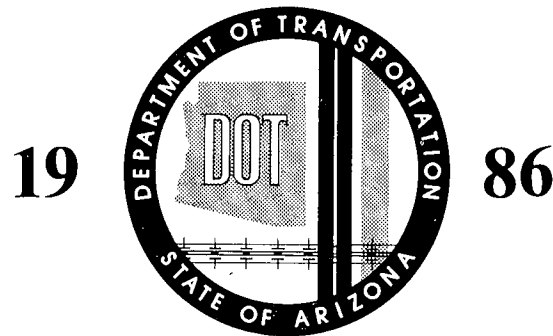


STATE OF ARIZONA
DEPARTMENT OF TRANSPORTATION
URBAN HIGHWAY DETAILS



DIVISION OF HIGHWAYS
URBAN HIGHWAY SECTION

STATE OF ARIZONA

DEPARTMENT OF TRANSPORTATION

URBAN HIGHWAY DETAILS

<u>Detail No.</u>	<u>Title</u>	<u>Detail No.</u>	<u>Title</u>	<u>Detail No.</u>	<u>Title</u>	<u>Detail No.</u>	<u>Title</u>
UC-01	Special Catch Basin Details	UC-44	Mainline Construction Joints with Curb and Gutter Sheet 1 of 2	UC-84	Valve Box Installation Sheet 1 of 2	USM-21	Warning Signs
UC-02	Slotted Drain Details			UC-84	Valve Box Installation Sheet 2 of 2	USM-22	Warning Signs
UC-03	Slotted Drain Installation Details	UC-44	Ramp Construction Joints with Curb and Gutter Sheet 2 of 2	UC-85	Tapping Sleeve and Valve Installation	USM-61	U.S. & State Route Shields For Independent & Joint Mounting
UC-04	Storm Drain Connection Details	UC-45	PCCP Joint Details	UC-86	Joint Restraint with Tie Rods Sheet 1 of 2	USM-62	U.S. & State Route Shield Guide Sign Mounting
UC-05	Manhole Riser Details	UC-46	Ramp Curb and Gutter Layout	UC-86	Joint Restraint with Tie Rods Sheet 2 of 2	USM-63	Directional Signs For Marker Signs
UC-06	Storm Drain Outlet Details	UC-47	Barrier Details at Piers	UC-87	Concrete Water Meter Box	USM-64	Directional Signs for Interstate Marker Assemblies
UC-07	Special Catch Basin with Half Barrier	UC-48	Load Transfer Dowel Details	UC-88	Steel Cover for Water Meter Box	USM-65	Arrow & Legend Details for Crossroad Signing
UC-20	Backfill-Pavement and Surface Treatment	UC-49	Guard Rail Assembly with Curb			USM-66	Interstate Route and Shield Details
UC-21	C12.20 Fence Modified	UC-50	Concrete Bus Bay				
UC-22	Crossroad Median Paving and Irrigation Sleeve Details	UC-51	Sidewalk Ramp				
UC-23	Frame and Cover with Grade Adjustment	UC-60	Sanitary Sewer Encasement	UB-01	Half Barrier Transition		
UC-24	Chain Link Cable Barrier Sheet 1 of 4	UC-61	Pipe Support Across Trenches Sheet 1 of 3	UB-02	Junction Box and Barrier Detail Sheet 1 of 2		
UC-24	Chain Link Cable Barrier Sheet 2 of 4	UC-61	Pipe Support Across Trenches Sheet 2 of 3	UB-02	Junction Box and Barrier Detail Sheet 2 of 2		
UC-24	Chain Link Cable Barrier Sheet 3 of 4	UC-61	Alternate to Pipe Support Sheet 3 of 3	UB-03	Temporary Concrete Barrier		
UC-24	Chain Link Cable Barrier Sheet 4 of 4	UC-62	Sewer Manhole and Cover Frame Adjustment	UB-04	Anchor Slab Details		
UC-25	Barricades	UC-63	24" and 30" Manhole Frame and Cover	UB-05	Curb Fence Details		
UC-40	Special Curb and Gutter Transition Type "A"	UC-64	Manhole Steps	USM-01	Regulatory Signs		
UC-41	Barrier Transition - Tangent Sheet 1 of 2	UC-65	Pre-Cast Concrete Sewer Manhole	USM-02	Regulatory Signs Cross Streets Only		
UC-41	Barrier Transition - Tangent Sheet 2 of 2	UC-80	Thrust Blocks for Water Lines	USM-03	Regulatory Signs		
UC-42	Barrier Transition - Curve	UC-81	Blocking for Water Valves Gate and Butterfly	USM-04	Regulatory Signs		
UC-43	Mainline Construction Joints Sheet 1 of 2	UC-82	Anchor Block for Vertical Bends	USM-05	Regulatory Signs for Overhead Structures		
UC-43	Ramp Construction Joints Sheet 2 of 2	UC-83	Vertical Realignment for Water Mains				

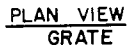
REDUCED SIZE DRAWINGS
DO NOT SCALE

1) All concrete shall be Class "B" (f'c = 2500 p.s.i.)
2) All reinforcing steel shall conform to 1003-1/2 Grade 40.
3) All reinforcing steel shall have 2" min. clear cover unless otherwise noted.
4) Reinforcing steel shall be No. 4 rebar, 12" c/c to horiz. & vertical in walls.
5) Pipe can be placed in any wall.
6) For more information & dimensions of Slotted Drains see Detail UC-02 & UC-03.
7) In the wall section "B", T = 6" when H is 8' or less, or T = 8" when H is over 8'.



NOTES

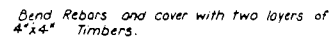
- 1) All Structural Steel shall be in accordance with A.S.T.M. Spec's A-36.
- 2) All Reinforcement Steel shall conform to 1003-1.2, Grade 40.
- 3) All Welding shall be in accordance with A.D.O.T. specifications.
- 4) The completed Grate assembly (Frame & Grate) shall be given two shop coats of No. 1 paint.
- 5) The installation and inspection of steel studs welded to steel acting as connection devices to the concrete shall conform to the American Welding Society's Structural Welding Code (AWS D.1, Specifications 4.21-4.27).



Special Curb & Gutter Dimensions											
Type	Curb Height	Gutter Width	Catch Basin Frame		Catch Basin Grate		Catch Basin				
			A	C	Δ	D	E	F	G	J	
B	6"	2'-6"	2'-0"	1'-4"	2'-3 1/2 08"	2'-0"	21° 32' 08"	2'-6"	4'-0"	4'-4"	3'-0"
C	3"	2'-6"	2'-0"	1'-4"	10° 46' 04"	2'-0"	10° 46' 04"	2'-6"	4'-0"	4'-4"	3'-0"



SPECIAL CATCH BASIN



TIMBER CAP DETAIL



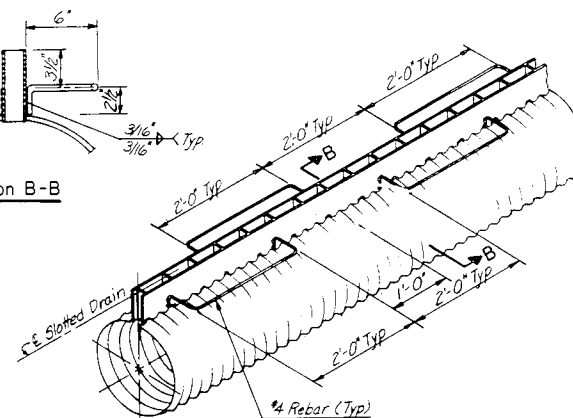
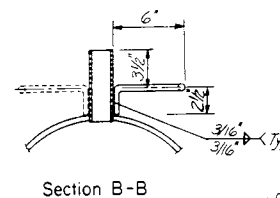
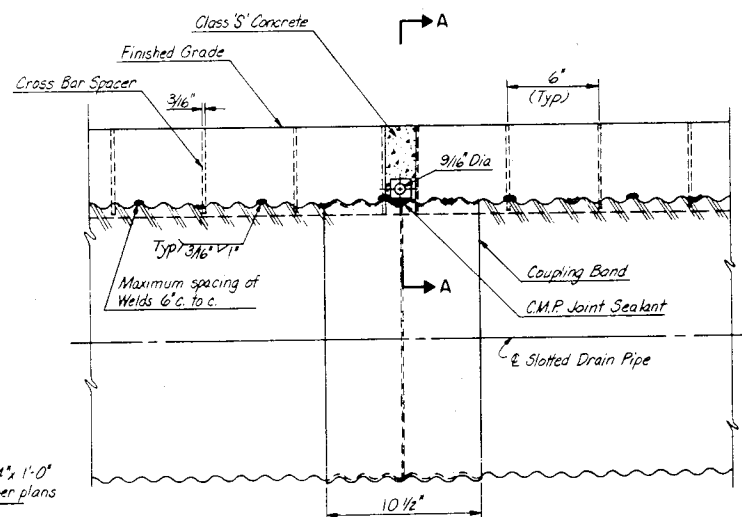
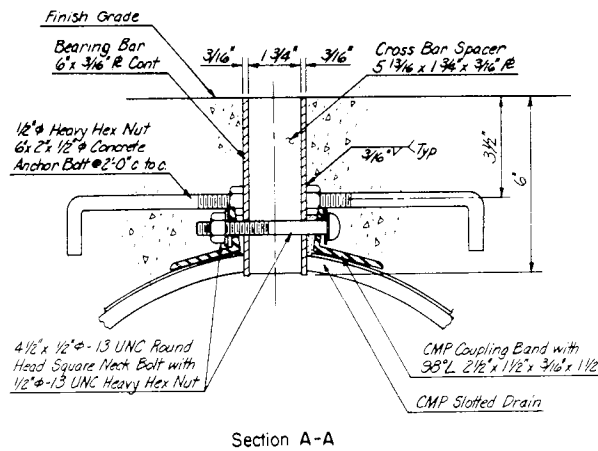
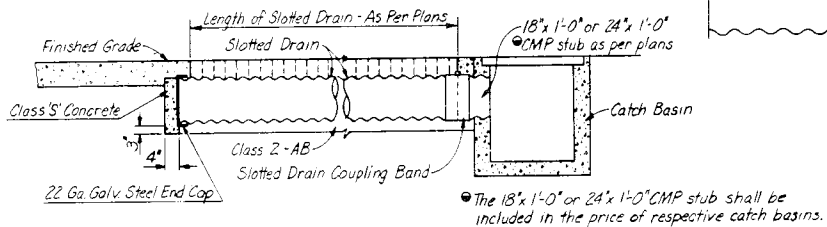
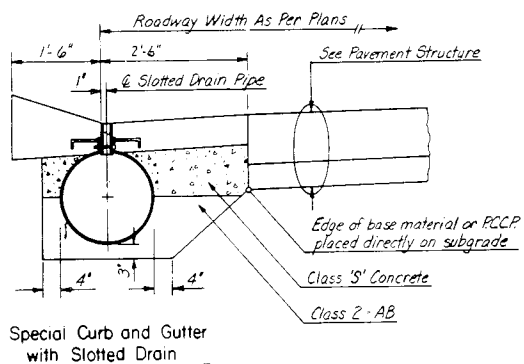
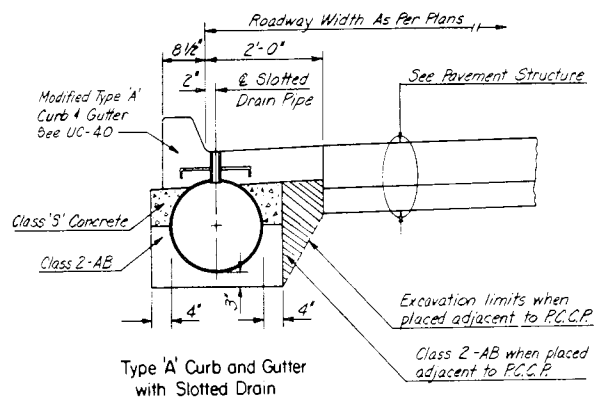
DETAIL APPROVED BY
URBAN HIGHWAY
ENGINEER

APPROVED FOR
DISTRIBUTION

STATE OF ARIZONA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAY
URBAN HIGHWAY DETAILS

SPECIAL CATCH BASIN DETAILS

DETAIL NO.	UC-0
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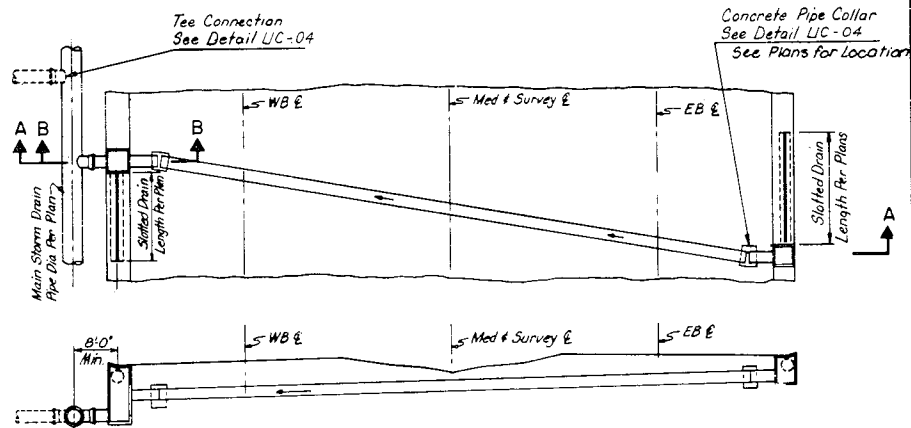
GENERAL NOTES

- 1.) Slotted drain pipe shall be 24 3/4 x 1/2 corrugated steel pipe with a minimum wall thickness of 0.064 and shall conform to the requirements of AASHTO M36.
- 2.) All Concrete shall be Class 'S' (f'c = 2500 psi)
- 3.) Reinforcing steel shall conform to 100B-1,2, Grade 40.
- 4.) Structural steel shall conform to ASTM A36.
- 5.) Concrete anchors shall conform to ASTM A307 and hex nuts shall conform to ASTM A563 Grade A.
- 6.) All slotted drain pipe hardware except anchor bolts and reinforcing steel shall be given two coats #1 paint.
- 7.) When annular pipe is used, apply water proof sealer before attaching coupling band.
- 8.) When helical pipe is used, it shall be formed with at least one annular corrugation at each end of each pipe section. Water proof sealer shall be applied to the annular corrugation prior to attachment of coupling band.
- 9.) Cover slot during construction with removable tape or other acceptable substitute.
- 10.) Slotted drain pipe shall be clean at the time of final acceptance.
- 11.) Concrete curb and gutter thru the slotted drains shall be paid for under the respective curb and gutter items.
- 12.) Refer to curb and gutter details for dimensions and details not shown.

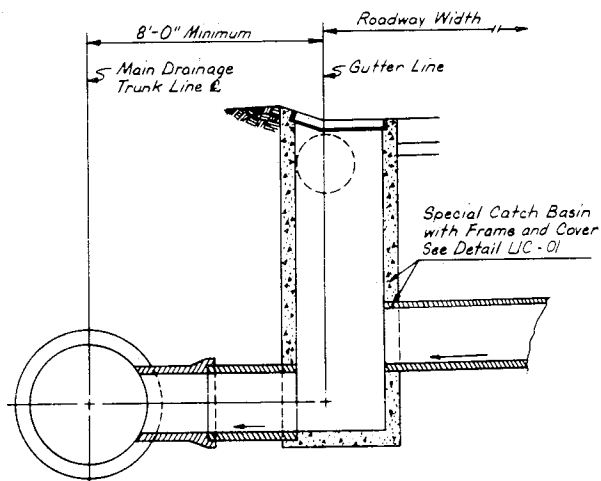
GENERAL NOTES (CONT.)

- 13.) Joints in concrete curb & gutter shall match adjoining RCCP and slotted drain bands.

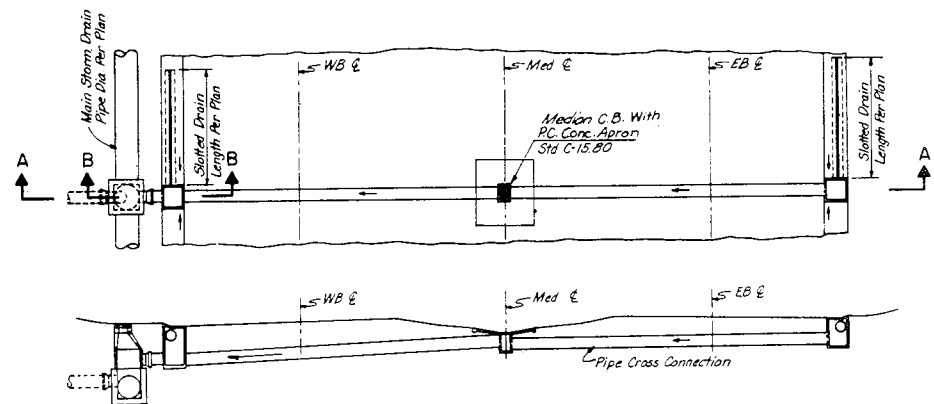
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APPROVED FOR DISTRIBUTION	SLOTTED DRAIN DETAILS	DETAIL NO. UC-02



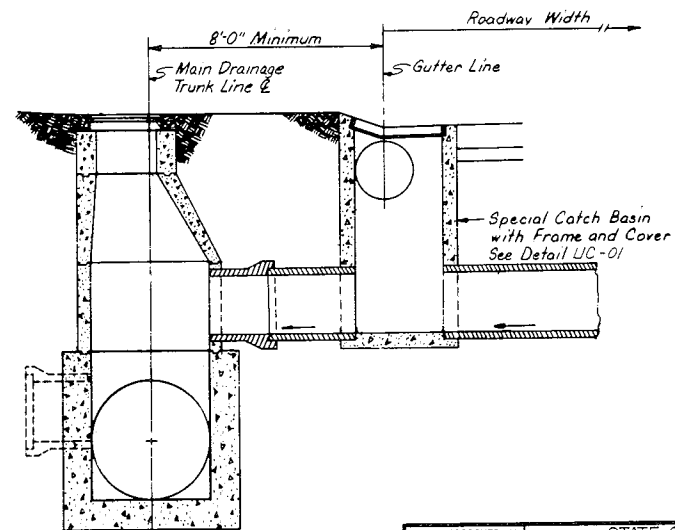
SECTION A-A
Typical Slotted Drain & Catch Basin
Installation Without Manhole



SECTION B-B
Typical Connection Between C.B. & Main Storm Drain

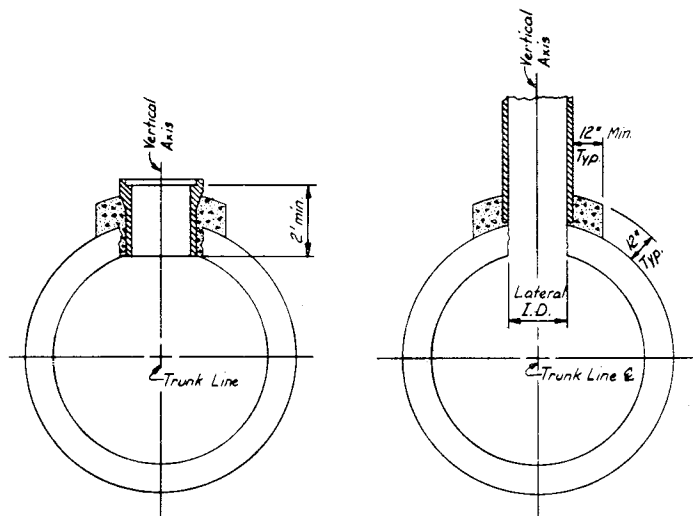


SECTION A-A
Typical Slotted Drain & Catch Basin
Installation With Manhole

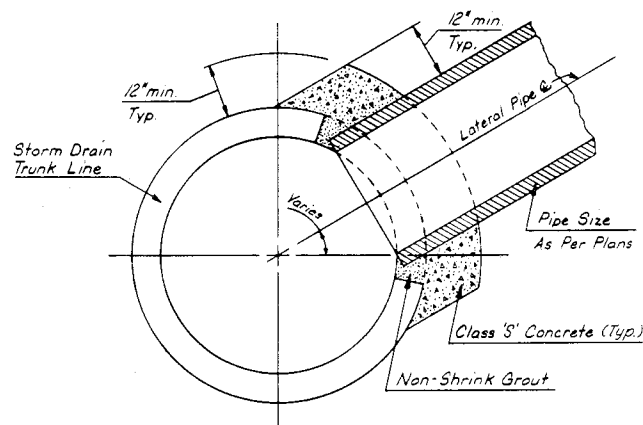


SECTION B-B
Typical Connection Between C.B. & Manhole

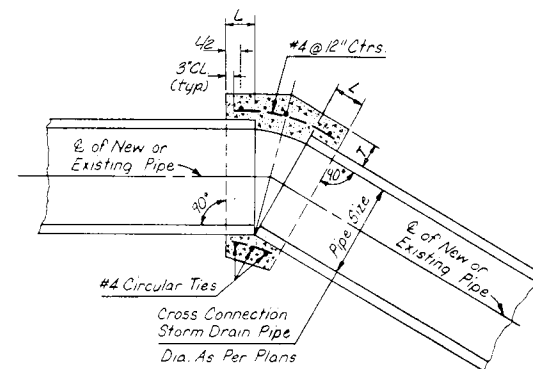
DETAIL APPROVED BY URBAN HIGHWAY ENGINEER	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAY URBAN HIGHWAY DETAILS		REV.
APPROVED FOR DISTRIBUTION <i>James J. Pitts</i>	SLOTTED DRAIN INSTALLATION DETAILS		DETAIL NO UC-03



VERTICAL CONNECTIONS INTO STORM DRAINS



LATERAL CONNECTIONS INTO TRUNK LINES



CONCRETE PIPE COLLAR

GENERAL NOTES

All Concrete shall be Class 'S' (f'c=2500psi)
All Reinforcing Steel shall conform to 1003-1.2, Grade 40.

All Reinforcing Steel shall have 2" minimum clear cover

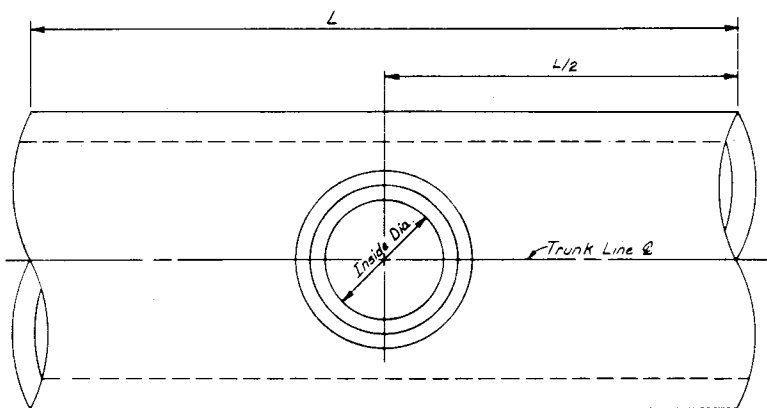
A Concrete Collar shall be required where pipes of different diameters or materials are joined or where the design change in alignment or grade exceeds that allowed for a standard joint.

When pipes of different diameters are joined with a concrete collar, "L" & "T" shall be those of the larger diameter.

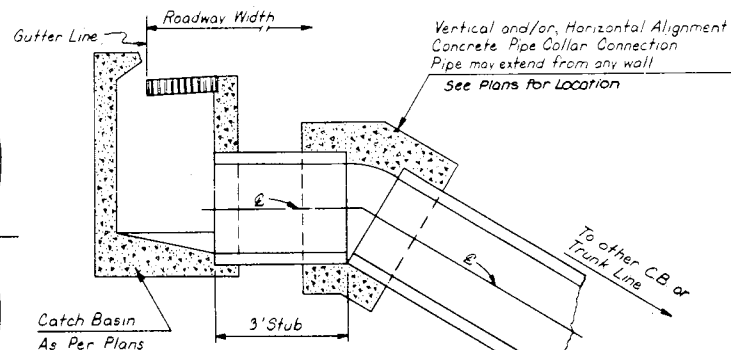
The diameter of the Circular Ties shall be the outside diameter of pipe + T.

Pipe ends to be trimmed such that the maximum distance between pipes at any point is 2 inches.

PIPE COLLAR TABLE			
Pipe Size	L	T	#4 Ties
12"	1.0'	4"	3
18"	1.0'	5"	3
24"	1.0'	6"	3
30"	1.5'	8"	3
36"	1.5'	8"	3
42"	1.75'	10"	4
48"	1.75'	10"	4
52"	1.75'	10"	4
60"	1.75'	11"	4
66"	2.00'	11"	5
72"	2.00'	14"	5
78"	2.00'	14"	5
84"	2.25'	16"	5
96"	2.25'	16"	5

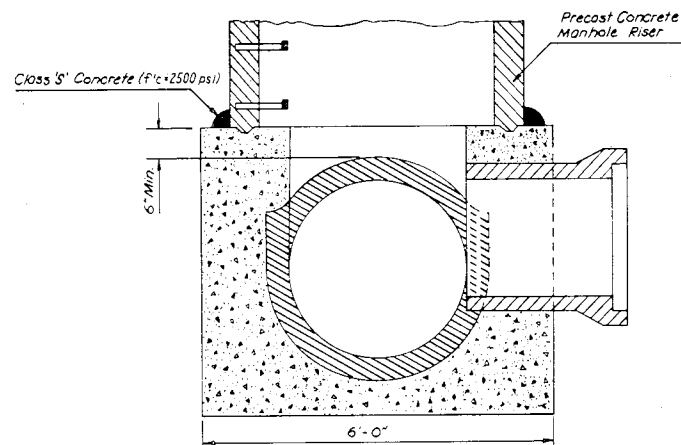


PRECAST STUB IN RCP

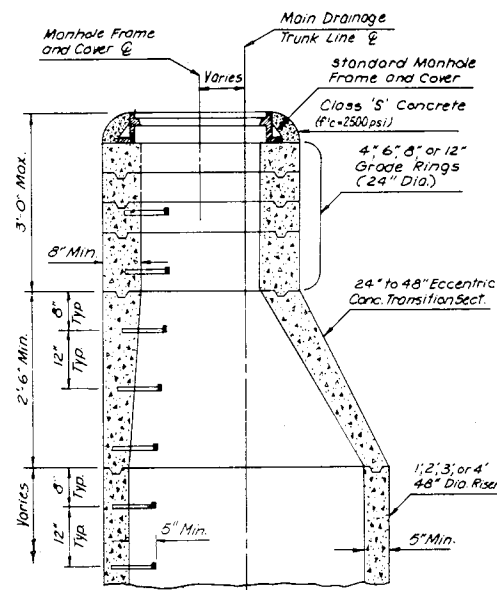


TYPICAL LATERAL CONNECTION TO CATCH BASINS WITH CONCRETE COLLARS

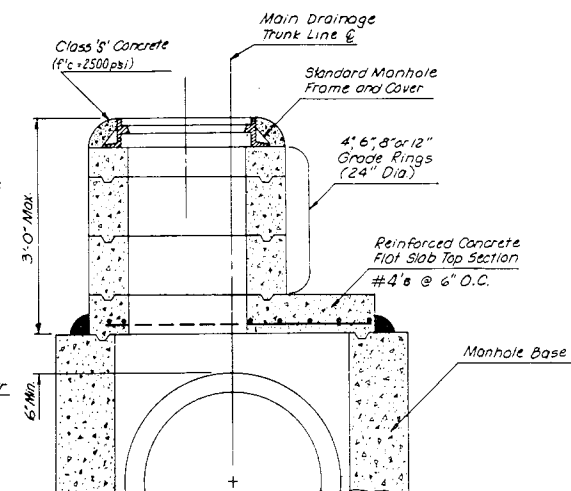
DETAIL APPROVED BY URBAN HIGHWAY ENGINEER 	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAY URBAN HIGHWAY DETAILS	REV.
APPROVED FOR DISTRIBUTION 	STORM DRAIN CONNECTION DETAILS	DETAIL NO. UC-04



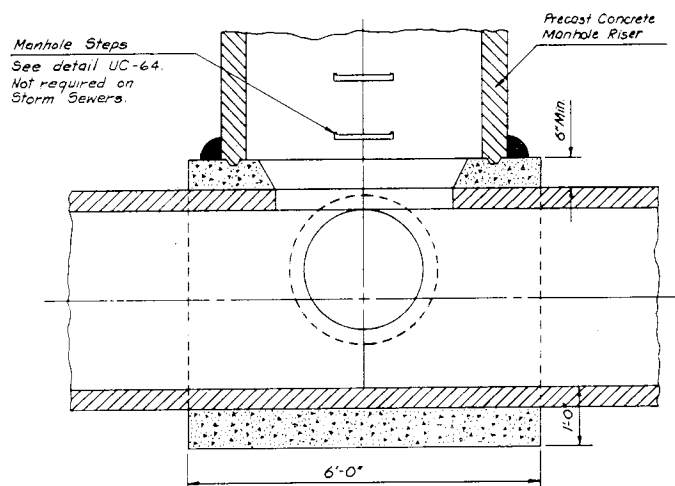
END VIEW



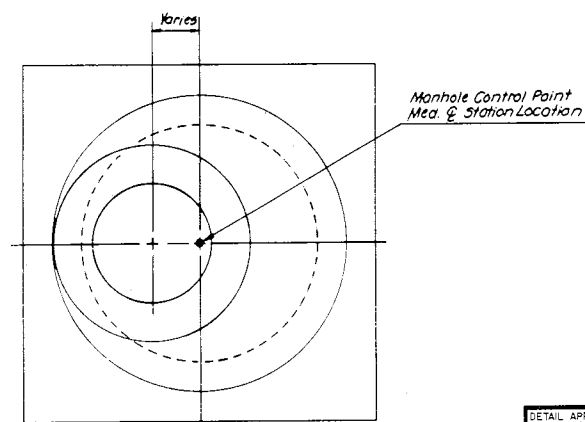
NORMAL INSTALLATION



SHALLOW INSTALLATION

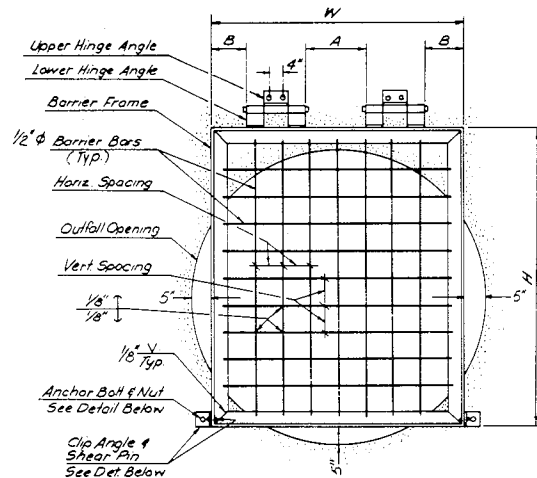


SIDE VIEW

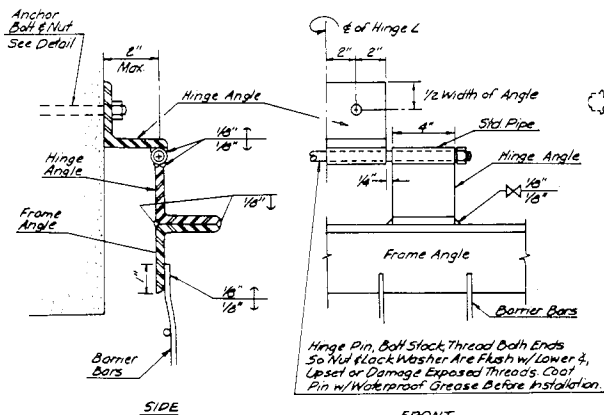


TOP VIEW

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APPROVED FOR DISTRIBUTION <i>[Signature]</i>	MANHOLE RISER DETAILS	DETAIL NO. UC-05



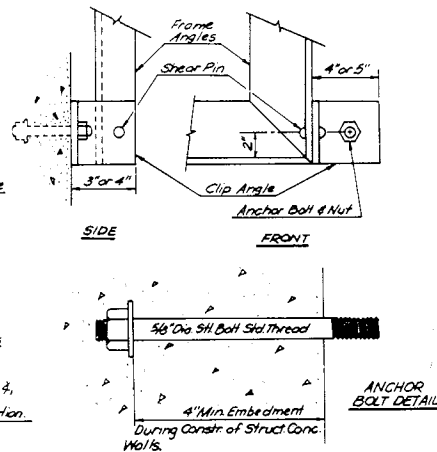
ACCESS BARRIER FRONT ELEV.



ACCESS BARRIER GATE

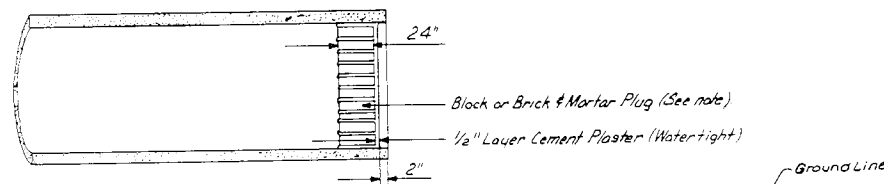
ACCESS BARRIER GEN NOTES

1. All Shear Pin Angles Shall Fit snug & True Face to Face. Cover w/ Waterproof Grease Prior to Installation of Pin.
2. Shear Pin Holes in the Angle Shall be Drilled for a Tight Fit of the Pins.
3. Both Ends of Shear Pins Shall be Peened After Installation.
4. Shear Pin Material Shall be Commercially Pure Aluminum Wire, Alloy 1100, Temper O, Federal Spec QQ-A-411.
5. Galvanize All Ferrous Parts After Fabrication.
6. All Anchor Bolt Shall be 5/8 inch diameter & Embedded 4" Min Into Struct. Conc.
7. Frame & Hinge Angles Shall Have The Outstanding Legs Out.
8. All Steel Shall Be In Accordance With A.S.T.M. A-36.
9. See Construction Plans for Access Barrier Gate Dimension Schedule.

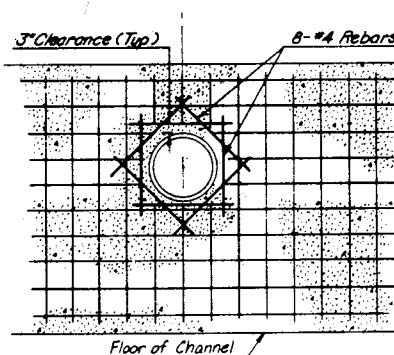
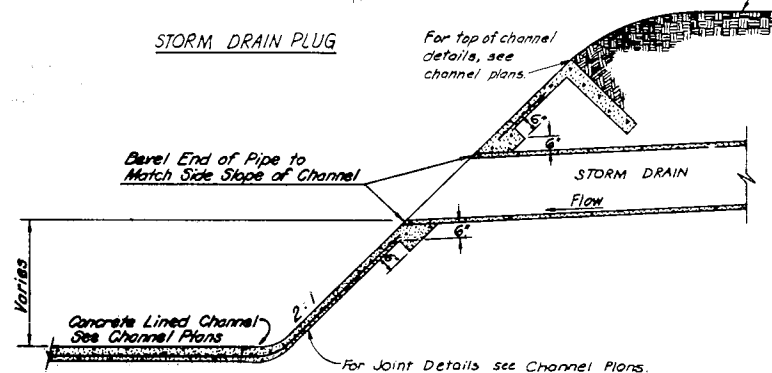


NOTES

1. Compact soil at end of Pipe to 95 % of maximum density.
2. If depth of cover is less than 5' or greater than 10' increase Plug thickness a minimum of 4".



STORM DRAIN PLUG

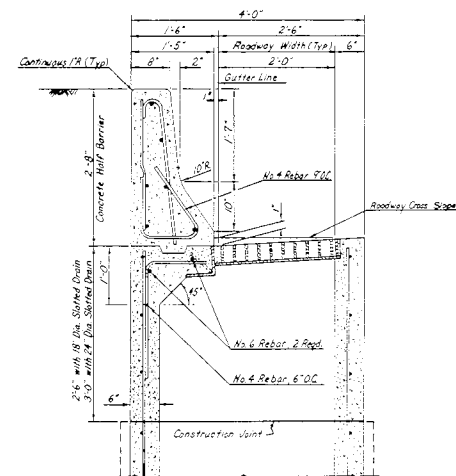
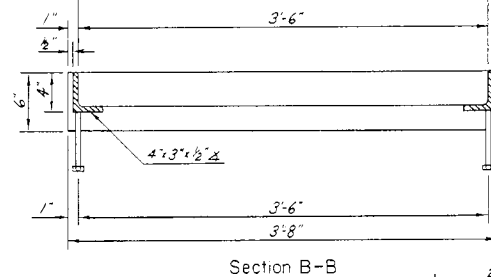
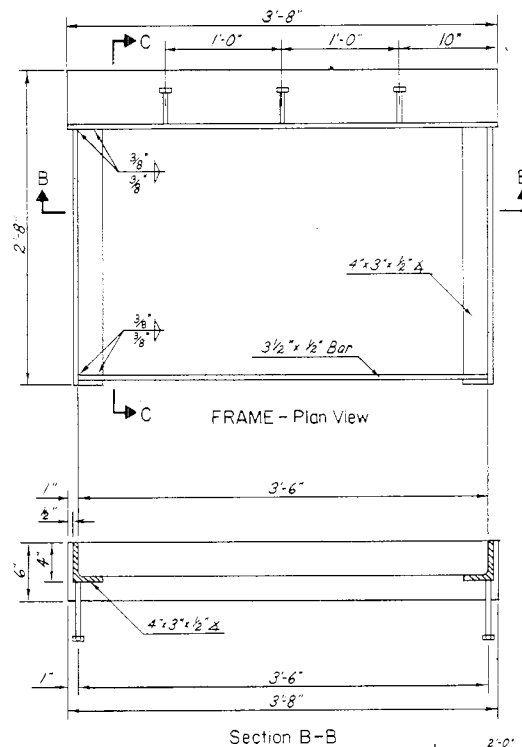
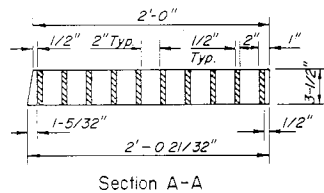
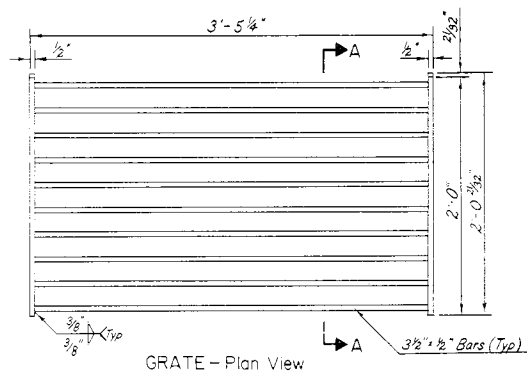


DRAINAGE OUTLET INTO CHANNEL

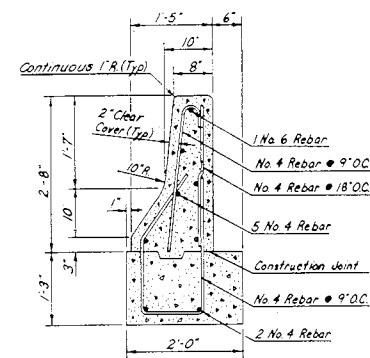
STORM DRAIN NOTES

- All Concrete shall be Class 'S' $f'_c = 2500 \text{ psi}$.
 All Reinforcing Steel shall conform to Sect. 1003-1.2, Grade 40.
 Additional Reinforcement Steel around Pipe shall have 3' Minimum clear cover.

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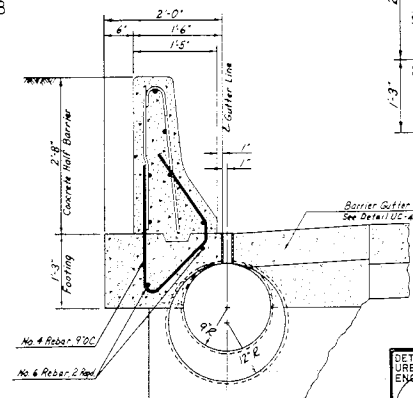
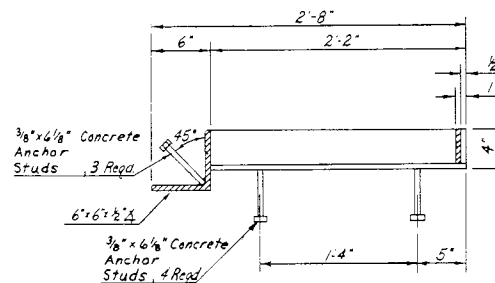
Special Catch Basin With Half Barrier



Reinforcing Detail

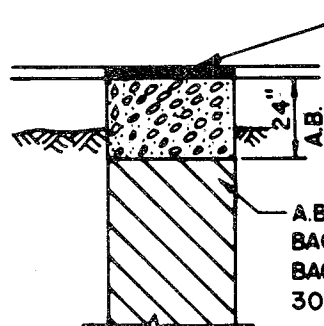
GENERAL NOTES:

1. For dimensions, sizes and details not shown for installation of special catch basin and half barrier, see detail UC-01.
2. For dimensions, sizes and details not shown for installation of slotted drain, see detail UC-02.
3. Unless otherwise noted, reinforcement steel in half barrier for installation with special catch basin and slotted drain, shall conform to sizes and number specified.
4. The installation and inspection of steel studs welded to steel acting as a connection device to the concrete shall conform to AWS D1.1 and Specifications 4.21-4.27.
5. Where applicable, see standard C-10.09 for weep hole placement.
6. For additional general notes, see detail UC-42.



