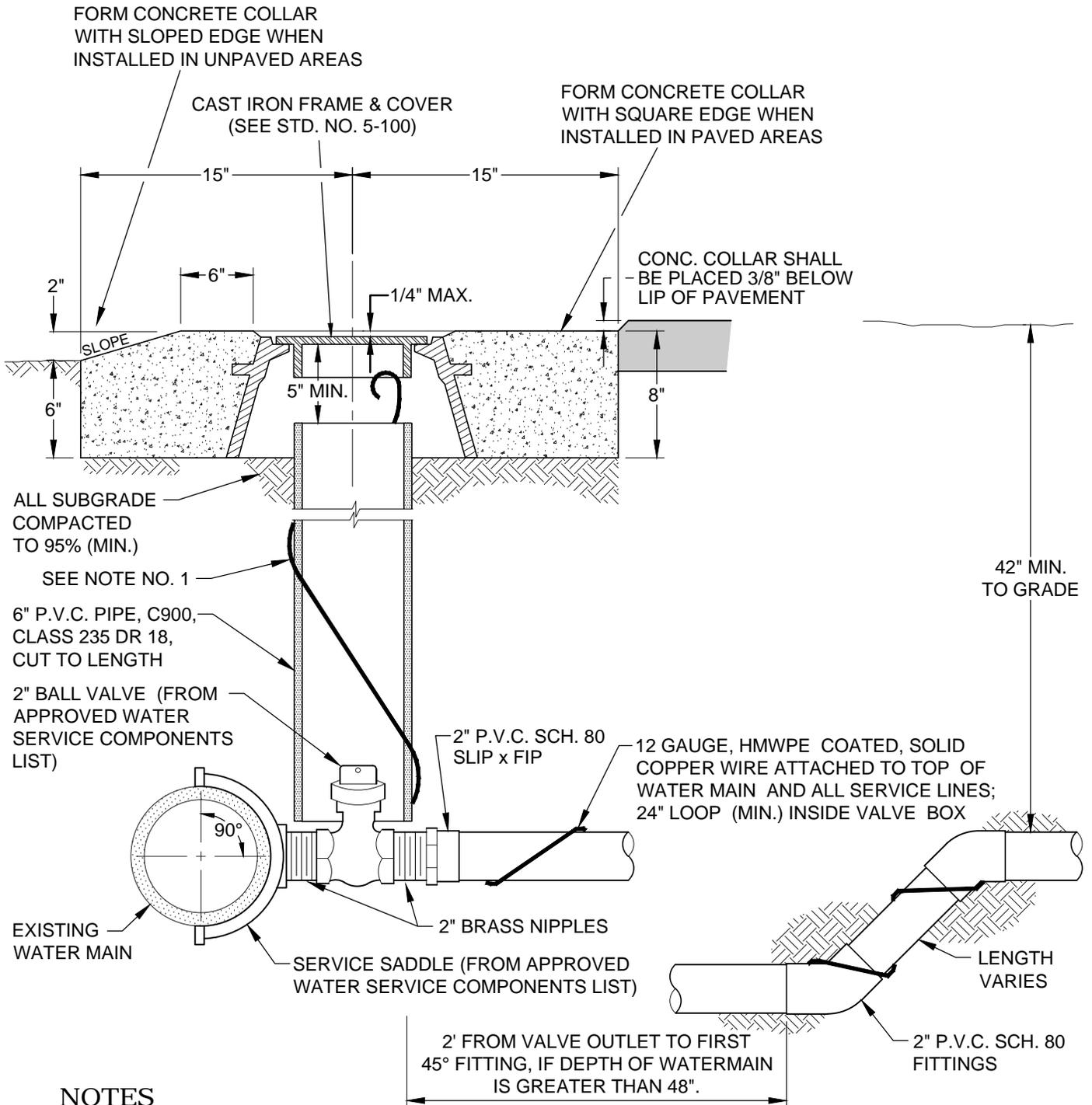
NOTES

1. Tracer wire required on all service lines between watermain and meter.
2. Meter box to be set adjacent to the public right-of-way line.
3. Water meter boxes shall not be subject to vehicular traffic. They shall not be placed in driveways, parking spots or traffic areas.
4. Meter boxes shall not be located in sidewalks.
5. Do not bend or crimp water service line. Use 45° bends and/or appropriate fittings.
6. On multiple 2" services, saddles shall be at least 24" clear (minimum).
7. All new water service requests 2" and smaller off of an existing water main will be done by City of Yuma utilities personnel.
8. Pipe shall be Sch. 40 minimum, fittings shall be Sch. 80 minimum.
9. Concrete collar shall be Class A per MAG Section 725.

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 5-040
2" WATER SERVICE



ALL SUBGRADE COMPACTED TO 95% (MIN.)

SEE NOTE NO. 1

6" P.V.C. PIPE, C900, CLASS 235 DR 18, CUT TO LENGTH

2" BALL VALVE (FROM APPROVED WATER SERVICE COMPONENTS LIST)

2" P.V.C. SCH. 80 SLIP x FIP

12 GAUGE, HMWPE COATED, SOLID COPPER WIRE ATTACHED TO TOP OF WATER MAIN AND ALL SERVICE LINES; 24" LOOP (MIN.) INSIDE VALVE BOX

EXISTING WATER MAIN

SERVICE SADDLE (FROM APPROVED WATER SERVICE COMPONENTS LIST)

2" BRASS NIPPLES

42" MIN. TO GRADE

LENGTH VARIES

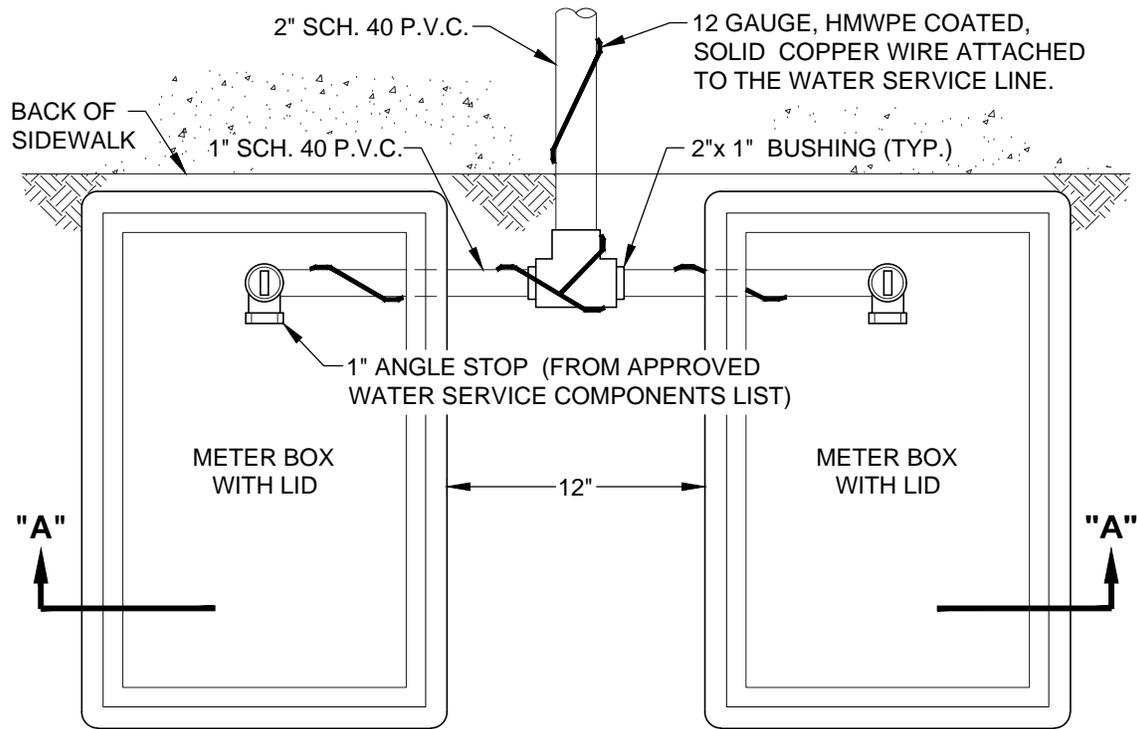
2" P.V.C. SCH. 80 FITTINGS

2' FROM VALVE OUTLET TO FIRST 45° FITTING, IF DEPTH OF WATERMAIN IS GREATER THAN 48".

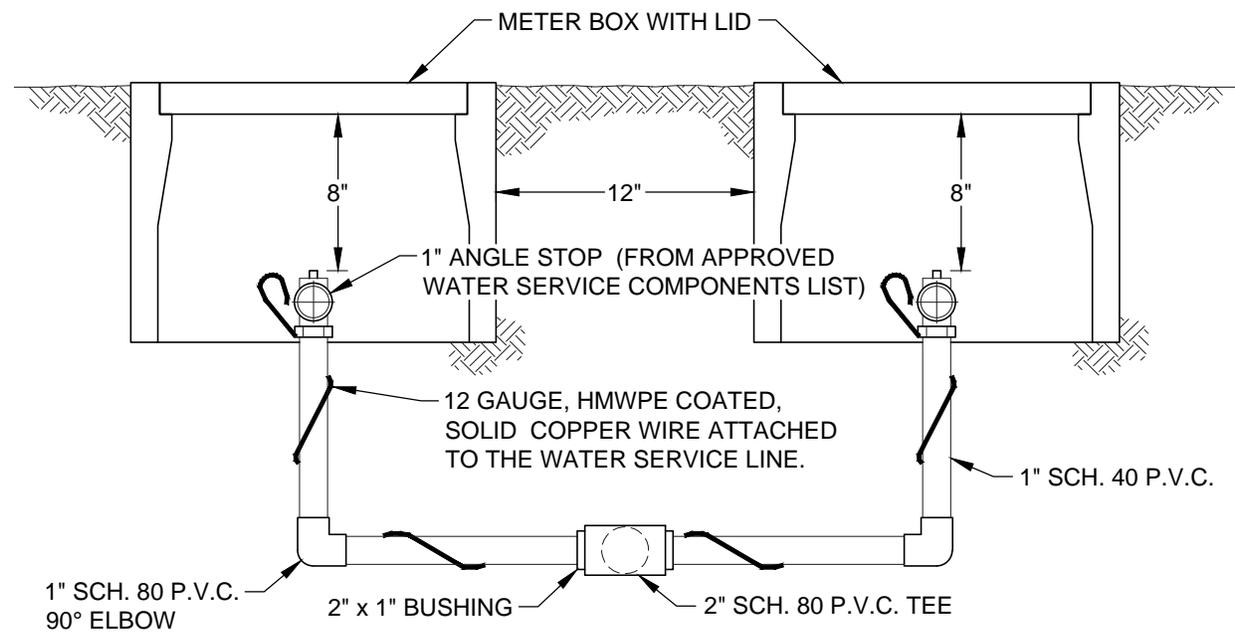
NOTES

1. Tracer wire required on all service lines between watermain and meter.
2. Meter box to be set adjacent to the public right-of-way line.
3. Water meter boxes shall not be subject to vehicular traffic. They shall not be placed in driveways, parking spots or traffic areas.
4. Meter boxes shall not be located in sidewalks.
5. Do not bend or crimp water service line. Use 45° bends and/or appropriate fittings.
6. On multiple 2" services, saddles shall be at least 24" clear (minimum) between saddles.
7. All new water service requests 2" and smaller off of an existing water main will be done by City of Yuma utilities personnel.
8. Pipe shall be Sch. 40 minimum, fittings shall be Sch. 80 minimum.
9. Concrete collar shall be Class A per MAG Section 725.

| | |
|--|--------------|
| 12-27-18 (Under Review) | Sheet 1 of 2 |
| <p>CITY OF YUMA CONSTRUCTION STANDARD DETAIL DRAWINGS STANDARD NO. 5-045 DUAL 1" WATER SERVICE FROM 2" SERVICE LINE</p> | |



TOP VIEW

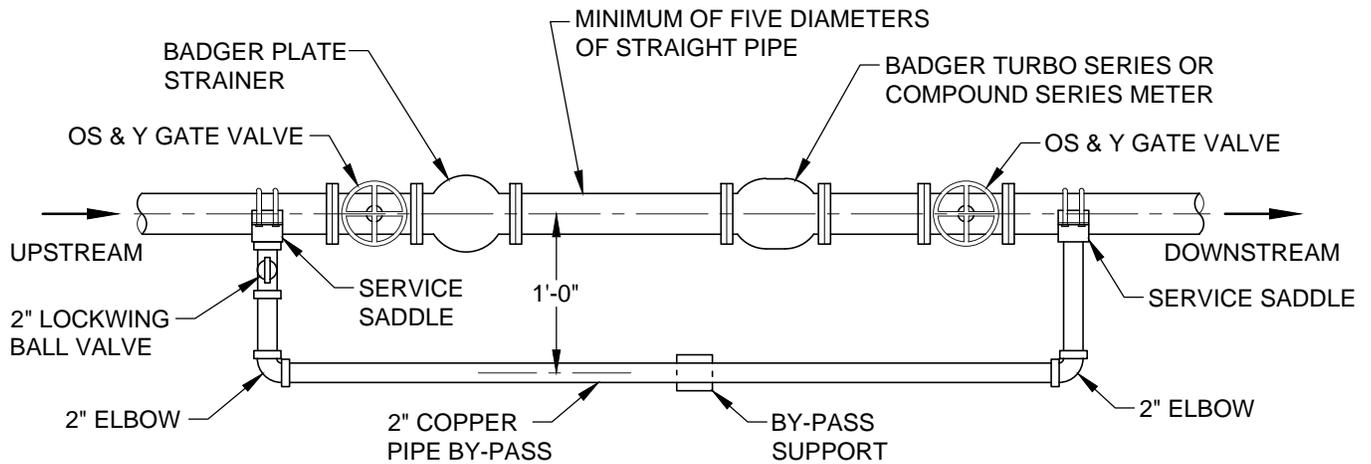


SECTION A-A

12-27-18 (Under Review) Sheet 2 of 2

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 5-045
DUAL 1" WATER SERVICE FROM
2" SERVICE LINE



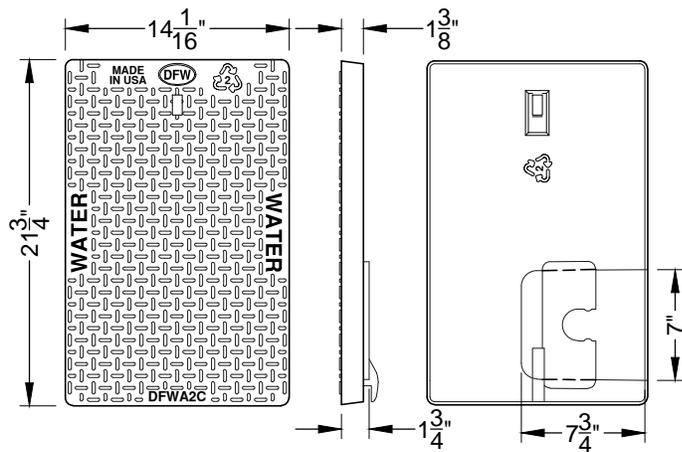
PLAN VIEW

NOTES

1. Water meter and strainer must be installed in accordance with manufacturer's instructions. (See approved water service components list for water meter information).
2. All above ground pipe must be flanged ductile iron.
3. All buried ductile iron pipe and fittings must be wrapped with 10mil. (minimum) polyethylene pipe tape.
4. For buried pipe: All joints and fittings must be restrained with mechanical joint wedge action restraining glands or bell joint restraining harness.
5. Service line for 3" meter must be 4", reduced to 3" after the 90° fitting and before the OS&Y Valve.
6. By-Pass shall be tapped off the side of the pipe and must be wrapped with 10mil. (min.) polyethylene pipe tape.
7. Water meter and valves must have 24"x 24"x 6" Class B (MAG Section 725) concrete pads and pipe supports.

12-27-18 (Under Review)

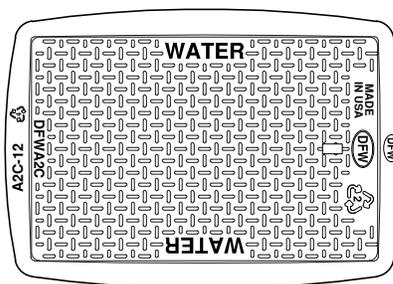
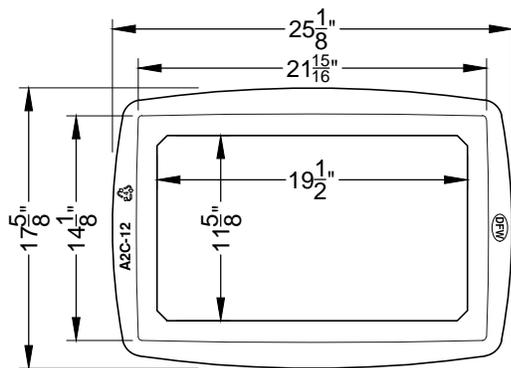
CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS
STANDARD NO. 5-050
3" THROUGH 8" TURBO SERIES OR
COMPOUND SERIES METER ABOVE
GROUND



| LID KEY | |
|---------|-----------------|
| 1 | BLACK COLOR |
| M | MAGNET |
| A | AMR SLIDE MOUNT |

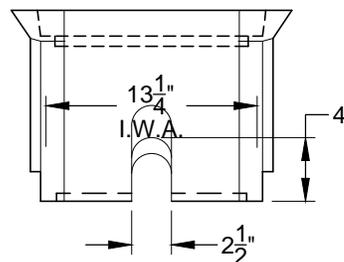
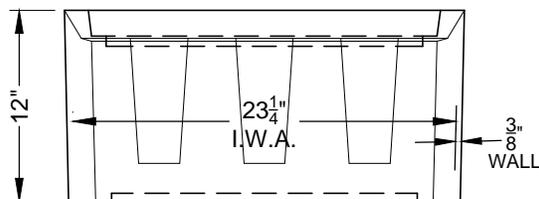
The polymer meter box lid must be detectable with a Ferromagnetic Locator.

DFWA2C-1MA-LID OR APPROVED EQUAL.



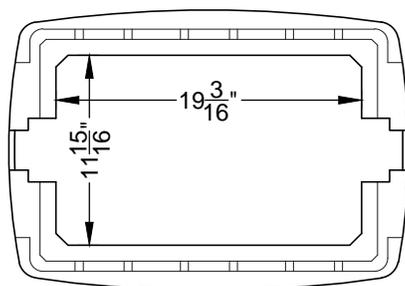
TOP VIEW

DFWA2C-12-1MA



DFWA2C-12-BODY OR APPROVED EQUAL.

SIDE VIEW



BOTTOM VIEW

DFWA2C-12-1MA BY DFW PLASTICS, INC. OR APPROVED EQUAL.

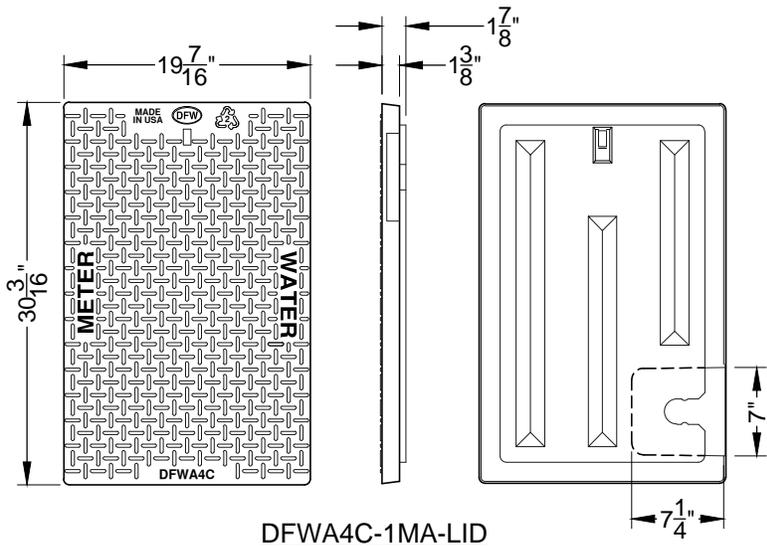
NOTES

1. Dim's ± 1/8" U.N.O.
2. Lid material: HDPE
3. Body material: LLDPE
4. Wall thickness: 3/8" minimum
5. I.W.A. = Inside work area
6. Snap lock pocket will receive AMR/AMI device endpoint. Snap lock slot is 1.80" ± .015" to allow for a finger force install.

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

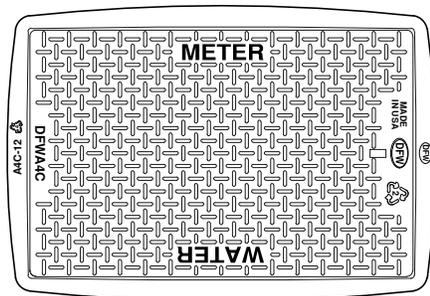
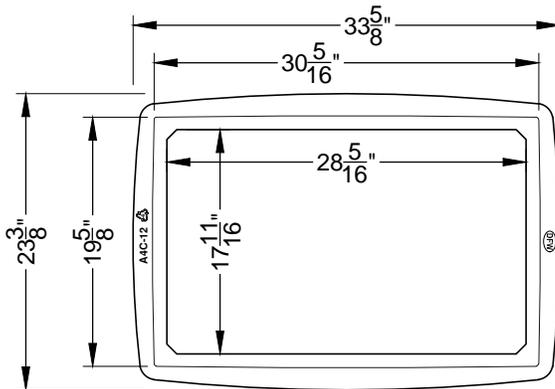
STANDARD NO. 5-055
WATER METER BOX
FOR 1" METERS & SMALLER



| LID KEY | |
|---------|-----------------|
| 1 | BLACK COLOR |
| M | MAGNET |
| A | AMR SLIDE MOUNT |

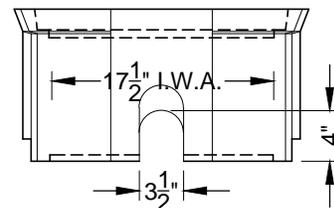
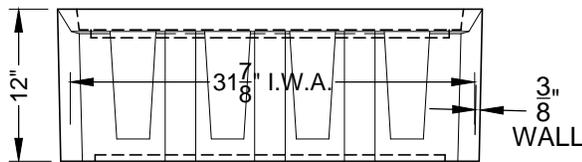
The polymer meter box lid must be detectable with a Ferromagnetic Locator.

DFWA4C-1MA-LID



TOP VIEW

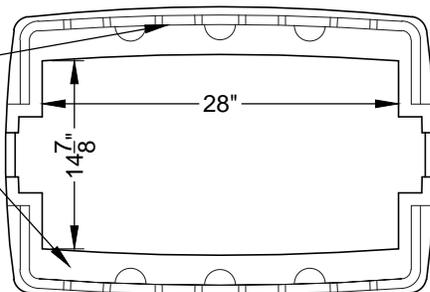
DFWA4C-12-1MA



SIDE VIEW

SIDES ARE BOWED OUT 1/2"

BOTTOM FLG IS 2 3/8" WIDE



DFWA4C-12-BODY
BOTTOM VIEW

NOTES

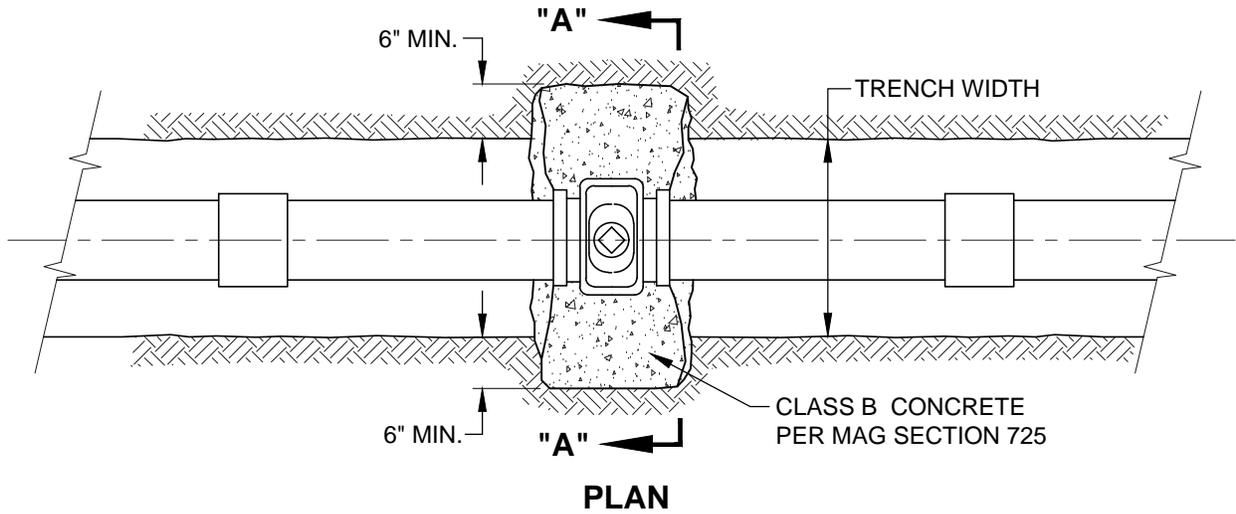
1. Dim's ± 1/8" U.N.O.
2. Lid material: HDPE
3. Body material: LLDPE
4. Wall thickness: 3/8" minimum
5. I.W.A. = Inside work area
6. Snap lock pocket will receive AMR/AMI device endpoint. Snap lock slot is 1.80" ± .015" to allow for a finger force install. Pocket height is 15/16 for min 1/8" air gap.

DFWA4C-12-1MA BY DFW PLASTICS, INC. OR APPROVED EQUAL.

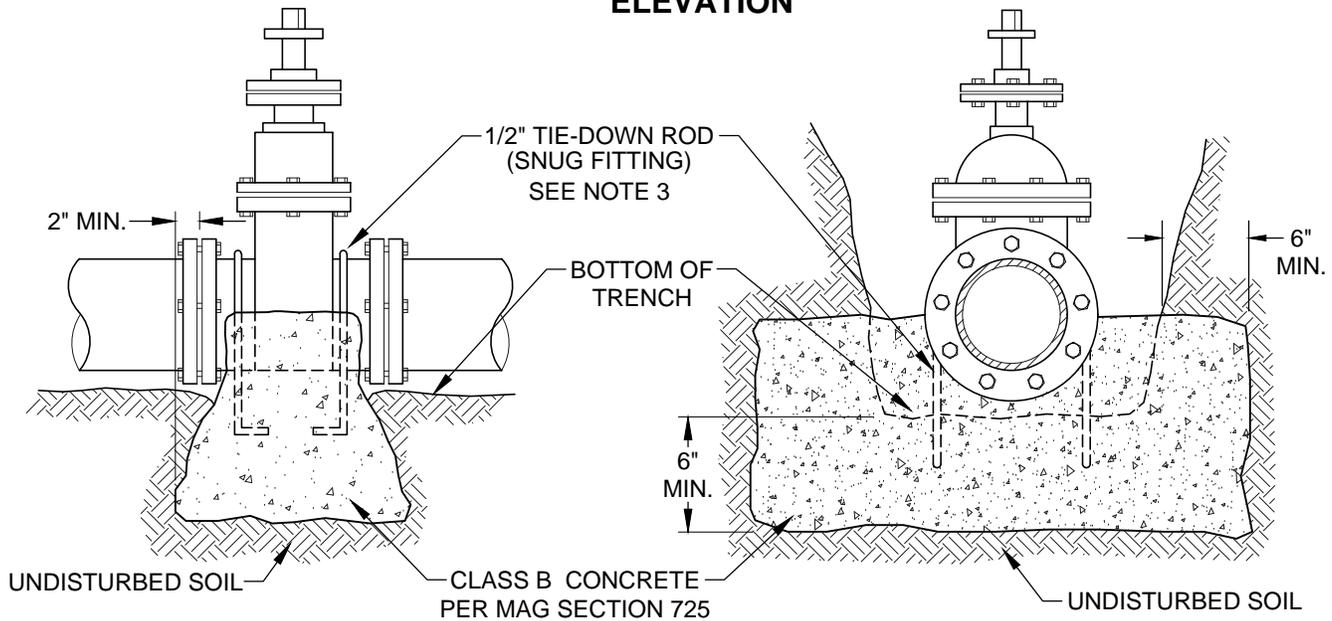
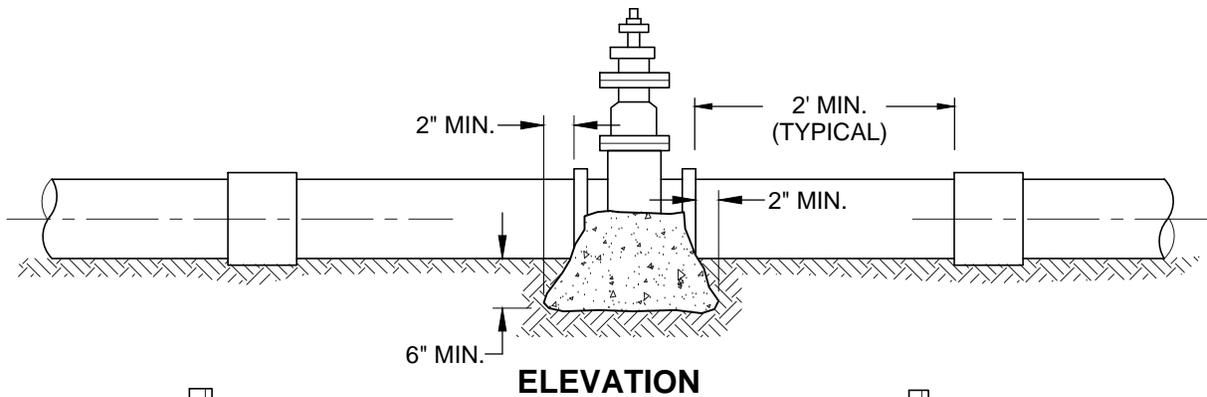
12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 5-060
WATER METER BOX
1 1/2" & 2" METERS



REFER TO STANDARD DETAIL 5-070 FOR VALVES 20" AND LARGER

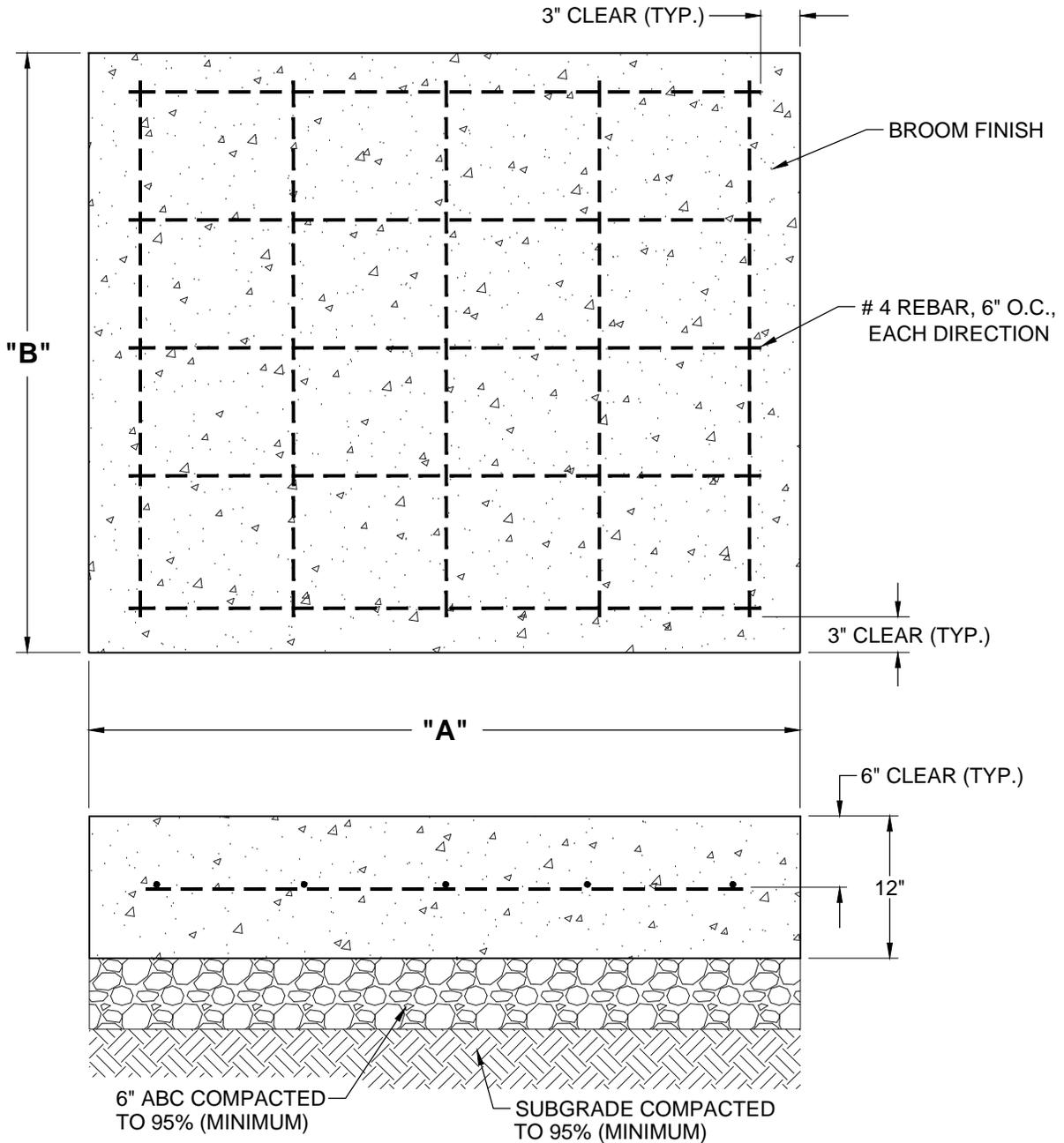


NOTES

1. This detail covers water valves 4" or larger.
2. All buried iron and ferrous fittings shall receive a 10mil (minimum) polyethelene plastic wrap to prevent direct contact with soil.
3. 316-stainless steel tie-down rods required for pipes larger than 8".
4. Concrete shall not come into contact with water pipe.
5. Refer to Standard Detail 5-070 for valves twenty inch (20") and larger.

| |
|---|
| 12-27-18 (Under Review) |
| CITY OF YUMA CONSTRUCTION STANDARD DETAIL DRAWINGS |
| STANDARD NO. 5-065 VALVE ANCHORS |

CONCRETE SLAB



| |
|-----------------------|
| A = 20" for 20" valve |
| A = 24" for 24" valve |
| A = 30" for 30" valve |
| A = 36" for 36" valve |

| |
|-----------------------|
| B = 20" for 20" valve |
| B = 24" for 24" valve |
| B = 30" for 30" valve |
| B = 36" for 36" valve |

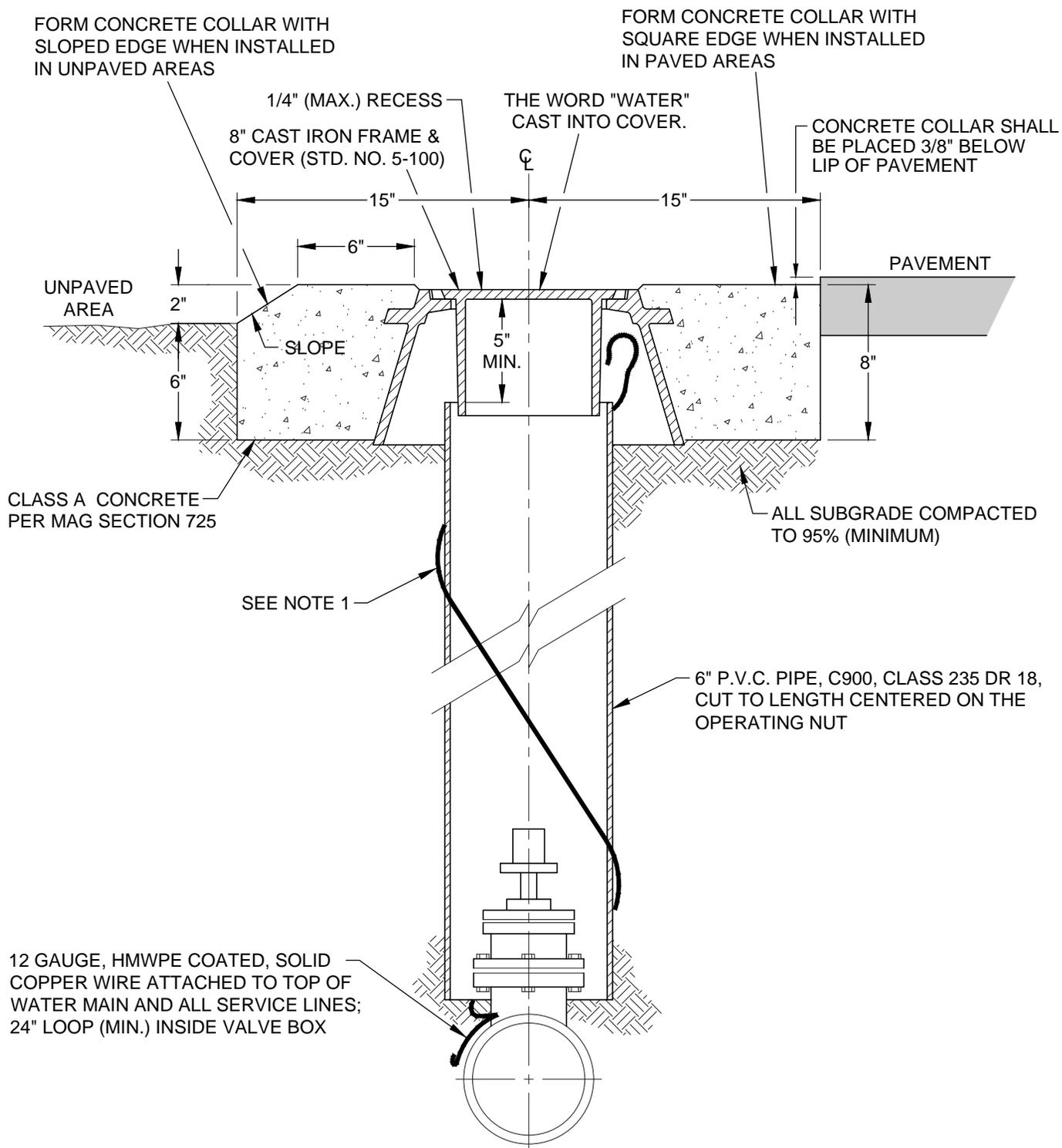
NOTES

1. Slab constructed from Class A concrete per MAG Section 725.

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 5-070
CONCRETE BASE FOR VALVES
20" AND LARGER



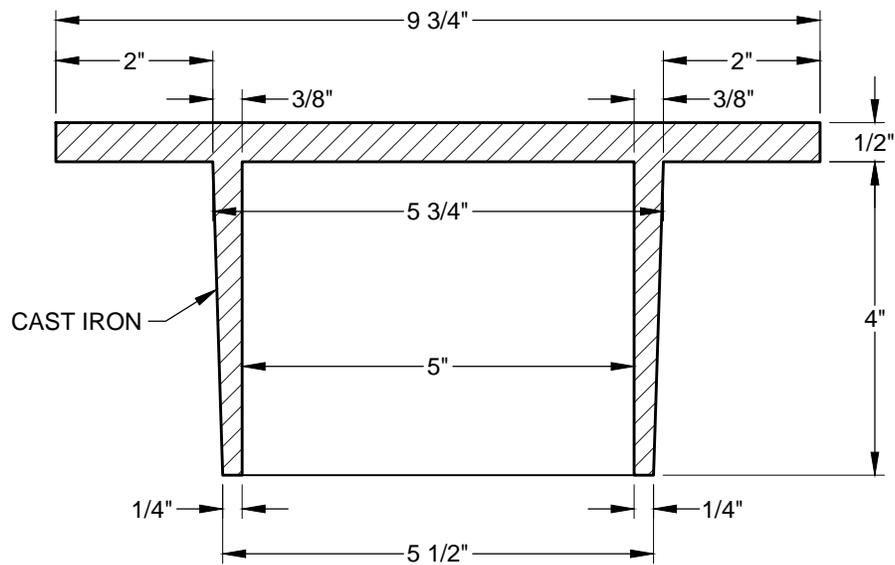
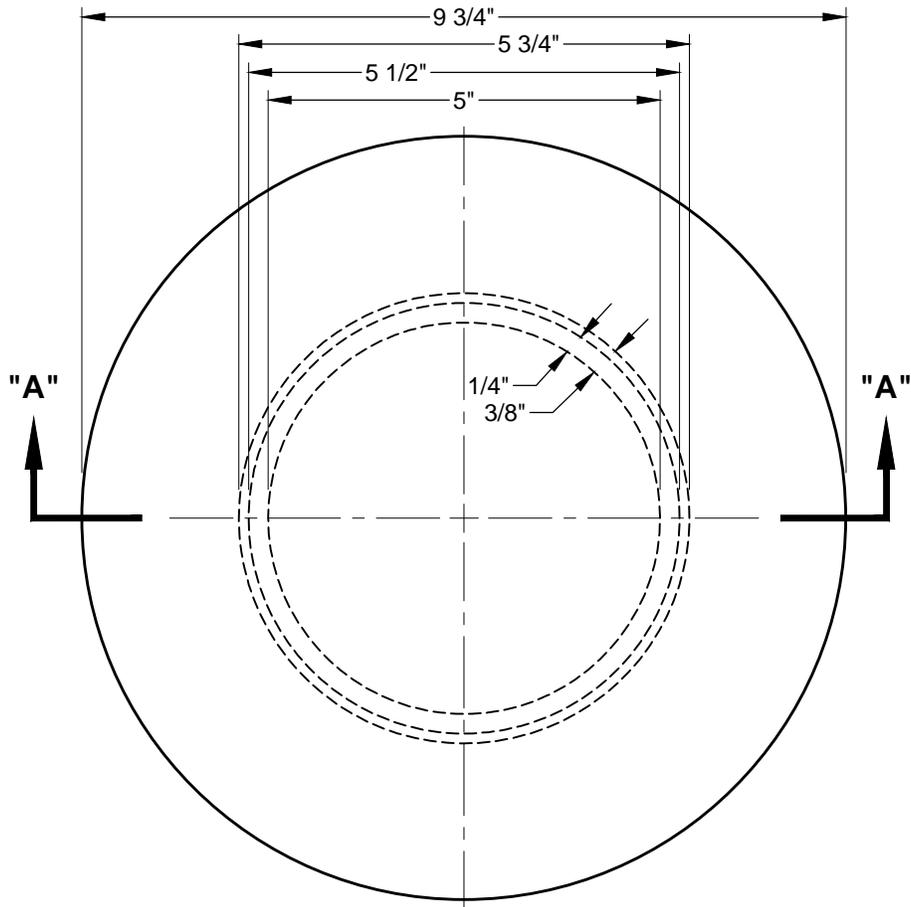
NOTE

1. 12 gauge solid copper tracer wire shall extend into the frame of each in-line valve, air release valve, blowoff, etc.

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 5-075
VALVE BOX INSTALLATION

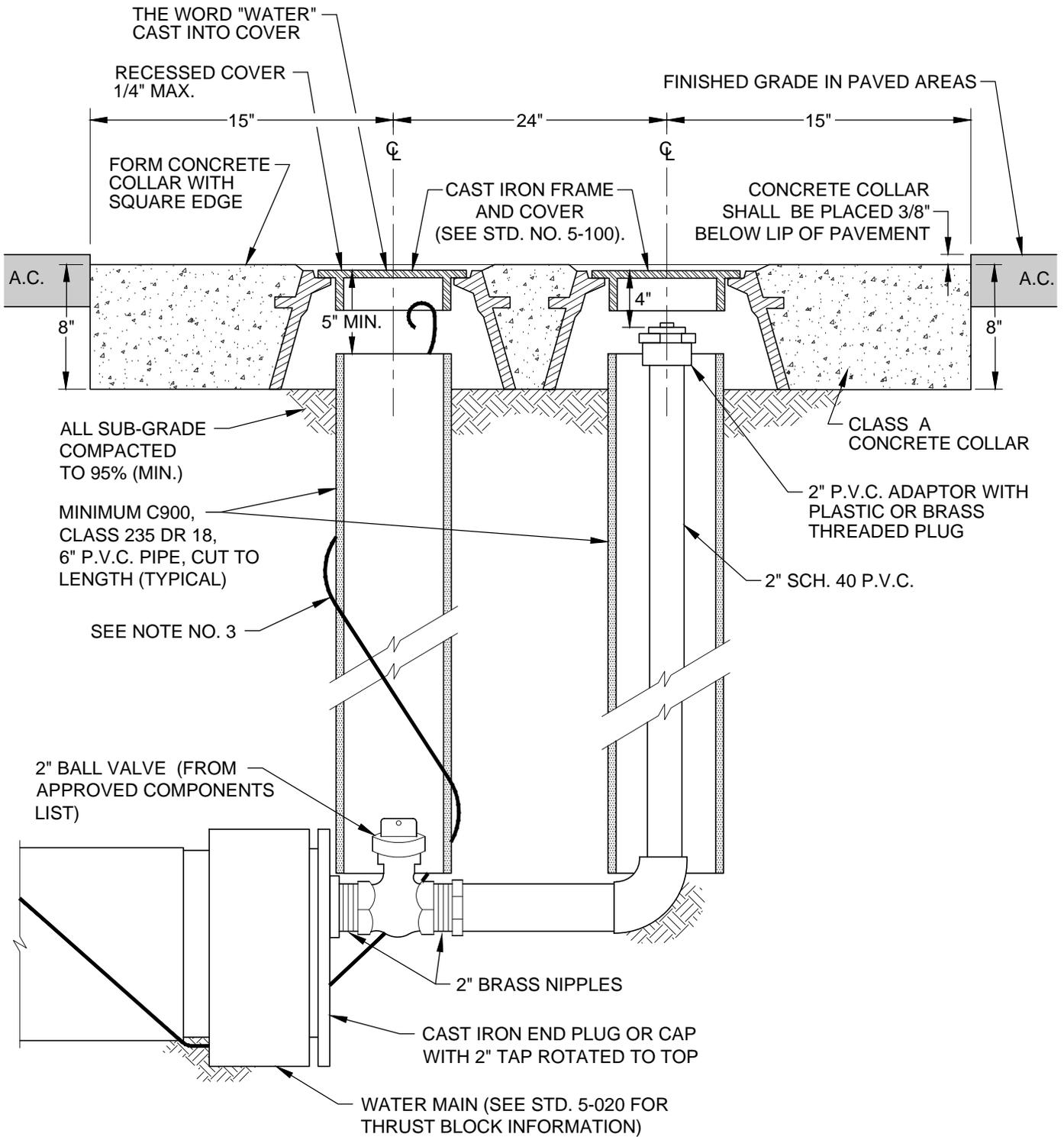


SECTION "A - A"

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 5-080
VALVE BOX COVER, DROP IN



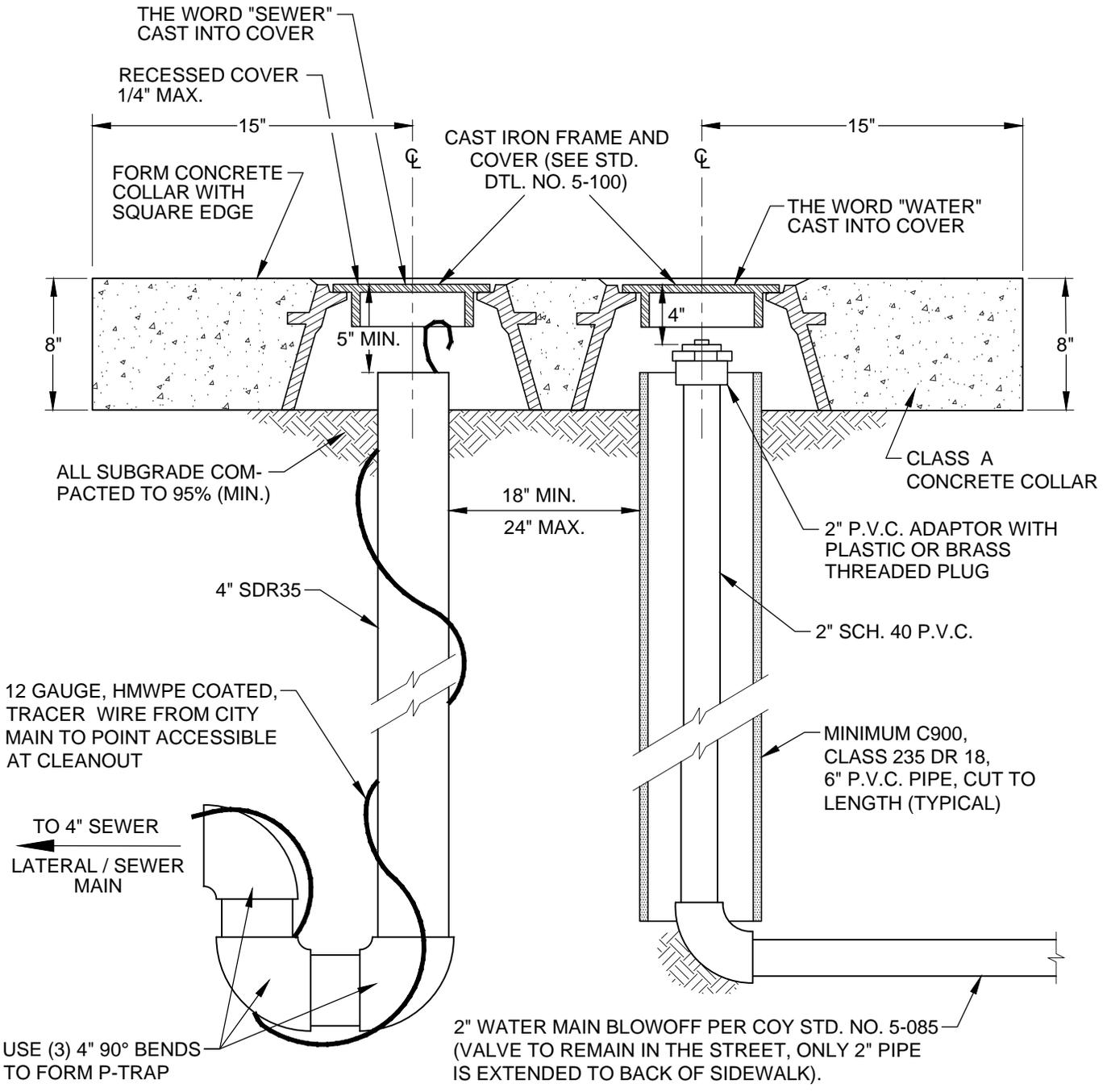
NOTES

1. Blowoff shall be located within 20' (max.) from last in-line valve.
2. Tracer wire shall be installed on all water mains and extensions. Tracer wire shall extend into the valve frame.
3. 12 gauge, HMWPE coated, solid copper tracer wire attached to top of water main and all service lines; 24" loop (min.) inside valve box.
4. All concrete shall be Class A per MAG Section 725.

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

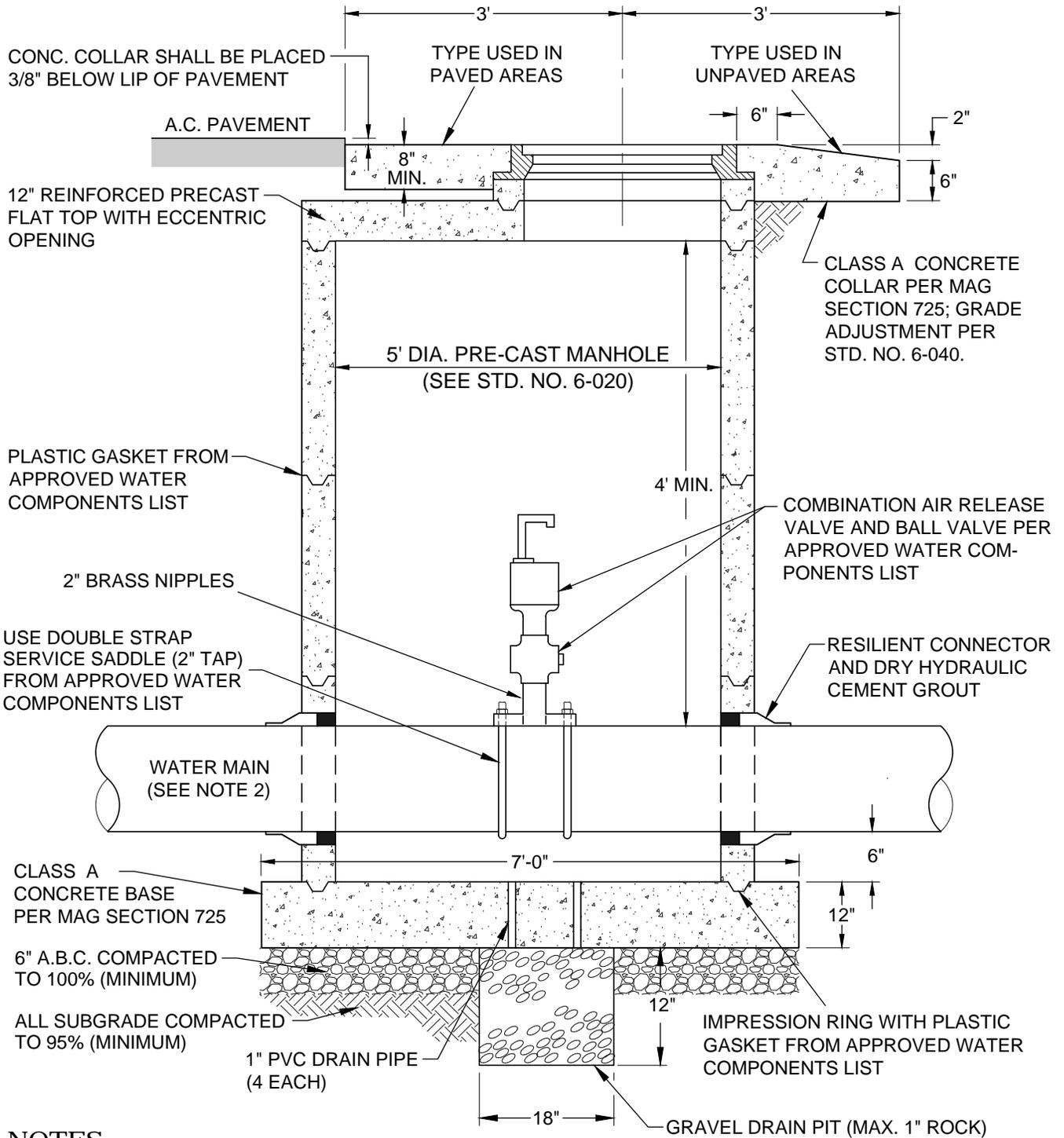
STANDARD NO. 5-085
WATERMAIN BLOWOFF



NOTES

1. Complete 2" blowoff installed per COY Standard No. 5-085.
2. Blowoff and sewer lateral installed behind the sidewalk and in the utility easement.
3. Cleanout installed per COY Std. No. 6-005 but to include P-Trap.
4. All concrete shall be per MAG Section 725.

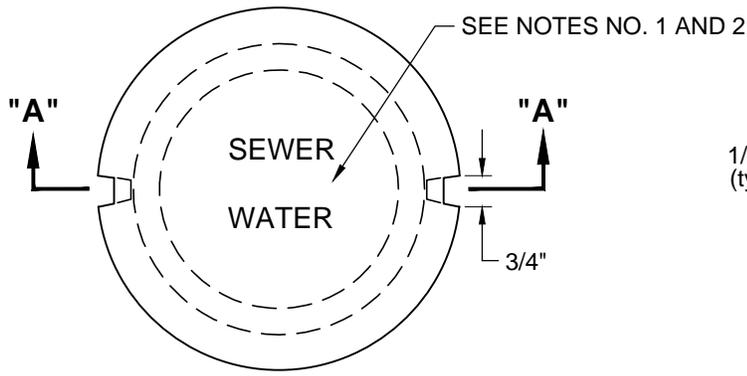
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|--|
| 12-27-18 (Under Review) |
| CITY OF YUMA |
| CONSTRUCTION STANDARD DETAIL DRAWINGS |
| STANDARD NO. 5-090 |
| WATERMAIN BLOWOFF |
| DRAIN |



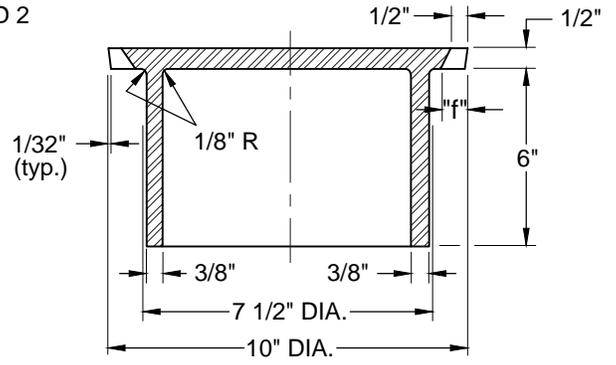
NOTES

1. Manhole frame and cover shall be Neenah Foundry R-1295 with the word WATER cast into the cover.
2. There shall be no pipe joints within two feet (2') of the manhole's exterior wall face.
3. Backfill used to fill manhole excavation shall be lean sand slurry consisting of one sack of cement per cubic yard of clean sand. Protect water main from direct contact with concrete backfill.
4. Apply asphalt waterproofing seal to the exterior surfaces of the manhole. Apply asphalt caulking to seal all joints.

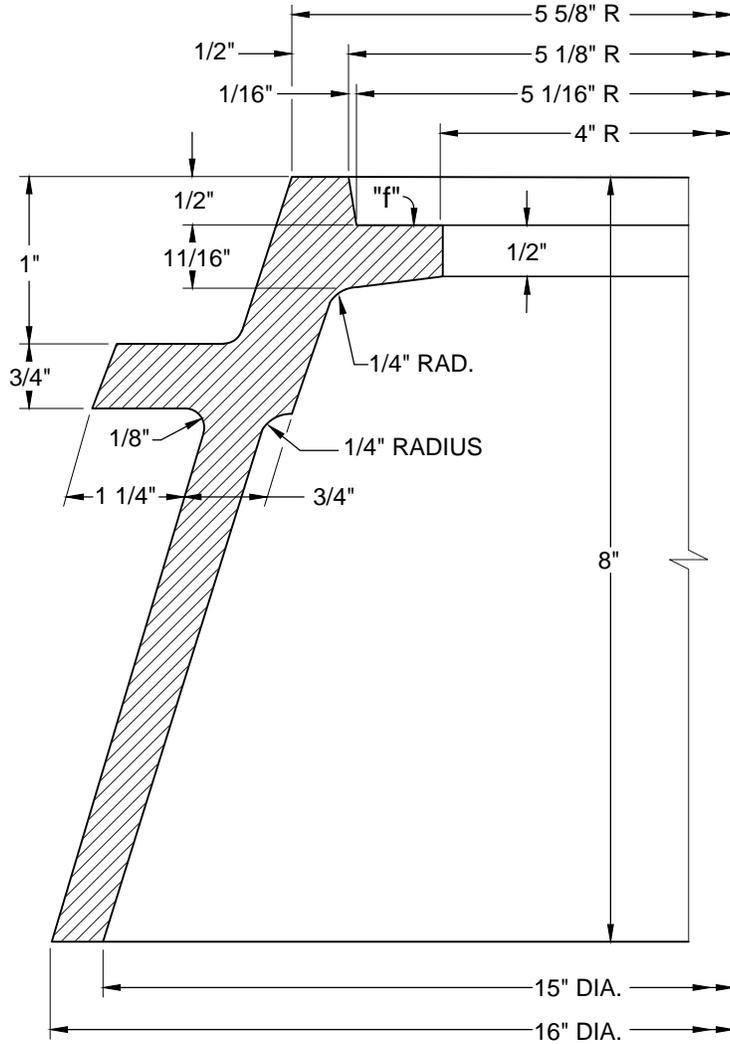
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| 12-27-18 (Under Review) |
| CITY OF YUMA |
| CONSTRUCTION STANDARD DETAIL DRAWINGS |
| STANDARD NO. 5-095 |
| AIR RELEASE VALVE MANHOLE |



COVER
MINIMUM WEIGHT 16 LBS.



SECTION "A - A"



FRAME
MINIMUM WEIGHT 63 LBS.

FRAME AND COVER:
PER APPROVED
COMPONENTS LIST

"f" INDICATES ORDINARY MACHINING
TOLERANCE FOR MACHINE FINISH: $\pm 1/64$ "

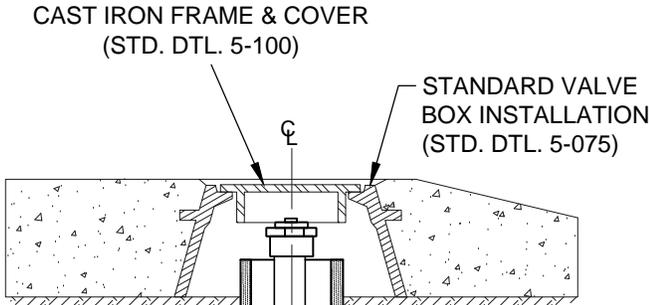
NOTES

1. The word "WATER" or "SEWER" shall be cast on the cover. Letter size: $5/8$ " x $3/4$ " raised $1/16$ " above level of cover.
2. Type of letters are to be submitted for approval.

12-27-18 (Under Review)

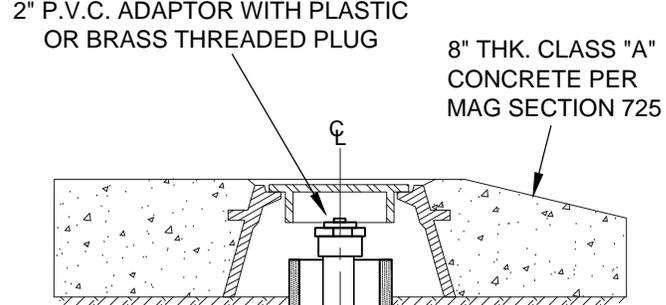
CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 5-100
8" CAST IRON
FRAME AND COVER



CAST IRON FRAME & COVER
(STD. DTL. 5-100)

STANDARD VALVE
BOX INSTALLATION
(STD. DTL. 5-075)



2" P.V.C. ADAPTOR WITH PLASTIC
OR BRASS THREADED PLUG

8" THK. CLASS "A"
CONCRETE PER
MAG SECTION 725

2" SCH. 40
VENT PIPE

ALL SUBGRADE COMPACTED
TO 95% (MIN.)

6" P.V.C., C-900, CLASS 235 DR 18
PIPE, CUT TO LENGTH

1/4" THICK x 4" WIDE PIPE SUPPORT
BRACKET WELDED TO STEEL CASING

STEEL
CASING

1/4" SST 'U' BOLT

WATERMAIN

WATERMAIN

FIRED CLAY BRICK AND MORTAR

STEEL CASING

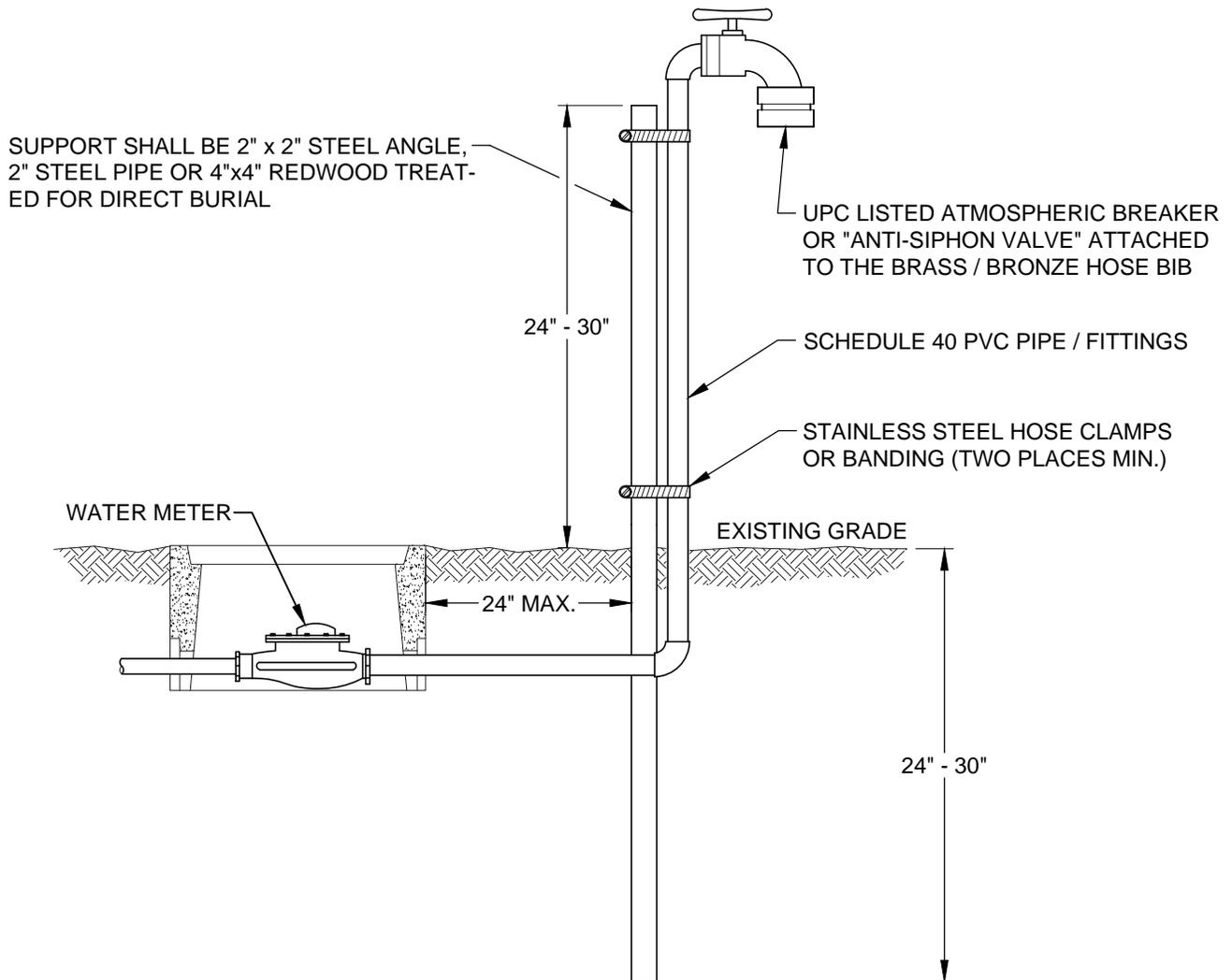
END VIEW

SIDE VIEW

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 5-105
STEEL CASING END SEALS
WITH VENT PIPE

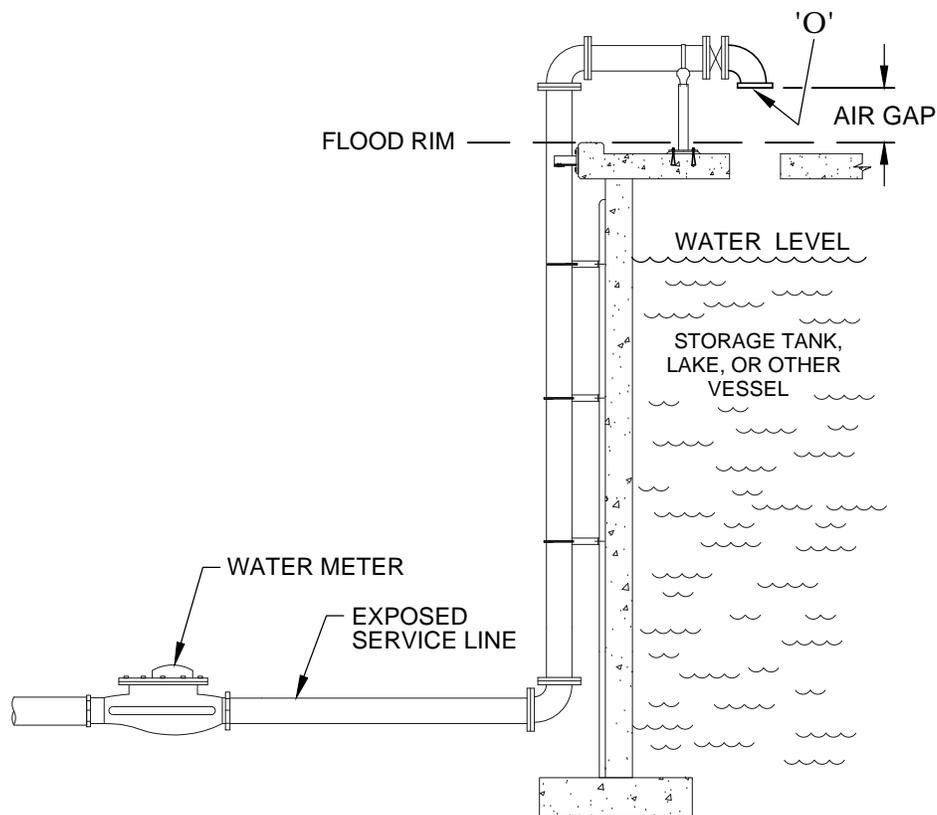


NOTES

1. This configuration shall be used until a permanent water service line is constructed from the water meter to the structure to be served.
2. In no case shall a water meter be allowed to remain in a location where the possibility of contamination could occur to the City's potable water system.

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|--|
| 12-27-18 (Under Review) |
| CITY OF YUMA |
| CONSTRUCTION STANDARD DETAIL DRAWINGS |
| STANDARD NO. 5-110 |
| TEMPORARY CONSTRUCTION |
| ANTI-BACKFLOW ASSEMBLY |

For additional information contact the City of Yuma Pretreatment Section at (928)373-4544.



NOTES

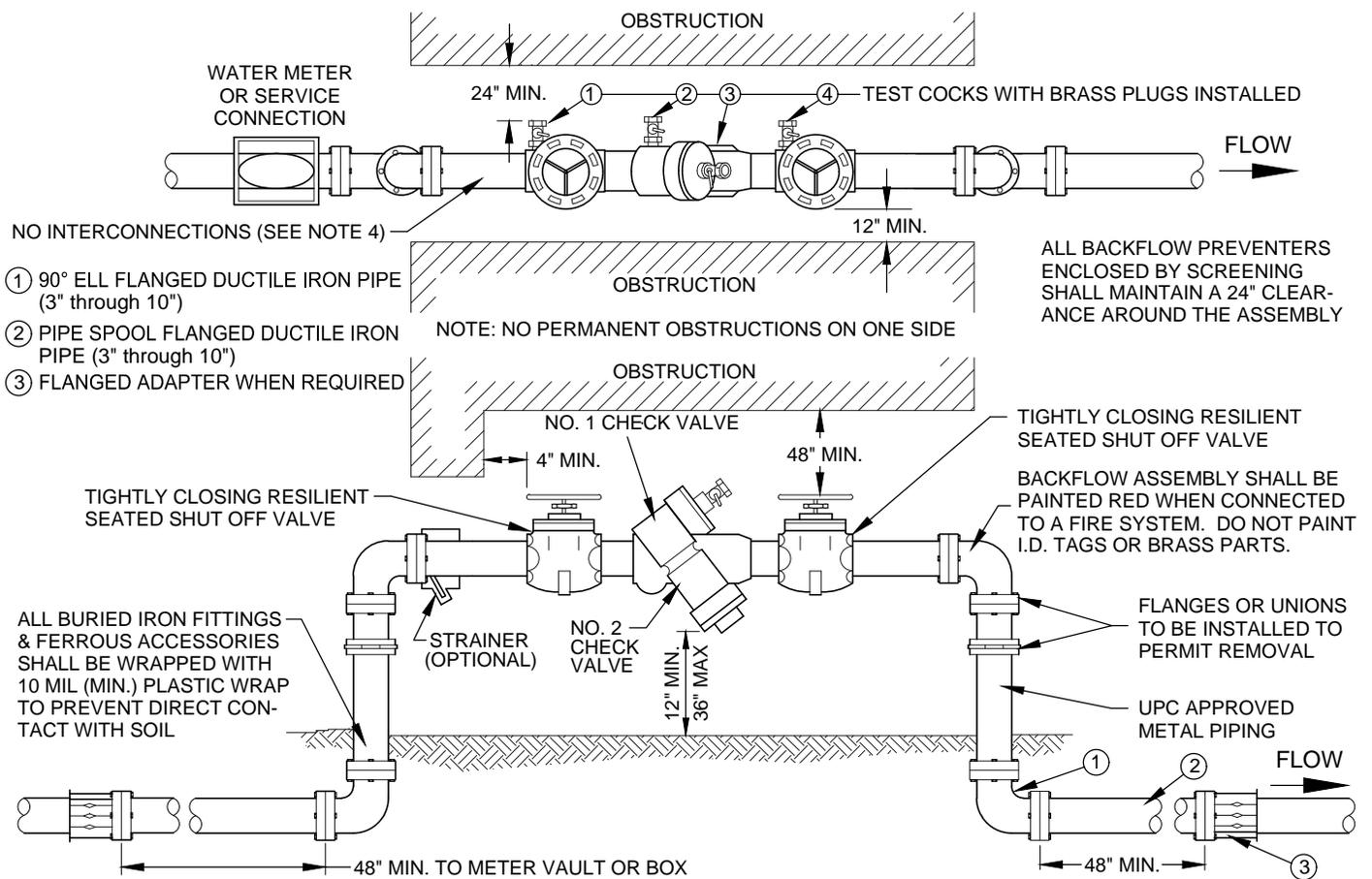
1. The prevention of backflow in a potable water supply system is necessary to prevent contamination or pollution of the water supply. Prevention is accomplished by the use of air gap separations or mechanical backflow prevention assemblies. Air gap separations and backflow prevention assemblies shall be installed according to current City of Yuma Construction Standard Detail Drawings and written Specifications to assure the protection of the public water supply system.
2. An air gap is not generally utilized for water service line protection since all supply pressure is lost. A water service line to a lake, tank or other vessel is generally where an air gap assembly is used. However, for service protection, another deterrent is that all piping to the air gap must remain exposed.
3. The minimum required air gap separation shall be measured vertically from the lowest end of the potable water outlet to the flood rim of the receptacle into which the potable water discharges. This air gap distance shall be a minimum of twice the diameter of the effective opening ('O') of the potable water outlet but not less than one inch (1").
4. There shall not be any provisions for extending the fixture below the flood level rim. If the end of the potable water pipe or fixture outlet is threaded or allows for any type of extension by any means, a properly installed and approved backflow preventer shall be installed.
5. The opening of the air gap device ('O') may be screened or shielded with an appropriate perforated material for protection.

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 5-115
AIR GAP SEPARATION
BACKFLOW PREVENTION

For additional information contact the City of Yuma
Pretreatment Section at (928)373-4544.



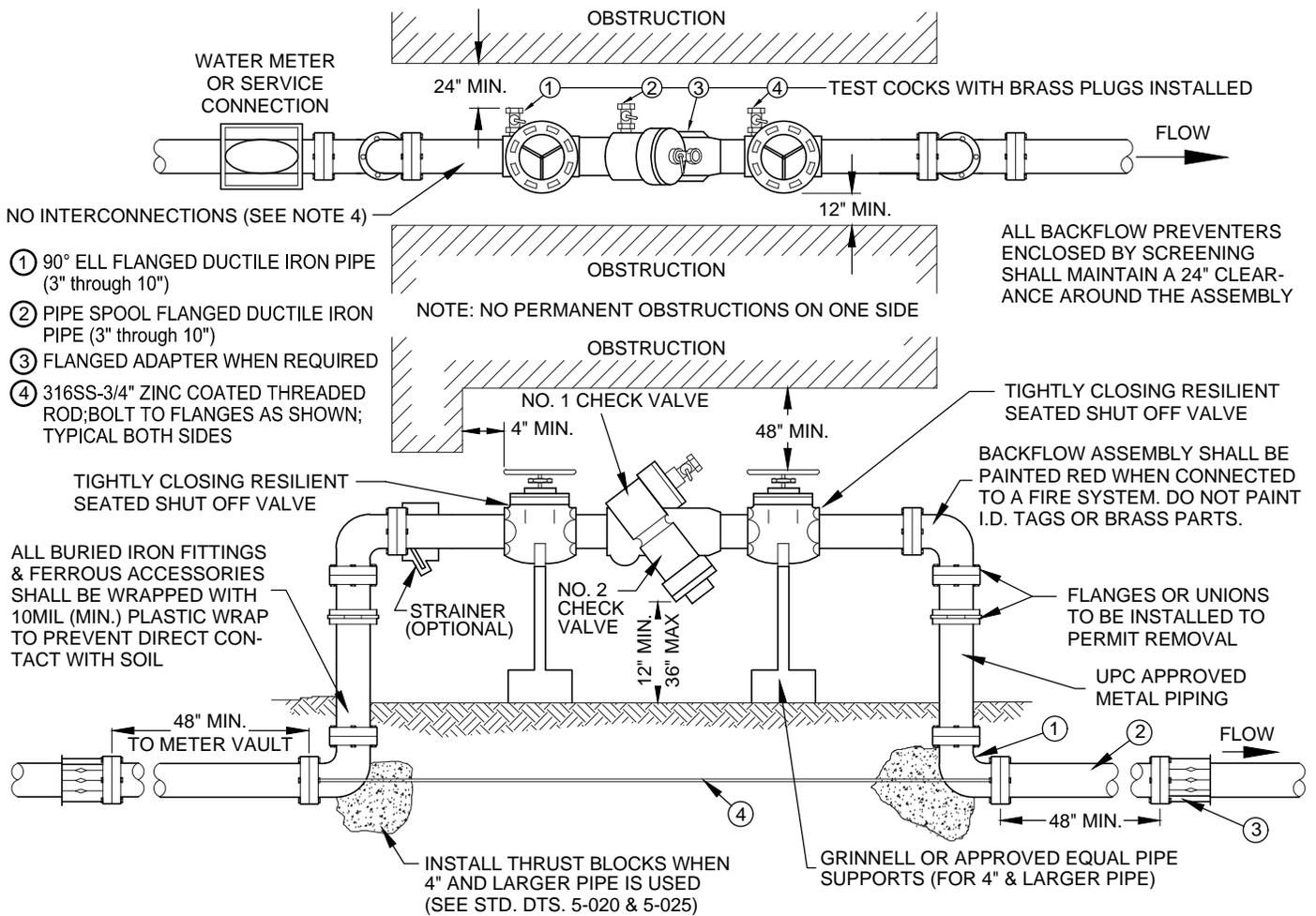
NOTES

1. A permit is required before installing or replacing a backflow assembly. Permits are obtained at the Department of Community Development, 1 City Plaza (SW corner of Madison Ave. and 3rd St.).
2. For a list of approved backflow assemblies, refer to the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research.
3. The D.C.V.A. shall be installed outside, above ground, as close to the water meter as possible. The D.C.V.A. shall be located on private property unless otherwise authorized.
4. There shall be no other piping connected to the piping between the water meter and the backflow assembly except for parallel assembly installations.
5. Installations shall meet all current uniform plumbing codes in addition to the City of Yuma building codes.
6. Installations shall be left exposed until inspected and approved by the City of Yuma.
7. If this unit is installed to serve a retention basin, this unit shall be placed a minimum of 12" (36" maximum) above the flood rim of the retention basin.
8. Protective cages are optional and will meet clearance, access and drainage requirements. Tamperproof switches may be required on fire backflow assemblies.
9. It is recommended that backflow assemblies be protected from the elements. Care shall be taken to ensure that the protection does not hinder the assembly's operation.
10. Approval from the City of Yuma Fire Marshal is required before any backflow assembly is connected to any fire system.
11. All backflow units are to be tested by a certified professional prior to final approval. Backflow units shall be tested on an annual basis.
12. The installation of a backflow assembly may create a closed system. Consult with the City of Yuma Building Official for pressure relief valves, thermal expansion or other needed requirements.

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS
STANDARD NO. 5-120
DOUBLE CHECK VALVE (D.C.V.A.)
BACKFLOW PREVENTION ASSEMBLY
3" AND SMALLER WATER LINE

For additional information contact the City of Yuma Pretreatment Section at (928)373-4544.



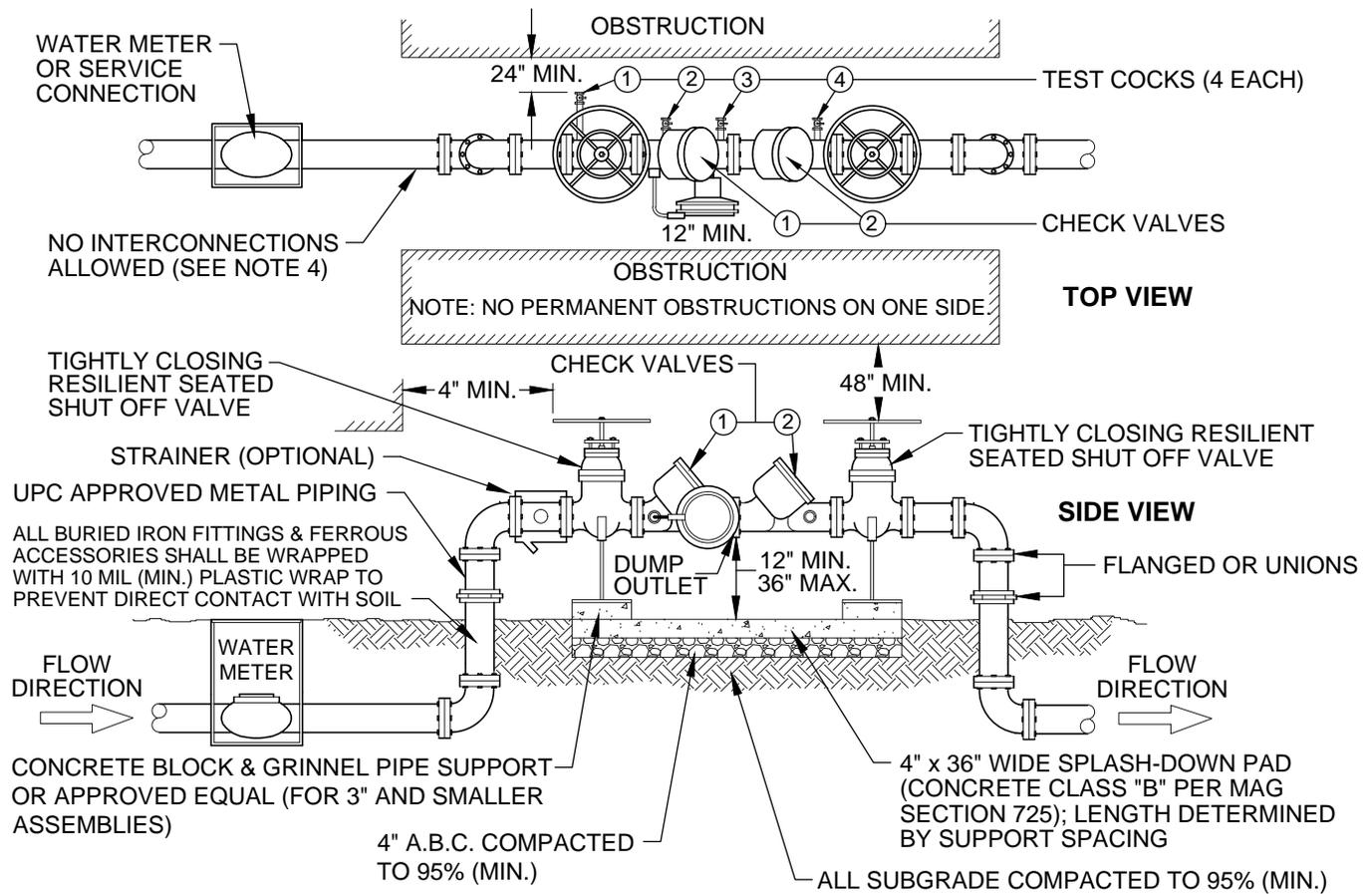
NOTES

1. A permit is required before installing or replacing a backflow assembly. Permits are obtained at the Department of Community Development, 1 City Plaza (SW corner of Madison Ave. and 3rd St.).
2. For a list of approved backflow assemblies, refer to the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research.
3. The D.C.V.A. shall be installed outside, above ground, as close to the water meter as possible. The D.C.V.A. shall be located on private property unless otherwise authorized.
4. There shall be no other piping connected to the piping between the water meter and the backflow assembly except for parallel assembly installations.
5. Installations shall meet all current uniform plumbing codes in addition to the City of Yuma building codes.
6. Installations shall be left exposed until inspected and approved by the City of Yuma.
7. If this unit is installed to serve a retention basin, this unit shall be placed a minimum of 12" (36" maximum) above the flood rim of the retention basin.
8. Protective cages are optional and will meet clearance, access and drainage requirements. Tamperproof switches may be required on fire backflow assemblies.
9. It is recommended that backflow assemblies be protected from the elements. Care shall be taken to ensure that the protection does not hinder the assembly's operation.
10. Approval from the City of Yuma Fire Marshal is required before any backflow assembly is connected to any fire system.
11. All backflow units are to be tested by a certified professional prior to final approval. Backflow units shall be tested on an annual basis.
12. The installation of a backflow assembly may create a closed system. Consult with the City of Yuma Building Official for pressure relief valves, thermal expansion or other needed requirements.

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS
STANDARD NO. 5-125
DOUBLE CHECK VALVE (D.C.V.A.)
BACKFLOW PREVENTION ASSEMBLY
4" AND LARGER WATER LINE

For additional information contact the City of Yuma Pretreatment Section at (928)373-4544.



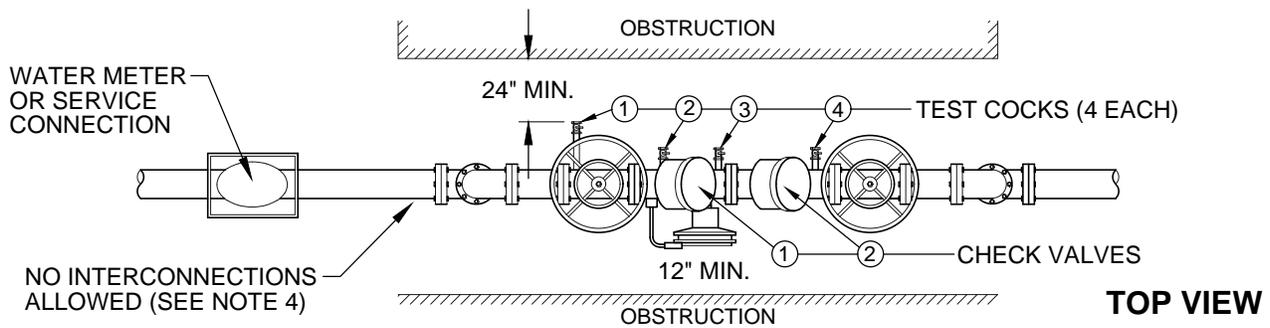
NOTES

1. A permit is required before installing or replacing a backflow assembly. Permits are obtained at the Department of Community Development, 1 City Plaza (SW corner of Madison Avenue and 3rd Street).
2. For a list of approved backflow assemblies, refer to the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research.
3. The R.P.A. shall be installed outside, above ground, as close to the water meter as possible and on private property unless otherwise authorized.
4. There shall be no other piping connected to the piping between the meter and the backflow assembly except for parallel assembly installations.
5. Installations shall meet current uniform plumbing codes in addition to City of Yuma building codes.
6. Installations shall be left exposed until inspected and approved by the City of Yuma.
7. If this unit is installed to service a retention basin, this unit shall be placed a minimum 12" (36" maximum) above the flood rim of the retention basin.
8. Protective cages are optional and will meet clearance, access and drainage requirements.
9. It is recommended that backflow assemblies be protected from the elements. Care shall be taken to ensure that the protection does not hinder the assembly's operation.
10. Approval from the City of Yuma's fire marshal is required before any backflow assembly is connected to any fire system. R.P.A. shall be painted red when used with a fire system.
11. All backflow units are to be tested by a certified professional prior to final approval. Backflow units shall be professionally tested on an annual basis.
12. The installation of a backflow assembly may create a closed system. Consult with the City of Yuma Building Official for pressure relief valves, thermal expansion, or other needed requirements.

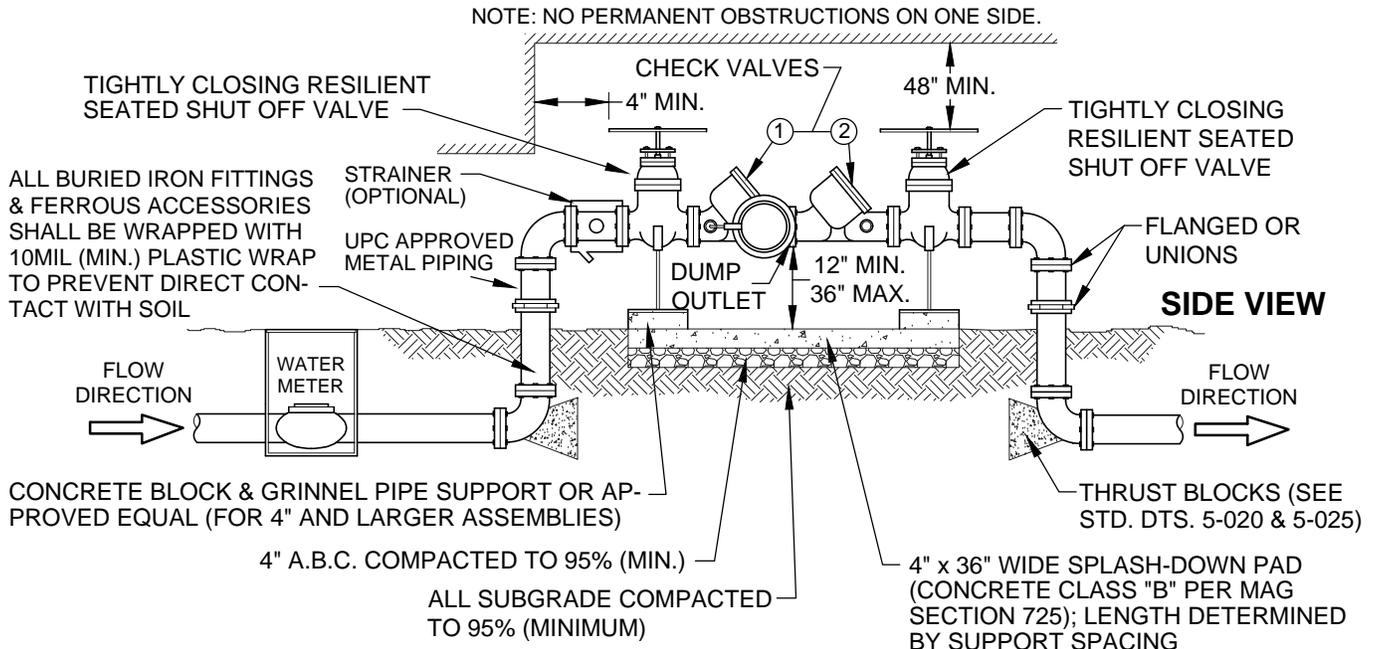
12-27-18 (Under Review)

CITY OF YUMA
 CONSTRUCTION STANDARD DETAIL DRAWINGS
 STANDARD NO. 5-130
 REDUCED PRESSURE ASSEMBLY (R.P.A.)
 FOR
 3" AND SMALLER WATER LINE

For additional information contact the
 City of Yuma Pretreatment Section
 at (928)373-4544.



TOP VIEW



SIDE VIEW

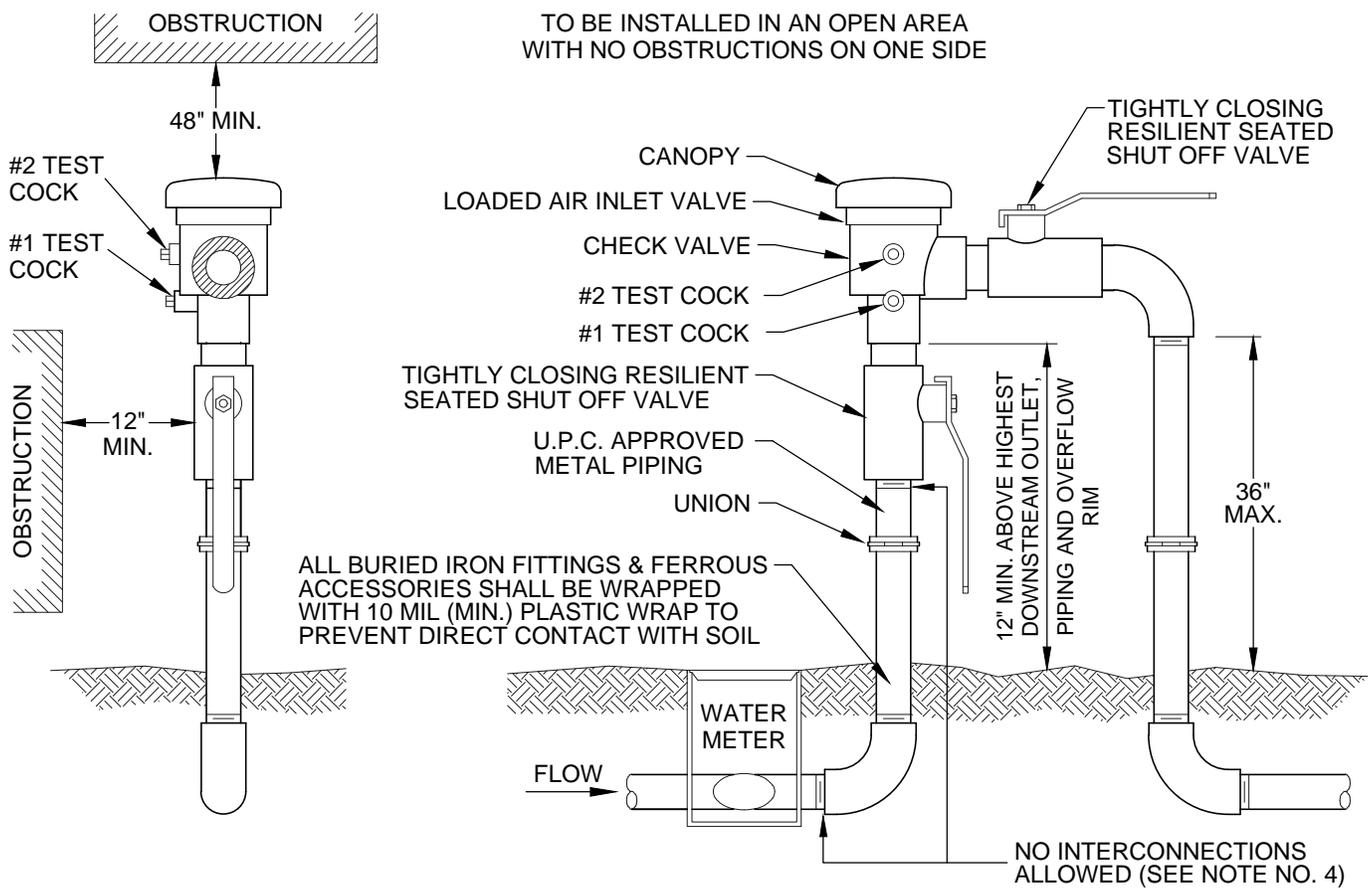
NOTES

1. A permit is required before installing or replacing a backflow assembly. Permits are obtained at the Department of Community Development, 1 City Plaza (SW corner of Madison Ave. and 3rd St.).
2. For a list of approved backflow assemblies, refer to the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research.
3. The R.P.A. shall be installed outside, above ground, as close to the water meter as possible. The R.P.A. shall be located on private property unless otherwise authorized.
4. There shall be no other piping connected to the piping between the water meter and the backflow assembly except for parallel assembly installations.
5. Installations shall meet all current uniform plumbing codes in addition to the City of Yuma building codes.
6. Installations shall be left exposed until inspected and approved by the City of Yuma.
7. If this unit is installed to serve a retention basin, this unit shall be placed a minimum of 12" (36" maximum) above the flood rim of the retention basin.
8. Protective cages are optional and will meet clearance, access and drainage requirements. Tamperproof switches may be required on fire backflow assemblies.
9. It is recommended that backflow assemblies be protected from the elements. Care shall be taken to ensure that the protection does not hinder the assembly's operation.
10. Approval from the City of Yuma Fire Marshal is required before any backflow assembly is connected to any fire system. Forward flush valves are required for fire line back-flow preventers.
11. All backflow units are to be tested by a certified professional prior to final approval. Backflow units shall be tested on an annual basis.
12. The installation of a backflow assembly may create a closed system. Consult with the City of Yuma Building Official for pressure relief valves, thermal expansion or other needed requirements.

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS
STANDARD NO. 5-135
REDUCED PRESSURE ASSEMBLY
(R.P.A.) FOR
4" AND LARGER WATER LINE

For additional information contact the City of Yuma Pretreatment Section at (928)373-4544.



NOTES

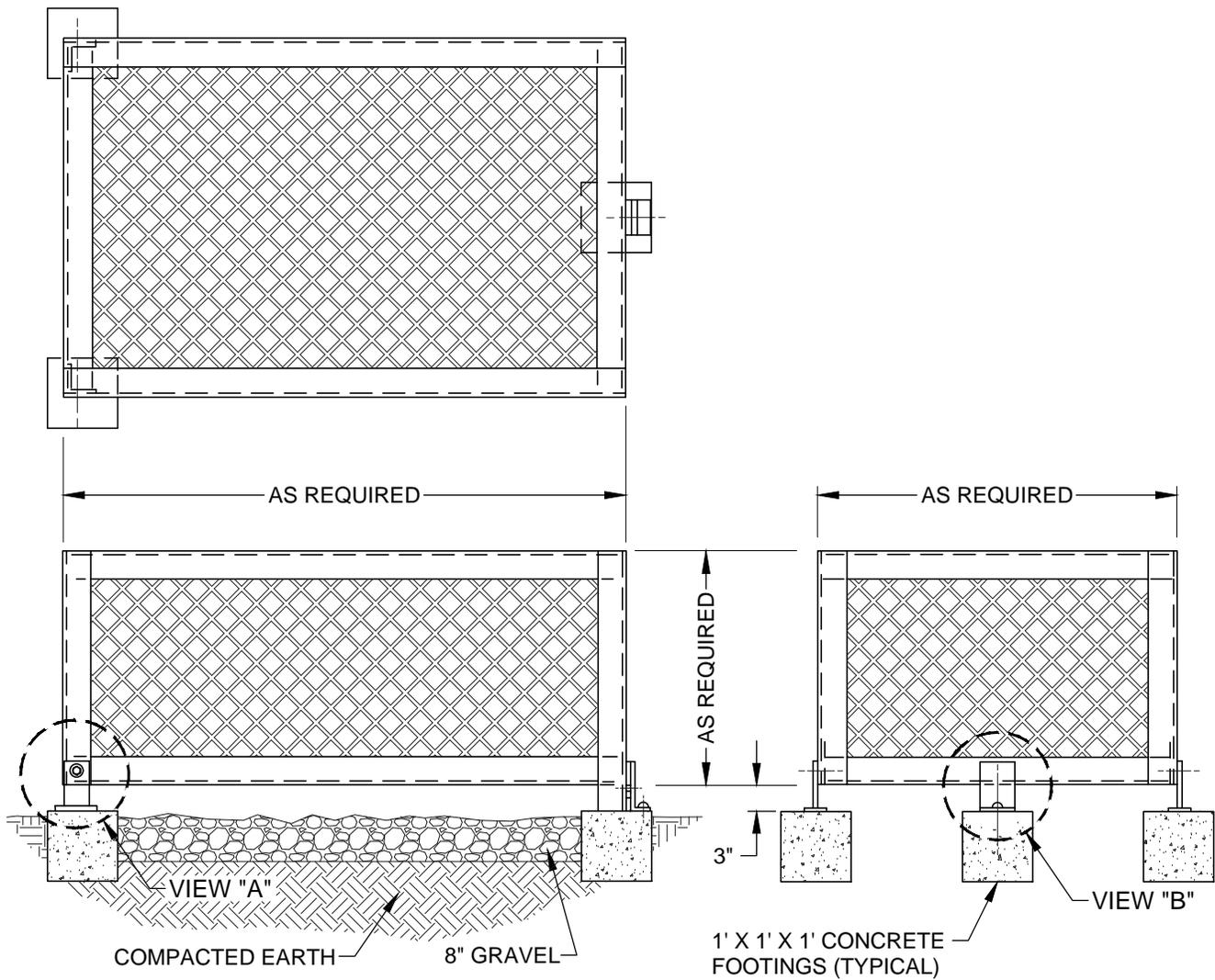
1. A permit is required before installing or replacing a backflow assembly. Permits are obtained at the Department of Community Development, 1 City Plaza (SW corner of Madison Ave. and 3rd St.).
2. For a list of approved backflow assemblies, refer to the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research.
3. The P.V.B. shall be installed outside, above ground, as close to the water meter as possible. The P.V.B. shall be located on private property unless otherwise authorized.
4. There shall be no other piping connected to the piping between the water meter and the backflow assembly except for parallel assembly installations.
5. Installations shall meet all current uniform plumbing codes in addition to the City of Yuma building codes.
6. Installations shall be left exposed until inspected and approved by the City of Yuma.
7. If this unit is installed to serve a retention basin, this unit shall be placed a minimum of 12" (36" maximum) above the flood rim of the retention basin.
8. Protective cages are optional and will meet clearance, access and drainage requirements.
9. It is recommended that backflow assemblies be protected from the elements. Care shall be taken to ensure that the protection does not hinder the assembly's operation.
10. All backflow units are to be tested by a certified professional prior to final approval. Backflow units shall be tested on an annual basis.
11. The installation of a pressure vacuum breaker assembly can cause a closed system. Consult with the City of Yuma Building Official for pressure relief valves, thermal expansion or other needed requirements.
12. P.V.B.'s may be maintained under constant pressure and have shutoff valves downstream but there shall be no means of imposing back pressure on the P.V.B. from any other source.
13. P.V.B.'s shall only be approved for irrigation system service protection unless otherwise authorized.

12-27-18 (Under Review)

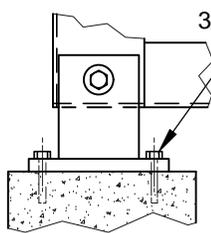
**CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS**

**STANDARD NO. 5-140
PRESSURE VACUUM BREAKER
ASSEMBLY (ALL SIZES)**

For additional information contact the
City of Yuma Pretreatment Section
at (928)373-4544.



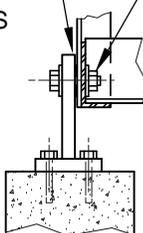
PLACE A NYLON WASHER BETWEEN THE CAGE FRAME AND HINGE



**VIEW "A"
METAL HINGE**

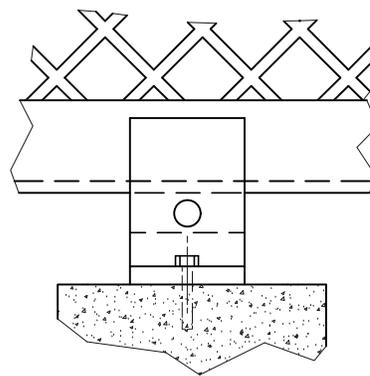
3/8" ANCHOR BOLTS (SST - TYPICAL)

STAINLESS STEEL BOLT, FLAT WASHERS AND NUT



**VIEW "B"
HOLD DOWN BRACKET**

1/2" DIA. HOLE FOR PADLOCK

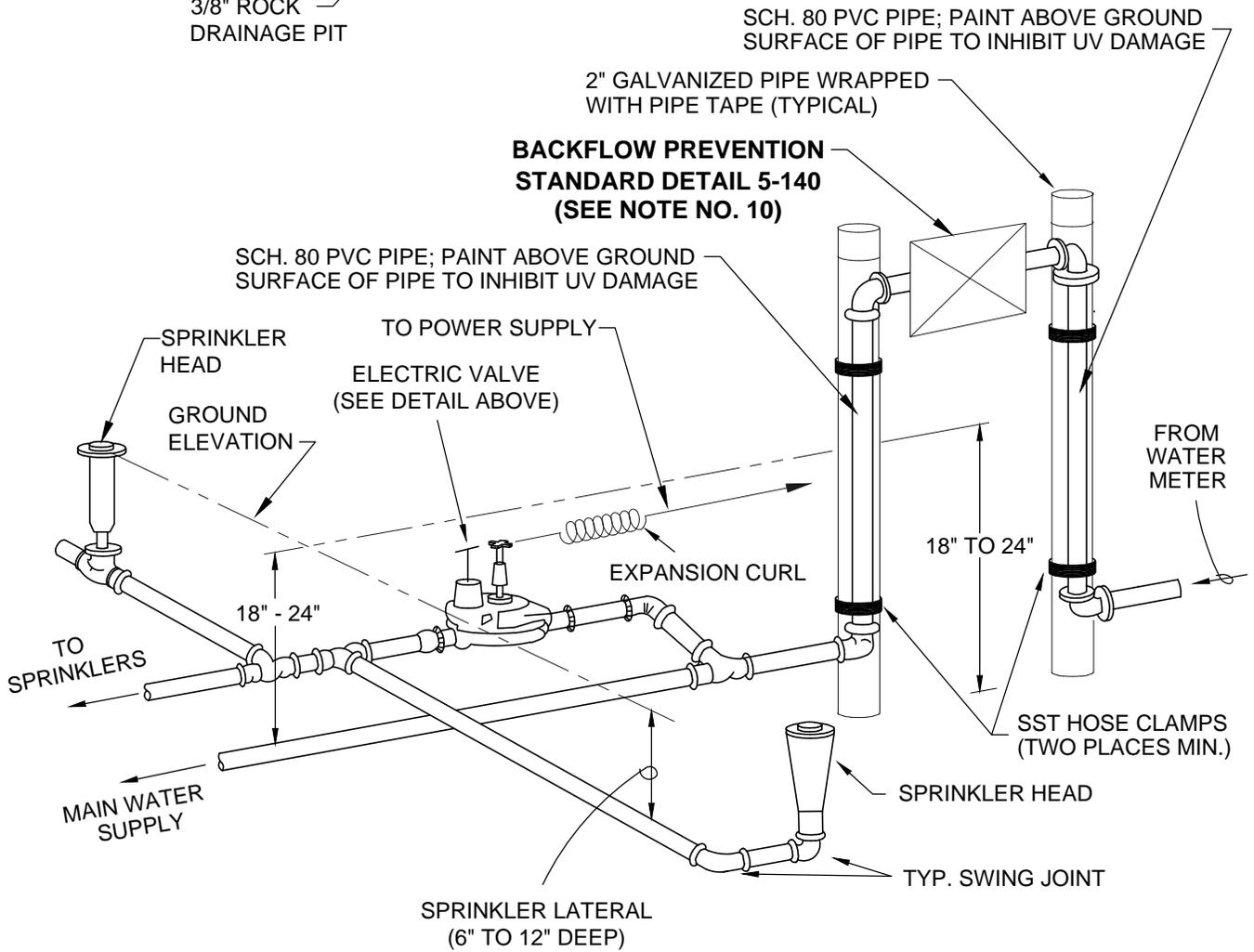
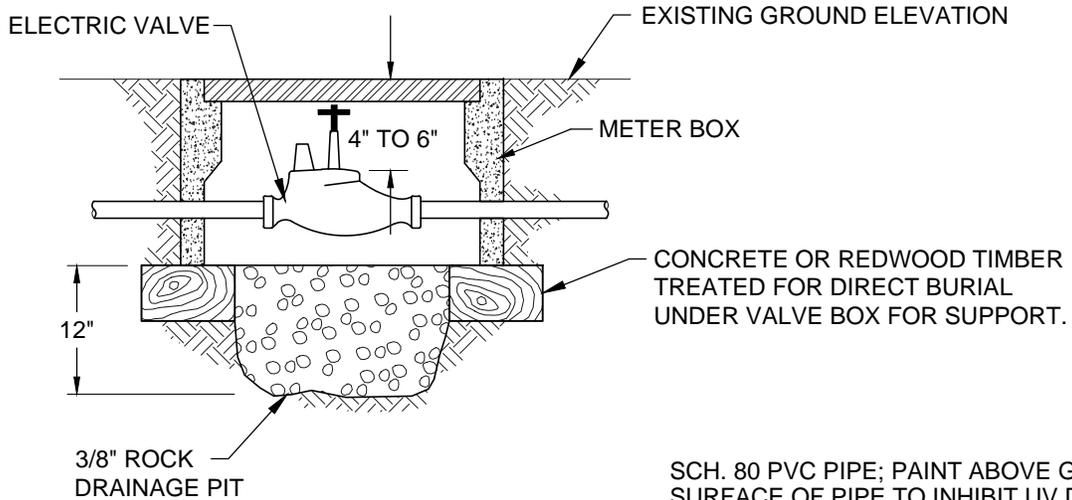


NOTES

1. Construct frame from 1 1/2" x 1 1/2" x 1/4" angle iron (welded assembly).
2. Construct hinges / hold down bracket from 1/4" steel.
3. 1/4" x 1/4" steel mesh tack welded to angle iron frame.
4. De-burr and round all welds and sharp edges.
5. Overall dimensions (height/length & width) to be determined by application.
6. Assembly shall receive one coat of metal primer and two finish coats of *INDUSTRON* "SAHARA SAND" rust resistant paint (or approved equal).
7. Concrete footings shall be constructed of Class "B" concrete per MAG Section 725.

12-27-18 (Under Review)

CITY OF YUMA
 CONSTRUCTION STANDARD DETAIL DRAWINGS
 STANDARD NO. 5-145
 CAGE FOR
 BACKFLOW PREVENTER



NOTES ARE FOUND ON SHEETS 2 AND 3 OF THIS DETAIL.

12-27-18 (Under Review)

Sheet 1 of 3

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 5-150
IRRIGATION SPRINKLER SYSTEM

NOTES

1. All main and lateral lines shall be snaked from side to side of trenches to allow for expansion and contraction.
2. All parts shall be "HUNTER" or approved equal.
3. Swing joints shall be installed for any sprinkler with 3/4" & larger inlet size, using street ells ("MARLEX" or approved equal).
4. Pipe type:
 - a. Mains and laterals (minimum): **SCHEDULE 40 PVC.**
 - b. Risers for sprinklers and electrical control valves shall be of schedule 80 PVC pipe and, if exposed to direct sunlight, shall be painted to inhibit U.V. damage.
 - c. No polyethylene tubing allowed.
5. Trenches:

Should be continuous and smooth, free of rocks and rubbish. Areas with ledge rock, hardpan or rocky soil shall be padded with sand or fine grained soil. The trenches for the mains shall be 18" - 24" below existing grade. The trenches for the sprinkler laterals shall be 12" below the surface.
6. Backflow preventers:
 - a. Shall be constructed of brass and stainless steel, brass body and accessory construction with replaceable seats, stainless steel trim and removable brass seats.
 - b. Check valve and relief valve assemblies shall be constructed with tight seating rubber discs.
 - c. Shall include two brass and stainless steel gate or ball valves for isolating unit and testing system.
 - d. Shall be installed 12" higher than the highest sprinkler head and / or basin highwater level. The backflow preventers shall be supported above ground with galvanized pipe (wrapped with pipe tape) and SST hose clamps.
 - e. Units smaller than 2 1/2" diameter shall include unions for ease of repair and / or replacement. Units 2 1/2" and larger shall be flanged.
 - f. All backflow preventers are to be housed in a protective cage (see Standard detail no. 5-145).
7. Manual shut-off valves:

Shall be constructed of brass and stainless steel, heavy-duty, and contain angle or ball type valves. If it will be installed above ground, it shall be supported by galvanized pipe (wrapped with pipe tape) and SST hose clamps. If installed at ground level or below, it shall be supported by schedule 80 PVC pipe. All valves shall be enclosed within heavy duty plastic valve boxes with lids.
8. Solvents and primers:

Only solvents and primers recommended by the pipe and fitting manufacturer shall be used. All excess solvent shall be removed from pipe and fittings.
9. Plastic fittings:

Threaded fittings shall be treated with a non-hardening pipe dope on all plastic to metal threaded joints. Slip fittings shall be used when installing risers to the sprinklers, allowing easier installation of new risers and sprinklers.
10. Electric remote control valves:
 - a. Shall be constructed of durable plastic, body and bonnet, corrosion resistant internal components.
 - b. Manual open and close control flow, adjustable control, 24 volt solenoid coil.
 - c. Shall be "HARDIE" or approved equal.

