

## APPENDIX A

### CONSTRUCTION DETAILS

DETAIL NO.	DETAIL NAME	NO. OF PAGES
<b><u>GENERAL:</u></b>		
G-1	PROJECT SIGN	1
G-2	TRAFFIC CONTROL NOTES	1
G-4	PLAN LEGEND	2
<b><u>WATER SERVICES:</u></b>		
WS-1	OPEN CUT LEAD SERVICE LINE OFFSET FROM PRIVATE DRAIN	1
WS-2	OPEN CUT LEAD SERVICE LINE REPLACEMENT WITH PRIVATE DRAIN REPLACEMENT-LONG SIDE	1
WS-3	OPEN CUT LEAD SERVICE LINE REPLACEMENT WITH PRIVATE DRAIN REPLACEMENT-SHORT SIDE	1
WS-4	LEAD SERVICE LINE AND HOUSE DRAIN REPLACEMENT DETAILS	1
<b><u>WATER MAIN:</u></b>		
D-1	CHICAGO FIRE HYDRANT DETAIL	8
D-2	FIRE HYDRANT SETTING DETAIL	1
D-3	FIRE HYDRANT INSTALLATION DETAIL FOR VAULTED SIDEWALKS	1
D-5	FIRE HYDRANT DRAIN DETAIL	1
D-7	COLOR CODE FOR FIRE HYDRANTS	1
D-8	WATER MAIN TRENCH PHASE DETAILS	1
D-9	WATER MAIN TRENCH INSULATION DETAIL	1
D-10	WATER MAIN POLYETHYLENE WRAP DETAIL	1
D-11	THRUST RESTRAINT CONCRETE THRUST BLOCK DETAILS	1
D-12	THRUST RESTRAINT RESTRAINED JOINT PIPE DETAILS	1
D-13	PRECAST VALVE BASIN FOR PIPES UP TO 16" DIA.	1
D-15	FRAME & LID	1
D-16	TYPICAL 1" & 2" WATER SERVICE	1
D-18	CASING PIPE UNDER RAILROAD TRACK DETAIL	1
D-20	GENERAL NOTES WATER MAIN CONTRACTS	2
D-22	BUMPER GUARD DETAIL	1
D-28	ELECTRICAL CONTINUITY BRACKET FOR TRANSITION COUPLING	1
D-31	SERVICE PIPE INSULATION DETAILS	1

## APPENDIX A

### CONSTRUCTION DETAILS

D-50	SEWER CROSSING DETAIL	3
D-51	WATER MAINS CROSSING OVER SEWERS & HOUSE DRAINS	2

### **FEEDER MAIN:**

FM-1	INSPECTION MANHOLE	1
FM-2	INSPECTION MANHOLE INSTALLATION	2
FM-4	PITOMETER TAP BASIN PRECAST CONCRETE	1
FM-5	FIRE HYDRANT SETTING 16" & LARGER WATER MAIN	1
FM-12	PIPE REPLACE INSTALLATION	1
FM-20	CONCRETE PIPE TAPPING CONNECTION	5
FM-23	TEST TAP DETAIL [CONCRETE PIPE]	1

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DETAIL NO.	DETAIL NAME	NO. OF PAGES
<b><u>RESTORATION:</u></b>		
R-2	PAVEMENT RESTORATION DETAIL FOR RESIDENTIAL STREETS	1
R-3	PAVEMENT RESTORATION DETAIL FOR ARTERIAL STREETS	1
R-4	PCC PAVEMENT	1
R-5	PCC BASE COURSE WITH HMA BINDER AND SURFACE COURSES	1
R-8	SPEED HUMP	3
R-13	RECONSTRUCTION/ ADJUSTMENT OF MASONRY UTILITY STRUCTURE	1
R-14	PRECAST UTILITY STRUCTURE ADJUSTMENT	1
R-15	TEMPORARY BITUMINOUS RAMP FOR UTILITY STRUCTURES	1
R-18	PAVEMENT MARKING DETAILS	3
R-19	SHORT TERM PAVEMENT MARKING LETTERS AND SYMBOLS	1
R-20	CABLE BRIDGING OF CUT RAILS (WHERE RAILS CANNOT BE RE-USED)	1
<b><u>SEWER:</u></b>		
A-1	VITRIFIED CLAY PIP DRAIN CONNECTIOSN AND SEWER	1
A-2	TRENCH DETAILS	1
A-19	DUCTILE IRON PIPE DRAIN CONCRETE COLLAR / CONNECTION DETAILS	1
A-21	STANDARD INLET – 2’ DIA	1
A-23	STANDARD CATCH BASIN – 4’ DIA	1

## APPENDIX A

### CONSTRUCTION DETAILS

DETAIL NO.	DETAIL NAME	NO. OF PAGES
<b><u>CDOT DETAILS:</u></b>		
A-2-2A	STREET PAVEMENT RESTORATION DETAIL WITH TRENCH BACKFILL	1
A-2-2B	STREET PAVEMENT RESTORATION DETAIL WITH FLOWABLE FILL	1
A-2-2C	PAVEMENT PATCHING AND PORTLAND CEMENT CONCRETE REPLACEMENT	1
A-2-3A	TYPICAL JOINT LAYOUT FOR P.C. CONCRETE PAVEMENTS	1
A-2-3B	P.C.C. PAVEMENT JOINT DETAILS	1
A-2-3C	P.C.C. BASE COURSE JOINT DETAILS	1
A-2-6	CONCRETE CURB AND GUTTER DETAIL	1
A-3-2	DETAILS OF PORTLAND CEMENT CONCRETE CONSTRUCTION	1
A-5-3	TRENCH GUIDELINES INSTALLATION OF UNDERGROUND UTILITIES ADJACENT TO TREES	1
A-6-1A	COMPONENT PARTS OF A TEMPORARY TRAFFIC CONTROL ZONE	1
A-6-1B	COMPONENT PARTS OF A TEMPORARY TRAFFIC CONTROL ZONE	1
A-7-1A	CROSSWALK MARKING DETAIL	1
A-7-2	6' BIKE SYMBOL	1
A-7-3	8' BIKE SYMBOL	1
A-7-4	BIKE ARROW	1
A-7-5	BIKE TURN ARROW	1
A-7-6	BIKE CHEVRON	1
A-7-7	SHARED LANE MARKING CHEVRON RIGHT LEG DETAIL	1
A-7-8	SHARED LANE MARKING LATERAL POSITIONING	1
A-7-9	SHARED LANE YIELD TO BIKES SIGN	1
A-7-10	BIKE AND ARROW SYMBOL SPACING	1
A-7-11	SHARED LANE MARKING	1
A-7-12	SHARED LANE MARKING - LONGITUDINAL SPACING	1



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### CONSTRUCTION DETAILS

DETAIL NO.	DETAIL NAME	NO. OF PAGES
<b><u>CDOT ADA STANDARDS:</u></b>		
---	CDOT ADA COVER SHEET & TABLE OF CONTENTS	2
B-1-1	TYPICAL CORNER RAMP LAYOUTS	1
B-1-2	2 PERPENDICULAR RAMPS AT CORNER	1
B-1-3	2 PERPENDICULAR RAMPS AT CORNER WITH RAMPS IN CURB RADIUS	1
B-1-4	PERPENDICULAR RAMP AT CORNER IN CURB RADIUS WITH SINGLE CROSSING	1
B-1-5	PERPENDICULAR RAMP AT CORNER IN CURB RADIUS WITH DETECTABLE WARNING SETBACK GREATER THAN 5'	1
B-1-6	COMBINATION RAMP AT CORNER (PARALLEL AND PERPENDICULAR RAMPS)	1
B-1-7	BLENDED TRANSITION AT CORNER	1
B-1-8	BLENDED TRANSITION AT CORNER WITH SINGLE CROSSING	1
B-1-9	FLUSH TRANSITION AT CORNER	1
B-1-10	SHARED (DIAGONAL) PERPENDICULAR RAMP AT CORNER	1
B-1-11	RAMPS AT CORNER WITH DIFFERENT SIDEWALK WIDTHS	1
B-1-12	PERPENDICULAR RAMPS AT CORNER WITH LARGE CURB RADIUS	1
B-1-13	BLENDED TRANSITION AT CORNER WITH LARGE CURB RADIUS	1
B-1-14	RAMPS THAT DO NOT ALIGN WITH CROSSWALK	1
B-1-15	PERPENDICULAR RAMP AT MID-BLOCK LOCATION	1
B-1-16	PARALLEL RAMP AT MID-BLOCK LOCATION	1
B-1-17	PARALLEL RAMP (ONE DIRECTION) AT MID-BLOCK LOCATION	1
B-1-18	COMBINATION RAMP (PARALLEL & PERPENDICULAR RAMPS) AT MID-BLOCK LOCATION	1
B-1-19	MEDIAN PASS-THROUGH	1
B-1-20	MEDIAN PASS-THROUGH WITH RAMPS	1
B-1-21	ON-GRADE RAMP AT BRIDGE OR OVERPASS	1
B-2-1	ALLEY RETURN PLAN VIEW	1
B-2-2	ALLEY RETURN SECTIONS	1
B-2-3	DRIVEWAY CONSTRUCTION PLAN VIEWS	1
B-2-4	DRIVEWAY CONSTRUCTION SECTIONS	1

## APPENDIX A

### CONSTRUCTION DETAILS

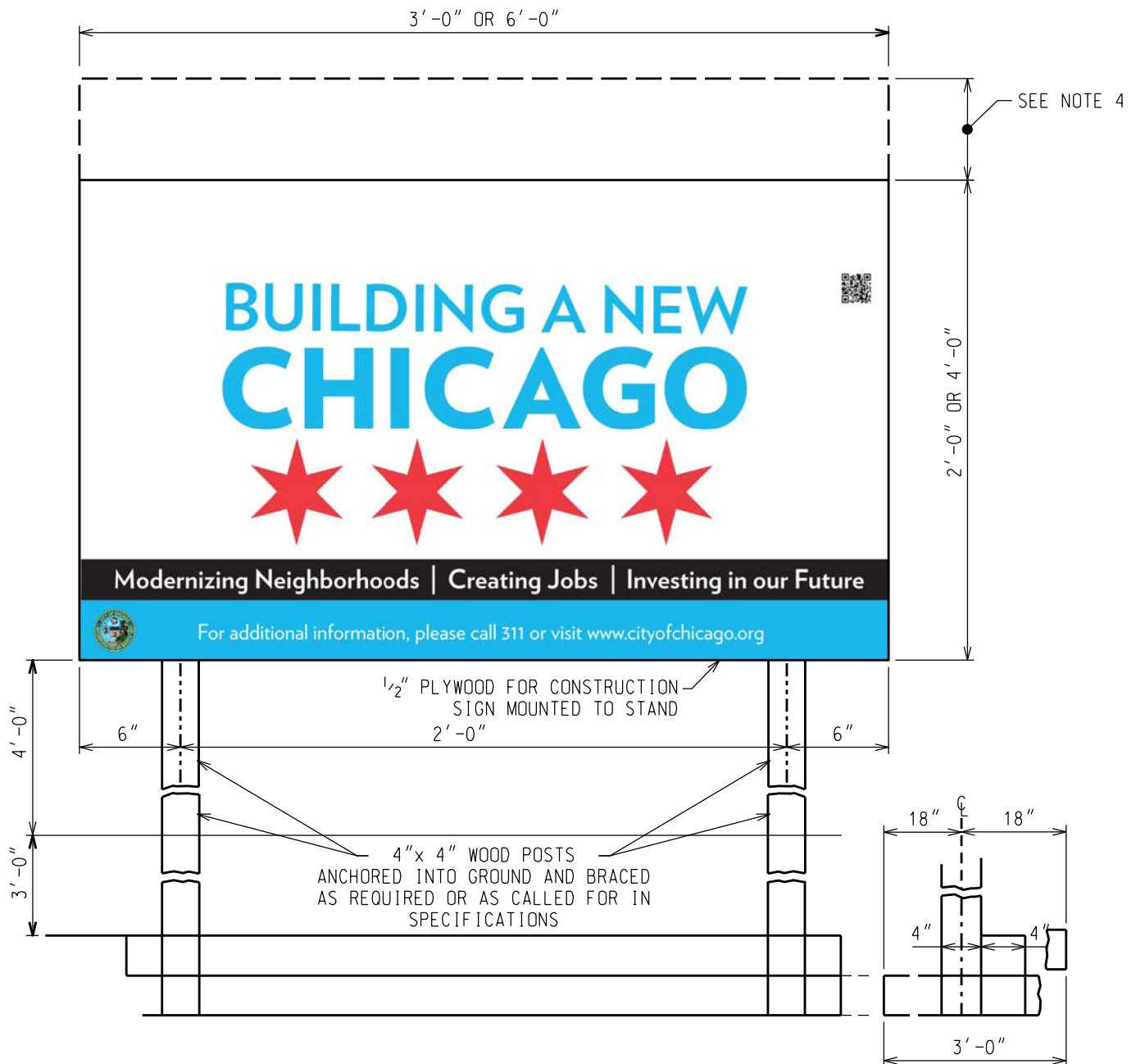
DETAIL NO.	DETAIL NAME	NO. OF PAGES
<b><u>CDOT ADA STANDARDS (CON'T):</u></b>		
B-2-5	ALLEY & DRIVEWAY DETAIL FOR REDUCED WIDTH PEDESTRIAN ACCESS ROUTE	1
B-3-1	CONVERSION CHARTS	1
B-3-2	GENERAL NOTES	1
B-3-3	GENERAL NOTES (CONTINUED)	1
B-3-4	ADA COMPLIANCE AND TRANSITION GUIDELINES	1
B-3-5	SEAL (ADA)	1
B-4-1	DETECTABLE WARNING UNIT SIZES	1
B-4-2	DETECTABLE WARNING UNIT DETAILS	1
B-4-3	CURB & GUTTER DETAILS	1

### **I.D.O.T HIGHWAY STANDARDS:**

NOTE: THE I.D.O.T. DETAILS ARE INCLUDED FOR REFERENCE. THE LATEST DETAILS AS REVISED BY I.D.O.T. ARE TO BE APPLIED.

*	420001	PAVEMENT JOINTS	2
*	420701	PAVEMENT FABRIC	1
*	442101	CLASS B PATCHES	2
	701901	TRAFFIC CONTROL DEVICES	3
	780001	TYPICAL PAVEMENT MARKINGS	2
	781001	TYPICAL APPLICATIONS RAISED REFLECTIVE PAVEMENT MARKERS	1

NOT ALL PORTIONS ARE APPLICABLE TO ALL INSTALLATIONS. LOCAL ,  
ARTERIAL AND I.D.O.T. STREETS WILL DIFFER ON PAVEMENT DESIGN REQUIRED.



**NOTES:**

1. TWO SIGNS (ONE ON EACH END OF EACH PIPE PROJECT) MUST BE DISPLAYED FROM THE TIME CONSTRUCTION BEGINS TO THE TIME THAT PAVEMENT IS RESTORED.
2. THE LOCATION OF THE SIGN WILL BE DETERMINED FOR THE RESIDENT ENGINEER.
3. AFTER THE COMPLETION OF THE CONTRACT THE SIGN WILL BE PROPERTY OF THE CITY OF CHICAGO AND MUST BE DELIVERED TO THE APPROPRIATE DISTRICT YARD UNLESS ORDERED TO DISCARD BY THE COMMISSIONER.
4. SIZE OF SIGN TO BE DETERMINED BY THE COMMISSIONER (3'x 2') OR (6'x 4').

## GENERAL NOTES:

1. WHENEVER POSSIBLE CONFINE THE WORK SITE ON A TWO LANE STREET OR HIGHWAY TO ONE TRAFFIC LANE LEAVING THE OPPOSITE LANE OPEN TO TRAFFIC.
2. WHENEVER POSSIBLE, PARK WORK VEHICLES ON THE SAME SIDE OF THE STREET AS THE JOB SITE.
3. WORK VEHICLES MAY BE USED AS AN ADDITIONAL BARRICADE WITH THE FLASHER LIGHT LIT BUT NOT AS A SUBSTITUTE FOR ANY WORK AREA PROTECTION WHICH MAY BE CALLED FOR.
4. UNDER CERTAIN FIELD CONDITIONS SUCH AS HILLS, CROSSROADS, CURVES, DRIVEWAYS, ETC. THE SPACING OF WORK AREA PROTECTION MUST BE ADJUSTED AS NECESSARY.
5. ALL EMPLOYEES WORKING ON THE JOB SITE ALONG HIGHLY TRAVELED ROADS MUST WEAR HIGH VISIBILITY VESTS AS REQUESTED BY THE OSHA ACT.
6. FLAGGERS MUST WEAR HIGH VISIBILITY VESTS WHEN DIRECTING TRAFFIC.
7. FLAGGERS MUST USE THE PROPER TRAFFIC CONTROL SIGN WHEN DIRECTING TRAFFIC.
8. WHEN TWO FLAGGERS ARE NECESSARY, THEY MUST BE IN DIRECT COMMUNICATION WITH EACH OTHER AT ALL TIMES EITHER BY SIGHT OR RADIO COMMUNICATION.
9. WHEN THERE IS NO WORK IN PROGRESS AND THE FLAGGER IS NOT REQUIRED, THE "FLAGGER SYMBOL" SIGN MUST BE REMOVED.
10. REMOVE ALL SIGNS OR TRAFFIC CONTROL DEVICES THAT DO NOT APPLY TO EXISTING CONDITIONS I.E. IF NO WORK IS BEING PERFORMED, THE WARNING SIGNS MUST BE EITHER TAKEN DOWN OR COVERED.
11. WHEN OPENINGS IN OR NEAR THE SIDEWALK ARE NECESSARY, BARRICADES MUST BE PROPERLY PLACED SO THAT ANYONE PASSING BY WOULD NOT INADVERTENTLY FALL INTO THE EXCAVATION. SAFETY FENCE MAY ALSO BE APPROPRIATE.
12. ALL EXCAVATIONS THAT PRESENT A HAZARD OR MUST BE LEFT OPEN OVERNIGHT MUST BE PROPERLY BARRICADED FOR THE PROTECTION OF THE PUBLIC.
13. THE SIDES OF BARRICADES FACING TRAFFIC MUST HAVE RETROREFLECTIVE RAIL FACES.
14. ALL TRAFFIC CONTROLS SHALL MEET THE REQUIREMENTS OF CDOT.

## LEGEND - SYMBOLS

## EXISTING WATER SYMBOLS


## SEWER SYMBOLS

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## GAS SYMBOLS

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## SURVEY SYMBOLS

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## ELECTRICAL SYMBOLS

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## TRAFFIC SYMBOLS

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## RAILROAD SYMBOLS

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## VEGETATION SYMBOLS

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## TELEPHONE SYMBOLS

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## MISCELLANEOUS SYMBOLS

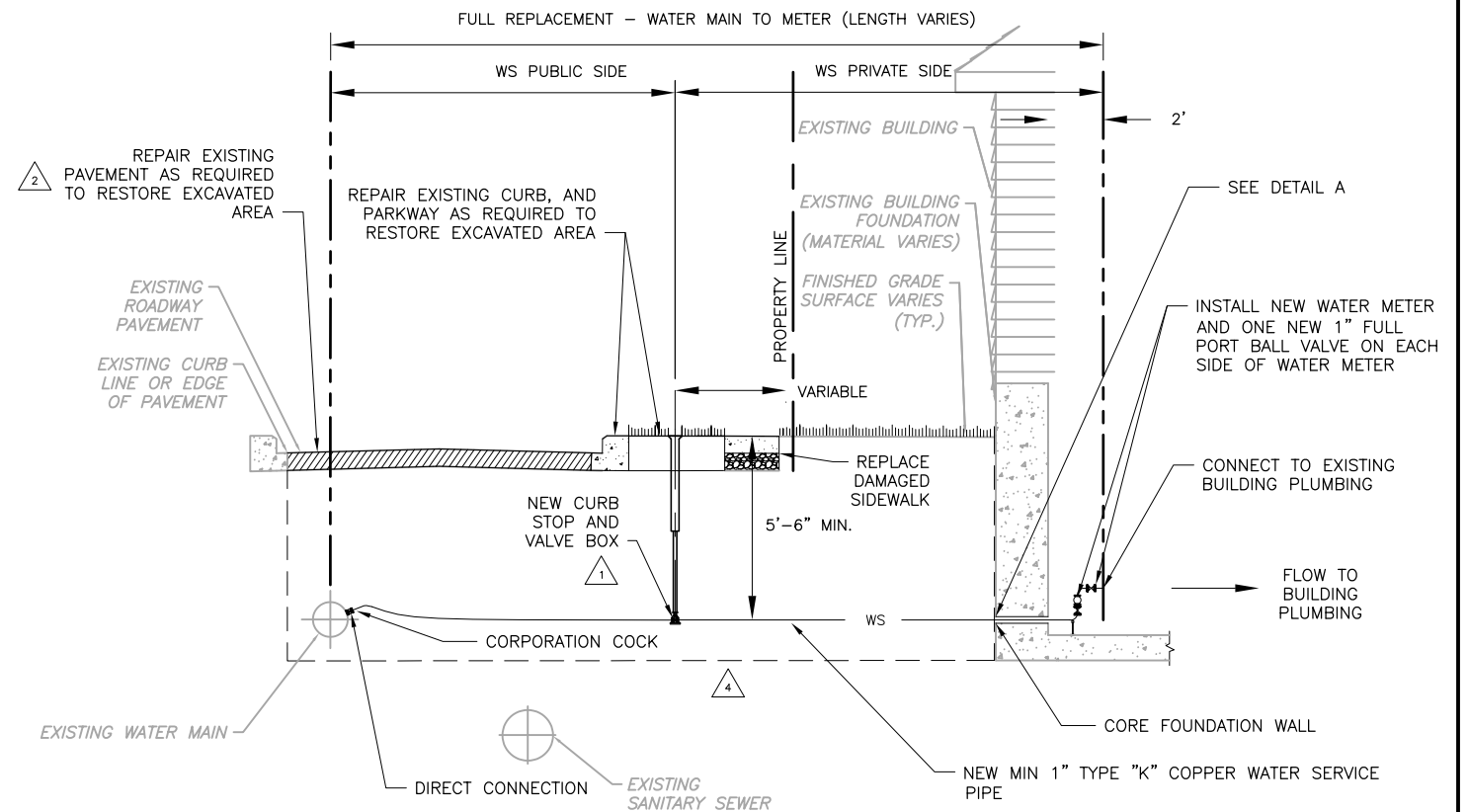
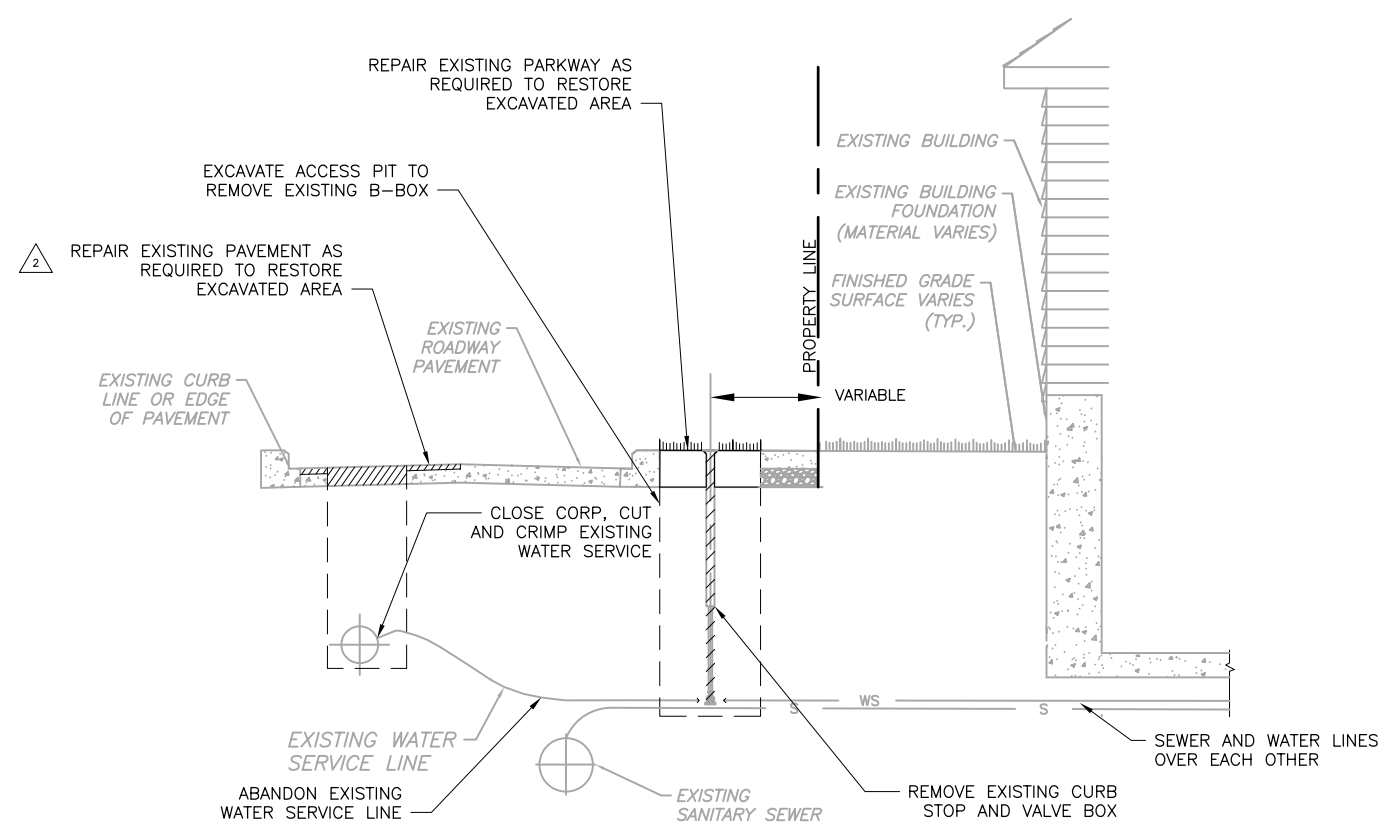
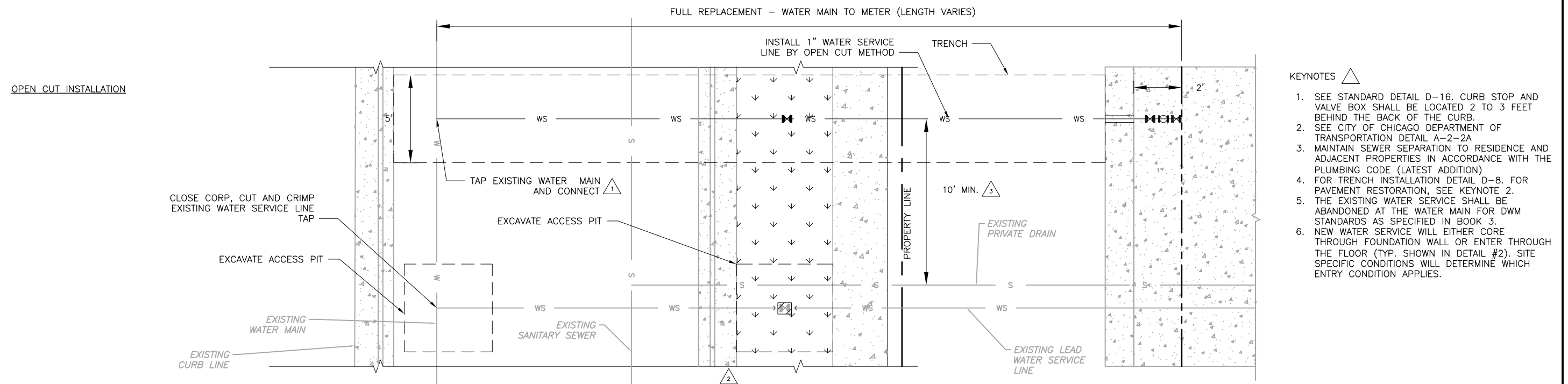

## CABLE T.V. SYMBOLS

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## PROPOSED WATER SYMBOLS


## LEGEND - LINE STYLES

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	Existing-Water Main		Existing-Curb
	Existing-Water Services		Existing-Sidewalk
	Proposed-Water Main		Existing-Ditches-Creeks-Edge of Water
	Proposed-New Water Services WM to B-Box		Existing-Edge of Pavement
	Proposed-New Water Services B-Box to Property		Existing-Embankments-Dead Ends-Retaining Walls
	Proposed-Water Main (By Others)		Existing-Fence
	Abandoned-Water Main Existing ROW		Existing-CTA Buried Electric Cables
	Existing ROW (Vacated)		Existing-Railroads
	Existing ROW (Elevated)		Existing-Buried Street Car Tracks
	Existing-Easement		Existing-Street and Cooling Pipes
	Proposed-ROW		Existing-City Press Electrical
	Existing-City Limits Boundary Line		Existing-Hedge Line
	Existing-Chicago Park District Line		Existing-Woods Tree Line
	Existing-City Electric		Proposed-Curb
	Existing-ComEd		Proposed-Sidewalk
	Existing-Cable TV		Proposed-Ditches-Creeks-Edge of Water
	Existing-Telephone		Proposed-Pavement
	Existing-Sewer		
	Proposed-Sewer		
	Proposed-Sewer Lateral		
	Existing-Sediment Force Main		
	Proposed-Sediment Force Main		
	Abandoned-Sewer		
	Abandoned-Gas		
	Existing-Gas		

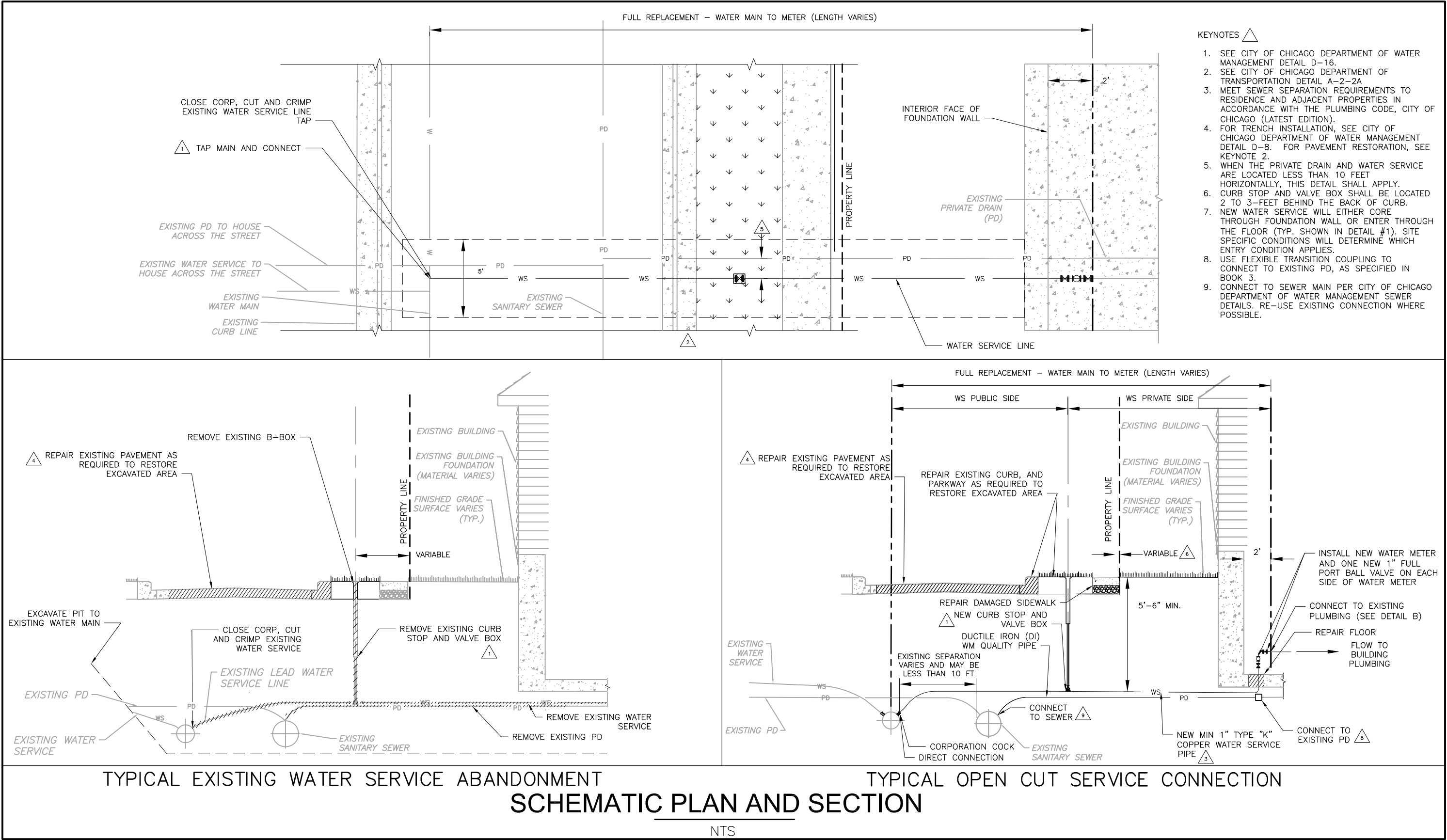


## TYPICAL EXISTING WATER SERVICE ABANDONMENT

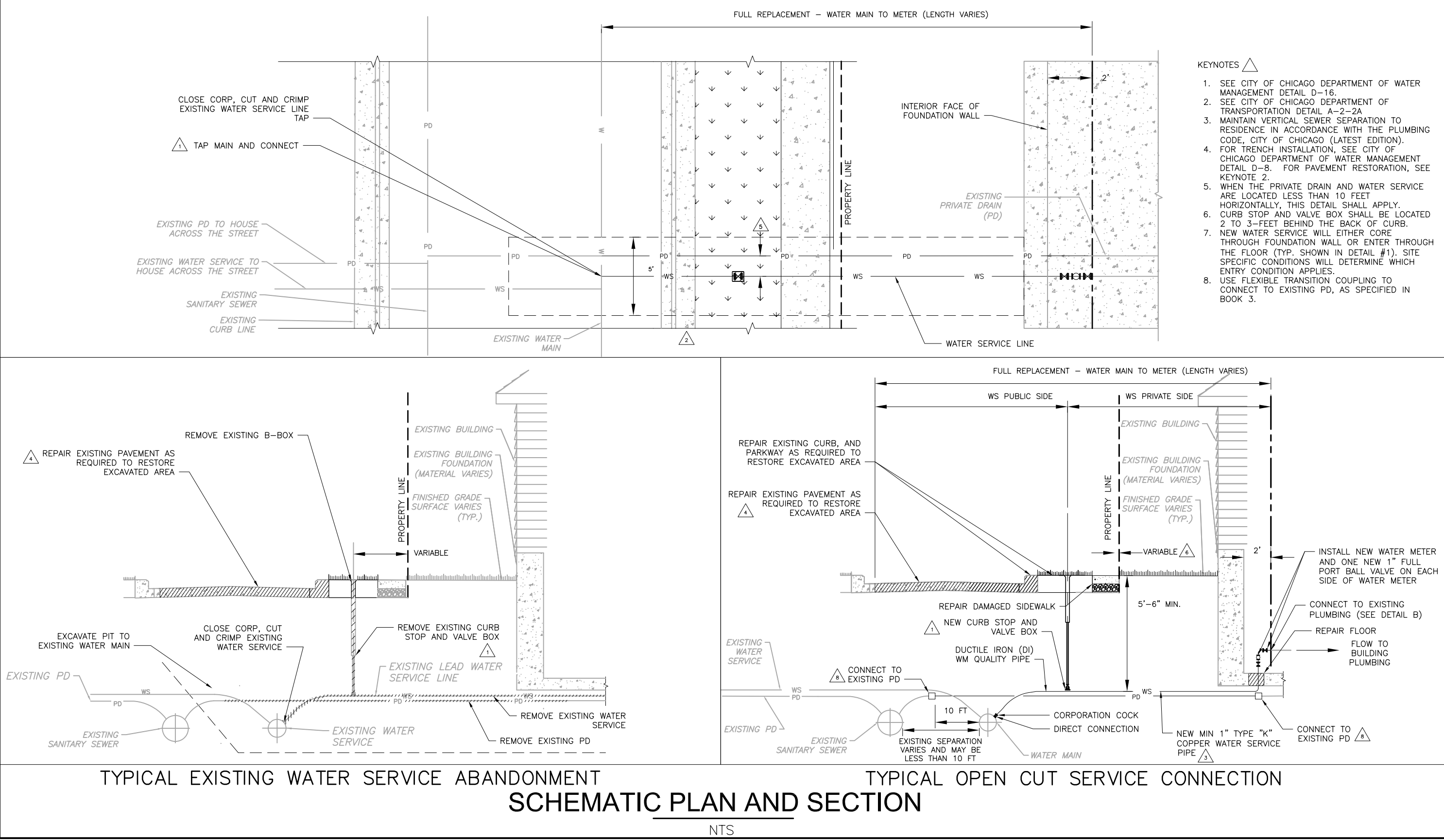
## TYPICAL OPEN CUT WATER SERVICE CONNECTION

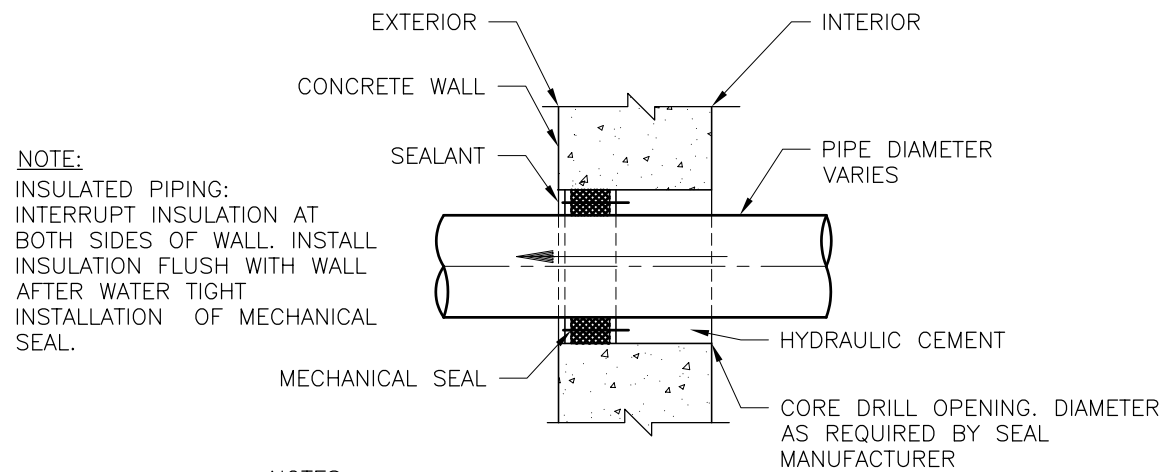
## SCHEMATIC PLAN AND SECTION

NTS







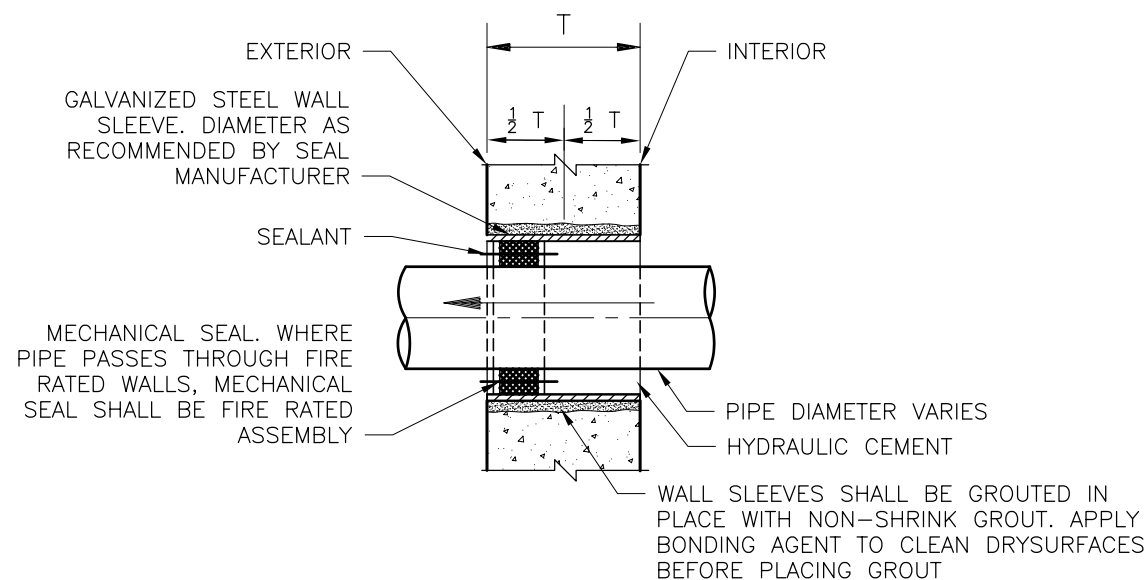


**NOTE:**  
INSULATED PIPING:  
INTERRUPT INSULATION AT  
BOTH SIDES OF WALL. INSTALL  
INSULATION FLUSH WITH WALL  
AFTER WATER TIGHT  
INSTALLATION OF MECHANICAL  
SEAL.

**NOTES:**

1. WHERE PIPE PASSES THROUGH FIRE RATED AREAS, INSTALL SEALS ON BOTH SIDES OF WALL. MECHANICAL SEALS SHALL BE FIRE RATED ASSEMBLIES.
2. IN LIEU OF MECHANICAL SEALS, NON-SHRINK GROUT, AS SPECIFIED, FILLING ALL VOIDS MAY BE USED FOR CONCRETE WALLS.

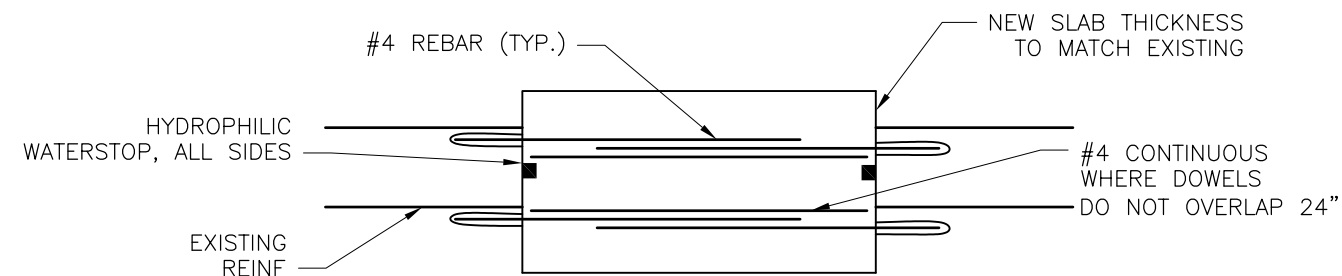
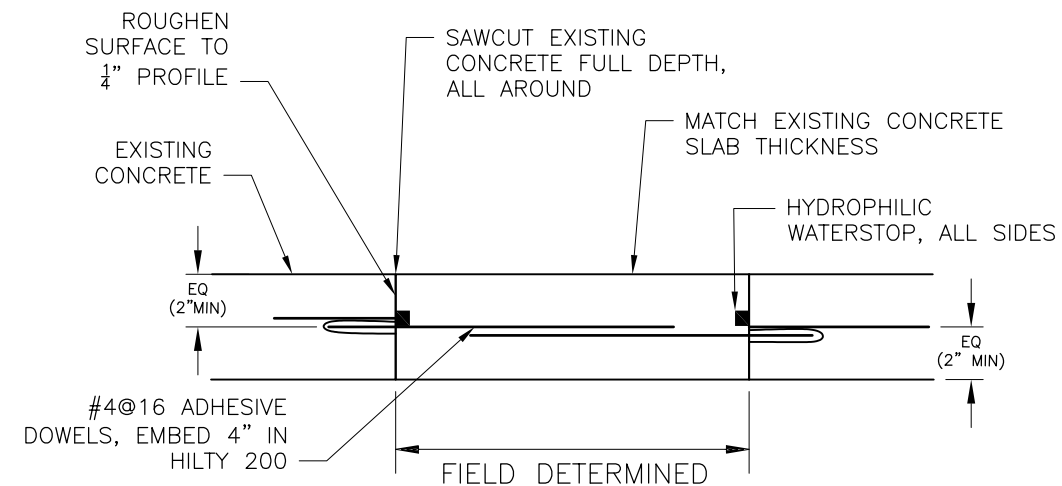
**CORE DRILLED OPENING AND MECHANICAL SEAL  
PENETRATION THROUGH EXISTING CONCRETE**



**WALL SLEEVE WITH MECHANICAL SEAL, BRICK  
CMU OR CAVITY WALLS**

**DETAIL A**

NTS

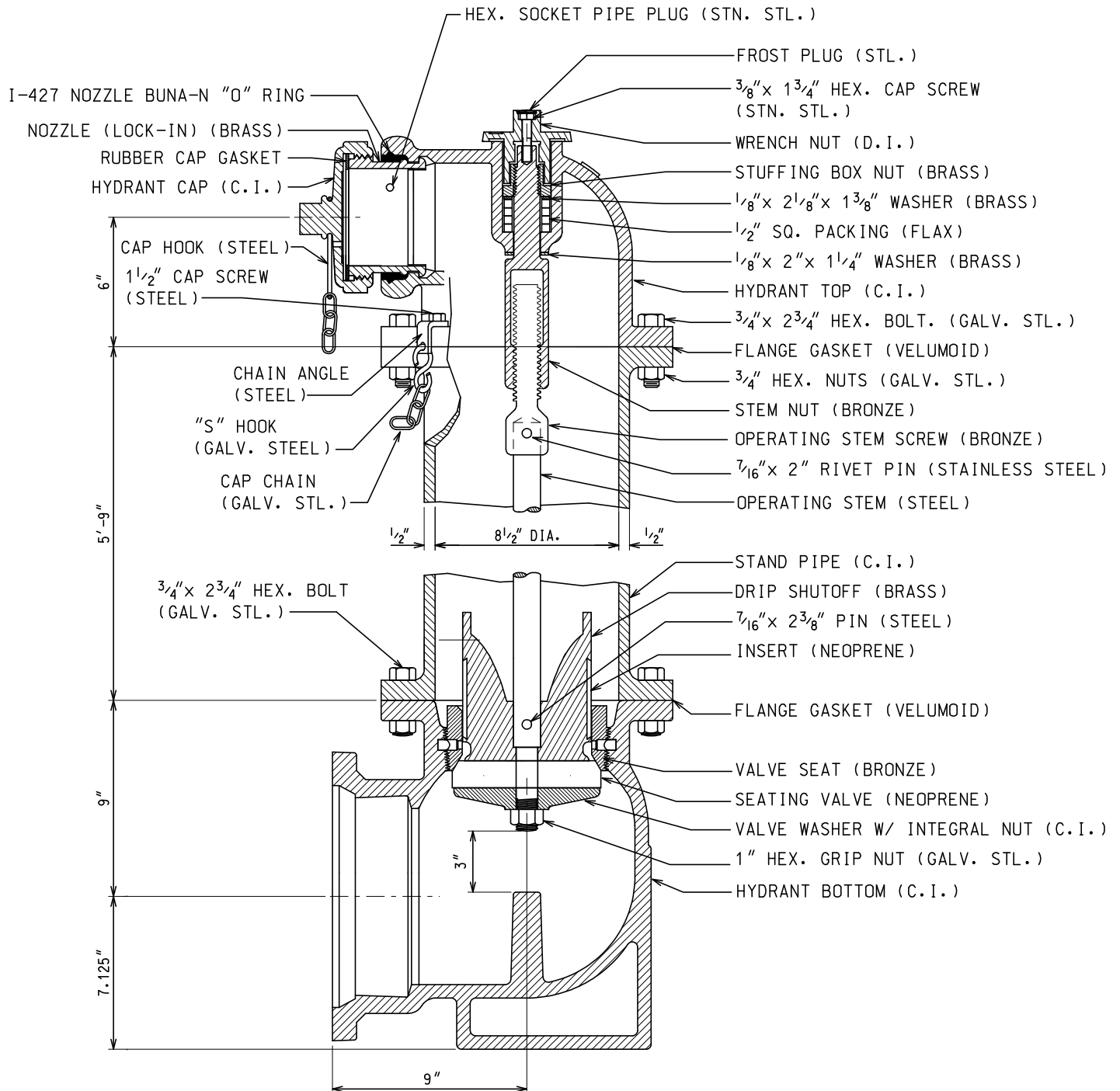


**DETAIL B: CONCRETE SLAB REPAIR**

NTS

**NOTES:**

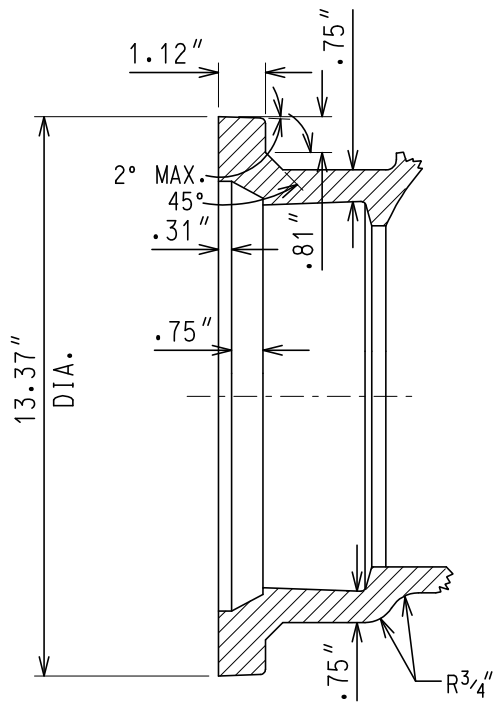
1. HYDROPHILIC WATERSOP SHALL BE SIKA CORPORATION HYDROTITE PRODUCT CJ-1020-2K-ADH, AND SHALL BE APPLIED TO EXISTING CONCRETE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS



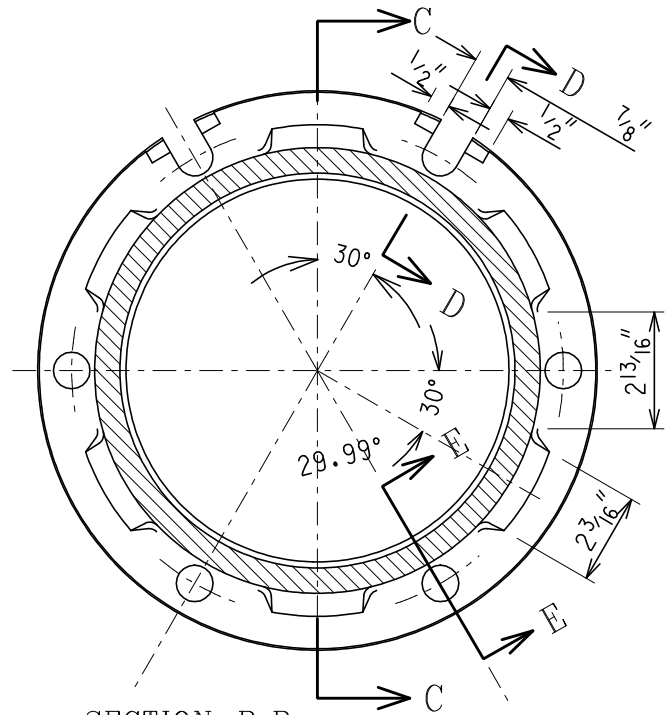
### CROSS-SECTIONAL VIEW

#### NOTE:

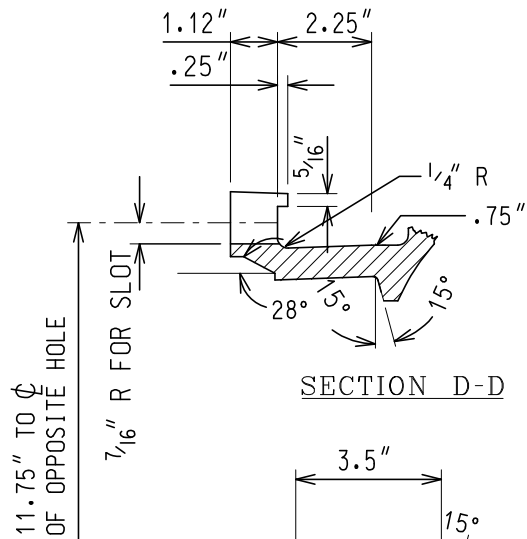
1. TOP CASTING IS TURNED 45° FROM TRUE POSITION IN SECTIONAL VIEW.



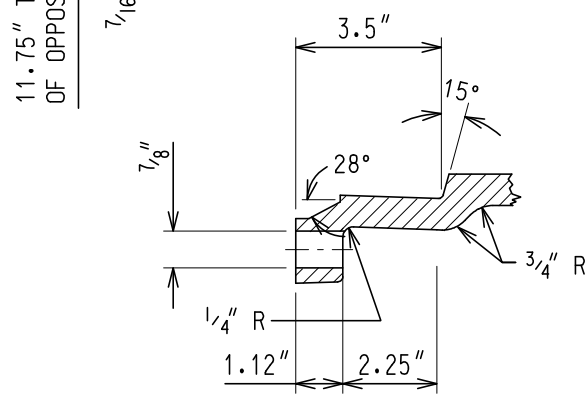
SECTION C-C



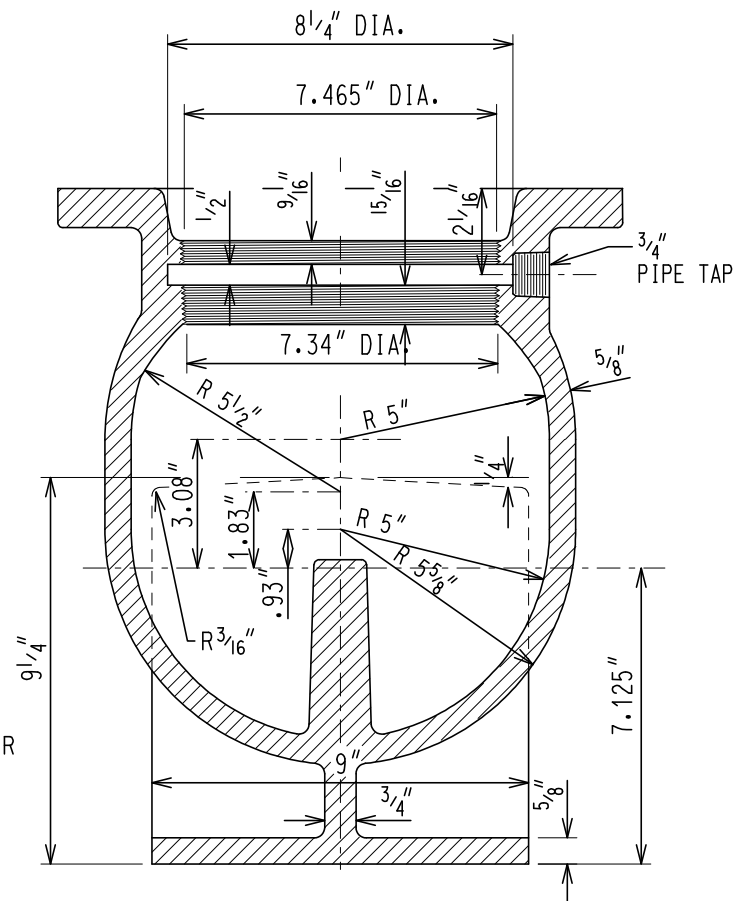
SECTION B-B



SECTION D-D



SECTION E-E

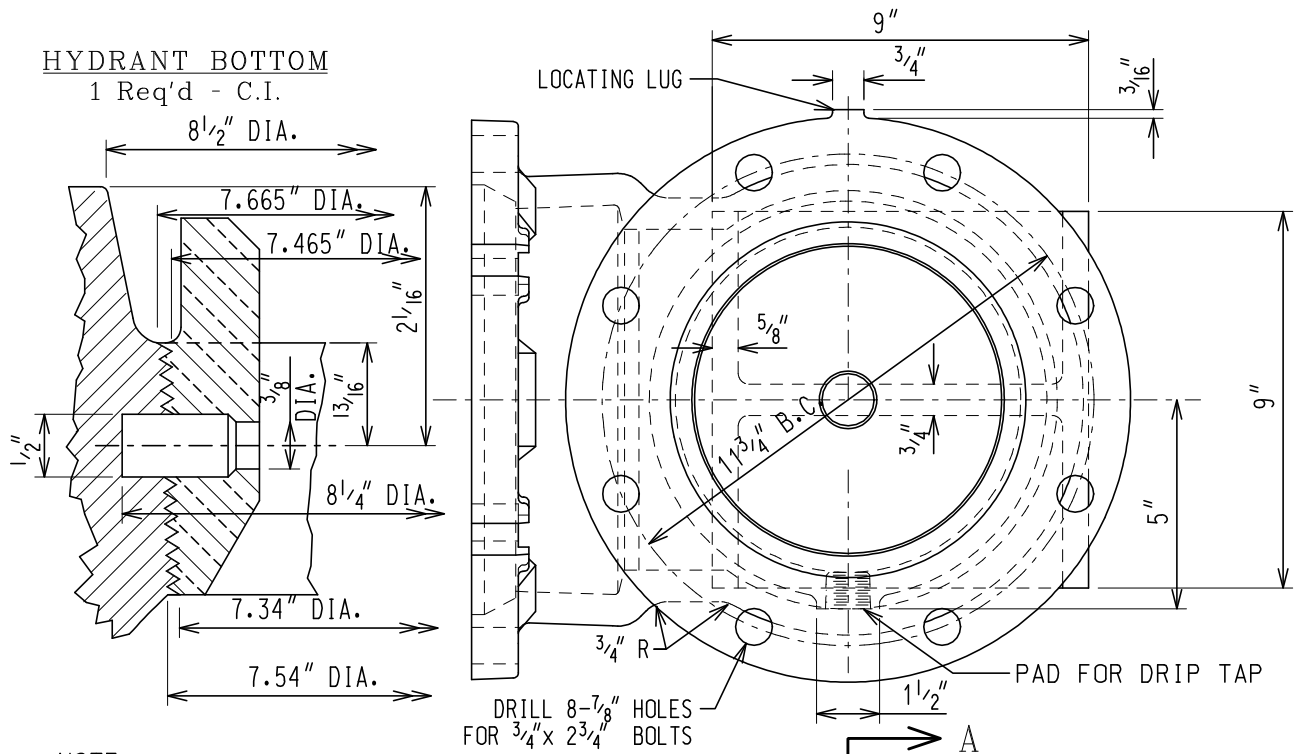


SECTION A-A

HYDRANT BOTTOM

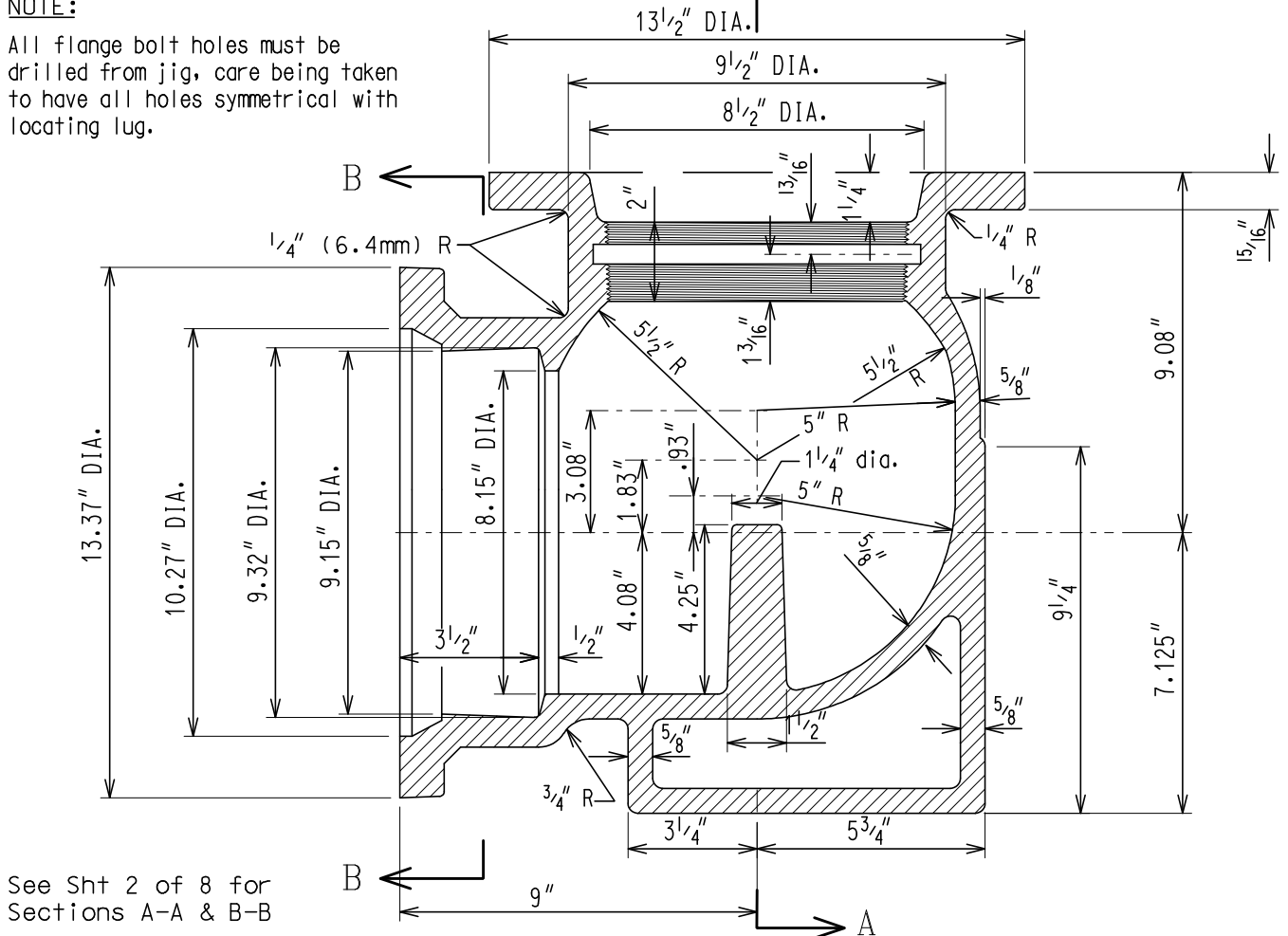
# HYDRANT BOTTOM

1 Req'd - C.I.



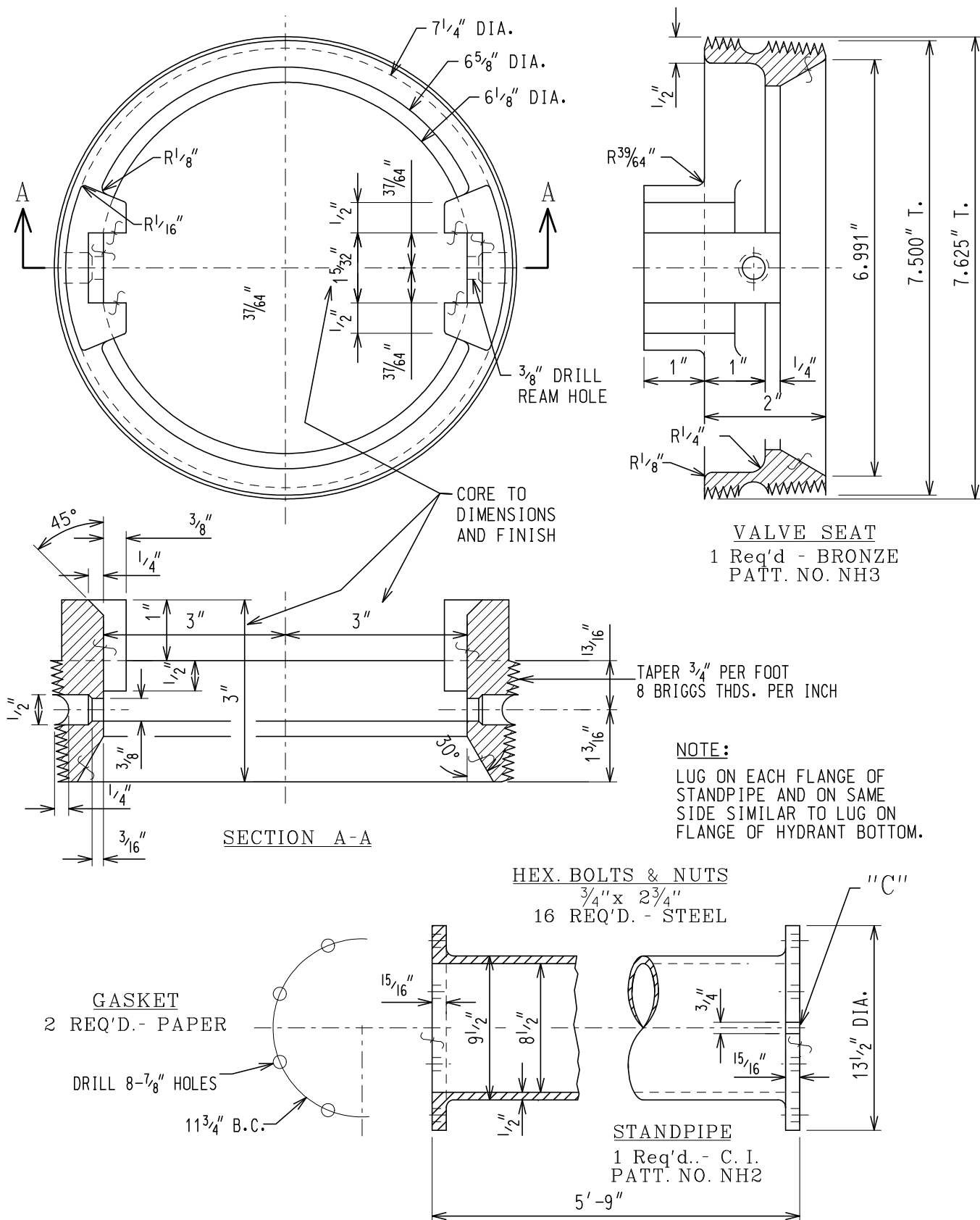
## NOTE:

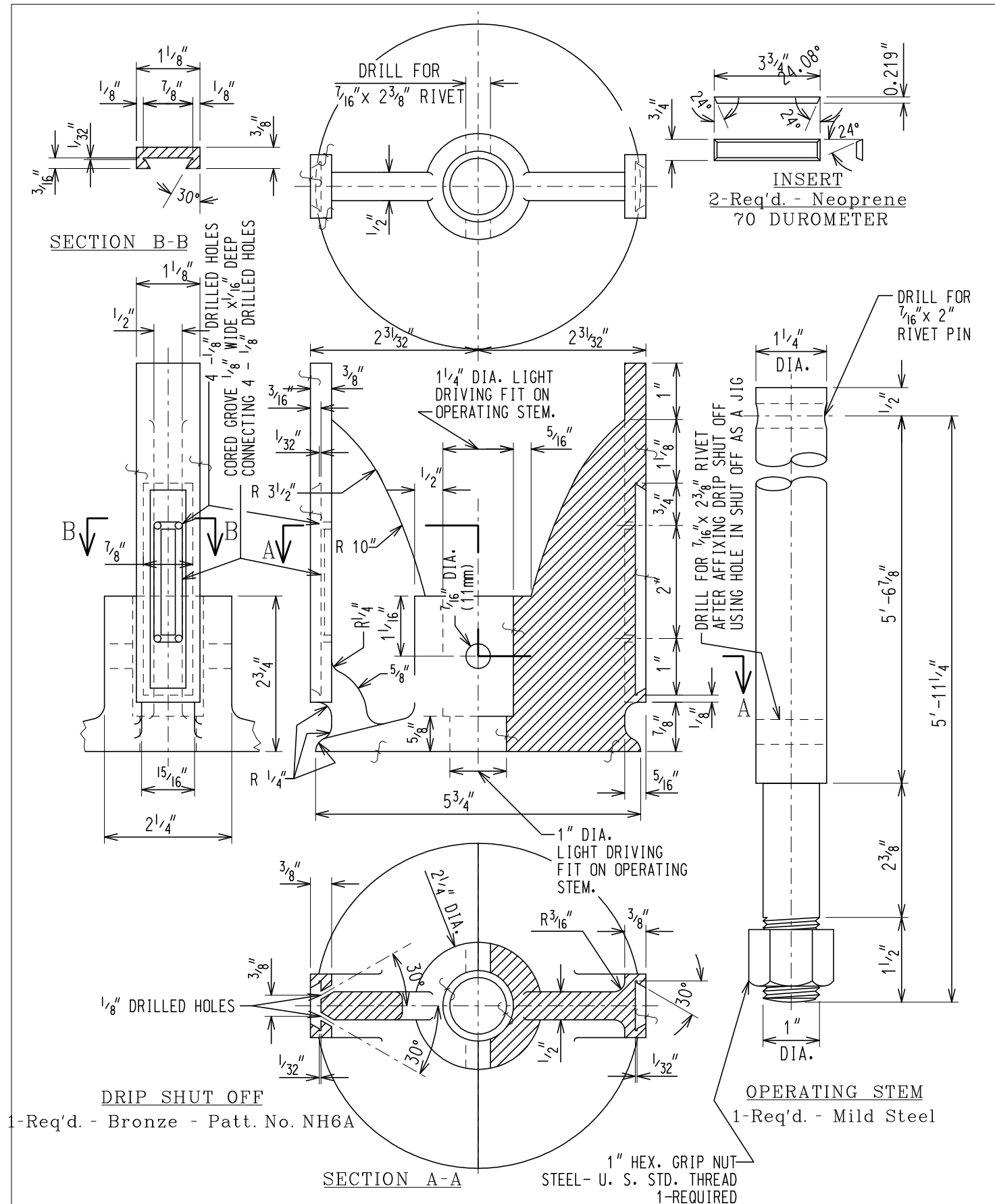
All flange bolt holes must be drilled from jig, care being taken to have all holes symmetrical with locating lug.