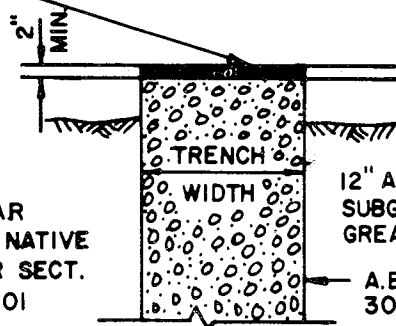
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A.C. PAVEMENT: MATCH EXISTING PAVEMENT AND COURSE BY TYPE AND THICKNESS



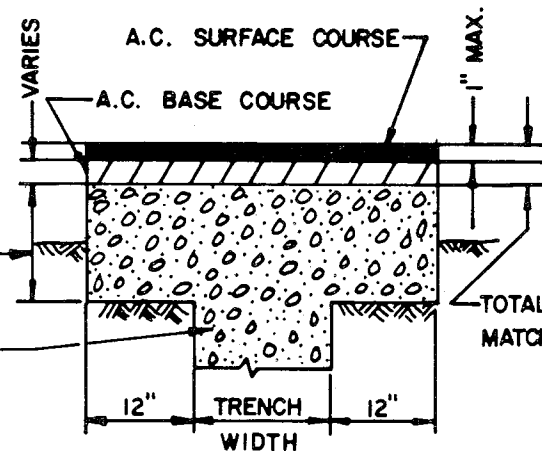
TYPE A

A.B., GRANULAR BACKFILL, OR NATIVE BACKFILL PER SECT. 303-2 AND 501



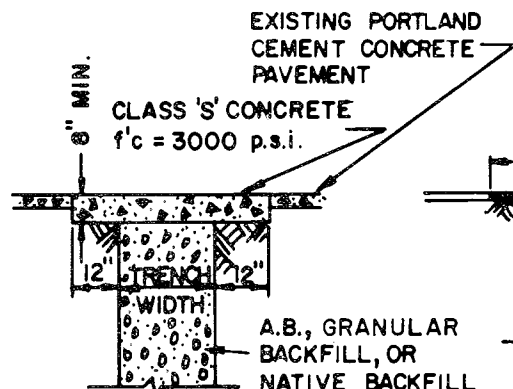
TYPE B

12" A.B. OR EXISTING SUBGRADE WHICHEVER IS GREATER
A.B. PER SECT. 303-2 AND 501



"T" TOP (SEE NOTE 3)

TOTAL THICKNESS TO MATCH EXISTING

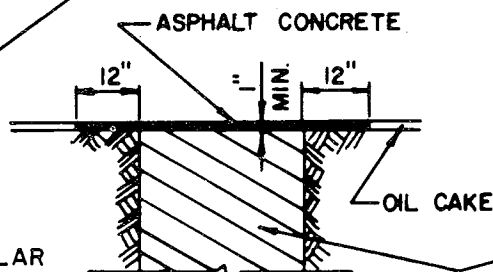


TYPE C

EXISTING PORTLAND CEMENT CONCRETE PAVEMENT

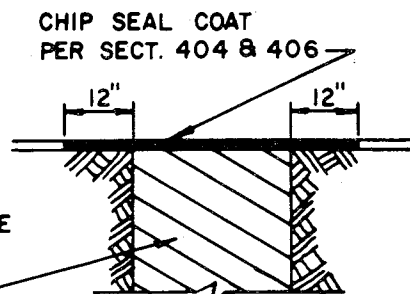
CLASS 'S' CONCRETE
f'c = 3000 p.s.i.

A.B., GRANULAR BACKFILL, OR NATIVE BACKFILL PER SECT. 303-2 AND 501.



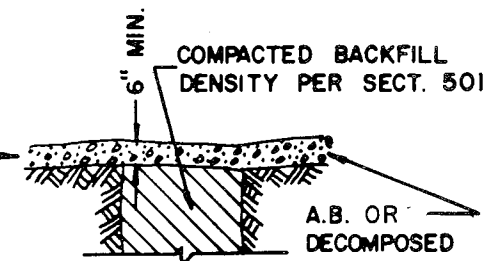
TYPE D

COMPACTED BACKFILL DENSITY PER SECT. 501



TYPE E

CHIP SEAL COAT PER SECT. 404 & 406
OIL CAKE
SURFACE OUTSIDE OF TRENCH LINES DAMAGED DURING CONSTRUCTION SHALL BE RESTORED TO ORIGINAL THICKNESS AND CONDITION.



TYPE F

A.B. OR DECOMPOSED GRANITE PER SECT. 303

NOTES

1. BEDDING PER SECTION 501
2. ASPHALT CONCRETE SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECT 406
3. 12" LIP IS REQUIRED ON THE SIDES OF A TRENCH THAT ARE NOT PARALLEL TO THE CENTER LINE OF THE STREET.
4. TYPES D & E REQUIRE 9" OF A.B. AT TOP OF TRENCH WHEN THERE IS AN EXISTING BASE.
5. SEE STANDARD DRAWING C-13.15 FOR TYPICAL PIPE INSTALLATION.

DETAIL APPROVED
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STATE OF ARIZONA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAY
URBAN HIGHWAY DETAILS
BACKFILL-PAVEMENT AND
SURFACE TREATMENT

REV.
DETAIL NO.
UC-20

Strain, End & Corner Posts	2" I.D. Nominal size pipe
Line Posts	1 1/2" I.D. Nominal size pipe "H" Sec. 1 7/8" X 1 5/8" Nominal size
Braces	1 1/4" I.D. Nominal size pipe
Gate	1 1/2" I.D. Nominal size pipe
Fencing	9 ga., 2" mesh fabricated wire

7 GA. STRAIN WIRE
TOP AND BOTTOM

11 GA. HOG RING FASTENERS
OR 9 GA. WIRE TIES TOP
AND BOTTOM 1'-6" C TO C.

BRACE - SEE NOTE 1

KNUCKLED SELVAGE UP

ALL PIPE POSTS TO
BE CAPPED, WITH
DOME TYPE CAP.

STRETCHER BAR BAND

STRETCHER BAR 1/4" x 3/4"

CORNER OR END POST

3/8" TRUSS ROD
SEE NOTE 1

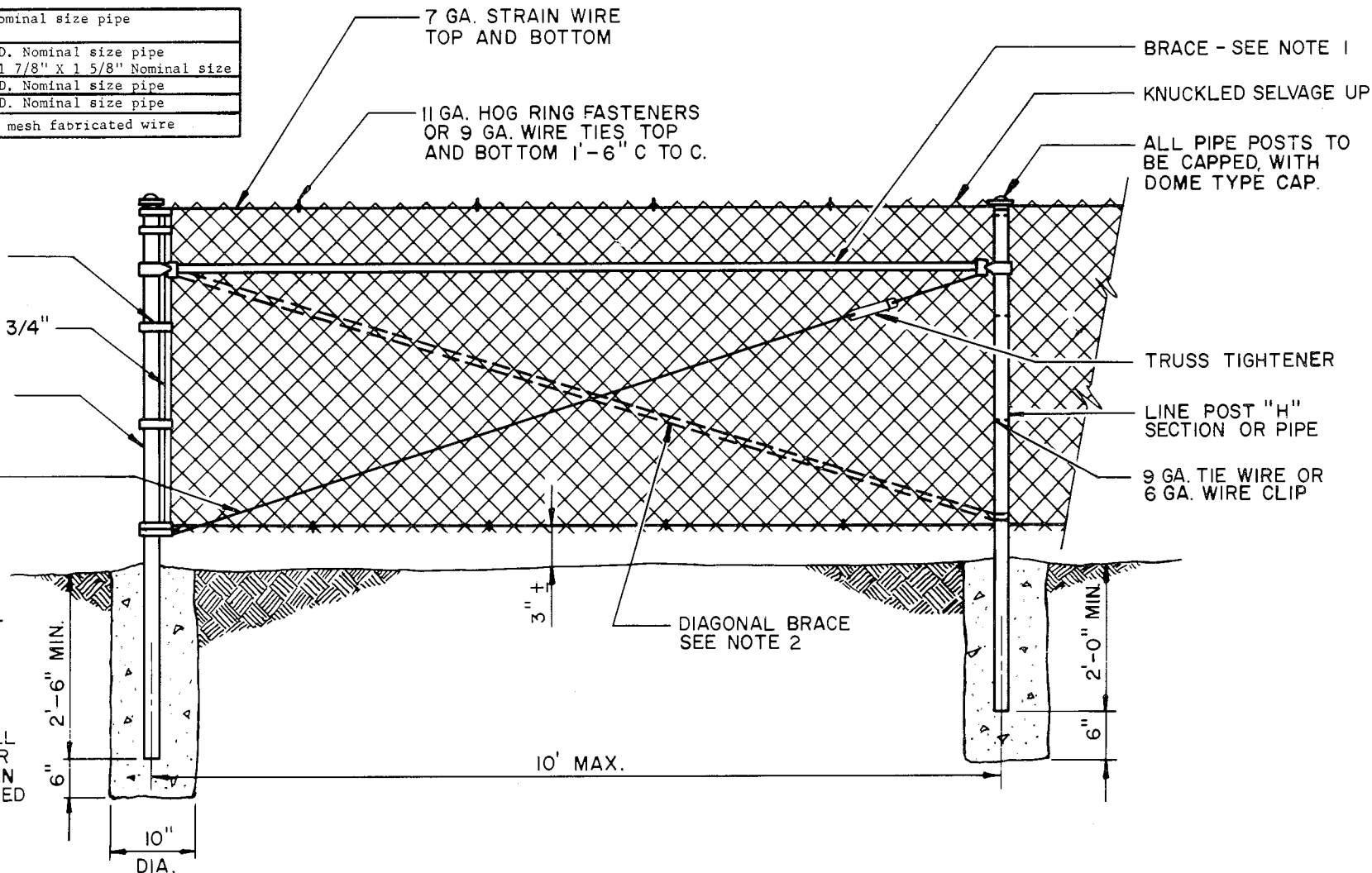
TRUSS TIGHTENER

LINE POST "H"
SECTION OR PIPE

9 GA. TIE WIRE OR
6 GA. WIRE CLIP

GENERAL NOTES:

- 1.) HORIZONTAL BRACE AND TRUSS ROD IN CORNER OR END PANEL SHALL BE LOCATED A MINIMUM OF 30 FEET AWAY FROM TRAVELED LANES ON RAMPS OR MAINLINE.
- 2.) DIAGONAL BRACE SHALL BE USED IN CORNER OR END PANELS LESS THAN 30 FEET FROM TRAVELED LANES ON RAMPS OR MAINLINE.



CORNER OR END PANEL
(TYPE 1 SHOWN, TYPE 2 SIMILAR)

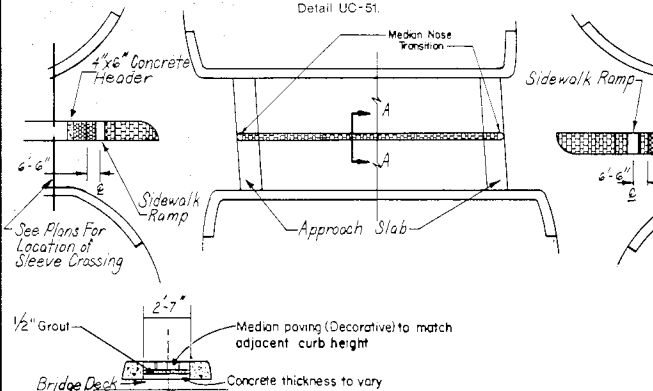
DETAIL APPROVED BY
URBAN HIGHWAY
ENGINEER
[Signature]
APPROVED FOR
DISTRIBUTION
[Signature]

STATE OF ARIZONA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAY
URBAN HIGHWAY DETAILS

C12.20 FENCE MODIFIED

DETAIL NO.
UC-21

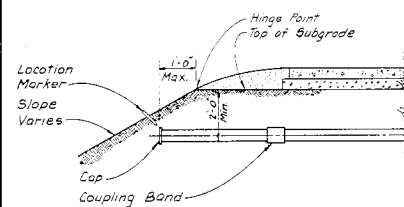
- NOTES: 1. Traffic signal foundations, traffic sign foundations and pull boxes for traffic signs and traffic signals shall be installed prior to placing median paving.
2. Install 1/2" bituminous expansion joint at 30'-O.C. or as approved by the Engineer for Concrete Median Paving.
3. Concrete Header shall be used where required for landscaping. See plans for limits of Decorative Median Paving.
4. Decorative Median Paving shall not be placed on Median Nose Transition. See Median Nose Transition Detail UC-51.



4' Median Detail
Section A-A

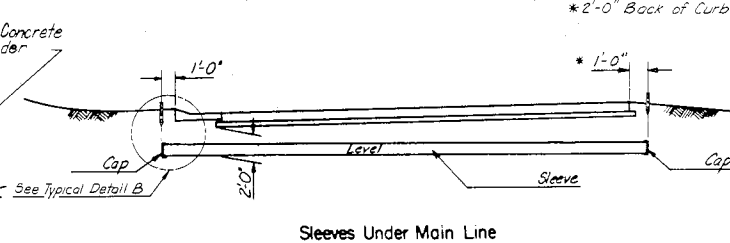
Decorative Median Paving Detail
Section C-C

CROSSROAD MEDIAN PAVING

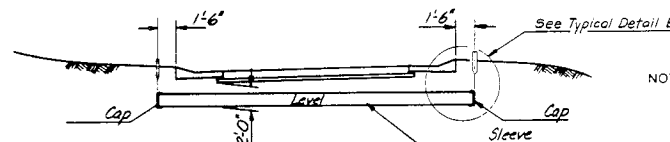


SLEEVE TERMINATION AT
ELEVATED ROADWAY
TYPICAL DETAIL

(B)

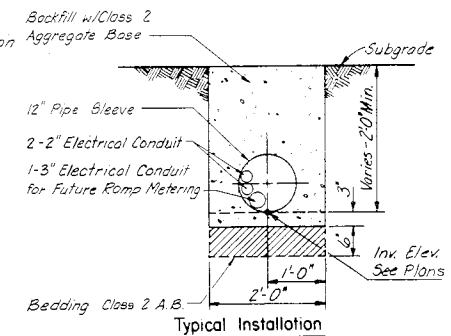


Sleeves Under Main Line



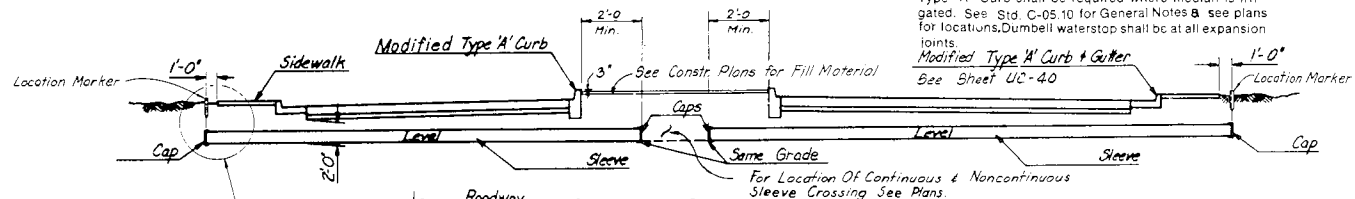
Sleeves Under Ramp

Note: Install pull wires in Electrical Conduit.

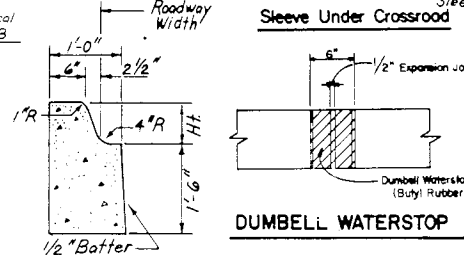


Typical Installation

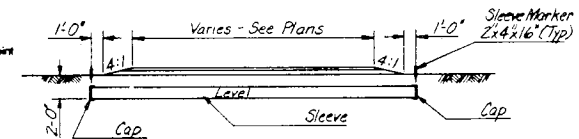
- NOTES: 1. Irrigation sleeves shall be installed in a trench condition. See Std. C-13.15 and Detail UC-20.
2. Bedding and backfill material shall be Class 2 Aggregate Base.
3. Pipe installation shall conform to Section 501 of Standard Specifications.
4. The Contractor shall imprint a 4"± high letter "S" on the face of all curbs at sleeve locations. The width of the letter shall be 1/2" and shall penetrate the concrete surface 1/2".
5. For non-continuous sleeves under crossroads, Modified Type "A" Curb shall be required where median is irrigated. See Std. C-05.10 for General Notes & see plans for locations. Dumbell waterstop shall be at all expansion joints.



Sleeve Under Crossroad



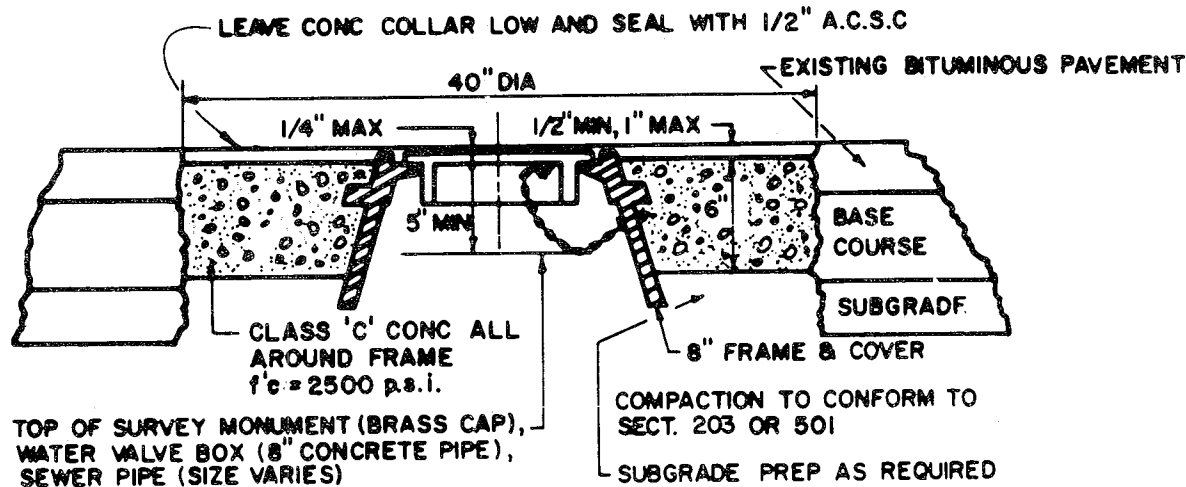
DUMBELL WATERSTOP



Sleeves Under Driveways
And Parking Areas

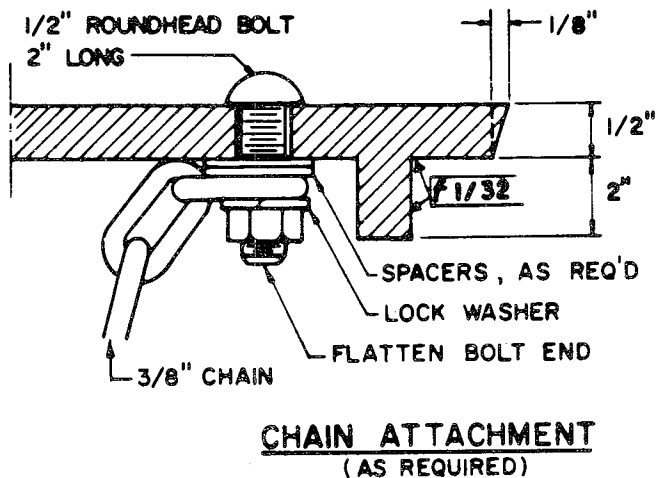
MODIFIED TYPE A CURB
(See Std. C-05.10)

DETAIL: APPROVED BY ENGINEER	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAY URBAN HIGHWAY DETAILS	REV.
APPROVED FOR DISTRIBUTION	CROSSROAD MEDIAN PAVING & IRRIGATION SLEEVE DETAILS	DETAIL NO.
		UC-22



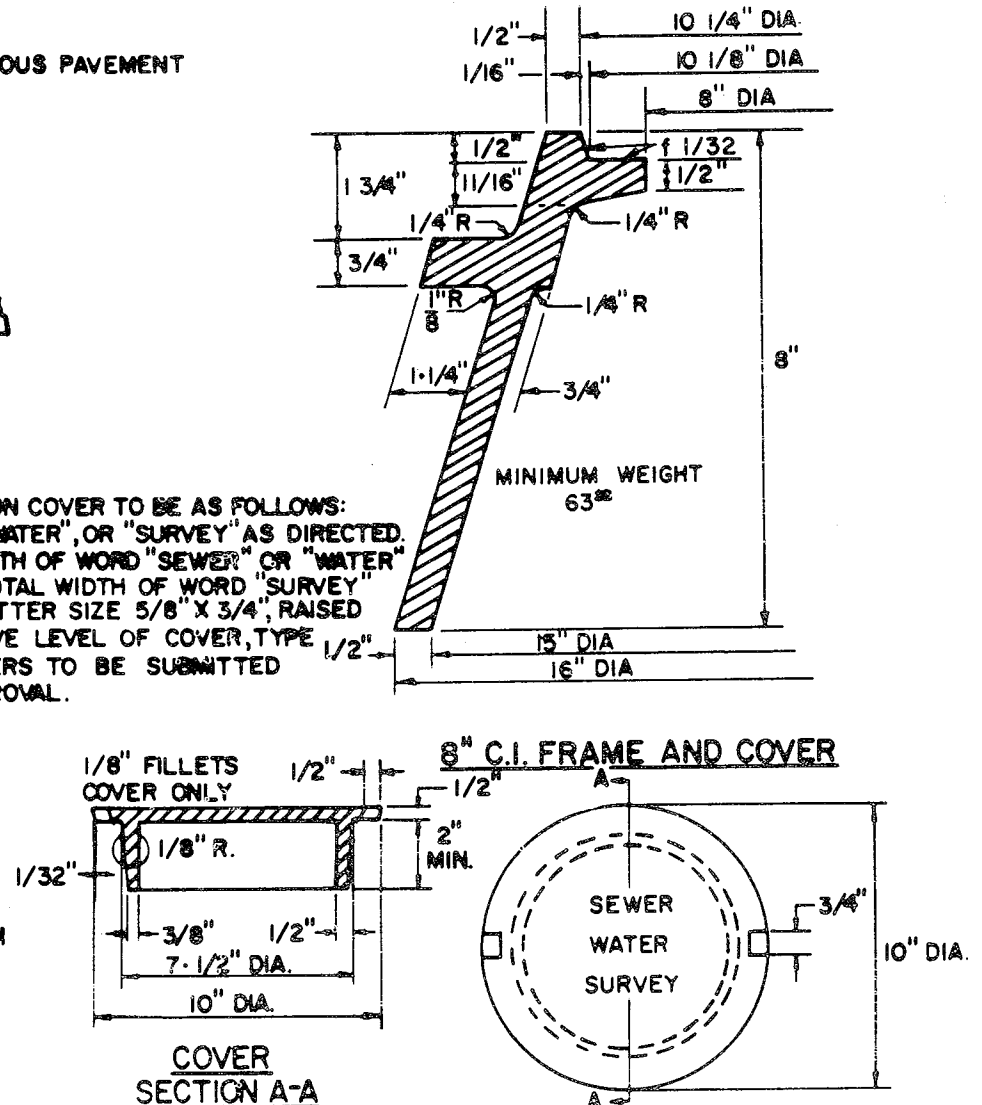
WATER VALVE, SURVEY MONUMENT, OR SEWER CLEAN OUT FRAME & GRADE ADJUSTMENT

LETTERS ON COVER TO BE AS FOLLOWS:
"SEWER", "WATER", OR "SURVEY" AS DIRECTED.
TOTAL WIDTH OF WORD "SEWER" OR "WATER"
3-3/4". TOTAL WIDTH OF WORD "SURVEY"
4-1/2". LETTER SIZE 5/8" X 3/4", RAISED
1/16" ABOVE LEVEL OF COVER, TYPE
OF LETTERS TO BE SUBMITTED FOR APPROVAL.

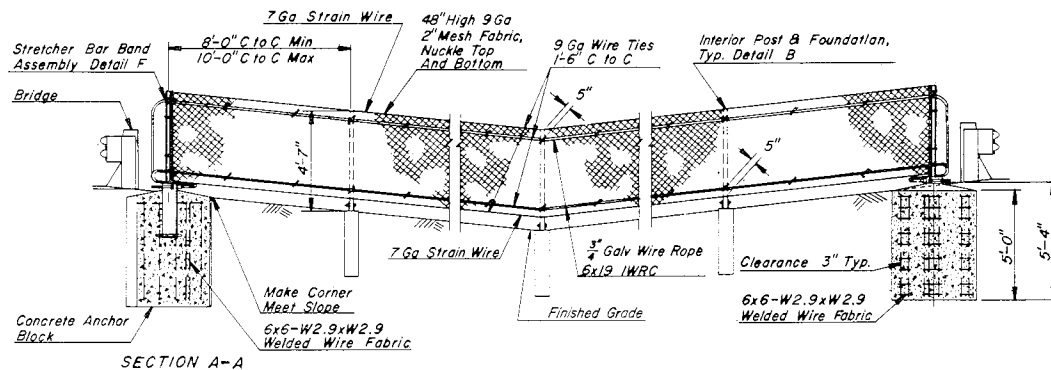


DETAIL TYPICAL
FOR BOTH FRAME
AND COVER

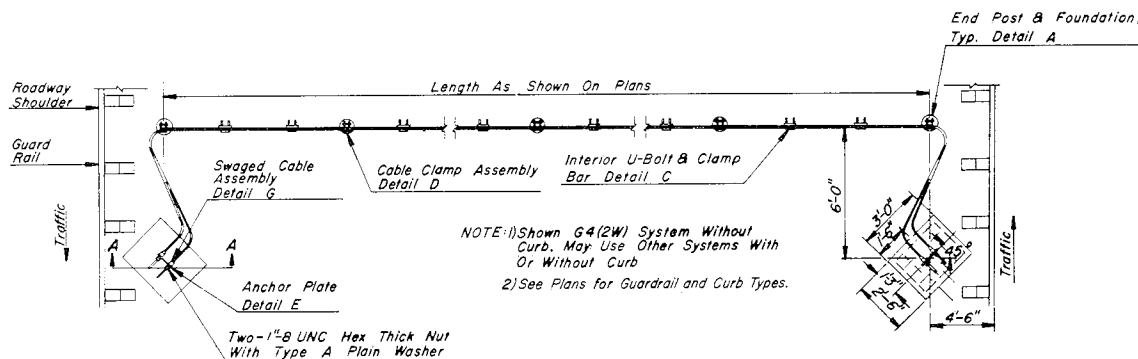
CASTING TO CONFORM
TO SECT. 1004. MINIMUM
WEIGHT 16 LBS. FOR
COVER



DETAIL APPROVED URBAN HIGHWAY ENGINEER	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAY URBAN HIGHWAY DETAILS	REV.
APPROVED FOR DISTRIBUTION	FRAME AND COVER WITH GRADE ADJUSTMENT	DETAIL NO. UC-23



ELEVATION FOR MEDIAN INSTALLATION (TYPE I)

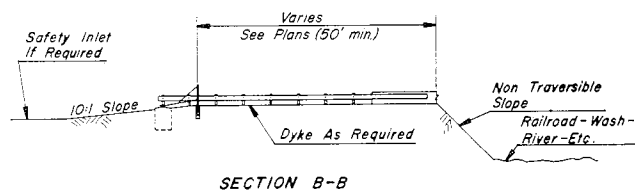


PLAN FOR MEDIAN INSTALLATION (TYPE I)

GENERAL NOTES

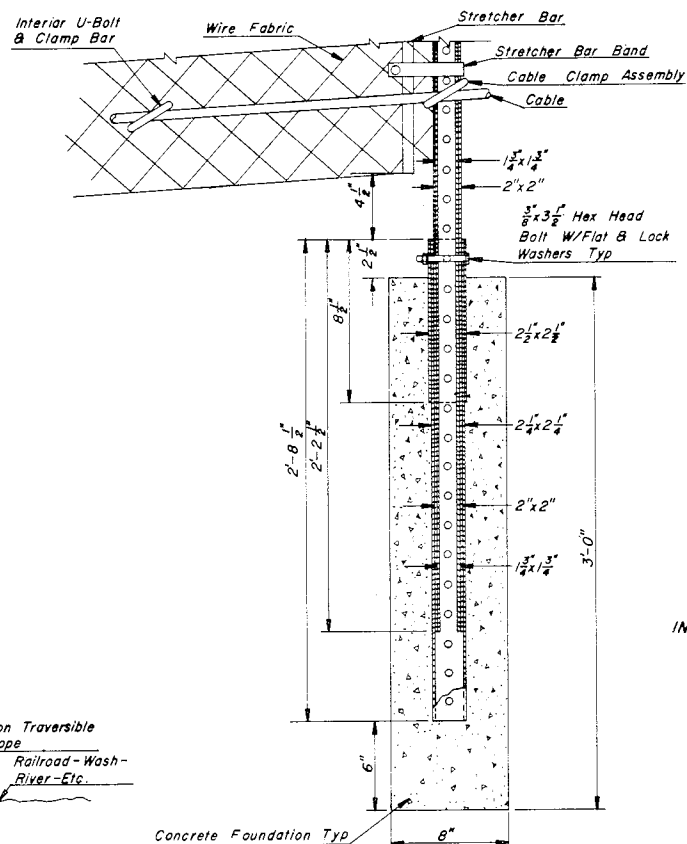
1. All concrete shall be class S, 4000 psi.
2. All bolts, nuts, washers and fittings shall meet the dimensional requirements of the American National Standards Institute, unless otherwise designated and galvanized in accordance with ASTM A153.
3. All structural steel shapes and products fabricated from such shapes, bars, strips, etc., shall meet the dimensional requirements of the American Institute of Steel Construction, shall conform to the requirements of ASTM A36, and shall be galvanized in accordance with the requirements of ASTM A123.
4. Galvanized swaged fitting and U-bolt shall conform to ASTM A449.
5. The $\frac{5}{8}$ galvanized wire rope shall conform to AASHTO M30 Class B, Type II.
6. The wire fabric, ties, bands, stretcher bars, and other fittings and hardware shall conform to AASHTO M181.
7. The wire fabric fence shall follow the contour of the finished grade.
8. The excavation for the concrete anchor blocks shall be to neat lines. Max excess is 3" \pm .
9. Perforated posts shall be square tube formed from 0.105" U.S.S. gauge A.S.T.M. A366 cold rolled carbon steel. The square tubes shall be welded directly in the corner by high frequency resistance welding or equal. The posts to be externally scarfed to agree with standard corner radii of $\frac{5}{16} \pm \frac{1}{16}$.
10. Perforated posts shall be galvanized to conform to the requirements of A.S.T.M. A525. Coating designation G-90.
11. The cables shall have enough tension to prevent sagging.
12. Height of bottom cable shall not exceed 12" above ground.
13. Two Interior U-Bolts & Clamps to be spaced at $\frac{1}{3}$ of the distance between posts.
14. See plans for locations.
15. See detail UC-21 and C-12.20 for 72" fence details.

DETAIL APPROVED BY URBAN HIGHWAY ENGINEER	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAY URBAN HIGHWAY DETAILS	REV.
APPROVED FOR DISTRIBUTION	CHAIN LINK CABLE BARRIER Sheet 1 of 4	DETAIL NO. UC-24



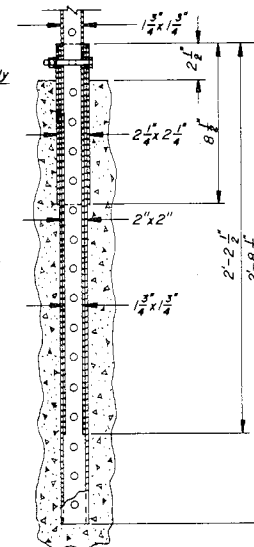
DETAIL A



END POST & FOUNDATION

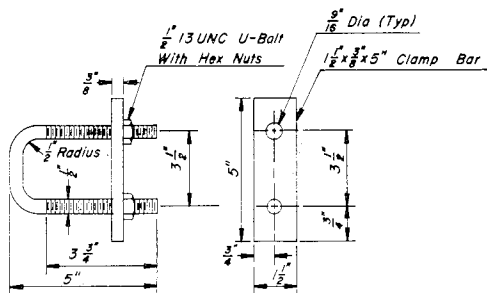


DETAIL B

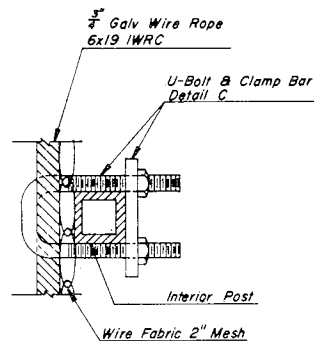
INTERIOR POST



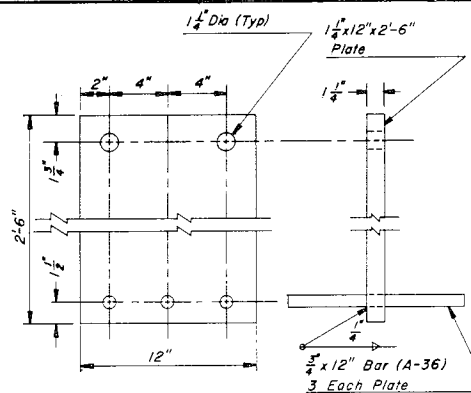
DETAIL APPROVED BY URBAN HIGHWAY ENGINEER 	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAY URBAN HIGHWAY DETAILS	REV.
APPROVED FOR DISTRIBUTION 	CHAIN LINK CABLE BARRIER Sheet 2 of 4	DETAIL NO. UC-24



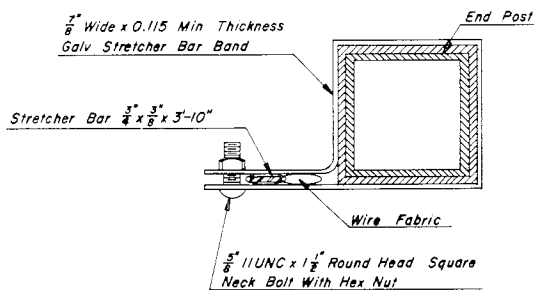
DETAIL C
U-BOLT & CLAMP BAR



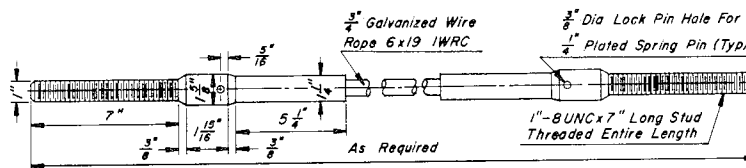
DETAIL D
CABLE CLAMP ASSEMBLY





FRONT VIEW
SIDE VIEW
DETAIL E
ANCHOR PLATE

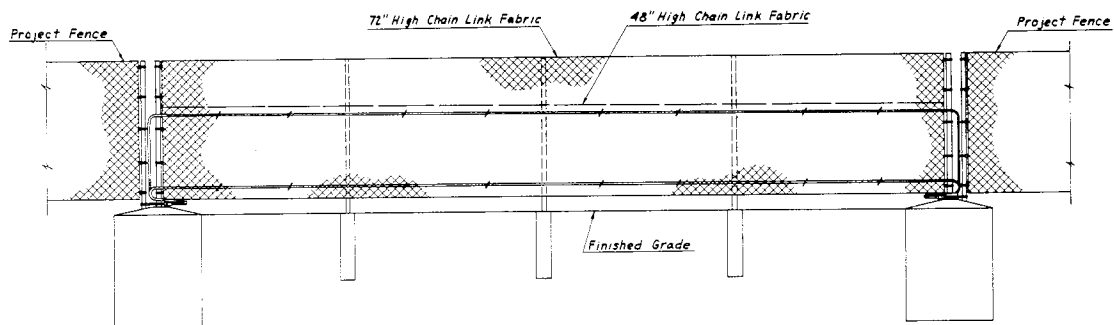


DETAIL F
STRETCHER BAR BAND ASSEMBLY

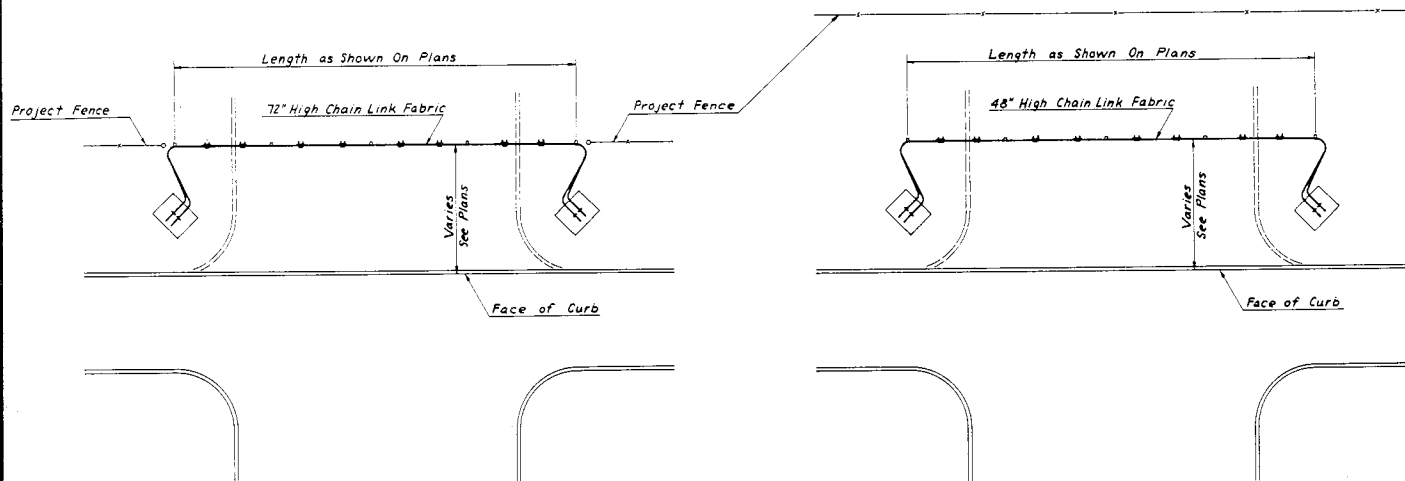


DETAIL G
SWAGED CABLE ASSEMBLY

DETAIL APPROVED BY URBAN HIGHWAY ENGINEER 	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAY URBAN HIGHWAY DETAILS	REV.
APPROVED FOR DISTRIBUTION 	CHAIN LINK CABLE BARRIER Sheet 3 of 4	DETAIL NO. UC-24



ELEVATION FOR LOCAL STREET T INTERSECTION INSTALLATION (TYPE 2)



FOR 72" HIGH FABRIC

FOR 48" HIGH FABRIC

PLANS FOR LOCAL STREET T INTERSECTION INSTALLATION (TYPE 2)

DETAIL APPROVED BY
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ENGINEER
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DISTRIBUTION
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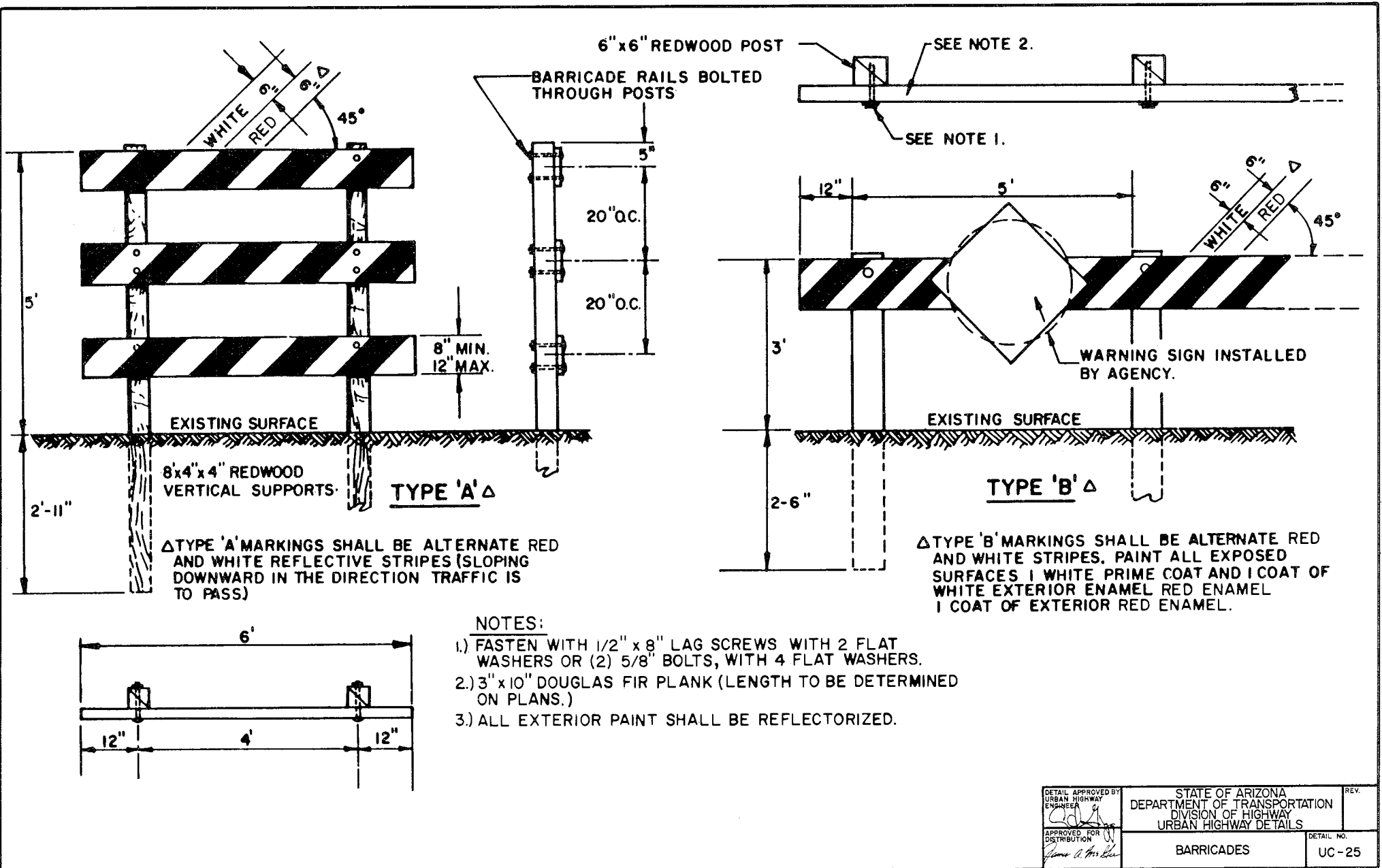
STATE OF ARIZONA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAY
URBAN HIGHWAY DETAILS

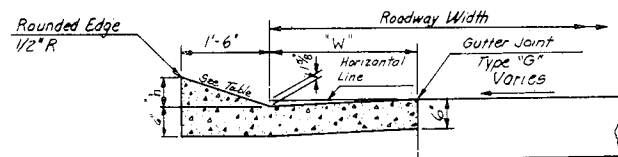
REV.

CHAIN LINK CABLE BARRIER
Sheet 4 of 4

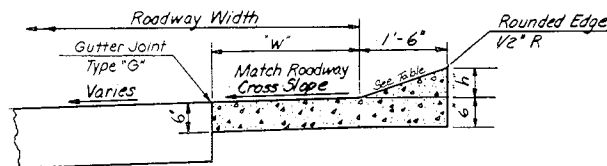
DETAIL NO.