ADDITIONAL NOTES ARE LOCATED
ON PAGE 3 OF THIS DETAIL.

12-27-18 (Under Review)

Sheet 2 of 3

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 5-150
IRRIGATION SPRINKLER SYSTEM

NOTES (continued)

10. Electrical remote control valves (continued):
 - d. Electrical wiring to solenoid shall be installed with expansion curls.
 - e. All electrical valves shall be enclosed in heavy duty valve boxes with lids. Lids shall be level with the ground, 3/8" rock shall be placed under all electric valves at a depth of 8" - 12".
 - f. Electrical wiring for valves shall be 14 gauge, low voltage, rated for direct burial, and weather resistant. All connections shall be made with wire connectors and protected with sealant approved by manufacturer. Wire conduit may be required for special applications, i.e., rodents.
 - g. Where electrical power is not readily available, solar powered controllers ("TROPE-16" or approved equal) are to be used. Solar powered controllers shall have a minimum height of three (3) feet and are to be housed in a metal case.
11. Irrigation controllers:
 - a. Shall be electro-mechanical or micro-electronics solid state.
 - b. Shall be capable of fully automatic or manual operation of the system.
 - c. Shall be housed in a wall or pedestal mountable heavy duty metal or plastic weather proof cabinet.
 - d. Controllers shall operate on 120 volts A.C. power input and be capable of operating 24-volt A.C. electric remote control valves. The controllers shall have a reset circuit breaker to protect from power overload.
 - e. The controllers shall have features for setting irrigation running times, days and hours, a 14 day calendar and shall have the capability of being programmed to operate for 1-60 minutes in one minute increments.
12. Sprinklers:

Pop-ups are to be spaced from 5 to 24 feet apart for 15 to 30 PSI working pressure. Pop-up height shall be 4" and be constructed of plastic and stainless steel materials with a heavy duty stainless steel retract spring. Nozzles shall be interchangeable for different patterns, have a 12-15 foot radius, have adjustable water flow under nozzle filters, and full - flow inlet opening.
13. Full or part- circle impact rotor sprinklers:
 - a. Precipitation rate: 18.79 inches per hour
 - b. Spacing: 28 to 54 feet apart.
 - c. Operating pressure: 25 to 60 psi
 - d. Interchangeable standard trajectory, heavy-duty plastic case, 3" pop-up height, adjustable arm spring, straight through flow, full or adjustable arc (20 to 340 degrees), and distance control diffuser pin.
14. Adjustable radius gear driven sprinkler:

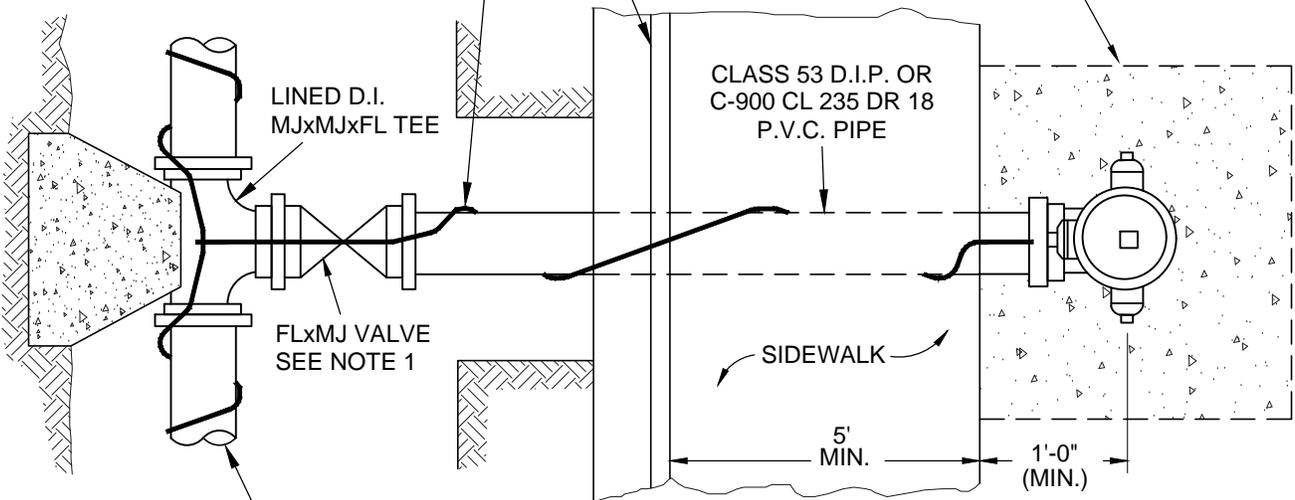
interchangeable nozzles, adjustable precipitation rate, 4" pop-up height, constructed of heavy-duty plastic and stainless steel materials.
15. Miscellaneous information:
 - a. Location of electric control valves:

Where possible valves shall be located in series along the main waterline or off a manifold next to the water meter. All electric valves shall be connected to the main waterline with schedule 80 risers. All electric valves shall be 4" to 6" below the surface.
 - b. All trenches shall be backfilled and leveled. All main and lateral lines shall be snaked from side to side of trenches to allow for expansion and contraction. All sprinkler heads shall be leveled to the terrain, adjusted properly, and pressure tested. All electrical wiring for the irrigation system shall be placed alongside the mainlines, free of cuts and/or folds.

12 GAUGE, HMWPE COATED, SOLID COPPER TRACER WIRE EXTENDED INTO THE VALVE FRAME (SEE NOTE 3)

CURB & GUTTER

4' x 4' x 8" THICK SQUARE (OR ROUND) CLASS B CONCRETE COLLAR TO BE CENTERED AROUND HYDRANT



CLASS 53 D.I.P. OR C-900 CL 235 DR 18 P.V.C. PIPE

PLAN

N.S.T. = NATIONAL STANDARD THREAD

HYDRANT PER APPROVED COMPONENTS LIST

CONNECT TRACER WIRE TO BREAK-AWAY FLANGE

TWO 2 1/2" N.S.T. CONNECTIONS

4 1/2" N.S.T. STEAMER CONNECTION

VALVE BOX INSTALLATION (SEE STD. DETAIL NO. 5-075)

6"

4" NATIVE SOIL

BREAKAWAY FLANGE 2" MIN. 3" MAX. ABOVE FINISHED GRADE (SEE NOTE 5)

LENGTH VARIES

UNDISTURBED SOIL

TRACER WIRE SEE NOTE 3

ALL FITTINGS SHALL BE MECHANICAL JOINT WEDGE ACTION RESTRAINING GLANDS

LENGTH VARIES

CONC. THRUST BLOCKS (SEE STANDARD DETAILS 5-020, 5-025, 5-065).

12"x12"x18" DEEP GRAVEL DRAIN PIT (1" MAXIMUM DIA. WASHED GRAVEL)

CONC. THRUST BLOCK (SEE STD. DETAILS 5-020 & 5-025).

UNDISTURBED SOIL

NOTES

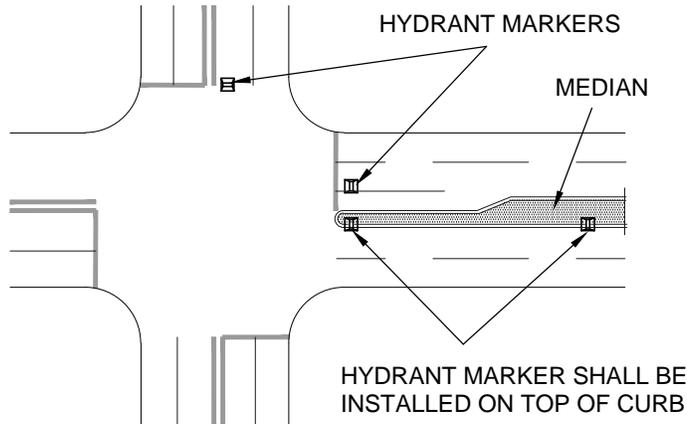
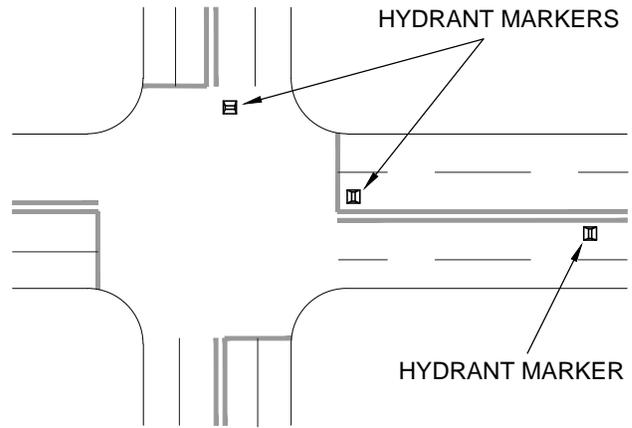
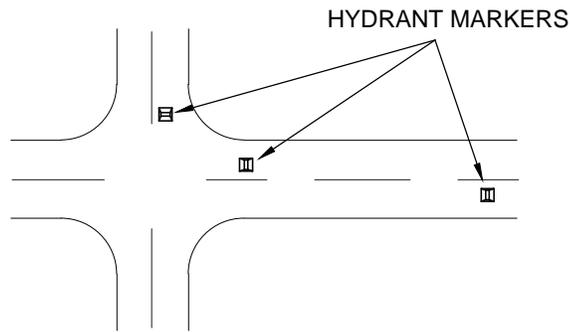
PROFILE

1. Approved valves can be found on the Approved Water Service Components List (contact COY Utilities Dept.).
2. All buried ductile iron pipe and fittings shall be wrapped with 10mil (minimum) polyethylene plastic wrap.
3. Tracer wire required on line from water main to hydrant.
4. No break-away flange bolts may make contact with soil.
5. Utilize a MJ Gradelok or offset to adjust breakaway flange height.
6. Concrete shall be per MAG Section 725.
7. Minimum supply for hydrant shall be 6" line.

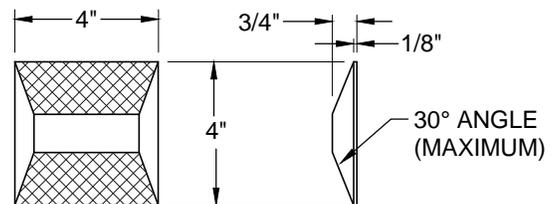
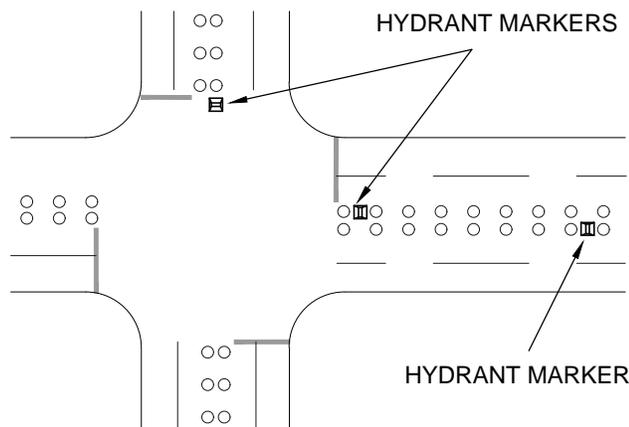
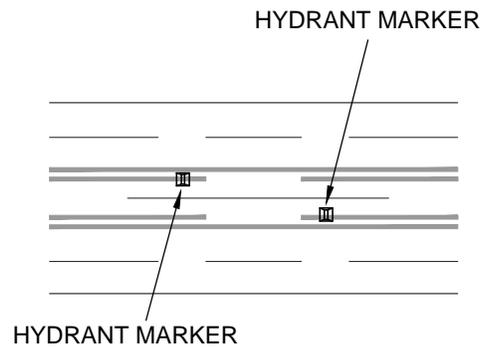
12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 5-155
FIRE HYDRANTS



HYDRANT MARKER SHALL BE INSTALLED ON TOP OF CURB



HYDRANT MARKER

NOTES

1. Ceramic highway markers shall be placed in roadway relative to the fire hydrant location. Markers will be blue in color with "two-way" reflective surfaces. Markers shall be placed so that the reflective surfaces are visible from both directions of travel. Markers shall be 4" from painted street centerlines or double line stripes of the roadway. Offset shall correspond with the hydrant's location. When a hydrant is located at an intersection markers shall be placed on both roadways.
2. When raised pavement markers are used to designate travel lanes, fire hydrant markers shall be placed in line with the other street markers.
3. See approved components list for marker sources.

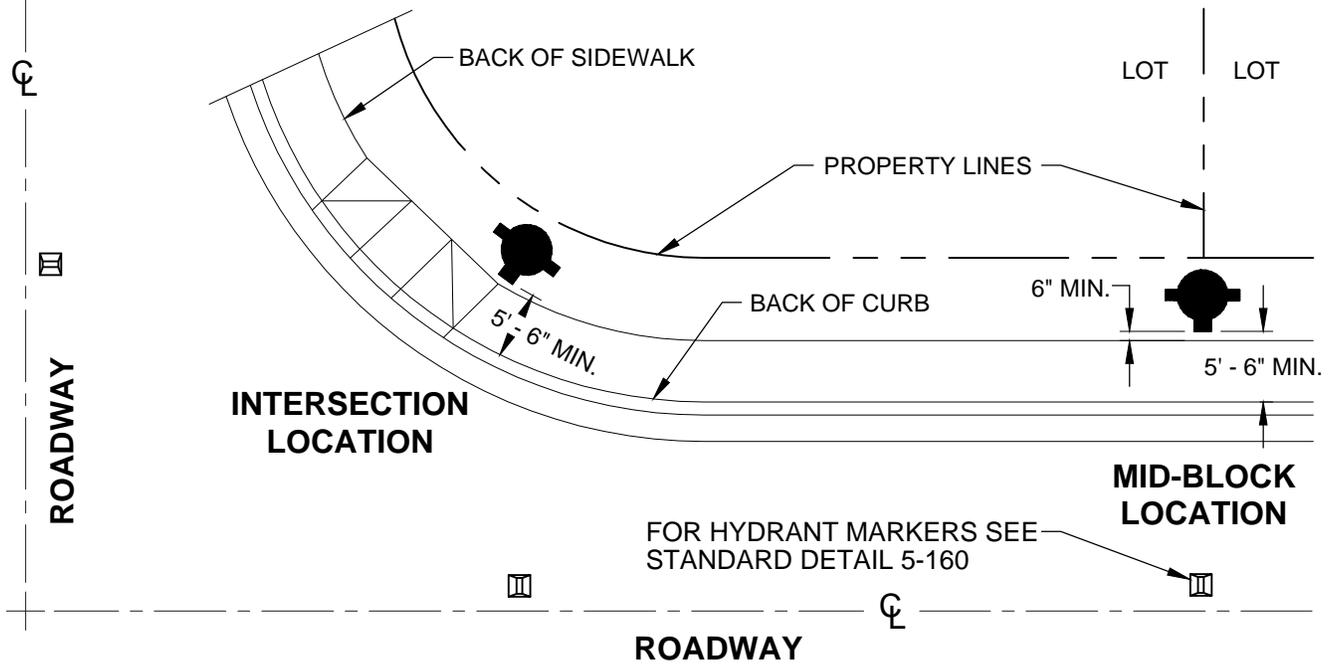
12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 5-160
FIRE HYDRANT
STREET MARKERS

(a) LOCATE HYDRANT PUMPING NOZZLE 5' - 6" BEHIND BACK OF CURB OR: WHERE CURB, GUTTER OR SIDEWALK ARE PRESENT:

(b) LOCATE HYDRANT PUMPER NOZZLE 6" BEHIND BACK OF SIDEWALK



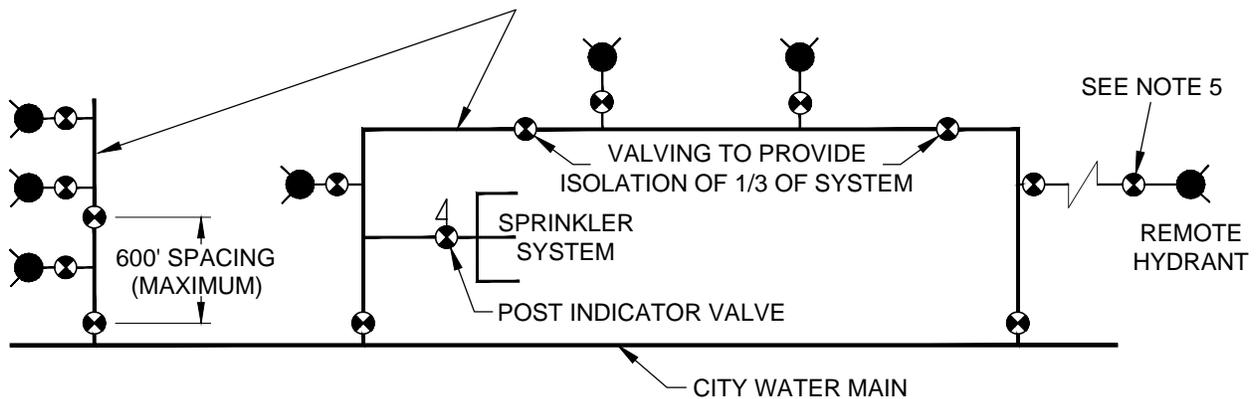
NOTES

1. Area around fire hydrant shall be level and firm. There shall be a minimum five feet (5') wide clear access from the hydrant directly to the roadway. This clear area shall also extend uninterrupted vertically.
2. Utility poles, street signs, fences, etc. must not be placed between curb and hydrant. Obstructions will not be permitted within a three foot (3') radius of the hydrant.
3. In all installations the pumper connections shall point toward the street or access.
4. Install stake markers if the hydrant is not protected by vertical curb. Stake markers shall be from the approved components list, 48" tall (or approved equal). Total number and location of stake markers will be determined by the City Engineer. Stake markers shall not be placed in line with the hydrant connections.

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|---|
| 12-27-18 (Under Review) |
| CITY OF YUMA CONSTRUCTION STANDARD DETAIL DRAWINGS |
| STANDARD NO. 5-165 FIRE HYDRANT AND STAKE MARKER LOCATIONS |

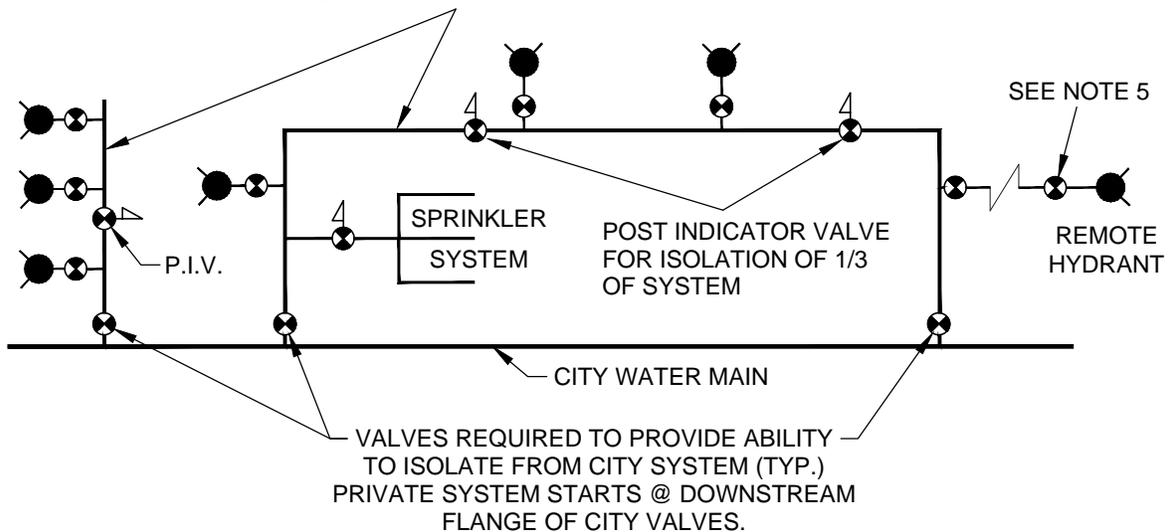
CASE 1: PUBLIC FIRE LINE

FIRE MAIN ACCEPTED WITHIN A DEDICATED PUBLIC EASEMENT.
 MINIMUM RATING FOR C900 PIPE IS CLASS 235 DR 18



CASE 2: PRIVATE FIRE LINE

FIRE MAIN WITHOUT A DEDICATED PUBLIC EASEMENT.
 MINIMUM RATING FOR C900 PIPE IS CLASS 235 DR 18



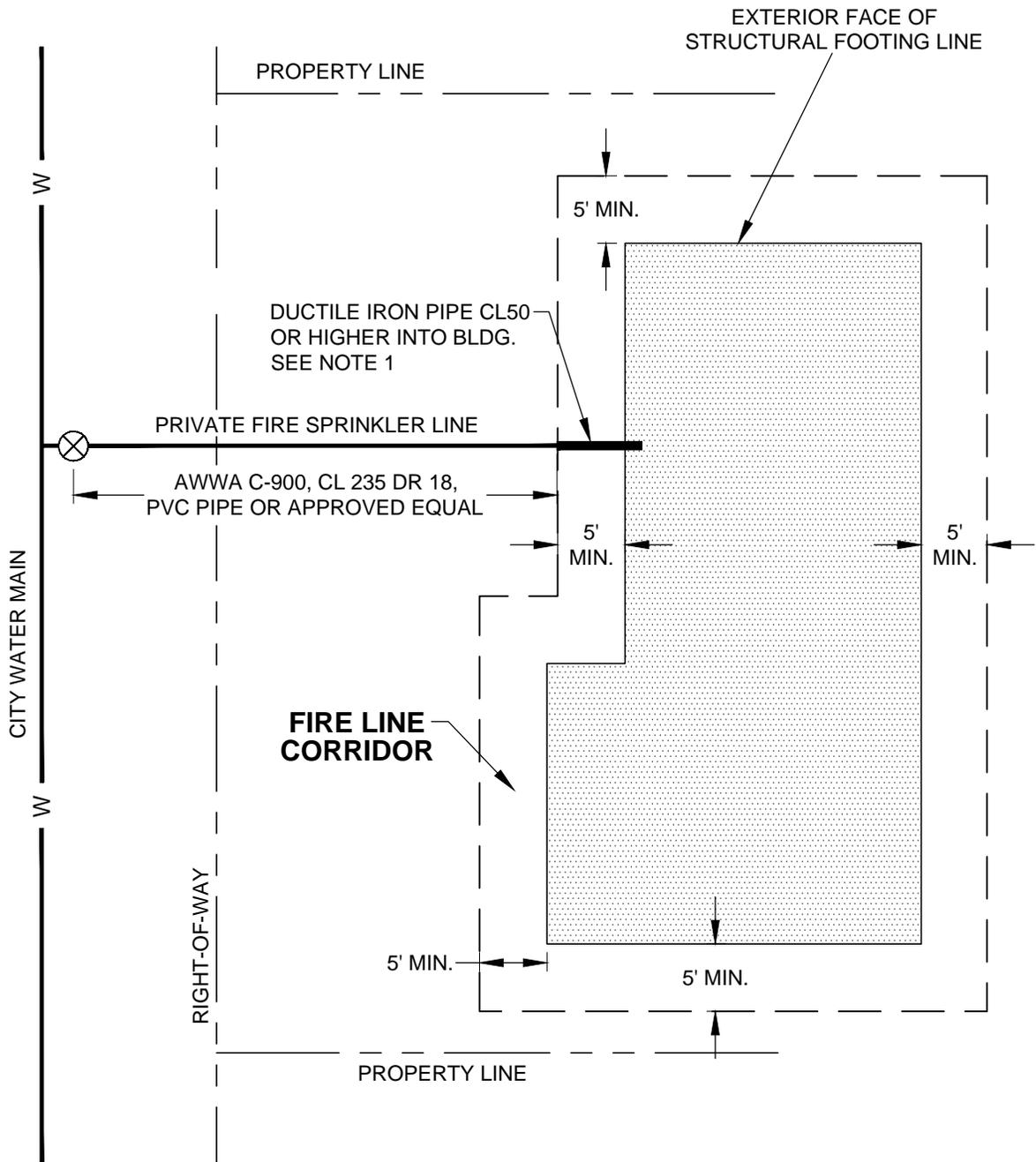
NOTES

1. In private fire line systems the more restrictive standard shall apply with respects to City of Yuma and N.F.P.A. requirements.
2. In private fire line a two hour, 200 psi hydrostatic test showing no pressure loss is required for acceptance of the piping.
3. Fire department connections shall be sited six inches (6") back of sidewalk.
4. All public / private fire lines and mains shall have tracer wire installed in accordance with Standard Detail 5-030.
5. For remote hydrants (lead length greater than 200') a second valve shall be installed within 20' of the hydrant.
6. Fire hydrant spacing shall be per most recently adopted fire code.

12-27-18 (Under Review)

CITY OF YUMA
 CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 5-170
 FIRE LINE VALVING



NOTE

1. Any fire line sprinkler line pipe installed inside the five foot (5') fire line corridor shall be a minimum CL50 ductile iron pipe.

12-27-18 (Under Review)

**CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS**

**STANDARD NO. 5-175
PRIVATE FIRE SPRINKLER
LINE INSTALLATION**

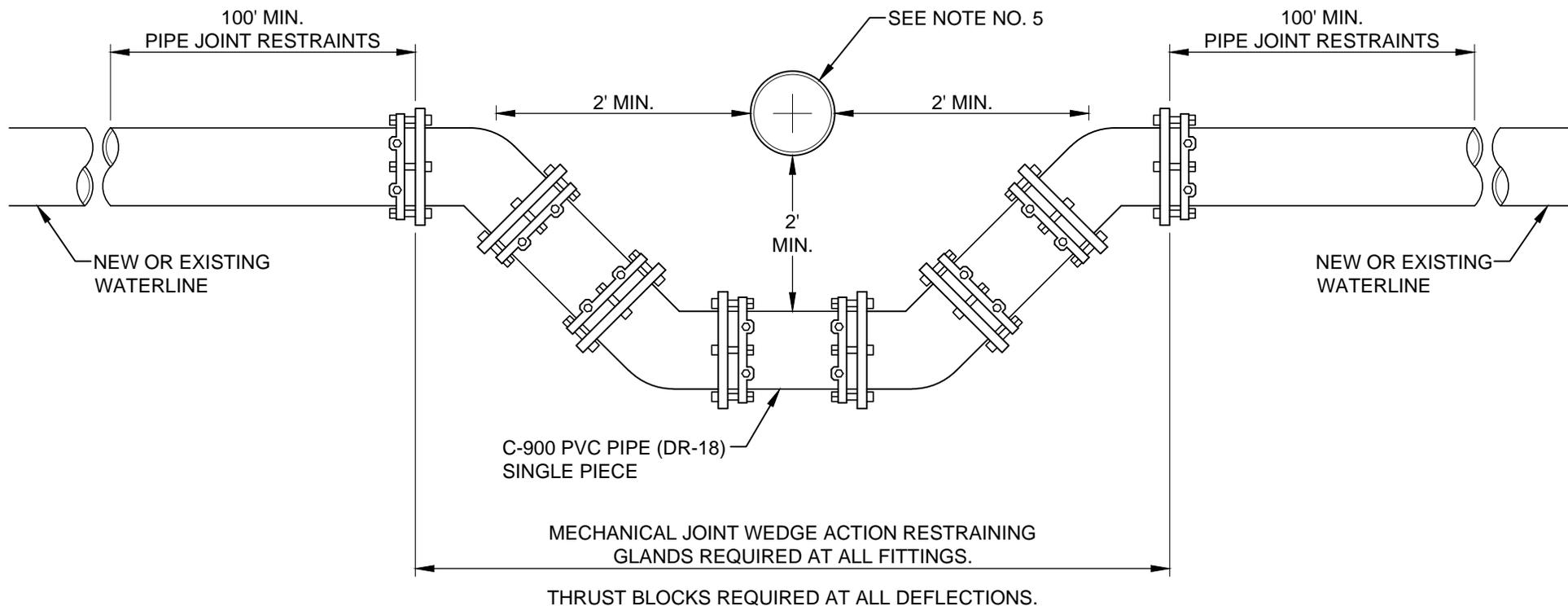
FIRE DEPARTMENT CONNECTIONS (F.D.C.)

1. Acceptable locations for the F.D.C.'s will be determined by Fire Department policy and recorded through the plan review process. Generally, this location will be remote from the building on the address (or front) side a minimum of 1 1/2 times the building height. Exceptions may apply due to site limitations.
2. A check valve shall be located just below the F.D.C. Siamese connection. The Siamese connection shall have two 2 1/2" swivels with national standard threads (NTS) and shall be provided with listed caps or plugs.
3. Whether the F.D.C. is remote or not:
 - A. The height of the Siamese connection shall be between thirty and forty-two inches to the center of the openings measured from the finished grade. Remote F.D.C.'s shall be oriented towards the street or access unless otherwise noted during plan review.
 - B. As required in N.F.P.A. 24 adopted by City ordinance, underground piping requires a minimum cover of thirty inches. Thirty-six inches of cover is required should the piping be located under a driveway. Forty-eight inches of cover is required should the piping be located under a railway unless railway criteria is more stringent. All measurements are from the top of the pipe to the finished grade.
 - C. Piping through or adjacent to any underground structural element requires a minimum two inches of clearance around the piping to prevent damage from seismic activity or settling of the foundation.
 - D. A two hour, 200 psi hydrostatic test showing no pressure loss is required for acceptance of the piping.
 - E. All supply piping, both sprinkler and F.D.C., shall be ductile iron when located within five feet of a building foundation or under the slab of a building (reference Standard No. 5-175). Ductile iron pipe shall be properly protected from corrosion.
 - F. The F.D.C. shall be located a minimum of 40' and a maximum of 150' from a fire hydrant.

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 5-180
FIRE DEPARTMENT
CONNECTIONS

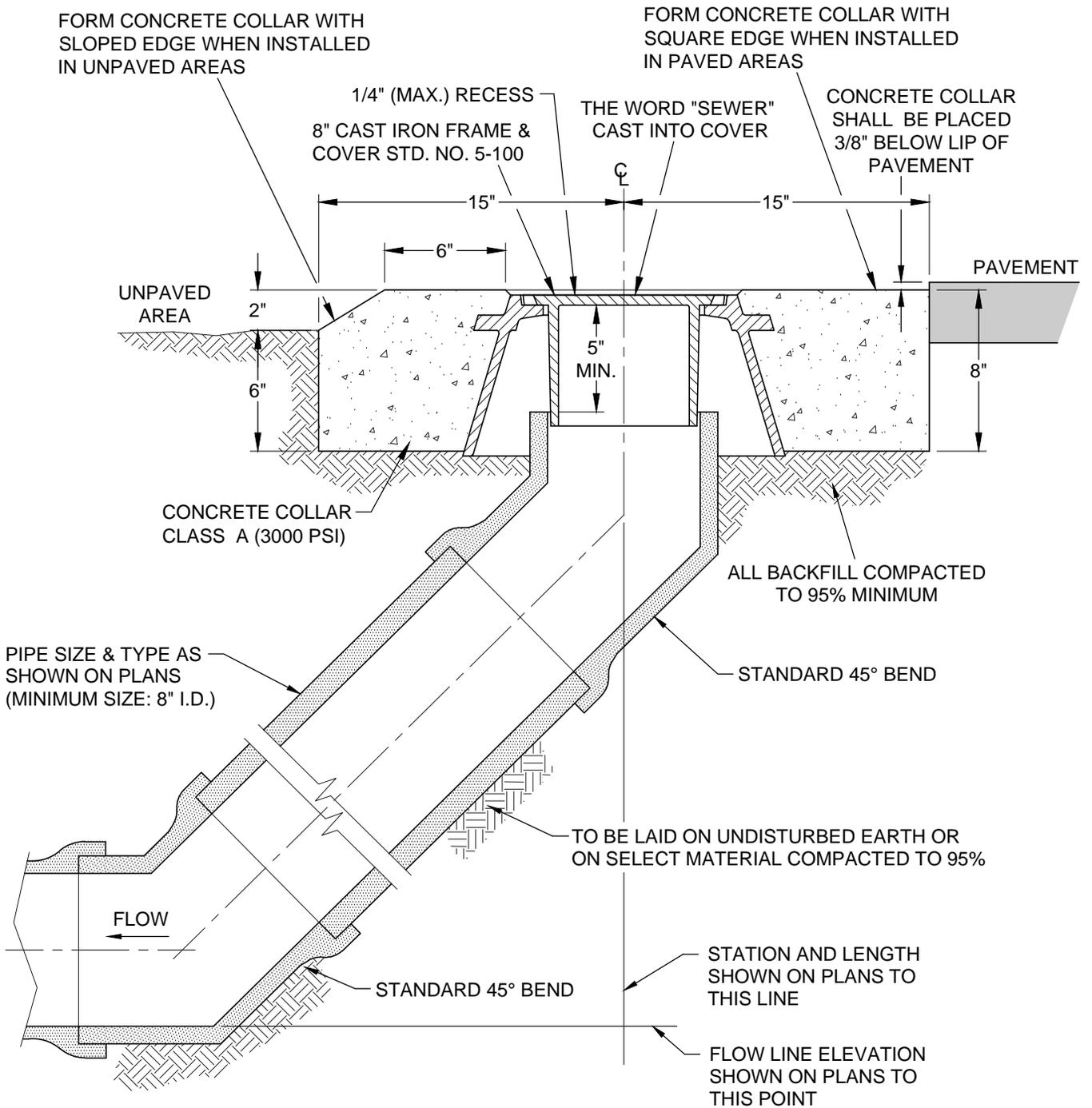


NOTES

1. All pipe joints within 100' of the deflection/lowering, must have pipe joint restraints installed.
2. Any mechanical joint fitting within 100' of either side of the deflection/lowering must have mechanical joint wedge action restraining glands installed.
3. Any push-on pipe joints within 100' of either side of the deflection/lowering must be restrained with a bell joint restraining harness.
4. All deflections must have thrust blocks poured per Standard Detail 5-025.
5. For sanitary sewer crossing, see Standard Detail 5-005.

12-27-18 (Under Review)

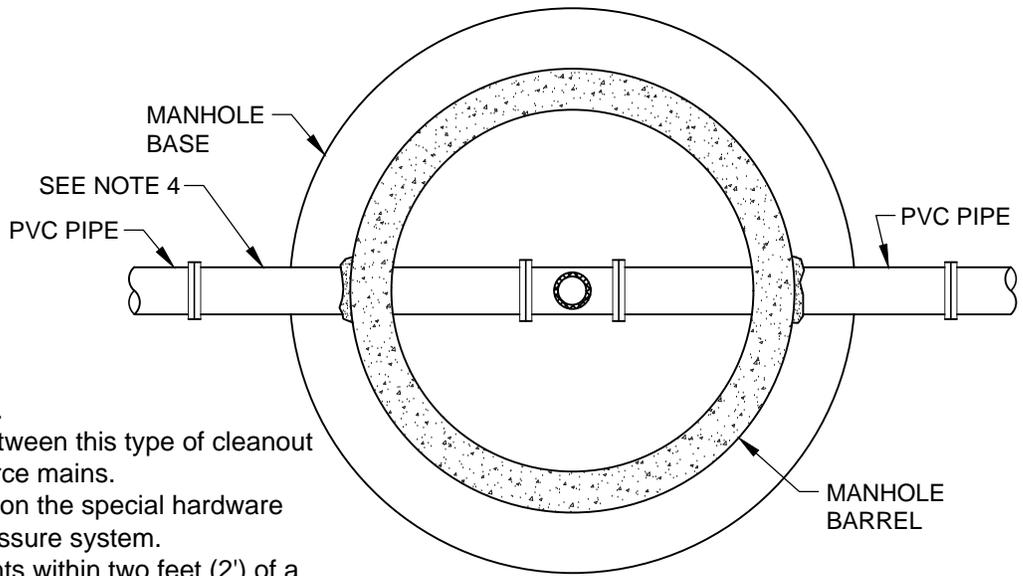
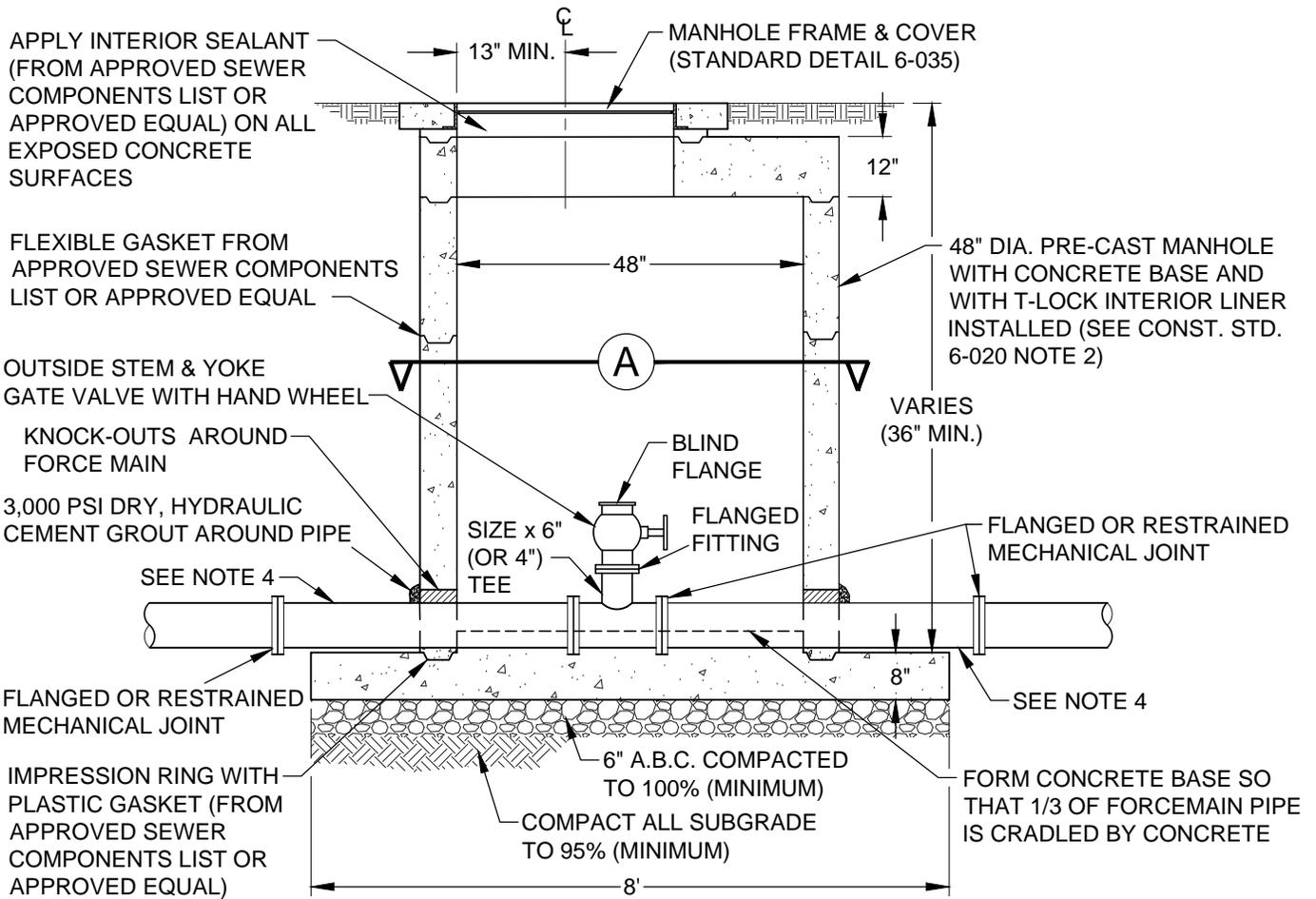
CITY OF YUMA
 CONSTRUCTION STANDARD DETAIL DRAWINGS
 STANDARD NO. 5-185
 DEFLECTING/LOWERING OF A
 WATERLINE FOR UTILITY CROSSING
 (EXCEPT SANITARY SEWER)



NOTE

1. Use of sanitary sewer cleanout in lieu of a manhole is only allowed with the approval of the Utilities Director or City Engineer.

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| 12-27-18 (Under Review) |
| CITY OF YUMA CONSTRUCTION STANDARD DETAIL DRAWINGS |
| STANDARD NO. 6-005 SANITARY SEWER CLEANOUT |



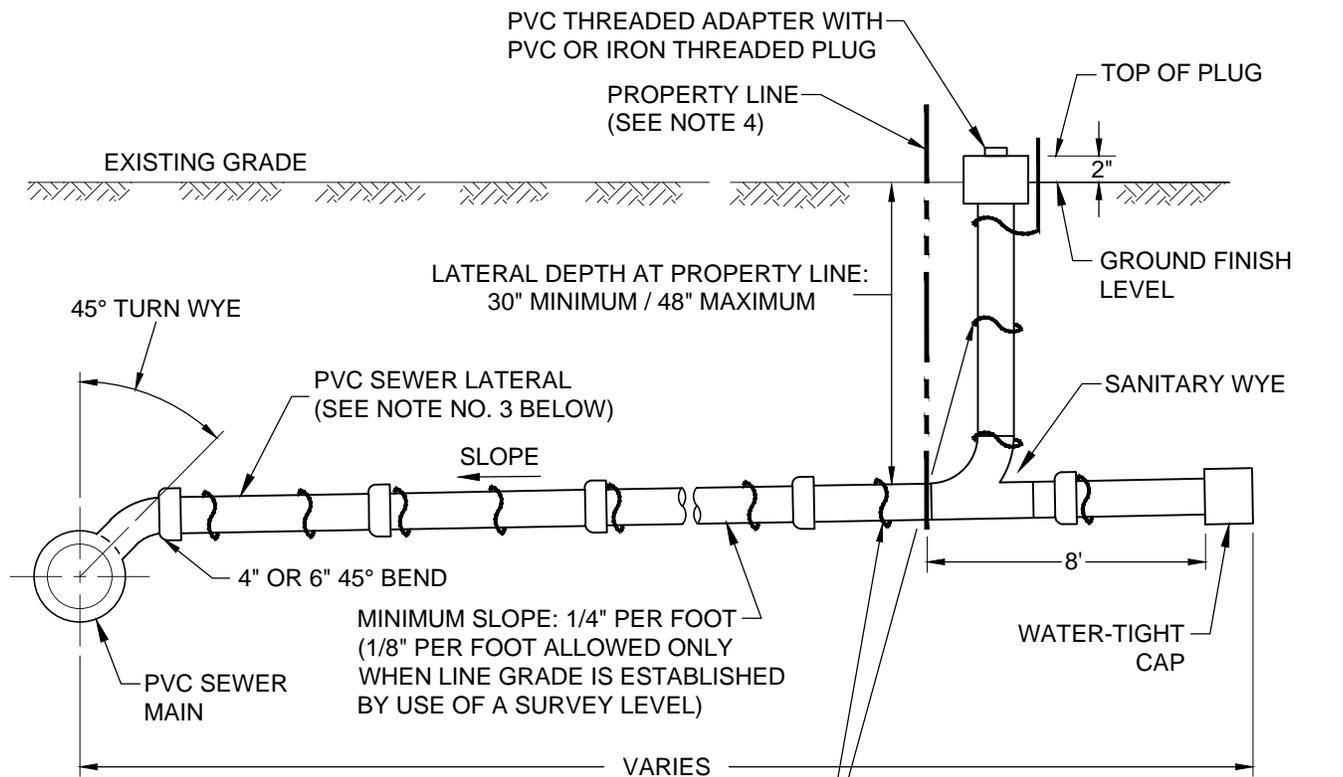
VIEW "A"

NOTES

1. No drains allowed in base.
2. The maximum spacing between this type of cleanout is 600' on 8" and larger force mains.
3. Emphasis shall be placed on the special hardware necessary for use in a pressure system.
4. There shall be no pipe joints within two feet (2') of a manhole's exterior wall face.
5. Backfill used to fill manhole excavation shall be a one sack cement per cubic yard of sand slurry mixture.
6. Apply asphalt waterproofing to the exterior surfaces of the manhole. Apply asphalt caulking to seal all joints.
7. Precast concrete manholes shall have a PVC T-Lock liner, sealed gas tight. Liner and interior surfaces shall be spark tested:(applies only to sanitary sewer manholes) see Arizona Administrative Code R18-9-E 301 D.3.e Manholes General Permit: Sewage Collection Systems pertaining to Holiday testing.

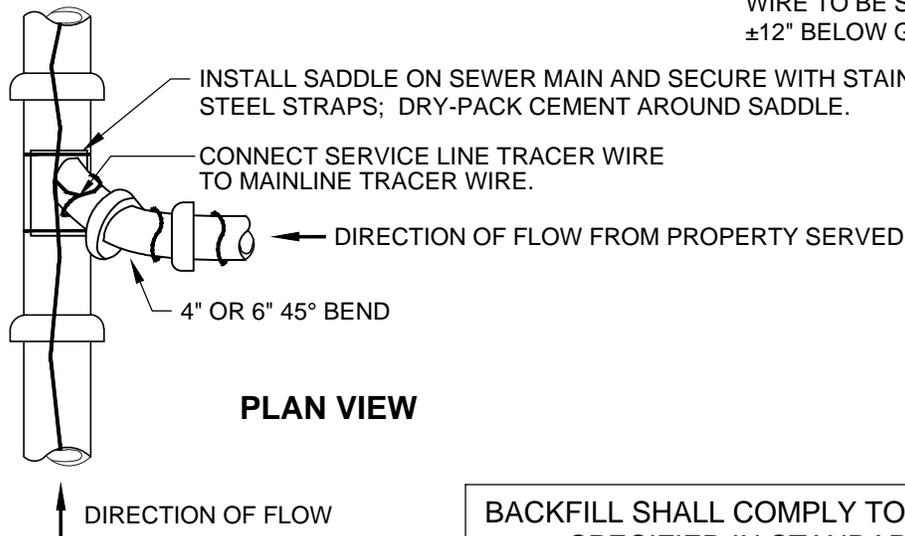
12-27-18 (Under Review)

CITY OF YUMA
 CONSTRUCTION STANDARD DETAIL DRAWINGS
 STANDARD NO. 6-010
 FORCEMAIN
 PRESSURE CLEANOUT



PROFILE VIEW

12 GAUGE HMWPE COATED SOLID COPPER TRACER WIRE FROM CITY MAIN TO A POINT ACCESSIBLE AT CLEANOUT. WIRE TO BE SECURED TO THE RISER AT ±12" BELOW GROUND LEVEL



PLAN VIEW

BACKFILL SHALL COMPLY TO THE REQUIREMENTS SPECIFIED IN STANDARD DETAIL 5-015.

NOTES

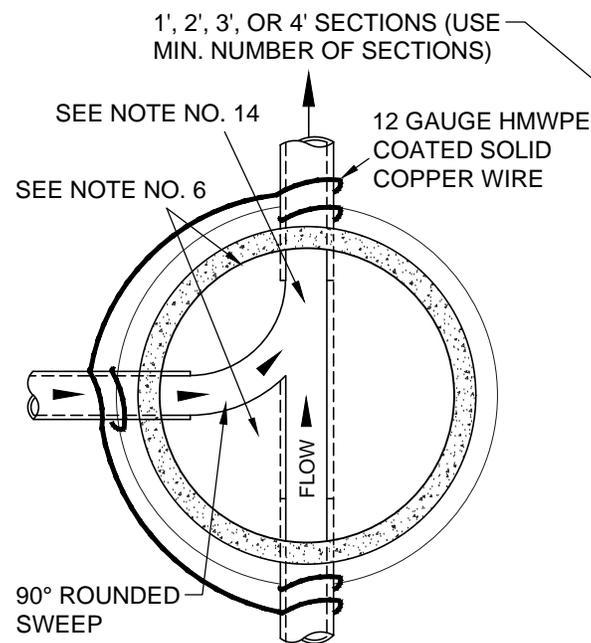
1. Where conditions exist that a larger lateral than 4" is required, the sanitary sewer main shall be checked to see if it has sufficient capacity to handle the additional flows from the new service connection before connection is permitted.
2. No commercial lateral shall be less than 6".
3. Certified "As Built" drawings shall be submitted to the City Engineer showing exact locations of all lateral connections from the nearest manhole or recorded property lines.
4. The termination point of a sewer lateral shall be eight feet (8') behind a property line and/or at the back of a public utility easement, whichever is furthest from the sewer main.

12-27-18 (Under Review)

CITY OF YUMA
 CONSTRUCTION STANDARD DETAIL DRAWINGS
 STANDARD NO. 6-015
 LATERAL CONNECTION
 TO WASTEWATER SYSTEM
 WITH SANITARY WYE

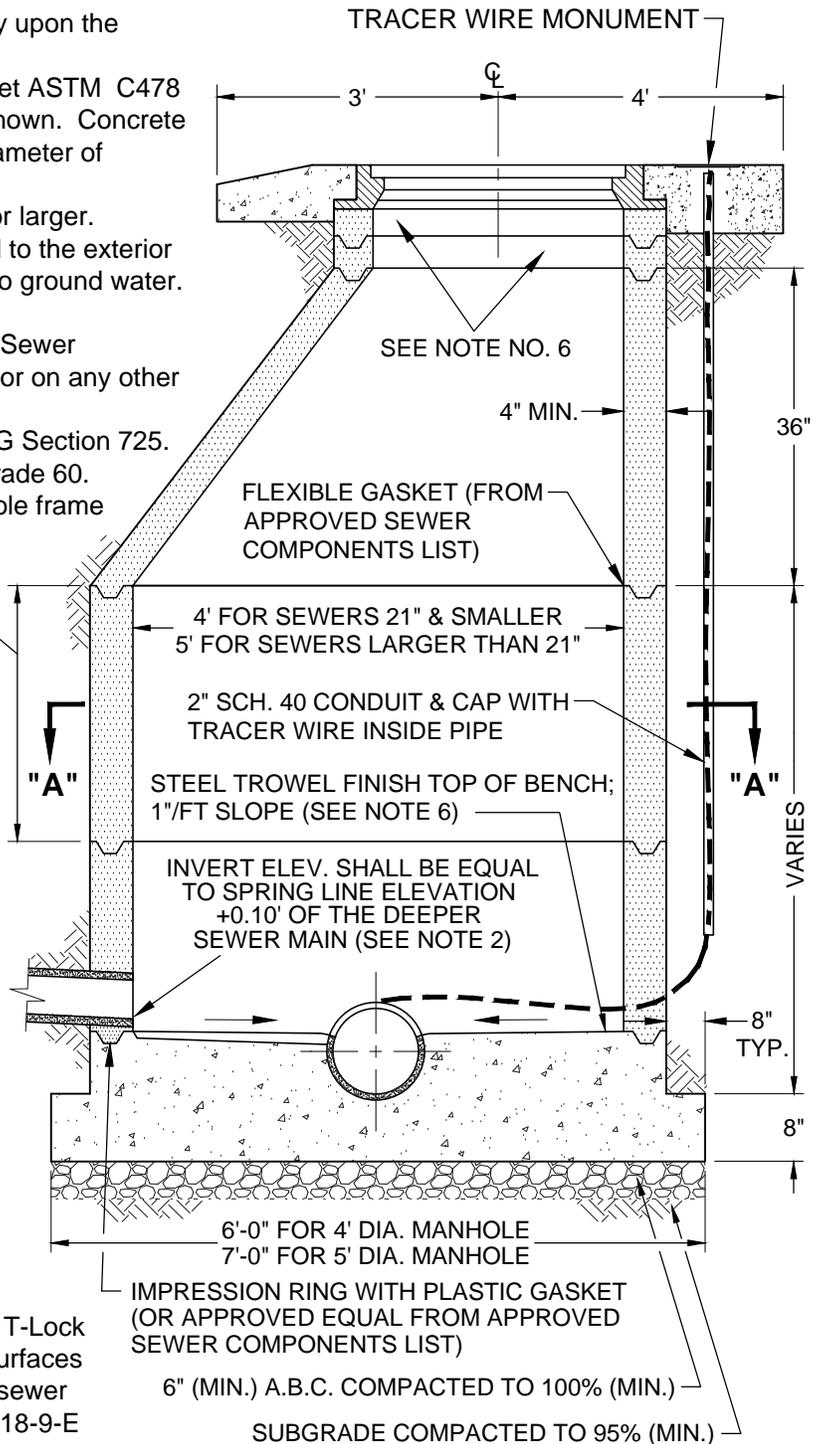
NOTES

1. Concentric manholes shall be constructed only upon the approval of the City Engineer.
2. Precast concrete cones and sections shall meet ASTM C478 specifications (latest revision) except where shown. Concrete shall be Type III with flyash additive. Inside diameter of manhole and elevations as shown on plans.
3. Use Polymer manhole for any sewer line 15" or larger.
4. An asphalt waterproofing seal shall be applied to the exterior surfaces of the manhole that will be exposed to ground water.
5. Provide a 20' wide vehicular access road.
6. Apply interior surface sealant (from Approved Sewer Components List) on adjustment rings, bench or on any other concrete surface.
7. Base constructed of Class A concrete per MAG Section 725.
8. Base reinforcing steel shall be ASTM A615, grade 60.
9. See standard Detail 6-040 for adjusting manhole frame and cover to final grade.



SECTION "A-A"

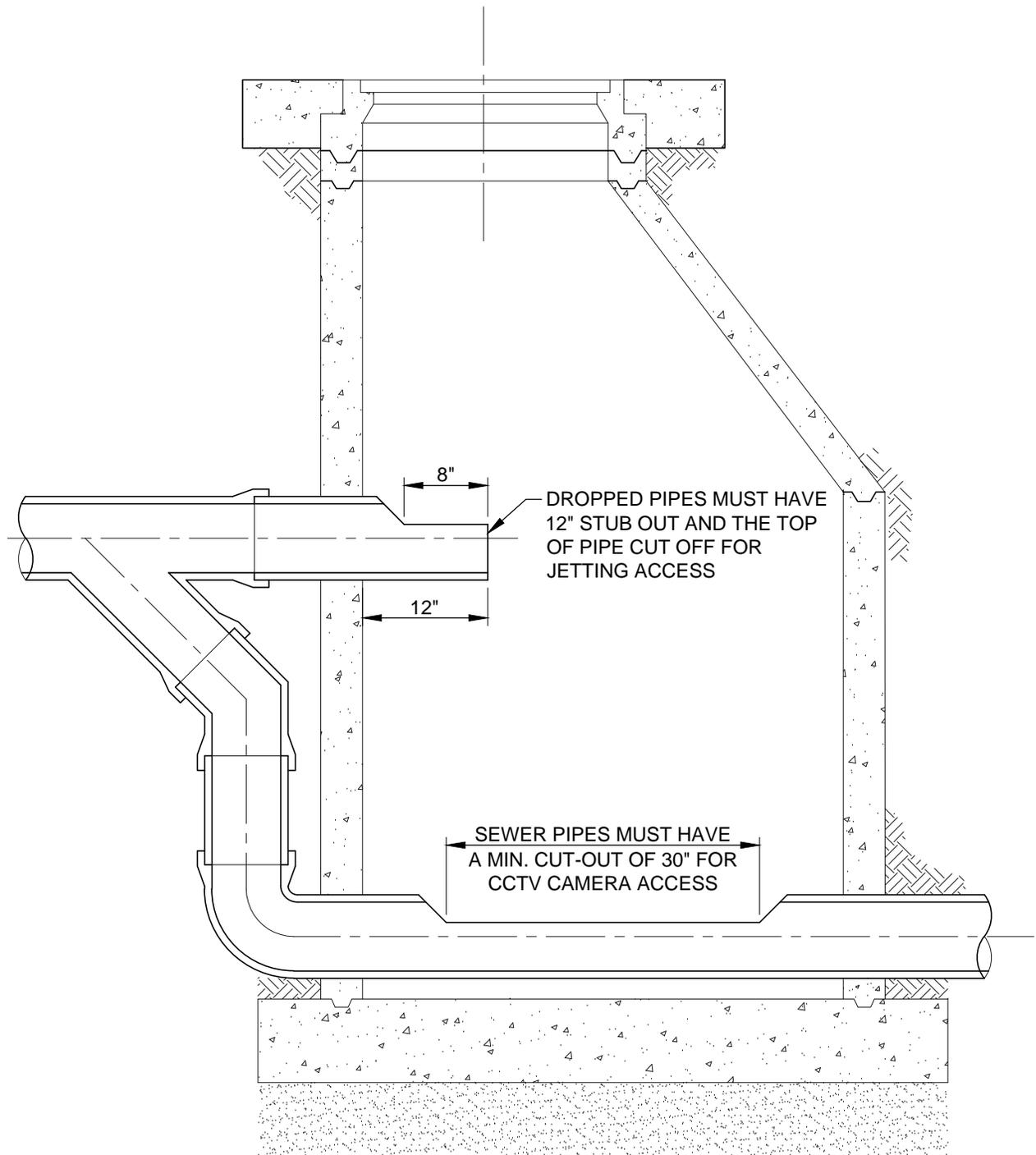
10. Precast concrete manholes shall have a PVC T-Lock liner and sealed gas tight. Liner and interior surfaces shall be spark tested (applies only to sanitary sewer manholes, see Arizona Administrative Code R18-9-E 301 D.3.e Manholes General Permit: Sewage Collection Systems pertaining to Holiday testing).
11. Backfill used to fill manhole excavation shall be a one sack cement per cubic yard of sand slurry mixture, unless otherwise approved.
12. Grout seal around pipe. Match and apply same protective coating on grout as used on the other exposed concrete surfaces (see Note 6).
13. Special details shall be required for: Manholes greater than 40' in depth; at deflection manholes; for multiple pipe penetrations with at least one pipe greater than 21"; or if sewer main is larger than 48" in diameter. Calculations shall be signed/sealed by a registered professional engineer (AZ license) and submitted to the City Engineer for review & acceptance.



14. For mainline pipe installation through manhole, see standard Detail 6-030.

12-27-18 (Under Review)

CITY OF YUMA
 CONSTRUCTION STANDARD DETAIL DRAWINGS
 STANDARD NO. 6-020
 13' DEEP OR LESS
 PRECAST CONCRETE MANHOLE



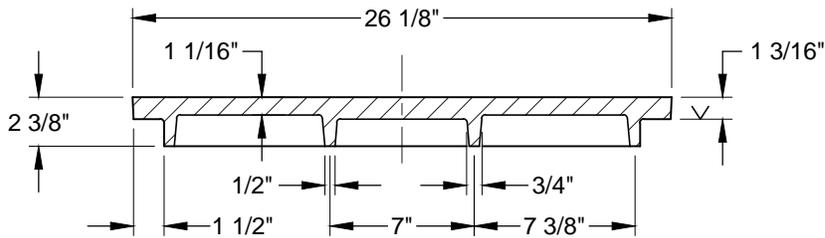
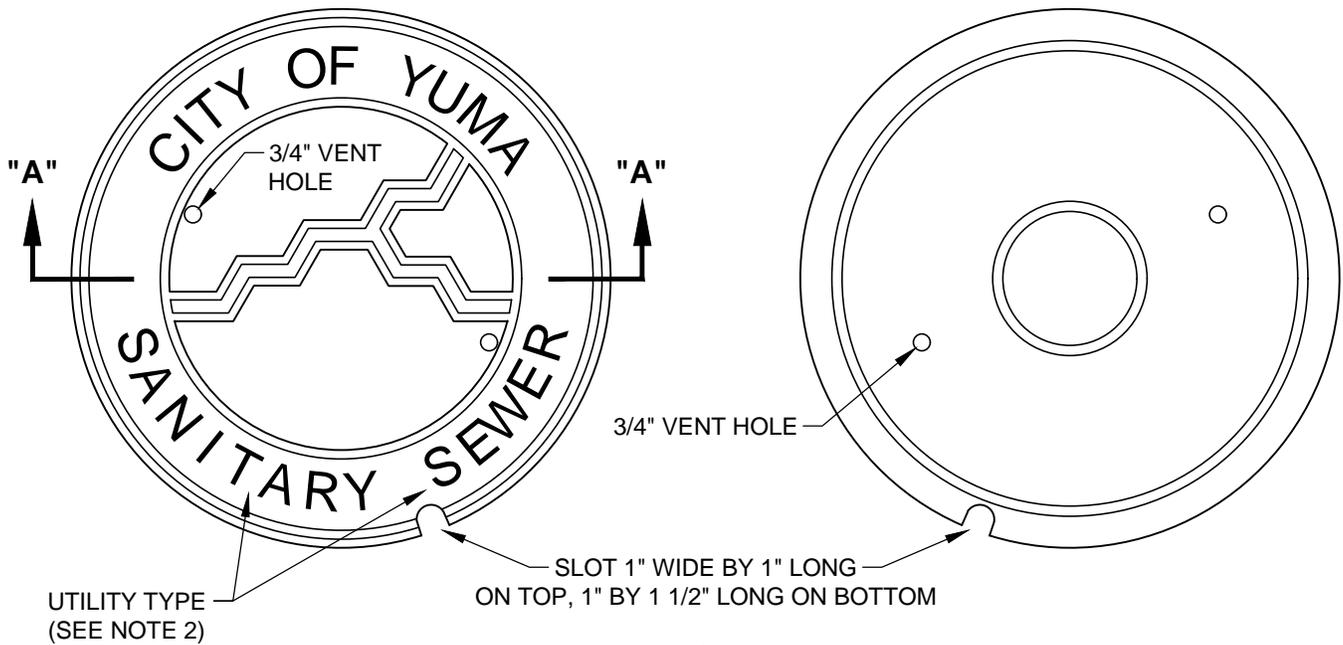
NOTE

(SEWER PIPE THROUGH THE MANHOLE)
 The pipe is the channel of the manhole. Concrete and grout not exposed to sewage, (see standard no. 6-020, 6-025, 6-055, and 6-060 for manhole construction).

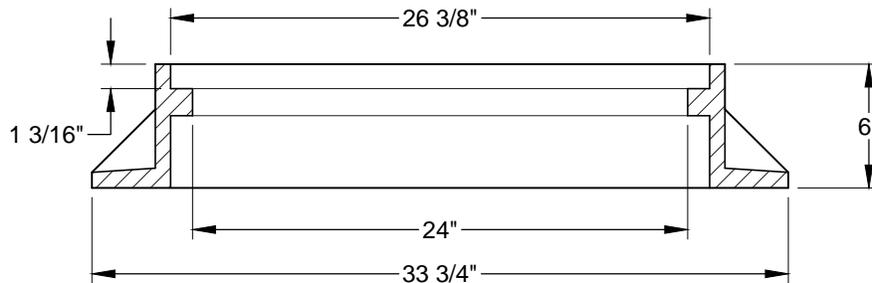
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|---|
| 12-27-18 (Under Review) |
| CITY OF YUMA CONSTRUCTION STANDARD DETAIL DRAWINGS |
| STANDARD NO. 6-030 CCTV CAMERA ACCESS |

TOP VIEW

BOTTOM VIEW



SECTION "A - A"

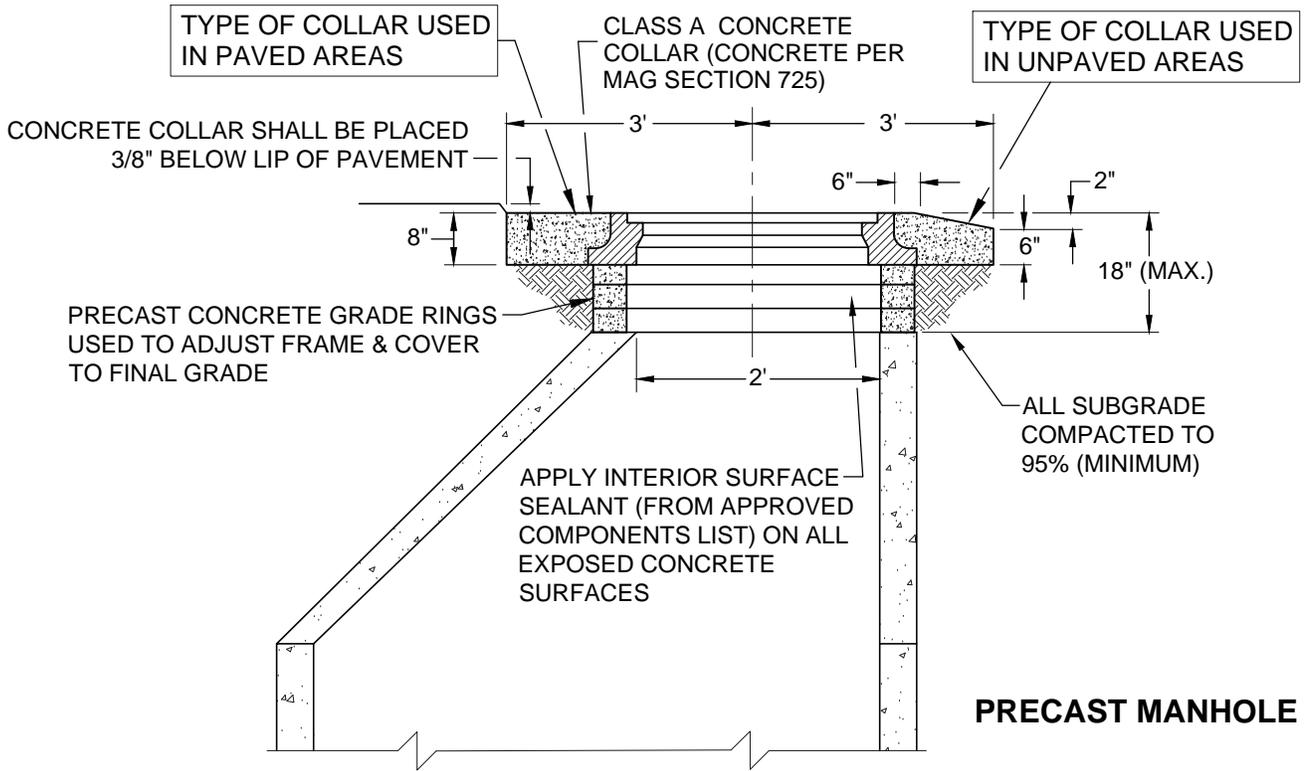


SECTION OF FRAME

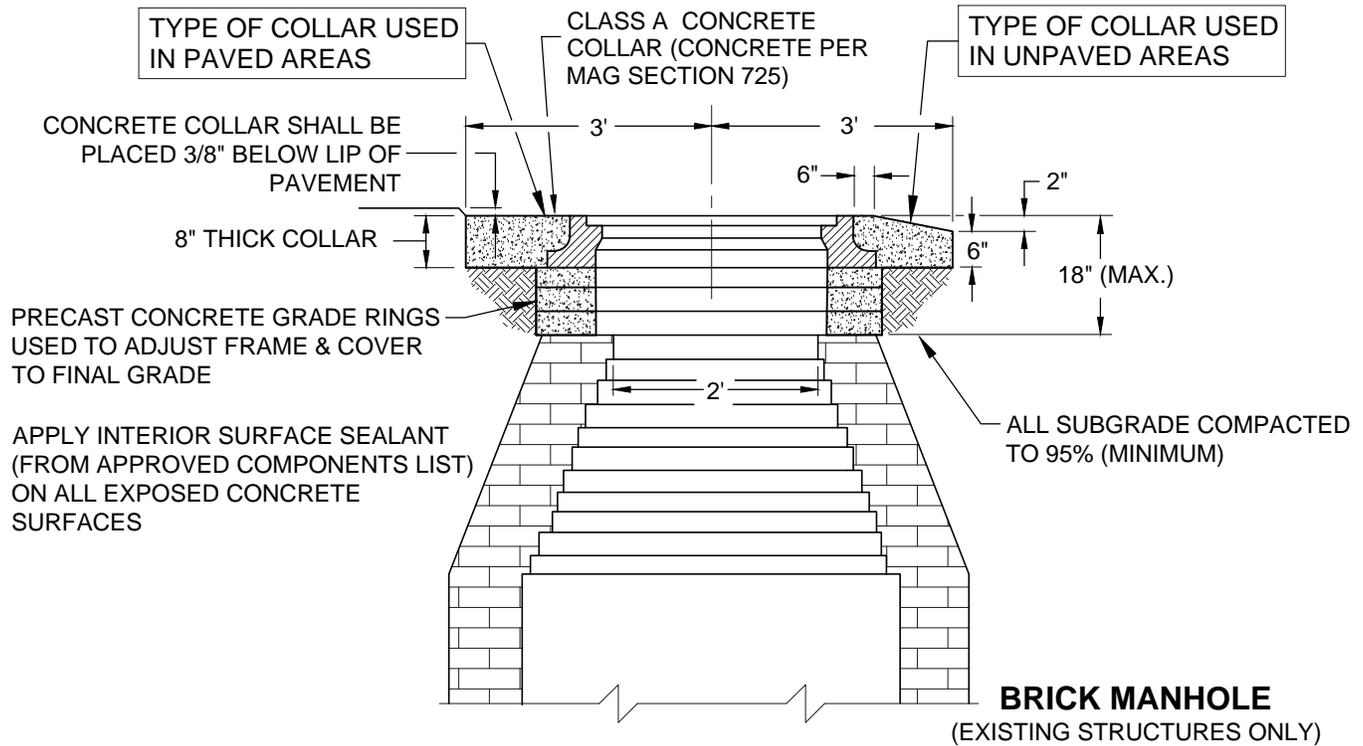
NOTES

1. The top of the cover and frame shall be flush and there shall be 1/8" horizontal clearance all around the frame and cover.
2. Lettering on manhole cover shall contain the City logo, the words "CITY OF YUMA" and the utility for which the manhole will be used (i.e. City of Yuma Sanitary Sewer).
3. Covers shall have a minimum of two 3/4" vent holes. Should a manhole be located within 500 feet of an interceptor sewer the vent holes are to be eliminated.
4. Standard manhole cover shall be per Approved Sewer Components List.

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| 12-27-18 (Under Review) |
| <p>CITY OF YUMA CONSTRUCTION STANDARD DETAIL DRAWINGS</p> <p>STANDARD NO. 6-035 STANDARD MANHOLE FRAME AND COVER</p> |



PRECAST MANHOLE



BRICK MANHOLE
(EXISTING STRUCTURES ONLY)

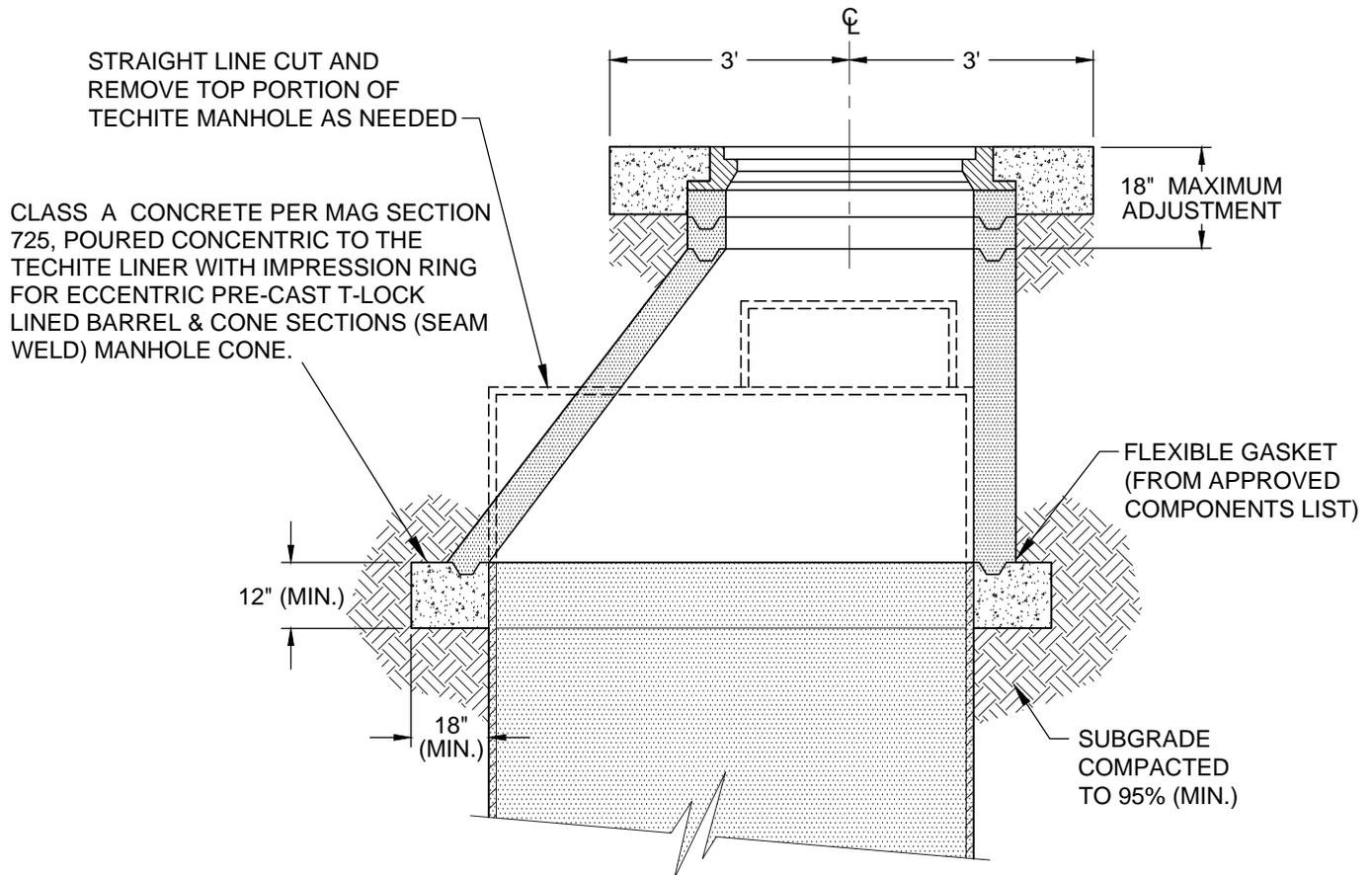
12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 6-040
ADJUSTING MANHOLE
TO FINAL GRADE

FOR MANHOLE FRAME & COVER
SEE STANDARD DETAIL NO. 6-035

SEE STANDARD DETAIL 6-040 FOR ADJUSTING
MANHOLE FRAME AND COVER TO FINAL GRADE



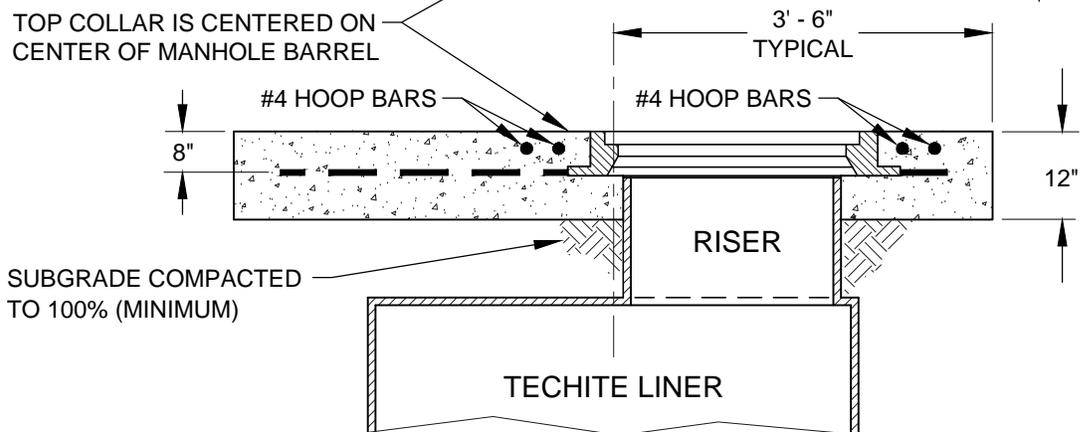
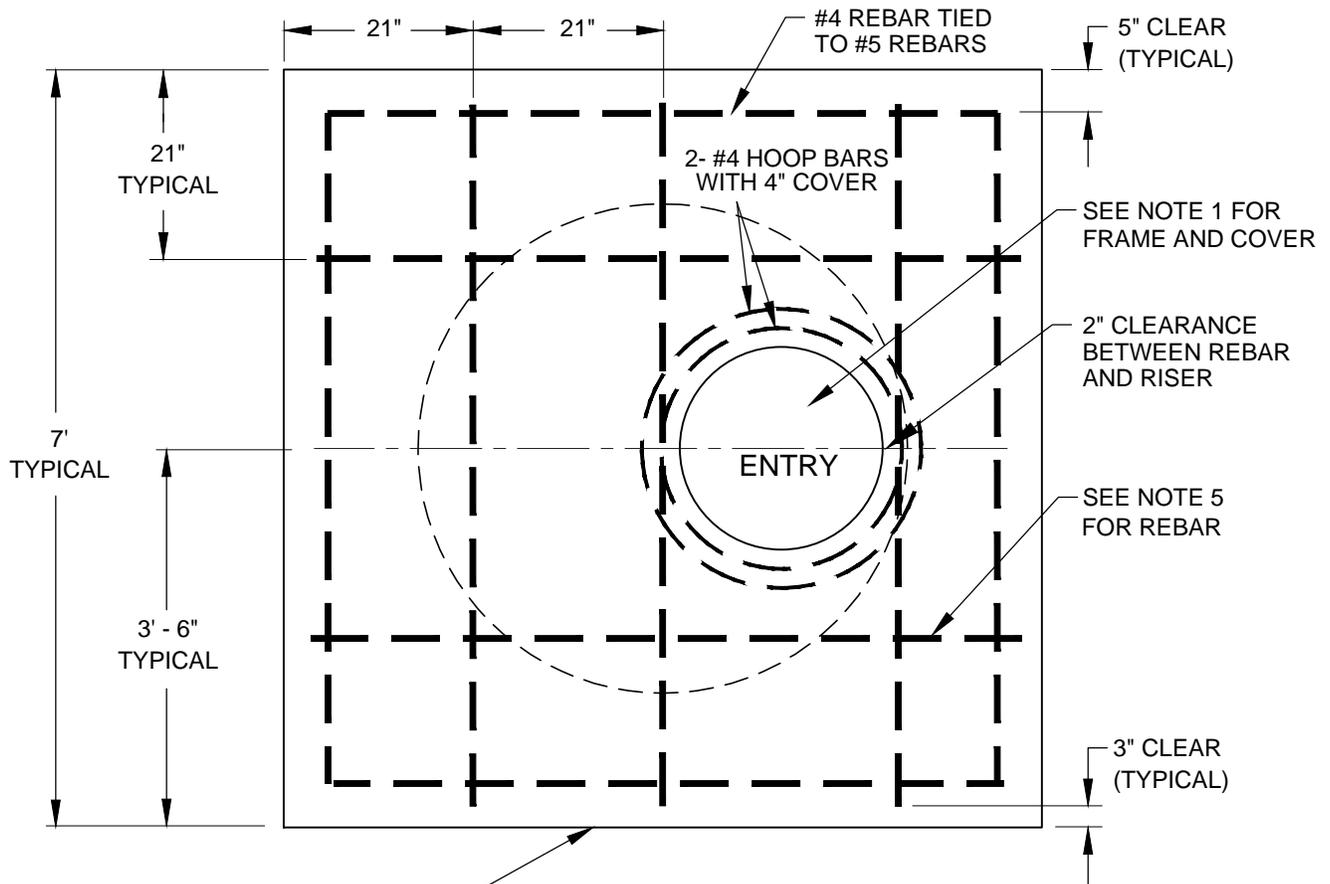
NOTES

1. Precast concrete cones shall meet A.S.T.M. C-478 specifications (latest version) except where shown. Concrete shall be Class A per MAG Section 725, with flyash additive.
2. Inside diameter of manhole and elevations shall be shown on plans.
3. Asphalt caulking shall be used to seal all joints.
4. An asphalt waterproofing seal shall be applied to the exterior surfaces of the manhole cone that will or could be exposed to ground water.
5. Apply surface sealant (from approved components list) on all interior surfaces of the adjustment rings and on any exposed interior concrete surface.
6. Backfill used to fill manhole excavation shall be a one sack cement per cubic yard of sand slurry mixture.
7. Precast concrete manholes shall have a PVC T-Lock liner, sealed gas tight (from approved components list) Liner and interior surfaces shall be spark tested (applies only to sanitary sewer manholes see Arizona Administrative Code R18-9-E 301 D.3.e Manholes General Permit: Sewage Collection Systems pertaining to Holiday testing).
8. Install new frame & cover.

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 6-045
ADJUSTING TECHITE MANHOLE
TO FINISHED GRADE



NOTES

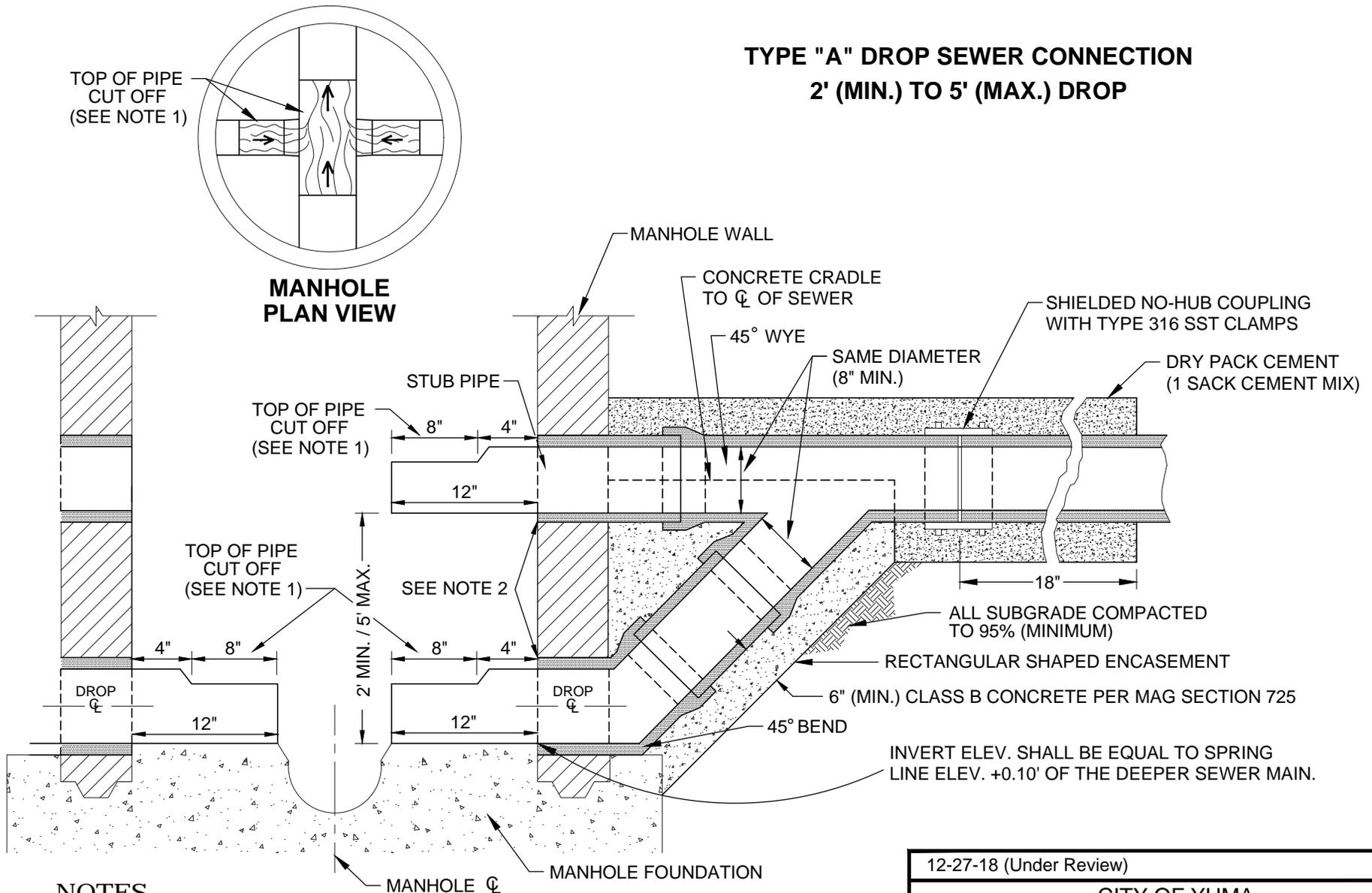
1. Frame and cover shall be Neenah R-1295, R-1595, R-1642 or approved equal. Frame shall be embedded into the concrete collar (monolithic pour).
2. Non-vented lid required for manholes installed in or within 500 feet of an interceptor or trunk sewer main.
3. All exposed concrete, mortar or cement shall be coated with surface sealant (from approved components list).
4. Top collar shall be constructed of Class A concrete per MAG Section 725.
5. Nine pieces of No. 5 rebar, six feet (6') long placed eight inches (8") deep.

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 6-050
TECHITE MANHOLE LINER
TOP COLLAR

TYPE "A" DROP SEWER CONNECTION 2' (MIN.) TO 5' (MAX.) DROP



NOTES

1. The mainline pipe needs to be installed through the manhole. The top 1/3-1/2 portion of the pipe must be cut off a minimum length of 8" to allow the CCTV camera access and to accept flow from lateral piping.
2. Grout seal around pipe; match existing coating and/or lining inside manhole (both penetrations)

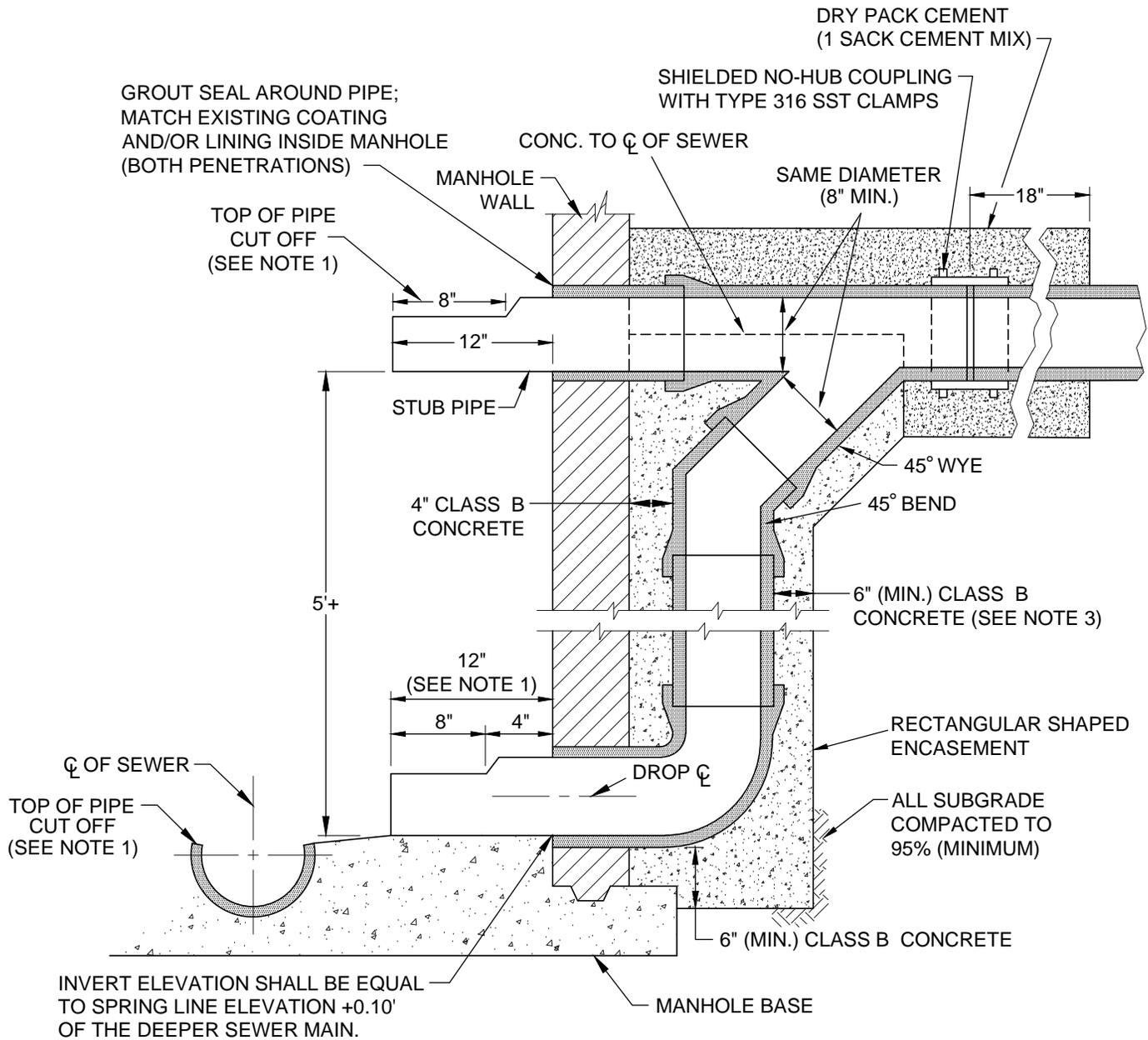
12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 6-055
TYPE "A"
DROP SEWER CONNECTION

TYPE "B" DROP SEWER CONNECTION

MORE THAN A 5' DROP



NOTES

1. The top 1/3-1/2 portion of the pipe must be cut off a minimum length of 8" to allow the CCTV camera access and to accept flow from lateral piping.
2. Grout seal around pipe; match existing coating and/or lining inside manhole (both penetrations)
3. Concrete shall be per MAG Section 725.

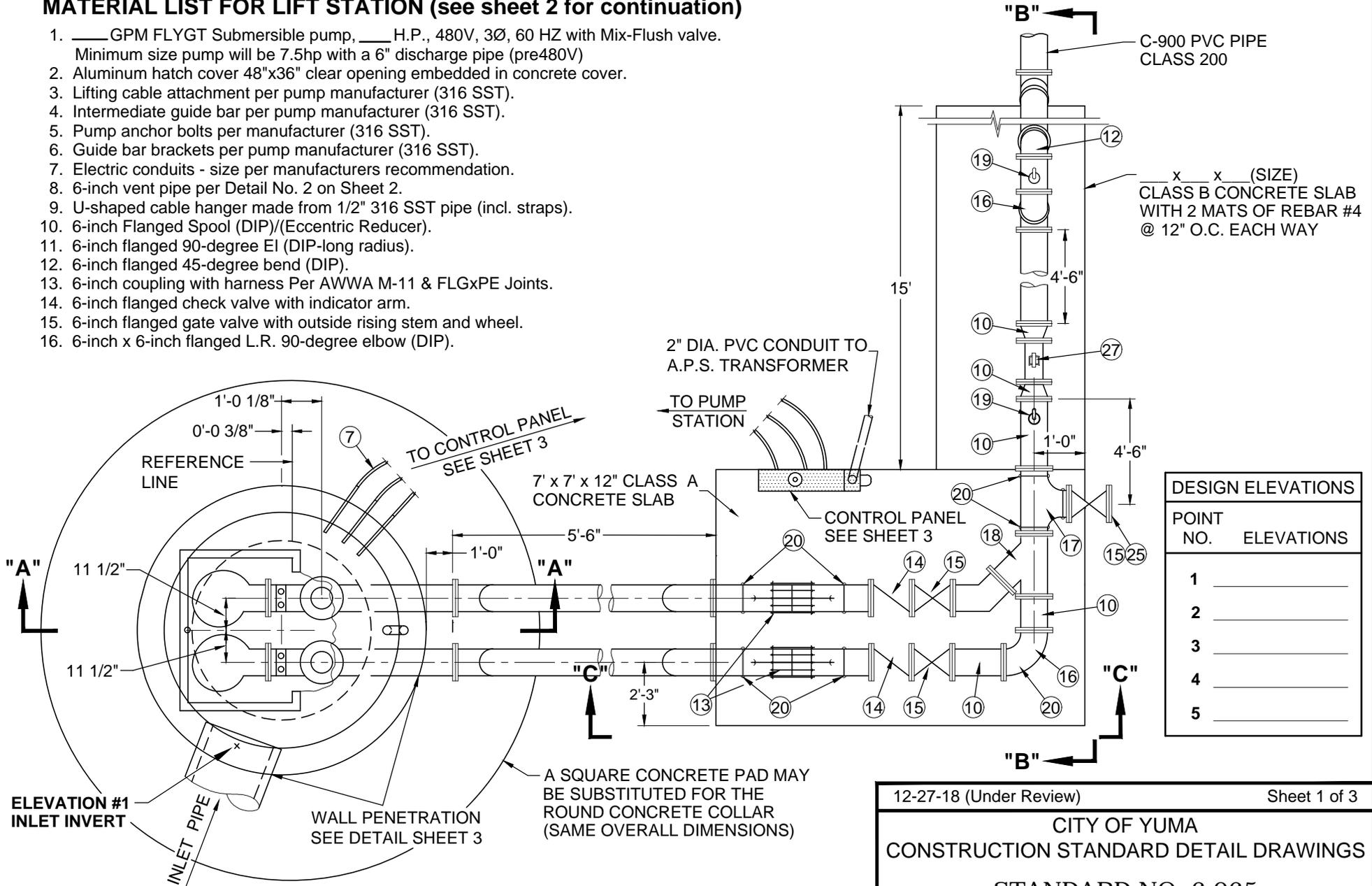
12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 6-060
TYPE "B"
DROP SEWER CONNECTION

MATERIAL LIST FOR LIFT STATION (see sheet 2 for continuation)

1. ___ GPM FLYGT Submersible pump, ___ H.P., 480V, 3Ø, 60 HZ with Mix-Flush valve.
Minimum size pump will be 7.5hp with a 6" discharge pipe (pre480V)
2. Aluminum hatch cover 48"x36" clear opening embedded in concrete cover.
3. Lifting cable attachment per pump manufacturer (316 SST).
4. Intermediate guide bar per pump manufacturer (316 SST).
5. Pump anchor bolts per manufacturer (316 SST).
6. Guide bar brackets per pump manufacturer (316 SST).
7. Electric conduits - size per manufacturers recommendation.
8. 6-inch vent pipe per Detail No. 2 on Sheet 2.
9. U-shaped cable hanger made from 1/2" 316 SST pipe (incl. straps).
10. 6-inch Flanged Spool (DIP)/(Eccentric Reducer).
11. 6-inch flanged 90-degree EI (DIP-long radius).
12. 6-inch flanged 45-degree bend (DIP).
13. 6-inch coupling with harness Per AWWA M-11 & FLGxPE Joints.
14. 6-inch flanged check valve with indicator arm.
15. 6-inch flanged gate valve with outside rising stem and wheel.
16. 6-inch x 6-inch flanged L.R. 90-degree elbow (DIP).



| DESIGN ELEVATIONS | |
|-------------------|------------|
| POINT NO. | ELEVATIONS |
| 1 | _____ |
| 2 | _____ |
| 3 | _____ |
| 4 | _____ |
| 5 | _____ |

PLAN

12-27-18 (Under Review) Sheet 1 of 3

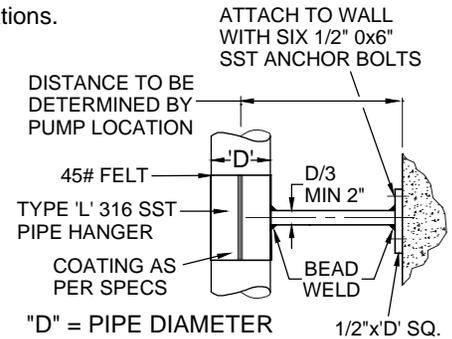
CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 6-065
SANITARY SEWER
LIFT STATION

(Continued from sheet 1)

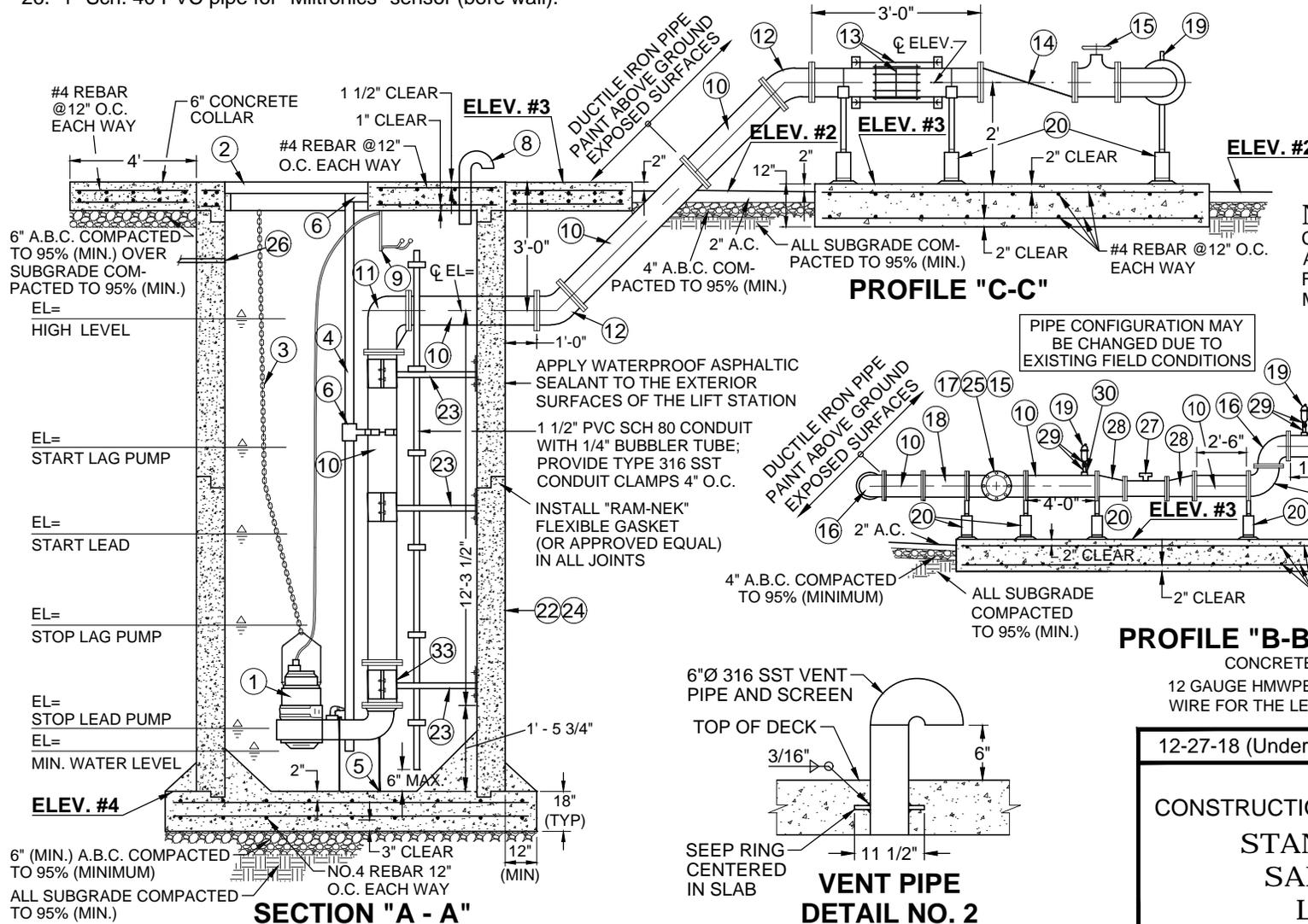
17. 6-inch x 6-inch x 6-inch tee (DIP).
18. 6-inch x 6-inch x 6-inch flanged wye (DIP).
19. 2-inch diameter air release valve (APCO Model 403 or equal).
20. Pipe support per Detail No. 3 on Sheet 3.
21. 6-inch 45-degree flanged elbow with thrust block and PVC adaptor.
22. 96-inch (inside diameter) RGRCP Class 4 structure with base and cover (or approved equal).
23. Pipe sway brace per Detail No. 1.
24. Sanitary sewer lift stations shall have T-Lock liners installed.
25. Blind flange.
26. 1" Sch. 40 PVC pipe for "Miltronics" sensor (bore wall).

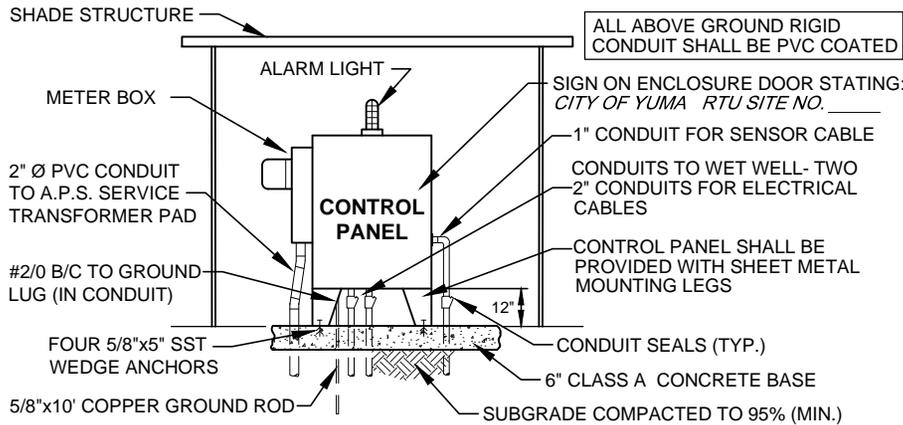
27. ABB Mod. "MAG-CM" magnetic flow meter (or appvd. equal).
Must be installed in accordance to manufacturers recommendations.
28. 8"x6" eccentric reducer.
29. 2" bronze ball valve with bronze nipple.
30. 2" threaded half coupling.
32. Tee Lock Liner on barrel.
33. Dip reducer-variety size with pump supplier.
34. Run a discharge line from air release valve back into the vault.
35. All concrete slab bases to be Class A.



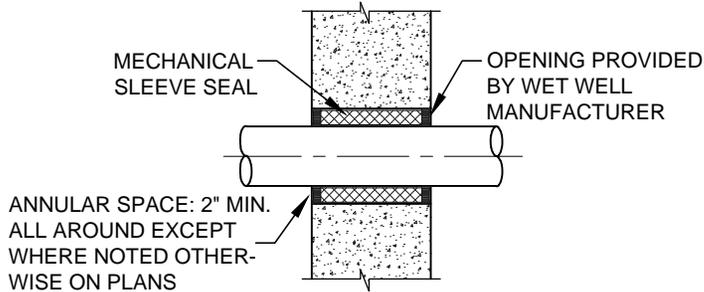
**PIPE SWAY BRACE
DETAIL NO. 1**

NOTE:
CONTRACTOR SHALL USE EPOXY COATED AND LINED DUCTILE IRON PIPE AND FITTINGS. PIPE SHALL BE FLANGED AND MEET ALL CONTRACT SPECIFICATIONS.

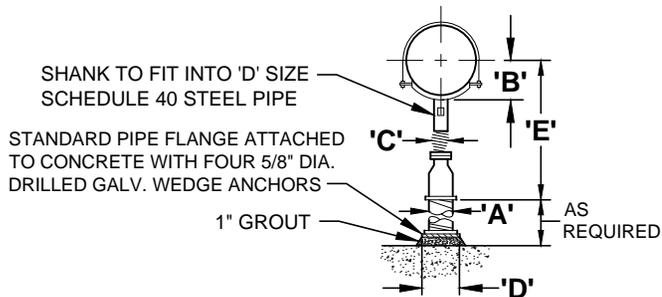




CONTROL PANEL ELEVATION



WALL PENETRATION SEAL DETAIL



PIPE SUPPORT DETAIL NO. 3

ALL ABOVE GROUND RIGID CONDUIT SHALL BE PVC COATED

SEWAGE LIFT STATION RTU COMPONENTS

- Allen Bradley, IntelliCENTER with DeviceNet.
 - 1ea 4 Slot Rack: 1746-A4
 - 1ea Power Supply: 1746-P2
 - 1ea Processor Unit: 1747-L532 Ser: E
 - 1ea Device Net: 1747 SDN
 - 1ea Analog Input: 1746-NI8
 - 1ea Device Net Starter Aux.: 100 DNY 42 R
- Allen-Bradley "Intelliscanner MCC" outdoor rated enclosure or approved equal.
- All electrical components shall be of a type/manufacture that is supported locally (Allen-Bradley or approved equal).
- Pump controller shall be Hydro Ranger Model 200 with the XPS-10 transducer with 100' of sensor cable and shall be mounted on face of inner door of MCC PLC-radio components cabinet. Coordinate with Instrumentation and Controls (928)373-4471.
- Flow meter controls shall be mounted on face of inner door of MCC PLC-radio components cabinet.
- Antenna support:
 - To be coordinated with Instrumentation and Controls personnel (928)373-4471.
- Radio components:
 - 1ea MDS licensed radio system GE MDS SD9- also with 120-V power supply astron A7 contact SYNETCOM@ (310)379-2000 for radio and telemetry information
 - 1ea 900-960 MHZ 10 DB MDS antenna
 - 1ea Three feet (3') Hellax jumper cable with 3/8" connector on one end and 1/2" on the other.
 - 2ea Type N ninety degree (90°) connector
 - 2ea 900Mhz lightning protector
 - 2ea 1/2" Coaxial weather proof grounding kit
 - 1ea 10dB antenna; 1/2" flexible Helix antenna cable (length to be determined by location of antenna)
 - 1ea SLC-5/03 PLC data to MDS radio cable
 - 1ea PLC to radio data interface cable assembly
 - 2ea 1/2" helix N cable terminations
 - 2ea 3' lighting protector 1/2" coaxial cable assembly
- Documentation:
 - Three sets of wiring diagrams for the lift station and RTU; three sets of the O & M manuals.
- For information on SCADA equipment, contact Instrumentation and Controls (928)373-4471.

NOTES

- Provide a 1" water service, a min. 3/4" water meter and R.P. backflow preventer (Standard No. 5-130).
- Provide access for large service vehicles.
- Switched lighting shall be installed.
- An appropriate shade structure shall be constructed over the control panel.
- W.P.C.F. SCADA/RTU connections required when lift station is to be used for sanitary sewer.
- Provide 120V GFI protected convenience outlet.
- Provide "Caterpillar" diesel (or approved equal) emergency generator size to max. pumping and control needs.
- Precast concrete manholes shall have a PVC T-Lock liner, sealed gas tight (from approved components list) Liner and interior surfaces shall be spark tested (applies only to sanitary sewer manholes, see Arizona Administrative Code R18-9-E 301 D.3.e Manholes General Permit: Sewage Collection Systems pertaining to Holiday testing).
- Pump controller shall be "Miltronic Hydro Ranger" in conjunction with "Allen Bradley SLC-500".
- Seal all conduit coming from lift station to junction boxes and control panels with duct seal to prevent migration of gas.
- Adjacent properties shall determine the placement of access gates to the site. Gates shall have a min. 20' wide double swing.
- All valves and check valves shall be installed above ground.
- Any and all hardware/bracing inside lift station shall be manufactured of Type 316 SST.
- Lift stations equipped with pumps 20HP or less at the inlet shall be supplied with a SST strainer baskets to ride on SST guides. A winch type swingline hoist shall be installed to facilitate basket removal.
- A soils report prepared by a registered geo-technical engineer shall be submitted to the City Engineer prior to the construction of the lift station. This report shall be used to design the wetwell structure including recommendations for protection from corrosive soils and anchoring if constructed in high ground water conditions.
- The control panel shall contain properly sized automatic transfer switch for the emergency generator.
- Flow meter to be located next to electronic panels under shaded structure.