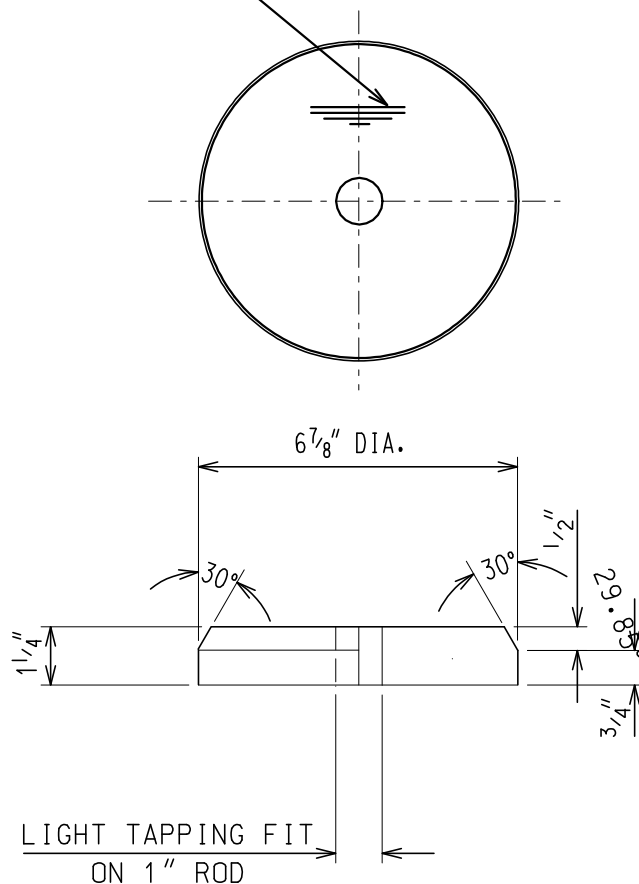
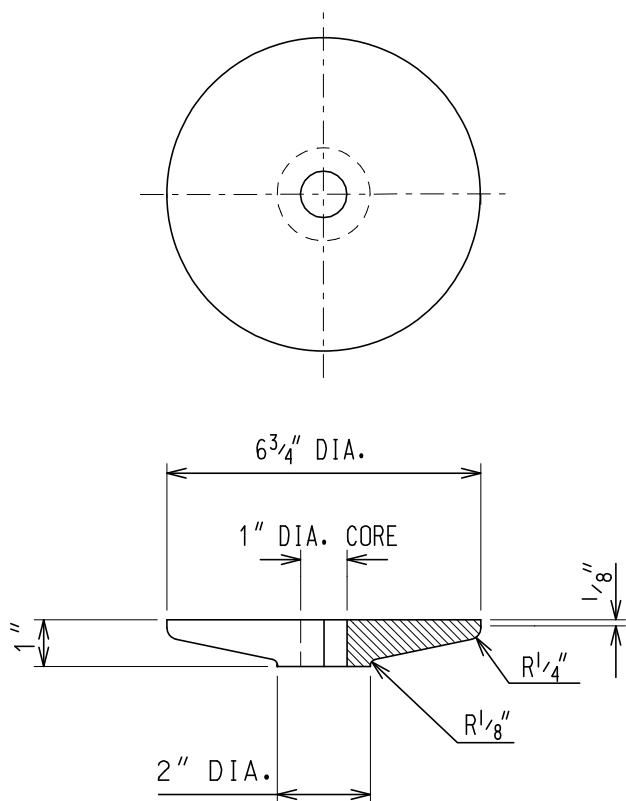
See Sht 2 of 8 for Sections A-A & B-B

HYDRANT BOTTOM





$\frac{1}{4}$ " LETTERS  
 CITY OF CHICAGO  
 NAME OF MANUFACTURER  
 DATE OF MANUFACTURE  
 DUROMETER

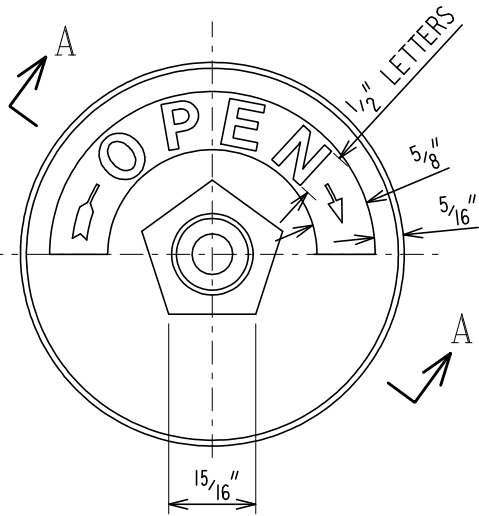


VALVE WASHER-CAST IRON  
PATTERN NO. NH 10 - 1 REQUIRED

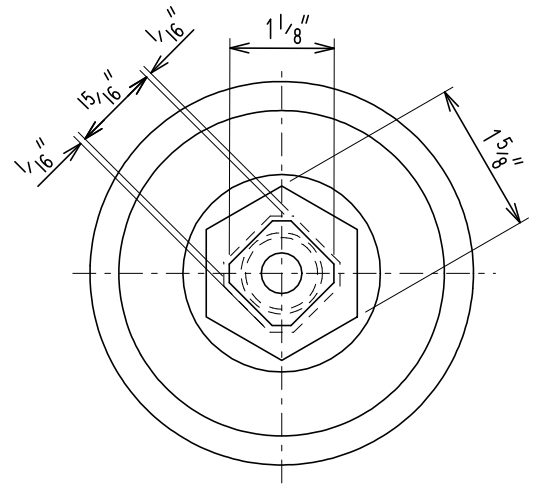
SEATING VALVE - NEOPRENE  
1 - REQUIRED  
80 DUROMETER

VALVE WASHER & SEATING VALVE





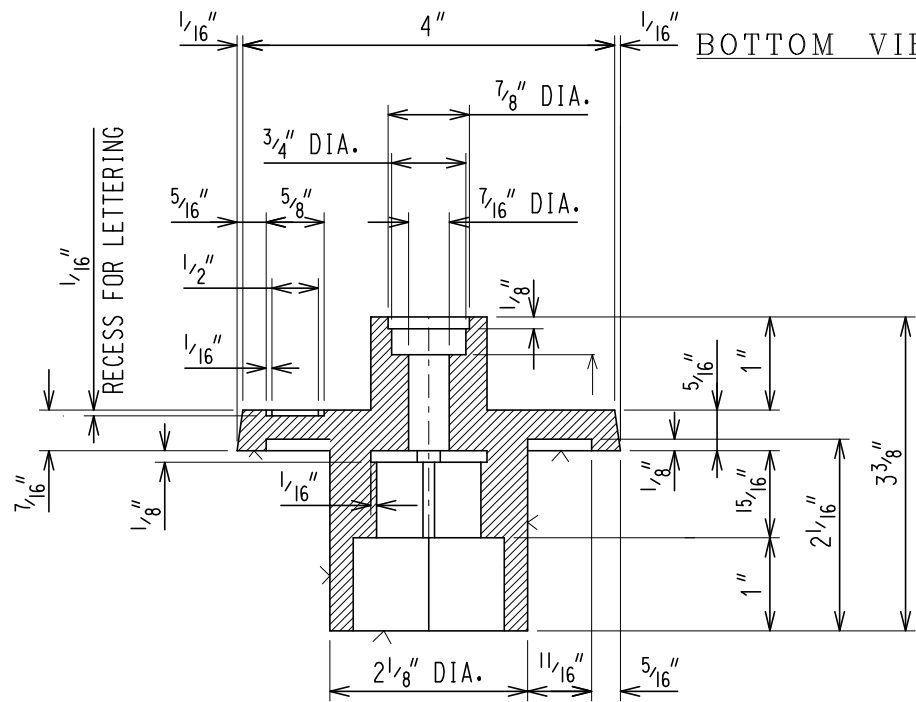
TOP VIEW



BOTTOM VIEW

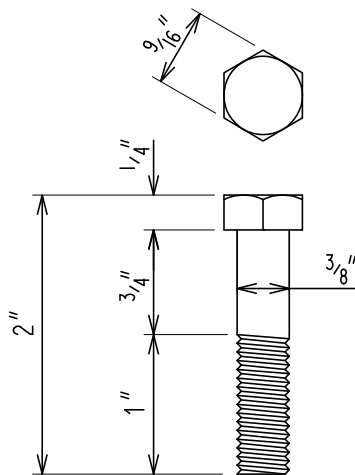
**NOTE**

LETTERS SHALL BE  $\frac{1}{2}$ " HIGH  
GOTHIC, RAISED  $\frac{1}{16}$ " FROM A  
 $\frac{1}{16}$ " RECESS AS SHOWN IN  
SECTION A-A



SECTION A-A

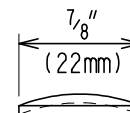
SPECIAL WRENCH NUT - DUCTILE IRON  
PATTERN NO. NH7B - 1 REQUIRED



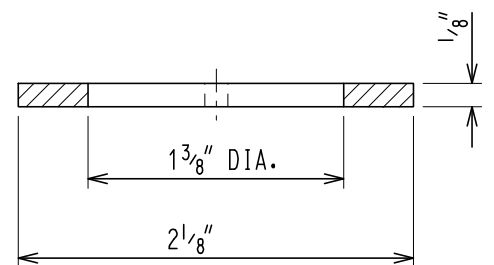
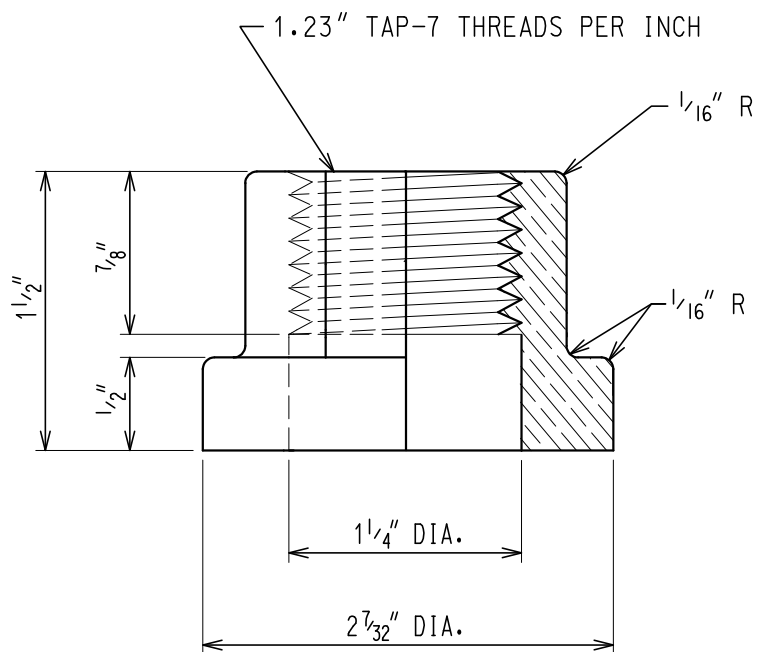
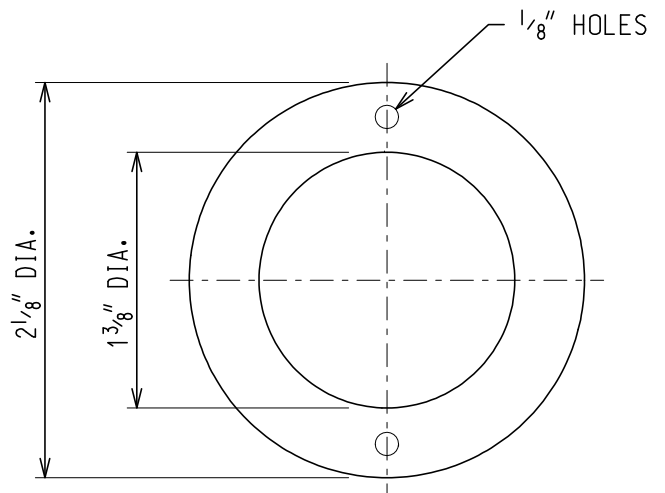
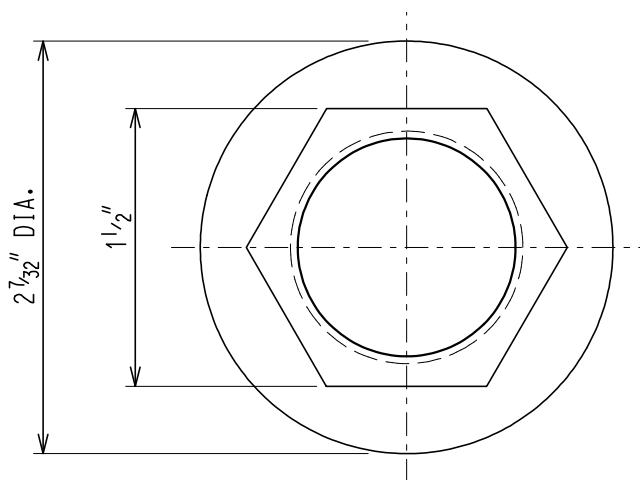
CAP SCREW-STAINLESS STL.  
HEX. HEAD TYPE 300 SERIES

1-Req'd.

FROST PLUG - STAINLESS STEEL  
7/8" STANDARD - REQ.



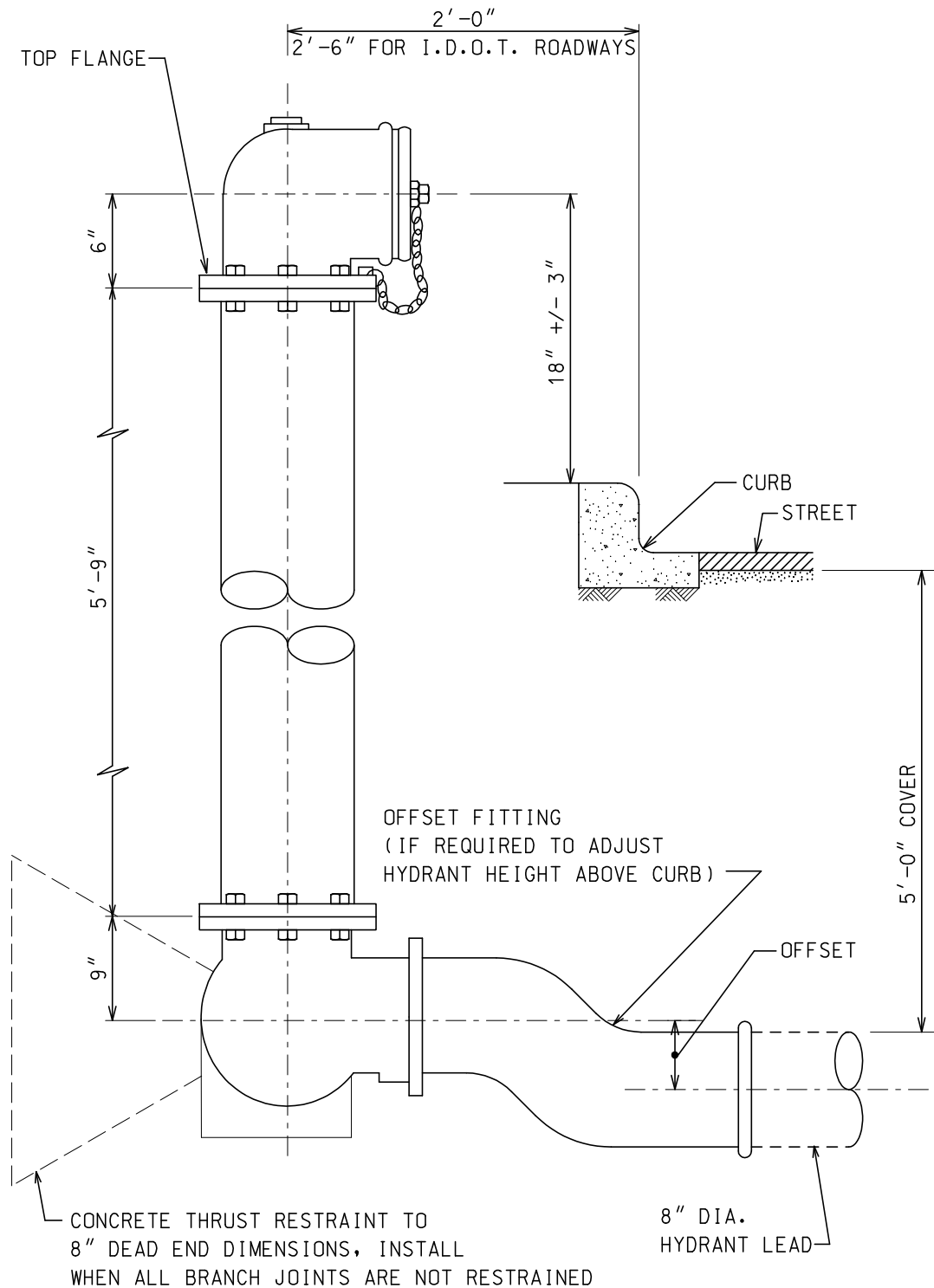
SPECIALTY WRENCH NUT, CAP SCREW & FROST PLUG DETAILS



WASHER - Brass  
1 Required

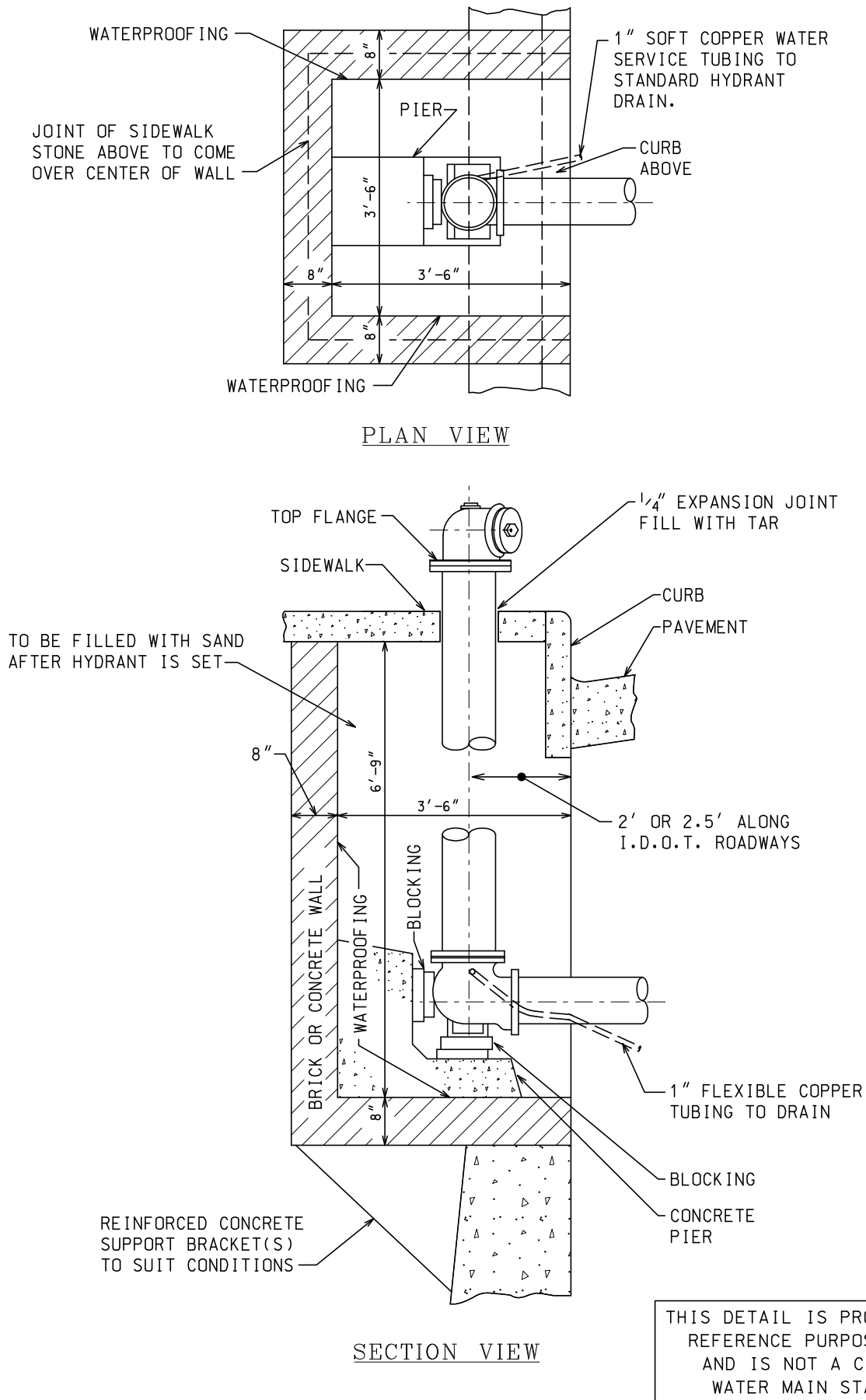
STUFFING BOX NUT - Bronze  
PATTERN NO. NH 8 - 1 Required

### STUFFING BOX NUT & WASHER DETAILS

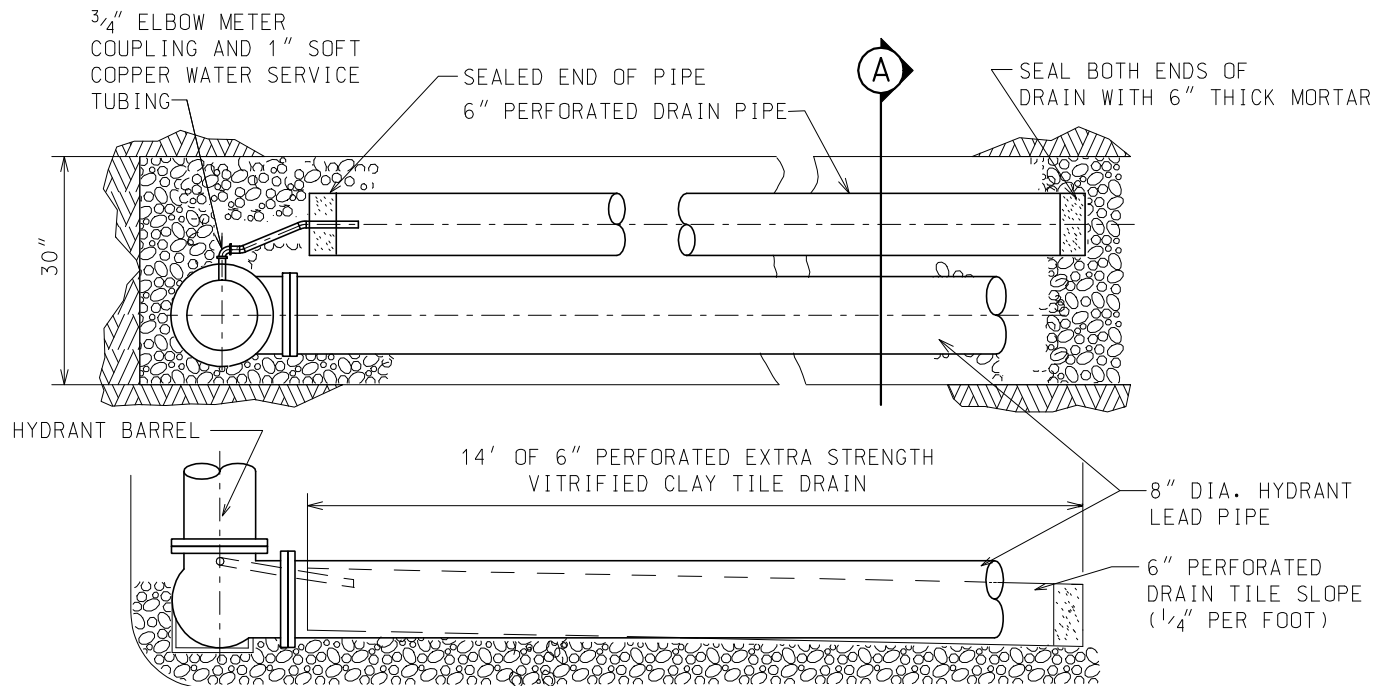


**NOTE:**

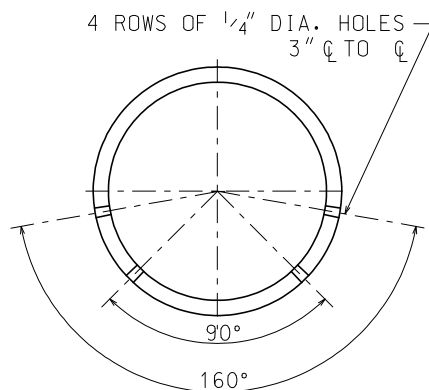
1. SEE FIRE HYDRANT DRAIN DETAILS.
2. ALL BURIED DUCTILE IRON HYDRANT COMPONENTS MUST BE WRAPPED IN POLYETHYLENE ENCASEMENT.
3. SEE DETAIL D-5 FOR FIRE HYDRANT DRAIN ASSEMBLY
4. THE TOP AND FACE OF THE CURB ARE TO BE PAINTED 'SAFETY YELLOW' FOR 15 FEET EACH SIDE OF THE FIRE HYDRANT, EXCEPT WHERE THE 15 FOOT DIMENSION INTERSECTS A CROSSWALK, DRIVEWAY OR SIMILAR FEATURE.



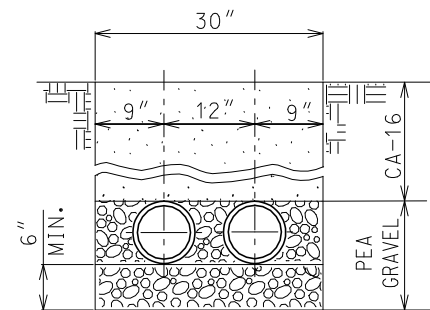
# FIRE HYDRANT INSTALLATION DETAIL FOR VAULTED SIDEWALKS



### LAYING CONDITION



DETAIL "A"  
DRAIN TILE DRAIN HOLES



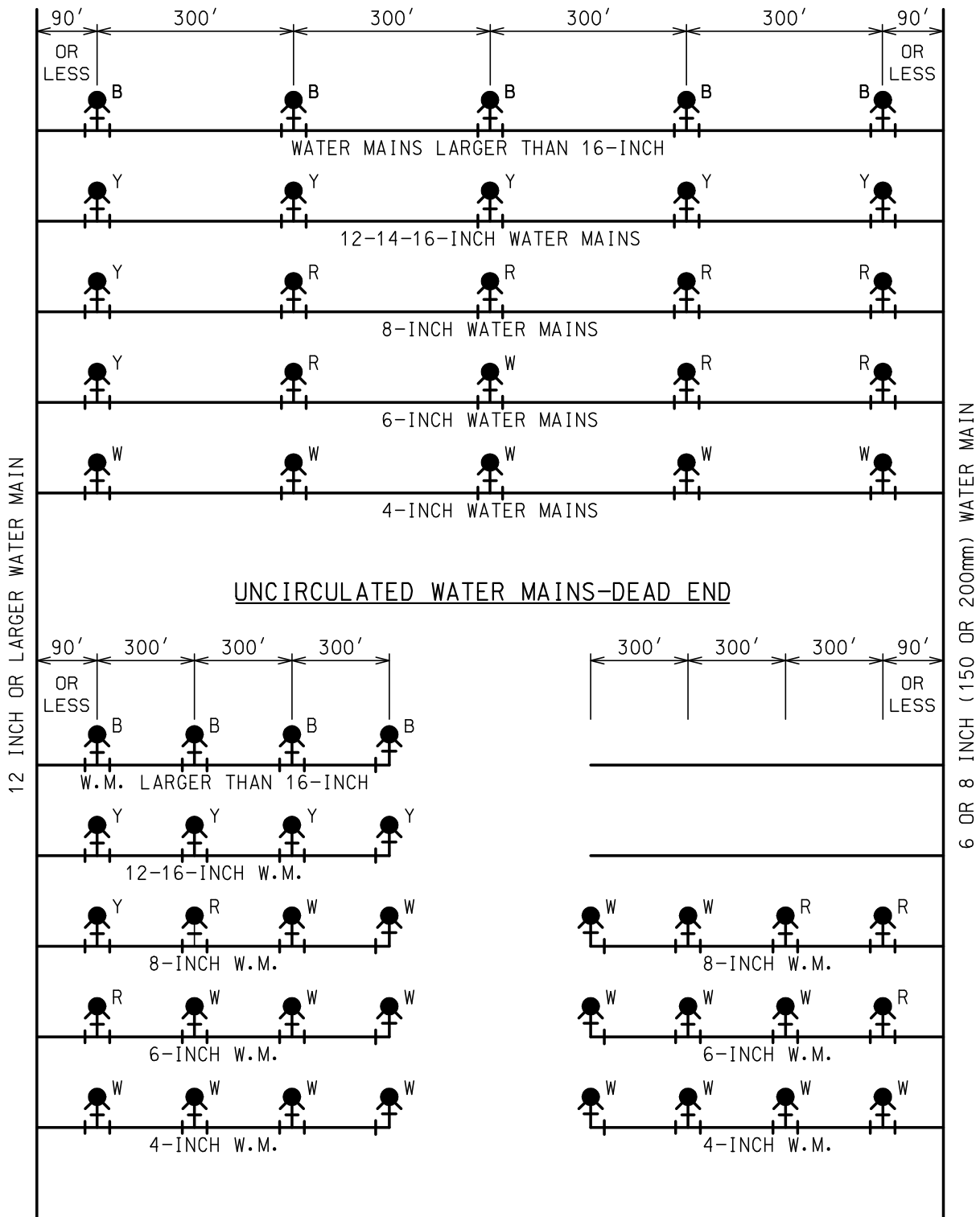
SECTION A

TILE PIPE & HYDRANT BRANCH  
EMBEDDED IN PEA GRAVEL

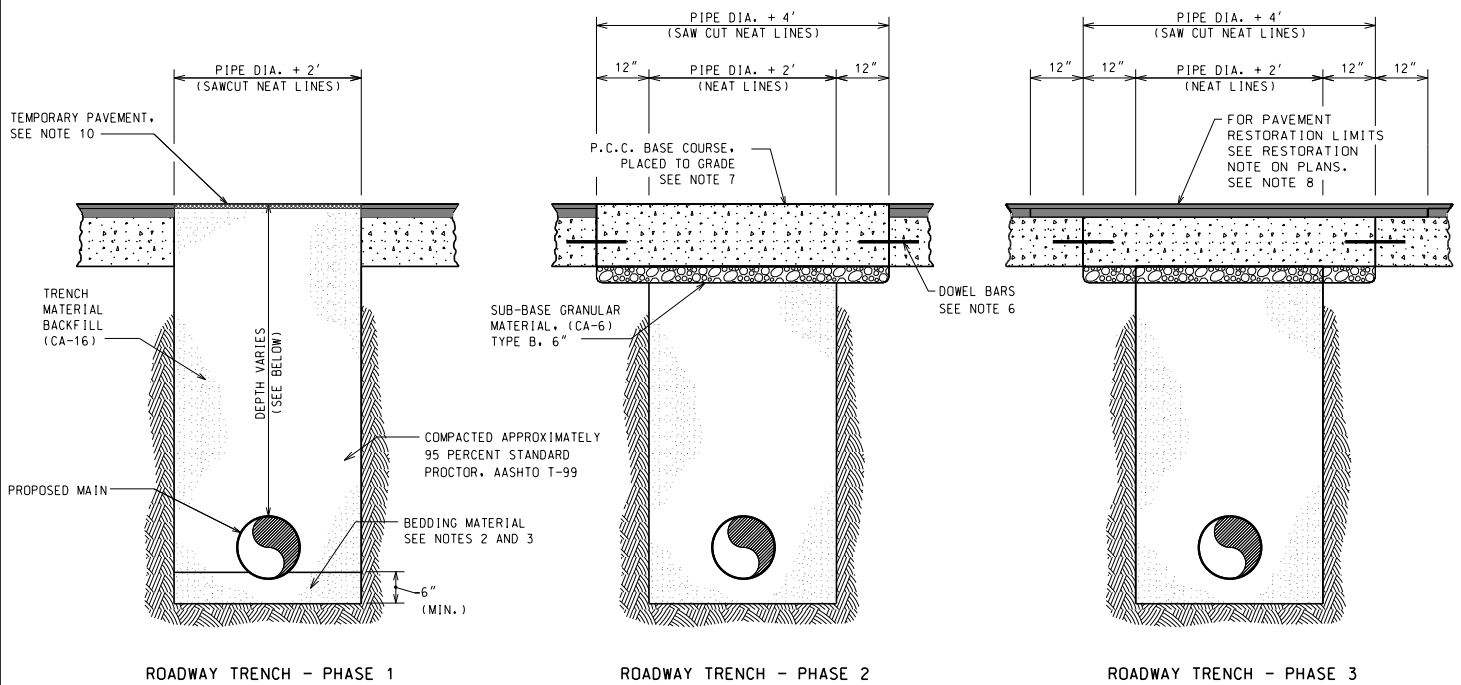
### NOTES:

1. WATER TABLE MUST BE BELOW BOTTOM OF TRENCH.
2. LAY DRAIN PIPE IN WATER MAIN TRENCH IF HYDRANT LEAD PIPE IS NOT LONG ENOUGH TO ACHIEVE 14' DRAIN PIPE LENGTH.
3. PLACE DRAIN PIPES SO HOLES ARE FACING DOWN, SEE DETAIL A.
4. COPPER WATER SERVICE TUBING MUST BE ENCASED IN POLYETHYLENE WRAP.

## CIRCULATED WATER MAINS

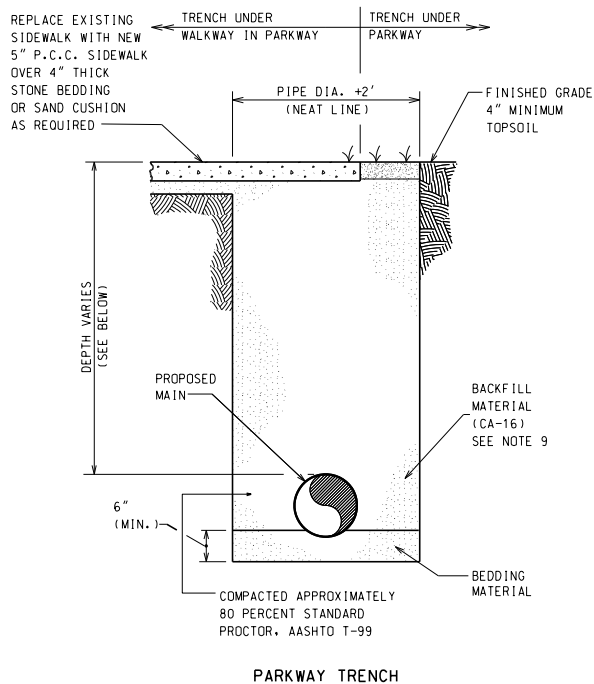


B-BLUE FLANGE Y-YELLOW FLANGE R-RED FLANGE W-WHITE FLANGE  
ALL PUBLIC FIRE HYDRANTS ARE TO BE PAINTED RED EXCEPT FOR THE  
TOP FLANGES WHICH MUST BE COLOR CODED.



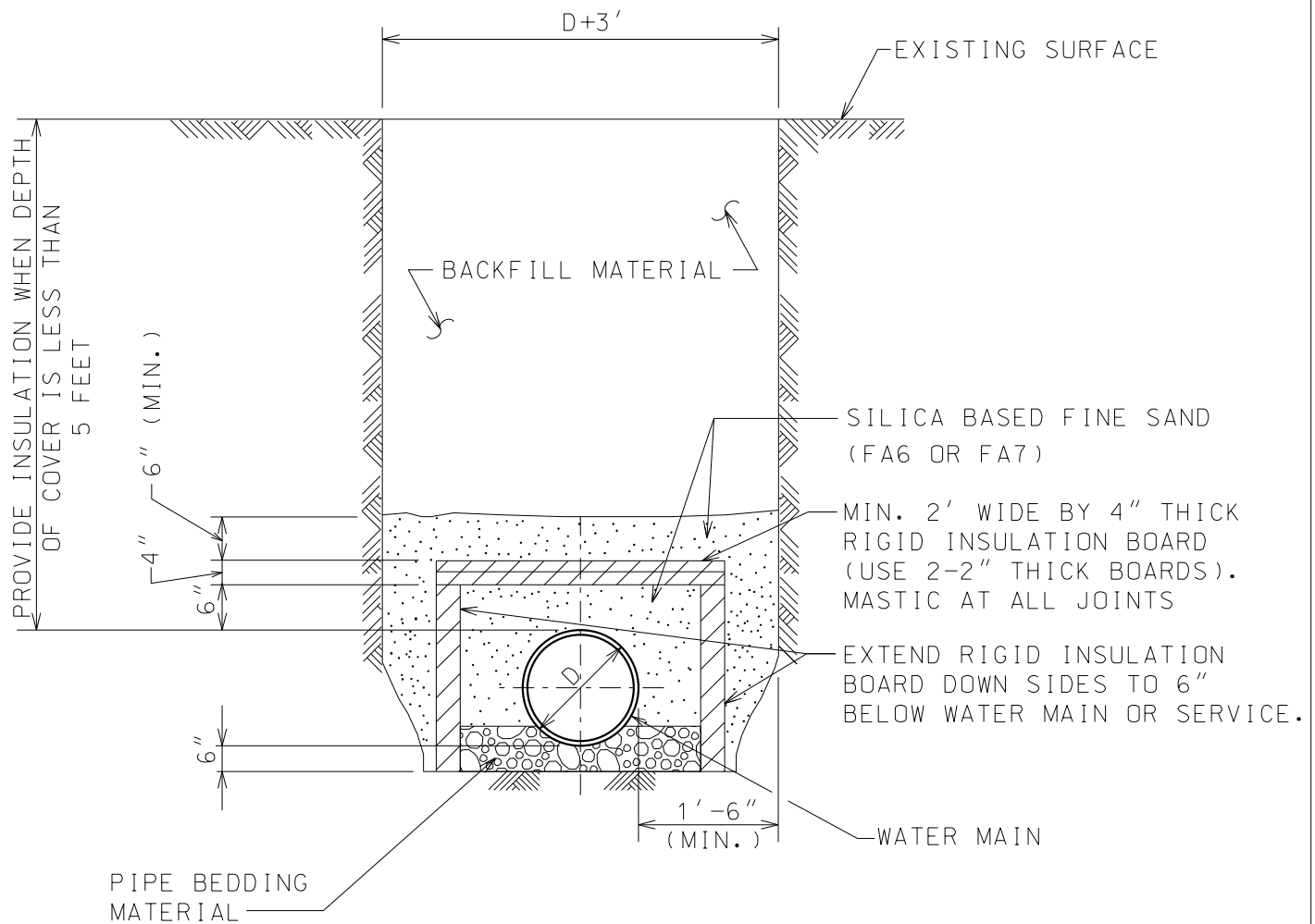
PIPE DEPTH REQUIREMENTS	
MINIMUM DEPTH OF COVER FOR WATER MAINS	
SIZE OF PIPE	DEPTH OF COVER
3/4" TO 3"	5'-6" ± 3"
4"	5'-6" ± 3"
6"	5'-6" ± 3"
8"	5'-3" ± 3"
12"	5'-0" ± 2"
16"	5'-0" ± 2"
24"	4'-6" ± 2"
30" TO 42"	3'-6" MIN. (SEE PLAN)
48" & LARGER	3' MIN. (SEE PLAN)

- PHASE 1:** BACKFILL CA-16 TO GRADE FOLLOWING THE INSTALLATION OF PROPOSED WATER MAIN.
- PHASE 2:** P.C.C. BASE COURSE TO GRADE FOLLOWING THE APPROVAL OF PROPOSED MAIN AND SUCCESSFUL COMPLETION OF SERVICE TRANSFERS AND CONNECTIONS.
- PHASE 3:** FINAL PAVEMENT RESTORATION. LIMITS AS INDICATED ON PLANS.



#### GENERAL NOTES:

1. PROVIDE PIPE BEDDING TO A DEPTH OF  $\frac{1}{8}$  OF PIPE DIAMETER OR 6" MINIMUM OF COMPACTED GRANULAR MATERIAL, GRAVEL, OR CRUSHED STONE.
2. USE CA-16 BEDDING MATERIAL FOR PIPE SIZES UP TO 16-INCH DIAMETER.
3. USE CA-11 BEDDING MATERIAL FOR PIPE SIZES LARGER THAN 16-INCH DIAMETER.
4. ALL EXCAVATIONS MUST BE PROPERLY SHORED, SHEETED AND BRACED TO PROVIDE SAFE WORKING CONDITIONS, ALL IN COMPLIANCE WITH THE U.S. DEPARTMENT OF LABOR SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION STIPULATED UNDER THE OCCUPATIONAL SAFETY AND HEALTH ACT, (O.S.H.A.).
5. PLATE ALL UNATTENDED EXCAVATIONS IN PAVEMENT AREAS AND SECURE PLATES TO PAVEMENT AND PROVIDE BARRIERS IN PARKWAY AREAS.
6. DOWEL BARS SHALL BE #5 EPOXY COATED BARS, 18" LONG DRILLED, WITH 9" EMBEDDMENT AND GROUTED AT 30" CENTERS. DOWEL BARS MAY BE OMITTED ON C.D.O.T. STREETS WHERE CLSM USED AS TRENCH BACKFILL.
7. FOLLOWING THE APPROVAL OF PROPOSED MAIN AND SUCCESSFUL COMPLETION OF SERVICE TRANSFERS AND CONNECTIONS, PLACE CONCRETE BASE COURSE FLUSH TO GRADE. THE ADDITIONAL THICKNESS IS TO BE REMOVED DURING PAVEMENT RESTORATION WORK. FINAL CONCRETE BASE THICKNESS MUST BE PER C.D.O.T. AND I.D.O.T. REQUIREMENTS. WHEN THE THICKNESS OF THE EXISTING ROADWAY BASE MATERIAL IS LESS THAN THE MINIMUM THICKNESS INDICATED IN THE PLANS, THE BOTTOM OF BASE MATERIAL WILL EXTEND BELOW THE BOTTOM OF THE BASE MATERIAL OF THE EXISTING PAVEMENT.
8. FINAL PAVEMENT RESTORATION SHALL BE COMPLETED AS INDICATED IN THE RESTORATION NOTE ON THE PLANS AND IN COMPLIANCE WITH C.D.O.T. AND STANDARDS. THE C.D.O.T. STREET PAVEMENT RESTORATION DETAIL HAS BEEN INCLUDED IN THESE DETAILS FOR REFERENCE.
9. EXCAVATED MATERIAL MAY BE USED IN PLACE OF (CA-16) IN PARKWAY TRENCHES. THE MATERIAL MUST BE PULVERIZED AND APPROVED BY THE COMMISSIONER.
10. ALL ACTIVE TRENCH CUTS OR EXCAVATIONS OPEN TO TRAFFIC INCLUDING VEHICLES, PEDESTRIANS, BICYCLES, ETC., MUST HAVE TEMPORARY PAVEMENT WHICH CONSISTS OF HMA OR ASPHALT COLD PATCH TO PROVIDE A SMOOTH AND LEVEL SURFACE. COMPACTED CRUSHED STONE FILL WILL BE ALLOWED AS TEMPORARY PAVEMENT IN ACTIVE TRENCH CUTS OR EXCAVATIONS LOCATED IN PERMITTED CLOSED WORK ZONES TO ALLOW FOR TEMPORARY PARKING RELIEF AS DIRECTED BY THE COMMISSIONER AND MUST MEET THE REQUIREMENTS OF SECTION 351 OF THE SSRBC.



#### NOTES:

1. RIGID INSULATION BOARD TO BE CLOSED CELL, EXTRUDED POLYSTYRENE FOAM MEETING ASTM 578, TYPE VI, 40 PSI COMPRESSING STRENGTH (ASTM D1621) 0.1% MAX. WATER ABSORPTION (ASTM C272).
2. BACKFILL MATERIAL AROUND RIGID INSULATION BOARD SHALL BE SILICA BASED FINE SAND (FA6 OR FA7), FREE FROM ROOTS, ORGANIC MATTER, LEAVES OR OTHER INJURIOUS MATERIALS.
3. OVERLAP ALL RIGID INSULATION BOARD JOINTS.
4. INSTALL RIGID INSULATION BOARD AS INDICATED ON PLANS OR AS APPROVED BY COMMISSIONER.



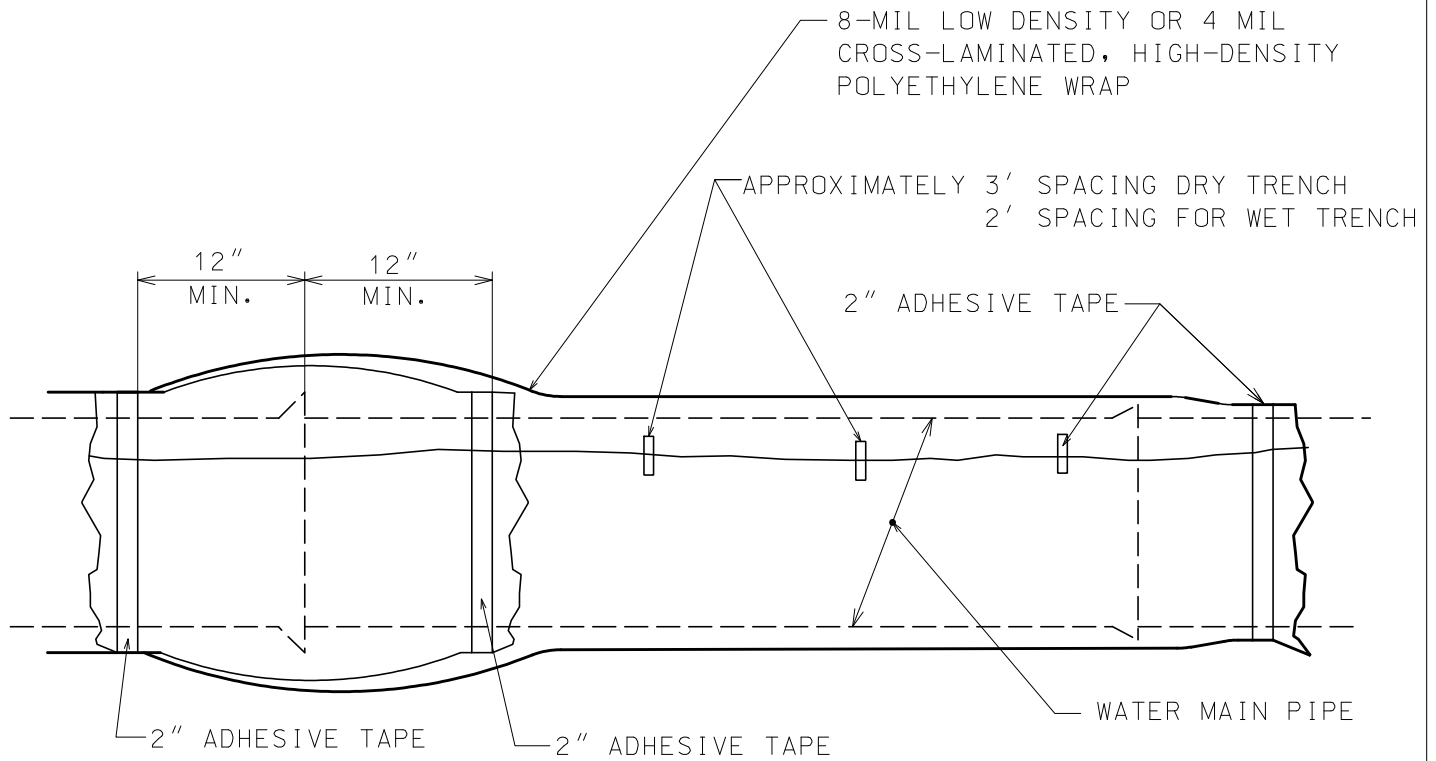
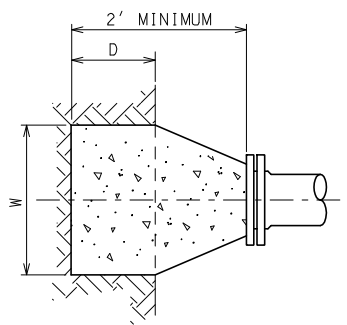


CHART "A" POLYWRAP FLAT TUBE WIDTHS		
PIPE DIAMETER (IN.)	D.I.P. WITH PUSH-ON JOINTS (IN.)	D.I.P. WITH MECHANICAL JOINTS (IN.)
4	14	16
6	17	20
8	21	24
12	29	30
16	37	37
24	53	53

NOTES:

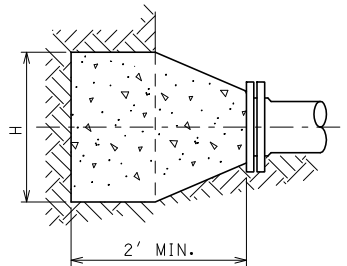
1. USE ONE LENGTH OF POLYETHYLENE TUBE WRAP FOR EACH LENGTH OF PIPE, OVERLAPPED AT PIPE JOINTS AND FOLD EXCESS OVER TOP OF TUBE FOR SLACK REDUCTION.
2. USE CHART "A" TO SELECT SIZE OF WRAP.

WATER MAIN  
POLYETHYLENE WRAP DETAIL



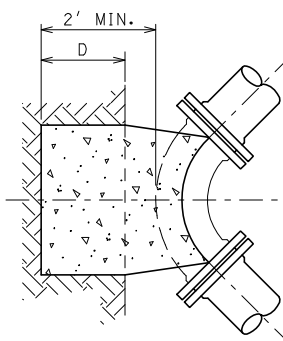
PLAN VIEW

### DEAD END THRUST BLOCK



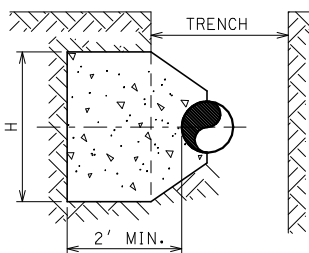
PROFILE

### DEAD END THRUST BLOCK



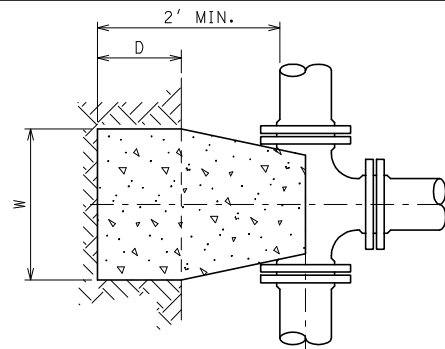
PLAN VIEW

### BEND THRUST BLOCK



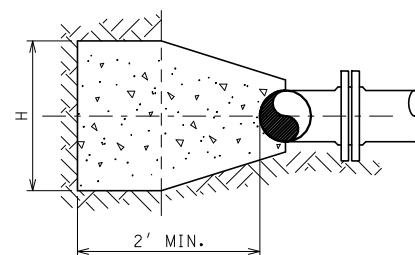
PROFILE

### BEND THRUST BLOCK



PLAN VIEW

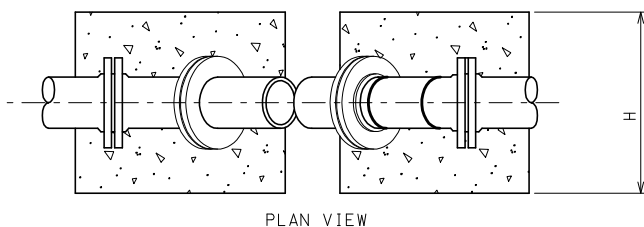
### TEE THRUST BLOCK



PROFILE

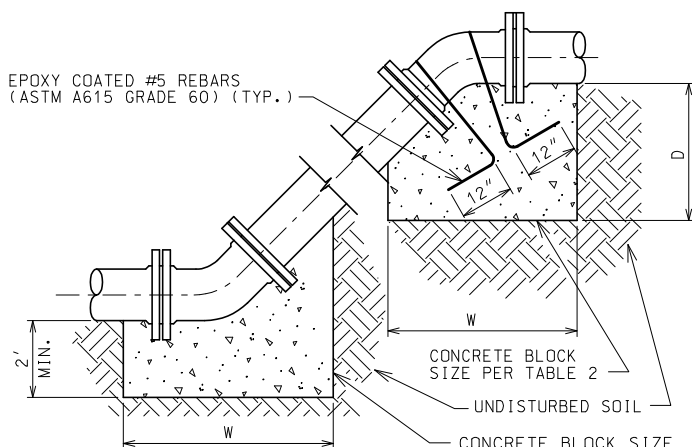
### TEE THRUST BLOCK

## HORIZONTAL THRUST BLOCK DETAILS



PLAN VIEW

EPOXY COATED #5 REBARS  
(ASTM A615 GRADE 60) (TYP.)



PROFILE

## VERTICAL THRUST BLOCK DETAILS

### NOTES:

1. FULL CONCRETE THRUST BLOCKS AS SHOWN ARE REQUIRED WHEN THRUST RESTRAINT IS NOT PROVIDED BY OTHER MEANS SUCH AS RESTRAINED JOINT PIPE.
2. WHEN THRUST RESTRAINT GLANDS ARE INSTALLED FOR THE CONNECTIONS, CONCRETE THRUST BLOCKS SHALL BE PROVIDED UP TO THE THE DOTTED LINE AS SHOWN.
3. ALL BOLTS, NUTS, THRUST RESTRAINT GLANDS AND FITTINGS SHALL BE WRAPPED WITH POLYETHYLENE TUBING TO PREVENT CORROSION AND CONCRETE ADHESION.
4. CONCRETE FOR THRUST BLOCKS MUST NOT CONTAIN FLY ASH.