UC-24

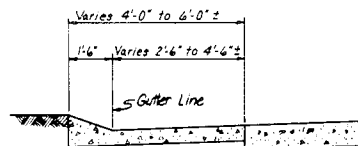
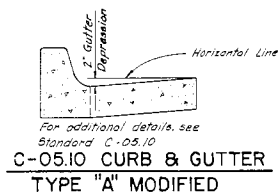




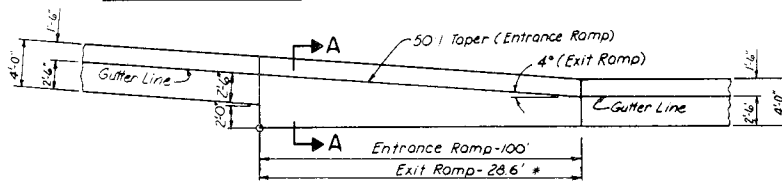
SPECIAL C AND G TYPE	CURB HEIGHT "h"	GUTTER WIDTH "w"	SLOPE
B	6"	2'-6"	3:1
C	3"	2'-6"	6:1



**SPECIAL CURB AND GUTTER
TYPE B AND C**



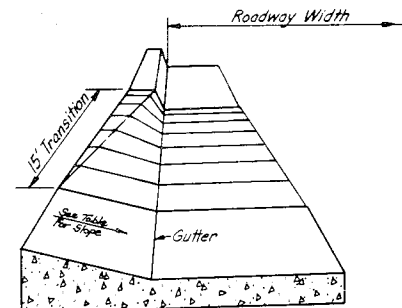
Section A-A



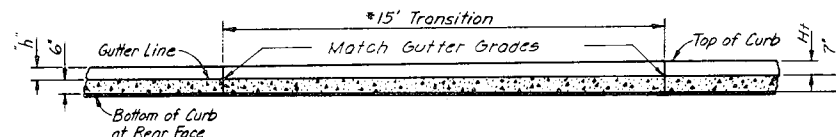
Plan View

MODIFIED SPECIAL CURB & GUTTER — AT RAMP TAPERS

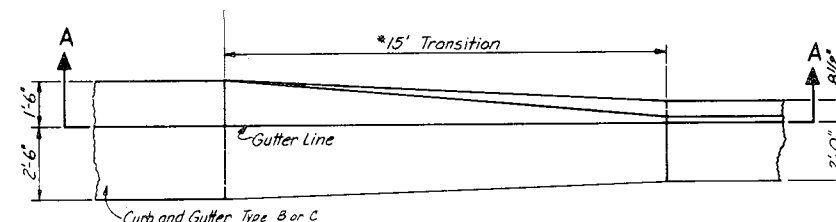
* Dimension may vary where exit occurs on curves, see plans.



PERSPECTIVE VIEW



SECTION A-A



PLAN VIEW

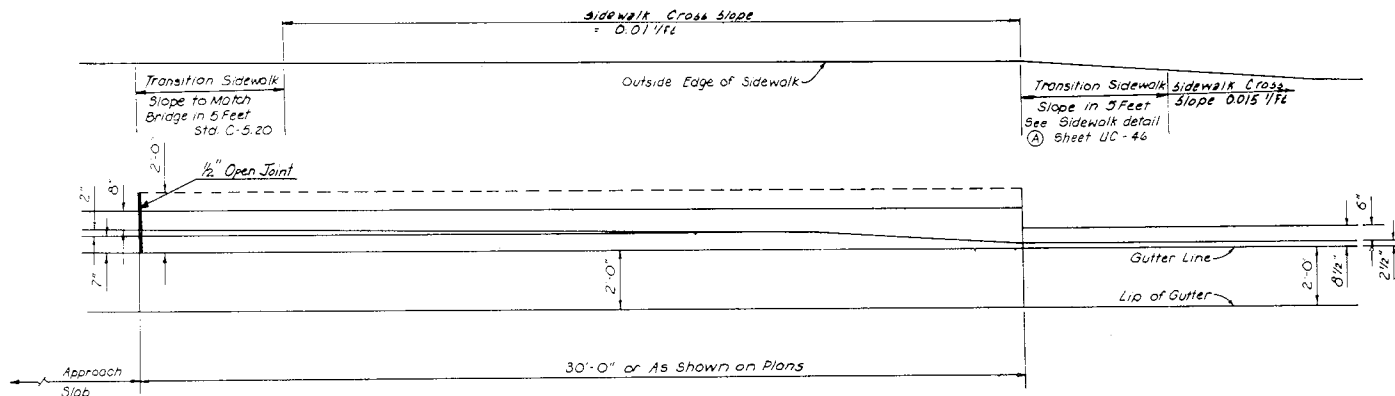
* Use 10'-0" Transition between A.D.O.T. and City of Phoenix Curb & Gutter

GENERAL NOTES:

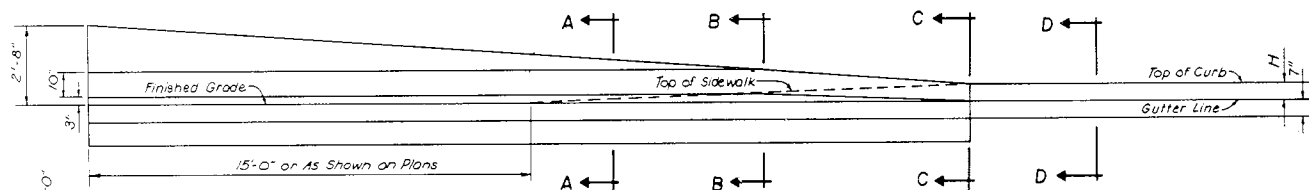
- 1) All concrete shall be Class 'S' (f'c = 2500 psi).
- 2) All gutter flow lines shall be troweled to an accurate grade for a width of 9". The remainder of curb and gutter shall be textured longitudinally to a light broom finish.
- 3) For Special Curb and Gutter with slotted drain, See Slotted Drain Details.
- 4) 1" Deep scored joints to be placed to match adjacent joints in PCCP. 1/2" bituminous joint filler shall be placed where the curb and gutter abutts, slotted drains, catch basins, curb returns, etc.
- 5) Special Curb and Gutter h=6" transitions to Special Curb and Gutter h=3" in 15ft.
- 6) For additional general notes and dimensions, See C-05.10.

SPECIAL CURB AND GUTTER TRANSITION

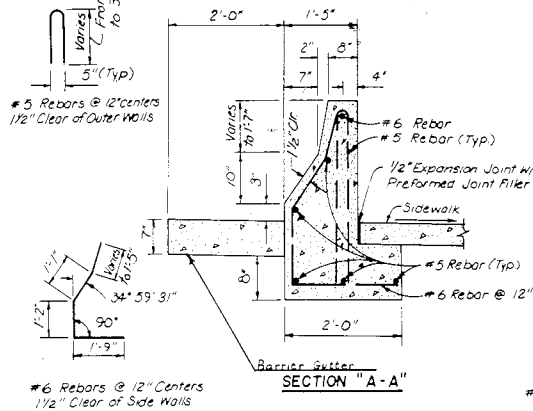
DETAIL APPROVED BY URBAN HIGHWAY ENGINEER <i>[Signature]</i>	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAY URBAN HIGHWAY DETAILS	REV.
APPROVED FOR DISTRIBUTION <i>[Signature]</i>	SPECIAL CURB AND GUTTER TRANSITION TYPE "A"	DETAIL NO. UC-40



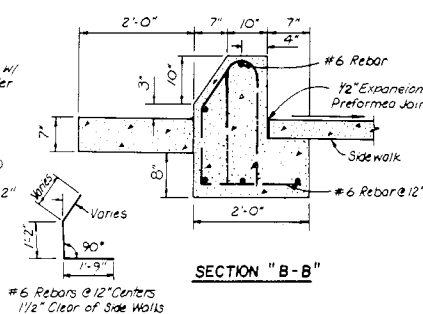
PLAN VIEW



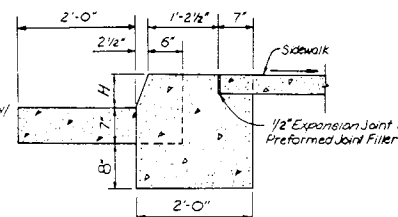
ELEVATION



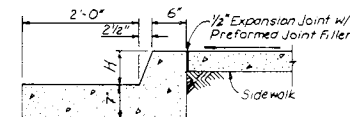
SECTION "A-A"



SECTION "B-B"



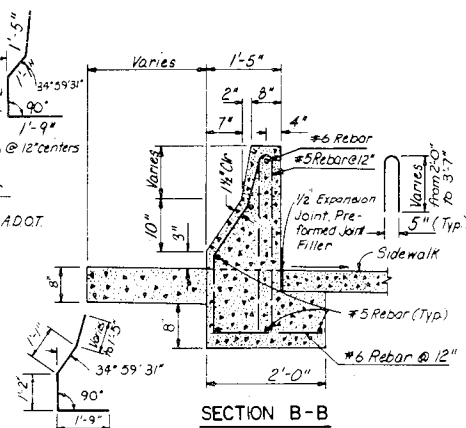
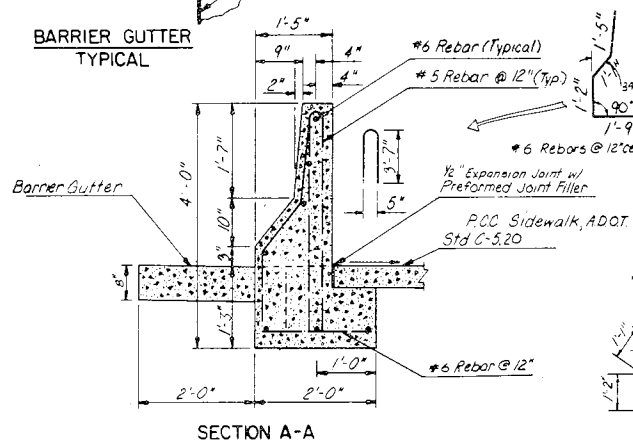
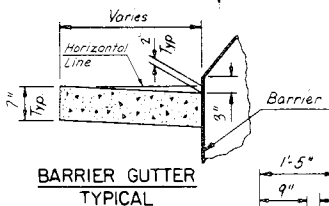
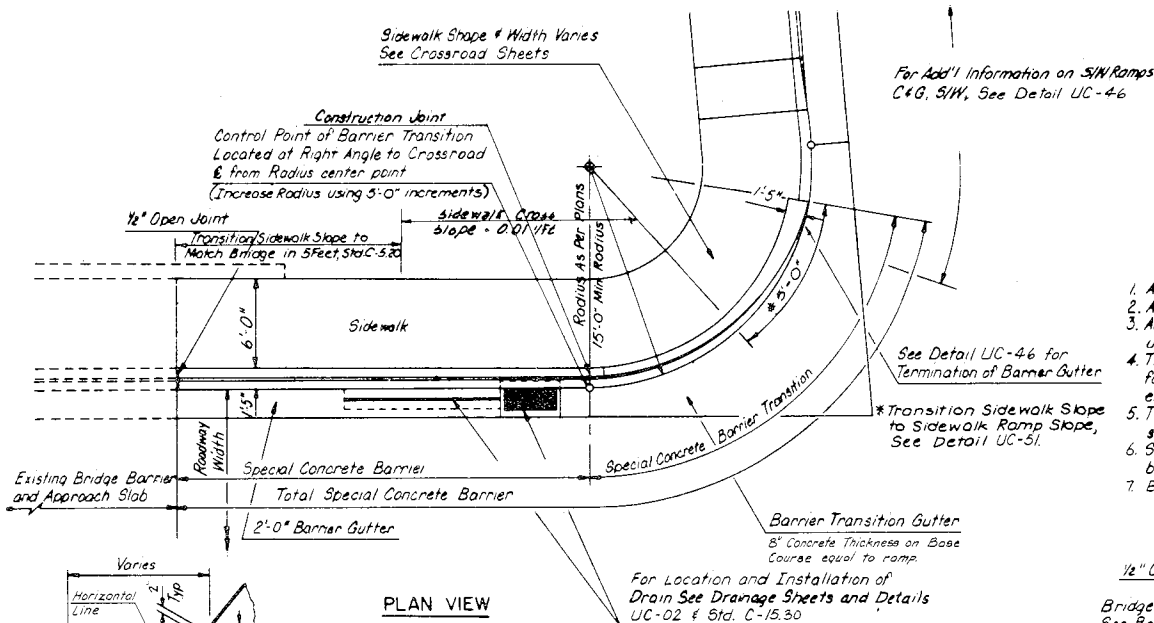
SECTION "C-C"



SECTION "D-D"

- General Notes
1. All concrete shall be Class "S" ($f'_c = 3000 \text{ psi}$).
 2. All reinforcing steel shall conform to Sect. 1003-4.2, Grade 40.
 3. All reinforcing steel shall have 2" minimum clear cover unless otherwise noted.
 4. Transverse construction joints shall extend through the foundation slab and be located at intervals not to exceed 20 feet, except for Barrier Transition.
 5. The barrier gutter and barrier transition gutter shall be included in the cost of the barrier.
 6. See drainage sheets for slatted drain and catch basin details.
 7. See detail UC-42 for barrier gutter detail.

DETAIL APPROVED BY URBAN HIGHWAY ENGINEER	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAY URBAN HIGHWAY DETAILS	REV.
APPROVED FOR DISTRIBUTION	BARRIER TRANSITION TANGENT	DETAIL NO. UC-41
James A. McLean	Sheet 2 of 2	

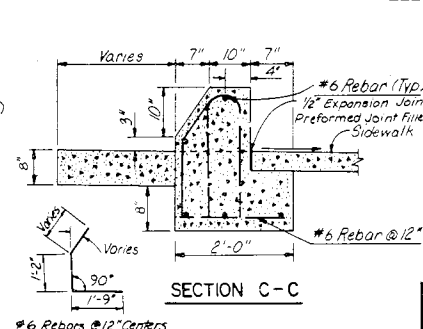
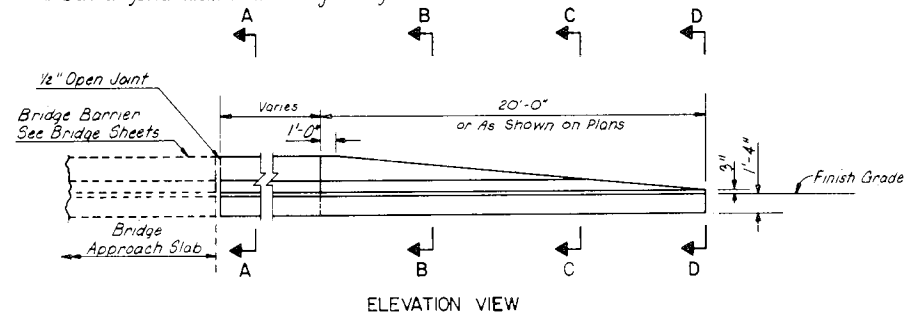
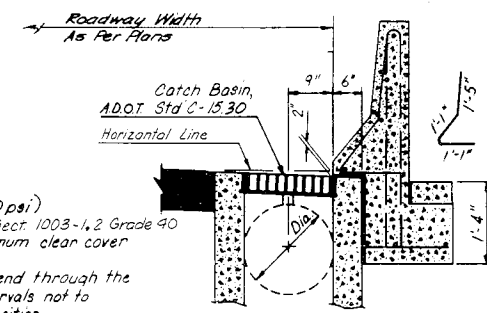


*6 Rebars @ 12" Centers

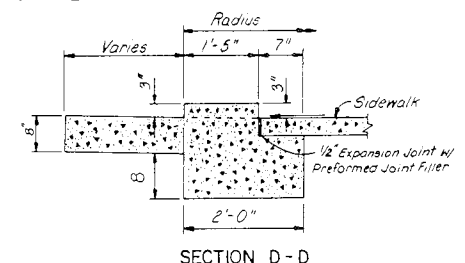
For Add'l Information on S/W/Ramps
C+G, S/W, See Detail UC-46

GENERAL NOTES

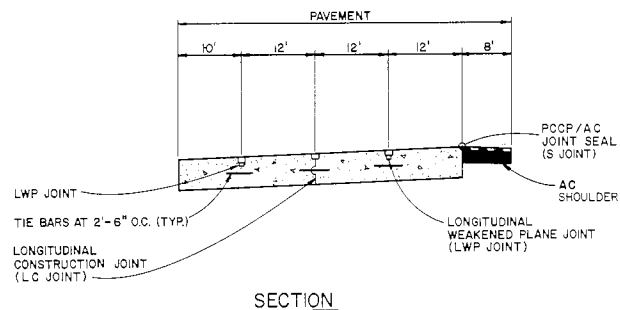
1. All concrete shall be Class "S" ($f'_c = 3000$ psi)
2. All reinforcing steel shall conform to Sect. 1003-4.2 Grade 40
3. All reinforcing steel shall have 2" minimum clear cover unless otherwise noted
4. Transverse construction joints shall extend through the foundation slab and be located at intervals not to exceed 20 feet, except for Barrier Transition.
5. The barrier gutter and barrier transition gutter shall be included in the cost of the barrier
6. See drainage sheets for slotted drain and catch basin details
7. Barrier gutter width to match adjacent gutter width.



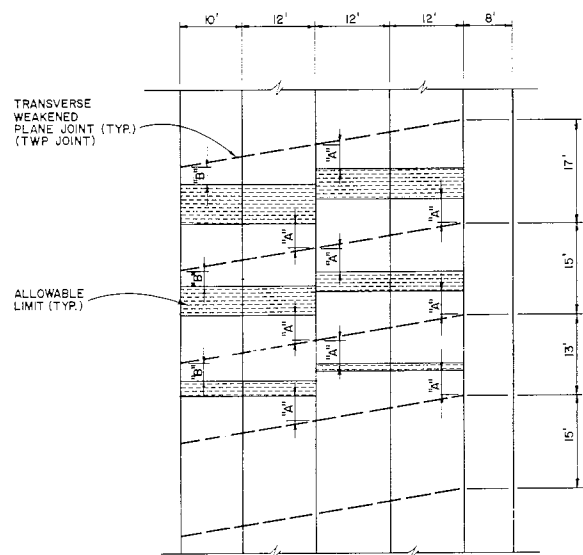
*6 Rebars @ 12" Centers



DETAIL APPROVED BY URBAN HIGHWAY ENGINEER	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAY URBAN HIGHWAY DETAILS	REV.
APPROVED FOR DISTRIBUTION	BARRIER TRANSITION CURVE	DETAIL NO. UC-42

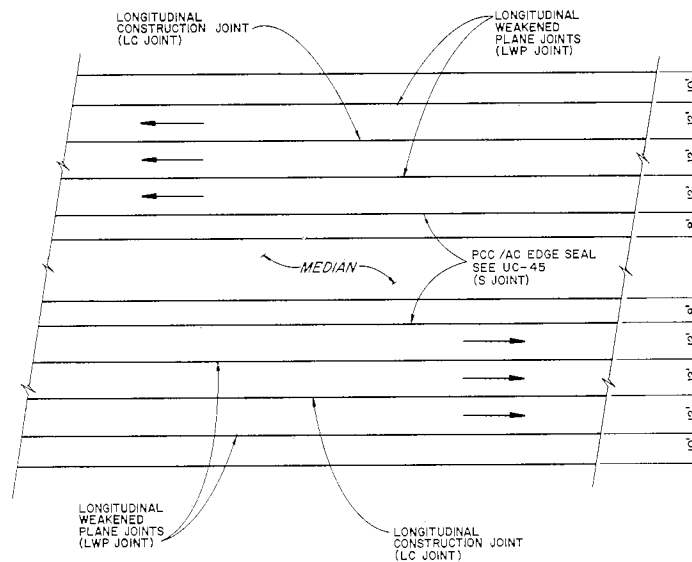


SECTION



PLAN

TRANSVERSE CONSTRUCTION JOINTS



MAINLINE CONSTRUCTION JOINTS

GENERAL NOTES

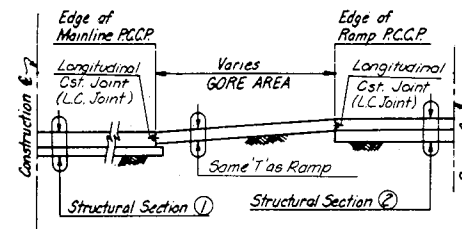
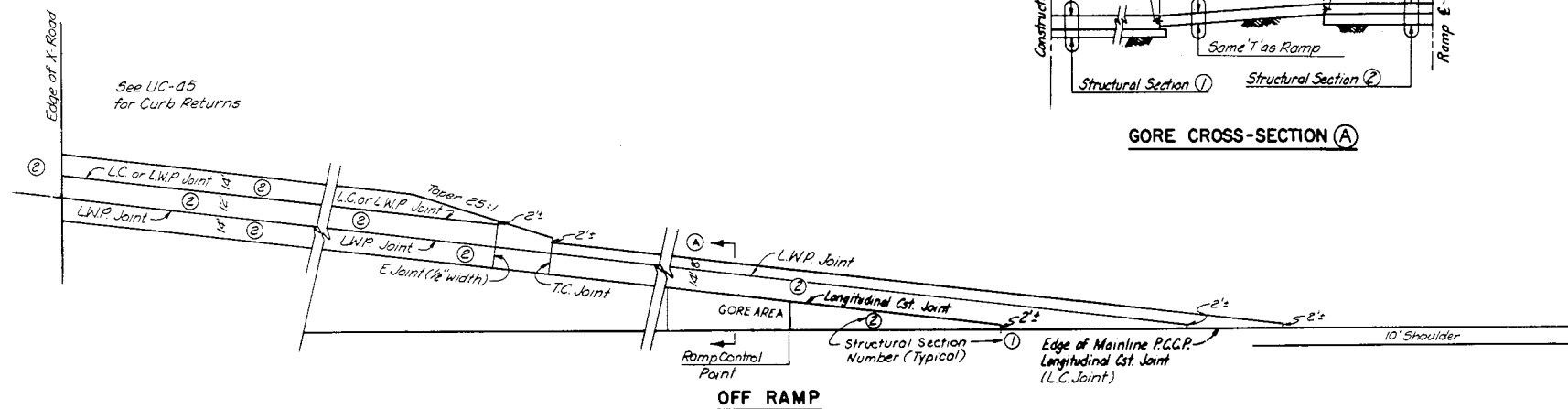
1. Transverse construction joints shall be located within the allowable limits shown. (TYP.)
2. "A" shall equal 4 ft. minimum (typical).
"B" shall equal 3 ft. minimum (typical).

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ENGINEER
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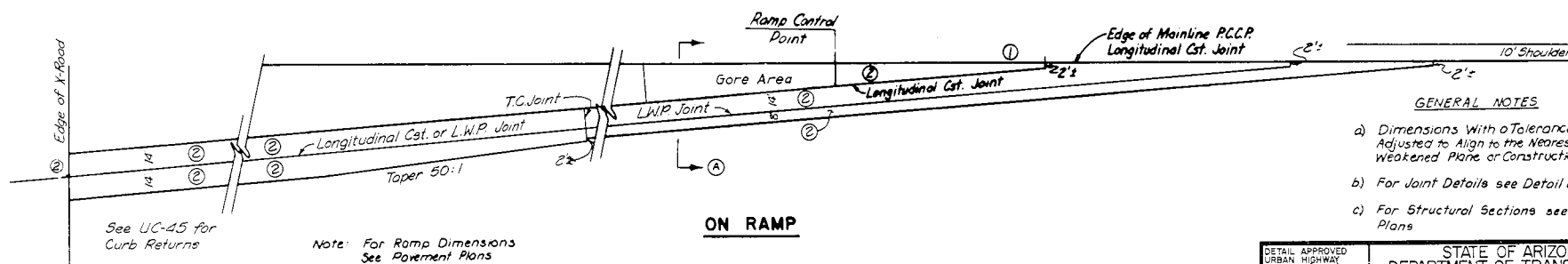
STATE OF ARIZONA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAY
URBAN HIGHWAY DETAILS

MAINLINE CONSTRUCTION
JOINTS
Sheet 1 of 2

DETAIL NO.
UC-43
REV.



GORE CROSS-SECTION (A)



GENERAL NOTES

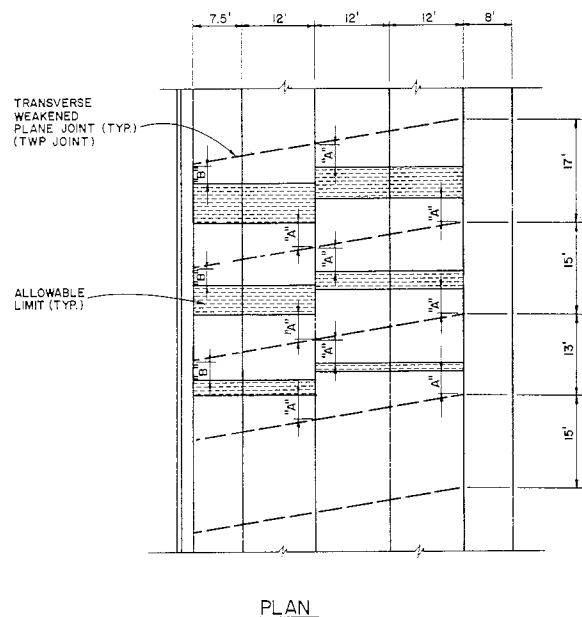
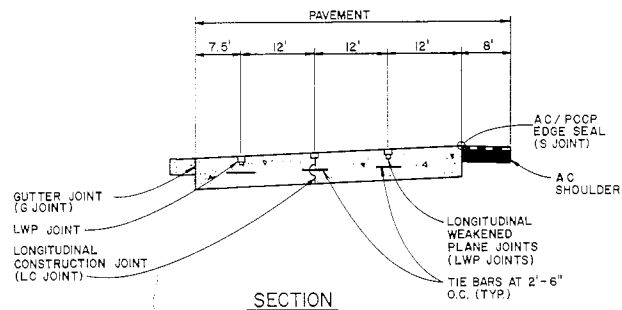
- Dimensions with a Tolerance May Be Adjusted to Align to the Nearest Transverse Weakened Plane or Construction Joint as Directed.
- For Joint Details see Detail UC-45 and UC-48.
- For Structural Sections see Construction Plans

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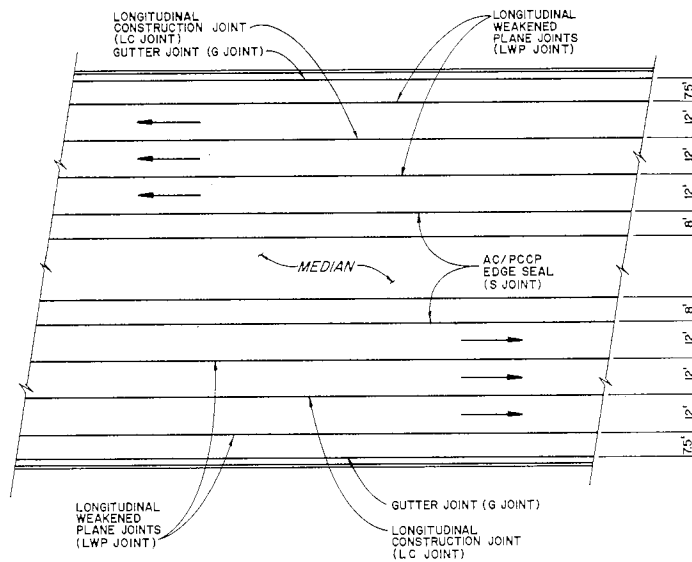
STATE OF ARIZONA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAY
URBAN HIGHWAY DETAILS

RAMP CONSTRUCTION JOINTS
Sheet 2 of 2

DETAIL NO.
UC-43



TRANSVERSE CONSTRUCTION JOINTS

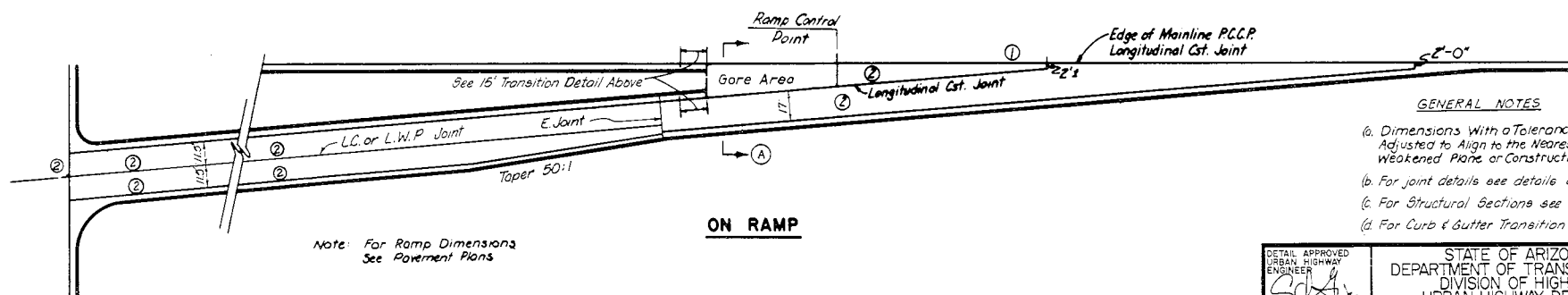
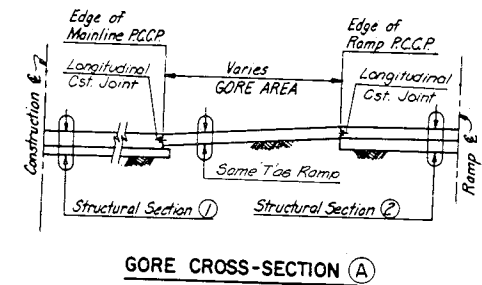
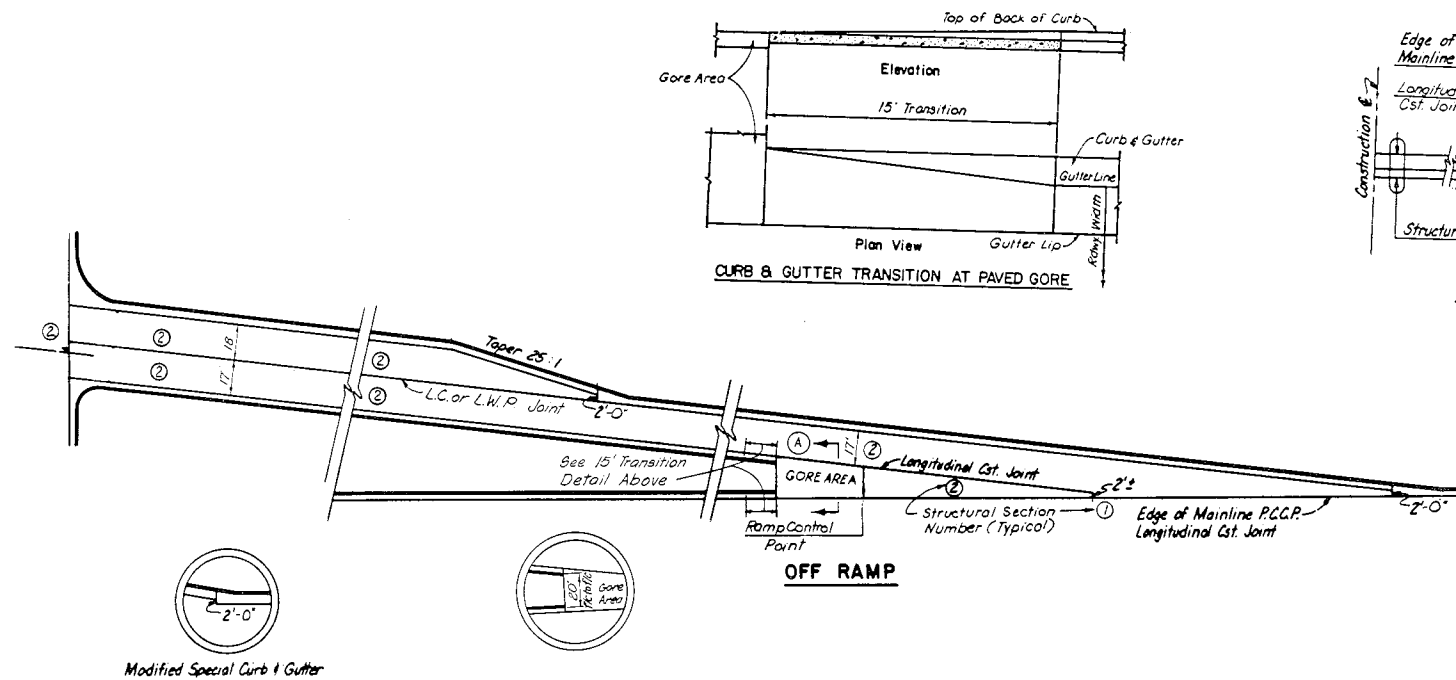


MAINLINE CONSTRUCTION JOINTS

GENERAL NOTES

1. Transverse construction joints shall be located within the allowable limits shown. (SEE PLAN).
2. "A" shall equal 4' ft. minimum (typical).
"B" shall equal 3' ft. minimum (typical).

DETAIL APPROVED URBAN HIGHWAY ENGINEER <i>[Signature]</i>	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAY URBAN HIGHWAY DETAILS	REV.
APPROVED FOR DISTRIBUTION <i>[Signature]</i>	MAINLINE CONST. JOINTS WITH CURB AND GUTTER Sheet 1 of 2	DETAIL NO. UC-44

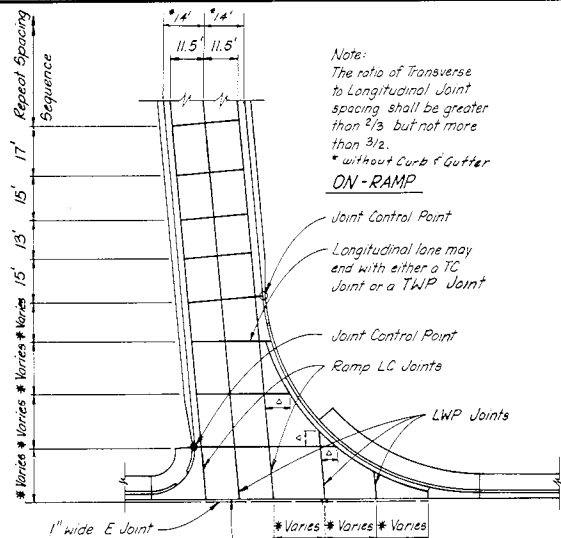


Note: For Ramp Dimensions See Pavement Plans

GENERAL NOTES

- Dimensions with a Tolerance may Be Adjusted to Align to the Nearest Transverse Weakened Plane or Construction Joint as Directed.
- For joint details see details UC-45 and UC-46.
- For Structural Sections see Construction Plans.
- For Curb & Gutter Transition - See UC-40.

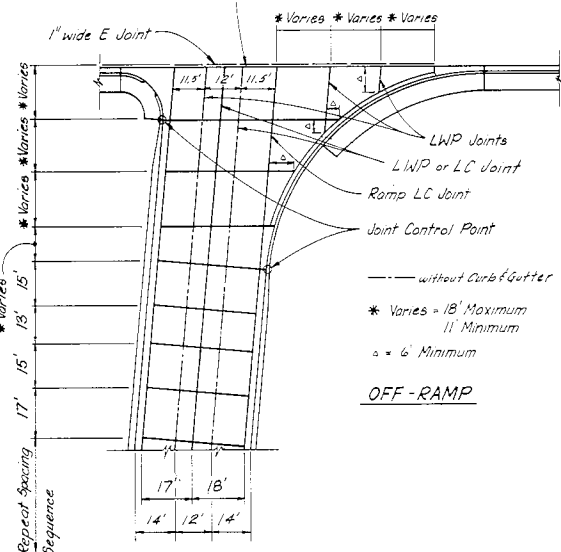
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APPROVED FOR DISTRIBUTION	RAMP CONSTRUCTION JOINTS WITH CURB AND GUTTER	DETAIL NO. UC-44
James O. McLean	Sheet 2 of 2	



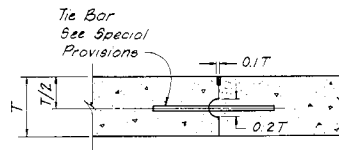
Note:
The ratio of Transverse to Longitudinal Joint spacing shall be greater than $\frac{2}{3}$ but not more than $\frac{3}{2}$.
* without Curb & Gutter
ON-RAMP

CROSS-STREET

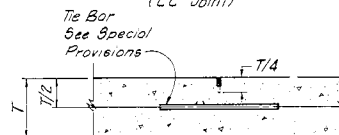
At ramp terminal, LC Joints without tie bars when cross-street is PCCP paving; G Joints when cross-street is AC paving.



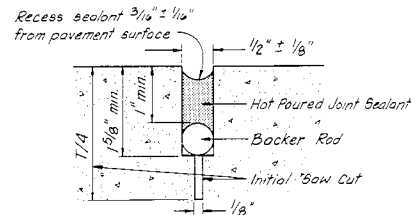
OFF-RAMP



Longitudinal Construction Joint (LC Joint)

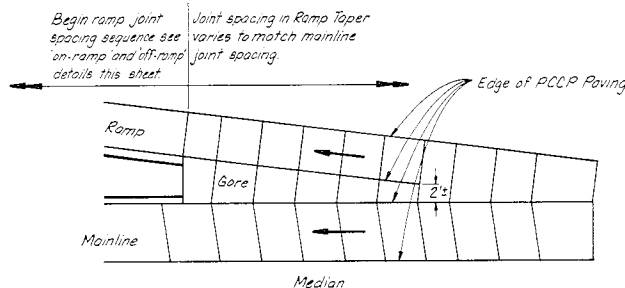


Longitudinal Weakened Plane Joint (LWP Joint)



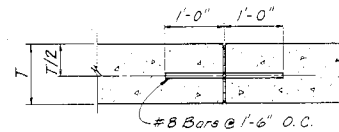
Alternate Transverse or Longitudinal Weakened Plane Joint Details

Note: Where load transfer dowel assemblies are used on transverse joints the depth of initial saw cut shall be $T/3$.

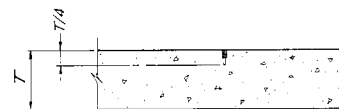


Typical Transverse Weakened Plane Joint Layout At Gore Areas

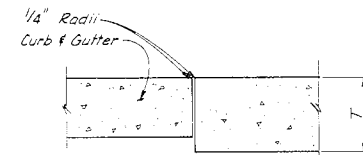
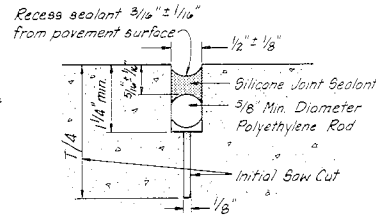
Note: Dimensions with a tolerance may be adjusted to align with the nearest transverse weakened plane or construction joint as directed.



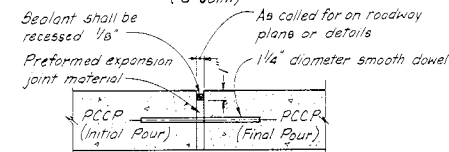
Transverse Construction Joint (TC Joint)



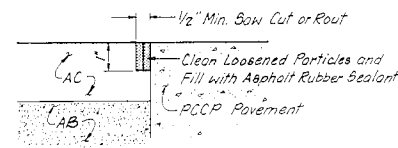
Transverse Weakened Plane Joint (TWP Joints-w/o load transfer dowel assemblies)



Gutter Joint (G Joint)



Expansion Joint (E Joint)



Edge Seal for AC/PCC Pavement Joint (E Joint)

Joint Abbreviations

- LWP - Longitudinal Weakened Plane Joint
- TWP - Transverse Weakened Plane Joint
- LC - Longitudinal Constr.
- TC - Transverse Constr.
- E - Expansion Joint
- S - AC/PCC Edge Seal
- G - Gutter Joint

General Notes:

1. For transverse weakened plane joint with load transfer dowel assemblies see detail UC-48.
2. Initial saw cut not required for longitudinal joints.