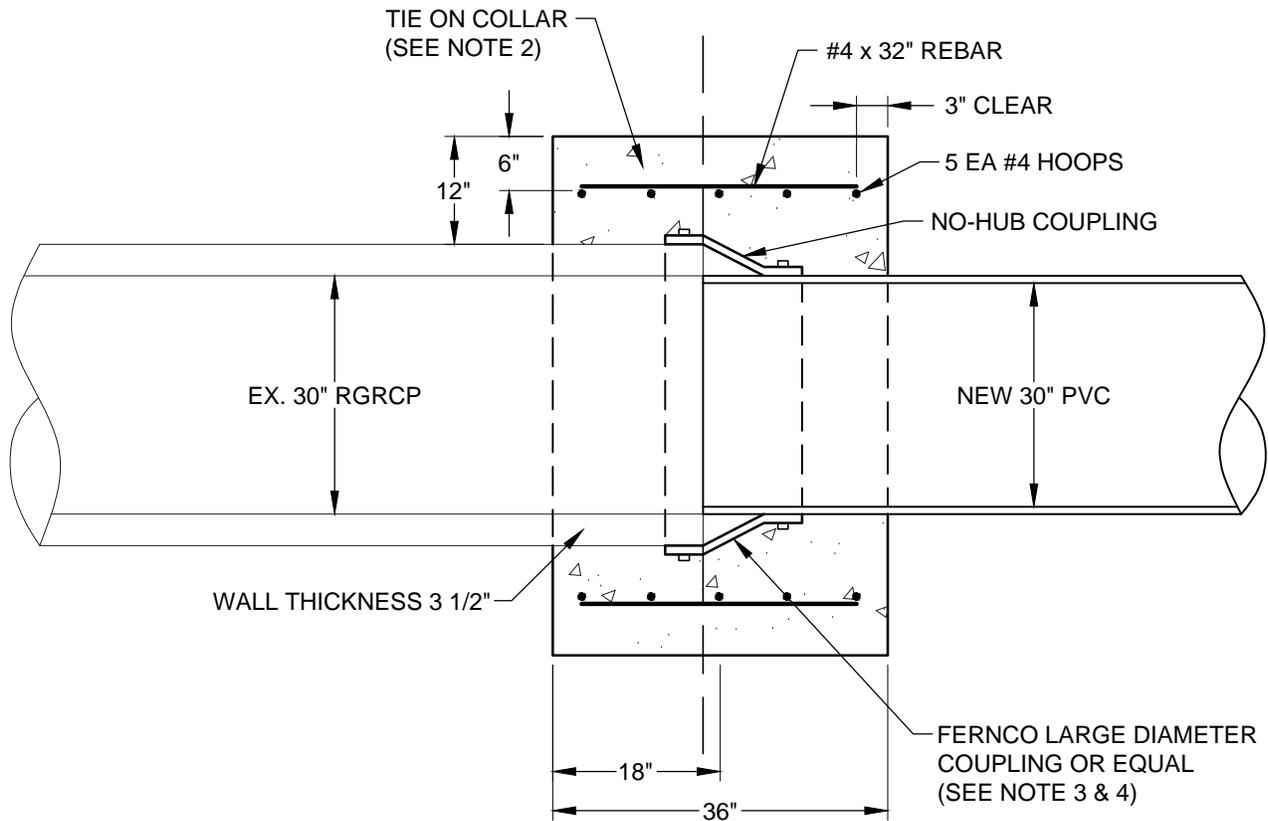
| NUMBER REQUIRED | SUPPORTED PIPE SIZE | 'A' | 'B' | 'C' | 'D' | 'E' | |
|-----------------|---------------------|-----|--------|------|---------|---------|---------|
| | | | | | | MIN. | MAX. |
| SIX | 6" | 3" | 5 7/8" | 2.5" | 11 3/4" | 10 3/4" | 14 1/2" |

ELECTRICAL UTILITY CO.
 ARIZONA PUBLIC SERVICE
 6700 E. 30th Street
 YUMA, ARIZONA 85365

12-27-18 (Under Review) Sheet 3 of 3

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 6-065
SANITARY SEWER
LIFT STATION



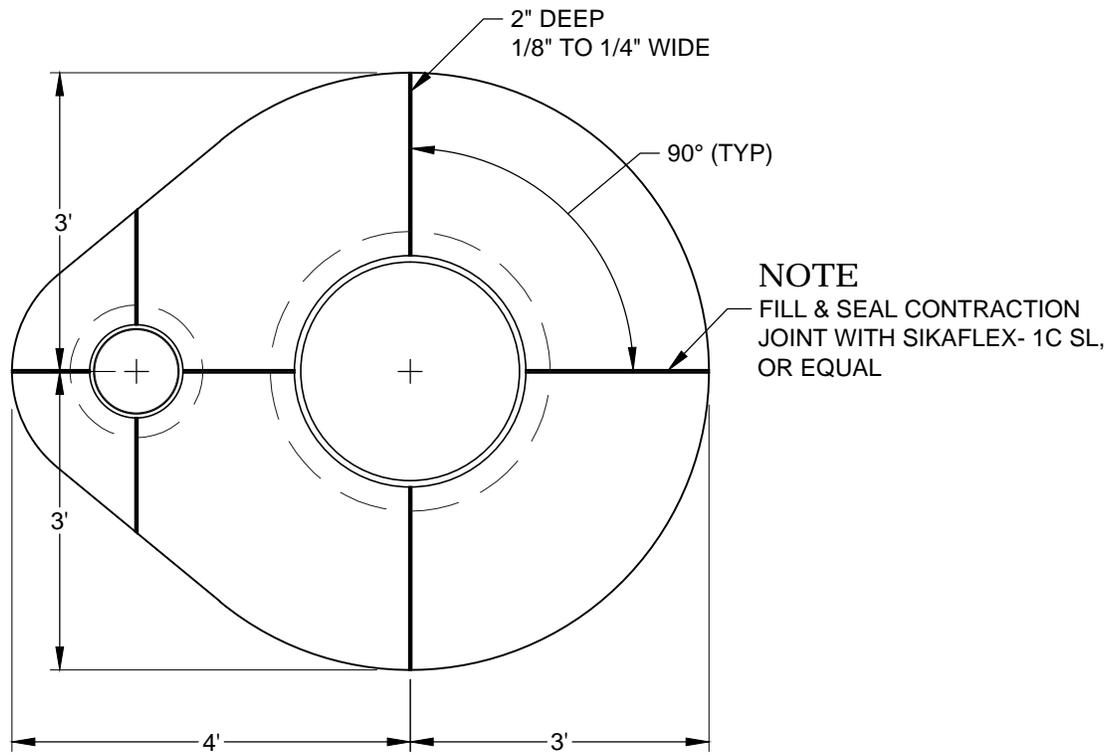
NOTES

1. Coat the ends of the RGRCP with PLASITE® 4500 S before installing new 30" PVC.
2. Concrete collar (Standard Detail No. 11-055)
3. Transition coupling
4. Connect existing 30" RGRCP to 30" PVC.
5. Lap reinforcement 24 bar diameters

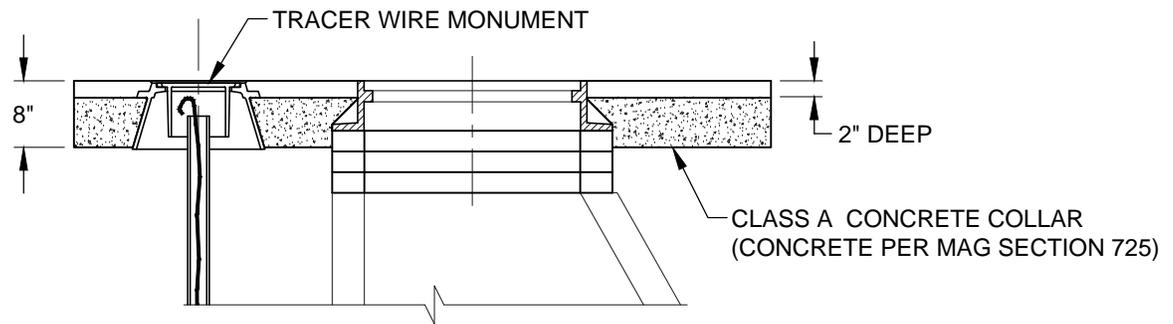
12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 6-070
PIPE TRANSITION
RGRCP TO PVC



**CONCRETE COLLAR WITH
CONTRACTION JOINTS**
(TOP VIEW)



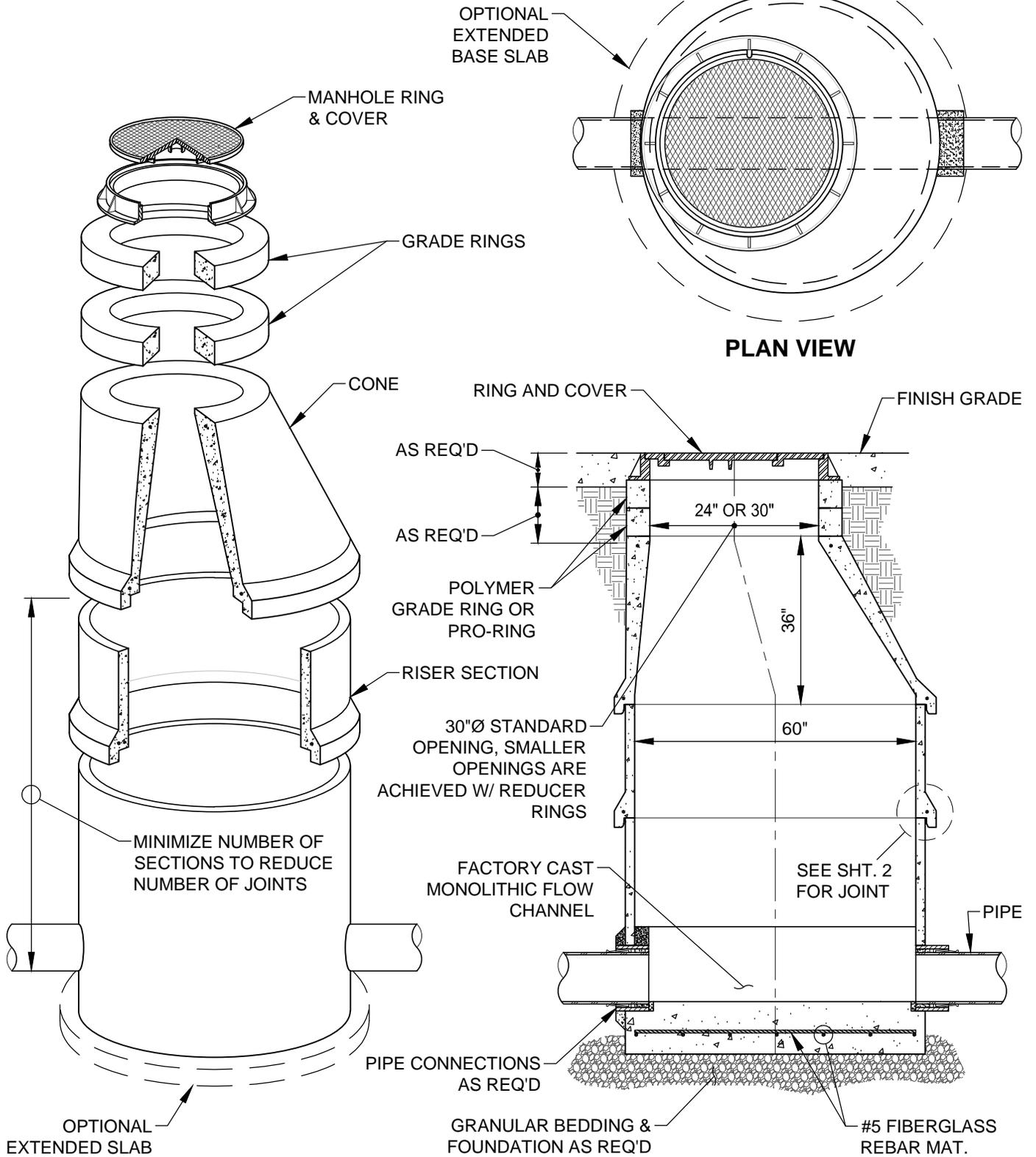
**CONCRETE COLLAR WITH
CONTRACTION JOINTS**
(SIDE VIEW)

REFERENCE DWGS:
COY STD. DETAIL NO. 6-040
COY STD. DETAIL NO. 6-045

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 6-075
CONCRETE COLLAR WITH
CONTRACTION JOINTS



60" POLYMER MONOLITHIC MANHOLE SPECIFICATIONS

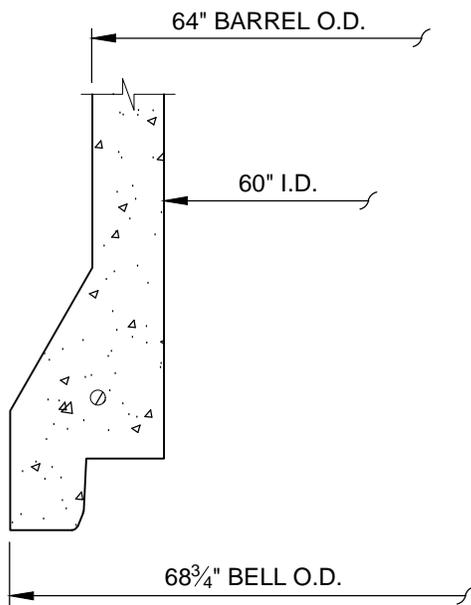
| WALL THICKNESS | AVAILABLE BASE HEIGHTS | AVAILABLE RISER HEIGHTS | WALL WEIGHT/FT |
|------------------------|------------------------|----------------------------|----------------|
| 2" | 3', 4', 5' | 1', 2', 3', 4', 5', 6', 7' | 375 LBS/FT |
| APPROX. WEIGHT 3' BASE | APPROX. WEIGHT 4' BASE | CONE WEIGHT | |
| 5,640 LBS | 6,350 LBS | 2,000 LBS | |

** ADD 250 LBS TO EACH RISER FOR THE WEIGHT OF THE BELL.

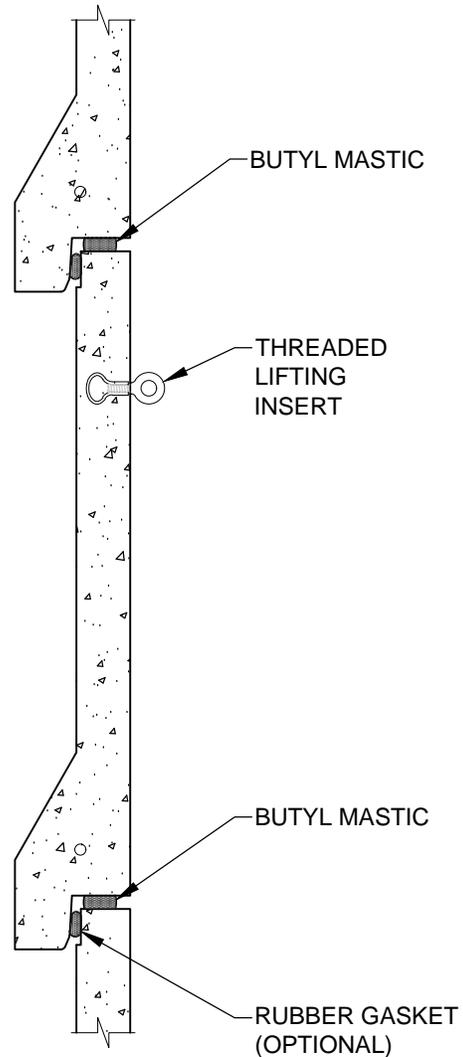
CITY OF YUMA CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 6-080 60" POLYMER MANHOLE

REFERENCE: ARMOROCK POLYMER PRODUCTS



60" JOINT DETAIL

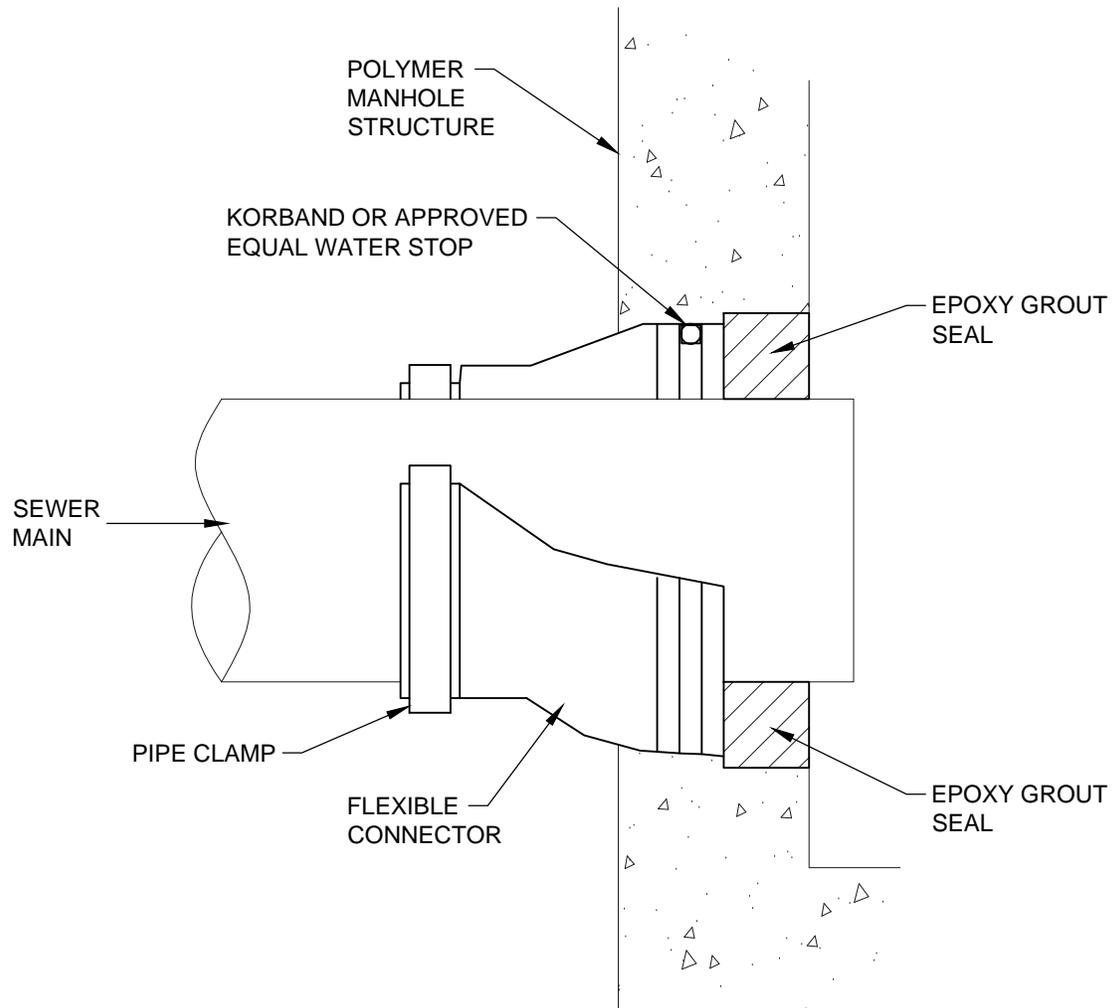


60" STACK UP

| POLYMER MANHOLE SPECIFICATIONS | | | |
|--------------------------------|------|----------------|-----------------|
| I.D. | O.D. | WALL THICKNESS | WEIGHT PER FOOT |
| 60" | 64" | 2" | 375 lb |

**ADD 250 LBS TO EACH RISER FOR THE WEIGHT OF THE BELL.

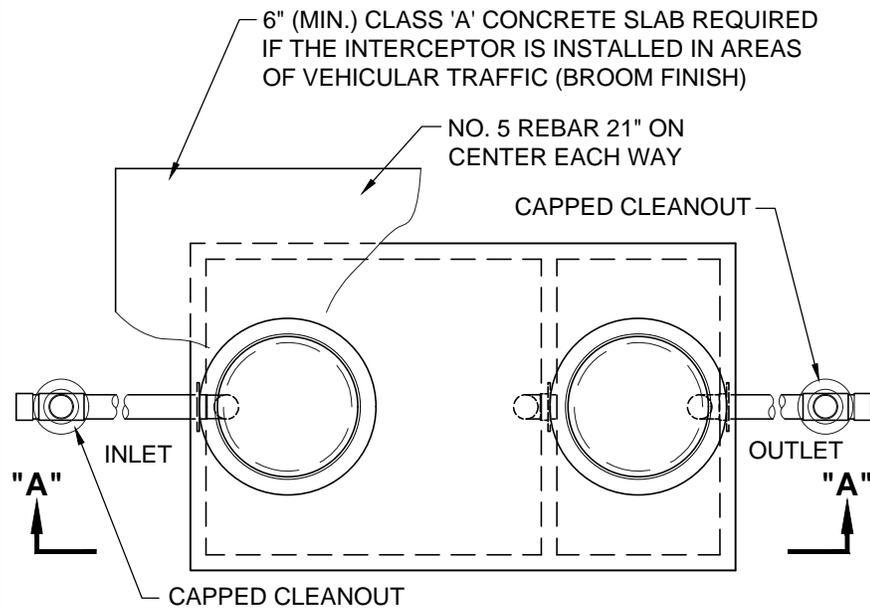
| | |
|---|--------------|
| 12-27-18 (Under Review) | Sheet 2 of 2 |
| CITY OF YUMA CONSTRUCTION STANDARD DETAIL DRAWINGS | |
| STANDARD NO. 6-080 60" POLYMER MANHOLE JOINT | |
| REFERENCE: ARMOROCK POLYMER PRODUCTS | |



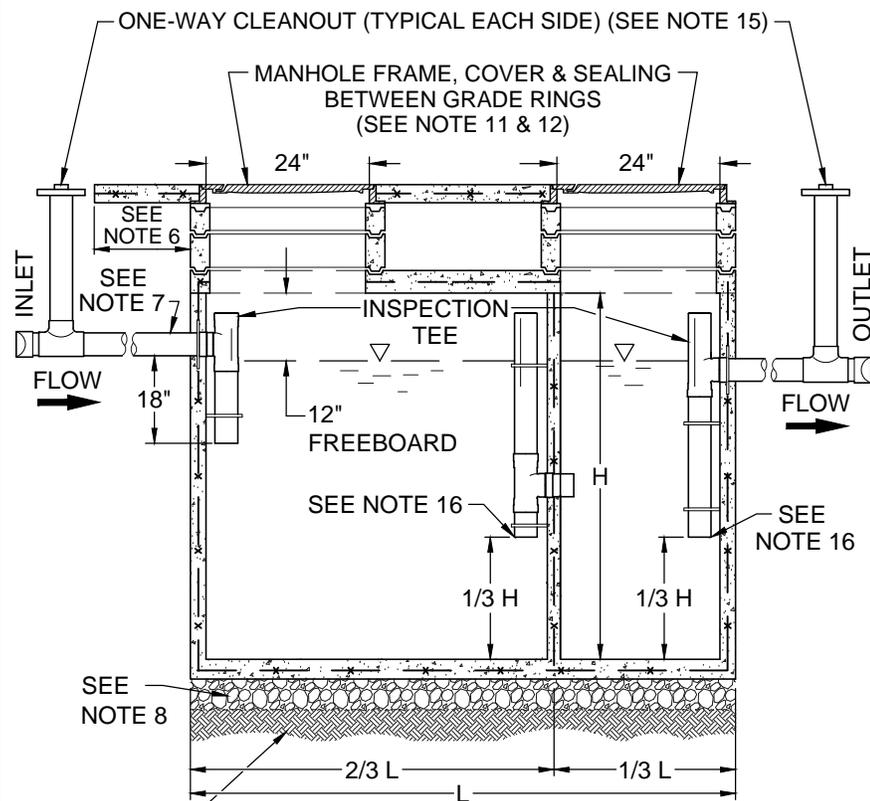
12-27-18 (Under Review)

CITY OF YUMA
 CONSTRUCTION STANDARD DETAIL DRAWINGS
 STANDARD NO. 6-090
 PIPE JOINS AT
 POLYMER MANHOLE

REFERENCE: GENEVA POLYMER PRODUCTS



PLAN



SECTION A-A

SUBGRADE
COMPACTED
TO 95% (MIN)

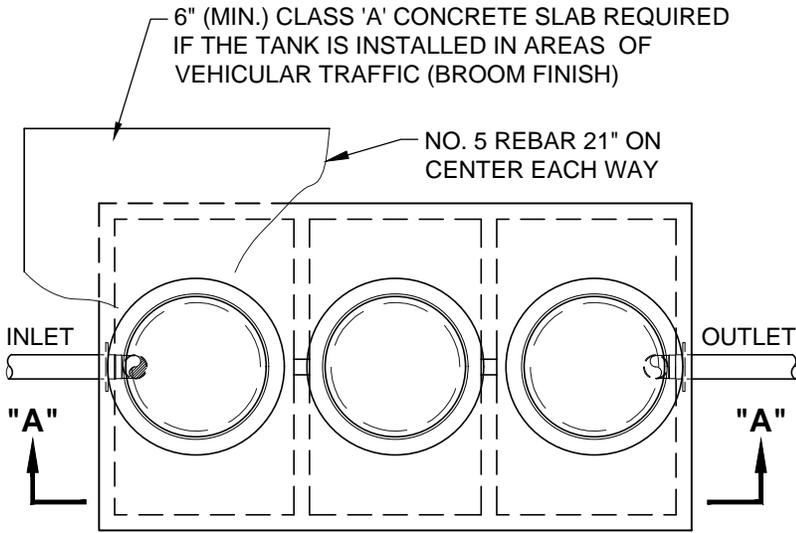
NOTES

1. Grease interceptors shall comply with the City of Yuma's current ordinance and the adopted plumbing code, as amended.
2. All grease interceptor designs shall be signed by a Registered Arizona Professional Engineer.
3. All new food service establishments shall be required to install minimum a 500 gallon outdoor grease interceptor unless granted a variance by the City of Yuma Utilities Division.
4. Tank capacity to be determined at the time of permit application.
5. The grease interceptor shall meet the following structural criteria:
 - a. Class A Concrete 28 day f'c = 3,000 psi
 - b. Rebar ASTM A615 Grade 60
 - c. Mesh ASTM A185
 - d. Design: ACI 318-02 (Current Building Code) ASTM C857 Minimum Structural Design Loading for Underground Precast Concrete Utility Structures
 - e. Loads: H20 Truck Wheel w/ 30% Impact per AASHTO
6. Concrete slab to extend 24" (min.) beyond all sides of the tank in traffic areas.
7. Inlet and outlet must be watertight to structure. A water stop consisting of a standard manhole adapter gasket shall be grouted into the walls around the inlet and outlet pipes. An asphalt caulking shall be used to seal all joints.
8. Place 12" (min.) ABC bedding material compacted to 100% (min.) under the tank.
9. All grease interceptors shall be located outside public right-of-way.
10. Grease interceptors shall be located where it will be accessible to waste hauler pumps.
11. Manhole covers and grade rings shall be installed in accordance with Standard No. 6-040.
12. Manholes shall have built in gaskets and shall be gastight and watertight when in place.
13. All surface waters must drain away from manholes.
14. Not approved for use inside an enclosed building. Tank must be a minimum of 2-feet outside of building foundation.
15. All wyes shall be one-way cleanouts wyes, sweeping away from grease interceptor except as noted by the adopted plumbing code.
16. The outlet down draft tube shall be located 1/3 of the total interceptor height from the bottom.

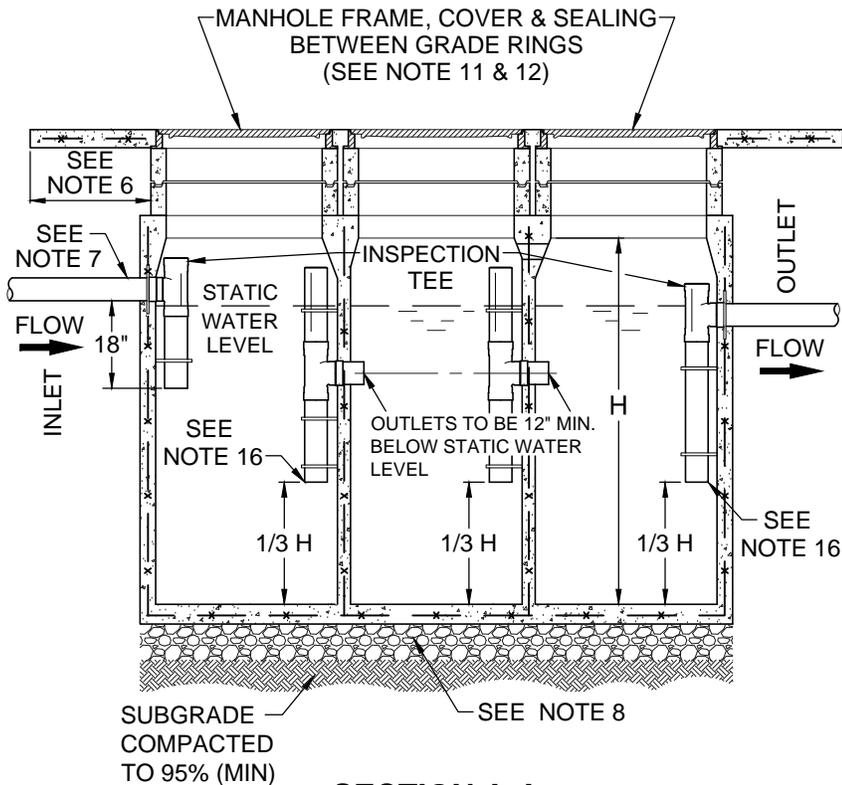
12-27-18 (Under Review)

**CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS**

**STANDARD NO. 6-100
TWO STAGE GREASE
INTERCEPTOR**



PLAN



SECTION A-A

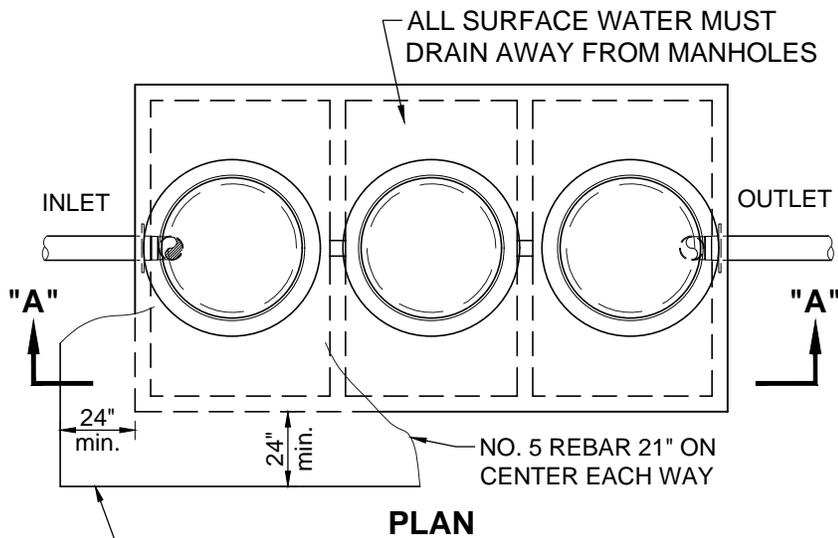
NOTES

1. Grease interceptors shall comply with the City of Yuma's current ordinance and the adopted plumbing code, as amended.
2. All grease interceptor designs shall be signed by a Registered Arizona Professional Engineer.
3. All new food service establishments shall be required to install minimum a 500 gallon outdoor grease interceptor unless granted a variance by the City of Yuma Utilities Division.
4. Tank capacity to be determined at the time of permit application.
5. The grease interceptor shall meet the following structural criteria:
 - a. Class A Concrete 28 day f'c = 3,000 psi
 - b. Rebar ASTM A615 Grade 60
 - c. Mesh ASTM A185
 - d. Design: ACI 318-02 (Current Building Code) ASTM C857 Minimum Structural Design Loading for Underground Precast Concrete Utility Structures
 - e. Loads: H20 Truck Wheel w/ 30% Impact per AASHTO
6. Concrete slab to extend 24" (min.) beyond all sides of the tank in traffic areas.
7. Inlet and outlet must be watertight to structure. A water stop consisting of a standard manhole adapter gasket shall be grouted into the walls around the inlet and outlet pipes. An asphalt caulking shall be used to seal all joints.
8. Place 12" (min.) ABC bedding material compacted to 100% (min.) under the tank.
9. All grease interceptors shall be located outside public right-of-way.
10. Grease interceptors shall be located where it will be accessible to waste hauler pumps.
11. Manhole covers and grade rings shall be installed in accordance with Standard No. 6-040.
12. Manholes shall have built in gaskets and shall be gastight and watertight when in place.
13. All surface waters must drain away from manholes.
14. Not approved for use inside an enclosed building. Tank must be a minimum of 2-feet outside of building foundation.
15. All wyes shall be one-way cleanouts wyes, sweeping away from grease interceptor except as noted by the adopted plumbing code.
16. The outlet down draft tube shall be located 1/3 of the total tank height from the bottom.

12-27-18 (Under Review)

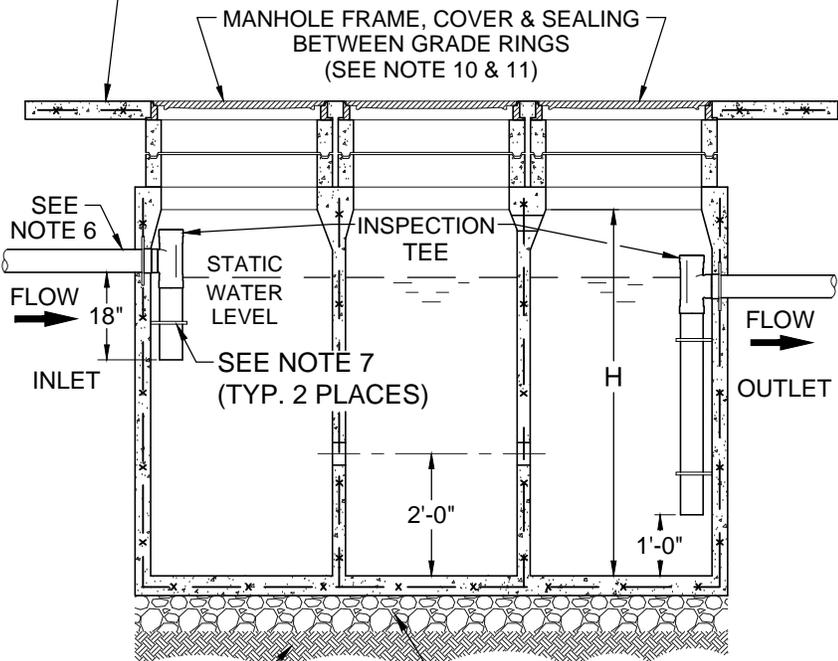
**CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS**

**STANDARD NO. 6-105
THREE STAGE
GREASE INTERCEPTOR**



PLAN

6" (MIN.) CLASS 'A' CONCRETE SLAB REQUIRED IF THE TANK IS INSTALLED IN AREAS OF VEHICULAR TRAFFIC. EXTEND 24" MIN. BEYOND ALL SIDES OF TANK (BROOM FINISH).



SECTION A-A

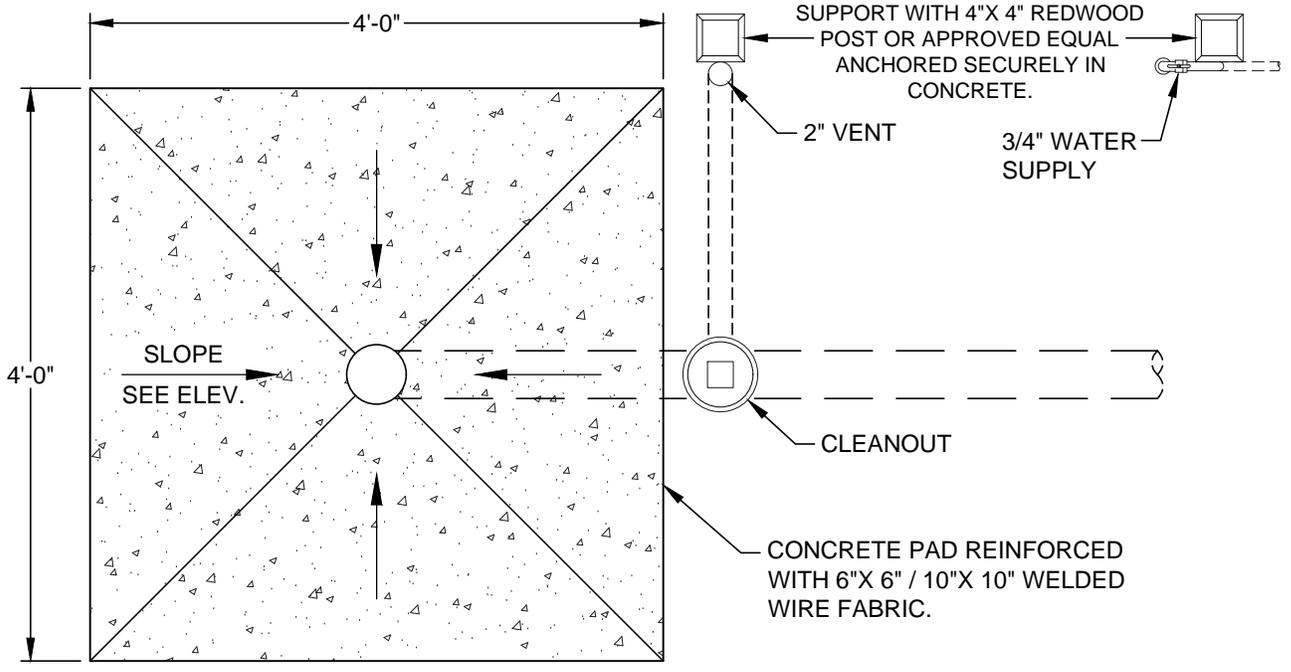
NOTES

1. Oil/water/grit separators shall comply with the City of Yuma's current ordinance and the adopted plumbing code, as amended.
2. All oil/water/grit separator designs shall be signed by a Registered Arizona Professional Engineer.
3. Tank capacity to be determined at the time of permit application.
4. The oil/water/grit separator shall meet the following structural criteria:
 - a. Class A Concrete 28 day f'c = 3,000 psi
 - b. Rebar ASTM A615 Grade 60
 - c. Mesh ASTM A185
 - d. Design: ACI 318-02 (Current Building Code) ASTM C857 Minimum Structural Design Loading for Underground Precast Concrete Utility Structures
 - e. Loads: H20 Truck Wheel w/ 30% Impact per AASHTO
5. Invert grades of inlet and outlet pipes to be provided by design engineering.
6. Inlet and outlet must be watertight to structure. A water stop consisting of a standard manhole adapter gasket shall be grouted into the walls around the inlet and outlet pipes. An asphalt caulking shall be used to seal all joints.
7. Stainless steel clamp and bolts 3'-0" o.c. max. (typical) minimum 2 required.
8. All oil/water/grit separators shall be located outside public right-of-way except with written approval of the City Engineer.
9. Oil/water/grit separators shall be located where it will be accessible to waste hauler pumps.
10. Manhole covers and grade rings shall be installed in accordance with Standard No. 6-040.
11. Manholes shall have built in gaskets and shall be gastight and watertight when in place.
12. Not approved for use inside an enclosed building. Tank must be a minimum of 2-feet outside of building foundation.
13. All wyes shall be one-way cleanouts wyes, sweeping away from oil/water/grit separator except as noted by the adopted plumbing code.
14. The outlet down draft tube shall be located 1/3 of the total tank height from the bottom.
15. Install interceptor per manufacturer's specifications.
16. Pipe and fittings to be 4" schedule 40 PVC DWV.
17. All waste must enter through inlet fittings only.
18. Protective coating shall cover all internal surfaces and meet the criteria of ASTM-309.

12-27-18 (Under Review)

**CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS**

**STANDARD NO. 6-110
OIL / WATER / GRIT
SEPARATOR**

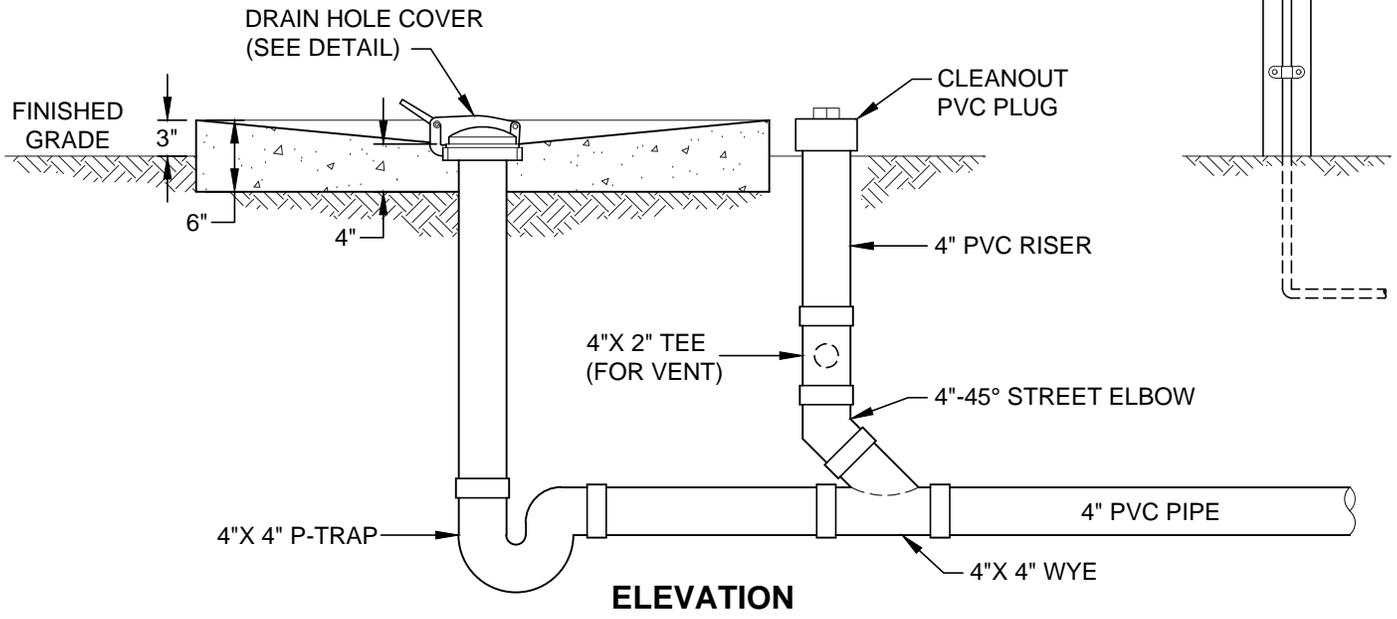


PLAN VIEW

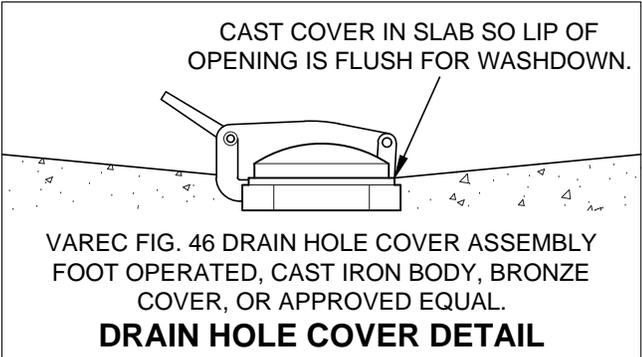
NOTES

1. Must install Reduced Pressure Backflow Prevention device on water service line prior to installation of this disposal facility.
2. Site must be physically locked when not in use.

*ONLY NEEDED IF EXISTING HOSE BIBB LOCATION IS NOT ACCESSIBLE.



ELEVATION

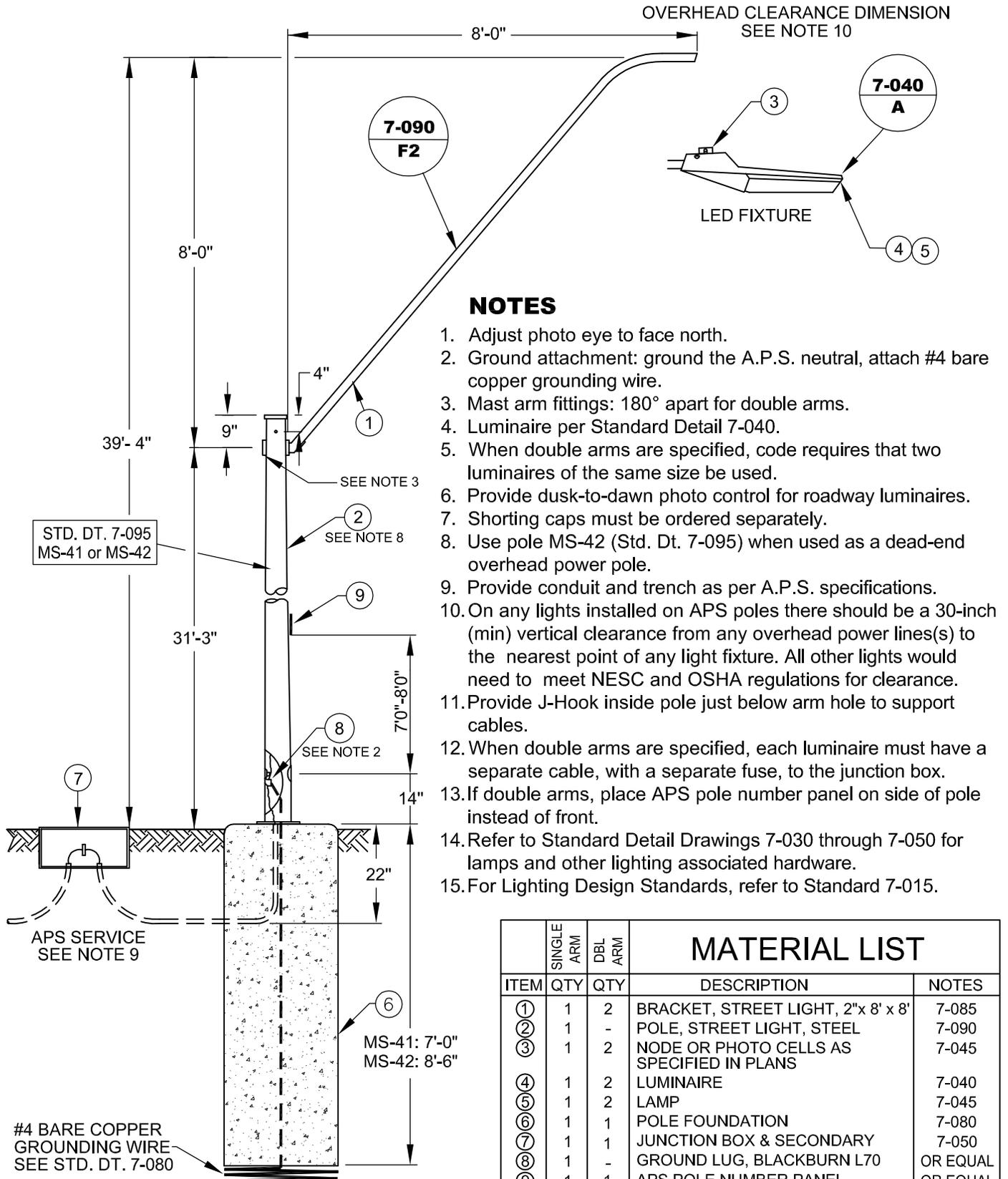


12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 6-120
RECREATIONAL VEHICLE
DISPOSAL FACILITY

OVERHEAD CLEARANCE DIMENSION
SEE NOTE 10



NOTES

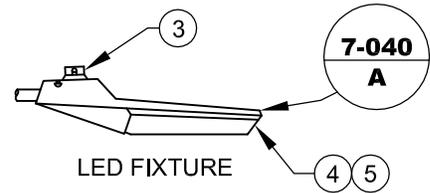
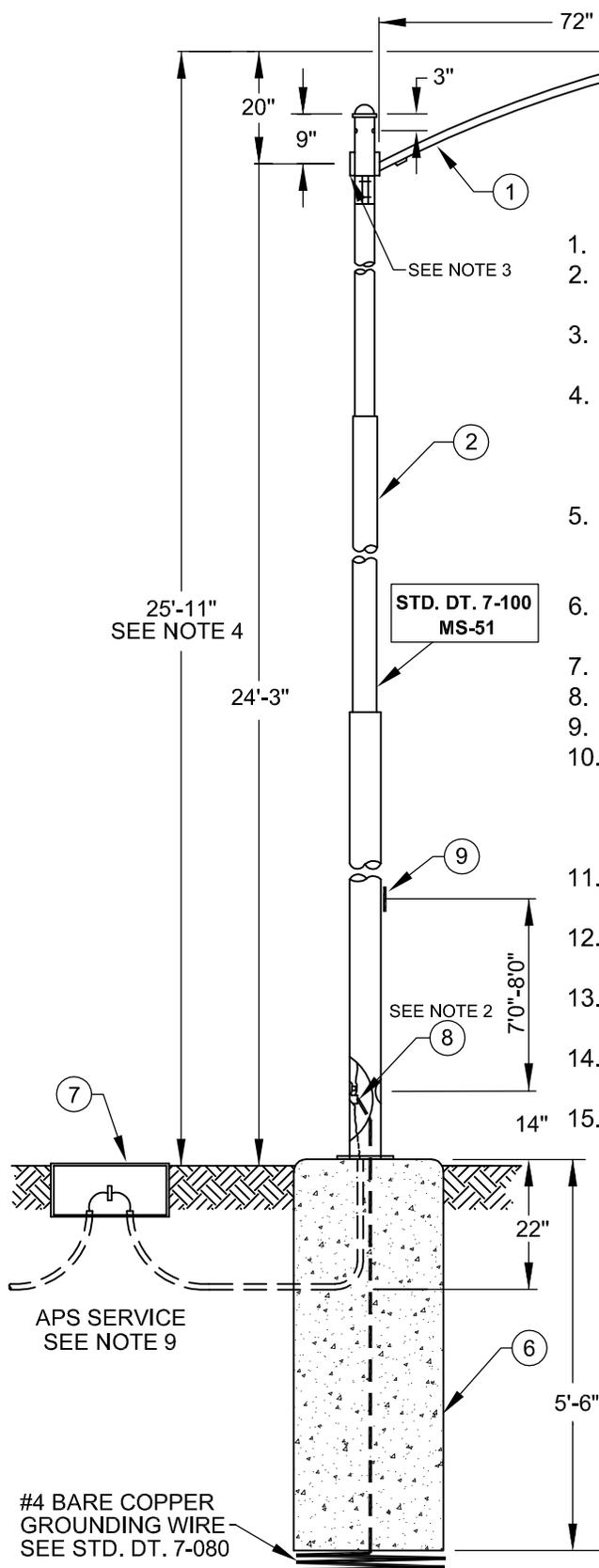
1. Adjust photo eye to face north.
2. Ground attachment: ground the A.P.S. neutral, attach #4 bare copper grounding wire.
3. Mast arm fittings: 180° apart for double arms.
4. Luminaire per Standard Detail 7-040.
5. When double arms are specified, code requires that two luminaires of the same size be used.
6. Provide dusk-to-dawn photo control for roadway luminaires.
7. Shorting caps must be ordered separately.
8. Use pole MS-42 (Std. Dt. 7-095) when used as a dead-end overhead power pole.
9. Provide conduit and trench as per A.P.S. specifications.
10. On any lights installed on APS poles there should be a 30-inch (min) vertical clearance from any overhead power lines(s) to the nearest point of any light fixture. All other lights would need to meet NESC and OSHA regulations for clearance.
11. Provide J-Hook inside pole just below arm hole to support cables.
12. When double arms are specified, each luminaire must have a separate cable, with a separate fuse, to the junction box.
13. If double arms, place APS pole number panel on side of pole instead of front.
14. Refer to Standard Detail Drawings 7-030 through 7-050 for lamps and other lighting associated hardware.
15. For Lighting Design Standards, refer to Standard 7-015.

| MATERIAL LIST | | | | |
|---------------|----------------|-------------|---|----------|
| ITEM | SINGLE ARM QTY | DBL ARM QTY | DESCRIPTION | NOTES |
| ① | 1 | 2 | BRACKET, STREET LIGHT, 2"x 8' x 8' | 7-085 |
| ② | 1 | - | POLE, STREET LIGHT, STEEL | 7-090 |
| ③ | 1 | 2 | NODE OR PHOTO CELLS AS SPECIFIED IN PLANS | 7-045 |
| ④ | 1 | 2 | LUMINAIRE | 7-040 |
| ⑤ | 1 | 2 | LAMP | 7-045 |
| ⑥ | 1 | 1 | POLE FOUNDATION | 7-080 |
| ⑦ | 1 | 1 | JUNCTION BOX & SECONDARY | 7-050 |
| ⑧ | 1 | - | GROUND LUG, BLACKBURN L70 | OR EQUAL |
| ⑨ | 1 | 1 | APS POLE NUMBER PANEL | OR EQUAL |

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS
STANDARD NO. 7-005
STREET LIGHT ASSEMBLY
8' X 8' HI-RISE MAST ARM(S)
ON 32' STEEL POLE

OVERHEAD CLEARANCE DIMENSION
SEE NOTE 10



NOTES

1. Adjust photo eye to face north.
2. Ground attachment: ground the A.P.S. neutral, attach #4 bare copper grounding wire.
3. Mast arm fittings: 180° apart for double arms will be manufacturer installed on new poles.
4. If a new arm is desired on an older existing pole, order steel pole adapters with Simplex fittings. These adapters are also used to reduce the mounting height of the luminaire(s) if required.
5. Luminaires illustrated in this drawing are recommended for this mounting height. Public Works Department to specify mounting height and luminaires.
6. When double arms are specified, code requires that two luminaires of the same size be used.
7. Provide dusk-to-dawn photo control for roadway luminaires.
8. Shorting caps must be ordered separately.
9. Provide conduit and trench as per A.P.S. specifications.
10. On any lights installed on APS poles there should be a 30-inch (min) vertical clearance from any overhead power lines(s) to the nearest point of any light fixture. All other lights would need to meet NESC and OSHA regulations for clearance.
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12. When double arms are specified, each luminaire must have a separate cable, to the junction box.
13. If double arms, place APS pole number panel on side of pole instead of front.
14. Refer to Standard Detail Drawings 7-030 through 7-050 for lamps and other lighting associated hardware.
15. For Lighting Design Standards, refer to Standard 7-015.

| | | SINGLE ARM | DBL ARM | MATERIAL LIST | |
|------|-----|------------|---|---------------|--|
| ITEM | QTY | QTY | DESCRIPTION | NOTES | |
| ① | 1 | 2 | BRACKET, STREET LIGHT, 2"x 20' x 6' | 7-085 | |
| ② | 1 | - | POLE, STREET LIGHT, STEEL | 7-095 | |
| ③ | 1 | 1 | NODE OR PHOTO CELLS AS SPECIFIED IN PLANS | 7-045 | |
| ④ | 1 | 1 | LUMINAIRE | 7-040 | |
| ⑤ | 1 | 1 | LAMP | 7-045 | |
| ⑥ | 1 | - | POLE FOUNDATION | 7-080 | |
| ⑦ | 1 | - | JUNCTION BOX & SECONDARY | 7-050 | |
| ⑧ | 1 | - | GROUND LUG, BLACKBURN L70 | OR EQUAL | |
| ⑨ | 1 | 1 | APS POLE NUMBER PANEL | OR EQUAL | |

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS
STANDARD NO. 7-010
STREET LIGHT ASSEMBLY
72" X 20" MAST ARM
AND 25' STEEL POLE

| CITY OF YUMA STREET LIGHT POLES | | | |
|---------------------------------|-----------------|----------|-----------------------|
| POLE TYPE | MOUNTING HEIGHT | MAST ARM | CITY OF YUMA STANDARD |
| TYPE I | 39'-4" | 8'-0" | STD.NO. 7-040 |
| TYPE 2 | 25'-11" | 6'-0" | STD.NO. 7-050 |

| CITY OF YUMA LED STREET LIGHTS | | | | |
|--------------------------------|----------------|---------------------|-------------------------|-------------------------|
| LED TYPE | NOMINAL LUMENS | OPTICS DISTRIBUTION | LIGHT LOSS FACTOR (LLF) | COLOR TEMPERATURE (CCT) |
| TYPE A | 4,700 | TYPE III | 0.72 | 3000 K |
| TYPE B | 9,000 | TYPE III | 0.72 | 3000 K |
| TYPE C | 15,700 | TYPE III | 0.72 | 3000 K |
| TYPE D | 17,400 | TYPE III | 0.72 | 3000 K |

| LIGHTING DESIGN CRITERIA FOR CITY OF YUMA ROADWAYS / STREETS | | | | | |
|--|---------------------------|---|---|---|---|
| ROAD CLASSIFICATION | PEDESTRIAN CLASSIFICATION | AVERAGE LUMINANCE L_{avg} (cd / m ²) | AVERAGE UNIFORMITY RATIO L_{avg} / L_{min} | MAXIMUM UNIFORMITY RATIO L_{max} / L_{min} | MAXIMUM VEILING LUMINANCE RATIO LV_{max} / L_{avg} |
| EXPRESSWAY | NONE | 1.0 | 3.0 | 5.0 | 0.3 |
| PRINCIPAL / MINOR ARTERIAL | LOW | 0.6 | 3.5 | 6.0 | 0.3 |
| COLLECTOR STREET | LOW | 0.4 | 4.0 | 8.0 | 0.4 |
| LOCAL STREET | LOW | 0.3 | 6.0 | 10.0 | 0.4 |

L_{avg} - MINIMUM MAINTAINED AVERAGE PAVEMENT LUMINANCE

L_{min} - MINIMUM PAVEMENT LUMINANCE

LV_{max} - MAXIMUM VEILING LUMINANCE

NOTES

1. Street / Roadway lighting for pedestrian areas, bikeways and intersections shall meet the lighting design criteria specified in the Illuminating Engineering Society (IES) Publication RP-08-14.
2. See Standard 7-020 for street light spacing.
3. LED Leotek fixtures only. Alternative suppliers that are compatible with Smart City Technology might be considered. Such alternatives shall be approved by Public Works prior to installation.
4. All LED fixtures shall be provided with a photo electric control module or sorting cap per Standard 7-045.
5. All LED fixtures and luminaire arms shall have a 10 foot minimum clearance from overhead power lines and meet NESC and OSHA regulations for clearance unless installed and maintained by Arizona Public Service (APS).

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS
STANDARD NO. 7-015
STREET LIGHT DESIGN

CITY OF YUMA - STREET LIGHT STANDARD SPACING

| STREET CLASSIFICATION | CITY OF YUMA STANDARD | LUMINAIRE | Pole Type I (Det. No.: 7-040) | | | | Pole Type II (Det. No.: 7-050) | | | | |
|---|-----------------------|-----------|-------------------------------|---------------|-------------|-----------|--------------------------------|---------------|-------------|-----------|--|
| | | | Mtg. Ht.: 39.3' | | Mast Arm 8' | | Mtg. Ht.: 25.9' | | Mast Arm 6' | | |
| | | | Onesided | Median (Twin) | Opposite | Staggered | Onesided | Median (Twin) | Opposite | Staggered | |
| LOCAL TWO LANE STREET WIDTH (B of S/W)= 51' PAVEMENT TYPE = Asphalt PEDESTRIAN VOLUME= Low | STD. NO. 2-035 | TYPE A | 110' | | 240' | 240' | 100' | | 175' | 280' | |
| | | TYPE B | 210' | | 300' | 300' | 200' | | 220' | 300' | |
| | | TYPE C | 300' | | | | | | | | |
| | | TYPE D | | | | | | | | | |
| LOCAL COMMERCIAL-INDUSTRIAL STREET WIDTH (B of S/W)= 56' PAVEMENT TYPE = Asphalt PEDESTRIAN VOLUME= Low | STD. NO. 2-040 | TYPE A | 100' | | 220' | 220' | 90' | | 170' | 250' | |
| | | TYPE B | 190' | | 300' | 300' | 180' | | 220' | 300' | |
| | | TYPE C | 290' | | | | | | 300' | | |
| | | TYPE D | | | | | | | | | |
| RESIDENTIAL COLLECTOR (w / median or turn lane) WIDTH (B of S/W)= 57' PAVEMENT TYPE = Asphalt PEDESTRIAN VOLUME= Low | STD. NO. 2-025 | TYPE A | | 100' | 160' | 160' | | 140' | 170' | 180' | |
| | | TYPE B | 130' | 210' | 300' | 300' | 120' | 190' | 210' | 300' | |
| | | TYPE C | 230' | 290' | | | 170' | | | | |
| | | TYPE D | | | | | | | | | |
| COLLECTOR (w/ median / turn lane and detached sidewalk)¹ WIDTH (B of S/W)= 75' PAVEMENT TYPE = Asphalt PEDESTRIAN VOLUME= Low | STD. NO. 2-020 | TYPE A | | 100' | 150' | 150' | | 140' | 170' | 190' | |
| | | TYPE B | 120' | 210' | 290' | 300' | 110' | 190' | 200' | 300' | |
| | | TYPE C | 200' | 290' | | | 170' | | | | |
| | | TYPE D | | | | | | | | | |
| MINOR ARTERIAL (w / median / turn lane and detached sidewalk)² WIDTH (B of S/W)= 97' PAVEMENT TYPE = Asphalt PEDESTRIAN VOLUME= Low | STD. NO. 2-015 | TYPE A | | | | | | | | | |
| | | TYPE B | | 120' | 130'/150' | 130'/150' | | | | | |
| | | TYPE C | | 220' | 220'/260' | 220'/260' | | | | | |
| | | TYPE D | | | | | | | | | |
| PRINCIPAL ARTERIAL (w / median / turn lane and detached sidewalk)² WIDTH (B of S/W)= 121' PAVEMENT TYPE = Asphalt PEDESTRIAN VOLUME= Low | STD. NO. 2-010 | TYPE A | | | | | | | | | |
| | | TYPE B | | 110' | | | | | | | |
| | | TYPE C | | 190' | 180'/210' | 180'/210' | | | | | |
| | | TYPE D | | | | | | | | | |
| EXPRESSWAY^{3,4} WIDTH (Pavement Edge to Edge)= 110' PAVEMENT TYPE = Asphalt PEDESTRIAN VOLUME= None | STD. NO. 2-005 | TYPE A | | | | | | | | | |
| | | TYPE B | | 110' | | | | | | | |
| | | TYPE C | | 190' | 120' | 120' | | | | | |
| | | TYPE D | | 210' | 140' | 140' | | | | | |

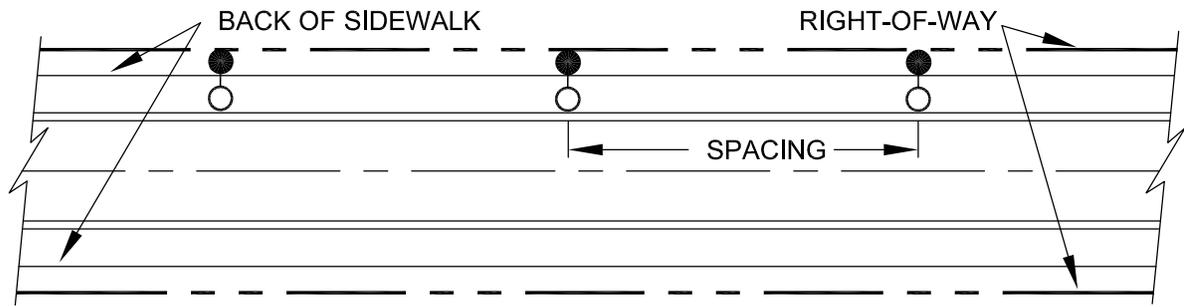
NOTES

1. Refer to Standard 7-025 for standard street light layout configurations.
2. Spacing of street light poles shall not exceed 300 feet on any street type or layout configuration.
3. Street light poles shall be placed a minimum of 4 feet from the back of the curb for urban streets and outside clear zones for rural streets (minimum 10 feet).

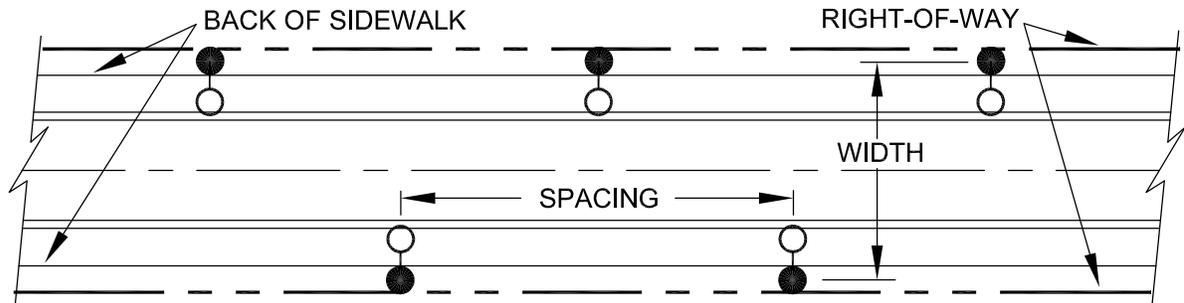
12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

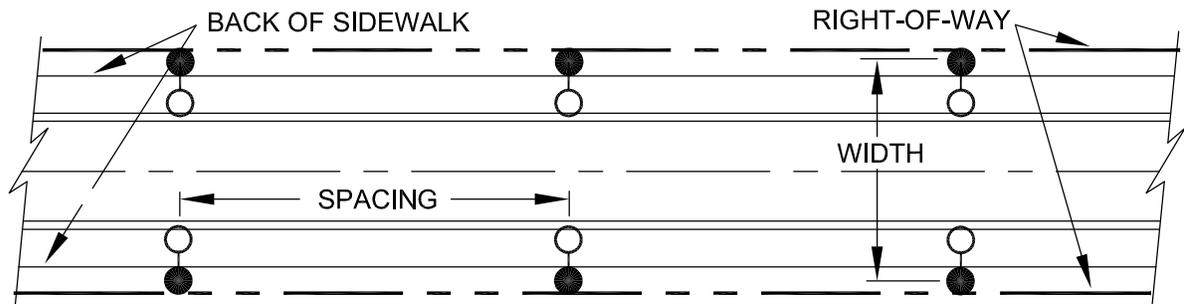
**STANDARD NO. 7-020
STREET LIGHT SPACING**



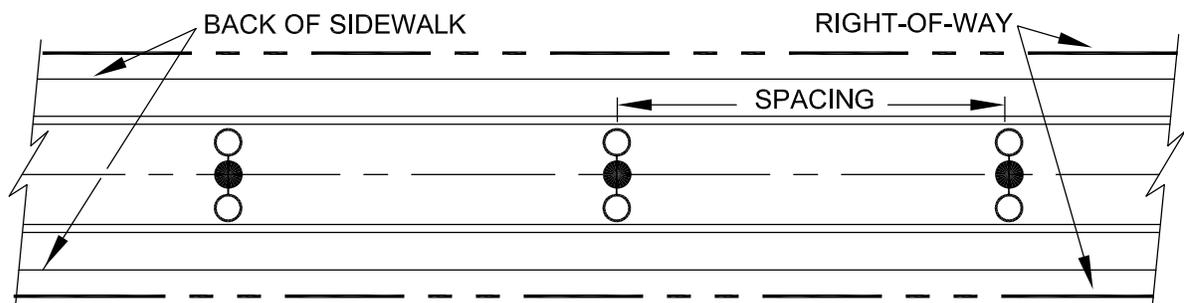
STREET LIGHTS ON ONE SIDE OF THE STREET



STREET LIGHTS STAGGERED - BOTH SIDES OF STREET



STREET LIGHTS OPPOSITE BOTH SIDES OF STREET



STREET LIGHTS IN MEDIAN AND/OR CENTER OF STREET

● SUPPORT POLE
○ LUMINAIRE

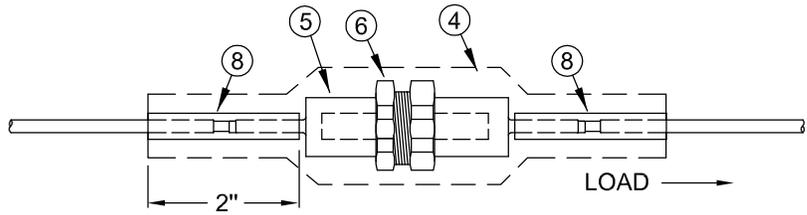
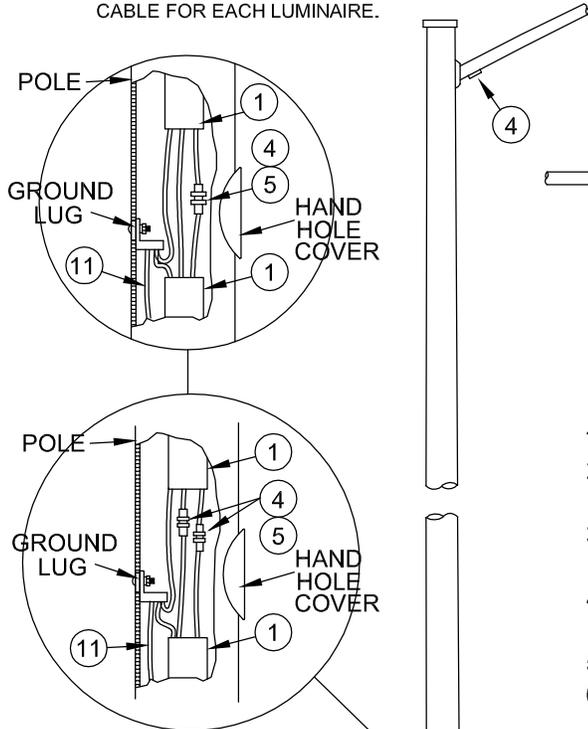
12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

**STANDARD NO. 7-025
STREET LIGHT LAYOUT**

120-VOLT CONNECTION

NOTE: USE A SEPARATE, FUSED CABLE FOR EACH LUMINAIRE.

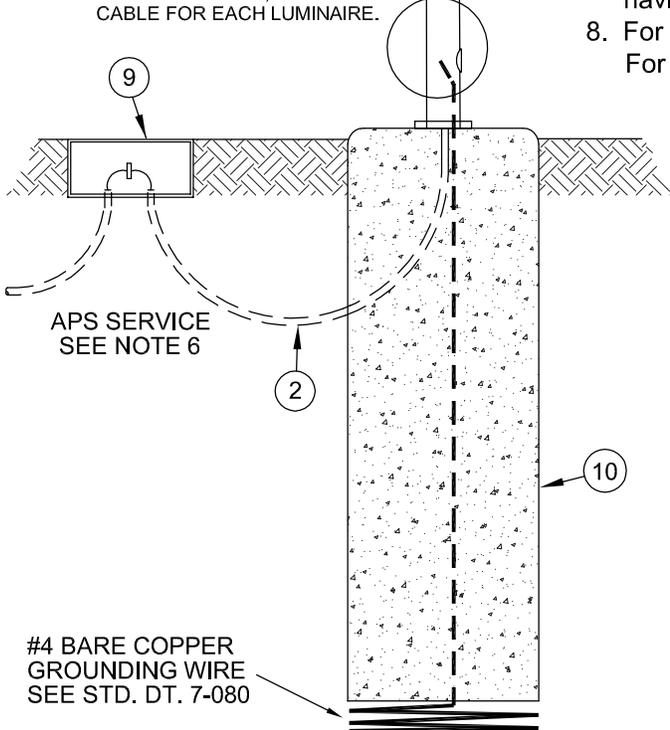


NOTES

1. Use indent tool to compress the fuse holder onto the wire.
2. Cable insulation should butt against the fuse holder. Do not remove an excess amount of insulation from the conductor.
3. Use a two inch (2") piece of heat shrink tubing on each side of the fuse holder, as shown, to insulate and waterproof.
4. Ground attachment: ground the A.P.S. neutral, attach #4 bare copper grounding wire.
5. Provide conduit and trench as per A.P.S. specifications.
6. If more than one luminaire, provide separate, fused cable from each luminaire to junction box.
7. Cable must be type UFNM (underground feed, non-metallic) having two #12 conductors and a #12 ground wire.
8. For 120-volt connections, provide fuse for hot conductor only. For 240-volt connections, provide fuses for both conductors.

120 / 240 V CONNECTION

NOTE: USE A SEPARATE, FUSED CABLE FOR EACH LUMINAIRE.



MATERIAL LIST

| ITEM | QTY | DESCRIPTION | NOTES |
|------|-----|--------------------------------|-------|
| 1 | 47 | CABLE, 2-#12 CU. +#12 CU. GRD. | |
| 2 | 6 | CONDUIT, 1" PVC FLEX CORR | |
| 3 | - | CONN BUTT SPLICE, #12 - #12 | |
| 4 | - | COVER, SPLICE 2/0 3/0 4/0 | |
| 5 | 1 | FUSE, CARTRIDGE 10A | |
| 6 | 1 | FUSE HOLDER, IN-LINE 600 V | |
| 7 | - | NOT USED | |
| 8 | AR | TUBING, SHRINKABLE 1/4" | |
| 9 | 1 | JUNCTION BOX & SECONDARY | 7-050 |
| 10 | 1 | POLE FOUNDATION | 7-080 |
| 11 | - | GROUND WIRE, COPPER, AWG-6 | 7-080 |

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS
STANDARD NO. 7-030
STREET LIGHT ASSEMBLY DETAIL
INTERNAL POLE WIRING
FOR UNDERGROUND CIRCUIT

**POLES PAINTS AND COATINGS FOR STEEL STREET LIGHT
POLES/ARMS AND STEEL STUB POLES**

1.0 ACCEPTABLE BELOW GRADE COATING PROCEDURES FOR GALVANIZED STREET LIGHT AND STUB POLES.

Coat pole from 12" above grade to the butt per either of the following options.

1.1 "CORROCOTE"

Galvanizing thickness shall be a minimum of 2.5 ounces/sq. ft. prior to coating (thickness which is greater than required by ASTM A123 allows for material removal due to surface preparation).

"Brush" Blast to etch galvanizing to a minimum acceptable substrate profile of 1.5 mils. do not fracture zinc coating. preheat, then coat outside with Madison Chemicals CORROCOTE II or CHEMLINE CHEMTHANE 2260 POLYURETHANE to a minimum dry film thickness of 12 mils.

NOTES

1. All foreign zinc substrate surface contaminants (i.e. oil based or other materials not soluble in water) shall be removed prior to etching.
2. Etching shall not be done when steel is at less than 5 degrees above the dew point.
3. After etching, the surface shall be free of blast residue dust and protected from contamination (including moisture).
4. Coating shall be applied before surface oxidation occurs and preferably within 48 hours after application of zinc coating.
5. Coating must be applied with graco hydra-cat system no. 954-470 (complete with heated hoses and drum heaters) or approved equal.
6. All edges to be feathered to eliminate lips.

1.2 MASTIC AND TAPE

Clean surface and coat with valspar vm 355 coal tar epoxy, to a minimum dry film thickness of 20 mils. after epoxy has dried, conformably half lap tape pole with corrosion resistant 10 mil tape. this tape shall be uniform and without folds, wrinkles or gaps.

2.0 COATING PROCEDURE FOR BROWN PAINTED STREET LIGHT POLES AND ARMS

Poles shall be powder coated per the following (solvent based paint systems are not acceptable).

2.1 POWDER COAT SYSTEM

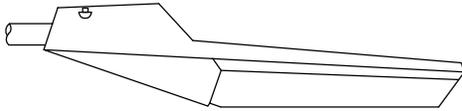
- 2.1.1 Blast clean pole to a minimum of "commercial grade" sspc sp6. Surfaces shall be free of blast residue dust and protected from foreign contaminants (including moisture).
- 2.1.2 Electrostatically apply tgic polyester powder to a minimum thickness of 3.0 mils. Cure coating per manufacturer's recommendations. Powder coating shall cover the full length of the pole including the below grade portion.
- 2.1.3 Coat from 12" above grade to the butt by either of the following methods.
 - 2.1.3.1 coat with madison chemicals corrocote ii or chemline chemthane 2260 polyurethane to a minimum dry film thickness of 12 mils,
 - 2.1.3.2 Finish pole from 12" above ground line to bottom with valspar vm 355 coal tar epoxy to a minimum dry film thickness of 20 mils. after epoxy has dried, conformably half lap tape pole with corrosion resistant 10 mil tape. this tape shall be uniform without folds, wrinkles or gaps.

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CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

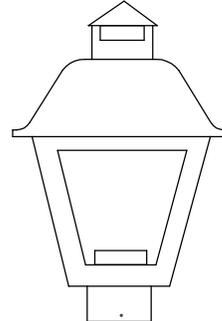
**STANDARD NO. 7-035
PROTECTIVE COATING
FOR STEEL LIGHT POLES**

COBRAHEAD LED FIXTURE



ROADWAY 90° CUTOFF

COLONIAL LED FIXTURE



COLONIAL

| LED FIXTURES | | | |
|--------------|-------|-------|----------------|
| | WATTS | VOLTS | INITIAL LUMENS |
| TYPE A | 100 | MULTI | 4700 |
| TYPE B | 150 | ↓ | 9000 |
| TYPE C | 250 | ↓ | 15700 |
| TYPE D | 400 | TAP | 17400 |

NOTES

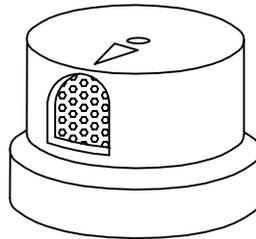
1. Lamps and photo controls must be ordered separately.
2. Contact the City of Yuma Public Works Department for the latest approved manufacturers and model numbers for lamps, fixtures, photoelectric controls, and nodes.
3. Luminaries under 250 watts must be 120 volts. Those 250 watts and more must be 240 volts.

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

**STANDARD NO. 7-040
STREET LIGHT FIXTURES
LED LUMINAIRES**

**MODEL NUMBERS ARE GIVEN TO ILLUSTRATE A QUALITY BENCHMARK ONLY
AND ARE NOT INTENDED TO BE A SOLE SOURCE.**



| PHOTOELECTRIC CONTROLLER | | |
|--------------------------|---|-------------------|
| MANUFACTURER MODEL | VOLTS | TURN / LOCK |
| | 120/208/240/277 MULTIVOLT 120V 480V | YES YES YES |

**SHORTING CAP, LOCKING-TYPE MOUNTING
SPECIFICATIONS**

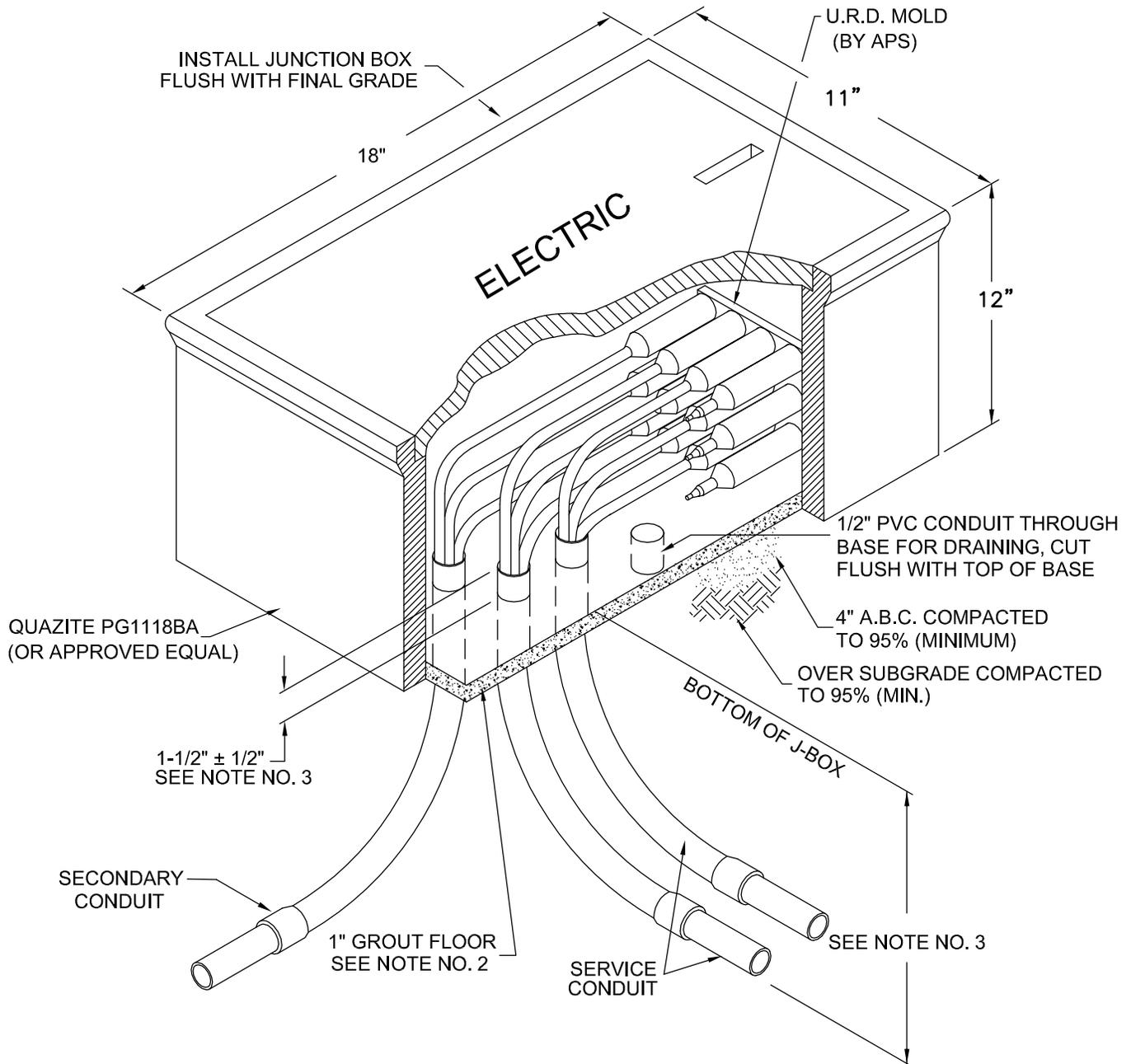
The locking type, shorting plug shall install on a ANSI C136.10 NEMA style 3-pin receptacle to connect load pins to bypass local photocell control. Shorting plug shall have a rating of 15A at 105-488 VAC. The shorting plug shall be constructed with UV stabilized polypropylene cap, black polypropylene base and neoprene gasket. The shorting plug shall be agency certified and tested accordingly. The shorting plug shall meet all environmental and electrical requirements of ANSI C136.10. The shorting plug shall have a manufactures limited warranty of 2 years minimum. The shorting plug shall be Intermatic Model K4500, or approved equal.



12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

**STANDARD NO. 7-045
STREET LIGHT DETAIL
PHOTOELECTRIC CONTROLLERS**



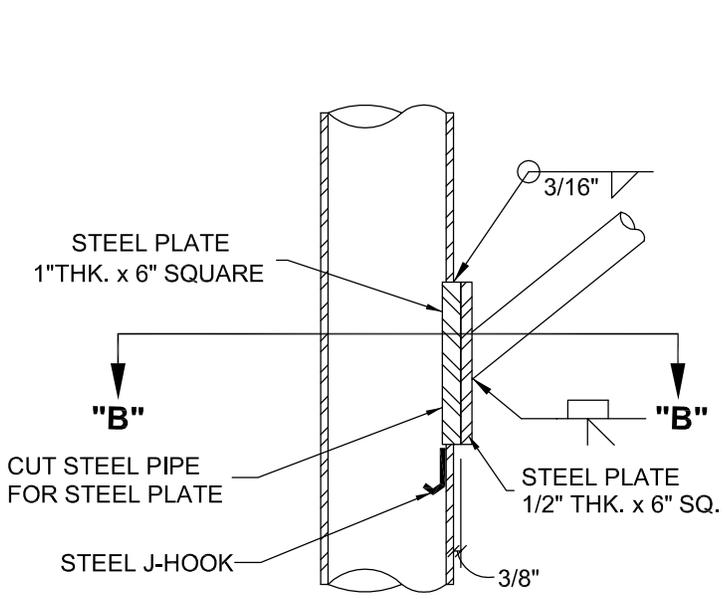
NOTES

1. "Penta-Head" lid-locking bolts shall be installed prior to energizing the underground systems.
2. Concrete grout (minimum 2000psi).
3. Bring all cable/conduits in at the same far end of the box to enable cables to be easily raised and lowered. Conduit sweeps shall be positioned and aligned in the best manner suited for each situation.
4. Backfill beneath and around the junction box shall consist of four inches (4") of ABC (minimum) and be compacted to 95% (minimum).

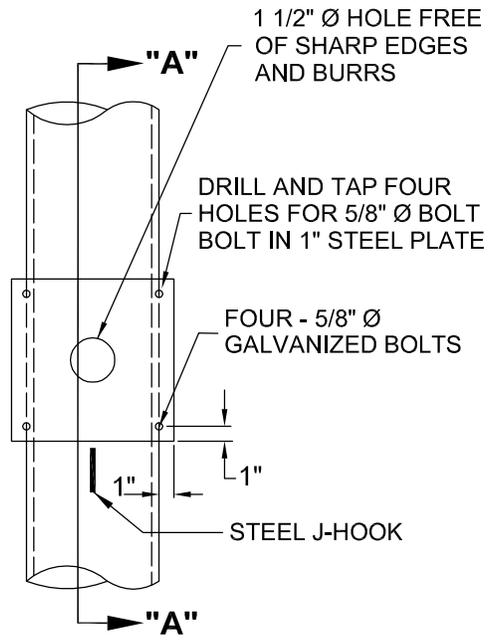
Junction boxes shall be provided by the Arizona Public Service Company at no charge.

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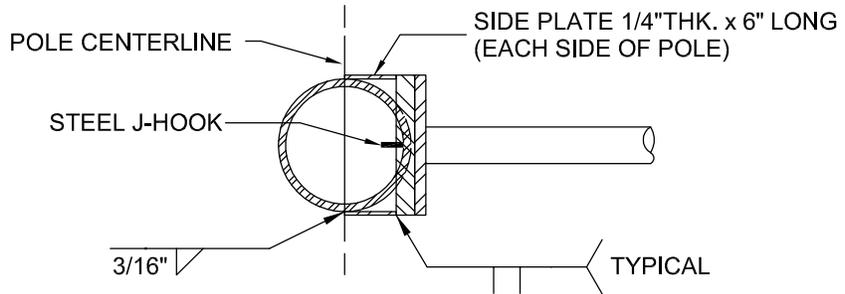
CITY OF YUMA
 CONSTRUCTION STANDARD DETAIL DRAWINGS
STANDARD NO. 7-050
HEAVY DUTY POLYMER
JUNCTION BOX
FOR STREET LIGHT SERVICE



SECTION "A - A"



FRONT VIEW



SECTION "B - B"

**MAST ARM CONNECTION FOR:
STANDARD DETAIL 7-095 (MS-41 & MS-42)
STANDARD DETAIL 7-100 (MS-51)**

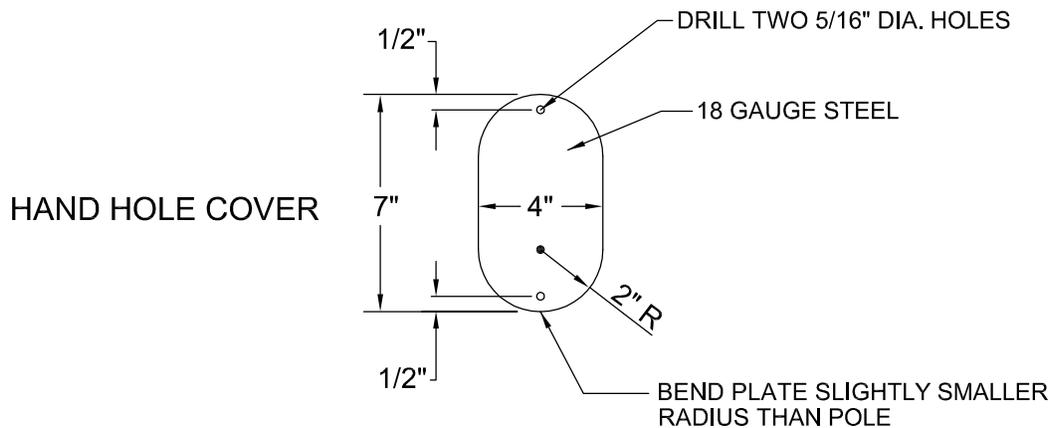
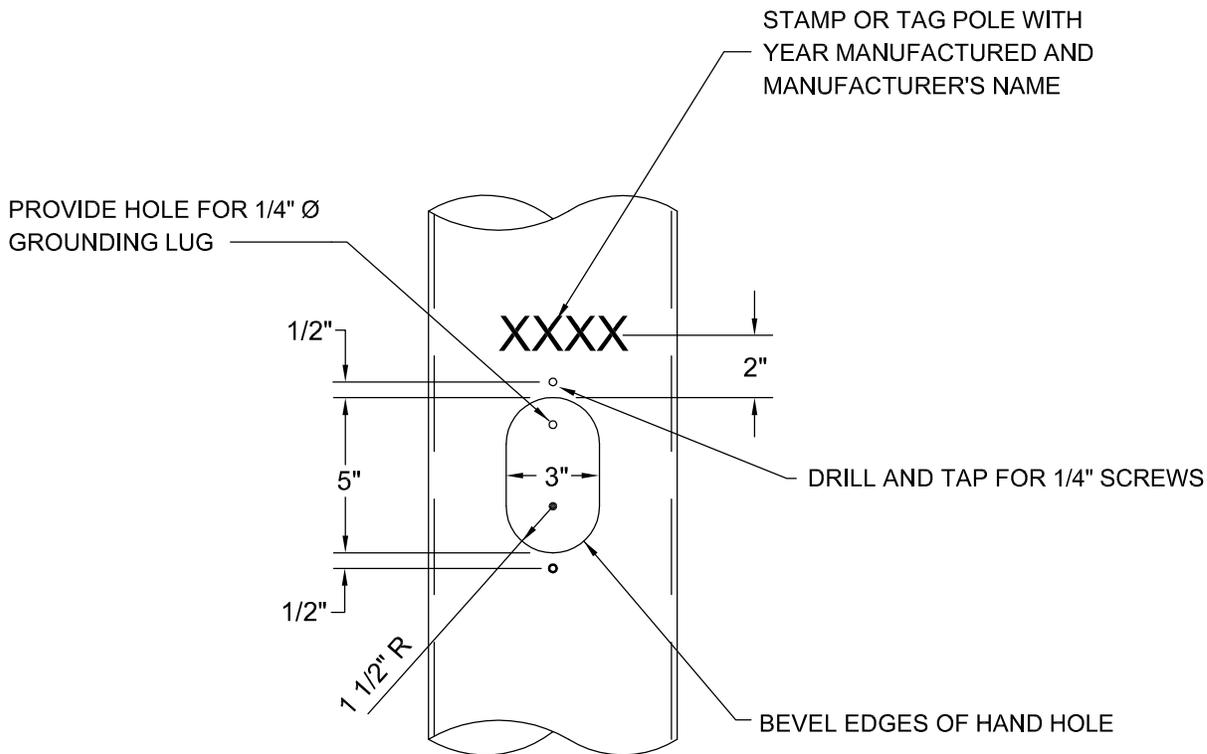
NOTE

1. Provide connection on opposite side of pole at two light condition

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

**STANDARD NO. 7-055
MAST ARM CONNECTION DETAIL**

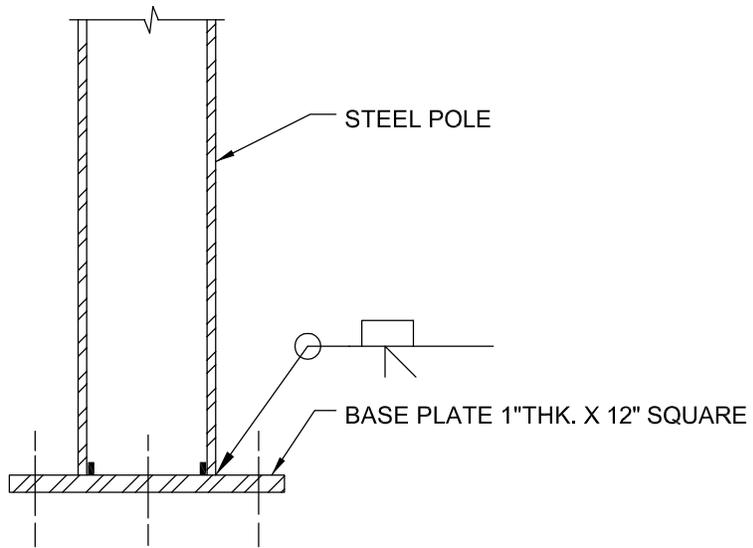


**HAND HOLE DETAIL FOR:
STANDARD DETAIL 7-095 (MS-41 & MS-42)
STANDARD DETAIL 7-100 (MS-51)**

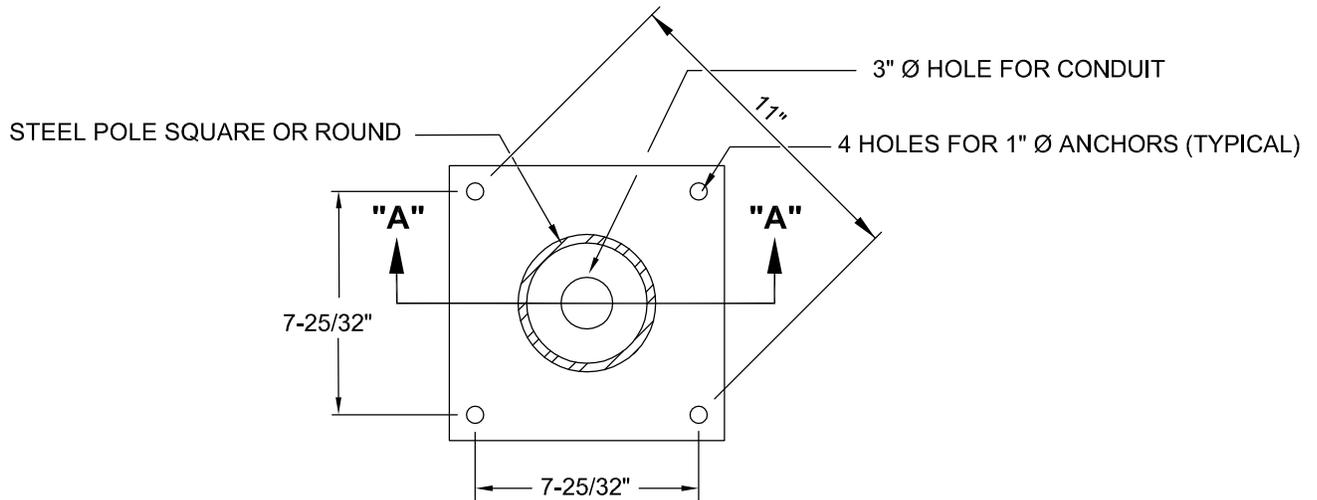
12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

**STANDARD NO. 7-060
ROUND POLE HAND HOLE DETAIL**



SECTION "A - A"

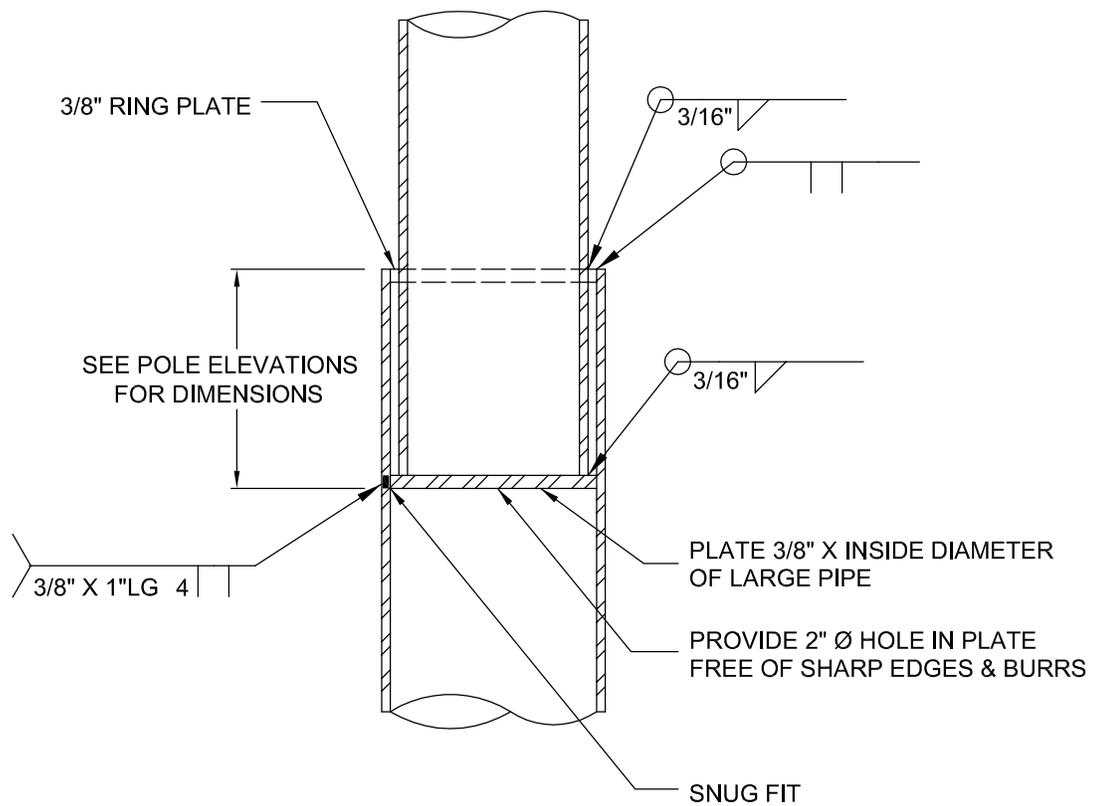


| BASIC WELD SYMBOLS | | | | | | | | | | |
|--------------------|------|--------|--------------|----------------|---|-------|---|---|---------|-------------|
| WELD ALL AROUND | BEAD | FILLET | PLUG OR SLOT | GROOVE OR BUTT | | | | | | |
| | | | | SQUARE | V | BEVEL | U | J | FLARE V | FLARE BEVEL |
| | | | | | | | | | | |

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 7-065
BASE PLATE DISPLAY



| BASIC WELD SYMBOLS | | | | | | | | | | |
|--------------------|------|--------|--------------|----------------|---|-------|---|---|---------|-------------|
| WELD ALL AROUND | BEAD | FILLET | PLUG OR SLOT | GROOVE OR BUTT | | | | | | |
| | | | | SQUARE | V | BEVEL | U | J | FLARE V | FLARE BEVEL |
| | | | | | | | | | | |

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 7-070
POLE STEP-DOWN DETAIL

GENERAL STRUCTURAL NOTES

(APPLY UNLESS NOTED OTHERWISE)

1. All work shall conform to the current Uniform Building Code adopted by the City of Yuma and AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaries and Traffic Signals.
2. Notes and details on drawings shall take precedence over general structural notes and typical details. Where no specific details are shown, construction shall conform to similar work on the project.
3. Verify all dimensions prior to the start of construction. Details marked "Typical" may or may not be referenced but shall apply unless noted otherwise.
4. If utilized the contractor shall be responsible for the design and implementation of all scaffolding, bracing and shoring. Observation visits to the job site by the Engineer shall not include inspection of the above items. The Engineer will not be responsible for the contractor's means, methods, techniques, sequences or procedures of construction nor will the Engineer be responsible for construction site safety or the safety precautions and the programs incident thereto.
5. The contract structural drawings represent the finished structure. They do not indicate the method of construction.
6. All footings shall bear on firm, undisturbed native soil. The Engineer accepts no responsibility for existing soil conditions. Footing design is based upon minimum Uniform Building Code soil bearing values as required by the Building Safety Division of the Department of Community Development in the absence of a soil report. It shall be the contractor's responsibility to verify the soil bearing pressure and to determine whether unsuitable soil conditions exist.
7. Lap splices for reinforcing in concrete shall be thirty bar diameters minimum.
8. Design loads: Wind: Basic wind speed = 80 MPH, pressure per AASHTO
Wire tension = 200# (Standard Details 7-005, 7-010)
Wire Tension = 700# (Standard Detail 7-090, MS-42)
9. Construction material:
Concrete: ASTM C94, F'c + 3000psi at 28 days. Maximum water/cement ratio by weight=0.58.
Reinforcing: ASTM A615 Grade 60
Structural steel: ASTM A36 (Fy=36ksi) for plates and shapes.
ASTM A500 Grade B (Fy=46ksi) for tubes.
ASTM A53 Types E or S, Grade B (Fy=35ksi) for pipes.

Bolts: ASTM A325

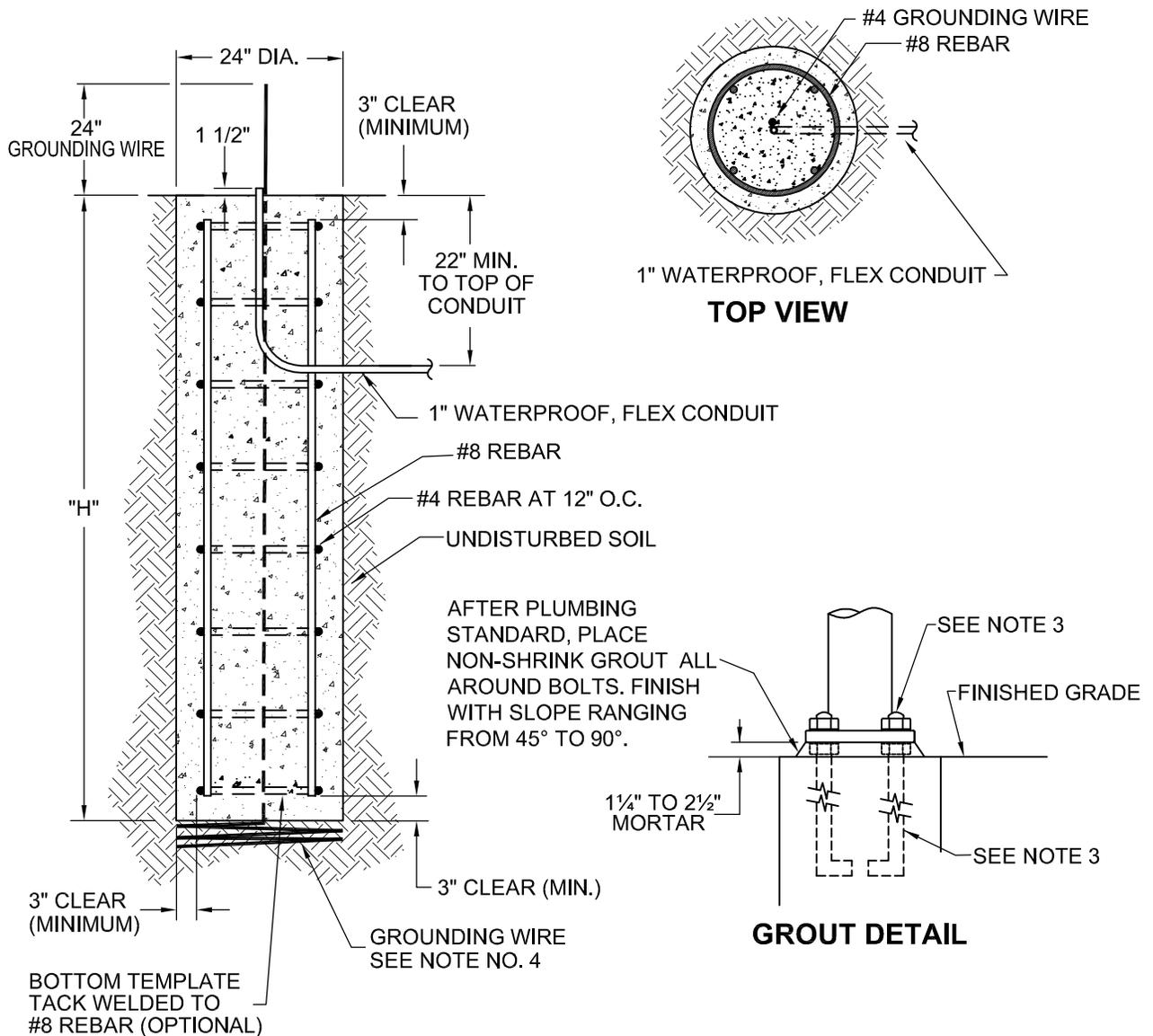
Welding: E70 series low hydrogen rods. Welding per AWS D1.1 random 25% of welds shall be tested per AASHTO

Protection for structural steel:

- A. Painted structures: the materials and methods shall conform to the AASHTO standard specifications for highway bridges. Parts inaccessible after erection, except the inside of tubing or pipe, shall be given three shop coats of paint.
- B. Structures galvanized after fabrication: the coating shall conform to the requirements of AASHTO M111, ASTM A123 and ASTM 143. Tubular steel pole shafts to be galvanized preferably shall have a silicone content equal to or less than 0.66%. Other components, such as base plates, should have a silicon content controlled as required to prevent detrimental galvanizing effects. Damage to the coating shall be repaired subsequent to erection by a method approved by the Engineer.

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS
STANDARD NO. 7-075
STREET LIGHT
STRUCTURAL NOTES



NOTES

1. Concrete: ASTM C94, F'c = 3000psi at 28 days, maximum water/cement ration by weight = 0.58.
2. Reinforcing: ASTM A615 Grade 60.
3. Light pole shall be installed as per manufacturer's specifications. Manufacturer shall furnish approved anchor bolts and spacing template for bolt installation in concrete footing.
4. Prior to pouring the concrete footing, place a 25' coil of #4 bare wire in the bottom of the hole and extend one end of the wire up through the rebar. Leave 24" of wire clear of concrete footing.
5. Non-shrink grout shall meet ADOT standard specifications section 1017.