TABLE 1

PIPE SIZE	DEAD END & TEE				HORIZONTAL 1/4 BEND				HORIZONTAL 1/8 BEND			
INCH DIA.	D	H	W	CY	D	H	W	CY	D	H	W	CY
16	1	5.5	4.5	2	1	6.5	5	2.5	1	4.5	4	1.5
12	1	3.5	3.5	1	1	4	4	1.5	1	3	3	.75
8	.5	2.5	2.5	.5	.5	3	3	.5	.5	2	2	.3

PIPE SIZE	HORIZONTAL 1/16 BEND				HORIZONTAL 1/32 BEND			
INCH DIA.	D	H	W	CY	D	H	W	CY
16	1	3.5	3.5	1	1	2.5	2.5	.6
12	1	2.5	2.5	.5	1	2	2	.4
8	.5	1.5	1.5	.25	.5	1.5	1.5	.25

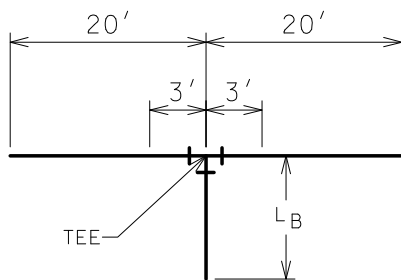
TABLE 2

PIPE SIZE	VERTICAL 1/8 BEND				VERTICAL 1/8 BEND BOTTOM			
INCH DIA.	D	H	W	CY	D	H	W	CY
16	7	6	6	11	2	4.5	4	2.25
12	5	6	5	7	2	3	3	1
8	4.5	4	4	3.5	2	2	2	.5

D IS THE DIMENSION INTO UNDISTURBED GROUND IN FEET  
H IS HEIGHT OF THRUST BLOCK IN FEET  
W IS WIDTH OF THRUST BLOCK IN FEET  
ALL DIMENSIONS ARE MINIMUM.  
THRUST BLOCKS IN LOOSE FILL OR SAND AREAS ARE NOT INCLUDED IN THESE TABLES AND WILL REQUIRE ADDITIONAL ANALYSIS.

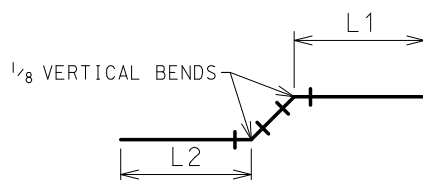
## THRUST RESTRAINT

## CONCRETE THRUST BLOCK DETAILS



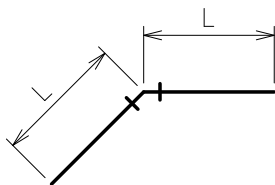
TEE SIZE	$L_B$
8" x 8" : (8", 12", 16" OR 24") x 12"	0
16" x 16"	42'
36" x 24"	277'

### HORIZONTAL TEES - LENGTH OF RESTRAINED JOINTS



PIPE SIZE		
	L1	L2
	8"	26'
	12"	37'
	16"	67'
	24"	67'

### 1/8 VERTICAL BENDS - LENGTH OF RESTRAINED JOINTS



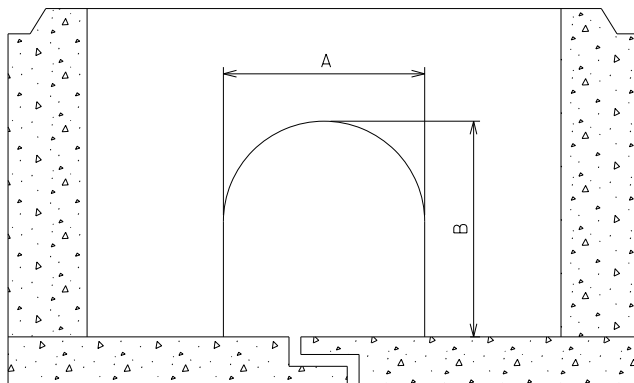
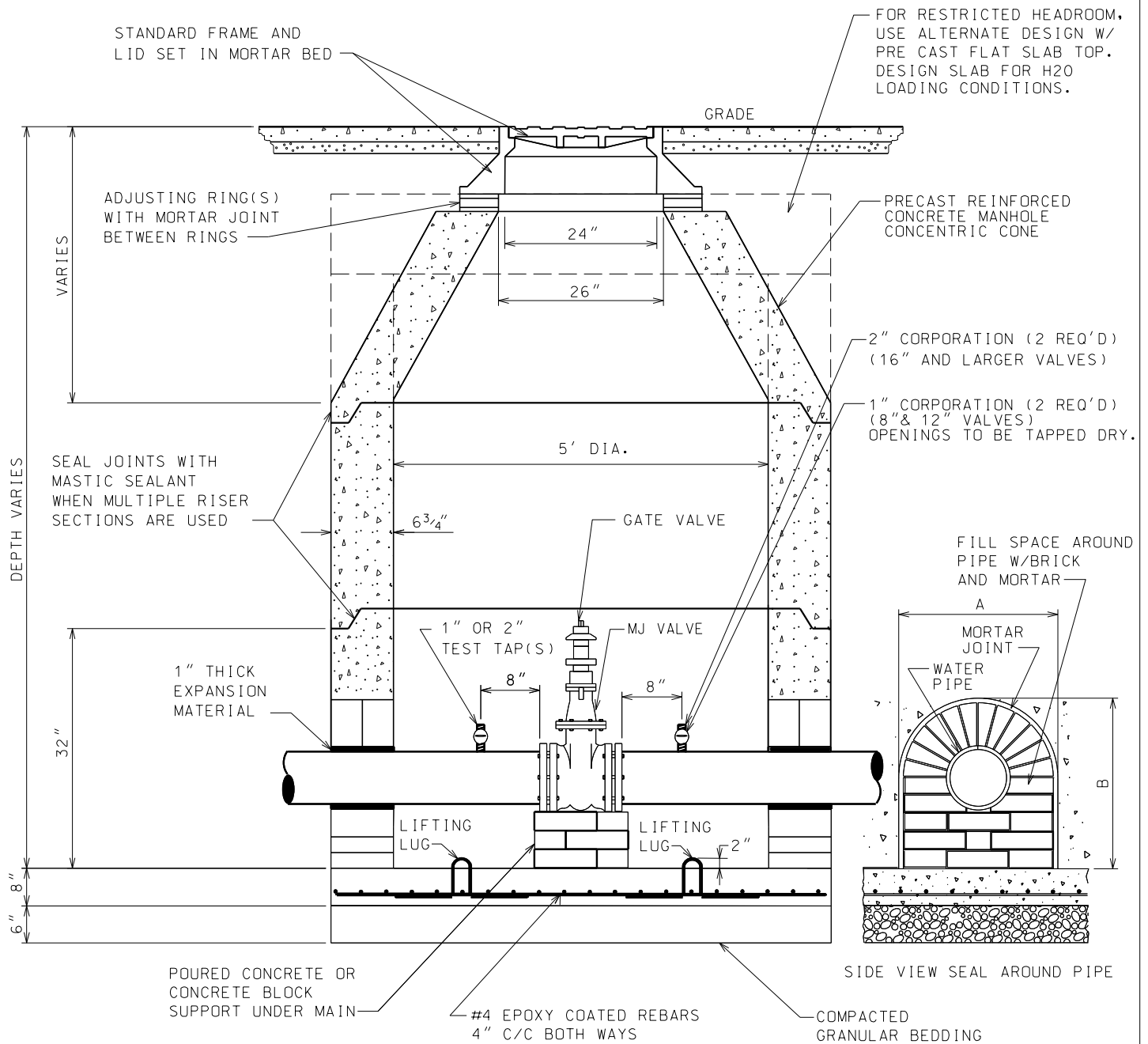
DISTANCE OF RESTRAINED JOINTS REQUIRED EITHER SIDE OF BENDS					
L					
BEND SIZES					
PIPE SIZE	1/32	1/16	1/8	1/4	
	8"	3'	6'	12'	29'
	12"	4'	8'	17'	41'
	16"	7'	15'	30'	73'
	24"	7'	15'	30'	73'

### HORIZONTAL BENDS - LENGTH OF RESTRAINED JOINTS

#### NOTE:

1. MINIMUM LENGTHS OF PIPE REQUIRED TO RESTRAIN FITTINGS SHOWN.
2. LENGTHS BASED ON POLY-WRAPPED PIPE.

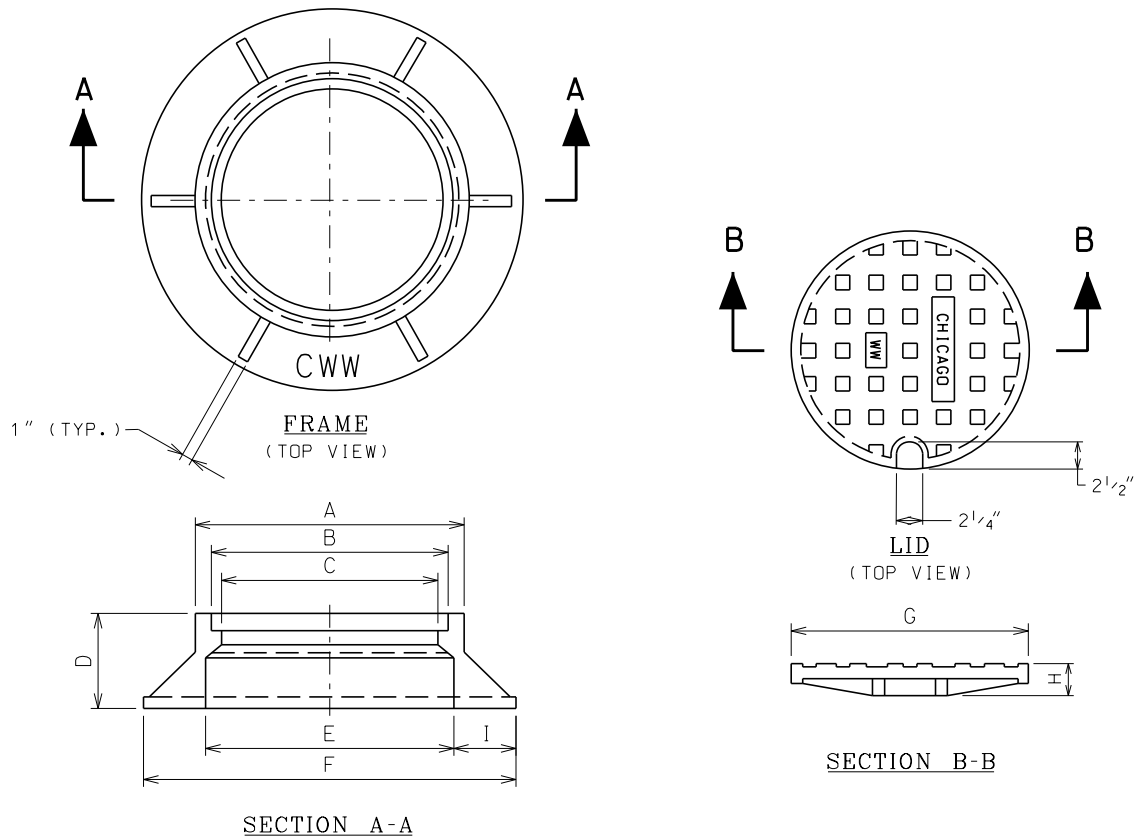
## THRUST RESTRAINT RESTRAINED JOINT PIPE DETAILS



OPTIONAL SPLIT BOTTOM

NOMINAL PIPE SIZES	OPENING DIMENSIONS	
	A	B
8"	11.0"	12.5"
12"	15.5"	16.5"
16"	19.5"	21.0"

## PRECAST VALVE BASIN FOR PIPES UP TO 16" DIA.



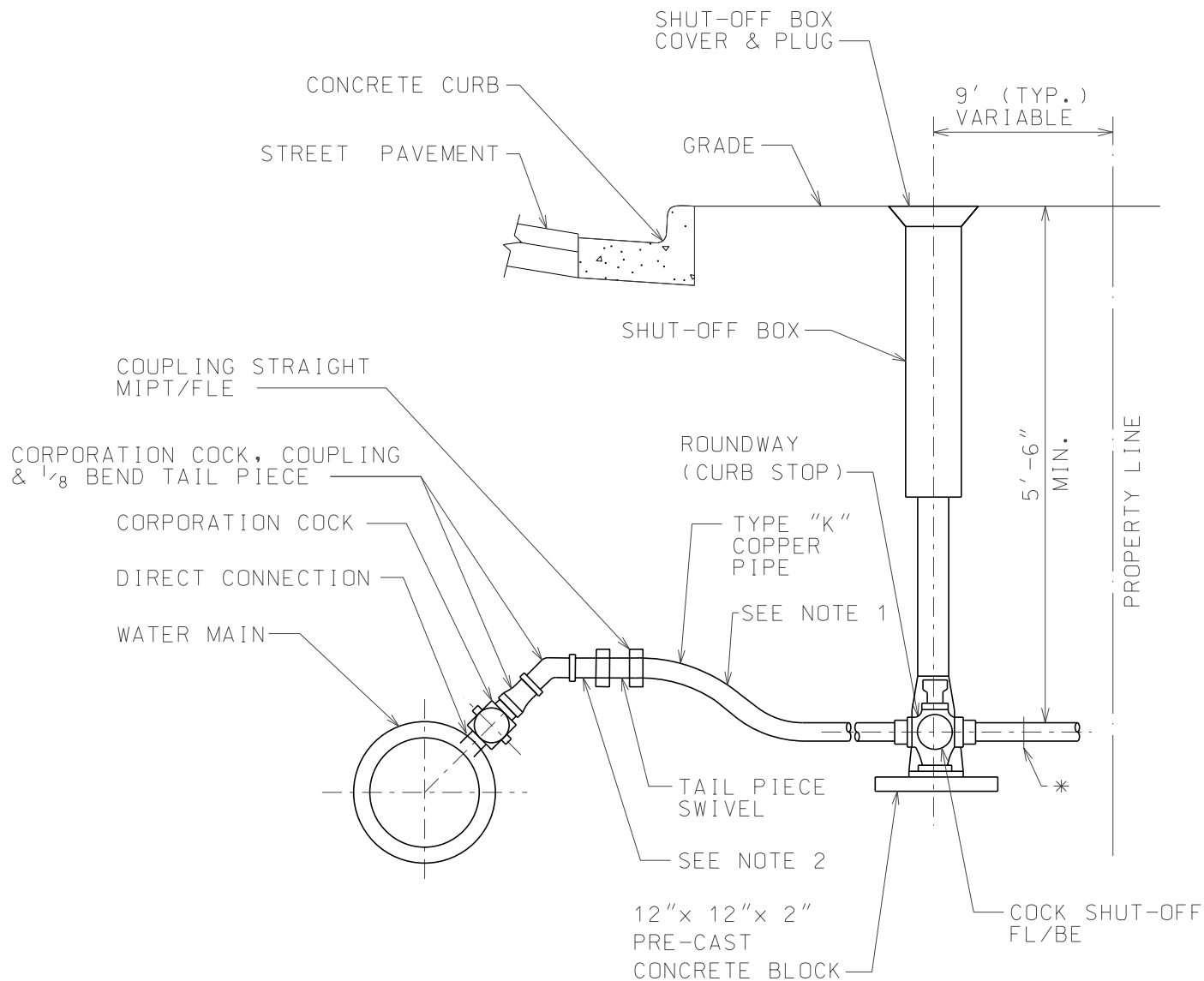
**NOTES:**

ALL FRAMES AND LIDS SHALL BE OF HEAVY DUTY TYPE DESIGN AND MEET AASHTO M105 AND M306 REQUIREMENTS FOR A 40,000 LB PROOF LOAD.

LETTERING FOR CHICAGO W.W. ON THE LID SHALL BE 2" SHARP FACE GOTHIC LETTERS,  $\frac{3}{16}$ " WIDE AND RAISED  $\frac{1}{8}$ " FROM  $\frac{1}{8}$ " RECESS AS MEASURED FROM THE TOP SURFACE OF THE LID.

LETTERING FOR C.W.W. ON THE FRAME SHALL BE LOCATED ON THE TOP SURFACE OF THE HORIZONTAL FLANGE AND SHALL BE 1" SHARP FACE GOTHIC,  $\frac{3}{16}$ " WIDE AND RAISED  $\frac{1}{8}$ " AS MEASURED FROM THE FLANGE SURFACE. LOCATION OF LETTERING SHALL BE AS INDICATED ON DRAWING.

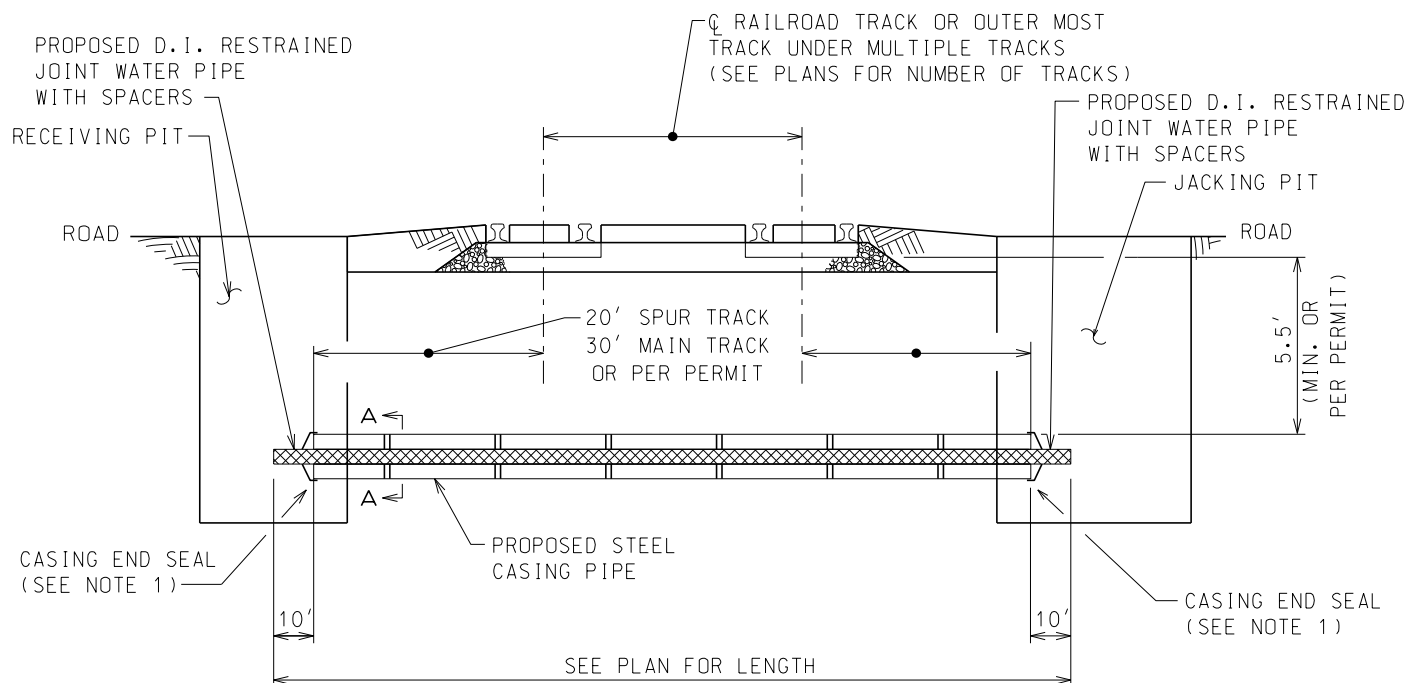
FRAME AND LID DIMENSIONS		
	FRAME AND LID TYPES	
	STANDARD	36" SPECIAL F&L
DIMENSION	INCHES	INCHES
A	24	—
B	$22\frac{7}{8}$ - 23	36
C	21	34
D	9	$8\frac{1}{2}$
E	$24\frac{1}{2}$ - $24\frac{13}{16}$	36
F	34	45
G	$22\frac{3}{4}$	36
H	3	$1\frac{1}{2}$
I	$4\frac{5}{8}$ - $4\frac{3}{4}$	$4\frac{1}{2}$



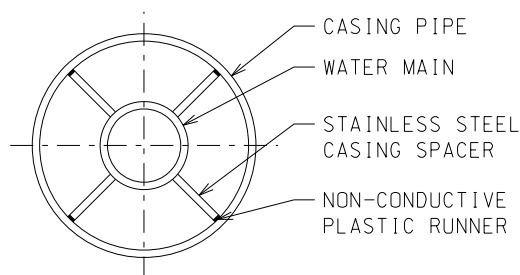
CORPORATION COCK		SHUT-OFF BOX
SIZE	WEIGHT	WEIGHT
IN.	LB.	LB.
1.0	3.00	7.25
1.5	10.00	7.25
2.0	16.50	7.25

NOTES:

1. WHEN CONNECTING NEW COPPER SERVICE TO EXISTING LEAD SERVICE PROVIDE: COMPRESSION COUPLING FIP/FL
2. THE FIRST THREE (3) FEET OF SERVICE CONNECTION TO WATER MAIN MUST BE ENCASED IN POLYETHYLENE WRAP



PROFILE  
N.T.S.



SECTION A-A

NOTES:

1. END SEAL - BRICK AND MORTAR OR SELF CURING RUBBER SEAL.
2. LENGTH OF CASING PIPES UNDER RAILROAD TRACKS SHALL BE EXTENDED TO RAILROAD R.O.W. LINES AND JACKING AND RECEIVING PITS ARE NOT TO BE LOCATED WITHIN TRACK R.O.W.

THIS DETAIL IS PROVIDED FOR  
REFERENCE PURPOSES ONLY

## GENERAL NOTES

1. LOCATION OF UTILITIES AND PROPERTY LINES ARE FROM THE BEST INFORMATION AVAILABLE. EXACT LOCATION AND COMPLETENESS ARE NOT GUARANTEED.
2. THE CONTRACTOR MUST VERIFY THE LOCATION OF UNDERGROUND UTILITIES WITH THE UTILITY OWNERS PRIOR TO DOING ANY WORK IN THE VICINITY. THE CONTRACTOR MUST COMPLY WITH REQUIREMENTS OF UTILITY OWNERS REGARDING NOTICE OF WORK AND PROTECTION OF UTILITIES. THE CONTRACTOR MUST COMPLY WITH THE CITY OF CHICAGO, DEPARTMENT OF TRANSPORTATION DAMAGE PREVENTION PROTOCOL CITY INFRASTRUCTURE DEPARTMENTS. ALL UTILITIES MUST BE NOTIFIED AT LEAST 48 HOURS BEFORE CONSTRUCTION. (CALL DIGGER 312-744-7000).
3. TEST PITS MUST BE EXCAVATED IN ADVANCE OF PIPELINE CONSTRUCTION IN ORDER TO CONFIRM DEPTH AND LOCATION OF EXISTING UTILITIES AND WHEN DIRECTED BY THE DEPARTMENT MANAGER. NO ADDITIONAL PAYMENT WILL BE MADE FOR TEST PIT EXCAVATION.
4. IF ANY PUBLIC OR PRIVATE UTILITIES CROSS THE WATER MAIN TRENCH AND MUST REMAIN IN PLACE, THE CONTRACTOR MUST PROTECT SAID UTILITY IN CONFORMANCE WITH THE SPECIFICATIONS OR AS DIRECTED BY THE COMMISSIONER.
5. PROVIDE EROSION CONTROL IN ACCORDANCE WITH THE SPECIFICATIONS.
6. FITTINGS AND THEIR LOCATIONS INDICATED ON THE DRAWINGS ARE TENTATIVE. THE CONTRACTOR MUST COMPLETE THE INSTALLATION WITH THE NECESSARY FITTINGS DICTATED BY FIELD CONDITIONS.
7. WORK INDICATED ON THE PLANS AND NOT REFERENCED TO A BID ITEM IS CONSIDERED INCIDENTAL TO THE WORK TO WHICH IT APPLIES AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
8. WATER MAIN AND FITTINGS LOCATIONS SHOWN ON THE DRAWINGS FOR THE NEW WATER MAINS AND APPURTENANCES MAY BE CHANGED BY THE COMMISSIONER DUE TO FIELD CONDITIONS. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR SUCH CHANGES, UNLESS PREVIOUSLY APPROVED BY THE COMMISSIONER.
9. THE CONTRACTOR MUST PROVIDE THRUST RESTRAINTS IN ACCORDANCE WITH THE SPECIFICATIONS. THE CONTRACTOR MUST FURNISH AND INSTALL MECHANICAL JOINT THRUST RESTRAINT GLANDS AT ALL FITTINGS AND MECHANICAL JOINTS.
10. THE CONTRACTOR MUST VERIFY THE OPERATION OF EVERY VALVE NECESSARY FOR THE REQUIRED WATER MAIN SHUT DOWN FOR EACH PIPE SECTION. FOR VALVES OR WATER MAINS UNDER 16-INCHES IN DIAMETER, THE WORK MUST BE DONE UNDER THE DIRECT SUPERVISION OF A DEPARTMENT REPRESENTATIVE PRIOR TO THE START OF THE JOB. A 24 HOUR ADVANCE NOTICE MUST BE GIVEN TO ALL CONSUMERS EFFECTED AND THE BUREAU OF OPERATIONS AND DISTRIBUTION. THE OPERATION OF ALL VALVES 16-INCHES IN DIAMETER AND LARGER MUST BE PERFORMED BY CITY FORCES PURSUANT TO A 72 HOUR ADVANCE NOTIFICATION TO THE DEPARTMENT. ANY VALVE FOUND NOT OPERABLE WILL BE REPAIRED OR REPLACED BY THE DEPARTMENT UNLESS DIRECTED OTHERWISE BY THE COMMISSIONER.
11. PRIOR TO NEW CONSTRUCTION CONTRACTOR MUST PERFORM UNI-DIRECTIONAL FLUSHING OF THE SOURCE WATER MAIN TO REMOVE PIPE SEDIMENT AND FLUSH UNTIL CLEAR. THIS IS FOR EXISTING PIPING ONLY, FLUSHING IS DONE WHEN EXISTING LINE VALVES ARE CHECKED FOR PROPER OPERATION PER NOTE 10.
12. IN INSTANCES WHERE CHLORINATION IS TO BE DONE AGAINST ANY EXISTING VALVE, AT THE TIME THAT THE EXISTING WATER MAIN IS BREACHED FOR FINAL CONNECTION, THE CONTRACTOR IS TO VERIFY THAT THE EXISTING VALVES ARE IN GOOD OPERATING CONDITION AND DO NOT LEAK. ANY LEAKING VALVE SHOULD BE BROUGHT TO THE COMMISSIONER'S ATTENTION AND BE REPAIRED OR REPLACED BY THE COMMISSIONER PRIOR TO MAKING PIPE CONNECTIONS TO THE EXISTING WATER MAIN. THE VALVE SHOULD REMAIN IN THE CLOSED POSITION UNTIL THE NEW WATER MAIN IS APPROVED FOR SERVICE.

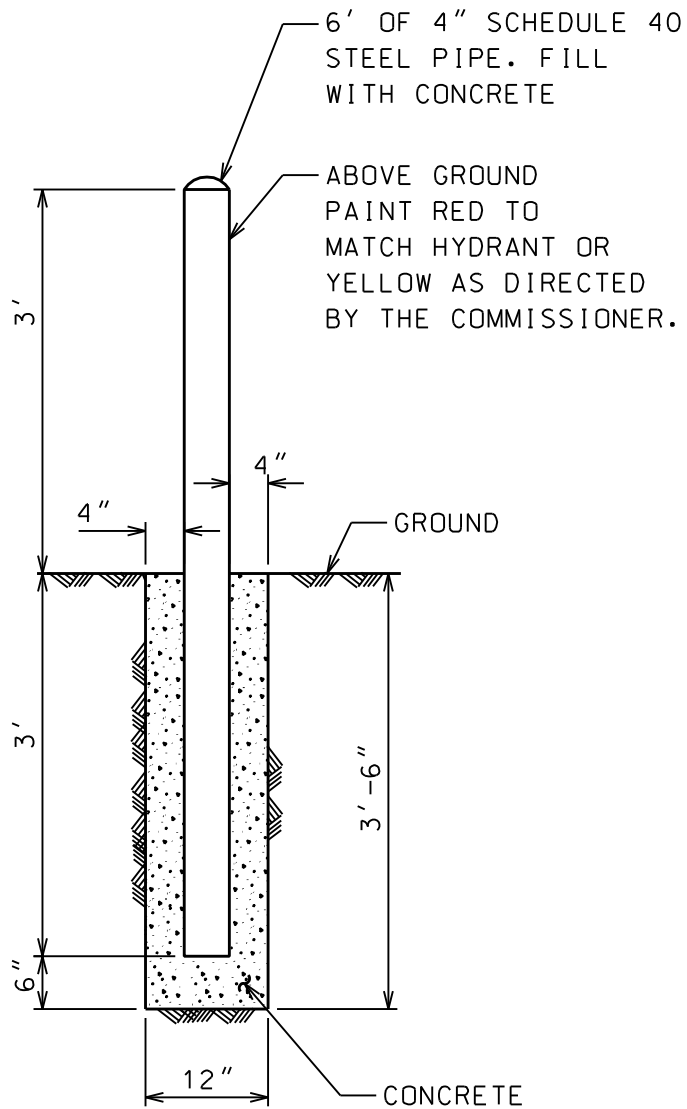
## GENERAL NOTES

## WATER MAIN CONTRACTS

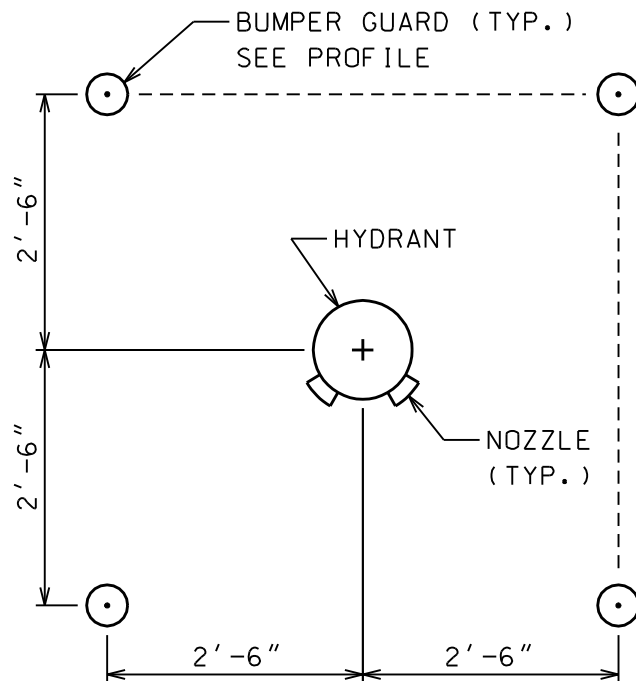


## GENERAL NOTES (CONTINUED)

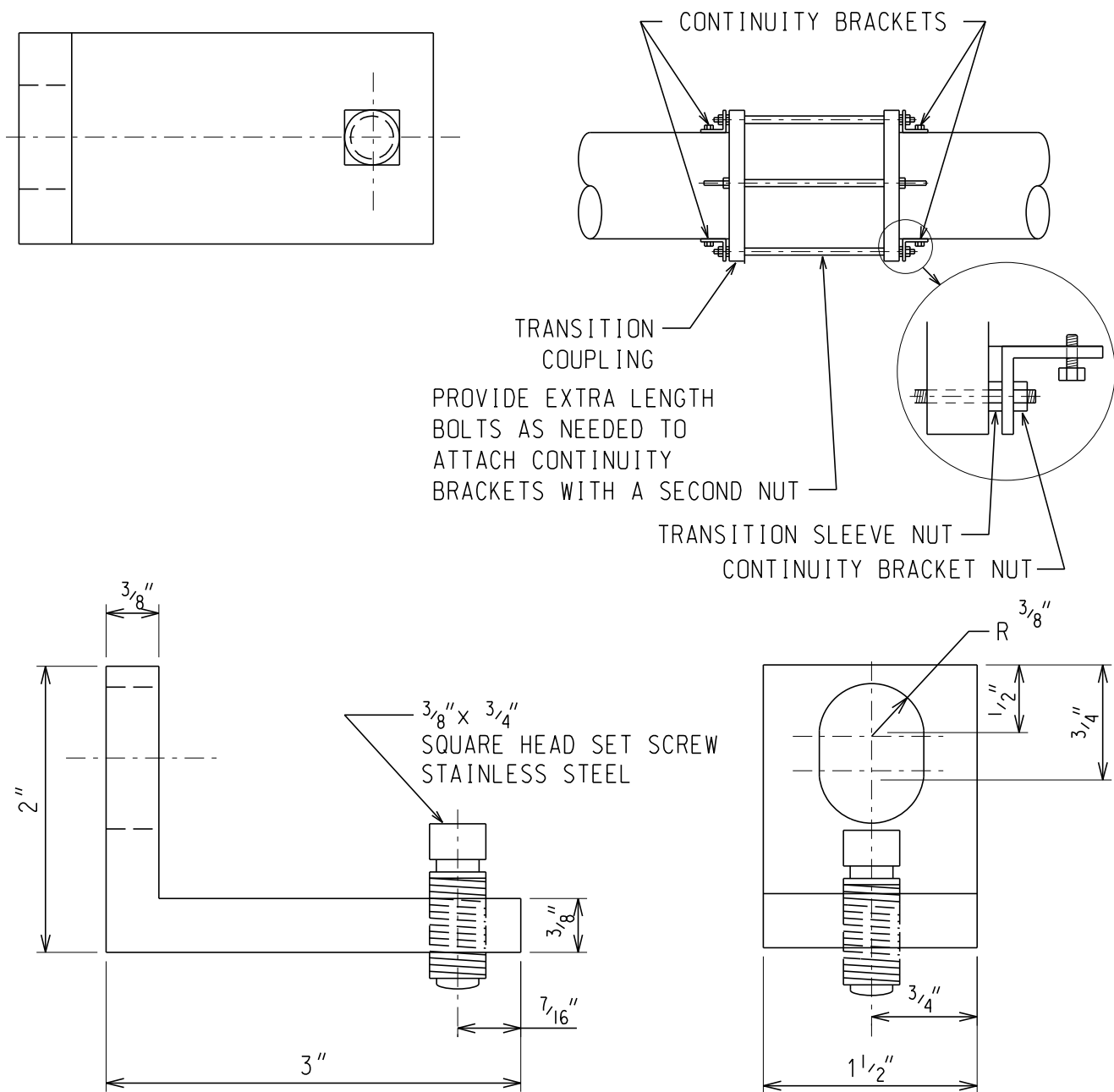
13. ALL OPENINGS IN EXISTING WATER MAINS MUST BE PLUGGED OR CAPPED WITH DUCTILE IRON FITTINGS UNTIL THE MAIN IS ABANDONED.
14. ALL VALVE BASINS MUST BE CONSTRUCTED OF PRE-CAST REINFORCED CONCRETE UNLESS DIRECTED OTHERWISE BY THE COMMISSIONER.
15. NOTES INDICATING S.N.L., E.W.L., ETC., MEAN SOUTH OF THE NORTH PROPERTY LINE, EAST OF THE WEST PROPERTY LINE, ETC. AND ARE MEASURED FROM THE NEAREST STREET.
16. IF A STANDARD MECHANICAL JOINT SLEEVE DOES NOT FIT TO MAKE CONNECTION OF THE NEW PIPE TO THE EXISTING PIPE, A TRANSITION SLEEVE MUST BE USED. NO GRINDING OF THE EXISTING PIPE IS PERMITTED.
17. BURIED STREET CAR TRACKS ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY. EXACT LOCATIONS AND DIMENSIONS ARE UNKNOWN UNLESS NOTED OTHERWISE. CAUTION SHOULD BE EXERCISED WHEN EXCAVATING IN THE STREETS CONTAINING BURIED STREET CAR TRACKS. BURIED TRACKS AND CABLES MAY BE USED FOR ELECTRICAL GROUNDING BY THE CHICAGO TRANSIT AUTHORITY OR MEMBERS OF THE CHICAGO AREA JOINT ELECTROLYSIS COMMITTEE STANDARDS. ELECTRICAL CONDUCTIVITY MUST BE MAINTAINED.
18. HOUSE DRAINS ARE NOT SHOWN ON THE DRAWINGS. THE CONTRACTOR MUST LOCATE ALL HOUSE DRAINS WITHIN THE AREA OF EXCAVATION AND MAKE ADJUSTMENTS AND/OR REPAIRS PER DETAILS D-50 AND D-51.
19. THE DEPARTMENT WILL PROVIDE THE NECESSARY I.E.P.A. WATER MAIN CONSTRUCTION PERMITS FOR THIS CONTRACT.
20. WORK WITHIN STATE ROUTES ARE NOTED ON THE DRAWINGS AND WILL REQUIRE I.D.O.T., REGION 1, UTILITY PERMITS. THE CONTRACTOR IS RESPONSIBLE FOR SECURING ALL PERMITS, INITIATED BY THE DEPARTMENT AND OBTAINING PERFORMANCE BONDS. ALL WORK MUST BE IN ACCORDANCE WITH I.D.O.T. PERMIT REQUIREMENTS. QUESTIONS SHOULD BE DIRECTED TO: I.D.O.T REGION ONE UTILITIES COORDINATOR AT (847) 705-4258.
21. ABANDON EXISTING WATER MAINS IN ACCORDANCE WITH THE SPECIFICATIONS.
22. SWAB PIPE AND FITTINGS THAT WILL NOT BE PRESSURE TESTED OR CHLORINATED WITH CHLORINE SOLUTION DURING INSTALLATION AND USE EXTRA PRECAUTION TO PREVENT SOIL AND DEBRIS FROM ENTERING THE PIPE. INCORPORATE UNTESTED PIPE INTO THE FLUSHING ROUTINE WHEN POSSIBLE. WHEN CONNECTING NEW PIPE TO THE EXISTING WATER SYSTEM, USE OPERATING PRESSURE TO VISUALLY INSPECT FOR LEAKS. WHEN FEASIBLE, PERFORM INSPECTION PRIOR TO BACKFILLING. COMPLY WITH ALL STANDARDS AND REQUIREMENTS OF THE BUREAU OF WATER QUALITY (312) 744-8190.
23. DE-CHLORINATION OF HEAVILY CHLORINATED WATER IS REQUIRED. THE CONTRACTOR OR SUBCONTRACTED CHLORINATOR SHALL DE-CHLORINATE AS LISTED FOR "INFORMATIONAL PURPOSES ONLY" IN APPENDIX C OF THE ANSI/AWWA STANDARD C651-05, JUNE 1, 2005. THE CHLORINE LEVEL MUST BE BROUGHT TO POTABLE WATER LEVELS.
24. ALL SEWER FACILITIES IMPACTED OR ADJUSTED DURING THE INSTALLATION OF THE PROPOSED WATER MAIN MUST BE MADE COMPLIANT WITH I.E.P.A. TITLE 35 REGULATIONS PRIOR TO CONNECTING TO THE EXISTING WATER SYSTEM AND PERFORMING HYDROSTATIC TESTING.



PROFILE



PLAN



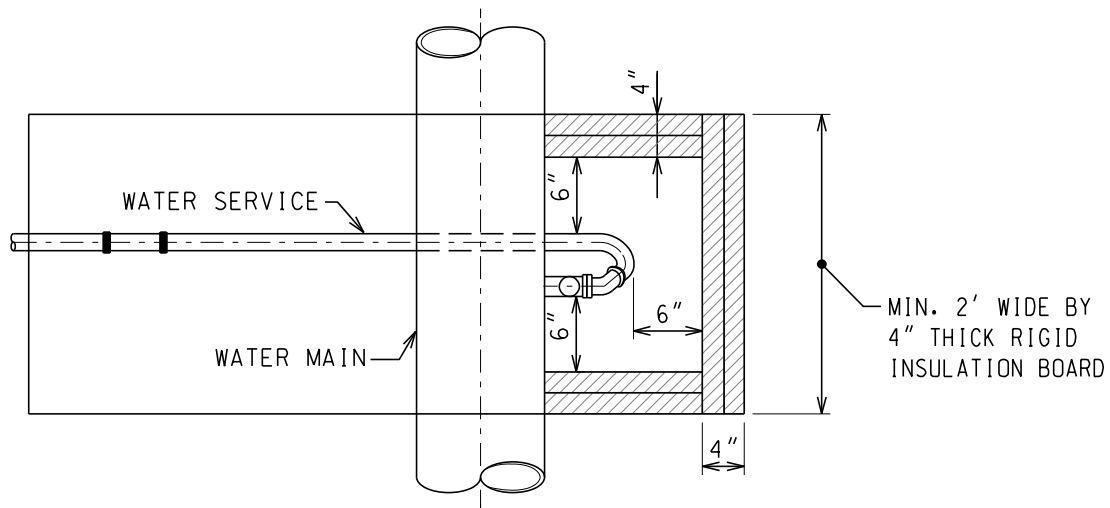
#### INSTALLATION NOTE:

AFTER THE TRANSITION SLEEVE IS TIGHTENED AND THE WATER MAIN PRESSURE TESTED, INSTALL MINIMUM OF FOUR (4) ELECTRICAL CONTINUITY BRACKETS. A MINIMUM OF TWO (2) ARE TO BE INSTALLED ON EACH END OF THE TRANSITION SLEEVE TO PROVIDE ELECTRICAL CONTINUITY FOR PIPE THAWING. EQUALLY SPACE BRACKETS AROUND PIPE (IE. 9 & 3 O'CLOCK POSITION).

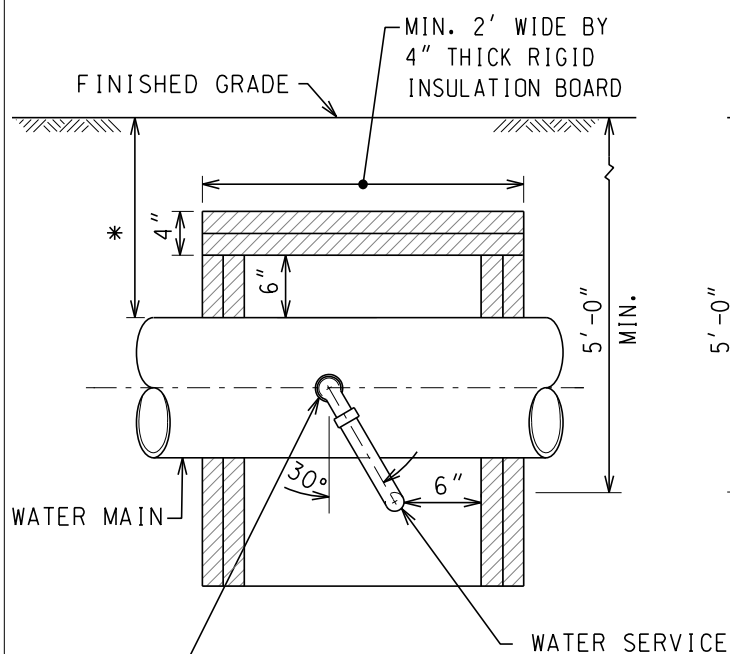
FOR 16-INCH DIAMETER CAST IRON PIPE INCREASE THE NUMBER OF ELECTRICAL CONTINUITY BRACKETS TO THREE (3) ON EACH END.

FOR 24-INCH DIAMETER AND LARGER CAST IRON PIPE CONTACT THE D.W.M., BUREAU OF ENGINEERING SERVICES.

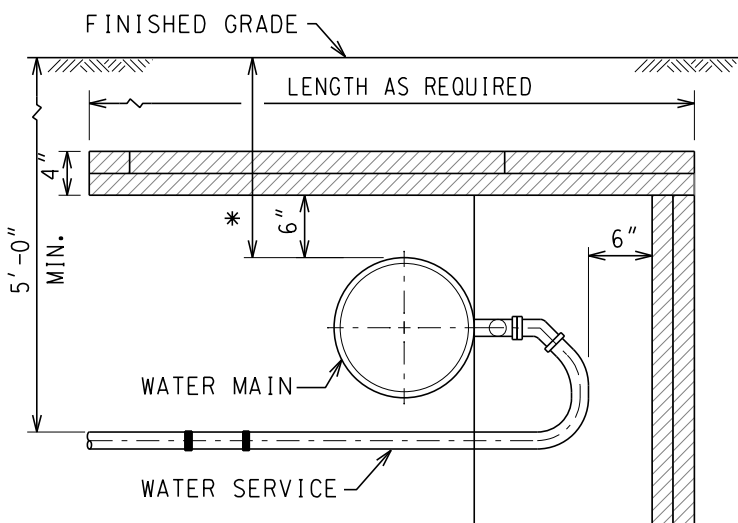
### ELECTRICAL CONTINUITY BRACKET FOR TRANSITION COUPLING



TOP VIEW



FRONT VIEW



SIDE VIEW

BACK FEED TAPS SHALL BE INSTALLED  
AT APPROXIMATELY 5 "O'CLOCK" POSITION.

\*DEPTH AS DIRECTED BY COMMISSIONER.

NOTES:

1. BACKFILL MATERIAL AROUND RIGID INSULATION BOARD SHALL BE SILICA BASED FINE SAND (FA6 OR FA7), FREE FROM ROOTS, ORGANIC MATTER, LEAVES OR OTHER INJURIOUS MATERIALS.
2. OVERLAP ALL RIGID INSULATION BOARD JOINTS.
3. RIGID INSULATION BOARD TO BE CLOSED CELL, EXTRUDED POLYSTYRENE FOAM MEETING ASTM 578, TYPE VI, 40 PSI COMPRESSING STRENGTH (ASTM D1621) 0.1% MAX. WATER ABSORPTION (ASTM C272).
4. INSTALL RIGID INSULATION BOARD AS INDICATED ON PLANS OR AS APPROVED BY COMMISSIONER.

# SEWER CROSSING DETAILS AND NOTES

## GENERAL NOTES

SEE DETAIL D-51 FOR ADDITIONAL INFORMATION AND REQUIREMENTS FOR SEWER CROSSINGS.

'SEWER-WATER MAIN CLEARANCE' IS THE VERTICAL DISTANCE MEASURED BETWEEN THE OUTER EDGES OF THE SEWER AND THE WATER MAIN.

THE "PROP. COVER AT SEWER" IS THE DEPTH OF COVER THE PROPOSED WATER MAIN NEEDS TO MEET SEWER SEPARATION REQUIREMENTS. THIS IS A CALCULATED DEPTH AND MAY NEED TO BE ADJUSTED DUE TO FIELD CONDITIONS. ANY ADJUSTMENTS MUST STILL PROVIDE THE SPECIFIED SEWER-WATER MAIN CLEARANCE.

BENDS ARE SHOWN IN THE DETAILS TO MAKE VERTICAL ADJUSTMENTS.  
USE  $\frac{1}{8}$ " BENDS UNLESS FIELD CONDITIONS NECESSITATE A DIFFERENT ANGLE.  
WHEN LESS THAN  $10\frac{1}{2}$ " INCHES OF VERTICAL ADJUSTMENT IS REQUIRED FOR A SEWER CROSSING, BREAK PIPE JOINTS RATHER THAN INSTALL BENDS.  
INSTALL WATER MAIN AT STANDARD DEPTH WHENEVER POSSIBLE.

WHEN VERTICAL BENDS ARE USED, RESTRAIN ALL PIPE JOINTS BETWEEN THE OUTERMOST BENDS.

INSTALL INSULATION WHEN 16" AND SMALLER WATER PIPE (SEE D-8) HAS LESS THAN 5 FEET OF COVER AND WHEN LARGER PIPE HAS LESS THAN  $3\frac{1}{2}$  FEET OF COVER.  
SEE DETAIL D-9 FOR INSTALLATION OF WATER MAIN TRENCH INSULATION.

## CASING NOTES

UNLESS OTHERWISE SPECIFIED ON THE DRAWINGS,  
INSTALL CASINGS OVER SEWERS BY OPEN CUT METHOD (SEE SECTION 31.23.10);  
INSTALL CASINGS UNDER SEWERS BY THE JACK & BORE METHOD (SEE SECTION 33.05.21).

CARRIER PIPE	PVC CASING SIZE See * Below	STEEL CASING SIZE See Section 33.05.21
1" TYPE K COPPER	2"	NA
1½" TYPE K COPPER	2½"	NA
2" TYPE K COPPER	3"	NA
4" DUCTILE IRON	12"	NA
6" DUCTILE IRON	14"	20"
8" DUCTILE IRON	14"	20"
12" DUCTILE IRON	24"	24"

\* USE PVC PIPE CONFORMING TO ASTM D1785 (PVC 1120 or PVC 1220).  
FOR COPPER PIPE, USE SCHEDULE 40 PVC PIPE;  
FOR DUCTILE IRON PIPE, USE SCHEDULE 80 PVC PIPE.

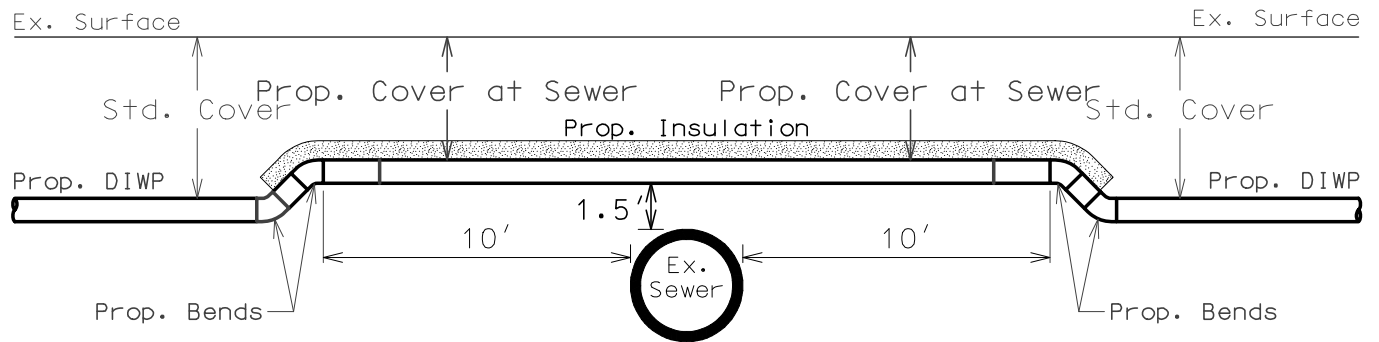
FOR COPPER PIPE, NO JOINTS ARE ALLOWED IN THE CASING.  
THE COPPER PIPE MAY REST DIRECTLY ON THE INSIDE BOTTOM OF THE CASING.

FOR DI PIPE, CENTER A FULL LENGTH OF PIPE IN THE CASING.  
RESTRAIN ALL DI JOINTS WITHIN THE CASING.  
NO CASING SPACERS ARE REQUIRED;  
REST THE TWO PIPE BELLS ASSOCIATED WITH  
THE FULL LENGTH OF PIPE CENTERED IN THE CASING  
DIRECTLY ON THE INSIDE BOTTOM OF THE CASING.  
INSTALL AN EXTRA LAYER OF POLYWRAP ON EACH BELL IN THE CASING.

AFTER PLACEMENT OF THE CARRIER PIPE THROUGH THE CASING,  
SEAL THE ENDS OF THE CASING WITH BRICK AND MORTAR, RUBBER END-SEAL,  
OR OTHER APPROPRIATE METHOD TO PROVIDE A LEAK-TIGHT SEAL.

## SEWER CROSSING DETAIL A.0

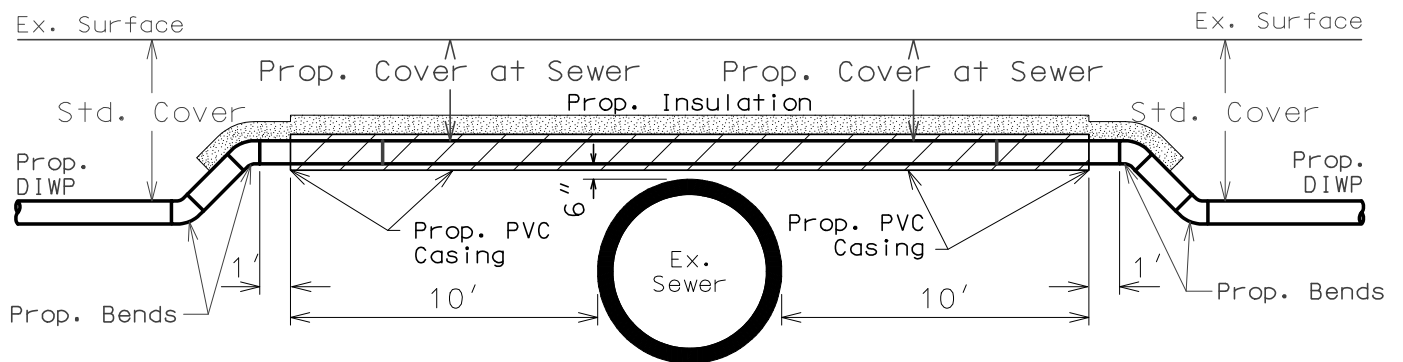
Water Main 1.5' Above Sewer



Profile View Along Water Main Centerline

## SEWER CROSSING DETAIL A.1

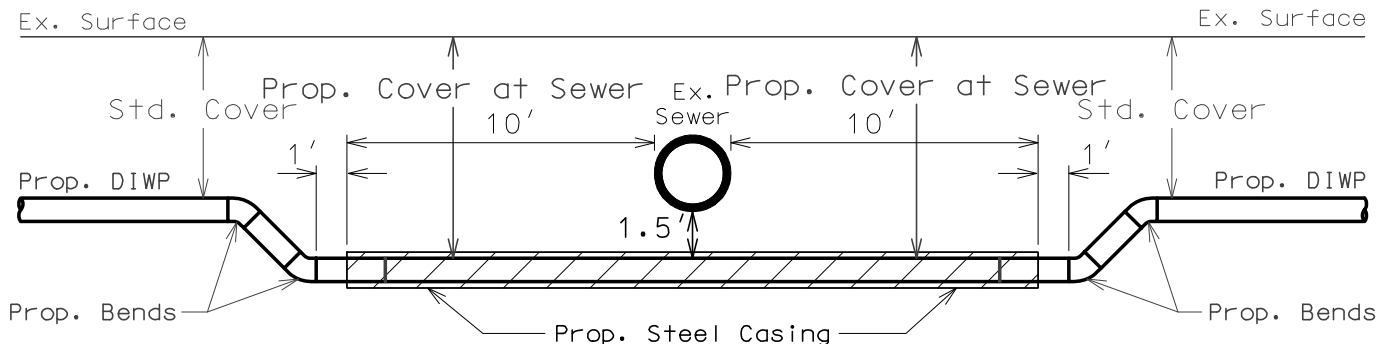
Water Main 6" Above Sewer - Case Water Main



Profile View Along Water Main Centerline

## SEWER CROSSING DETAIL B.1

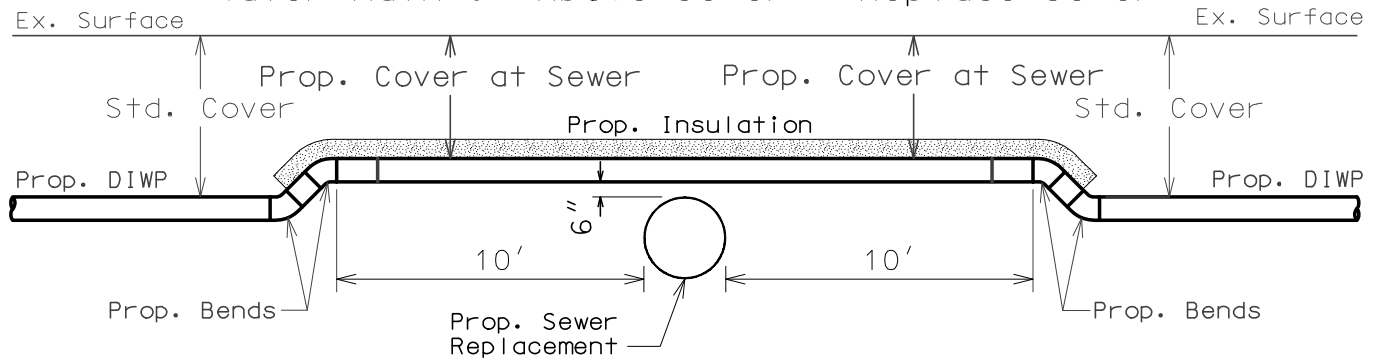
Water Main 1.5' Below Sewer - Case Water Main



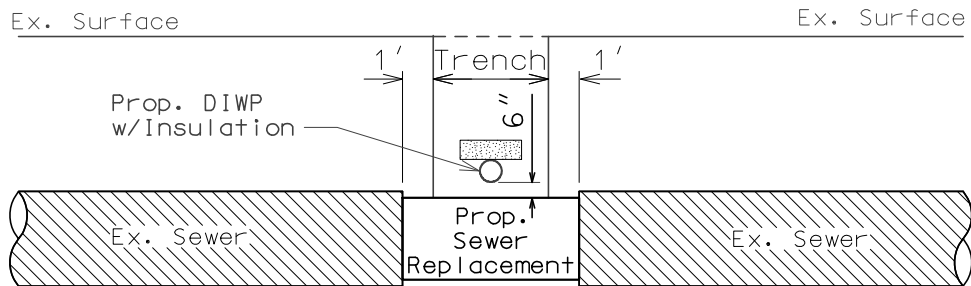
Profile View Along Water Main Centerline

## SEWER CROSSING DETAIL A.2

Water Main 6" Above Sewer – Replace Sewer



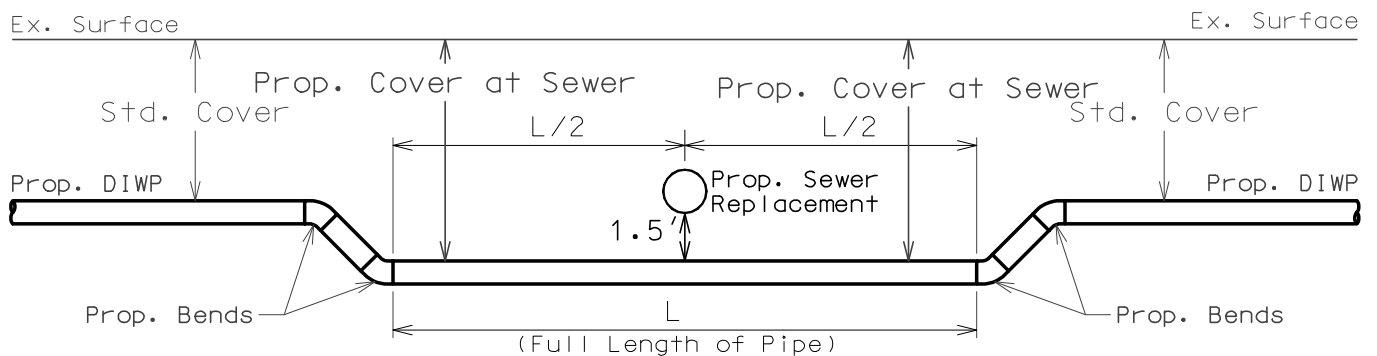
Profile View Along Water Main Centerline



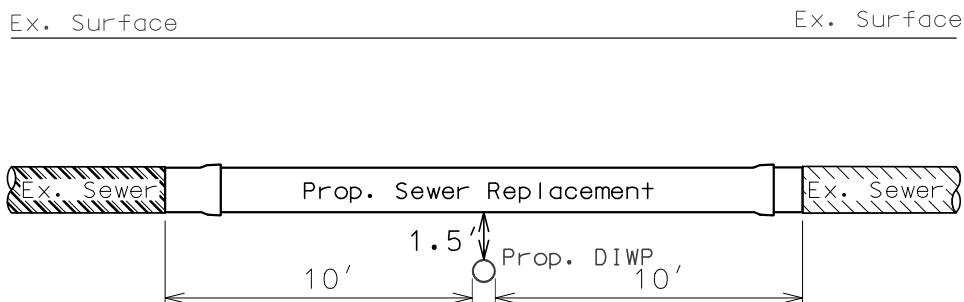
Profile View Along Sewer Centerline

## SEWER CROSSING DETAIL B.2

Water Main 1.5' Below Sewer – Replace Sewer



Profile View Along Water Main Centerline



Profile View Along Sewer Centerline

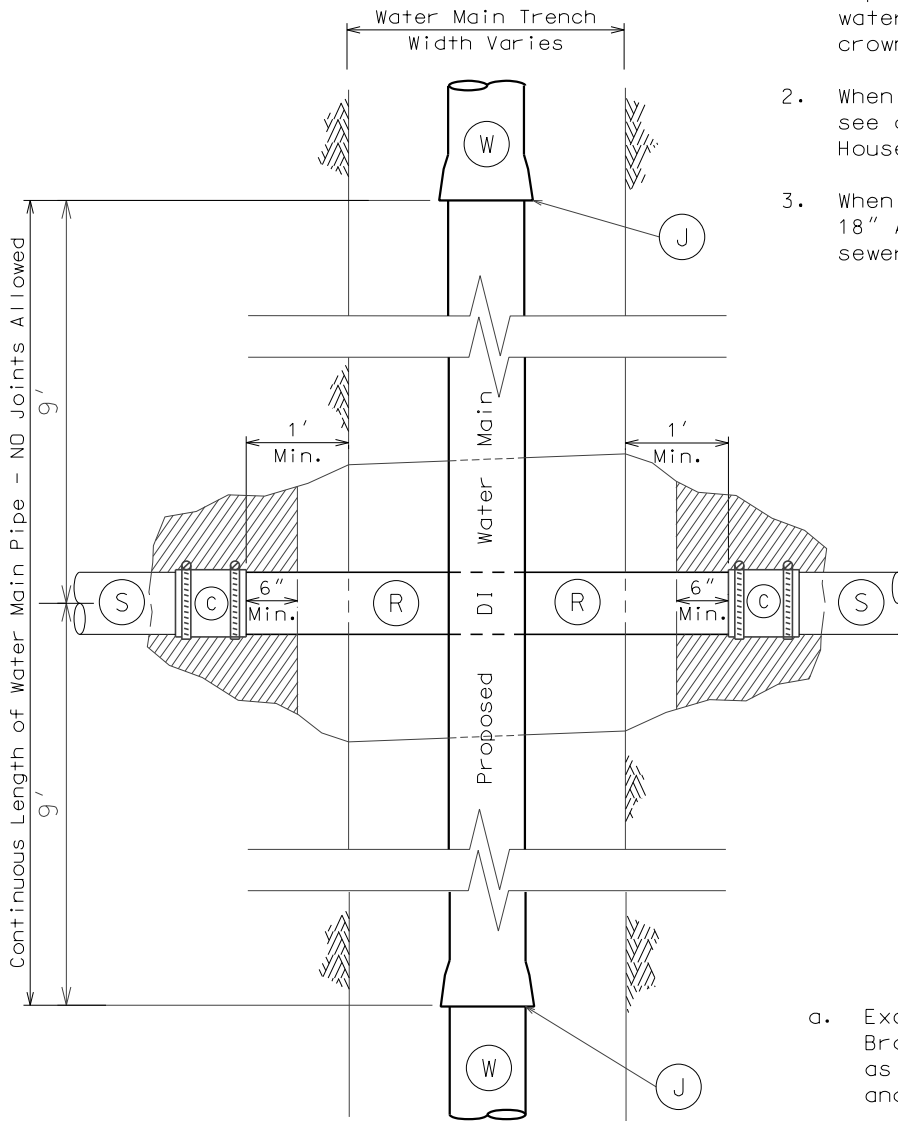
## SEWER CROSSING DETAIL

## GENERAL NOTES

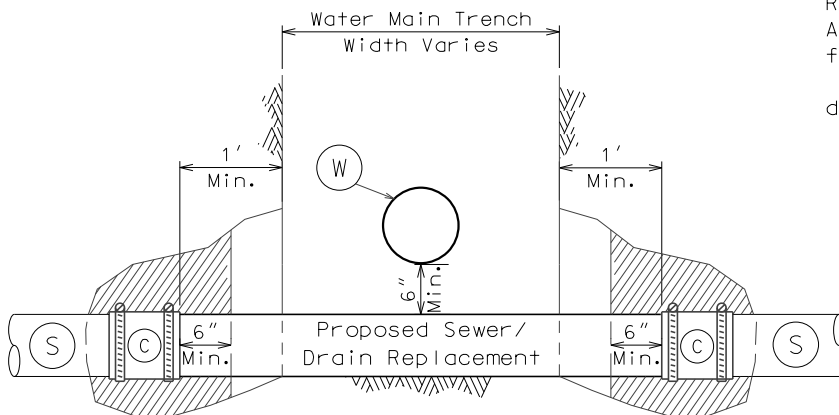
1. Replace the sewer/drain when the invert of the water main is LESS than 18" ABOVE the crown of the sewer/drain.
2. When a water main crosses UNDER a sewer/drain, see detail "Water Mains Crossing Under Sewers & House Drains."
3. When the invert of the water main is MORE than 18" ABOVE the crown of the sewer/drain, no sewer/drain replacement is required.