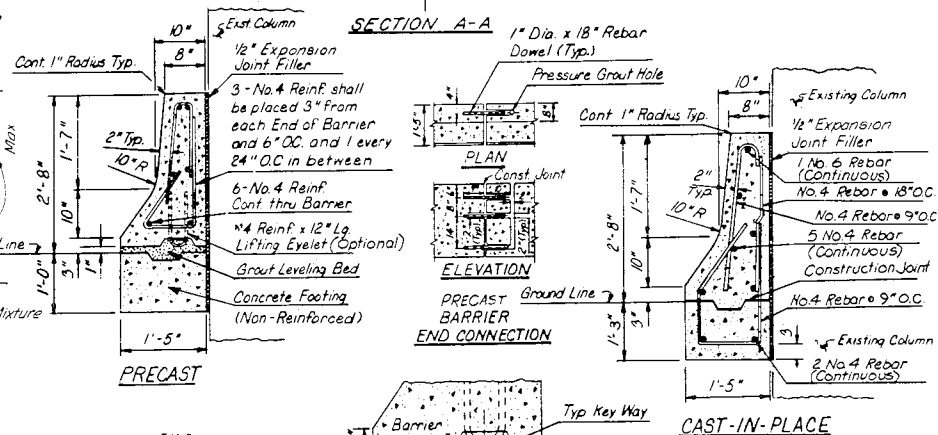
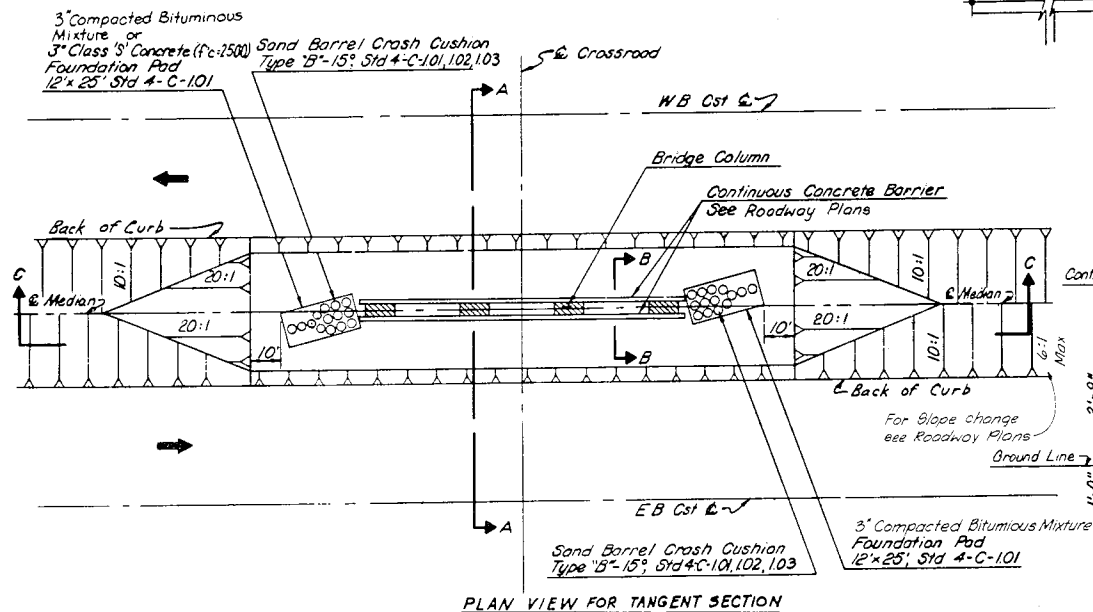
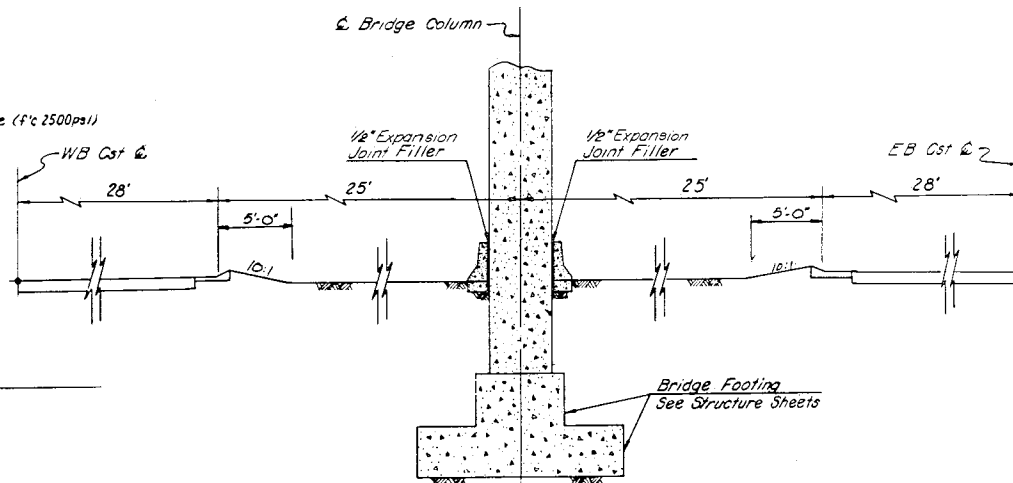
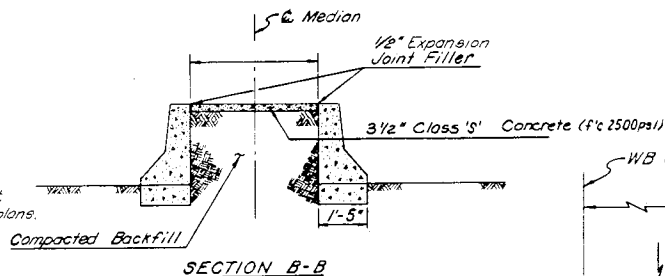
DETAIL APPROVED BY
URBAN HIGHWAY
ENGINEER
APPROVED FOR
DISTRIBUTION
James A. McEwen

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DIVISION OF HIGHWAY
URBAN HIGHWAY DETAILS

PCCP JOINT DETAILS

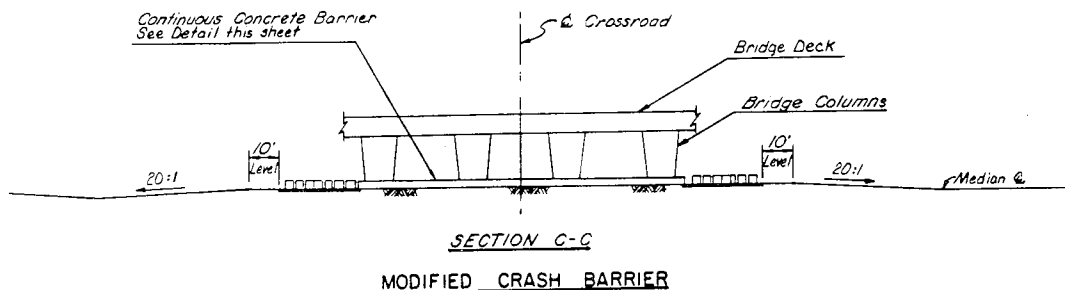
DETAIL NO.
UC-45

General Note:
Similar attenuation configuration
required at both ends of barrier at
overpass structures. See roadway plans.

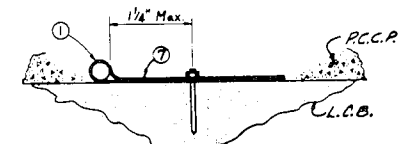
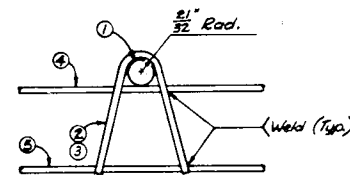
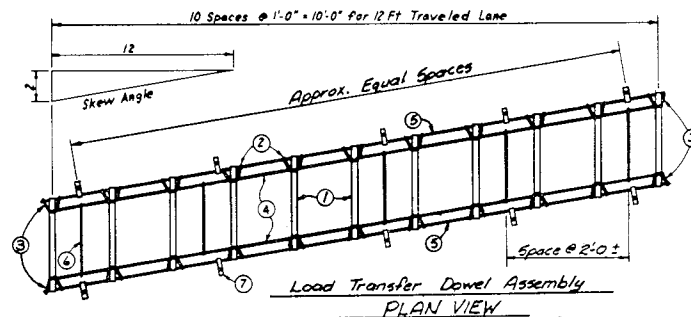
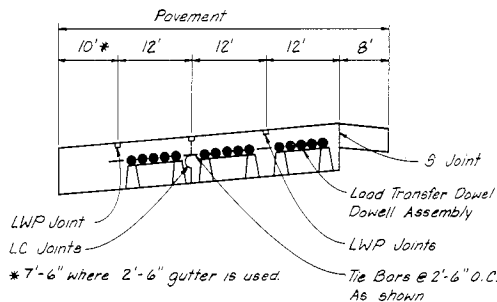
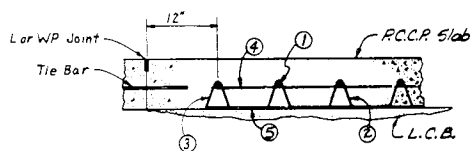
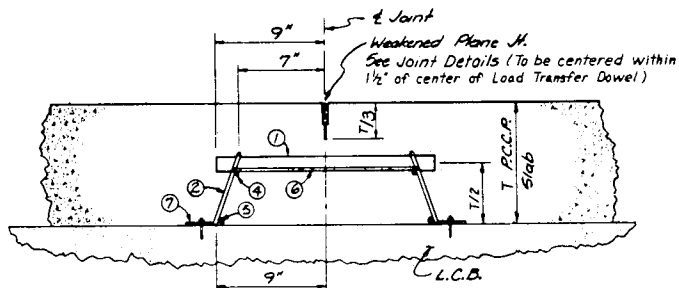
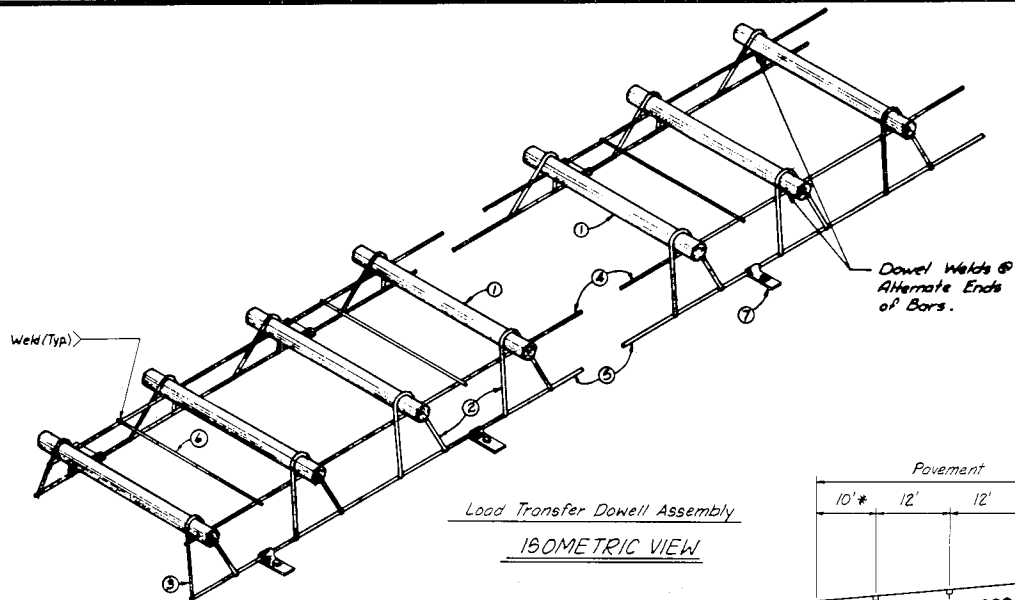


- NOTES:
- 1) Cast-in-Place Concrete Barrier shall be Class "S" ($f'_c = 3000\text{psi}$)
 - 2) Precast Concrete Barrier shall be Class "S" ($f'_c = 4000\text{psi}$)

PRECAST & CAST-IN-PLACE CONCRETE BARRIERS



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GENERAL NOTES:

Load Transfer Dowel Assembly shall be assembled from the following Materials:
For 12 Ft. Traveled Lane:

1. Dowel Bars - 1 1/4" x 1'-6" Plain Round Bars w/ Coating. See Special Provisions. 11 Bars required each assembly.
2. Intermediate Legs - 2 Ga. or W-5.5 Wire, 18 required each assembly.
3. End Legs - 2 Ga. or W-5.5 Wire, 4 required each assembly.
4. Upper Space Bar - 2 Ga. or W-5.5 Wire x 10'-5 1/2" (skewed), 2 required each assembly.
5. Lower Space Bar - 2 Ga. or W-5.5 Wire x 10'-5 1/2" (skewed), 2 required each assembly.
6. Tie Bars - W-1.5 Wire x 16", 5 required each assembly.
7. Anchor Straps - 1" x 3" Steel Strap, .079 thick. Place with 1/2" steel nail, .145" x ASTM A227 Class I w/ 1/4" head or washer to be power driven. 10 required each assembly.

For 18 ft Traveled Lane:

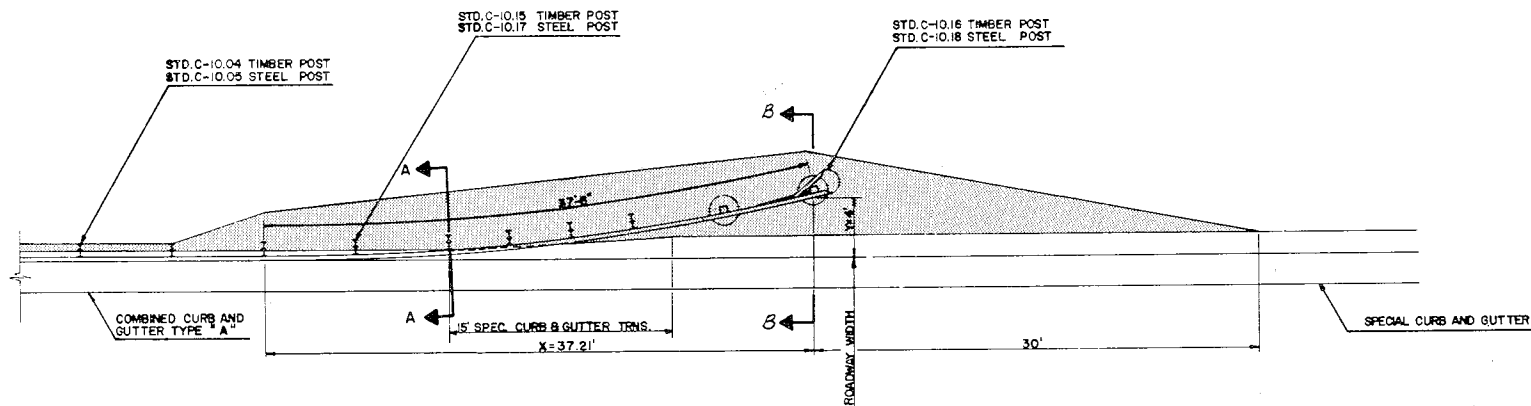
1. Dowel Bars - 1 1/4" x 1'-6" Plain Round Bars w/ Coating. See Special Provisions. 17 Bars required each assembly.
2. Intermediate Legs - 2 Ga. or W-5.5 Wire, 30 required each assembly.
3. End Legs - 2 Ga. or W-5.5 Wire, 4 required each assembly.
4. Upper Space Bar - 2 Ga. or W-5.5 Wire x 16'-6 1/2" (skewed), 2 required each assembly.
5. Lower Space Bar - 2 Ga. or W-5.5 Wire x 16'-6 1/2" (skewed), 2 required each assembly.
6. Tie Bars - W-1.5 Wire x 16", 8 required each assembly.
7. Anchor Straps - 1" x 3" Steel Strap, .079 thick. Place with 1/2" steel nail, .145" x ASTM A227 Class I w/ 1/4" head or washer to be power driven. 18 required each assembly.

For Transverse Joint spacing, see Plans.

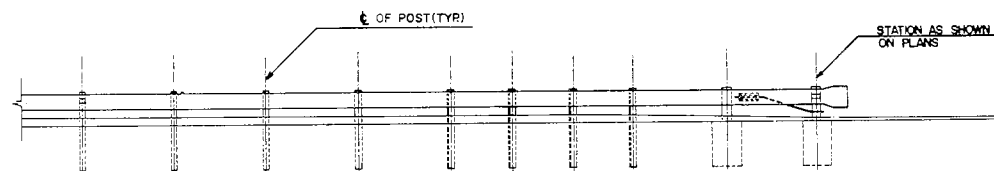
Load Transfer Dowel Assemblies are to be placed at each Transverse Weakened Plane Joint on the Mainline Paving in the Traveled Lanes.

For additional information, see Details UC-43, UC-44 and UC-45.

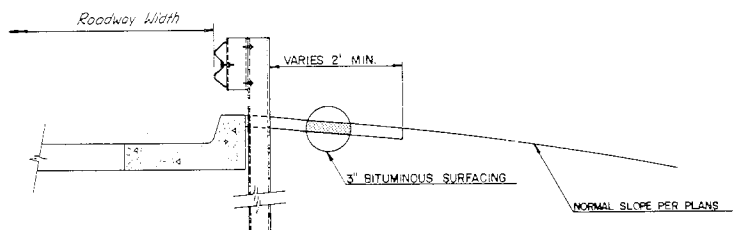
DETAIL APPROVED BY URBAN HIGHWAY ENGINEER APPROVED FOR DISTRIBUTION James G. Miller	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAY URBAN HIGHWAY DETAILS LOAD TRANSFER DOWEL DETAILS DETAIL NO. UC-48
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PLAN



ELEVATION



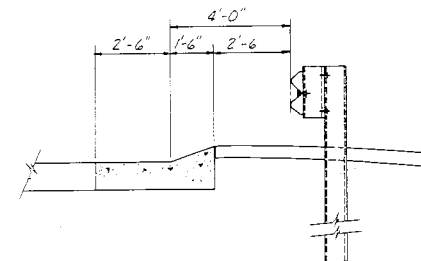
SECTION A-A

FLARED GEOMETRICS		
DIST. ALONG 37'-6" PARABOLIC CURVE	DIST. ALONG X AXIS	DIST. ALONG Y AXIS TO FACE OF GUARD RAIL
6'-3"	6.25'	0.11'
12'-6"	12.49'	0.44'
16'-8"	16.64'	0.79'
20'-10"	20.73'	1.23'
25'-0"	24.92'	1.73'
31'-3"	31.08'	2.73'
37'-6"	37.21'	4.00'

LAYOUT AND DETAILS OF THE FLARE

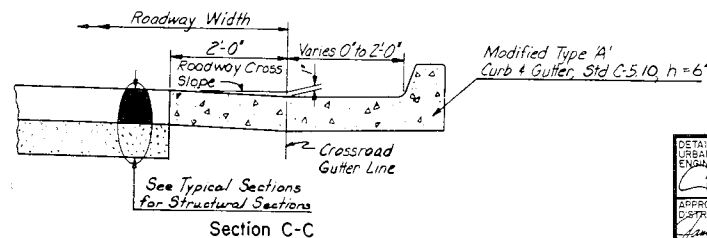
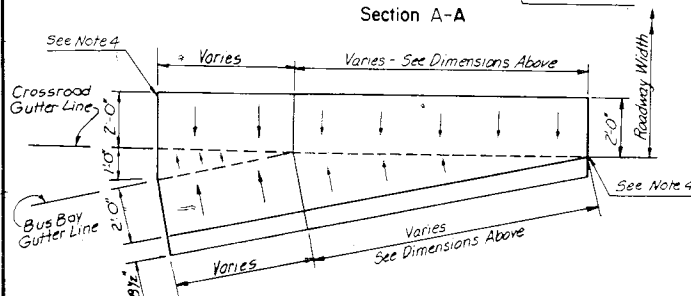
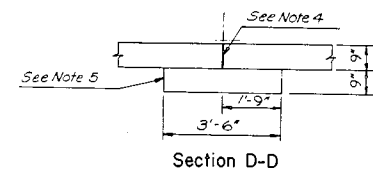
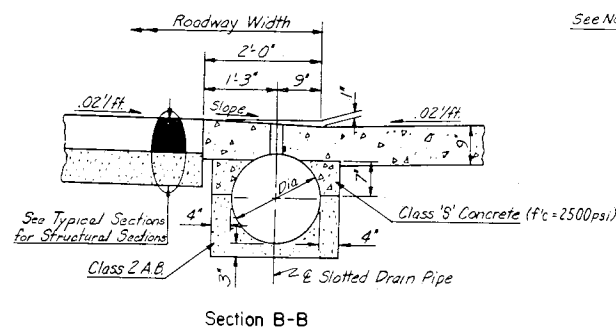
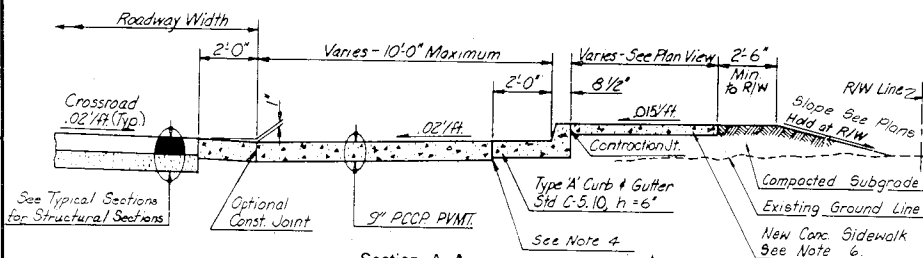
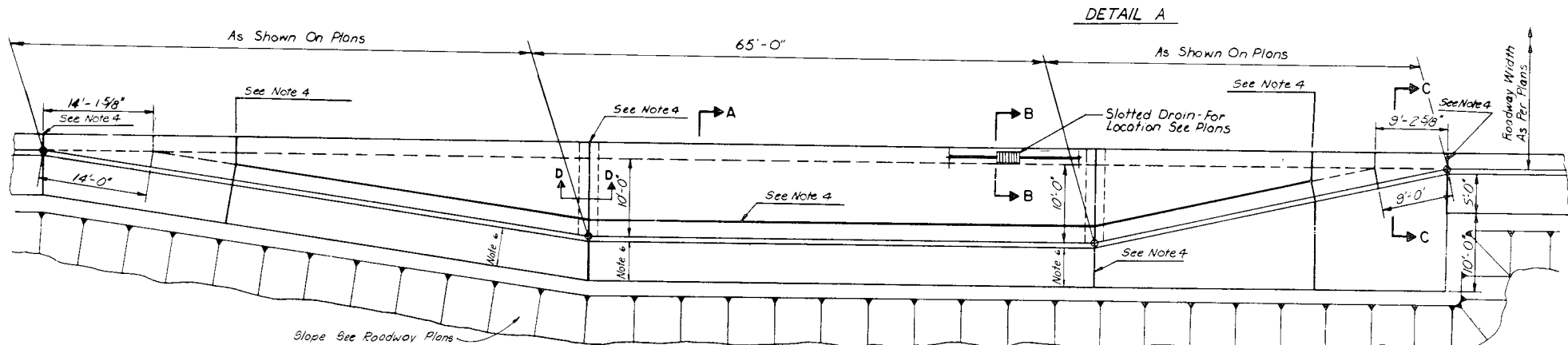
GENERAL NOTES:

1. See plans for location of guard rail & type of post.
2. For timber post details not shown, see std. C-10.04, 10.15 & 10.18
3. For steel post details not shown, see std. C-10.05, 10.16, & 10.17
4. For special curb & gutter transition see detail



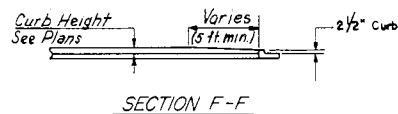
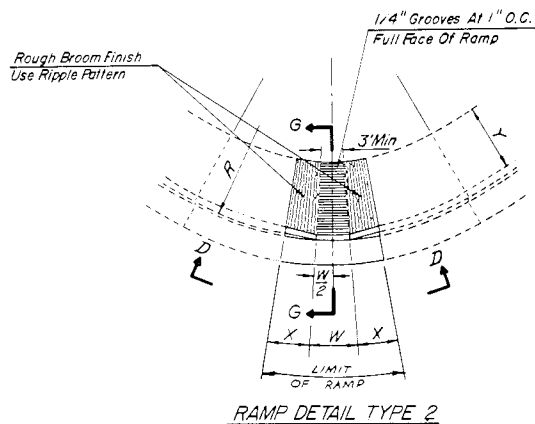
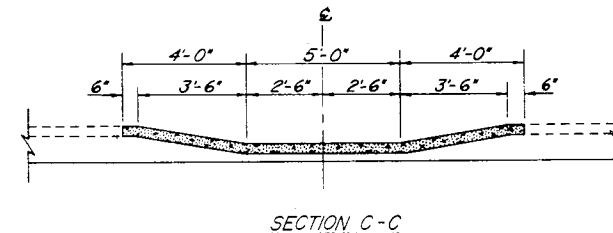
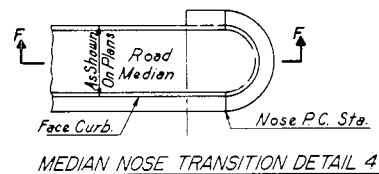
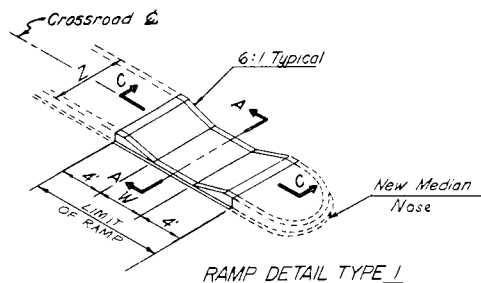
Section B-B

DETAIL APPROVED BY URBAN HIGHWAY ENGINEER 	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAY URBAN HIGHWAY DETAILS	REV.
APPROVED FOR DISTRIBUTION 	GUARD RAIL ASSEMBLY WITH CURB	DETAIL NO. UC-49

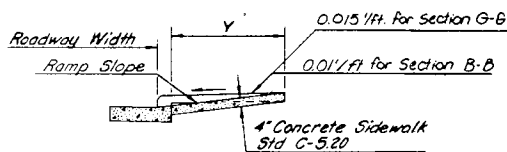
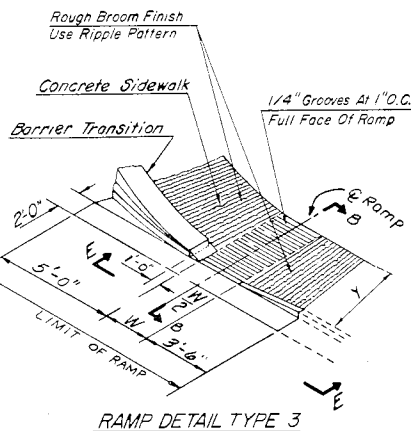
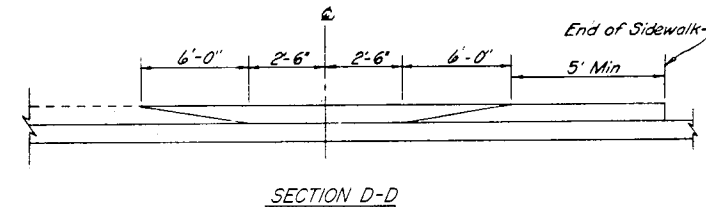
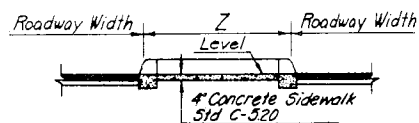


- GENERAL NOTES**
- 1) The PCCP Surfaces within the Bus Bay Area shall be Textured Transversely. Surface Texturing to Conform to Sect. 401.
 - 2) Transverse Weakened Plane Joints shall be constructed at a maximum spacing of 15' and shall align with joints in the concrete curb and gutter.
 - 3) For additional data on Slotted Drains see Slotted Drain Details.
 - 4) 1/2" Expansion Joint w/ Preformed Joint Filler. See Detail A.
 - 5) Concrete Pad to be poured separately from concrete bus bay pavement.
 - 6) See Sidewalk Detail UC-46.

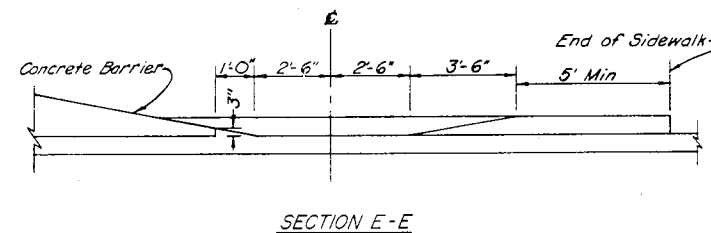
DETAIL APPROVED BY URBAN HIGHWAY ENGINEER	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAY URBAN HIGHWAY DETAILS	REV.
APPROVED FOR DISTRIBUTION James C. McEwen		DETAIL NO. CONCRETE BUS BAY UC-50



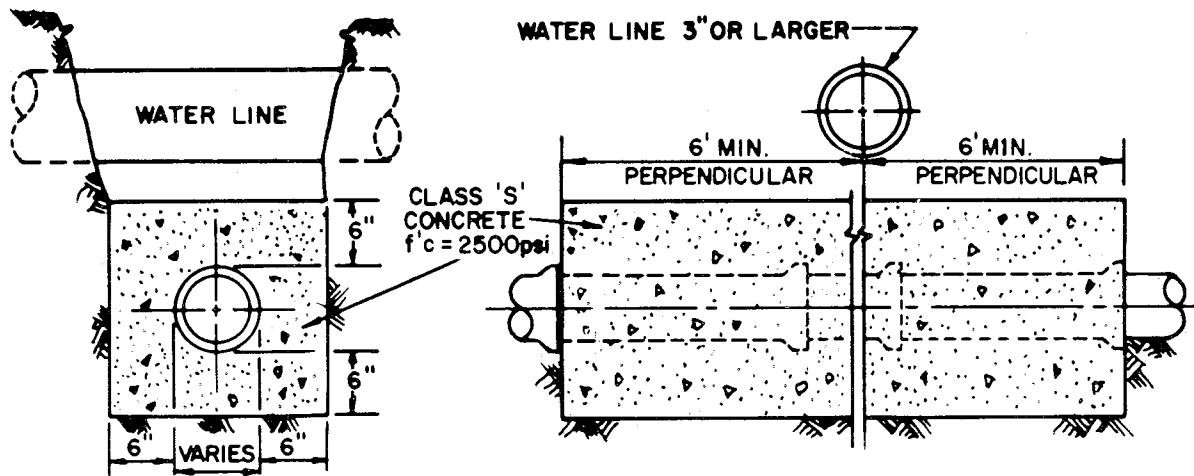
NOTE: Length of transition shall be equal to radius of median nose-
(5 ft. minimum). For location see plans.



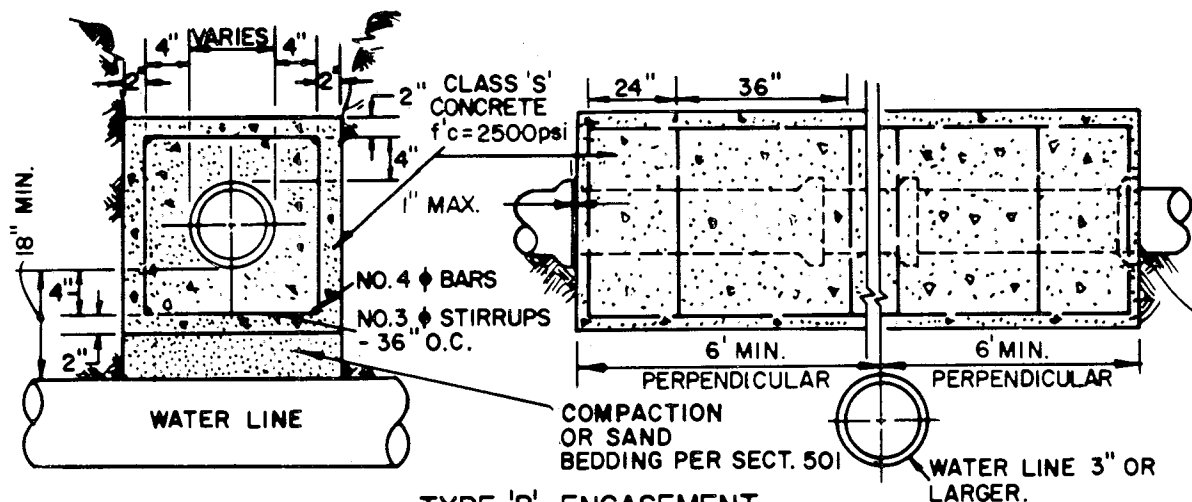
R = As Per Plans
W = 5'-0"
X = 6'-0"
Y = New or Existing Width of Sidewalk
As Per Plans
Z = Median Width As Per Plans



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TYPE 'A' ENCASEMENT



TYPE 'B' ENCASEMENT

TYPE 'A' ENCASEMENT-FOR SEWER LATERALS OR HOUSE CONNECTIONS BELOW WATERLINES.

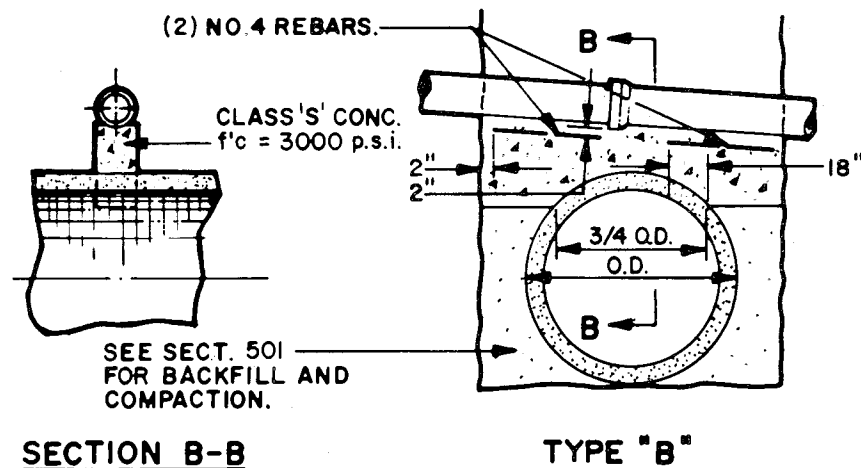
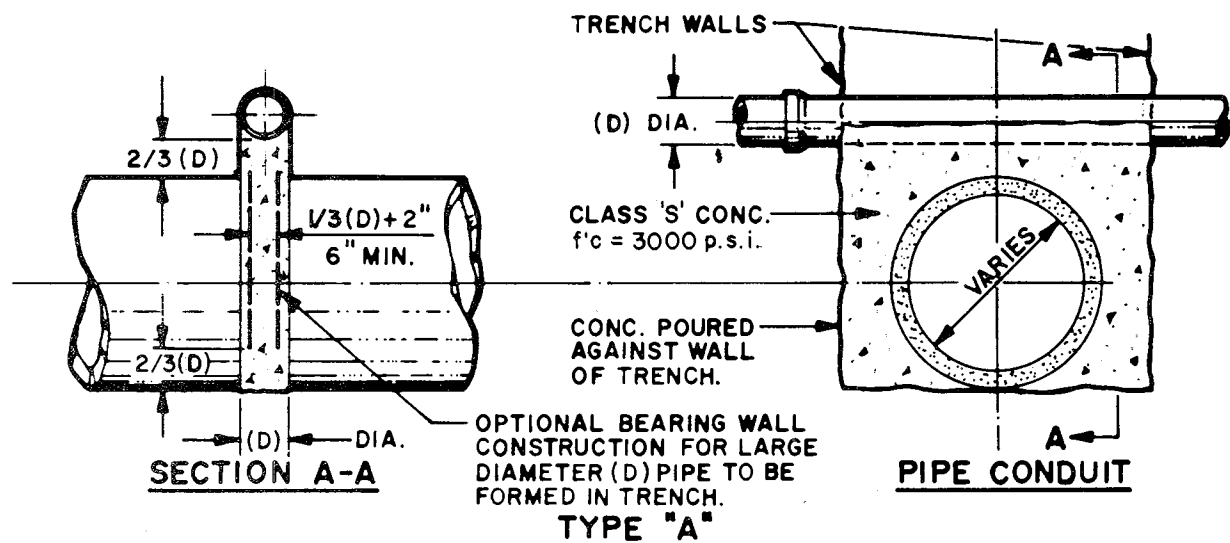
TYPE 'B' ENCASEMENT-FOR SEWER LATERALS OR HOUSE CONNECTIONS ABOVE WATERLINES.

NOTES

1. THE ENCASEMENT SHALL EXTEND AT LEAST 6' ON EACH SIDE OF THE WATER LINE AND MUST INCLUDE THE NEAREST JOINT.
2. PROTECTION FOR TYPE 'A' REQUIRED WHEN DISTANCE FROM BOTTOM OF WATER TO TOP OF SEWER LINE IS 24" OR LESS EXCEPT WHEN SEWER IS 4" OR 6" HOUSE CONNECTION NO PROTECTION IS REQUIRED IF DISTANCE IS MORE THAN 12".
3. FOR TYPE A CROSSINGS, CLASS 150 C.I.P. OR DUCTILE PIPE MAY BE USED AS AN ALTERNATE. FOR TYPE B CROSSING REINFORCED ENCASEMENT IS ALWAYS REQUIRED.
4. REINFORCED ENCASEMENT FOR TYPE 'B' IS REQUIRED IN ALL CASES WHERE A SANITARY SEWER CROSSES ABOVE THE WATER LINE.

DO NOT ALLOW CONCRETE MORTAR TO LOCK JOINT (TYP.)

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APPROVED FOR DISTRIBUTION	SANITARY SEWER ENCASEMENT	DETAIL NO. UC-60



NOTES

1. TYPE "A" PIPE SUPPORT MAY BE USED FOR ANY TYPE CROSSING CONDITION.
2. TYPE "C" PIPE SUPPORT MAY BE USED FOR CROSSING PIPES WITH A BELL DIAMETER OF 18" OR LESS IF SUFFICIENT CLEARANCE OVER STORM SEWER IS AVAILABLE AND TOTAL SPAN IS LESS THAN 34'.
3. INTERMEDIATE PIPE SUPPORT SHALL BE USED IN CONJUNCTION WITH TYPE "C" PIPE SUPPORT IF TOTAL SPAN EXCEEDS MAX. 'W' IN TABLE.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING ALL SUPPORTS BOTH PERMANENT AND TEMPORARY. TEMPORARY SUPPORTS SHALL NOT BE A SEPARATE PAY ITEM.
5. PERMANENT PIPE SUPPORTS MAY BE DECREASED FROM PLAN QUANTITIES, OR EXTENDED TO INCLUDE SOME LISTED BELOW AS TEMPORARY SUPPORTS IF CONDITIONS WARRANT THESE CHANGES AT THE TIME OF CONSTRUCTION. DECISION SHALL BE MADE BY THE ENGINEER.
6. WHEN TYPE "A" PIPE SUPPORT IS USED AND WHENEVER SO DIRECTED BY THE ENGINEER, THE CONTRACTOR SHALL PIERCE THE WALL WITH SUITABLE OPENINGS TO PREVENT UNEQUAL PRESSURE RESULTING FROM FLOODING OF THE BACKFILL THE VOLUME OF THE PIERCED OPENING SHALL NOT EXCEED 1/2 THE VOLUME OF THE SUPPORTING WALL.
7. USE TYPE "B" PIPE SUPPORT INSTEAD OF TYPE "C" WHEN CLEARANCE IS LESS THAN 'Y' IN TABLE, BETWEEN PIPES.

SCHEDULE OF REQUIRED SUPPORTS

PERMANENT
SEWER LINES

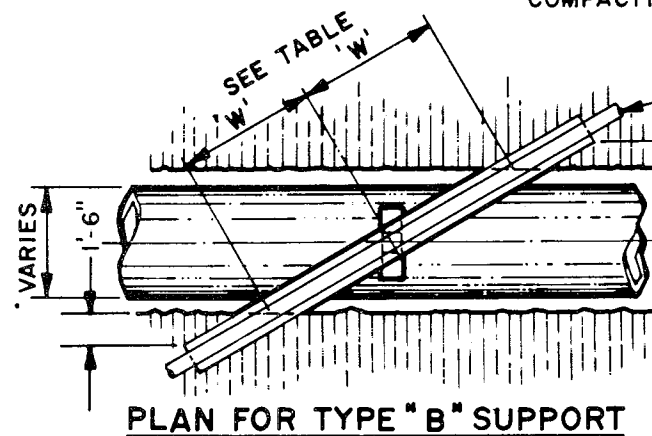
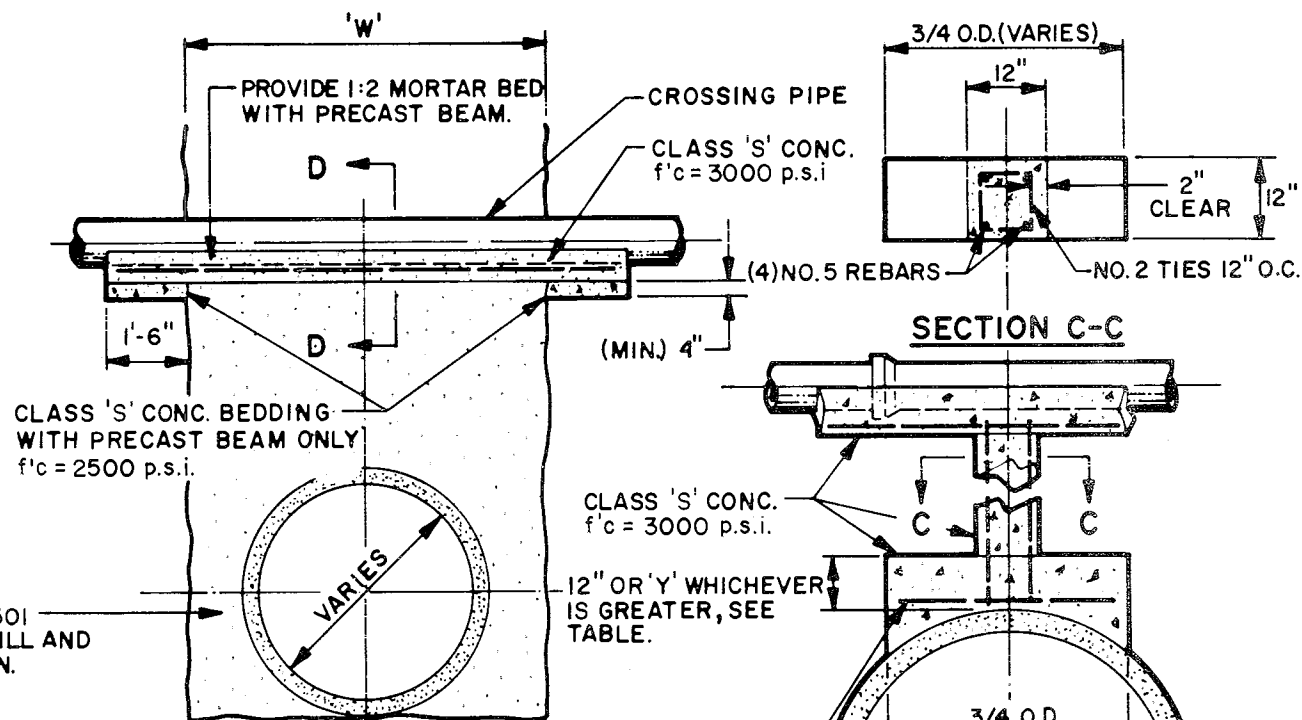
TEMPORARY

CAST IRON PIPE CONC. STORM DRAIN
CONC. IRRIG. PIPE CONC. BOX CULVERT
BURIED TELCO. TRAFFIC CONTROL CONDUIT
GAS PIPES WATER & SEWER LINES

NOTE: OTHER UTILITIES AS NOTED ON THE PLANS OR AS REQUIRED BY THE ENGINEER AT TIME OF CONSTRUCTION.

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APPROVED FOR DISTRIBUTION 	PIPE SUPPORT ACROSS TRENCHES Sheet 1 of 3	DETAIL NO. UC - 61

TABLE				
'W'	DEPTH OF COVER ON SUPPORTS			
	0' TO 8'		8' TO 16'	
	BAR NO.	Y	BAR NO.	Y
TO 6'	5	8"	6	11"
7'	5	9"	6	12"
8'	5	10"	6	13"
9'	6	11"	6	14"
10'	6	12"	7	15"
11'	6	13"	7	16"
12'	6	14"	7	17"
13'	7	15"	7	19"
14'	7	16"	8	20"
15'	7	17"	8	21"
16'	7	18"		
17'	8	19"		



CROSSING PIPE

TYPE "C"

(4) REBARS (EQUAL TO BEAM REINFORCEMENT)

INTERMEDIATE SUPPORT FOR TYPE "B" CROSSINGS

NO. 6 REBAR FOR PRECAST BEAM ONLY

4" O.C SPACING, SEE TABLE FOR BAR SIZE

PIPE O.D. + 2" SEE NOTE 2.