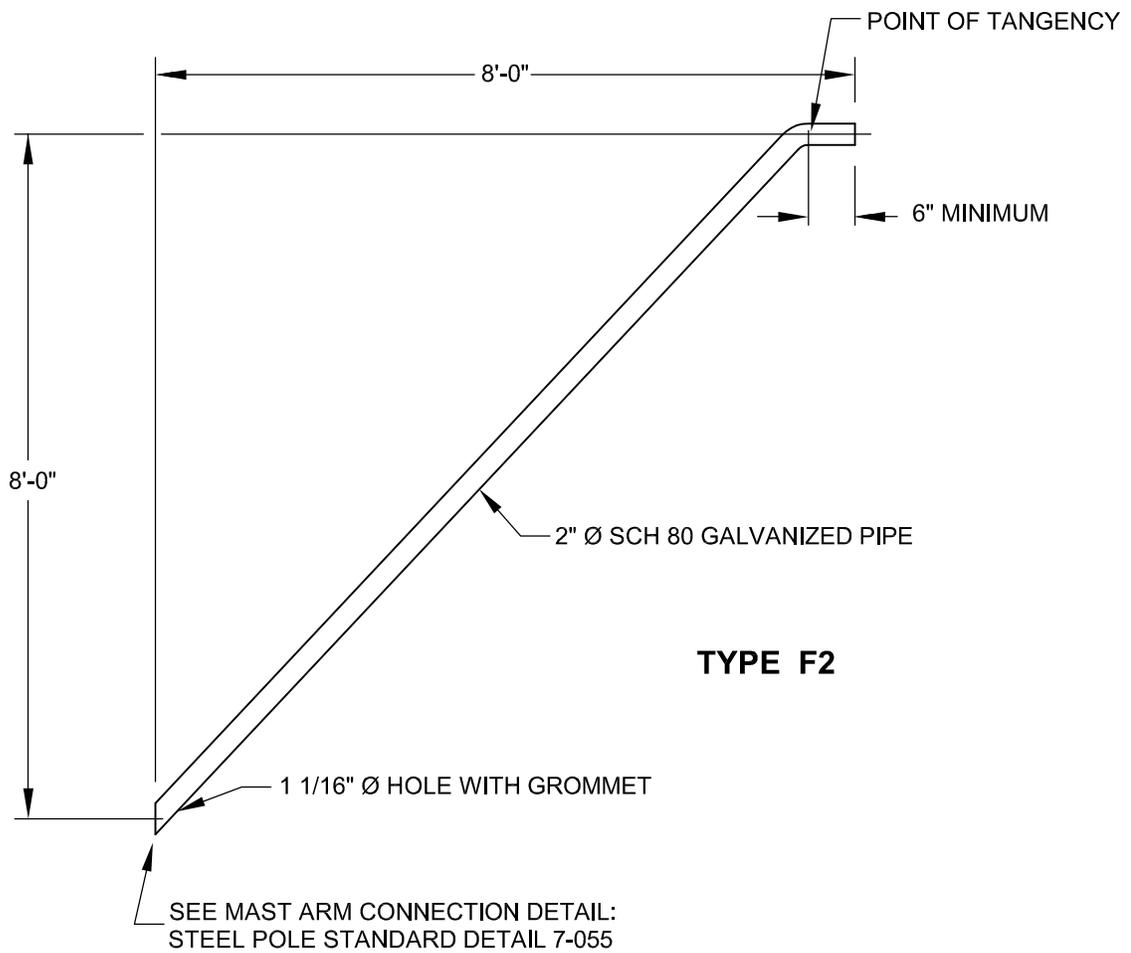
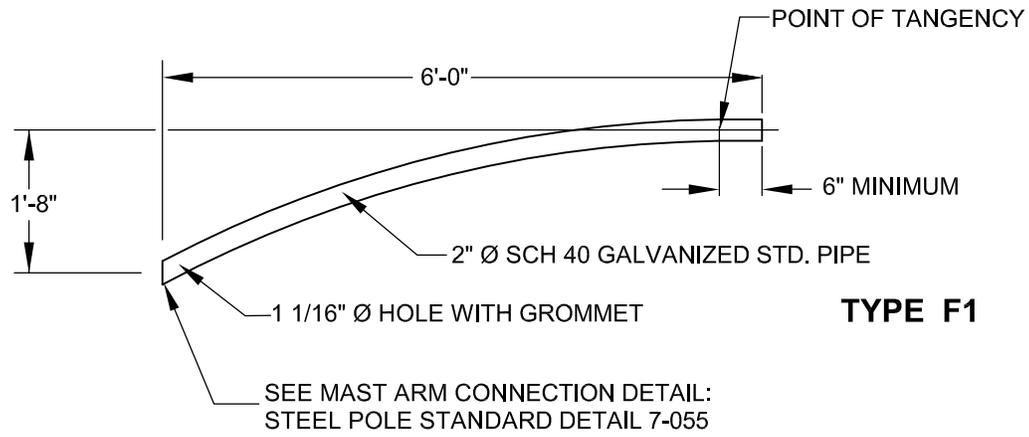
| FOOTING DEPTH SCHEDULE | | |
|------------------------|-------|-------|
| STD. DT. | POLE | "H" |
| 7-095 | MS-41 | 7'-0" |
| 7-095 | MS-42 | 8'-6" |
| 7-100 | MS-51 | 5'-6" |

Ref: JOL/MS-8

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

**STANDARD NO. 7-080
POLE FOOTING DETAIL**



12-27-18 (Under Review)

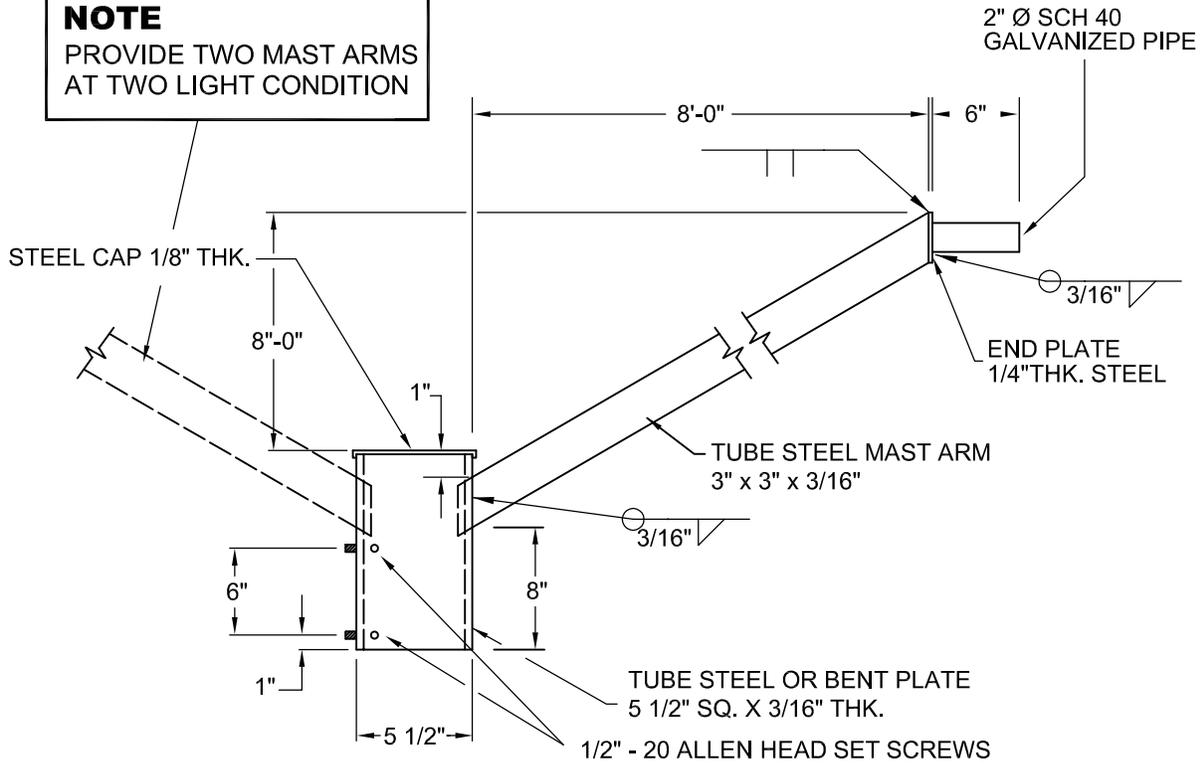
Sheet 1 of 3

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 7-085
MAST ARM DETAILS

NOTE

PROVIDE TWO MAST ARMS
AT TWO LIGHT CONDITION



TYPE F3

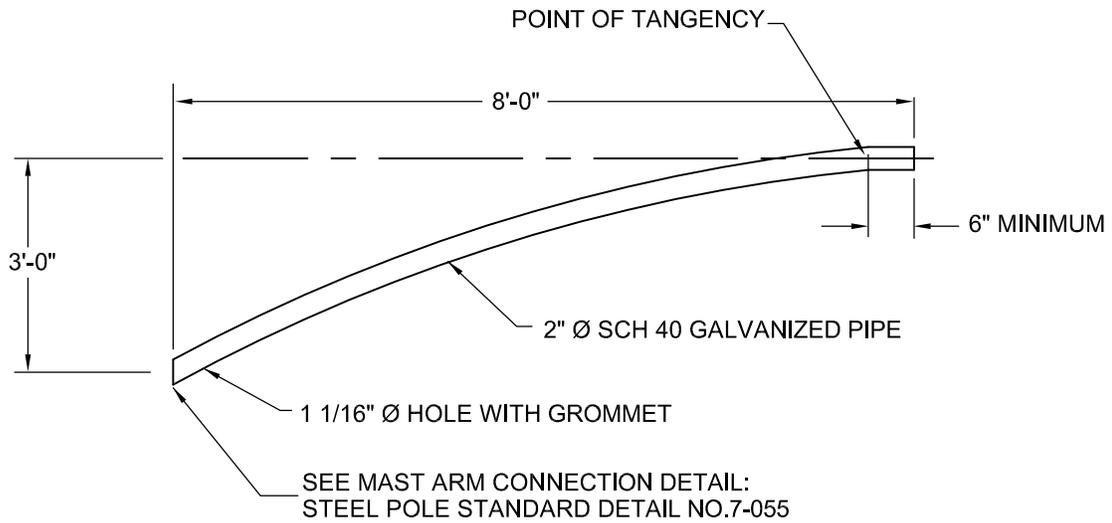
| BASIC WELD SYMBOLS | | | | | | | | | | |
|--------------------|------|--------|--------------|----------------|---|-------|---|---|---------|-------------|
| WELD ALL AROUND | BEAD | FILLET | PLUG OR SLOT | GROOVE OR BUTT | | | | | | |
| | | | | SQUARE | V | BEVEL | U | J | FLARE V | FLARE BEVEL |
| | | | | | | | | | | |

12-27-18 (Under Review)

Sheet 2 of 3

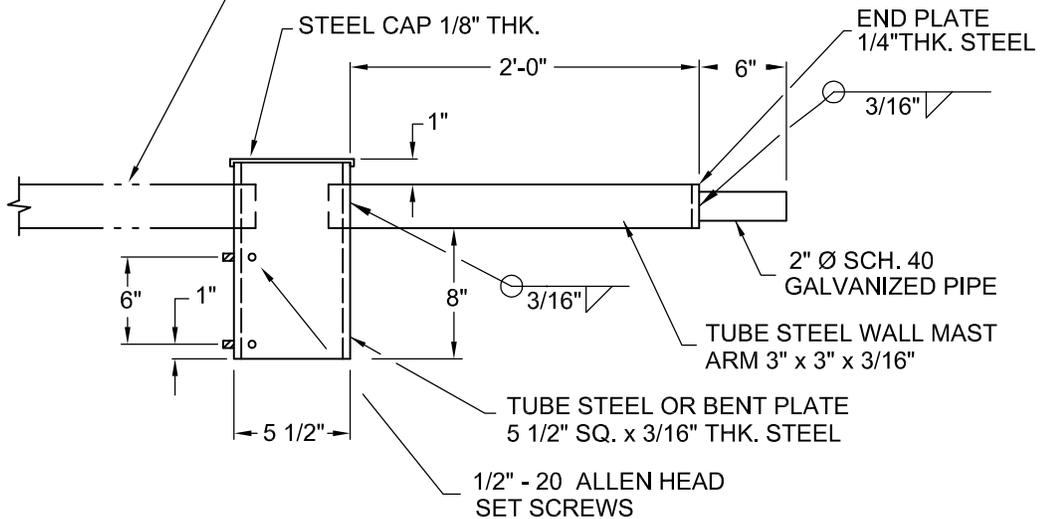
CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 7-085
MAST ARM DETAILS



TYPE F4

NOTE
 PROVIDE TWO MAST ARMS
 AT TWO LIGHT CONDITION

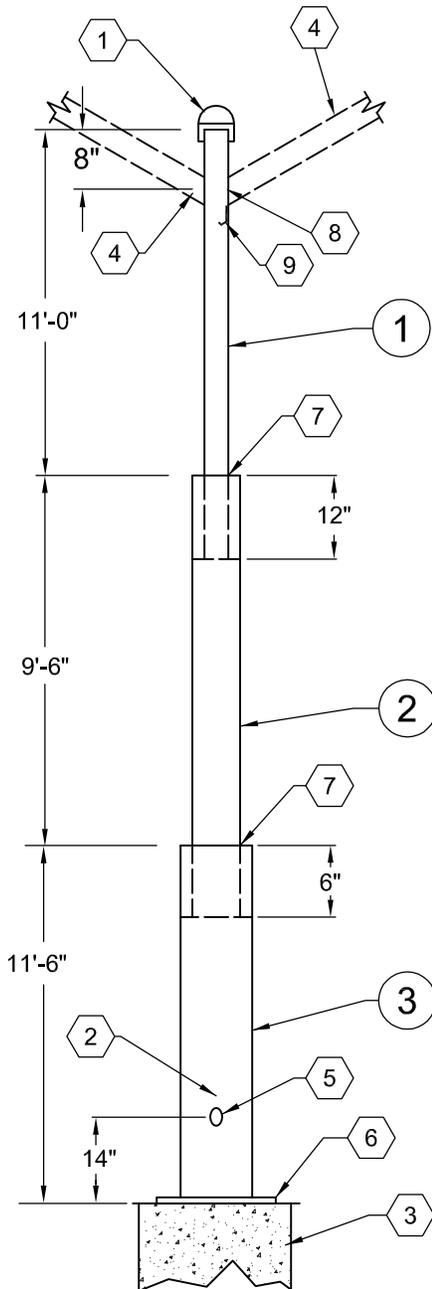


TYPE F5

| BASIC WELD SYMBOLS | | | | | | | | | | |
|--------------------|------|--------|--------------|----------------|---|-------|---|---|---------|-------------|
| WELD ALL AROUND | BEAD | FILLET | PLUG OR SLOT | GROOVE OR BUTT | | | | | | |
| | | | | SQUARE | V | BEVEL | U | J | FLARE V | FLARE BEVEL |
| | | | | | | | | | | |

LEGEND

- ① Slip-on cap; plate inside diameter shall equal outside diameter of pole tip.
- ② Stamp or tag pole with year manufactured and manufacturer's name.
- ③ Concrete footing detail: refer to Standard Detail 7-080.
- ④ Master arms: refer to Standard Detail 7-085.
- ⑤ Hand hole: refer to Standard Detail 7-060.
- ⑥ Base plate: refer to Standard Detail 7-065.
- ⑦ Step-down connection: refer to Standard Detail 7-070.
- ⑧ Master arm connection: refer to Standard Detail 7-055.
- ⑨ J-hook (inside of pole)

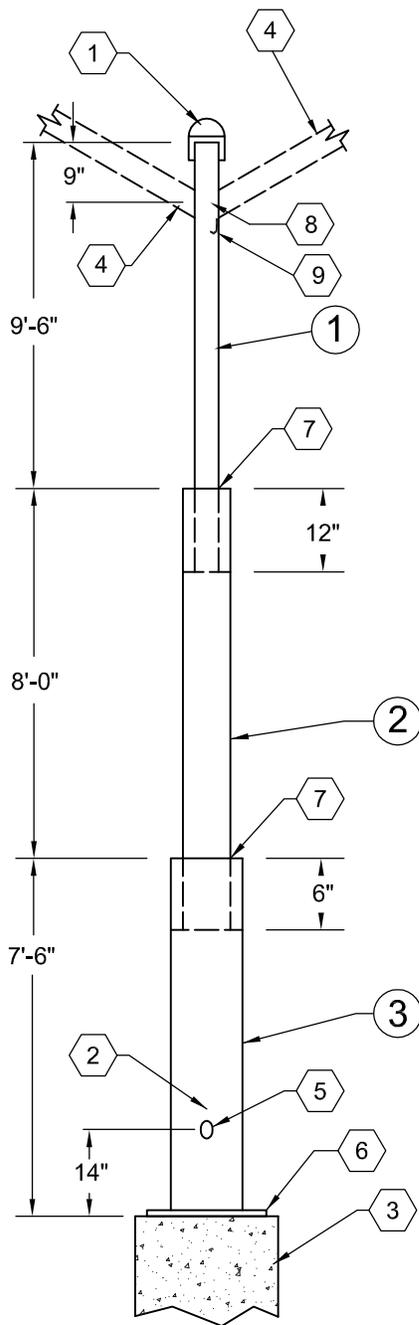


| POLE | MS-41 | MS-42 |
|------|-----------|-----------|
| ① | 4" Ø STD. | 5" Ø STD. |
| ② | 5" Ø STD. | 6" Ø STD. |
| ③ | 6" Ø STD. | 8" Ø STD. |

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 7-090
32' STEEL STREET LIGHT POLE

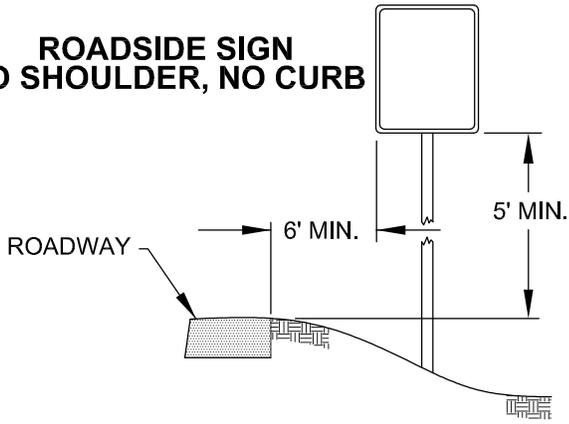


LEGEND

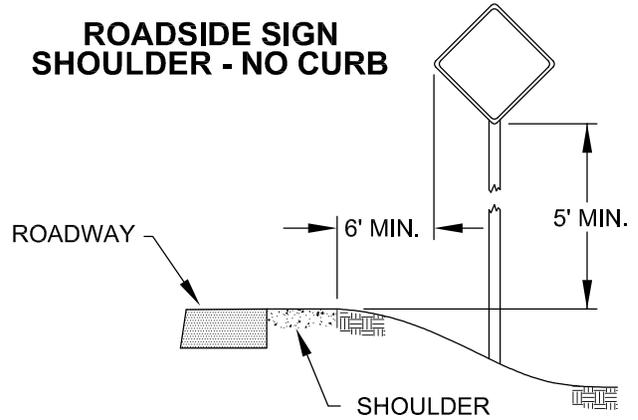
- ① Slip-on cap; plate inside diameter shall equal outside diameter of pole tip.
- ② Stamp or tag pole with year manufactured and manufacturer's name.
- ③ Concrete footing detail: refer to Standard Detail 7-080.
- ④ Master arms: refer to Standard Detail 7-085.
- ⑤ Hand hole: refer to Standard Detail 7-060.
- ⑥ Base plate: refer to Standard Detail 7-065.
- ⑦ Step-down connection: refer to Standard Detail 7-070.
- ⑧ Master arm connection: refer to Standard Detail 7-055.
- ⑨ J-Hook (inside pole)

| POLE | MS-51 |
|------|-----------|
| ① | 3" Ø STD. |
| ② | 4" Ø STD. |
| ③ | 5" Ø STD. |

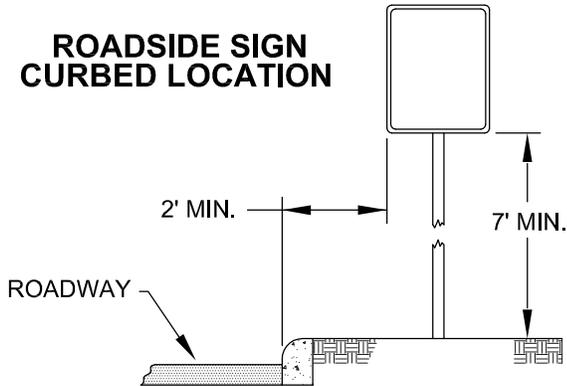
**ROADSIDE SIGN
NO SHOULDER, NO CURB**



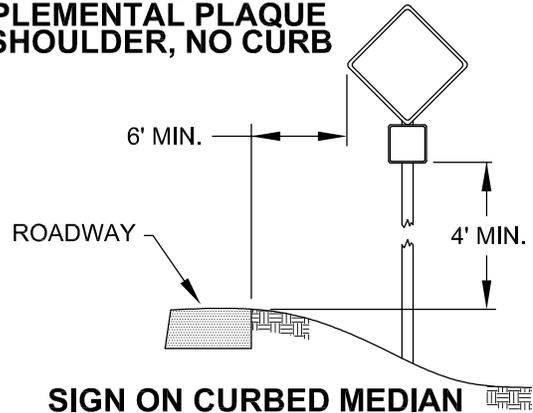
**ROADSIDE SIGN
SHOULDER - NO CURB**



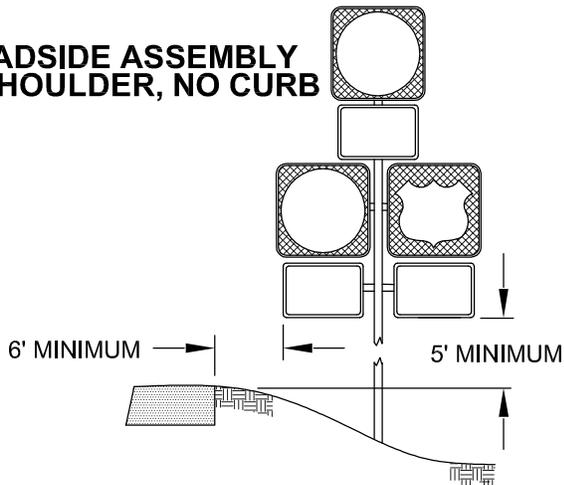
**ROADSIDE SIGN
CURBED LOCATION**



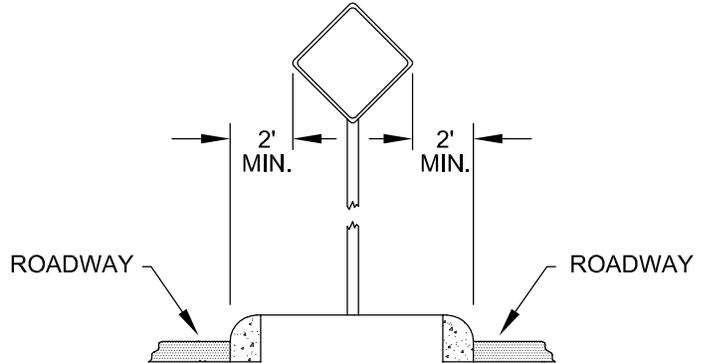
**ROADSIDE SIGN WITH
SUPPLEMENTAL PLAQUE
NO SHOULDER, NO CURB**



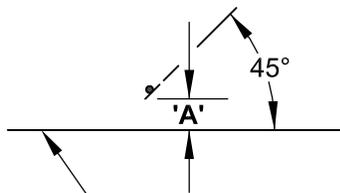
**ROADSIDE ASSEMBLY
NO SHOULDER, NO CURB**



SIGN ON CURBED MEDIAN



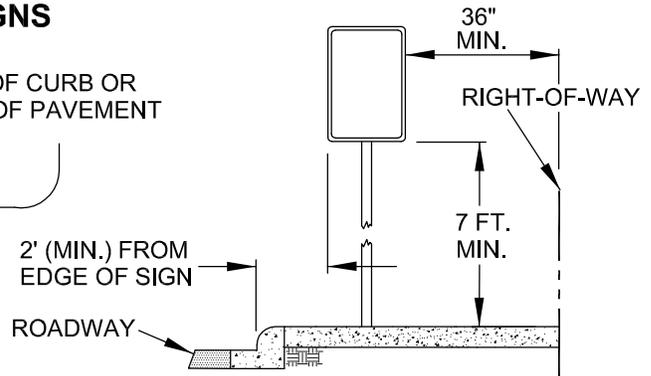
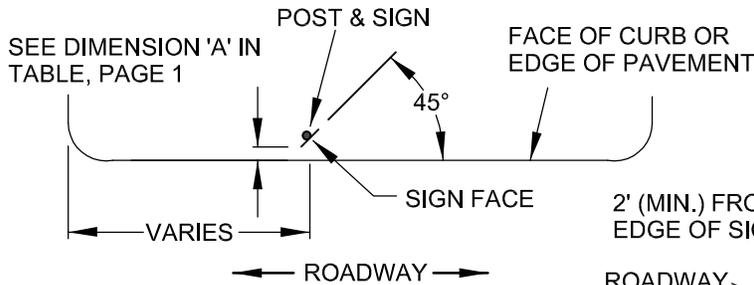
**LATERAL PLACEMENT AND ORIENTATION
ROADSIDE USE (PARKING)
RESTRICTION SIGN**



FACE OF CURB OR EDGE OF PAVEMENT

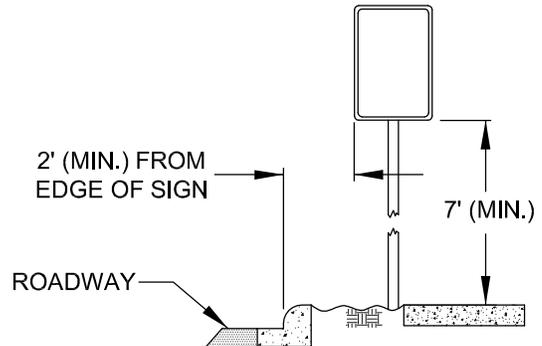
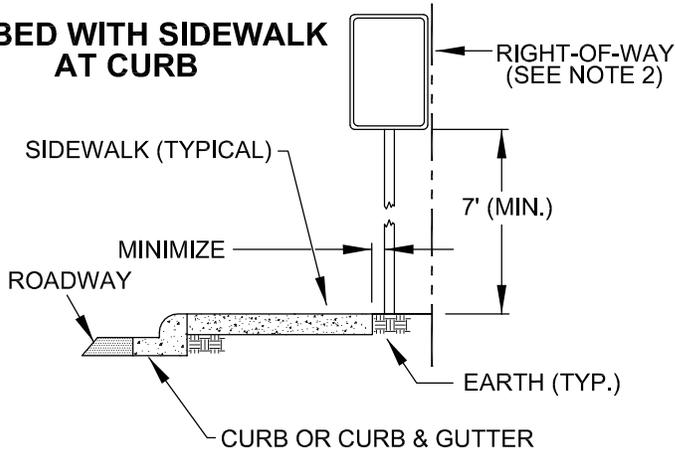
| TYPE LOCATION | DIMENSION 'A' |
|---------------|---------------|
| CURBED | 2 FT. OR MORE |
| NO CURB | 6 FT. OR MORE |

ROADSIDE USE RESTRICTION SIGNS



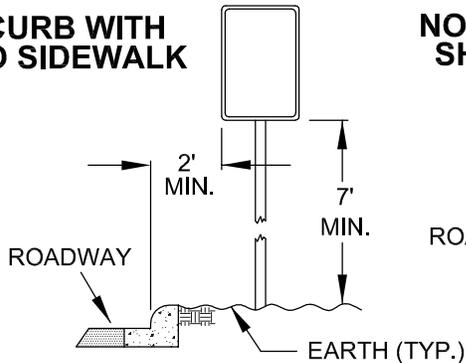
CURBED WITH SIDEWALK TO RIGHT-OF-WAY LINE

CURBED WITH SIDEWALK AT CURB

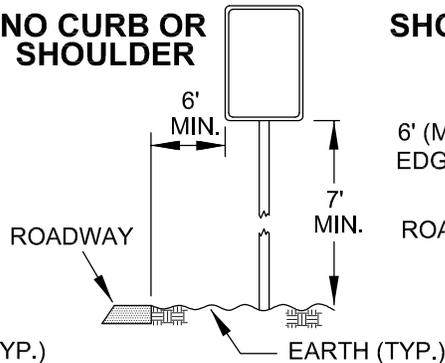


CURBED WITH PARKWAY AND SIDEWALK

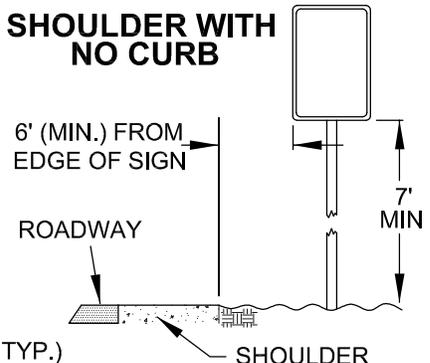
CURB WITH NO SIDEWALK



NO CURB OR SHOULDER



SHOULDER WITH NO CURB



NOTES

1. Refer to Standard Detail 8-020 for additional sign mounting requirements.
2. No part of any sign shall extend beyond edge of right-of-way.
3. If pedestrian or roadside parking activity occurs in areas with no curb, use minimum height of 7' instead of 5'.
4. Consult the City's Traffic Engineer for situations not illustrated.

12-27-18 (Under Review)

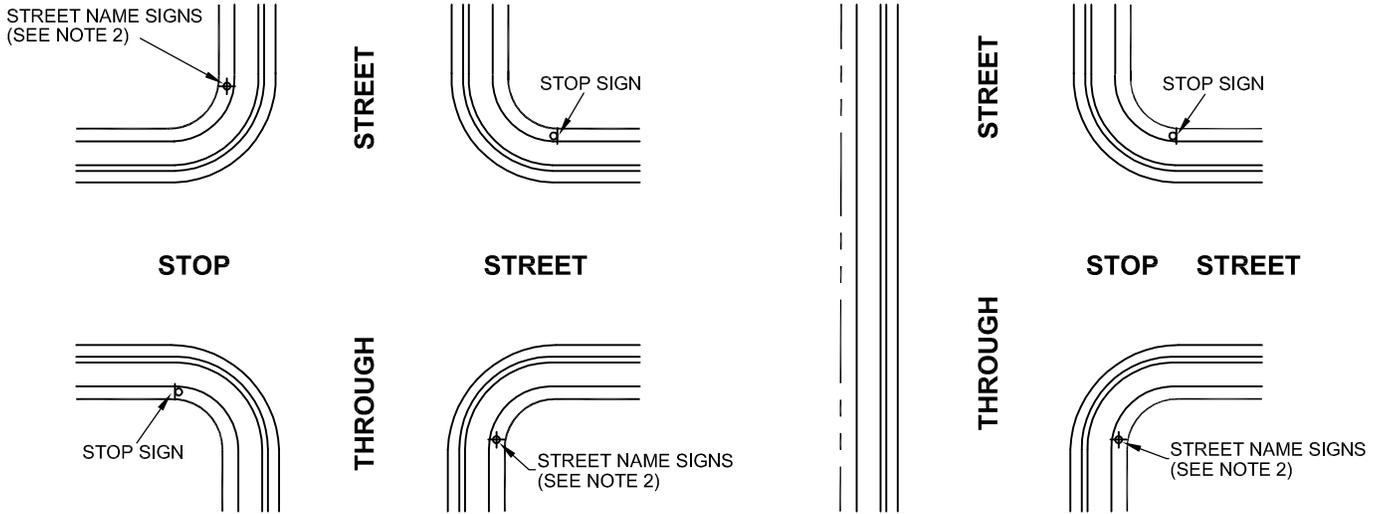
Sheet 2 of 2

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 8-005
PLACEMENT REQUIREMENTS
FOR TRAFFIC SIGNS

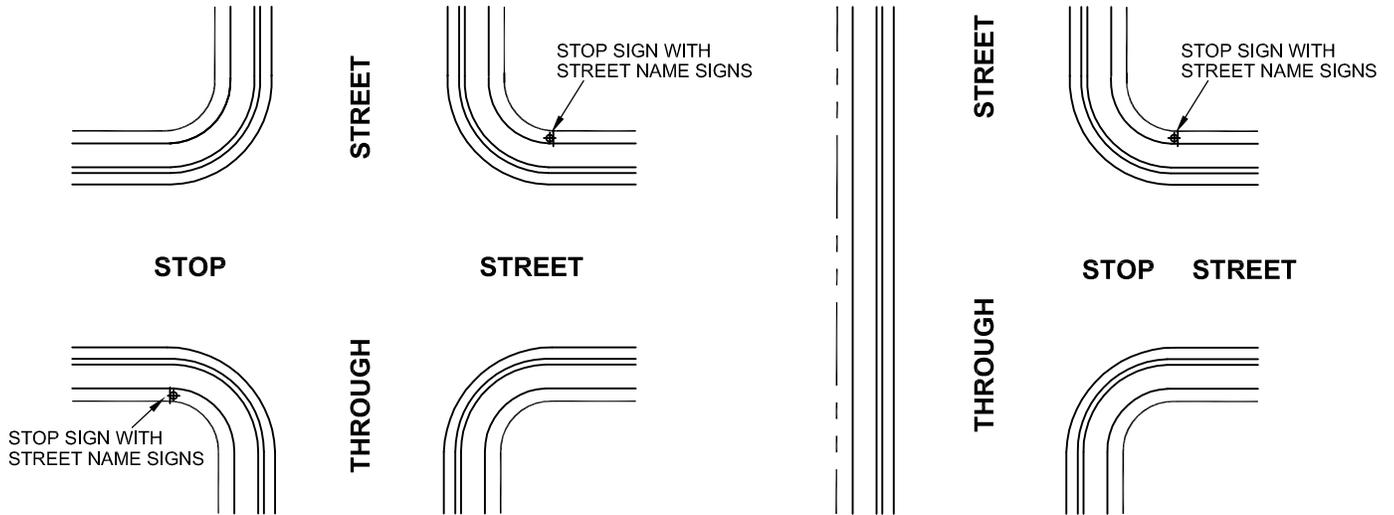
INTERSECTIONS INVOLVING ARTERIAL OR COLLECTOR STREETS

PUT STREET NAME SIGNS ON THROUGH STREET SEPARATE FROM STOP SIGNS



INTERSECTIONS INVOLVING ONLY LOCAL STREETS

COMBINE STREET NAME SIGNS WITH STOP SIGNS ON STOP STREET.



NOTES

1. Sign locations shall not interfere with sidewalk ramps in accordance with ADA requirements.
2. If through street has a median or is more than 50 feet wide, use second set of street name signs. A second set not required otherwise.

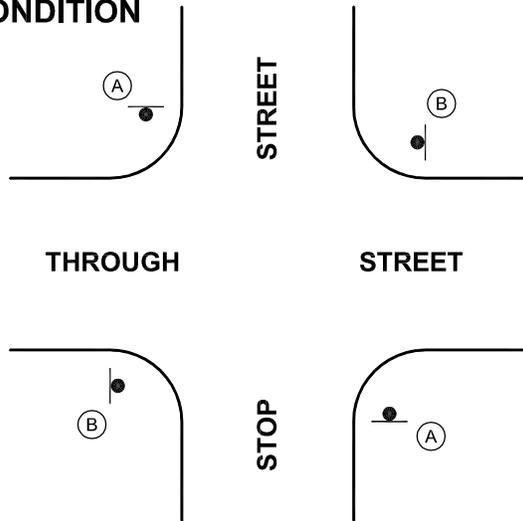
12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

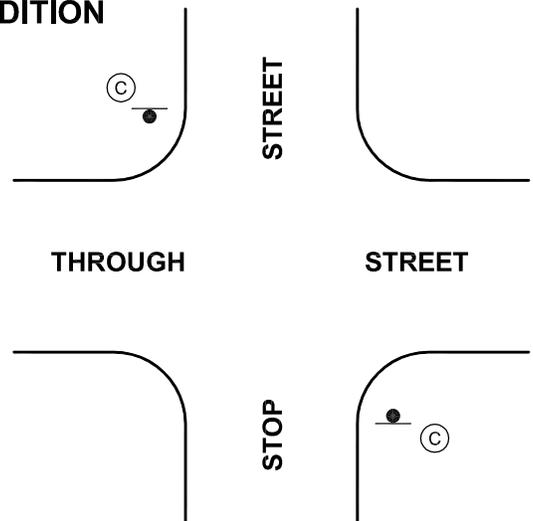
STANDARD NO. 8-010
STOP SIGN AND STREET NAME
SIGN PLACEMENT

TYPICAL TRANSITION FROM ALL-WAY STOP TO 2-WAY STOP CONTROL

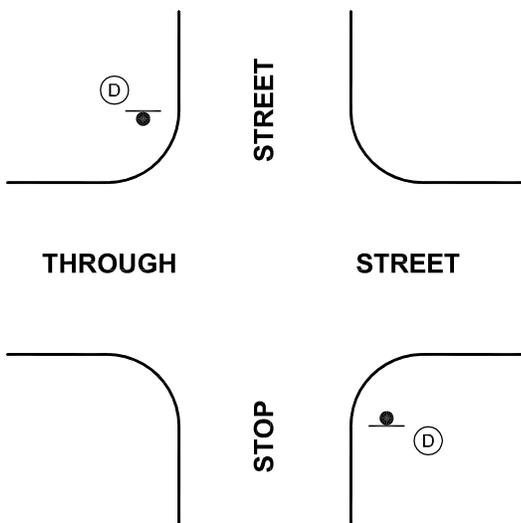
TRANSITION CONDITION



CONFIRMATION CONDITION



FINAL CONDITION



SIGN LEGEND



A
M4-7
18"x6"
BLACK ON WHITE
R1-1
30"x30"
R1-4
18"x6"



B
M4-7
18"x6"
BLACK ON WHITE
R1-4
18"x6"
18"x18"
BLACK ON WHITE
DATE OF PLANNED
REMOVAL



C
R1-1
30"x30"
W4-4pAZ
30"x18"



D
R1-1
30"x30"

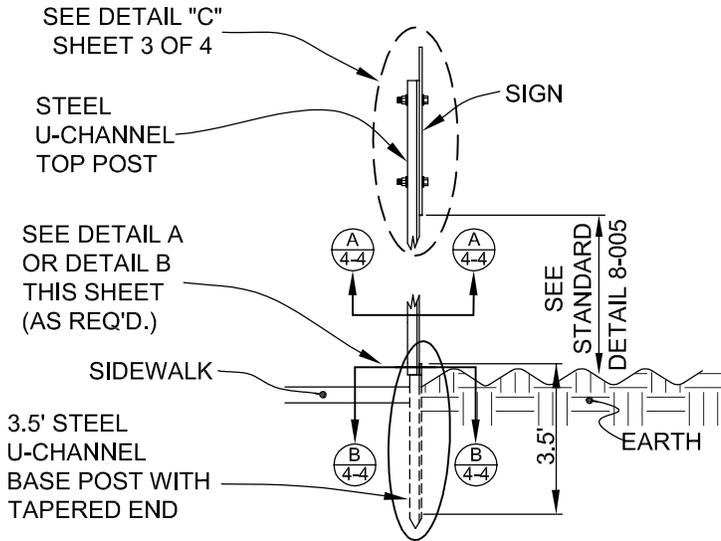
NOTE

1. Transition and confirmation conditions shall be in effect for 30 calendar days.

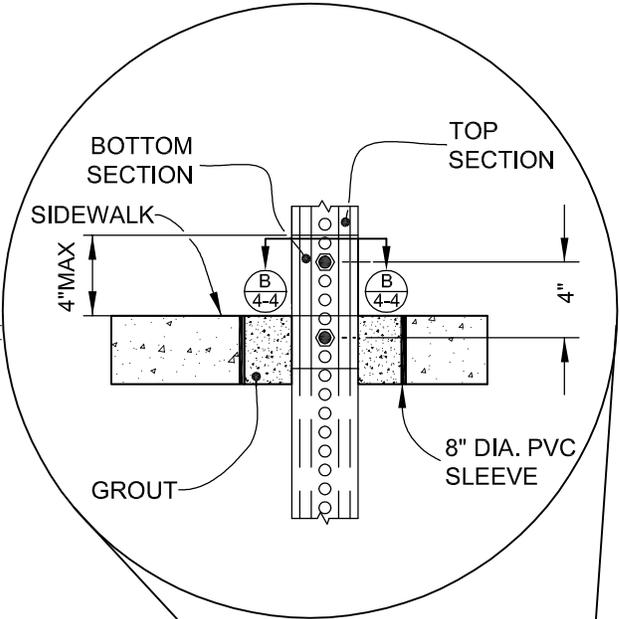
12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

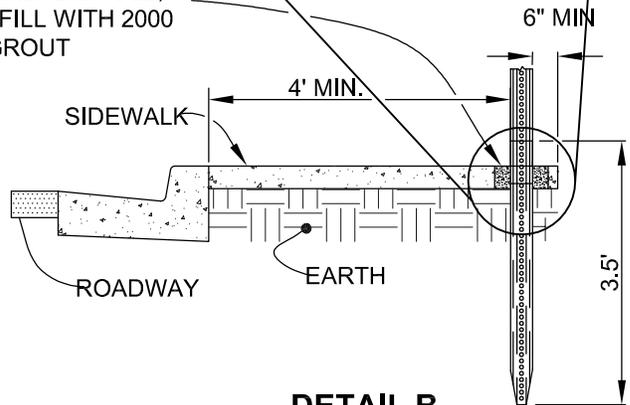
**STANDARD NO. 8-015
ALL-WAY STOP TO
2-WAY STOP TRANSITION**



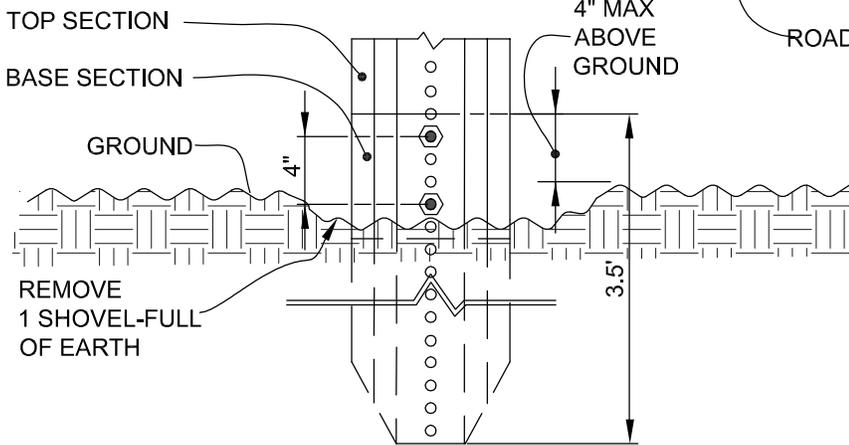
INSTALLATION FOR BREAK-AWAY CAPABILITY



CORE DRILL OR FORM
8" DIAMETER HOLE,
BACKFILL WITH 2000
PSI. GROUT

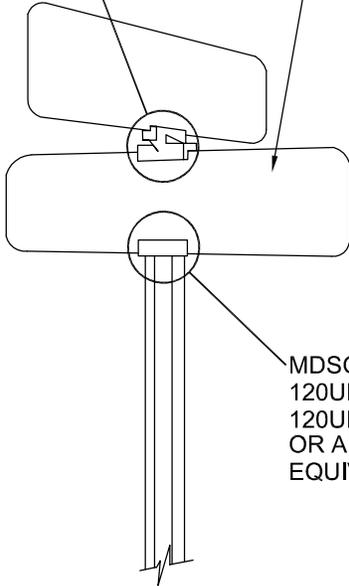


**DETAIL B
IN SIDEWALK**



**DETAIL A
IN EARTH**

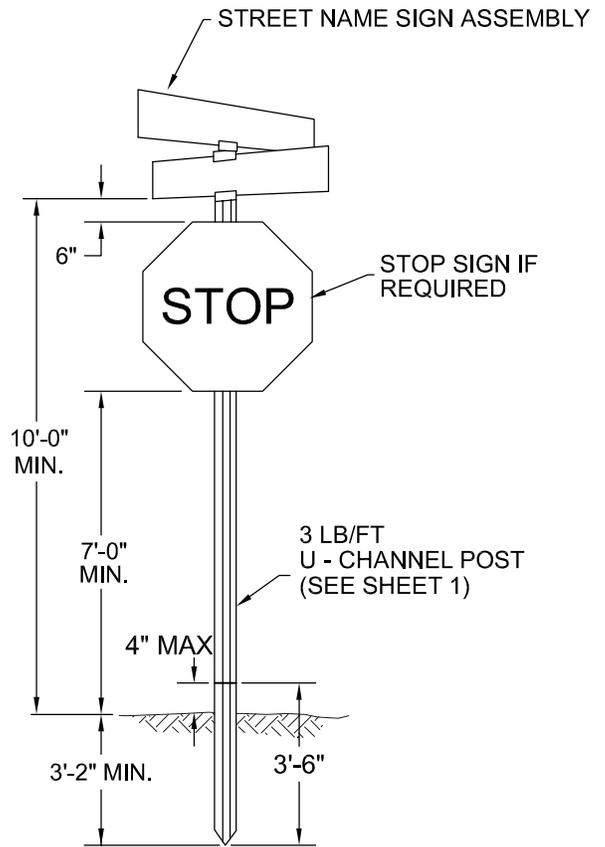
MDSOLUTIONS 120CPF090
OR APPROVED EQUIVALENT



**STREET NAME
SIGN ASSEMBLY**

BOTTOM SIGN SHALL BE PERPENDICULAR
TO HIGHER TYPE ROADWAY

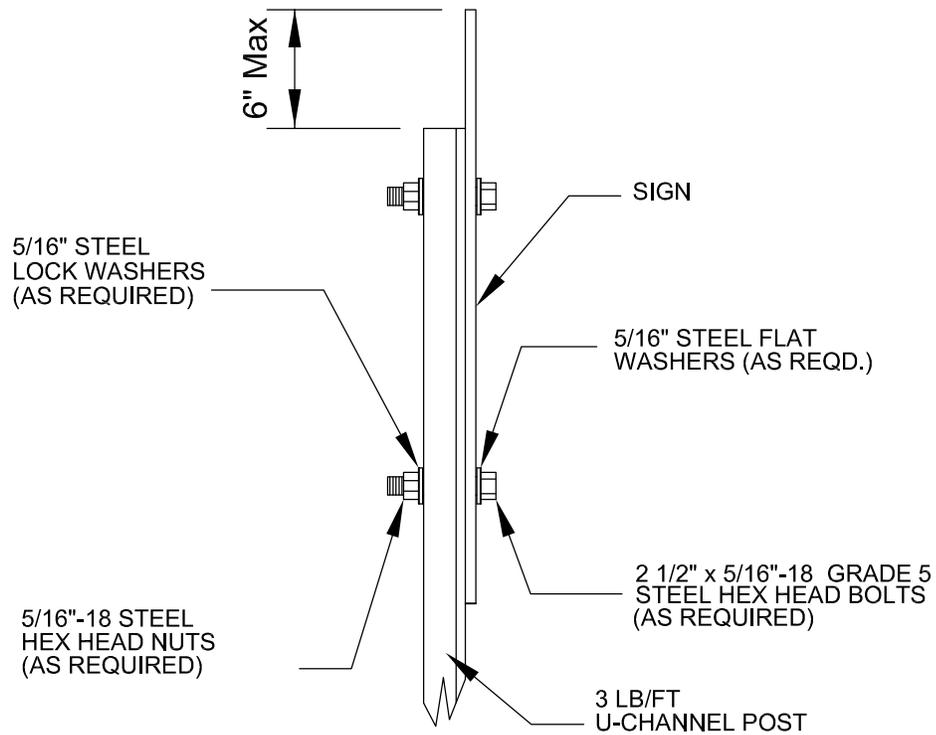
MDSOLUTIONS
120UFC090
120UFC180
OR APPROVED
EQUIVALENT



SIGN INSTALLATION

NOTES

1. See Standard 8-050 for street name signs.
2. See Standard 8-010 for street name sign placement.



**DETAIL C
SIGN/POST ATTACHMENT**

NOTES

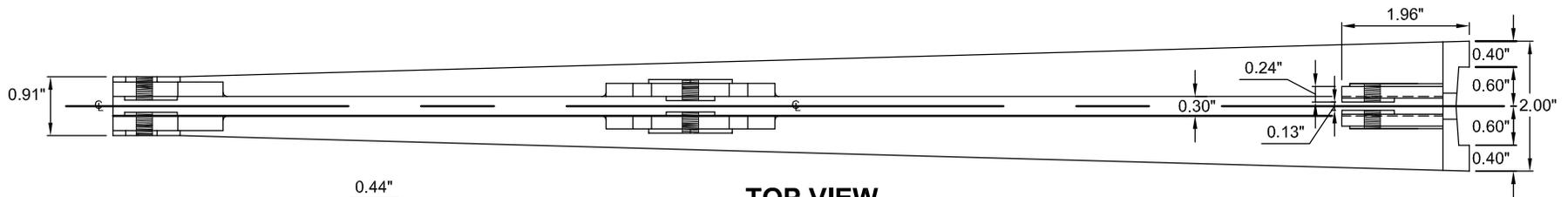
1. Posts must be manufactured from hot rolled flange channel galvanized steel per ASTM A123 finish and intended to be used as supports for signs.
2. All posts shall be 3 lb/ft, steel u-channel posts.
3. Posts must be of a uniform flanged channel section with 3/8" dia. holes on one inch (1") centers for the entire length of the channel.
4. See Standard Detail 8-030 for additional requirements for roadside use restriction signs.
5. Should there be a supplemental plaque it must be mounted immediately below the sign.
6. Signs on the same post may not be overlapped.
7. See Sheet 2 for street name sign mounting requirements.

12-27-18 (Under Review)

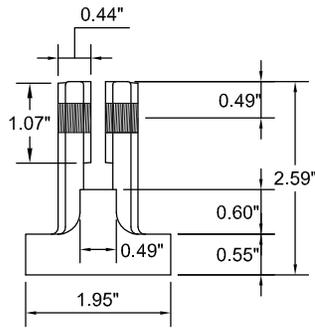
Sheet 3 of 4

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

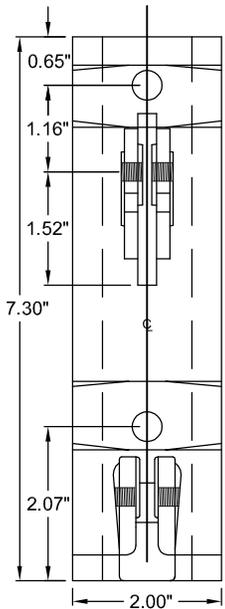
**STANDARD NO. 8-020
TRAFFIC SIGN MOUNTING**



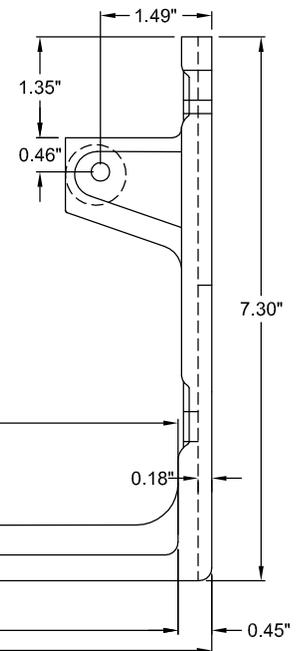
TOP VIEW



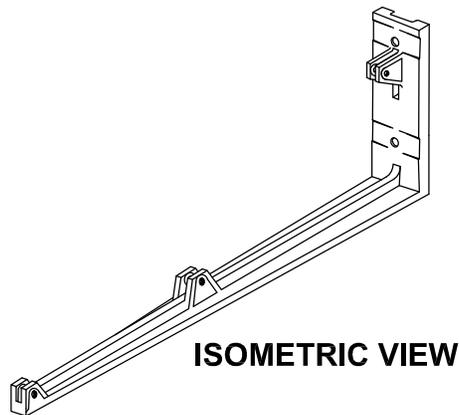
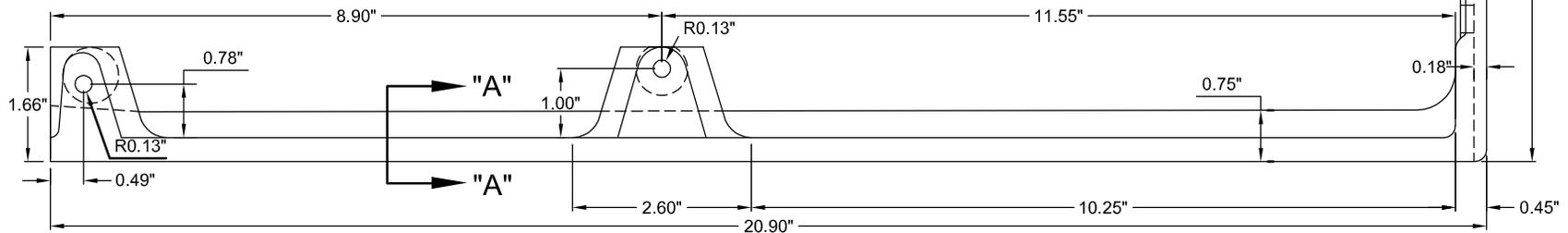
SECTION "A - A"



FRONT VIEW



RIGHT VIEW



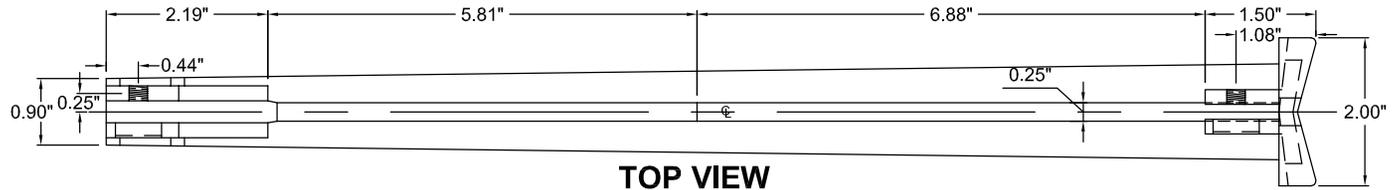
ISOMETRIC VIEW

NOTES

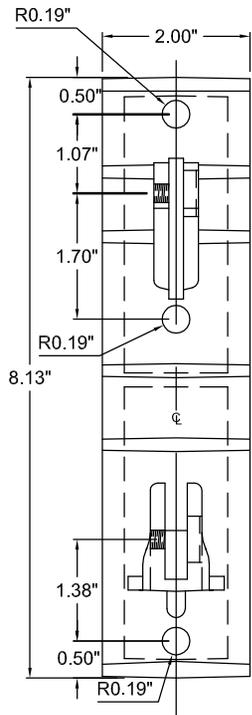
1. Bracket must be cast aluminum.
2. Dimensions are nominal. Brackets with slightly different dimensions that are functionally equivalent, in the judgement of the Engineer, will be acceptable.
3. Bracket must include all required set screws for attaching sign.

POLE MOUNTING BRACKET FOR 8" FLAT SIGNS

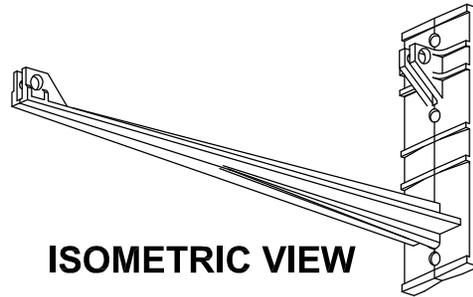
| | |
|---|--------------|
| 12-27-18 (Under Review) | Sheet 1 of 2 |
| <p>CITY OF YUMA CONSTRUCTION STANDARD DETAIL DRAWINGS</p> <p>STANDARD NO. 8-025 STREET NAME SIGN MOUNTING BRACKETS</p> | |



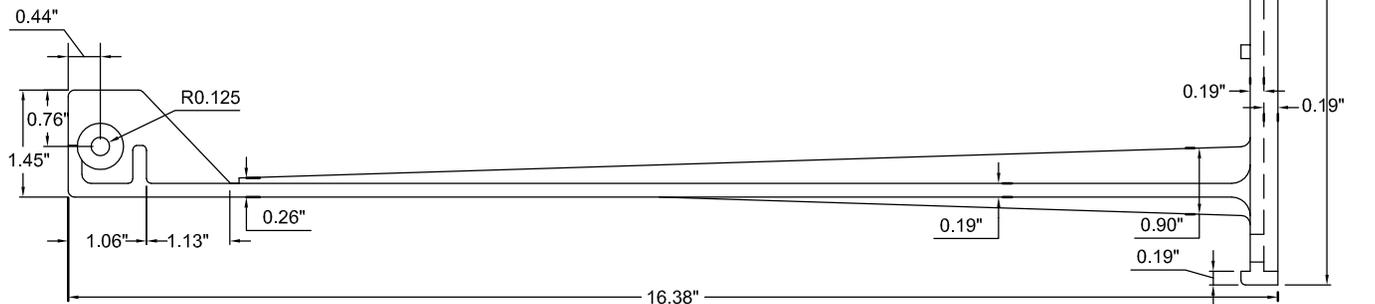
TOP VIEW



LEFT VIEW



ISOMETRIC VIEW



FRONT VIEW

**POLE MOUNTING BRACKET
FOR 6" FLAT SIGNS**

NOTES

1. Bracket must be cast aluminum.
2. Dimensions are nominal. Brackets with slightly different dimensions that are functionally equivalent, in the judgement of the Engineer, will be acceptable.
3. Bracket must include all required set screws for attaching sign.

12-27-18 (Under Review)

Sheet 2 of 2

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

**STANDARD NO. 8-025
STREET NAME SIGN
MOUNTING BRACKETS**

Table 2C-4. Guidelines for Advance Placement of Warning Signs

| Posted or 85th-Percentile Speed | Advance Placement Distance ¹ | | | | | | | | |
|---------------------------------|--|--|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| | Condition A: Speed reduction and lane changing in heavy traffic ² | Condition B: Deceleration to the listed advisory speed (mph) for the condition | | | | | | | |
| | | 0 ³ | 10 ⁴ | 20 ⁴ | 30 ⁴ | 40 ⁴ | 50 ⁴ | 60 ⁴ | 70 ⁴ |
| 20 mph | 225 ft | 100 ft ⁶ | N/A ⁵ | — | — | — | — | — | — |
| 25 mph | 325 ft | 100 ft ⁶ | N/A ⁵ | N/A ⁵ | — | — | — | — | — |
| 30 mph | 460 ft | 100 ft ⁶ | N/A ⁵ | N/A ⁵ | — | — | — | — | — |
| 35 mph | 565 ft | 100 ft ⁶ | N/A ⁵ | N/A ⁵ | N/A ⁵ | — | — | — | — |
| 40 mph | 670 ft | 125 ft | 100 ft ⁶ | 100 ft ⁶ | N/A ⁵ | — | — | — | — |
| 45 mph | 775 ft | 175 ft | 125 ft | 100 ft ⁶ | 100 ft ⁶ | N/A ⁵ | — | — | — |
| 50 mph | 885 ft | 250 ft | 200 ft | 175 ft | 125 ft | 100 ft ⁶ | — | — | — |
| 55 mph | 990 ft | 325 ft | 275 ft | 225 ft | 200 ft | 125 ft | N/A ⁵ | — | — |
| 60 mph | 1,100 ft | 400 ft | 350 ft | 325 ft | 275 ft | 200 ft | 100 ft ⁶ | — | — |
| 65 mph | 1,200 ft | 475 ft | 450 ft | 400 ft | 350 ft | 275 ft | 200 ft | 100 ft ⁶ | — |
| 70 mph | 1,250 ft | 550 ft | 525 ft | 500 ft | 450 ft | 375 ft | 275 ft | 150 ft | — |
| 75 mph | 1,350 ft | 650 ft | 625 ft | 600 ft | 550 ft | 475 ft | 375 ft | 250 ft | 100 ft ⁶ |

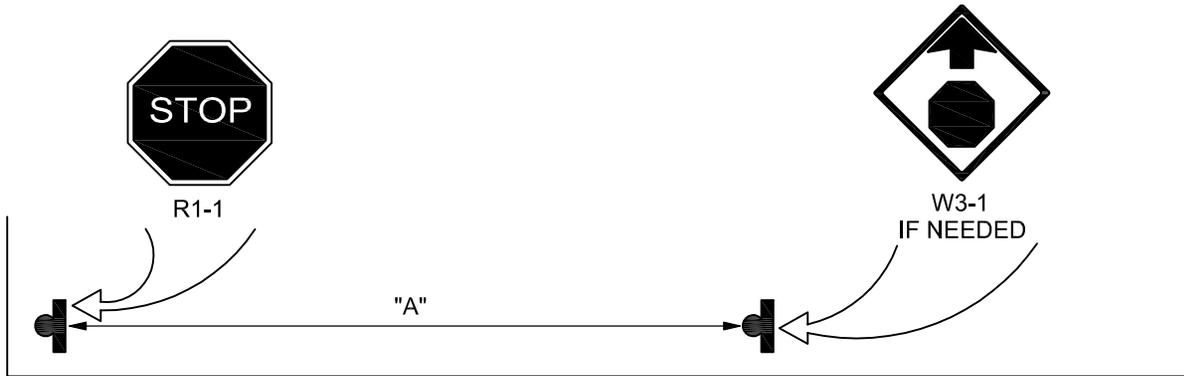
NOTES

1. The distances are adjusted for a sign legibility distance of 180 feet for Condition A. The distances for Condition B have been adjusted for a sign legibility distance of 250 feet, which is appropriate for an alignment warning symbol sign. For Conditions A and B, warning signs with less than 6-inch legend or more than four words, a minimum of 100 feet should be added to the advance placement distance to provide adequate legibility of the warning sign.
2. Typical conditions are locations where the road user must use extra time to adjust speed and change lanes in heavy traffic because of a complex driving situation. Typical signs are Merge and Right Lane Ends. The distances are determined by providing the driver a PRT of 14.0 to 14.5 seconds for vehicle maneuvers (2005 AASHTO Policy, Exhibit 3-3, Decision Sight Distance, Avoidance Maneuver E) minus the legibility distance of 180 feet for the appropriate sign.
3. Typical condition is the warning of a potential stop situation. Typical signs are Stop Ahead, Yield Ahead, Signal Ahead, and Intersection Warning signs. The distances are based on the 2005 AASHTO Policy, Exhibit 3-1, Stopping Sight Distance, providing a PRT of 2.5 seconds, a deceleration rate of 11.2 feet/second², minus the sign legibility distance of 180 feet.
4. Typical conditions are locations where the road user must decrease speed to maneuver through the warned condition. Typical signs are Turn, Curve, Reverse Turn, or Reverse Curve. The distance is determined by providing a 2.5 second PRT, a vehicle deceleration rate of 10 feet/second², minus the sign legibility distance of 250 feet.
5. No suggested distances are provided for these speeds, as the placement location is dependent on site conditions and other signing. An alignment warning sign may be placed anywhere from the point of curvature up to 100 feet in advance of the curve. However, the alignment warning sign should be installed in advance of the curve and at least 100 feet from any other signs.
6. The minimum advance placement distance is listed as 100 feet to provide adequate spacing between signs.

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

**STANDARD NO. 8-030
GUIDELINES FOR WARNING
SIGN PLACEMENT**



"A"= Distance from which STOP sign must be continuously visible. (See table for value based on approach speed.) Trim all foliage to achieve this. Where clear visibility cannot be provided, install Stop Ahead Symbol sign (W3-1) at approximately distance "A".

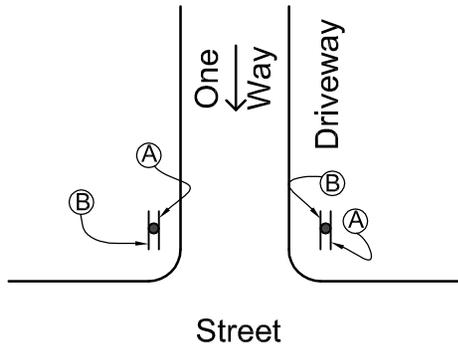
| 85th-Percentile Speed (mph)* | "A" Visibility Distance (feet) |
|------------------------------|--------------------------------|
| 20 | 100 |
| 25 | 100 |
| 30 | 100 |
| 35 | 100 |
| 40 | 125 |
| 45 | 175 |
| 50 | 250 |
| 55 | 325 |
| 60 | 400 |
| 65 | 475 |
| 70 | 550 |
| 75 | 650 |

12-27-18 (Under Review)

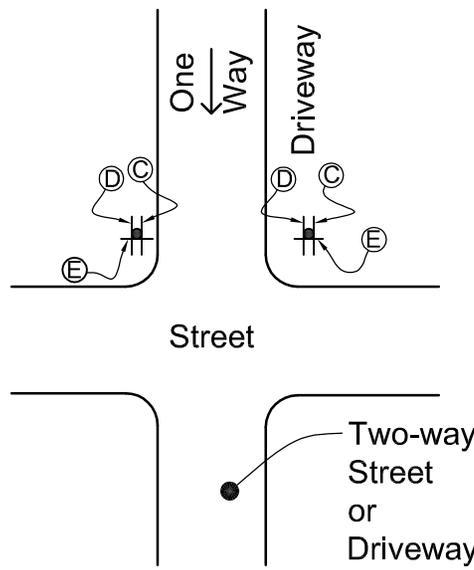
CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 8-035
STOP SIGN VISIBILITY AND
ADVANCE WARNING

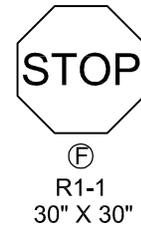
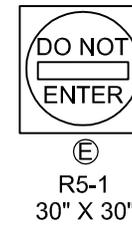
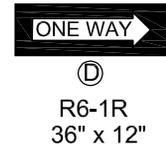
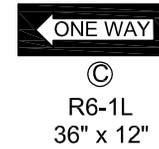
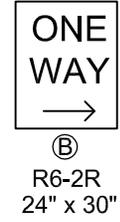
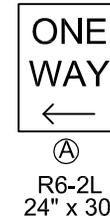
CASE 1- MINOR DRIVEWAY



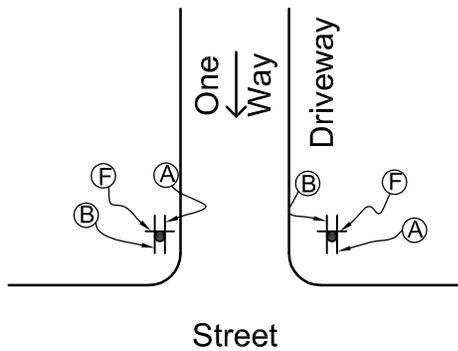
CASE 2- MINOR DRIVEWAY



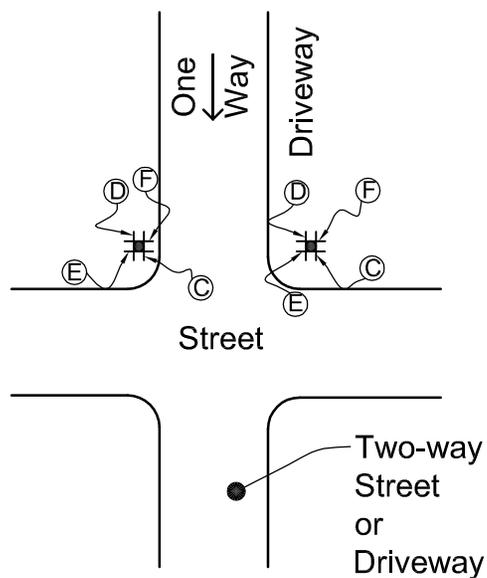
SIGN LEGEND



CASE 3 - MAJOR DRIVEWAY



CASE 4 - MAJOR DRIVEWAY



NOTES

1. Sign locations are schematic
2. Not to scale

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 8-040
SIGNING OF ONE-WAY
EXIT DRIVEWAYS

SIGN WZIS-1

F.H.W.A. LETTER SERIES

48" (MIN.)

ORANGE BACKGROUND

BLACK LETTERING

Project Name

3/8" ORANGE BORDER

3/4" BLACK LINE

3/8" WHITE BORDER

5/8" BLACK BORDER

WHITE BACKGROUND

BLACK LETTERING

Company Name
Company Name
Company Name

3/4" BLACK LINE

DUST AND STORMWATER

WHITE BACKGROUND

BLACK LETTERING

COMPLAINTS - CALL

BLACK LETTERING

373-4500

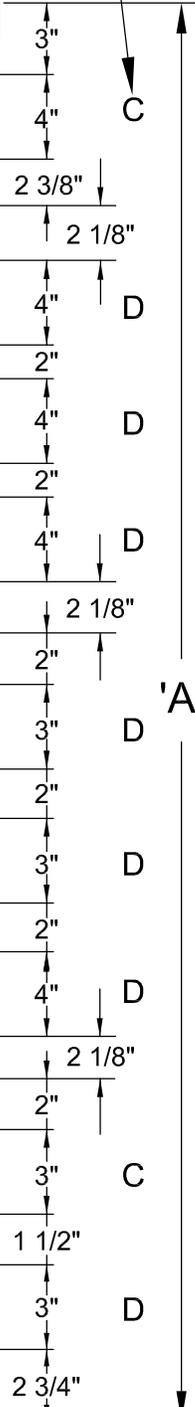
3/4" BLACK LINE

WHITE BACKGROUND

BLACK LETTERING

Expected End Of Work:
Month / Day / Year

2 1/4" R (TYP.)

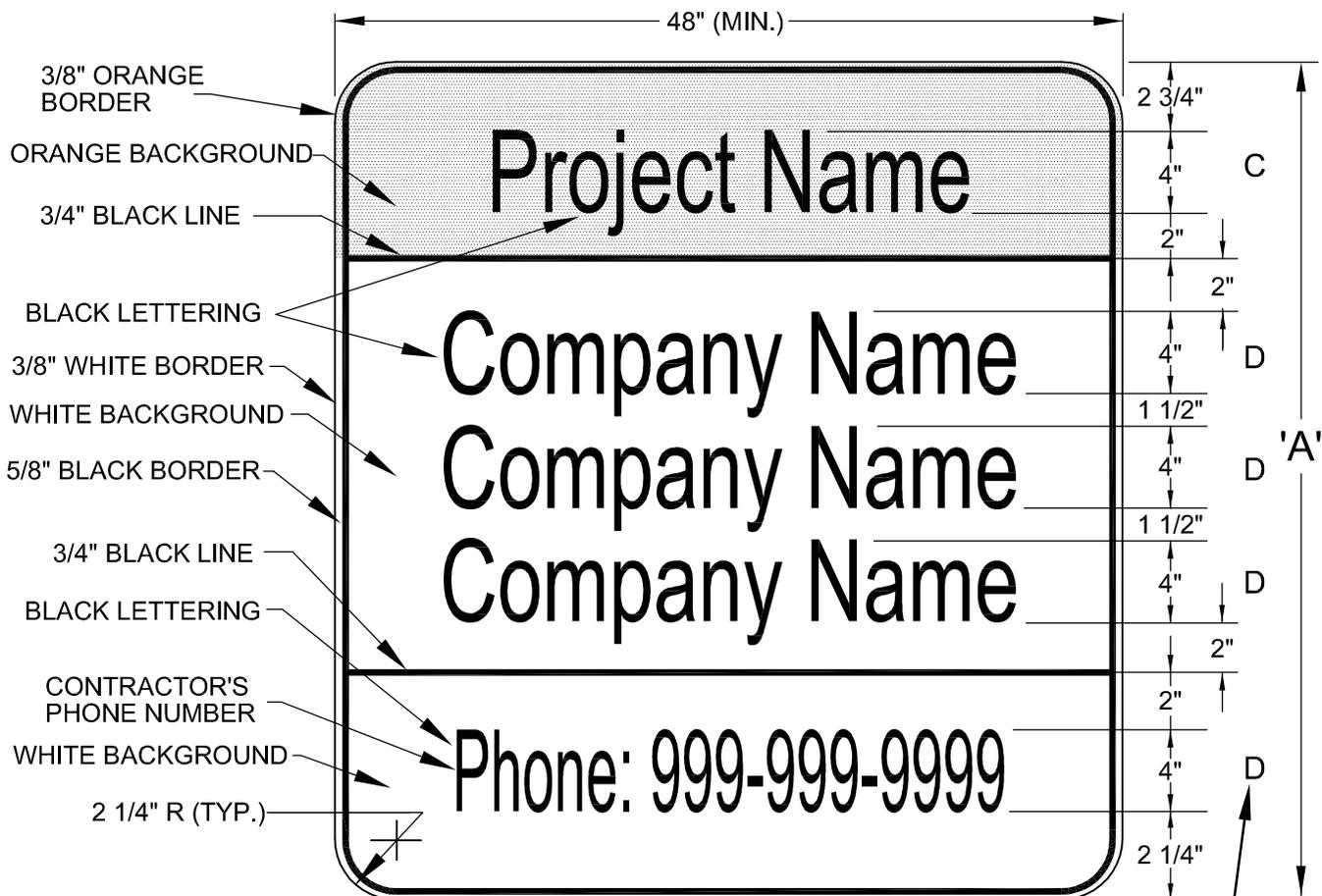


'A' DIMENSION
60" FOR 3-LINE COMPANY NAME
54" FOR 2-LINE COMPANY NAME
48" FOR 1-LINE COMPANY NAME

SEE NOTES ON SHEET 2.

| | |
|---|--------------|
| 12-27-18 (Under Review) | Sheet 1 of 2 |
| CITY OF YUMA CONSTRUCTION STANDARD DETAIL DRAWINGS | |
| STANDARD NO. 8-045 WORK ZONE IDENTIFICATION SIGN | |

SIGN WZIS-2



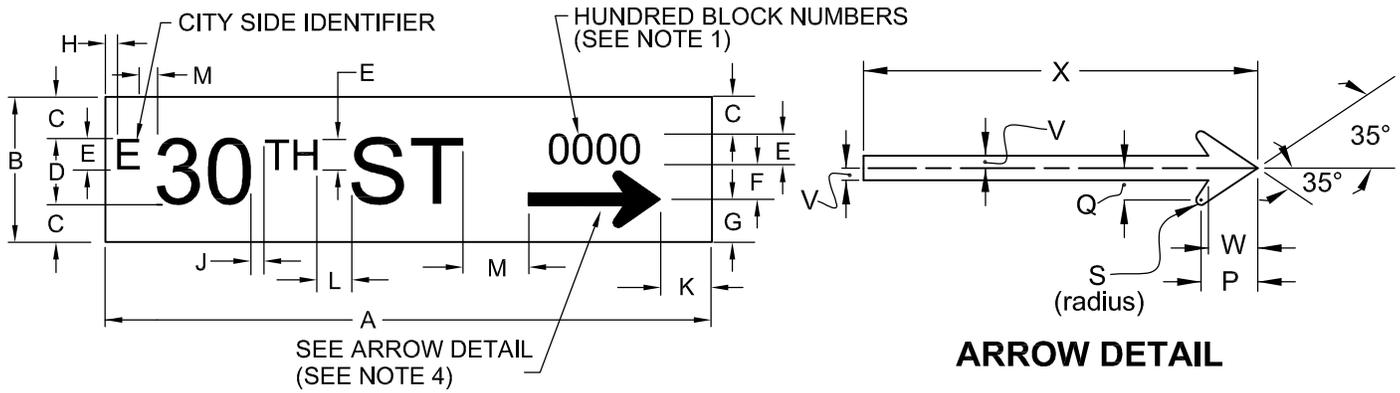
'A' DIMENSION
 36" FOR 3-LINE COMPANY NAME
 30" FOR 2-LINE COMPANY NAME
 24" FOR 1-LINE COMPANY NAME

F.H.W.A. LETTER SERIES

NOTES

1. Use sign WZIS-1 for projects with a duration of ten (10) days or more. Use sign WZIS-2 for projects with a duration of less than ten (10) days.
2. Do not use leading zeros in month or day numbers.
3. Mount sign with bottom of sign being at least five feet (5') above the ground.
4. Text and borders must be black in color and must conform to the indicated series in the FHWA publication "Standard Highway Signs".
5. Sign letters to use upper and lower case lettering as indicated.
6. Background must be fully reflectorized.
7. Adjust spacing as necessary within the COMPANY NAME area for 1-line and 2-line company names.
8. Contractor's phone must be monitored 24 hours a day, seven days a week.

| | |
|--|--------------|
| 12-27-18 (Under Review) | Sheet 2 of 2 |
| CITY OF YUMA CONSTRUCTION STANDARD DETAIL DRAWINGS STANDARD NO. 8-045 WORK ZONE IDENTIFICATION SIGN | |



SIGN DIMENSIONS IN INCHES

| Intersection Involving Only Local Streets | | | | | | | | | | | | | | | | | | |
|--|---|------|------------------|-----------------|------|-------|------------|-------|------------|------------|------------|------|-------------|----------|--------------|-------|------|--|
| A | B | C | D | E | F | G | H | J | K | L | M | P | Q | R | S | V | W | X |
| 24 min 48 max | 6 | .875 | 4.25 Series C | 2.0 Series C | 1.5 | 1.625 | 1.5 min | 0.375 | 1.5 min | 2.5 min | 1.5 min | 1.15 | 0.65 typ | 1 typ | 0.1 typ | 0.25 | 1 | Match width of block number, minimum 8". |
| Intersection Involving Collector or Arterial Streets | | | | | | | | | | | | | | | | | | |
| 30 min 60 max | 8 | .875 | 6.25 Series C | 2.5 Series C | 2.00 | 2.375 | 2 min | 0.5 | 2 min | 3.5 min | 2 min | 1.3 | 0.75 typ | 1 typ | 0.125 typ | 0.325 | 1.15 | |

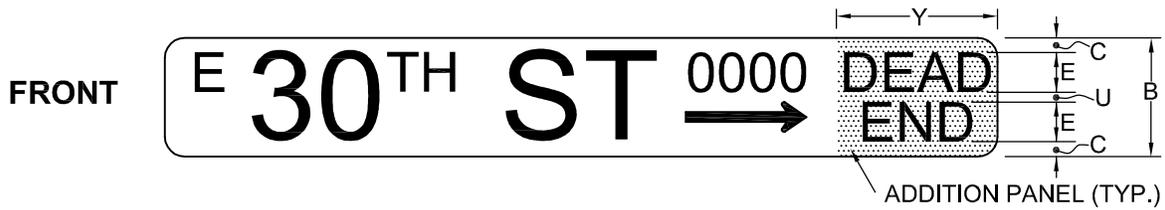
NOTES

1. Verify hundred block number with the City's Department of Community Development.
2. See Sheet 4 for Century Heights sign design.
3. See Sheet 3 for street names requiring sign blade greater than maximum.
4. See Sheet 5 for direction of arrows.
5. All sizes and spacing must conform to the requirements for the indicated series as specified in the current edition of "Standard Highway Signs and Pavement Markings Reference Guide" published by the Federal Highway Administration. Spacing must be 100% unless otherwise approved by City's Traffic Engineer in each instance.
6. Each street name sign must have both front and back faces that are identical except for the arrows' directions.
7. Sign blanks must be 0.10" thick aluminum.
8. Do not abbreviate the word "Avenue" when it is a part of a name (i.e. Avenue B) rather than a suffix.
9. See Sheet 2 if "Dead End" or "No Outlet" panel required.
10. All street name letters, except number superscripts, must be the indicated size.
11. When a private street intersects a public street, the sign panel for the public street must be the size and colors indicated. The sign panel for the private street must be the size indicated, but must have a black non-reflectorized background with a white reflective legend.
12. Series C letters may be replaced with Series B letters if approved by the City's Traffic Engineer in each instance.

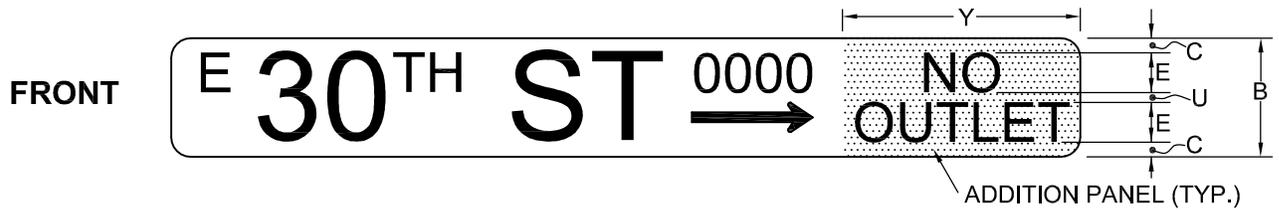
| COLOR AND REFLECTORIZATION (SEE NOTE 11 FOR PRIVATE STREETS) | | |
|--|------------|--------|
| INTERSECTION INVOLVING | BACKGROUND | LEGEND |
| ONLY LOCAL STREETS | GREEN | WHITE |
| COLLECTOR OR ARTERIAL STREETS | BLUE | WHITE |
| SIGNS MUST BE FULLY REFLECTORIZED USING 3M HIGH-INTENSITY SHEETING | | |

| STANDARD ABBREVIATIONS | |
|------------------------|----------------|
| AV = AVENUE SEE NOTE 8 | PKWY = PARKWAY |
| BLVD = BOULEVARD | PL = PLACE |
| CR = CIRCLE | RD = ROAD |
| CT = COURT | ST = STREET |
| DR = DRIVE | WY = WAY |
| LN = LANE | |

| CITY SIDE IDENTIFIER | |
|--|--------|
| INTERSECTION LOCATION | ID |
| EAST - WEST STREET: EAST OF 1ST AVENUE WEST OF 1ST AVENUE | E W |
| NORTH - SOUTH STREET NORTH OF 1ST STREET SOUTH OF 1ST STREET | N S |



STREET NAME SIGN WITH DEAD END PANEL



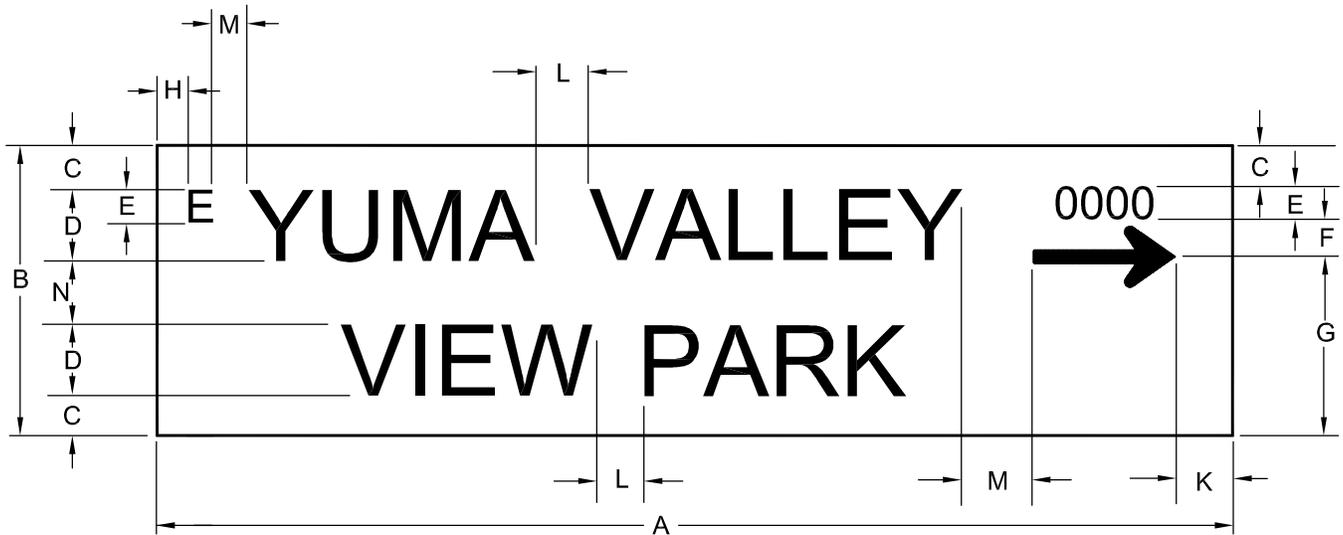
STREET NAME SIGN WITH NO OUTLET PANEL

| SIGN ADDITION DIMENSIONS | | | | | | |
|-------------------------------|---------------------|------|-----------------|-----|----------|-----------|
| Intersection Involving | Dimensions (inches) | | | | Y | |
| | B | C | E SEE NOTE 6 | U | Dead End | No Outlet |
| Only Local Streets | 6 | 0.75 | 2.0 Series C | 0.5 | 7 | 9 |
| Collector or Arterial Streets | 8 | 1 | 2.5 Series C | 1 | 8 | 12 |

NOTES

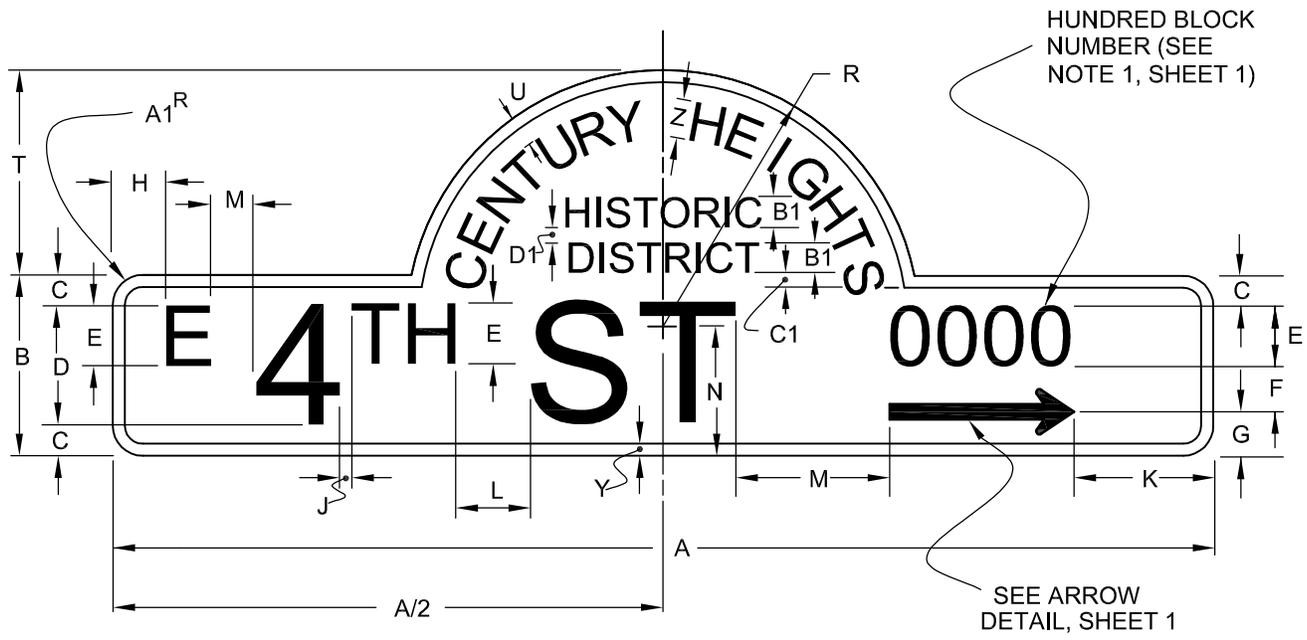
1. Additional panels must have a black legend on a YELLOW reflective background and no border.
2. Mount signs with additional panels on side of street closest to "Dead End" or "No Outlet" leg and with additional panel at end of sign closest to "Dead End" or "No Outlet".
3. Main panel of sign must conform to the requirements shown on Sheet 1.
4. Yellow background must be high-intensity sheeting.
5. Center additional panel text.
6. See note 12, sheet 1.

| | |
|---|--------------|
| 12-27-18 (Under Review) | Sheet 2 of 6 |
| <p>CITY OF YUMA CONSTRUCTION STANDARD DETAIL DRAWINGS</p> <p>STANDARD NO. 8-050 STREET NAME SIGN LAYOUT AND DESIGN</p> | |



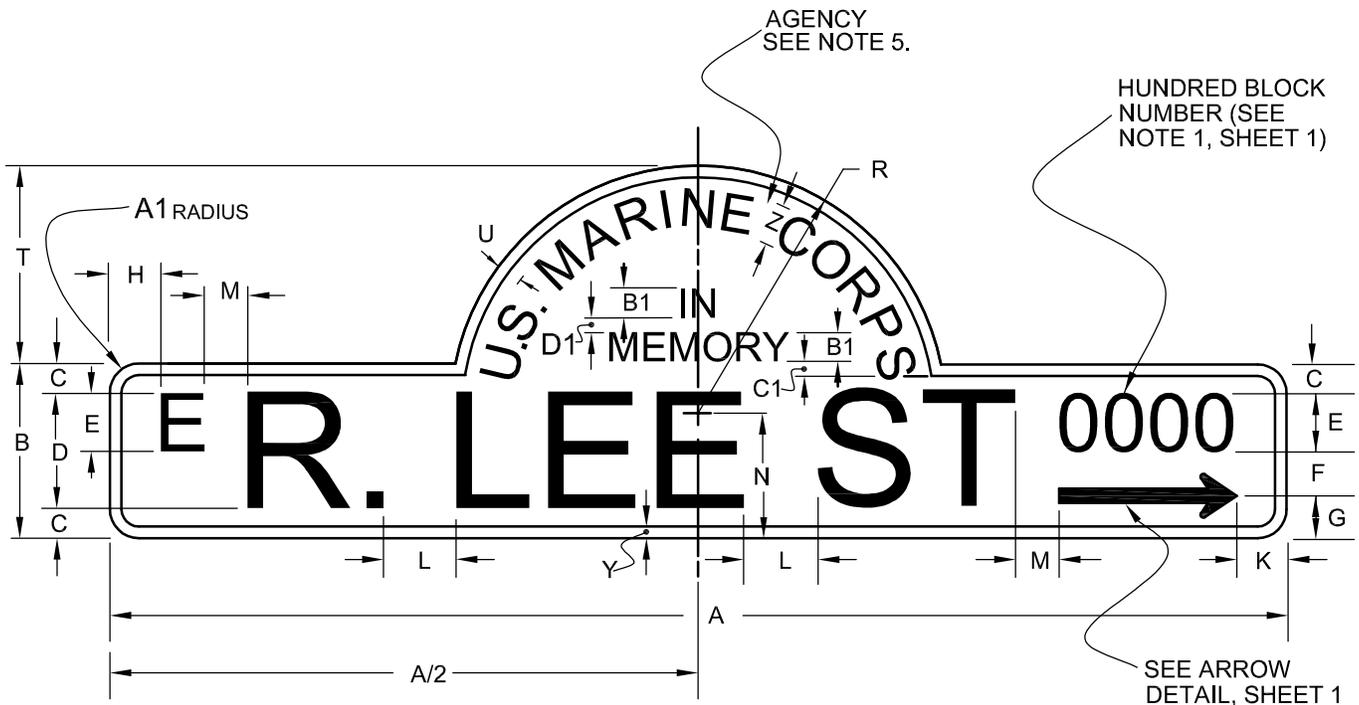
SIGN DIMENSIONS IN INCHES

| Intersection Involving Only Local Streets | | | | | | | | | | | | |
|--|----|------|--------------------------------|--------------------------------|------|------|------------|------------|------------|------------|-----|----------|
| A | B | C | D <small>SEE NOTE 3</small> | E <small>SEE NOTE 3</small> | F | G | H | K | L | M | N | R |
| 24 min 48 max | 12 | 1 | 4.25 Series C | 2.0 Series C | 1.75 | 7.25 | 1.5 min | 1.5 min | 2.5 min | 1.5 min | 1.5 | 1 typ |
| Intersection Involving Collector or Arterial Streets | | | | | | | | | | | | |
| A | B | C | D <small>SEE NOTE 3</small> | E <small>SEE NOTE 3</small> | F | G | H | K | L | M | N | R |
| 30 min 60 max | 18 | 1.25 | 6.25 Series C | 2.5 Series C | 2.25 | 12 | 2 min | 2 min | 3.5 min | 2 min | 3 | 1 typ |



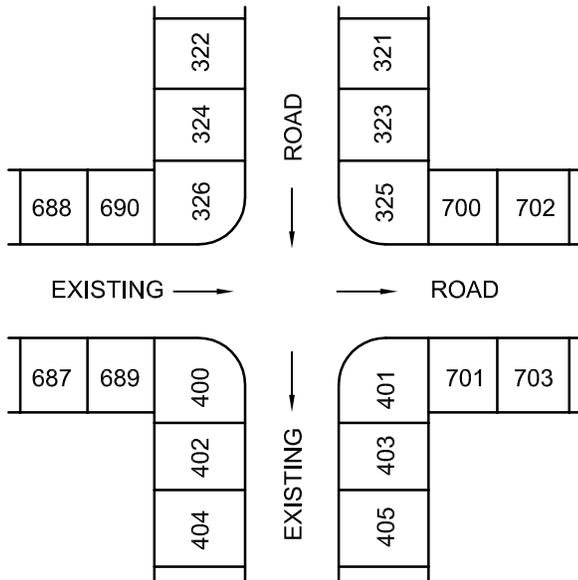
SIGN DIMENSIONS IN INCHES

| Intersection Involving Only Local Streets | | | | | | | | | | | | | | | | | | | | | |
|--|---|------|--------------------------------|--------------------------------|-----|------|-------------|-------|-------------|------------|------------|-----|-----|---|------|-----|-----------------|-----|-----------------|-----|-----|
| A | B | C | D <small>SEE NOTE 3</small> | E <small>SEE NOTE 3</small> | F | G | H | J | K | L | M | N | R | T | U | Y | Z | A1 | B1 | C1 | D1 |
| 24 min 48 max | 6 | 0.75 | 4 Series C | 2.0 Series C | 1.5 | 1.75 | 1.75 min | 0.375 | 1.75 min | 2.5 min | 1.5 min | 3.5 | 8.5 | 6 | 0.65 | 0.4 | 2.0 Series B | 1.0 | 1.0 Series B | 0.2 | 0.5 |
| Intersection Involving Collector or Arterial Streets | | | | | | | | | | | | | | | | | | | | | |
| A | B | C | D <small>SEE NOTE 3</small> | E <small>SEE NOTE 3</small> | F | G | H | J | K | L | M | N | R | T | U | Y | Z | A1 | B1 | C1 | D1 |
| 30 min 60 max | 8 | 1.25 | 6 Series C | 2.5 Series C | 2 | 2.25 | 2.5 min | 0.5 | 2.5 min | 3.5 min | 2 min | 5.5 | 8.5 | 6 | 0.65 | 0.5 | 2.0 Series B | 1.0 | 1.0 Series B | 0.2 | 0.5 |

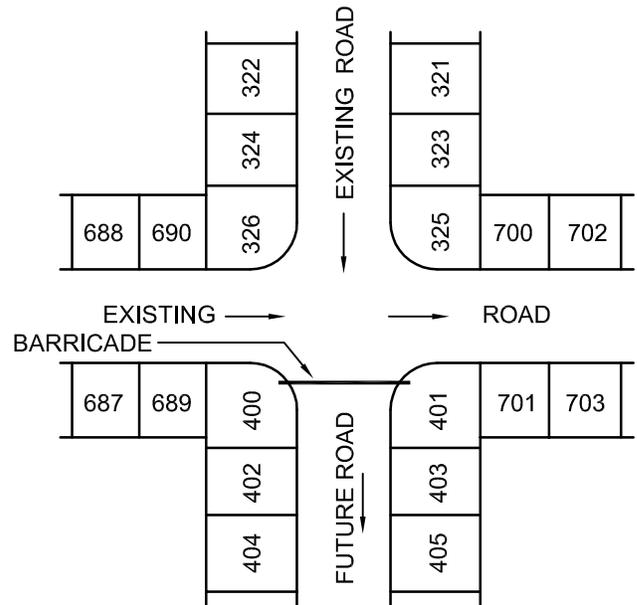


SIGN DIMENSIONS IN INCHES

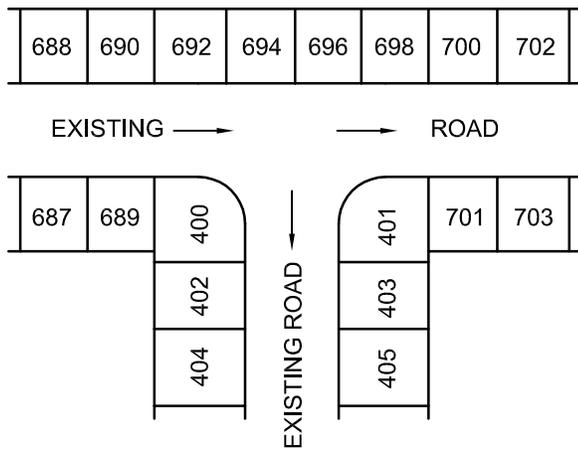
| Intersection Involving Only Local Streets | | | | | | | | | | | | | | | | | | | | |
|--|---|---|--------------------------------|--------------------------------|------|------|-------------|-------------|------------|------------|-----|-----|---|------|-----|-----------------|-----|-----------------|-----|-----|
| A | B | C | D <small>SEE NOTE 6</small> | E <small>SEE NOTE 6</small> | F | G | H | K | L | M | N | R | T | U | Y | Z | A1 | B1 | C1 | D1 |
| 24 min 48 max | 6 | 1 | 4 Series C | 2.0 Series C | 1.5 | 2 | 1.75 min | 1.75 min | 2.5 min | 1.5 min | 3.5 | 8.5 | 6 | 0.65 | 0.4 | 2.0 Series B | 1.0 | 1.0 Series B | 0.2 | 0.5 |
| Intersection Involving Collector or Arterial Streets | | | | | | | | | | | | | | | | | | | | |
| A | B | C | D <small>SEE NOTE 6</small> | E <small>SEE NOTE 6</small> | F | G | H | K | L | M | N | R | T | U | Y | Z | A1 | B1 | C1 | D1 |
| 30 min 60 max | 8 | 1 | 6 Series C | 2.5 Series C | 2.25 | 2.75 | 2.5 min | 2.5 min | 3.5 min | 2 min | 5.5 | 8.5 | 6 | 0.65 | 0.5 | 2.0 Series B | 1.0 | 1.0 Series B | 0.2 | 0.5 |



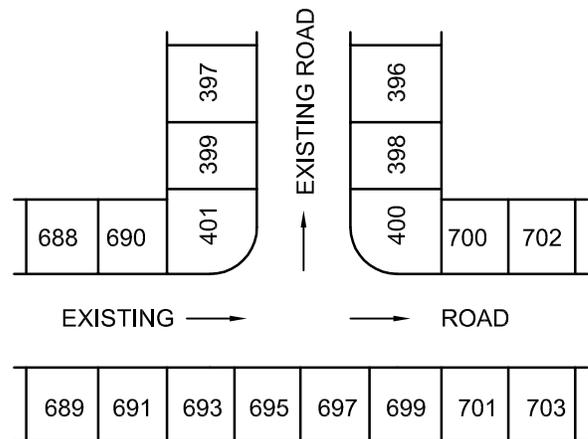
CASE A
NORMAL 4-WAY INTERSECTION



CASE B
NORMAL 4-WAY INTERSECTION WITH FUTURE LEG



CASE C
NORMAL 'T' INTERSECTION WITH 'T' STEM IN DIRECTION OF INCREASING ADDRESS NUMBERS

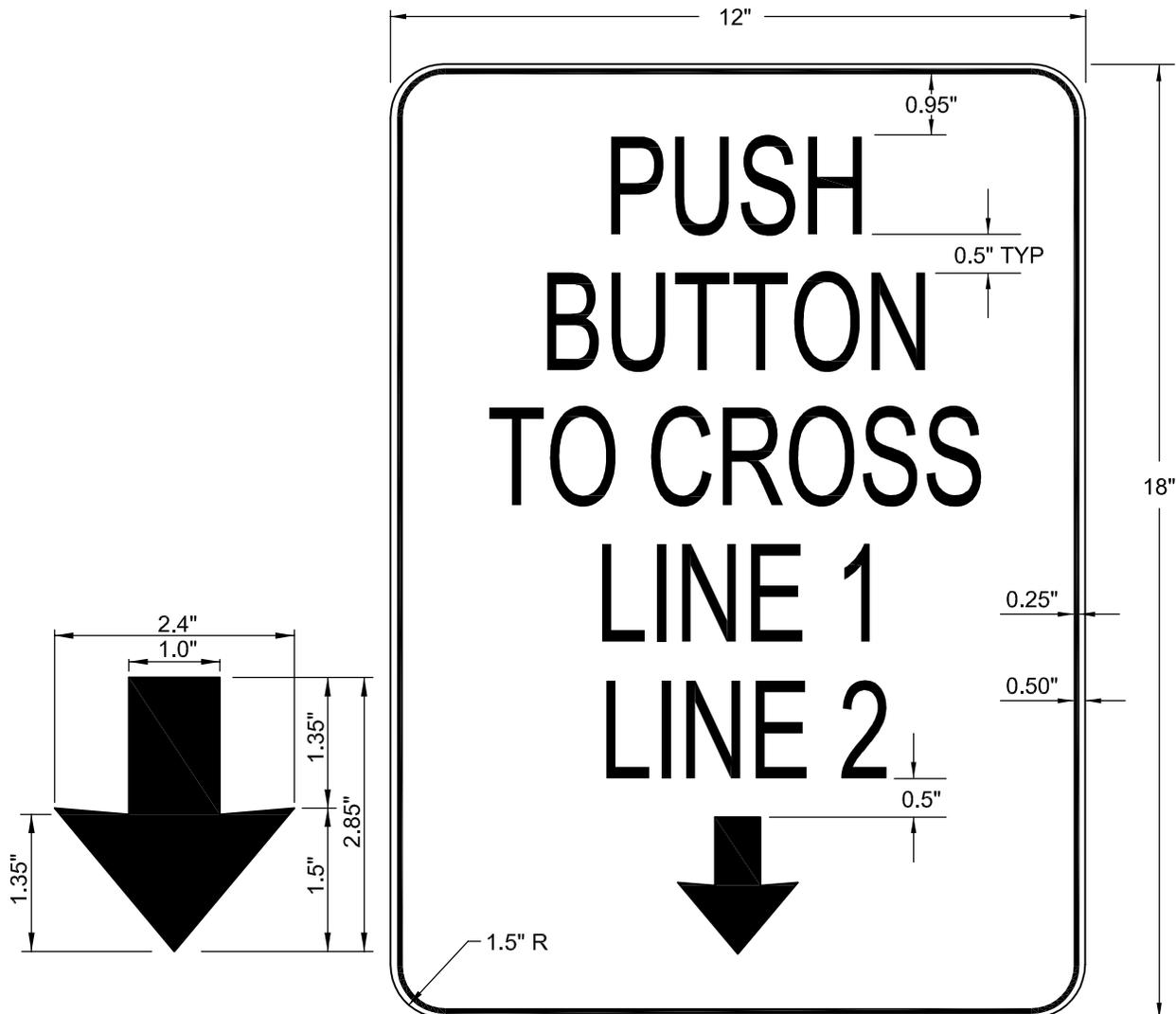


CASE D
NORMAL 'T' INTERSECTION WITH 'T' STEM IN DIRECTION OF DECREASING ADDRESS NUMBERS

NOTE: ARROW FOR 'T' STEM POINTS IN DIRECTION OF DECREASING ADDRESS NUMBERS.

NOTES

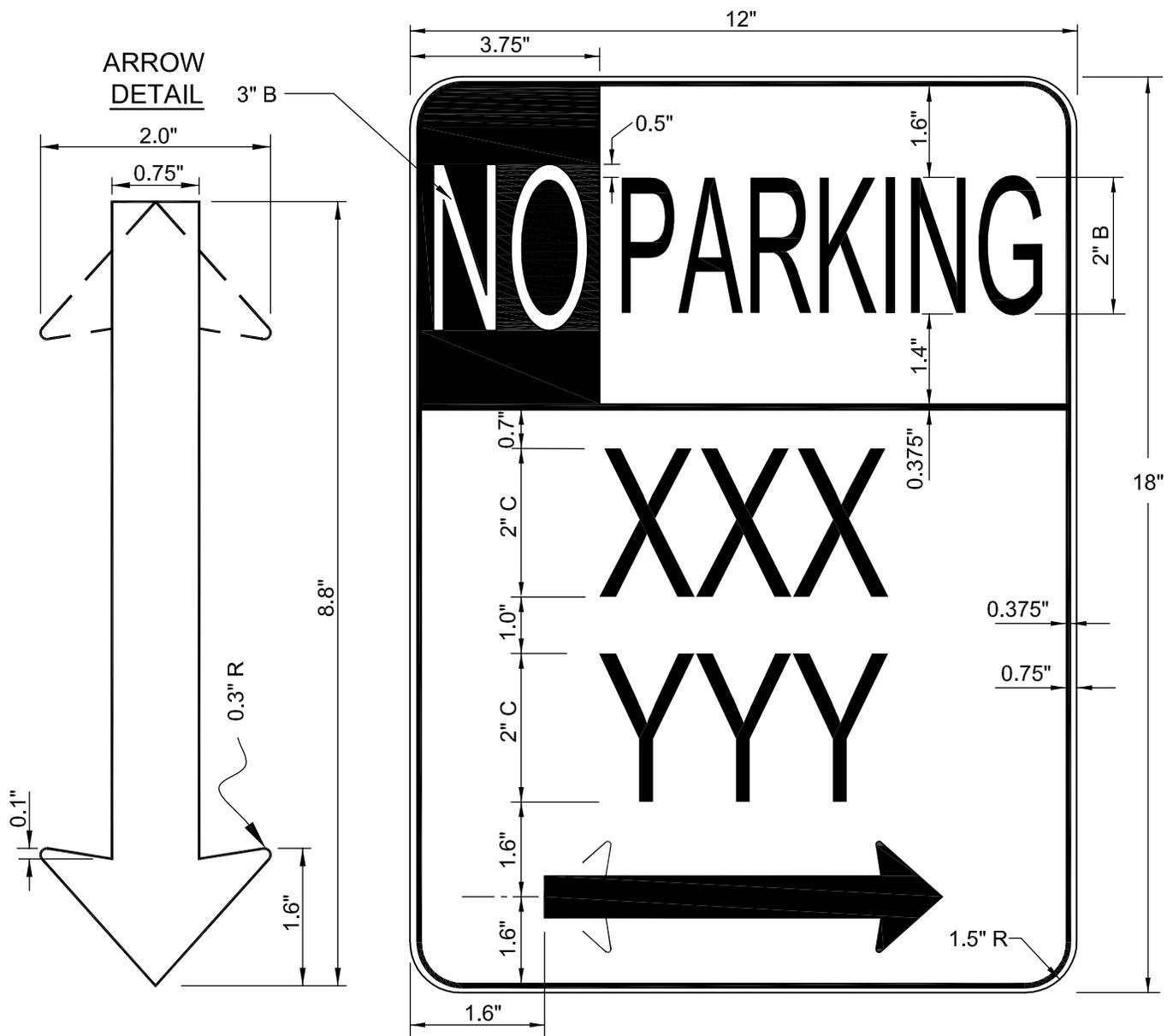
1. Arrows on street name signs must point in the direction of the increasing address numbers except for the 'T' stem of CASE D.
2. Use "Dead End" panel for dead end street legs.
3. Use "No Outlet" panel for street legs having no outlet from the area.



NOTES

1. Line 1 and line 2 must be replaced with the appropriate street name in accordance with the plans.
2. Legend and inside border must be black on white reflectorized background. Sheeting must be engineer grade.
3. All letters must be 2-inch series C in accordance with the publication "Standard Alphabets for Highway Signs and Pavement Markings" published by the Federal Highway Administration.

| |
|---|
| 12-27-18 (Under Review) |
| CITY OF YUMA CONSTRUCTION STANDARD DETAIL DRAWINGS |
| STANDARD NO. 8-055 PEDESTRIAN PUSH-BUTTON IDENTIFICATION SIGN (SP-1) |



NOTES

1. All letters must be the indicated series in accordance with the publication "standard alphabets for highway signs and pavement markings" published by the federal highway administration.
2. Sign substrate must be 0.08" (minimum) aluminum.
3. Unless otherwise indicated, signs must have double-headed arrow. suffix r indicates an arrow to the right. suffix l indicates an arrow to the left.
4. The sign must be fully retroreflective using the following colors:

| <u>Feature</u> | <u>Color</u> |
|----------------------|--------------|
| "No" legend | white |
| "No" background | red |
| All other background | white |
| All other legend | red |
| Border | red |
| Lines & arrow | red |

5. See sheet 2 for sign legends.

12-27-18 (Under Review)

Sheet 1 of 2

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

**STANDARD NO. 8-060
PARKING REGULATION SIGNS**



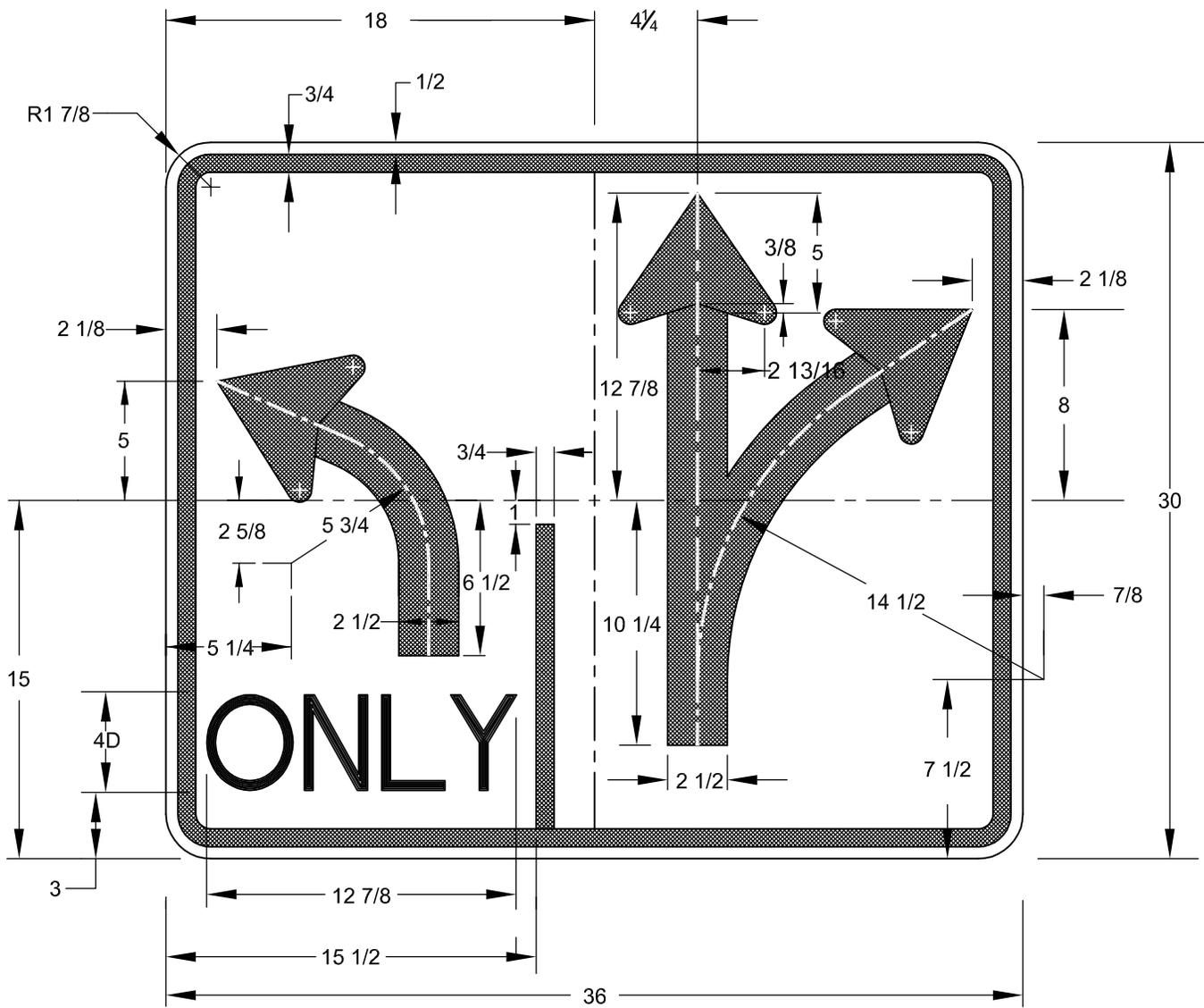
R7-1Y



R7-1HTC

NOTE

1. See sheet 1 for details.



SIGN R3-8YL

NOTES

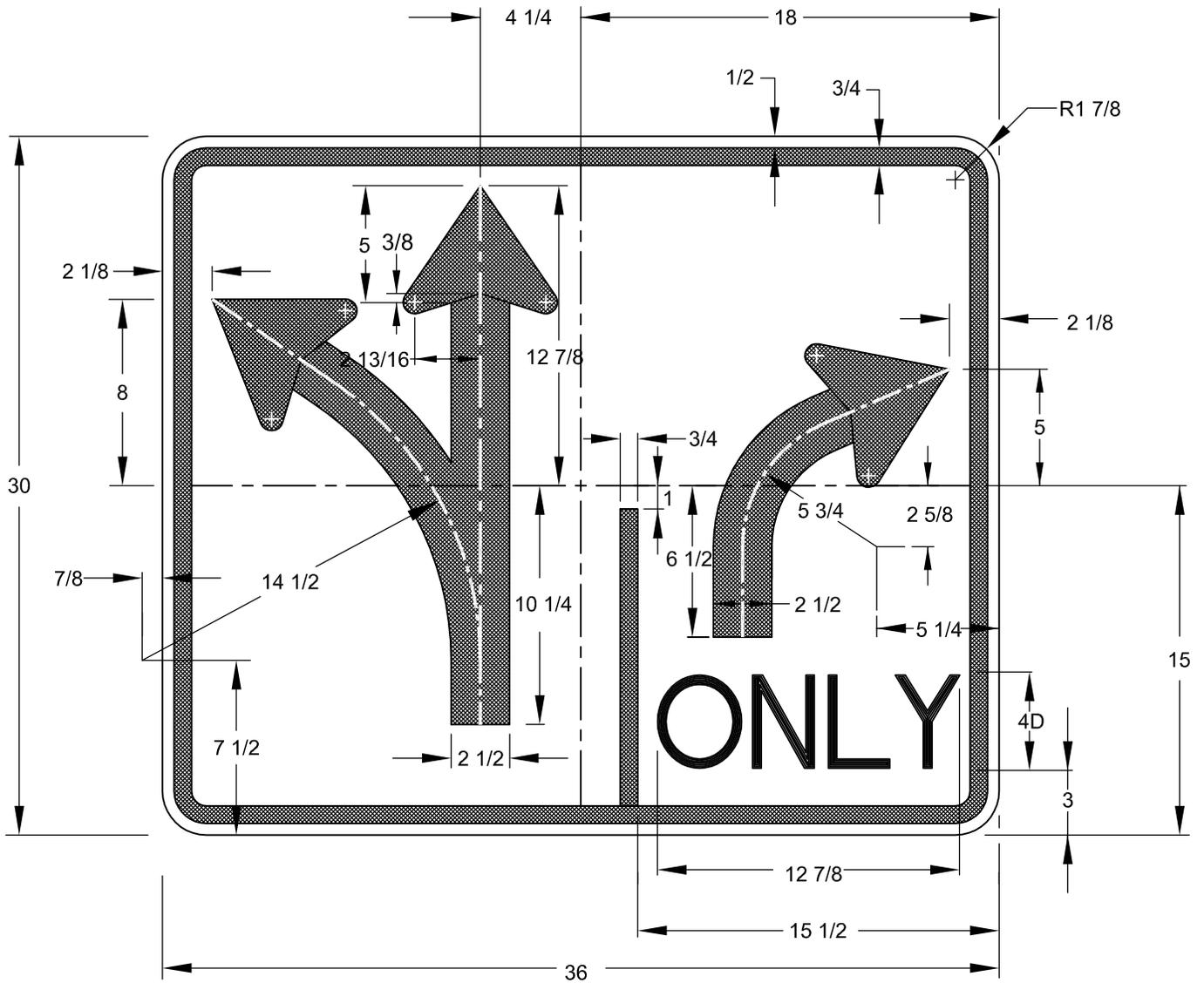
1. All dimensions are in inches.
2. Black legend and border on white background.
3. Substrate must be 0.125" (min.) aluminum.

12-27-18 (Under Review)

Sheet 1 of 2

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 8-065
GROUND-MOUNTED LANE USE SIGNS



SIGN R3-8YR

NOTES

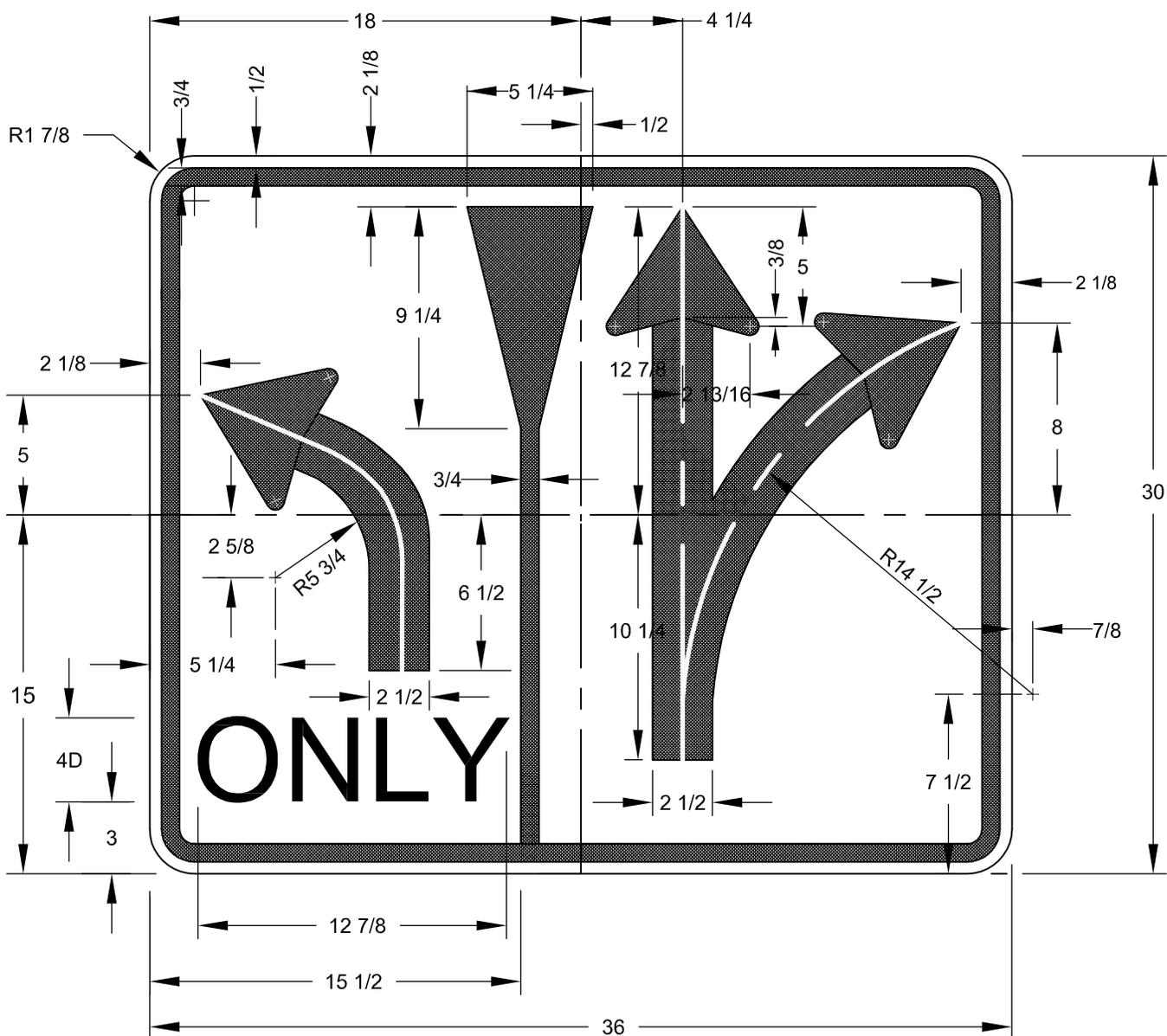
1. All dimensions are in inches.
2. Black legend and border on white background.
3. Substrate must be 0.125" (min.) aluminum.

12-27-18 (Under Review)

Sheet 2 of 2

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 8-065
GROUND-MOUNTED LANE USE SIGNS



SIGN WZR3-8YL

NOTES

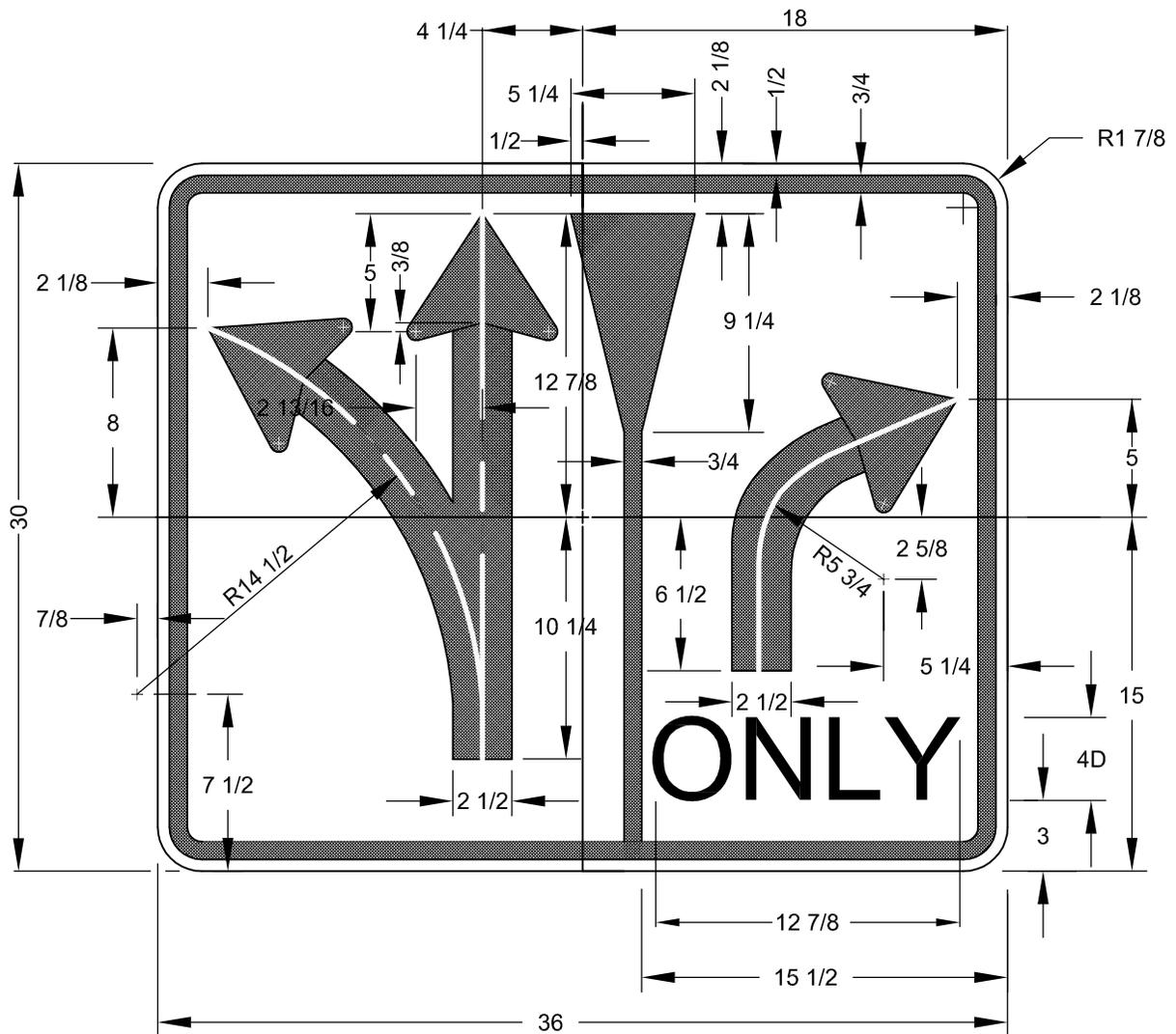
1. All dimensions are in inches.
2. Black legend and border on white background.
3. Substrate must be 0.125" (min.) aluminum.