## KEY TO SYMBOLS

- (W) Proposed DI Water Main
- (J) Proposed DI Water Main Joint (Continuous Pipe Between Joints)
- (S) Existing Sewer or House Drain
- (R) Proposed Sewer/Drain Replacement
- (C) Proposed ASTM C1173 Flexible Transition Coupling for Sewer Piping
- Proposed Bentonite Seal
- Undisturbed Soil



PLAN  
No Scale



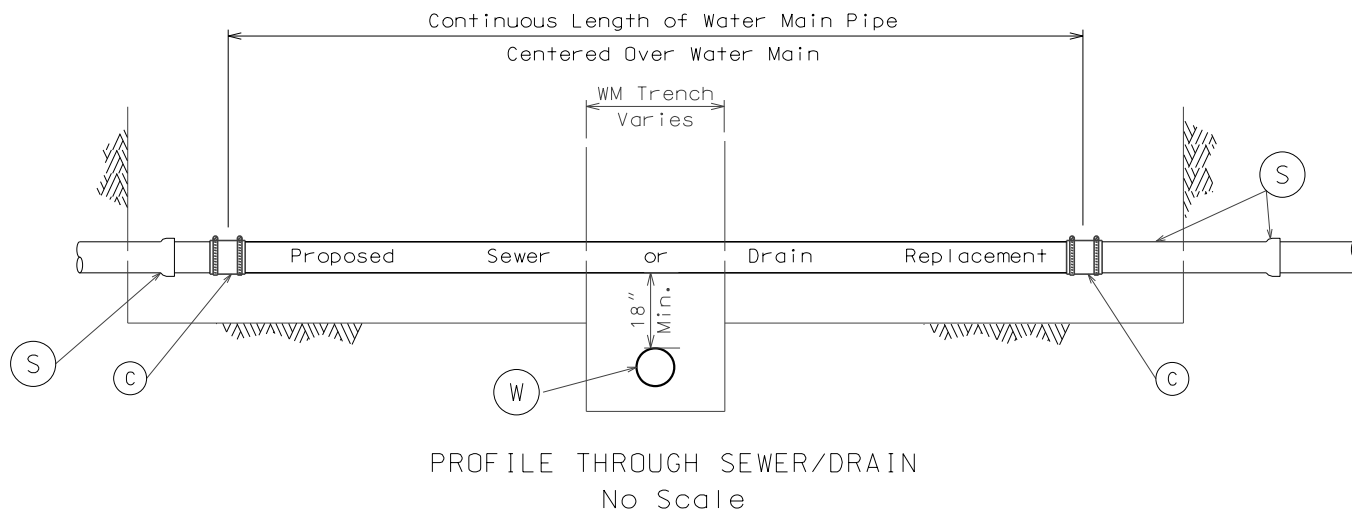
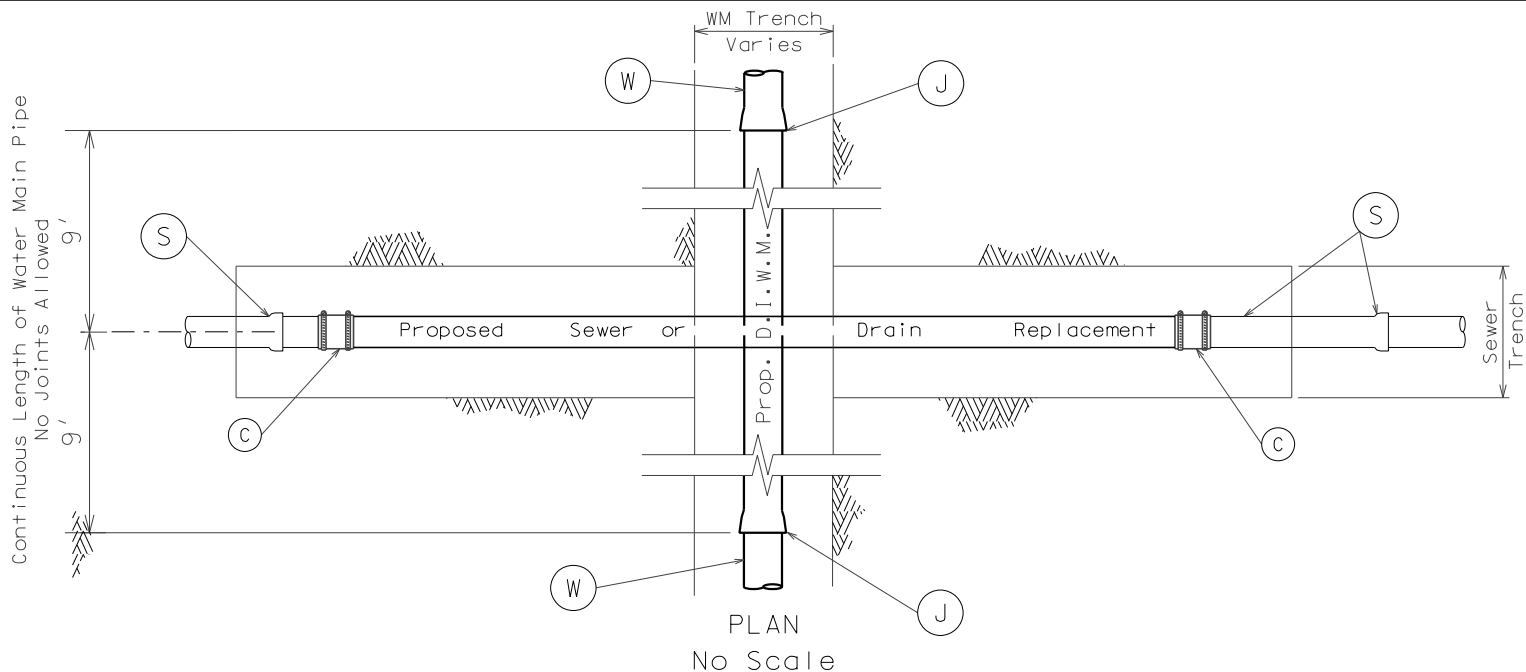
PROFILE THROUGH SEWER/DRAIN  
No Scale

## SEWER/DRAIN REPLACEMENT NOTES

- a. Excavate as needed to replace sewer/drain. Brace and shore trenches and excavations as needed to provide safe working conditions and comply with applicable requirements.
- b. Cut existing sewer/drain to remove section to be replaced; breaking or cracking is not allowed.
- c. Replace the sewer/drain with a continuous length of ductile iron pipe, the same size as the sewer/drain, cut to fit. Reconnect the sewer/drain with ASTM C1173 Flexible Transition Couplings for Sewer Pipe.
- d. Encase the couplings in medium bentonite chips ( $1/4"$  -  $3/8"$ ) mixed with enough clean water to form a stiff clay. Pack the excavations surrounding the couplings to seal off leaks.
- e. Center a length of water main pipe (18' typically) over the sewer/drain crossing.
- f. Except where bentonite seals are shown, backfill using typical standards.
- g. Comply with IL EPA requirements (modified and approved by IL EPA November 13, 2007).

## WATER MAINS CROSSING OVER SEWERS & HOUSE DRAINS






#### GENERAL NOTES

1. Replace the sewer/drain in all cases when a water main crosses UNDER the sewer/drain.
2. When a water main crosses OVER a sewer/drain, see detail "Water Mains Crossing Over Sewers & House Drains."

#### KEY TO SYMBOLS

- (W) Proposed DI Water Main
- (J) Proposed DI Water Main Joint (Continuous Pipe Between Joints)
- (S) Existing Sewer or House Drain
- (R) Proposed Sewer/Drain Replacement
- (C)  Proposed ASTM C1173 Flexible Transition Coupling for Sewer Piping

 Undisturbed Soil

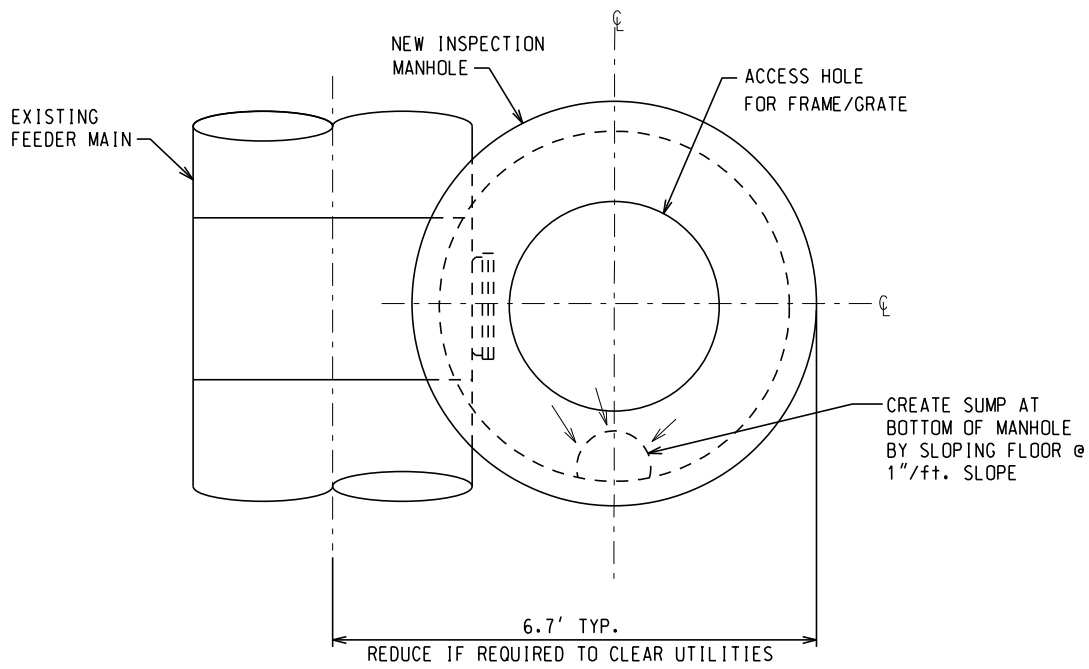
#### SEWER/DRAIN REPLACEMENT NOTES

- a. Minimum clearance between the crown of the water main and the invert of the sewer/drain is 18".
- b. Excavate as needed to replace sewer/drain. Brace and shore trenches and excavations as needed to provide safe working conditions and comply with applicable requirements.
- c. Cut existing sewer/drain to remove section to be replaced; breaking or cracking is not allowed.
- d. Replace the sewer/drain with a continuous length of ductile iron pipe, the same size as the sewer/drain, cut to fit. Reconnect the sewer/drain with ASTM C1173 Flexible Transition Couplings for Sewer Pipe.
- e. Center a length of water main pipe (18' typically) under the sewer/drain crossing.
- f. Backfill using typical standards.
- g. Comply with IL EPA requirements.

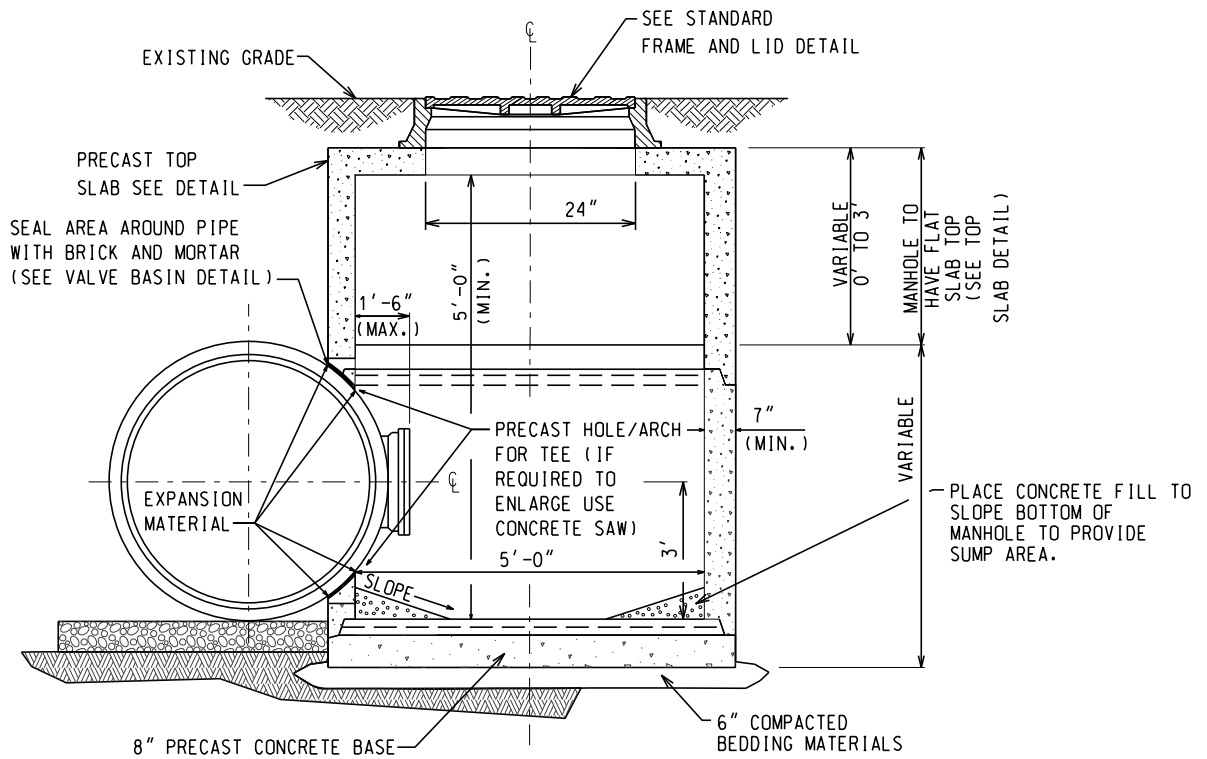
### WATER MAINS CROSSING UNDER SEWERS & HOUSE DRAINS

REV:07.12

D-51  
SHT. 2 OF 2



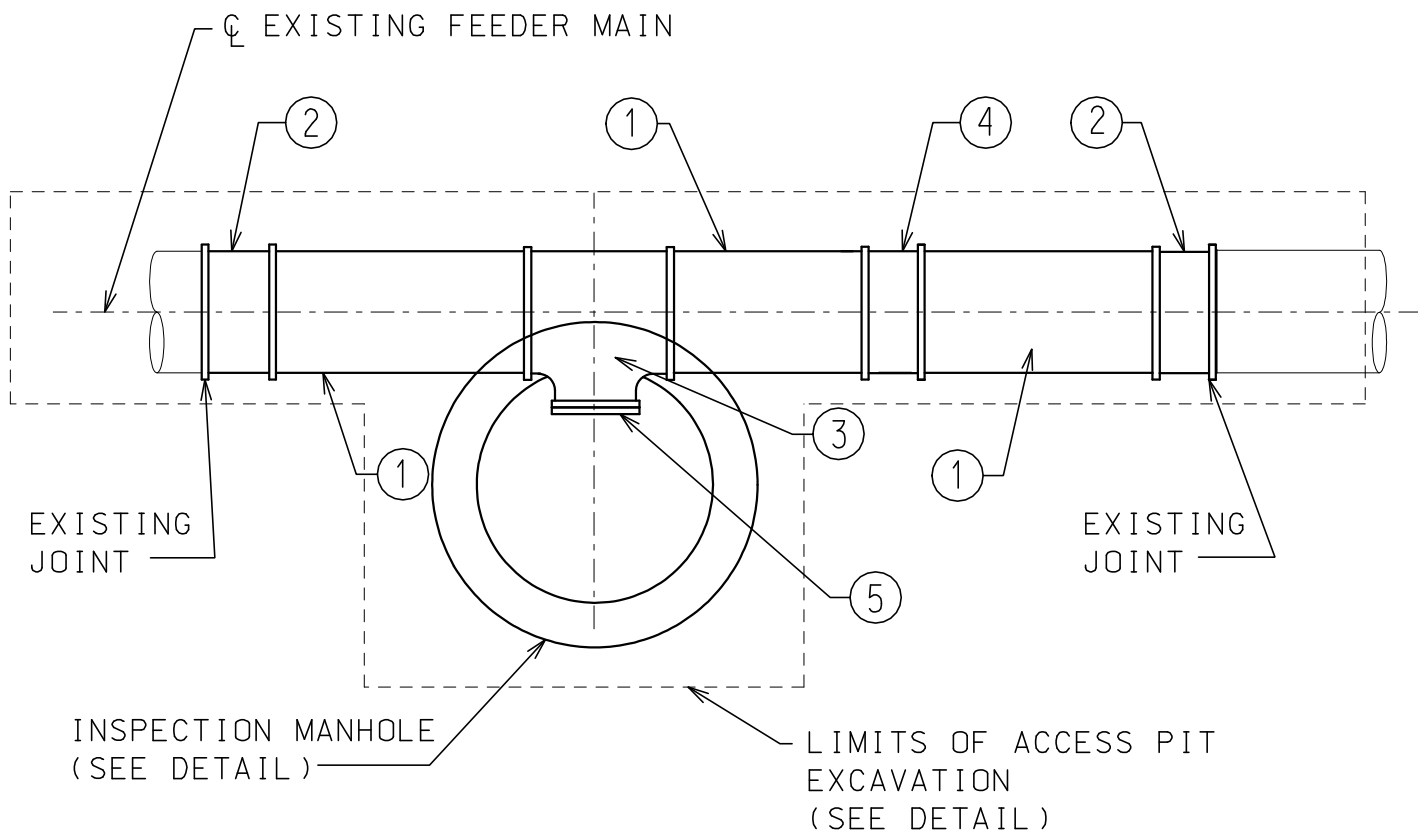
**PLAN**



**SECTIONAL VIEW**

**NOTE:**

ALL OPENINGS IN BASIN SHALL BE SEALED WITH "NO SHRINK" GROUT.

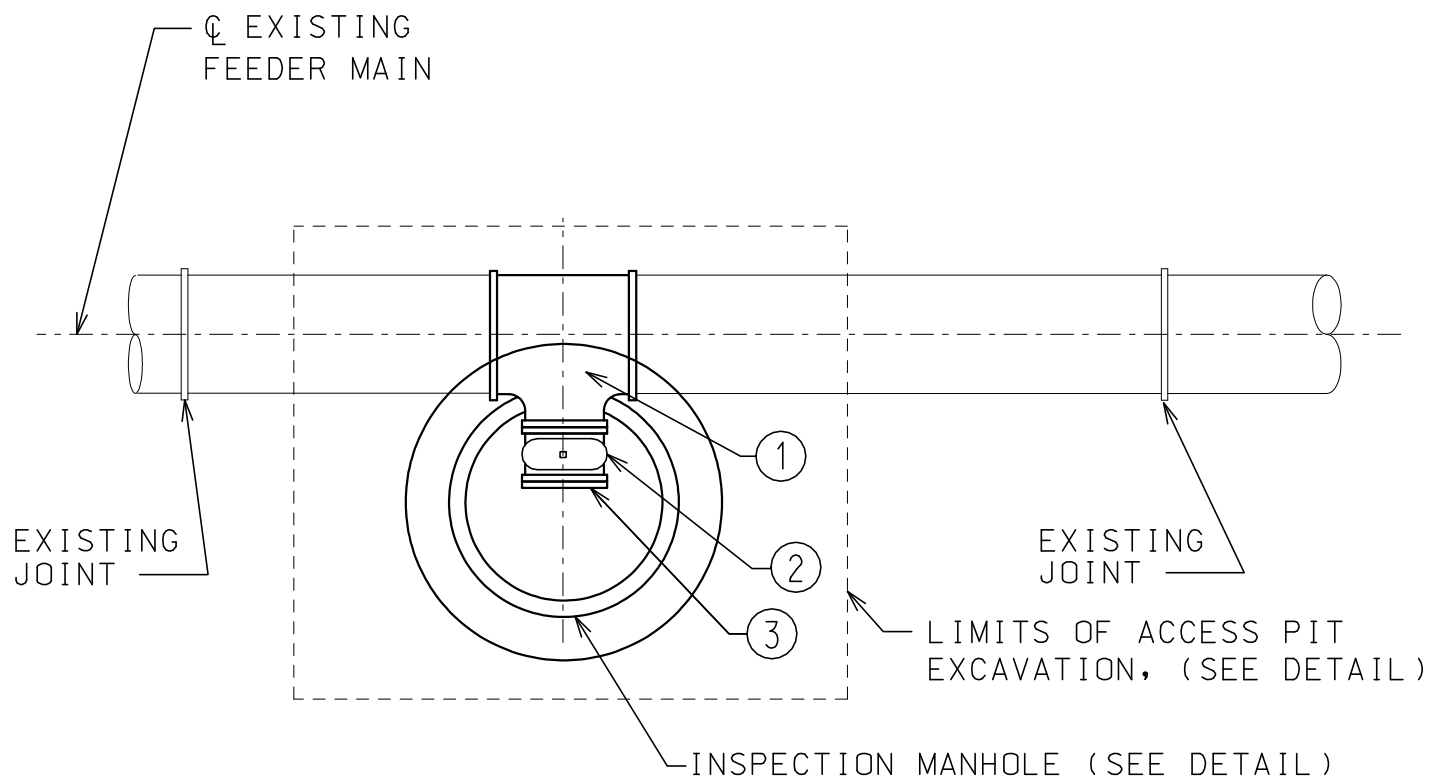


#### NOTES

1. DUCTILE IRON WATER MAIN
2. ADAPTER P.C.C.P. TO DUCTILE IRON
3. 24" BRANCH DUCTILE IRON 3BMJ TEE
4. MJ SLEEVE
5. 24" MJ PLUG AND GASKET
6. MEGALUGS AT ALL MJ JOINTS

THIS DETAIL IS PROVIDED FOR  
REFERENCE PURPOSES ONLY

## INSPECTION MANHOLE INSTALLATION REPLACE PIPE



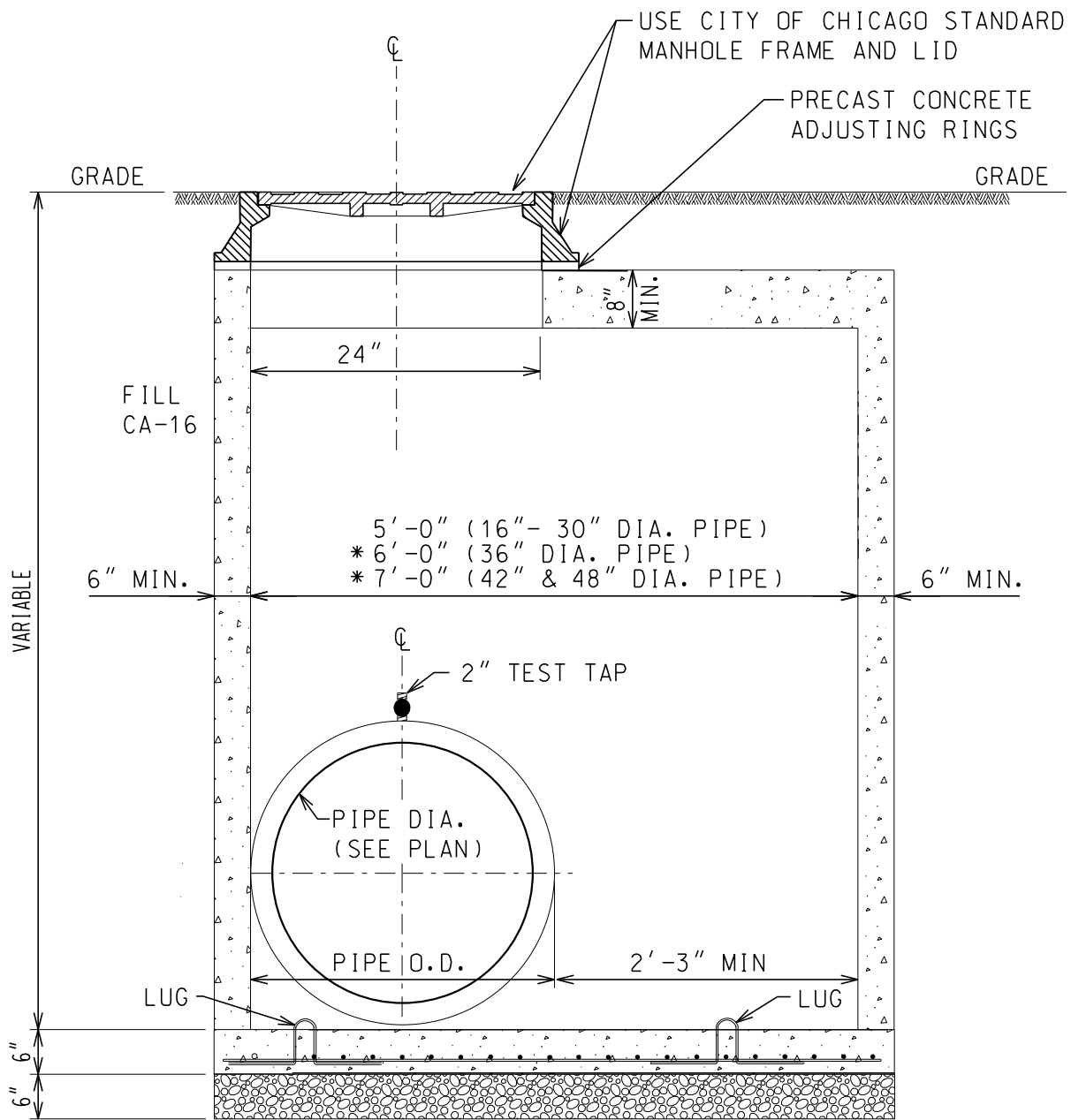
#### NOTES

1. TAPPING SADDLE WITH 24" FLANGE  
ENCASE BURIED METAL PARTS IN CONCRETE.  
CONCRETE MUST NOT CONTAIN FLY ASH.
2. TAPPING VALVE
3. 24" BLIND FLANGE AND GASKET.

TYPICAL FOR INSTALLATION ADJACENT TO BUTTERFLY VALVES OVER 24" DIAMETER, UNLESS OTHERWISE NOTED ON THE DRAWINGS OR DIRECTED BY THE COMMISSIONER.

THIS DETAIL IS PROVIDED FOR  
REFERENCE PURPOSES ONLY

### INSPECTION MANHOLE INSTALLATION ALTERNATIVE A - PIPE TAP



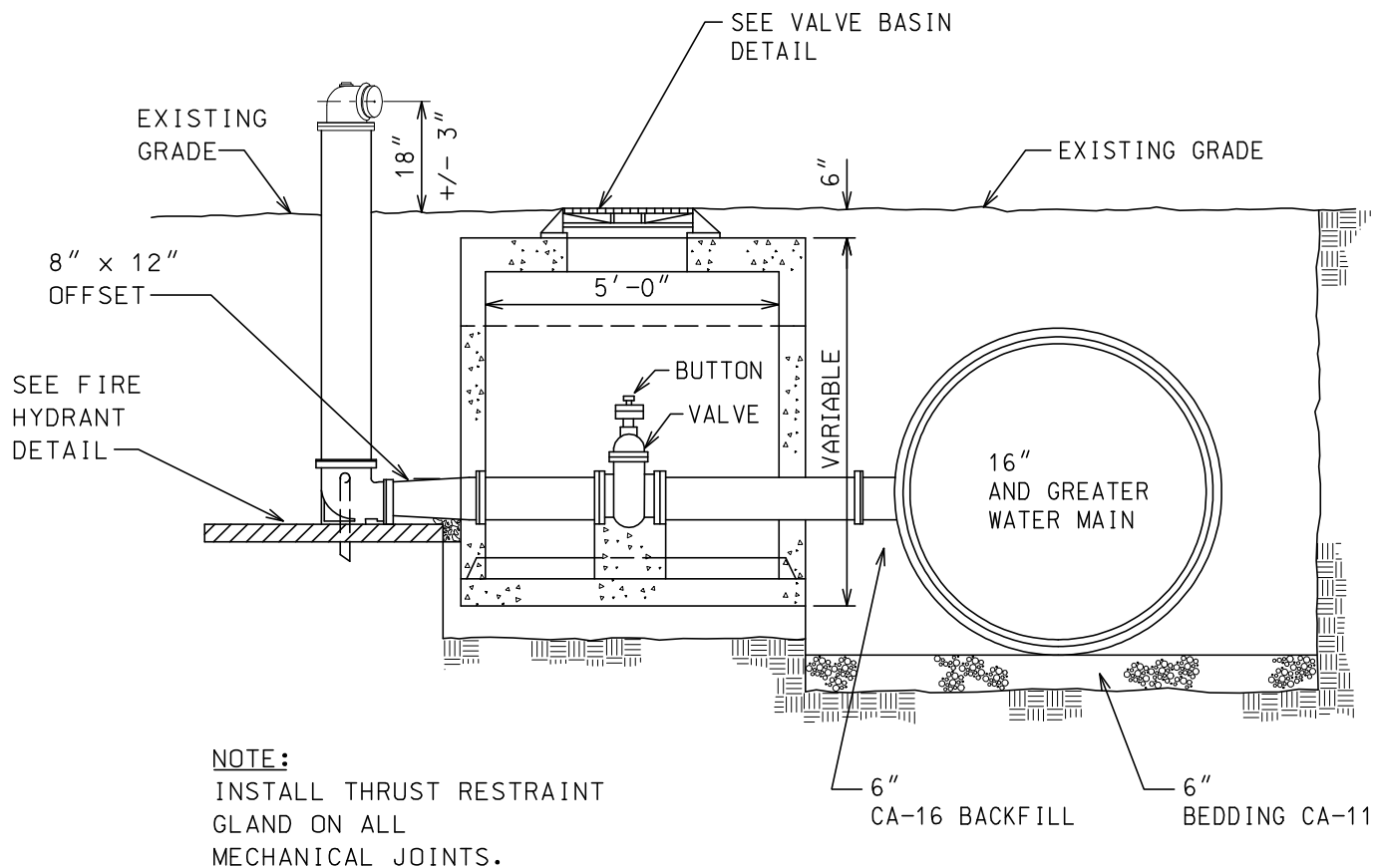
SECTIONAL VIEW

SCALE: N.T.S.

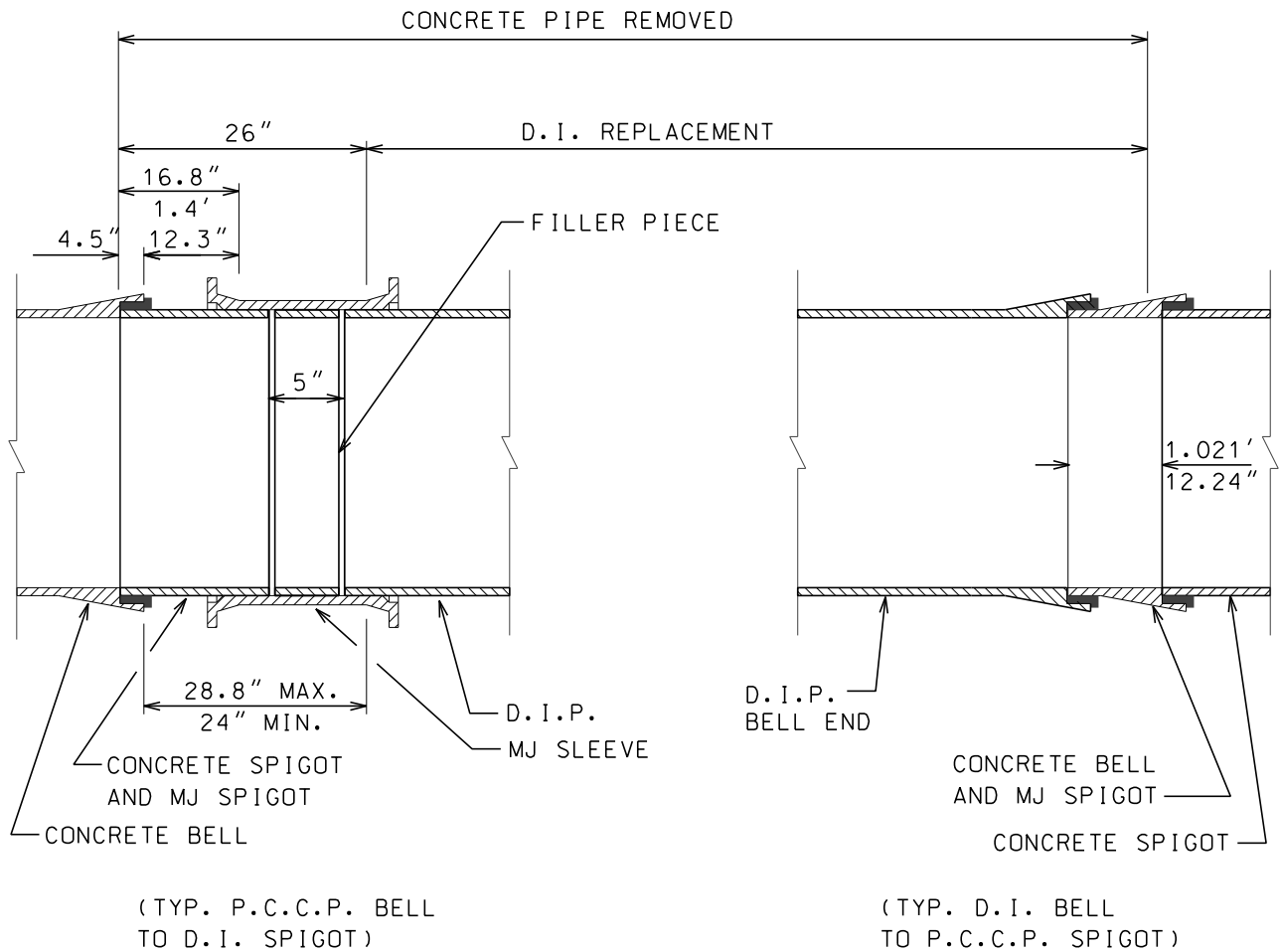
**NOTE:**

1. PROVIDE 6" THICK COMPACTED CA-16 BEDDING
2. USE PRECAST CONCRETE BASE OR PROVIDE 6" THICK IDOT CLASS 'SI' CONCRETE BASE POURED IN PLACE WITH #4 EPOXY COATED REBARS 4" C/C BOTH WAYS.
3. PROVIDE FOUR #4 REBAR LUGS FOR HANDLING. CUT THE LUGS AFTER PLACING THE SLAB IN POSITION.
4. PRECAST CONCRETE TOP SLAB TO BE USED WHERE HEAD ROOM IS REQUIRED.
5. THE LOCATION OF MANHOLE TO BE DETERMINED ON INDIVIDUAL BASIS.
- \* 6. OPENING ON TOP SLAB TO BE CENTERED OVER TEST TAP.

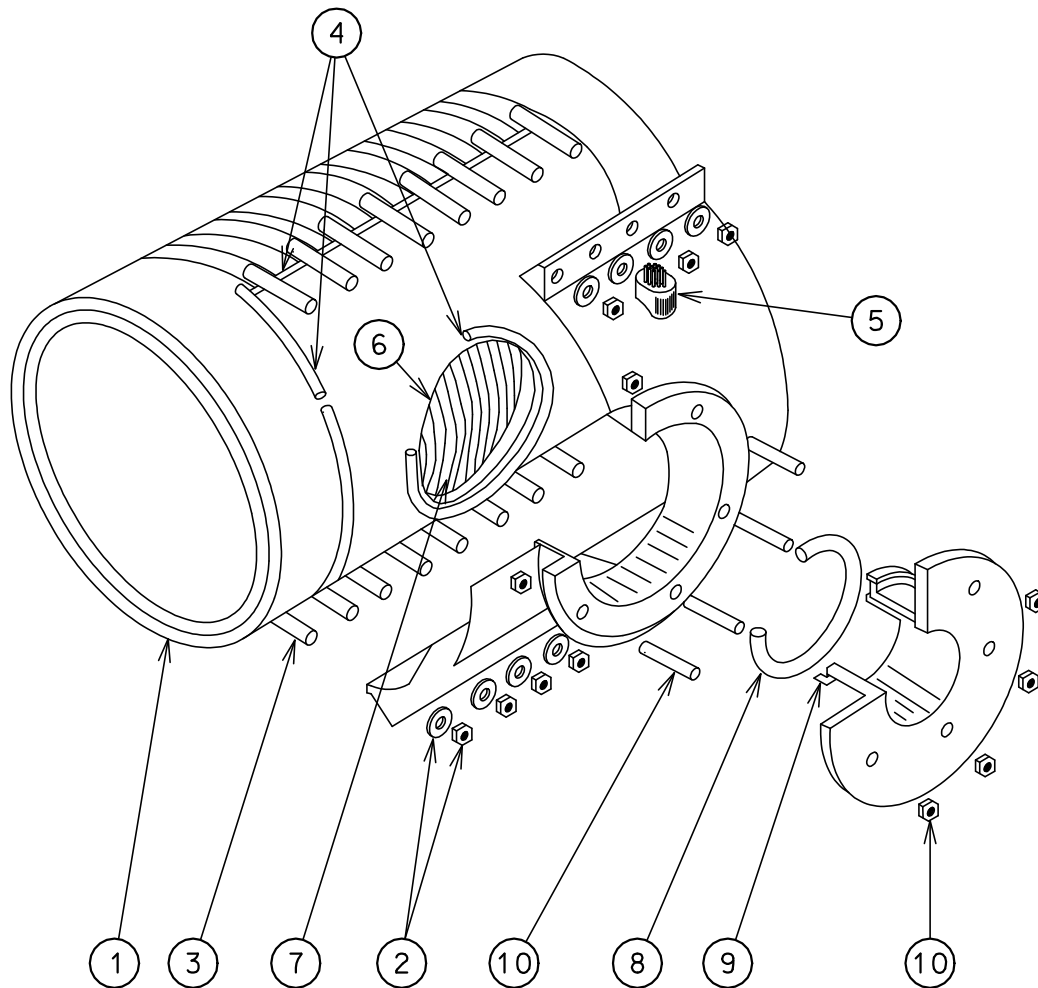
PITOMETER TAP BASIN  
PRECAST CONCRETE



FIRE HYDRANT SETTING  
16" & LARGER WATER MAIN



THIS DETAIL IS PROVIDED FOR  
REFERENCE PURPOSES ONLY

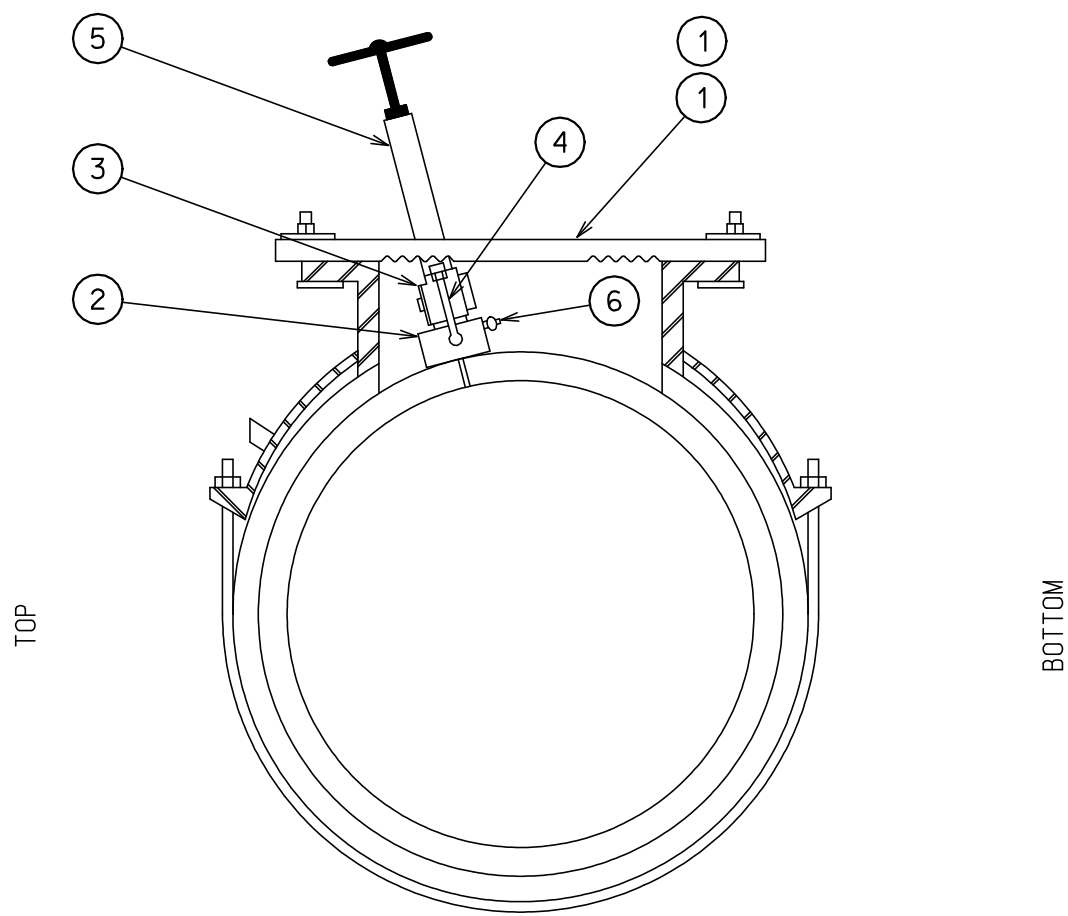


SKETCH A

- ① CONCRETE CYLINDER PIPE
- ② NUTS AND BOLTS
- ③ U-BOLT STRAPS
- ④ RUBBER GASKETS
- ⑤ GROUT OPENING
- ⑥ OPENING
- ⑦ PRESTRESSING WIRES
- ⑧ RUBBER GLAND GASKET
- ⑨ GLAND
- ⑩ STUDS AND NUTS

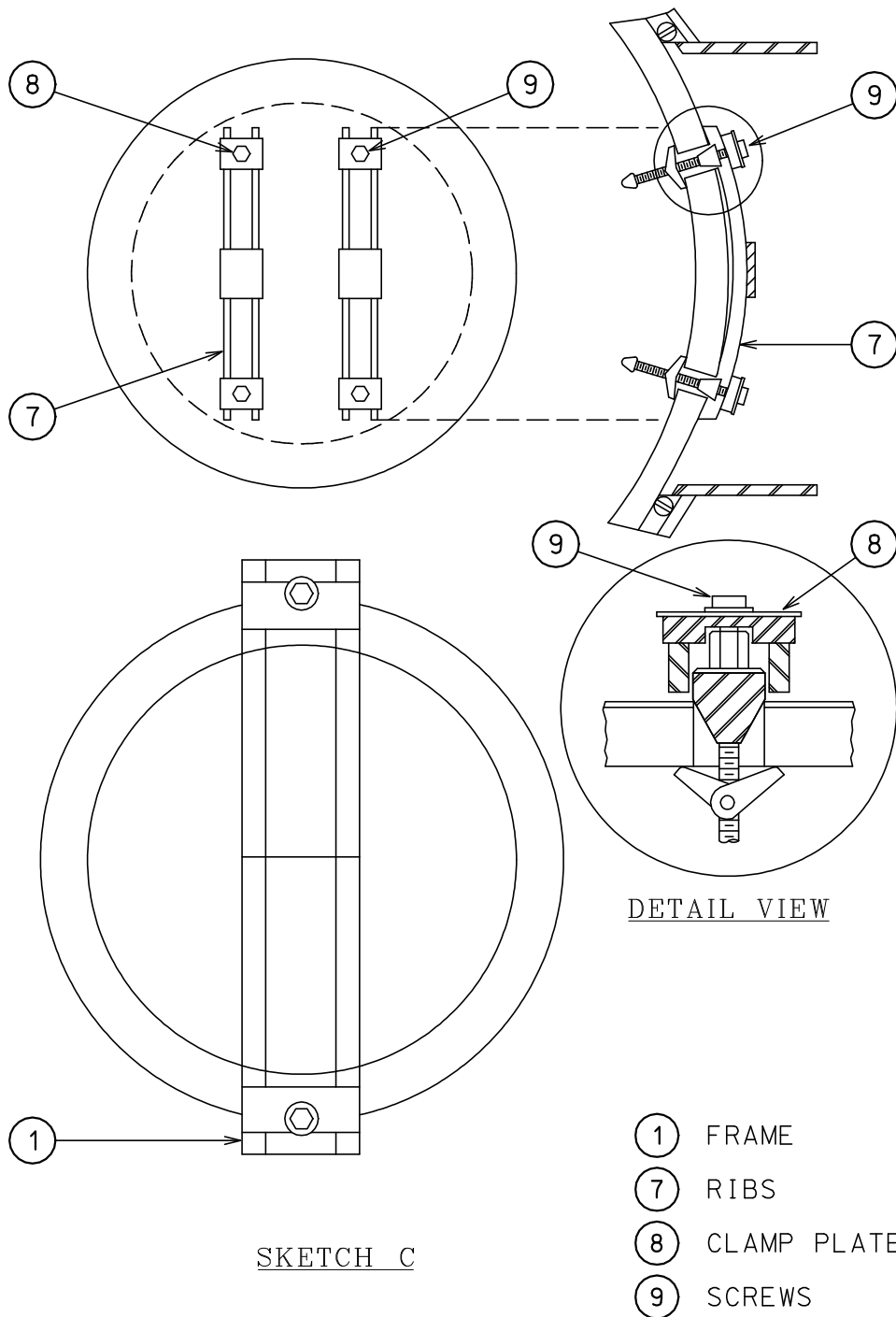
NOTE: INSTALL BLIND FLANGE VALVE AS REQUIRED

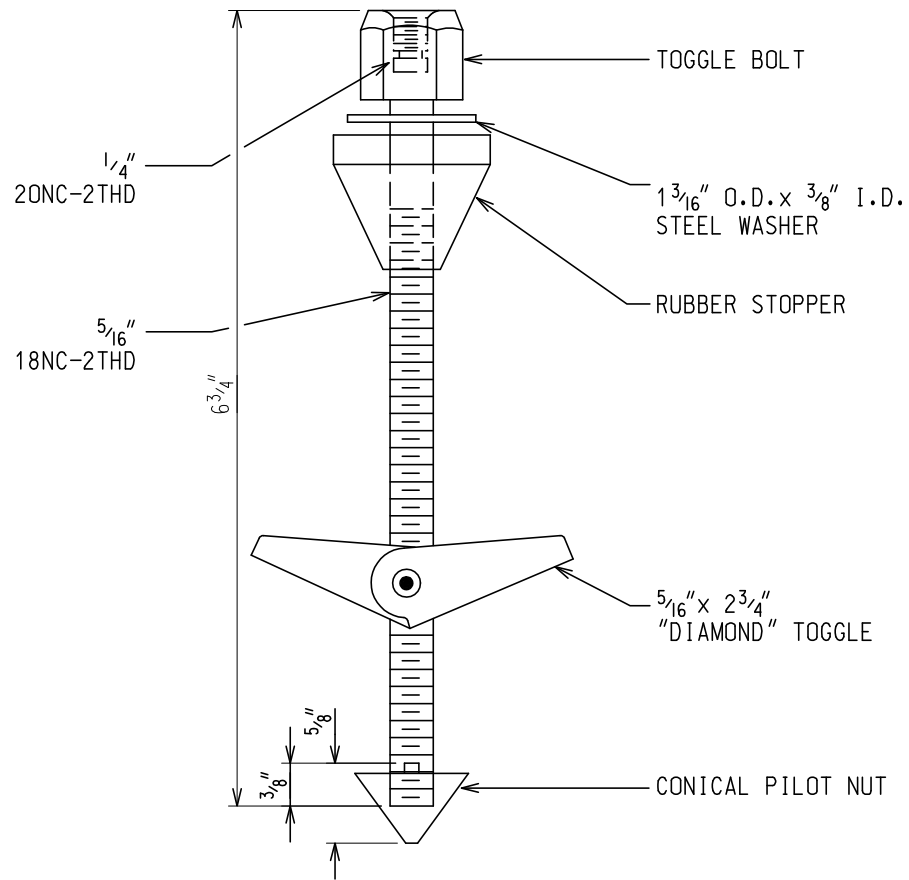




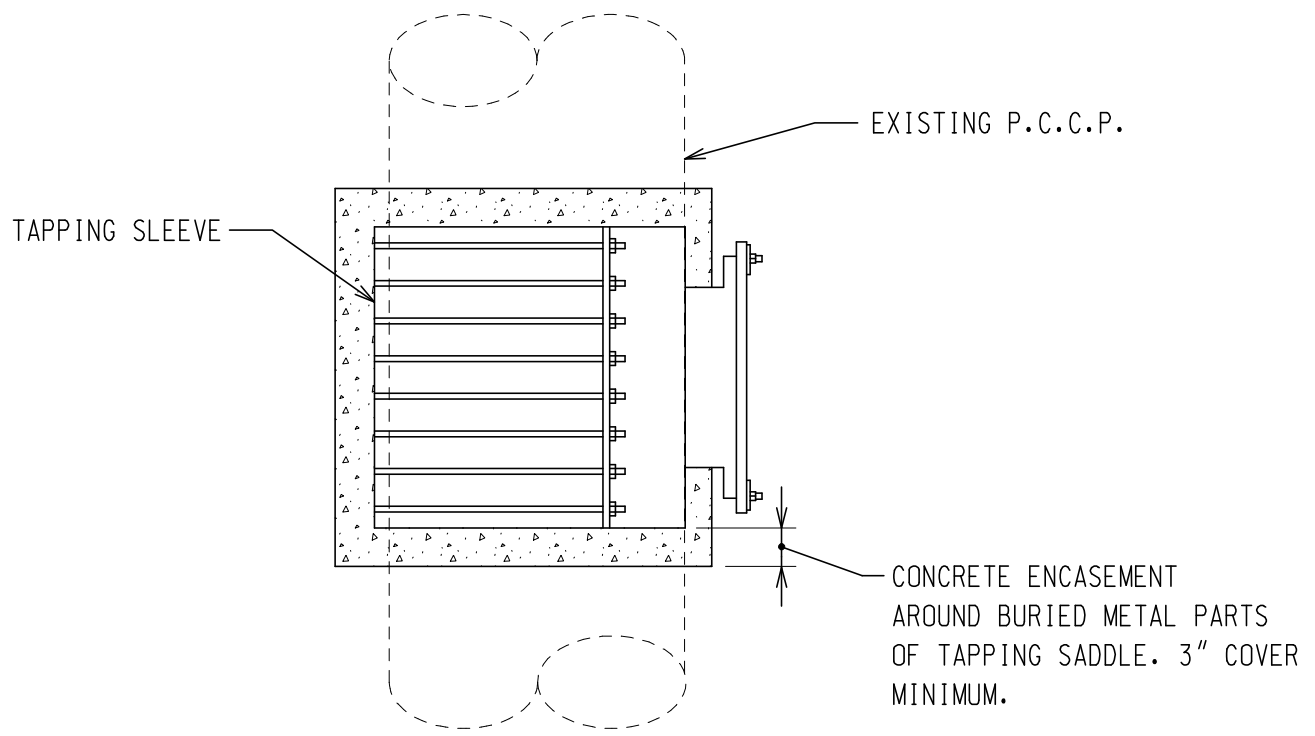
SKETCH B

- ① FRAME
- ② GLAND
- ③ CORPORATION STOP
- ④ JACKING BOLT
- ⑤ TOGGLE INSERTING MACHINE
- ⑥ SEAL CHECK COCK

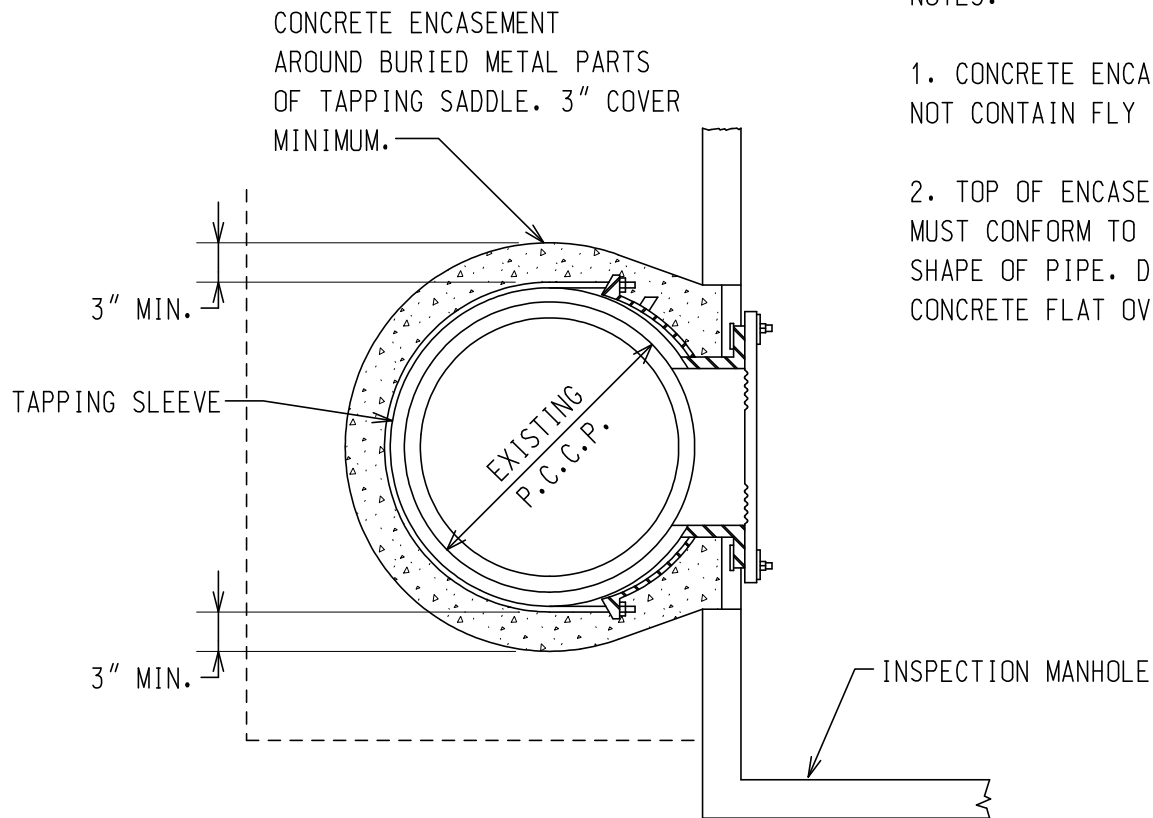




SKETCH D



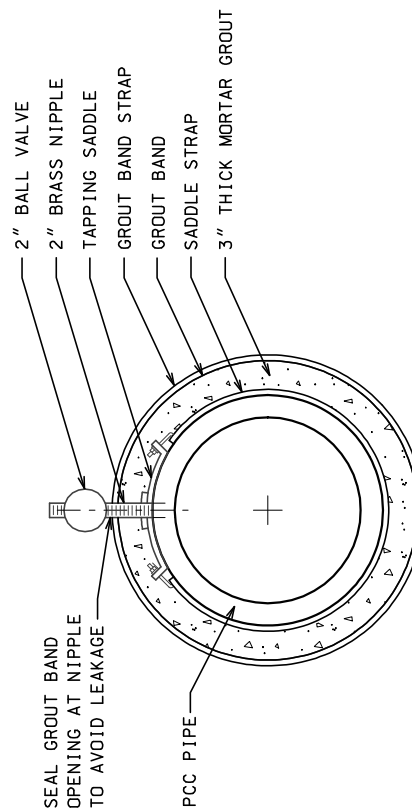
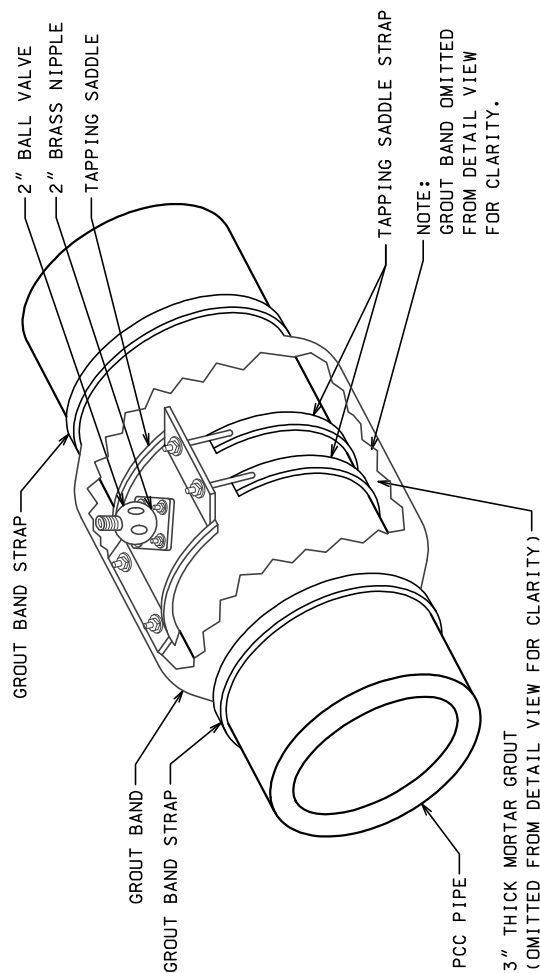
PLAN



SECTION

NOTES:

1. CONCRETE ENCASEMENT MUST NOT CONTAIN FLY ASH.
2. TOP OF ENCASEMENT CONCRETE MUST CONFORM TO THE ROUND SHAPE OF PIPE. DO NOT FINISH CONCRETE FLAT OVER TOP OF PIPE.