'Y' SEE TABLE

SECTION D-D

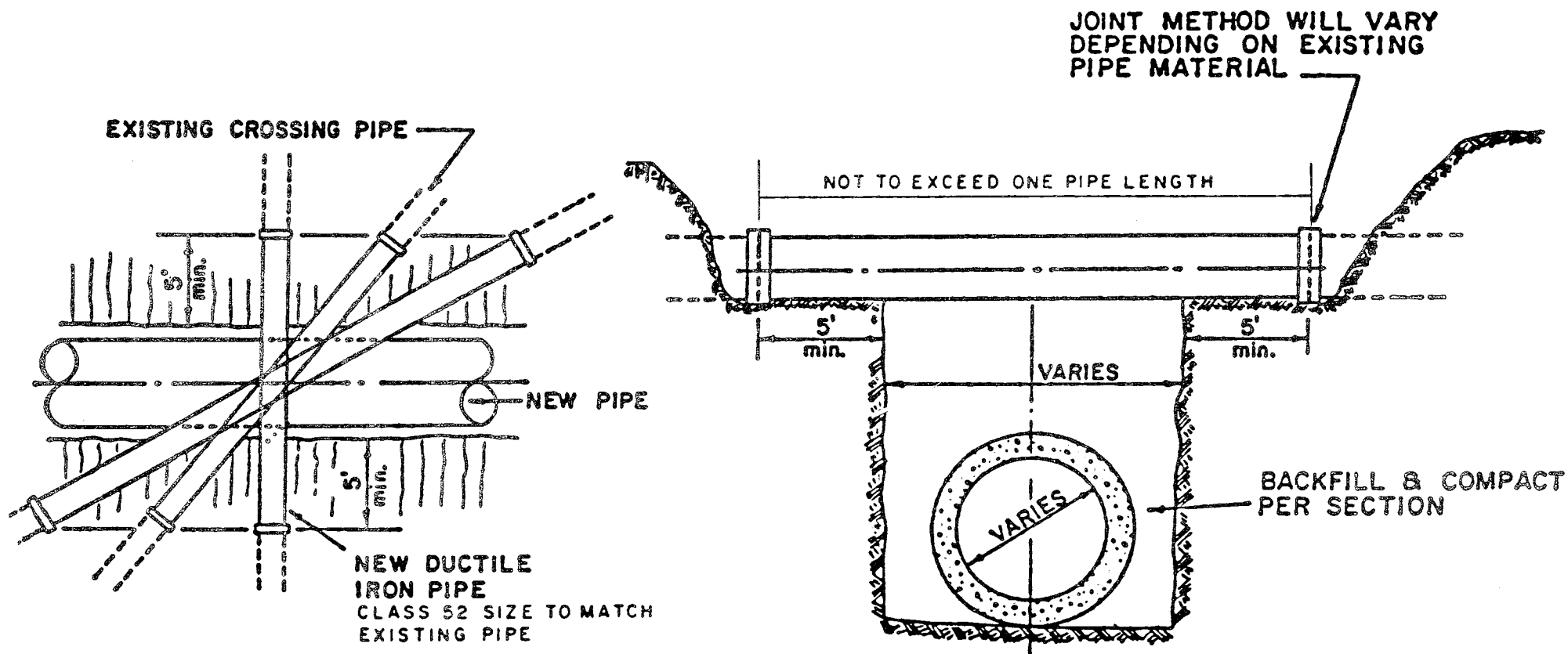
MIN. BEARING SHALL BE 1/2 O.D. OF PIPE.

DETAIL APPROVED BY
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STATE OF ARIZONA
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DIVISION OF HIGHWAY
URBAN HIGHWAY DETAILS

PIPE SUPPORT
ACROSS TRENCHES
Sheet 2 of 3

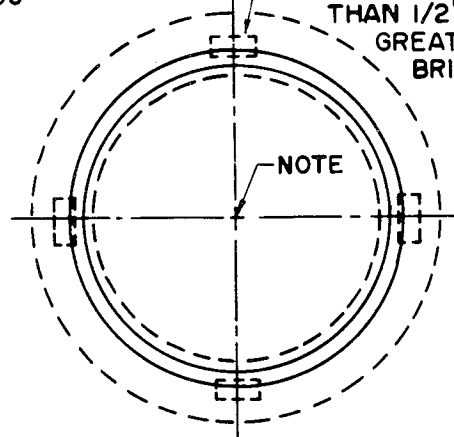
DETAIL NO.
UC-61



DETAIL APPROVED BY URBAN HIGHWAY ENGINEER	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAY URBAN HIGHWAY DETAILS	REV.
APPROVED FOR DISTRIBUTION <i>James A. Miller</i>	ALTERNATE TO PIPE SUPPORT Sheet 3 of 3	DETAIL NO. UC-61

M.H. FRAME AND
COVER PER
SECT. 505

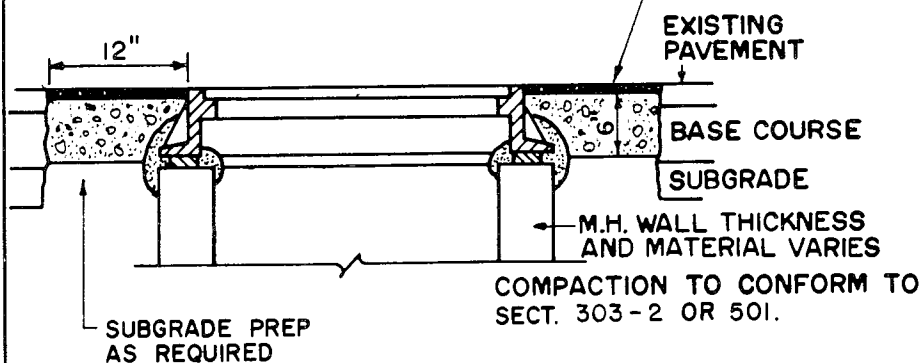
FOUR STEEL SPACERS, 4"x2",
THICKNESS AS REQUIRED FROM
1/2" TO 2". WHEN THICKNESS IS LESS
THAN 1/2" USE MORTAR, WHEN
GREATER THAN 2", USE
BRICK.



NOTE: LOCATION & ELEVATION
SHOWN ON PLANS.

CLASS 'S' CONCRETE
f'c = 2500 p.s.i.

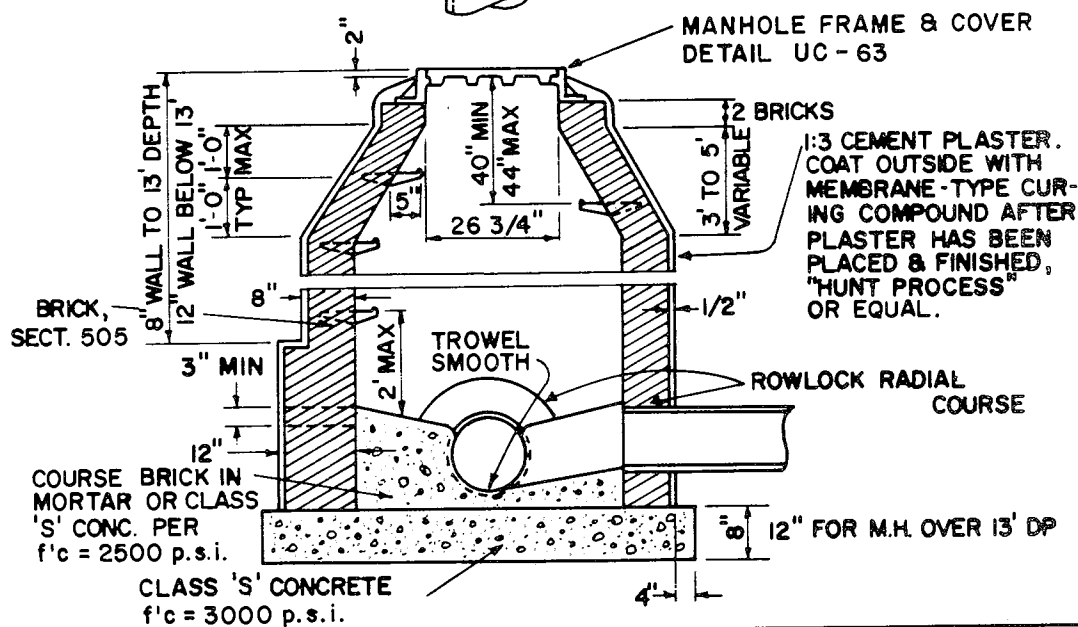
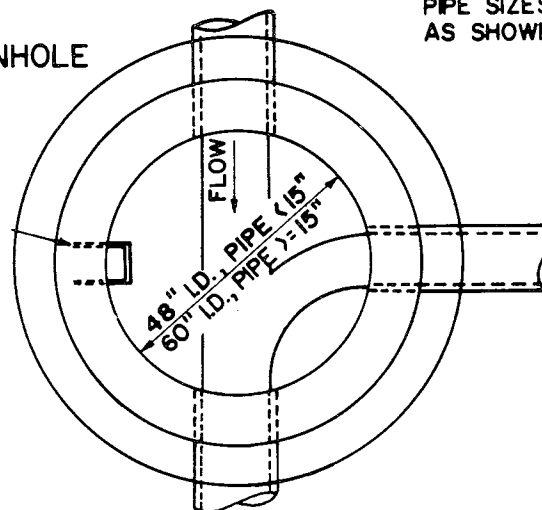
LEAVE CONC. COLLAR LOW AND SEAL
WITH 3/8" FINE DENSE GRADED
PLANT MIX MATERIAL. MIN
THICKNESS 1/2", MAX 1".



SEWER MANHOLE

PIPE SIZES AND ELEVATIONS
AS SHOWN ON PLANS

M.H. STEP
IN 48"
M.H. ONLY



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--	---



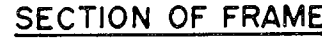
BOTTOM VIEW
APPROX. WEIGHT - 200 LBS.





APPROX. WEIGHT - 324 LBS.



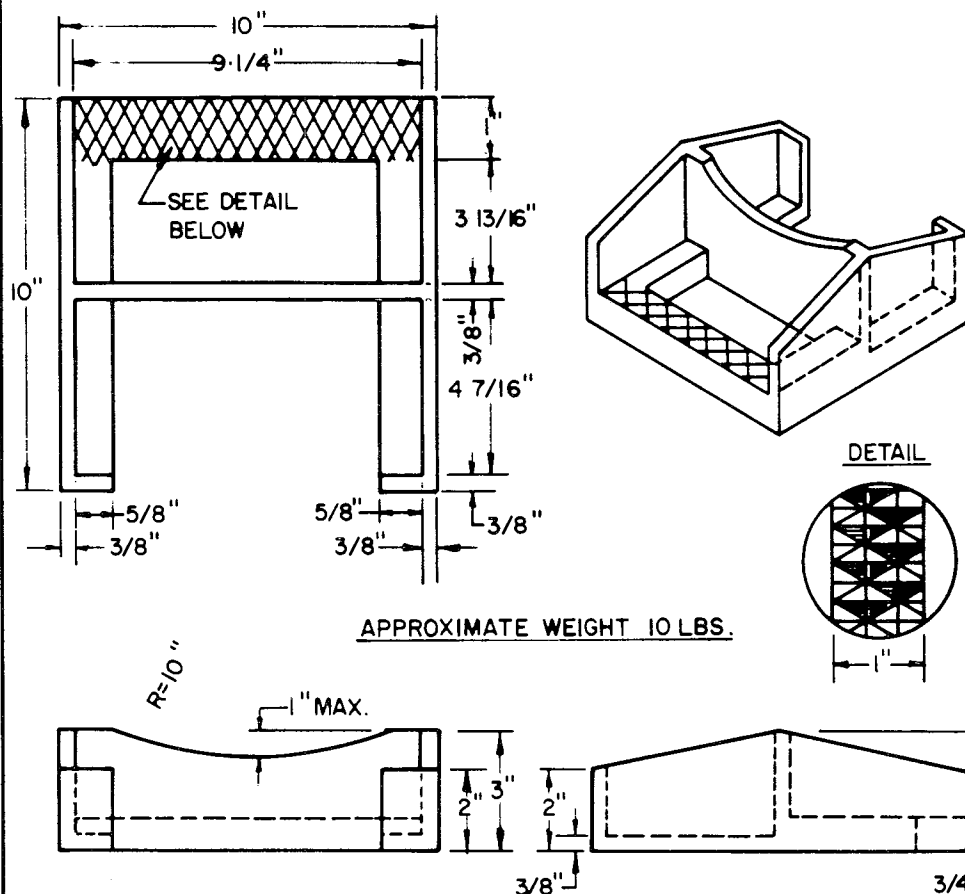
SECTION 'A-B-C' OF COVER



SECTION 'D-D' OF COVER

DETAIL APPROVED BY URBAN HIGHWAY ENGINEER 	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAY URBAN HIGHWAY DETAILS	REV.
APPROVED FOR DISTRIBUTION 	24" and 30" MANHOLE FRAME AND COVER	DETAIL NO. UC-63

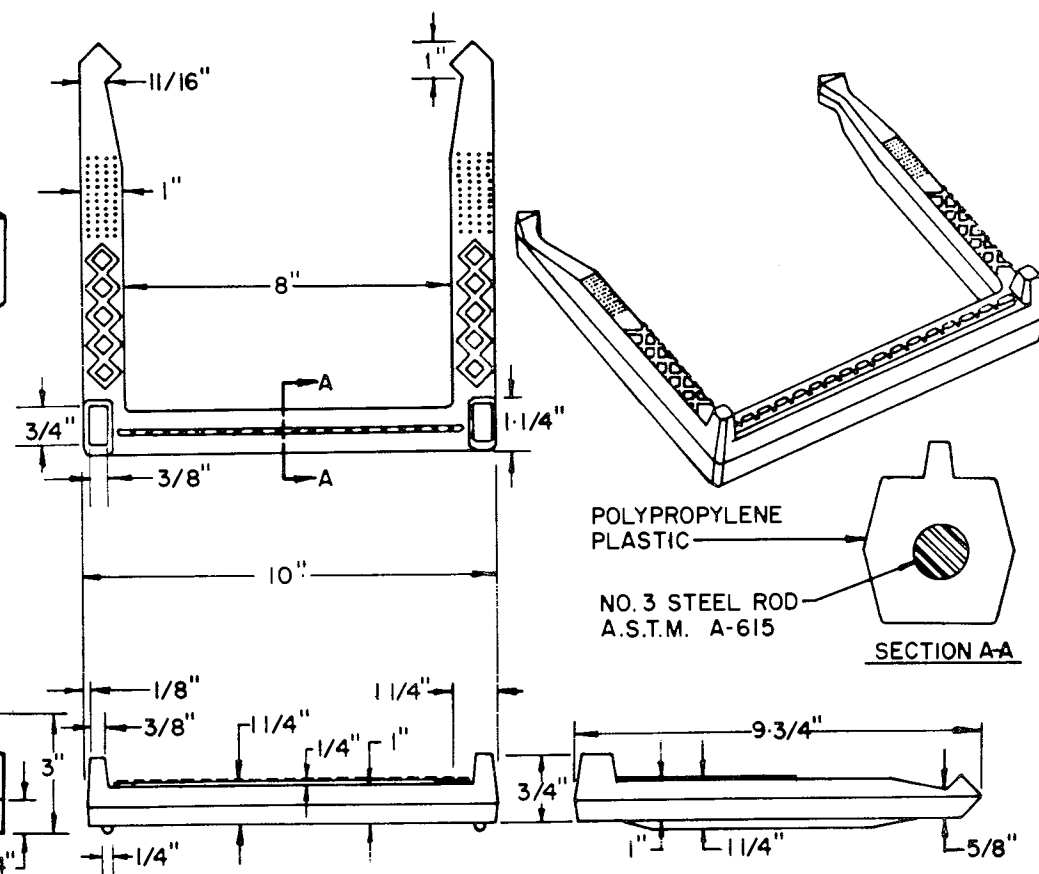
CAST IRON MANHOLE STEP



NOTES:

1. ALL DIMENSIONS ARE MINIMUM EXCEPT WHERE NOTED.
2. CASTING AS PER SECTIONS 1004-6 AND 505-2.05.
3. CASTING SHALL BE PAINTED OR DIPPED IN COMMERCIAL-QUALITY ASPHALTUM PAINT, UNLESS OTHERWISE SPECIFIED.

POLYPROPYLENE MANHOLE STEP



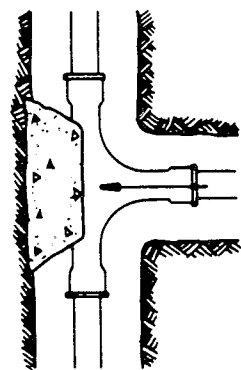
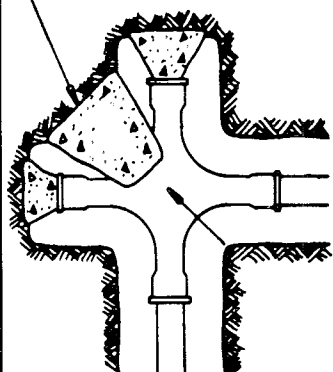
NOTES:

1. STEPS SHALL BE PLACED INTO WET CONCRETE WALL DURING MANUFACTURE OR MORTARED INTO HOLES AFTER CONCRETE HAS SET.
2. POLYPROPYLENE MUST MEET REQUIREMENTS OF A.S.T.M. 2146, TYPE II, GRADE 16906.

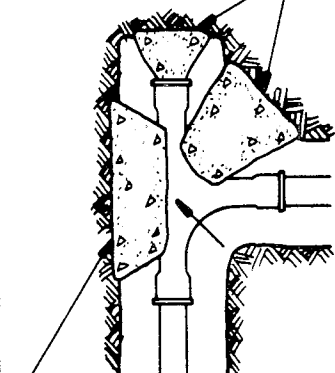
DETAIL APPROVED BY URBAN HIGHWAY ENGINEER <i>[Signature]</i>	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAY URBAN HIGHWAY DETAILS	REV.
APPROVED FOR DISTRIBUTION <i>[Signature]</i>	MANHOLE STEPS	DETAIL NO. UC-64

TYPICAL LOCATIONS OF THRUST BLOCKS

AREA REQUIRED FOR 90° BEND

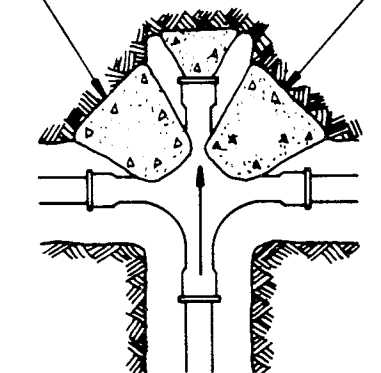


1/2 AREA REQUIRED FOR 90° BEND



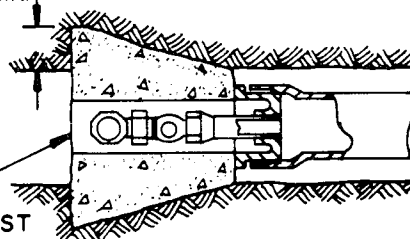
AREA FOR TEE

TOTAL AREA EQUALS AREA REQUIRED FOR TEE



NOTE: THRUST BLOCKS ARE TO EXTEND TO UNDISTURBED GROUND. CONCRETE TO BE CLASS 'S', $f'c = 2500$ p.s.i.

6" MIN.

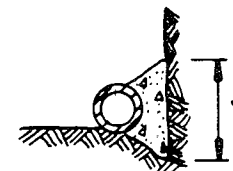
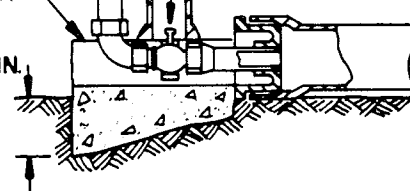


THRUST BLOCK

CURB STOP

THRUST BLOCK

6" MIN.



SECTION A-A

MINIMUM THRUST BLOCK AREA REQUIRED ($Y \times W$)

PIPE SIZE	WATER PIPE	
	TEE, DEAD END, 90° BEND	45° & 22 1/2° BENDS
4" & LESS	3 SQ. FEET	3 SQ. FEET
6"	4 " "	3 " "
8"	6 " "	3 " "
10"	9 " "	5 " "
12"	13 " "	7 " "
16"	23 " "	12 " "

NOTES:

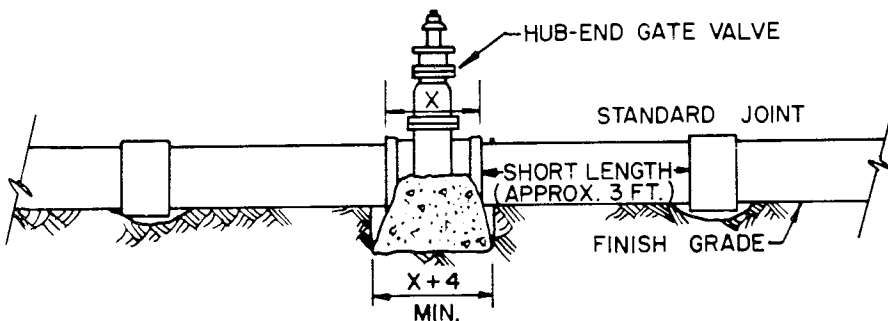
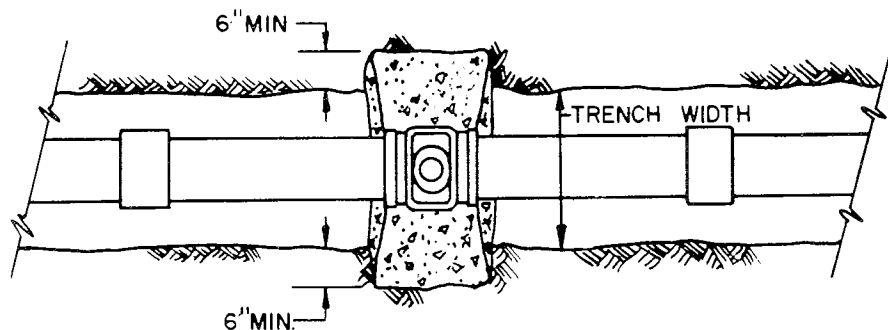
1. TABLE IS BASED ON 3000 # / SQ. FT. SOIL. IF CONDITIONS ARE FOUND TO INDICATE SOIL BEARING IS LESS, THE AREAS SHALL BE INCREASED ACCORDINGLY.
2. AREAS FOR PIPE LARGER THAN 18" SHALL BE CALCULATED FOR EACH PROJECT.
3. FORM ALL NON-BEARING VERTICAL SURFACES.

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DIVISION OF HIGHWAY
URBAN HIGHWAY DETAILS

THRUST BLOCKS FOR
WATER LINES

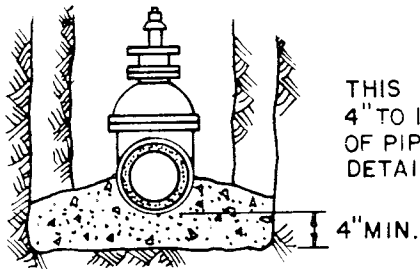
DETAIL NO.
UC-80



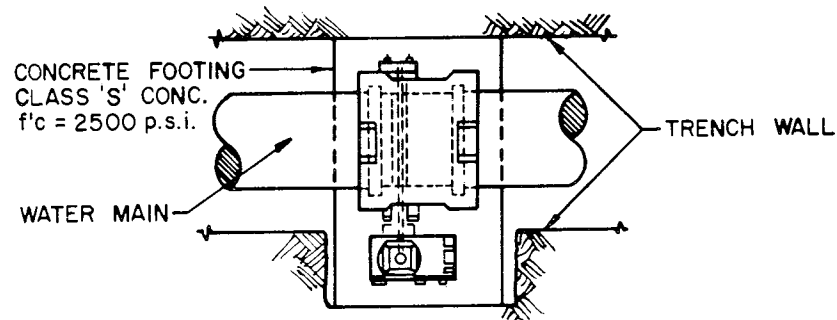
CLASS 'S' CONCRETE $f'c = 2500$ p.s.i.
FORM AS REQUIRED TO KEEP CLEAR OF JOINTS.

NOTE

THIS DETAIL COVERS WATER GATE VALVES, 4" TO 16" INCLUSIVE, REGARDLESS OF TYPE OF PIPE USED. LARGER LINES TO BE DETAILED ON PLANS.



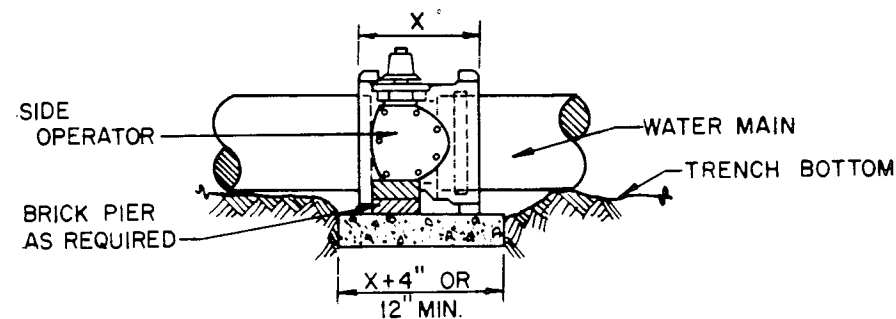
GATE VALVE



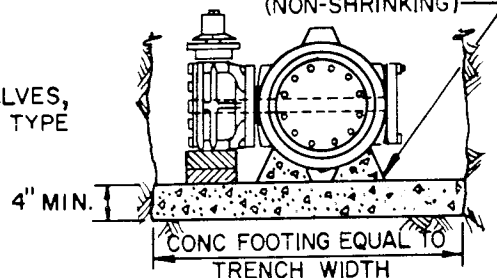
CONCRETE FOOTING
CLASS 'S' CONC.
 $f'c = 2500$ p.s.i.

WATER MAIN

TRENCH WALL



CEMENT GROUTING UNDER VALVE
(NON-SHRINKING)



BUTTERFLY VALVE

NOTES

1. THIS DETAIL COVERS BUTTERFLY VALVE INSTALLATION, 3" TO 12" INCLUSIVE, REGARDLESS OF TYPE OF PIPE OR JOINT USED. LARGER LINES TO BE DETAILED ON PLANS.
2. VALVE BOX AND COVER REQUIRED PER DETAIL UC-84.

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DIVISION OF HIGHWAY
URBAN HIGHWAY DETAILS
BLOCKING FOR WATER VALVES
GATE AND BUTTERFLY

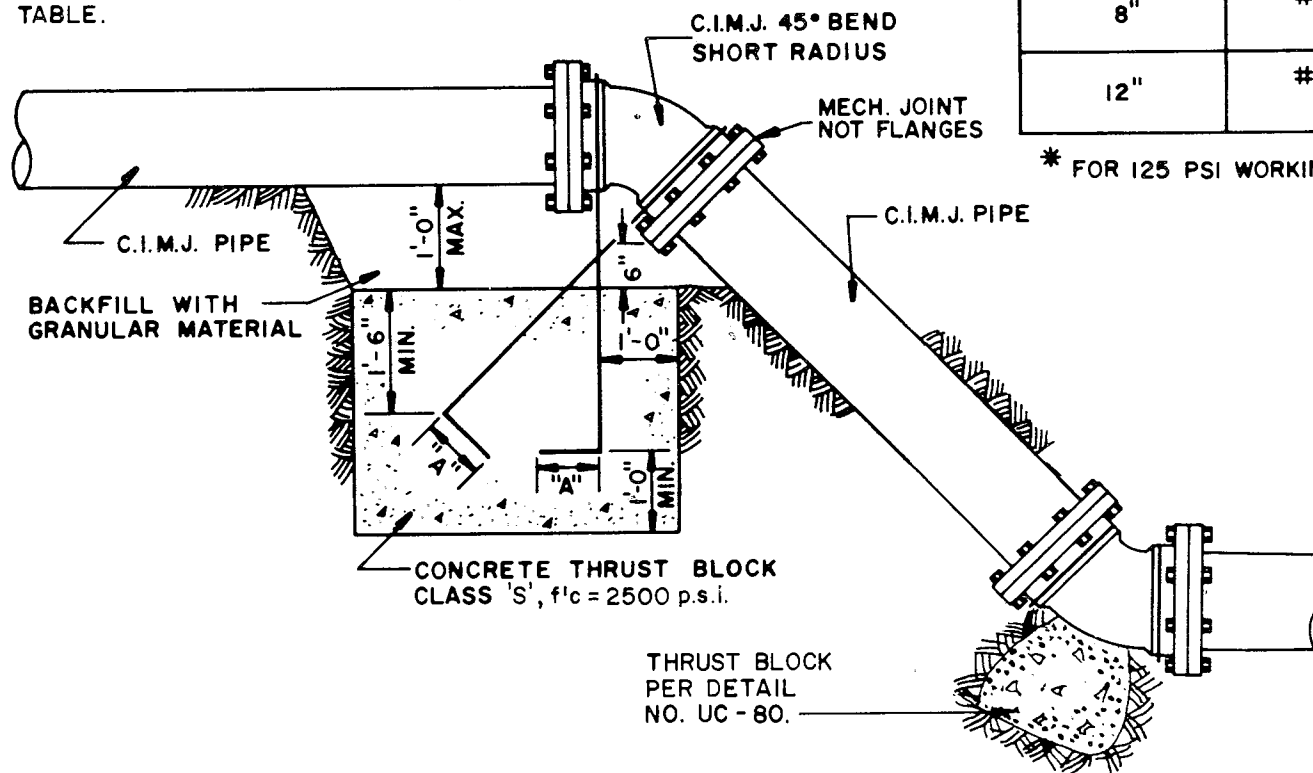
REV.
DETAIL NO.
UC-81

NOTE

BARS TO CONCRETE THRUST BLOCK TO BE COATED WITH 2 COATS COAL TAR, EPOXY OR BY OTHER APPROVED METHOD. BARS TO HAVE 90° HOOK ON LOWER END, AS PER TABLE.

PIPE SIZE	MIN. BAR SIZE	"A"-DIMENSION (HOOK)	MIN. # BLOCK DIM.
6"	# 6	6"	3'x 3'x 3'
8"	# 6	9"	4'x 4'x 2.5'
12"	# 8	9"	4'x 5'x 5'

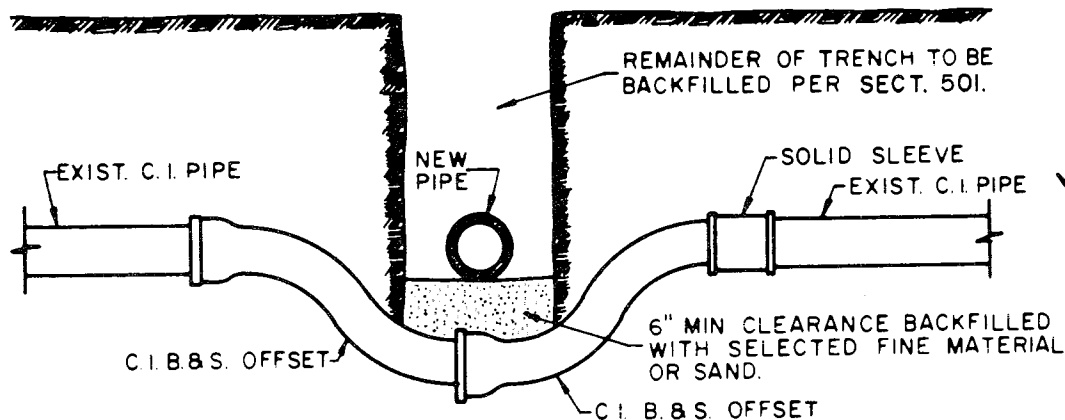
* FOR 125 PSI WORKING PRESSURE



NOTES

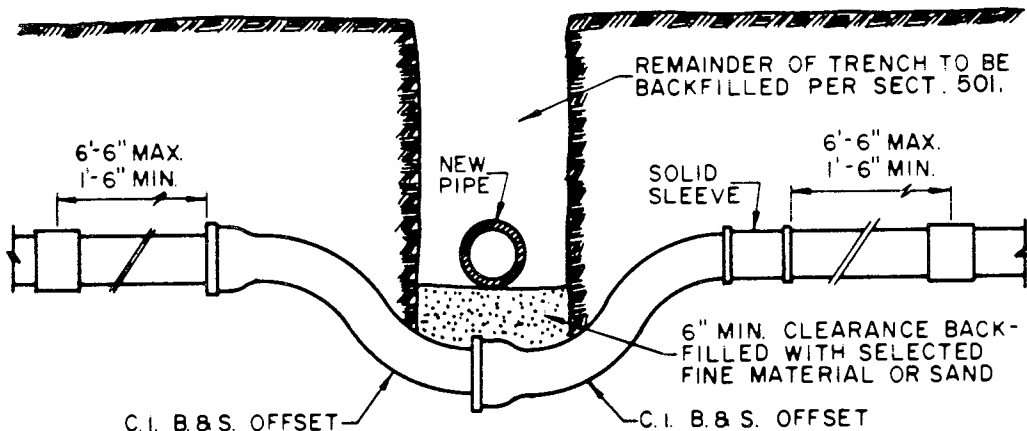
1. EITHER THIS DETAIL OR RESTRAINT RODS CAN BE USED WHEN IT IS ALLOWED TO RELOCATE A WATER LINE UPWARD TO CROSS OVER A CONFLICT.
2. DUCTILE IRON PIPE MAY BE USED.

DETAIL APPROVED BY URBAN HIGHWAY ENGINEER <i>[Signature]</i>	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAY URBAN HIGHWAY DETAILS	REV.
APPROVED FOR DISTRIBUTION <i>[Signature]</i>	ANCHOR BLOCK FOR VERTICAL BENDS	DETAIL NO. UC-82

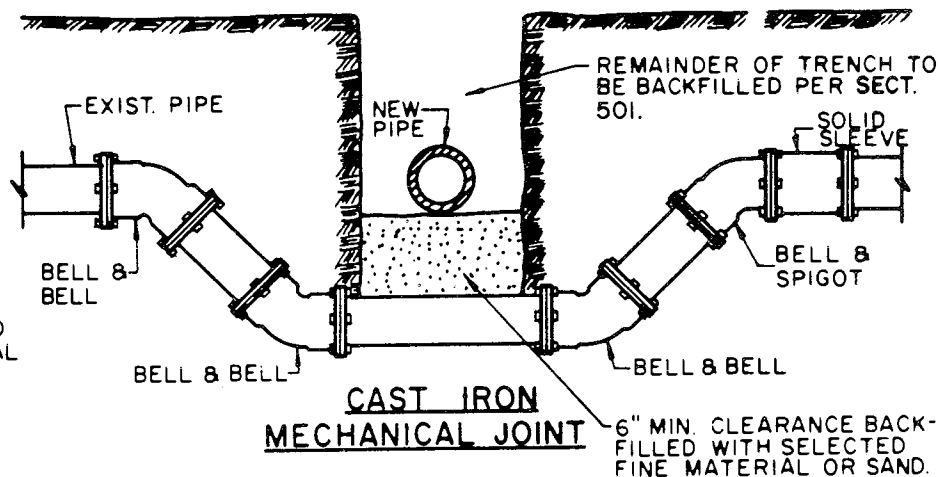


45° CAST IRON BENDS MAY
BE USED IN PLACE OF CAST
IRON OFFSETS, AS SHOWN

CAST IRON



ASBESTOS CEMENT



CAST IRON MECHANICAL JOINT

DROP SECTION IS TO BE PREFABRICATED AND INSTALLED
AS A SINGLE UNIT.

NOTES:

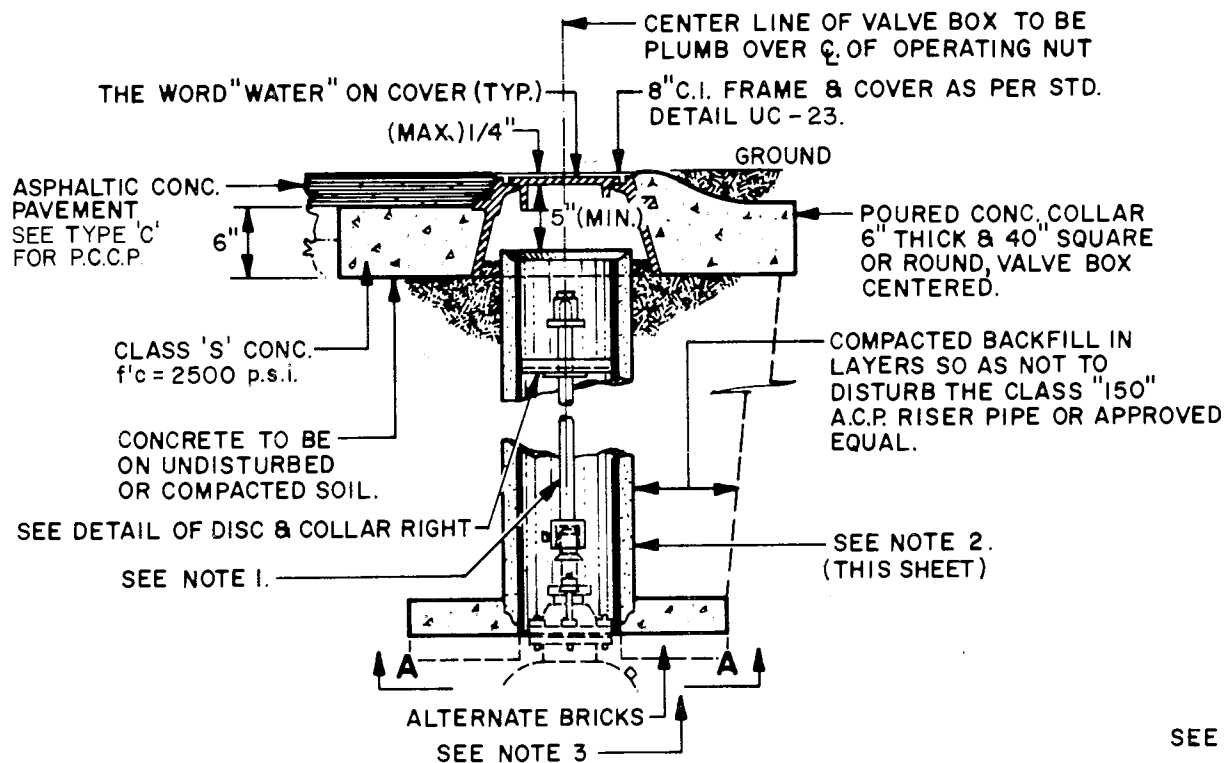
1. THIS DETAIL COVERS MOVING OF WATER MAINS, 2" TO 12" ONLY.
2. THRUST BLOCKING AS PER DETAIL NO. UC-80 AND UC-82.
3. IF OFFSET IS TO GO OVER OBSTRUCTION, JOINT RESTRAINTS MUST BE USED
4. PIPE IS TO BE CAST IRON OR DUCTILE IRON.

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APPROVED FOR
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URBAN HIGHWAY DETAILS

VERTICAL REALIGNMENT
OF WATER MAINS

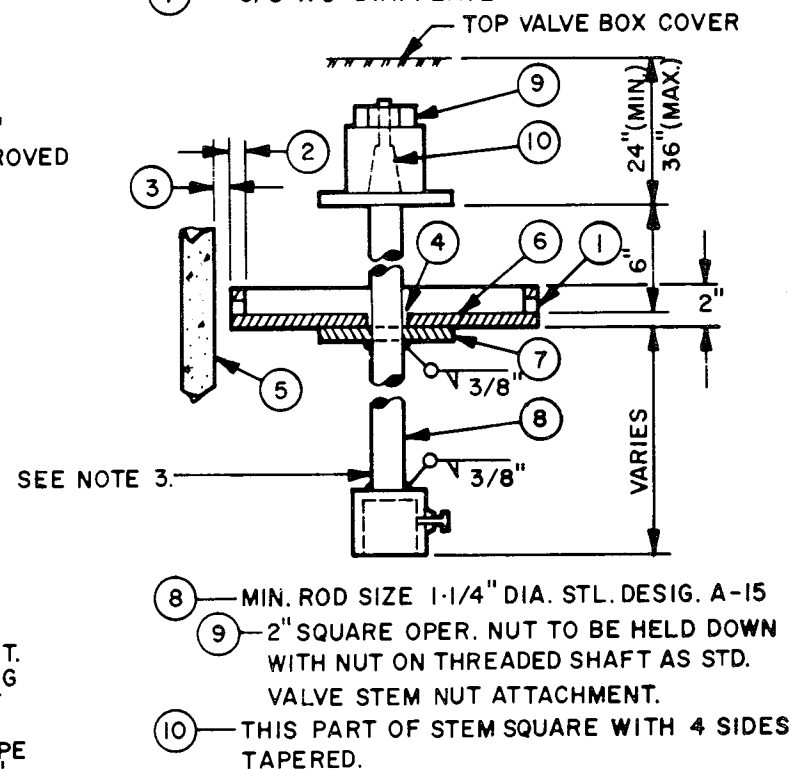
REV.
DETAIL NO.
UC-83



NOTES

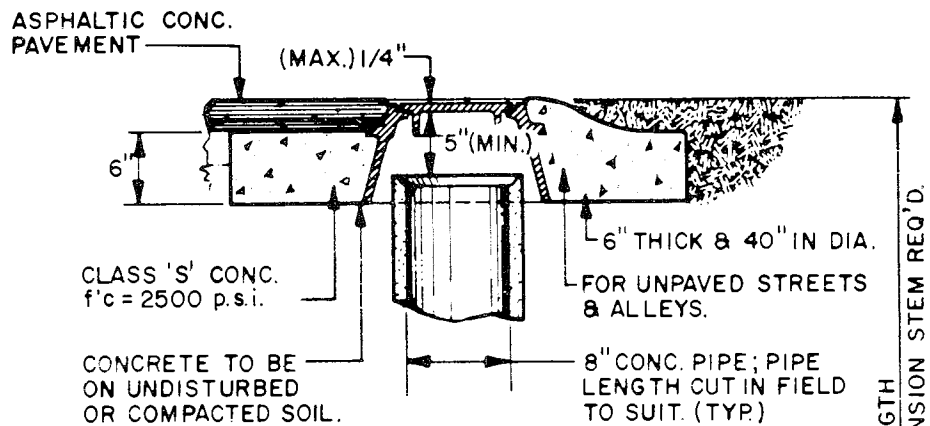
1. EXTENSION STEM: WITH SQUARE SOCKET ON BOTTOM TO FIT 2" SQUARE VALVE NUT. EXTENSION TO VALVE STEMS REQUIRED ON ALL VALVES INSTALLED WHERE OPERATING NUT IS OVER 5' BELOW SURFACE. LENGTH TO FIT EACH INSTALLATION. OPERATING NUT TO BE HELD ON TOP OF EXTENSION WITH STOP NUT.
2. IF TWO OR MORE JOINTS OF A.C.P. ARE USED TO MAKE RISER USE STANDARD A.C. PIPE RUBBER GASKET COUPLING TO JOIN PIPE. WHERE RISER LENGTH EXCEEDS 10' USE 12" A.C. PIPE
3. STEM PAINTING: ALL STEEL TO HAVE PRIME COAT OF PAINT NO. 4 AND ONE HEAVY APPLICATION (FINISH COAT) OF PAINT NO. 1002 - 4.06 AS PER SECT. 1002.