12-27-18 (Under Review)

Sheet 1 of 4

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 8-070
GROUND-MOUNTED WORK ZONE
LANE USE SIGNS



SIGN WZR3-8YR

NOTES

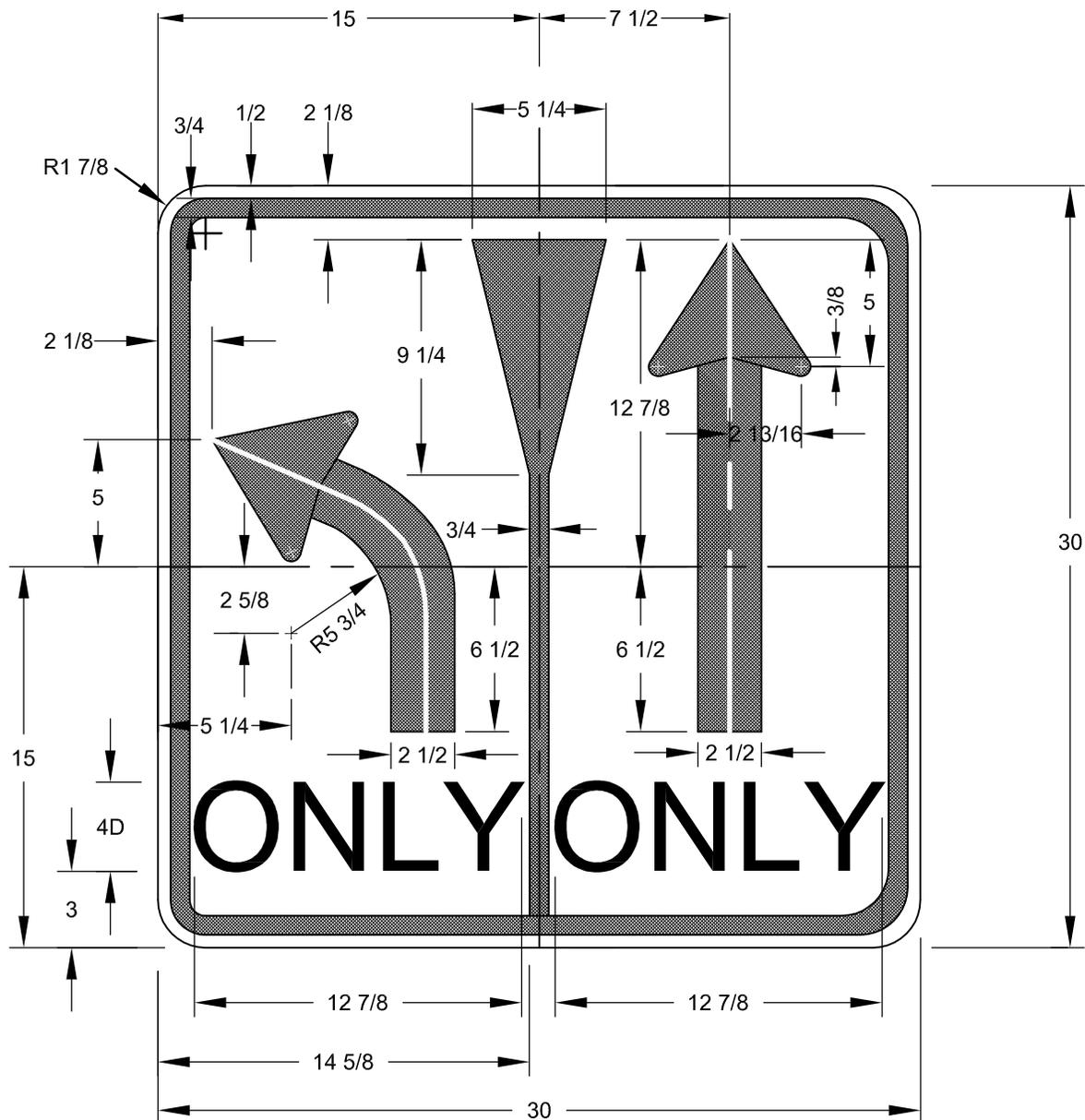
1. All dimensions are in inches.
2. Black legend and border on white background.
3. Substrate must be 0.125" (min.) aluminum.

12-27-18 (Under Review)

Sheet 2 of 4

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 8-070
GROUND-MOUNTED WORK ZONE
LANE USE SIGNS



SIGN WZR3-8YLA

NOTES

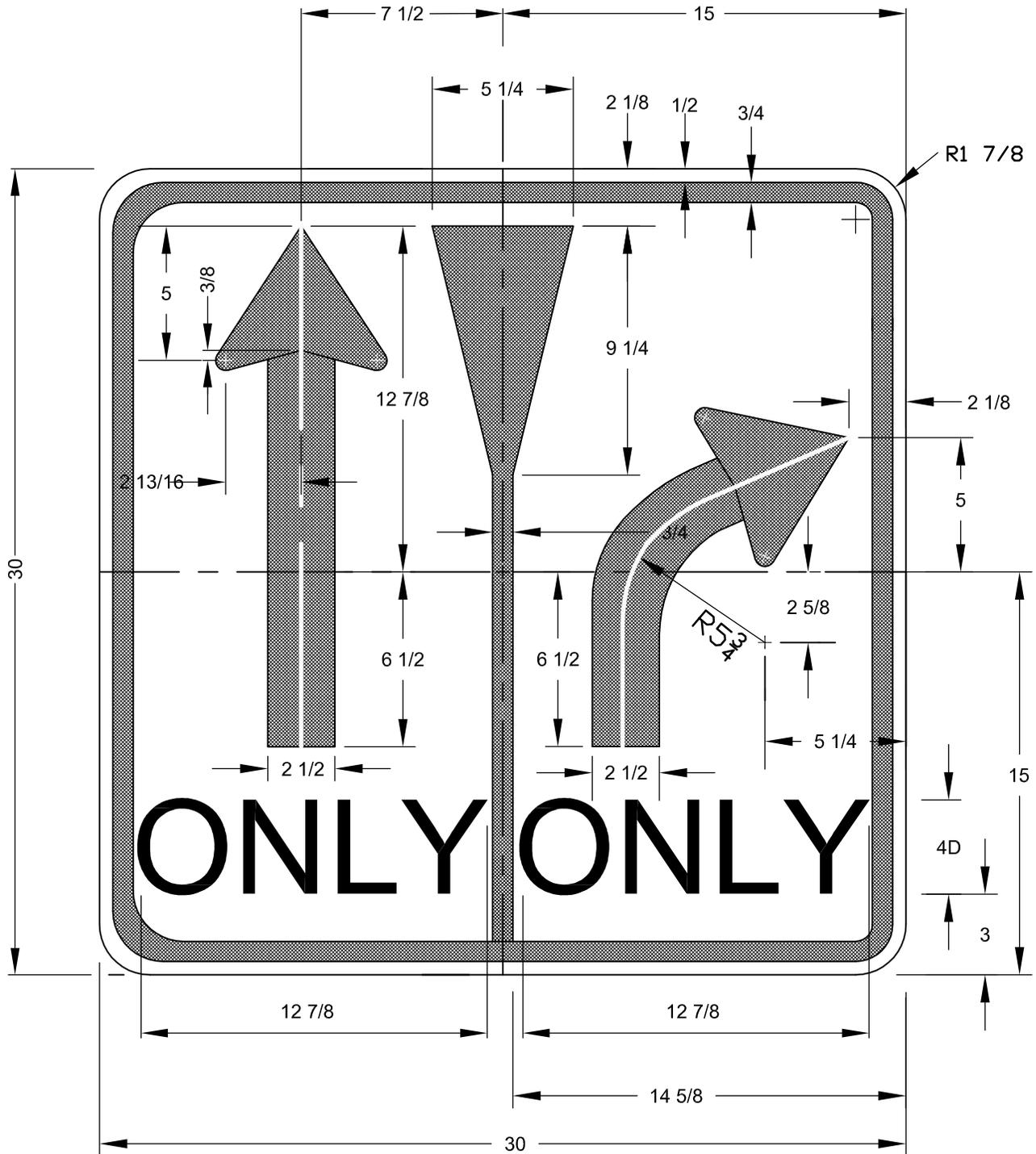
1. All dimensions are in inches.
2. Black legend and border on white background.
3. Substrate must be 0.125" (min.) aluminum.

12-27-18 (Under Review)

Sheet 3 of 4

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 8-070
GROUND-MOUNTED WORK ZONE
LANE USE SIGNS



SIGN WZR3-8YRA

NOTES

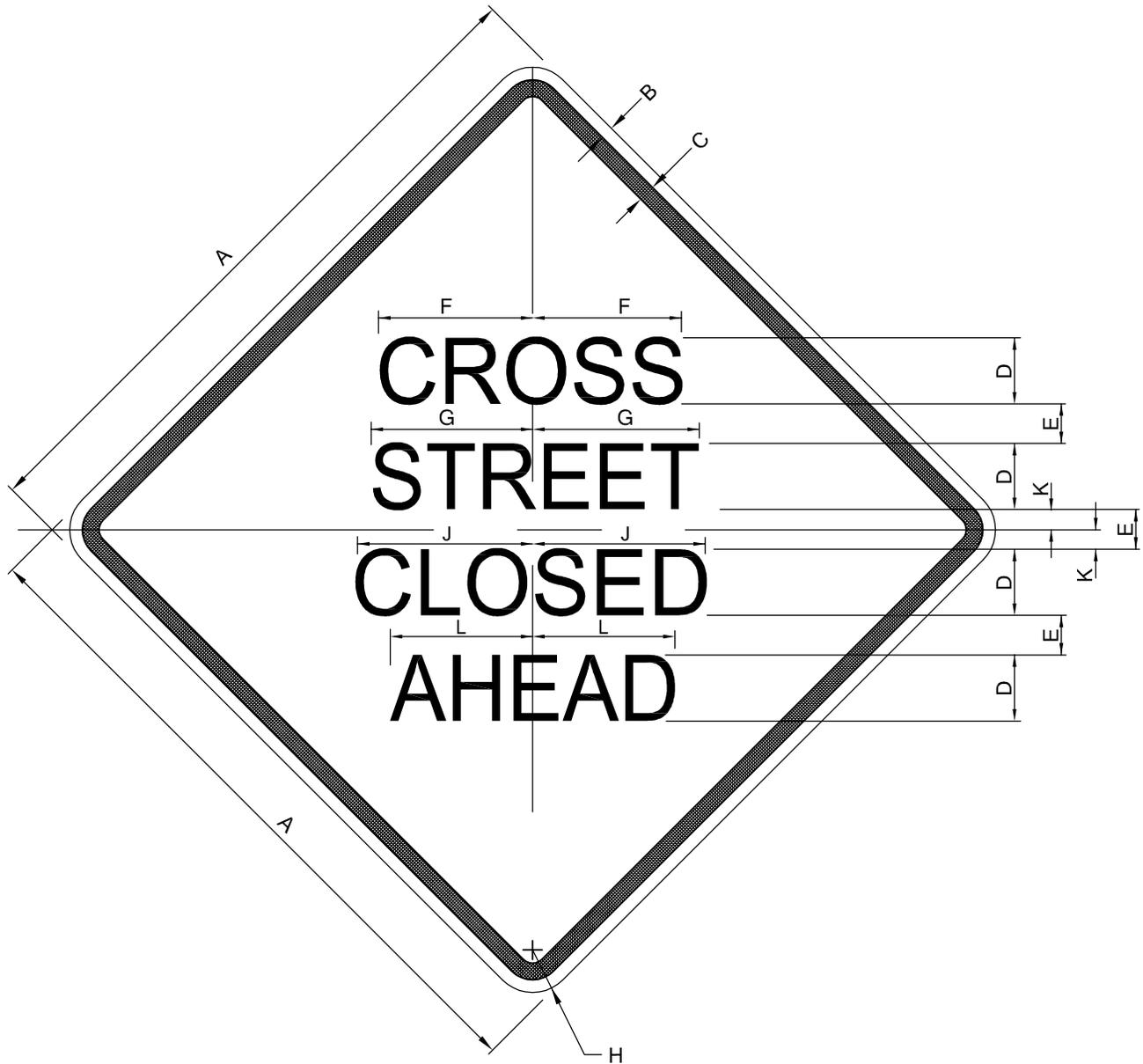
1. All dimensions are in inches.
2. Black legend and border on white background.
3. Substrate must be 0.125" (min.) aluminum.

12-27-18 (Under Review)

Sheet 4 of 4

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 8-070
GROUND-MOUNTED WORK ZONE
LANE USE SIGNS



| DIMENSIONS (INCHES) | | | | | | | | | | |
|---------------------|-----|-------|----|---|--------|--------|---|--------|-------|--------|
| A | B | C | D | E | F | G | H | J | K | L |
| 48 | 7/8 | 1 1/8 | 5D | 3 | 11 1/8 | 12 1/2 | 3 | 12 3/4 | 1 1/2 | 11 1/4 |

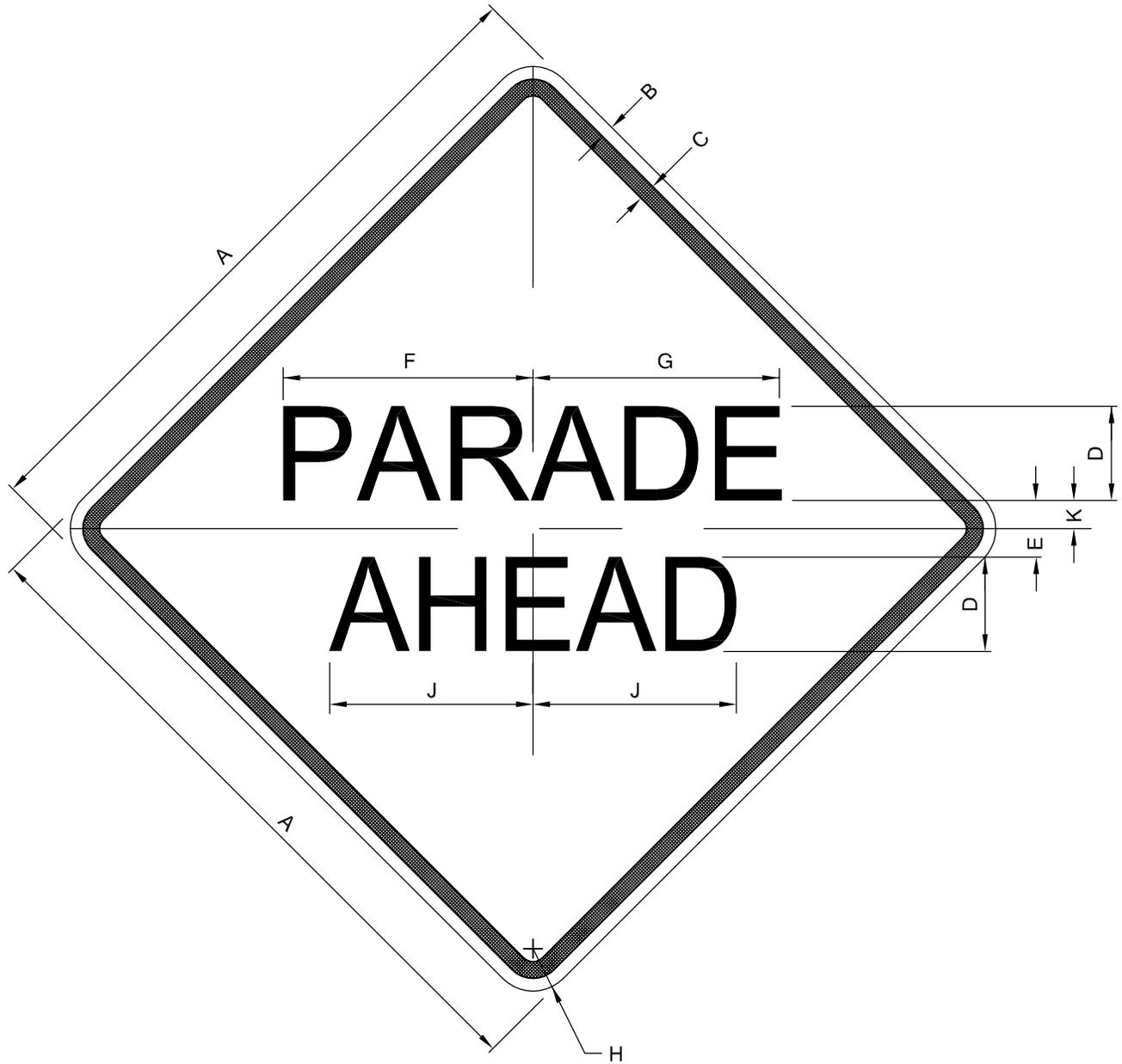
NOTES

1. All dimensions are in inches.
2. Black legend and border on reflective orange background.
3. Substrate must be 0.125" (min.) aluminum.

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 8-075
CROSS STREET CLOSED AHEAD
SIGN (W20-3YS)



DIMENSIONS (INCHES)

| A | B | C | D | E | F | G | H | J | K |
|----|-----|-----|----|---|--------|---------|-------|--------|-------|
| 36 | 5/8 | 7/8 | 5D | 3 | 13 1/4 | 13 1/16 | 2 1/4 | 10 3/4 | 1 1/2 |

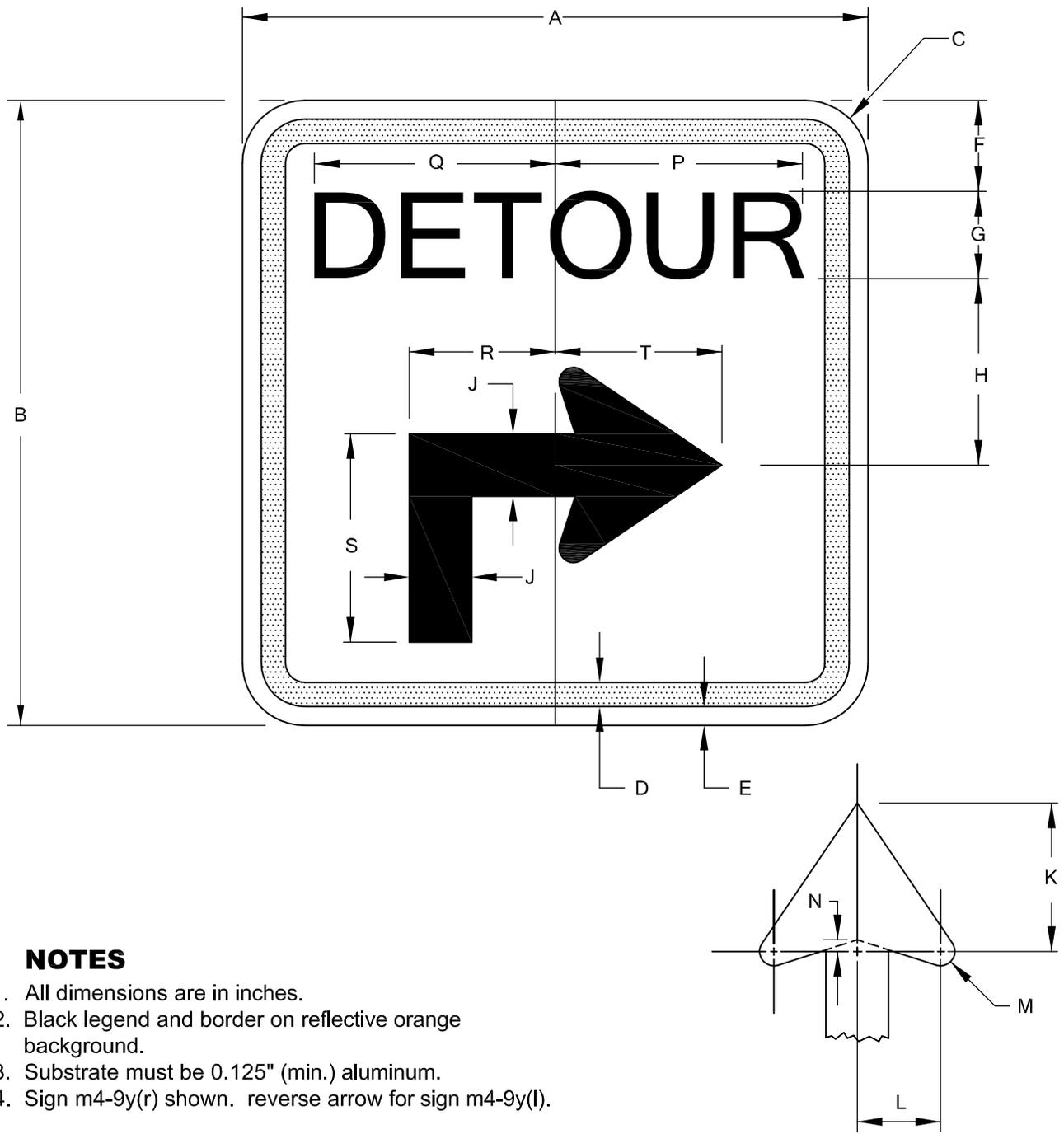
NOTES

1. All dimensions are in inches.
2. Black legend and border (non- refl) on orange background.
3. Substrate must be 0.125" (min.) aluminum.

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

**STANDARD NO. 8-080
PARADE AHEAD SIGN
(W50-1Y)**



NOTES

1. All dimensions are in inches.
2. Black legend and border on reflective orange background.
3. Substrate must be 0.125" (min.) aluminum.
4. Sign m4-9y(r) shown. reverse arrow for sign m4-9y(l).

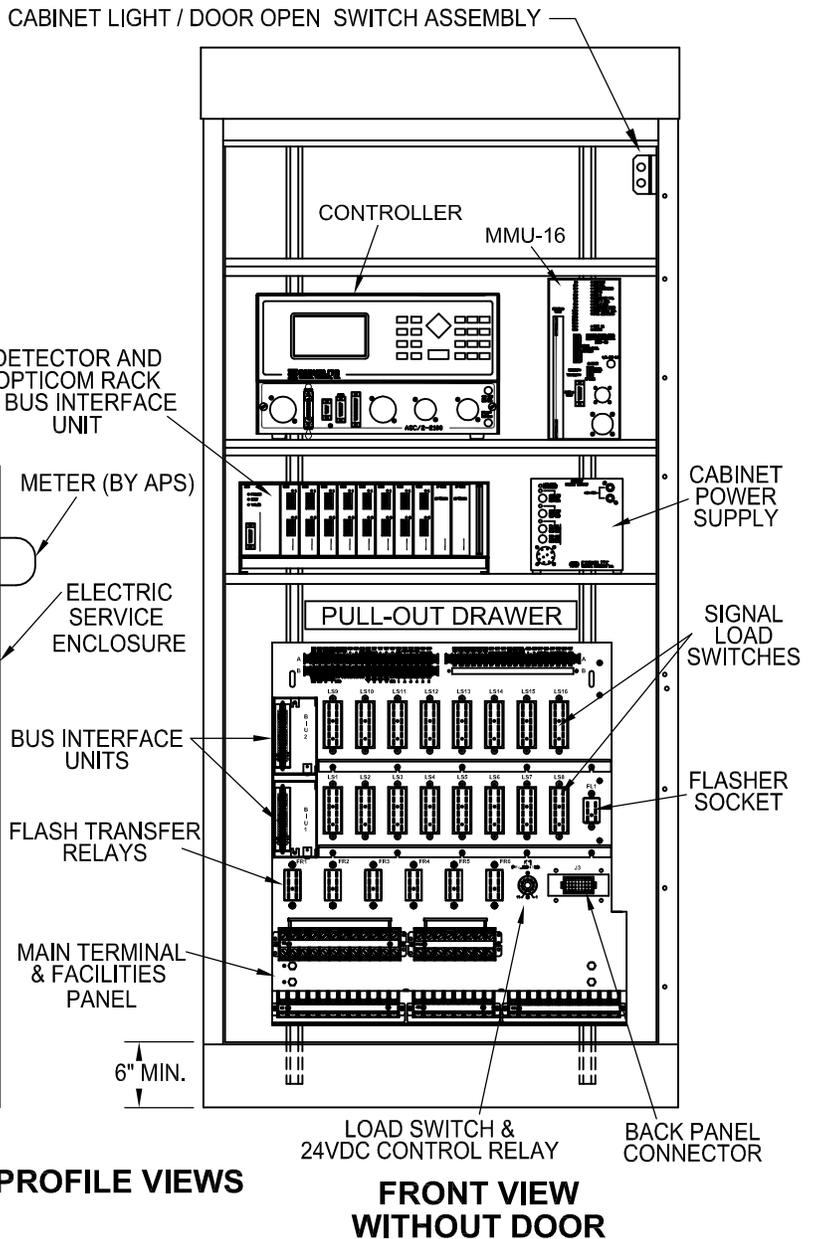
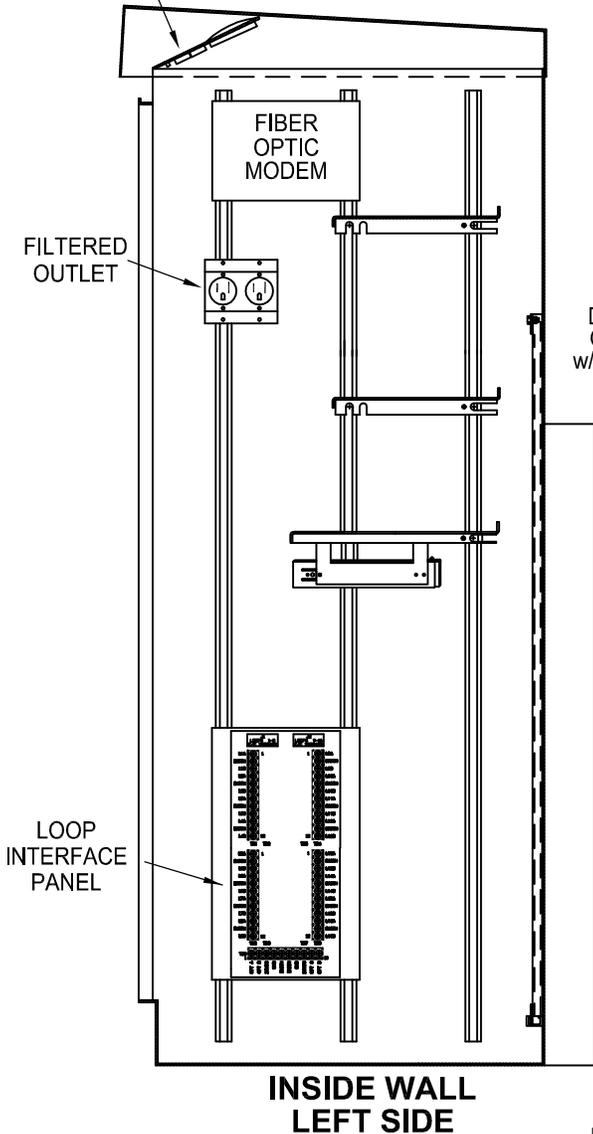
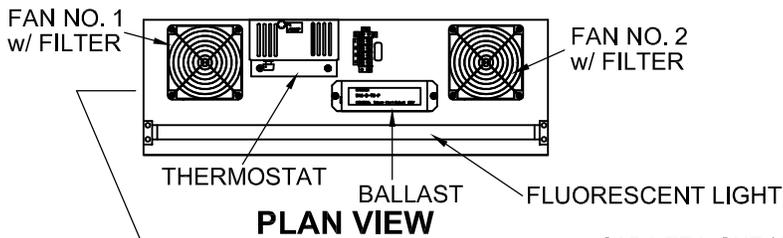
| SIGN | NOMINAL DIMENSIONS (INCHES) | | | | | | | | | | | | |
|----------|-----------------------------|----|-------|-----|-----|---|----|---------|--------|--------|---|--------|-------|
| | A | B | C | D | E | F | G | H | J | K | L | M | N |
| STANDARD | 30 | 30 | 1 1/2 | 5/8 | 3/8 | 4 | 5D | 8 1/2 | 3 | 7 1/8 | 4 | 11/16 | 9/16 |
| SPECIAL | 48 | 48 | 2 1/4 | 7/8 | 5/8 | 6 | 8D | 12 4/10 | 4 6/10 | 10 5/8 | 6 | 1 1/16 | 13/16 |

| SIGN | DIMENSIONS (CONT.) | | | | |
|----------|--------------------|--------|--------|----|----|
| | P | Q | R | S | T |
| STANDARD | 12 | 11 1/2 | 7 | 10 | 8 |
| SPECIAL | 20 1/4 | 19 1/2 | 10 1/2 | 15 | 12 |

12-27-18 (Under Review)

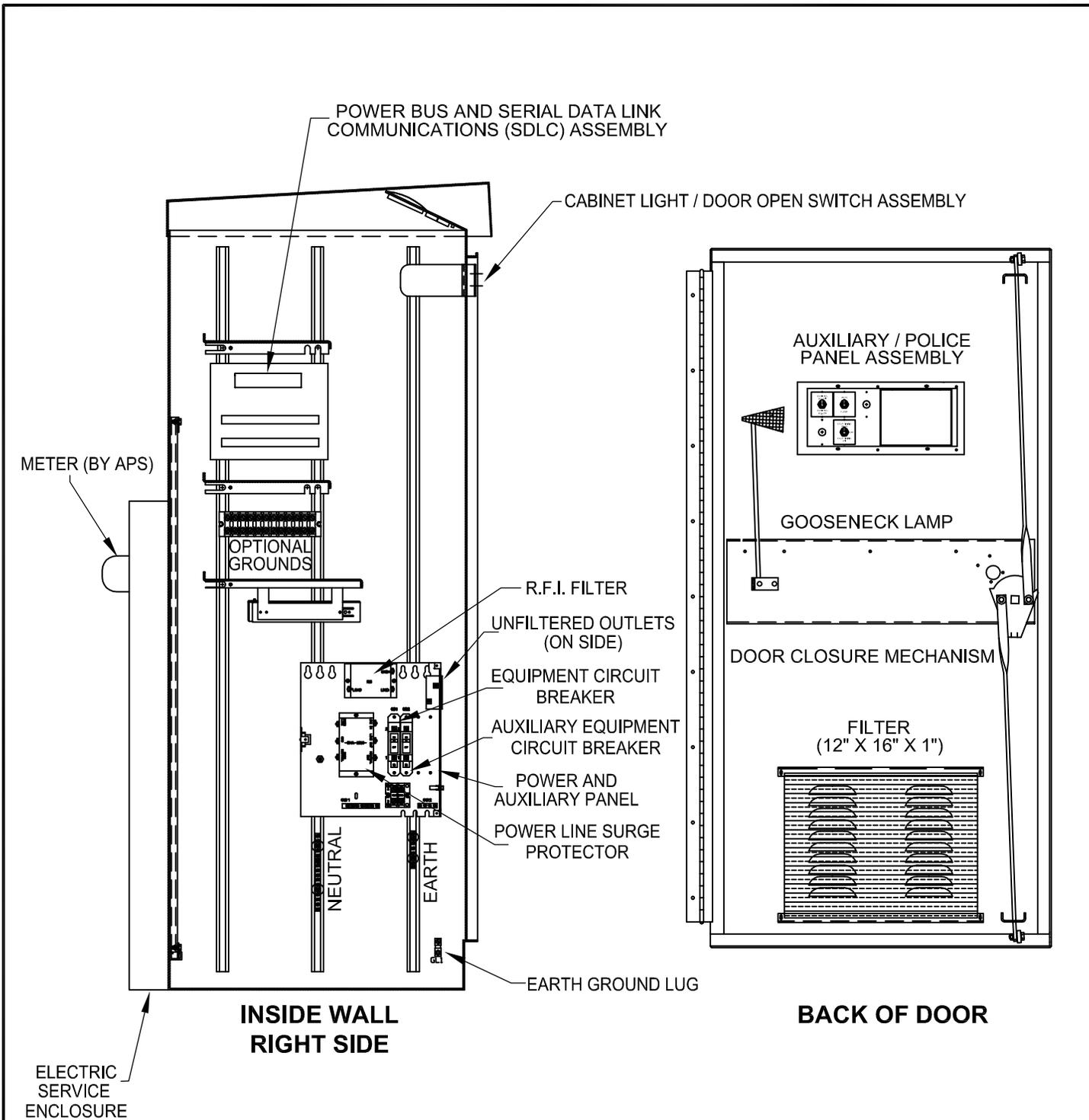
CITY OF YUMA
 CONSTRUCTION STANDARD DETAIL DRAWINGS

**STANDARD NO. 8-085
 ADVANCE DETOUR SIGN
 (M4-9Y)**



NOTES

1. Nominal minimum cabinet dimensions: 67" high, 30" wide and 25" deep.
2. Equipment locations are approximate.
3. See Standard Detail 9-010 for electrical service enclosure.
4. See Standard Detail 9-015 for cabinet foundation.
5. Power panel must have a rigid cover with slotted screw holes so the cover can be removed without removing the screws.
6. Front of door must be labeled "CITY OF YUMA TRAFFIC CONTROL" with embossed or engraved letters a minimum of one inch (1") high.
7. Cabinet must be an "Econolite Control Products, Inc., Type O, drawing 73156 or approved equivalent.
8. To maintain uniformity with the City of Yuma Smart City Plan, the only currently acceptable controller unit is Econolite Cobalt C P/N: COBS12120120000.



METER (BY APS)

POWER BUS AND SERIAL DATA LINK COMMUNICATIONS (SDLC) ASSEMBLY

CABINET LIGHT / DOOR OPEN SWITCH ASSEMBLY

OPTIONAL GROUNDS

R.F.I. FILTER

UNFILTERED OUTLETS (ON SIDE)

EQUIPMENT CIRCUIT BREAKER

AUXILIARY EQUIPMENT CIRCUIT BREAKER

POWER AND AUXILIARY PANEL

POWER LINE SURGE PROTECTOR

NEUTRAL

EARTH

EARTH GROUND LUG

AUXILIARY / POLICE PANEL ASSEMBLY

GOOSENECK LAMP

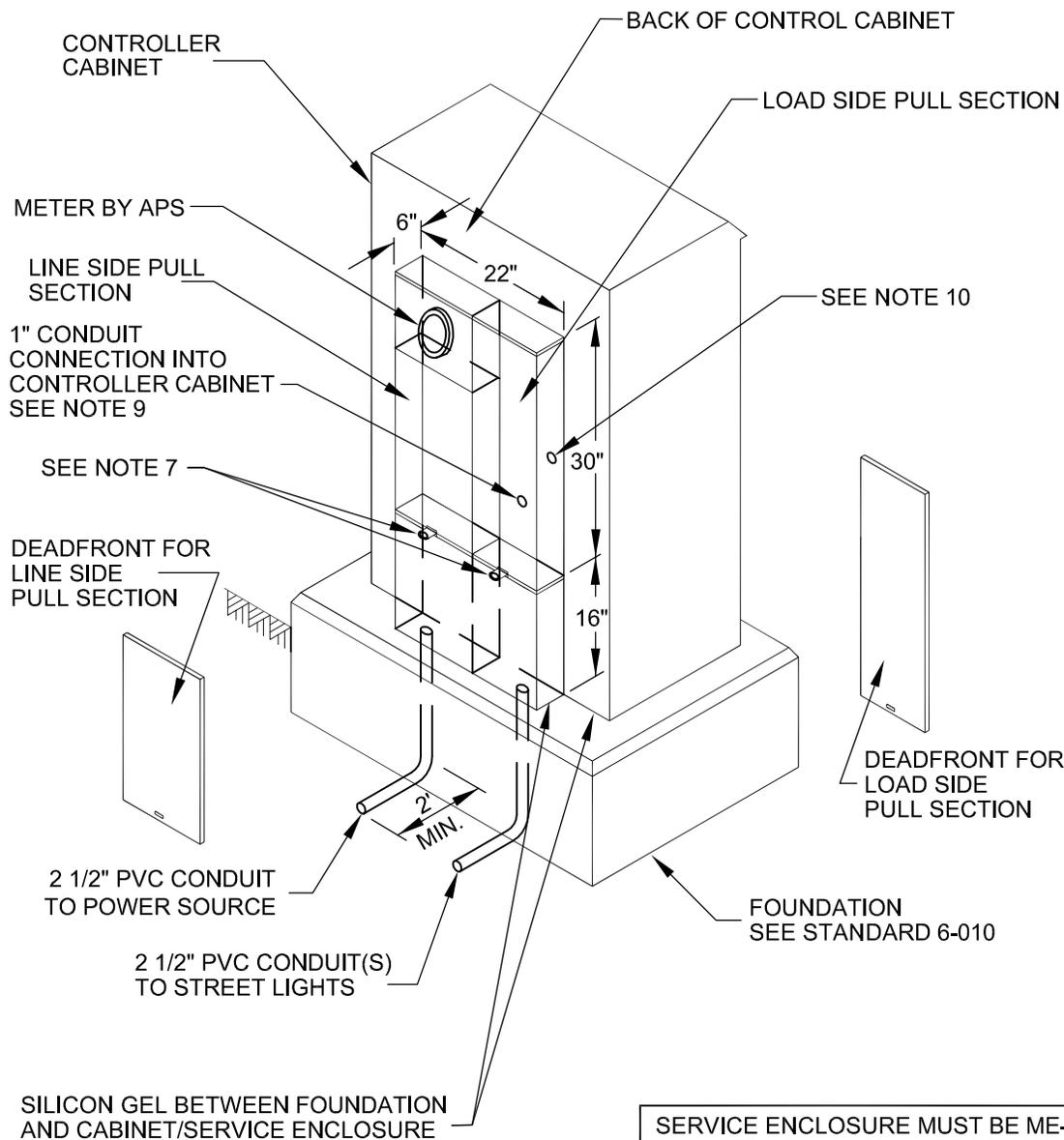
DOOR CLOSURE MECHANISM

FILTER (12" X 16" X 1")

**INSIDE WALL
RIGHT SIDE**

BACK OF DOOR

ELECTRIC SERVICE ENCLOSURE

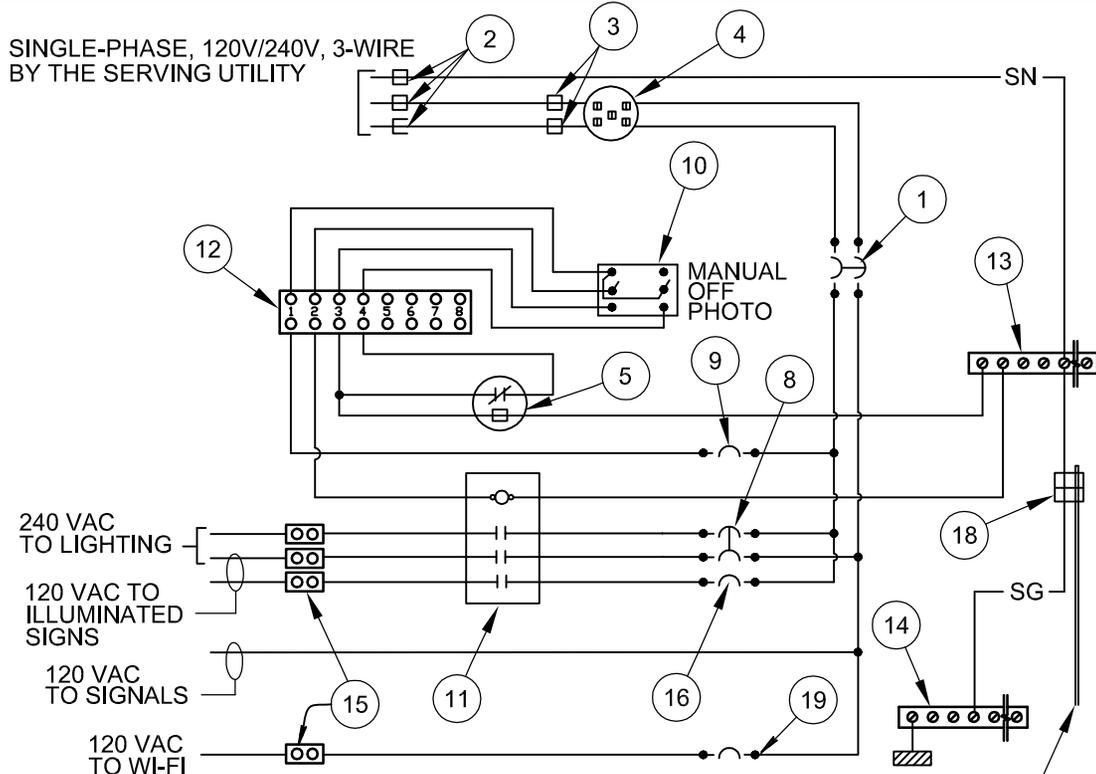


NOTES

1. See Traffic Signal and Roadway Lighting Specifications for construction requirements
2. All service conductors and service panels must have a 100 ampere capacity.
3. All components shall be rated for 250V operation.
4. Circuit breakers shall be the molded case, thermal magnetic, plug-in type with a minimum fault interrupting capacity of 10,000 amperes.
5. The service enclosure shall be fabricated from zinc-coated 14 gauge steel.
6. The service enclosure shall be N.E.M.A. 3R rated.
7. Each front panel shall be independently padlockable.
8. The service enclosure shall be secured to the control cabinet with four 3/8" cadmium plated bolts. Bolts shall not interfere with interior cabinet wiring or equipment placement.
9. There shall be a 1" flexible metal conduit from the back of the enclosure to the circuit breaker box in the controller cabinet.
10. A photoelectric switch must be mounted on the inside right side wall of the enclosure. A 2" diameter opening must be provided for the photoelectric cell. The opening must be covered from the inside by a 3" x 3" x 1/4" Plexiglas secured from the inside by 1/2"-12 bolts tapped and threaded into the enclosure.
11. See sheet 2 for enclosure wiring.
12. The dimensions shown are approximate. Enclosures that are functionally equivalent, approximately the same size, and acceptable to the Arizona Public Service Company(APS) may be provided subject to approval by the City Engineer.

SERVICE ENCLOSURE MUST BE ME-TYPE II BY MYERS ELECTRICAL PRODUCTS, INC. OR APPROVED EQUIVALENT.

| | |
|--|--------------|
| 12-27-18 (Under Review) | Sheet 1 of 2 |
| <p>CITY OF YUMA CONSTRUCTION STANDARD DETAIL DRAWINGS</p> <p>STANDARD NO. 9-010 ELECTRIC SERVICE ENCLOSURE ON CONTROLLER CABINET</p> | |



LEGEND

| | | | |
|----|-----------------|------|-----------------------|
| P | POLE | — | EXTERNAL CONDUCTOR |
| CB | CIRCUIT BREAKER | — | CONDUCTOR OR BUS |
| A | AMPERE | —●— | TIE POINT |
| V | VOLT | —○— | CONTACTOR COIL |
| M | METERED | — — | CONTACTOR, CONTACT NO |
| SN | SOLID NEUTRAL | —/— | CONTACTOR, CONTACT NC |
| SG | SOLID GROUND | ▨ | ENCLOSURE BOND |
| NO | NORMALLY OPEN | | |
| NC | NORMALLY CLOSED | | |

SEE NOTE 5

METER PEDESTAL EQUIPMENT LEGEND

| ITEM NO. | COMPONENT | NAME PLATE DESCRIPTION |
|----------|--------------------------|---|
| ① | 100A, 240V, 2P, CB | MAIN BREAKER |
| ② | UTILITY LANDING LUG | SEE NOTE 1 |
| ③ | TEST BYPASS BLOCKS | |
| ④ | METER SOCKET AND SUPPORT | |
| ⑤ | PHOTO ELECTRIC CELL | |
| ⑥ | RESERVED | |
| ⑦ | NOT USED | |
| ⑧ | 30A, 240V, 2P, CB | LIGHTING |
| ⑨ | 15A, 120V, 1P, CB | LIGHTING CONTROL |
| ⑩ | SWITCH | LIGHTING & SIGN CONTROL SWITCH (MANUAL, OFF, PHOTO) |
| ⑪ | 60A, 3P, NO CONTACTOR | |
| ⑫ | TERMINAL BLOCK | |
| ⑬ | NEUTRAL BUS | SEE NOTE 2 |
| ⑭ | GROUND BUS | |
| ⑮ | LIGHTING LANDING LUGS | |
| ⑯ | 15A, 120V, 1P, CB | ILLUMINATED SIGN |
| ⑰ | CABINET GROUND ROD | SEE NOTE 3 |
| ⑱ | GROUND ROD CLAMP | SEE NOTE 3 |
| ⑲ | 15A, 120V, 1P, CB | WI-FI |

NOTES

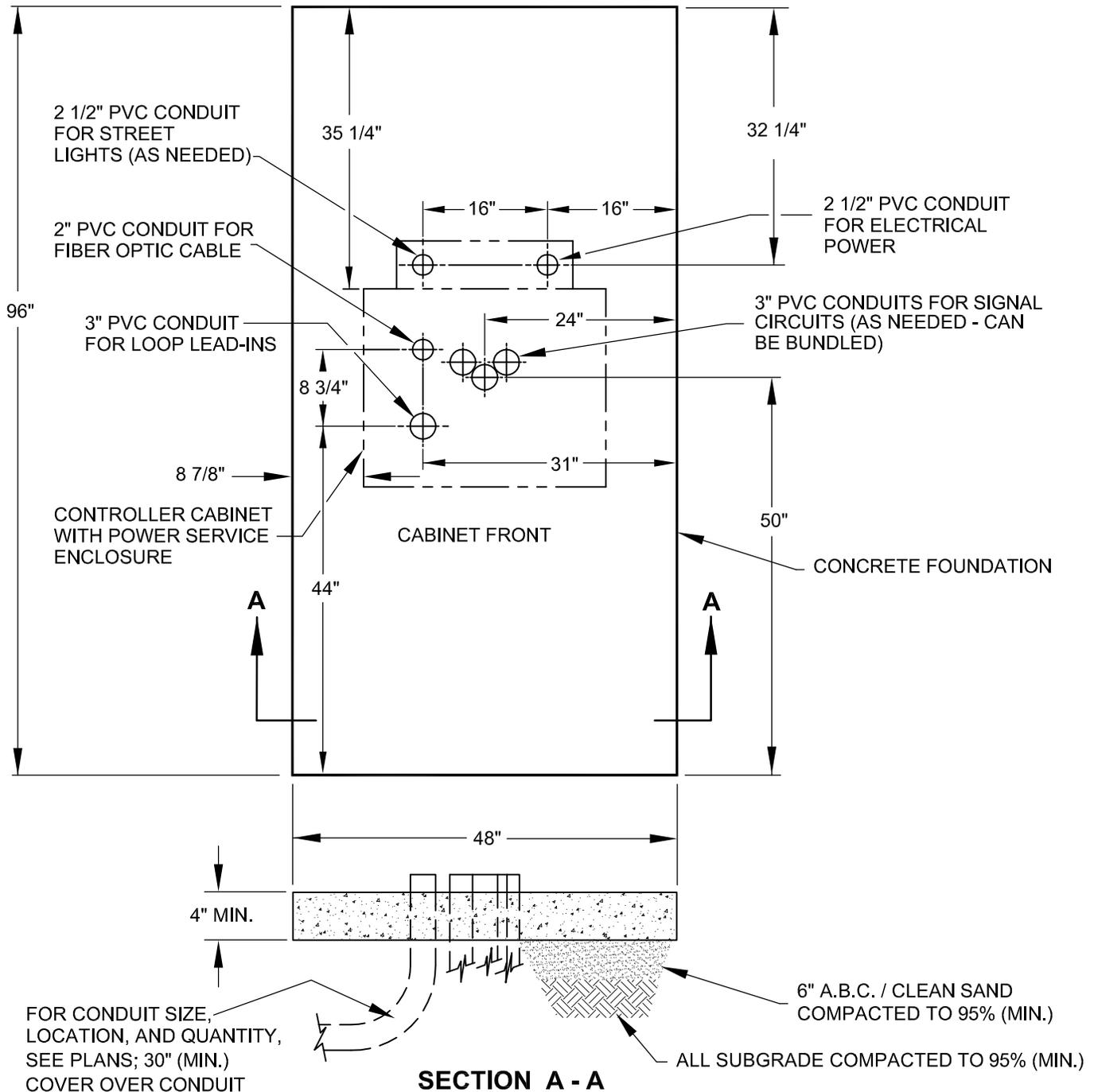
1. Aluminum-bodied terminals for #6 through #1/0 wire with rigid insulating barriers (maximum terminal size 250 KCMIL) per the requirements of the Electrical Utility Service Equipment Requirements Committee (EUSERC) and acceptable to Arizona Public Service Company(APS).
2. Insulated bondable vertical lay-in, double neutral lug with #1/0 wire capacity mounted on either sidewall.
3. Ground rod and clamp are not part of the enclosure.
4. See sheet 1 for service enclosure design.
5. See Standard 9-030 for grounding.

12-27-18 (Under Review)

Sheet 2 of 2

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 9-010
ELECTRIC SERVICE ENCLOSURE
ON CONTROLLER CABINET



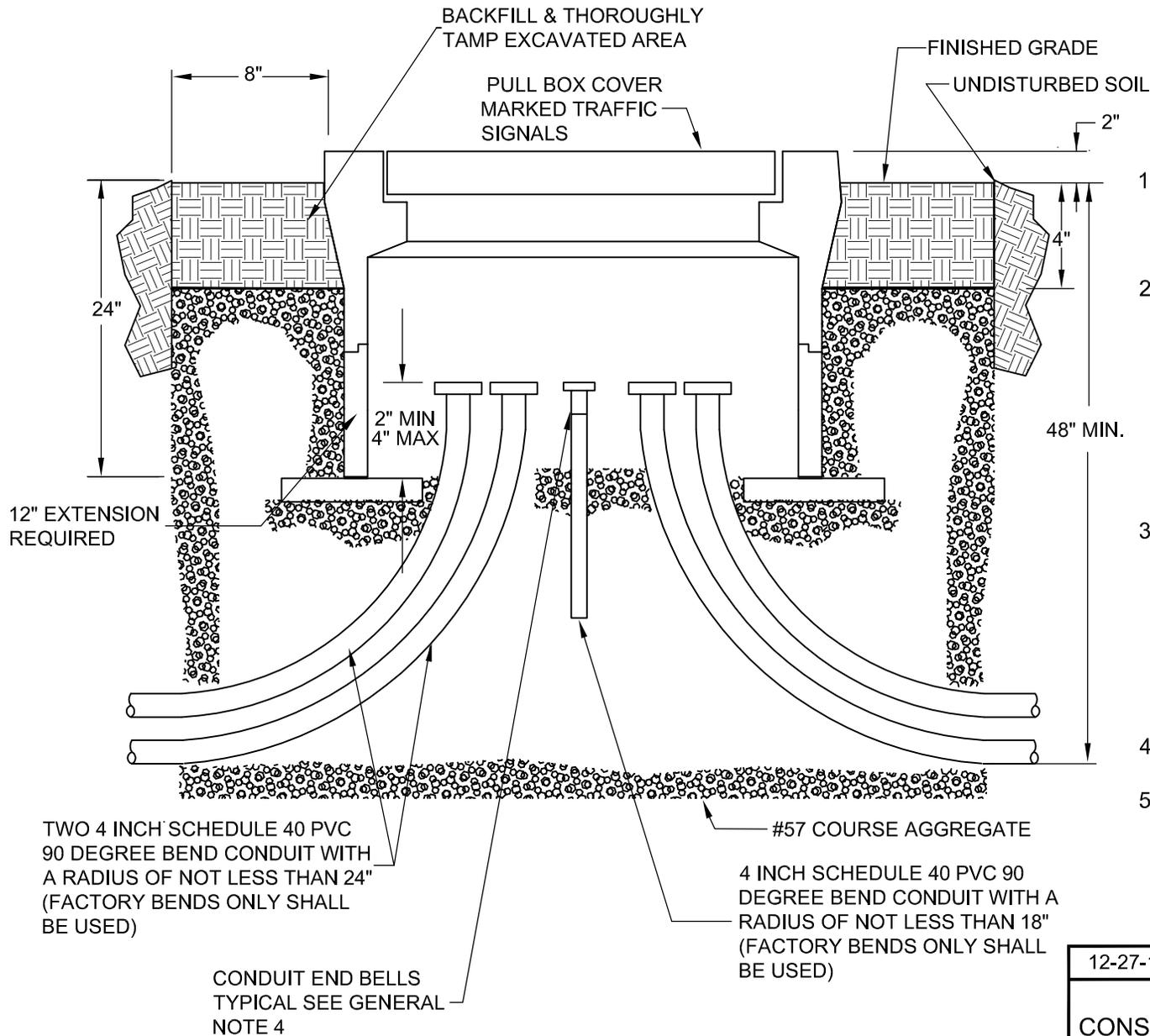
NOTES

1. Foundation must be constructed of Class "B" concrete per Mag. Section 725. Broom finish all exposed surfaces.
2. All dimensions nominal.
3. Attach cabinet to foundation with shot-in threaded studs, oversize washers and nuts.
4. Prior to mounting the cabinet onto foundation, apply "General Electric Silver Silicone Sealant" (or approved equivalent) to bottom of cabinet to provide a weather-proof seal between cabinet and foundation.
5. Orient foundation to provide maximum view of inter-section for personnel looking at front of cabinet.
6. See Standard 9-030 for grounding.
7. All conduit must be Schedule 40 PVC unless otherwise indicated.

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 9-015
TRAFFIC SIGNAL CONTROL
CABINET FOUNDATION



NOTES

1. All finished traffic signal equipment (pole foundations, pull boxes, and controller cabinet pads) shall be at back of sidewalk grade, unless otherwise noted on plans.
2. When traffic signal equipment (poles, pull boxes, and controller cabinets) are installed in an upward slope section, the project engineer shall design a retaining wall or cut back existing grade to obtain a level area for at least 24 inches from the traffic signal equipment. the slope of the finished grade shall not exceed a 1:6 slope and shall match and conform to the existing terrain.
3. When traffic signal equipment (poles, pull boxes, and cabinets) are installed in a downward slope section, needed dirt shall be hauled in to obtain a level area for at least 24 inches from the traffic signal equipment. The slope of the finished grade shall not exceed a 1:6 slope and shall match and conform to the existing terrain.
4. Conduit end bells shall be installed before pulling wire.
5. Backfill with excavated materials and thoroughly tamp per MAG. Standard 601.6. Finish grade shall be 2" down from top of box. Any pavement or sidewalk shall be flush with top of box.

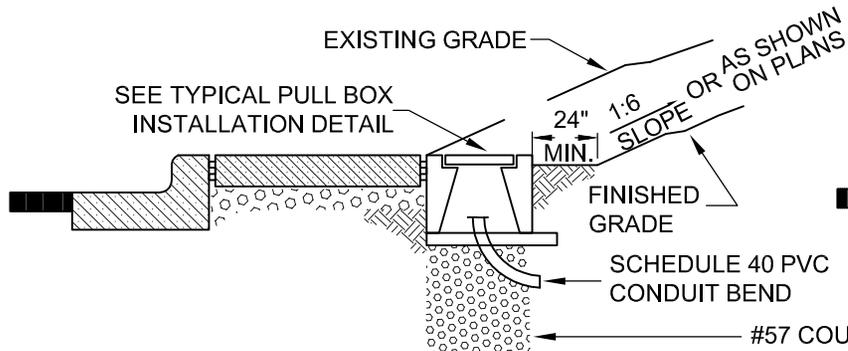
12-27-18 (Under Review)

Sheet 1 of 3

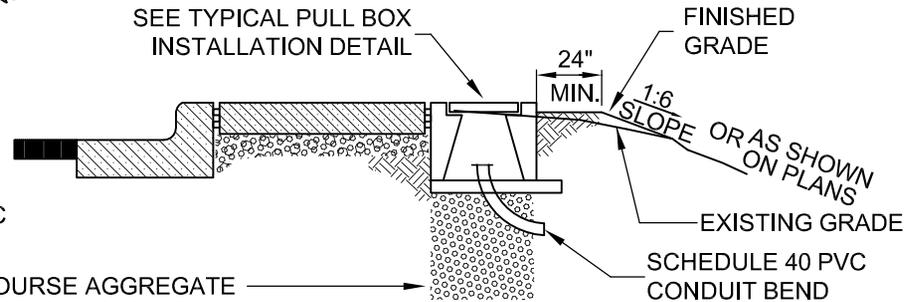
CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 9-020
TYPICAL PULL BOX INSTALLATION
FOR IT/COMMUNICATIONS

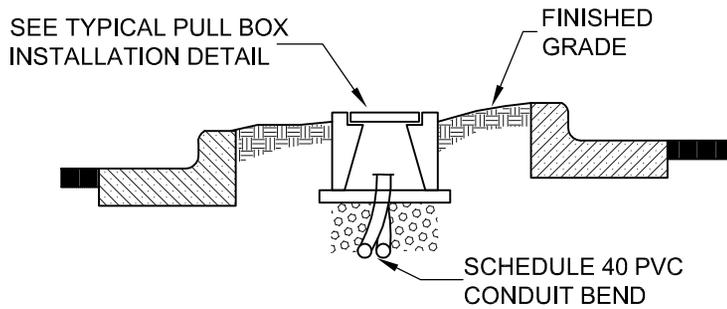
**TYPICAL PULL BOX INSTALLATION DETAIL
FOR TRAFFIC SIGNALS**



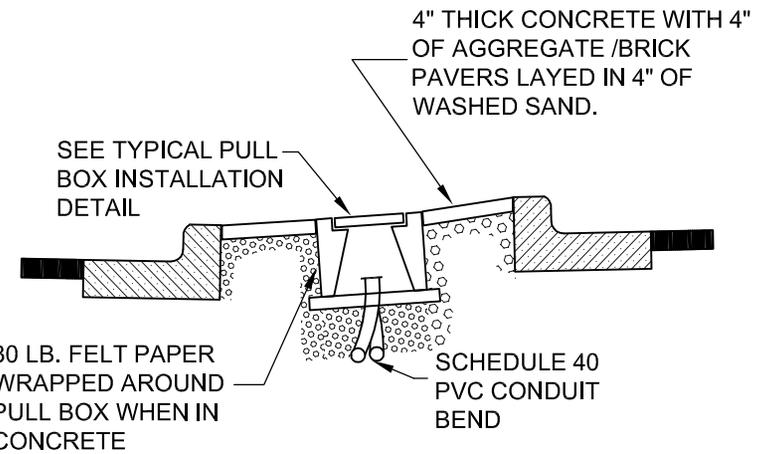
UPWARD SLOPE DETAIL



DOWNWARD SLOPE DETAIL



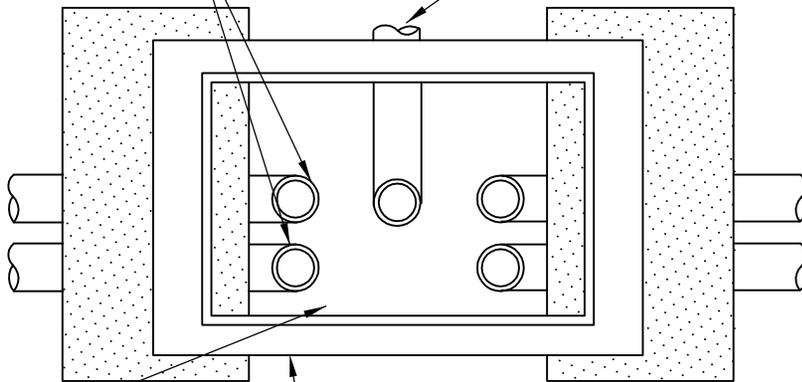
MEDIAN DETAIL



CONCRETE MEDIAN DETAIL

TWO 4 INCH SCHEDULE 40 PVC 90 DEGREE BEND CONDUIT

4 INCH SCHEDULE 40 PVC 90 DEGREE BEND CONDUIT



COVER OMITTED FOR CLARITY

TYPICAL PULL BOX
TOP VIEW

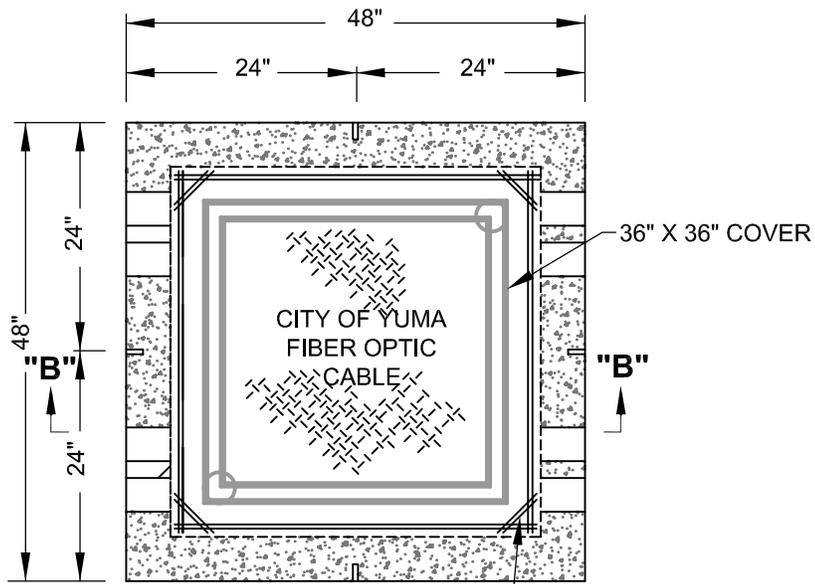
CONCRETE BUILDING BLOCK (8" x 1-1/2" x 16")

12-27-18 (Under Review)

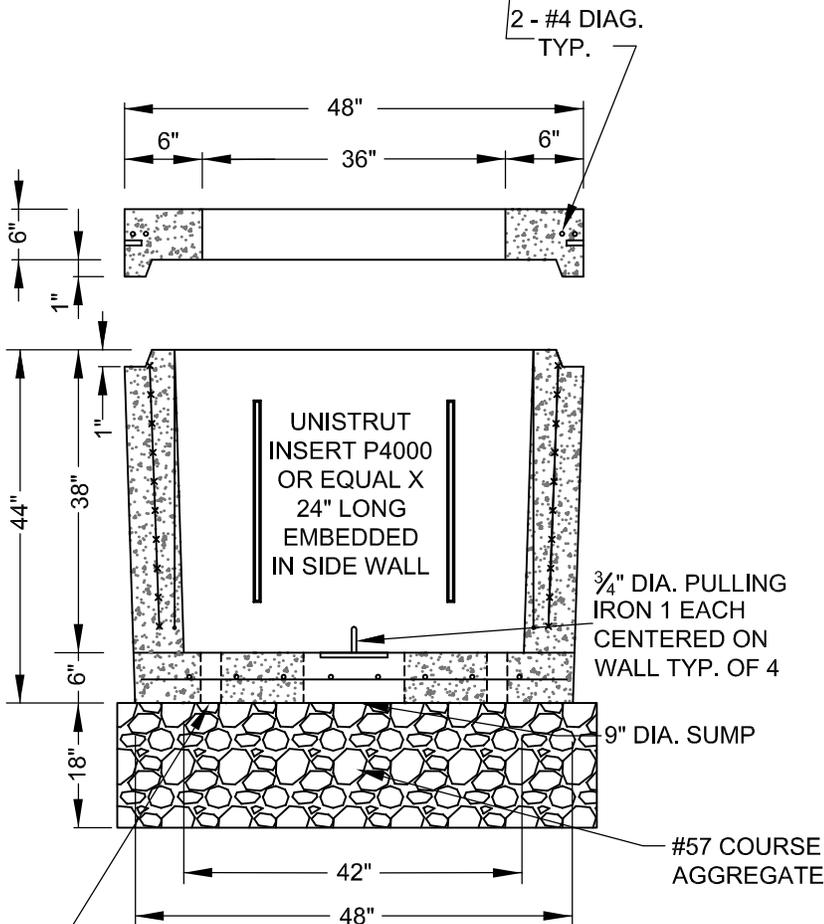
Sheet 2 of 3

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 9-020
TYPICAL PULL BOX INSTALLATION
FOR IT/COMMUNICATIONS



PLAN VIEW



SECTION "B - B"

2 EA. 2-1/2"
GROUND ROD
KNOCKOUTS

NOTES

Design loads-
 Live load HS 20-44 loading
 HS20 Wheel loading in off-street locations where not subjected to high density traffic.
 80PSF lateral live load surcharge-up to 8' depth.
 Soil: 40 PCF Lateral soil pressure above water table.
 80 PCF Lateral soil pressure below water table.
 120 PCF Soil density.

Material Specifications:

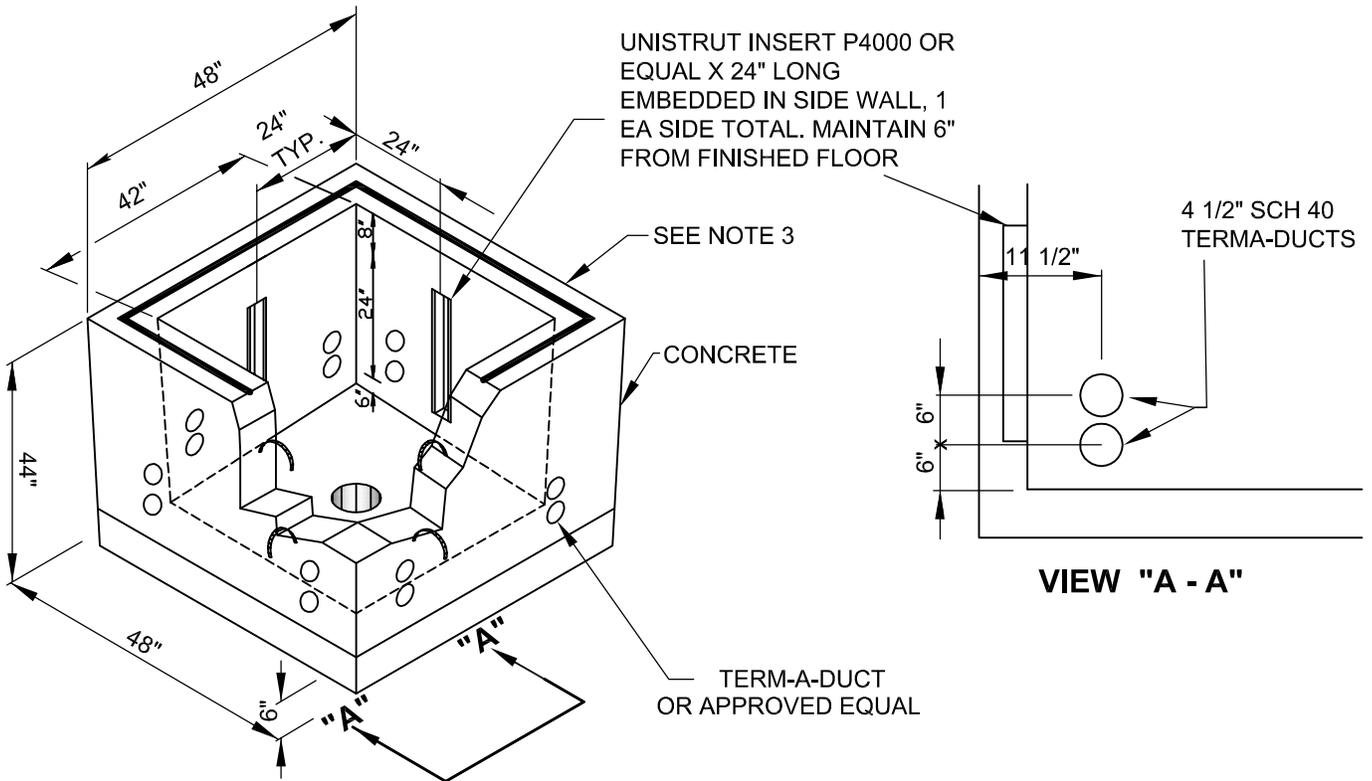
Concrete: 28 day compressive strength, $f'_c = 5,000$ p.s.i.
 Reinforcing Steel: ASTM A 615 grade 60
 Welded Wire Fabric: ASTM A1064 Grade 65.

Design Codes:

American Concrete Institute (ACI) 318-14.
 ASTM C857-16 Minimum Structural Design Loading for Underground - Precast Concrete Utility Structures.

General Notes:

1. All joints between concrete units shall be sealed with butyl rubber rope to assure watertight integrity.
2. All reinforcement steel to have equal cover unless otherwise noted.



UNISTRUT INSERT P4000 OR
EQUAL X 24" LONG
EMBEDDED IN SIDE WALL, 1
EA SIDE TOTAL. MAINTAIN 6"
FROM FINISHED FLOOR

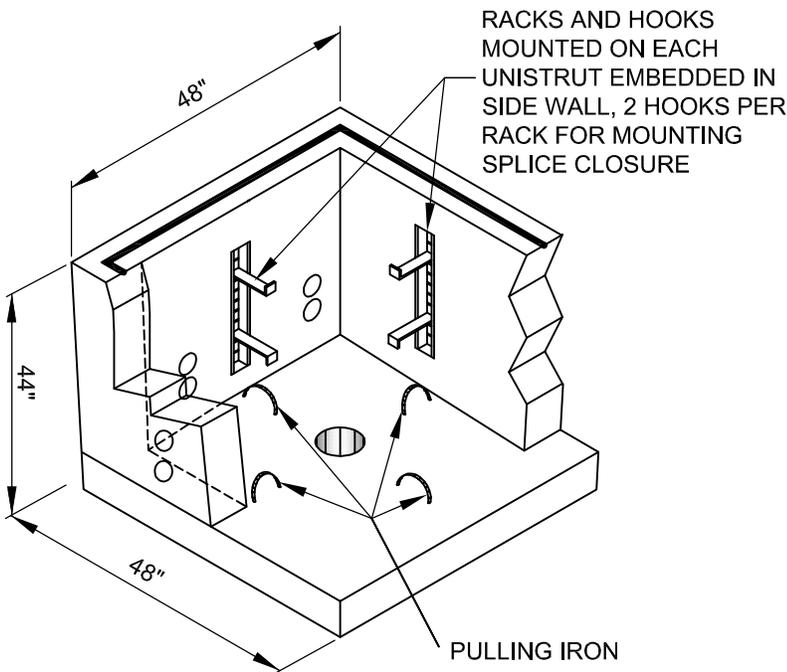
SEE NOTE 3

CONCRETE

4 1/2" SCH 40
TERMA-DUCTS

VIEW "A - A"

TERM-A-DUCT
OR APPROVED EQUAL

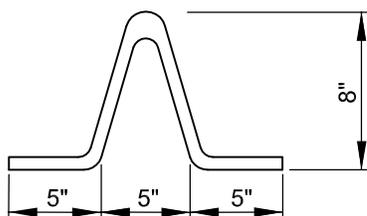


RACKS AND HOOKS
MOUNTED ON EACH
UNISTRUT EMBEDDED IN
SIDE WALL, 2 HOOKS PER
RACK FOR MOUNTING
SPLICE CLOSURE

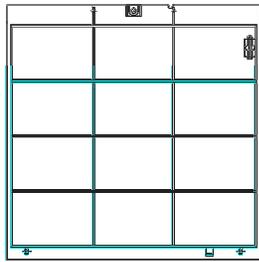
PULLING IRON

NOTES

1. Four (4) pulling irons shall be cast into the bottom of pull box.
2. All new pull boxes shall be furnished with (4) 18 hole racks, (8) 1/2" spring nuts and bolts, and (8) 7 1/2" straight hooks.
3. Pull box shall be installed with a locking lip with seal between wall & cover assembly.
4. Term-a-duct (or approved equal) shall accept a 4" dia. schedule 40 pvc conduit, unless otherwise specified.
5. All communication cables shall be tagged with cable identification.



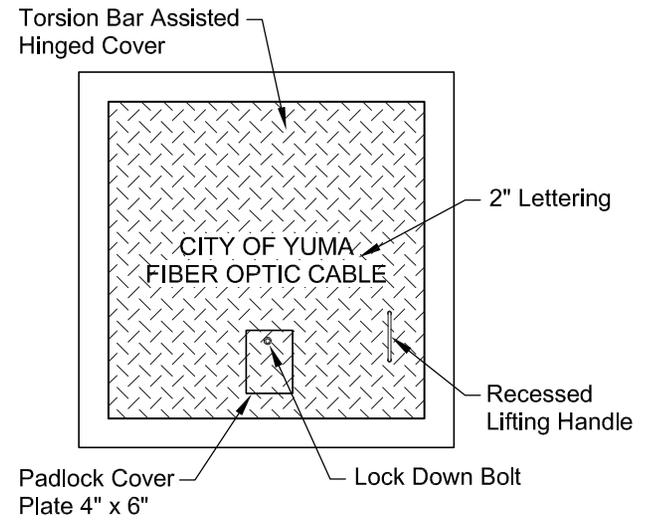
PULLING IRON DETAIL



BOTTOM VIEW

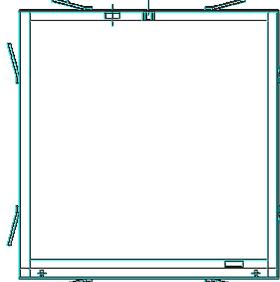
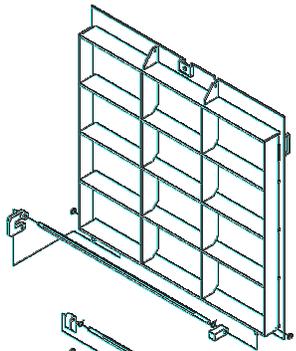


SIDE VIEW



PLAN VIEW WITH COVER

Frame anchors
embedded into
pull box lid



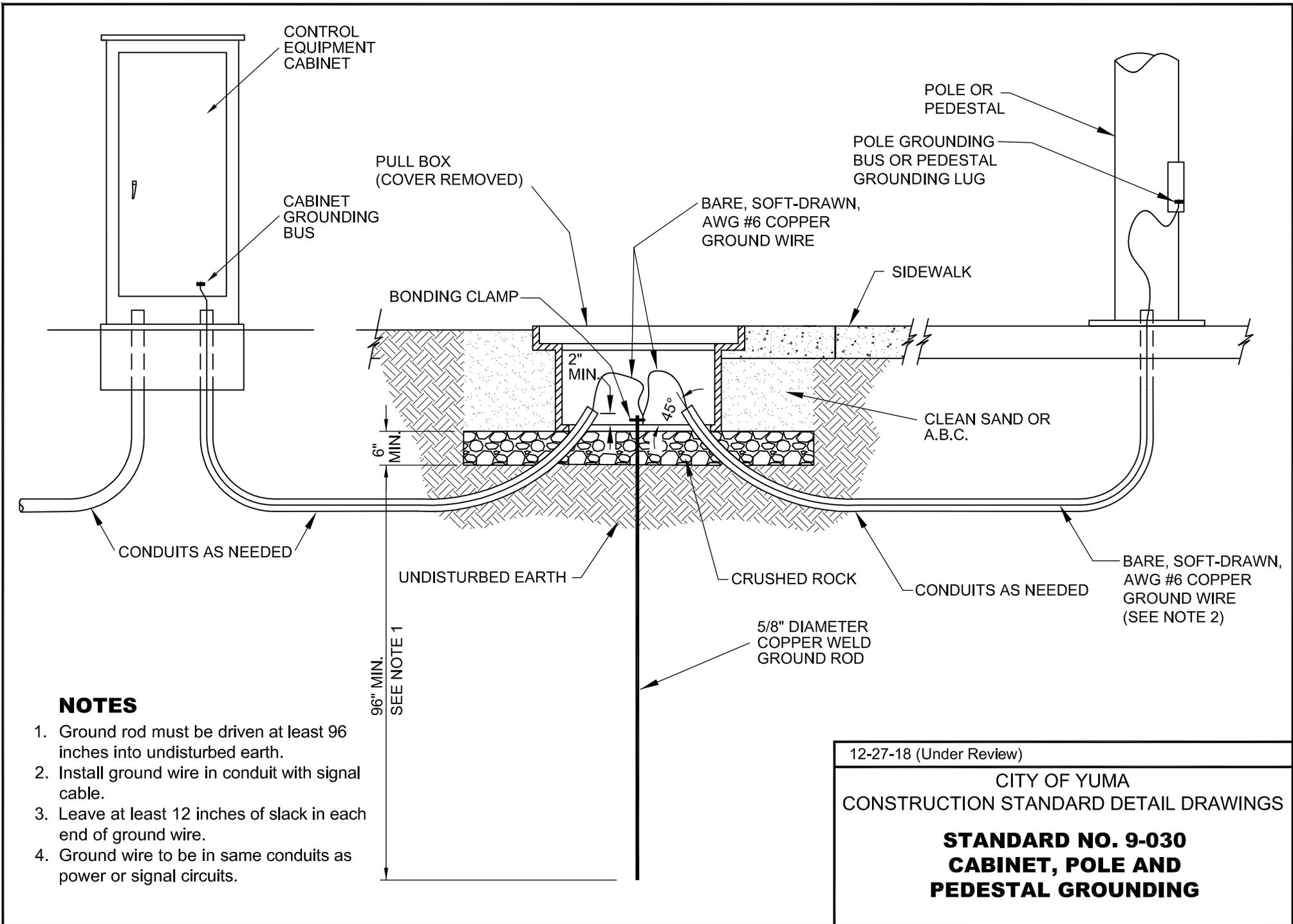
PLAN VIEW OF FRAME



END VIEW OF FRAME

COVER AND FRAME ASSEMBLY

- NOTES**
1. Cover Opens to 180-Degree Position.
 2. Exclude All Provisions for 90-Degree Open Position.
 3. Easily Opened and Closed By One Person, Maximum Force Required to Open/Close = 30 Lbs.
 4. Torsion Assist with Spring Mechanism. No Hydraulic System.
 5. Locking Hardware Required.
 6. 2" Welded Lettering on Lid to Read "CITY OF YUMA FIBER OPTIC CABLE"
 7. Load Rated for HS 20-44
 8. Weight: 200 Lbs. Maximum.
 9. Grounding Lug to Be Attached On Frame for Cover Grounding Per NEC.
 10. Dimensions: 36" x 36" Minimum.
 11. Material of Construction: Galvanized Steel.



NOTES

1. Ground rod must be driven at least 96 inches into undisturbed earth.
2. Install ground wire in conduit with signal cable.
3. Leave at least 12 inches of slack in each end of ground wire.
4. Ground wire to be in same conduits as power or signal circuits.

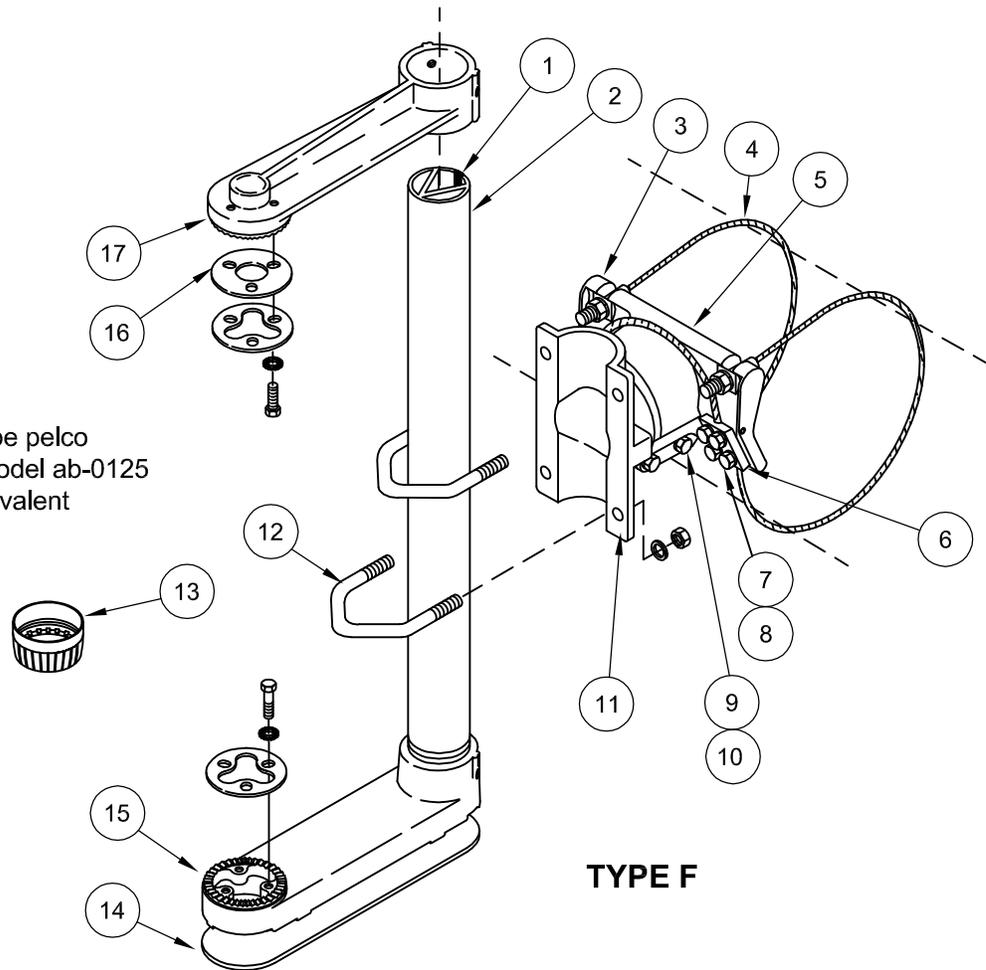
12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

**STANDARD NO. 9-030
CABINET, POLE AND
PEDESTAL GROUNDING**

NOTE

1. Assembly must be pelco products, inc. model ab-0125 or approved equivalent



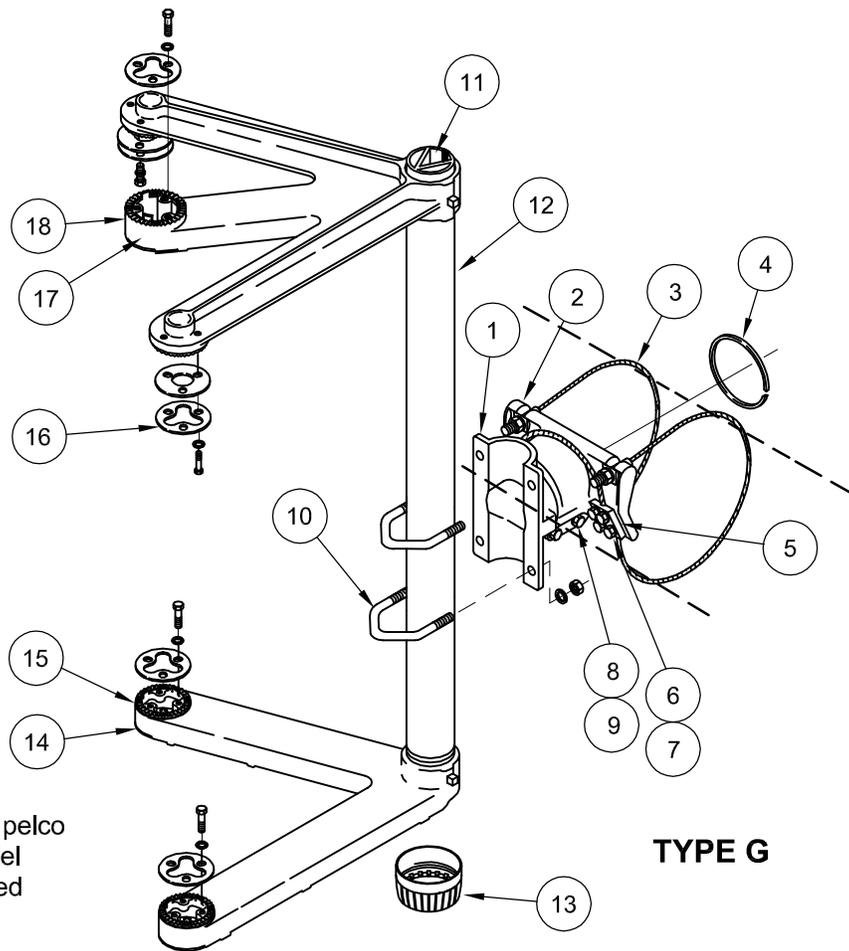
TYPE F

| ITEM | PART NO. | DESCRIPTION | QTY |
|------|-------------|---|-----|
| 1 | AB-0233 | INSERT, VINYL | 1 |
| 2 | AB-0306 | GUSSETED TUBE, TOE 1½" ALUM | 1 |
| 3 | AB-0354-M2 | CLAMP, FEMALE CABLE MNT, ALUM | 1 |
| 4 | AB-0280 | CABLE ASSY W/ GALV CABLE & STAINLESS HDWR | 1 |
| 5 | AB-0263-ZN2 | RETAINING RING, 2-7/8", ZINC 2 | 1 |
| 6 | AB-0339-M1 | PLATE, CABLE CLAMP, ASTRO-BRAC, ALUM | 2 |
| 7 | FS-2098-SS | BOLT, HEX HD 5/16"-18 x 7/8", STAINLESS | 8 |
| 8 | FS-4201-SS | WASHER, SPLIT LOCK 5/16", STAINLESS | 8 |
| 9 | FS-2025-SS | BOLT, HEX HD 5/16"-18 x 1½", STAINLESS | 2 |
| 10 | FS-4201-SS | WASHER, LOCK 5/16", STAINLESS | 2 |
| 11 | AB-0265-M1 | CLAMP, MALE, ALUM | 1 |
| 12 | AB-0256-SS | V-BOLT KIT, 5/16"-18, STAINLESS | 1 |
| 13 | B-4001 | THREAD PROTECTOR, 1-1/2", PLASTIC | 1 |
| 14 | AB-0236-M1 | COVER, LOWER ARM, ABS PLASTIC | 1 |
| 15 | AB-0215-M1 | LOWER ARM, ASTRO-BRAC 1-WAY, 8-1/2 | 1 |
| 16 | AB-0205-SS | HARDWARE KIT, 1-WAY ARM W/ ZINC WASHER & SS HDWR | 1 |
| 17 | AB-0214-M1 | UPPER ARM, ASTRO-BRAC 1-WAY, 8-1/2" | 1 |
| | B-2015 | BAG, .004 X 6-1/2" X 14", POLY W/ "AB-4000 ARM KIT" | 1 |

| OPTIONS |
|---|
| SIGNAL SECTIONS: 3, 4, or 5 SECTIONS |
| CABLE LENGTH: 62" FITS 4"-8.6" POLE/ARM DIA. 84" FITS 4"-11.6" POLE/ARM DIA. 96" FITS 4"-14.6" POLE/ARM DIA. |

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS
STANDARD NO. 9-035
MAST ARM
SIGNAL MOUNTING ASSEMBLY
3 TO 5 SECTION STRAIGHT



NOTE

1. Assembly must be pelco products, inc. model ab-0138 or approved equivalent.

TYPE G

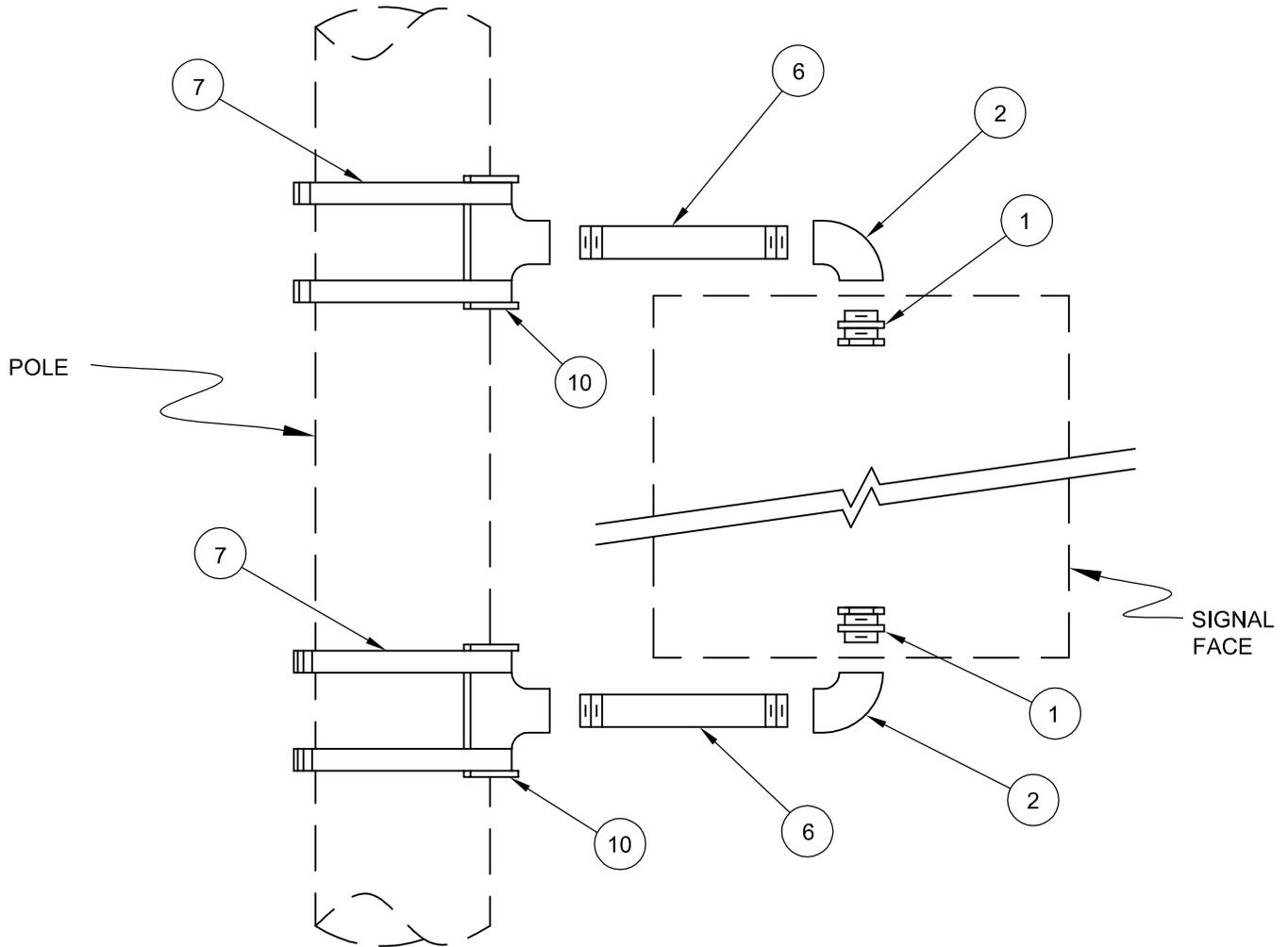
| ITEM | PART NO. | DESCRIPTION | QTY |
|------|---------------|--|-----|
| 1 | AB-0265-M1 | CLAMP, MALE, ALUM | 1 |
| 2 | AB-0354-M2 | CLAMP, FEMALE CABLE MNT, ALUM | 1 |
| 3 | AB-0280 | CABLE ASSY W/ GALV CABLE & STAINLESS HDWR | 1 |
| 4 | AB-0263-ZN2 | RETAINING RING, 2-7/8", ZINC 2 | 1 |
| 5 | AB-0339-M1 | PLATE, CABLE CLAMP, ASTRO-BRAC, ALUM | 2 |
| 6 | FS-4201-SS | WASHER, SPLIT LOCK 5/16", STAINLESS | 8 |
| 7 | FS-2098-SS | BOLT, HEX HD 5/16"-18 x 7/8", STAINLESS | 8 |
| 8 | FS-2025-SS | BOLT, HEX HD 5/16"-18 x 1 1/2", STAINLESS | 2 |
| 9 | FS-4201-SS | WASHER, LOCK 5/16", STAINLESS | 2 |
| 10 | AB-0256-SS | V-BOLT KIT, 5/16"-18, STAINLESS | 1 |
| 11 | AB-0233-35 | INSERT, VINYL, 35" | 1 |
| 12 | AB-0306-37-M1 | GUSSETED TUBE, 1 1/2"-11 1/2" NPS X 37" TOE, SLOT BACK, ALUM | 1 |
| 13 | B-4001 | THREAD PROTECTOR, 1 1/2", PLASTIC | 1 |
| 14 | AB-0236-M2 | COVER SET, LOWER ARM, 2-WAY, ABS PLASTIC | 1 |
| 15 | AB-0297-M1 | LOWER ARM, ASTRO-BRAC, 2-WAY, ALUM | 1 |
| 16 | AB-0270-SS | HDWR KIT, 5 SEC CLUSTER W/ STAINLESS HDWR | 1 |
| 17 | AB-0236-M4 | COVER, SINGLE UPPER CLUSTER ARM, ABS PLASTIC | 1 |
| 18 | AB-0298-M1 | UPPER ARM, ASTRO-BRAC, 5-SEC CLUSTER, ZINC 2 | 1 |
| | B-2013 | BAG, W/ PELCO LOGO .004" x 4" x 4", POLY | 1 |

OPTIONS

CABLE LENGTH:
 62" FITS 4"-8.6" POLE/ARM DIA.
 84" FITS 4"-11.6" POLE/ARM DIA.
 96" FITS 4"-14.6" POLE/ARM DIA.

12-27-18 (Under Review)

CITY OF YUMA
 CONSTRUCTION STANDARD DETAIL DRAWINGS
STANDARD NO. 9-040
MAST ARM
SIGNAL MOUNTING ASSEMBLY
5 SECTION CLUSTER MOUNT



**TYPE A
1-WAY SIGNAL HEAD
POLE - SIDE**

BILL OF MATERIALS

| ITEM | DESCRIPTION |
|------|---|
| 1. | Locking Nipple |
| 2. | Standard Elbow |
| 3. | Conduit Body with cover, gasket, and screws, T-Type |
| 4. | Pedestal-Top Adapter, 2-Way, 4.5" Slipfitter |
| 5. | Pedestal-Top Adapter, 3-Way, 4.5" Slipfitter |
| 6. | Pipe, 1.5", Threaded Both Ends (appropriate length) |
| 7. | 316 Stainless Steel Strap with Clamp, 0.5 inch |
| 8. | Bracket Assembly, 2-Way |
| 9. | Bracket Assembly, 3-Way |
| 10. | Pole Plate, Simple, 1.5" threaded |

NOTE

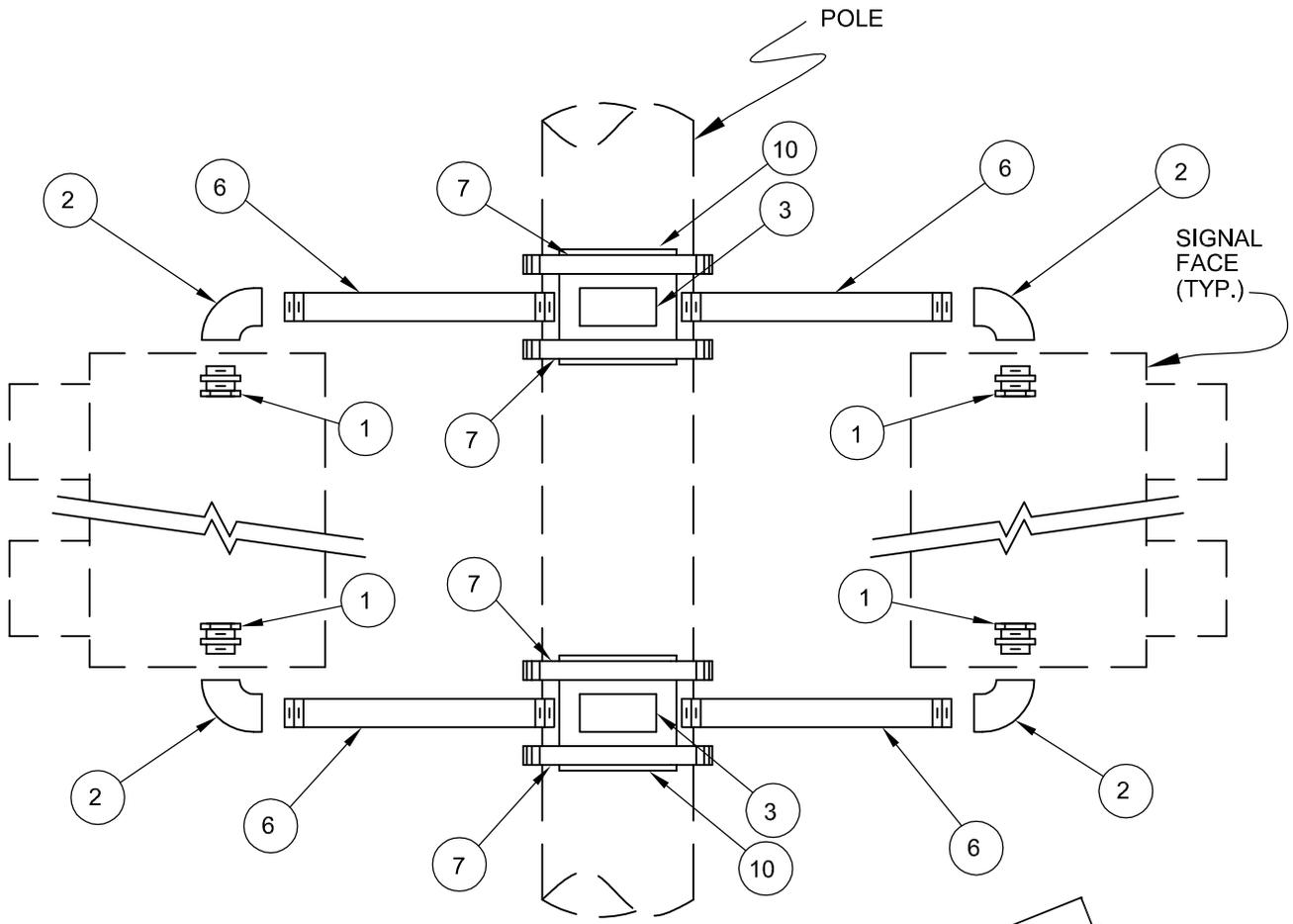
1. All materials, except stainless steel straps, must be finished with flat black powder coating.

12-27-18 (Under Review)

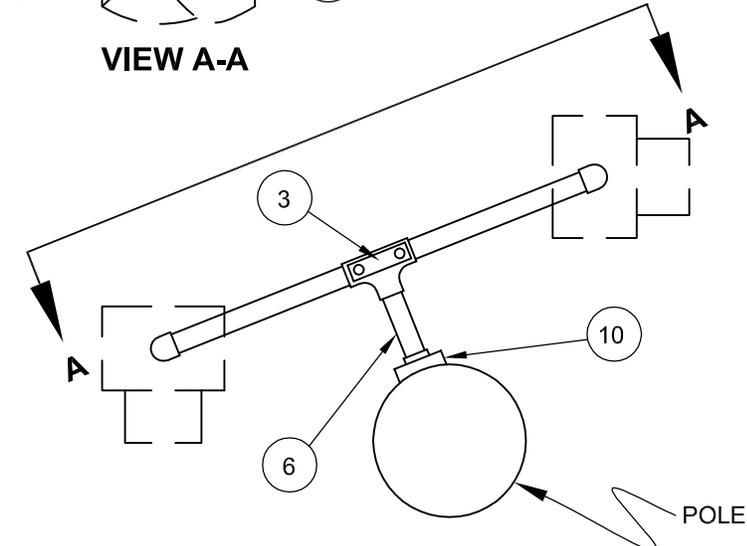
Sheet 1 of 4

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

**STANDARD NO. 9-045
SIGNAL MOUNTING ASSEMBLIES
FOR POLES AND PEDESTALS**



VIEW A-A



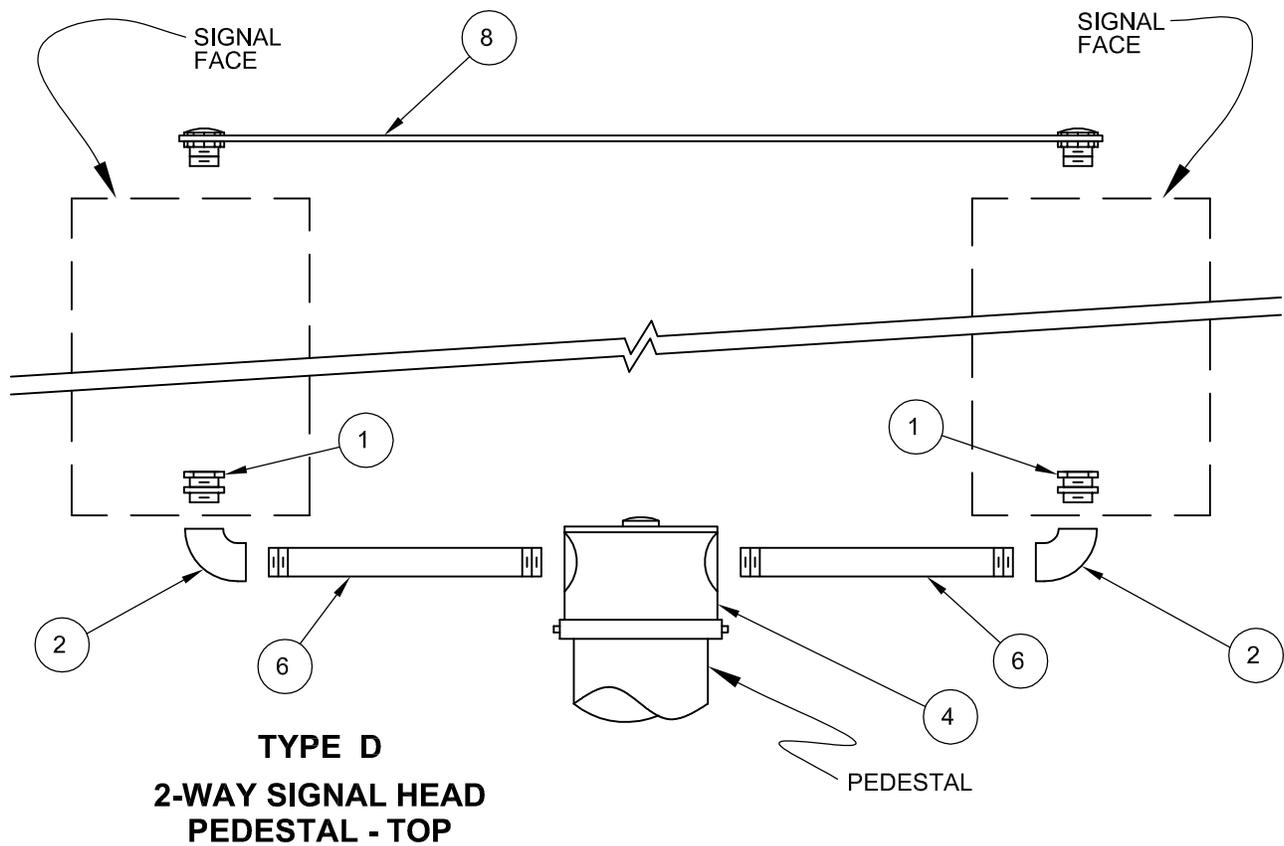
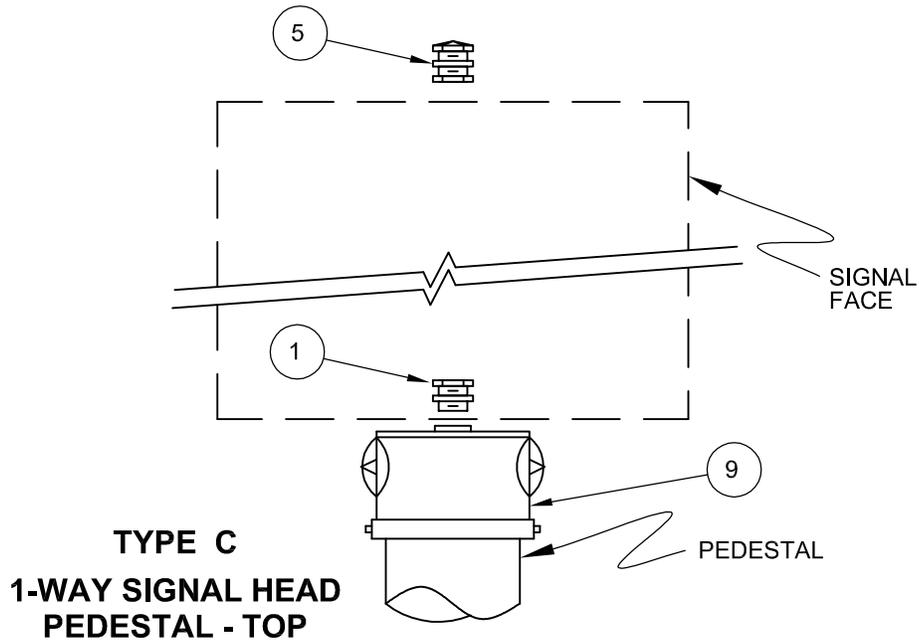
TOP VIEW

**TYPE B
2-WAY SIGNAL HEAD
POLE - SIDE**

NOTE

1. See Sheet 1 for Bill of Materials.

| | |
|---|--------------|
| 12-27-18 (Under Review) | Sheet 2 of 4 |
| CITY OF YUMA CONSTRUCTION STANDARD DETAIL DRAWINGS STANDARD NO. 9-045 SIGNAL MOUNTING ASSEMBLIES FOR POLES AND PEDESTALS | |



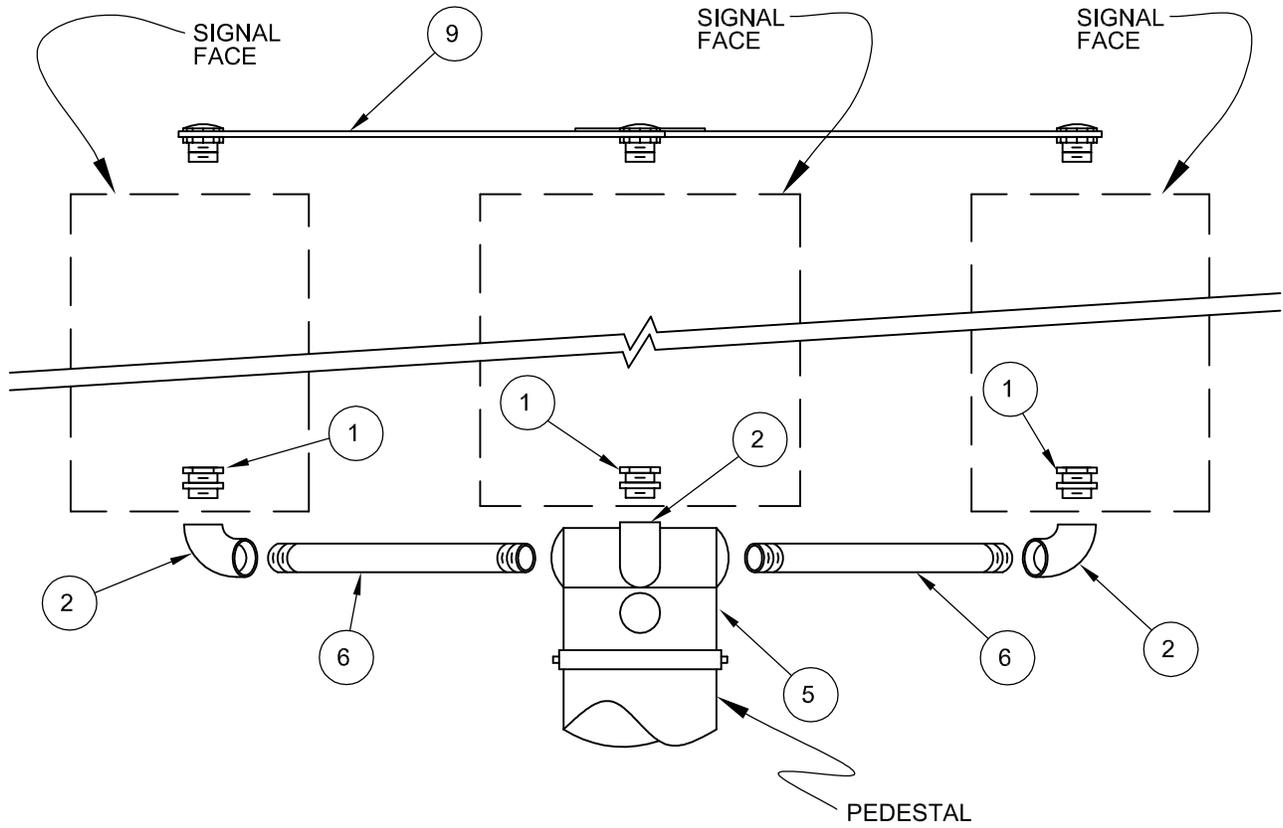
NOTE

1. See Sheet 1 for Bill of Materials.

12-27-18 (Under Review)

Sheet 3 of 4

CITY OF YUMA
 CONSTRUCTION STANDARD DETAIL DRAWINGS
STANDARD NO. 9-045
SIGNAL MOUNTING ASSEMBLIES
FOR POLES AND PEDESTALS

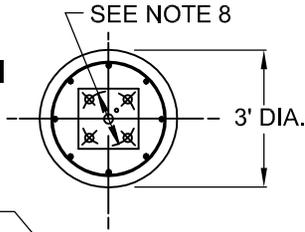


**TYPE E
3-WAY SIGNAL HEAD
PEDESTAL - TOP**

NOTE

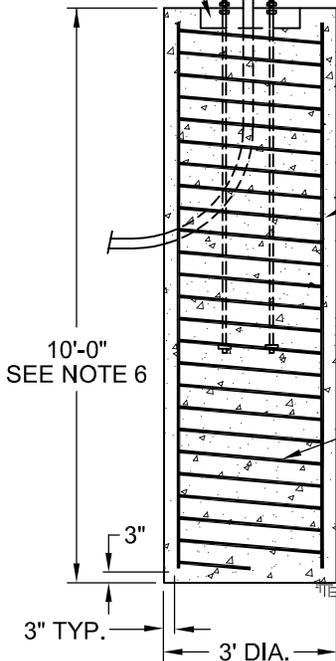
1. See Sheet 1 for Bill of Materials.

FOUNDATION PLAN
(TYPICAL)



SEE NOTE 4
SEE NOTES 2 & 3
BLOCK OUT FOR LEVELING NUTS

SEE NOTE 4
SEE NOTES 2 & 3
BLOCK OUT FOR LEVELING NUTS



EIGHT NO. 7 VERTICAL REBARS

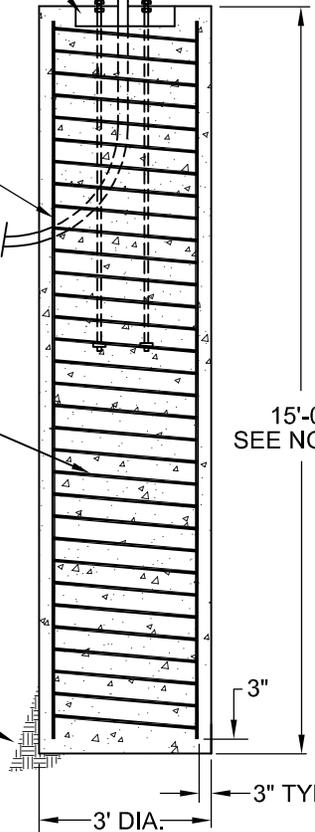
3/8 " DIA. COLD DRAWN STEEL WIRE SPIRAL CAGE WITH 3" PITCH

SEE NOTE 5

10'-0"
SEE NOTE 6

3"
3" TYP.

TYPE A-1
FOR USE ON YUMA MESA



15'-0"
SEE NOTE 6

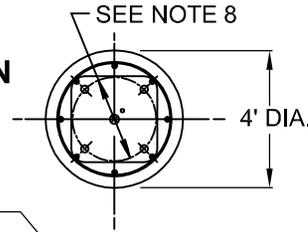
3"
3" TYP.