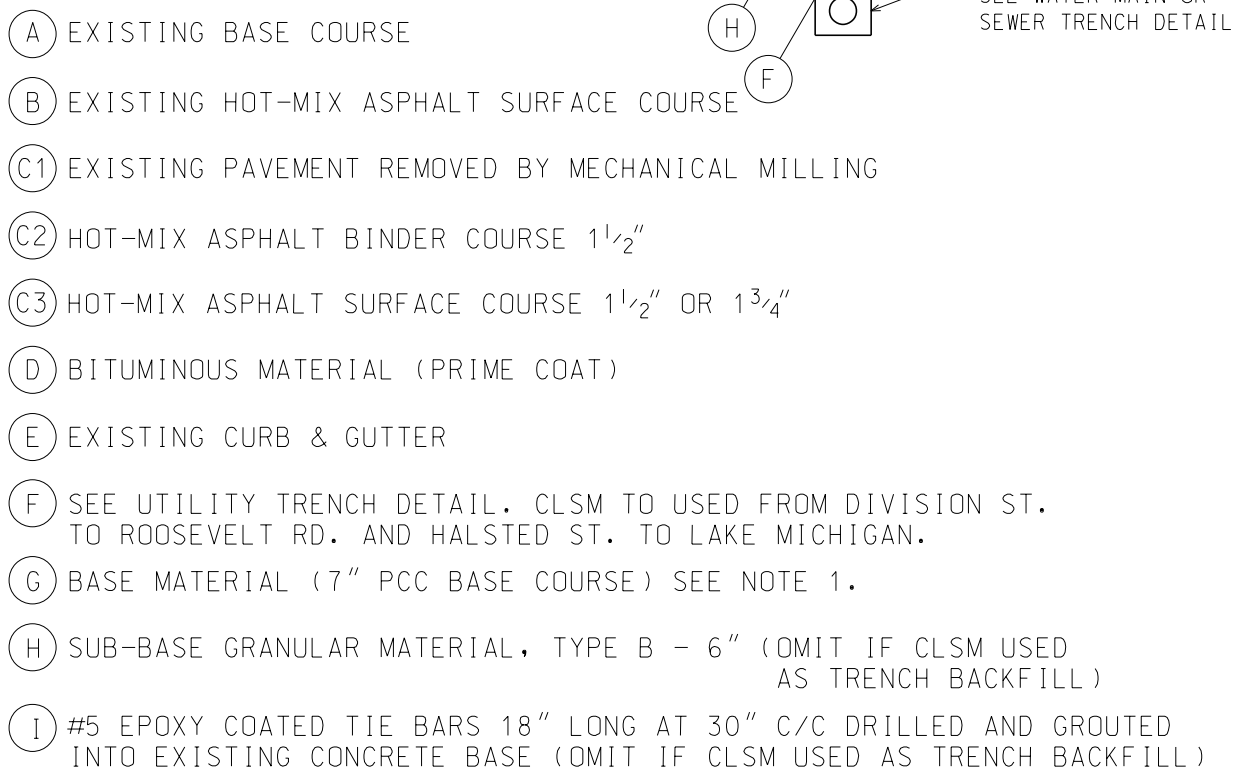


SECTION AT TAP CONNECTION

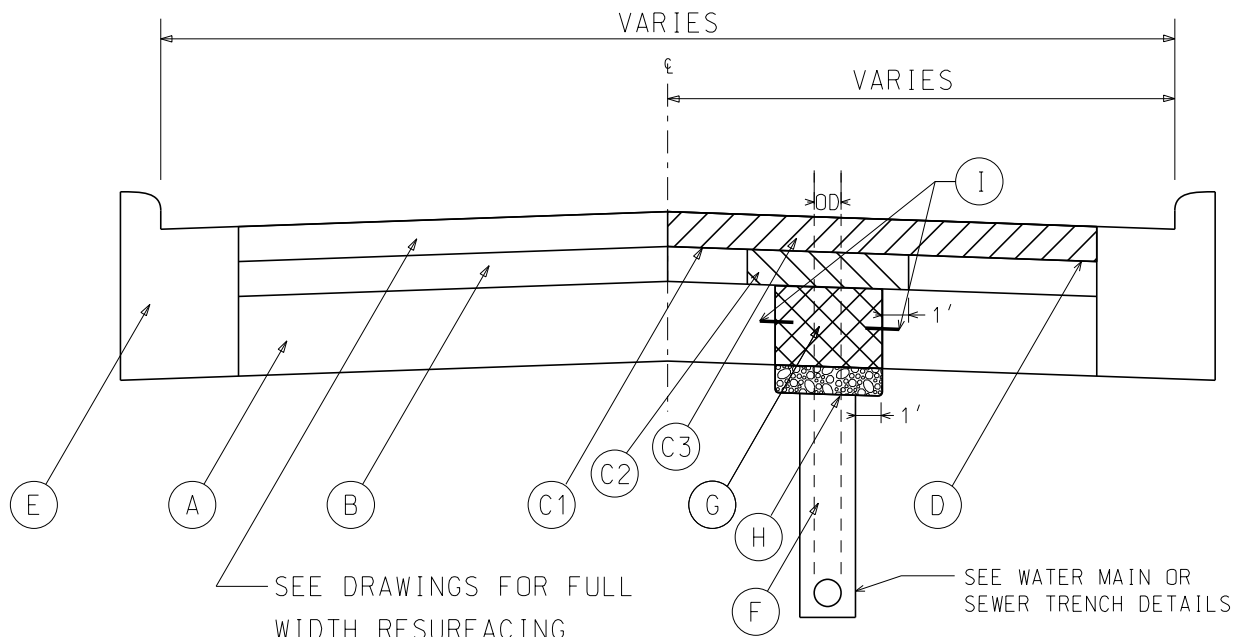
NOTES:

1. PIPE SURFACE RECEIVING A CEMENT MORTAR COATING MUST BE THOROUGHLY CLEAN AND WETTED WITH WATER JUST PRIOR TO PLACING THE CEMENT MORTAR.
2. PLACE A GROUT BAND AROUND THE PIPE AND TAPPING SADDLE STRAPS. PROVIDE SUFFICIENT LENGTH OF BAND TO ESSENTIALLY ENCIRCLE THE PIPE AND SECURE THE BAND IN SUCH A MANNER THAT MORTAR GROUT WILL BE CONTAINED WITH LITTLE OR NO LEAKAGE.
3. COMPLETELY FILL THE BAND WITH MORTAR IN ONE OPERATION BY FILLING FROM ONE SIDE UNTIL THE MORTAR RISES ON THE OPPOSITE SIDE, AND THEN ROD OR AGITATE ON BOTH SIDES OF THE PIPE ALTERNATELY TO SETTLE THE MORTAR. DO NOT AGITATE THE MORTAR FOR AT LEAST 15 MINUTES TO ALLOW EXCESS WATER TO SEEP THROUGH THE GROUT BAND AND TO ALLOW THE MORTAR TO STIFFEN. AFTER THIS PERIOD ADD MORE MORTAR, AS NECESSARY, TO COVER THE SADDLE AND STRAPS COMPLETELY.
4. THE GAP AT THE TOP OF THE GROUT BAND MUST BE PROTECTED FROM PENETRATION OF BACKFILL INTO THE MORTAR EITHER BY ALLOWING THE MORTAR TO STIFFEN, OR BY CAPPING WITH A STIFF MORTAR MIX, OR BY COVERING WITH A STRUCTURALLY PROTECTIVE MATERIAL. THE BAND MUST NOT BE REMOVED FROM THE JOINT.
5. THE MORTAR USED AT JOINTS MUST CONSIST OF ONE PART PORTLAND CEMENT TO NO MORE THAN 3 PARTS CLEAN SAND MIXED WITH WATER. MORTAR MUST BE MIXED WITH WATER UNTIL IT HAS THE CONSISTENCY OF THICK CREAM. DURING PERIODS OF COLD WEATHER THE MORTAR MUST BE ADEQUATELY PROTECTED FROM FREEZING.

THIS DETAIL IS PROVIDED FOR  
REFERENCE PURPOSES ONLY



- ## PAVEMENT RESTORATION DETAIL FOR RESIDENTIAL STREETS

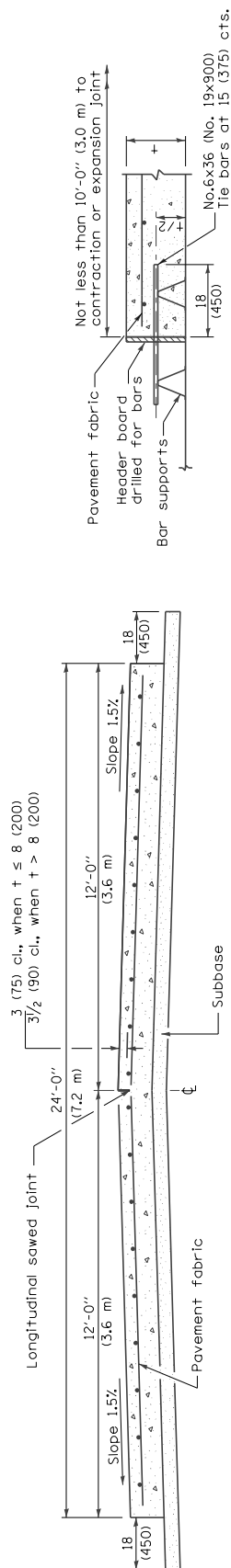


- (A) EXISTING BASE COURSE
- (B) EXISTING HOT-MIX ASPHALT SURFACE COURSE
- (C1) EXISTING PAVEMENT REMOVED BY MECHANICAL MILLING
- (C2) HOT-MIX ASPHALT BINDER COURSE  $1\frac{1}{2}"$
- (C3) HOT-MIX ASPHALT SURFACE COURSE,  $1\frac{1}{2}"$  OR  $1\frac{3}{4}"$
- (D) BITUMINOUS MATERIAL (PRIME COAT)
- (E) EXISTING CURB & GUTTER
- (F) SEE UTILITY TRENCH DETAIL. CLSM IS TO BE USED FROM DIVISION ST. TO ROOSEVELT RD. AND HALSTED ST. TO LAKE STREET.
- (G) BASE COURSE (9" PCC BASE COURSE) SEE NOTE 1.
- (H) SUB-BASE GRANULAR MATERIAL, TYPE B - 6" (OMIT IF CLSM USED AS TRENCH BACKFILL)
- (I) #5 EPOXY COATED TIE BARS 18" LONG AT 30" C/C DRILLED AND GROUTED INTO EXISTING CONCRETE BASE (OMIT IF CLSM USED AS TRENCH BACKFILL)

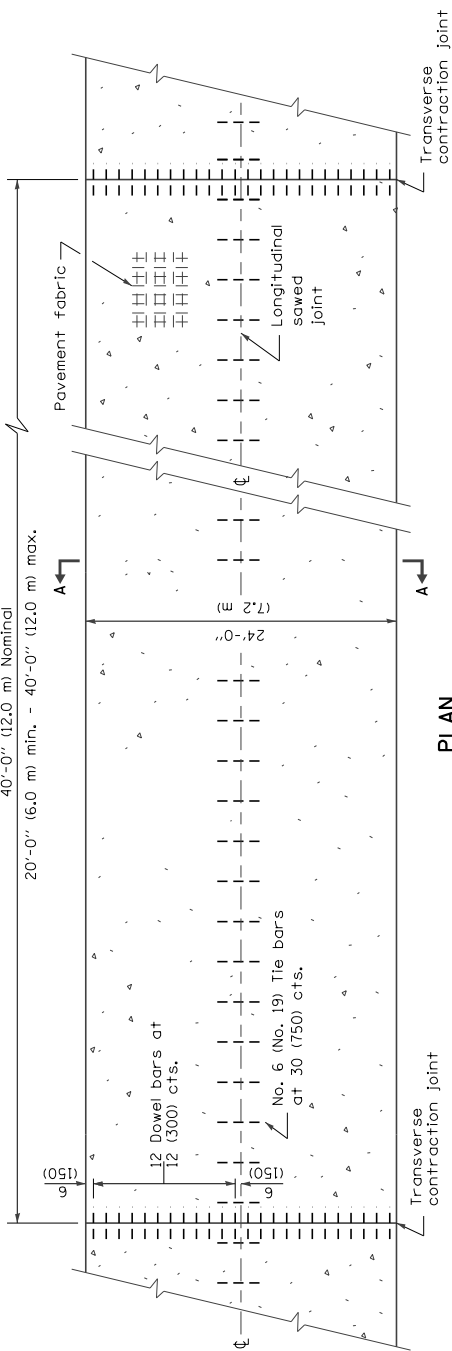
1. WHEN TRENCH BACKFILL IS COMPLETE POUR CONCRETE BASE COURSE FLUSH TO TOP AND AT A MINIMUM BOTTOM OF EXISTING PAVEMENT GRADE. THE ADDITIONAL THICKNESS IS TO BE REMOVED DURING PAVEMENT RESTORATION WORK. FINAL CONCRETE BASE THICKNESS MUST BE PER C.D.O.T./I.D.O.T. REQUIREMENTS. WHEN THE THICKNESS OF THE EXISTING ROADWAY BASE MATERIAL IS LESS THAN THE MINIMUM THICKNESS NOTED BELOW, THE BOTTOM OF BASE MATERIAL WILL EXTEND BELOW THE BOTTOM OF THE BASE MATERIAL OF THE EXISTING PAVEMENT.
2. FOR ADDITIONAL INFORMATION AND DETAILS SEE PAGES 39 & 40 AND SHEET A-2-2A OF C.D.O.T. REGULATIONS FOR OPENINGS, CONSTRUCTION AND REPAIR IN PUBLIC WAY.
3. PLATE ALL UNATTENDED EXCAVATION IN PAVEMENT AREAS AND SECURE PLATES TO PAVEMENT AND PROVIDE BARRIERS IN PARKWAY AREAS.

**PAVEMENT RESTORATION DETAIL**  
**FOR ARTERIAL STREETS**

# PCC PAVEMENT IDOT STANDARD 420601-05

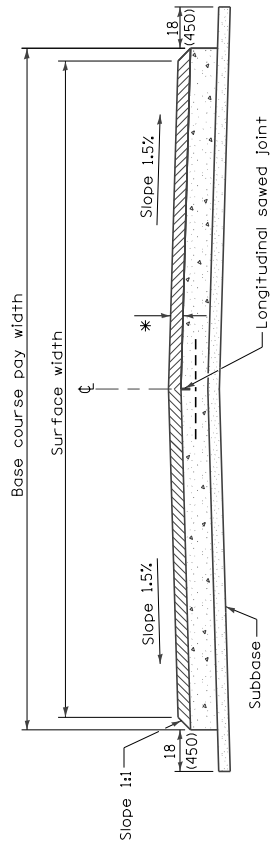


## TRANSVERSE CONSTRUCTION JOINT



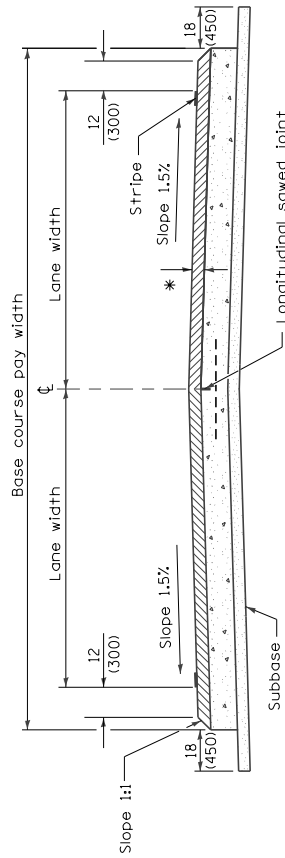
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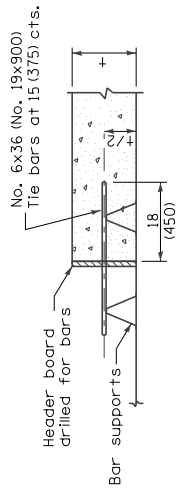


\* HMA binder and surface courses

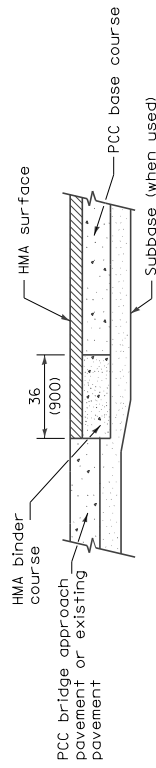
**SECTION A-A**  
(TYPICAL 2 LANE WITH SHOULDERS)



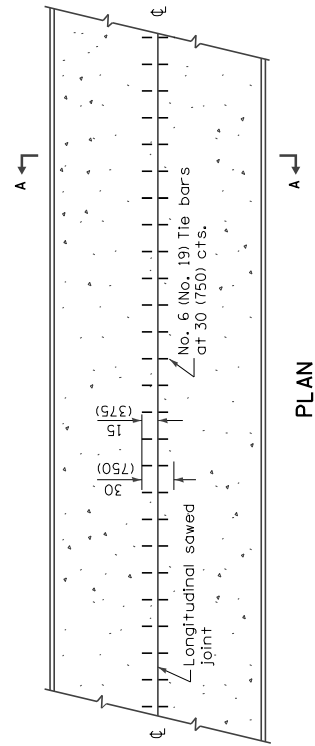
**ALTERNATE SECTION A-A**  
(TYPICAL 2 LANE WITH SHOULDERS)



**TRANSVERSE CONSTRUCTION JOINT**



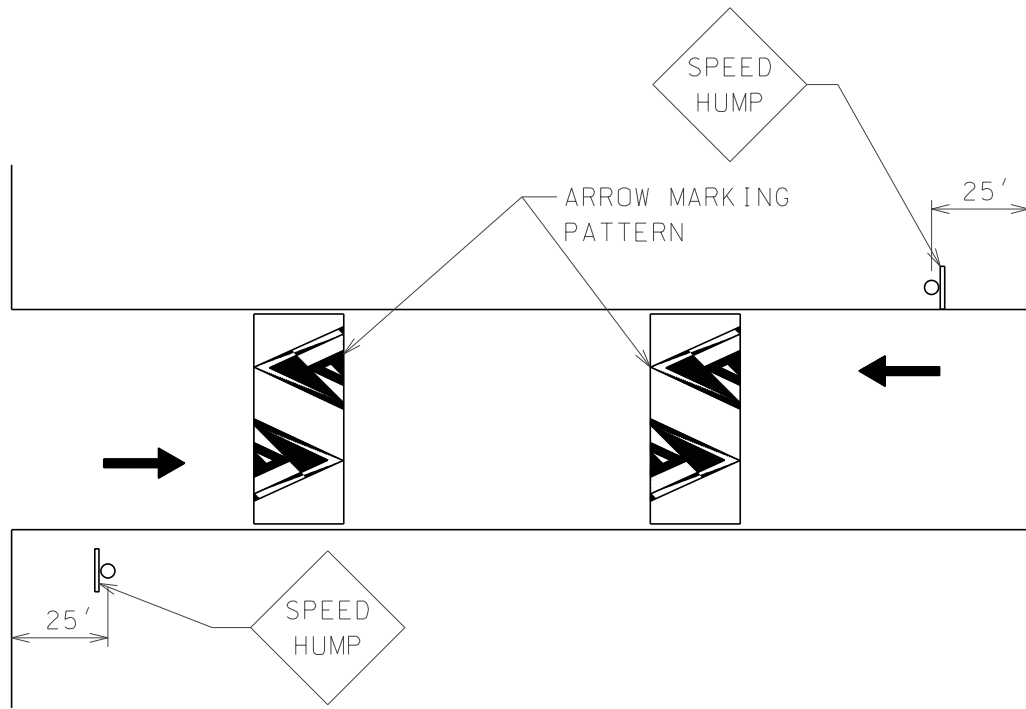
**LONGITUDINAL SECTION SHOWING  
CONSTRUCTION ADJACENT  
TO PCC BRIDGE APPROACH PAVEMENT  
OR EXISTING PAVEMENT**



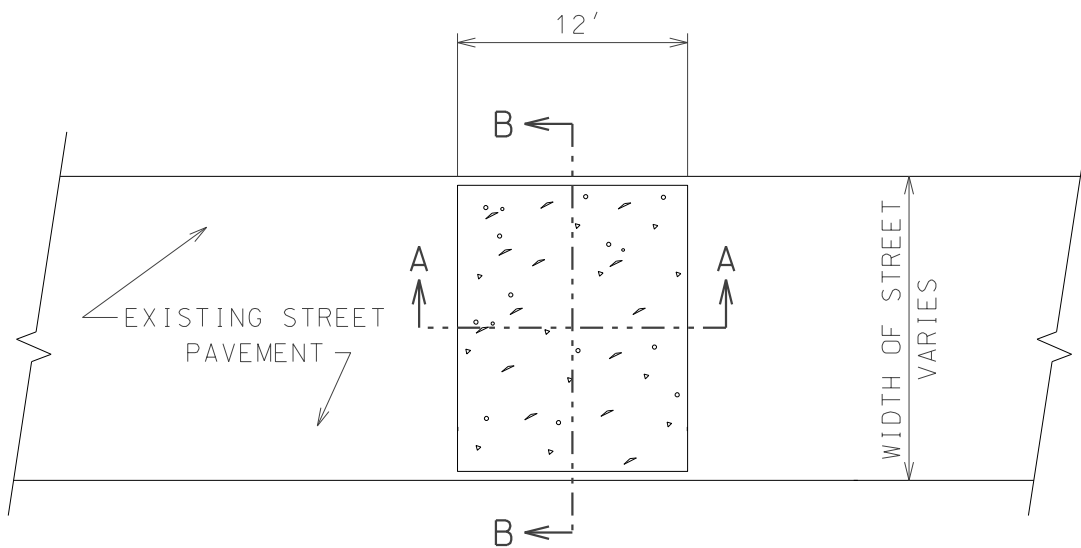
**PLAN**

# PCC BASE COURSE WITH HMA BINDER AND SURFACE COURSES

IDOT STANDARD 353001-04



SPEED HUMP SIGN AND MARKING PLAN



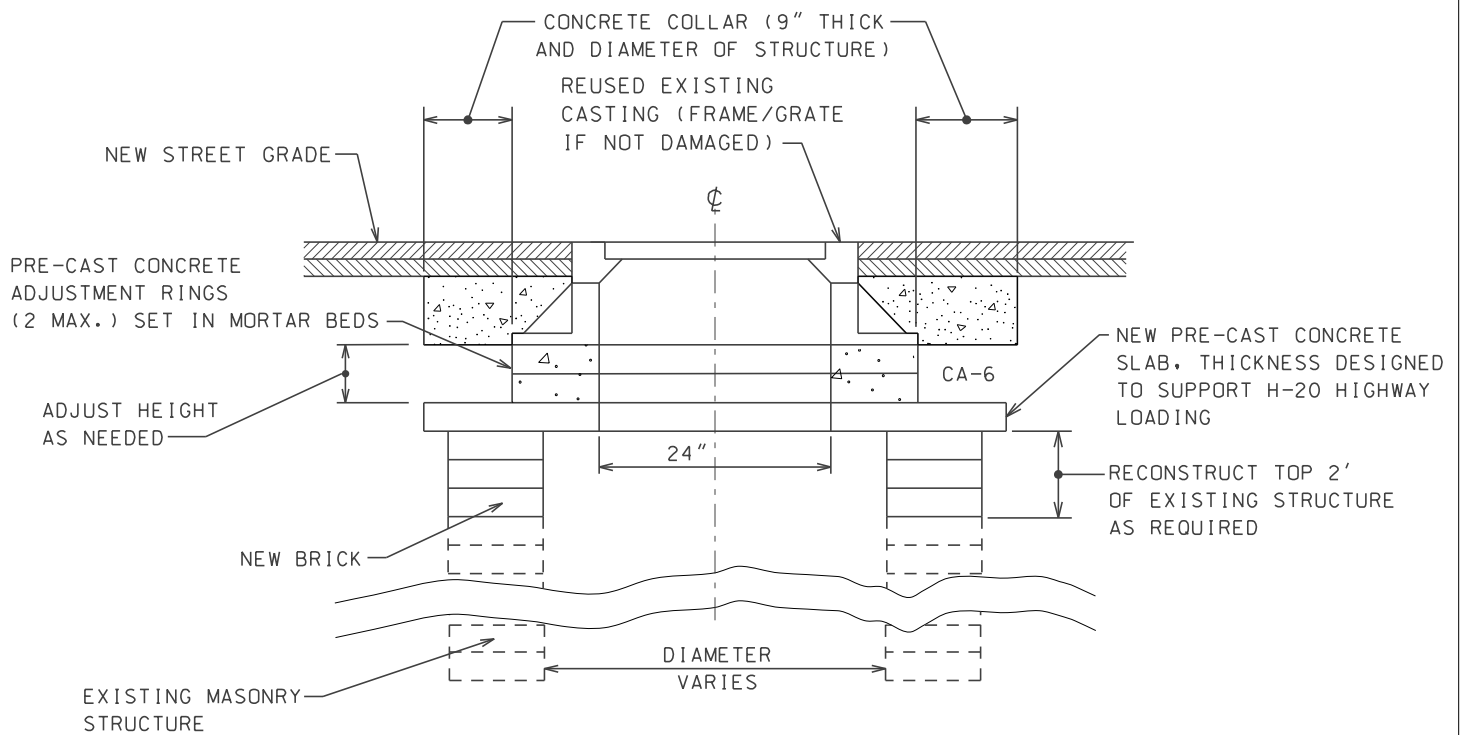
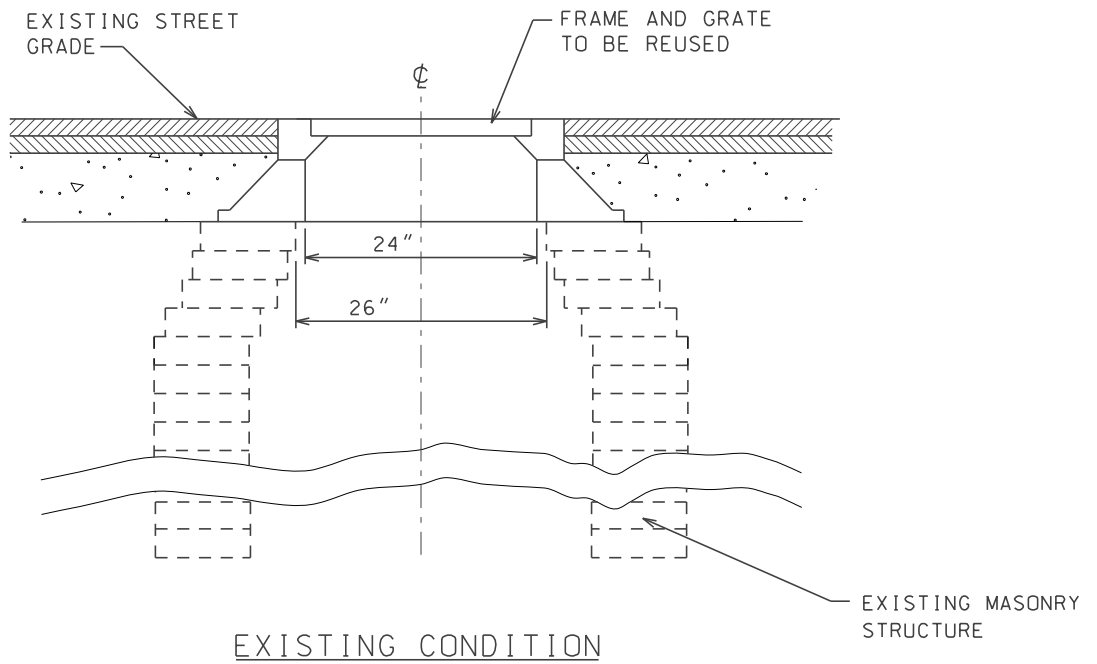
TYPICAL SPEED HUMP PLAN

THIS DETAIL IS PROVIDED FOR  
REFERENCE PURPOSES ONLY



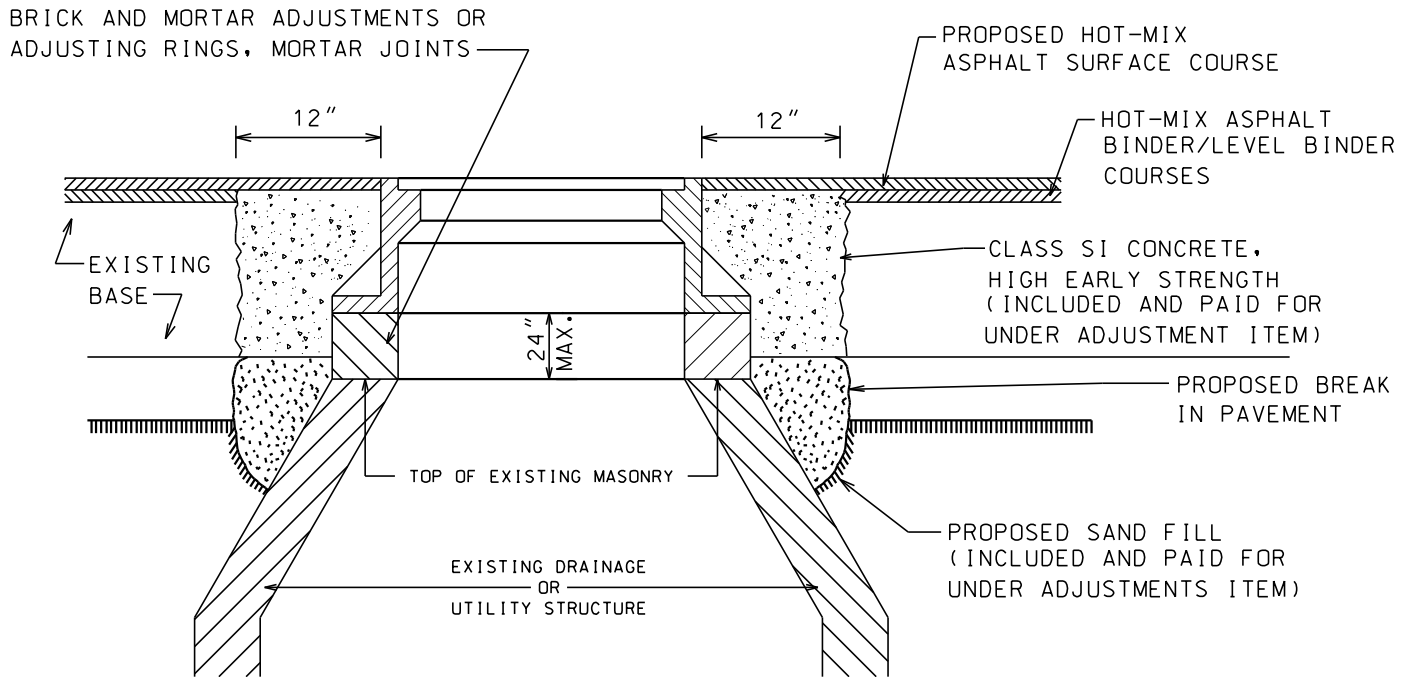
R-8  
SHT. 2 OF 3





THIS DETAIL IS PROVIDED FOR  
REFERENCE PURPOSES ONLY

# RECONSTRUCTION/ADJUSTMENT OF MASONRY UTILITY STRUCTURE

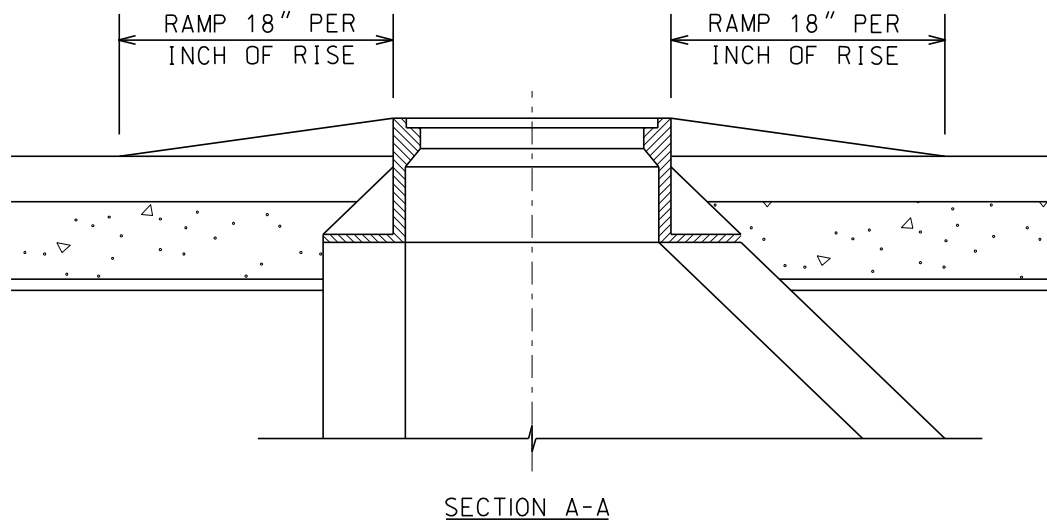
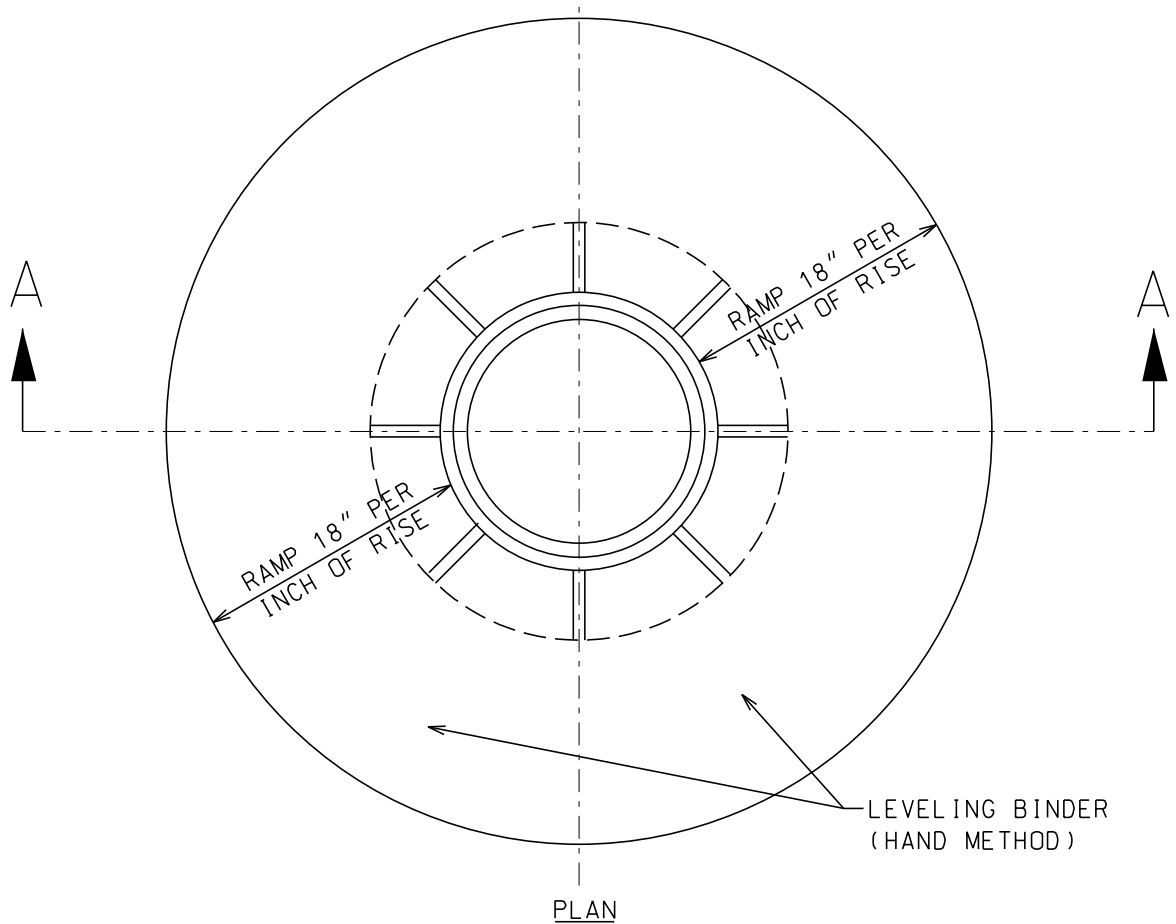


**NOTE:**

IF THE ADJUSTMENT EXCEEDS A 24" HEIGHT THE CONE MUST BE REMOVED AND THE BARREL SECTION HAS TO BE ADJUSTED. THIS WORK SHALL BE PAID FOR UNDER RECONSTRUCTION PAY ITEM.

THIS DETAIL IS PROVIDED FOR  
REFERENCE PURPOSES ONLY

PRECAST UTILITY  
STRUCTURE ADJUSTMENT

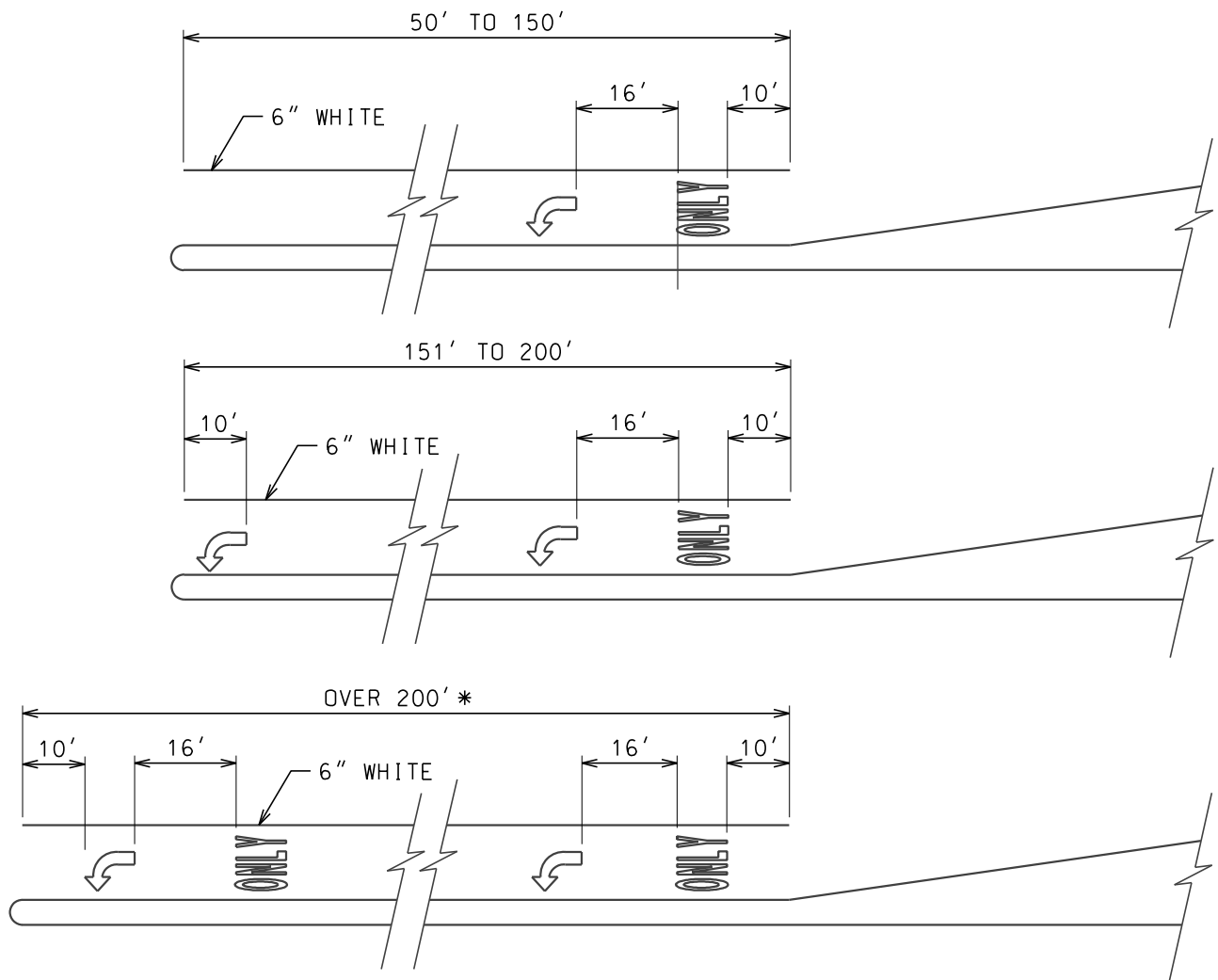


**NOTE:**

THE TEMPORARY BITUMINOUS RAMP, LEVELING BINDER (HAND METHOD) SUPER PAVE, IS TO BE FORMED WHEN OVER 1½" IS EXPOSED ON ARTERIAL STREET AND WHERE DIRECTED BY THE COMMISSIONER REGARDLESS OF SHAPE (ROUND, SQUARE OR RECTANGULAR), THE COST OF WHICH SHALL BE INCIDENTAL TO THE ITEM. HOT-MIX ASPHALT SURFACE COURSE.

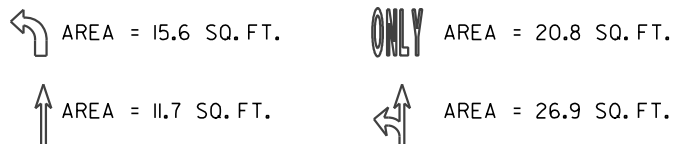
THIS DETAIL IS PROVIDED FOR  
REFERENCE PURPOSES ONLY

**TEMPORARY BITUMINOUS RAMP FOR  
UTILITY STRUCTURES**



INSTALL PAVEMENT MARKERS WITHIN PROJECT LIMITS IN ACCORDANCE WITH IDOT AND CDOT APPLICABLE STANDARDS.

FULL SIZE LETTERS AND ARROWS SHALL BE USED.



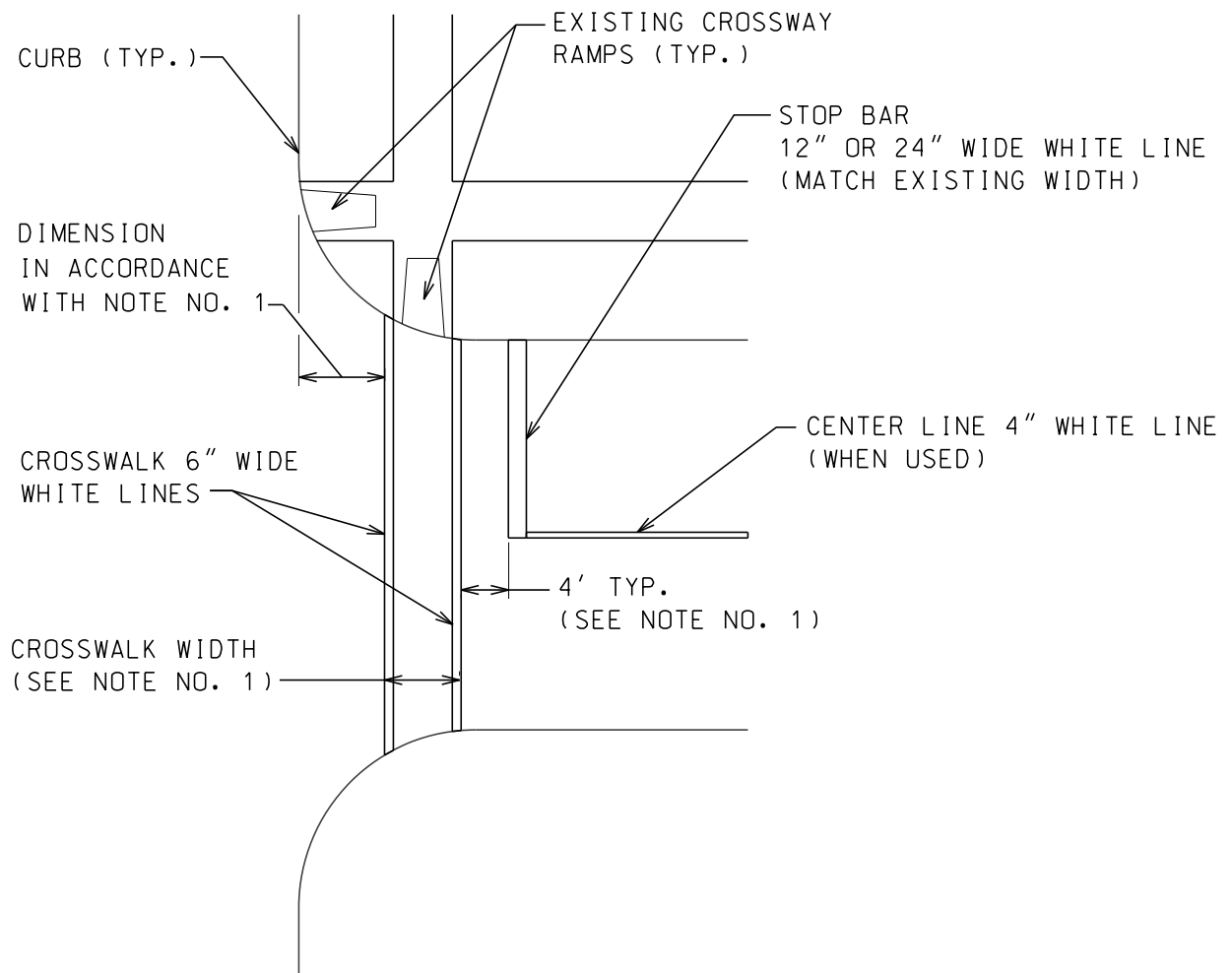
ALL PAVEMENT MARKINGS MUST CONFORM WITH THE SPECIFICATIONS.

LAYOUT OF ALL PAVEMENT SYMBOLS MUST BE APPROVED BY CDOT AND/OR IDOT AS APPLICABLE BEFORE INSTALLATION.

## PAVEMENT MARKING DETAILS

### TYPICAL LEFT TURN LANE MARKING



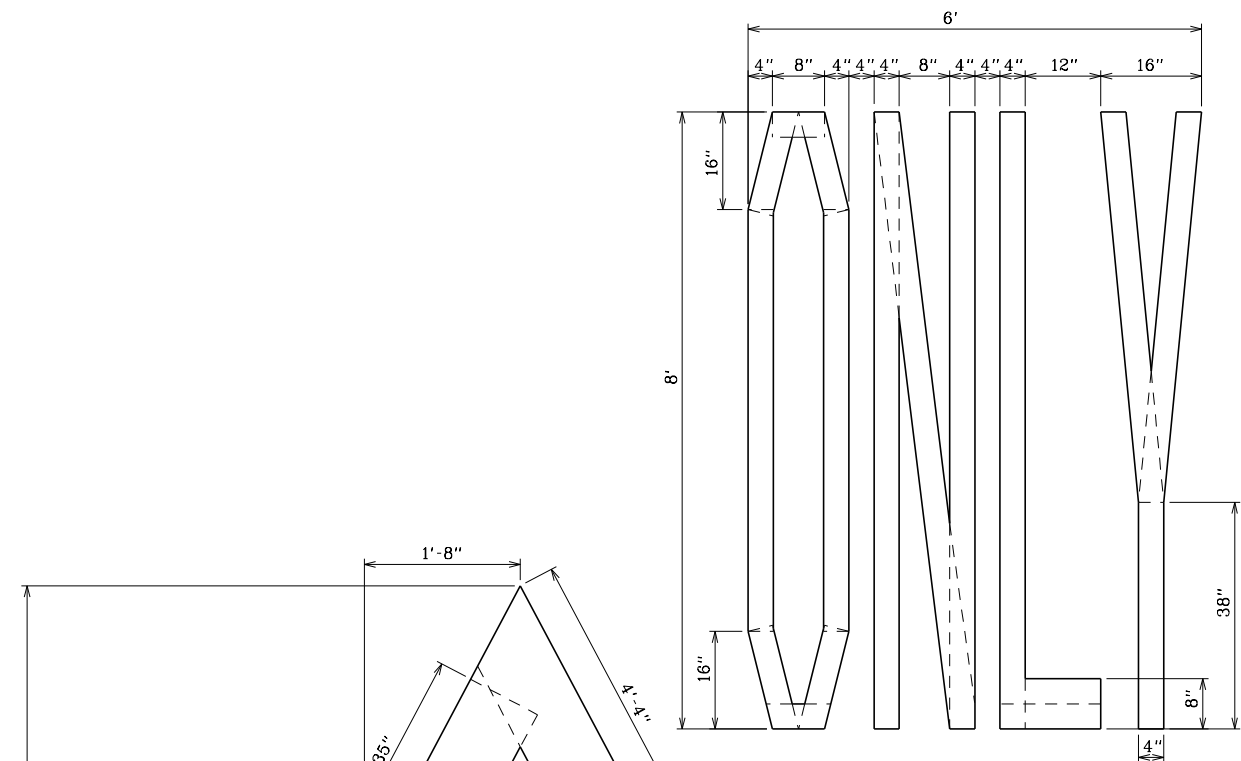


NOTE:

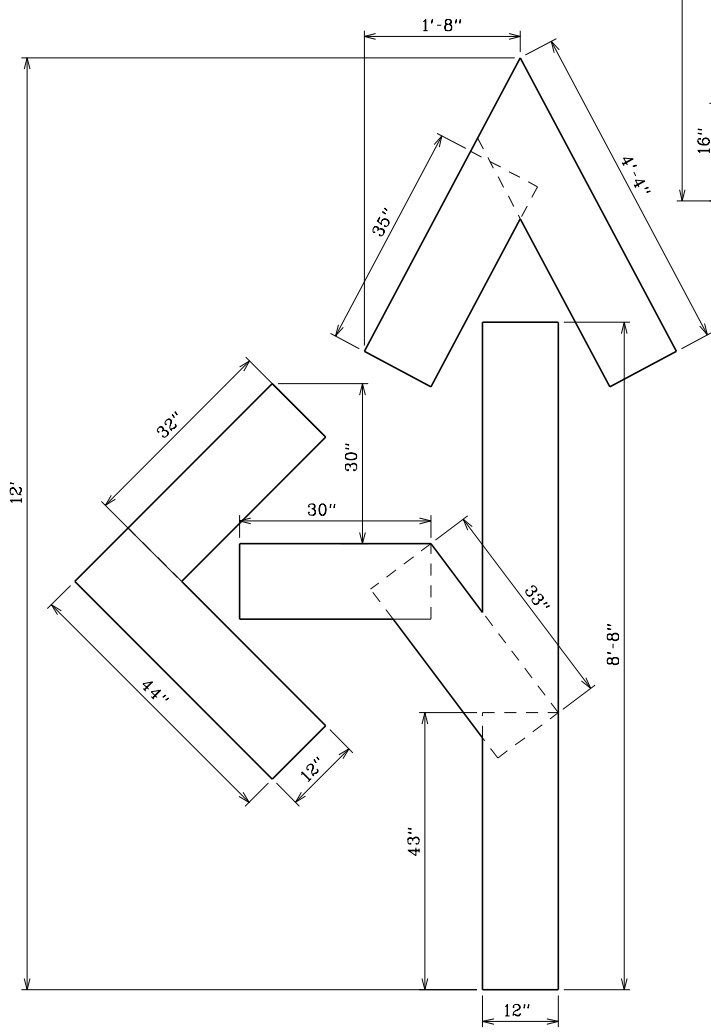
1. DISTANCE MUST BE IN ACCORDANCE WITH EXISTING INSTALLATION OR AS DIRECTED BY CDOT AND/OR IDOT AS APPLICABLE.

PAVEMENT MARKING DETAILS  
TYPICAL CROSSWALK, STOP BAR &  
CENTERLINE DETAIL

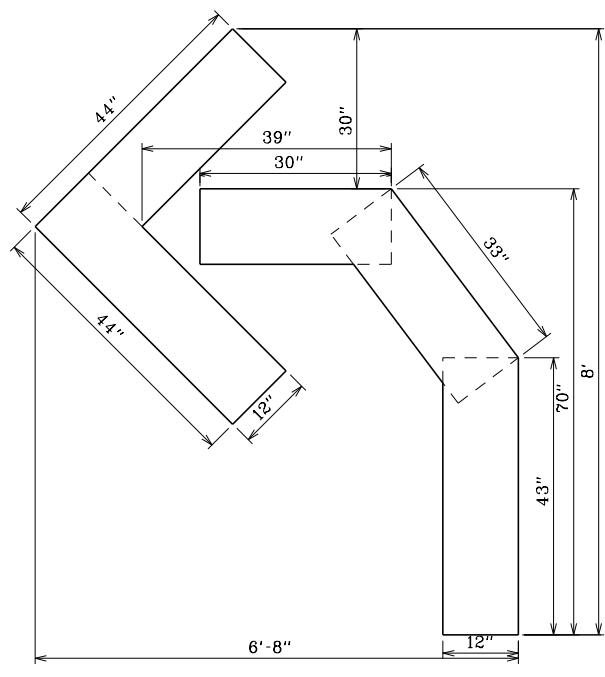




QUANTITY 21.1 S.F.



QUANTITY 27.4 S.F.



QUANTITY 15.2 S.F.

THIS DETAIL IS PROVIDED FOR  
REFERENCE PURPOSES ONLY

# SHORT TERM PAVEMENT MARKING LETTERS AND SYMBOLS

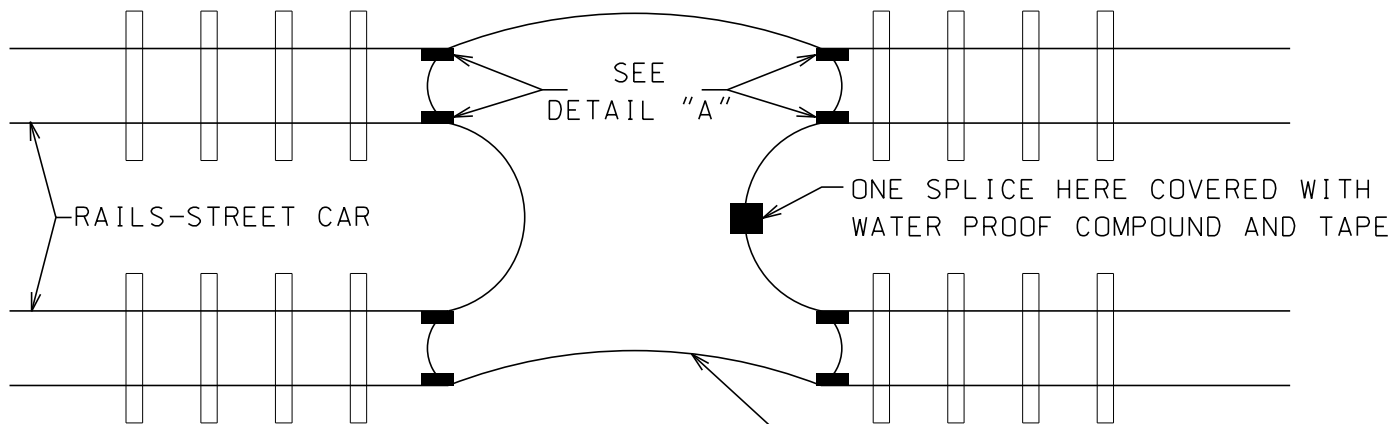


FIGURE 1

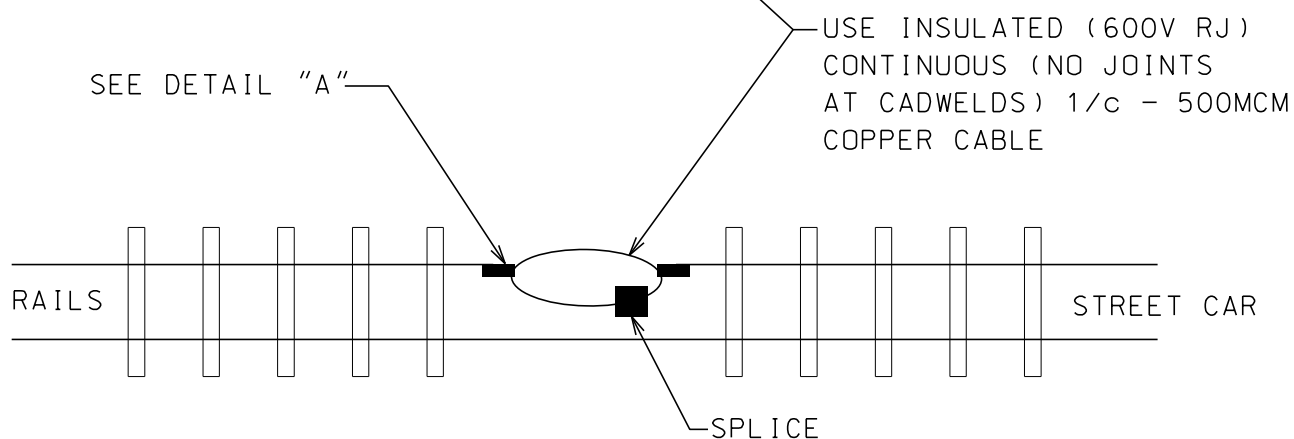
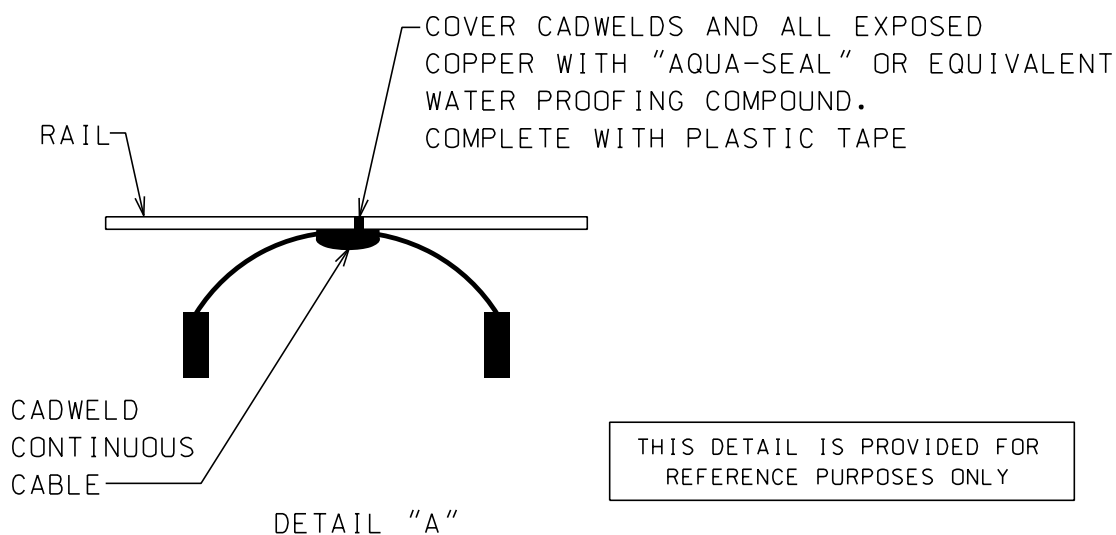
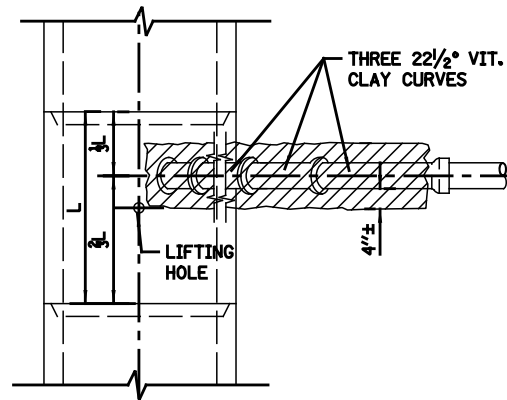


FIGURE 2

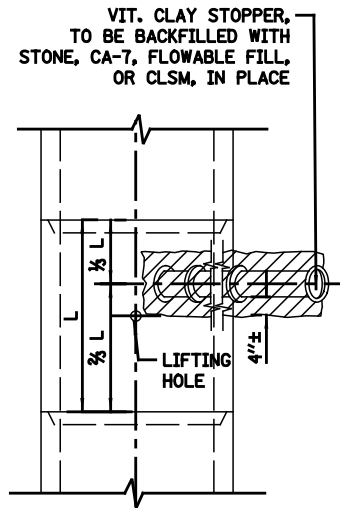


CONTACT YOUSSEF TABIB, COM ED TRANSMISSION LINE ENGINEERING,  
AT (630) 576-6952 (OFFICE) OR (708) 204-7178 (CELL) A MINIMUM  
OF 2 WEEKS IN ADVANCE OF STREET CAR TRACK WORK TO SCHEDULE  
RECTIFIER SHUT-DOWN AND DE-ENERGIZING OF THE RAILS.

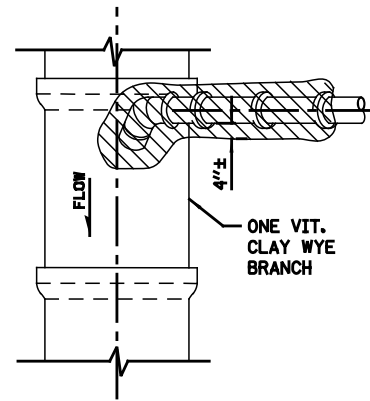
# CABLE BRIDGING OF CUT RAILS (WHERE RAILS CANNOT BE RE-USED)



PLAN

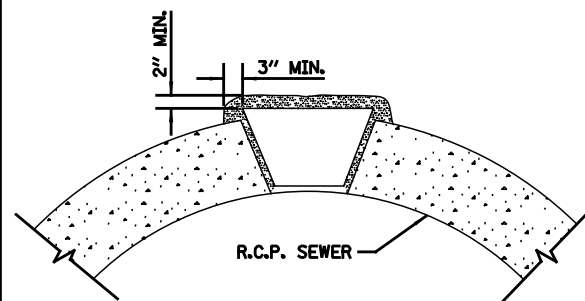


PLAN



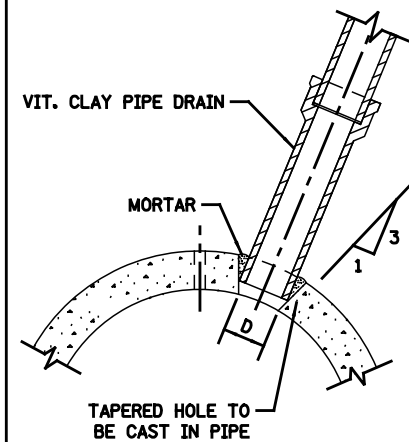
PLAN

NOTE:  
PLUG TO BE COATED WITH MORTAR AND  
DRIVEN INTO PLACE WITH A WOODEN  
Mallet AND THEN SEALED WITH MORTAR.



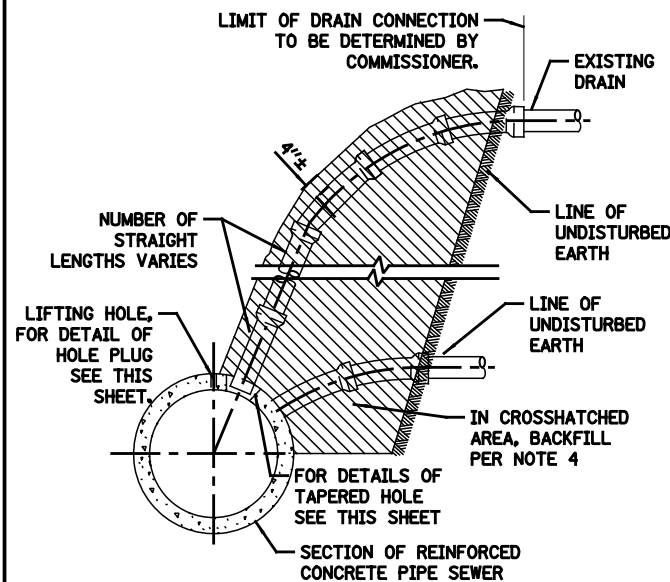
LIFTING HOLE PLUG DETAIL  
FOR CONCRETE PIPE

NOTE:  
1. ALL PLUG MATERIALS MUST COMPLY WITH  
1042.16 OF THE IDOT SSRBC.  
2. LIFT HOLES ON COMBINED SEWERS ARE  
PROHIBITED WHEN THE WATER TABLE IS  
WITHIN 2 FEET OF THE PIPE INVERT.