- ① (2) 1/2" DIA. HOLES OPPOSITE SIDES
- ② 3/16"
- ③ 1/4" ALL SIDES
- ④ 1/16" MIN. CLEARANCE
- ⑤ A.C.P. RISER WALL
- ⑥ 3/16" STL. PLATE
- ⑦ 3/8" X 3" DIA. PLATE



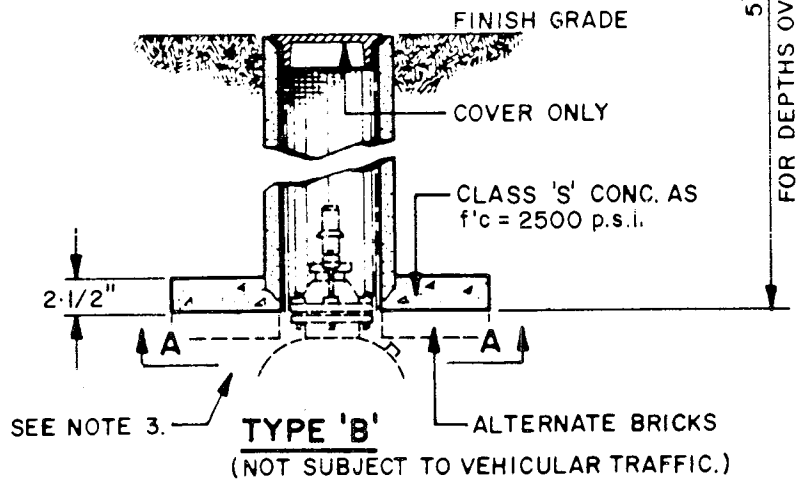
DETAIL APPROVED BY URBAN HIGHWAY ENGINEER	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAY URBAN HIGHWAY DETAILS	REV.
APPROVED FOR DISTRIBUTION	VALVE BOX INSTALLATION Sheet 1 of 2	DETAIL NO. UC-84

NOTES

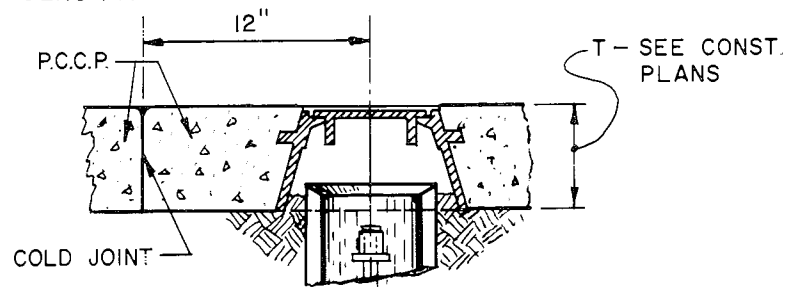


TYPE 'A'

(TO BE USED IN AREAS SUBJECT TO
VEHICULAR TRAFFIC.)

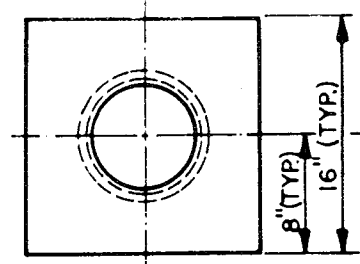


4. VALVE BOX SHALL BE ADJUSTED TO THE FINISHED GRADE PRIOR TO PLACING OF THE ASPHALTIC CONCRETE SURFACE.
5. USE PARKSON TYLER, APCO, OR EQUAL DEEP SKIRTED LID (4" OR MORE) TYPE, SLIDING ADJUSTABLE CAST IRON VALVE BOX. C.I. MIN. T.S. 30,000 P.S.I.
6. GROUND BELOW CONCRETE PAD OR 3 BRICKS TO BE COMPACTED 95% OF MAX. DENSITY.



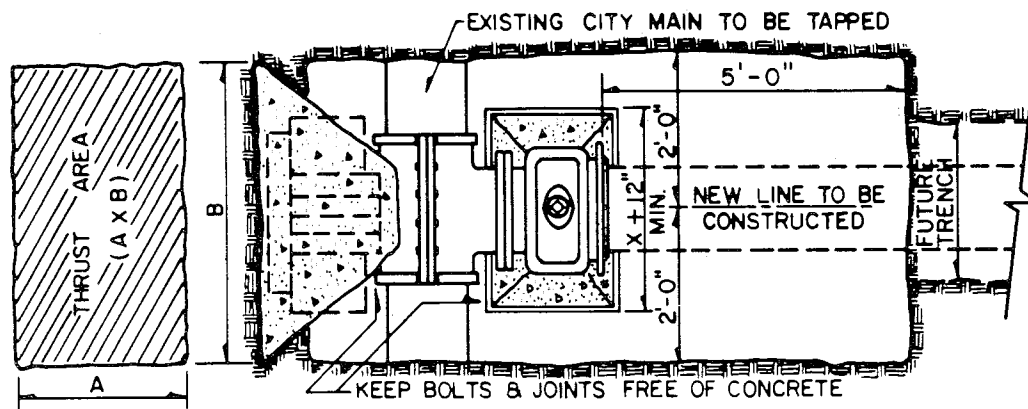
TYPE 'C'

(TO BE USED WHEN VALVE
BOX IS LOCATED WITHIN
P.C.C. PAVEMENT)



VIEW A-A

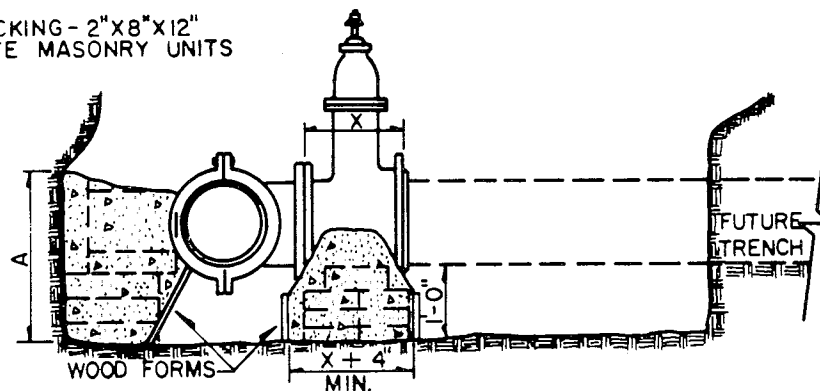
DETAIL APPROVED BY URBAN HIGHWAY ENGINEER <i>[Signature]</i>	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAY URBAN HIGHWAY DETAILS	REV.
APPROVED FOR DISTRIBUTION <i>[Signature]</i>	VALVE BOX INSTALLATION Sheet 2 of 2	DETAIL NO. UC-84



PLAN

CONCRETE: CLASS 'S' $f'c = 2500$ p.s.i.
NORMALLY, CURE 24 HRS. BEFORE
BACKFILLING.

OPTIONAL BLOCKING - 2"x8"x12"
SOLID CONCRETE MASONRY UNITS
AS INDICATED.



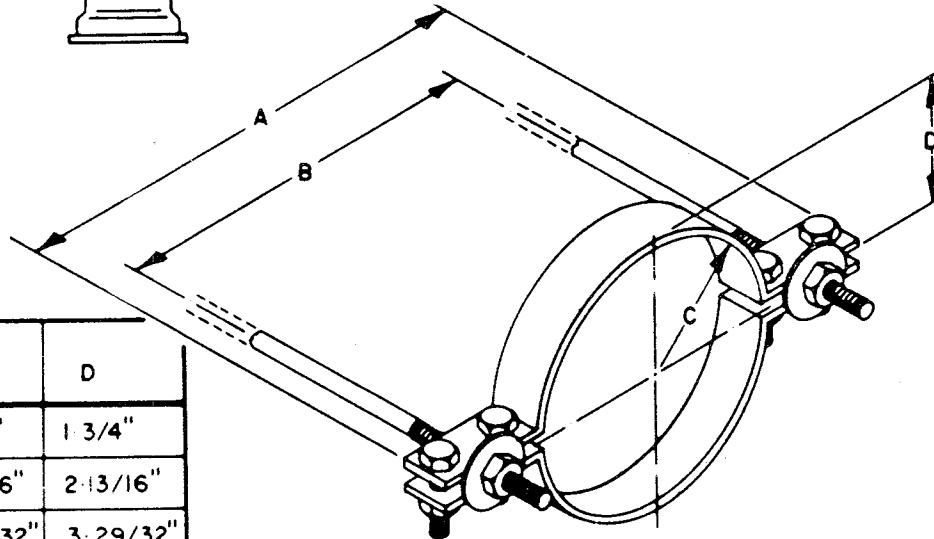
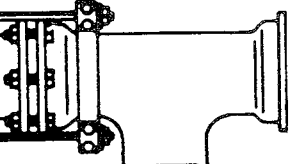
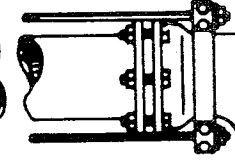
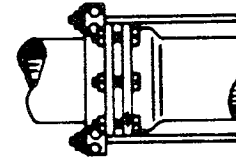
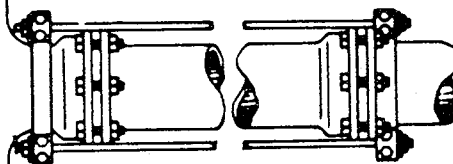
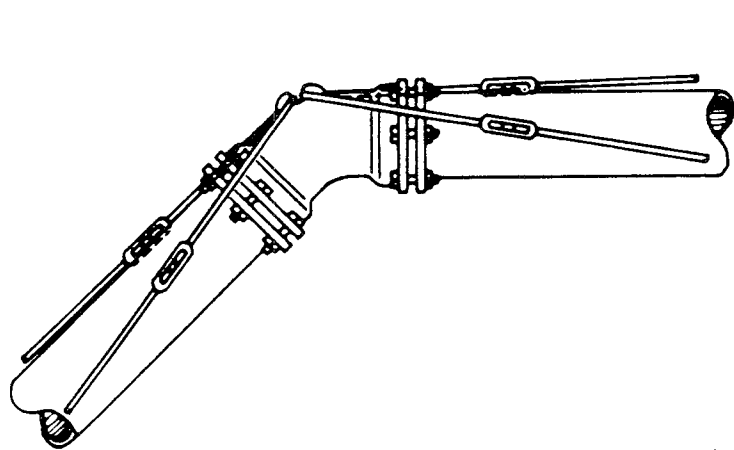
ELEVATION

NOTES

1. BLOCKS ARE TO EXTEND TO UNDISTURBED GROUND.
2. ALL TAPS SHALL BE MADE BY CITY CREWS AT PREVAILING RATES.
3. INSTALL PERMANENT BLOCKING UNDER VALVE BEFORE TAP IS MADE. ALL FLANGE BOLTS SHALL BE CLEAR OF FOOTING.
4. ALL TAPPING SLEEVES MUST BE PRESSURE TESTED PRIOR TO REQUESTS FOR TAP BY CITY.
5. CONTRACTOR SHALL EXCAVATE AS SHOWN AND SHALL SET TAPPING SLEEVE AND VALVE AND TIGHTEN ALL BOLTS PRIOR TO REQUESTING CITY TO MAKE TAP.
6. TAPPING SLEEVE TO BE PLACED A MINIMUM OF 18" FROM ANY BELL, COUPLING, VALVE, OR OTHER OBSTRUCTION.

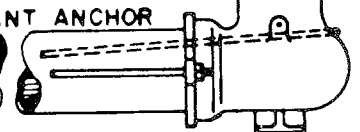
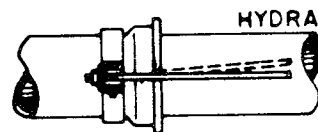
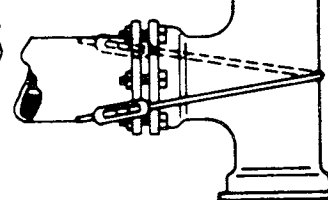
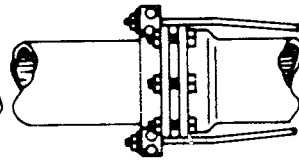
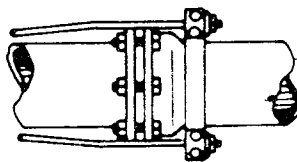
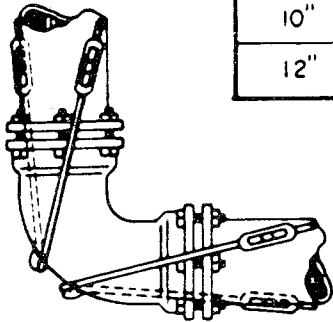
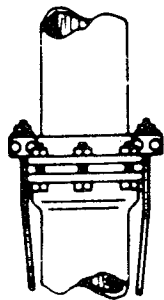
SIZE OF PIPE BEING CONNECTED	MINIMUM THRUST AREA REQUIRED EQUALS (A X B)
4" & LESS	3 SQUARE FEET
6"	4 " "
8"	6 " "
10"	9 " "
12"	13 " "
16"	23 " "

DETAIL APPROVED BY URBAN HIGHWAY ENGINEER <i>[Signature]</i>	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAY URBAN HIGHWAY DETAILS	REV.
APPROVED FOR DISTRIBUTION <i>[Signature]</i>	TAPPING SLEEVE AND VALVE INSTALLATION	DETAIL NO. UC-85



PIPE SIZE	A	B	C	D
4"	12-1/2"	10-1/8"	2-1/2"	1-3/4"
6"	14-1/2"	12-1/8"	3-9/16"	2-13/16"
8"	16-3/4"	14-3/8"	4-21/32"	3-29/32"
10"	19-1/16"	16-11/16"	5-3/4"	5"
12"	22-5/16"	19-3/16"	6-3/4"	5-7/8"

RODS ARE ATTACHED TO LUGS CAST ON BELL OF HYDRANT IF HYDRANT IS NOT FITTED WITH LUGS, RODS ARE ATTACHED AS SHOWN BY THE DOTTED LINES.



HYDRANT ANCHOR

DETAIL APPROVED BY
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ENGINEER
[Signature]
APPROVED FOR
DISTRIBUTION
[Signature]

STATE OF ARIZONA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAY
URBAN HIGHWAY DETAILS
JOINT RESTRAINT
WITH TIE RODS
Sheet 1 of 2

REV.
DETAIL NO.
UC-86

THIS DETAIL IS FOR USE ONLY ON UNDERGROUND INSTALLATIONS WHERE THE USE OF CONCRETE THRUST BLOCKING PER DETAIL NO. UC-80 CANNOT BE USED BECAUSE OF OBSTRUCTIONS, OR REQUIREMENTS OF THE SPECIFICATIONS...

CLAMPS SHALL BE 1/2 BY 2 INCHES FOR PIPE 4 AND 6 INCHES IN DIAMETER; 5/8 BY 2-1/2 INCHES FOR PIPE 8 AND 10 INCHES; 5/8 BY 3 INCHES FOR PIPE 12 INCHES. BOLT HOLES SHALL BE 1/16 INCH IN DIAMETER LARGER THAN BOLTS.

RODS SHALL BE 3/4 INCHES IN DIAMETER FOR PIPES 4, 6 AND 8 INCHES IN DIAMETER; 7/8 INCHES FOR PIPE 10 INCHES AND 1 INCH IN DIAMETER FOR PIPE 12 INCHES.

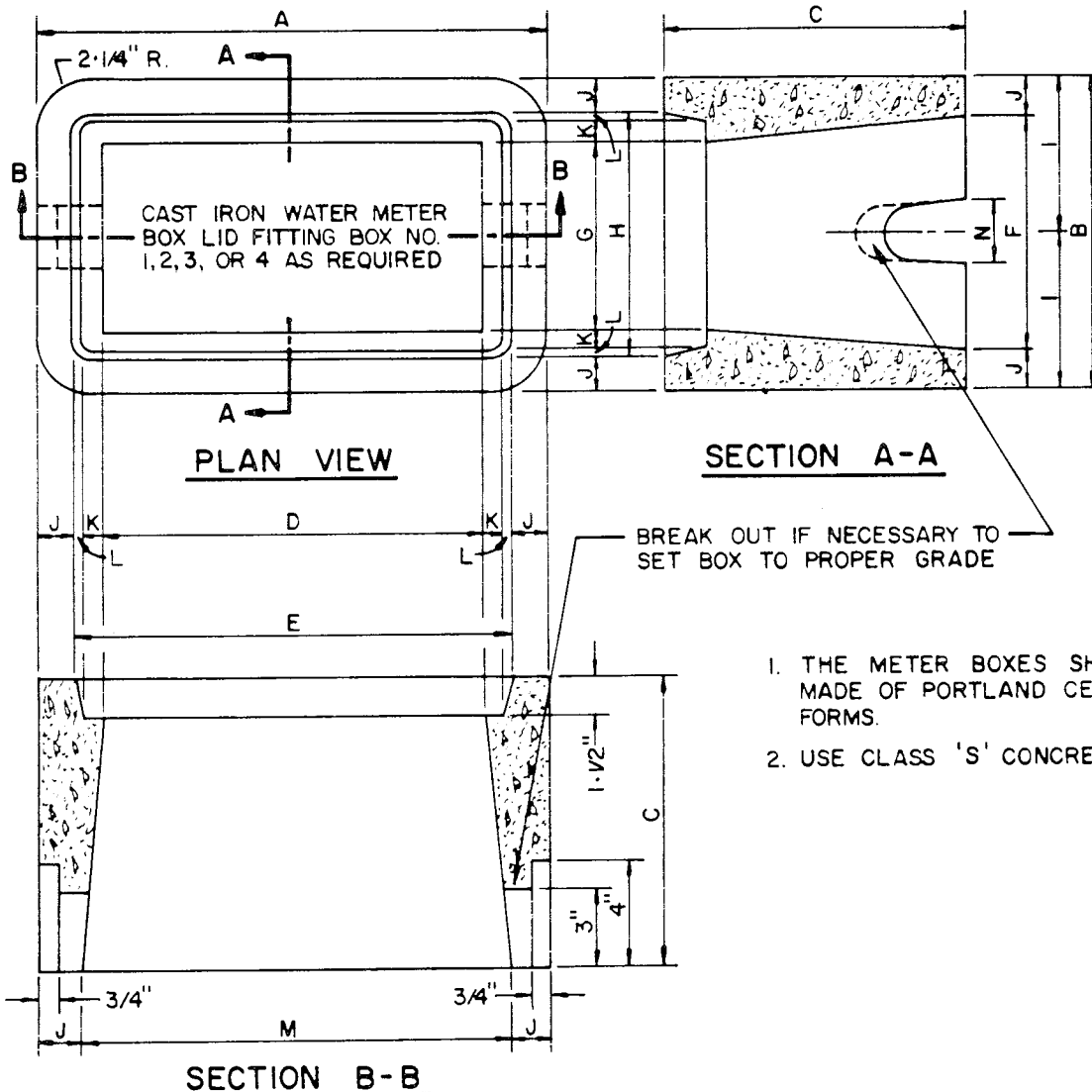
BOLTS SHALL BE 5/8 INCHES IN DIAMETER FOR PIPE 4, 6 AND 8 INCHES IN DIAMETER; 3/4 INCHES FOR PIPE 10 INCHES AND 7/8 INCHES IN DIAMETER FOR PIPE 12 INCHES.

WASHERS MAY BE CAST IRON OR STEEL, ROUND OR SQUARE. DIMENSIONS FOR CAST IRON WASHERS ARE 5/8 BY 3 INCHES FOR PIPE 4, 6, 8 AND 10 INCHES IN DIAMETER AND 3/4 BY 3-1/2 INCHES FOR PIPE 12 INCHES. DIMENSIONS FOR STEEL WASHERS ARE 1/2 BY 3 INCHES FOR PIPE 4, 6, 8 AND 10 INCHES IN DIAMETER AND 1/2 BY 3-1/2 INCHES FOR PIPE 12" IN DIA., HOLES SHALL BE 1/8 INCH LARGER THAN THE RODS.

FOR PIPE LARGER THAN 12" IN DIA., RESTRAINT DETAILS SHALL BE SUBMITTED FOR APPROVAL PRIOR TO INSTALLATION.

1. ALL TIE RODS, ROD COUPLINGS, TURNBUCKLES, BOLTS AND NUTS FOR THESE JOINTS SHALL BE OF CARBON STEEL EQUIVALENT TO A.S.T.M. A-307, GRADE B, WITH CADMIUM PLATING IN ACCORDANCE WITH A.S.T.M. A-165, EXCEPT THAT THE MIN. THICKNESS OF THE PLATING SHALL BE .0002 OF AN INCH. CADMIUM PLATED BOLTS SHALL HAVE CLASS 2A THREADS AND THE NUTS, ROD COUPLINGS AND TURNBUCKLES SHALL HAVE 2B THREADS.
2. HIGH STRENGTH, HEAT TREATED CAST IRON TEE-HEAD BOLTS WITH HEXAGON NUTS, ALL IN ACCORDANCE WITH THE STRENGTH REQUIREMENTS OF A.W.W.A. C-III, MAY BE USED IN LIEU OF THE CADMIUM PLATED BOLTS AND NUTS.
3. THE SKETCHES IN THIS SERIES OF FIGURES SHOW ACCEPTABLE METHODS OF PROVIDING ANCHORAGE. THERE IS NO PARTICULAR SIGNIFICANCE TO BE ATTACHED TO WHETHER THE SKETCH SHOWS A BELL AND SPIGOT JOINT OR A STANDARD MECHANICAL JOINT. THE ANCHORING PROCEDURE ILLUSTRATED APPLIES IN MOST CASES TO EITHER TYPE OF JOINT. IN SOME CASES, DIMENSIONS OF THE PARTICULAR PIPE OR HUB AND SPACE AVAILABLE FOR WORKING AROUND THE PARTICULAR JOINT WILL INFLUENCE THE CHOICE OF METHODS USED.
4. IN CERTAIN ASSEMBLIES OF RODS AND CLAMPS SHOWN, RODS RUN FROM A LUG ON THE FITTING (OR A CLAMP BEHIND THE HUB OF A BELL) TO A CLAMP AGAINST A FACE OF A BELL. NOTE THAT THIS ARRANGEMENT ANCHORS ONLY ONE JOINT. THE STABILITY OF THE JOINT WHERE THE CLAMP IS AGAINST THE FACE OF THE BELL DEPENDS ON HAVING SOIL ABOVE A RELATIVELY LONG PIECE OF PIPE ON BOTH SIDES OF THE JOINT. CONSEQUENTLY, IF THE DISTANCE BETWEEN THE FIRST AND SECOND JOINTS IS LESS THAN 12 FEET, THE SECOND JOINT SHOWN SHALL BE ANCHORED BY A CLAMP BEHIND THE HUB OF THE BELL AND RODS TO A CLAMP AT THE FACE OF THE NEXT BELL.
5. COATING TYPE: A.H.D ASPHALTIC PRIMER 907-2.02 - ALL EXPOSED METAL.

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APPROVED FOR DISTRIBUTION <i>[Signature]</i>	JOINT RESTRAINT WITH TIE RODS Sheet 2 of 2	DETAIL NO. UC-86



METER BOX DIMENSIONS				
DIM.	BOX NUMBER			
	1	2	3	4
A	19"	24 1/2"	29 1/2"	33 1/2"
B	12"	16 3/4"	18 1/2"	22 3/4"
C	11"	12"	13"	12"
D	14"	19"	23 3/4"	27 3/4"
E	16"	22"	26 1/2"	30 1/2"
F	9"	13 1/4"	15"	19 3/4"
G	7"	11 1/4"	12 3/4"	17"
H	9"	14 1/4"	15 1/2"	19 3/4"
I	6"	8 3/8"	9 1/4"	11 3/8"
J	1 1/2"	1 3/4"	1 3/4"	1 1/2"
K	3/4"	1 1/8"	1"	1"
L	1/4"	3/8"	3/8"	3/8"
M	16"	21"	25 1/2"	30 1/2"
N	2 1/2"	3 1/2"	4"	4"
	5/8" OR 3/4" METER	1" METER	1 1/2" METER	2" METER

NOTES

1. THE METER BOXES SHALL CONFORM TO THE DIMENSIONS AS SHOWN AND SHALL BE MADE OF PORTLAND CEMENT CONCRETE POURED AND TAMPED (OR VIBRATED) IN TRUE FORMS.
2. USE CLASS 'S' CONCRETE, $f'_c = 4000$ p.s.i.

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APPROVED FOR DISTRIBUTION 	CONCRETE WATER METER BOXES	DETAIL NO. UC-87

NO SCALE

NOTE: ALL STEEL PER
SPEC. 1004-1 &
1004-2

DIAMOND PLATE
STEEL

BLACK
HOT DIPPED
COAL TAR
BITUMINOUS
COATING

LIFT SLOT

10° TAPER

3/4" HEAVY WALL BLACK
IRON PIPE CORNERS
SCH. 40

(UNDERSIDE)
DETAIL

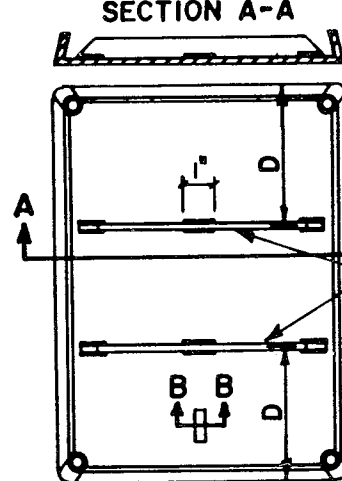
1/4"

INSIDE, ALL 4 CORNERS
BOTH SIDES OF PIPE

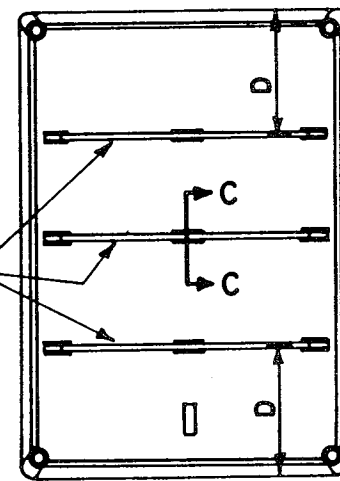
OPTIONAL 3/16" WELD IN LIEU OF IRON PIPE

UNDERSIDE VIEWS

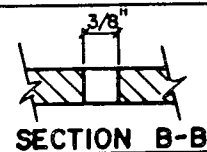
SECTION A-A



DETAIL 1

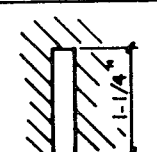


DETAIL 2

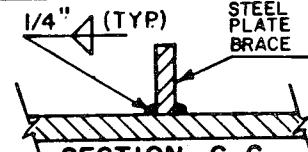


SECTION B-B

SLOT DETAIL



(ALL LDS)



BRACE DETAIL

SPECIFICATIONS

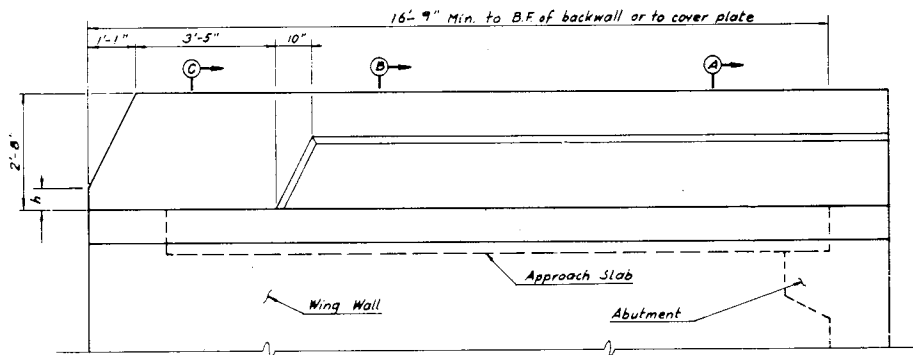
NO.	A	B	C	D	E	BRACES	WEIGHT	MATERIAL
1	9"	15 7/8"	1 3/8"	NONE	NONE	NONE	5 1/4 LBS.	14 GAGE
2	14 1/8"	21 3/4"	1 1/2"	6 1/2"	3/16" X 1 1/4" X 13 1/8"	DETAIL 1	12 3/4 LBS.	12 GAGE
3	15 1/4"	26 1/4"	1 1/2"	8 1/4"	3/16" X 1 1/4" X 14 1/4"	DETAIL 1	19 1/4 LBS.	12 GAGE
4	19 1/2"	30"	1 1/2"	7 1/8"	3/16" X 1 1/4" X 18 3/4"	DETAIL 2	33 LBS.	11 GAGE

DETAIL APPROVED BY
URBAN HIGHWAY
ENGINEER
APPROVED FOR
DISTRIBUTION
James A. McLean

STATE OF ARIZONA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAY
URBAN HIGHWAY DETAILS

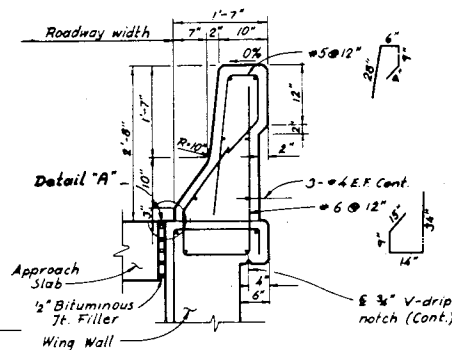
STEEL COVER FOR
WATER METER BOX

REV.
DETAIL NO.
UC-88



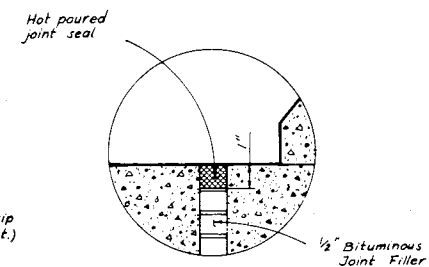
END BARRIER DETAIL

Scale: $\frac{3}{4}$ " = 1'-0"



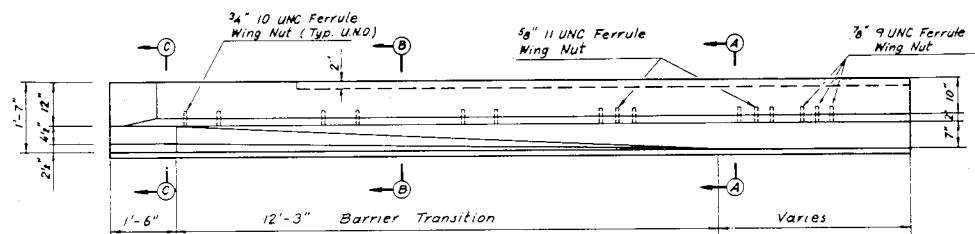
SECTION A-A

Scale: 1" = 1'-0"



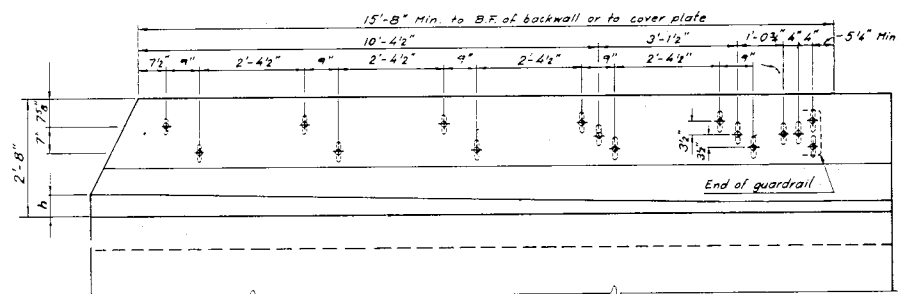
DETAIL "A"

Not to scale



PLAN

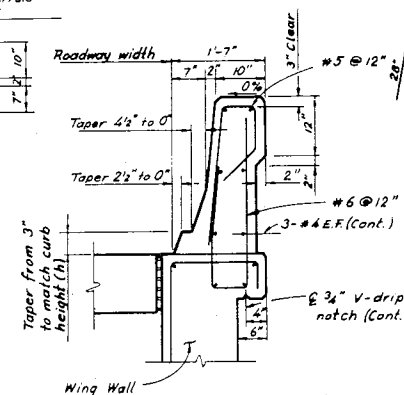
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ELEVATION

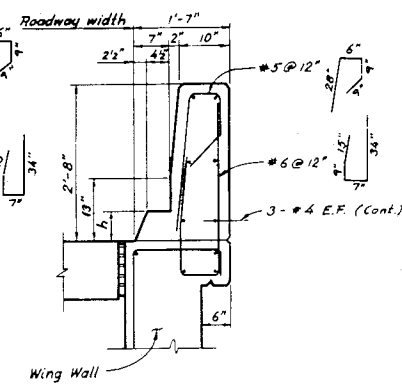
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END BARRIER DETAIL FROM TRAFFIC DIRECTION



SECTION B-B

Scale: 1" = 1'-0"



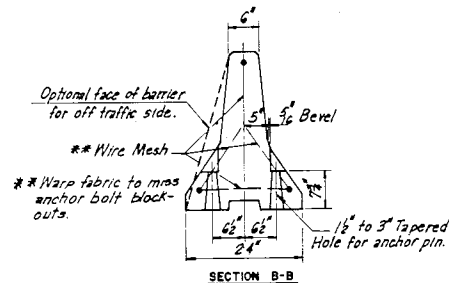
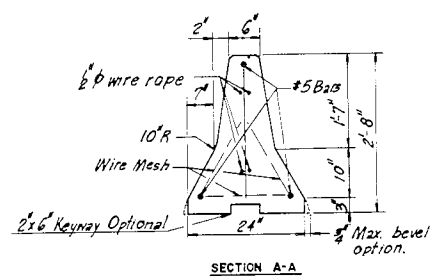
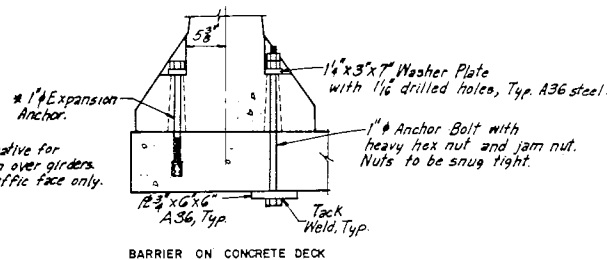
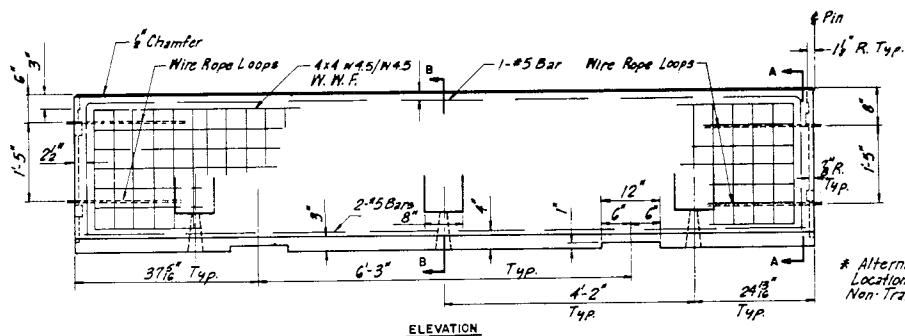
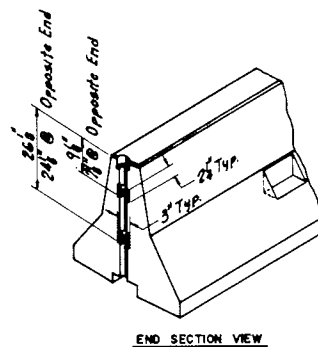
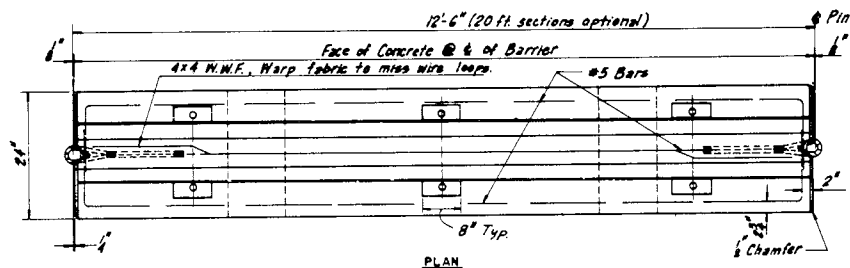
SECTION C-C

Scale: 1" = 1'-0"

NOTES

1. See Construction Standard Drawings C-10.37 through C-10.41 for dimensions and details not shown.
2. Terminal Connector Back Plate shown on the Detail H, Construction Standard Drawing C-10.41, shall not be used.
3. See plans for type of guard rail post.

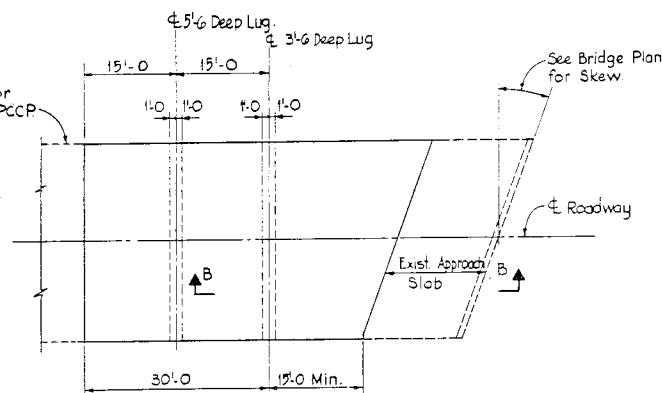
DETAIL APPROVED BY URBAN HIGHWAY ENGINEER	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAY URBAN HIGHWAY DETAILS	
APPROVED FOR DISTRIBUTION <i>James C. H. [Signature]</i>	DETAIL NO. HALF BARRIER TRANSITION UB-01	



NOTES

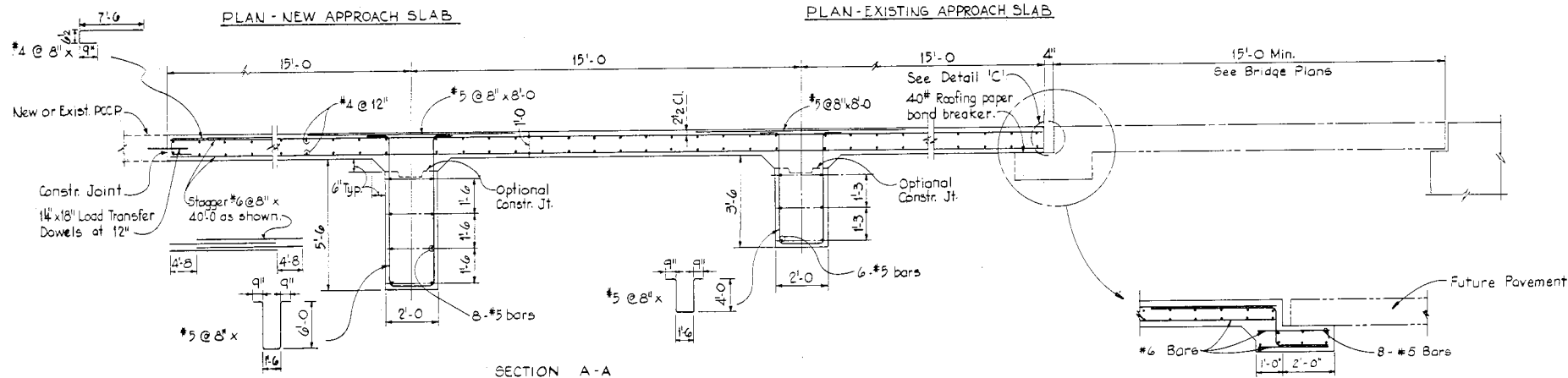
1. Place concrete barrier on 1" Styrofoam pad. Pad shall be 2' x 32" centered on joints.
2. Install Type BM-1 or BM-2 barrier delineator at 25 ft. spacing.
3. The connecting pin, washer and nut shall be 1040 steel, heat treated according to A.S.T.M. A-449 and hot dipped galvanized according to A.S.T.M. A-153. For connecting pin details, see Std. 4-C-2.01.
4. The wire rope shall be 1/2"-6x19 Independent Wire Rope Core. For wire rope details, see Std. 4-C-2.01.
5. Concrete 28 Day Strength f'c = 4,000 p.s.i.
6. Welded wire fabric (W.W.F.) shall conform to the requirements of AASHTO #55. (A.S.T.M. A-62.66 + A-185.69)
7. All bolts, washers, and nuts shall be ASTM A-325.
8. All structural steel shall be ASTM A-36, unless noted otherwise.

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APPROVED FOR DISTRIBUTION James A. McLean	TEMPORARY CONCRETE BARRIER	DETAIL NO. UB-03

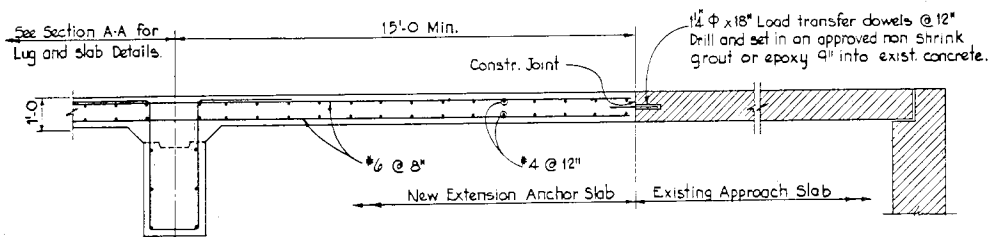


All Concrete shall be Class 'S' f'c = 3,000 psi.
All Reinforcing Steel dimensions shall be to center of bars unless noted otherwise.
All Reinforcing Steel shall have 3" clear cover unless noted otherwise.
Reinforcing Steel shall conform to ASTM Spec. A615.
Bar size #6 and smaller are designed as Grade 40 and furnished as Grade 40 or Grade 60; f's = 20,000 psi.
Bar size #7 and larger shall be Grade 60; f's = 24,000 psi.
Anchor lug to be cast in precompacted roadway embankment or formed and compacted to embankment requirements prior to the casting of Anchor Slab.