TYPE B-1
FOR USE IN YUMA AND GILA VALLEYS

NOTES

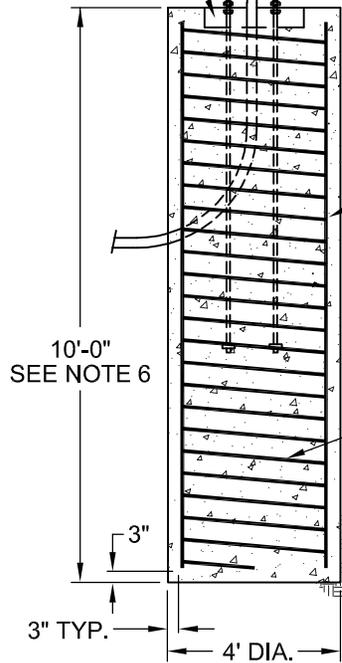
1. All materials and construction must conform to the requirements of the project manual Special Conditions and A.D.O.T. specifications.
2. See City of Yuma Standard No. 9-060 & 9-065. Each anchor bolt must have four (4) hex nuts and (2) flat washers.
3. Anchor bolts must project 4 1/2" above the foundation.
4. Conduit must project two inches (2") to four inches (4") above the foundation.
5. The foundation hole must be augered and 4000 psi concrete poured against undisturbed, compacted earth.
6. Unstable soil may require deeper foundation. See A.D.O.T. Standard Specifications, Section 731-3.01.
7. See Standard 9-030 for pole grounding.
8. BOLT CIRCLE: 18"- Pole types J, K, Q, R, II 19"- Pole Type I.

FOUNDATION PLAN
(TYPICAL)



SEE NOTE 4
SEE NOTES 2 & 3
BLOCK OUT FOR
LEVELING NUTS

SEE NOTE 4
SEE NOTES 2 & 3
BLOCK OUT FOR
LEVELING NUTS



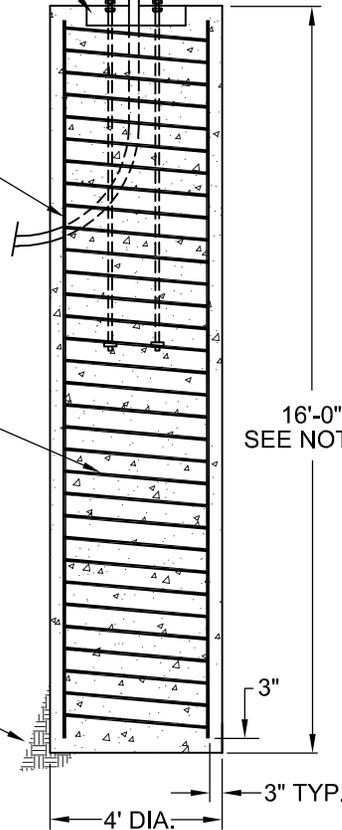
TYPE A-2
FOR USE ON YUMA MESA

EIGHT NO. 7
VERTICAL REBARS

3/8" DIA. COLD DRAWN
STEEL WIRE SPIRAL
CAGE WITH 3" PITCH

SEE NOTE 5

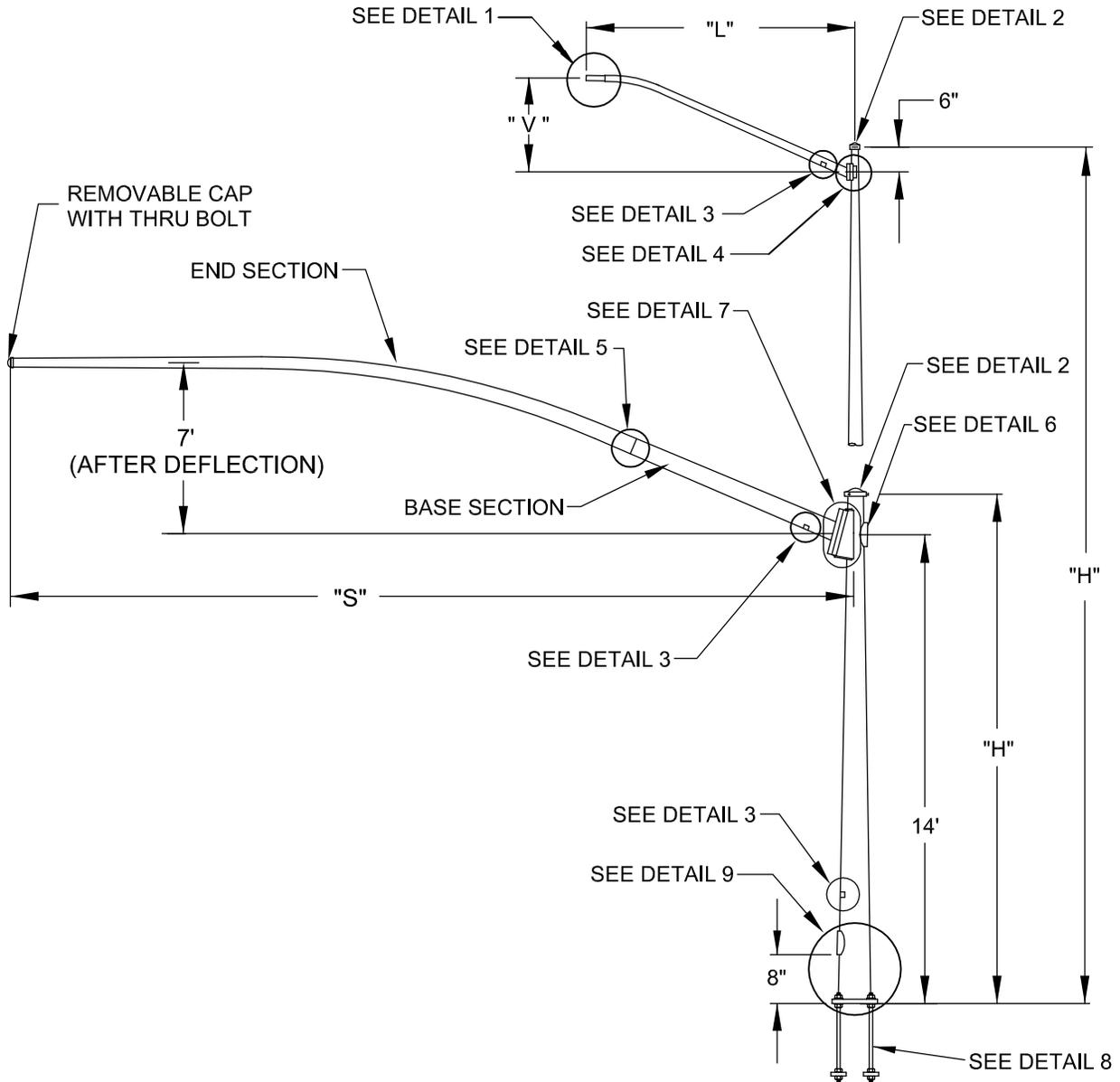
SEE NOTE 5



TYPE B-2
**FOR USE IN YUMA
AND GILA VALLEYS**

NOTES

1. All materials and construction must conform to the requirements of the project manual Special Conditions and A.D.O.T. specifications.
2. See City of Yuma Standard No. 9-060 & 9-065. Each anchor bolt must have four (4) hex nuts and (2) flat washers.
3. Anchor bolts must project 4 1/2" above the foundation.
4. Conduit must project two inches (2") to four inches (4") above the foundation.
5. The foundation hole must be augered and 4000 psi concrete poured against undisturbed, compacted earth.
6. Unstable soil may require deeper foundation. See A.D.O.T. Standard Specifications, Section 731-3.01.
7. See Standard 9-030 for pole grounding.
8. BOLT CIRCLE: 22"- Pole types SP-1A, SP-1B, II



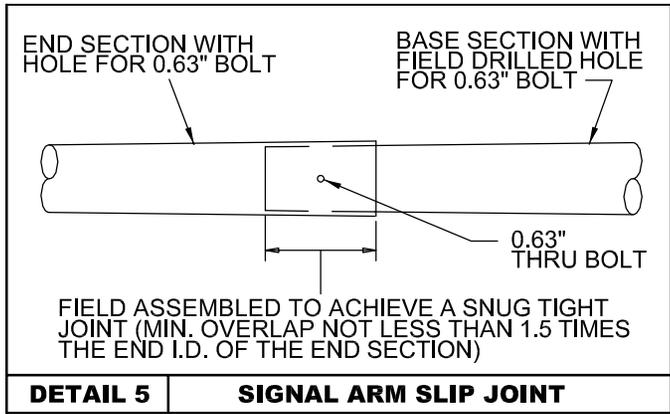
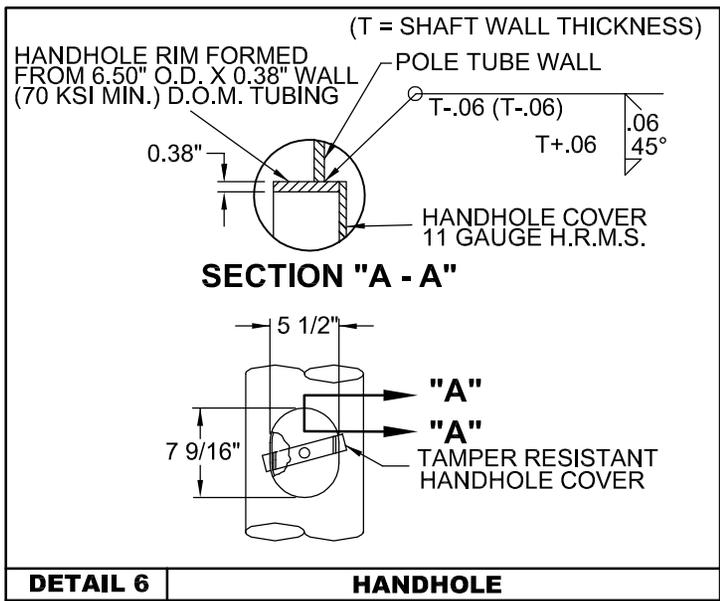
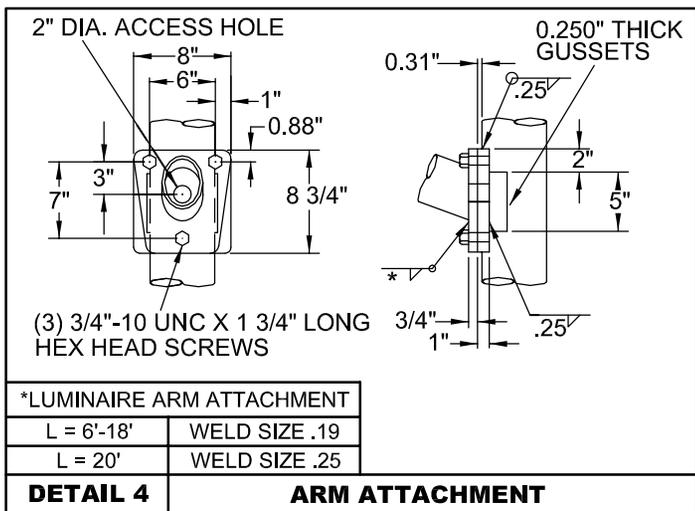
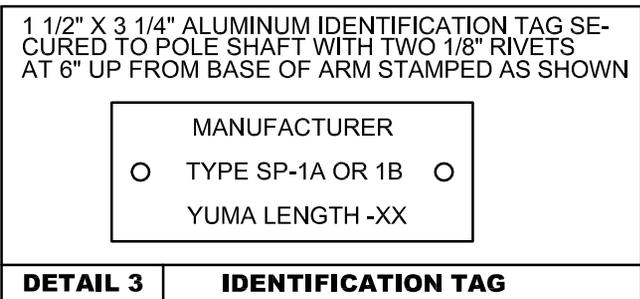
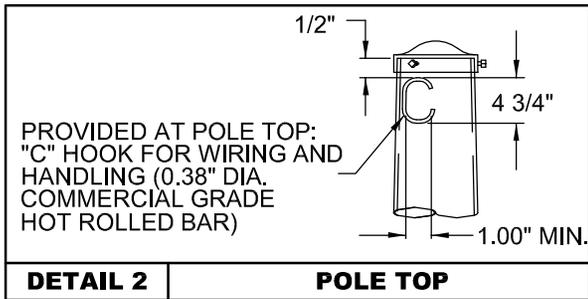
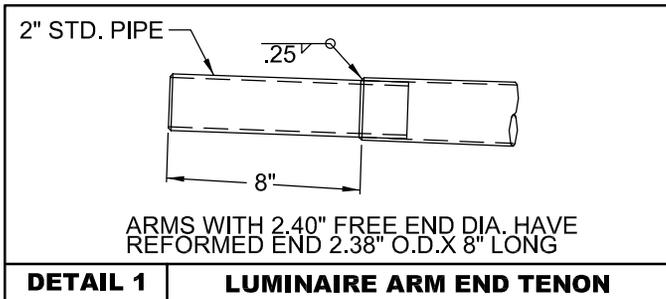
| FOR THIS INFORMATION | SEE TABLE |
|----------------------|-----------|
| LUMINAIRE ARM | 1 |
| POLE | 2 |
| SIGNAL ARM | 3 |
| MATERIAL DATA | 4 |

| TABLE 1: LUMINAIRE ARM DATA | | | | | |
|-----------------------------|-------------------------|------------------------|-------|-------------------|-----------------|
| ARM SPAN "L" (FEET) | FIXED END DIA. (INCHES) | FREE END DIA. (INCHES) | GAUGE | LENGTH "L" (FEET) | RISE "V" (FEET) |
| 6 | 3.31 | 2.40 | 11 | 6.00 | 2.00 |
| 8 | 3.61 | 2.40 | 11 | 8.00 | 2.50 |
| 10 | 3.93 | 2.40 | 11 | 10.00 | 3.33 |
| 12 | 4.23 | 2.40 | 11 | 12.00 | 4.25 |
| 15 | 4.65 | 2.40 | 11 | 15.00 | 4.75 |
| 18 | 5.10 | 2.40 | 11 | 18.00 | 5.75 |
| 20 | 5.90 | 3.00 | 7 | 20.00 | 5.75 |

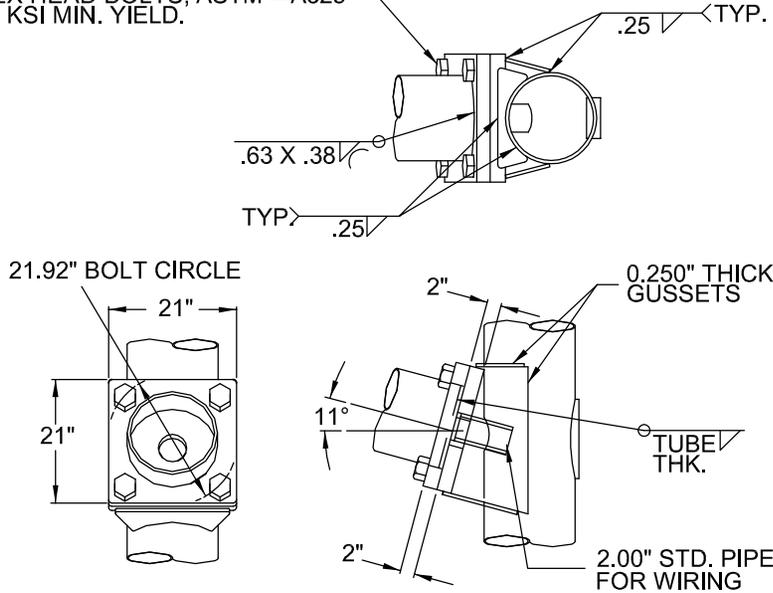
| TABLE 2: POLE DATA | | | | | |
|--------------------|---------------|-------------------|--------------------|-------------------|--------------------|
| TYPE | LUMINAIRE ARM | POLE TUBE | | | |
| | | HEIGHT (H) (FEET) | BASE DIA. (INCHES) | TOP DIA. (INCHES) | WALL THK. (INCHES) |
| SP-1A | N/A | 21.00 | 16.50 | 13.56 | 0.281" |
| SP-1B | YES | 30.00 | 16.50 | 12.30 | 0.281" |

| TABLE 3: SIGNAL ARM DATA | | | | | |
|--------------------------|------|-------------------------|-------------------------|---------------|-----------------------|
| ARM LENGTH "S" | | LARGE END DIA. (INCHES) | SMALL END DIA. (INCHES) | THK. (INCHES) | SECTION LENGTH (FEET) |
| 60'-0" | BASE | 13.50 | 10.18 | 0.313 | 23.70 |
| | END | 11.00 | 5.49 | 0.239 | 39.32 |
| 65'-0" | BASE | 13.50 | 10.18 | 0.313 | 23.70 |
| | END | 11.00 | 4.79 | 0.239 | 44.32 |
| 70'-0" | BASE | 13.50 | 10.18 | 0.313 | 23.70 |
| | END | 11.00 | 4.09 | 0.239 | 49.32 |

| TABLE 4: MATERIAL DATA | | |
|--------------------------|-----------------|-------------------------|
| COMPONENT | DESIGNATION | DESIGN MIN. YIELD (KSI) |
| POLE SHAFT | ASTM A572 | 50 |
| BASE PLATE | ASTM A572 GR.42 | 42 |
| SIGNAL ARM TUBE (BASE) | ASTM A572 | 50 |
| SIGNAL ARM TUBE (END) | ASTM A595 GR.A | 48 |
| SIGNAL ARM ATTACHMENT | ASTM A36 | 36 |
| LUMINAIRE ARM TUBE | ASTM A595 GR.A | 48 |
| LUMINAIRE ARM ATTACHMENT | ASTM A36 | 36 |
| ANCHOR BOLTS | ASTM F1554 | 55 |
| NUTS | ASTM A563 GR.A | NA |
| WASHERS | ASTM F463 | NA |
| GALVANIZING-ACCESSORIES | ASTM A153 | NA |
| GALVANIZING-TUBES | ASTM A123 | NA |

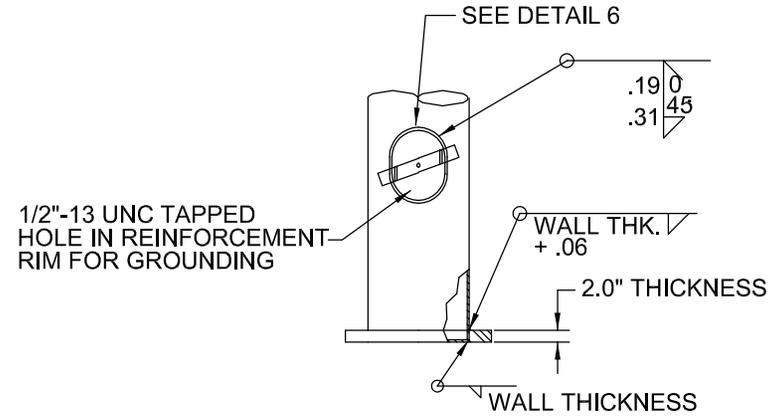


(4)-1 1/2"- 6 UNC X 4 1/4" LONG
HEX HEAD BOLTS, ASTM A-325
81 KSI MIN. YIELD.



DETAIL 7

SIGNAL ARM ATTACHMENT



1/2"-13 UNC TAPPED
HOLE IN REINFORCEMENT
RIM FOR GROUNDING

22.0" BOLT CIRCLE

22.0"
SQUARE

HOLE DIAMETER: POLE SHAFT
OUTSIDE DIAMETER + 0.06"

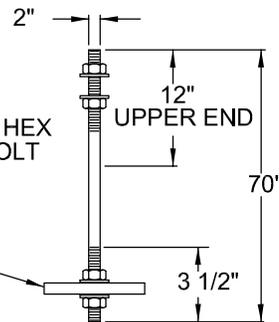
2 1/4" X 2 1/2" SLOT SIZE

DETAIL 9

POLE BASE

FOUR ANCHOR BOLTS WITH FOUR HEX
NUTS AND FOUR WASHERS PER BOLT
WITH UPPER END GALVANIZED AT
LEAST 12".

1 1/2" X 5 1/2" X 5 1/2"

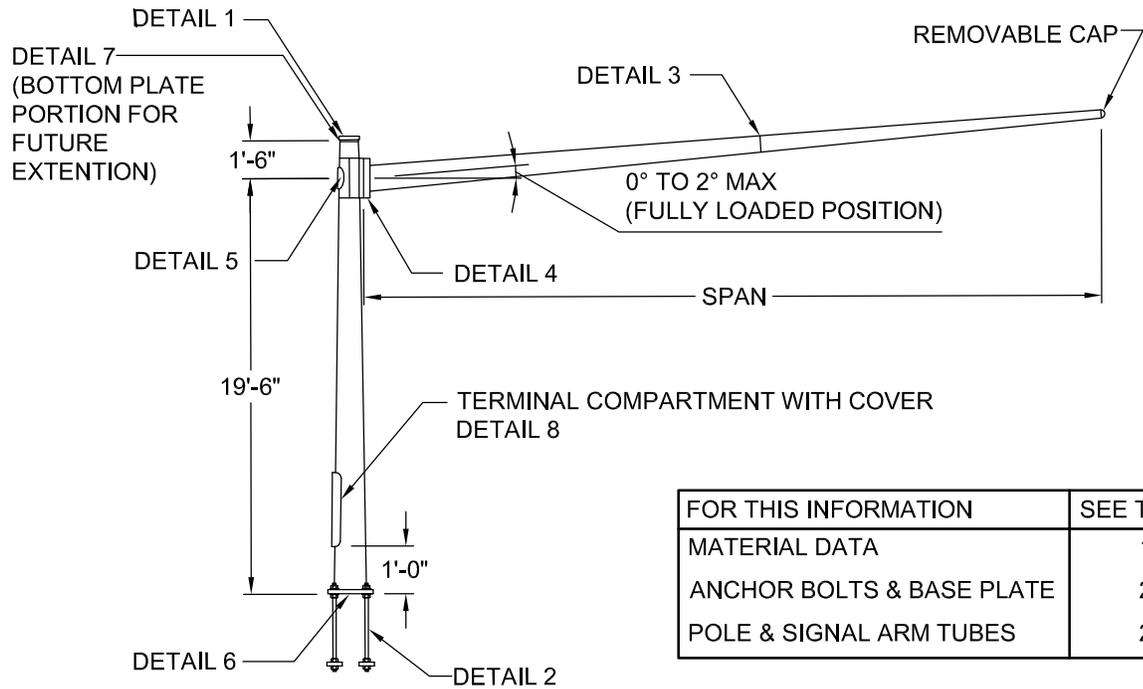


DETAIL 8

ANCHOR BOLT

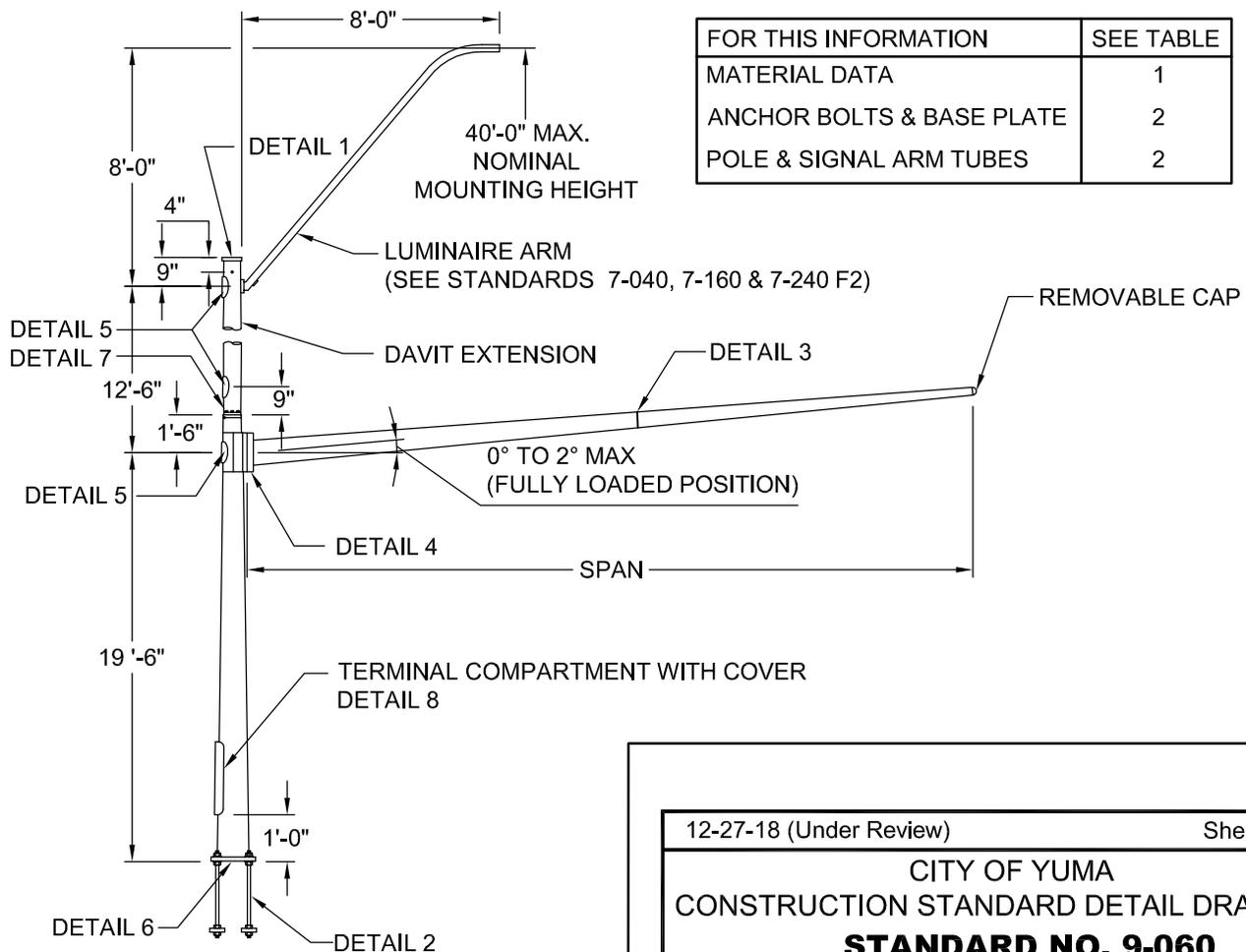
NOTE

1. This detail is only for poles and arms not installation



| FOR THIS INFORMATION | SEE TABLE |
|---------------------------|-----------|
| MATERIAL DATA | 1 |
| ANCHOR BOLTS & BASE PLATE | 2 |
| POLE & SIGNAL ARM TUBES | 2 |

TYPICAL POLE & MAST ARM



| FOR THIS INFORMATION | SEE TABLE |
|---------------------------|-----------|
| MATERIAL DATA | 1 |
| ANCHOR BOLTS & BASE PLATE | 2 |
| POLE & SIGNAL ARM TUBES | 2 |

**TYPICAL POLE, MAST ARM,
DAVIT EXTENSION & LUMINAIRE ARM**

DESIGN CRITERIA:

2001 AASHTO standard specification for structural supports for highway signs, luminaires and traffic signals.

- 25 year design life/recurrence interval
- Fatigue category iii
- Truck-induced fatigue included (galloping not included)

WIND VELOCITY:

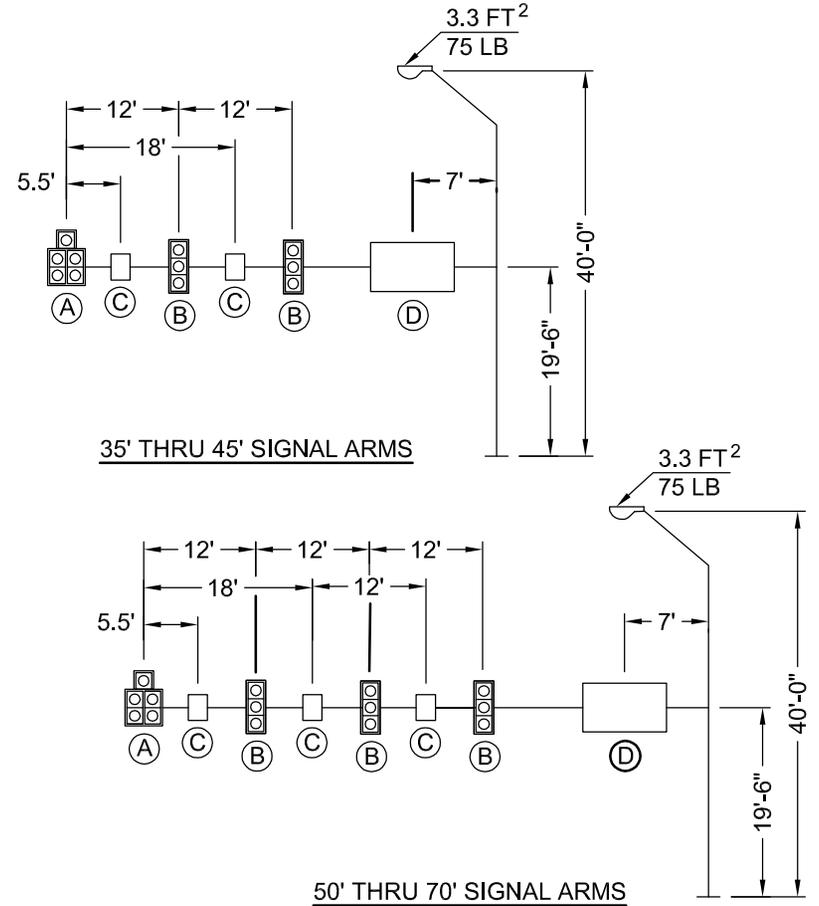
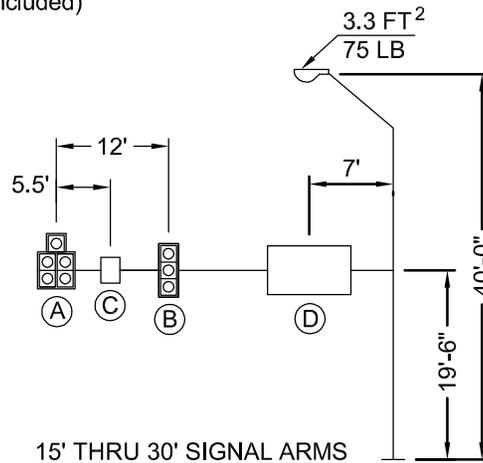
80 MPH ISOTACH.

MAXIMUM TRUCK-INDUCED FATIGUE:

65 MPH

CAFL AT CRITICAL CONNECTIONS:

- Pole to base plate connection = e
- Arm to simplex plate connection = e
- Simplex gussets = et
- Pole wall at simplex gusset = e
- Pole shaft = b'



| DEVICE | DESCRIPTION | PROJ. AREA (FT ²) | WEIGHT (LBS) |
|------------|---|-------------------------------|--------------|
| (A) SIGNAL | 12"-5 SEC. CLUSTER SIGNAL WITH BACKPLATES | 16 | 80 |
| (B) SIGNAL | 12"-3 SEC. SIGNAL WITH BACKPLATES | 9.75 | 50 |
| (C) SIGN | 30" X 36" SIGN | 7.5 | 23 |
| (D) SIGN | ILLUMINATED STREET NAME SIGN | 18.6 | 120 |

LOADING INFORMATION

TABLE 1: MATERIAL DATA

| COMPONENT | DESIGNATION | MIN. YIELD (KSI) |
|--------------------------------|--------------------------|------------------|
| POLE - 0.250" & 0.313" WALL | A572 GR. 65 | 65 |
| ARM TUBE - 7 GA. & 0.250" WALL | A595 GR. A | 55 |
| BASE PLATE | A36 | 36 |
| SIGNAL ARM ATTACHMENT | A36 | 36 |
| SIGNAL ARM CONN. BOLTS | A325 | - |
| ANCHOR BOLTS - 2.00" DIA. | A449 | 58 |
| NUTS | ASTM A563 GR. C.O. OR DH | - |
| WASHERS | ASTM F436 | - |
| GALVANIZING | A123 & A153 | - |

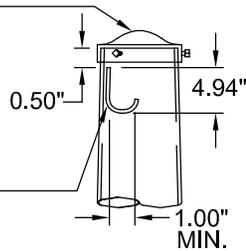
12-27-18 (Under Review)

Sheet 2 of 4

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 9-060
TYPE 1 AND TYPE 2
TRAFFIC SIGNAL
POLE AND MAST ARM

CAST POLE TOP
CAP HELD IN
PLACE WITH (3)
SET SCREWS

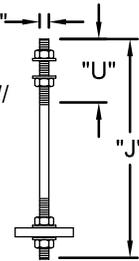


"J" HOOK FOR WIRING
AND HANDLING - 0.50"
DIA. COMMERCIAL
GRADE HOT ROLLED BAR

DETAIL 1

POLE TOP

(4) ANCHOR BOLTS WITH
(2) HEX NUTS,
(2) WASHERS AND
(1) ROUND BEARING PLATE W/
(1) HEX NUT TACK WELDED
TO BOTTOM OF BEARING
PLATE. TOP THREAD END
GALVANIZED AT LEAST 12"
TYP. PER EACH ANCHOR
BOLT.

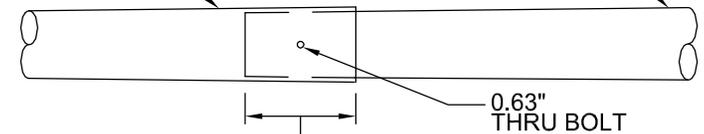


DETAIL 2

ANCHOR BOLT

END SECTION WITH HOLE
FOR 0.63" BOLT

BASE SECTION WITH FIELD
DRILLED HOLE FOR 0.63" BOLT



FIELD ASSEMBLED TO ACHIEVE A SNUG TIGHT
JOINT (MIN. OVERLAP NOT LESS THAN 1.5
TIMES THE END I.D. OF THE END SECTION)

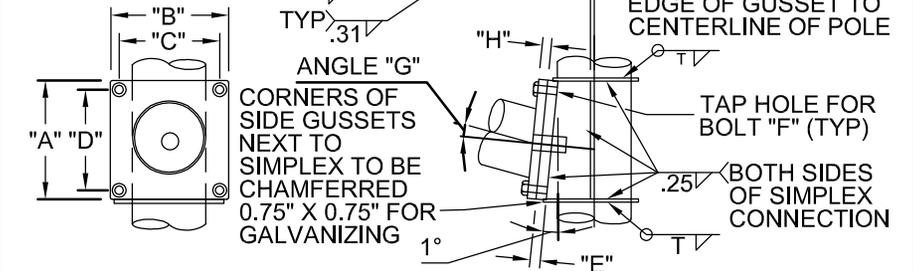
DETAIL 3

SIGNAL ARM SLIP JOINT

t = GUSSET PLATE THICKNESS
t = 0.50" FOR 35'-0" THRU 70'-0" SIGNAL ARMS
t = 0.31" FOR ALL OTHER SHORTER SIGNAL ARMS
T = POLE SHAFT WALL THICKNESS

(4) - SIZE "F" HEX HEAD
BOLTS WITH (1)
WASHER PER BOLT

SEE ARM PLATE
WELD DETAIL



DETAIL 4

SIGNAL ARM ATTACHMENT

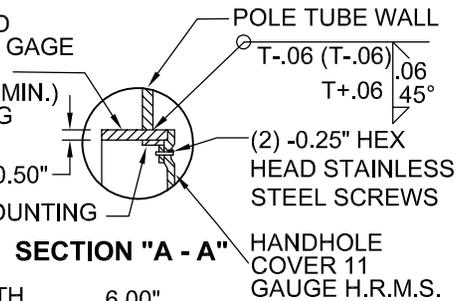
(T = POLE SHAFT WALL THICKNESS)

RIMS FORMED
FROM 6.50", 3 GAGE
(MIN.)
WALL (70 KSI MIN.)
D.O.M. TUBING

COVER MOUNTING
CLIP

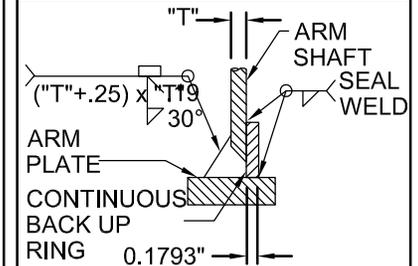
0.50" NUT
HOLDER WITH
FASTENERS
FOR GROUNDING

NUT
HOLDER
FOR LOWER
HANDHOLE
ONLY

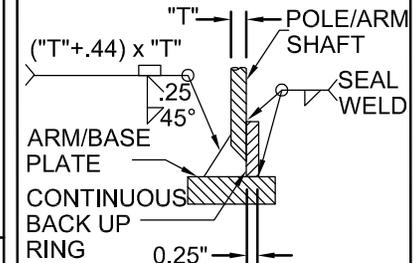


DETAIL 5

HANDHOLE

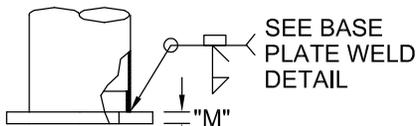


ARM SHAFTS

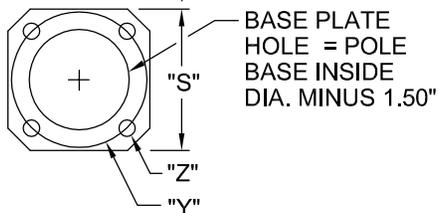


**POLE/ARM SHAFTS
0.250" & 0.313"**

**ARM PLATE &
BASE PLATE WELD DETAIL**



SEE BASE
PLATE WELD
DETAIL



BASE PLATE
HOLE = POLE
BASE INSIDE
DIA. MINUS 1.50"

DETAIL 6

POLE BASE PLATE

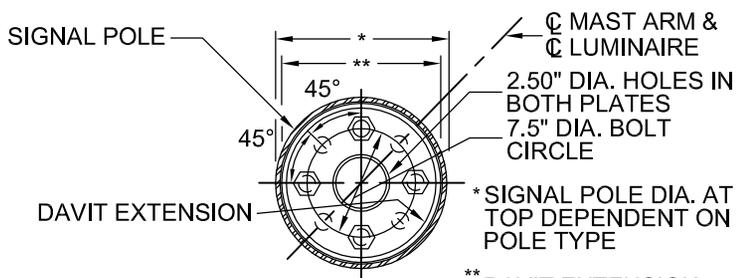
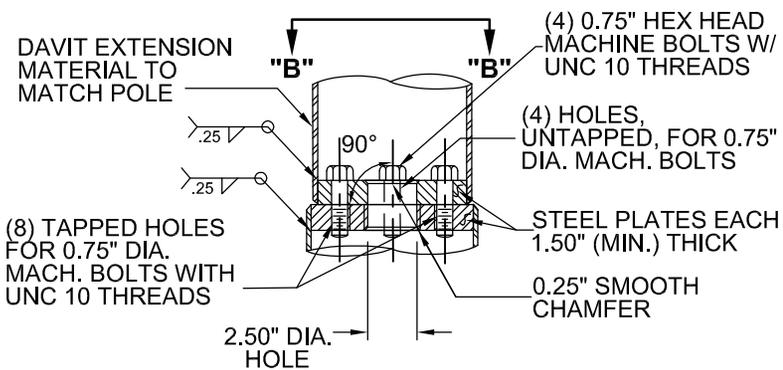
NOTES

1. Anchor bolts, davit extension attachment bolts, and mast arm attachment bolts must be furnished with each pole.
2. Luminaire arm attachment bolts must be furnished with each davit extension.
3. Angle "g" is the angle between the mast arm and the connection plate.

TABLE 2: POLE AND SIGNAL ARM DATA

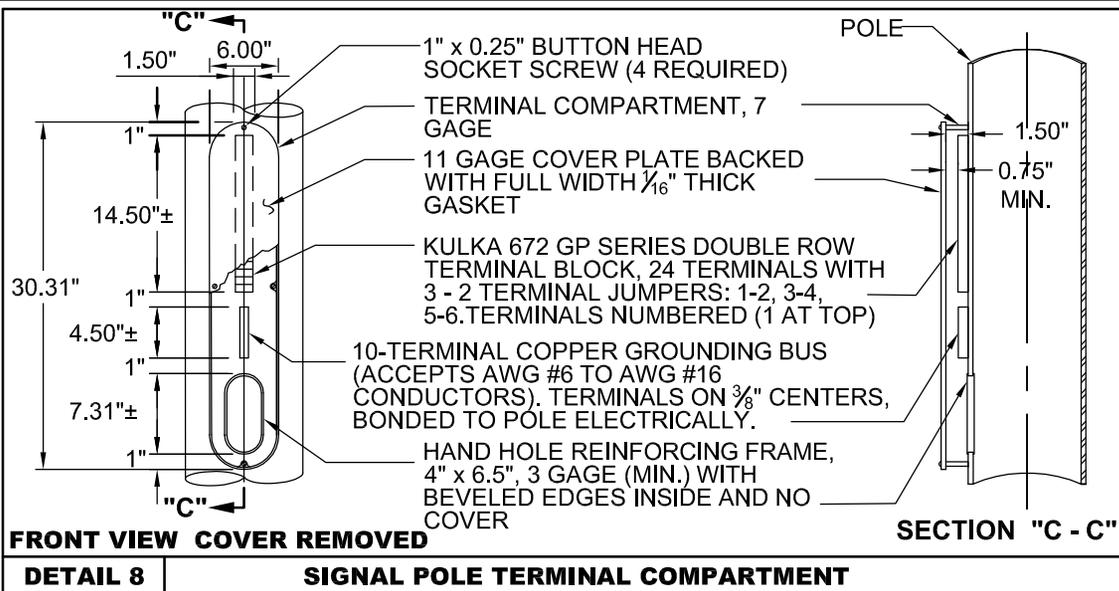
| POLE DATA | POLE SHAFT | | | | POLE BASE PLATE | | | | ANCHOR BOLT | | | | ACCOMMODATES ARM LENGTHS (FT) |
|-----------|------------|----------------|---------------|------------------|--------------------|-----------------|----------------------|--------------|---------------|---------------|-----------------|------------------------|-------------------------------|
| | POLE CLASS | BASE DIA. (IN) | TOP DIA. (IN) | MAX. LENGTH (FT) | GAGE OR THICK (IN) | SQUARE "S" (IN) | BOLT CIRCLE "Y" (IN) | THK "M" (IN) | HOLE "Z" (IN) | DIA. "K" (IN) | LENGTH "J" (IN) | BRG. PLT (DIA. X THK.) | |
| TYPE I | 14.00 | 11.06 | 21.00 | 0.250 | 19.50 | 19.00 | 1.50 | 2.25 | 2.00 | 60.00 | 5" X 1" | 8.00 | UP TO 45 |
| TYPE II | 17.00 | 14.06 | 21.00 | 0.313 | 22.50 | 22.00 | 2.00 | 2.25 | 2.00 | 60.00 | 7" X 1" | 8.00 | UP TO 70 |

| SIGNAL ARM DATA | SIGNAL ARM TUBE | | | | SIGNAL ARM ATTACHMENT DATA | | | | | | | |
|-----------------|-----------------|---------------------|--------------------|--------------------|----------------------------|----------|----------|----------|----------|------------------|------------------|-----------|
| | ARM SPAN (FT) | FIXED END DIA. (IN) | FREE END DIA. (IN) | GAGE OR THICK (IN) | "A" (IN) | "B" (IN) | "C" (IN) | "D" (IN) | "E" (IN) | "H" (IN) | "F" (IN) | "G" (DEG) |
| | 15-30 | 10.00 | 7.90-5.80 | 7 | 23.75 | 23.75 | 20.00 | 20.00 | 2.25 | 1.75 | 1.50-6UNC X 4.25 | 0 |
| | 35-45 | 12.00 | 7.10-5.70 | 0.25 | 23.75 | 23.75 | 20.00 | 20.00 | 2.25 | 2.00 | 1.50-6UNC X 4.50 | 1 |
| | 50-55 | 16.00 | 9.00-8.30 | 0.25 | 23.75 | 23.75 | 20.00 | 20.00 | 2.25 | 2.00 | 1.50-6UNC X 4.50 | 2 |
| 60-70 | 16.00 | 7.60-6.20 | 0.25 | 23.75 | 23.75 | 20.00 | 20.00 | 2.25 | 2.00 | 1.50-6UNC X 4.50 | 3 | |



SECTION "B - B"

DETAIL 7 LIGHT DAVIT EXTENSION ATTACHMENT



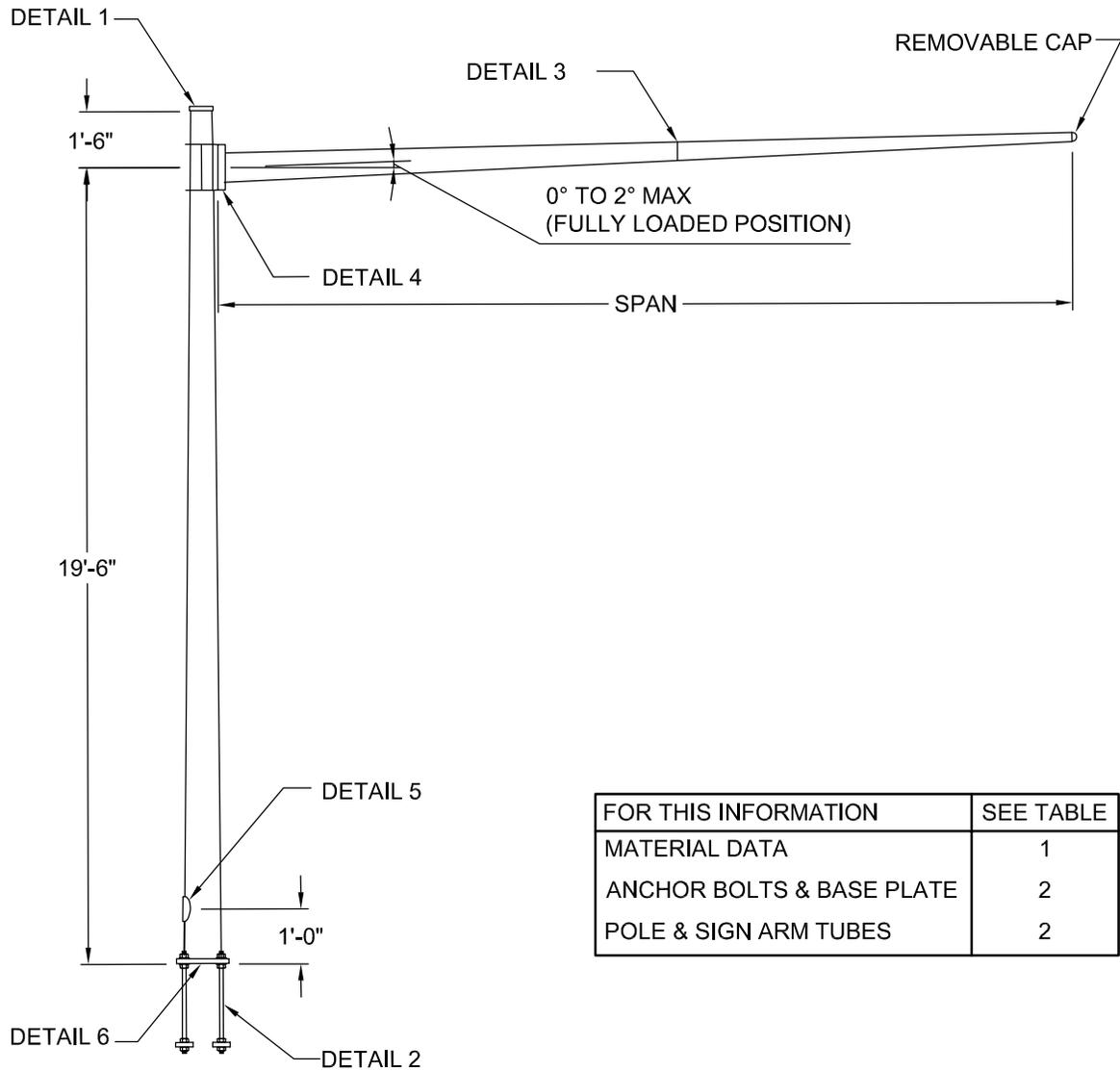
| FOUNDATION REQUIRED | |
|---------------------|---|
| SIGNAL ARM LENGTH | FOUNDATION TYPE CITY OF YUMA STANDARD 6-200 |
| ≤ 45 | A-1 OR B-1 |
| > 45 | A-2 OR B-2 |

12-27-18 (Under Review)

Sheet 4 of 4

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 9-060
TYPE 1 AND TYPE 2
TRAFFIC SIGNAL
POLE AND MAST ARM



| FOR THIS INFORMATION | SEE TABLE |
|---------------------------|-----------|
| MATERIAL DATA | 1 |
| ANCHOR BOLTS & BASE PLATE | 2 |
| POLE & SIGN ARM TUBES | 2 |

TYPICAL POLE (TYPE III)

DESIGN CRITERIA:

- 2001 AASHTO standard specification for structural supports for highway signs, luminaires and traffic signals.
- 25 year design life/recurrence interval
- Fatigue category iii
- Galloping & truck-induced fatigue included

WIND VELOCITY:

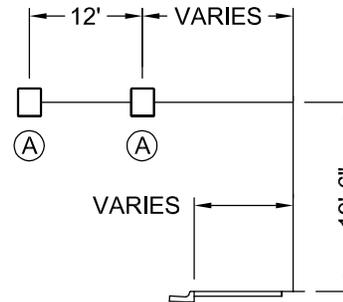
80 MPH ISOTACH.

MAXIMUM TRUCK-INDUCED FATIGUE:

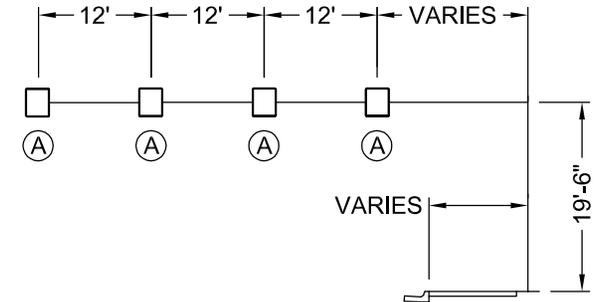
65 MPH

CAFL AT CRITICAL CONNECTIONS:

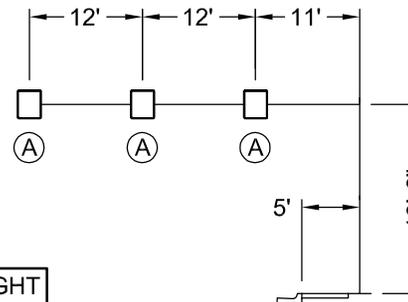
- Pole to base plate connection = d
- Arm to simplex plate connection = d
- Simplex gussets = et
- Pole wall at simplex gusset = e
- Pole shaft = b'



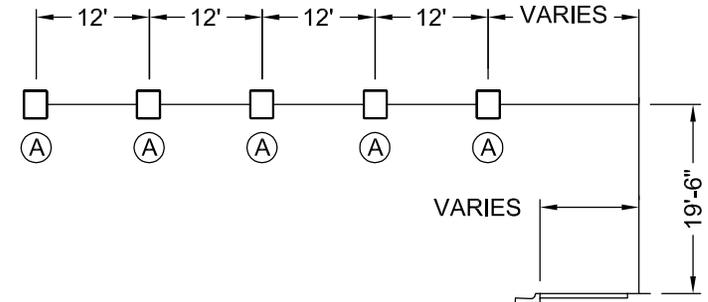
15' THRU 30' SIGN ARMS



40' THRU 55' SIGN ARMS



35' SIGN ARM



60' THRU 65' SIGN ARM

| DEVICE | DESCRIPTION | PROJ. AREA (FT ²) | WEIGHT (LBS) |
|----------|----------------|-------------------------------|--------------|
| (A) SIGN | 30" X 36" SIGN | 7.5 | 23 |

LOADING INFORMATION

TABLE 1: MATERIAL DATA

| COMPONENT | DESIGNATION | MIN. YIELD (KSI) |
|--------------------------------|--------------------------|------------------|
| POLE - 0.250" WALL | A572 GR. 65 | 65 |
| ARM TUBE - 7 GA. & 0.250" WALL | A595 GR. A | 55 |
| BASE PLATE | A36 | 36 |
| SIGN ARM ATTACHMENT | A36 | 36 |
| SIGN ARM CONN. BOLTS | A325 | - |
| ANCHOR BOLTS - 1.50" DIA. | A449 | 58 |
| NUTS | ASTM A563 GR. C.O. OR DH | - |
| WASHERS | ASTM F436 | - |
| GALVANIZING | A123 & A153 | - |

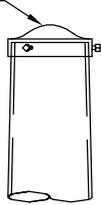
12-27-18 (Under Review)

Sheet 2 of 4

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 9-065
TYPE III
TRAFFIC SIGN
POLE AND MAST ARM

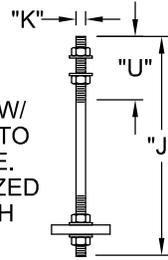
CAST POLE TOP
CAP HELD IN
PLACE WITH (3)
SET SCREWS



DETAIL 1

POLE TOP

(4) ANCHOR BOLTS WITH
(2) HEX NUTS,
(2) WASHERS AND
(1) ROUND BEARING PLATE W/
(1) HEX NUT TACK WELDED TO
BOTTOM OF BEARING PLATE.
TOP THREAD END GALVANIZED
AT LEAST 12" TYP. PER EACH
ANCHOR BOLT.



DETAIL 2

ANCHOR BOLT

END SECTION WITH
HOLE FOR 0.63" BOLT
BASE SECTION WITH FIELD
DRILLED HOLE FOR 0.63" BOLT

0.63"
THRU BOLT

FIELD ASSEMBLED TO ACHIEVE A SNUG TIGHT
JOINT (MIN. OVERLAP NOT LESS THAN 1.5
TIMES THE END I.D. OF THE END SECTION)

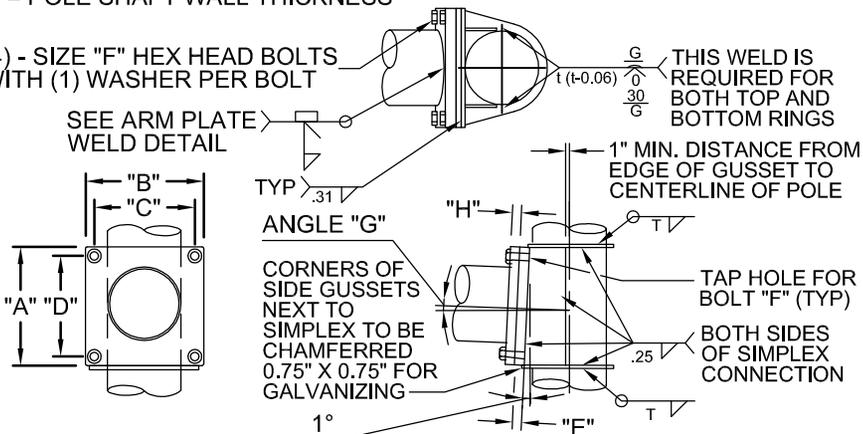
DETAIL 3

SIGN ARM SLIP JOINT

t = GUSSET PLATE THICKNESS
t = 0.50" FOR 40'-0" THRU 65'-0" SIGN ARMS
t = 0.31" FOR ALL OTHER SHORTER SIGN
ARMS
T = POLE SHAFT WALL THICKNESS

(4) - SIZE "F" HEX HEAD BOLTS
WITH (1) WASHER PER BOLT

SEE ARM PLATE
WELD DETAIL



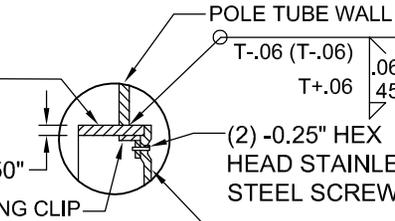
DETAIL 4

SIGN ARM ATTACHMENT

(T = POLE SHAFT WALL THICKNESS)

RIMS FORMED
FROM 6.50", 3
GAGE (MIN.)
WALL (70 KSI
MIN.)
D.O.M. TUBING

COVER MOUNTING CLIP

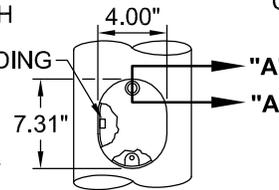


SECTION "A - A"

HANDHOLE
COVER 11
GAUGE H.R.M.S.

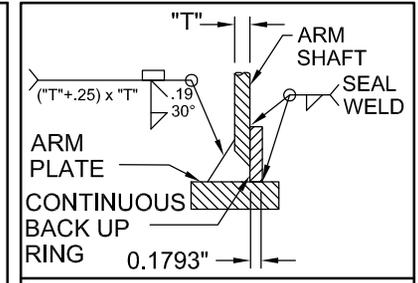
0.50" NUT
HOLDER WITH
FASTENERS
FOR GROUNDING

NUT
HOLDER
FOR LOWER
HANDHOLE
ONLY

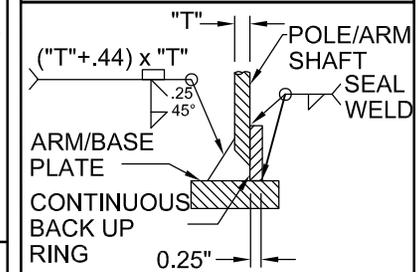


DETAIL 5

HANDHOLE



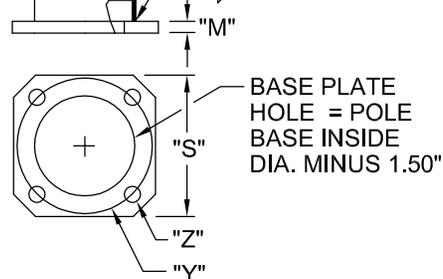
ARM SHAFTS



**POLE/ARM SHAFTS
0.250" & 0.313"**

**ARM PLATE &
BASE PLATE WELD DETAIL**

SEE BASE
PLATE WELD
DETAIL



DETAIL 6

POLE BASE PLATE

NOTE

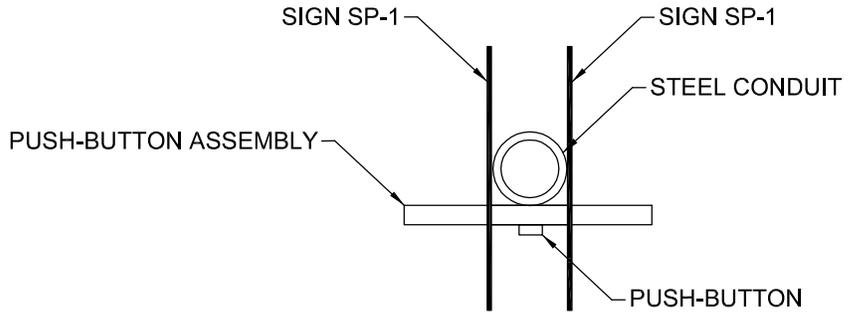
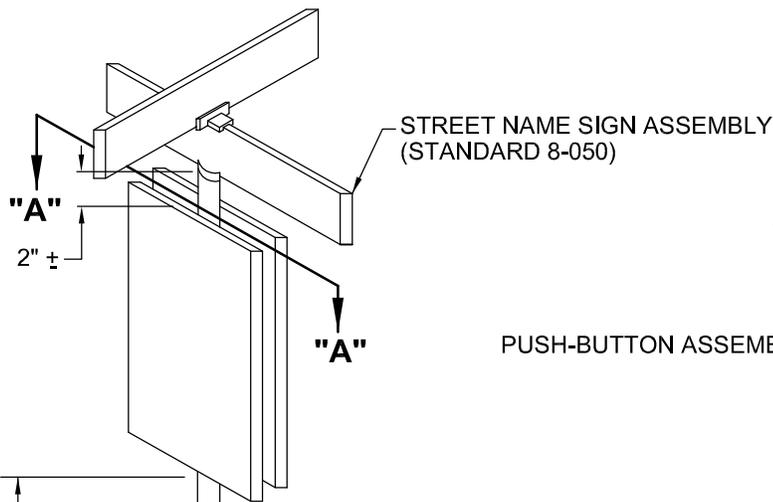
1. Anchor bolts and mast arm attachment bolts must be furnished with each pole.
2. Angle "g" is the angle between the mast arm and the connection plate.

TABLE 2: POLE AND SIGN ARM DATA

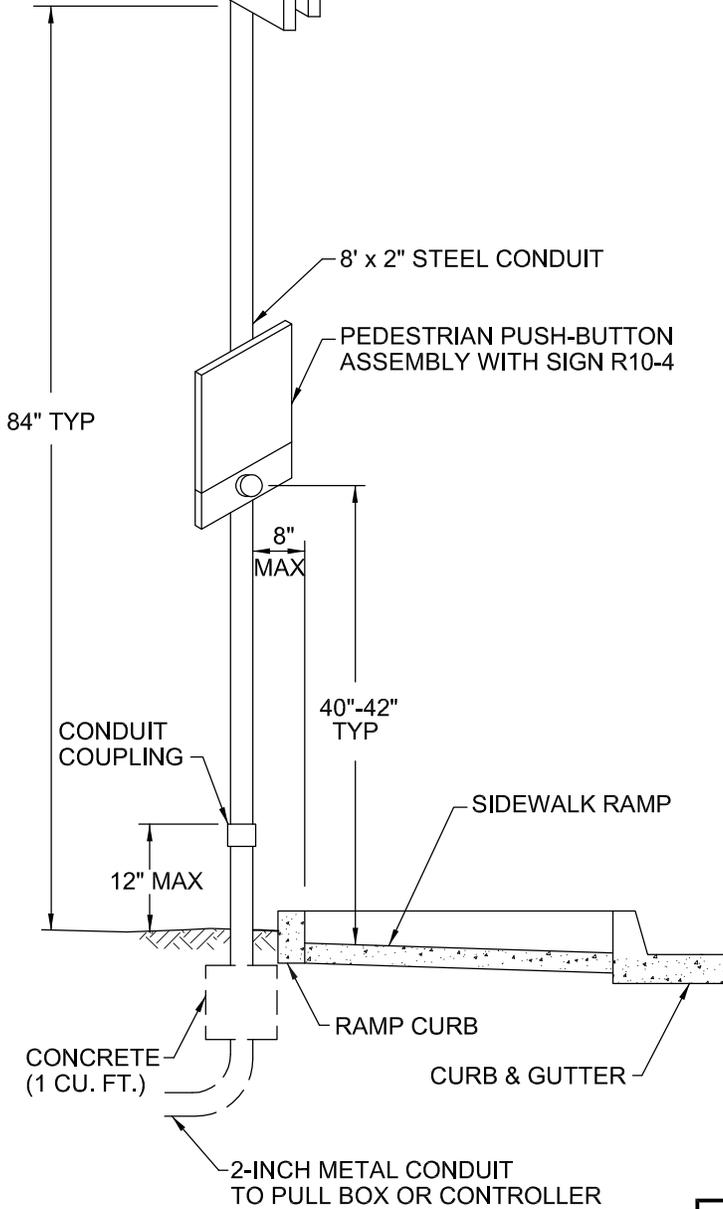
| POLE CLASS | POLE TUBE | | | | POLE BASE PLATE | | | | ANCHOR BOLT | | | | SIGN ARM TUBE | | | | SIGN ARM ATTACHMENT DATA | | | | | | | |
|------------|----------------|---------------|------------------|--------------------|-----------------|----------------------|--------------|---------------|---------------|-----------------|------------------------|------------------------|---------------------|--------------------|--------------------|-----------|--------------------------|----------|----------|----------|----------|----------|------------------|-----------|
| | BASE DIA. (IN) | TOP DIA. (IN) | MAX. LENGTH (FT) | GAGE OR THICK (IN) | SQUARE "S" (IN) | BOLT CIRCLE "Y" (IN) | THK "M" (IN) | HOLE "Z" (IN) | DIA. "K" (IN) | LENGTH "J" (IN) | BRG. PLT (DIA. X THK.) | THREAD LENGTH "U" (IN) | FIXED END DIA. (IN) | FREE END DIA. (IN) | GAGE OR THICK (IN) | SPAN (FT) | "A" (IN) | "B" (IN) | "C" (IN) | "D" (IN) | "E" (IN) | "H" (IN) | "F" (IN) | "G" (DEG) |
| TYPE III | 12.00 | 9.06 | 21.00 | 0.250 | 19.50 | 18.00 | 1.50 | 1.75 | 1.50 | 60.00 | 5" X 1" | 8.00 | 10.00 | 7.90-5.80 | 7 | 15-30 | 19.75 | 19.75 | 16.00 | 16.00 | 2.25 | 1.50 | 1.50-6UNC X 4.00 | 0 |
| TYPE III | 12.00 | 9.06 | 21.00 | 0.250 | 19.50 | 18.00 | 1.50 | 1.75 | 1.50 | 60.00 | 5" X 1" | 8.00 | 10.00 | 5.10 | 7 | 35 | 19.75 | 19.75 | 16.00 | 16.00 | 2.25 | 1.50 | 1.50-6UNC X 4.00 | 1 |
| TYPE III | 14.00 | 11.06 | 21.00 | 0.250 | 19.50 | 18.00 | 2.00 | 1.75 | 1.50 | 60.00 | 7" X 1" | 8.00 | 12.00 | 6.40-4.30 | 0.25 | 40-55 | 19.75 | 19.75 | 16.00 | 16.00 | 2.25 | 1.50 | 1.50-6UNC X 4.00 | 2 |
| TYPE III | 14.00 | 11.06 | 21.00 | 0.250 | 19.50 | 18.00 | 2.00 | 1.75 | 1.50 | 60.00 | 7" X 1" | 8.00 | 12.00 | 3.60-2.90 | 0.25 | 60-65 | 19.75 | 19.75 | 16.00 | 16.00 | 2.25 | 1.50 | 1.50-6UNC X 4.00 | 4 |

| FOUNDATION REQUIRED | |
|---------------------|---|
| SIGNAL ARM LENGTH | FOUNDATION TYPE CITY OF YUMA STANDARD 6-200 |
| ≤ 65 | A-1 OR B-1 |

| | |
|--|--------------|
| 12-27-18 (Under Review) | Sheet 4 of 4 |
| CITY OF YUMA CONSTRUCTION STANDARD DETAIL DRAWINGS STANDARD NO. 9-065 TYPE III TRAFFIC SIGN POLE AND MAST ARM | |



SECTION "A - A"



NOTES

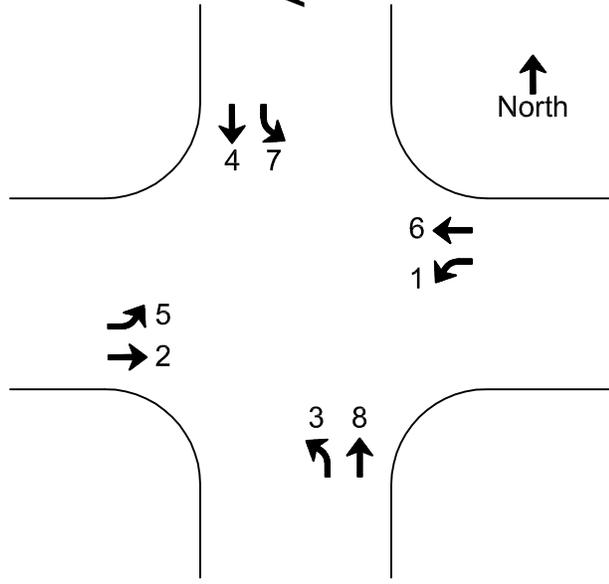
1. Street name signs must be parallel to the associated streets.
2. Unless otherwise noted, the push-button must be connected to the controller cabinet by a 4-conductor, a.w.g. #14 signal cable.
3. The push-button must be connected to the controller cabinet ground bus by the white-insulated wire in the signal cable.
4. The text of signs sp-1 must conform to the requirements of the plans. see standard no. 8-205.
5. The location of the push-button assembly must be centered on the sidewalk ramp with the button axis perpendicular to the ramp curb.

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

**STANDARD NO. 9-070
PEDESTRIAN PUSH-BUTTON ON
STREET NAME SIGN ASSEMBLY**

ALL INTERSECTIONS



Ring Diagram

| | | | |
|--------|---|---|---|
| 1 | 2 | 3 | 4 |
| ← | → | ↶ | ↓ |
| ↷ F | ← | ↷ | ↑ |

ALL INTERSECTIONS

NOTES

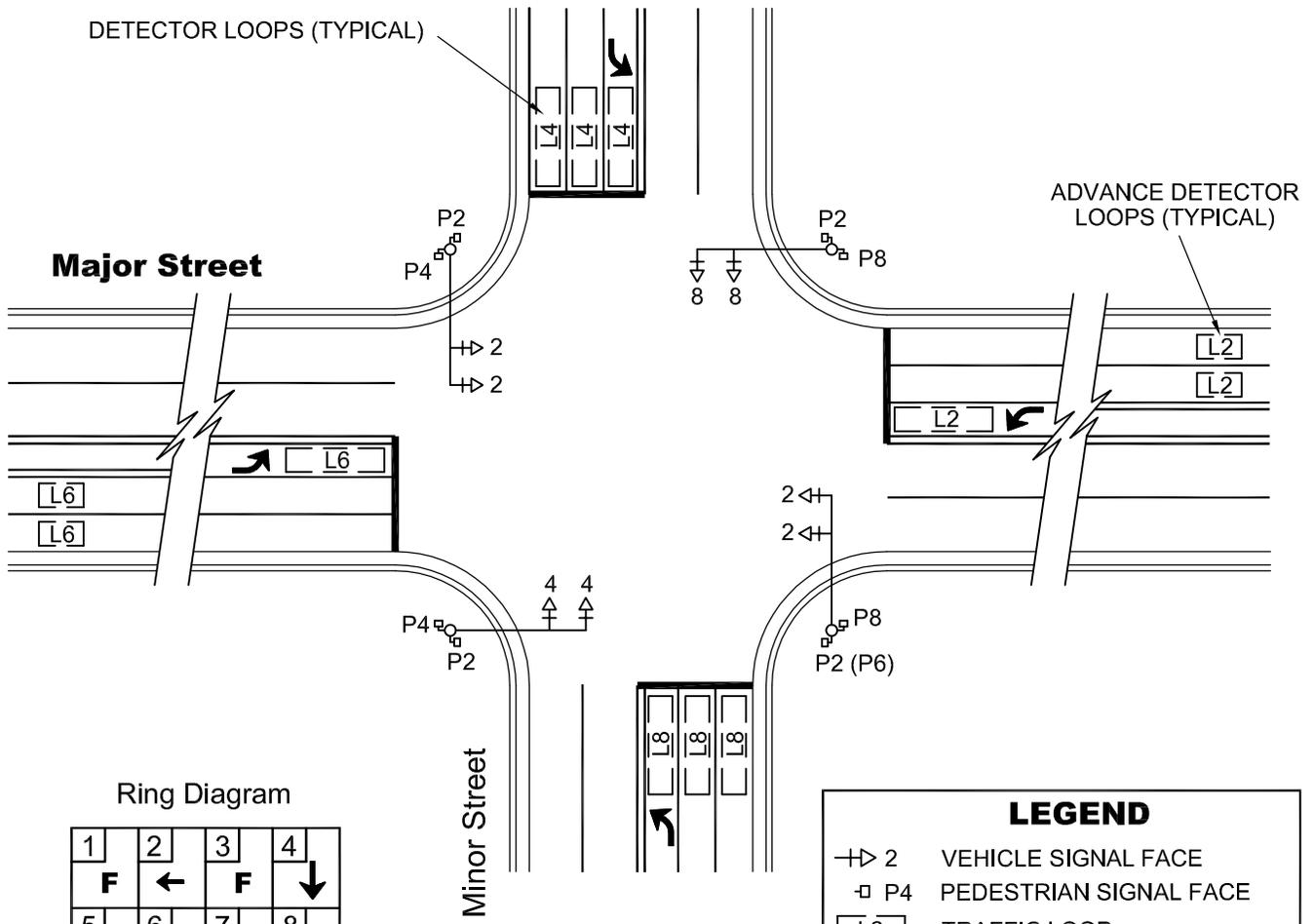
1. Not all intersections will require all phases but the controller and cabinet must be wired to provide all phases.
2. "F" in ring diagrams indicate phase is not in use but is reserved for future use.

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 9-075
TRAFFIC SIGNAL
PHASE ASSIGNMENTS

INITIAL SETUP



Ring Diagram

| | | | |
|---|---|---|---|
| 1 | 2 | 3 | 4 |
| F | ← | F | ↓ |
| 5 | 6 | 7 | 8 |
| F | → | F | ↑ |

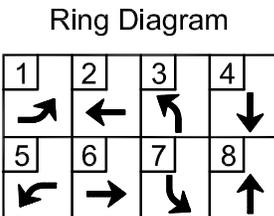
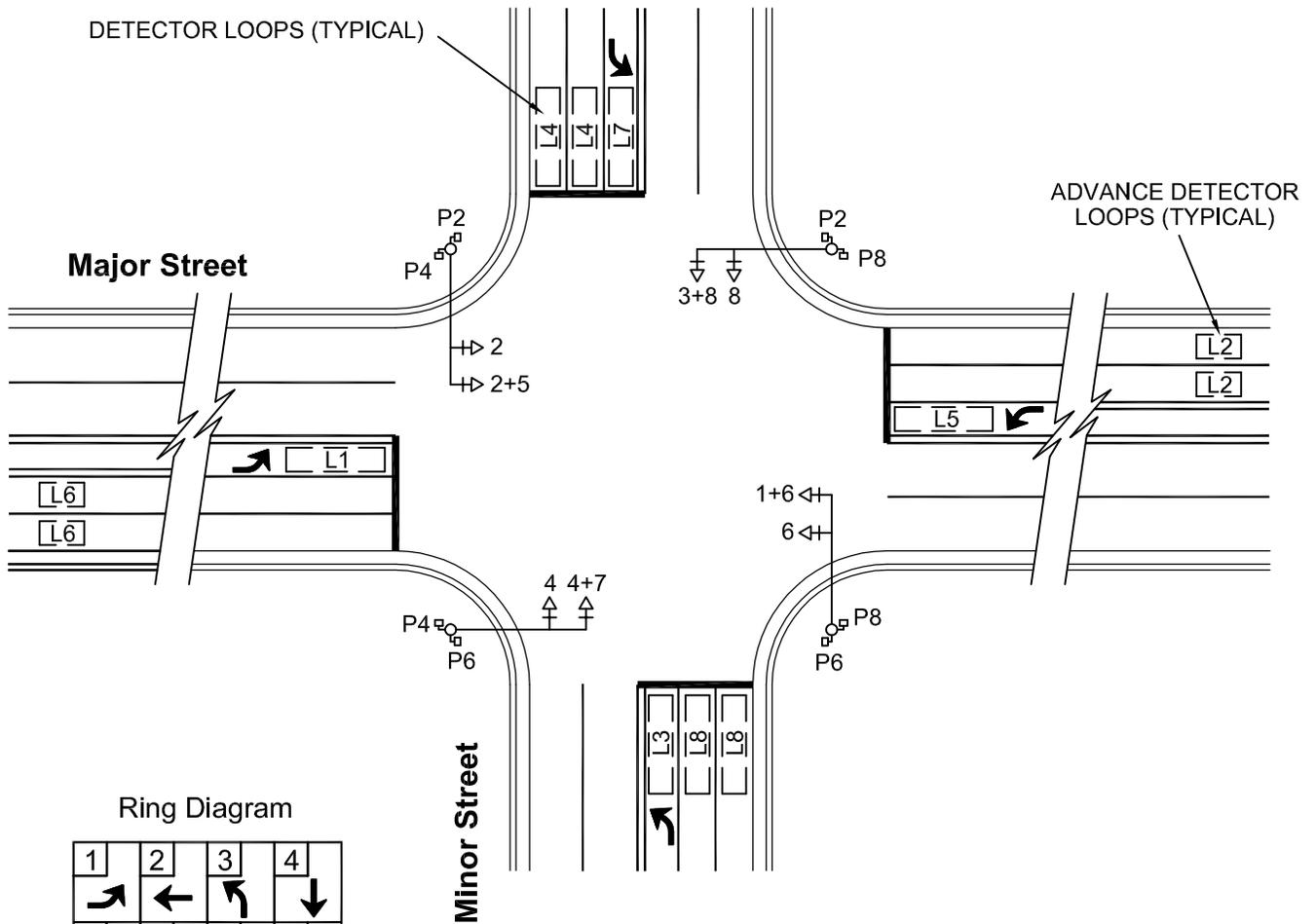
LEGEND

- +▷ 2 VEHICLE SIGNAL FACE
- P4 PEDESTRIAN SIGNAL FACE
- [L2] TRAFFIC LOOP

NUMBERS IN ALL OF THE ABOVE INDICATE ASSOCIATED TIMING FUNCTIONS.

FOR 2 PHASE INTERSECTION WITH ADVANCE DETECTION

POTENTIAL FUTURE SETUP



LEGEND

- +> 2 VEHICLE SIGNAL FACE
- P4 PEDESTRIAN SIGNAL FACE
- [L2] TRAFFIC LOOP

NUMBERS IN ALL OF THE ABOVE INDICATE ASSOCIATED TIMING FUNCTIONS.

FOR 8 PHASE INTERSECTION WITH ADVANCE DETECTION

NOTE

1. Connect all loop and signal faces in normal quad-left configuration.

SCH 40 PVC CONDUIT FOR SIGNAL & STREET LIGHT CIRCUITS (SEE PLANS) (SEE NOTE 5)

TWO (MIN.) 3" SCH 40 PVC CONDUITS FOR SIGNAL CIRCUITS

SCH 40 PVC CONDUITS FOR DETECTOR CIRCUITS (SEE PLANS)

3" SCH 40 PVC CONDUIT FOR DETECTOR CIRCUITS

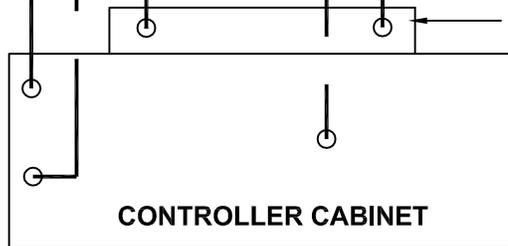
2" SCH 40 PVC CONDUIT FOR STREET LIGHTS

SCH 40 PVC CONDUITS FOR FIBER OPTIC INTERCONNECT CABLE (SEE PLANS)

2" SCH 40 PVC CONDUIT FOR FIBER OPTIC DROP CABLE

2½" SCH 40 PVC CONDUIT TO POWER SOURCE

ELECTRICAL SERVICE ENCLOSURE



PULL BOX LEGEND

-  NO. 5 PULL BOX
-  NO. 7 PULL BOX WITH EXTENSION
-  TYPE FO PULL BOX WITH EXTENSION

SAFETY NOTE

ALL WORKERS SHOULD BE MADE AWARE THAT LOOP WIRES/LEAD-IN CABLES (LOW VOLTAGE), PEDESTRIAN DETECTOR CABLES (LOW VOLTAGE) AND OPTICAL DETECTOR CABLES (LOW VOLTAGE) MAY SHARE THE SAME CONDUITS WITH 120V AC CIRCUITS.

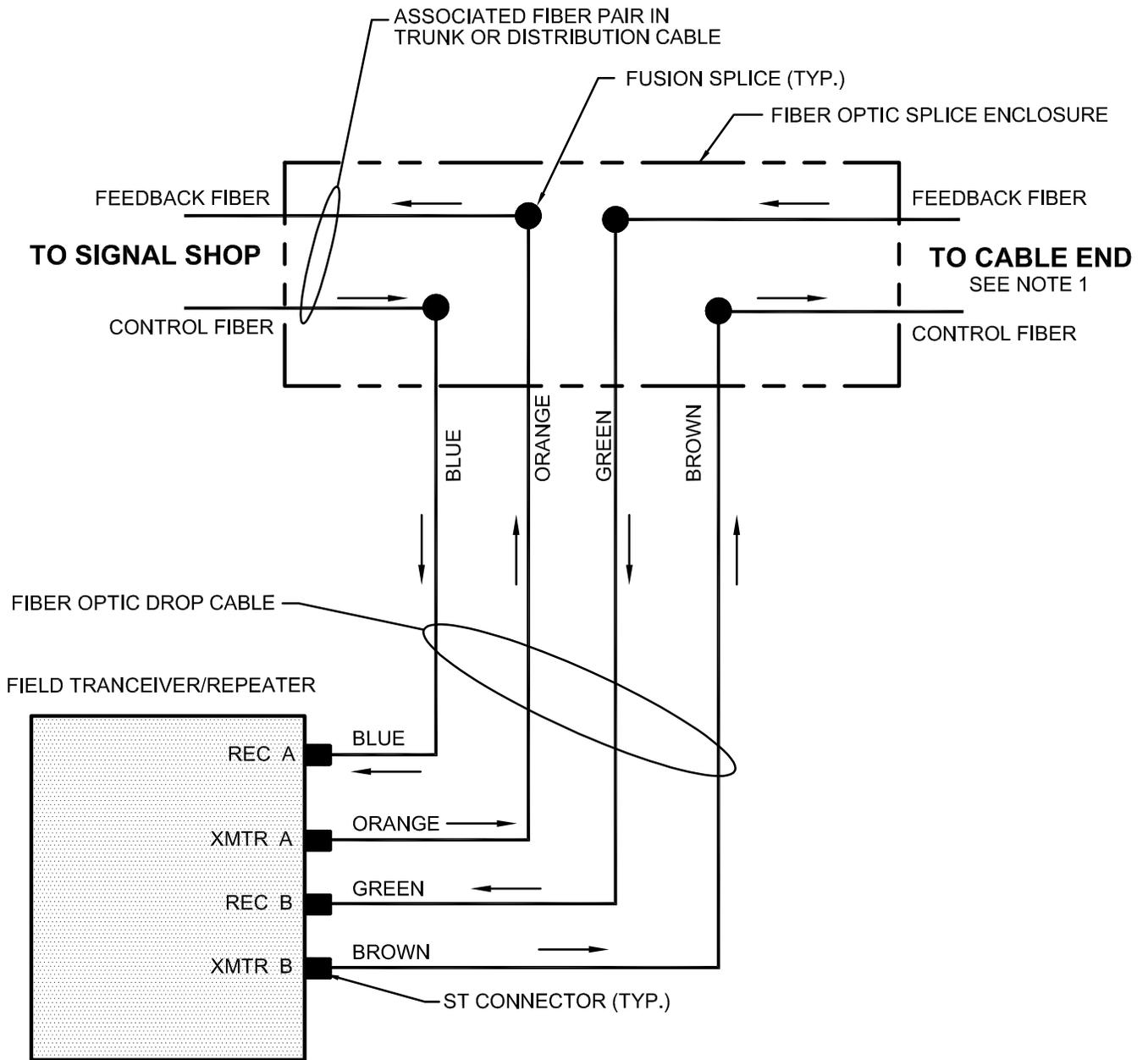
NOTES

1. Requirements shown are minimum. Use additional conduits as needed.
2. Conduit and pullbox layout is schematic. Adjust to fit site.
3. See Standard Detail 9-015 for cabinet foundation details.
4. Conduit sizes shown are minimum sizes.

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

**STANDARD NO. 9-085
CONDUITS AND PULL BOXES
AT CONTROLLER CABINET**



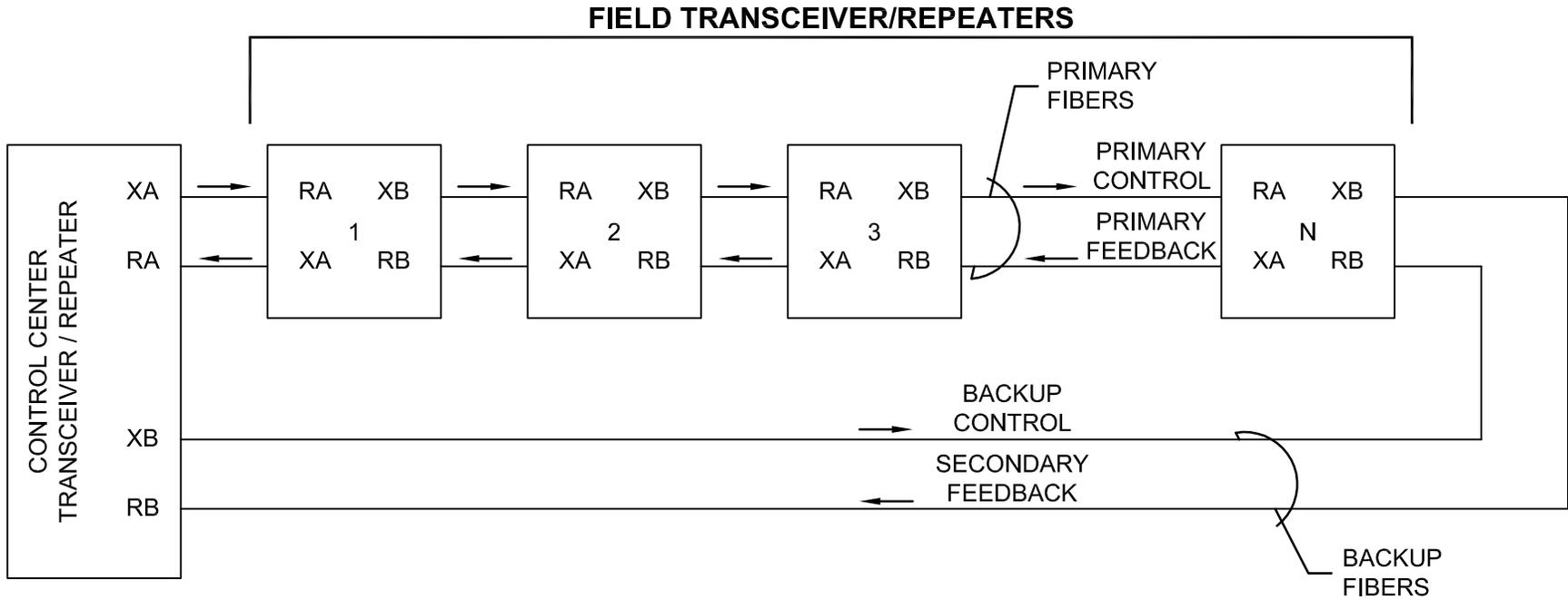
NOTE

1. For the last intersection on a fiber pair, the "To Cable End" fibers must be those of the back-up pair.

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

**STANDARD NO. 9-090
TRAFFIC SIGNAL FIBER OPTIC
CABLE CONNECTIONS**



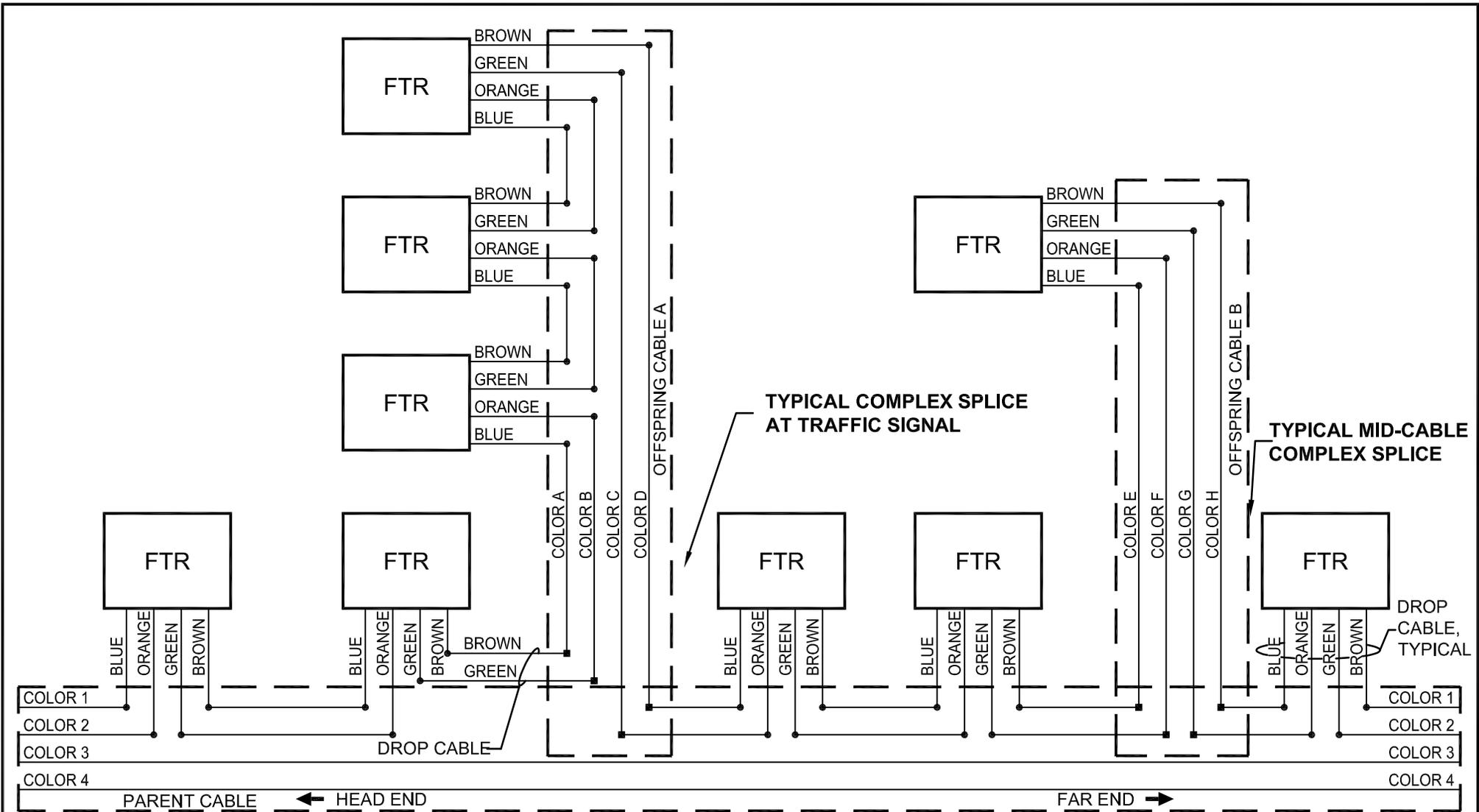
LEGEND

- N Last field transceiver/repeater on channel (max=15)
- RA Receive, primary
- RB Receive, secondary
- XA Transmit, primary
- XB Transmit, secondary

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 9-095
SCHEMATIC TRAFFIC SIGNAL FIBER
OPTIC CHANNEL CONNECTIONS



NOTE

1. Cables may have additional unrelated fibers.

LEGEND

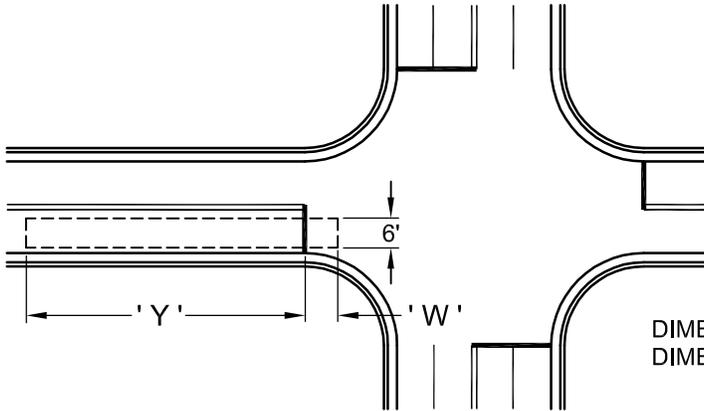
FTR FIELD TRANSCEIVER/REPEATER

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 9-100
TYPICAL TRAFFIC SIGNAL
FIBER OPTIC CHANNEL
COMPLEX SPLICES

INTERSECTION DETECTION WITH PRESENCE LOOP



NOTE

1. All presence loops must be installed in the quadrupole configuration even though they are illustrated schematically as rectangles on the plans.

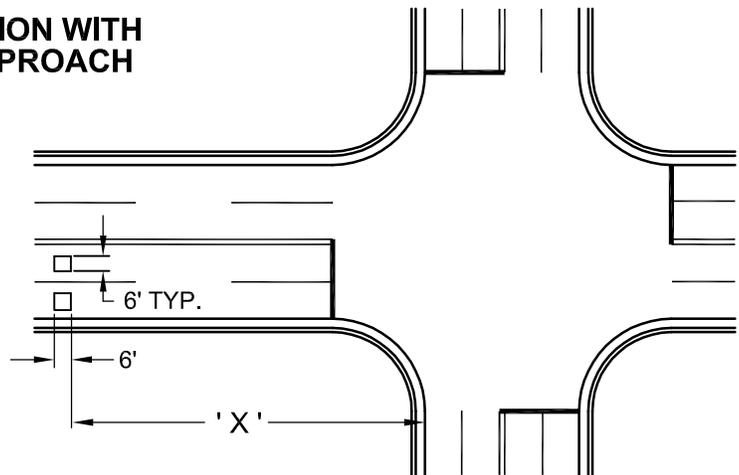
UNLESS OTHERWISE NOTED:

DIMENSION 'W' : AS SHOWN ON PLANS (TYPICALLY, 6')
 DIMENSION 'Y' : 50' UNLESS OTHERWISE SHOWN ON THE PLANS OR DIRECTED BY THE ENGINEER.

SYSTEM OR INTERSECTION DETECTION WITH PULSE LOOP ON INTERSECTION APPROACH

NOTES

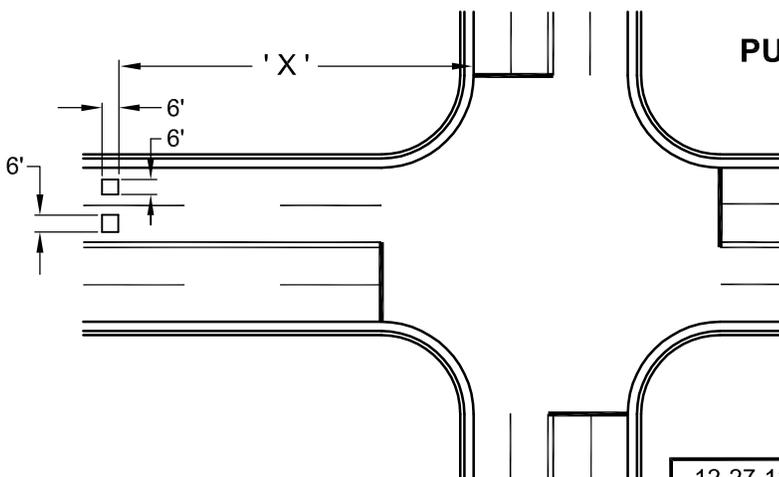
1. 'X' dimension as indicated on plans (measured from the edge of pavement).
2. A separate loop must be used for each lane to be detected.
3. Each loop must have three (3) turns of wire.



SYSTEM DETECTION WITH PULSE LOOP ON INTERSECTION EXIT

NOTES

1. 'X' dimension: 100' (50' minimum) or as detailed on plans (measured from edge of pavement).
2. A separate loop must be used for each lane to be detected.
3. Each loop must have three (3) turns of wire.



12-27-18 (Under Review)

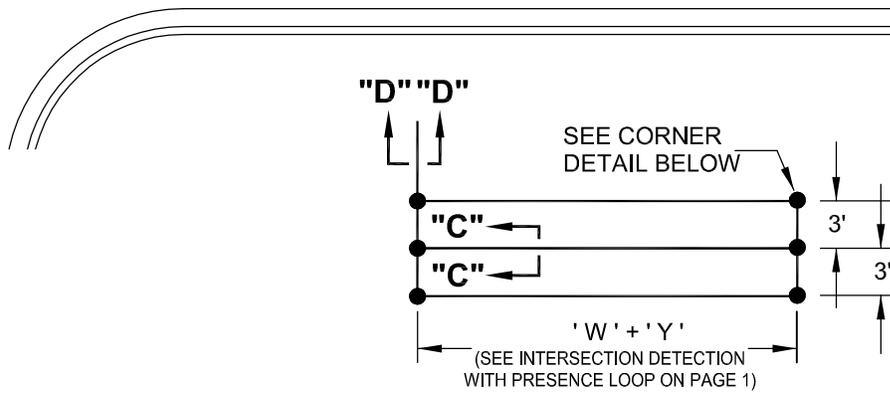
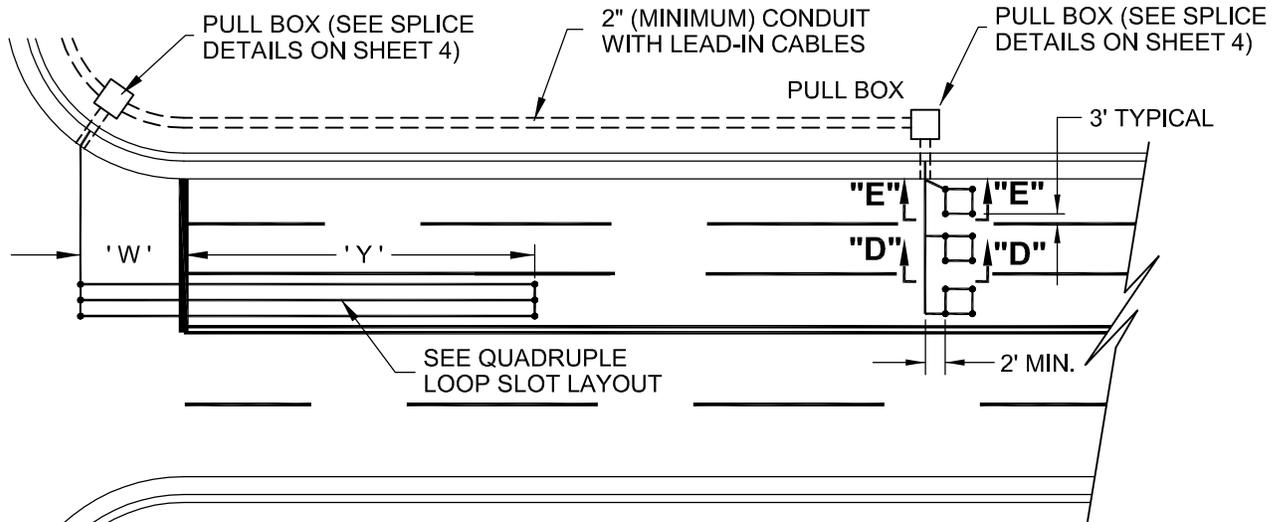
Sheet 1 of 5

CITY OF YUMA
 CONSTRUCTION STANDARD DETAIL DRAWINGS

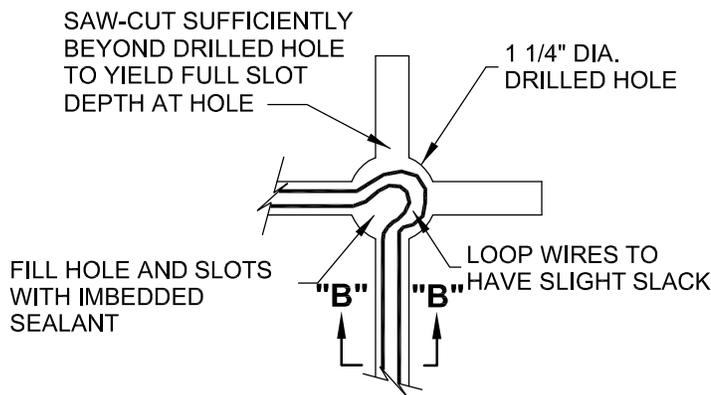
**STANDARD NO. 9-105
 LOOP SYSTEM INSTALLATION**

SEE SHEET 5 FOR GENERAL NOTES

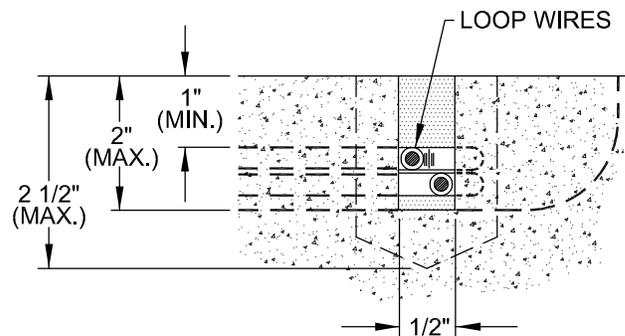
GENERAL LOOP INSTALLATION LAYOUT



QUADRUPOLE SLOT LAYOUT



CORNER DETAIL



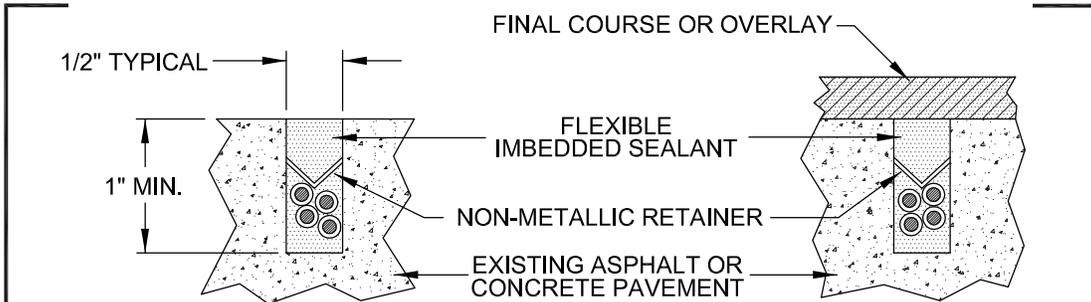
SECTION "B - B" CORNER SECTION

12-27-18 (Under Review)

Sheet 2 of 5

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

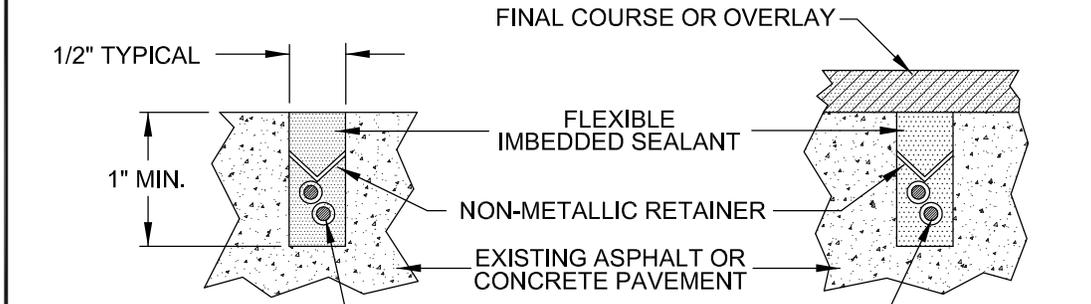
**STANDARD NO. 9-105
LOOP SYSTEM INSTALLATION**



SECTION "C - C"

TYPE 1 OR TYPE 2 LOOP WIRE INSTALLATION

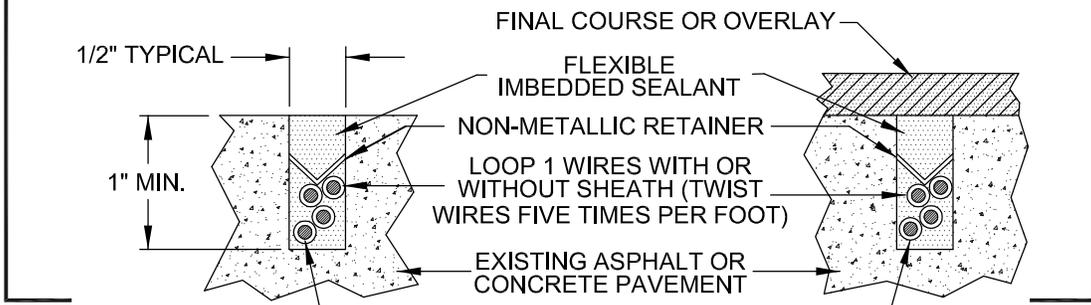
WORK DONE IN EXISTING PAVEMENT



SECTION "D - D"

TYPE 1 OR TYPE 2 LOOP WIRE INSTALLATION

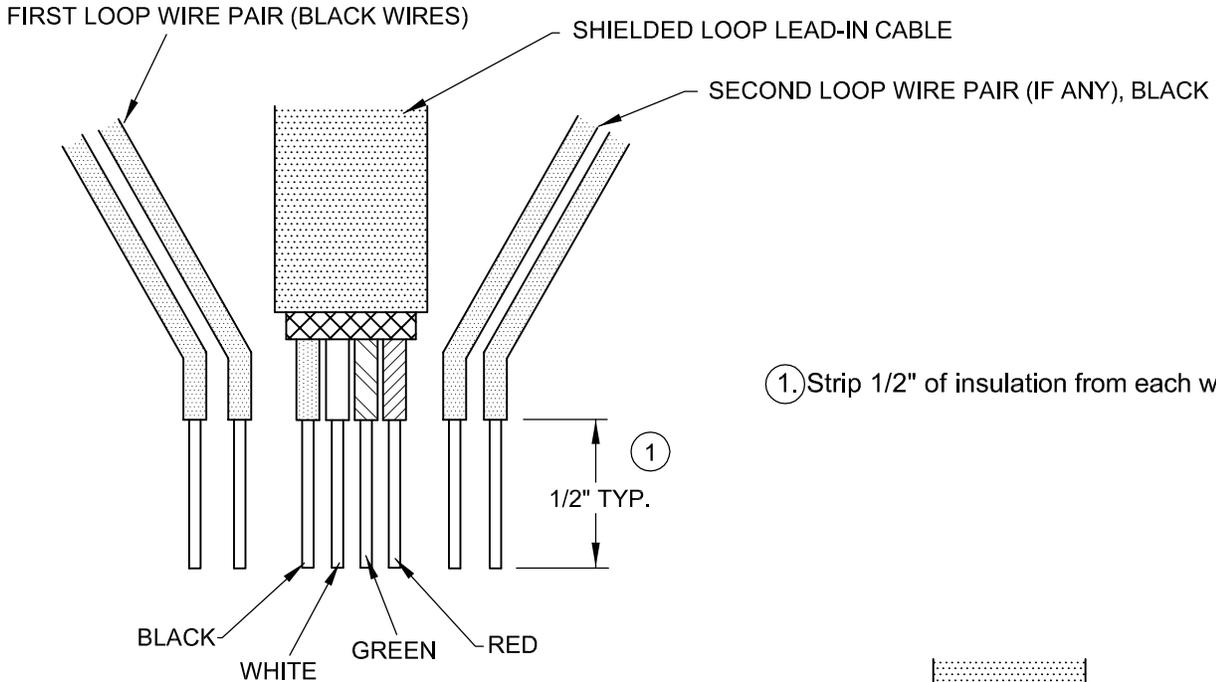
NEW ASPHALT PAVEMENT OR PAVEMENT TO BE RESURFACED



SECTION "E - E"

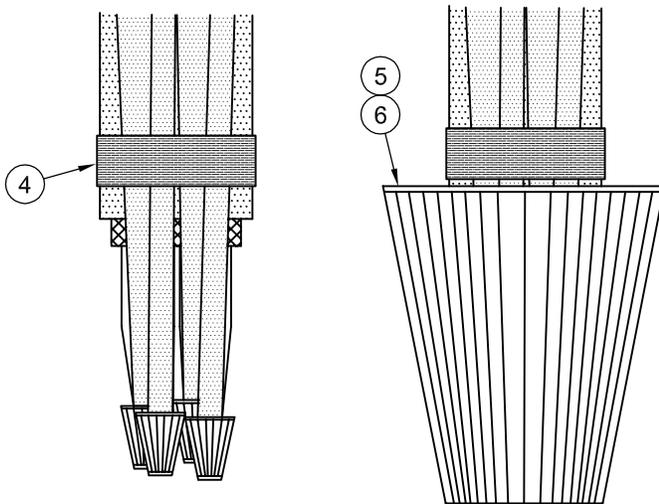
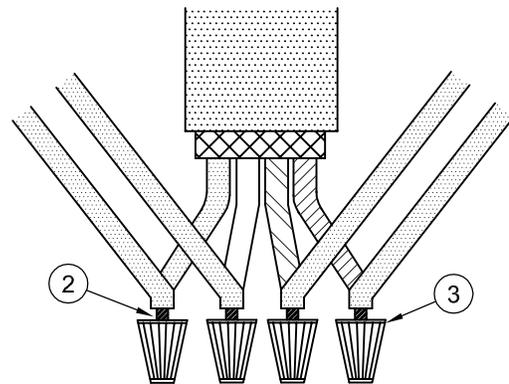
TYPE 1 OR TYPE 2 LOOP WIRE INSTALLATION

LOOP WIRE / LEAD-IN CABLE SPlice DETAILS



① Strip 1/2" of insulation from each wire.

- ② Twist wires together and solder each pair of wires utilizing resin core solder.
- ③ Install wire nuts to each soldered splice.



- ④ Tie or tape wires and cables together and dress the leads close together.
- ⑤ Totally encapsulate splices in flexible imbedded sealant to form a watertight splice.
- ⑥ Allow sealant to harden before laying cable in pull box.

GENERAL NOTES

1. Except as otherwise noted, loop system installations must conform to A.D.O.T. Standard Drawing T.S. 7-1.
2. Loops must be centered in their lanes unless otherwise noted. When a lane is wider than normal to accommodate parking, the lane must be taken as:
 - A. Eight feet (8') from the face of curb or edge of pavement when the parking is parallel to the curb or
 - B. Eighteen feet (18') from the face of curb or edge of pavement when angled parking is used.
3. To the extent practical, a single lead-in cable must service two (2) loops.
4. Two types of loop installations are described in this standard drawing: one for use in good pavement (Type 1) and one for use in weak or damaged pavement (Type 2). Type 1 installations utilize a simple insulated conductor to form the loop. Type 2 installations use the same insulated conductor that has been factory encased in a polyethylene sheath. Type 2 installations must be used unless otherwise noted in each instance.
5. The loop wire must not contain any splices. The loop/lead-in cable system must be free of splices except for the splice between the loop wire and the lead-in cable.
6. For Type 1 loops: loops in adjacent lanes must consist of loop wires having different colored insulation. No two loops entering the same pull box or cabinet from the same street leg may have the same color insulation unless there are more than four (4) such loops. The installation color scheme must be: black (for the loop closest to the pull box or cabinet), then white, red and green.
7. The continuity of the lead-in cable shield must be maintained and the shield must not be grounded.
8. Nonmetallic retainers must be placed in the saw slot cut into the roadway at approximate 24" intervals in order to prevent the loop wires from floating to the surface in the sealant.
9. Seal the ends of any conduit with a suitable material in order to prevent any flexible embedded sealant from entering the conduit.
10. Loop wires must be twisted together at the rate of five (5) turns per foot of loop wire in the sawn slot between the loop and the conduit, in the conduit and in the pull box.
11. A minimum of two feet (2') of slack must be maintained in each lead-in cable and each pair of loop wires in the pull box.
12. In order to prevent the relative movement of loop wires in the pull box, the pair of loop wires for each loop must be clamped or taped to one another.
13. In Type 2 loop installations, the sheath must be removed from the loop wires at the conduit's entrance.
14. All loop slots must be completely filled with a flexible imbedded loop sealant totally encasing the loop wires. Excess sealant must be struck off and removed.
15. Conduit sizes shown are to be considered minimum sizes.

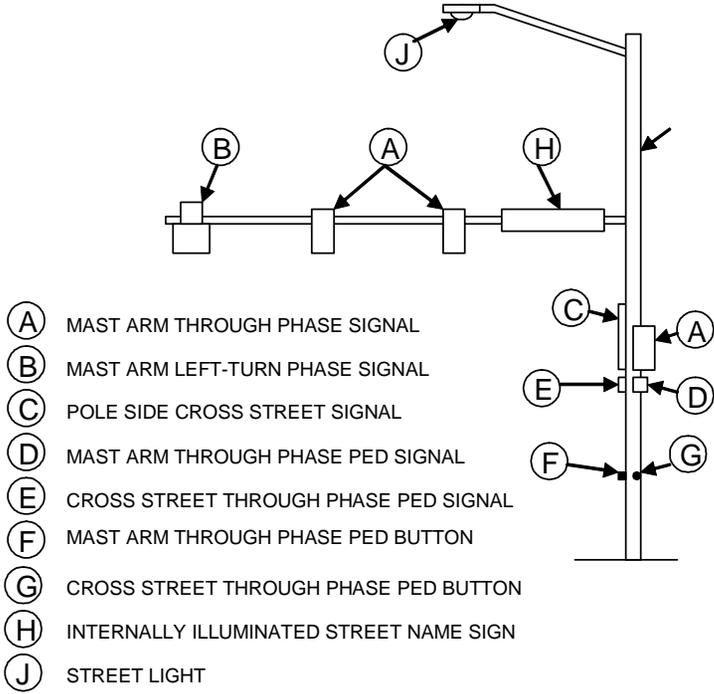
NOTES

1. When a signal pedestal is on the same corner as a signal pole or in the vicinity of a signal pole if not at a corner, the signal cable must run from the controller to the terminal block in the signal pole and then to the signal pedestal. The terminal block in the signal pole is to be the main splice point for all signal cable on a corner or in a given vicinity.
2. Unless otherwise noted, there must be two (2) cables from the controller serving each signal pole: one 20-conductor for the signals and one 4-conductor for the pedestrian push-buttons.
3. See Sheet 3 for cable requirements.
4. Loop lead-in cables, push-button cables, preemptor detector cables and fiber optic cables may share conduits.
5. Loop lead-in cables, push-button cables and preemptor detector cables may NOT enter Type FO pull boxes.
6. Number 5 pull box for loop lead-in and push-button cables, Number 7 pull box for signal circuits, and Type FO pull box for fiber optic cables closest to controller cabinet must each have extentions.
7. A conduit run from the controller that serves two (2) corners must have two (2) conduits for signal cables and two (2) conduits for detector lead-in and push-button cables.
8. This example must be adapted to the specific intersection by the design engineer.