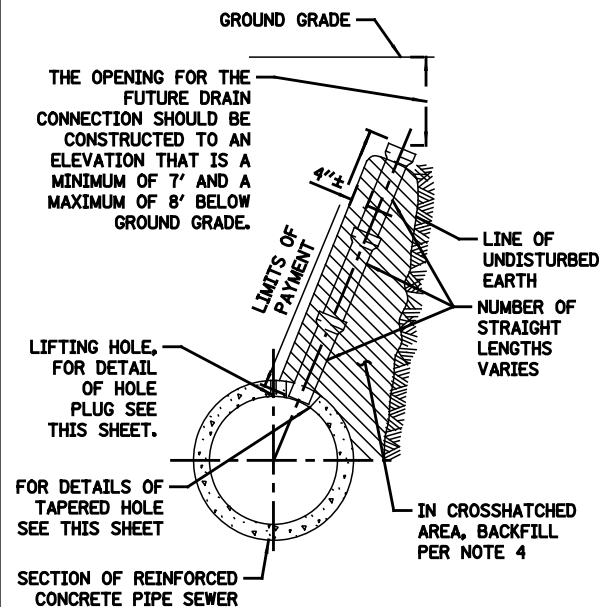


DETAIL OF TAPERED HOLE

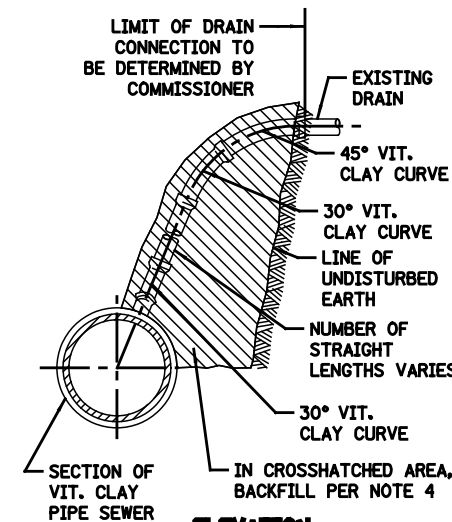
SIZE OF DRAIN	"D"
6"	6 7/8"
8"	9 1/8"
10"	11 1/8"
12"	13 1/2"
15"	17"
18"	20 1/4"
21"	23 3/8"



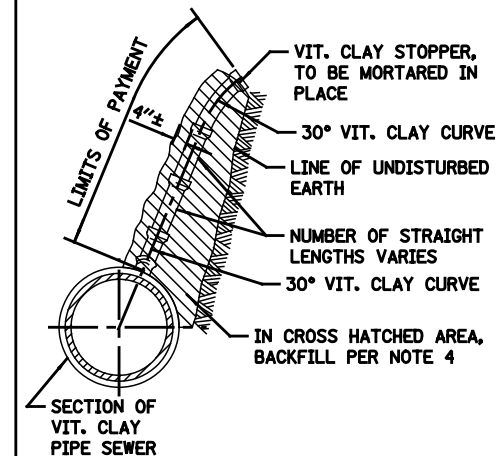
TYPICAL DRAIN CONNECTIONS  
FOR EXISTING DRAINS



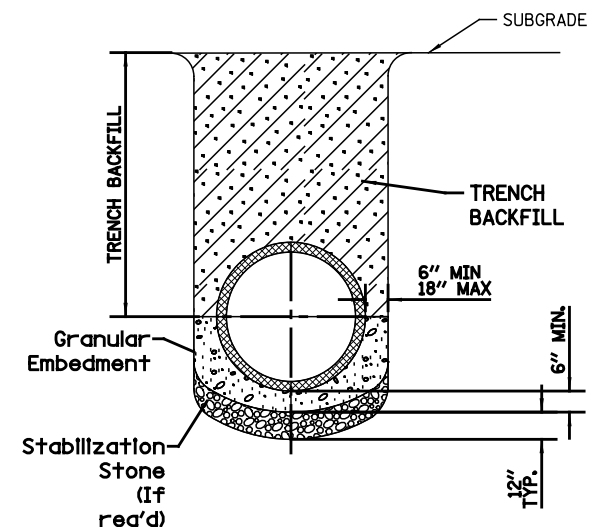
TYPICAL DRAIN STACKS  
FOR FUTURE USE



TYPICAL DRAIN CONNECTIONS  
FOR EXISTING DRAINS



TYPICAL DRAIN STACKS  
FOR FUTURE USE



NOTE:  
1. FOR TRENCH BACKFILL, REFER TO IDOT  
SSRBC, ARTICLE  
1003.04.  
2. FOR GRANULAR EMBEDMENT, USE CA-11,  
CRUSHED GRAVEL, CRUSHED STONE, OR  
CRUSHED CONCRETE.  
3. FOR STABILIZATION STONE, 12" OF CA-1  
STONE IS ONLY REQUIRED WHEN UNSTABLE  
MATERIAL IS ENCOUNTERED AT TRENCH  
BOTTOM.  
4. AGGREGATE PLACED FOR TEMPORARY  
SURFACE RESTORATION WILL NOT BE PAID  
SEPARATELY AND SHALL BE INCIDENTAL TO  
THE CONTRACT.

SEWER TRENCH DETAIL

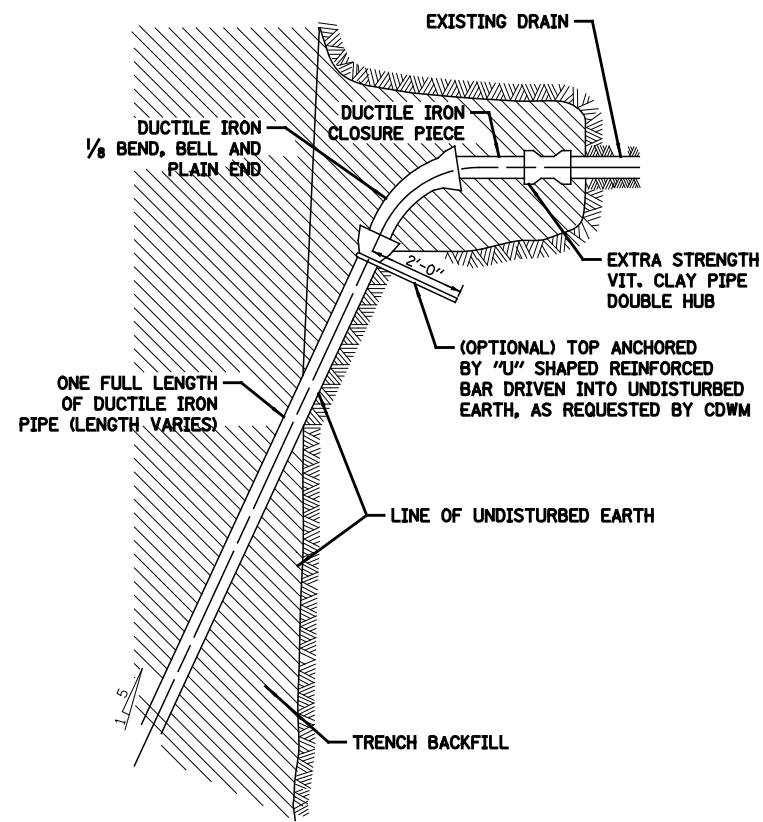
NOTES:  
1. ALL DRAIN CONNECTION JOINTS MUST BE MADE AS SPECIFIED IN SPECIFICATIONS..  
2. FOR DUCTILE IRON PIPE DRAIN CONNECTIONS SEE SHEET NO. A.2.  
3. FOR BACKFILL OF HATCHED SUPPORT AREAS, USE CONCRETE. CA-11, FLOWABLE FILL, OR CLSM.

STANDARD REVISIONS	
DATE	DESCRIPTION
7/3/18	APPROVED PLAN

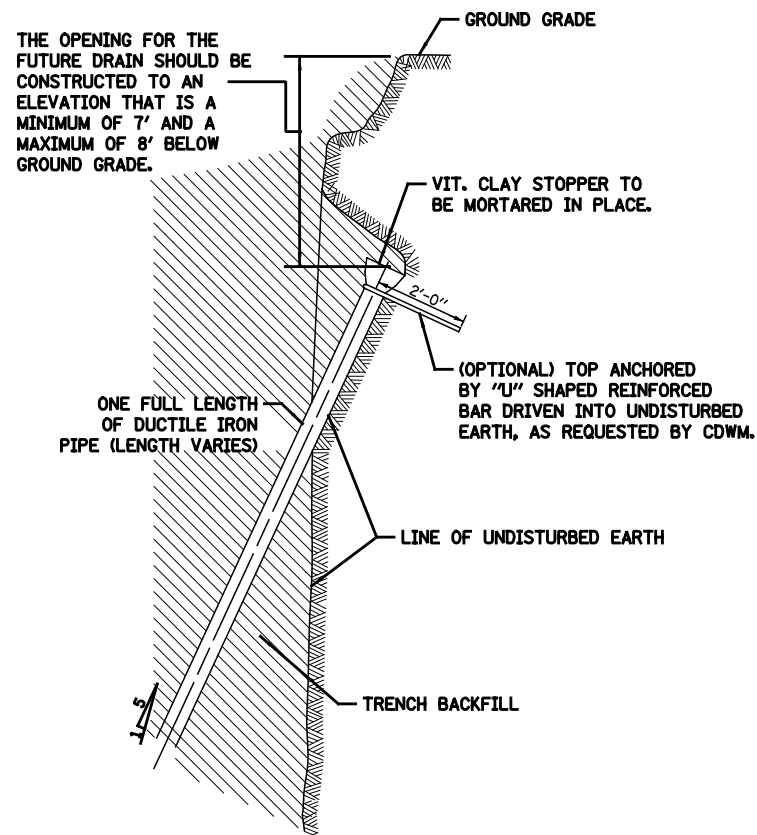
PERCENT COMPLETE	DATE
30	
60	
75	
90	
100	
BULLETIN	

CITY OF CHICAGO	
DEPARTMENT OF WATER MANAGEMENT BUREAU OF ENGINEERING SERVICES	
VITRIFIED CLAY PIPE DRAIN CONNECTIONS AND SEWER TRENCH DETAIL	

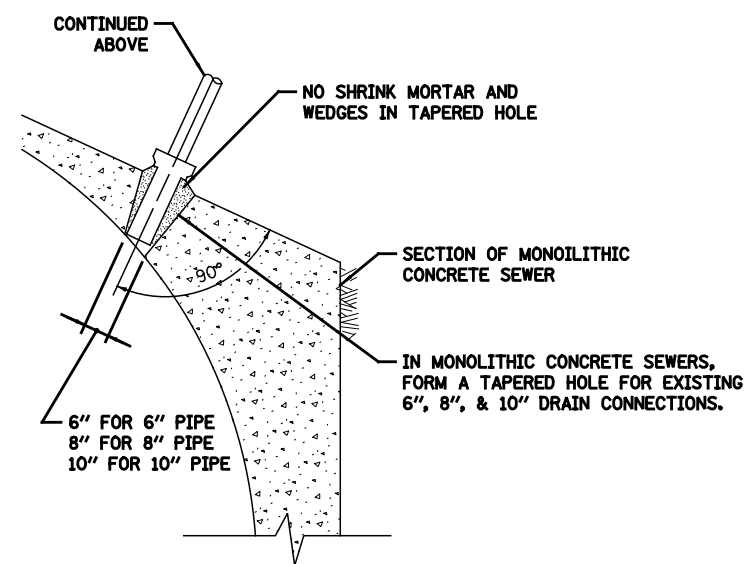
DESIGNED: <b>AK</b>	<b>A.1</b>
CHECKED: <b>AK</b>	
REVIEWED: <b>AK</b>	
	OF
PN	



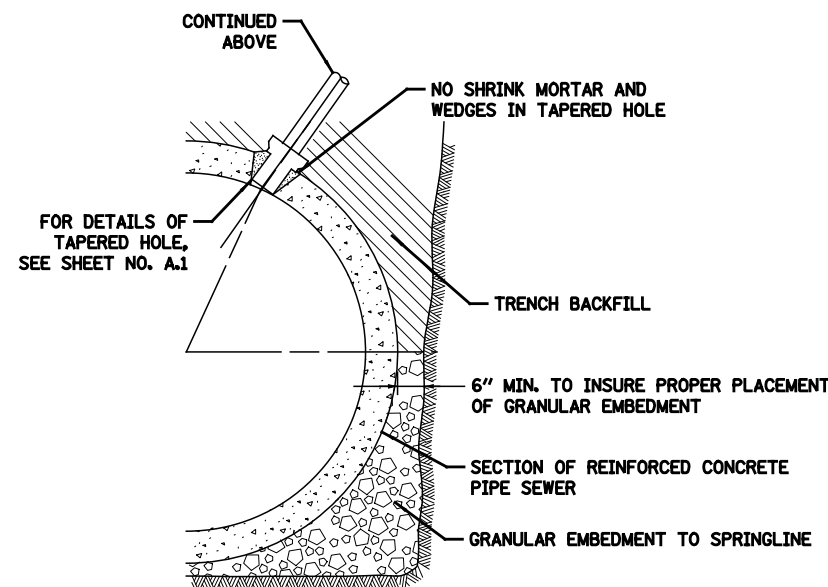
**TYPICAL DRAIN CONNECTIONS  
FOR EXISTING DRAINS**



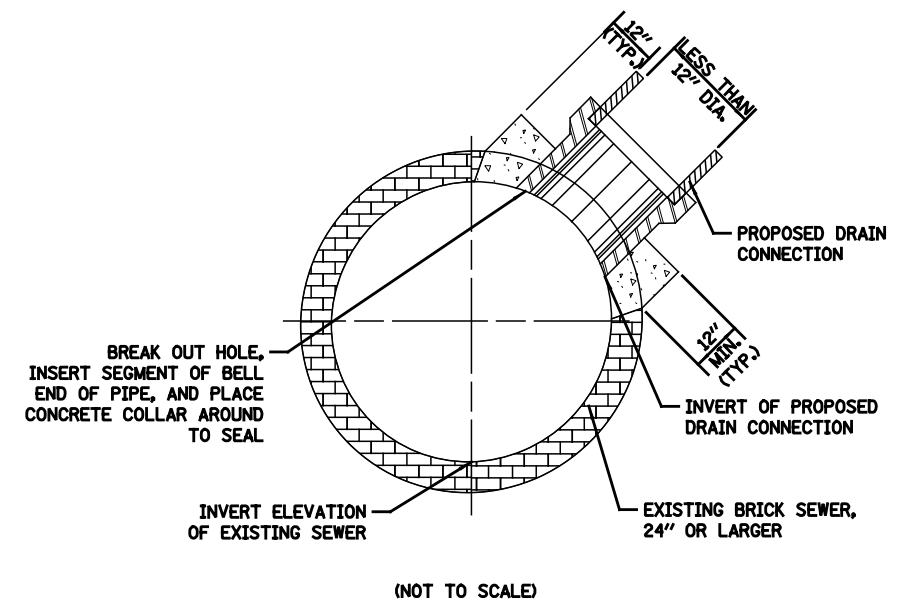
**TYPICAL DRAIN STACKS  
FOR FUTURE USE**



**FOR MONOLITHIC CONCRETE SEWERS**



**FOR REINFORCED CONCRETE PIPE SEWERS**



**FOR BRICK SEWERS**

## DUCTILE IRON PIPE DRAIN CONNECTIONS

## BRICK SEWER DRAIN CONNECTIONS

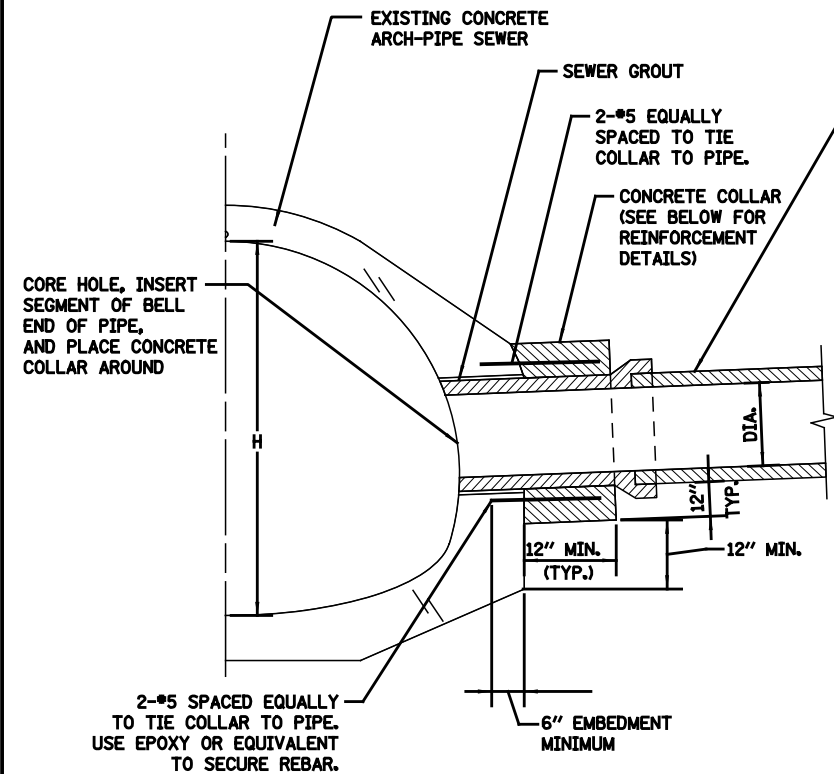
### NOTES:

- DUCTILE IRON PIPE MUST BE BELL END WITH PUSH-ON JOINTS CONFORMING TO ANSI SPECIFICATIONS A21.51 WITH CLASS 52 THICKNESS.
- CONNECTIONS AND STACKS SHOWN MUST BE USED FOR 6'', 8'', & 10'' DRAINS ONLY.
- FOR VITRIFIED CLAY PIPE DRAIN CONNECTION AND DRAIN STACK CONSTRUCTION, SEE SHEET NO. A.1.
- FOR TRENCH BACKFILL, REFER TO IDOT SSRBC, ARTICLE 1003.04.
- FOR GRANULAR EMBEDMENT, USE CA-11, CRUSHED GRAVEL, CRUSHED STONE, OR CRUSHED CONCRETE.

STANDARD REVISIONS	
DATE	DESCRIPTION
9/20/17	APPROVED PLAN

PERCENT COMPLETE	DATE
30	
60	
75	
90	
100	
BULLETIN	

CITY OF CHICAGO DEPARTMENT OF WATER MANAGEMENT BUREAU OF ENGINEERING SERVICES		DRAWN: DESIGNED: CHECKED: REVIEWED: DATE: BY: A.2
DUCTILE IRON PIPE DRAIN CONNECTIONS		OF PN



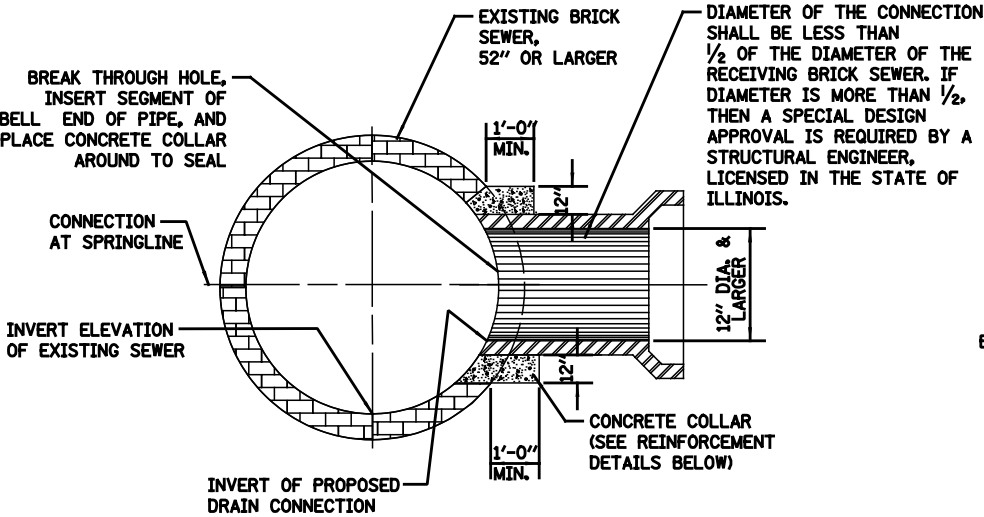
EXAMPLE TYPICAL CONNECTION DETAIL  
(NOT TO SCALE)

CONCRETE COLLAR NOTES:

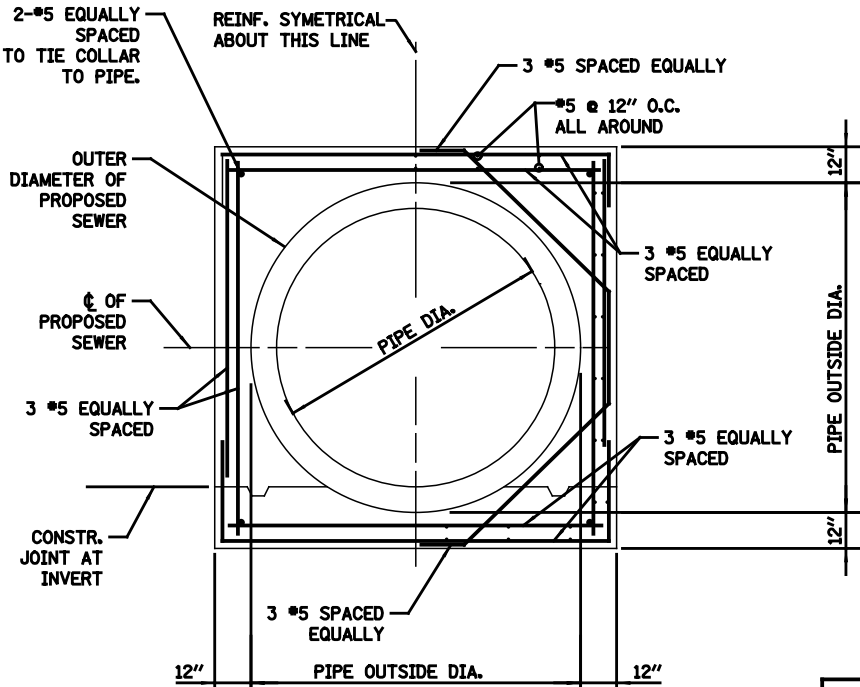
1. ALL ITEMS AND MATERIALS SHALL CONFORM TO THE LATEST IDOT SSRBC SPECIFICATIONS, UNLESS OTHERWISE NOTED IN SUPPLEMENTAL SPECIFICATIONS FOR THE SPECIFIC PROJECT BEING CONSTRUCTED.
2. ALL CONCRETE SHALL CONFORM TO IDOT SSRBC ARTICLE 1020.04, CLASS SI, WITH A COMPRESSIVE STRENGTH OF 3500 PSI.
3. ALL EPOXY COATED REINFORCEMENT BARS SHALL CONFORM TO IDOT SSRBC SECTION 508, AND ARTICLE 1006.10.
4. UNLESS OTHERWISE SHOWN, THE COVER FOR REINFORCING STEEL SHALL BE AS FOLLOWS: A.) CONCRETE CAST AGAINST PERMANENTLY EXPOSE EARTH: 3" B.) ALL OTHER REINFORCING BARS: 2"
5. CONCRETE COLLARS SHALL BE USED AT ALL EXISTING/PROPOSED PIPE CONNECTIONS. TRIM EXISTING PIPE END TO PROVIDE FLUSH BUTT JOINT, INSTALL REBAR, AND PLACE CONCRETE COLLAR.
6. THE CONTRACTOR SHALL PROVIDE ALL MEASURES AND PRECAUTIONS NECESSARY TO PREVENT DAMAGE TO THE EXISTING SEWER DURING CONSTRUCTION. CONTRACTOR SHALL ADEQUATELY BRACE OR SHORE EXISTING SEWER IF REQUIRED TO MAINTAIN INTEGRITY OF SEWER DURING CONSTRUCTION. SUBMIT DESIGN AND DETAILS, SEALED AND SIGNED BY AN ILLINOIS LICENSED STRUCTURAL ENGINEER, SHOWING TEMPORARY BRACING FOR THE EXISTING SEWER DURING CONSTRUCTION FOR REVIEW PRIOR TO CONSTRUCTION. ANY DAMAGE TO EXISTING STRUCTURE IS RESPONSIBILITY OF THE CONTRACTOR.
7. CONTRACTOR SHALL DIVERT ALL FLOW FROM THE EXISTING SEWER PRIOR TO CONSTRUCTION SO THAT THE WORK CAN BE PERFORMED IN THE DRY CONDITION. SEWER MUST BE MAINTAINED IN SERVICE AT ALL TIMES. SUBMIT MEANS OF FLOW DIVERSION FOR REVIEW PRIOR BREAKING INTO EXISTING BRICK SEWER. ALL EXCAVATION SHALL BE KEPT DEWATERED DURING CONSTRUCTION OPERATIONS UNTIL BACKFILL IN PLACE. PROVISIONS SHALL BE MADE TO PREVENT THE BOTTOM OF ALL EXCAVATIONS FROM FREEZING OR FLOODING AT ALL TIMES. PLAN DIMENSIONS AND DETAILS RELATIVE TO EXISTING STRUCTURE SHALL BE SUBJECT TO NOMINAL CONSTRUCTION VARIATIONS. IT SHALL BE CONTRACTOR'S RESPONSIBILITY TO VERIFY SUCH DIMENSIONS AND DETAILS IN THE FIELD AND MAKE NECESSARY APPROVED ADJUSTMENTS PRIOR TO CONSTRUCTION OR ORDERING MATERIALS. SUCH VARIATIONS SHALL NOT BE CAUSE FOR ADDITIONAL COMPENSATION FOR A CHANGE IN THE SCOPE OF THE WORK, HOWEVER, CONTRACTOR WILL BE PAID FOR THE QUANTITY ACTUALLY FURNISHED AT THE UNIT PRICE OF THE WORK.

DIAMETER OF THE CONNECTION SHALL BE EQUAL TO OR LESS THAN H/3. IF DIAMETER IS MORE THAN H/3, A SPECIAL DESIGN APPROVAL IS REQUIRED BY A STRUCTURAL ENGINEER, LICENSED IN THE STATE OF ILLINOIS.

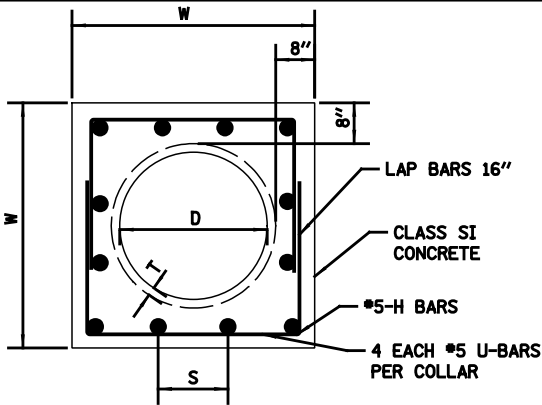
CENTER TO CENTER SPACING OF LATERAL CONNECTIONS TO ARCH PIPES SHALL BE NO LESS THAN 6 TIMES THE DIAMETER OF THE CONNECTION SIZE.



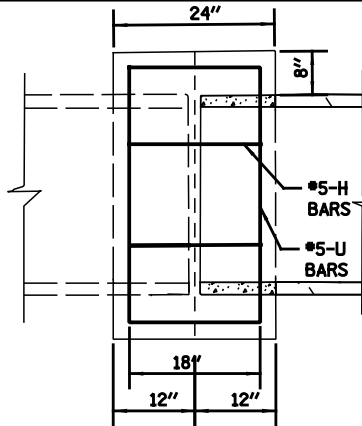
EXAMPLE TYPICAL BRICK SEWER CONNECTION FOR  
CONNECTING PIPE SIZES GREATER THAN 12" DIA.  
(NOT TO SCALE)



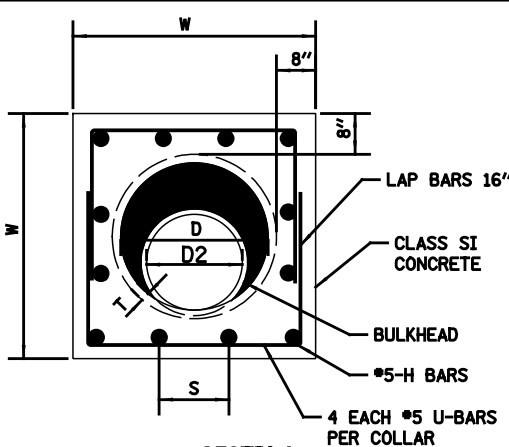
EXAMPLE CONCRETE COLLAR  
REINFORCEMENT - SECTION  
(NOT TO SCALE)



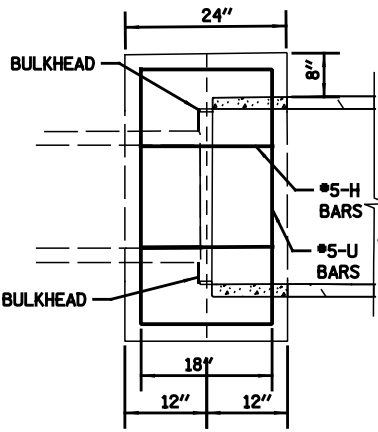
SECTION  
(SAME DIAMETERS)



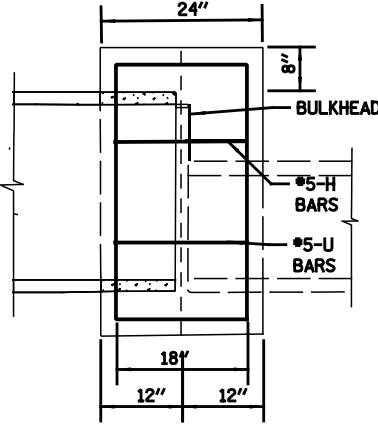
PLAN  
(SAME DIAMETERS)



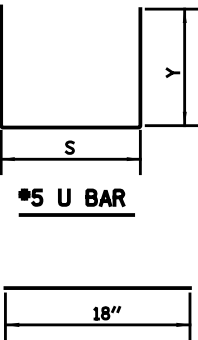
SECTION  
(DIFFERENT DIAMETERS)



PLAN  
(DIFFERENT DIAMETERS)



PROFILE  
(DIFFERENT DIAMETERS)



#5 H BAR

NOTES

1. IF DIFFERENT PIPE SIZES ARE BEING CONNECTED, STEEL REINFORCEMENT BARS SHALL BE SUPPLIED AS GIVEN IN TABLE BELOW FOR THE LARGER DIAMETER PIPE.
2. CONTRACTOR SHALL PROVIDE BULKHEAD TO KEEP CONCRETE FROM SPILLING INTO LARGER PIPE. BULKHEAD MUST BE REMOVED, OR LEFT IN PLACE, ONLY AS APPROVED BY THE COMMISSIONER.

PIPE TO PIPE  
REINFORCED CONCRETE COLLAR DETAIL

SCALE: N.T.S.

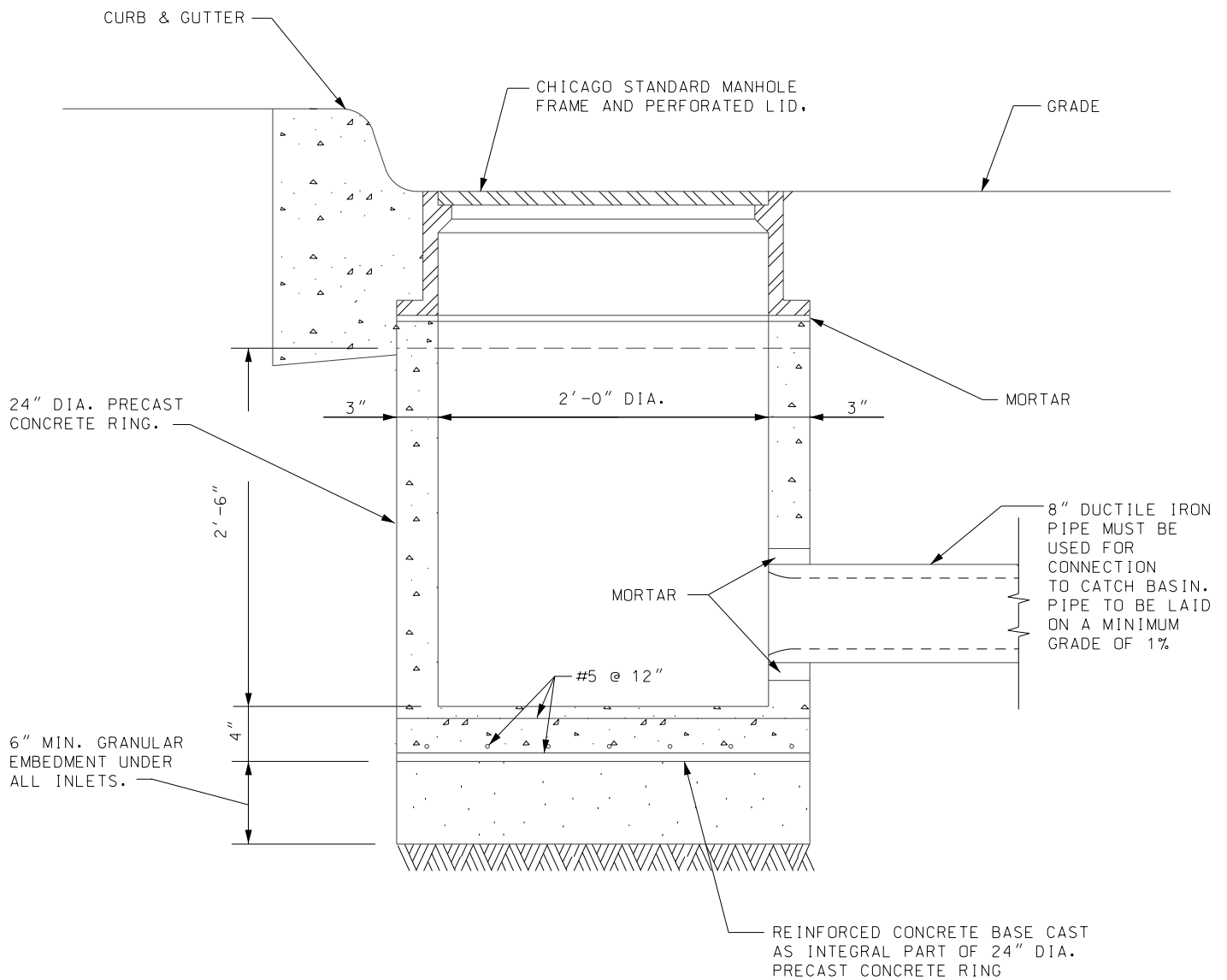
D	T	W	U BAR				H BAR				CLASS SI	#5 EPOXY REBAR
			X	Y	QTY	LENGTH	S	QTY	LENGTH	CONCRETE		
PIPE DIA.	PIPE THICKNESS	WIDTH	(IN)	(IN)	(EACH)	(FT)	(IN)	(EACH)	(FT)	(CU YD)		(LBS)
24	3.00	46.0	40.00	28.00	4	32.0	9 5/8	16.0	24.0	0.72		58.4
27	3.25	49.5	43.50	29.75	4	34.3	10 1/2	16.0	24.0	0.81		60.8
30	3.50	53.0	47.00	31.50	4	36.7	11 3/8	16.0	24.0	0.89		63.3
33	3.75	56.5	50.50	33.25	4	39.0	9 4/5	20.0	30.0	0.98		72.0
36	4.00	60.0	54.00	35.00	4	41.3	10 1/2	20.0	30.0	1.07		74.4
42	4.50	67.0	61.00	38.50	4	46.0	9 7/8	24.0	36.0	1.26		85.5
48	5.00	74.0	68.00	42.00	4	50.7	11 1/8	24.0	36.0	1.46		90.4

STANDARD REVISIONS	
DATE	DESCRIPTION
7/3/2018	APPROVED PLAN

PERCENT COMPLETE	DATE
30	
60	
75	
90	
100	
BULLETIN	

CITY OF CHICAGO DEPARTMENT OF WATER MANAGEMENT BUREAU OF ENGINEERING SERVICES	
CONCRETE COLLAR / CONNECTION DETAILS	

DRAWN DESIGNED CHECKED REVIEWED	
	A.19
	OF
PN	



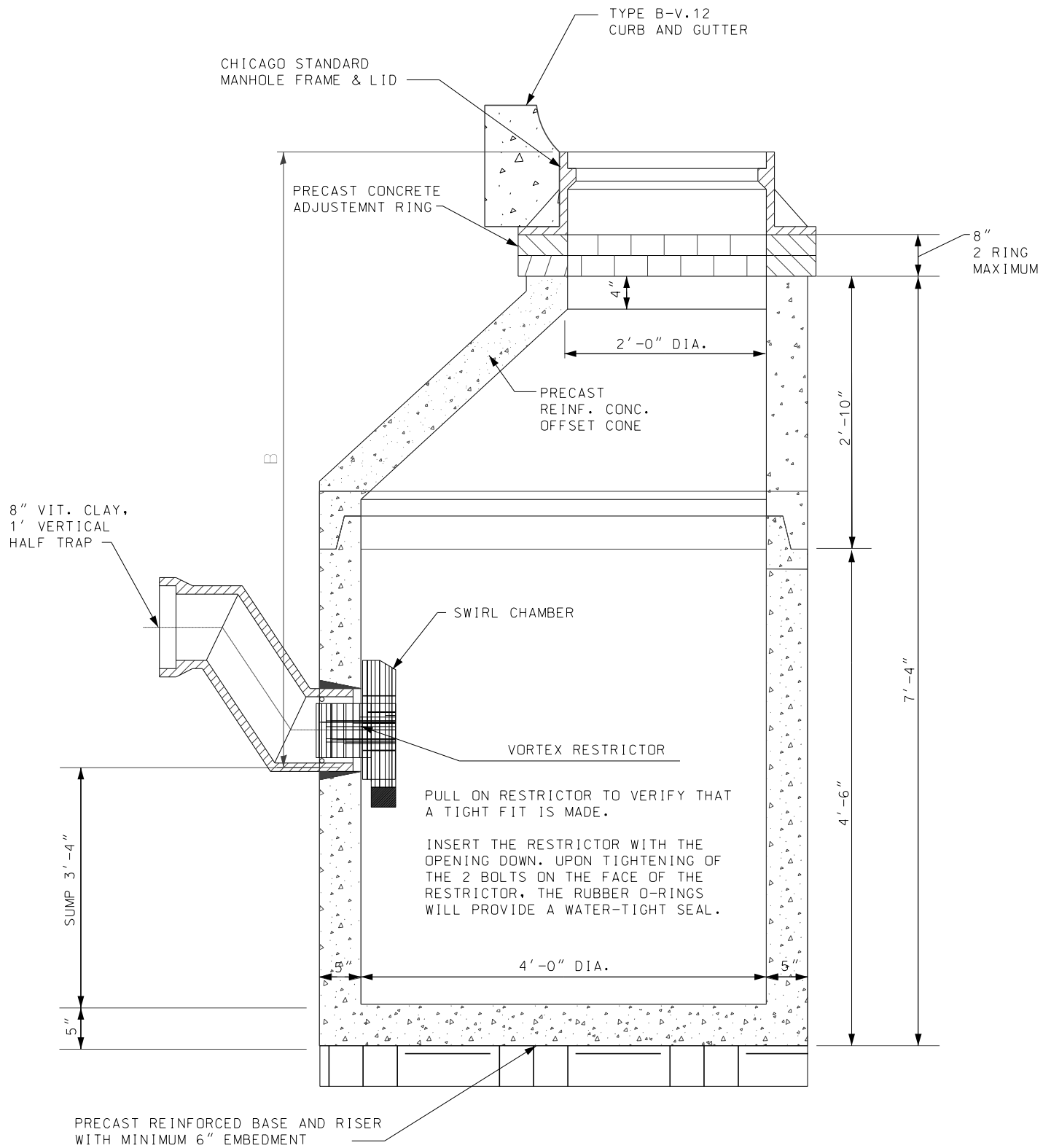
THIS INLET DETAIL IS SOMETIMES REFERRED TO AS "CHICAGO STANDARD INLET, TYPE A"—TO BE USED ONLY WITH PRIOR APPROVAL OF CDWM.

## SECTION

N.T.S.

STANDARD DRAINAGE STRUCTURE FOR PUBLIC STREETS

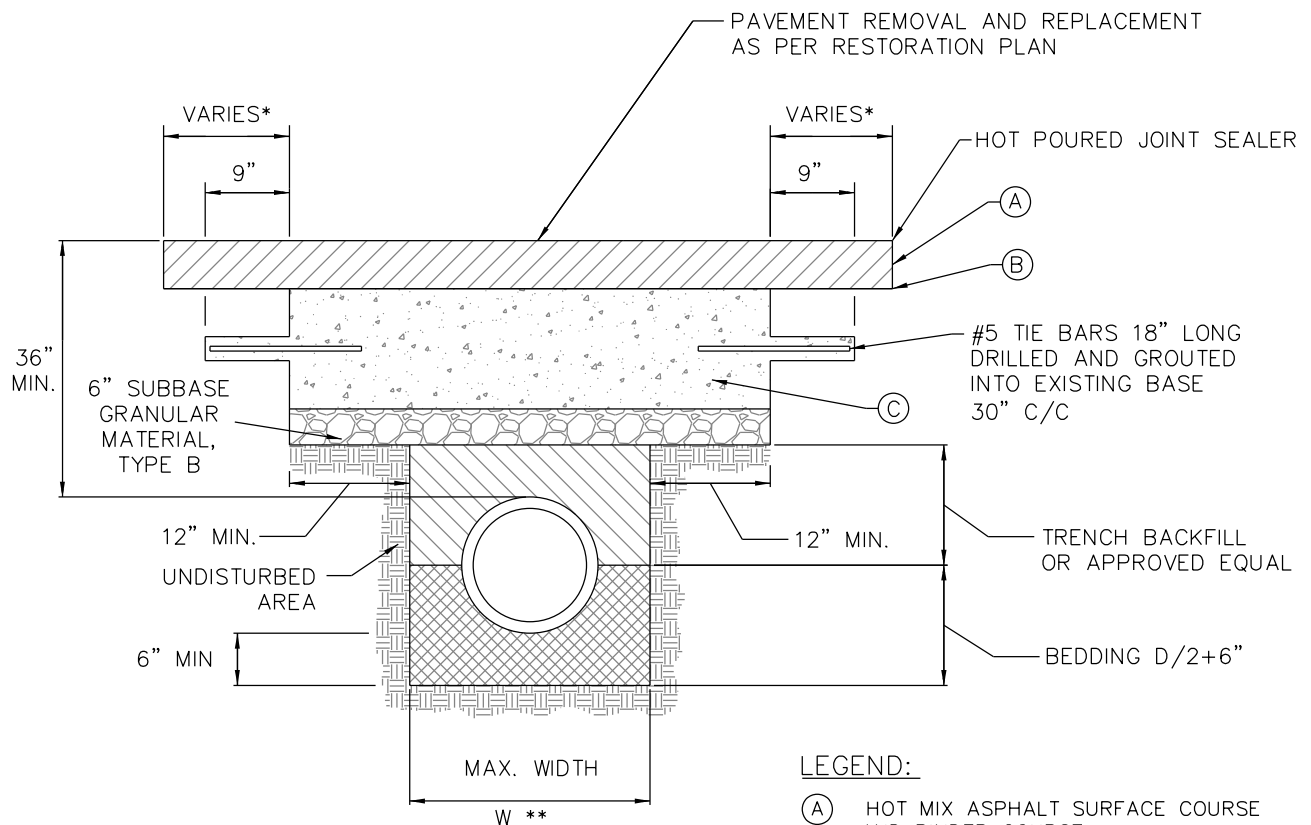




# SECTION

N.T.S.

STANDARD DRAINAGE STRUCTURE FOR PUBLIC STREETS



**LEGEND:**

- (A) HOT MIX ASPHALT SURFACE COURSE AND BINDER COURSE
- (B) BITUMINOUS MATERIAL & AGGREGATE (PRIME COAT)
- (C) PCC BASE COURSE

\* PAVEMENT SHALL BE REMOVED & REPAVED TO NEAREST CONSTRUCTION JOINT IF TRENCH EDGE IS 5' OR LESS FROM JOINT. (OR AS REQUIRED BY THE COMMISSIONER)

\*\*  $W = 9" + \text{O.D.} + 9"$ , WHEN TRENCH DEPTH  $\leq 5$  FT.  
 $W = 18" + \text{O.D.} + 18"$ , WHEN TRENCH DEPTH  $> 5$  FT.

**NOTES:**

1. THE PORTLAND CEMENT CONCRETE BASE SHALL BE 8" OR MORE (SEE SECTION 4.2b FOR REQUIRED THICKNESS). FOR CONCRETE STREETS THE CONCRETE SHALL BE BROUGHT TO GRADE (INCLUDING 1'-0" OVERLAP) AND FINISHED AS REQUIRED IN THE IDOT SSRBC.
2. ALL EXISTING PAVEMENTS SHALL BE SAW CUT 1'-0" ON BOTH SIDES OF THE TRENCH OR PAVEMENT OPENING. UNDER NO CIRCUMSTANCES SHOULD EXISTING PAVEMENT, WHICH HAS BEEN UNDERMINED OR OTHERWISE DISTURBED, BE LEFT IN PLACE AND NOT RESTORED.
3. ALL STREET PAVEMENT WILL REQUIRE PLACEMENT OF #5 TIE BARS, 18 INCHES LONG DRILLED AND GROUTED (NON SHRINK) AT 30" CENTERS ON ALL SIDES. A MINIMUM OF TWO TIE BARS WILL BE REQUIRED ON EACH SIDE OF SAW CUT BOUNDARIES.
4. ALL TIE BARS AND DOWEL BARS ARE TO BE EPOXY COATED (INCIDENTAL).



DATE

REVISION

CITY OF CHICAGO

1/1/2014

REVISION 1

STREET PAVEMENT RESTORATION  
DETAIL WITH TRENCH BACKFILL

1/27/2016

REVISION 2

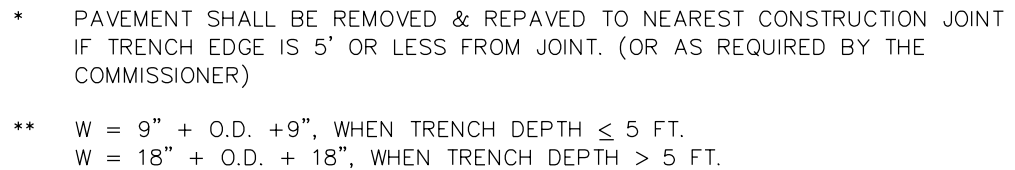
DATE

SHEET  
A-2-2A

DRAWN BY


12/12/06

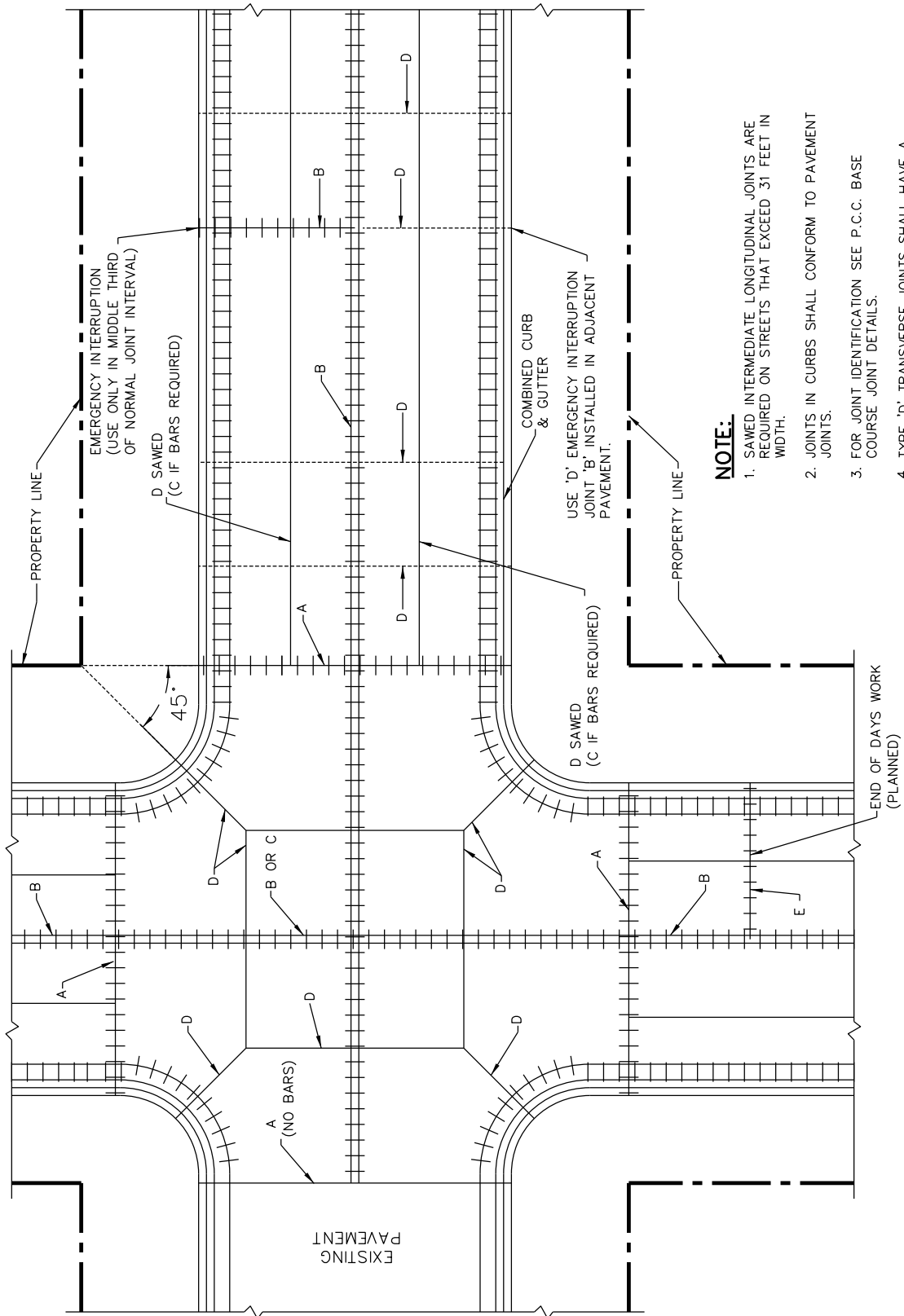
CDOT



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3. ALL STREET PAVEMENT WILL REQUIRE PLACEMENT OF #5 TIE BARS, 18 INCHES LONG DRILLED AND GROUTED (NON SHRINK) AT 30" CENTERS ON ALL SIDES. A MINIMUM OF TWO TIE BARS WILL BE REQUIRED ON EACH SIDE OF SAW CUT BOUNDARIES.
4. ALL TIE BARS AND DOWEL BARS ARE TO BE EPOXY COATED (INCIDENTAL).

DATE	REVISION	CITY OF CHICAGO		
1/1/2014	REVISION 1	STREET PAVEMENT RESTORATION DETAIL WITH FLOWABLE FILL		
1/27/2016	REVISION 2			
		DATE	SHEET A-2-2B	DRAWN BY
		01/11/07		CDOT

	DATE	REVISION	CITY OF CHICAGO		
	1/1/2014	REVISION 1	PAVEMENT PATCHING AND PORTLAND CEMENT CONCRETE REPLACEMENT		
	1/27/2016	REVISION 2			
			DATE	SHEET A-2-2C	DRAWN BY
			01/11/07		CDOT



**NOTE:**

1. SAWED INTERMEDIATE LONGITUDINAL JOINTS ARE REQUIRED ON STREETS THAT EXCEED 31 FEET IN WIDTH.
2. JOINTS IN CURBS SHALL CONFORM TO PAVEMENT JOINTS.
3. FOR JOINT IDENTIFICATION SEE P.C.C. BASE COURSE JOINT DETAILS.
4. TYPE 'D' TRANSVERSE JOINTS SHALL HAVE A SPACING OF 20 FEET ON ALL LONGITUDINAL CUTS THAT EXCEED 20 FEET IN LENGTH.
5. SEE SPECIAL PROVISION FOR JOINING P.C.C. PAVEMENT AND P.C.C. BASE.



DATE

1/1/2014

REVISION

REVISION 1

CITY OF CHICAGO

TYPICAL JOINT LAYOUT  
FOR P.C. CONCRETE PAVEMENTS

DATE

12/26/06

SHEET  
A-2-3A

DRAWN BY

CDOT

DATE

1/1/2014

REVISION

REVISION 1

CITY OF CHICAGO

P.C.C. PAVEMENT JOINT DETAILS

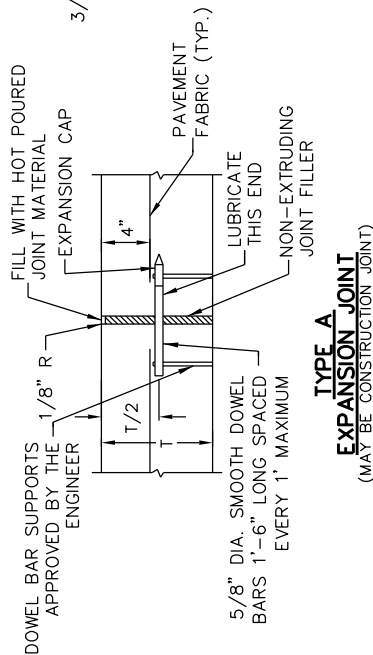
DATE

12/26/06

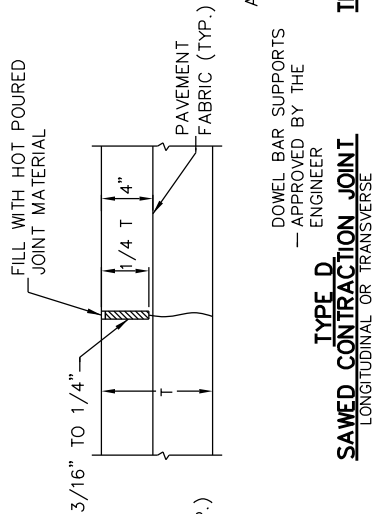
SHEET  
A-2-3B

DRAWN BY

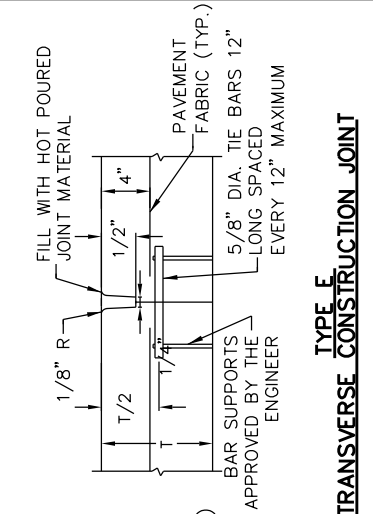
CDOT



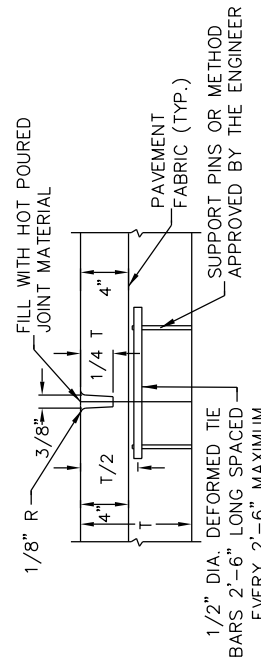
**TYPE A**  
**EXPANSION JOINT**  
(MAY BE CONSTRUCTION JOINT)



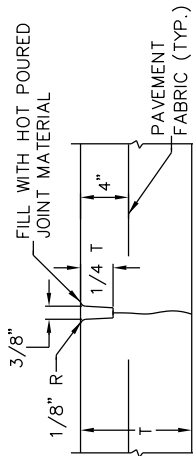
**TYPE D**  
**SAWED CONTRACTION JOINT**  
LONGITUDINAL OR TRANSVERSE



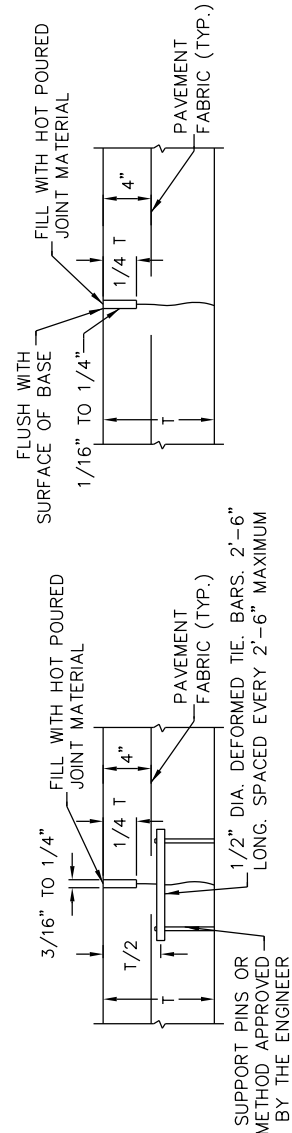
**TYPE E**  
**TRANSVERSE CONSTRUCTION JOINT**



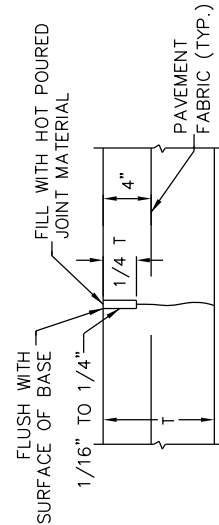
**TYPE B**  
**CONSTRUCTION JOINT**  
LONGITUDINAL OR TRANSVERSE



**TYPE D**  
**DUMMY GROOVE CONTRACTION JOINT**  
TRANSVERSE ONLY



**TYPE C**  
**SAWED LONGITUDINAL JOINT**



**TYPE D**  
**PREMOLDED CONTRACTION JOINT**  
TRANSVERSE ONLY

**NOTES:**

1. DEFORMED TIE BARS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-31 OR M-53 WITH AN ELONGATION NOT LESS THAN 20%.
2. HOT POURED JOINT MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-173-60 FOR CONCRETE JOINT SEALER.
3. ALL TIE BARS AND DOWEL BARS ARE TO BE EPOXY COATED.
4. SPLIT BOARD HEADERS WILL NOT BE ALLOWED.

DATE  
1/1/2014

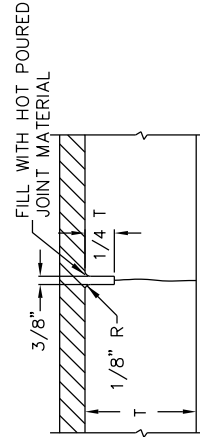
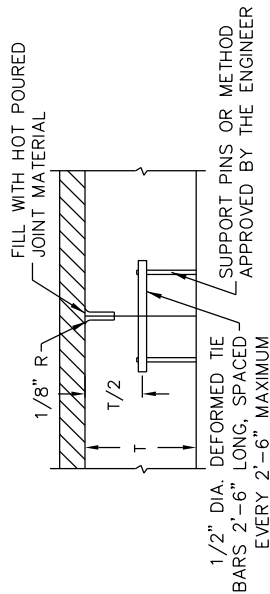
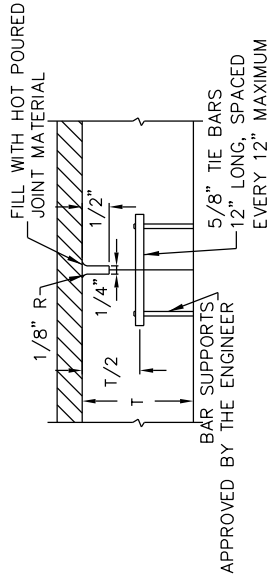
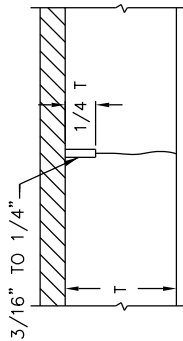
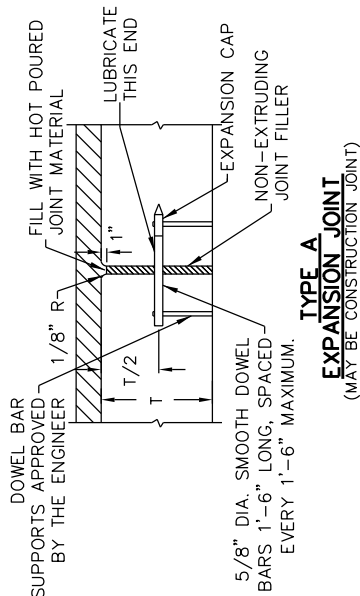
REVISION  
REVISION 1

CITY OF CHICAGO  
P.C.C. BASE COURSE JOINT DETAILS

DATE  
12/27/06

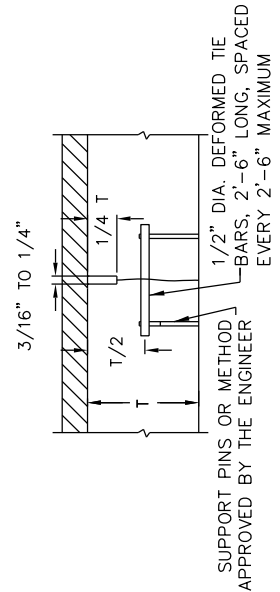
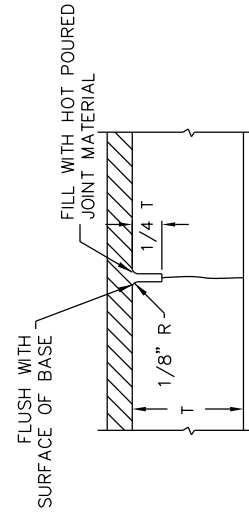
SHEET  
A-2-3C

DRAWN BY  
CDOT



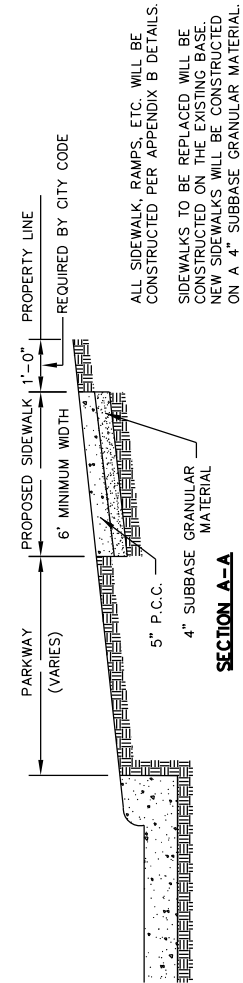
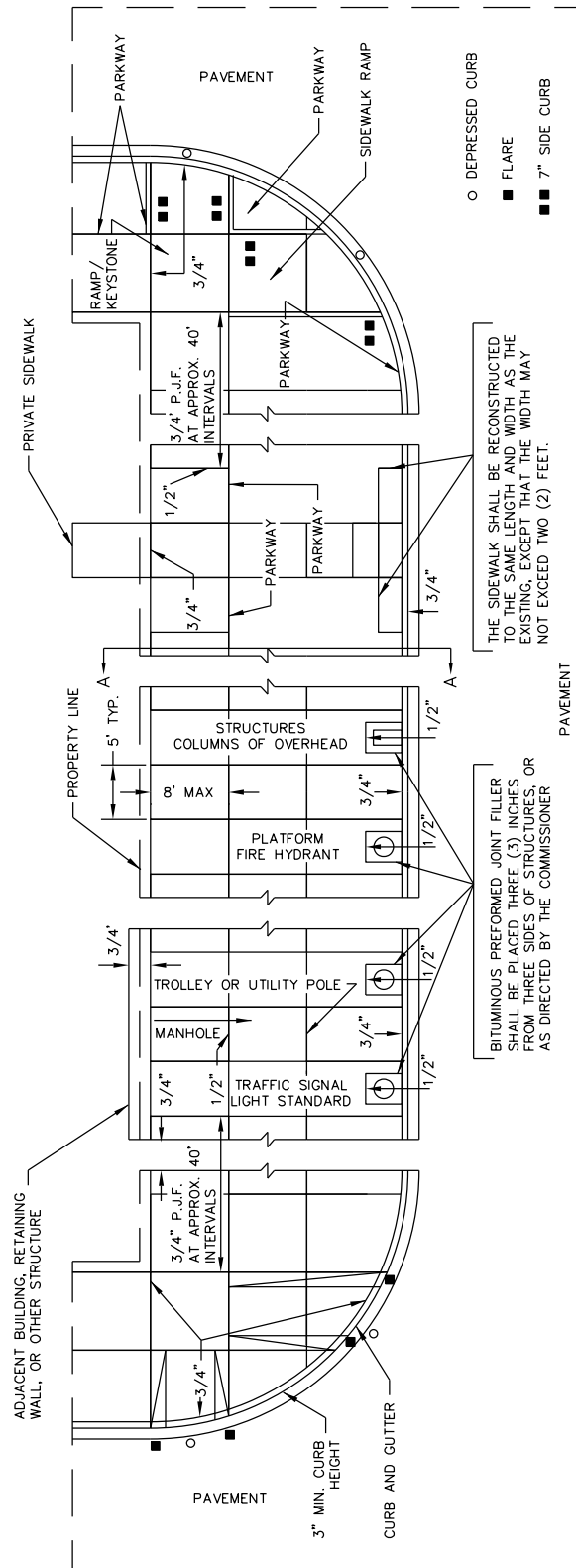
**NOTES:**

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2. HOT POURED JOINT MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF AASHTO SPECIFICATION M-173-60 FOR CONCRETE JOINT SEALER.
3. ALL TIE BARS AND DOWEL BARS ARE TO BE EPOXY COATED.
4. SPLIT BOARD HEADERS WILL NOT BE ALLOWED.