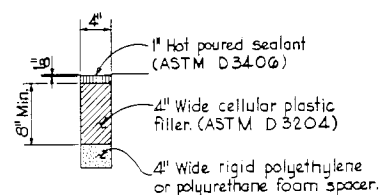
PLAN-EXISTING APPROACH SLAB



SECTION A-A





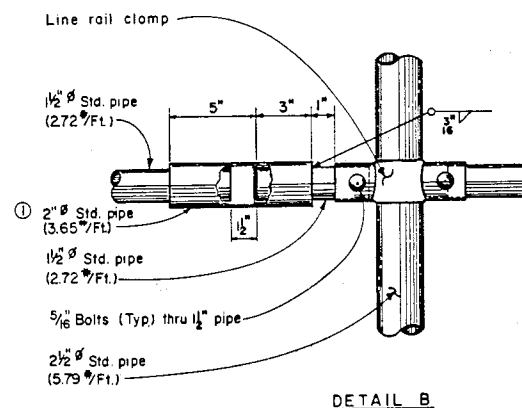
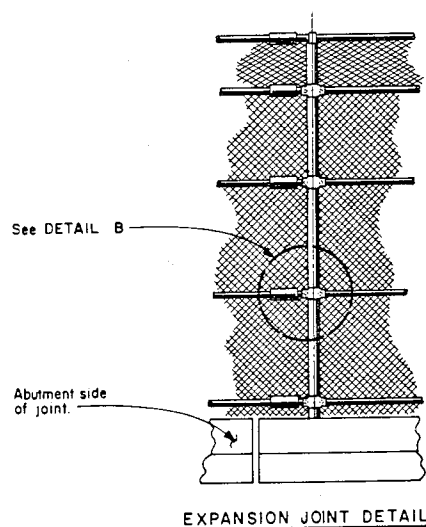
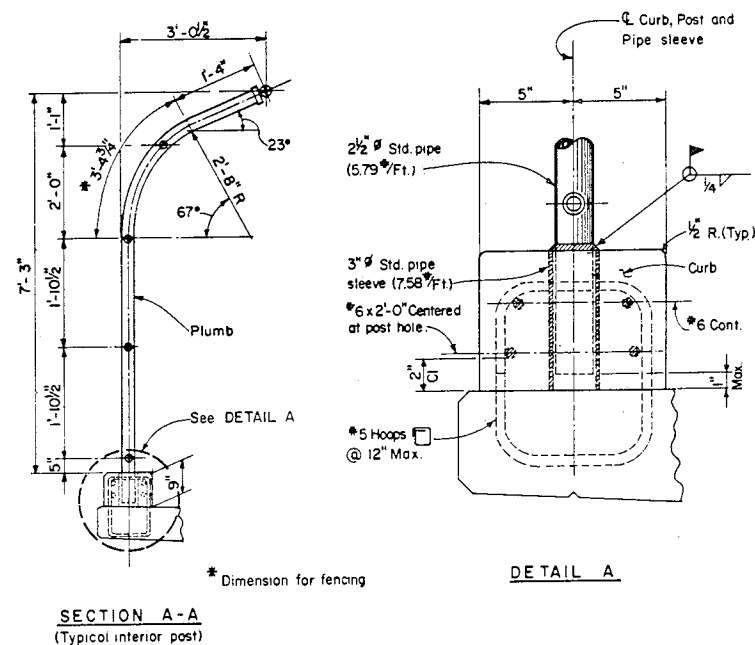
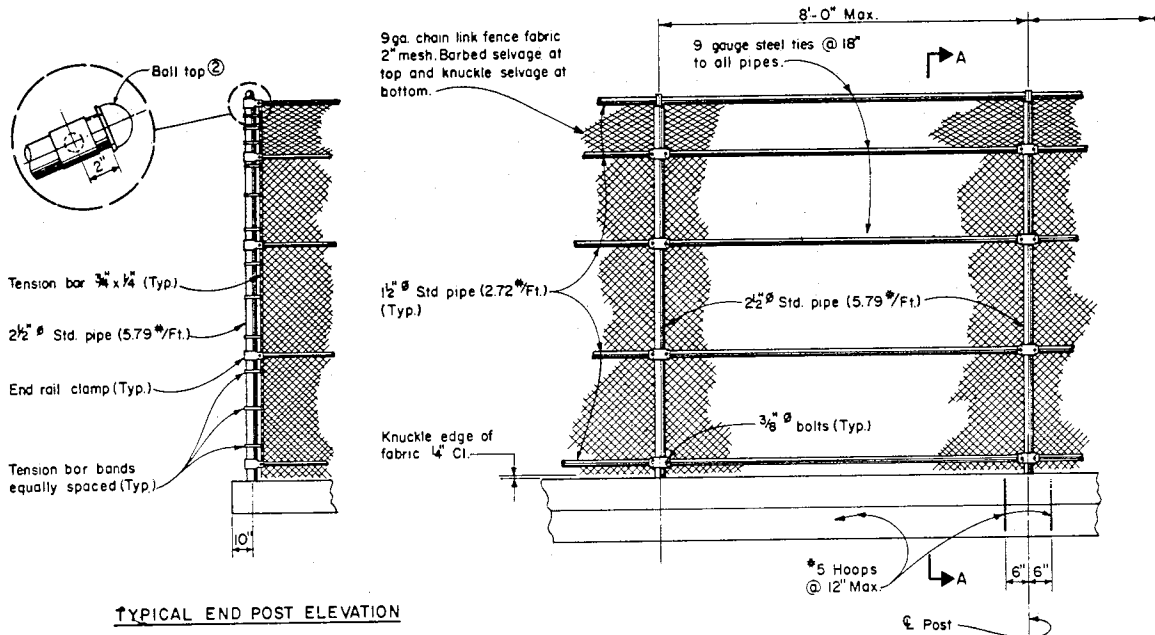
SECTION B-B



DETAIL 'C'

ALTERNATE END DETAIL

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APPROVED FOR DISTRIBUTION 	ANCHOR SLAB DETAILS	DETAIL NO. UB-04



GENERAL NOTES:

Chain link fence fabric shall conform to AASHTO M181- Type I or Type II. For Type I, the wire fabric coating shall be Class A.

Posts, Fittings and Hardware shall conform to ASTM-A120 Schedule 40 pipe standard weights As Shown.

All galvanizing that has been damaged in handling, transporting or welding shall be repaired by the application of a paste compound of an approved zinc powder and flux.

All exposed edges shall be smooth.

All bolt heads shall be to the inside.

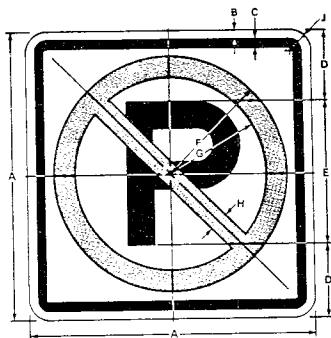
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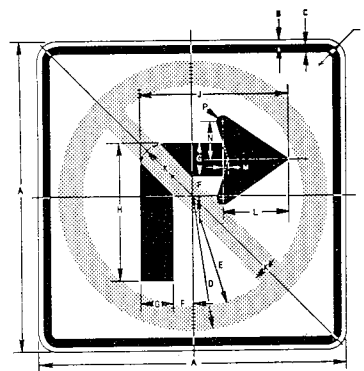
CURB FENCE DETAILS

DETAIL NO.
UB-05



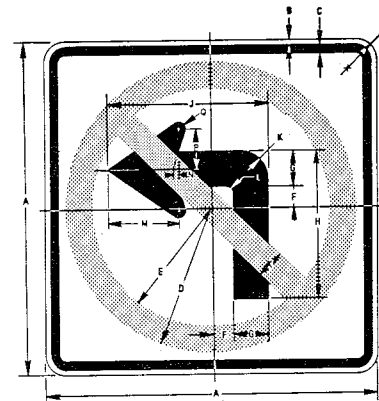
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BIKE	12	3/8	3/8	3	REIN	4 3/8	3 1/2	1 1/2									
MIN.	24	3/8	3/8	6	REIN	10 1/2	8 1/2	2 1/2	10 1/2	11 1/2	2	4 1/2	3/8	2 3/4	1/2		
STD.	24	3/8	3/8	6	REIN	10 1/2	8 1/2	2 1/2	10 1/2	11 1/2	2	5 1/4	3/8	3	1/2		
SPECIAL	30	1/2	3/4	9	REIN	13 1/2	10 1/2	3 1/8	13 1/2	14 1/2	2 1/2	6 3/8	1/2	3 5/8	3/8		
EXPWY.	36	5/8	1	12	REIN	16 1/2	12 1/2	4 1/8	16 1/2	17 1/2	3	7 5/8	5/8	4 1/2	1/2		
FWY.	48	3/4	1 1/4	12	REIN	21	17	4	21	23	4	10 1/2	3/4	5 1/2	1		
SPECIAL																	

R8-3a



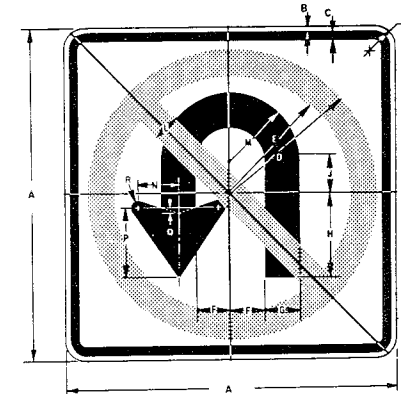
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MIN.	24	3/8	3/8	10 1/2	8 1/2	1 1/2	2 1/2	10 1/2	11 1/2	2	5 1/4	3/8	3	1/2			
STD.	24	3/8	3/8	10 1/2	8 1/2	1 1/2	2 1/2	10 1/2	11 1/2	2	5 1/4	3/8	3	1/2			
SPECIAL	30	1/2	3/4	13 1/2	10 1/2	1 1/2	3 1/8	13 1/2	14 1/2	2 1/2	6 3/8	1/2	3 5/8	3/8			
EXPWY.	36	5/8	1	16 1/2	12 1/2	2 1/8	4 1/8	16 1/2	17 1/2	3	7 5/8	5/8	4 1/2	1/2			
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SPECIAL																	

R3-1



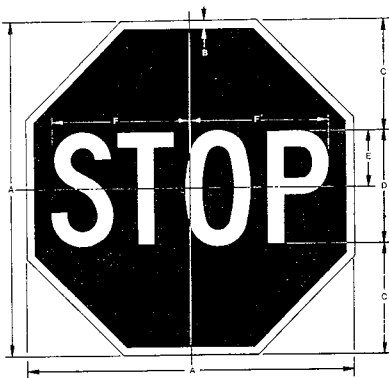
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MIN.	24	3/8	3/8	10 1/2	8 1/2	1 1/2	2 1/2	10 1/2	11 1/2	2	5 1/4	3/8	3	1/2			
STD.	24	3/8	3/8	10 1/2	8 1/2	1 1/2	2 1/2	10 1/2	11 1/2	2	5 1/4	3/8	3	1/2			
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EXPWY.	36	5/8	1	16 1/2	12 1/2	2 1/8	4 1/8	16 1/2	17 1/2	3	7 5/8	5/8	4 1/2	1/2			
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SPECIAL																	

R3-2



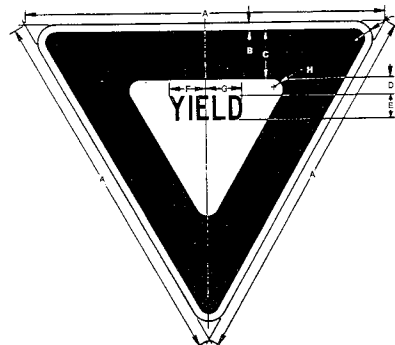
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MIN.	24	3/8	3/8	10 1/2	8 1/2	1 1/2	2 1/2	10 1/2	11 1/2	2	5 1/4	3/8	3	1/2			
STD.	24	3/8	3/8	10 1/2	8 1/2	1 1/2	2 1/2	10 1/2	11 1/2	2	5 1/4	3/8	3	1/2			
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EXPWY.	36	5/8	1	16 1/2	12 1/2	2 1/8	4 1/8	16 1/2	17 1/2	3	7 5/8	5/8	4 1/2	1/2			
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SPECIAL																	

R3-4



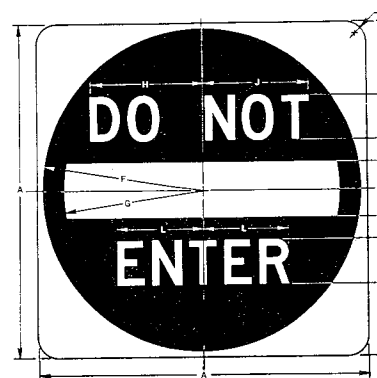
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MIN.	24	3/8	3/8	8	8C	4 10											
STD.	30	3/4	3/4	10	10C	5 12 1/2											
EXPWY.	36	7/8	7/8	12	12C	6 15											
SPECIAL	42	1	1	14	14C	7 17 1/2											
SPECIAL	48	1 1/4	1 1/4	16	16C	8 20											

R1-1



SIGN	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	Q	R
BIKE	24	3/8	3/8	1 1/2	20	3 1/4	3 1/8	1 1/2									
MIN.	30	3/8	3/8	1 1/2	20	3 1/4	3 1/8	1 1/2									
STD.	36	3/4	3/4	2	25	4 1/4	4 1/8	1 1/2	2								
SPECIAL	48	1	1	2 1/2	30	5 1/4	5 1/8	2	3								
EXPWY.	60	1 1/2	1 1/2	3 1/2	35	6 1/4	6 1/8	2 1/2	4								
SPECIAL																	

R1-2



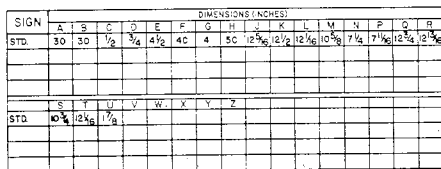
SIGN	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	Q	R
BIKE	30	6 1/2	4D	2	5	14 1/2	12 1/2	3 3/4	10	1 1/8	7 1/8						
MIN.	30	6 1/2	4D	2	5	14 1/2	12 1/2	3 3/4	10	1 1/8	7 1/8						
STD.	30	6 1/2	4D	2	5	14 1/2	12 1/2	3 3/4	10	1 1/8	7 1/8						
EXPWY.	36	7 1/2	5D	2 1/2	6	17 1/2	15	4 1/2	12	2 3/8	8 1/8						
FWY.	48	11	6D	3	8	23 1/2	20	5 1/2	15	3 11/16							
SPECIAL																	

R5-1

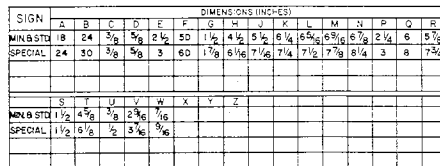
NOTES:

- COLOR OF SIGNS SHALL BE AS FOLLOWS:
 - R8-3a, R3-1, R3-2 & R3-4
CIRCLE & DIAGONAL - RED (REFLECTORIZED)
SYMBOL, BORDER, LEGEND - BLACK (NON-REFLECTORIZED)
BACKGROUND - WHITE (REFLECTORIZED)
 - R1-1, R1-2 & R5-1
LEGEND - RED (REFLECTORIZED)
BACKGROUND - WHITE (REFLECTORIZED)
- DIMENSIONS ARE NOMINAL
- SIGNS SHALL BE REFERENCED BY SIZE, EXAMPLE - R1-1 (A")

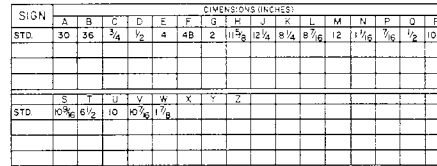
DETAIL APPROVED BY ENGINEER <i>[Signature]</i> APPROVED FOR DISTRIBUTION <i>[Signature]</i>	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAY URBAN HIGHWAY DETAILS		REV.
	REGULATORY SIGNS		DETAIL NO. USM-01



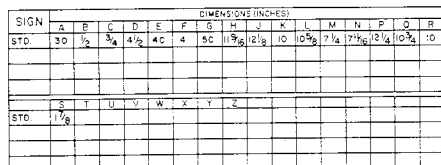
R3 - 7R



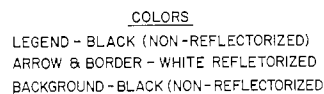
R6-2R
 *R6-2L



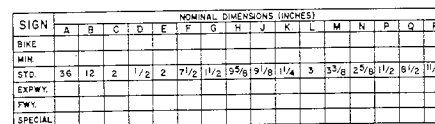
R5 -10a



R3-7L





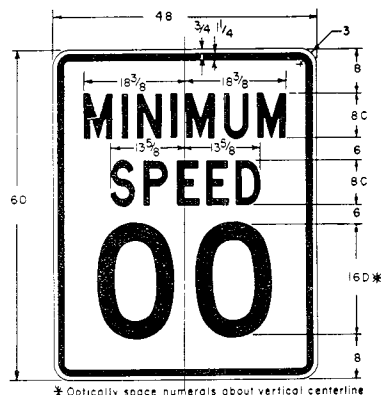
R6-IR



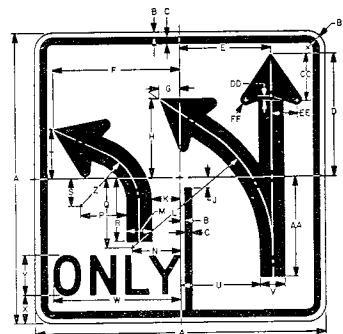
R6-IL

- 1.) COLOR OF ALL SIGNS SHALL BE AS FOLLOWS,
EXCEPT AS NOTED OTHERWISE
LEGEND - BLACK (NON - REFLECTORIZED)
BACKGROUND - WHITE (REFLECTORIZED)
- 2.) DIMENSIONS ARE NOMINAL
- 3.) SIGNS SHALL BE REFERENCED BY SIZE,
EXAMPLE - R6-2R (A" x B")
- 4.) ➡ ARROW DIMENSIONS ARE OPPOSITE
HAND.

DETAIL APPROVED BY URBAN HIGHWAY ENGINEER 	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAY URBAN HIGHWAY DETAILS	REV.
APPROVED FOR DISTRIBUTION 	REGULATORY SIGNS CROSS STREETS ONLY	DETAIL NO. USM-02

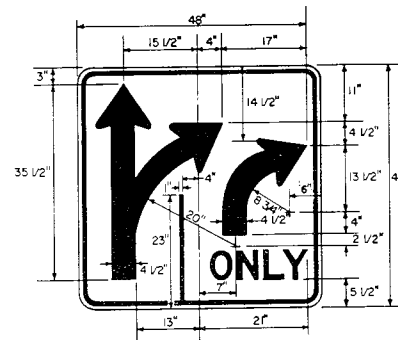


R2-4

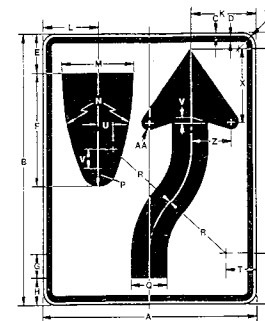


SIGN	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	Q	R
STD.	30	1/2	3/4	10 3/8	9 1/2	12 1/2	1 1/4	8	1	2 1/2	14 1/2	2 1/2	4 3/4	14 1/2	17 1/2	16 1/2	
SPECIAL	48	3/4	1 1/4	20 3/8	15 3/8	22 1/2	2 1/4	11 1/2	1 1/2	4 3/4	23 3/4	4	7 5/8	17 5/8	12	10 3/8	

R3-8L

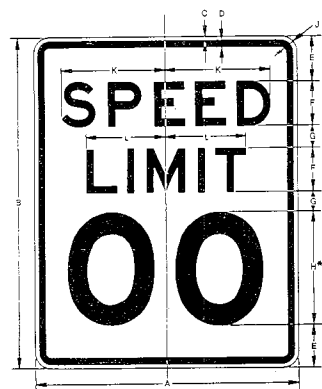


R3-8R

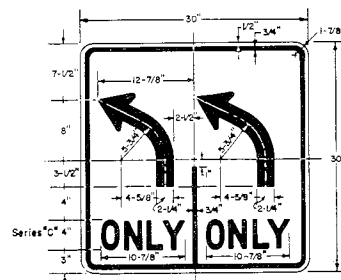


SIGN	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	Q	R
MIN.	18	24	3/2	5 1/2	3 3/4	9 3/4	1 1/2	2 1/4	1 3/8	5 1/2	4 1/4	6	22 1/2	11 1/2	3	6 3/4	
STD.	24	30	3/4	5 1/2	4 1/2	12 1/2	2 1/2	3	1 3/8	7 3/8	6 1/4	8	30	2	4	9	
EXPWY.	36	48	1 1/4	5 1/2	6 3/4	18 3/4	3 3/4	4 1/2	2 3/8	11 1/8	19 3/8	12	45	3	6	13 1/2	
FWY.	48	60	1 1/2	5 1/2	9	25	5	6	3 3/4	14 1/2	27 1/2	16	60	4	8	18	

R4-7



R2-1



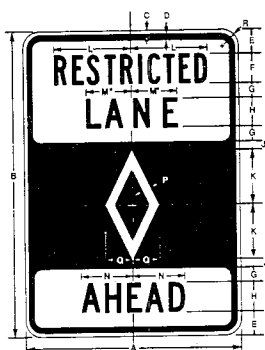
R3-8L (SPECIAL)
R3-8R (SPECIAL)

NOTES:

- 1) COLOR OF ALL SIGNS SHALL BE AS FOLLOWS:
LEGEND & BORDER - BLACK NON-REFLECTORIZED
BACKGROUND - WHITE REFLECTORIZED
- 2) DIMENSIONS ARE NOMINAL
- 3) SIGNS SHALL BE REFERENCED BY SIZE,
EXAMPLE - R2-1 (4" x 8")
- 4) @ DENOTES OPPOSITE HAND DIMENSIONS.

SIGN	A	B	C	D	E	F	G	H	I	J	K	L
EXPWY.	36	48	5/8	7/8	6	6E	5	14E	2 1/4	14 3/8	11	
FRWAY	48	60	3/4	1 1/4	8	8E	6	16E	3	19 1/8	14 5/8	
MIN	18	24	3/8	5/8	3	3E	2	8E	1 1/2	7 3/8	5 1/2	
STD.	24	30	3/8	5/8	4	4E	2	10E	1 1/2	9 3/8	7 3/8	

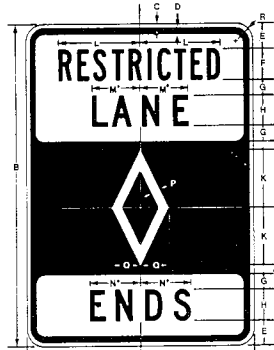
DETAIL APPROVED BY URBAN HIGHWAY ENGINEER 	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAY URBAN HIGHWAY DETAILS		REV.
	REGULATORY SIGNS		DETAIL NO. USM-03



*INCREASE SPACING 100%

SIGN	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R
BIKE																
MIN.	30	42	1/2	3/4	3/4	4B	2	4C	1 1/4	7 1/2	10 3/8	6	8 3/4	1 1/8	3 3/4	1 1/8
STD.	30	42	1/2	3/4	3/4	4B	2	4C	1 1/4	7 1/2	10 3/8	6	8 3/4	1 1/8	3 3/4	1 1/8
EXPWY.	36	60	5/8	1	1	4 1/2	2B	3	6C	2	10	15 1/2	9	10 1/2	1 1/2	5 1/2
FWY.	48	84	3/4	1 1/4	1 1/4	6	3B	4	8C	3	15	20 1/2	12	14	2 1/4	7 1/2
SPECIAL																

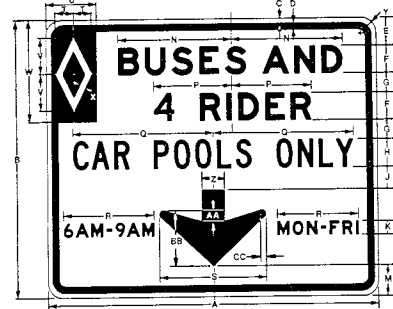
R3-10



*INCREASE SPACING 100%

SIGN	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R
BIKE																
MIN.	30	42	1/2	3/4	3/4	4B	2	4C	1 1/4	7 1/2	10 3/8	6	8 3/4	1 1/8	3 3/4	1 1/8
STD.	30	42	1/2	3/4	3/4	4B	2	4C	1 1/4	7 1/2	10 3/8	6	8 3/4	1 1/8	3 3/4	1 1/8
EXPWY.	36	60	5/8	1	1	4 1/2	2B	3	6C	2	10	15 1/2	9	10 1/2	1 1/2	5 1/2
FWY.	48	84	3/4	1 1/4	1 1/4	6	3B	4	8C	3	15	20 1/2	12	14	2 1/4	7 1/2
SPECIAL																

R3-12



DIMENSIONS (INCHES)

SIGN	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R
MIN. STD.	72	60	1 1/2	6	60	4	6C	4 1/2	30	6 1/2	7	23 1/2	6 1/2	31	VAR.	
EXPWY.	96	72	1 1/4	3/4	8	60	6	6C	4 1/2	40	6 1/2	7	31 1/2	21 3/4	41	VAR.
FWY.	108	84	1 1/2	2	10	10D	6	10C	4	50	22	6	39	27	51	VAR.
S																
MIN. STD.	24	4	11	8	22	1 1/4	3 3/4	4 1/2	2 1/4	11 1/4	1 1/4					
EXPWY.	24	5	15	10	30	1 1/2	5	5 1/2	2 1/4	14	1 1/4					
FWY.	32	6	18	12	36	2	6	6 1/2	3	16	1					

R3-14



LINE 1 ALTERNATE R3-11 LINE 4 ALTERNATE
CURB LEFT RIGHT TURNS

DIMENSIONS (INCHES)

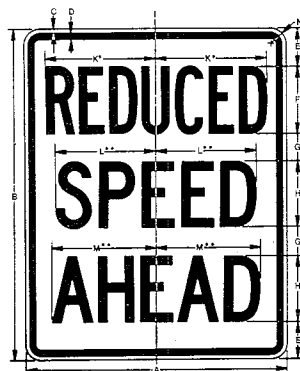
SIGN	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R
MIN. STD.	30	42	1/2	3/4	3/4	4B	2	4C	1 1/4	7 1/2	10 3/8	6	8 3/4	1 1/8	3 3/4	1 1/8
EXPWY.	42	60	5/8	1	1	4 1/2	2B	3	6C	2	10	15 1/2	9	10 1/2	1 1/2	5 1/2
FWY.	54	84	3/4	1 1/4	1 1/4	6	3B	4	8C	3	15	20 1/2	12	14	2 1/4	7 1/2
S																
MIN. STD.	24	4	11	8	22	1 1/4	3 3/4	4 1/2	2 1/4	11 1/4	1 1/4					
EXPWY.	24	5	15	10	30	1 1/2	5	5 1/2	2 1/4	14	1 1/4					
FWY.	32	6	18	12	36	2	6	6 1/2	3	16	1					

COLORS

TOP
SYMBOL & LEGEND - WHITE
REFLECTORIZED
BACKGROUND - BLACK
NON-REFLECTORIZED

BOTTOM
LEGEND - BLACK
NON-REFLECTORIZED
BACKGROUND - WHITE
REFLECTORIZED

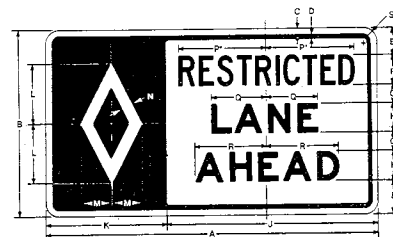
R3-11



*REDUCE SPACING 50% FOR STD. SIZE AND 25% FOR OTHER SIZES
**FOR STD. SIZE, REDUCE SPACING 40%

SIGN	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R
BIKE																
MIN.	18	24	3/8	5/8	3/4	4B	2	4C	6 3/4	7	6 3/4	7	1 1/2			
STD.	24	30	3/8	5/8	3/4	4B	2	4C	6 3/4	7	6 3/4	7	1 1/2			
EXPWY.	36	48	5/8	7/8	1	6B	3	6C	10 1/4	11 1/4	10 1/4	11 1/4	1 1/2			
FWY.	48	60	3/4	1 1/4	1 1/4	8	4	8C	14 1/4	15 1/4	14 1/4	15 1/4	1 1/2			
SPECIAL																

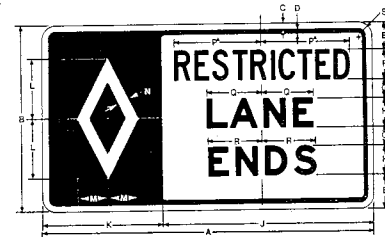
R2-5a



*REDUCE SPACING 50%

SIGN	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R
MIN. STD.	66	36	5/8	7/8	5/4	4C	3 1/2	6D	42	24	12	6	2	17	9 1/2	13 1/2
EXPWY.	84	48	3/4	1 1/4	7	6C	5	8D	54	30	16	8	2 1/2	22 1/2	17 1/2	
FWY.	102	60	1	1 1/2	9	10C	6	10D	66	36	20	10	3	28	16	21 1/2
S																
MIN. STD.	2 1/4															
EXPWY.	3															
FWY.	3 1/4															

R3-13



*REDUCE SPACING 50%

SIGN	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R
MIN. STD.	66	36	5/8	7/8	5/4	4C	3 1/2	6D	42	24	12	6	2	17	9 1/2	13 1/2
EXPWY.	84	48	3/4	1 1/4	7	6C	5	8D	54	30	16	8	2 1/2	22 1/2	17 1/2	
FWY.	102	60	1	1 1/2	9	10C	6	10D	66	36	20	10	3	28	16	21 1/2
S																
MIN. STD.	2 1/4															
EXPWY.	3															
FWY.	3 1/4															

R3-15

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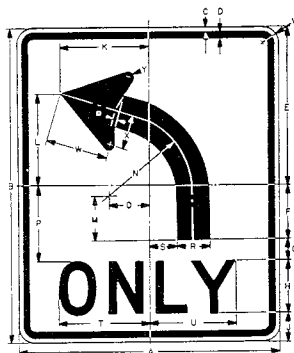
STATE OF ARIZONA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAY
URBAN HIGHWAY DETAILS

REGULATORY SIGNS

DETAIL NO.
USM-04

NOTES:

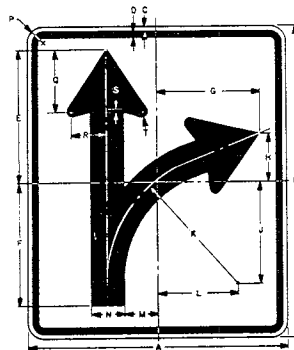
- COLOR OF ALL SIGNS SHALL BE AS FOLLOWS, EXCEPT WHERE NOTED OTHERWISE
LEGEND - BLACK (NON-REFLECTORIZED)
BACKGROUND - WHITE (REFLECTORIZED)
SYMBOL - REFLECTORIZED WHITE ON BLACK
- DIMENSIONS ARE NOMINAL
- SIGNS SHALL BE REFERENCED BY SIZE, EXAMPLE - R3-10 (A" x B")



SIGN	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	Q	R
STD	30	36	1/2	3/4	18	5 1/2	2 1/2	60	3 1/2	3 1/4	11 1/4	5 1/4	9 1/2	8 1/4	3 1/4	3 1/4	
SPECIAL	48	60	3/4	1 1/4	30	7	3 3/4	100	6 1/2	11 1/2	16	9	9 1/2	13 1/2	2 1/4	5 1/2	

SIGN	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	Q	R
STD	30	36	1/2	3/4	18	5 1/2	2 1/2	60	3 1/2	3 1/4	11 1/4	5 1/4	9 1/2	8 1/4	3 1/4	3 1/4	
SPECIAL	48	60	3/4	1 1/4	30	7	3 3/4	100	6 1/2	11 1/2	16	9	9 1/2	13 1/2	2 1/4	5 1/2	

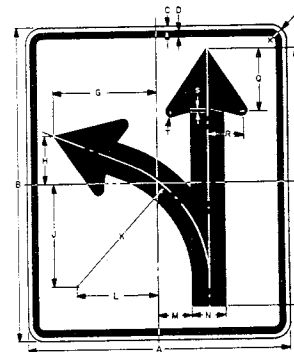
R3-5L
R3-5R



SIGN	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	Q	R
STD	48	60	3/4	1 1/4	2 1/2	20	16 1/2	7 1/2	15 1/2	20 1/2	12 1/4	4 1/8	5 1/2	3	10 1/2	6 1/2	
SPECIAL	30	36	1/2	3/4	1 1/4	14 1/4	11 1/4	5 1/2	11 1/4	14 1/2	8 1/2	3 1/2	17 1/2	7 1/2	4		

SIGN	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	Q	R
STD	48	60	3/4	1 1/4	2 1/2	20	16 1/2	7 1/2	15 1/2	20 1/2	12 1/4	4 1/8	5 1/2	3	10 1/2	6 1/2	
SPECIAL	30	36	1/2	3/4	1 1/4	14 1/4	11 1/4	5 1/2	11 1/4	14 1/2	8 1/2	3 1/2	17 1/2	7 1/2	4		

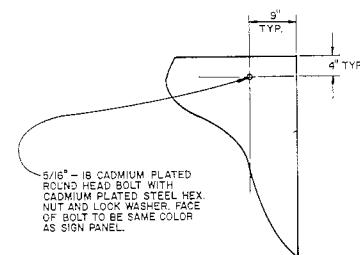
R3-6R



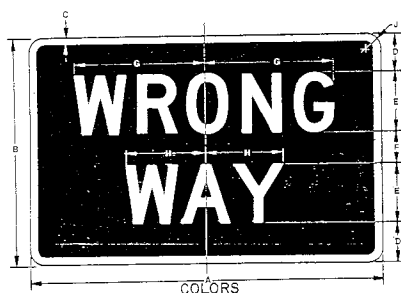
SIGN	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	Q	R
STD	48	60	3/4	1 1/4	2 1/2	20	16 1/2	7 1/2	15 1/2	20 1/2	12 1/4	4 1/8	5 1/2	3	10 1/2	6 1/2	
SPECIAL	30	36	1/2	3/4	1 1/4	14 1/4	11 1/4	5 1/2	11 1/4	14 1/2	8 1/2	3 1/2	17 1/2	7 1/2	4		

SIGN	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	Q	R
STD	48	60	3/4	1 1/4	2 1/2	20	16 1/2	7 1/2	15 1/2	20 1/2	12 1/4	4 1/8	5 1/2	3	10 1/2	6 1/2	
SPECIAL	30	36	1/2	3/4	1 1/4	14 1/4	11 1/4	5 1/2	11 1/4	14 1/2	8 1/2	3 1/2	17 1/2	7 1/2	4		

R3-6L

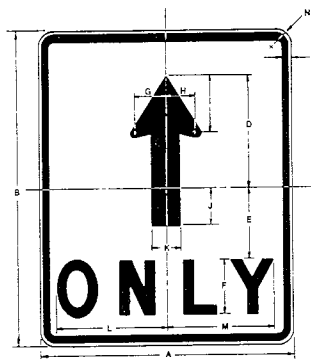


BOLT SPACING DETAIL
4' x 5' SIGN PANELS



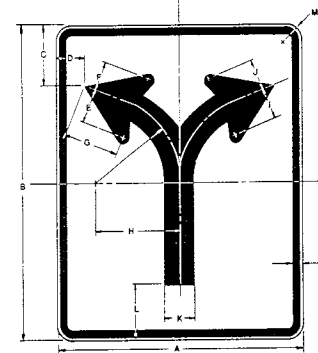
SIGN	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	Q	R
MIN	30	18	5/8	3	5D	2	11 1/2	6 1/2	11 1/2								
STD	24	24	3/4	4 1/2	6D	3	13 1/2	8 1/2	11 1/2								
EXPT																	
SPECIAL	72	48	1	7 1/2	12D	9	26 1/2	16 1/2	3								
SPECIAL	42	30	3/8	5	5D	4	17 1/2	10 1/2	1 1/2								

R5-1a



SIGN	A	B	C	D	E	F	G	H	I	J	K	L	M	N
STD	48	60	2	2 1/2	13 1/2	10	16 1/2	9 1/2	10 1/2	7	5 1/2	20 1/2	20 1/2	3

R3-5S



SIGN	A	B	C	D	E	F	G	H	I	J	K	L	M	N
STD	48	60	12	5 1/2	6 1/2	8 1/2	0 3/4	5 1/2	6 1/2	6 1/2	5 1/2	10	3	2

R3-5L & R

NOTE

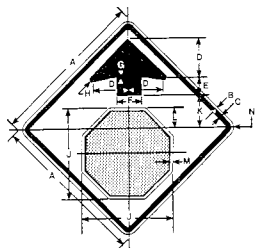
- 1) COLOR OF ALL SIGNS SHALL BE AS FOLLOWS, EXCEPT WHERE NOTED OTHERWISE:
LEGEND & BORDER - BLACK NON-REFLECTORIZED
BACKGROUND - WHITE REFLECTORIZED
- 2) DIMENSIONS ARE NOMINAL
- 3) SIGNS SHALL BE REFERENCED BY SIZE.
EXAMPLE - R3-5L (48" x 60")
- 4) ARROW DIMENSIONS ARE OPPOSITE HAND.

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STATE OF ARIZONA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAY
URBAN HIGHWAY DETAILS
REGULATORY SIGNS FOR
OVERHEAD STRUCTURES

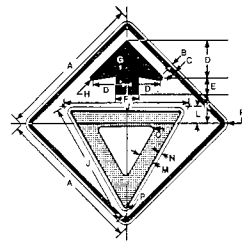
DETAIL NO.
USM-05

REV.



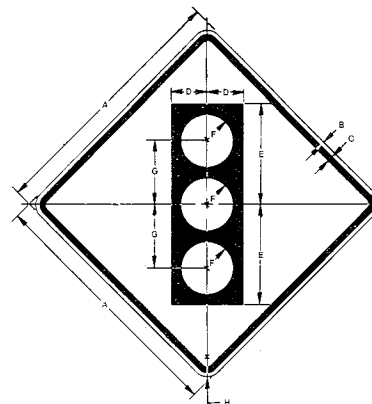
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BIKE	18	1/2	3/8	7/16	3/4	5/8	5/16	5/8	5/16	5/8	1/2	1/8				
MIN.	30	1/2	3/8	7/16	3/4	5/8	5/16	5/8	5/16	5/8	1/2	1/8				
STD.	36	1/2	3/8	7/16	3/4	5/8	5/16	5/8	5/16	5/8	1/2	1/8				
EXPWY.																
FWY.																
SPECIAL	48	1/2	3/8	7/16	3/4	5/8	5/16	5/8	5/16	5/8	1/2	1/8				

W3-1a



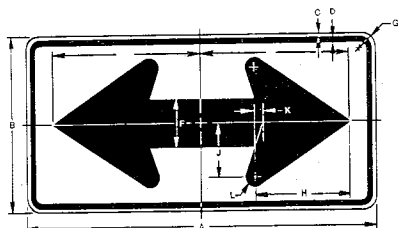
SIGN	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R
BIKE	18	1/2	3/8	7/16	3/4	5/8	5/16	5/8	5/16	5/8	1/2	1/8				
MIN.	30	1/2	3/8	7/16	3/4	5/8	5/16	5/8	5/16	5/8	1/2	1/8				
STD.	36	1/2	3/8	7/16	3/4	5/8	5/16	5/8	5/16	5/8	1/2	1/8				
EXPWY.																
FWY.																
SPECIAL	48	1/2	3/8	7/16	3/4	5/8	5/16	5/8	5/16	5/8	1/2	1/8				

W3-2a



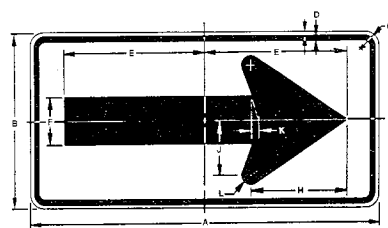
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BIKE	18	1/2	3/8	7/16	3/4	5/8	5/16	5/8	5/16	5/8	1/2	1/8				
MIN.	30	1/2	3/8	7/16	3/4	5/8	5/16	5/8	5/16	5/8	1/2	1/8				
STD.	36	1/2	3/8	7/16	3/4	5/8	5/16	5/8	5/16	5/8	1/2	1/8				
EXPWY.																
FWY.																
SPECIAL	48	1/2	3/8	7/16	3/4	5/8	5/16	5/8	5/16	5/8	1/2	1/8				

W3-3



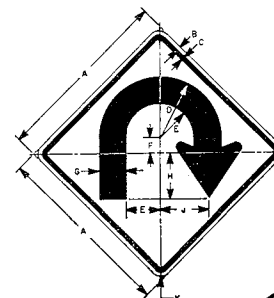
SIGN	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R
BIKE	24	12	3/8	1/2	3/4	5/8	5/16	5/8	5/16	5/8	1/2	1/8				
MIN.	36	18	3/8	1/2	3/4	5/8	5/16	5/8	5/16	5/8	1/2	1/8				
STD.	48	24	3/8	1/2	3/4	5/8	5/16	5/8	5/16	5/8	1/2	1/8				
EXPWY.																
FWY.																
SPECIAL	60	30	3/8	1/2	3/4	5/8	5/16	5/8	5/16	5/8	1/2	1/8				

W1-7R



SIGN	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R
BIKE	24	12	3/8	1/2	3/4	5/8	5/16	5/8	5/16	5/8	1/2	1/8				
MIN.	36	18	3/8	1/2	3/4	5/8	5/16	5/8	5/16	5/8	1/2	1/8				
STD.	48	24	3/8	1/2	3/4	5/8	5/16	5/8	5/16	5/8	1/2	1/8				
EXPWY.																
FWY.																
SPECIAL	60	30	3/8	1/2	3/4	5/8	5/16	5/8	5/16	5/8	1/2	1/8				

W1-6R
W2-6L



SIGN	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R
BIKE	24	12	3/8	1/2	3/4	5/8	5/16	5/8	5/16	5/8	1/2	1/8				
MIN.	36	18	3/8	1/2	3/4	5/8	5/16	5/8	5/16	5/8	1/2	1/8				
STD.	48	24	3/8	1/2	3/4	5/8	5/16	5/8	5/16	5/8	1/2	1/8				
EXPWY.																
FWY.																
SPECIAL	60	30	3/8	1/2	3/4	5/8	5/16	5/8	5/16	5/8	1/2	1/8				

W2-8R
W2-8L

NOTES:

1) COLOR OF SIGNS SHALL BE AS FOLLOWS:

- W3-1a
BORDER & ARROW - BLACK NON-REFLECTORIZED
SYMBOL - WHITE BORDER ON RED BACKGROUND
REFLECTORIZED
BACKGROUND - YELLOW REFLECTORIZED
- W3-2a
BORDER & ARROW - BLACK NON-REFLECTORIZED
SYMBOL - RED BORDER ON WHITE BACKGROUND
REFLECTORIZED
BACKGROUND - YELLOW REFLECTORIZED
- W3-3
SYMBOL & LEGEND - BLACK NON-REFLECTORIZED
TOP CIRCLE - RED REFLECTORIZED
BOTTOM CIRCLE - GREEN REFLECTORIZED
BACKGROUND - YELLOW REFLECTORIZED
- W1-7R, W1-6R, W1-6L, W2-8R & W2-8L
LEGEND - BLACK NON-REFLECTORIZED
BACKGROUND - YELLOW REFLECTORIZED

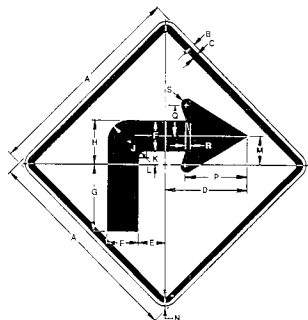
2) DIMENSIONS ARE NOMINAL

3) SIGNS SHALL BE REFERENCED BY SIZE.
EXAMPLE - W3-3 (A")
W1-6L (A" x B")

4) @ DENOTES OPPOSITE HAND DIMENSIONS.