CABLE REQUIREMENTS

| CONTROLLER-SIGNAL POLE CABLE, 20-CONDUCTOR | | | | |
|--|------------|--------|----------------------------------|--------------|
| Conductor Number | Insulation | | Signals | Signal Color |
| | Color | Tracer | | |
| 1 | Black | | Spare | --- |
| 2 | White | | Vehicle Signals | Common |
| 3 | Red | | Mast Arm Through Phase-A | Red |
| 4 | Green | | Mast Arm Through Phase-A | Green |
| 5 | Orange | | Mast Arm Through Phase-A | Yellow |
| 6 | Blue | | Mast Arm Through Phase PED-D | Man |
| 7 | White | Black | Mast Arm Through Phase PED-D | Hand |
| 8 | Red | Black | Mast Arm End-B | Red Arrow |
| 9 | Green | Black | Mast Arm End-B | Green Arrow |
| 10 | Orange | Black | Mast Arm End-B | Yellow Arrow |
| 11 | Blue | Black | Cross Street Through Phase PED-E | Man |
| 12 | Black | White | Cross Street Through Phase PED-E | Hand |
| 13 | Red | White | Pole Side Cross Street-C | Red |
| 14 | Green | White | Pole Side Cross Street-C | Green |
| 15 | Blue | White | Pole Side Cross Street-C | Green Arrow |
| 16 | Black | Red | Pole Side Cross Street-C | Yellow Arrow |
| 17 | White | Red | Pedestrian Signals | Common |
| 18 | Orange | Red | Pole Side Cross Street-C | Yellow |
| 19 | Blue | Red | Spare | --- |
| 20 | Red | Green | Spare | --- |

CABLE TERMINATION DEFINITIONS



NOTE

1. All cables must satisfy IMSA Specification 19-1.

| CONTROLLER-SIGNAL POLE CABLE, 4-CONDUCTOR | | |
|---|------------------|-------------------------|
| Conductor | | |
| Number | Insulation Color | Function |
| 1 | Black | Spare |
| 2 | White | Common |
| 3 | Red | Ø4 or Ø8 Button |
| 4 | Green | Ø2 or Ø6 Button, if any |

| 4-CONDUCTOR CABLE TO 3-SECTION SIGNAL FACE | | |
|--|------------------|----------|
| Conductor | | |
| Number | Insulation Color | Function |
| 1 | Black | Yellow |
| 2 | White | Common |
| 3 | Red | Red |
| 4 | Green | Green |

| 4-CONDUCTOR CABLE TO PEDESTRIAN SIGNAL | | |
|--|------------------|----------|
| Conductor | | |
| Number | Insulation Color | Function |
| 1 | Black | Spare |
| 2 | White | Common |
| 3 | Red | Hand |
| 4 | Green | Man |

| 7-CONDUCTOR CABLE TO MAST ARM END SIGNAL FACE | | | |
|---|------------------|--------|--------------|
| Conductor | | | |
| Number | Insulation Color | Tracer | Function |
| 1 | Black | | Yellow |
| 2 | White | | Common |
| 3 | Red | | Red |
| 4 | Green | | Green |
| 5 | Orange | | Yellow Arrow |
| 6 | Blue | | Green Arrow |
| 7 | White | Black | Spare |

| 4-CONDUCTOR CABLE TO PUSH-BUTTON | | |
|----------------------------------|------------------|----------|
| Conductor | | |
| Number | Insulation Color | Function |
| 1 | Black | Spare |
| 2 | White | Common |
| 3 | Red | Button |
| 4 | Green | Spare |

CITY OF YUMA
 CONSTRUCTION STANDARD DETAIL DRAWINGS
STANDARD NO. 9-110
EXAMPLE OF TRAFFIC SIGNAL
LAYOUT FOR CONDUIT, CABLE AND
ELECTRICAL CONNECTIONS DESIGN

| CONDUITS AND ENCLOSED CABLES | | | | | |
|------------------------------|------|---------|----------|---------------|--|
| Conduit | Pole | Conduit | | Size (inches) | Function |
| | | Type | Schedule | | |
| 1 | | PVC | 40 | 2.5 | Power service |
| 2 | | PVC | 40 | 3 | Signal cables (signals, street lights, ISNS) |
| 3 | | PVC | 40 | 3 | Signal cables (signals, street lights, ISNS) |
| 4 | | PVC | 40 | 3 | Signal cables (signals, street lights, ISNS) (SEE NOTE 2) |
| 5 | | PVC | 40 | 3 | Signal cables (signals, street lights, ISNS) |
| 6 | | PVC | 40 | 3 | Signal cables (signals, street lights, ISNS) |
| 7 | | PVC | 40 | 2 | Signal cables (signals, street lights, ISNS) |
| 8 | | PVC | 40 | 2 | Signal cables (signals, street lights, ISNS) |
| 9 | | PVC | 40 | 2 | Signal cables (signals, street lights, ISNS) |
| 10 | | PVC | 40 | 2 | Signal cables (signals, street lights, ISNS) |
| 11 | | PVC | 40 | 3 | Loop lead-in cables, push-button cables, preemptor detector cables |
| 12 | | PVC | 40 | 3 | Loop lead-in cables, push-button cables, preemptor detector cables |
| 13 | | PVC | 40 | 3 | Loop lead-in cables, push-button cables, preemptor detector cables (SEE NOTE 2) |
| 14 | | PVC | 40 | 3 | Loop lead-in cables, push-button cables, preemptor detector cables |
| 15 | | PVC | 40 | 2 | Loop lead-in cables, push-button cables |
| 16 | | PVC | 40 | 2 | Push-button cables |
| 17 | | PVC | 40 | 2 | Push-button cables |
| 18 | | PVC | 40 | 2 | Push-button cables, preemptor detector cables |
| 19 | | PVC | 40 | 2 | Push-button cables |
| 20 | | PVC | 40 | 2 | Loop wire |
| 21 | | PVC | 40 | 2 | Loop wire |
| 22 | | PVC | 40 | 2 | Loop wire |
| 23 | | PVC | 40 | 2 | Loop wire |
| 24 | | PVC | 40 | 2 | Signal cable |
| 25 | | PVC | 40 | 2 | Fiber optic cable |
| 26 | | PVC | 40 | 2 or 3 | Fiber optic cable |
| 27 | | PVC | 40 | 2 or 3 | Fiber optic cable |
| 28 | | PVC | 40 | 2 or 3 | Fiber optic cable |
| 29 | | PVC | 40 | 2 | Preemptor detector cable |
| | NW | | | | Signal cables (signals, street lights, ISNS), push-button cable, preemptor detector cables |
| | NE | | | | Signal cables (signals, street lights, ISNS), push-button cable |
| | SW | | | | Signal cables (signals, street lights, ISNS), push-button cable, preemptor detector cables |
| | SE | | | | Signal cables (signals, street lights, ISNS) |
| | SE1 | | | | Signal cables (signals), push-button cable |

LEGEND: PVC = polyvinylchloride, FO = fiber optic, ISNS = illuminated street name signs, 40 = Schedule 40 PVC Conduit

NOTES

1. Conduits with conductors with 90 volts or more must be separated from those with conductors with less than 90 volts by either:
 - 3 inches of concrete; or
 - 12 inches of well-tamped earth.
2. Two (2) conduits of the indicated sizes must be provided in runs ④ and ⑬

| DETECTOR CONNECTION, ASSIGNMENT AND TIMING | | | | | | |
|--|---------|-----------------------------------|-------------------|----------------------------------|--------------------|---------------------|
| Input File 1 (Upper) | | Loops* (2 max. per channel) | Assigned Phase | Assigned Sampling Detector | Timing | |
| Slot | Channel | | | | Delay (seconds) | Extend (seconds) |
| 1 | 1 | | 1 | | | |
| | 2 | | 1 | | | |
| 2 | 1 | | 2 | 1 | | |
| | 2 | | 2 | 2 | | |
| 3 | 1 | | 3 | | | |
| | 2 | | 3 | | | |
| 4 | 1 | | 4 | | | |
| | 2 | | 4 | | | |
| 5 | 1 | | 5 | | | |
| | 2 | | 5 | | | |
| 6 | 1 | | 6 | 3 | | |
| | 2 | | 6 | 4 | | |
| 7 | 1 | | 7 | | | |
| | 2 | | 7 | | | |
| 8 | 1 | | 8 | | | |
| | 2 | | 8 | | | |
| 9 | 1 | | | | | |
| | 2 | | | | | |
| 10 | 1 | | | | | |
| | 2 | | | | | |
| 11 | 1 | | | | | |
| | 2 | | | | | |
| 12 | 1 | | | | | |
| | 2 | | | | | |
| 13 | 1 | | | | | |
| | 2 | | | | | |
| 14 | 1 | | | | | |
| | 2 | | | | | |
| 15 | 1 | | | | | |
| | 2 | | | | | |
| 16 | 1 | | 8 | | | |
| | 2 | | 8E | | | |

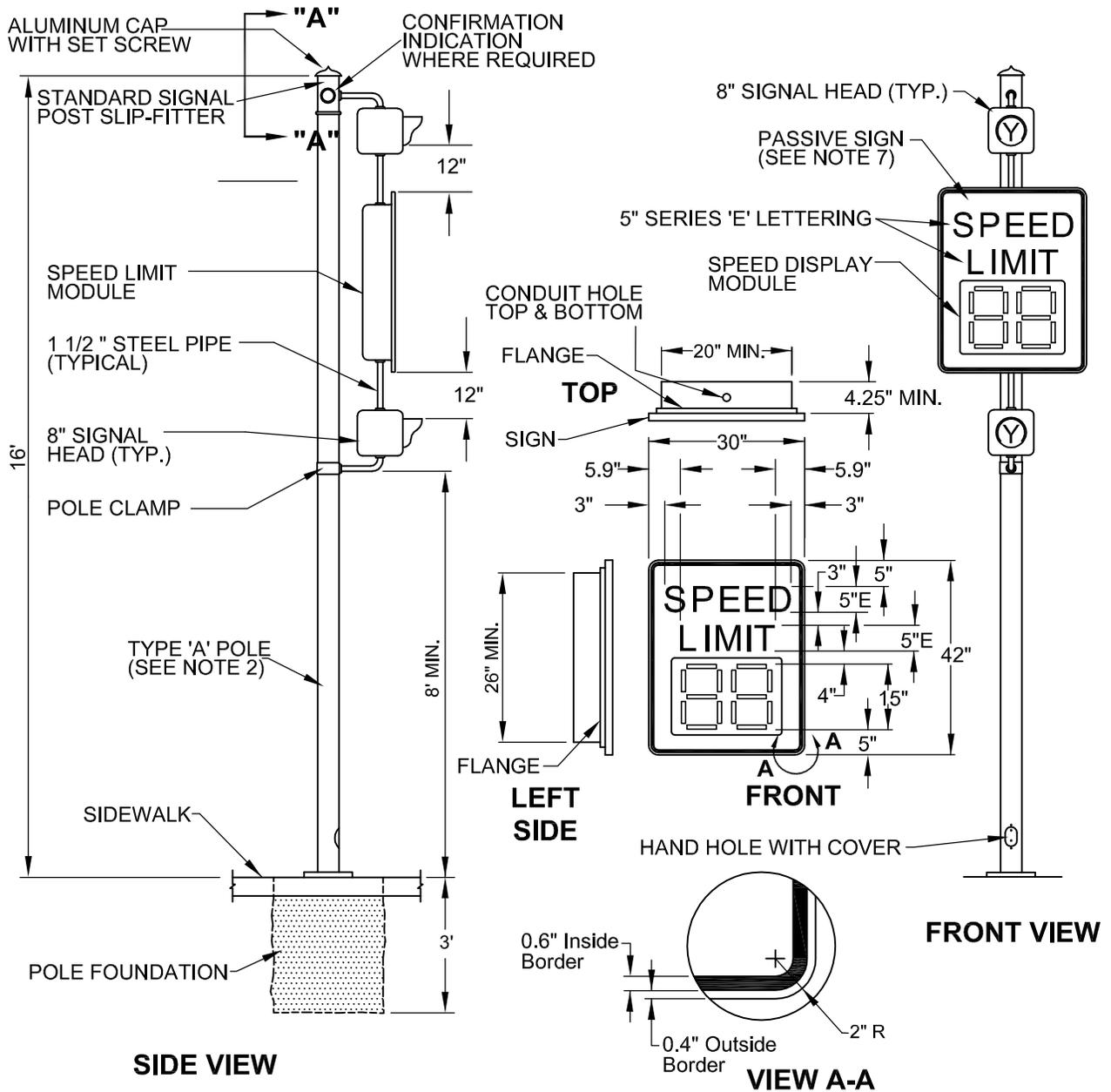
* Pulse (6' x 6') loops must be connected to separate channels for counting purposes.

| DESIGN NOTES: | | | | | | |
|---|--|--|--|--|--|--|
| 1. See sheet 1 for intersection layout. | | | | | | |
| 2. See sheet 3 for cable requirements. | | | | | | |
| 3. EXCEL file formats available from City's Traffic Engineer. | | | | | | |
| 4. This example must be <i>adapted</i> to the specific intersection by the design engineer. | | | | | | |

12-27-18 (Under Review)

Sheet 4 of 4

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS
STANDARD NO. 9-110
EXAMPLE OF TRAFFIC SIGNAL
LAYOUT FOR CONDUIT, CABLE AND
ELECTRICAL CONNECTIONS DESIGN



SIDE VIEW

FRONT VIEW

VIEW A-A

NOTES

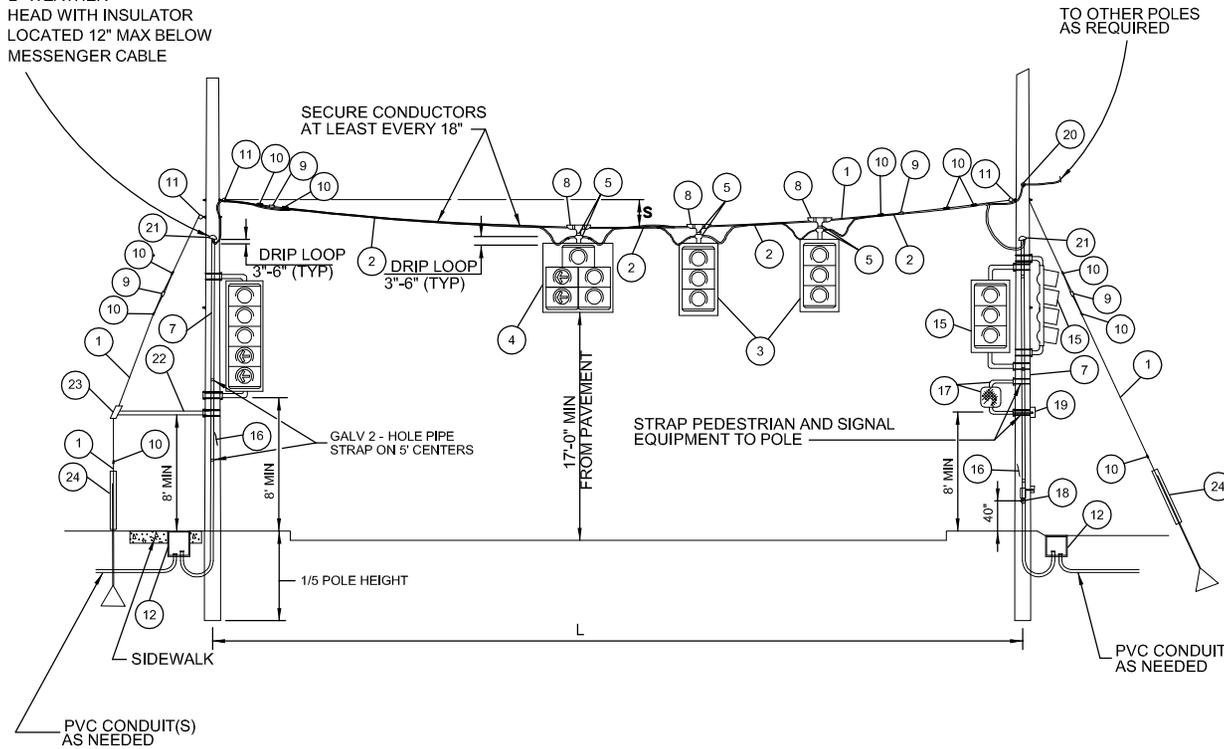
1. Pole and foundation shall conform to A.D.O.T. Standard Drawing T.S. 4-1.
2. Type "A" pole, 4" standard pipe (0.237" wall thickness).
3. Sign: 0.080" aluminum panel with Diamond Grade reflective sheeting ("Scotchlite" or approved equivalent).
4. Aim assembly as directed by C.O.Y. Traffic Engineer.
5. Grounding must conform to Standard 6-040.
6. See "Traffic Signal and Roadway Lighting Specifications", Section 14.
7. Passive sign legend and inside border: black. Background and outside border: white.
8. Confirmation Indication to be Pelco Model SM-0284 with a clear globe and a 67-watt traffic signal lamp having 5 filament supports, a 2" light center length and an 8,000-hour rated life.
9. Numerals must be white L.E.D.S

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 9-115
SPEED LIMIT BEACON ASSEMBLY

2" WEATHER HEAD WITH INSULATOR LOCATED 12" MAX BELOW MESSENGER CABLE



NOTES

1. See section 20 of "traffic signal and roadway lighting specifications", especially articles 20.2 and 20.7.1.
2. See special conditions.
3. The number, type and placement of signal heads is subject to the approval of the engineer in each instance.
4. ADOT Type G signal heads may not be used.
5. No in-line splices are permitted.
6. Bond all electrical apparatus to #6 ground conductor.
7. The guy wire alignment plan must be submitted to the engineer prior to construction of temporary signals.
8. Messenger cable must have a sag of five percent of span or less ($s=0.05l$, maximum). The lowest point of any overhead portion of the temporary signal assembly must be at least 17 feet above the roadway. The contractor must check each day to insure that the minimum clearance is maintained and must take corrective measures as necessary.
9. Cables and conductors with nominal voltages of 24 volts or less may not be installed in the same conduits and raceways as cables and conductors with nominal voltages greater than 24 volts.
10. The contractor must furnish and install all required miscellaneous hardware.
11. The temporary signal assembly must conform to the requirements of the "manual on uniform traffic control devices".
12. This drawing shows the design concept for a typical temporary span. The contractor must adapt to match actual conditions.

| ITEM | DESCRIPTION | ITEM | DESCRIPTION |
|------|---|------|---------------------------------------|
| 1 | 3/8" DIA. 7-STRAND GALV. MESSENGER CABLE | 12 | GUY WIRE ANCHOR ASSEMBLY |
| 2 | SIGNAL CABLE IMSA SPEC. 19-1(#16 AWG SOLID), ONE (1) NO. 8 GROUNDED CONDUCTORS, OPTICOM CABLE SEE PLANS FOR OTHER CONDUCTORS AND CABLES IN WIRE BUNDLES | 13 | #7 PULL BOX INSTALLED |
| 3 | SIGNAL ASSEMBLY - PER SIGNAL PLAN SHEET | 15 | SIGNAL ASSEMBLY-PER SIGNAL PLAN SHEET |
| 4 | SIGNAL ASSEMBLY - PER SIGNAL PLAN SHEET | 16 | CLASS III WOOD POLE, 40 FEET |
| 5 | BALANCE ADJUSTER AND WIRE ENTRANCE | 17 | PED. SIGNAL AND BRACKET ASSEMBLY |
| 7 | RIGID METAL CONDUIT(S) AS NEEDED | 18 | PED. PUSH BUTTON |
| 8 | SPAN WIRE CLAMP AND UNIVERSAL BRACKET | 19 | CONDULET |
| 9 | PORCELAIN STRAIN INSULATORS | 20 | INSULATOR |
| 10 | 3-BOLT CLAMP | 21 | 2" WEATHER HEAD |
| 11 | EYE BOLT, EYELET, 2 SQUARE WASHERS AND 2-NUTS, GALV. | 22 | STEEL PIPE |
| | | 23 | SIDEWALK GUY CLAMP |
| | | 24 | GUY GUARD |

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 9-120
TEMPORARY SPAN WIRE
TRAFFIC SIGNAL ASSEMBLY

MAIN DIRECTIONS

| DIRECTION | COLOR |
|-----------|--------|
| WB | BLUE |
| EB | GREEN |
| NB | RED |
| SB | YELLOW |

LEFT TURN DIRECTIONS
(MAIN COLOR + WHITE)

| DIRECTION | COLOR |
|-----------|----------------|
| WBLT | BLUE + WHITE |
| EBLT | GREEN + WHITE |
| NBLT | RED + WHITE |
| SBLT | YELLOW + WHITE |

RIGHT TURN DIRECTIONS
(MAIN COLOR + BLACK)

| DIRECTION | COLOR |
|-----------|----------------|
| WBRT | BLUE + BLACK |
| EBRT | GREEN + BLACK |
| NBRT | RED + BLACK |
| SBRT | YELLOW + BLACK |

COLOR OF WIRE FOR
POWER / NEUTRALS / PUSHBUTTONS

| WIRE | COLOR |
|----------------|-------------------------------|
| AC+ POWER | BLACK |
| AC- NEUTRAL | WHITE |
| 24V PUSHBUTTON | ORANGE + DIRECTIONAL CABLE |
| PEDESTRIAN | VIOLET + DIRECTIONAL CABLE |

NOTES

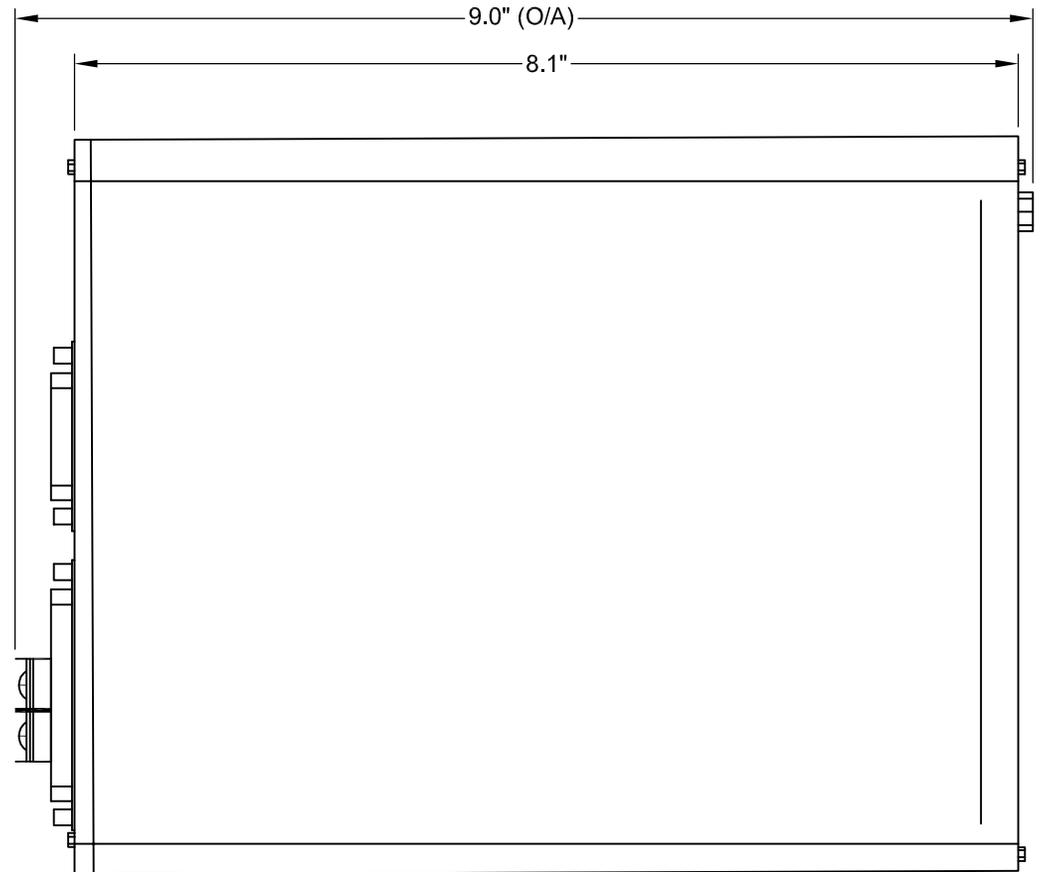
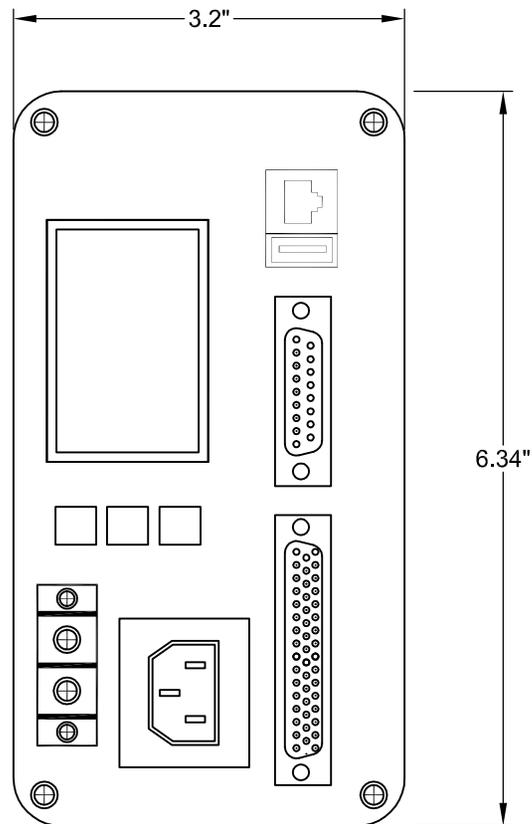
ALL TAPE SHALL BE: 3M SCOTCH 35 MODEL OR SUPER 33

WBLT = West bound left turn and shall be the phase for vehicles facing West and turning to South.
 EBLT = East bound left turn and shall be the phase for vehicles facing East and turning to North
 NBLT = North bound left turn and shall be the phase for vehicles facing North and turning to West.
 SBLT = South bound left turn and shall be the phase for vehicles facing South and turning to East.
 WBRT = West bound right turn shall be the phase for vehicles facing West and turning to North.
 EBRT = East bound right turn and shall be the phase for vehicles facing East and turning to South.
 NBRT = North bound right turn and shall be the phase for vehicles facing North and turning to East.
 SBRT = South bound right turn and shall be the phase for vehicles facing South and turning to West.

12-27-18 (Under Review)

CITY OF YUMA
 CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 9-125
TAPE COLOR CODES FOR
TRAFFIC SIGNAL WIRING



NOTES

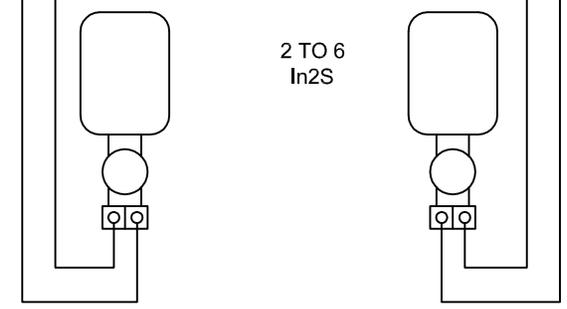
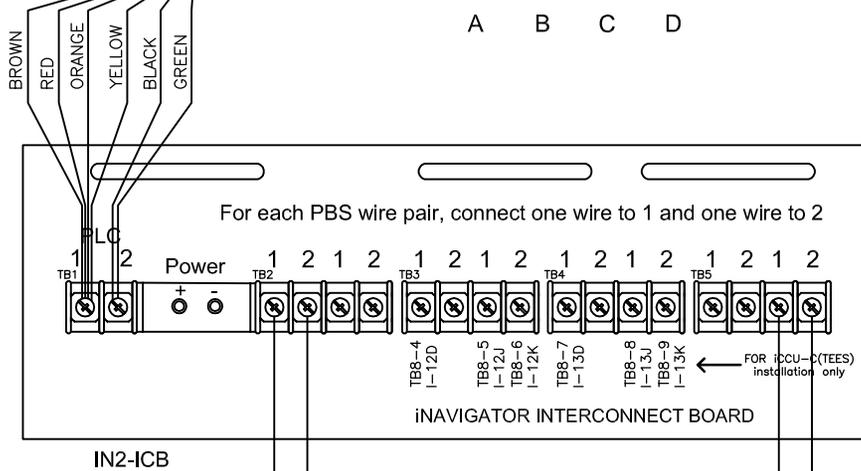
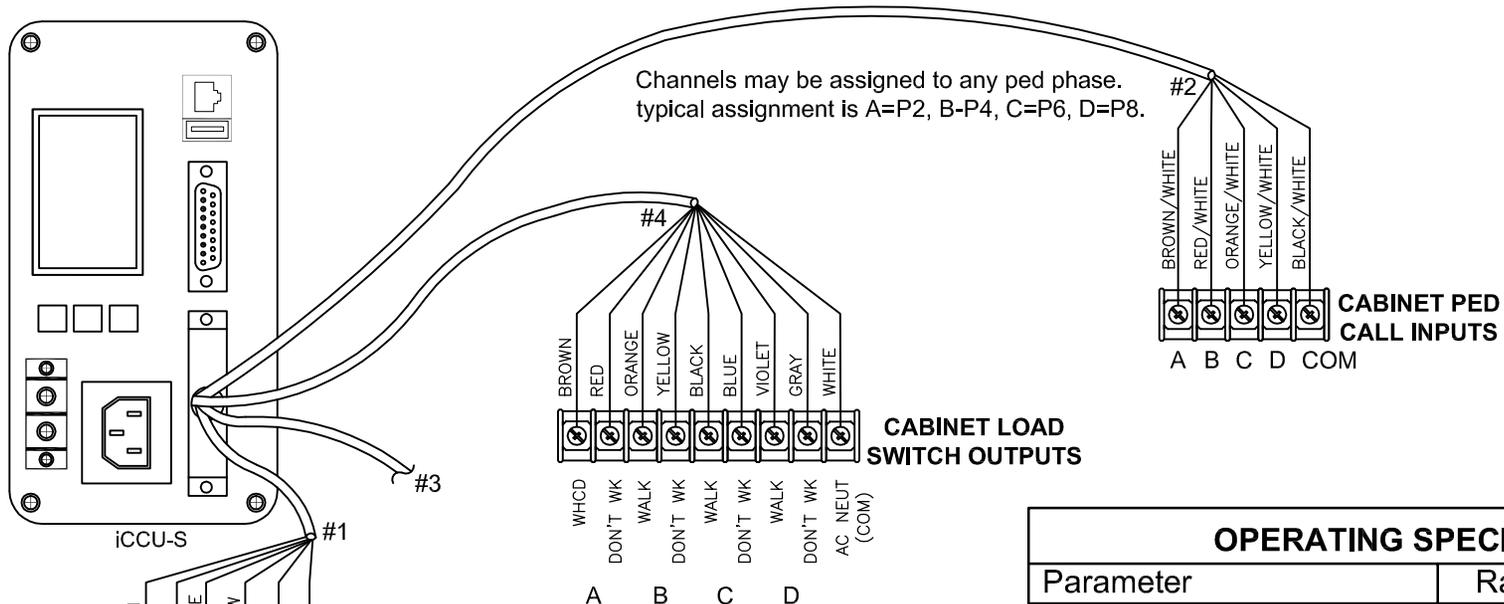
1. Central control unit is designed for use in any style traffic cabinet.
2. Used with an interconnect panel and supports sdhc communications.
3. Backlit lcd for displaying system status information.
4. All setup functions are through ethernet, wi-fi using a pc, iphone or ipad using wi-fi.
5. Bluetooth is supported by apps for both windows pcs (win 7+) and ios (8.0+) devices.
6. Has internal conflict monitoring and health log data capture.
7. Remote monitoring can be done over ethernet.
8. See sheet 2 of 2 for connection details.
9. Opticom detector cable to be used with radio/gps units and phase selectors.

12-27-18 (Under Review)

Sheet 1 of 2

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 9-130
INTELLIGENT CENTRAL CONTROL
UNIT FOR SHELF MOUNT



| OPERATING SPECIFICATIONS | |
|-----------------------------|----------------------------------|
| Parameter | Rating |
| Operating Temperature Range | -34°C to +74°C (-30°F to +165°F) |

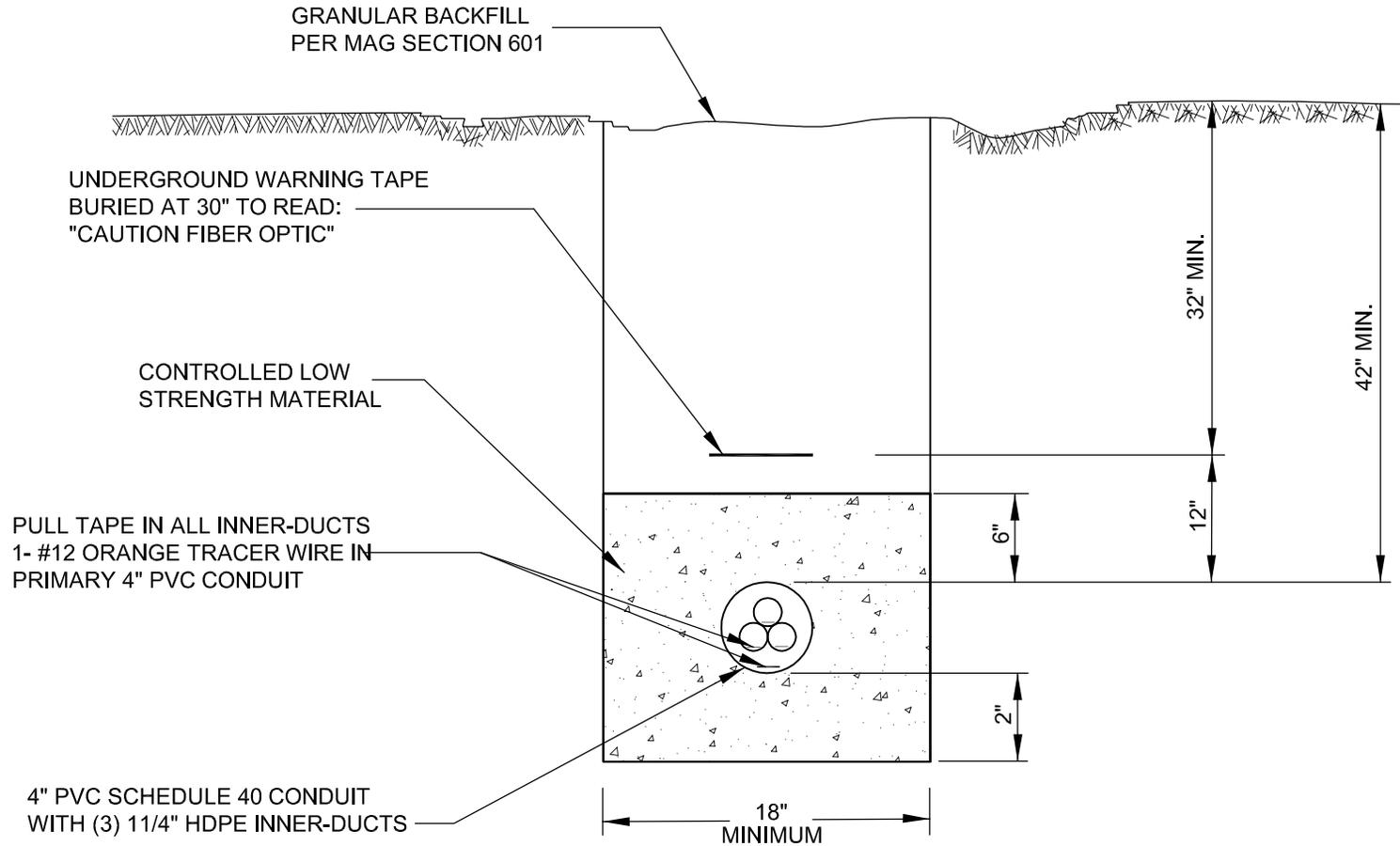
| DESIGN COMPLIANCE | |
|------------------------------------|---------------------------------|
| Test Type | Compliance |
| Functionality | MUTCD 2009 - 4E |
| Temperature and Humidity | NEMA TS 2* |
| Transient Voltage Protection | NEMA TS 2* |
| Transient Suppression | IEC 61000-4-4, IEC 61000-4-5* |
| Electronic Noise (Bluetooth Radio) | FCC TITLE 47, PART 15, CLASS A* |
| Mechanical Shock and Vibration | NEMA TS 2* |
| iN2 PBS Enclosure | NEMA 250 - TYPE 4X* |
| Electrical Reliability | NEMA TS 4 |

* Tested and certified by independent 3rd party

12-27-18 (Under Review) Sheet 2 of 2

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 9-130
INTELLIGENT CENTRAL CONTROL
UNIT FOR SHELF MOUNT



INTERCONNECT TRENCH DETAIL

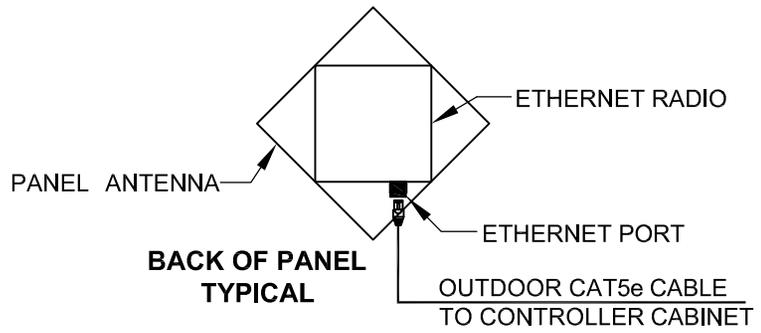
NOTES

1. Conduit contents are oriented assuming the section is facing in the direction of travel for the arterial street.
2. All spoil materials shall be removed offsite by the contractor.
3. Area shall be returned to existing grade.
4. Install 2500 lb pull tape in all inner-duct conduits. The pull tape shall be spliced in all pull boxes. There will be no splicing or tying of the pull tape between pull boxes.
5. Install #12 solid copper tracer wire with orange HMWPE coating in primary 4" conduit. All tracer wires shall be spliced together and bonded to ground rod in each pull box.
6. Controlled low strength material shall consist of one sack of portland cement per cubic yard of clean sand.

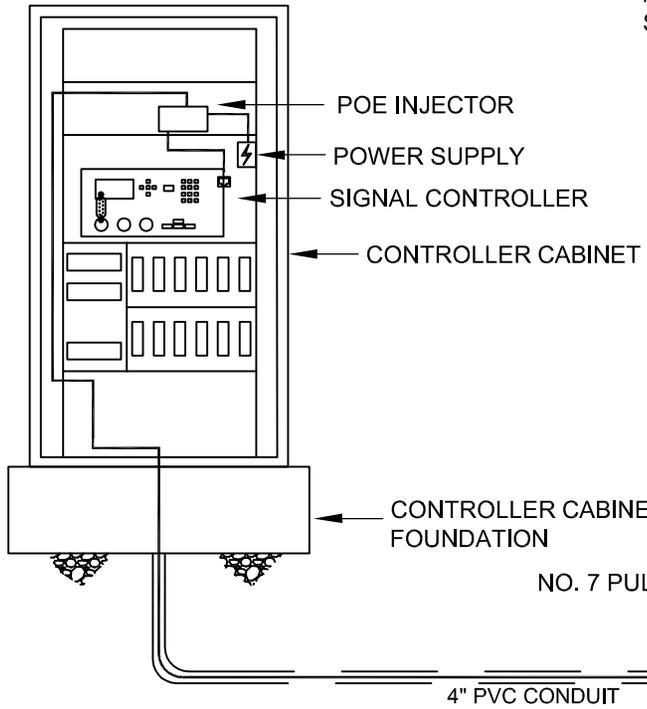
12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

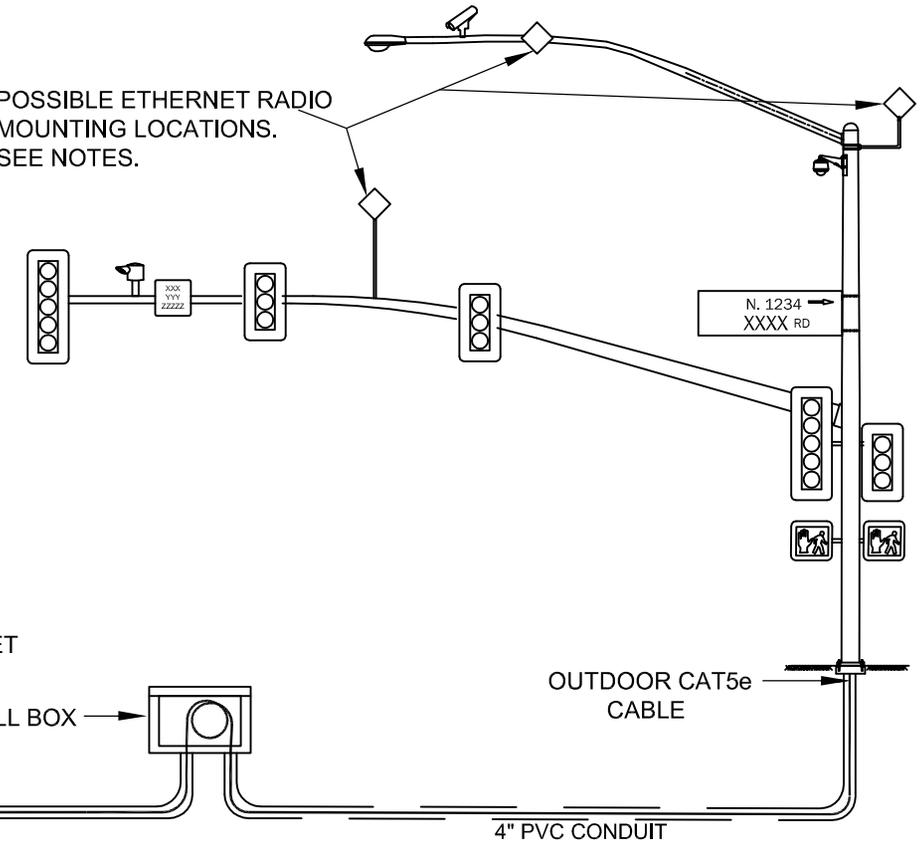
STANDARD NO. 9-135
IT/COMMUNICATIONS
TRENCH DETAIL



**BACK OF PANEL
TYPICAL**



POSSIBLE ETHERNET RADIO
MOUNTING LOCATIONS.
SEE NOTES.



**ETHERNET RADIO
SCHEMATIC**

NOTES

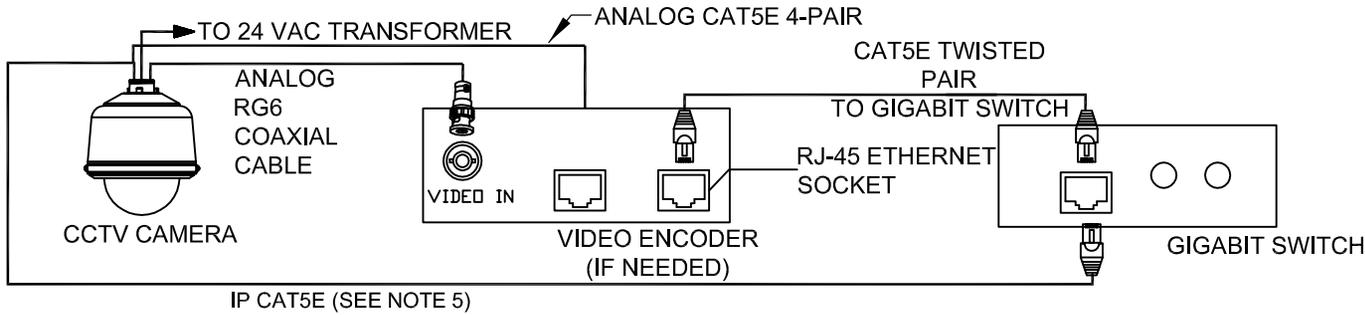
1. Panel antenna shall be mounted at location with best line-of-sight. Contact the City of Yuma for mounting location.
2. Contact the City of Yuma for mounting bracket information.
3. Orientation of the panel antenna is site specific. Contact the City of Yuma for details before installation.
4. Installation shall be according to manufacturer specifications.

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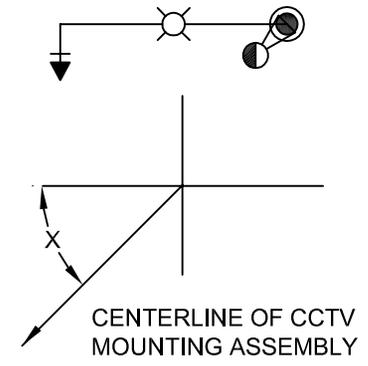
CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

**STANDARD NO. 9-140
ETHERNET RADIO DETAIL**

WIRING TYPICAL

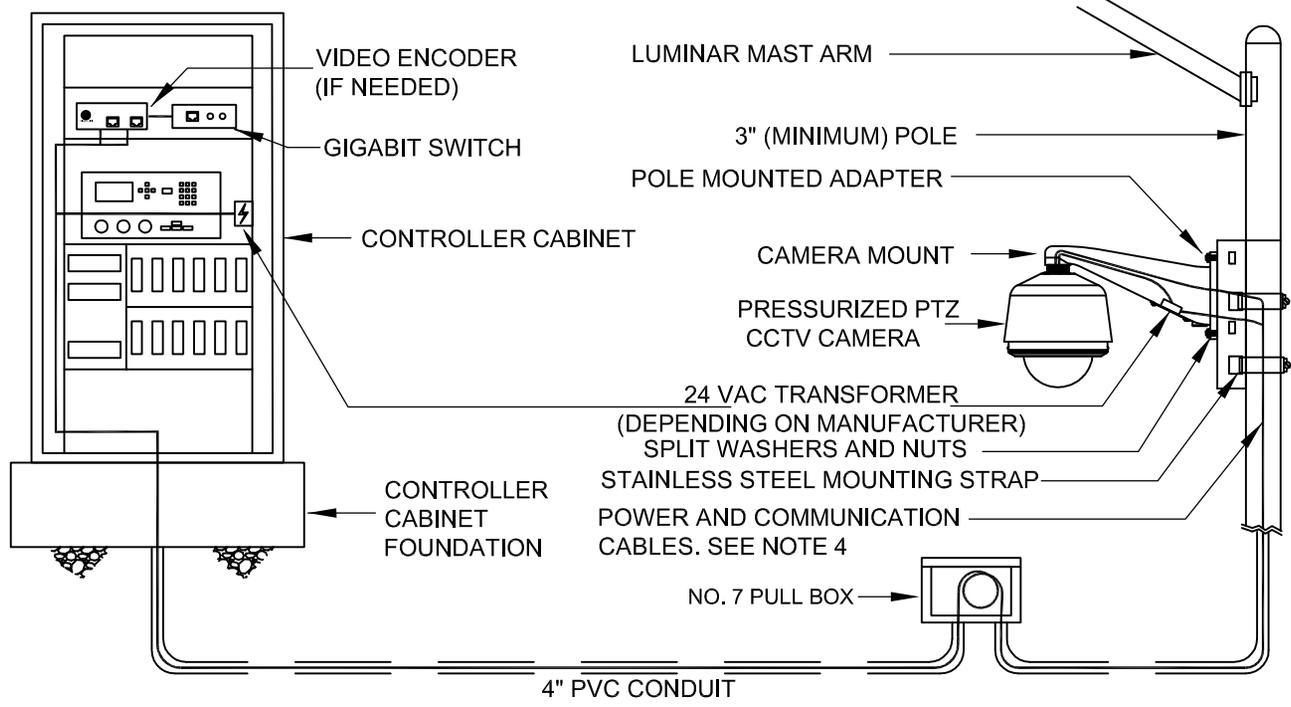


PLAN



NOTES

1. The CCTV composite cable shall be run unspliced from the CCTV to the video encoder installed in the cabinet.
2. Installation shall be according to manufacturer specifications.
3. Camera shall be mounted on the south side of the intersection. Contact the City of Yuma for specific location.
4. Contact the City of Yuma for approved CCTV camera and video encoder models and equipment.
5. If an IP CCTV camera is installed based on note 4, no video encoder is needed and the cat5 cable from the CCTV camera will connect to the gigabit switch.



CCTV SCHEMATIC

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

**STANDARD NO. 9-145
CCTV CAMERA DETAIL**

VIDEO DETECTION SECIFICATIONS

Video detection system shall be Autoscope Vision.

This specification sets forth the minimum requirements for a video detection system that detects vehicles, bicycles, and motorcycles on a roadway by processing video images and that provides vehicle presence, traffic flow data, event alarms, and full-motion video for real-time traffic control and management systems.

System Hardware

The video detection system shall be comprised of two major hardware components: a video sensor and a communications interface panel. An optional wired input/output card shall be available for certain cabinet types. The video detection system shall include a video sensor that integrates a high-definition (HD) camera with an embedded processor for analyzing the video and performing detection. The processor shall support H.264 video compression for streaming output.

Communications Iterface Panel

The video detection system shall include an interface panel in the traffic panel that manages communications between the video sensors, the traffic management center, a maintenance technician, an the traffic cabinet itself. All communications to the vide sensor shall be broadband-over-power via the same three conductor cable that powers the unit. Coaxial cable shall not be required. The Wi-Fi access point shall operate simultaneously with the wired maintenance port and with the TMC connection.

Traffic Controller Connection

The communications interface panel shall provide one connection to communicate to the traffic controller through the cabinet. Power and communications for the video sensor shall be carried over a single three conductor cable. An Ethernet port shall be provided to connect to a remote Traffic Management Center (TMC). All communications to the video detection system through the TMC connection shall be to a single IP address. An 802.11g Wi-Fi access point shall allow wireless connection to the video detection system at the cabinet for setup and maintenance purposes.

System Software

The video detection system shall include management software for configuration, monitoring and data collection purposes. The real-time quad-view video stream shall be capable of displaying the overlay graphics for all four sensors simultaneously. The video detection system shall automatically collect and store traffic flow data in non-volatile memory for later retrieval and analysis. No additional hardware or software shall be necessary.

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 9-150
VIDEO DETECTION
SPECIFICATIONS

| TAPER LENGTHS (L) | | | | | | | | | | | | | | | |
|-------------------------------------|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| feet | | | | | | | | | | | | | | | |
| Estimated 85th%-ile Speed (S) | Width of Transition (W) | | | | | | | | | | | | | | |
| | feet | | | | | | | | | | | | | | |
| m.p.h. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 20 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 25 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 110 | 120 | 130 | 140 | 150 | 160 |
| 30 | 100 | 100 | 100 | 100 | 100 | 100 | 110 | 120 | 140 | 150 | 170 | 180 | 200 | 210 | 230 |
| 35 | 100 | 100 | 100 | 100 | 110 | 130 | 150 | 170 | 190 | 210 | 230 | 250 | 270 | 290 | 310 |
| 40 | 100 | 100 | 120 | 160 | 200 | 240 | 280 | 320 | 360 | 400 | 440 | 480 | 520 | 560 | 600 |
| 45 | 100 | 100 | 135 | 180 | 225 | 270 | 315 | 360 | 405 | 450 | 495 | 540 | 585 | 630 | 675 |
| 50 | 100 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 |
| 55 | 100 | 110 | 165 | 220 | 275 | 330 | 385 | 440 | 495 | 550 | 605 | 660 | 715 | 770 | 825 |
| 60 | 100 | 120 | 180 | 240 | 300 | 360 | 420 | 480 | 540 | 600 | 660 | 720 | 780 | 840 | 900 |
| 65 | 100 | 130 | 195 | 260 | 325 | 390 | 455 | 520 | 585 | 650 | 715 | 780 | 845 | 910 | 975 |
| 70 | 100 | 140 | 210 | 280 | 350 | 420 | 490 | 560 | 630 | 700 | 770 | 840 | 910 | 980 | 1050 |

Taper lengths computed based on the following formulas from the Manual on Uniform Traffic Control Devices(MUTCD). Results rounded up.

L = 100 feet minimum

For speeds less than 40 m.p.h.: $L = WS^2/60$

For speeds ≥ 40 m.p.h.: L = WS

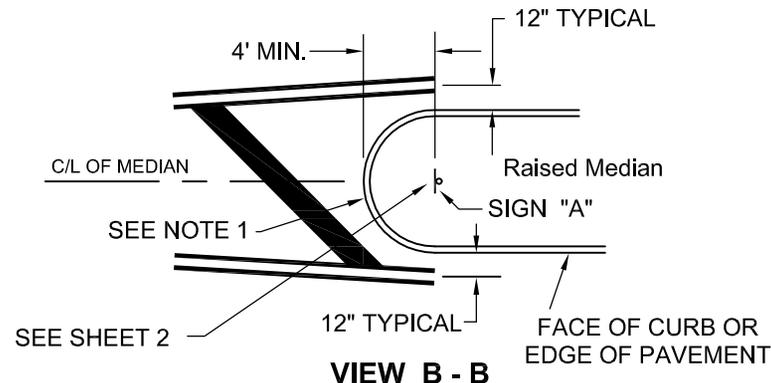
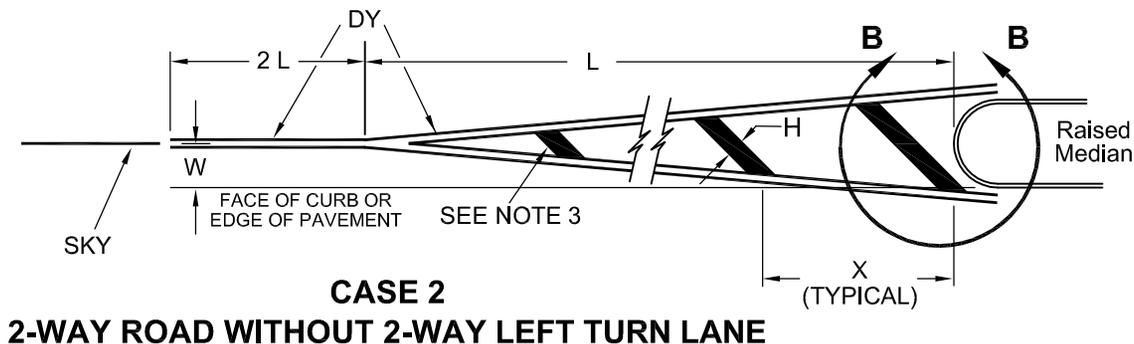
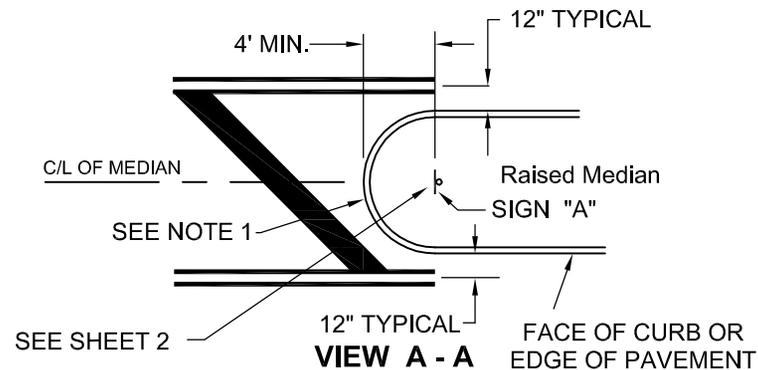
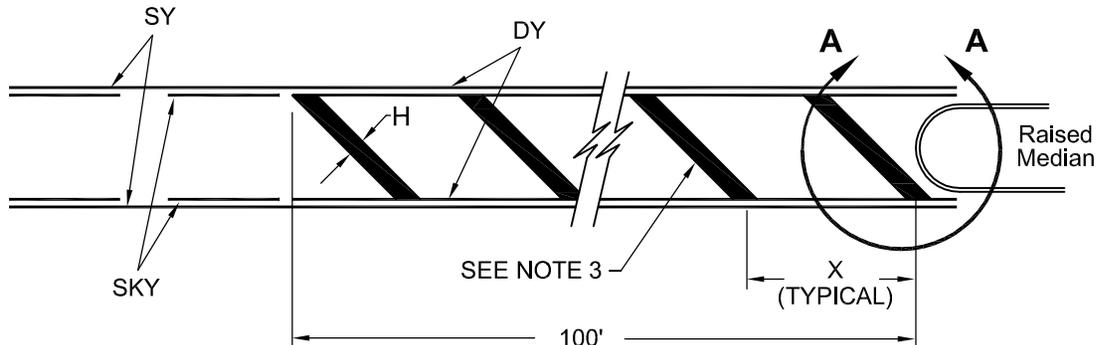
NOTE

1. See MUTCD for taper applications for work zone/special event (temporary) traffic control.

12-27-18 (Under Review)

CITY OF YUMA
 CONSTRUCTION STANDARD DETAIL DRAWINGS
STANDARD NO. 10-005
TAPER LENGTHS FOR PAVEMENT
MARKINGS AND WORK ZONE/
SPECIAL EVENT TRAFFIC CONTROL

**CASE 1
2-WAY ROAD WITH 2-WAY LEFT TURN LANE**



| LEGEND | | | |
|---------------|---|-----|--------------------------------------|
| W | WIDTH OF TRANSITION MEASURED IN FEET. | SY | SINGLE 4" SOLID YELLOW LINE |
| L | LENGTH OF TAPER MEASURED IN FEET (SEE STD. DET. 9-010). | SKY | SINGLE 4" SKIP (BROKEN) YELLOW LINE |
| S | 85TH PERCENTILE SPEED (NOT SPEED LIMIT) OF APPROACHING TRAFFIC. | H | 24' SOLID YELLOW DIAGONAL LINE (45°) |
| DY | DOUBLE 4" SOLID YELLOW LINES 4" APART | X | 20' UNLESS OTHERWISE NOTED. |

NOTES

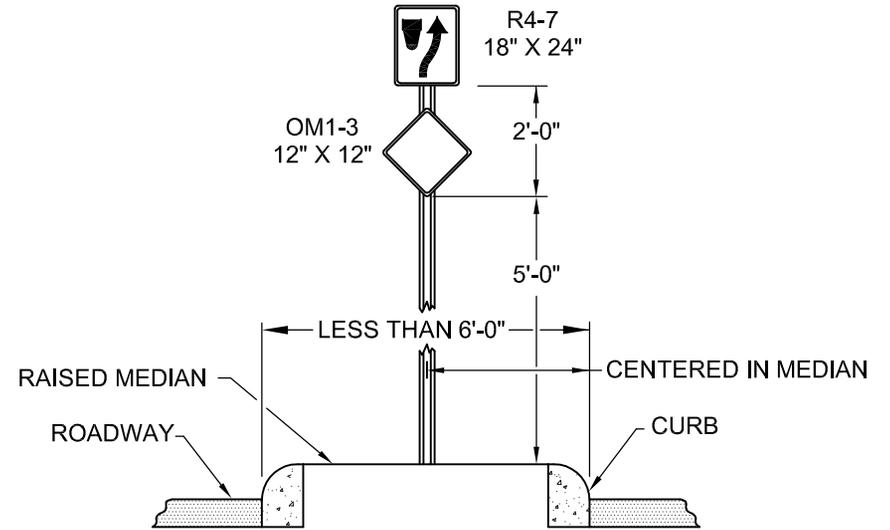
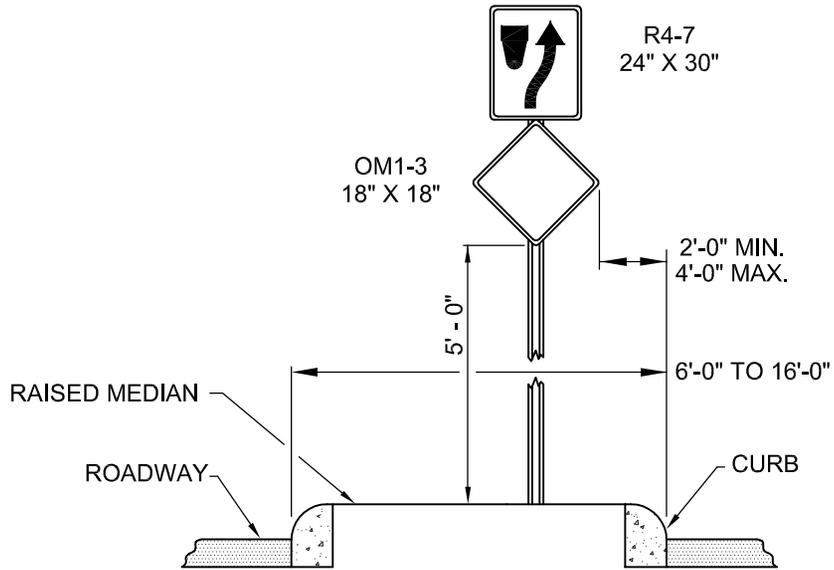
1. Paint or treat curb face with yellow reflective material on rounded portion.
2. The signs and markings shown are intended for the beginning of a median. signs and markings should not be used at median breaks unless roadway alignment might attract a vehicle to the left.
3. Install crosshatch lines in divergence at interval 'x' but not when space between divergence markings is less than five (5) feet.

12-27-18 (Under Review) Sheet 1 of 2

**CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS**

**STANDARD NO. 10-010
APPROACH END TREATMENT
FOR MEDIANS**

PLACEMENT OF SIGN "A"



NOTE

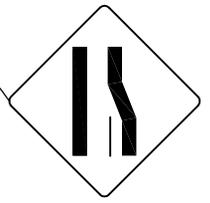
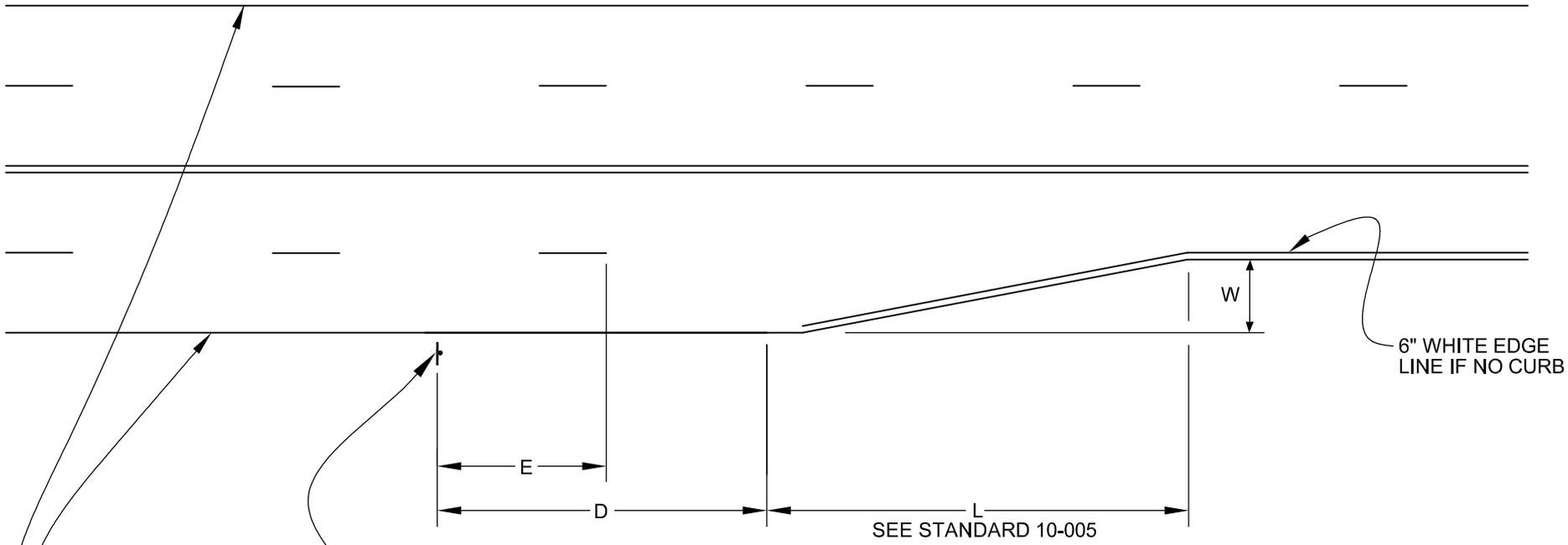
1. Refer to Standard Detail 8-020 for post material specifications, installation and approved assembly.

12-27-18 (Under Review)

Sheet 2 of 2

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 10-010
APPROACH END TREATMENT
FOR MEDIANS



W4-2
36"X36"

| 85%-ile Approach Speed (MPH) | D (FEET) | E* (FEET) |
|------------------------------|----------|-----------|
| <=30 | 200 | 30-70 |
| >30, <50 | 300 | 55-95 |
| =>50 | 400 | 80-120 |

* DESIGN FOR MID-POINT

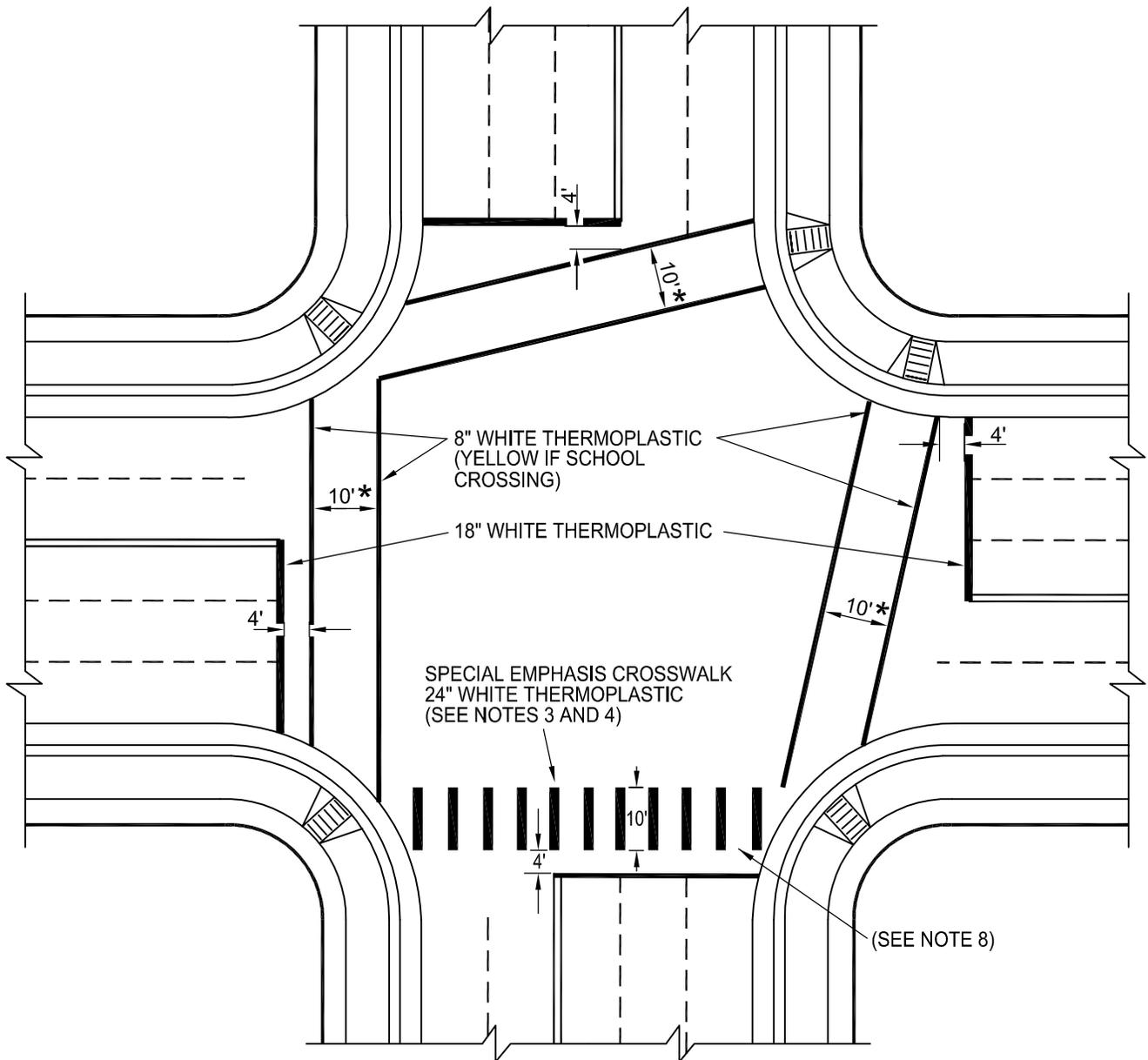
NOTE

1. Sign w9-1 is not required.

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

**STANDARD NO. 10-015
LANE DROP SIGNING
AND MARKING**



NOTES

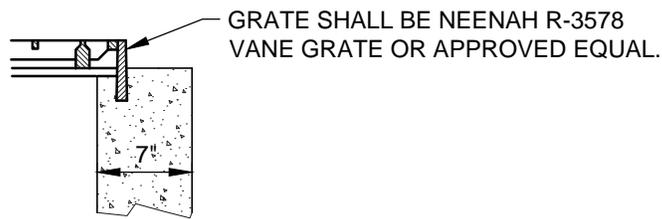
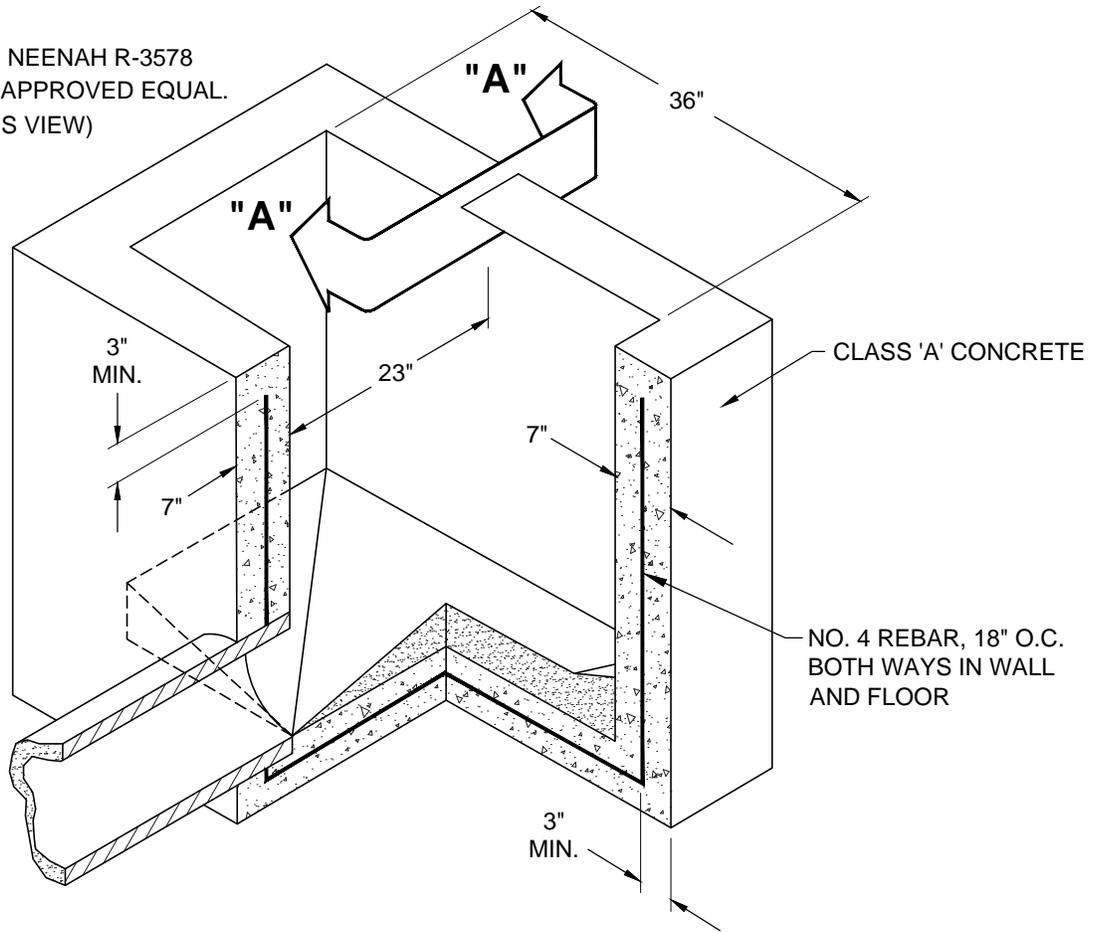
1. Thermoplastic pavement markings must be 90 mils thick (minimum) and meet all A.D.O.T. specifications.
2. The markings must contain 30% to 40% (by weight) reflective glass inter-mixed beads. An additional 10lbs of glass beads must be evenly applied to the surface of the molten material per 100 sq. ft. of line.
3. Special emphasis crosswalks to be used only as directed by the City's Traffic Engineer.
4. Special emphasis crosswalk lines to be centered on lane lanes and centers of lanes.
5. Crosswalks will generally not be used at unsignalized intersections except for designated school crossings and other locations approved by the City's Traffic Engineer.
6. See standard 9-110.

* CENTER TO CENTER OF MARKINGS.

7. For school crossing signing and marking, refer to ADOT guidelines for traffic safety for school areas.
8. Spacing between bars shall be a maximum of 60 inches and shall avoid wheel paths.

| |
|---|
| 12-27-18 (Under Review) |
| CITY OF YUMA CONSTRUCTION STANDARD DETAIL DRAWINGS |
| STANDARD NO. 10-020 INTERSECTION PAVEMENT MARKINGS |

GRATE SHALL BE NEENAH R-3578
VANE GRATE OR APPROVED EQUAL.
(REMOVED IN THIS VIEW)



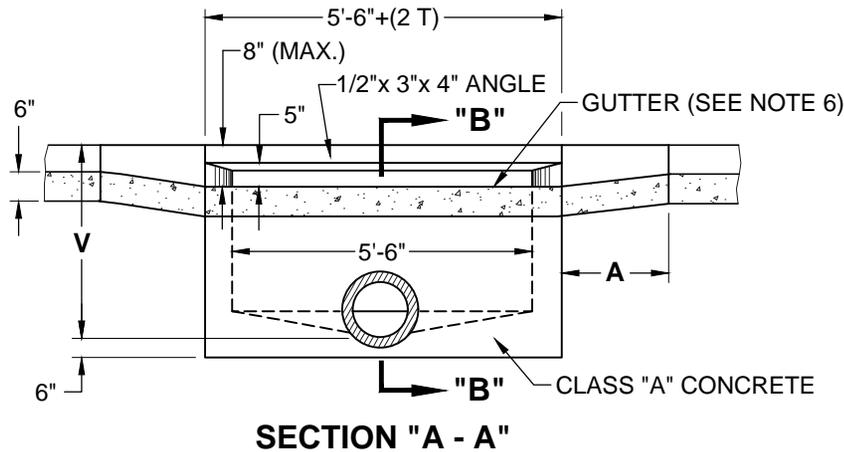
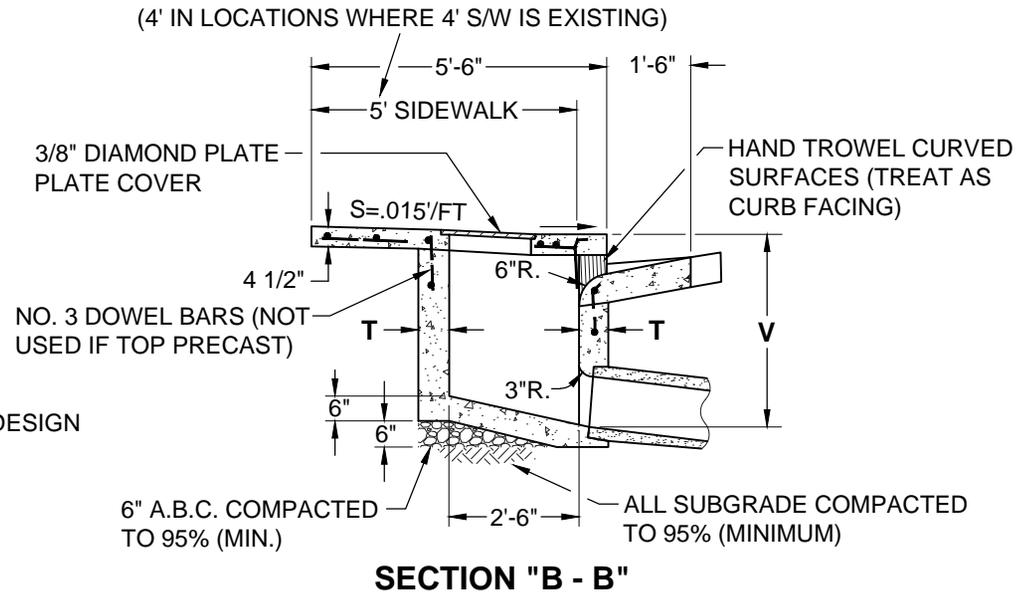
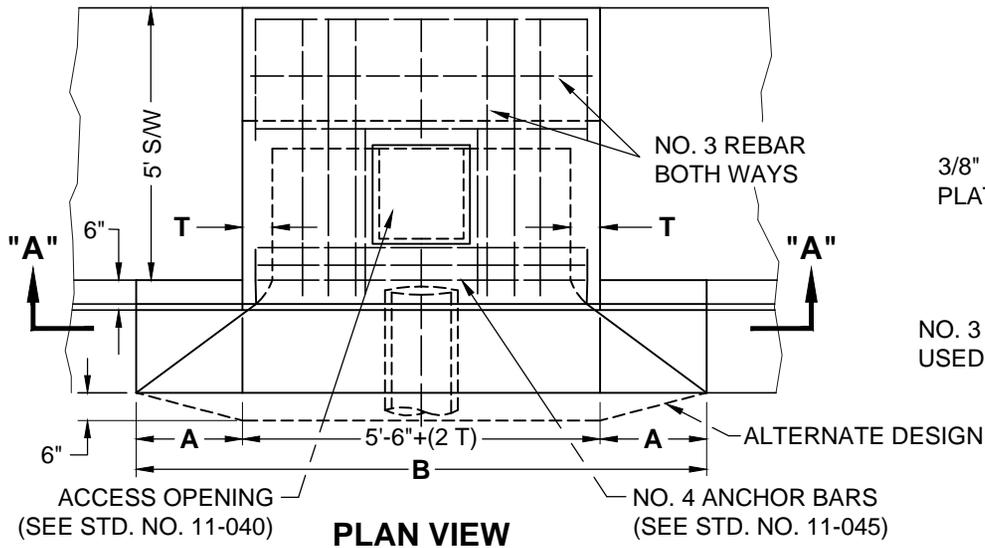
SECTION "A - A"

NOTES

1. Pipes may enter or leave any wall. Bottom of box shall be sloped to outlet pipe from all directions and trowelled to a hard smooth surface.
2. Connection pipes may be placed in any position around the walls provided the position is consistent with the plan.
3. Outlet pipe shall be trimmed to final shape and length before concrete is poured.
4. All structural steel and castings to be painted one shop coat and two field coats of *INDUSTRION* OSHA safety green (or approved equal).
5. Provide no. 4 rebar, 18" o.c. both ways in wall and floor.

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS
STANDARD NO. 11-005
TYPE A CATCH BASIN
FOR USE WITHOUT CURB & GUTTER



DIMENSIONS

| CURB | A | B |
|------|-------|-------|
| 4" | 3'-3" | 13' |
| 6" | 1'-9" | 10' |
| 7" | 1' | 8'-9" |

T = 6" IF V = 4' OR LESS.
 T = 8" IF V IS BETWEEN 4' AND 8'.
 T = 10" IF V IS 8' OR MORE (IF V EXCEEDS 10' A SPECIAL DESIGN IS REQUIRED)
 V = 3'-6" UNLESS OTHERWISE NOTED.

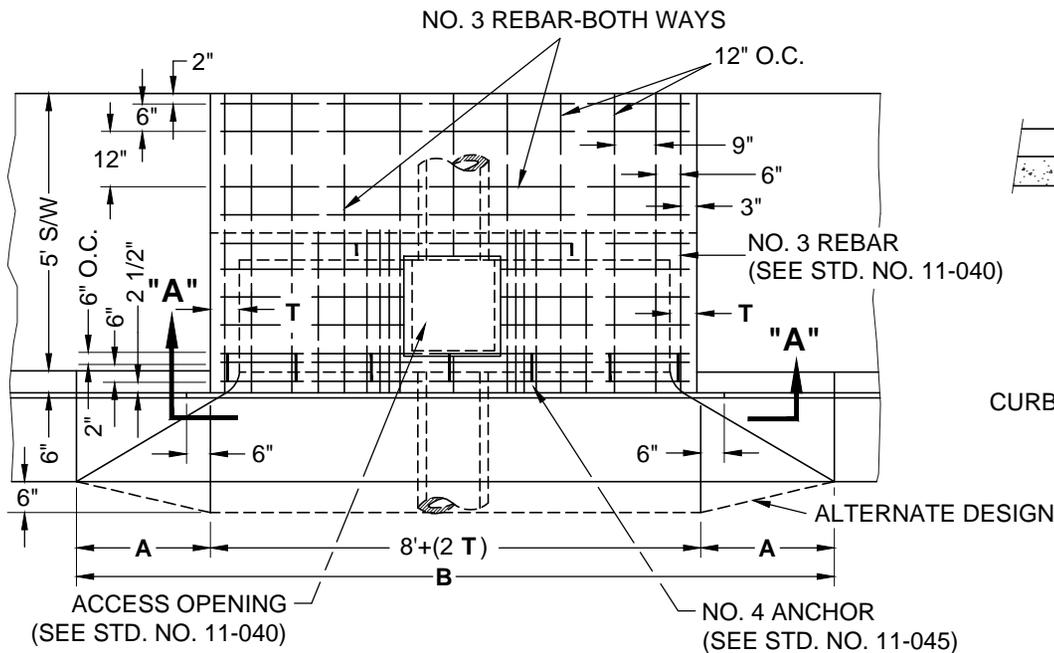
NOTES

1. The entire catch basin cover may be pre-cast or poured in place.
2. Connection pipes may be placed in any position around the walls provided the position is consistent with the plan.
3. Outlet pipe shall be trimmed to final shape and length before concrete is poured.
4. Floor of basin shall be trowelled to a hard smooth surface and shall slope from all directions towards outlet.
5. All structural steel and castings to be painted one shop coat and two field coats *INDUSTRION* OSHA safety green (or approved equal).
6. Gutter shall not be depressed from a straight line grade to create a bump.
7. See std. detail no. 11-040 for details common to all curb opening basins.

12-27-18 (Under Review)

CITY OF YUMA
 CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 11-010
 TYPE B CATCH BASIN
 5' TO 6' CURB OPENING WITH ACCESS



PLAN VIEW

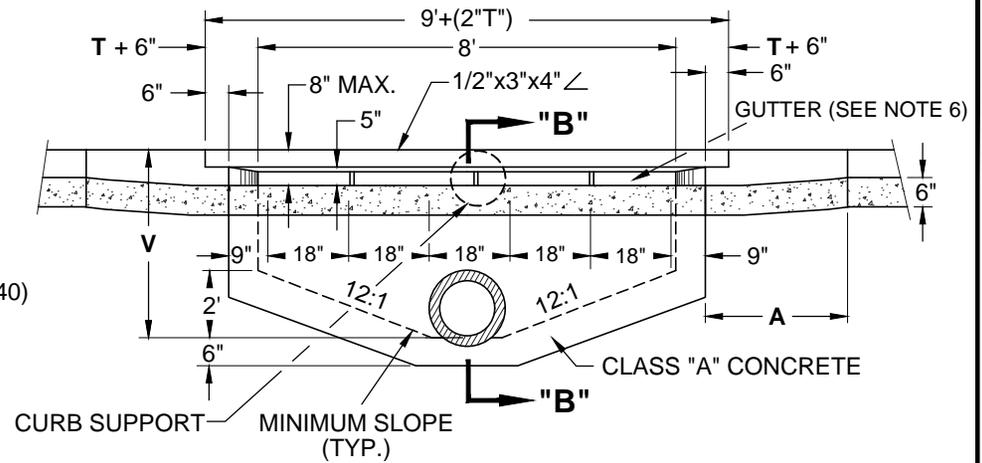
DIMENSIONS

| CURB | A | B |
|------|-------|--------|
| 4" | 3'-3" | 15'-6" |
| 6" | 1'-9" | 12'-6" |
| 7" | 1' | 11' |

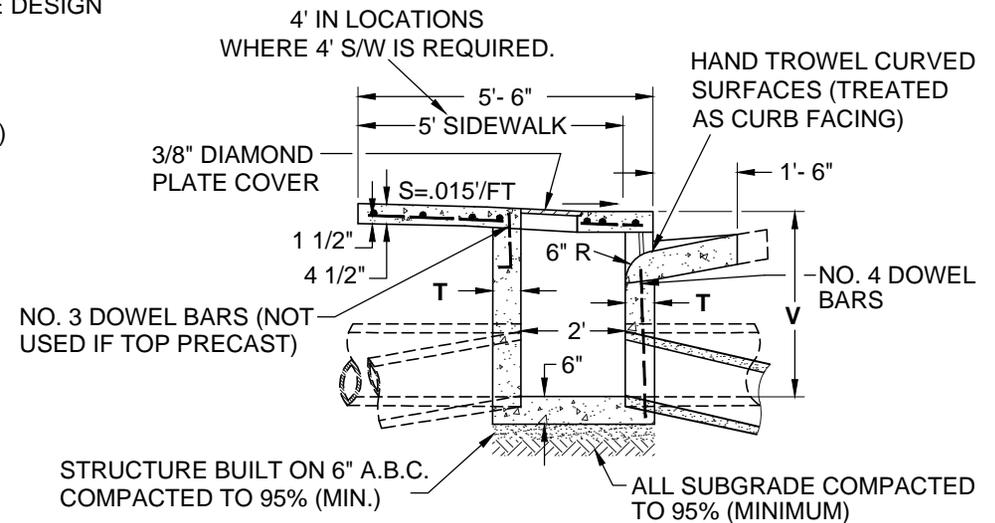
T = 6" IF V = 4' OR LESS.
 T = 8" IF V IS BETWEEN 4' AND 8'.
 T = 10" IF V IS 8' OR MORE (IF V EXCEEDS 10' A SPECIAL DESIGN IS REQUIRED)
 V = 4'-0" UNLESS OTHERWISE NOTED.

NOTES

1. The entire catch basin cover may be pre-cast or poured in place.
2. Connection pipes may be placed in any position around the walls provided the position is consistent with the plan.
3. Outlet pipe shall be trimmed to final shape and length before concrete is poured.
4. Floor of basin shall be trowelled to a hard smooth surface and shall slope from all directions towards outlet.
5. All structural steel and castings to be painted one shop coat and two field coats of *INDUSTRION* OSHA safety green (or approved equal).
6. Gutter shall not be depressed from a straight line grade.
7. See std. dt. no. 11-040 for details common to all curb opening basins.



SECTION "A - A"



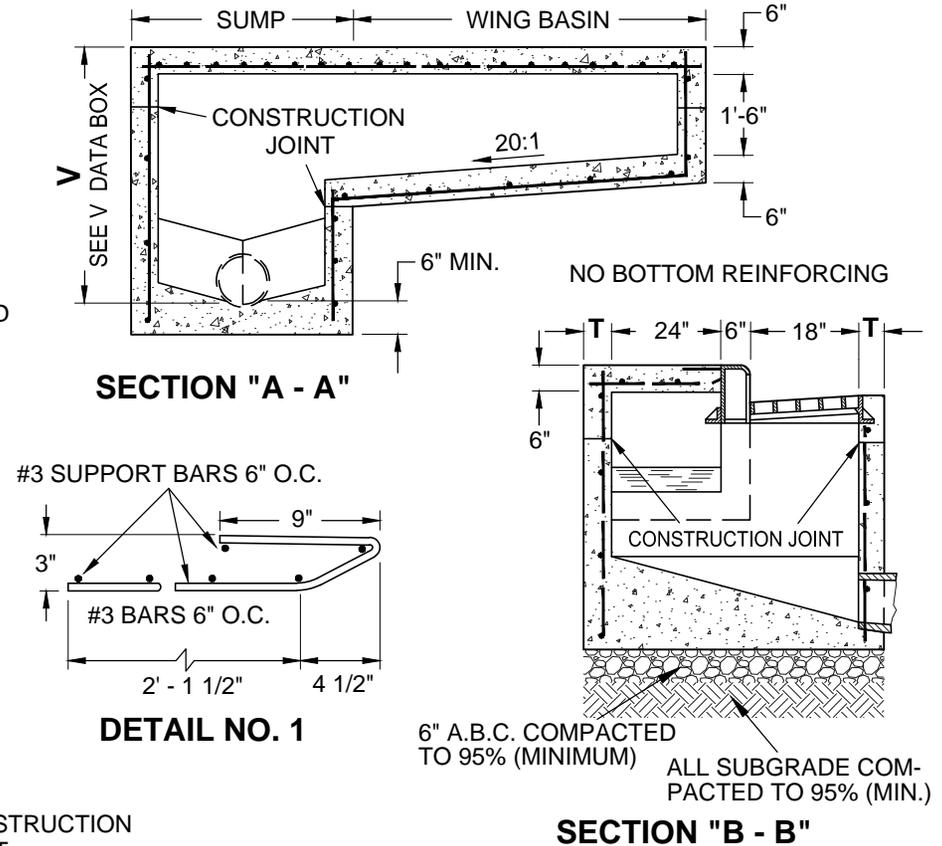
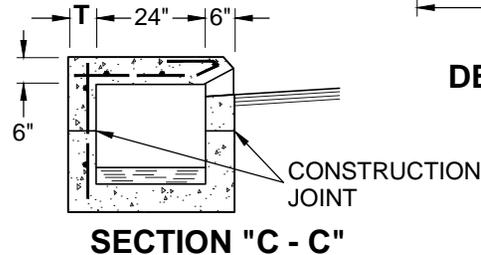
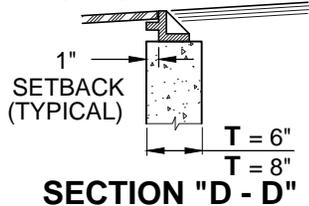
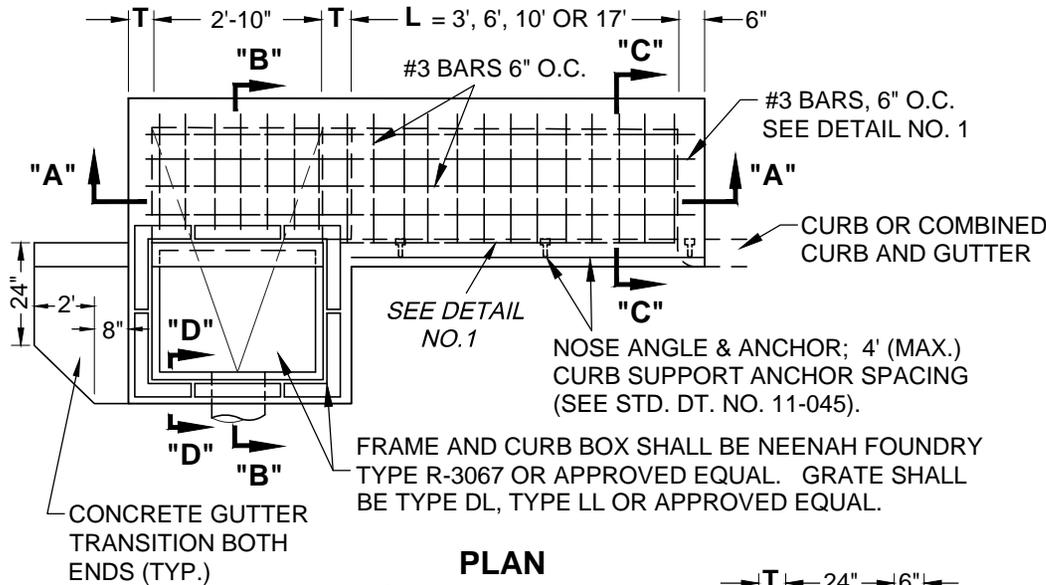
SECTION "B - B"

12-27-18 (Under Review)

CITY OF YUMA
 CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 11-015
 TYPE C CATCH BASIN
 8' CURB OPENING WITH ACCESS

NOTE: REINFORCING BARS SHOWN ARE FOR ROOF SLAB ONLY. SEE SECTIONS AND NOTE NO. 5 FOR OTHER REINFORCING REQUIREMENTS.



NOTES

1. Single catch basin with sump and wing basin upstream (illustrated).
2. Double catch basin sump with symmetrical wing basins each side.
3. Pipes can be placed in any wall except wall under wing basin.
4. Sump floor shall have a wood trowel finish and a minimum slope of 4:1 in all directions towards outlet pipe.
5. All reinforcing bars shall be #4, 18" O.C. both ways and 1 1/2" clear to inside of walls and outside of wing basin floor except as shown.
6. All concrete shall be Class A per MAG Section 725.
7. Construction joints shall be placed to meet field conditions.
8. $T = 6"$ when V is less than 8' and 8" when greater than 8', see section "D-D".
9. Gutter shall not be depressed from a straight line grade to create a bump.
10. All structural steel and castings to be painted one shop coat and two field coats of *INDUSTRION* OSHA safety green paint or approved equal.
11. See Standard Detail 11-040 for details common to all curb opening basins.

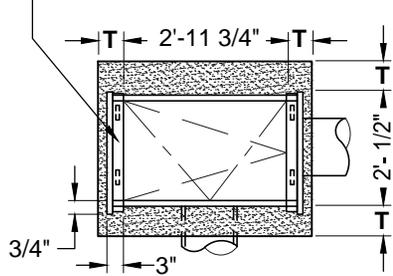
$V = 3'-3"$ MIN. WHEN $L = 3'$
 $V = 3'-5"$ MIN. WHEN $L = 6'$
 $V = 3'-7"$ MIN. WHEN $L = 10'$
 $V = 4'-0"$ MIN. WHEN $L = 17'$
 V DOUBLES FOR SYMMETRICAL WINGS.

12-27-18 (Under Review)

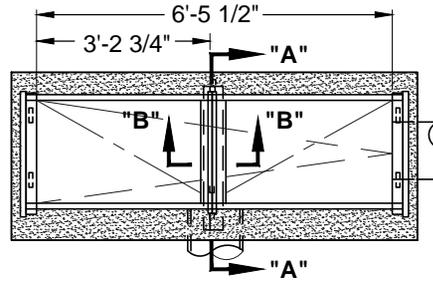
CITY OF YUMA
 CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 11-020
 TYPE D CATCH BASIN

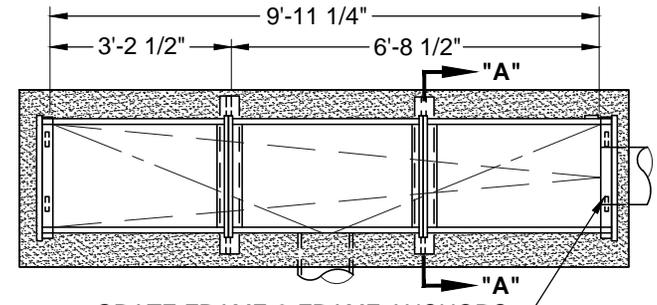
GRATE FRAME AND FRAME ANCHORS



SINGLE CATCH BASIN PLAN

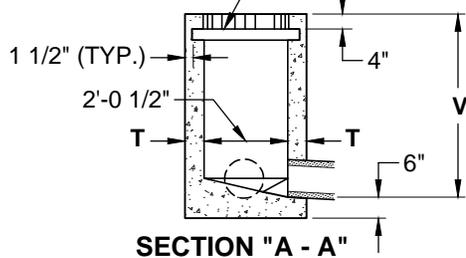


DOUBLE CATCH BASIN PLAN

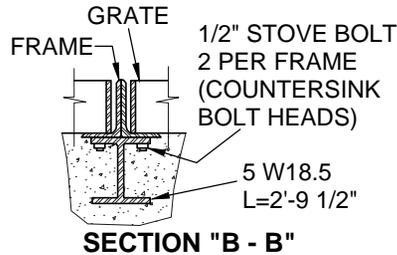


GRATE FRAME & FRAME ANCHORS
TRIPLE CATCH BASIN PLAN

GRATE SUPPORT FOR DOUBLE & TRIPLE ONLY SEE SECT. "B - B"

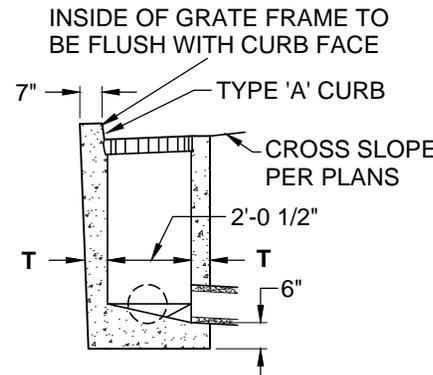


SECTION "A - A"

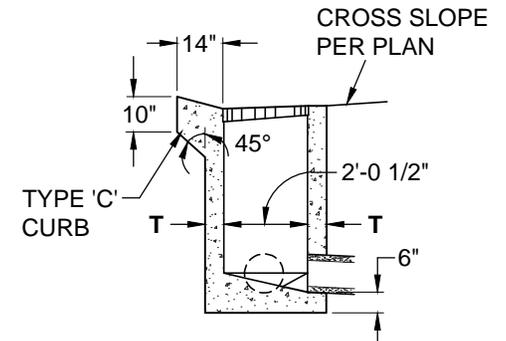


SECTION "B - B"

CATCH BASIN WALL THICKNESS
T = 6" IF V IS 4' OR LESS
T = 8" IF V IS 4' TO 8' (IF V EXCEEDS 8' A SPECIAL DESIGN IS REQUIRED)
V = 3'-0" UNLESS OTHERWISE NOTED



TYPE E CATCH BASIN IN VERTICAL CURB & GUTTER

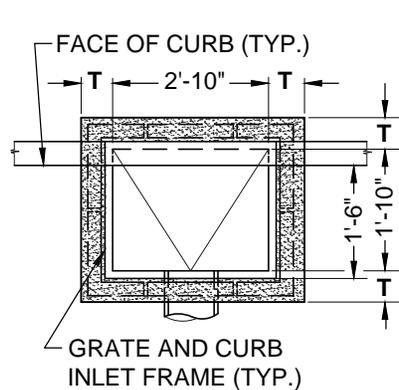


TYPE E CATCH BASIN IN ROLL CURB & GUTTER

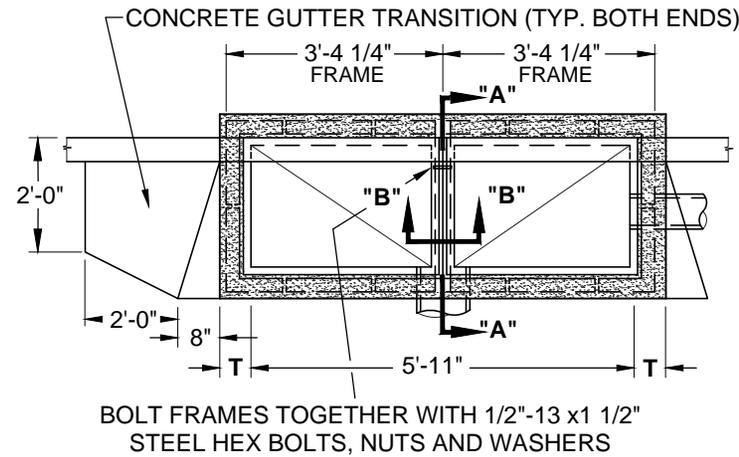
NOTES

1. All concrete shall be Class A per MAG Section 725.
2. Connector pipes may be placed in any wall as per plan.
3. Floor of basin shall be trowelled to a hard smooth surface and shall slope from all directions towards outlet pipe.
4. Connector pipe shall be trimmed to final shape and length before concrete is poured.
5. Plans should specify grate and invert elevations.
6. The Type E catch basin may be prefabricated providing that a shop drawing is approved by the city engineer prior to fabrication.
7. The frame and grate shall be Neenah R-3076, R-3077 or approved equal.
8. Gutter shall not be depressed from a straight line grade to create bump.
9. Catch basins shall contain #4 rebar 18" c to c in walls and floors.
10. All structural steel and castings shall be painted one shop coat and two field coats of *INDUSTRION* OSHA safety green paint or approved equal.

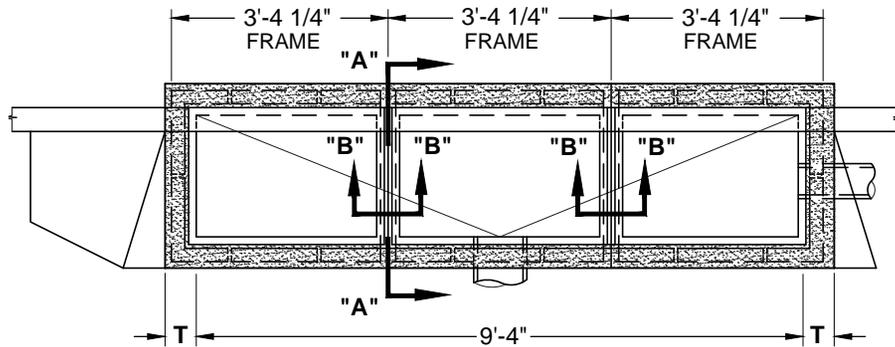
12-27-18 (Under Review)
 CITY OF YUMA
 CONSTRUCTION STANDARD DETAIL DRAWINGS
 STANDARD NO. 11-025
 TYPE E CATCH BASIN
 SINGLE, DOUBLE OR TRIPLE GRATE



SINGLE CATCH BASIN PLAN

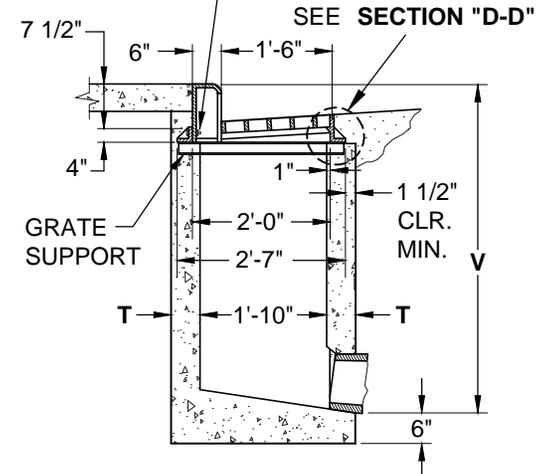


DOUBLE CATCH BASIN PLAN



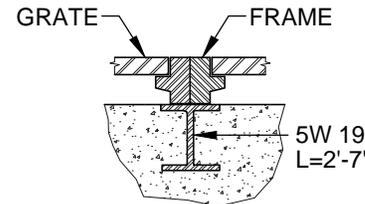
TRIPLE CATCH BASIN PLAN

BOLT CURB BOX TO FRAME WITH TWO 1/2"-13 x 2 1/2" LG. STEEL HEX HD. BOLTS, NUTS, AND WASHERS

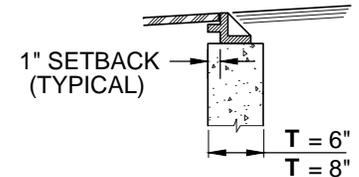


GRATE SUPPORT FOR DOUBLE AND TRIPLE COVERS SEE SECTION "B-B"

SECTION "A - A"



SECTION "B - B"



SECTION "D - D"

CATCH BASIN WALL THICKNESS

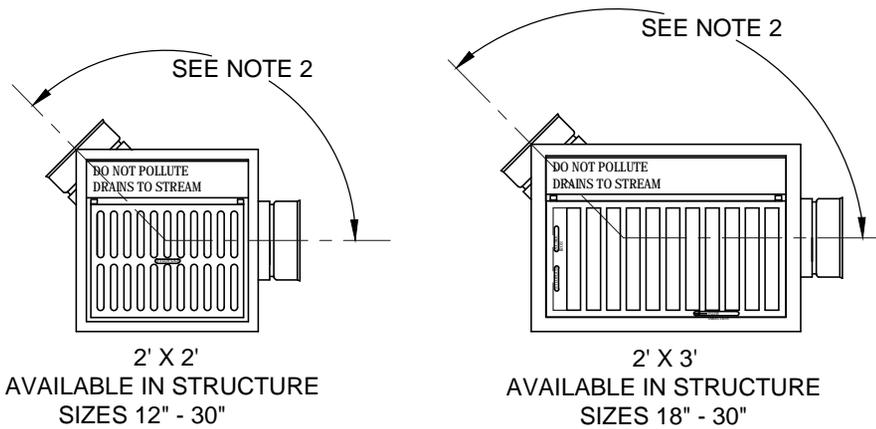
- T = 6" IF V IS LESS THAN 8'
- T = 8" IF V IS GREATER THAN 8'

NOTES

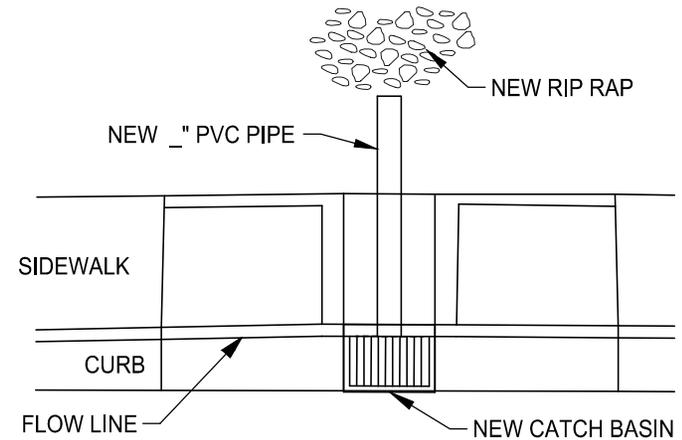
1. All concrete shall be Class A per MAG Section 725.
2. Connector pipes may be placed in any wall as per plan.
3. Floor of basin shall be trowelled to a hard surface and shall slope from all directions to outlet pipe.
4. Connector pipe shall be trimmed to the final shape and length before the concrete is poured.
5. The single frame & curb box shall be a Neenah Type R-3067 or approved equal. The double and triple frame and curb box shall be a Neenah Type R-3295-A, R-3295-B or approved equal. The grates shall be Type DL, LL, or approved equal.
6. Gutter shall not be depressed from a straight line grade to create bump.
7. Catch basins shall contain #4 Rebar placed 18" c to c in walls & floors.
8. All structural steel and castings to be painted one shop coat and two field coats of *INDUSTRION* OSHA safety green (or approved equal).