DATE	REVISION	CITY OF CHICAGO		
1/1/2014	REVISION 1	CONCRETE CURB & GUTTER DETAIL		
		DATE	SHEET A-2-6	DRAWN BY
		12/12/06		CDOT





\* THE 1/2" AND 3/4" DIMENSIONS REFER TO THE THICKNESS OF THE BITUMINOUS PREFORMED JOINT FILLER REQUIRED AT THE VARIOUS LOCATIONS.



DATE	REVISION	CITY OF CHICAGO		
1/1/2014	REVISION 1	DETAILS OF PORTLAND CEMENT CONCRETE CONSTRUCTION		
		DATE	SHEET A-3-2	DRAWN BY
		12/22/06		CDOT

<u>TREE DIAMETER</u>	<u>DISTANCE OF TUNNEL FROM TREE TRUNK</u>	<u>DISTANCE OF OPEN BYPASS TRENCH FROM TREE TRUNK</u>
INCHES	FEET	FEET
2	2	3
3	3	6
6	5*	10
12	6*	12
18	7*	14
24+	8*	16

\* DEPENDENT ON PARKWAY WIDTH

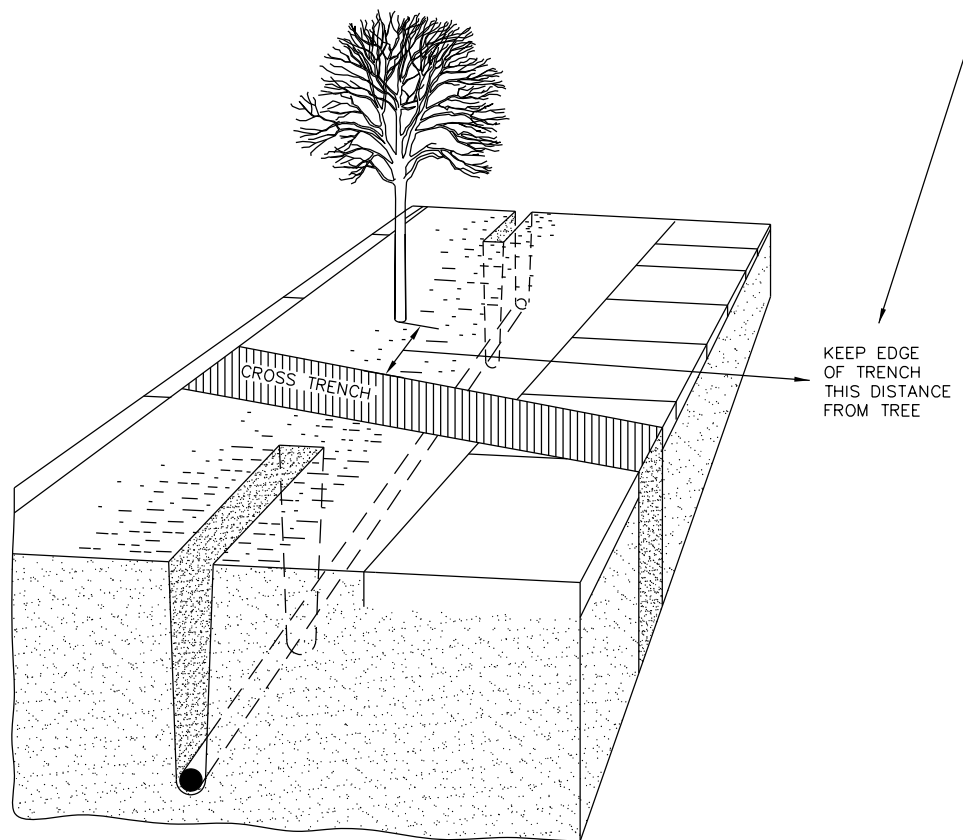


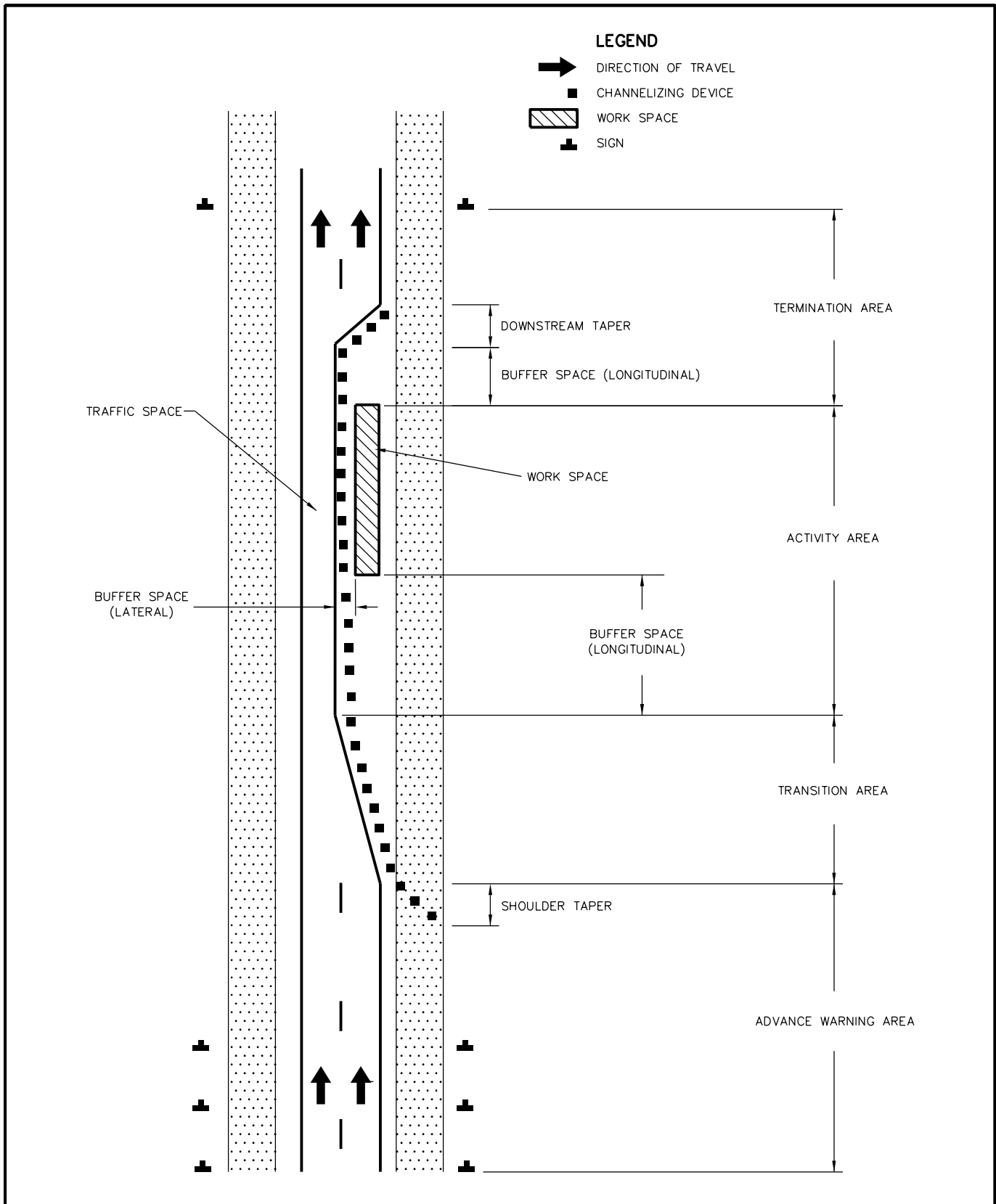
DIAGRAM ILLUSTRATING THE USE OF SOIL AUGERS IN THE PRESENCE OF TREES.




DATE	REVISION
1/1/2014	REVISION 1





CITY OF CHICAGO  
TRENCH GUIDELINES FOR  
INSTALLATION OF UNDERGROUND  
UTILITIES ADJACENT TO TREES

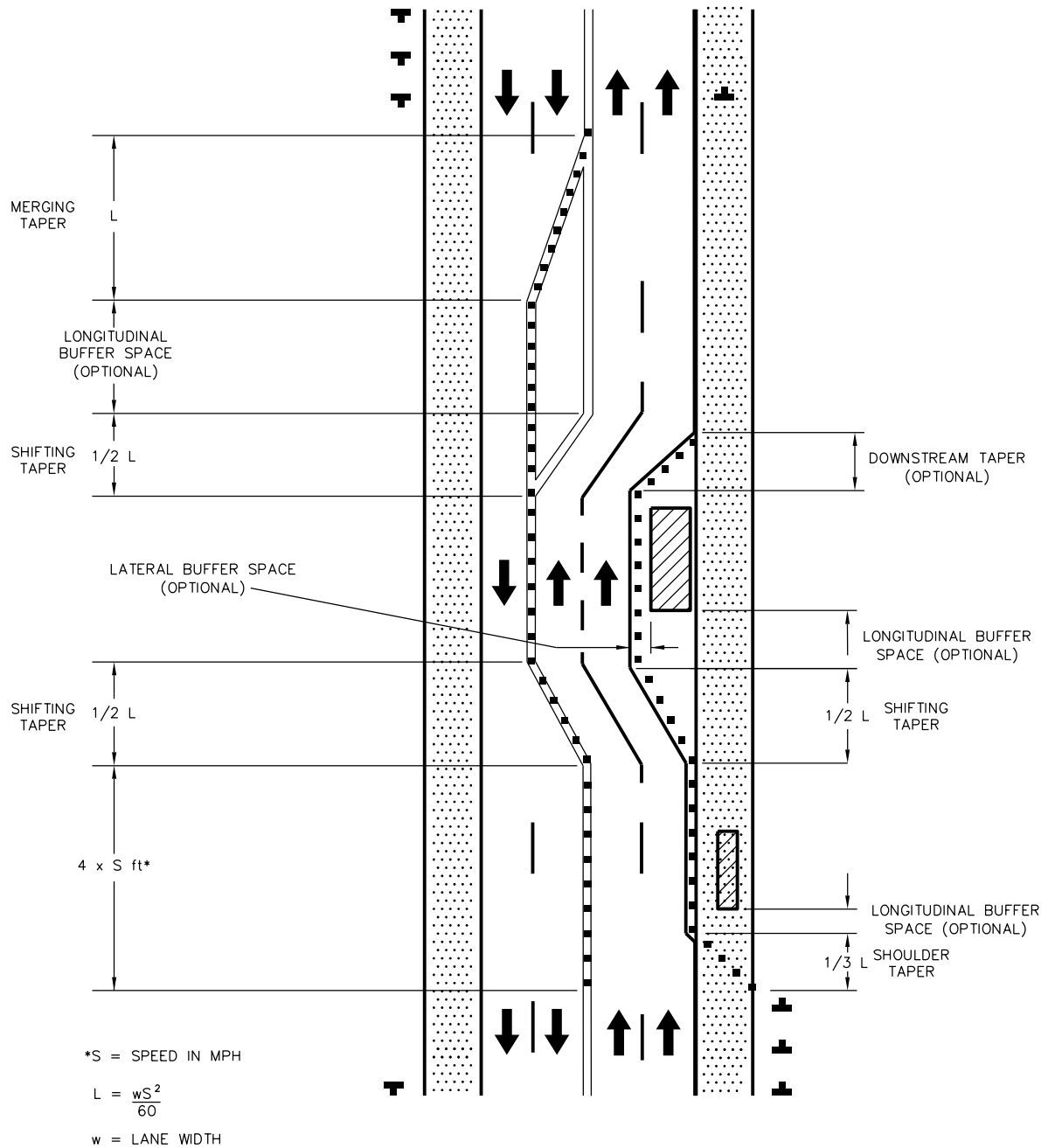
DATE	SHEET	DRAWN BY
01/11/07	A-5-3	CDOT



 <p>CHICAGO DEPARTMENT OF TRANSPORTATION</p>	DATE	REVISION	CITY OF CHICAGO		
			COMPONENT PARTS OF A TEMPORARY TRAFFIC CONTROL ZONE		
			DATE	SHEET	DRAWN BY
			1/1/14	A-6-1A	CDOT

# LEGEND

-  DIRECTION OF TRAVEL
-  CHANNELIZING DEVICE
-  WORK SPACE
-  SIGN



DATE

REVISION

CITY OF CHICAGO

COMPONENT PARTS OF A  
TEMPORARY TRAFFIC CONTROL ZONE

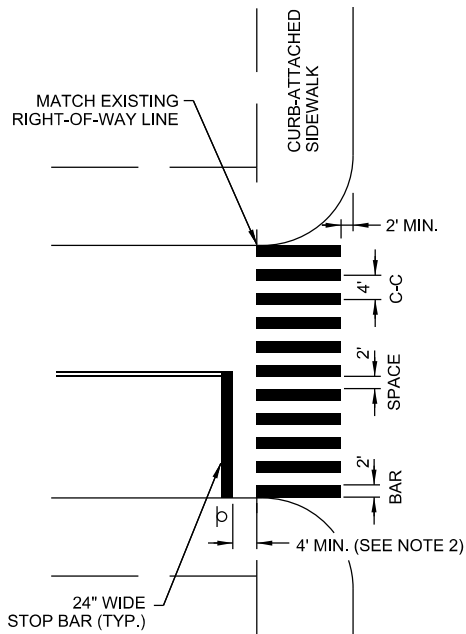
DATE

SHEET  
A-6-1B

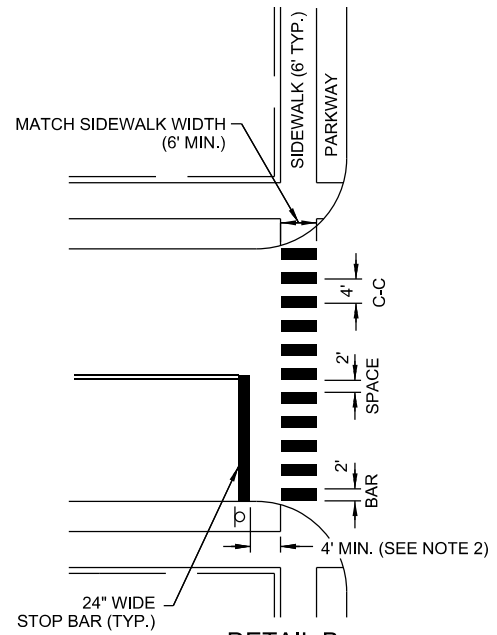
DRAWN BY

1/1/14

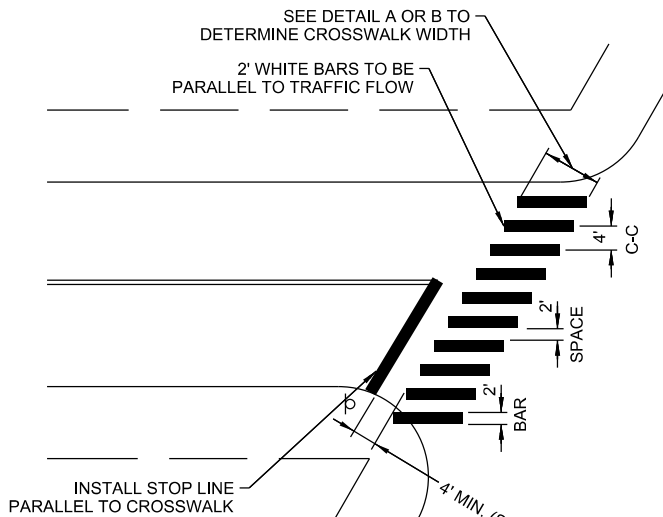
CDOT



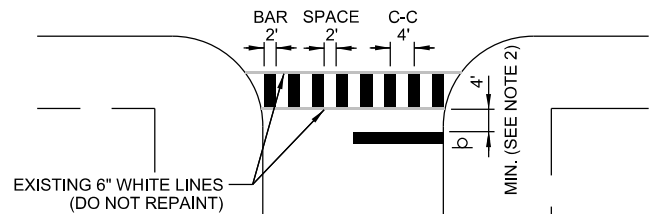
DETAIL A  
CONTINENTAL CROSSWALK  
CURB-ATTACHED SIDEWALK



DETAIL B  
CONTINENTAL CROSSWALK  
SIDEWALK AND PARKWAY

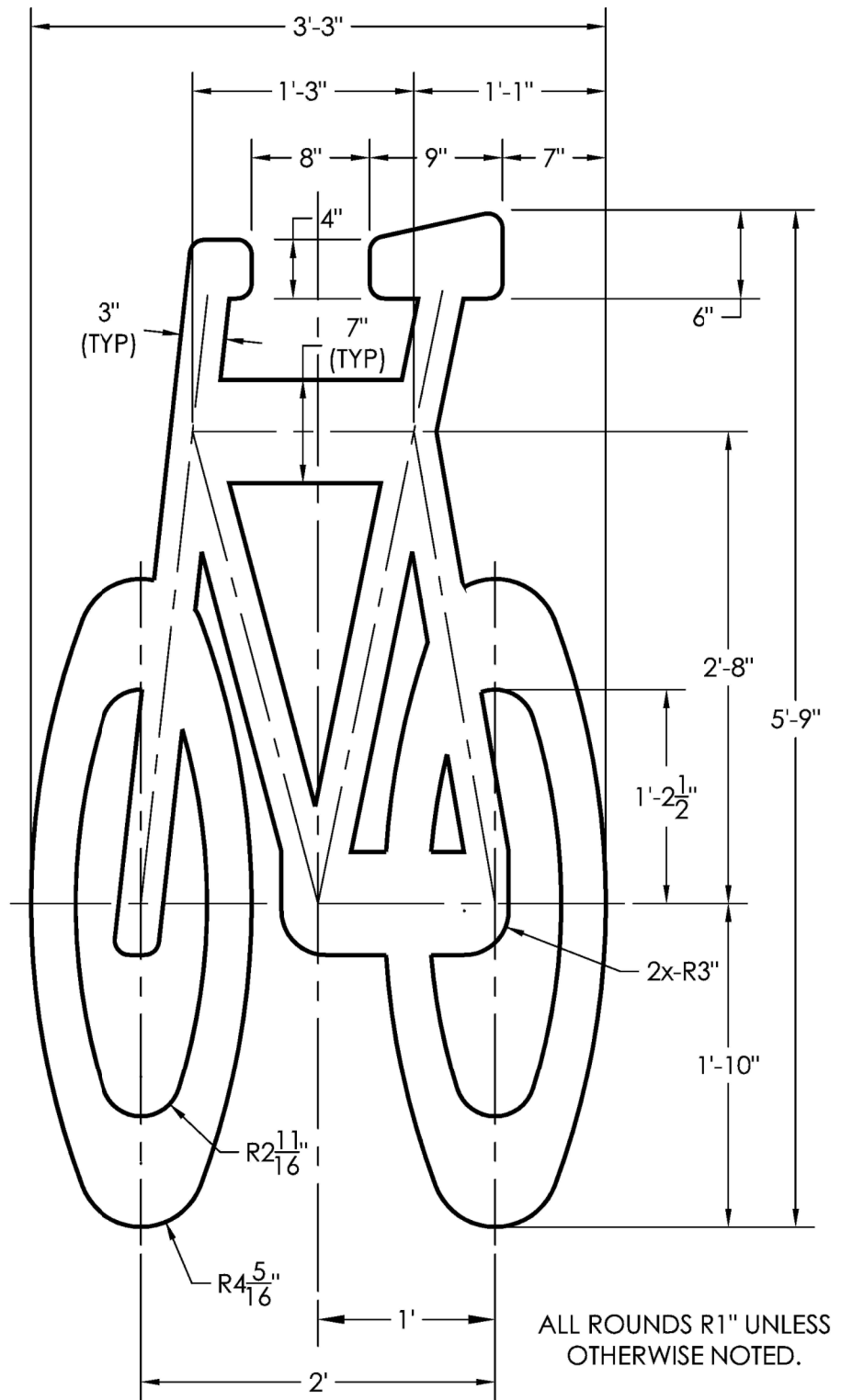


DETAIL C  
CONTINENTAL CROSSWALK  
SKEWED INTERSECTION



DETAIL D  
LADDER CROSSWALK

AREA = 8.36 ft<sup>2</sup>



DATE

1/1/2014

REVISION

REVISION 1

CITY OF CHICAGO

6' BIKE SYMBOL

DATE

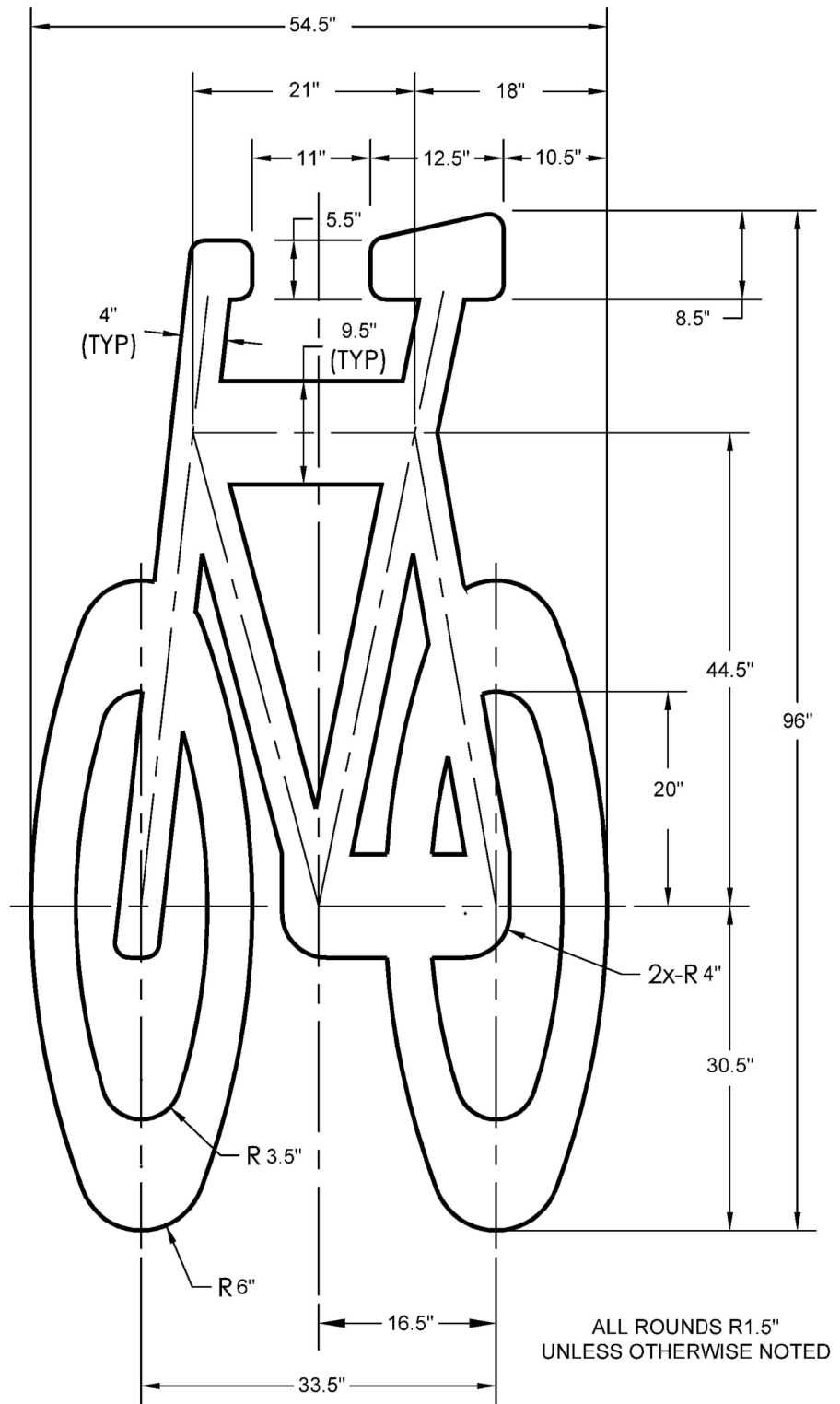
06/25/12

SHEET  
A-7-2

DRAWN BY

CDOT

AREA = 16.2 ft<sup>2</sup>



DATE

1/1/2014

REVISION

REVISION 1

CITY OF CHICAGO

8' BIKE SYMBOL

DATE

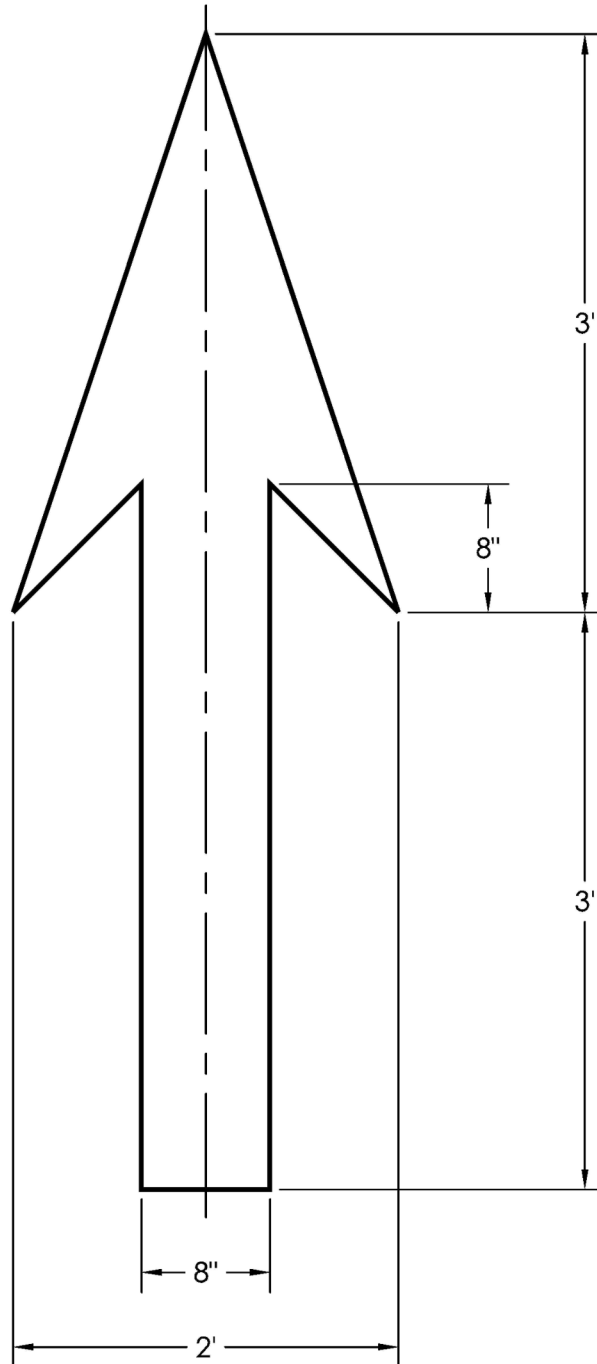
06/25/12

SHEET  
A-7-3

DRAWN BY

CDOT

AREA = 4.56 ft<sup>2</sup>



DATE

1/1/2014

REVISION

REVISION 1

CITY OF CHICAGO

BIKE ARROW

DATE

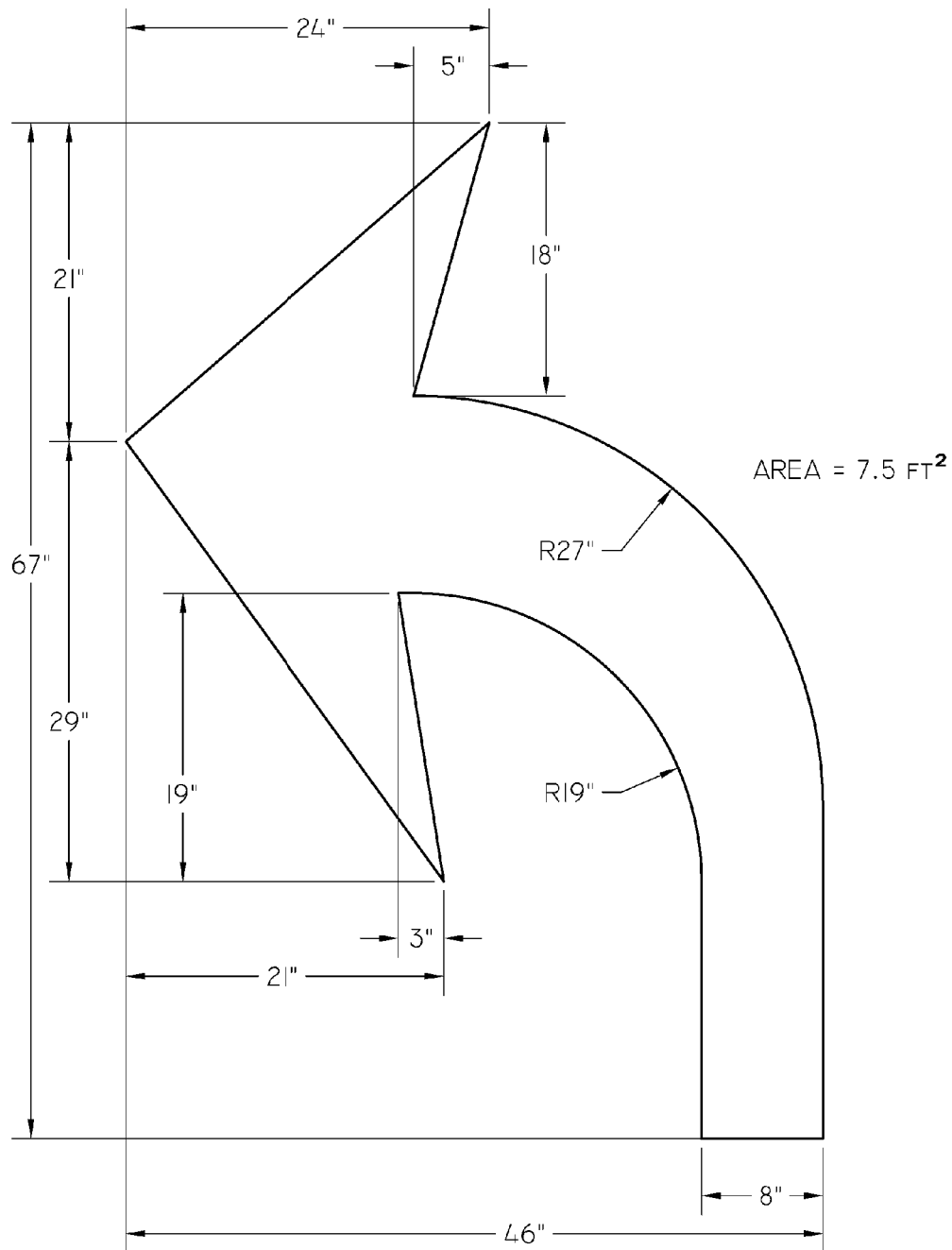
06/25/12

SHEET  
A-7-4

DRAWN BY

CDOT





NOTE:  
THIS SPECIFICATION REPRESENTS THE BIKE LEFT  
TURN ARROW. FOR A BIKE RIGHT TURN ARROW,  
USE A MIRROR IMAGE.



DATE

1/1/2014

REVISION

REVISION 1

CITY OF CHICAGO

BIKE TURN ARROW

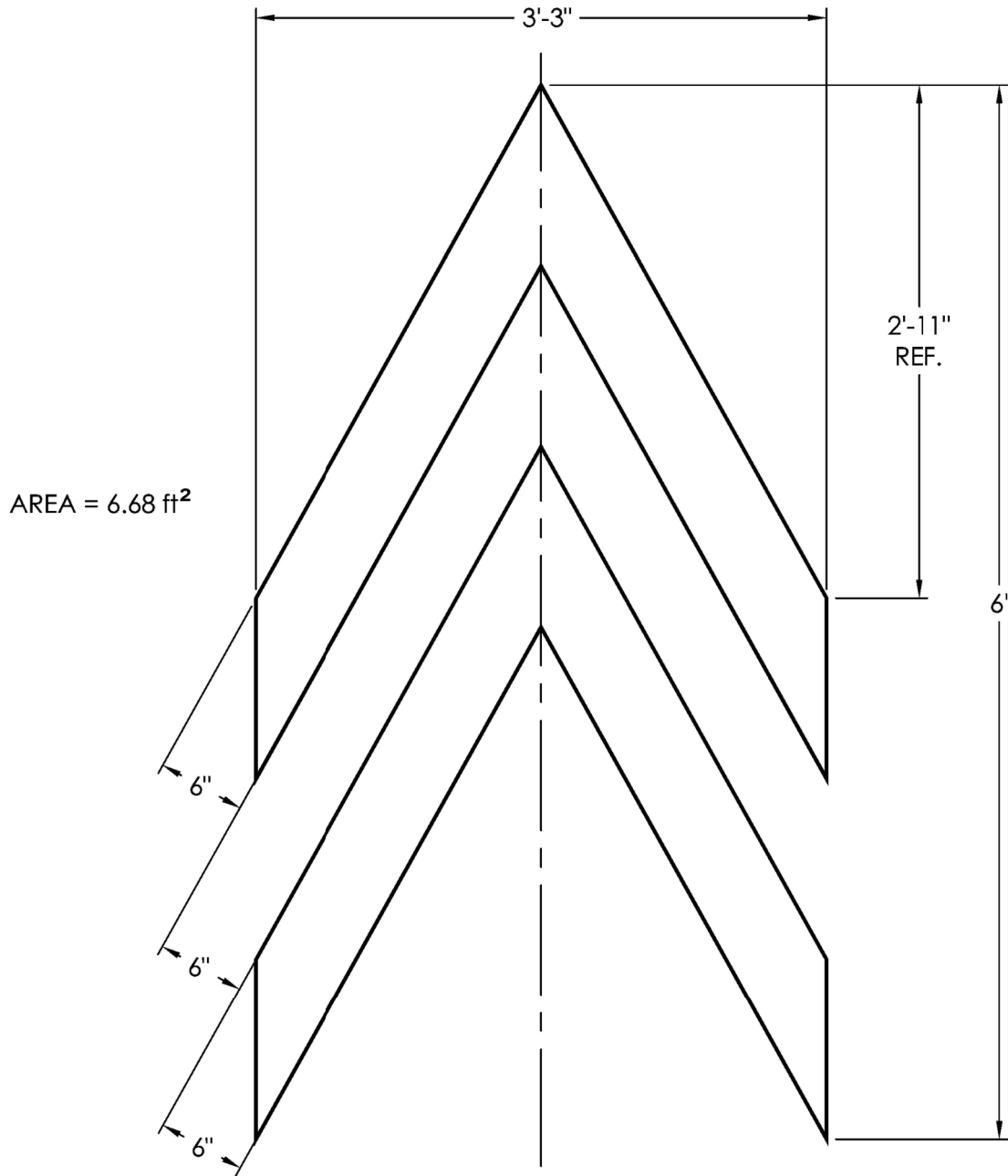
DATE

06/25/12

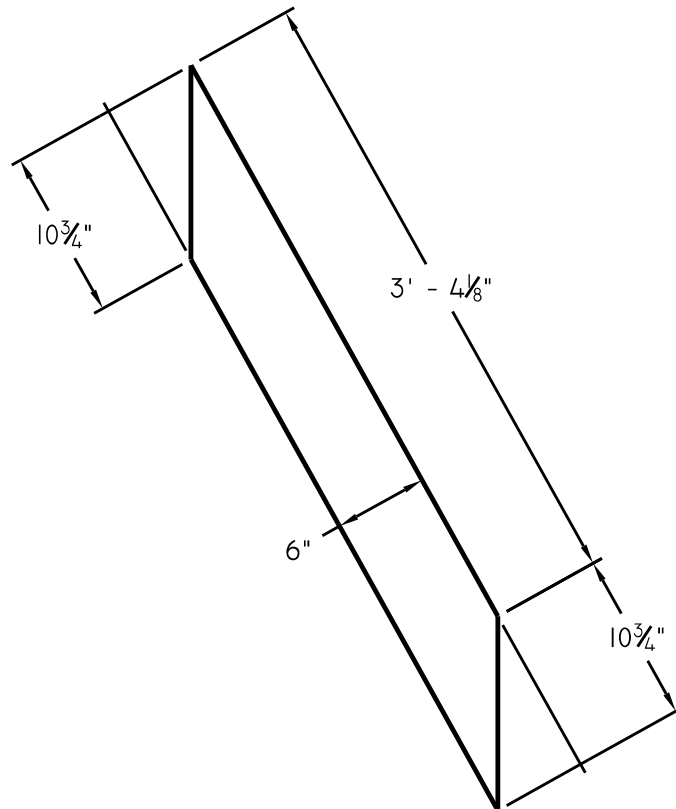
SHEET  
A-7-5

DRAWN BY

CDOT



DATE	REVISION	CITY OF CHICAGO		
1/1/2014	REVISION 1	BIKE CHEVRON		
		DATE	SHEET	DRAWN BY
		06/25/12	A-7-6	CDOT



NOTE:

1. THESE DIMENSIONS SHOULD BE CONSIDERED AN APPROXIMATION, TO BE USED WHEN THE CHEVRON IS CUT, IN THE FIELD, FROM 6" PREFORMED THERMOPLASTIC MARKING.
2. THIS DRAWING REPRESENTS THE RIGHT LEG OF THE CHEVRON. MIRROR THIS DRAWING FOR THE CHEVRON'S LEFT LEG.



DATE

1/1/2014

REVISION

REVISION 1

CITY OF CHICAGO

SHARED LANE MARKING

CHEVRON

RIGHT LEG DETAIL

DATE

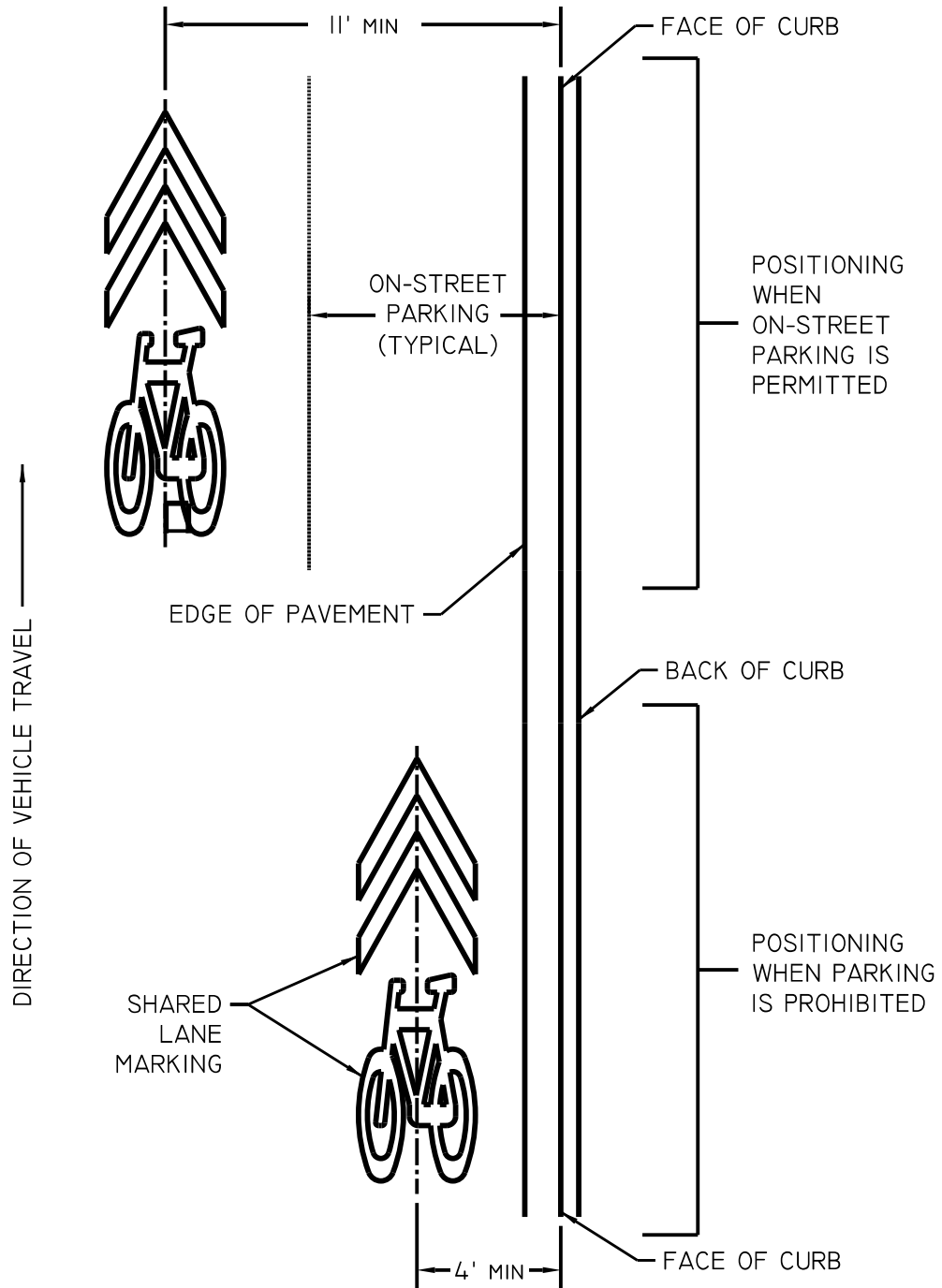
10/24/05

SHEET

A-7-7

DRAWN BY

CDOT





\* FHWA Series 2000  
Standard Alphabets

Refer to FHWA Standard  
Highway Signs manual for  
symbol detail.

Colors: Legend -Black  
Background -Orange



DATE

REVISION

CITY OF CHICAGO

SHARED LANE  
YIELD TO BIKES SIGN

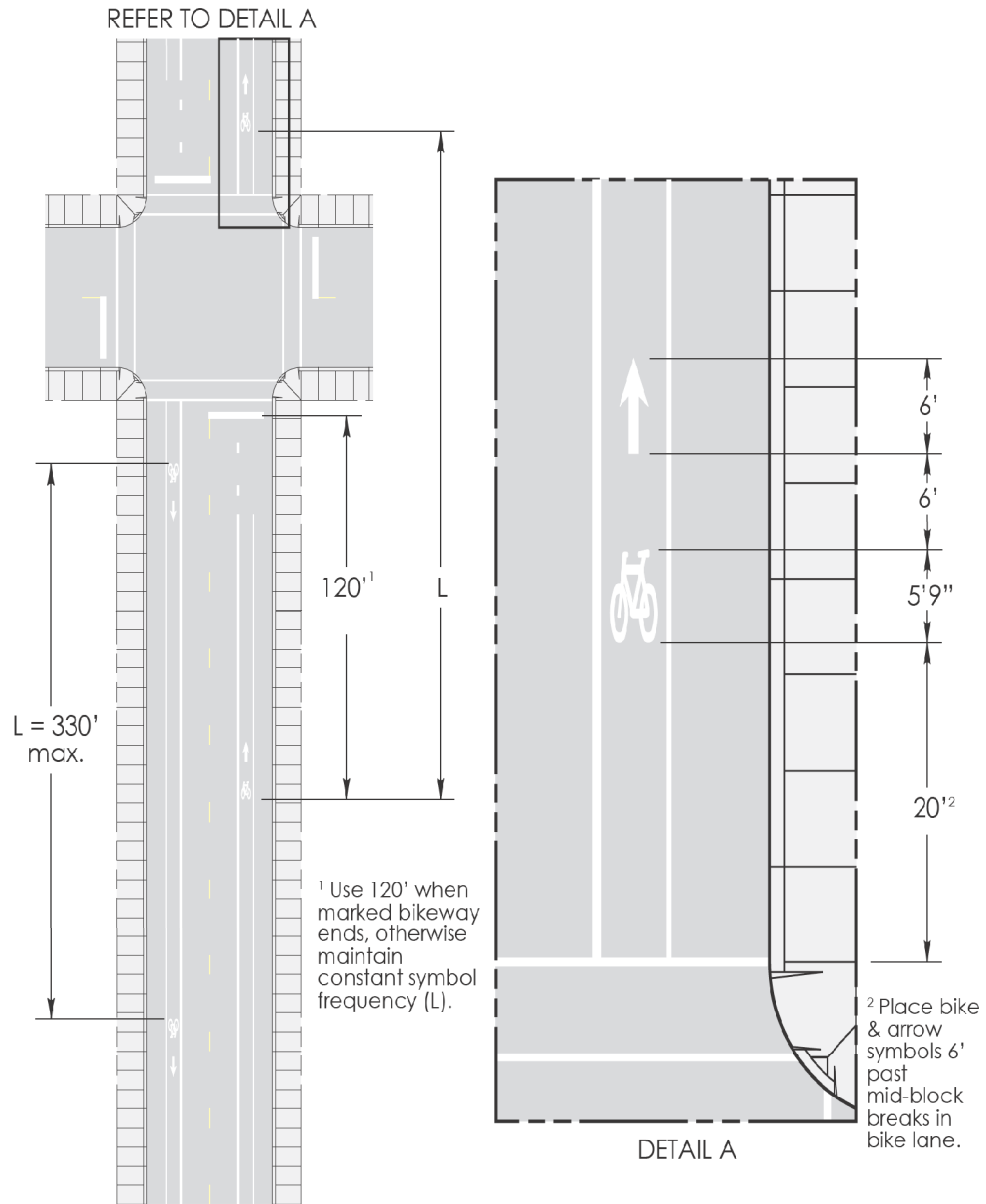
DATE

SHEET  
A-7-9

DRAWN BY

1/1/14

CDOT



DATE

1/1/2014

REVISION

REVISION 1

CITY OF CHICAGO

BIKE AND ARROW SYMBOL SPACING

DATE

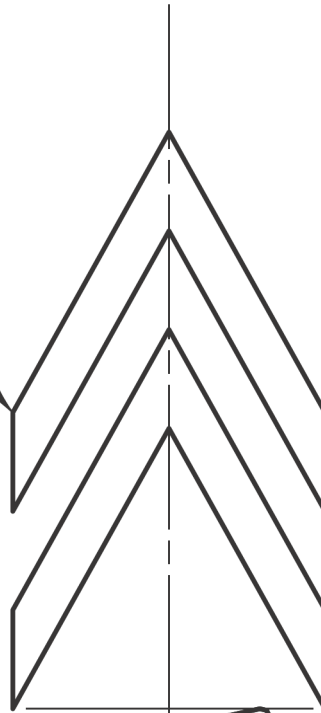
09/02/05

SHEET  
A-7-10

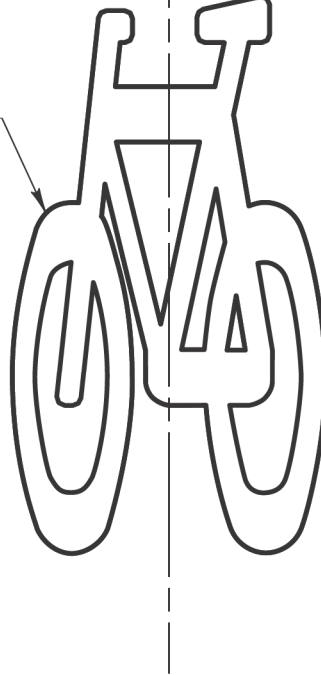
DRAWN BY

CDOT

REFER TO BIKE CHEVRON  
DETAIL FOR MARKING  
DIMENSIONS.



REFER TO BIKE SYMBOL  
DETAIL FOR MARKING  
DIMENSIONS.



INSTALL BIKE CHEVRON  
AND BIKE SYMBOL FLUSH  
TO ONE ANOTHER.



DATE

1/1/2014

REVISION

REVISION 1

CITY OF CHICAGO

SHARED LANE MARKING

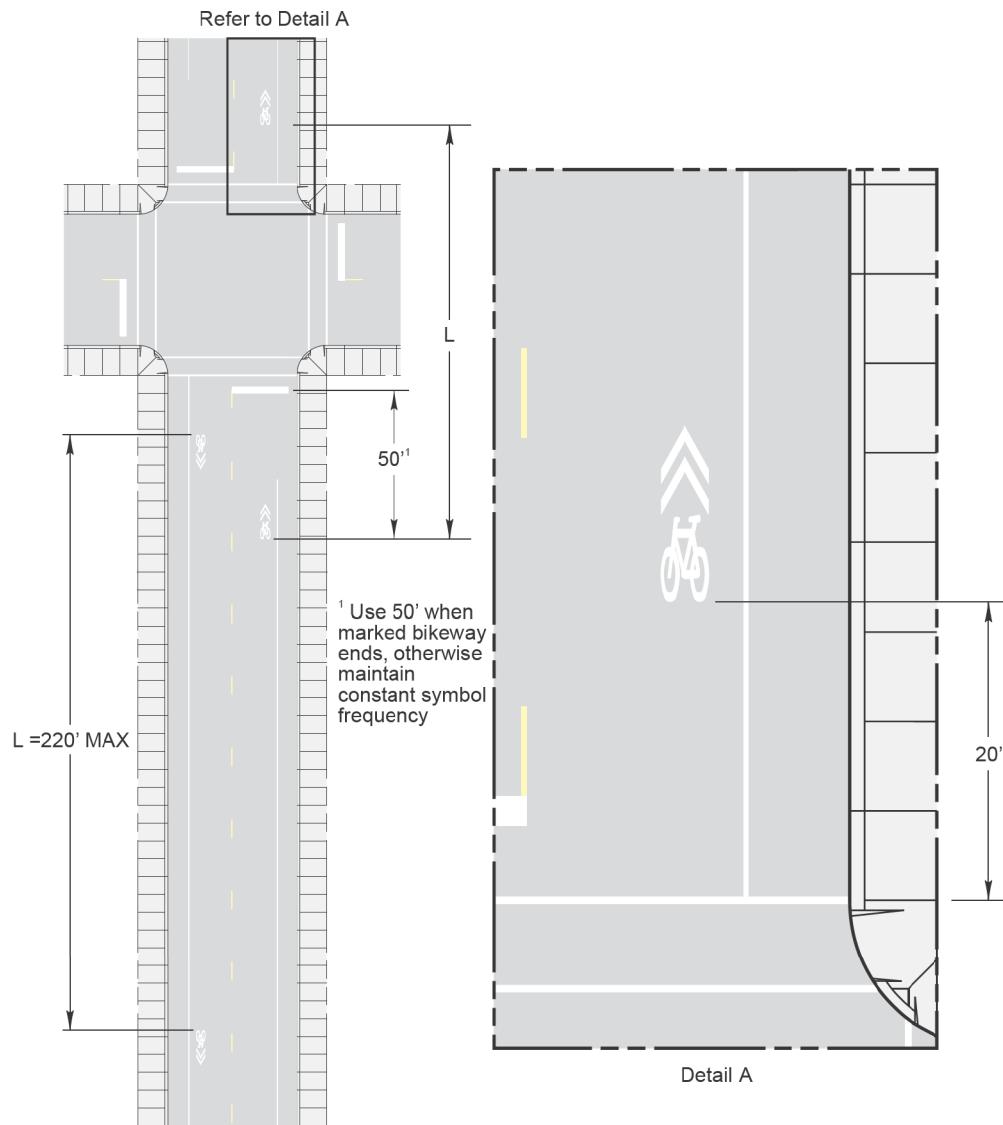
DATE

10/02/07

SHEET  
A-7-11

DRAWN BY

CDOT



DATE

1/1/2014

REVISION

REVISION 1

CITY OF CHICAGO

SHARED LANE MARKING -  
LONGITUDINAL SPACING

DATE

12/12/07

SHEET  
A-7-12

DRAWN BY

CDOT



## **APPENDIX B: ADA STANDARDS**

Provided hereinafter are the latest Department of Transportation ADA Standards which must be followed for infrastructure construction in the Public Way. Please be advised that these may be revised without notice because of new standards and regulations imposed by the Federal, State and Local Governments.

# CITY OF CHICAGO

## DEPARTMENT OF TRANSPORTATION

### APPENDIX B

### REQUIREMENTS FOR OPENINGS, CONSTRUCTION AND REPAIR IN THE PUBLIC WAY

# ADA STANDARDS



Department of Transportation

REVISION		REVISION	
1.	DATE - 02/20/2007	5.	DATE - 08/10/2012
2.	DATE - 11/15/2007	6.	DATE - 01/01/14
3.	DATE - 11/14/2008		
4.	DATE - 11/02/2009		



# APPENDIX B - ADA STANDARDS

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### SECTION 1 - PLAN SHEETS

SHEET#	SHEET NAME
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B-1-3	2 PERPENDICULAR RAMPS AT CORNER WITH RAMPS IN CURB RADIUS
B-1-4	PERPENDICULAR RAMP AT CORNER IN CURB RADIUS WITH SINGLE CROSSING
B-1-5	PERPENDICULAR RAMP AT CORNER IN CURB RADIUS WITH DETECTABLE WARNING SETBACK GREATER THAN 5'
B-1-6	COMBINATION RAMP AT CORNER (PARALLEL AND PERPENDICULAR RAMPS)
B-1-7	BLENDED TRANSITION AT CORNER
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B-1-12	PERPENDICULAR RAMPS AT CORNER WITH LARGE CURB RADIUS
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B-1-14	RAMPS THAT DO NOT ALIGN WITH CROSSWALK
B-1-15	PERPENDICULAR RAMP AT MID-BLOCK LOCATION
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B-1-17	PARALLEL RAMP (ONE DIRECTION) AT MID-BLOCK LOCATION
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B-2-2	ALLEY RETURN SECTIONS
B-2-3	DRIVEWAY CONSTRUCTION PLAN VIEWS
B-2-4	DRIVEWAY CONSTRUCTION SECTIONS
B-2-5	ALLEY & DRIVEWAY DETAIL FOR REDUCED WIDTH PEDESTRIAN ACCESS ROUTE

### SECTION 3 - NOTES

SHEET#	SHEET NAME
B-3-1	CONVERSION CHARTS
B-3-2	GENERAL NOTES
B-3-3	GENERAL NOTES (CONTINUED)
B-3-4	ADA COMPLIANCE AND TRANSITION GUIDELINES
B-3-5	SEAL

### SECTION 4 - DETAILS

SHEET#	SHEET NAME
B-4-1	DETECTABLE WARNING UNIT SIZES
B-4-2	DETECTABLE WARNING DETAILS
B-4-3	CURB & GUTTER DETAILS

## NOTES:

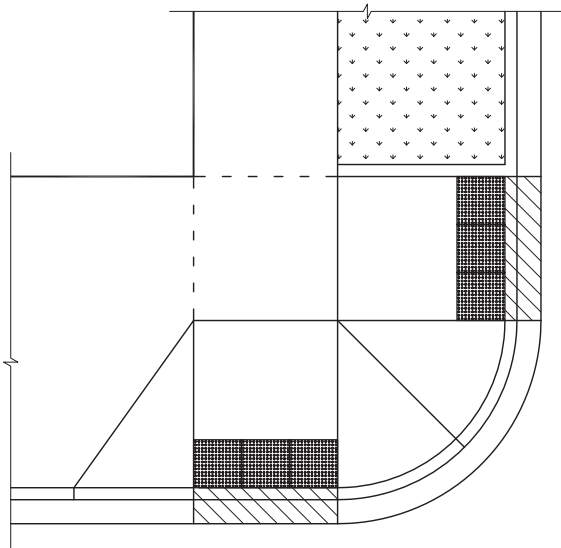
**CURB RAMP LAYOUT B-1-2 IS PREFERRED WHEREVER POSSIBLE. WHERE RAMPS ARE LOCATED IN THE CORNER RADIUS, LAYOUT B-1-3 SHALL BE USED.**

CURB RAMP PLACEMENT SHALL BE COORDINATED AS REQUIRED TO ALLOW FOR A 4' MINIMUM WIDTH SIDEWALK AROUND EACH CORNER OF INTERSECTION. SIDEWALK NOT TO BE OBSTRUCTED BY CURB RAMPS OR OTHER BARRIERS AND SHALL HAVE A CROSS SLOPE OF 1:64 MAXIMUM.

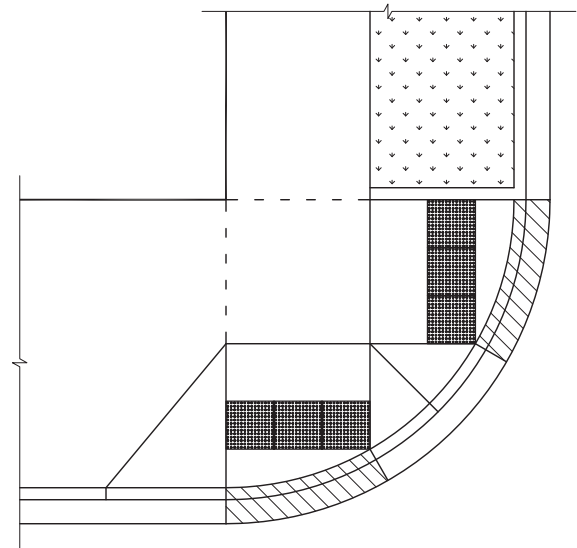
THE BLENDED TRANSITION LAYOUT B-1-7 (AND SIMILAR) MAY BE USED WHERE TWO RAMPS ARE NOT POSSIBLE DUE TO GEOMETRIC CONSTRAINTS, SUCH AS LIMITED SIDEWALK WIDTH OR GRADE ELEVATIONS. THE BLENDED TRANSITION SHALL NOT BE USED IF ACCESS TO AN EXISTING FACILITY WOULD BE REDUCED.

**THE SHARED PERPENDICULAR RAMP AT CORNER LAYOUT B-1-10 IS NOT PREFERRED AND MAY ONLY BE USED WITH PERMISSION FROM THE COMMISSIONER.**

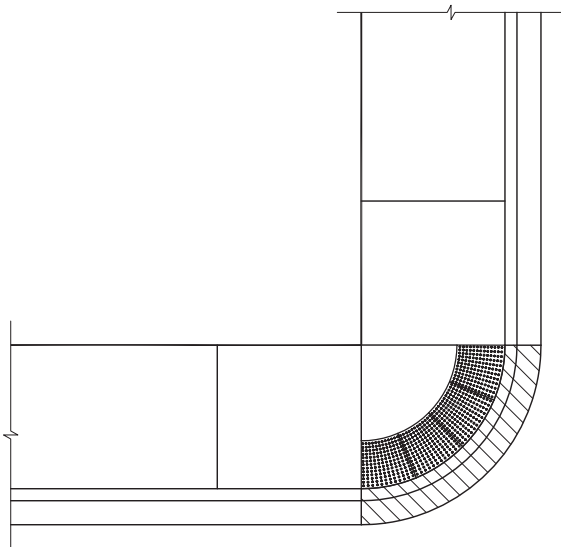
SEE SHEET B-3-3 FOR TRANSITION PANEL GUIDELINES.