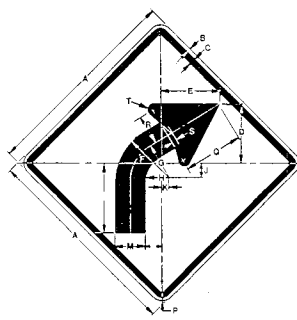
DETAIL APPROVED BY
URBAN HIGHWAY
ENGINEER
[Signature]
APPROVED FOR
DISTRIBUTION
[Signature]

STATE OF ARIZONA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAY
URBAN HIGHWAY DETAILS
WARNING SIGNS
DETAIL NO.
USM-21



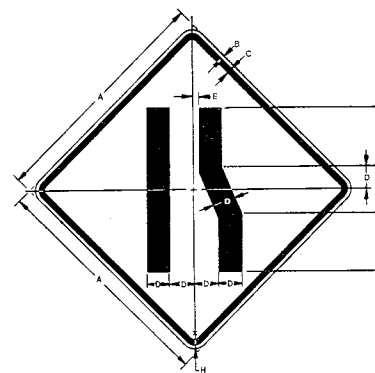
SIGN	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R
BIKE	18	3/8	5/8	7/8	2 1/4	2 5/8	5 1/8	3 3/4	1 1/8	1	5/8	2 1/2	1 1/2	5 1/8	3	3/8
MIN.	24	3/8	5/8	7/8	3	3 1/2	5 1/8	3 3/4	1 1/8	1	5/8	2 1/2	1 1/2	5 1/8	4	3/8
STD.	30	1/2	3/4	12	3 3/4	4 3/8	5 1/8	6 1/4	3	1 1/8	1	4 1/8	1 1/8	8 1/8	5	1 1/8
EXPWY.	36	5/8	7/8	4 1/2	5 1/4	11 5/8	7 1/2	3 3/4	2 1/4	1 1/4	4 1/8	2 1/4	1 1/8	10 1/8	6	1 3/8
SPECIAL	48	3/4	1 1/4	5 1/2	6	7 1/2	10	4 1/4	3	1 5/8	5 1/2	3	1 3/8	8	1 1/8	1 1/8
S	T	U	V	W	X	Y	Z									
BIKE	1/2															
MIN.	1 1/8															
STD.	7/8															
EXPWY.	1 1/8															
SPECIAL	1 3/8															

WI-IR
*WI-IL



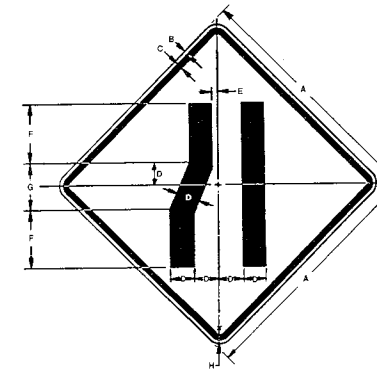
SIGN	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R
BIKE	18	3/8	5/8	5 1/2	6	4 1/4	3 3/8	1 1/4	1 1/4	2	2 5/8	6 1/4	1 1/2	5 1/8	3	3/8
MIN.	24	3/8	5/8	7 1/4	8	6 1/4	4 1/2	2 1/4	1 3/4	2 1/4	3 1/4	8 1/4	1 1/2	7 1/8	4	3/8
STD.	30	1/2	3/4	8 1/8	10	7 1/8	5 1/8	3 1/8	2 1/8	3 1/8	4 1/8	10 1/8	1 1/8	8 1/8	5	1 1/8
EXPWY.	36	5/8	7/8	10 5/8	12	9 3/8	6 1/8	3 1/8	2 3/8	4 1/8	5 1/8	12 3/8	1 3/8	10 3/8	6	1 3/8
FWY.	48	3/4	1 1/4	14 1/8	16	12 1/2	8 1/4	4 1/8	3 1/2	5 1/2	7	16 1/2	1 3/4	14 1/2	8	1 3/8
S	T	U	V	W	X	Y	Z									
BIKE	1/2															
MIN.	1 1/8															
STD.	7/8															
EXPWY.	1 1/8															
FWY.	1 3/8															

WI-2R
*WI-2L



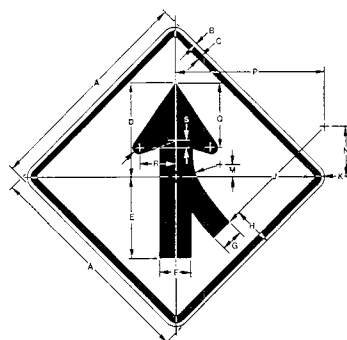
SIGN	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R
BIKE	18	3/8	5/8	5 1/2	6	4 1/4	3 3/8	1 1/4	1 1/4	2	2 5/8	6 1/4	1 1/2	5 1/8	3	3/8
MIN.	24	3/8	5/8	7 1/4	8	6 1/4	4 1/2	2 1/4	1 3/4	2 1/4	3 1/4	8 1/4	1 1/2	7 1/8	4	3/8
STD.	30	1/2	3/4	8 1/8	10	7 1/8	5 1/8	3 1/8	2 1/8	3 1/8	4 1/8	10 1/8	1 1/8	8 1/8	5	1 1/8
EXPWY.	36	5/8	7/8	10 5/8	12	9 3/8	6 1/8	3 1/8	2 3/8	4 1/8	5 1/8	12 3/8	1 3/8	10 3/8	6	1 3/8
FWY.	48	3/4	1 1/4	14 1/8	16	12 1/2	8 1/4	4 1/8	3 1/2	5 1/2	7	16 1/2	1 3/4	14 1/2	8	1 3/8
SPECIAL																

W4-2R



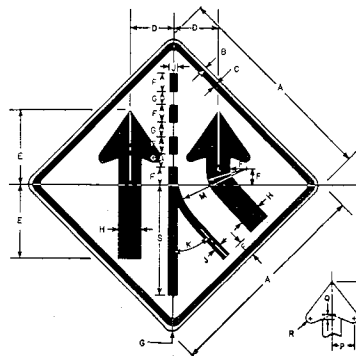
SIGN	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R
BIKE	18	3/8	5/8	5 1/2	6	4 1/4	3 3/8	1 1/4	1 1/4	2	2 5/8	6 1/4	1 1/2	5 1/8	3	3/8
MIN.	24	3/8	5/8	7 1/4	8	6 1/4	4 1/2	2 1/4	1 3/4	2 1/4	3 1/4	8 1/4	1 1/2	7 1/8	4	3/8
STD.	30	1/2	3/4	8 1/8	10	7 1/8	5 1/8	3 1/8	2 1/8	3 1/8	4 1/8	10 1/8	1 1/8	8 1/8	5	1 1/8
EXPWY.	36	5/8	7/8	10 5/8	12	9 3/8	6 1/8	3 1/8	2 3/8	4 1/8	5 1/8	12 3/8	1 3/8	10 3/8	6	1 3/8
FWY.	48	3/4	1 1/4	14 1/8	16	12 1/2	8 1/4	4 1/8	3 1/2	5 1/2	7	16 1/2	1 3/4	14 1/2	8	1 3/8
SPECIAL																

W4-2L



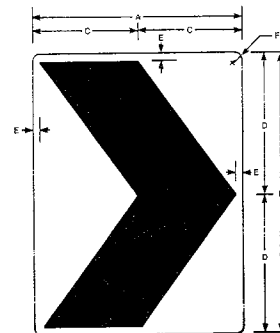
SIGN	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R
MIN.	24	3/8	5/8	10 1/4	12 1/4	10 1/4	12 1/4	10 1/4	12 1/4	10 1/4	12 1/4	10 1/4	12 1/4	10 1/4	12 1/4	4
STD.	30	1/2	3/4	13 1/4	15 1/4	13 1/4	15 1/4	13 1/4	15 1/4	13 1/4	15 1/4	13 1/4	15 1/4	13 1/4	15 1/4	5
EXPWY.	36	5/8	7/8	15 3/4	18 3/4	15 3/4	18 3/4	15 3/4	18 3/4	15 3/4	18 3/4	15 3/4	18 3/4	15 3/4	18 3/4	6
FWY.	48	3/4	1 1/4	20 3/4	24 3/4	20 3/4	24 3/4	20 3/4	24 3/4	20 3/4	24 3/4	20 3/4	24 3/4	20 3/4	24 3/4	8
S	T	U	V	W	X	Y	Z									
MIN.	1 1/8															
STD.	1 1/8															
EXPWY.	1 1/8															
FWY.	1 3/8															

W-4-1



SIGN	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R
MIN.	30	1/2	3/4	6 1/8	7 1/8	6 1/8	7 1/8	6 1/8	7 1/8	6 1/8	7 1/8	6 1/8	7 1/8	6 1/8	7 1/8	4
STD.	36	5/8	7/8	7 1/2	8 1/2	7 1/2	8 1/2	7 1/2	8 1/2	7 1/2	8 1/2	7 1/2	8 1/2	7 1/2	8 1/2	5
EXPWY.	48	3/4	1 1/4	10 1/4	12 1/4	10 1/4	12 1/4	10 1/4	12 1/4	10 1/4	12 1/4	10 1/4	12 1/4	10 1/4	12 1/4	6
FWY.	60	3/4	1 1/4	14 1/4	17 1/4	14 1/4	17 1/4	14 1/4	17 1/4	14 1/4	17 1/4	14 1/4	17 1/4	14 1/4	17 1/4	8
S	T	U	V	W	X	Y	Z									
MIN.	1 1/8															
STD.	1 1/8															
EXPWY.	1 1/8															
FWY.	1 3/8															

W4-3



SIGN	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R
BIKE	12	18	6	9	1 1/2	1 1/2										
MIN.	12	18	6	9	1 1/2	1 1/2										
STD.	18	24	9	12	3/4	1 1/2										
EXPWY.	30	36	15	18	1	1 1/2										
FWY.	36	48	18	24	1 1/2	2 1/4										
SPECIAL	24	30	12	15	1 1/4	1 1/4										

W-8

NOTES:

- COLOR OF ALL SIGNS SHALL BE AS FOLLOWS:
LEGEND & BORDER - BLACK (NON-REFLECTORIZED)
BACKGROUND - YELLOW (REFLECTORIZED)
- DIMENSIONS ARE NOMINAL
- SIGNS SHALL BE REFERENCED BY SIZE.
EXAMPLE - WI-IL (A")
WI-8 (A" x B")
- *DENOTES OPPOSITE HAND DIMENSIONS.

DETAIL APPROVED BY
URBAN HIGHWAY
ENGINEER
[Signature]
APPROVED FOR
DISTRIBUTION
[Signature]

STATE OF ARIZONA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAY
URBAN HIGHWAY DETAILS

WARNING SIGNS

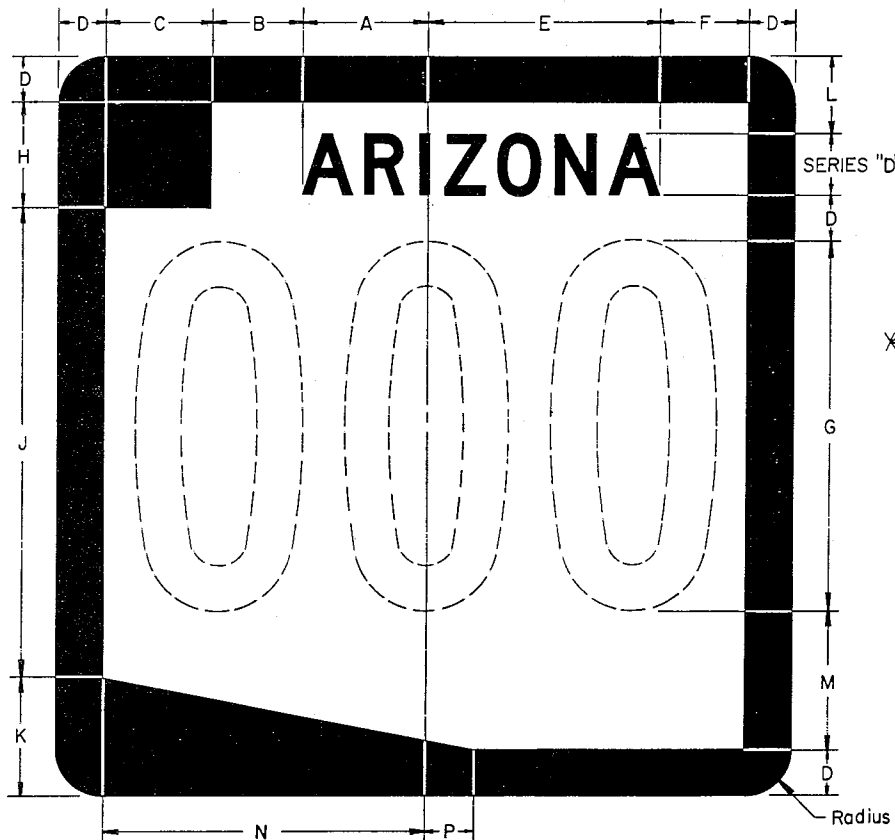
DETAIL NO.
USM-22

REV.

M 1-6 A

STATE ROUTE SHIELD

Signs with 2 digits are "C" Series.
Signs with 3 digits are "C" Series.



STATE ROUTE SHIELD DETAIL

SIZE	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Series "D"	Radius
24"X 24"	4-1/8	3	3-3/8	1-1/2	7-1/2	3	12	3-7/16	15-3/16	3-7/8	2-1/2	4-1/2	10-1/2	1-3/4	2	1-1/2
36"X 36"	6-3/16	4-1/2	5-1/16	2-1/4	11-1/4	4-1/2	18	5-5/32	22-25/32	5-13/16	3-3/4	6-3/4	15-3/4	2-5/8	3	2-1/4

Note: All dimensions are inches.

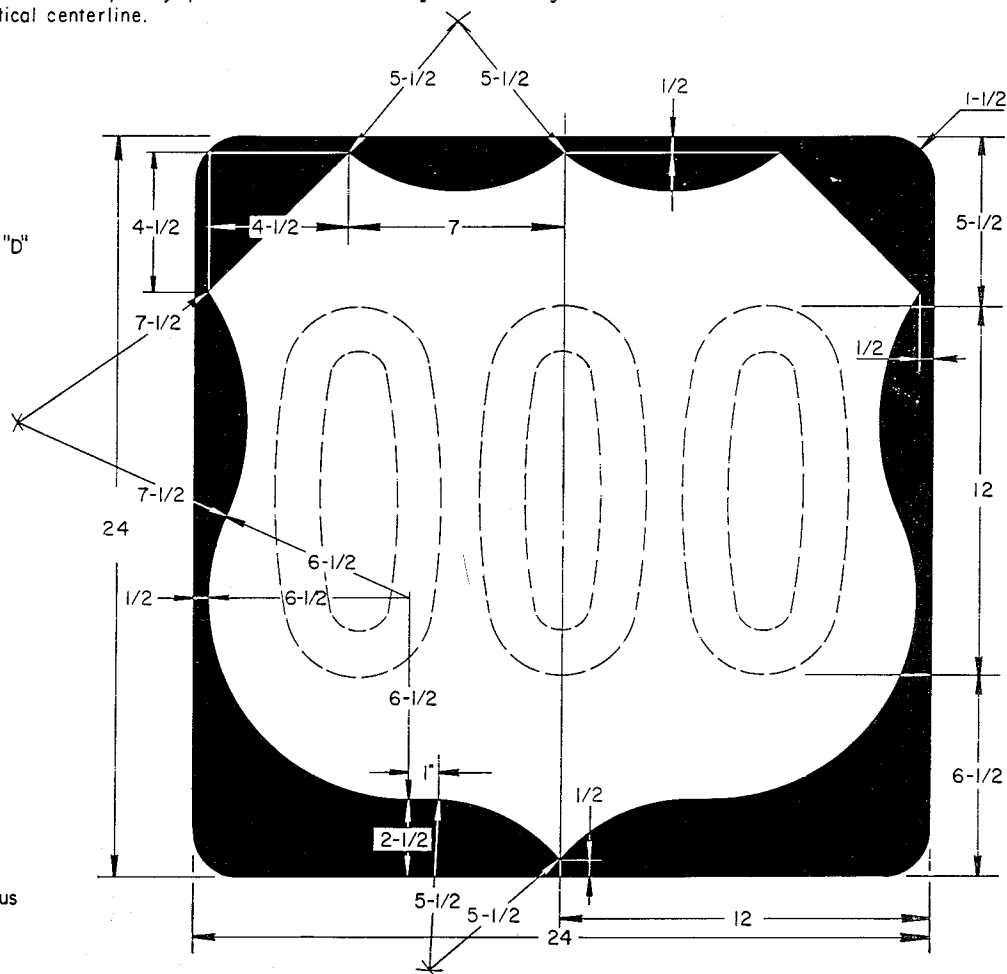
NOTE:

Numerals are to be optically spaced about vertical centerline.

M 1-4 (A) (24")

U.S. ROUTE SHIELD

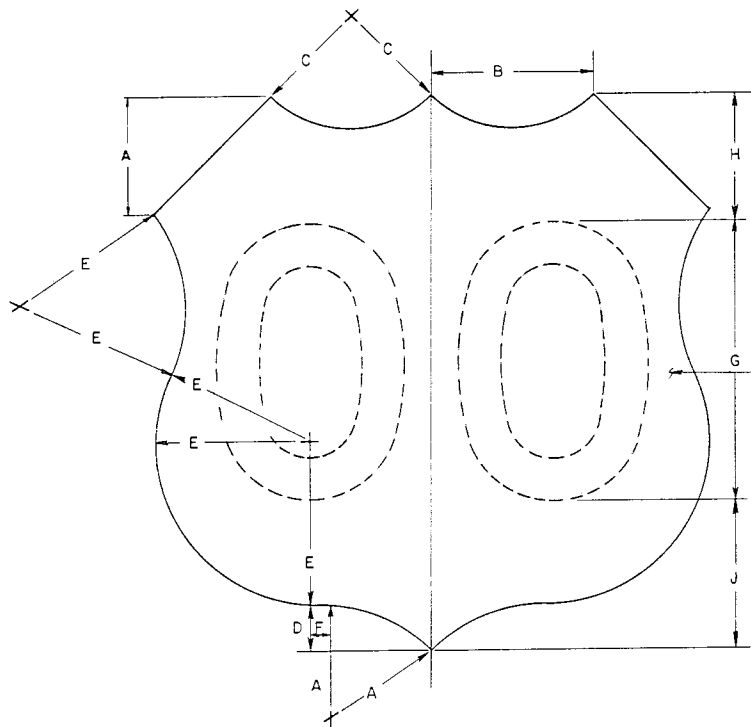
Signs with 2 digits are "C" Series
Signs with 3 digits are "C" Series



DETAIL APPROVED BY
ENGINEER
[Signature]
APPROVED FOR
DISTRIBUTION
[Signature]

STATE OF ARIZONA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAY
URBAN HIGHWAY DETAILS
U.S. & STATE ROUTE SHIELDS
FOR INDEPENDENT AND
JOINT MOUNTING

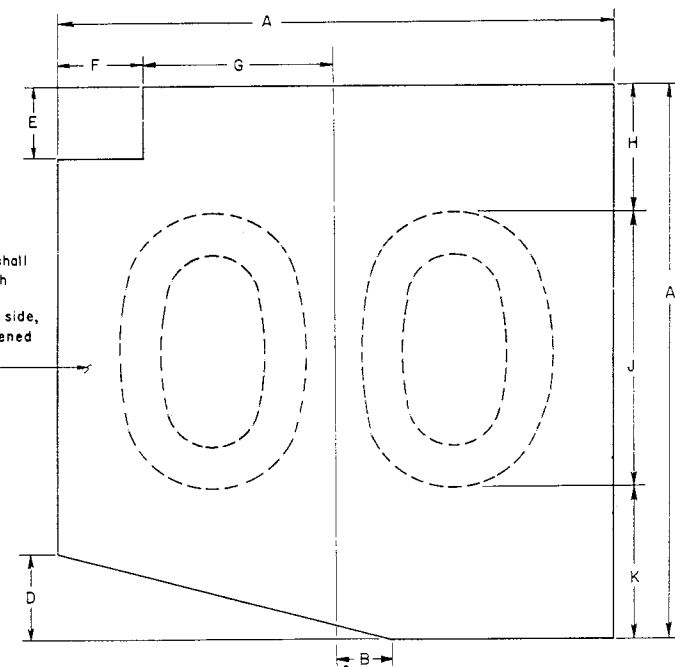
REV.
DETAIL NO.
USM-61



MI-4 (C and D)
U.S. ROUTE SHIELD DETAILS

Shield Size	A	B	C	D	E	F	G	H	J
24X24	5	7	5	2	7	1	12D	5 1/2	6 1/2
30X24	5	10	9	2	7	4	12D	5 1/2	6 1/2
36X36	7 1/2	10 1/2	7 1/2	3	10 1/2	1 1/2	18D	8 1/4	9 3/4
45X36	7 1/2	15	13 1/2	3	10 1/2	5 1/2	18D	8 1/4	9 3/4
48X48	10	14	10	4	14	2	24D	11	13
60X48	10	20	18	4	14	8	24D	11	13

U.S. & State Route Shields shall be .063" sheet aluminum with high intensity silver reflective sheeting adhered to the face side, with black opaque silk screened numerals.

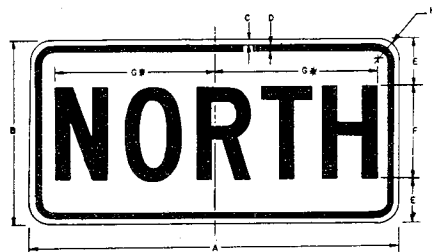


MI-6 (C and D)
STATE ROUTE SHIELD DETAILS

Num	Series	Digits	A	B	C	D	E	F	G	H	J	K
12	D	2	24	2 1/2	9 1/2	4	3	3 1/2	8 1/2	5 1/2	12D	6 1/2
12	C	3	26	2 1/2	10 1/2	4	3	4	22	5 1/2	12D	6 1/2
18	D	2	36	3 3/4	14 1/4	5 7/8	4 3/4	5 1/4	12 3/4	8 1/4	18D	9 3/4
18	C	3	39	3 3/4	15 1/2	5 7/8	4 3/4	5 3/4	33 1/4	8 1/4	18D	9 3/4
24	D	2	48	3 3/4	19 1/4	7 1/2	6 1/4	7 1/4	16 3/4	11	24D	13
24	C	3	52	3 3/4	22 1/4	7 1/2	6 1/4	8	44	11	24D	13

NOTE:
All dimensions are in inches

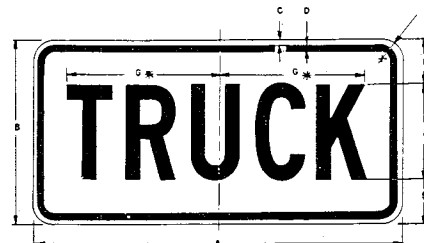
DETAIL APPROVED BY URBAN HIGHWAY ENGINEER <i>[Signature]</i>	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAY URBAN HIGHWAY DETAILS	REV.
APPROVED FOR DISTRIBUTION <i>[Signature]</i>	U.S. & STATE ROUTE SHIELD GUIDE SIGN MOUNTING	DETAIL NO. USM-62



REDUCT SPACING 20% STD. & 50% SPECIAL SIZE

SIGN	DIMENSIONS (INCHES)							
	A	B	C	D	E	F	G	H
MIN. & STD.	24	12	3/8	5/8	3	6C	10	1 1/2
SPECIAL	30	15	3/8	5/8	3 1/2	8C	12 3/8	1 1/2

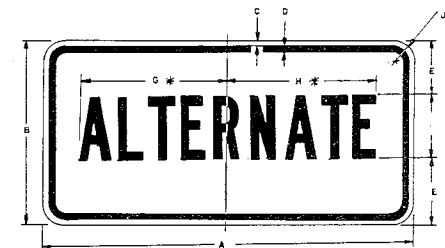
M3-1



REDUCT SPACING 20% STD. & 50% SPECIAL SIZE

SIGN	DIMENSIONS (INCHES)							
	A	B	C	D	E	F	G	H
MIN. & STD.	24	12	3/8	5/8	3	6C	9 7/8	1 1/2
SPECIAL	30	15	3/8	5/8	3 1/2	8C	12 1/4	1 1/2

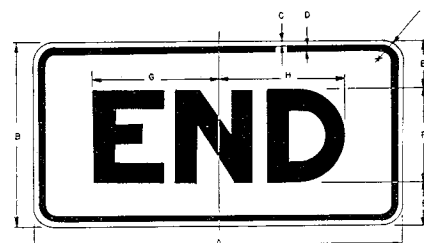
M4-4



REDUCT SPACING 20% STD. & 50% SPECIAL SIZE

SIGN	DIMENSIONS (INCHES)									
	A	B	C	D	E	F	G	H	J	
MIN. & STD.	24	12	3/8	5/8	3	6C	10 1/8	9 7/8	1 1/2	
SPECIAL	30	15	3/8	5/8	3 1/2	8C	12 1/8	10 7/8	1 1/2	

M3-3



SIGN	DIMENSIONS (INCHES)									
	A	B	C	D	E	F	G	H	J	
STD & MIN.	24	12	3/8	5/8	3	60	7	7 1/4	1 1/2	
SPECIAL	30	15	3/8	5/8	3 1/2	80	9 1/4	9 3/4	1 1/2	

M4-6

REDUCE SPACING 50% FOR SPECIAL SIZE

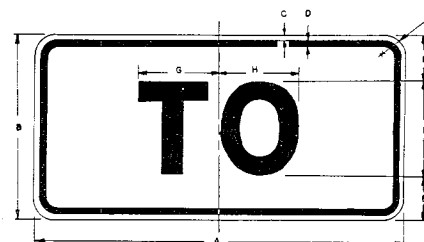
SIGN	DIMENSIONS (INCHES)									
	A	B	C	D	E	F	G	H	J	
STD. & MIN.	24	12	3/8	5/8	4	4B	9 1/8	9 1/8	1 1/2	
SPECIAL	30	15	3/8	5/8	4 1/2	6B	12 3/8	12 3/8	1 1/2	

M4-1



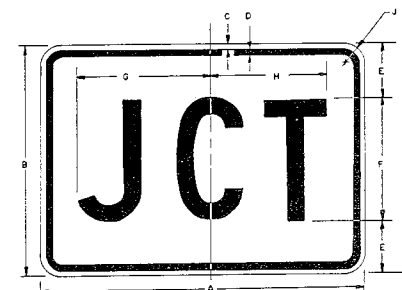
SIGN	DIMENSIONS (INCHES)									
	A	B	C	D	E	F	G	H	J	
MIN. & STD.	24	12	3/8	5/8	3	6C	7 5/8	8 1/2	1 1/2	
SPECIAL	30	15	3/8	5/8	3 1/2	8C	10 1/8	10 7/8	1 1/2	

M3-2



SIGN	DIMENSIONS (INCHES)									
	A	B	C	D	E	F	G	H	J	
STD. & MIN.	24	12	3/8	5/8	3	6E	5 1/2	5	1 1/2	
SPECIAL	30	15	3/8	5/8	3 1/2	8E	7 1/2	6 3/4	1 1/2	

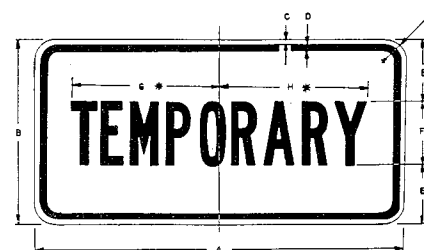
M4-5



REDUCT SPACING 20% STD. & 50% SPECIAL SIZE

SIGN	DIMENSIONS (INCHES)							
	A	B	C	D	E	F	G	H
MIN. & STD.	24	12	3/8	5/8	3	6C	8 3/8	1 1/2
SPECIAL	30	15	3/8	5/8	3 1/2	8C	11 1/4	1 1/2

M3-4



SIGN	DIMENSIONS (INCHES)									
	A	B	C	D	E	F	G	H	J	
STD. & MIN.	24	12	3/8	5/8	4	4B	9 1/2	9 5/8	1 1/2	
SPECIAL	30	15	3/8	5/8	5	5B	11 7/8	12 1/2	1 1/2	

M4-7

REDUCE SPACING 40%

SIGN	DIMENSIONS (INCHES)								
	A	B	C	D	E	F	G	H	J
MIN. & STD.	21	15	3/8	5/8	3	9C	8 5/16	8 5/8	1 1/2

M2-1

NOTES:

- 1.) COLOR OF ALL SIGNS SHALL BE AS FOLLOWS:
LEGEND AND BORDER - BLACK (NON-REFLECTORIZED)
BACKGROUND - WHITE (REFLECTORIZED)
OR AS NOTED IN PLANS

- 2.) DIMENSIONS ARE NOMINAL

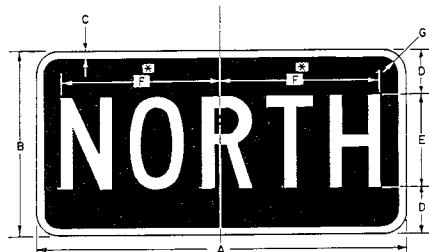
- 3.) SIGNS SHALL BE REFERENCED BY SIZE,
EXAMPLE - M3-4 (A" x B")

DETAIL APPROVED BY
ENGINEER
[Signature]
APPROVED FOR
DISTRIBUTION
[Signature]

STATE OF ARIZONA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAY
URBAN HIGHWAY DETAILS

DIRECTIONAL SIGNS FOR
MARKER SIGNS

REV.
DETAIL NO.
USM-63



M3-1 (INTERSTATE)

*Reduce spacing 25% for 30" x 15" size
 **Use 30" x 15" size with 30" x 24" shield or with 36" x 36" shield

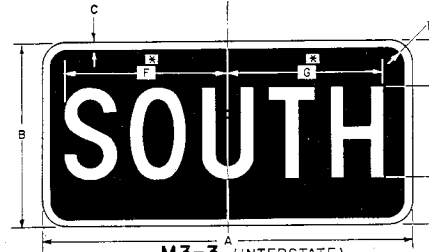
SIGN (MIN)	A	B	C	D	E	F	G
STD.	24	12	1/2	3	6 C	10-7/16	1-1/2
STD.**	30	15	1/2	3-1/2	8 C	13-1/8	1-1/2



M3-2 (INTERSTATE)

*Use 30" x 15" size with 30" x 24" shield or with 36" x 36" shield

SIGN (MIN)	A	B	C	D	E	F	G	H
STD.	24	12	1/2	3	6 C	7-5/8	8-1/8	1-1/2
STD.*	30	15	1/2	3-1/2	8 C	10-1/8	10-7/8	1-1/2



M3-3 (INTERSTATE)

*Reduce spacing 25% for 30" x 15" size
 **Use 30" x 15" size with 30" x 24" shield or with 36" x 36" shield

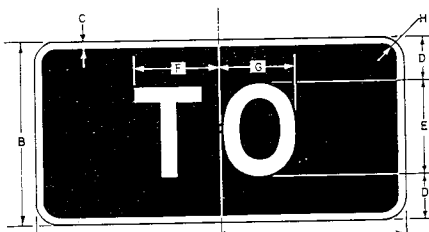
SIGN (MIN)	A	B	C	D	E	F	G	H
STD.	24	12	1/2	3	6 C	10-9/16	10-1/16	1-1/2
STD.**	30	15	1/2	3-1/2	8 C	13-3/8	12-5/8	1-1/2



M3-4 (INTERSTATE)

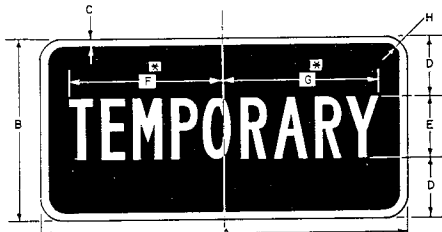
*Use 30" x 15" size with 30" x 24" shield or with 36" x 36" shield

SIGN (MIN)	A	B	C	D	E	F	G
STD.	24	12	1/2	3	6 C	8-3/8	1-1/2
STD.*	30	15	1/2	3-1/2	8 C	11-1/4	1-1/2



M4-5 (INTERSTATE)

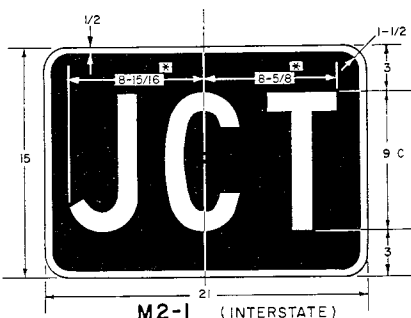
SIGN (MIN)	A	B	C	D	E	F	G	H
STD. & MIN.	24	12	1/2	3	6 E	5-5/8	5	1-1/2
SPECIAL	30	15	1/2	3-1/2	8 E	7-1/2	6-5/8	1-1/2



M4-7 (INTERSTATE)

*Reduce spacing 20%

SIGN (MIN)	A	B	C	D	E	F	G	H
STD. & MIN.	24	12	1/2	4	4 B	10	10-1/8	1-1/2
SPECIAL	30	15	1/2	5	5 B	12-1/2	12-1/16	1-1/2



M2-1 (INTERSTATE)

*Increase spacing 25%

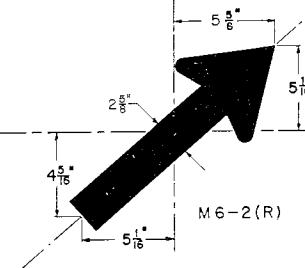
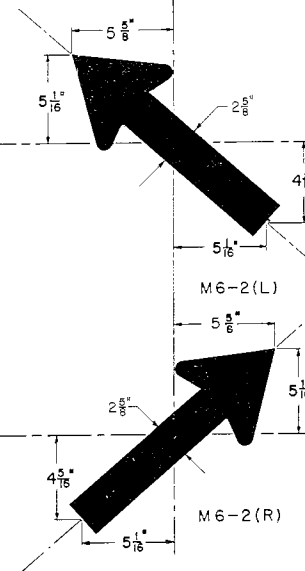
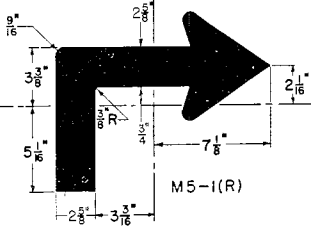
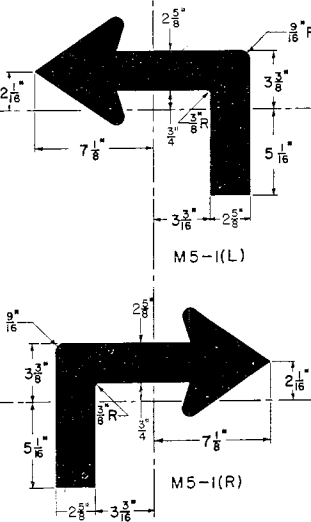
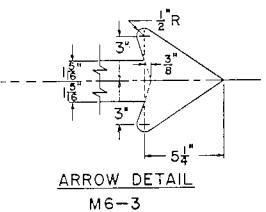
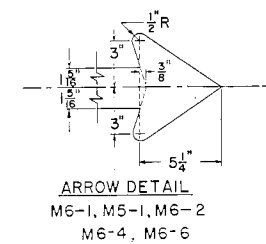
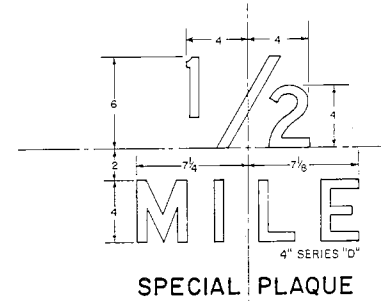
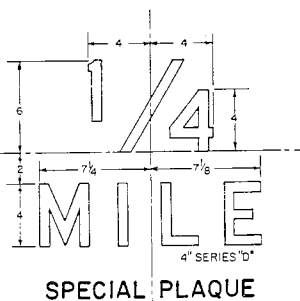
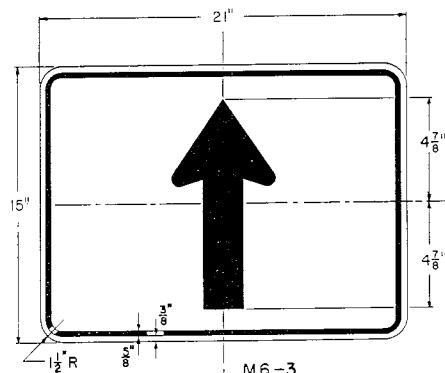
NOTE

- 1) COLOR OF ALL SIGNS SHALL BE AS FOLLOWS:
 LEGEND & BORDER - WHITE REFLECTORIZED
 BACKGROUND - BLUE REFLECTORIZED
- 2) DIMENSIONS ARE NOMINAL
- 3) SIGNS SHALL BE REFERENCED BY SIZE,
 EXAMPLE - M3-4 (INTERSTATE) (A" x B")

DETAIL APPROVED BY
 URBAN HIGHWAY
 ENGINEER
[Signature]
 APPROVED FOR
 DISTRIBUTION
[Signature]

STATE OF ARIZONA
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAY
 URBAN HIGHWAY DETAILS
 DIRECTIONAL SIGNS FOR
 INTERSTATE ROUTE
 MARKER ASSEMBLIES

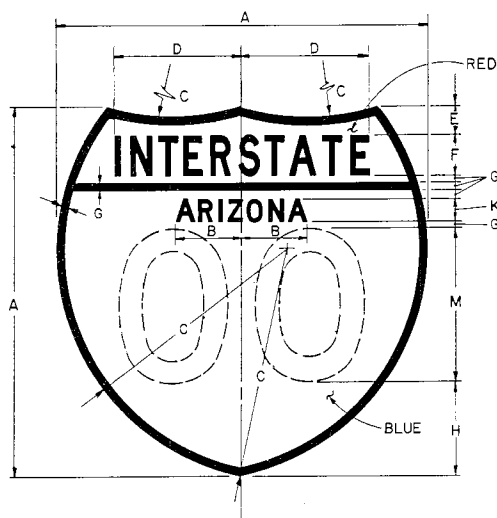
REV.
 DETAIL NO.
 USM-64



NOTE:

All signs shown shall have a reflectorized arrow and border (legend). Sign color shall be as specified in the Manual on Uniform Traffic Control Devices.

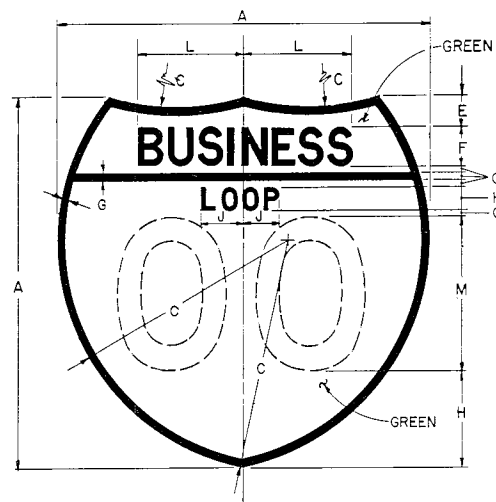
DETAIL APPROVED BY URBAN HIGHWAY ENGINEER <i>[Signature]</i>	STATE OF ARIZONA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAY URBAN HIGHWAY DETAILS	REV.
APPROVED FOR DISTRIBUTION <i>[Signature]</i>	ARROW AND LEGEND DETAILS FOR CROSSROAD SIGNING	DETAIL NO. USM-65



MI-1A SERIES

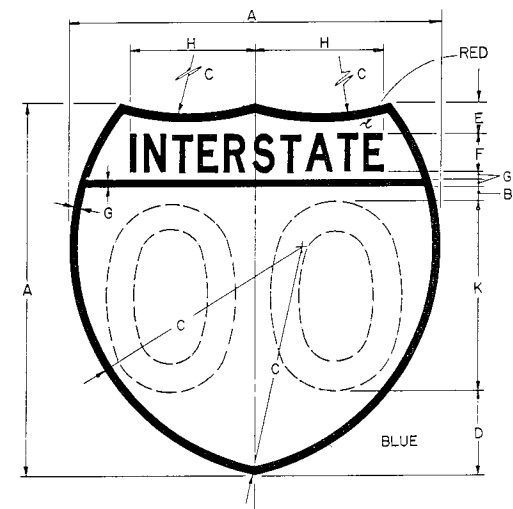
(FOR INDEPENDENT MOUNTING)

Numerical Size	DIGITS	A	B	C	D	E	F	G	H	J	K	L	M	N
10" D	2	24	4 1/4	15	7 3/4	2	2 1/2	1/2	6	2 1/2	1 1/2	6 3/4	10 D	6
15" D	2	36	6 1/4	22 1/2	11 3/4	3	3 3/4	3/4	9 1/4	3 3/4	2 1/4	10	15 D	9
20" D	2	48	8 1/4	30	15 1/2	4	5 C	1	12	5	3 D	13 1/4	20 D	12



MI-2A SERIES

(FOR USE ON GUIDE SIGNS
OR INDEPENDENT MOUNTING)



MI-1C SERIES

(FOR USE ON GUIDE SIGNS)

Numerical Size	DIGITS	A	B	C	D	E	F	G	H	K
12" D	2	24	1	15	1	2	2 1/2	1/2	7 3/4	12 D
18" D	2	36	1 1/2	22 1/2	1 1/2	3	3 3/4	3/4	11 3/4	18 D
24" D	2	48	2	30	2	4	5 C	1	15 1/2	24 D

NOTES:

- 1.) SHOP DRILL 7/16" HOLES IN INDEPENDENT PANELS. DO NOT DRILL IN LETTER OR NUMERALS.
- 2.) ALL DIMENSIONS IN INCHES.
- 3.) DIMENSIONS ARE NOMINAL.
- 4.) SIGNS SHALL BE REFERENCED BY SIZE EXAMPLE - MI-1C (18" D)
- 5.) SIGNS COLORS SHALL BE AS SPECIFIED ABOVE. LEGEND AND BORDER SHALL BE WHITE.
- 6.) OPTICALLY SPACE NUMERALS ABOUT CENTER LINE.

DETAIL APPROVED BY
URBAN HIGHWAY
ENGINEER
[Signature]
APPROVED FOR
DISTRIBUTION
[Signature]

STATE OF ARIZONA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAY
URBAN HIGHWAY DETAILS
INTERSTATE ROUTE
AND SHIELD DETAILS

REV.
DETAIL NO.
USM-66