12-27-18 (Under Review)

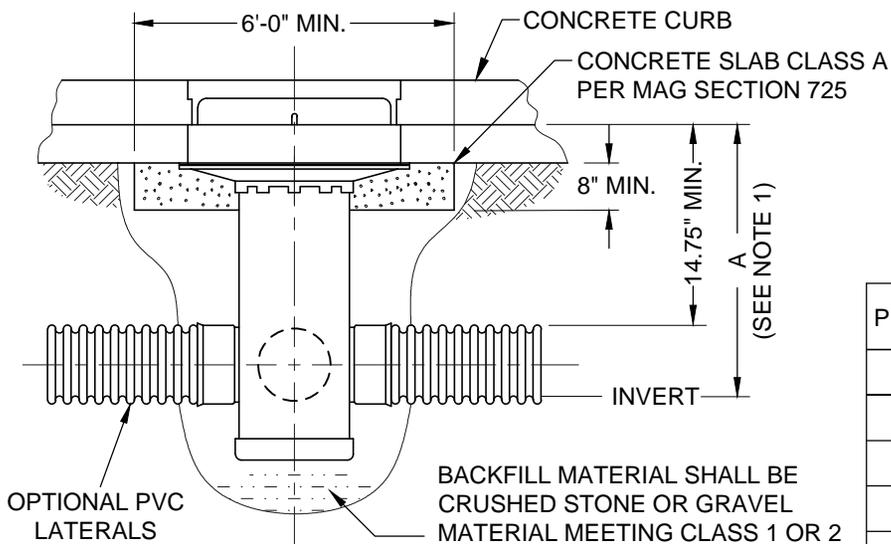
CITY OF YUMA
 CONSTRUCTION STANDARD DETAIL DRAWINGS
 STANDARD NO. 11-030
 TYPE F CATCH BASIN
 CURB OPENING WITH
 SINGLE, DOUBLE OR TRIPLE GRATE



AVAILABLE IN STRUCTURE SIZES



PLAN VIEW



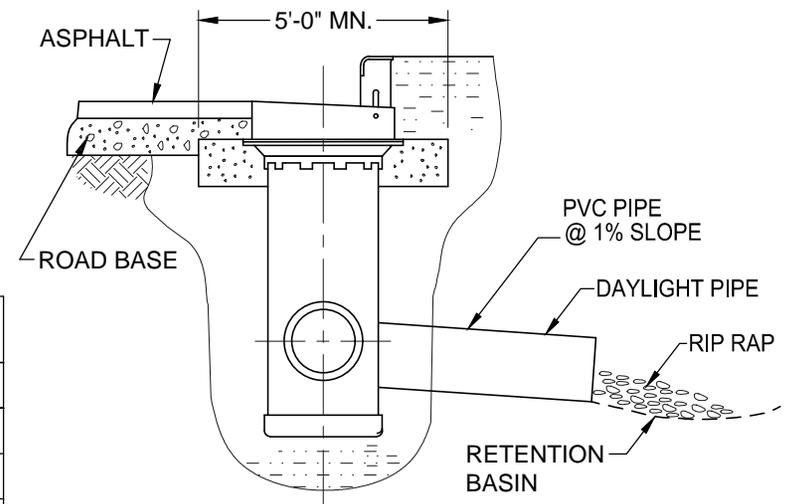
FRONT VIEW

BACKFILL MATERIAL SHALL BE CRUSHED STONE OR GRAVEL MATERIAL MEETING CLASS 1 OR 2 AS SPECIFIED IN ASTM D2321 BACKFILL MATERIAL SHALL BE PLACED UNIFORMLY IN 12" LIFTS AND COMPACTED

NOTES

1. Maximum recommended overall height 10'.
2. Adapters can be mounted at any angle 0° to 359°.
3. Use Nyloplast or approved equal

| PIPE SIZE | A (ADS N-12 PIPE) |
|-----------|----------------------|
| 4" | 20.00" |
| 6" | 22.00" |
| 8" | 24.00" |
| 10" | 26.00" |
| 12" | 29.00" |
| 15" | 32.00" |
| 18" | 35.00" |
| 24" | 42.00" |
| 30" | 48.00" |

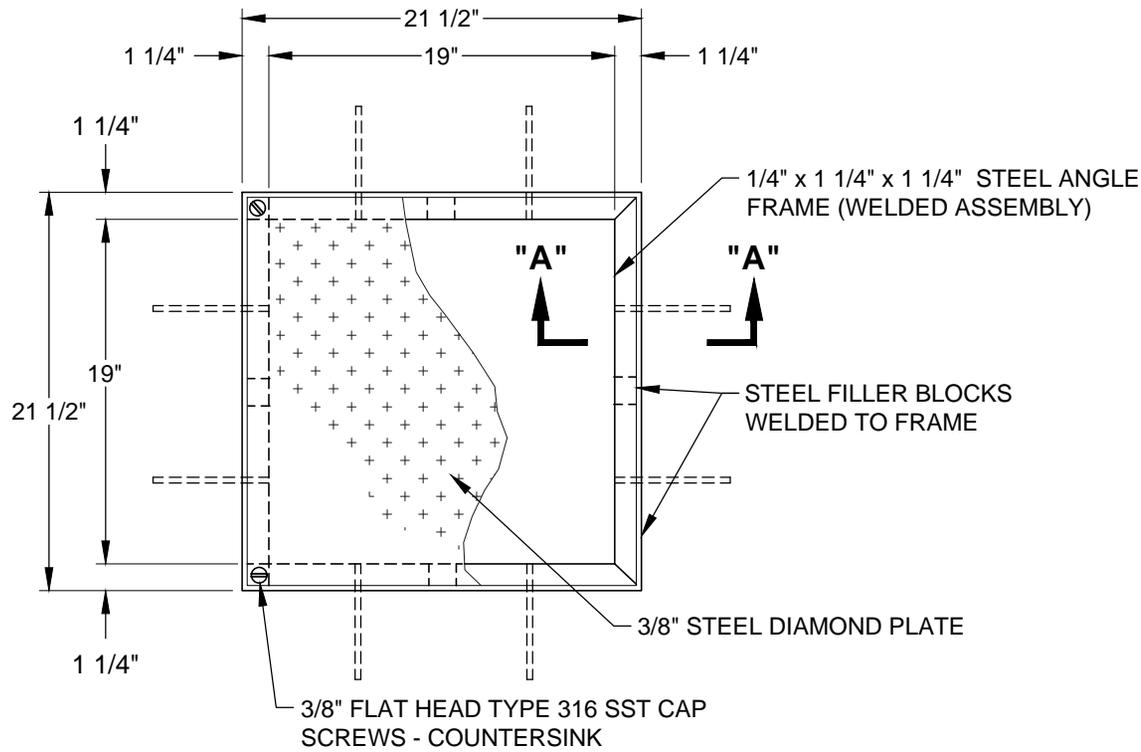


SIDE VIEW

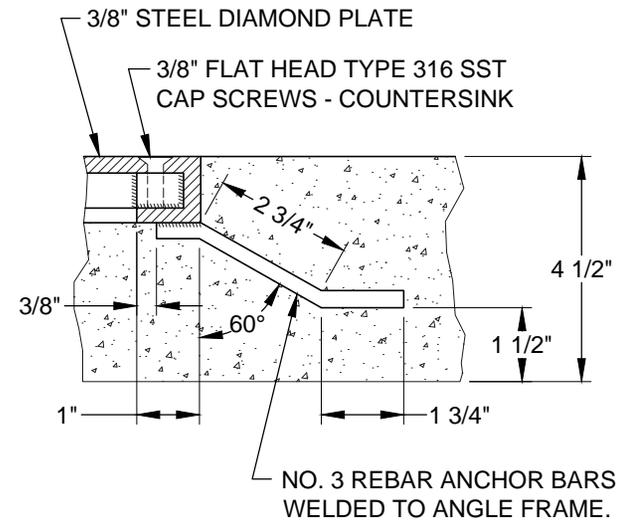
12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 11-035
CATCH BASIN WITH
HDPE STRUCTURE



PLAN VIEW



SECTION "A - A"

APPLIES TO:

- TYPE B CATCH BASIN (STD. DT. NO. 11-010)
- TYPE C CATCH BASIN (STD. DT. NO. 11-015)

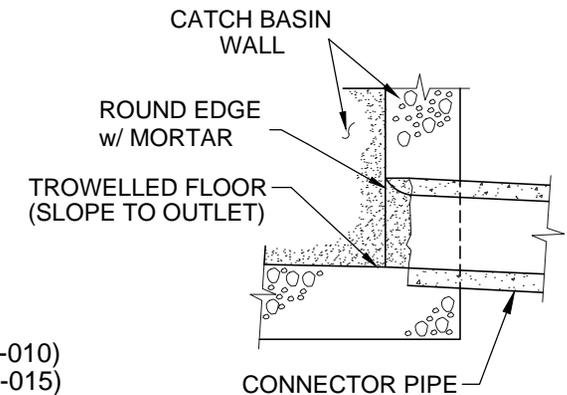
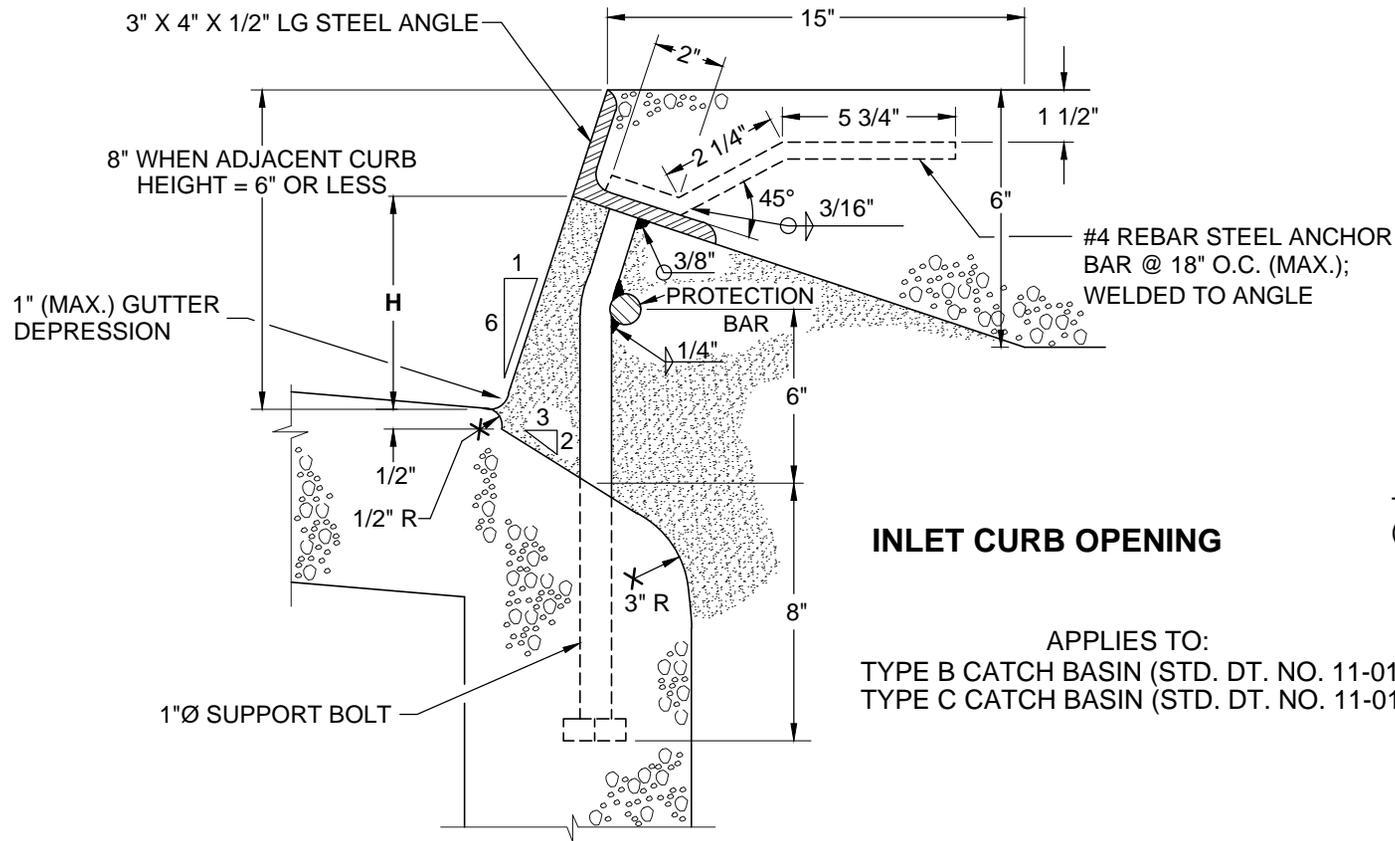
NOTE

1. All structural steel and castings to be painted one shop coat and two field coats of *INDUSTRION* OSHA safety green (or approved equal).

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 11-040
COVER FOR ACCESS OPENING
TYPE B AND C CATCH BASINS



PIPE ENTRY DETAIL

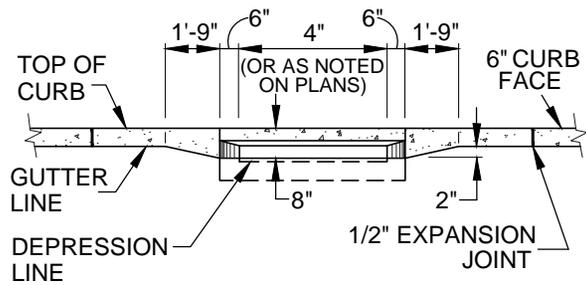
NOTES

1. Unless otherwise specified, curb opening height **H** shall be 5".
2. When curb opening height **H** exceeds 6" install 1"Ø steel protection bars. The protection bars shall extend the full length of the curb opening and shall be embedded a minimum of 3" at each end.
3. Install additional bars at 3 1/2" clear spacing above first bar when opening exceeds 13".
4. When curb opening length exceeds 6" install 1"Ø steel support bolts spaced no more than 4" o.c.
5. All structural steel and castings to be painted one shop coat and two field coats of *INDUSTRON* OSHA safety green (or approved equal).
6. All metal units shall be fabricated from structural steel except as noted. Structural steel shall be in accordance with ASTM A-36.
7. Welding shall be in accordance with standard welding specifications.
8. Connector pipe shall be trimmed to the final shape and length before the concrete is poured.

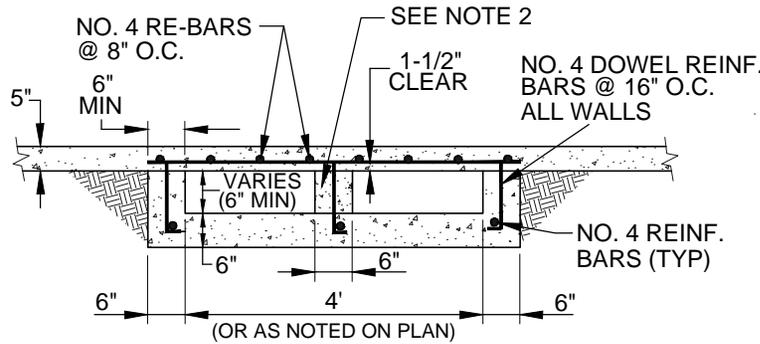
12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

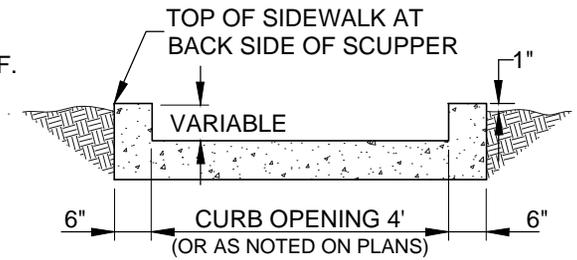
STANDARD NO. 11-045
CURB OPENING INLET AND
PIPE ENTRY DETAIL



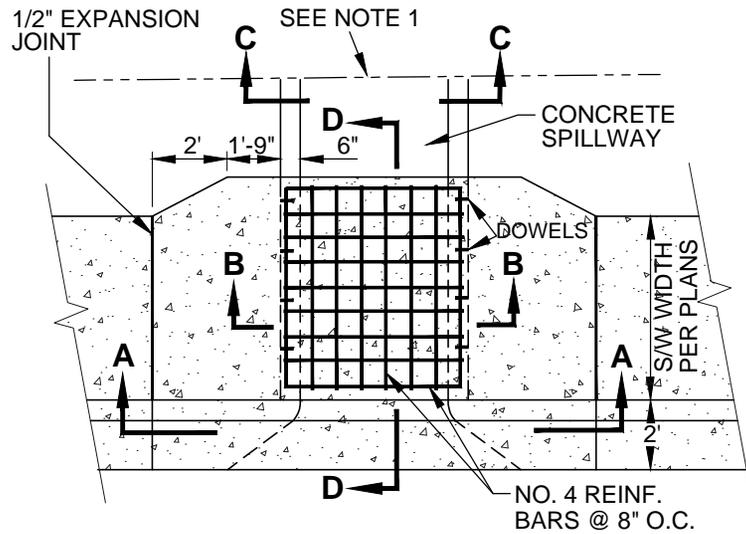
SECTION A-A



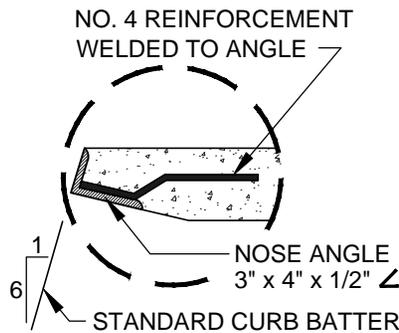
SECTION B-B



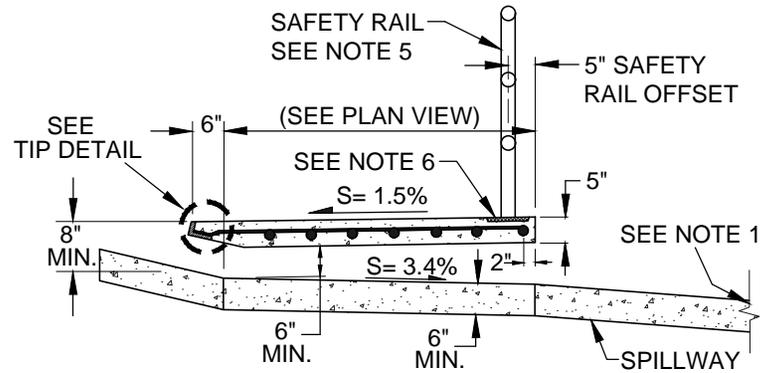
SECTION C-C SPILLWAY



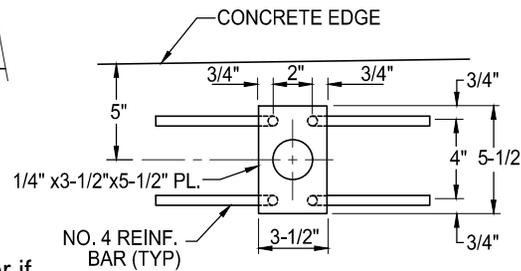
SCUPPER PLAN VIEW



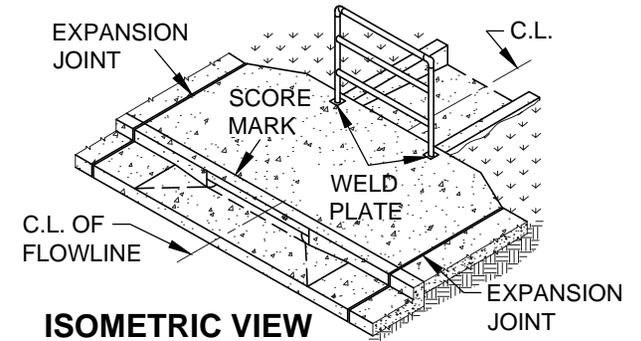
TIP DETAIL



SECTION D-D



WELD PLATE



ISOMETRIC VIEW

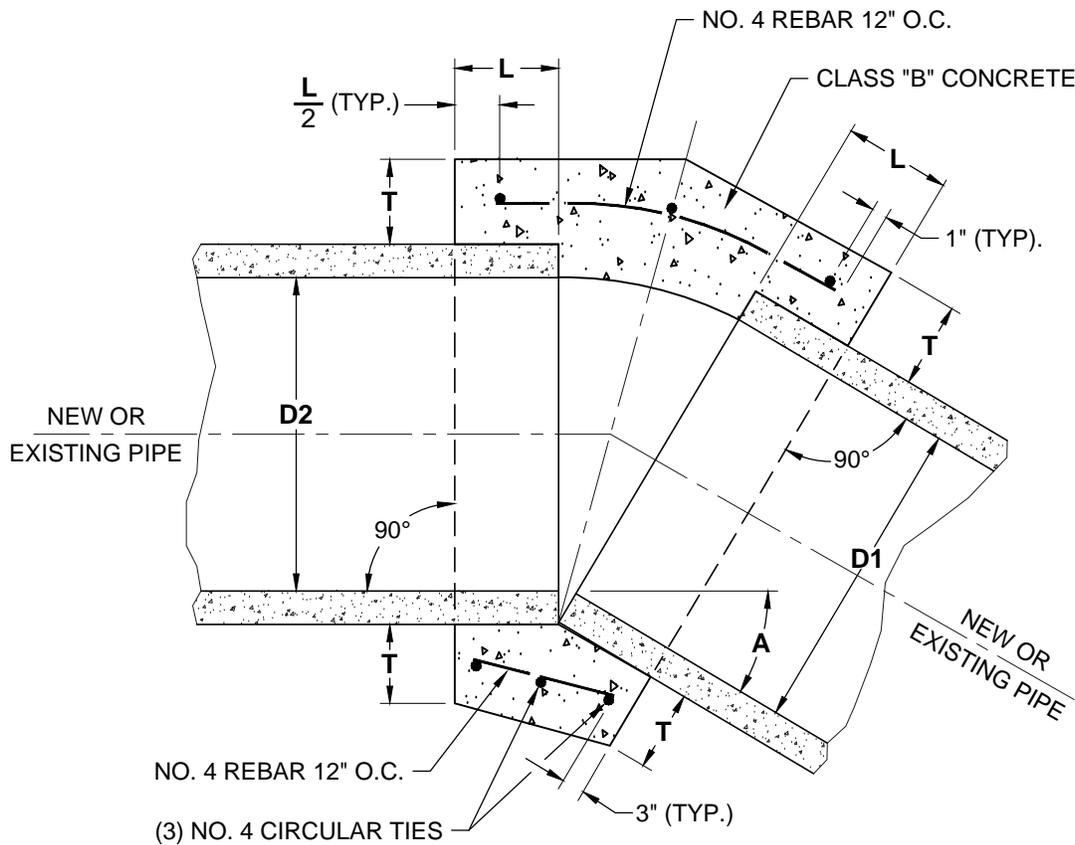
NOTES

1. Transition to spillway/channel as per approved plans.
2. A center wall shall be installed in scuppers wider than 4' or if more than 1 scupper is built in series.
3. Expansion joint filler shall be 1/2" bituminous type preformed expansion joint filler, ASTM D-1751.
4. Concrete for the scupper shall be Class A per Section 725. Concrete for the spillway shall be Class A or Class B.
5. Concrete scupper to be used with City Engineer's approval only.
6. Safety rail shall be continuous between the spillway exterior walls.
7. Use weld plates for safety rail anchors located in the 5" thick concrete.

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 11-050
CONCRETE SCUPPER



A = ANGLE OF DEFLECTION

| TABLE | | |
|-------|-------|-----|
| D | L | T |
| 12" | 1.0' | 4" |
| 18" | 1.0' | 5" |
| 24" | 1.0' | 6" |
| 36" | 1.5' | 8" |
| 48" | 1.5' | 10" |
| 57" | 1.5' | 10" |
| 60" | 1.75' | 11" |
| 66" | 1.75' | 11" |

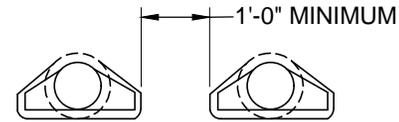
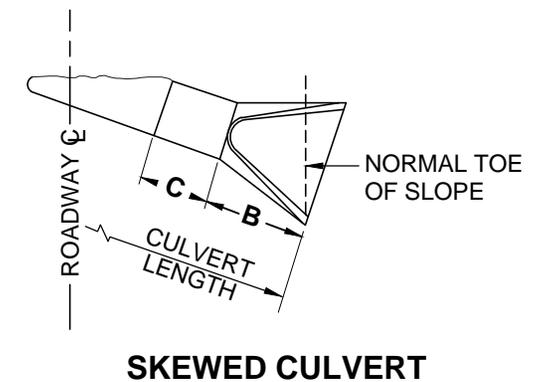
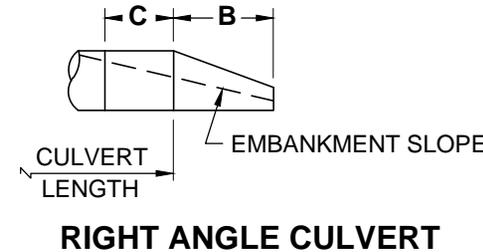
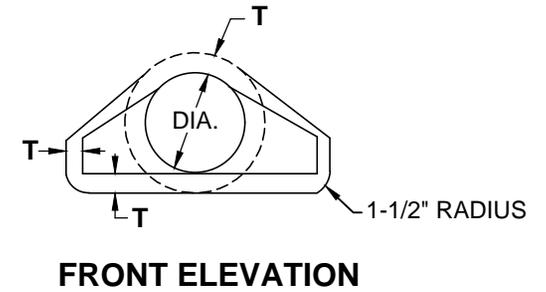
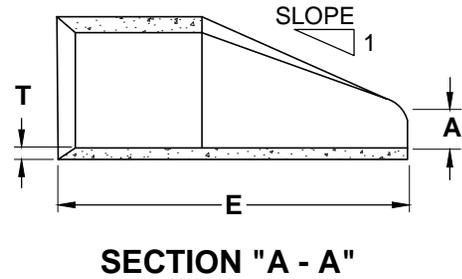
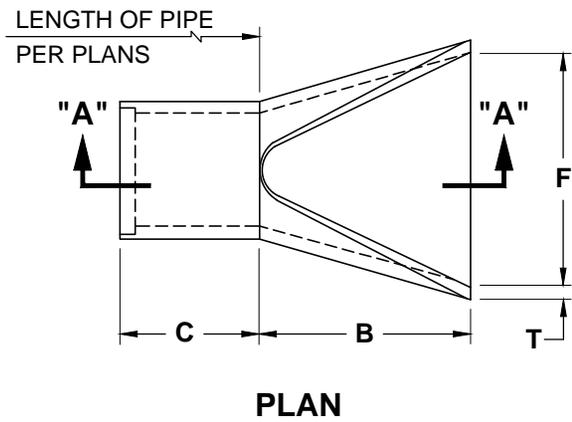
NOTES

1. A concrete collar is required where pipes of different diameters or materials are joined, or where the changes in alignment or grade exceed what is allowed for ordinary joints.
2. Where pipes of different diameters are joined with a concrete collar dimensions L and T should be those of the larger pipe.
3. For pipe sizes not listed use next size larger.
4. Omit reinforcing on pipe sizes 24" and smaller.
5. Where reinforcing is required the diameter of the circular ties shall be outside diameter + T.
6. Field closures of pipes of the same diameter and without changes in grade or alignment, shall be made with a concrete collar.
7. Concrete pipe collars shall only be used with the approval of the City Engineer.

12-27-18 (Under Review)

CITY OF YUMA
 CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 11-055
 CONCRETE PIPE COLLAR



| PIPE DIA. | APPROX. WEIGHT | DIMENSIONS - INCHES | | | | | | APPROX. SLOPE |
|-----------|----------------|---------------------|---------|---------|---------|---------|-----|---------------|
| | | T | A | B | C | E | F | |
| 24" | 1520LBS | 3" | 9-1/2" | 43-1/2" | 30" | 73-1/2" | 48" | 3" |
| 27" | 1930LBS | 3-1/4" | 10-1/2" | 49-1/2" | 24" | 73-1/2" | 54" | 3" |
| 30" | 2190LBS | 3-1/2" | 12" | 54" | 19-3/4" | 73-3/4" | 60" | 3" |
| 36" | 4100LBS | 4" | 15" | 63" | 34-3/4" | 97-3/4" | 72" | 3" |
| 42" | 5380LBS | 4-1/2" | 21" | 63" | 35" | 98" | 78" | 3" |
| 48" | 6550LBS | 5" | 24" | 72" | 26" | 98" | 84" | 3" |
| 54" | 8240LBS | 5-1/2" | 27" | 65" | 33-1/4" | 98-1/4" | 90" | 2-1/2" |

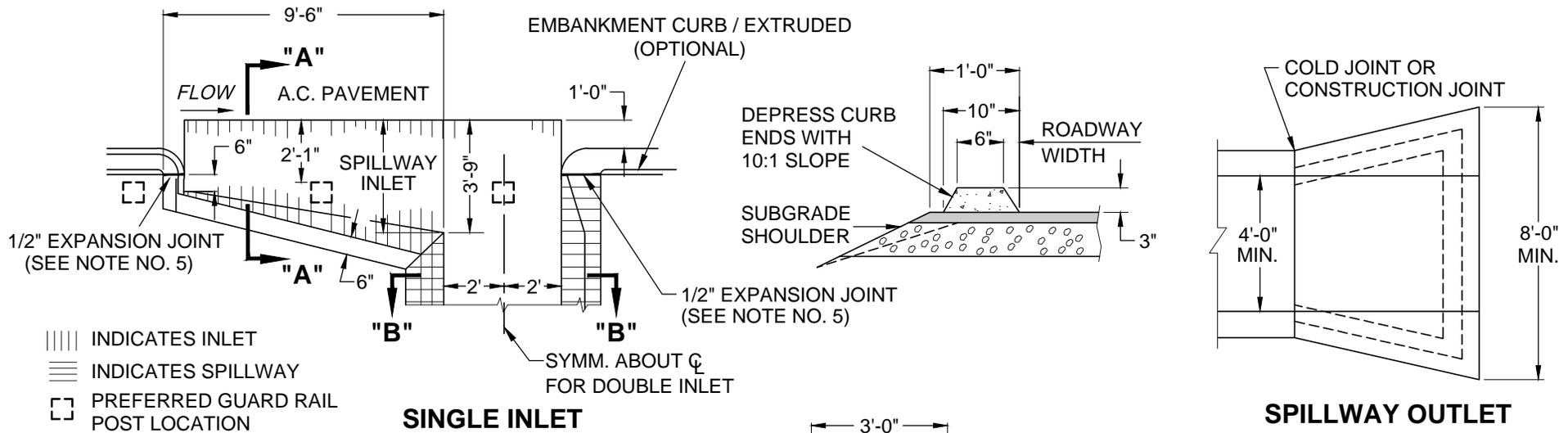
NOTES

1. Design of end section shall conform to standards for reinforced concrete pipe.
2. End section joint conformation shall match the pipe joints.
3. Embankment slope shall be warped to match slope of end section.
4. Culvert length is as shown on plans.
5. Required grates with spacing no less than 4" vertically aligned.

12-27-18 (Under Review)

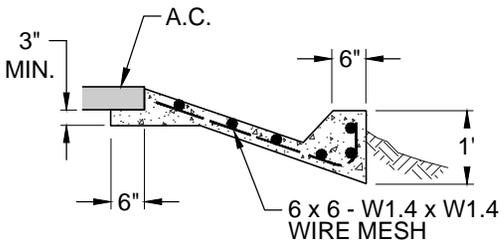
CITY OF YUMA
 CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 11-060
 REINFORCED CONCRETE PIPE
 END SECTION

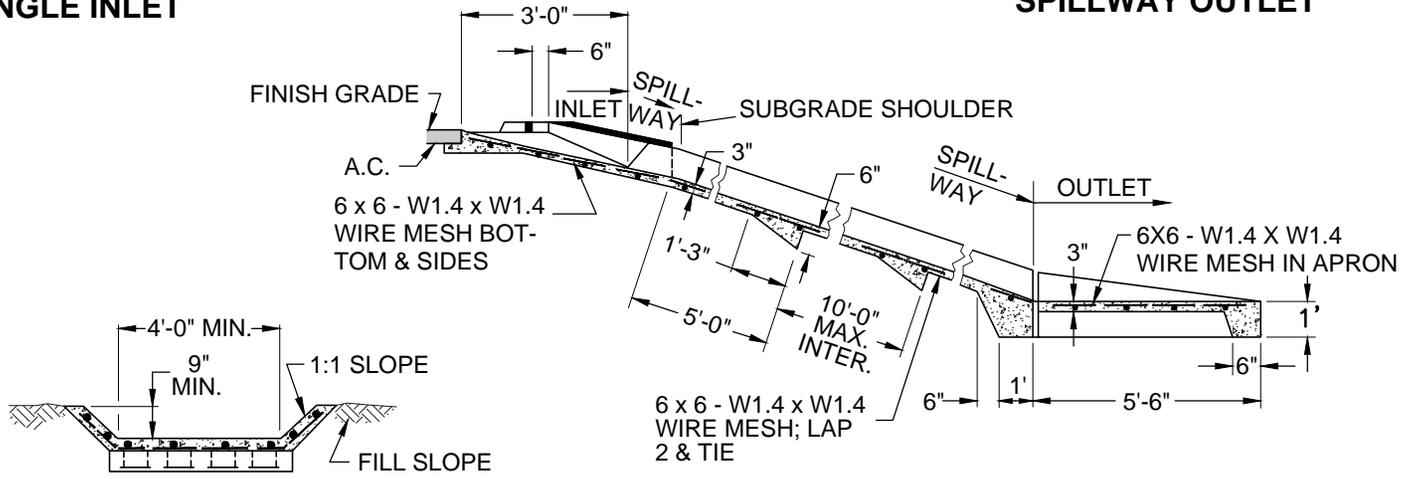


SINGLE INLET

SPILLWAY OUTLET



SECTION "A - A"



SECTION "B - B"

SECTION ON SPILLWAY ϕ

NOTES

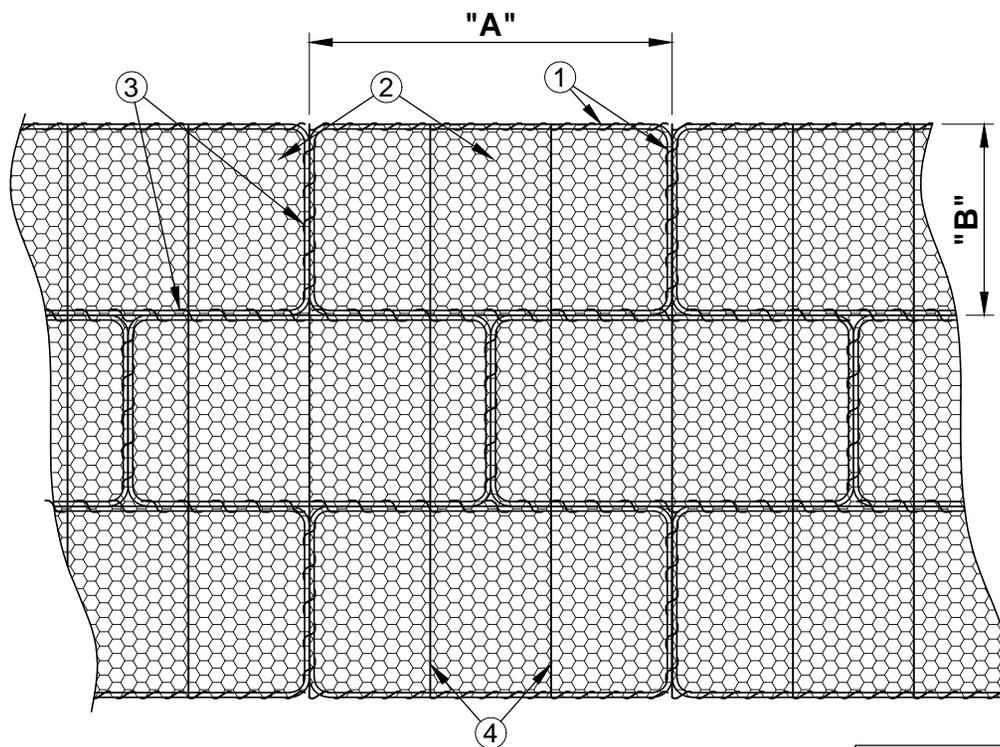
1. Where rock is encountered the outlet may be omitted with the approval of the city engineer.
2. All portions of the spillway shall be trowel finished.
3. Concrete for spillway inlet, spillway and outlet shall be Class B per MAG Section 725.
4. When the outlet is used, the wire mesh shall extend through the joint into the outlet in lieu of bending into the key.
5. The one-half inch joint filler shall be the bituminous type meeting AASHTO M-33 or ASTM D-1751 specifications and shall extend the full depth of the concrete.

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

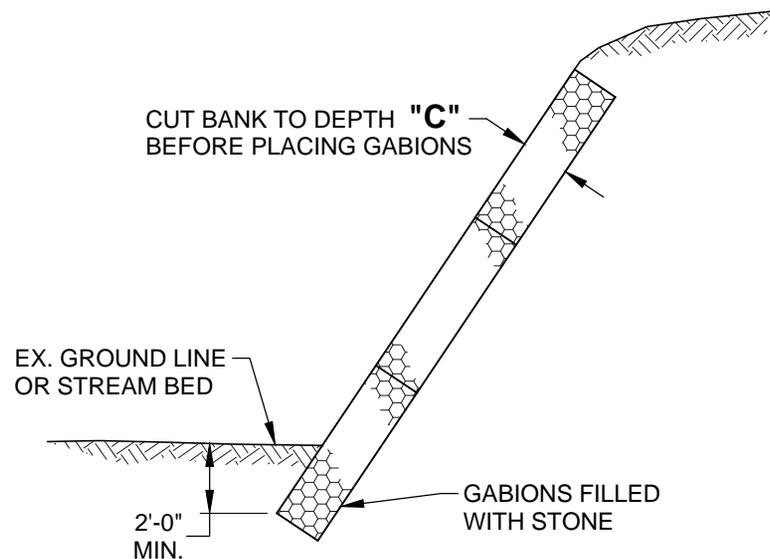
STANDARD NO. 11-065
SPILLWAY INLET AND OUTLET

TYPICAL GABIONS



PLAN

- ① HEAVY GAUGE FRAME WIRE.
- ② HEAVY GAUGE TRIPLE-TWIST HEXAGONAL MESH (OR EQUAL) FASTENED TO FRAME WIRE.
- ③ CONTINUOUS HEAVY GAUGE WIRE WRAPPED AROUND FRAMES TO FASTEN GABIONS TO EACH OTHER.
- ④ PARTITIONS TO PREVENT SHIFTING, NORMALLY ONE PER 3' LENGTH. INSTALLED AT FACTORY.



ELEVATION

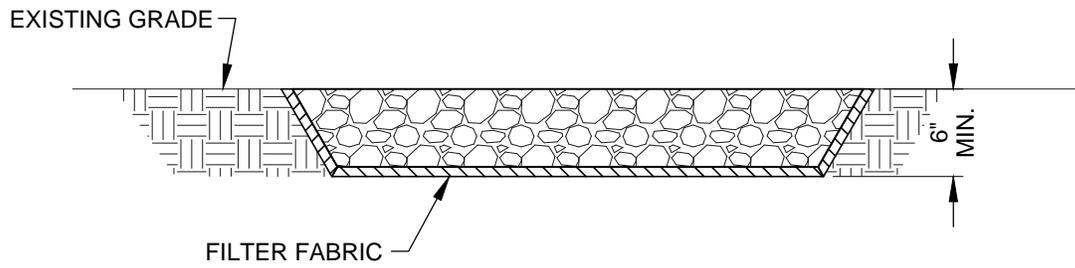
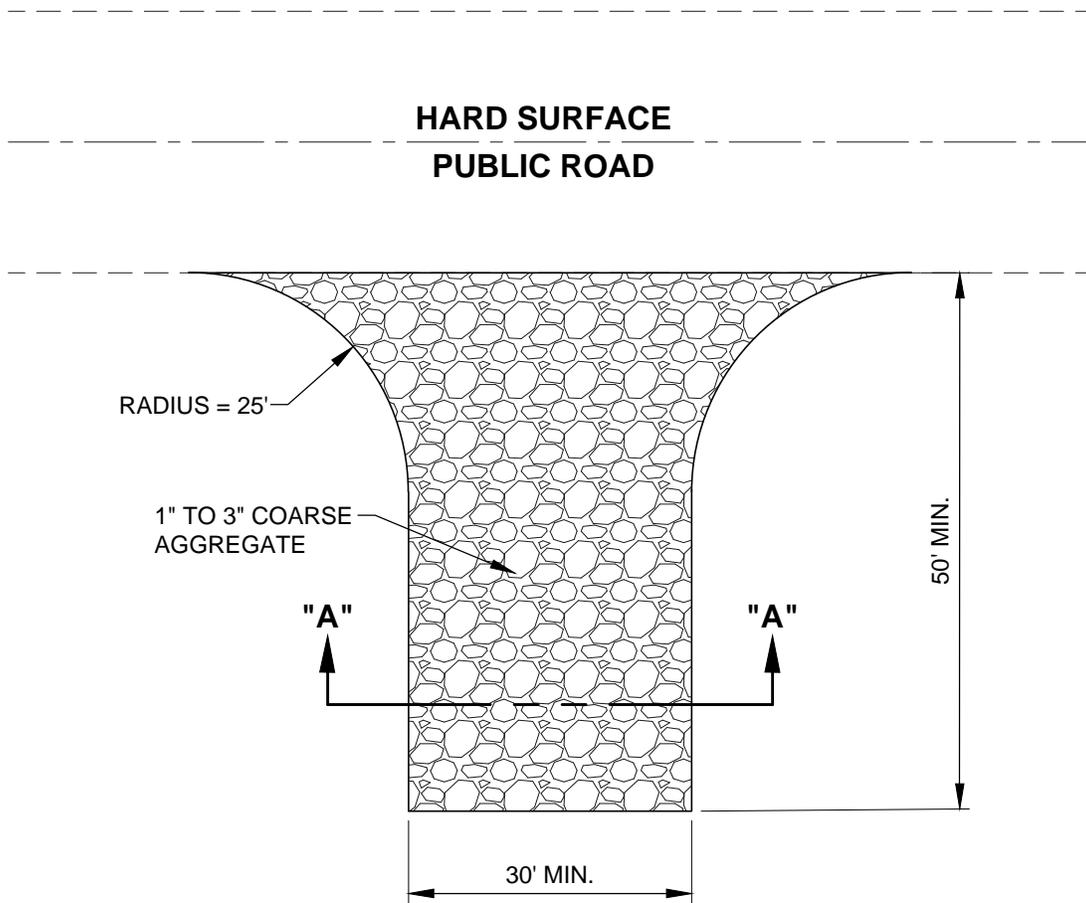
| NOMINAL SIZE COMBINATIONS | | |
|---------------------------|--------------|--------------|
| LENGTH "A" | WIDTH "B" | DEPTH "C" |
| 6' | 3' | 1' 1.5' 3' |
| 9' | 3' | 1' 1.5' 3' |
| 12' | 3' | 1' 1.5' 3' |

Other sizes available from manufacturer.

12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 11-070
EROSION PROTECTION / GABIONS



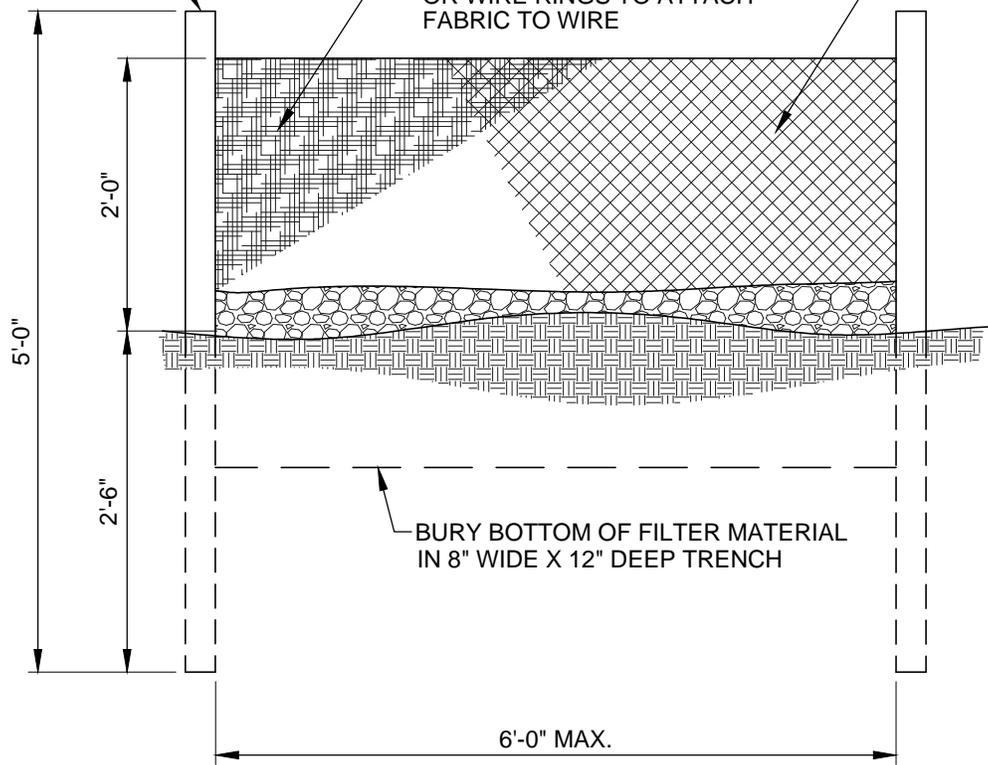
SECTION "A - A"

| |
|--|
| 12-27-18 (Under Review) |
| CITY OF YUMA CONSTRUCTION STANDARD DETAIL DRAWINGS |
| STANDARD NO. 11-075 STABILIZED CONSTRUCTION EXIT/ENTRANCE |

2" X 4" WOOD POSTS,
STEEL POSTS, OR
EQUIVALENT

FILTER FABRIC MATERIAL
60' LONG ROLLS. USE STAPLES
OR WIRE RINGS TO ATTACH
FABRIC TO WIRE

2' X 2" 14 GA. WIRE
FABRIC OR EQUIV.



BURY BOTTOM OF FILTER MATERIAL
IN 8" WIDE X 12" DEEP TRENCH

6'-0" MAX.

FILTER FABRIC MATERIAL
OR EQUIVALENT

2' X 2" 14 GA. WIRE FABRIC
OR EQUIVALENT

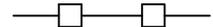
PROVIDE 3/4" - 1 1/2" WASHED
GRAVEL BACKFILL IN TRENCH
& ON BOTH SIDES OF FILTER
FABRIC ON THE SURFACE

12"

8"

SYMBOL

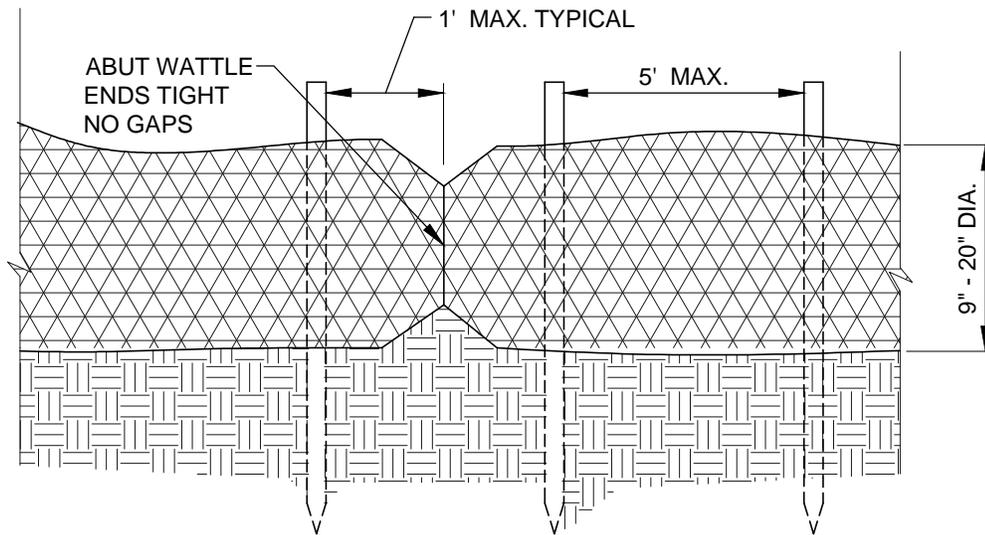
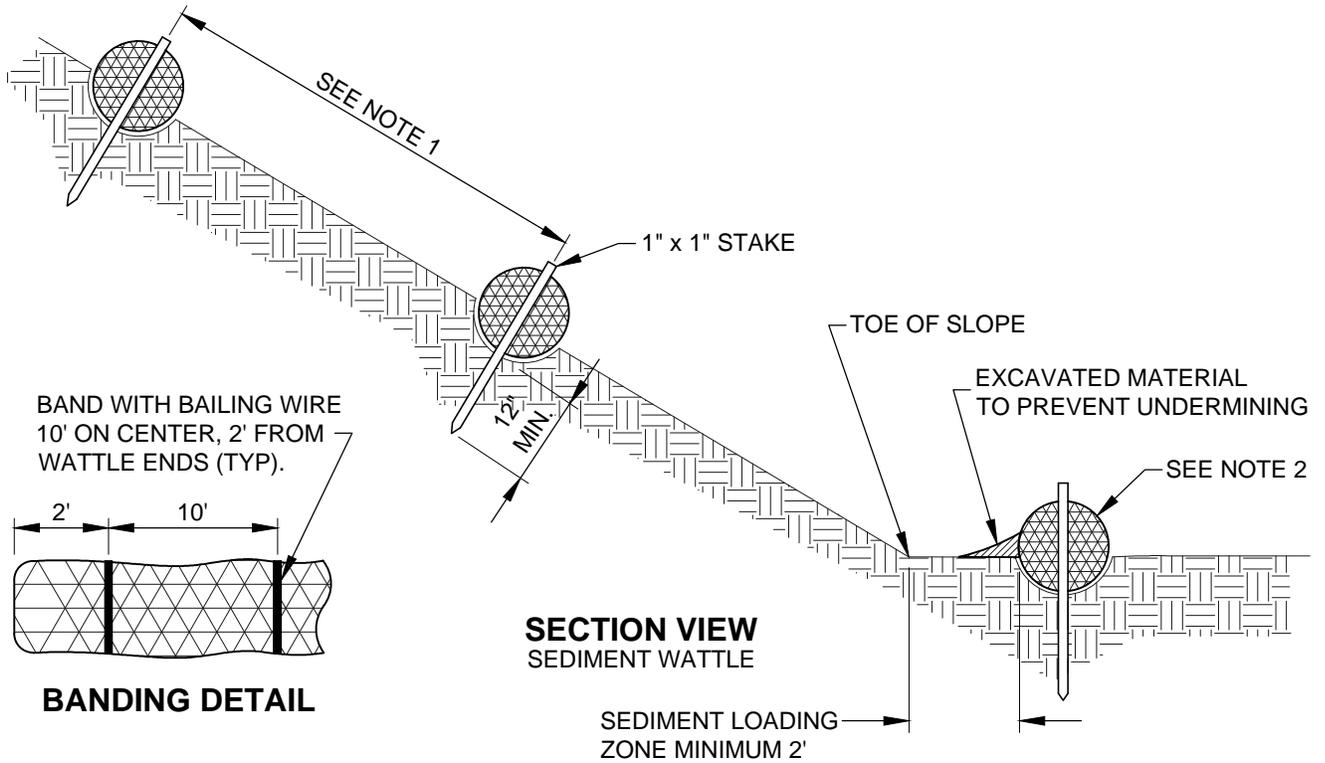
S.F.



12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 11-080
SILT FENCE

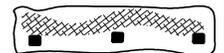


NOTES

| 1. Slope Ratio | Spacing Interval |
|----------------|------------------|
| 2:1 | 10' |
| 3:1 | 20' |
| 4:1 | 30' |
| 5:1 | 40' |

2. Bottom wattle to be 20" min. diameter.
Silt fence may be used in place of
bottom wattle.

SYMBOL
SL-1 & SL-2

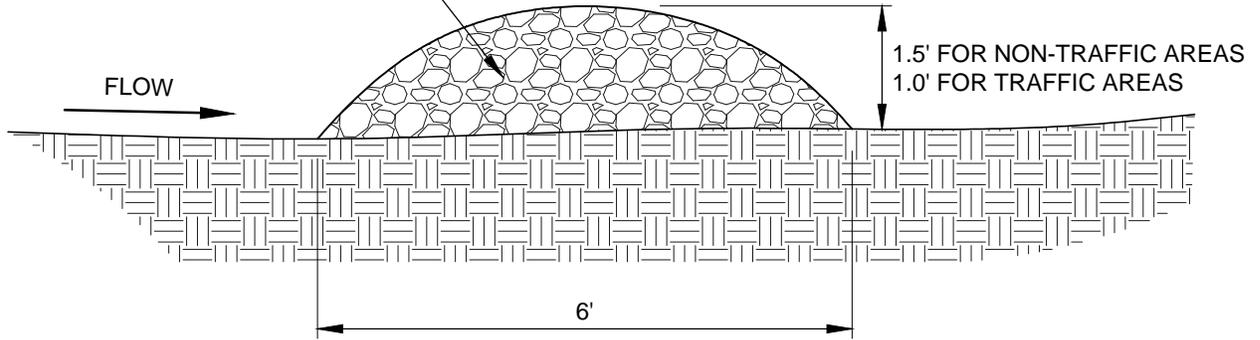


12-27-18 (Under Review)

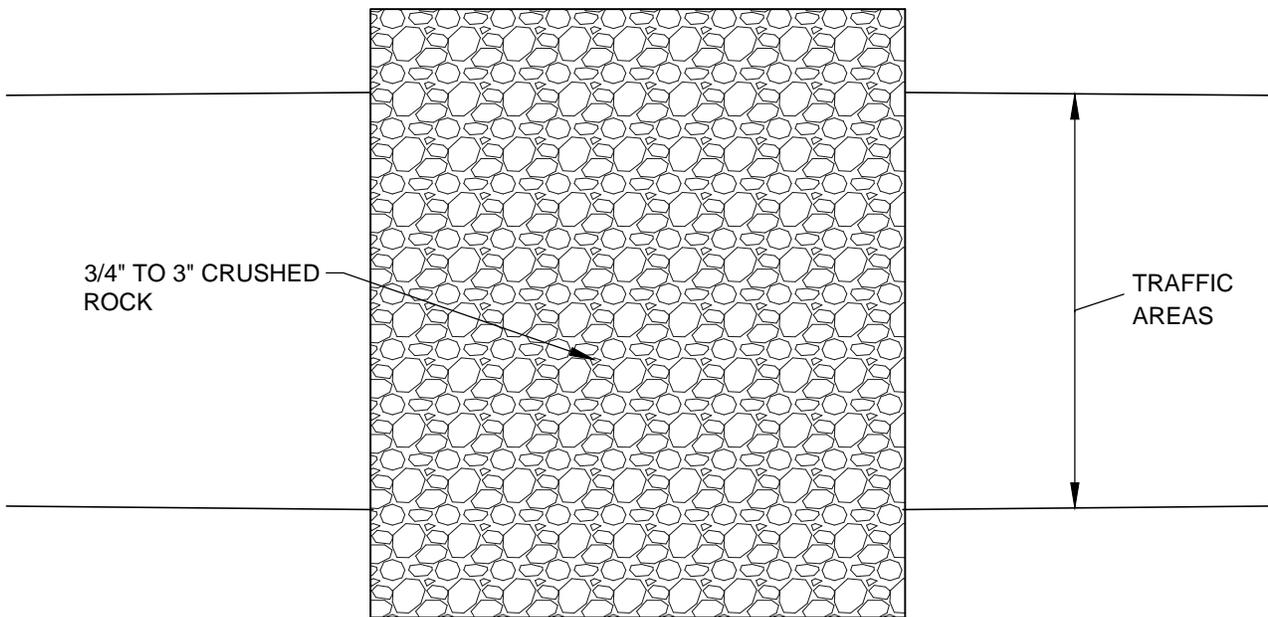
CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 11-085
SEDIMENT WATTLE

3" TO 5" ROCK
(FOR CONCENTRATED FLOW)
3/4" TO 3" CRUSHED ROCK
(FOR SHEET FLOW)



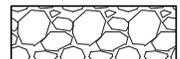
SECTIONAL ELEVATION



WOVEN WIRE SHEATING
(POULTRY NETTING) IN AREAS
OF CONCENTRATED FLOW TO
KEEP ROCK IN PLACE. THE
WIRE SHOULD BE GALVANIZED
20 GAUGE WITH 1" DIAMETER
HEXAGONAL MESH.

PLAN VIEW

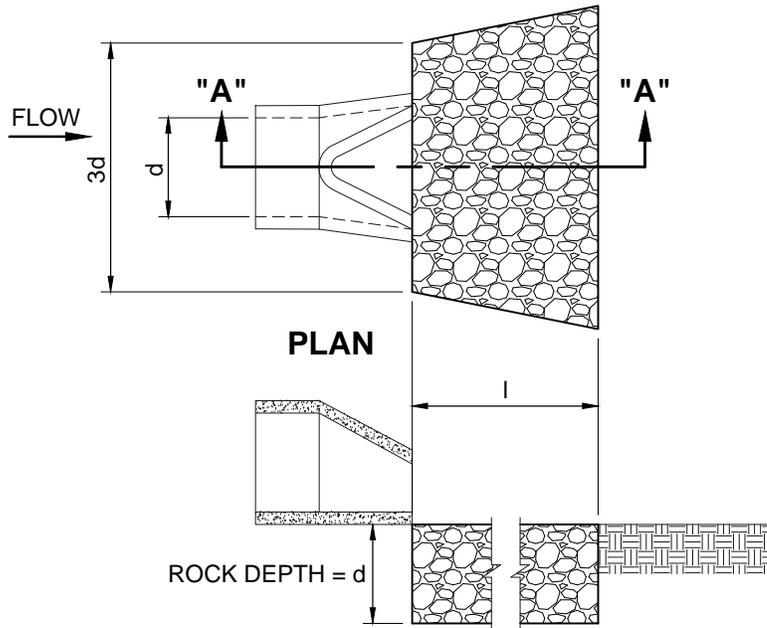
SYMBOL
GFB



12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 11-090
GRAVEL FILTER BERM

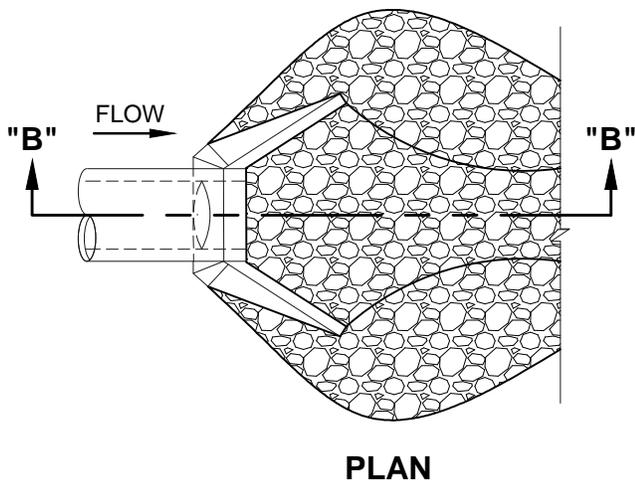


I = LENGTH OF APRON
d = INSIDE PIPE DIAMETER

PLAN

SECTION "A - A"

PIPE OUTLET TO FLAT AREA WITH NO DEFINED CHANNEL



PLAN

SECTION "B - B"

PIPE OUTLET TO WELL-DEFINED CHANNEL

NOTES

1. Apron lining may be rip-rap, grouted rip-rap, or concrete.
2. Whereas technical design procedures exist for determining I, it is recommended to use the following table for temporary rock outlet protection.

| PIPE SIZE INCH | AVERAGE ROCK DIA INCH | I FEET |
|----------------|-----------------------|--------|
| 12 | 6 | 12 |
| 15 | 10 | 18 |
| 18 | 12 | 21 |
| 21 | 15 | 25 |
| 24 | 15 | 30 |

3. $d = 1.5$ times the maximum stone diameter but not less than 6 inches.

PIPE OUTLET CONDITIONS

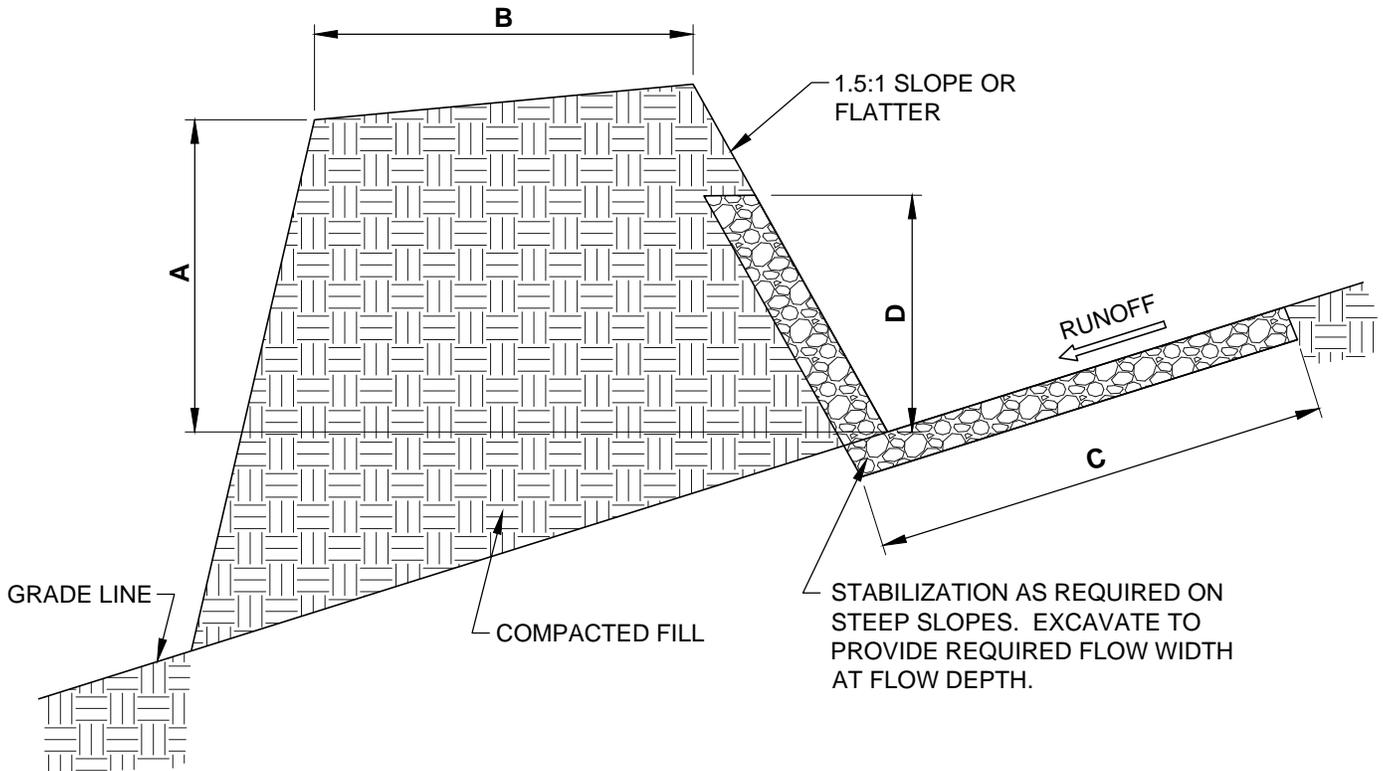
SYMBOL



12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 11-095
PIPE OUTLET PROTECTION



RECOMMENDED STANDARDS

| REQUIREMENTS BASED ON UPSTREAM DRAINAGE AREA | | |
|--|-----------------------------|---------------------------|
| | DIKE 1 (5 ACRES OR LESS) | DIKE 2 (5 TO 10 ACRES) |
| A-DIKE HEIGHT | 18" | 36" |
| B-DIKE WIDTH | 24" | 36" |
| C-FLOW WIDTH | 4' | 6' |
| D-FLOW DEPTH | 8" | 15" |

NOTES

1. All dikes should be compacted by earth moving equipment.
2. All dikes should have positive drainage downstream.
3. Top width may be wider and side slopes may be flatter if desired to facilitate crossing by construction traffic.
4. Stone, recycled concrete or equivalent should be applied in a layer at least 8 inches thick and be pressed into the soil top with construction equipment.

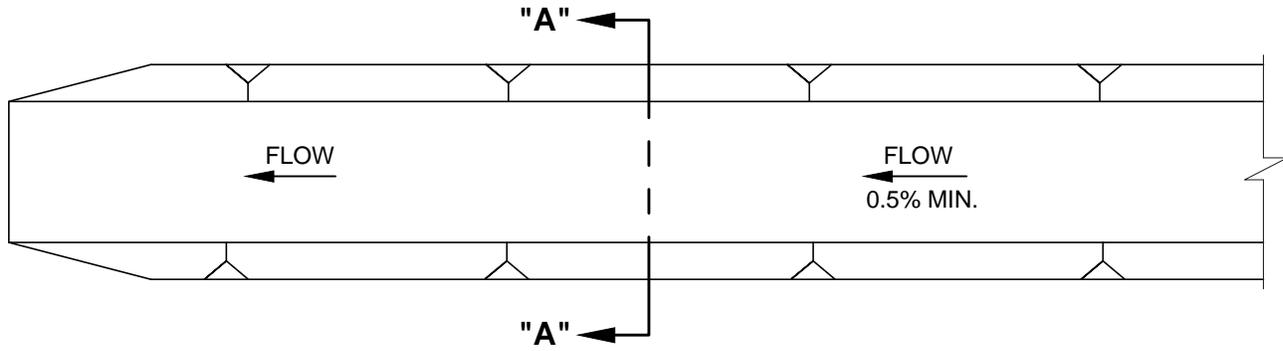
SYMBOL

TDD

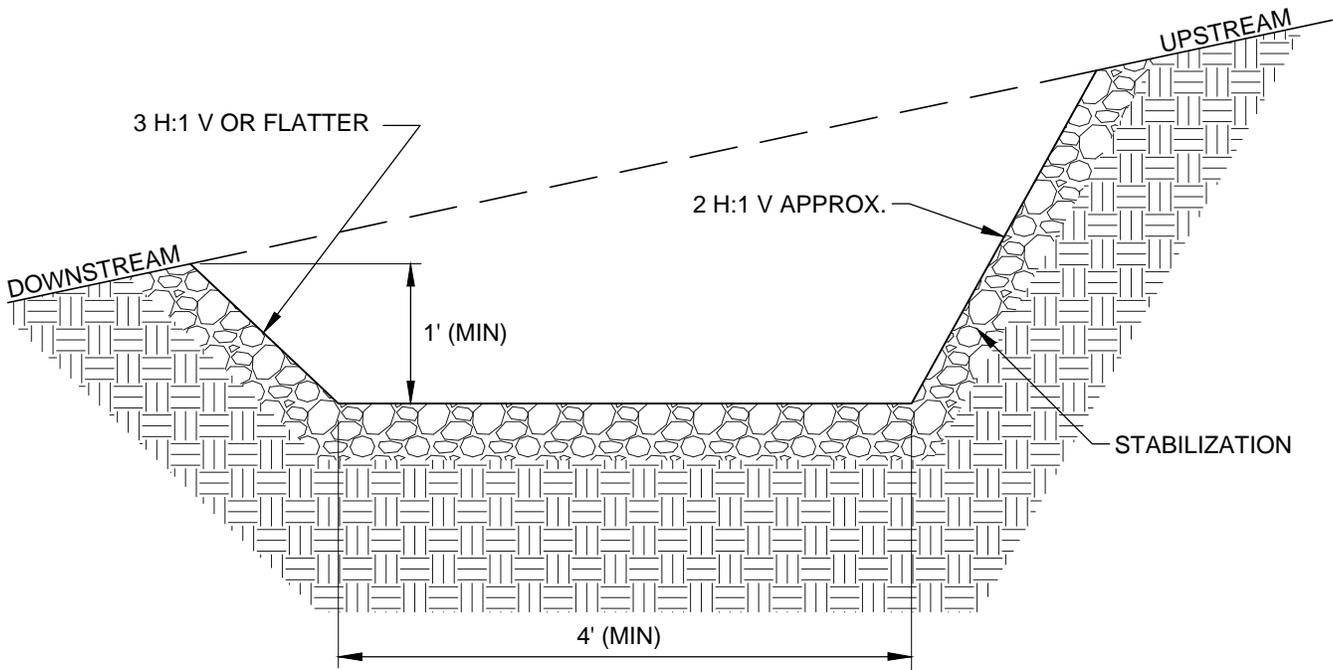
12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 11-100
TEMPORARY DIVERSION DIKE



PLAN VIEW



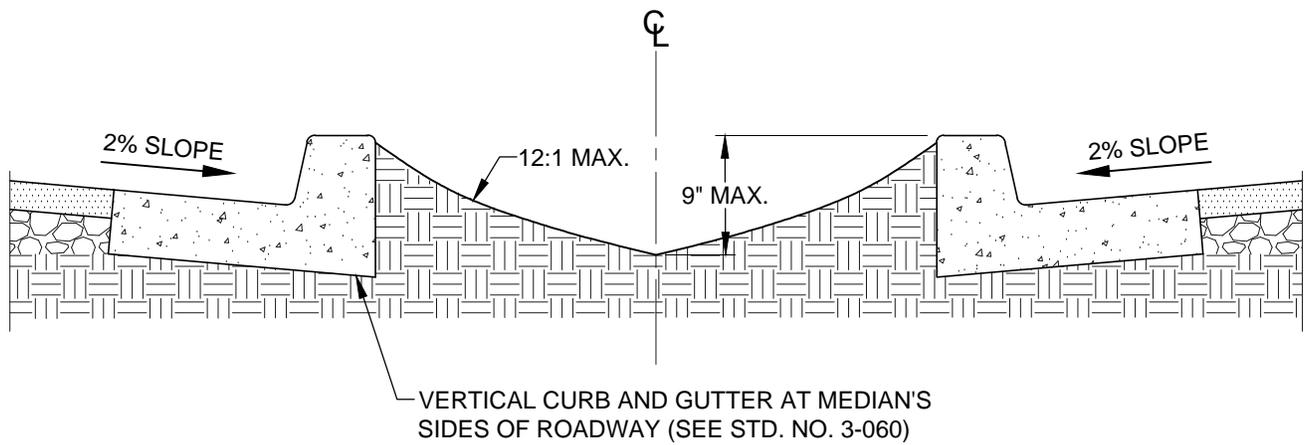
SECTION "A - A"

| CHANNEL GRADE % | DRAINAGE AREA < 5 ACRES | DRAINAGE AREA 5-10 ACRES |
|-----------------|-------------------------|--------------------------|
| 0.5-1.0 | 4" RIP-RAP | 4" RIP-RAP |
| 1.1-2.0 | 6" RIP-RAP | 6" RIP-RAP |
| 2.1-3.0 | 8" RIP-RAP | 6-12" RIP-RAP |
| 3.1-5.0 | 8-12" RIP-RAP | PER PLANS |

SYMBOL



12-27-18 (Under Review)
 CITY OF YUMA
 CONSTRUCTION STANDARD DETAIL DRAWINGS
 STANDARD NO. 11-105
 TEMPORARY DRAINAGE SWALE



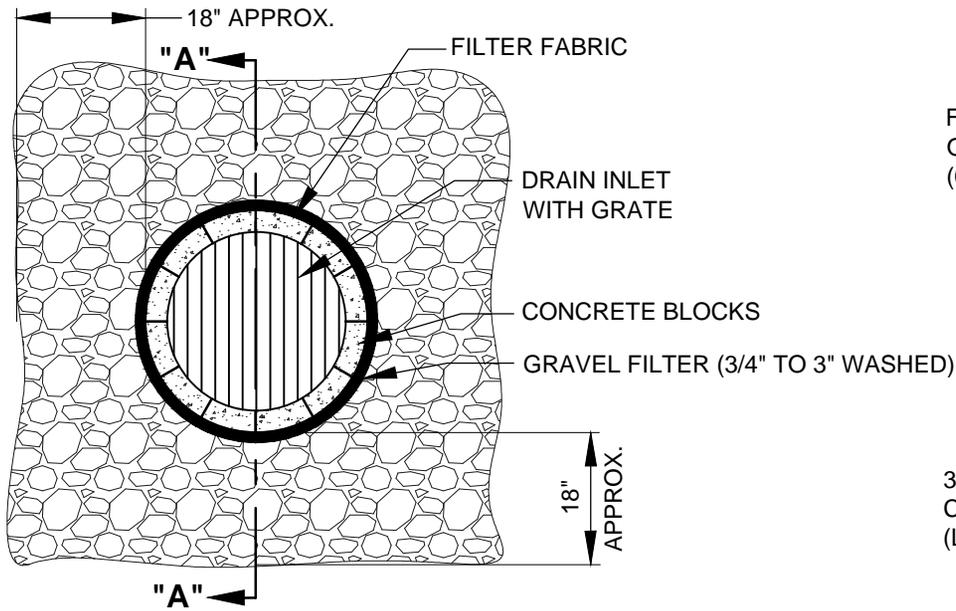
NOTES

1. Minimum width for a landscaped median is (8) feet.
2. All concrete shall be Class B.
3. Provide curb cuts with appropriate longitudinal grade for roadway drainage.
4. Provide vertical curb per standard 3-075 on other side of roadway.
5. Median shall not be compacted.

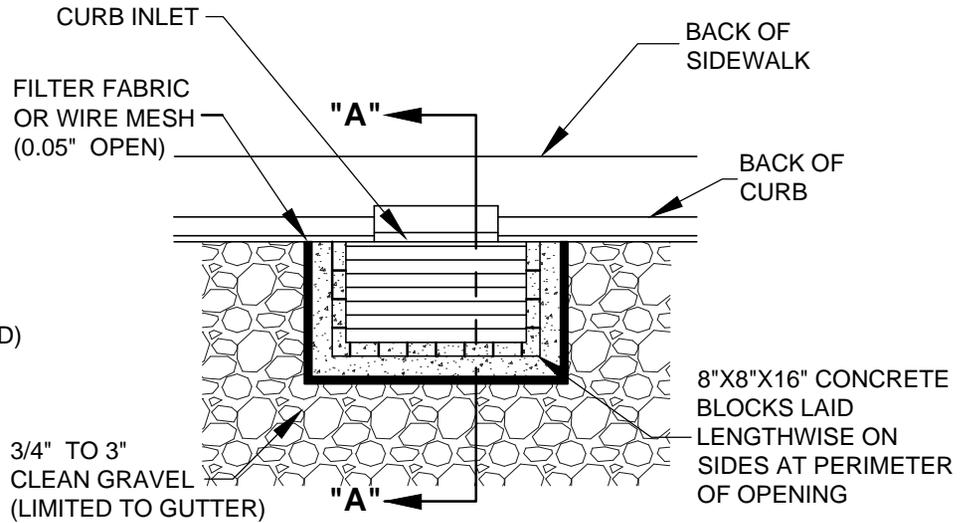
12-27-18 (Under Review)

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

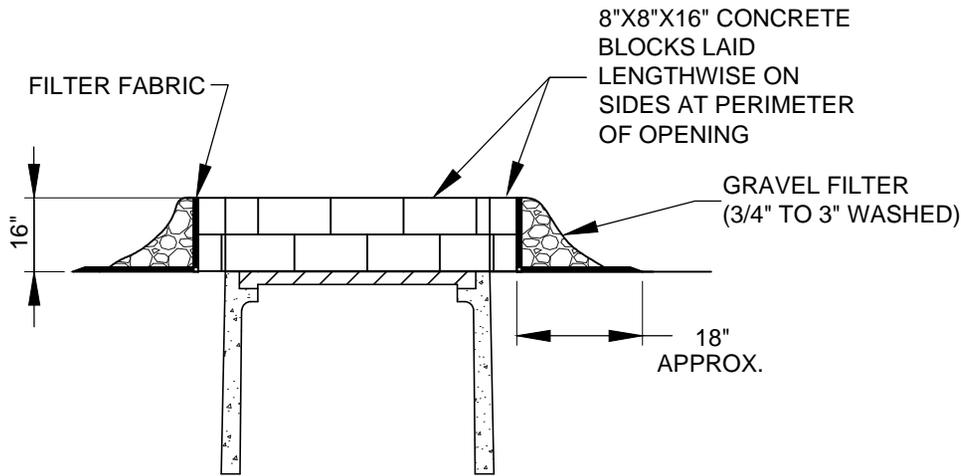
STANDARD NO. 11-110
CONCAVE MEDIAN



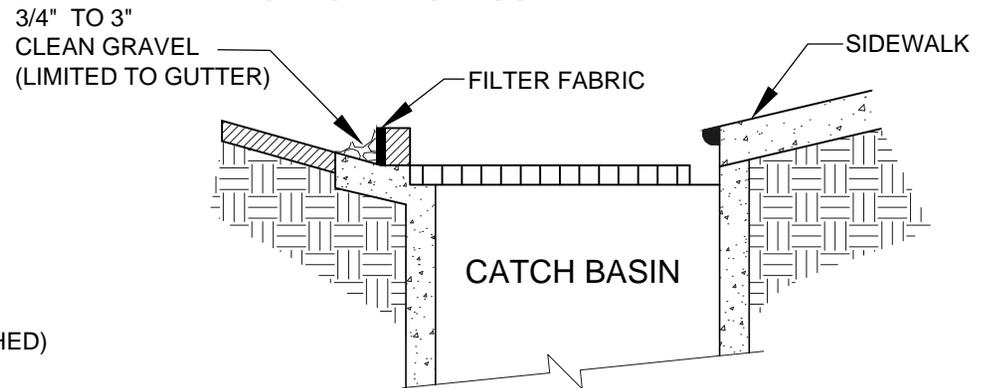
**PLAN
STORM DRAIN INLET**



**PLAN
CATCH BASIN CURB INLET**



SECTION "A - A"



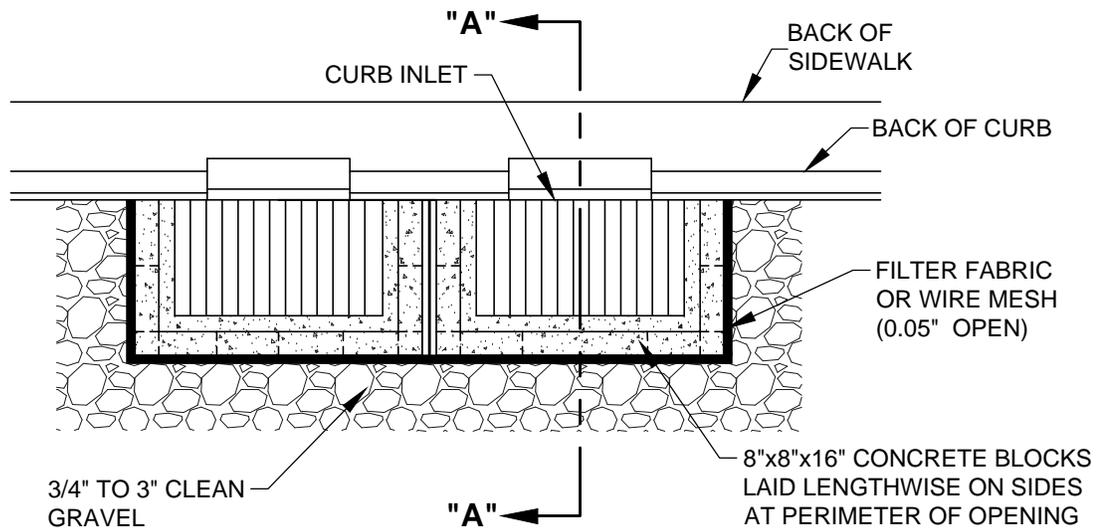
SECTION "A - A"

12-27-18 (Under Review)

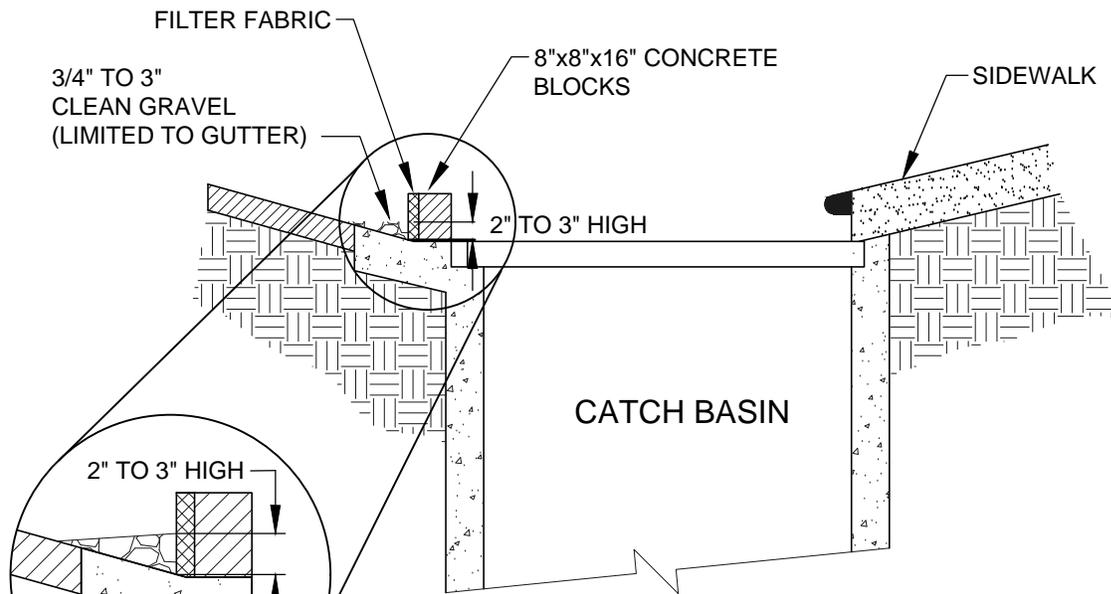
Sheet 1 of 2

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

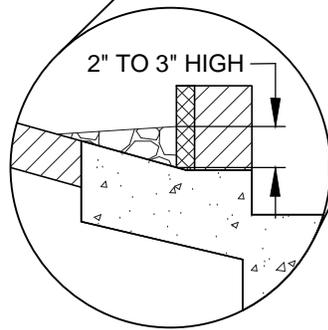
STANDARD NO. 11-115
INLET PROTECTION



**PLAN
INLET PROTECTION**



**SECTION "A - A"
CATCH BASIN CURB INLET**



NOTE

1. Special caution should be exercised when installing inlet protection on publicly traveled streets or in developed areas.

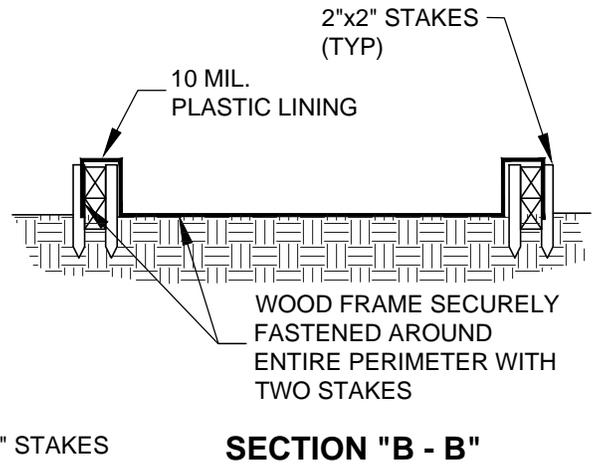
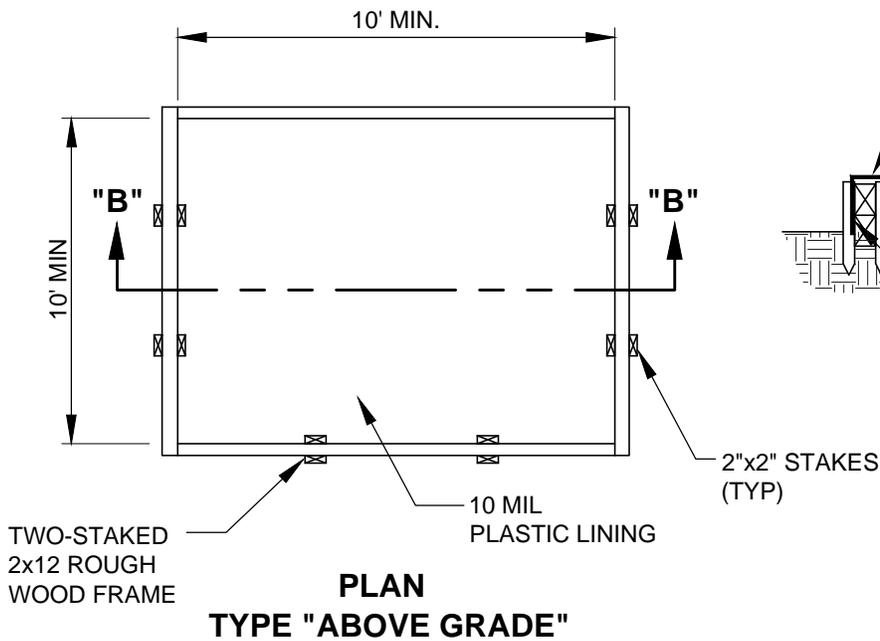
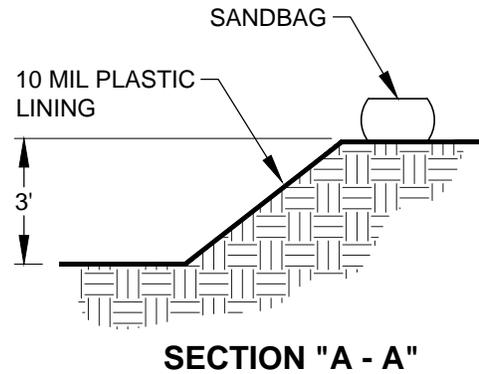
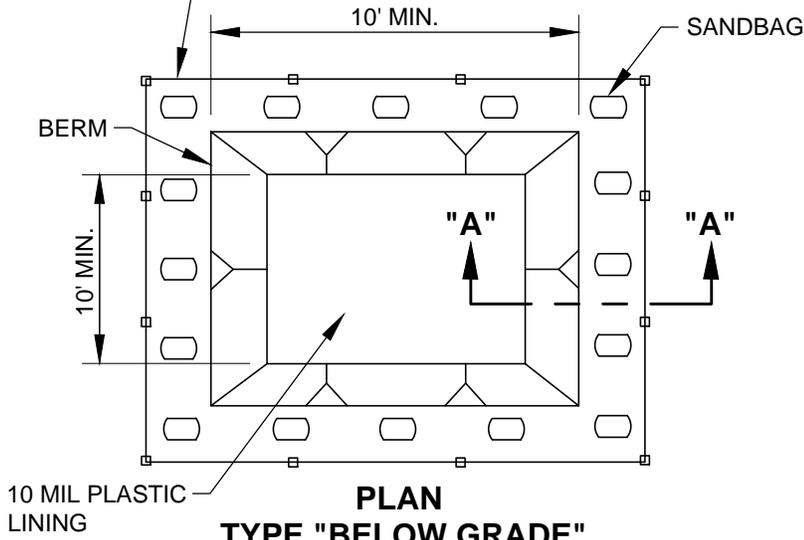
12-27-18 (Under Review)

Sheet 2 of 2

**CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS**

**STANDARD NO. 11-115
INLET PROTECTION**

LATH & FLAGGING
ON ALL SIDES



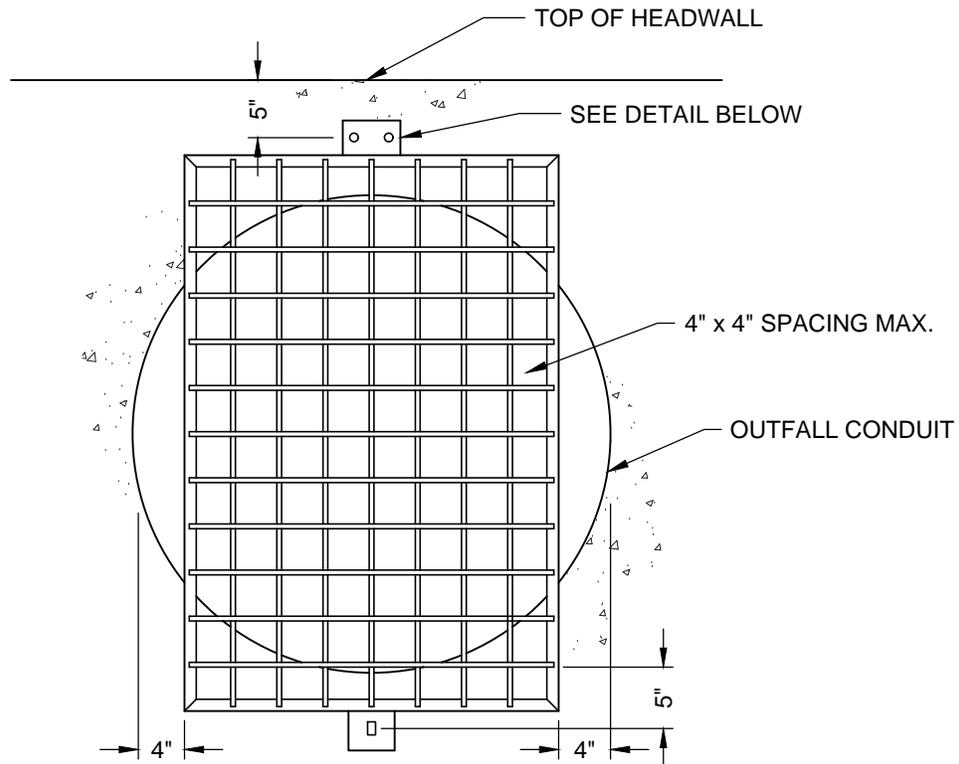
NOTES

1. Actual layout determined in field.
2. The concrete washout sign shall be installed within 30 ft. of the temporary concrete washout facility.
3. Grade underneath liner shall be clear of debris and large rocks.

12-27-18 (Under Review)

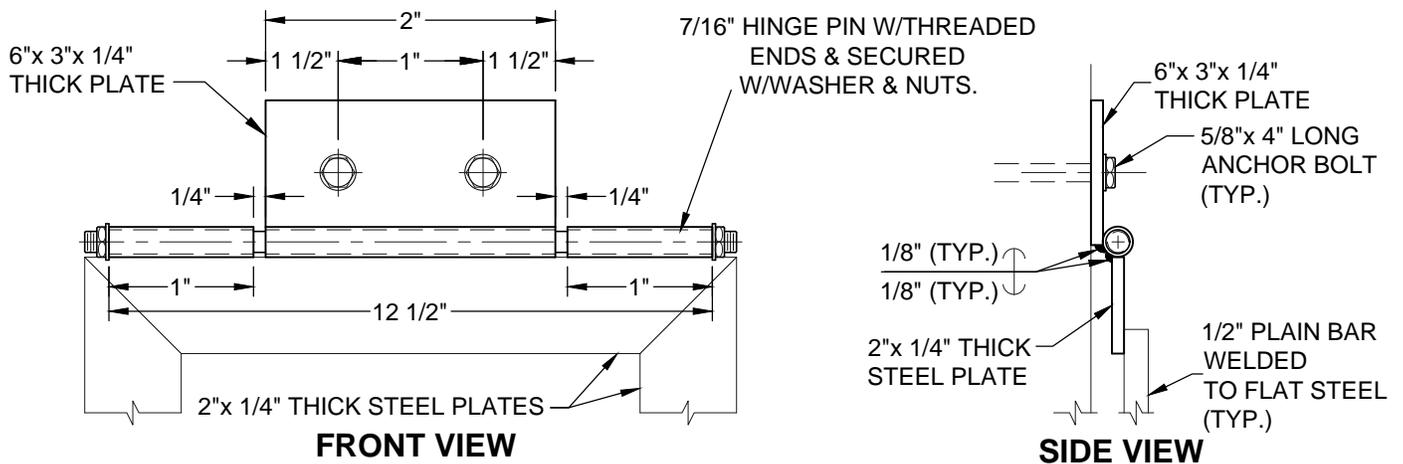
CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 11-120
CONCRETE WASHOUT AREA



NOTES

1. All anchor bolts shall be 5/8" dia. embedded (4" min) into epoxy grout.
2. All barrier bars to be 1/2" plain.
3. Conduits 42" and larger require two hinges.
4. All parts shall be painted with rust inhibitive paint.



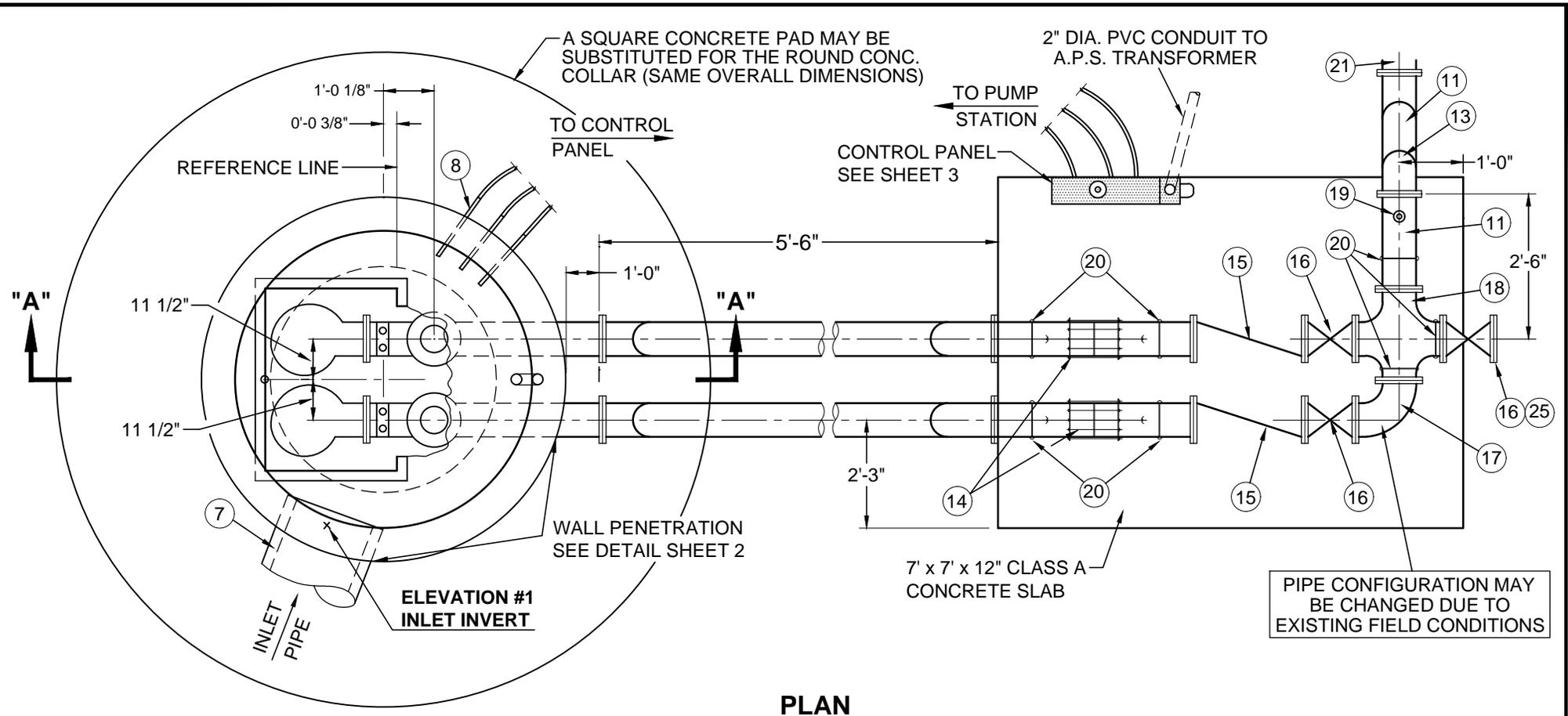
HINGE DETAIL

NOTE

1. All dimensions are minimum dimensions, adjust for larger conduit sizes.

12-27-18 (Under Review)

CITY OF YUMA
 CONSTRUCTION STANDARD DETAIL DRAWINGS
 STANDARD NO. 11-125
 STORM DRAIN SAFETY GRATE



PLAN

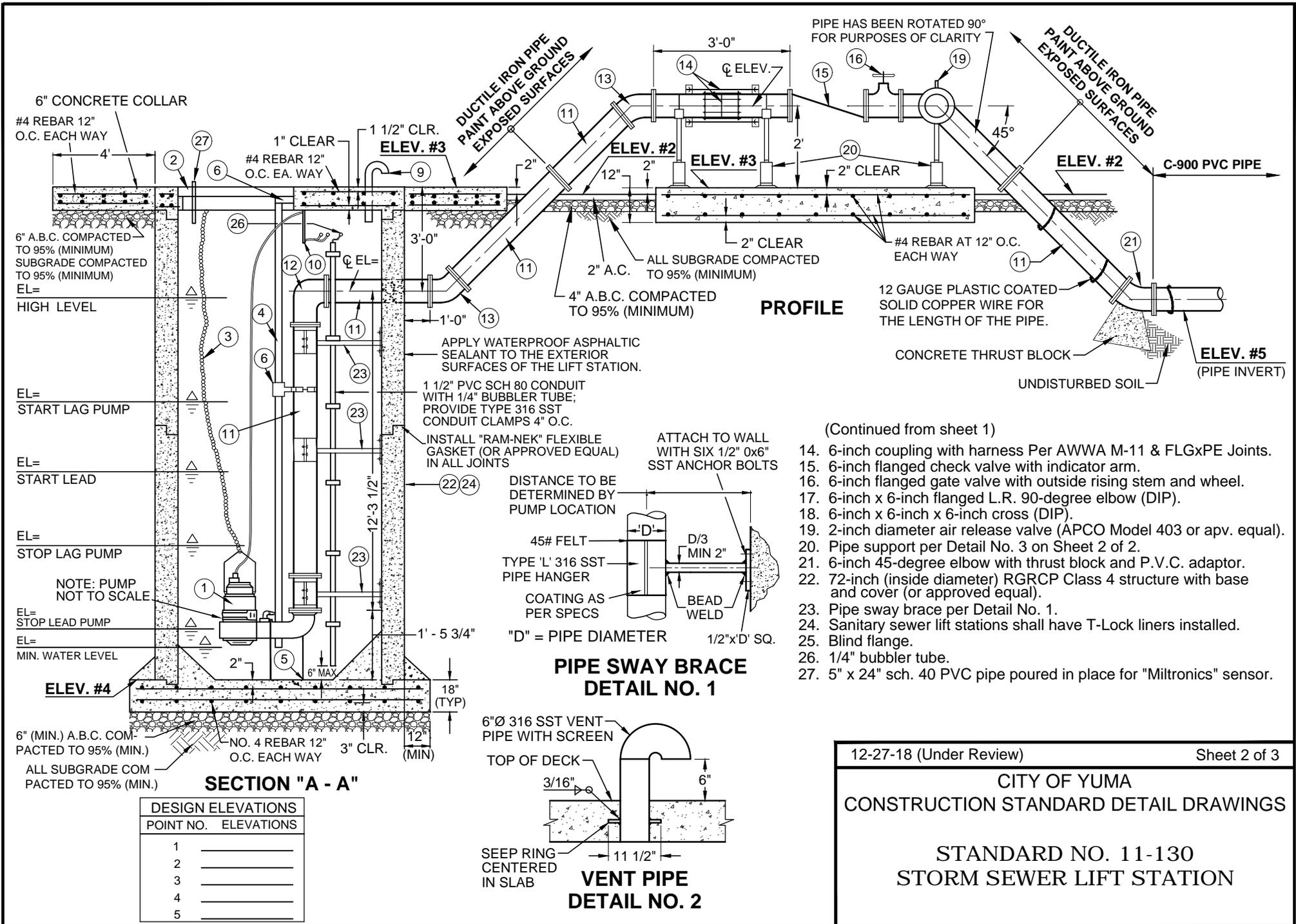
MATERIAL LIST FOR LIFT STATION

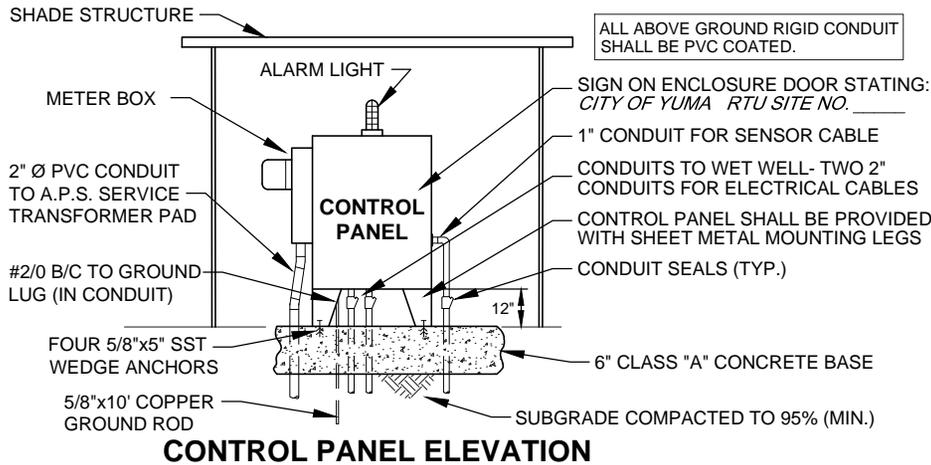
1. ___ GPM FLYGT Submersible pump, ___ H.P., 480V, 3Ø, 60 HZ with Mix-Flush valve.
 2. Aluminum hatch cover 48"x36" clear opening embedded in concrete cover.
 3. Lifting cable attachment per pump manufacturer (316 SST).
 4. Intermediate guide bar per pump manufacturer (316 SST).
 5. Pump anchor bolts per manufacturer (316 SST).
 6. Guide bar brackets per pump manufacturer (316 SST).
 7. Inlet pipe with shut-off valve.
 8. Electric conduits - size per manufacturers recommendation.
 9. 6-inch vent pipe per Detail No. 2 on Sheet 2 of 2 (316 SST).
 10. U-shaped cable hanger made from 1/2" 316 SST pipe (incl. straps).
 11. 6-inch Flanged Spool (DIP).
 12. 6-inch flanged 90-degree EI (DIP-long radius).
 13. 6-inch flanged 45-degree bend (DIP).
- (Continued on sheet 2)

NOTES:

1. Contractor shall use epoxy coated and lined ductile iron pipe and fittings. Pipe shall be flanged and meet all contract specifications.
2. All hardware, nuts, bolts, washers inside vault are to be Type 316 Stainless Steel.

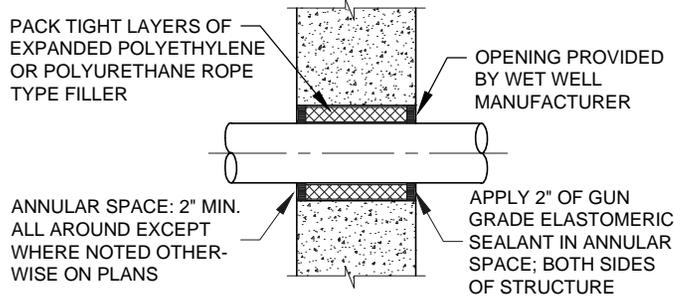
| | |
|---|--------------|
| 12-27-18 (Under Review) | Sheet 1 of 3 |
| <p>CITY OF YUMA CONSTRUCTION STANDARD DETAIL DRAWINGS</p> <p>STANDARD NO. 11-130 STORM SEWER LIFT STATION</p> | |



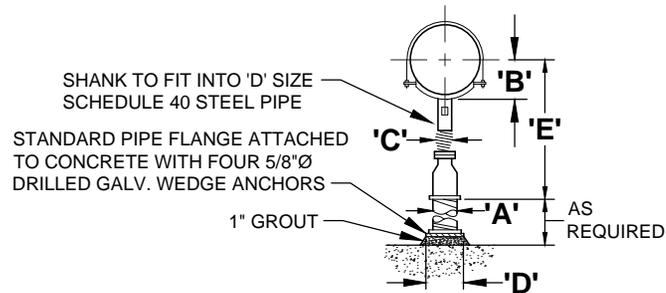


SEWAGE LIFT STATION RTU COMPONENTS

- Allen Bradley, IntelliCENTER with DeviceNet.
 - 1ea 4 Slot Rack: 1746-A4
 - 1ea Power Supply: 1746-P2
 - 1ea Processor Unit: 1747-L532 Ser: E
 - 1ea Device Net: 1747 SDN
 - 1ea Analog Input: 1746-NI8
 - 1ea Device Net Starter Aux.: 100 DNY 42 R
- Hoffman A-604810LP outdoor rated enclosure or approved equal
- Surge suppresser:
 - 1ea "Poly Phaser IS-50NX-C2" series or approved equal
 - 1ea Lightning ground protection grid
- All electrical components shall be of a type/manufacture that is supported locally (Allen-Bradley, Cutler-Hammer or approved equal.
- Antenna support:
 - Antenna must be attached in a firm and fixed position with 'line of sight' between antennas. The City's repeater is located atop the elevated water storage tank adjacent to the Yuma Civic & Convention Center.
 - Power supply: 120VAC with double AC circuit breaker
- Documentation:
 - Three sets of wiring diagrams for the lift station and RTU; three sets of Operation and Maintenance manuals.
- Monitoring and functions to be provided:
 - Pump #1 and Pump #2:
 - Hand, Off, Auto, Thermal Overloads, MAG/Starter Confirm Energized, Loss of Electrical Power (APS), Generator On, Generator Failure, High Level & Low Level Float and AMP Meters for each pump.
 - Analog functions (Pump #1 and Pump #2):
 - L1, L2, L3, Flow Meter, APS / Generator voltage, Ultra Sonic Level (4-20ma)



WALL PENETRATION SEAL DETAIL

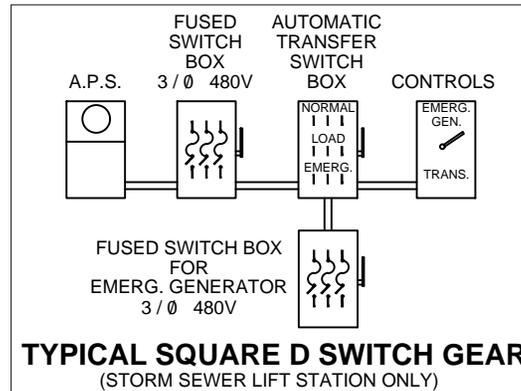


PIPE SUPPORT DETAIL NO. 3

| NUMBER REQUIRED | SUPPORTED PIPE SIZE | 'A' | 'B' | 'C' | 'D' | 'E' | |
|-----------------|---------------------|-----|--------|------|---------|---------|---------|
| | | | | | | MIN. | MAX. |
| SIX | 6" | 3" | 5 7/8" | 2.5" | 11 3/4" | 10 3/4" | 14 1/2" |

NOTES

- Provide a 1" water service, a min. 3/4" water meter and R.P. backflow preventer (Standard No. 5-130).
- Provide access for large service vehicles.
- Switched lighting shall be installed.
- An appropriate shade structure shall be constructed over the control panel.
- W.P.C.F. SCADA/RTU connections required when pump stations are to be used for sanitary sewer.
- Provide 120VAC GFI protected convenience outlet.
- Provide "Generex" diesel (or approved equal) emergency generator.
- Pump controller shall be "Miltronics Hydro Ranger" in conjunction with "Allen Bradley SLC-500".
- Seal all conduit coming from lift station to junction boxes/control panels with duct seal to prevent the migration of gas.
- Adjacent properties shall determine the placement of access gates to the site. Gates shall be double swing and have a minimum width of 20'.
- All valves and check valves shall be installed above ground.
- All hardware and bracing inside the lift station shall be manufactured of Type 316 SST.
- Lift stations equipped with pumps 20HP or less at the inlet shall be supplied with SST strainer baskets to ride on SST guides. A "winch type" swingline hoist shall be installed to facilitate basket removal.
- A soils report prepared by a registered geotechnical engineer shall be submitted to the City Engineer prior to the construction of the lift station. This report shall be used to design the wetwell structure including recommendations for protection from corrosive soils and anchoring if constructed in high ground water conditions.
- The control panel shall contain a properly sized automatic transfer switch for the emergency generator.



ELECTRICAL UTILITY CO.

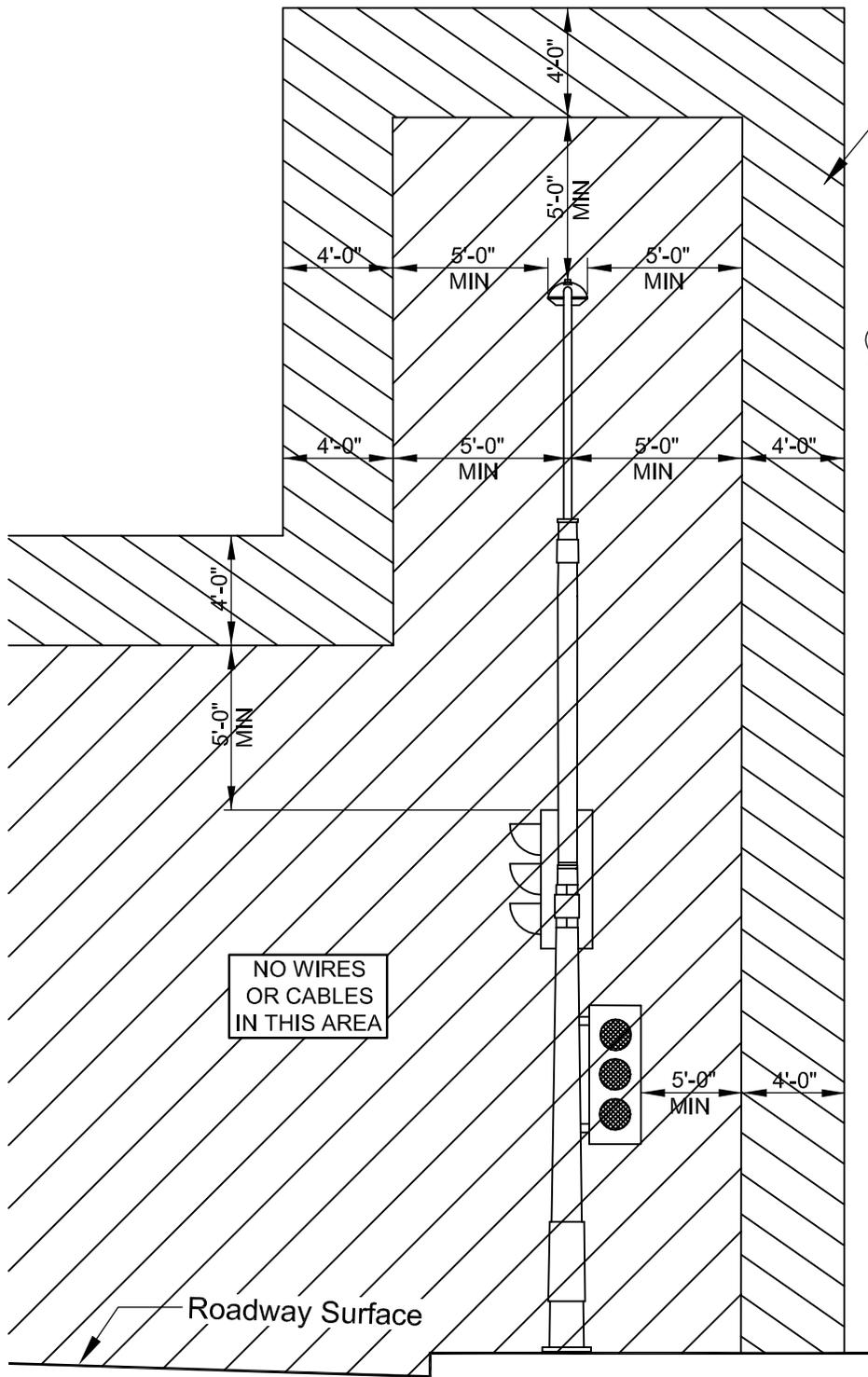
ARIZONA PUBLIC SERVICE
6700 E. 30th Street
YUMA, ARIZONA 85365

12-27-18 (Under Review)

Sheet 3 of 3

CITY OF YUMA
CONSTRUCTION STANDARD DETAIL DRAWINGS

STANDARD NO. 11-130
STORM SEWER LIFT STATION



NO WIRES OR CABLES
IN THIS AREA WITH
MORE THAN 750 VOLTS

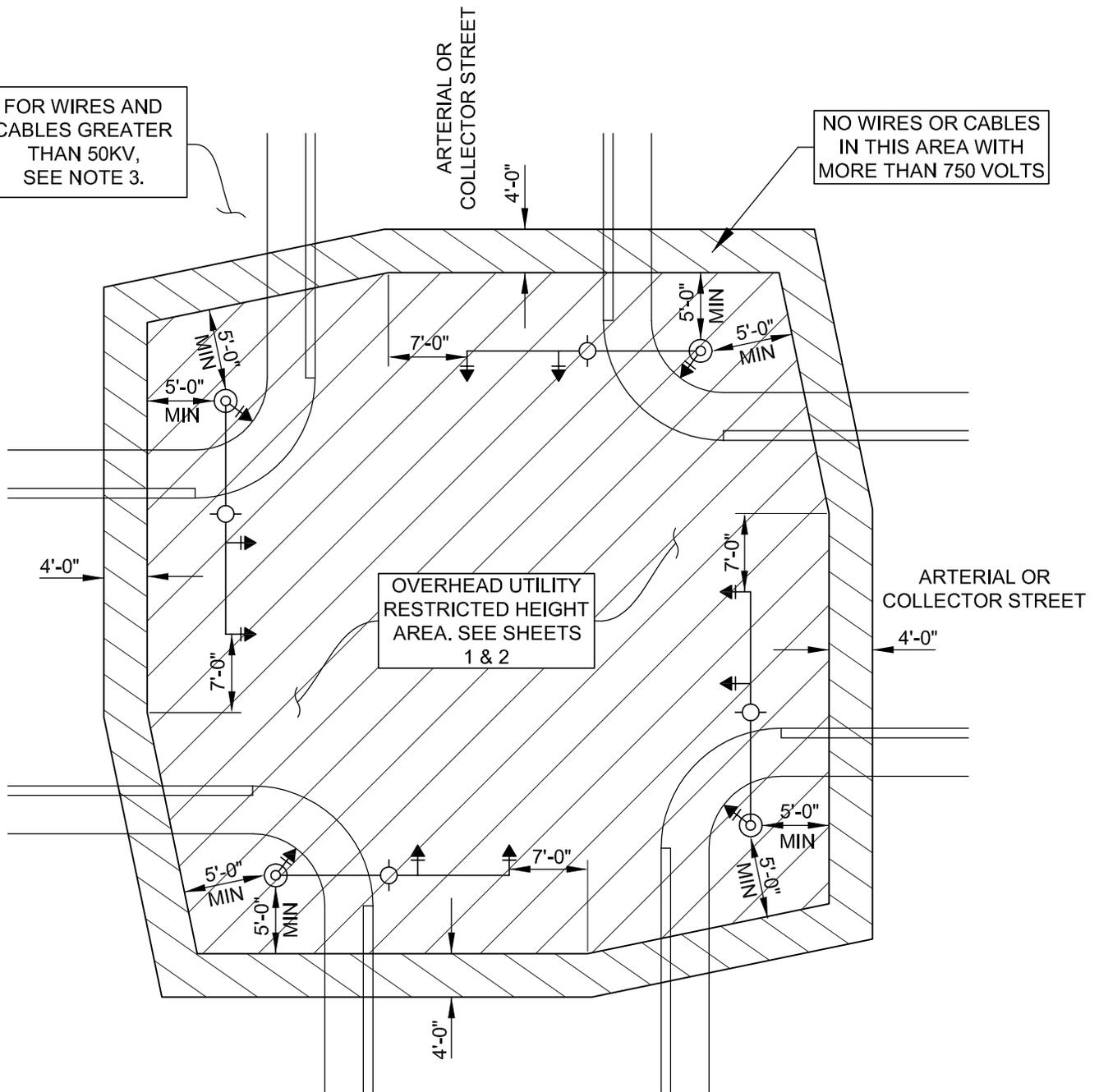
FOR WIRES AND
CABLES GREATER
THAN 50KV,
SEE NOTE 3 ON
SHEET 3

NO WIRES
OR CABLES
IN THIS AREA

BACK OF POLE ELEVATION

FOR WIRES AND CABLES GREATER THAN 50KV, SEE NOTE 3.

NO WIRES OR CABLES IN THIS AREA WITH MORE THAN 750 VOLTS



PLAN VIEW

NOTES

1. This standard applies to all signalized intersections regardless of the roadway classifications and to unsignalized intersections of:
 - expressways with expressways
 - expressways with arterials
 - expressways with collectors
 - arterials with arterials
 - arterials with collectors
 - collectors with collectors
2. See city's *TRANSPORTATION MASTER PLAN*, current edition, for roadway classifications.
3. Increase clearances 0.4 inch per KV for all voltages in excess of 50KV.

| | |
|---|--------------|
| 12-27-18 (Under Review) | Sheet 3 of 3 |
| <p>CITY OF YUMA CONSTRUCTION STANDARD DETAIL DRAWINGS STANDARD NO. 12-010 OVERHEAD WIRE AND CABLE CLEARANCE AT SIGNIFICANT INTERSECTIONS</p> | |