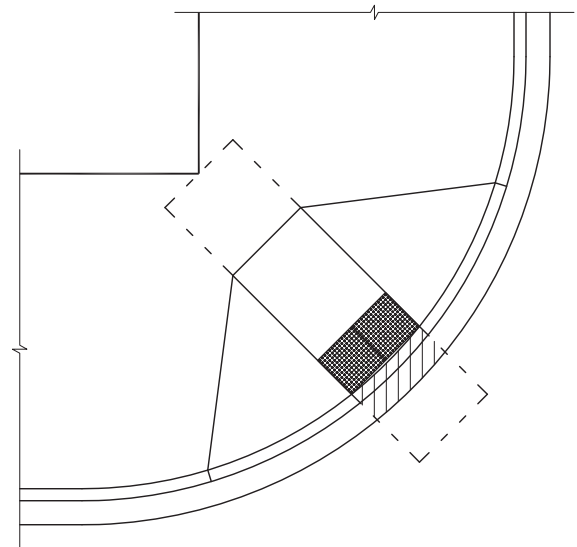
**SHEET B-1-2: 2 PERPENDICULAR RAMPS**



**SHEET B-1-3: 2 RAMPS IN RADIUS**



**SHEET B-1-7: BLENDED TRANSITION**



**SHEET B-1-10: SHARED PERPENDICULAR RAMP AT CORNER**



City of Chicago  
Rahm Emanuel, Mayor  
Department of Transportation  
Division of Engineering  
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### DATE

02/20/07  
11/15/07  
11/14/08  
11/02/09  
08/10/12

### REVISION

REVISION 1  
REVISION 2  
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REVISION 5

## CITY OF CHICAGO TYPICAL CORNER RAMP LAYOUTS SHEET B-1-1

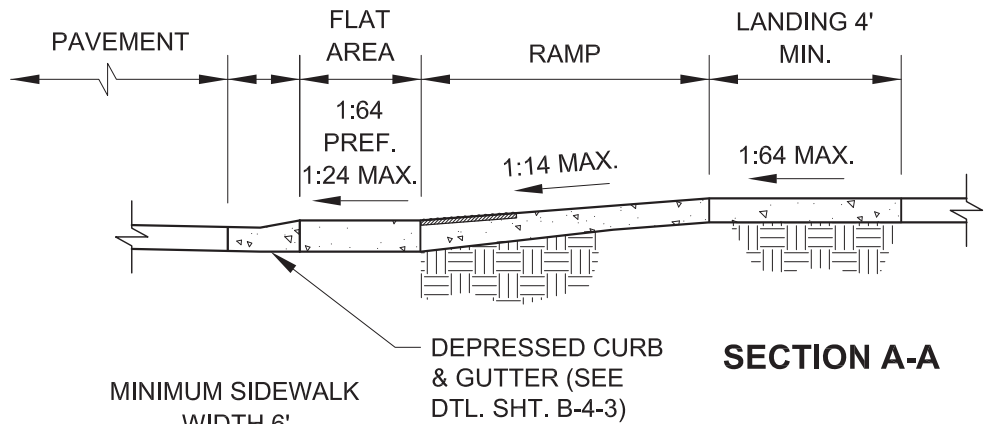
SCALE: NOT TO SCALE  
DATE: 10/23/2006

DRAWN BY: CDOT  
CHECKED BY: LCM

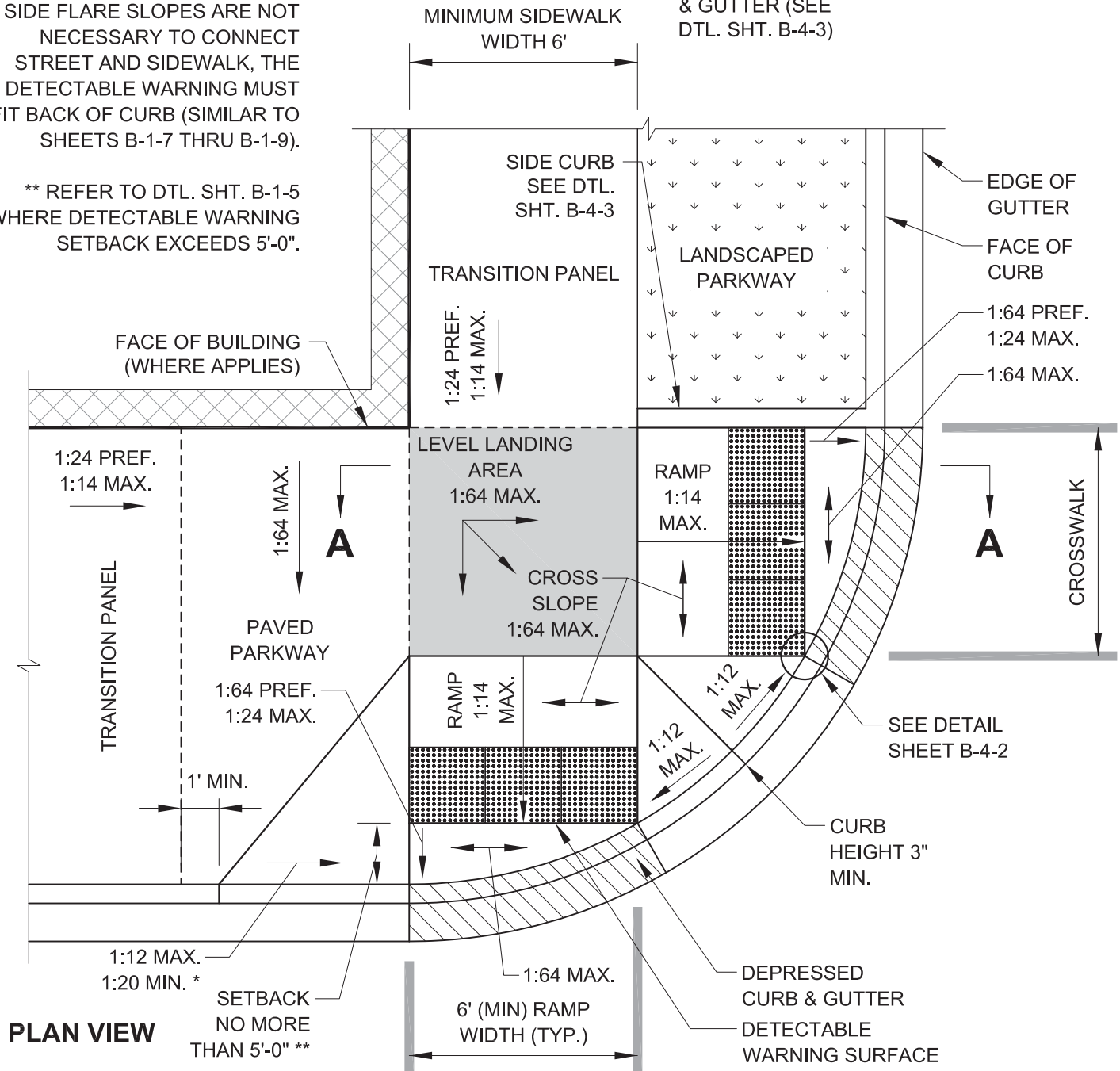


\* SIDE FLARES WITH A MINIMUM SLOPE OF 1:20 (MEASURED PARALLEL TO CURB) ARE NECESSARY FOR DETECTION BY THE BLIND AND VISUALLY IMPAIRED AT PAVED PARKWAYS WHERE DETECTABLE WARNING IS SET BACK FROM BACK OF CURB (TO BE POSITIONED PERPENDICULAR TO THE PATH OF TRAVEL). WHERE RAMP AND SIDE FLARE SLOPES ARE NOT NECESSARY TO CONNECT STREET AND SIDEWALK, THE DETECTABLE WARNING MUST FIT BACK OF CURB (SIMILAR TO SHEETS B-1-7 THRU B-1-9).

\*\* REFER TO DTL. SHT. B-1-5 WHERE DETECTABLE WARNING SETBACK EXCEEDS 5'-0".

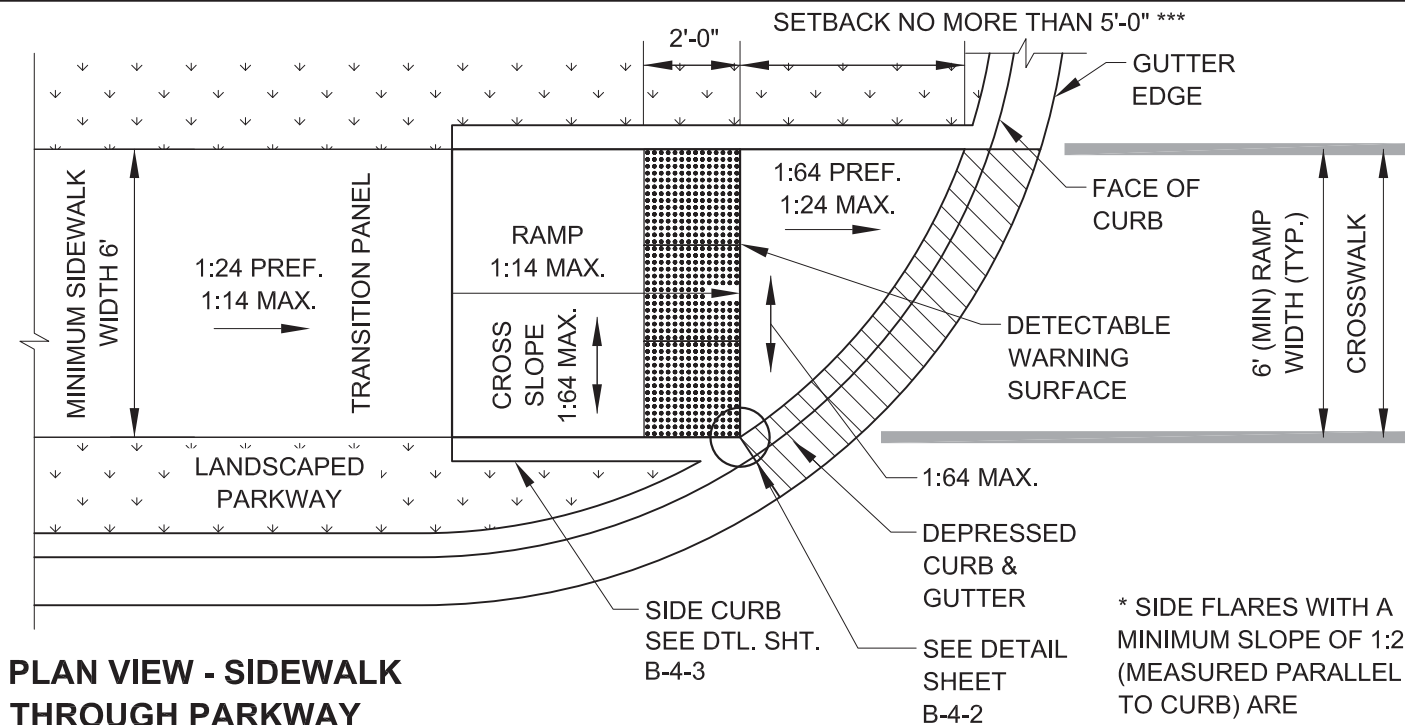


**SECTION A-A**



**PLAN VIEW**

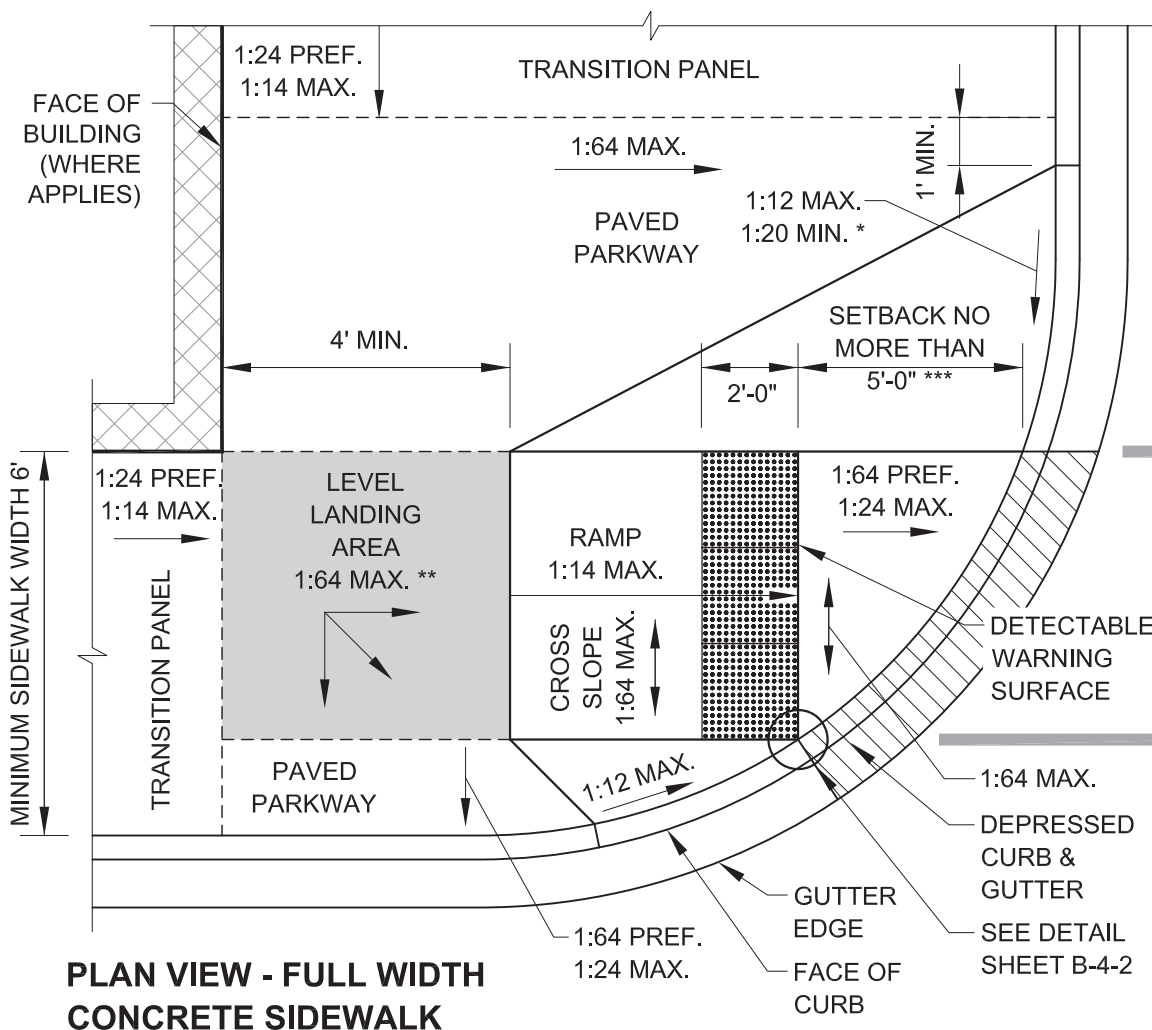
DATE	REVISION
02/20/07	REVISION 1
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11/14/08	REVISION 3
11/02/09	REVISION 4
08/10/12	REVISION 5



\* SIDE FLARES WITH A MINIMUM SLOPE OF 1:20 (MEASURED PARALLEL TO CURB) ARE NECESSARY FOR DETECTION BY THE BLIND AND VISUALLY IMPAIRED AT PAVED PARKWAYS WHERE DETECTABLE WARNING IS SET BACK FROM BACK OF CURB (TO BE POSITIONED PERPENDICULAR TO THE PATH OF TRAVEL). WHERE RAMP AND SIDE FLARE SLOPES ARE NOT NECESSARY TO CONNECT STREET AND SIDEWALK, THE DETECTABLE WARNING MUST FIT BACK OF CURB (SIMILAR TO SHEETS B-1-7 THRU B-1-9).

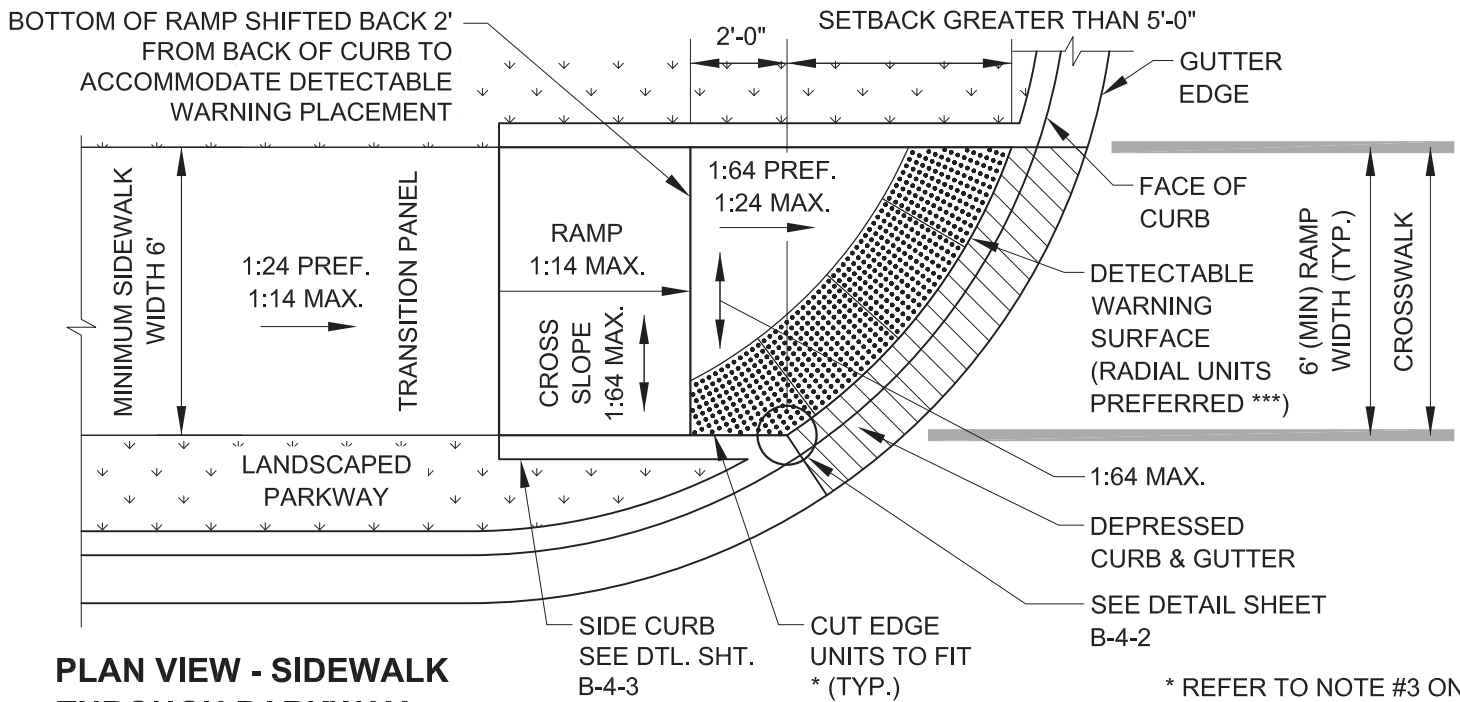
\*\* LEVEL LANDING AREA REQUIRED WHERE SIDEWALKS INTERSECT AT TOP OF RAMP.

\*\*\* REFER TO DTL. SHT. B-1-5 WHERE DETECTABLE WARNING SETBACK EXCEEDS 5'-0".

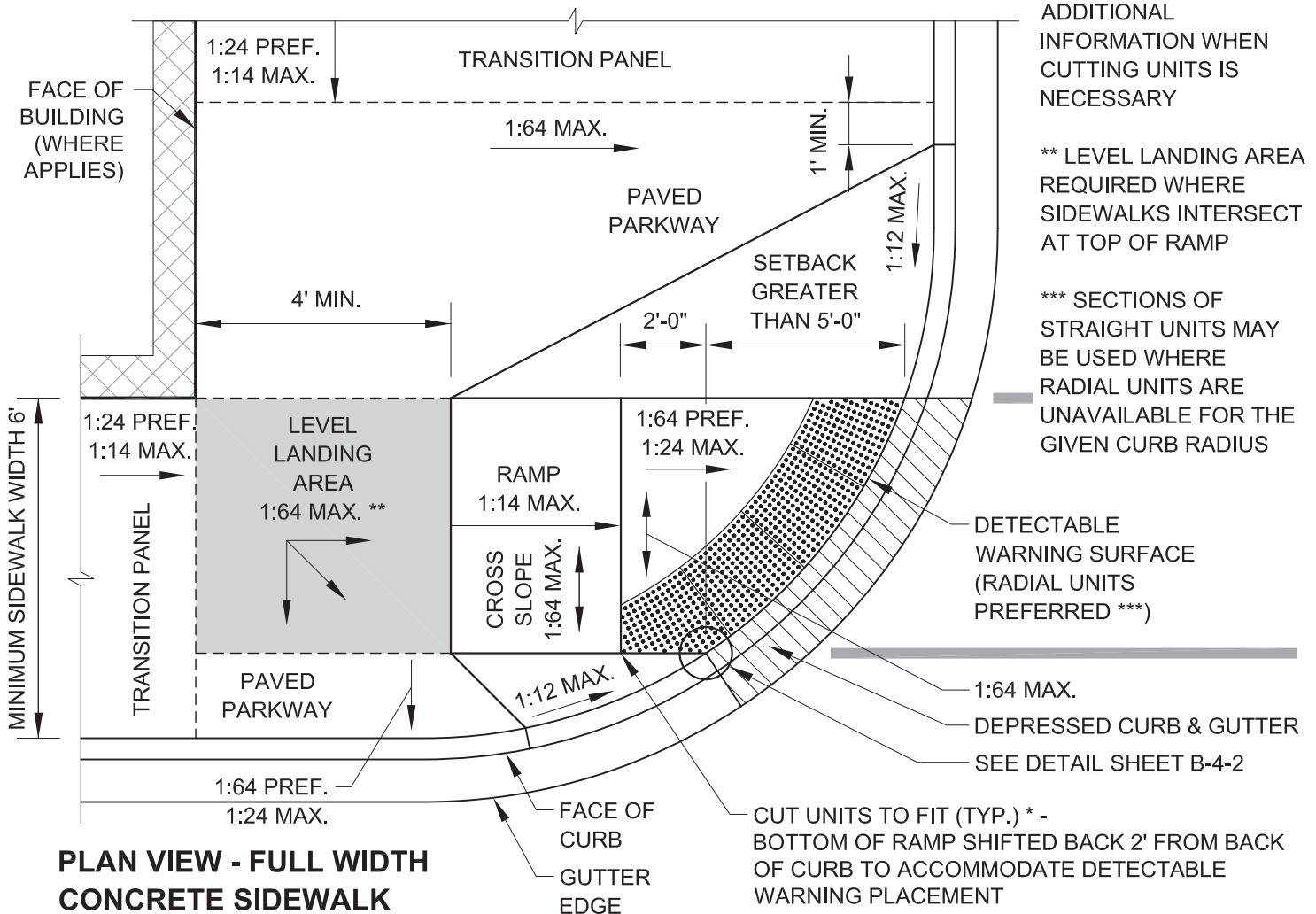


DATE	REVISION
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11/02/09	REVISION 4
08/10/12	REVISION 5





**PLAN VIEW - SIDEWALK THROUGH PARKWAY**



**PLAN VIEW - FULL WIDTH CONCRETE SIDEWALK**

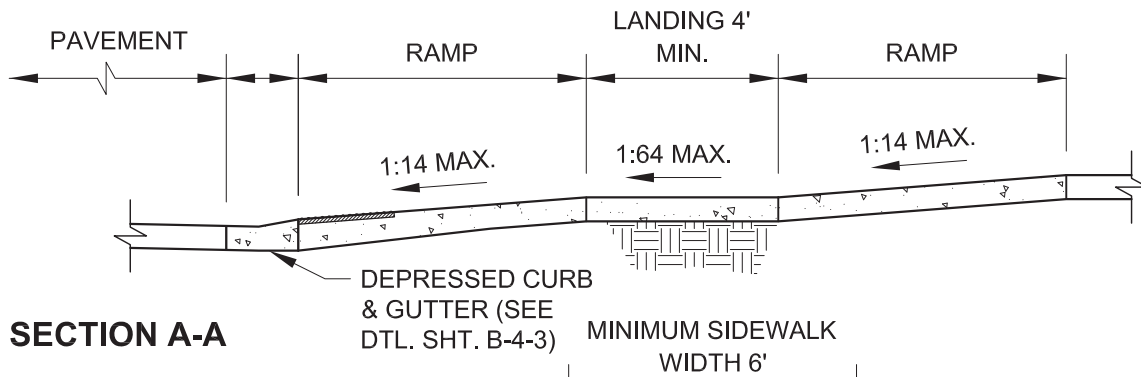
\* REFER TO NOTE #3 ON SHEET B-3-2 FOR ADDITIONAL INFORMATION WHEN CUTTING UNITS IS NECESSARY

\*\* LEVEL LANDING AREA REQUIRED WHERE SIDEWALKS INTERSECT AT TOP OF RAMP

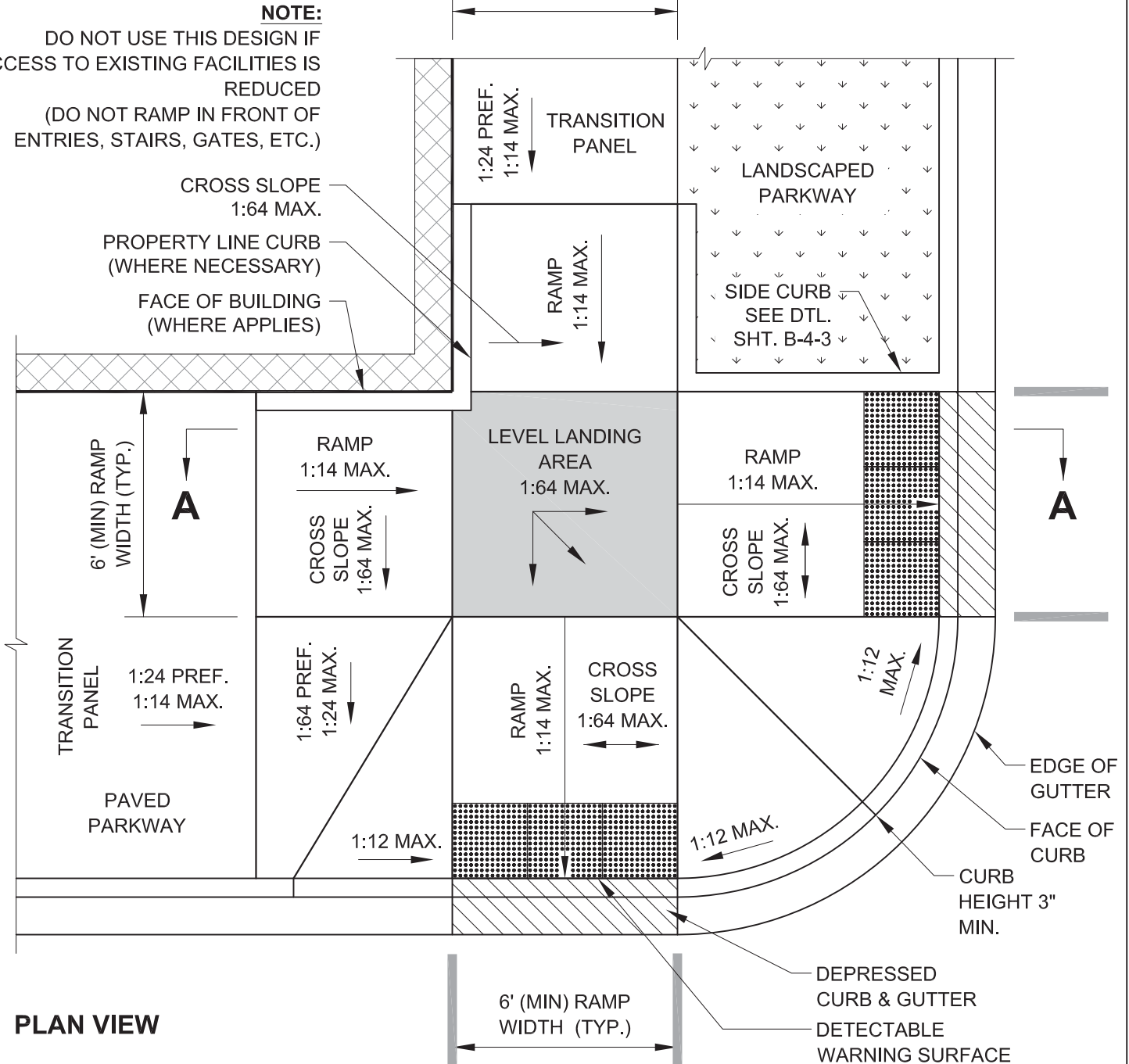
\*\*\* SECTIONS OF STRAIGHT UNITS MAY BE USED WHERE RADIAL UNITS ARE UNAVAILABLE FOR THE GIVEN CURB RADIUS

DATE	REVISION
02/20/07	REVISION 1
11/15/07	REVISION 2
11/14/08	REVISION 3
11/02/09	REVISION 4
08/10/12	REVISION 5

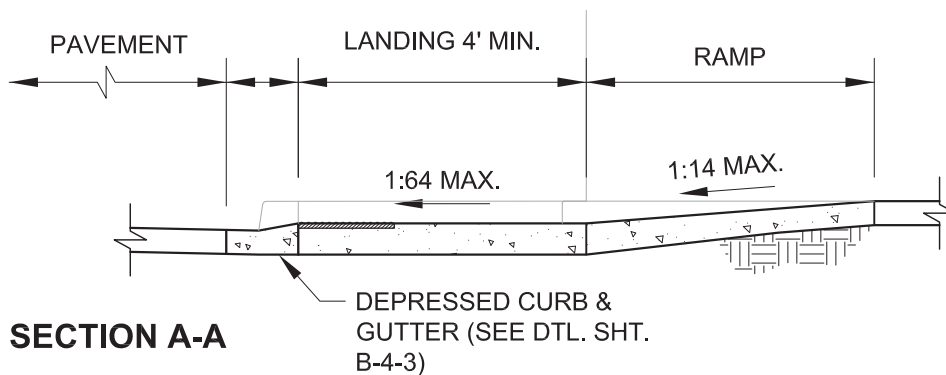




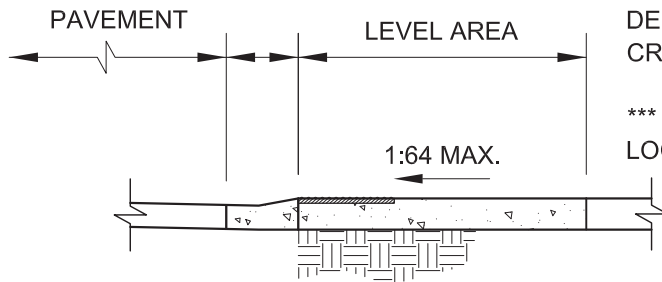
**NOTE:**  
DO NOT USE THIS DESIGN IF ACCESS TO EXISTING FACILITIES IS REDUCED (DO NOT RAMP IN FRONT OF ENTRIES, STAIRS, GATES, ETC.)



DATE	REVISION
02/20/07	REVISION 1
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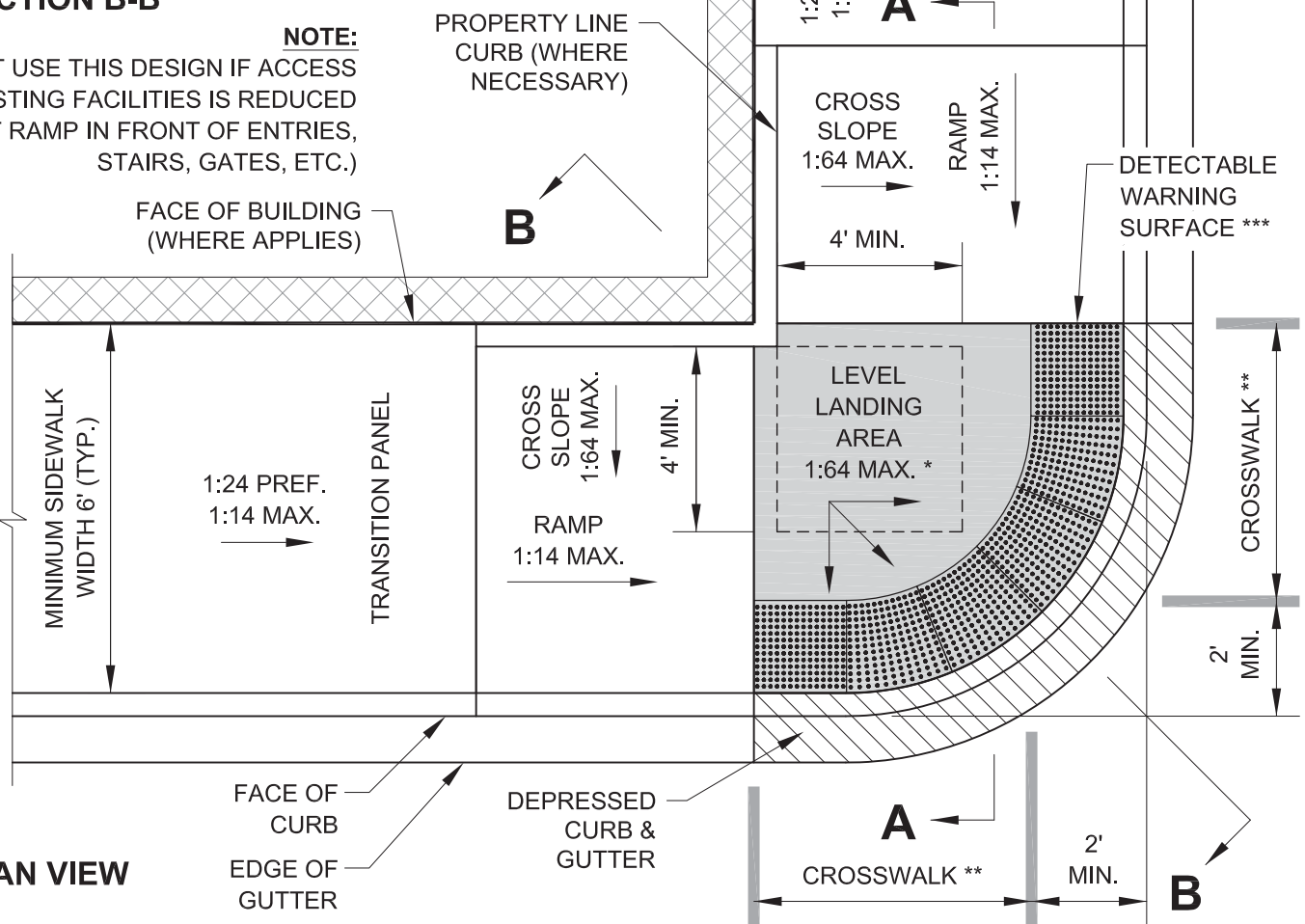
\* THE FLAT LANDING AREA INCLUDES THE ENTIRE SPACE BEHIND THE BACK OF THE CURB TO THE BOTTOM OF EACH RAMP; THE 4'x4' AREA DASHED IS THE MINIMUM REQUIRED MANEUVERING AREA AT A LANDING (FIT BEHIND THE BACK OF CURB) FOR A PEDESTRIAN USING A WHEELCHAIR. THE FLAT LANDING MAY INCLUDE DETECTABLE WARNING



\*\* WHERE A STREET CROSSING IS ONLY PROVIDED IN ONE DIRECTION, SITUATE THE DETECTABLE WARNING AND DEPRESSED CURB TO BEST SERVE THE ONLY AVAILABLE CROSSING (SEE DTL. SHT. B-1-8)

\*\*\* DETECTABLE WARNING SURFACE SHALL BE PLACED AT ANY LOCATION WHERE THE SIDEWALK AND STREET ARE FLUSH

**NOTE:**  
DO NOT USE THIS DESIGN IF ACCESS TO EXISTING FACILITIES IS REDUCED (DO NOT RAMP IN FRONT OF ENTRIES, STAIRS, GATES, ETC.)



DATE	REVISION
02/20/07	REVISION 1
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11/14/08	REVISION 3
11/02/09	REVISION 4
08/10/12	REVISION 5

\* THE FLAT LANDING AREA INCLUDES THE ENTIRE SPACE BEHIND THE BACK OF RADIAL CURB TO THE BOTTOM OF EACH RAMP; THE 4'x4' AREA DASHED IS THE MINIMUM REQUIRED MANEUVERING AREA AT A LANDING (FIT BEHIND BACK OF CURB) FOR A PEDESTRIAN USING A WHEELCHAIR. THE FLAT LANDING MAY INCLUDE DETECTABLE WARNING

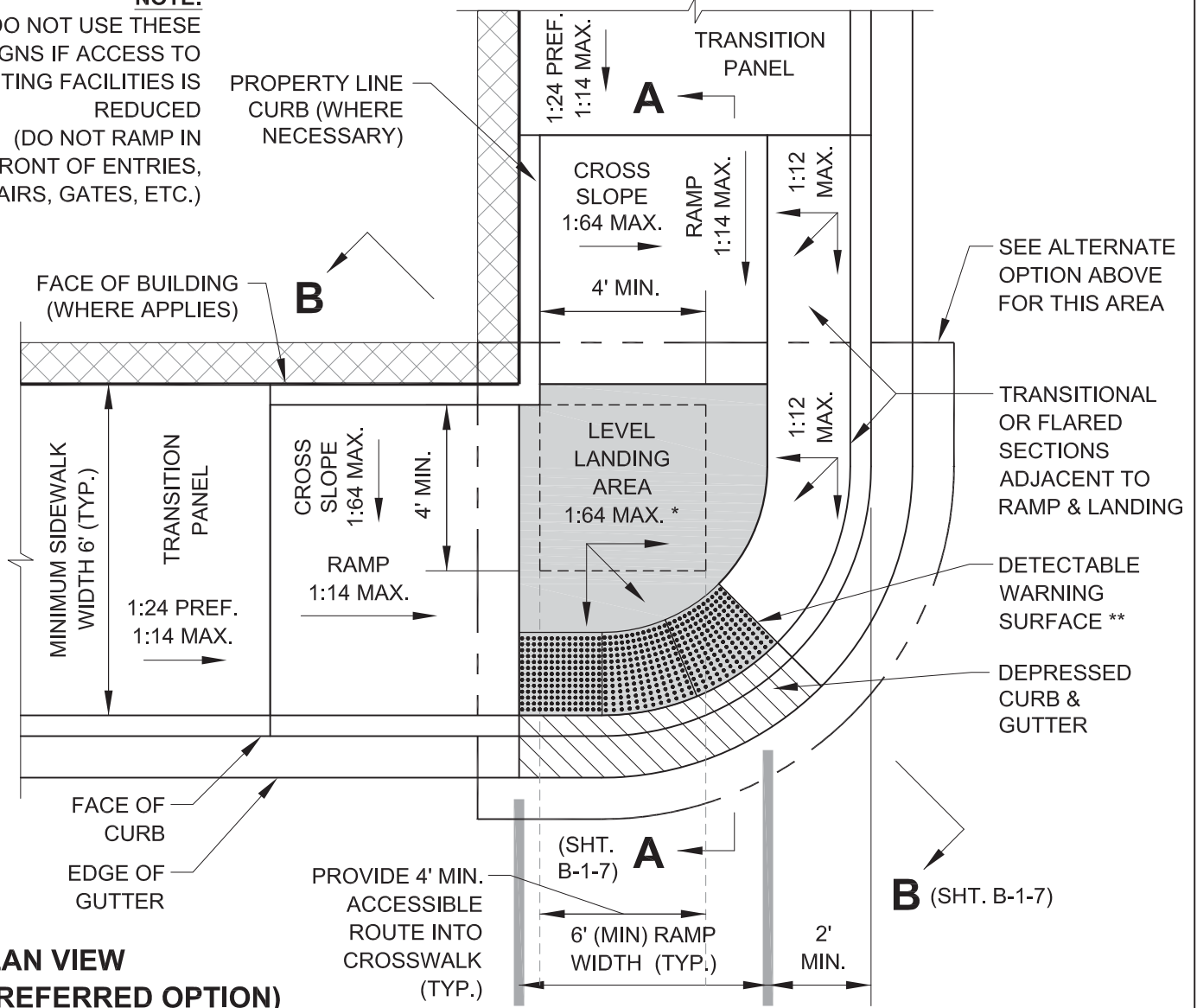
\*\* DETECTABLE WARNING SURFACE SHALL BE PLACED AT ANY LOCATION WHERE THE SIDEWALK AND STREET ARE FLUSH. REFER TO NOTE #3 ON SHEET B-3-2 FOR ADDITIONAL INFORMATION WHEN CUTTING UNITS IS NECESSARY

**NOTE:**

DO NOT USE THESE DESIGNS IF ACCESS TO EXISTING FACILITIES IS REDUCED (DO NOT RAMP IN FRONT OF ENTRIES, STAIRS, GATES, ETC.)

PROPERTY LINE CURB (WHERE NECESSARY)

FACE OF BUILDING (WHERE APPLIES)



**PLAN VIEW  
(PREFERRED OPTION)**

**PLAN VIEW -  
ALTERNATE  
OPTION  
(WITH CUT  
UNIT)**



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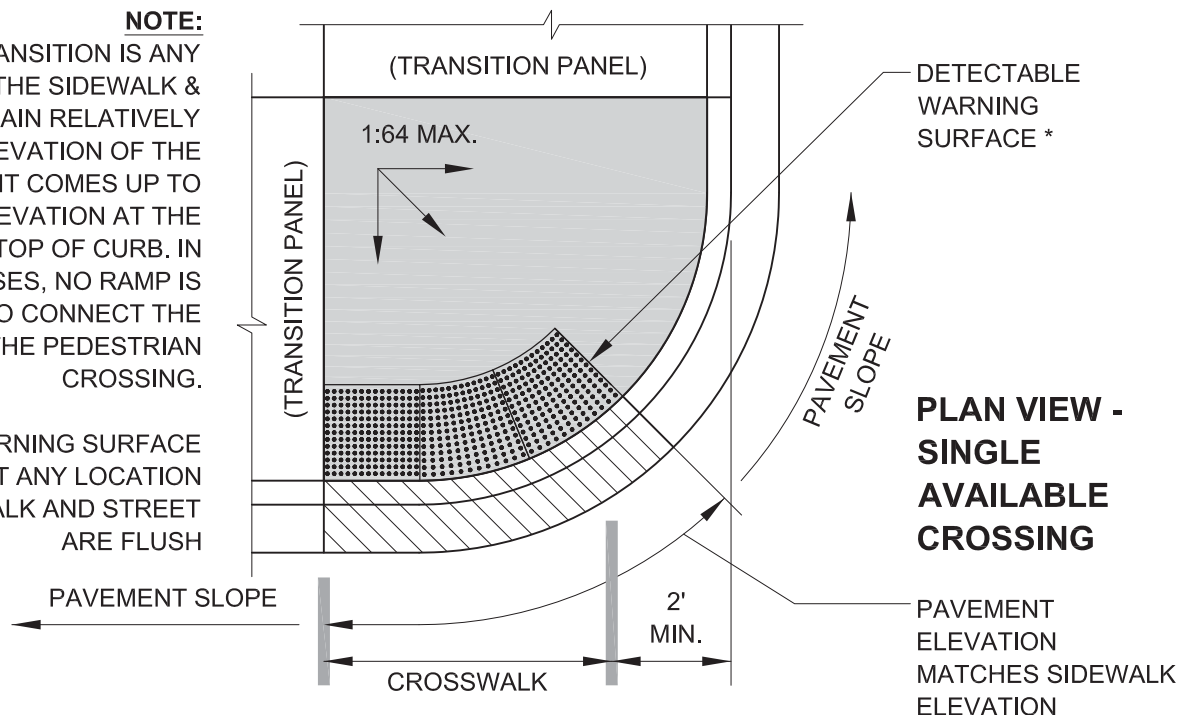
CITY OF CHICAGO  
BLENDED TRANSITION AT CORNER  
WITH SINGLE CROSSING  
**SHEET B-1-8**

SCALE: NOT TO SCALE  
DATE: 10/23/2006

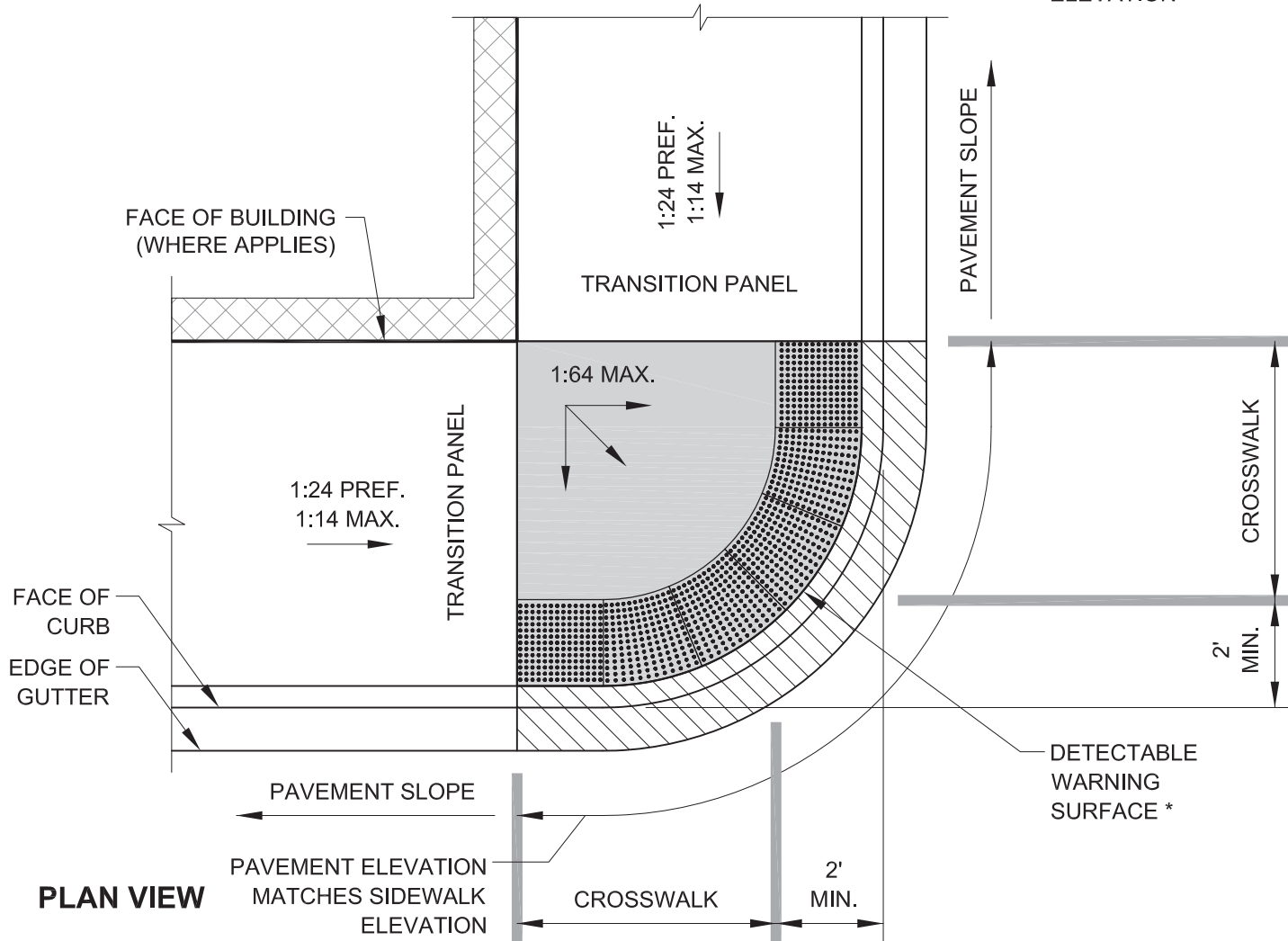
DRAWN BY: CDOT  
CHECKED BY: LCM

**NOTE:**  
A FLUSH TRANSITION IS ANY LOCATION WHERE THE SIDEWALK & TOP OF CURB REMAIN RELATIVELY FLAT AND THE ELEVATION OF THE ROADWAY PAVEMENT COMES UP TO MEET THE ELEVATION AT THE SIDEWALK AND TOP OF CURB. IN THESE CASES, NO RAMP IS NECESSARY TO CONNECT THE SIDEWALK WITH THE PEDESTRIAN CROSSING.

\* DETECTABLE WARNING SURFACE SHALL BE PLACED AT ANY LOCATION WHERE THE SIDEWALK AND STREET ARE FLUSH



## PLAN VIEW - SINGLE AVAILABLE CROSSING



## PLAN VIEW

City of Chicago  
Rahm Emanuel, Mayor  
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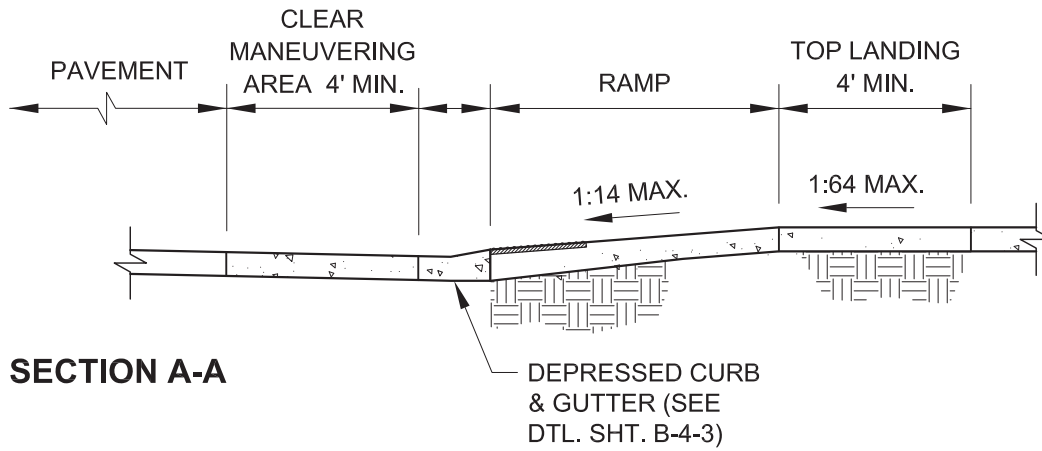


DATE	REVISION
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11/15/07	REVISION 2
11/14/08	REVISION 3
11/02/09	REVISION 4
08/10/12	REVISION 5

## CITY OF CHICAGO FLUSH TRANSITION AT CORNER SHEET B-1-9

SCALE: NOT TO SCALE  
DATE: 10/23/2006

DRAWN BY: CDOT  
CHECKED BY: LCM

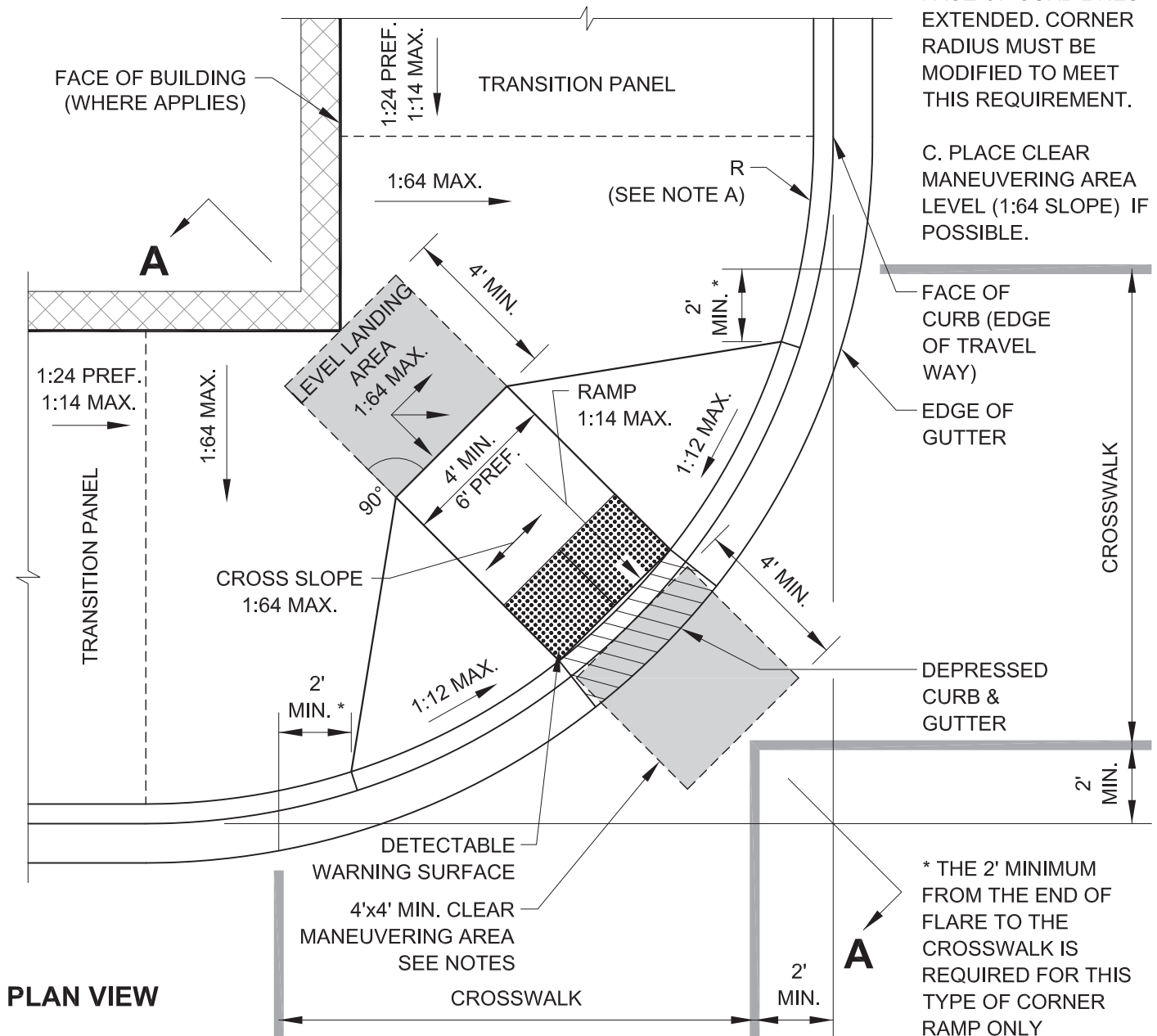


**NOTES:**

A. MIN. 17' RADIUS IS REQUIRED TO PROVIDE 4'x4' MIN. CLEAR MANEUVERING AREA AT BOTTOM OF RAMP AS SHOWN.

B. THE CLEAR MANEUVERING AREA MUST FALL COMPLETELY WITHIN THE AREA BEHIND THE FACE OF CURB LINES EXTENDED. CORNER RADIUS MUST BE MODIFIED TO MEET THIS REQUIREMENT.

C. PLACE CLEAR MANEUVERING AREA LEVEL (1:64 SLOPE) IF POSSIBLE.



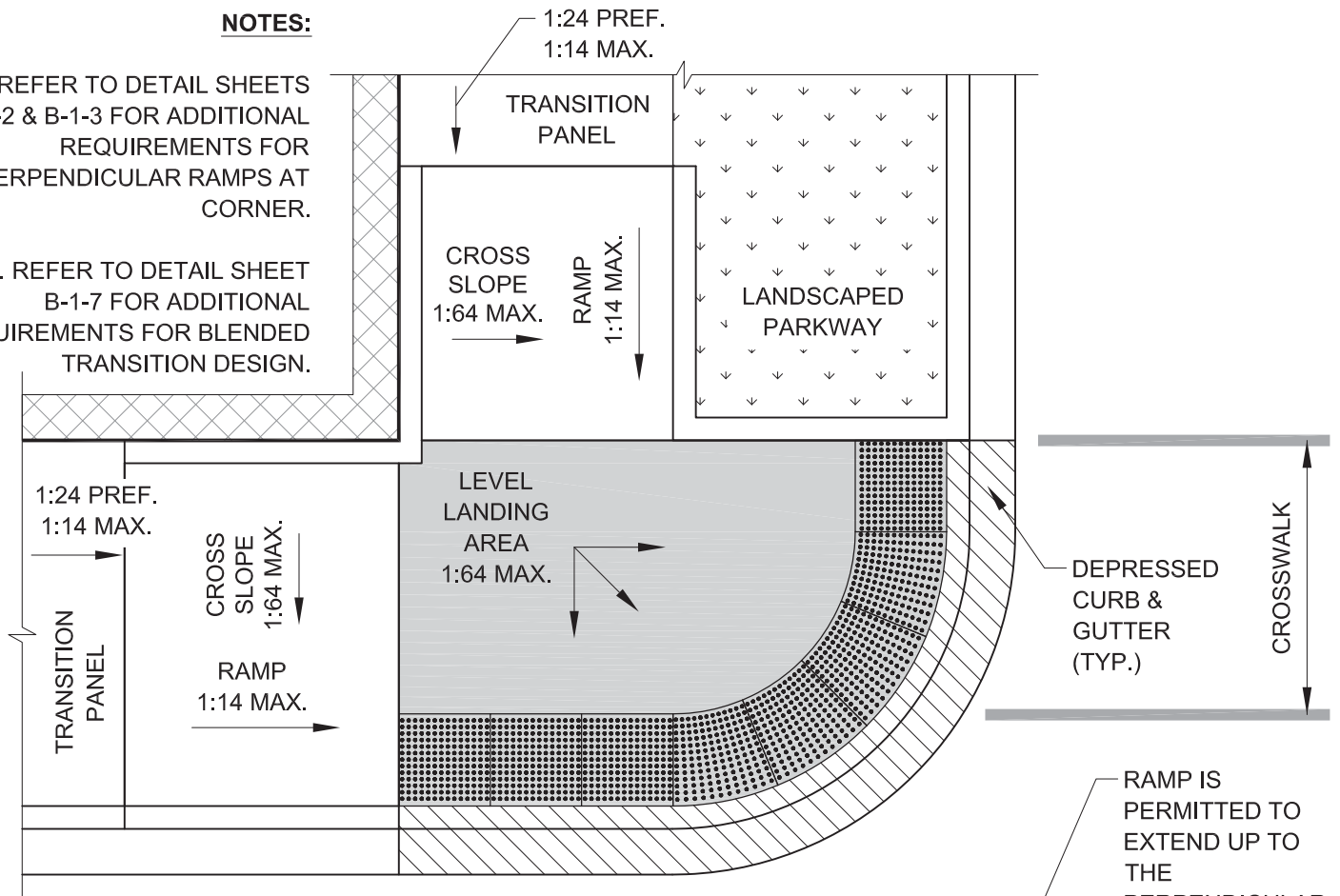
\* THE 2' MINIMUM FROM THE END OF FLARE TO THE CROSSWALK IS REQUIRED FOR THIS TYPE OF CORNER RAMP ONLY

DATE	REVISION
02/20/07	REVISION 1
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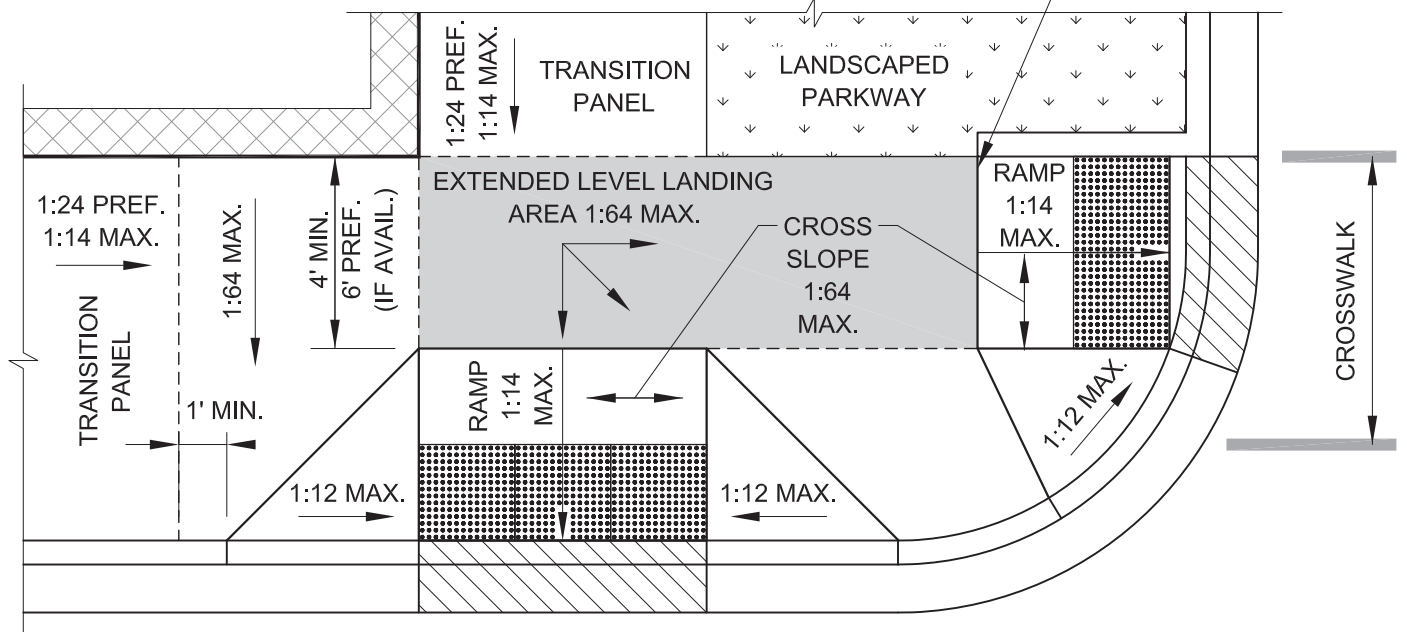
**NOTES:**

A. REFER TO DETAIL SHEETS B-1-2 & B-1-3 FOR ADDITIONAL REQUIREMENTS FOR PERPENDICULAR RAMPS AT CORNER.

B. REFER TO DETAIL SHEET B-1-7 FOR ADDITIONAL REQUIREMENTS FOR BLENDED TRANSITION DESIGN.



**PLAN VIEW - OPTION B:  
BLENDED TRANSITION**



**PLAN VIEW - OPTION A: PERPENDICULAR RAMPS (PREFERRED OPTION)**

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02/20/07	REVISION 1
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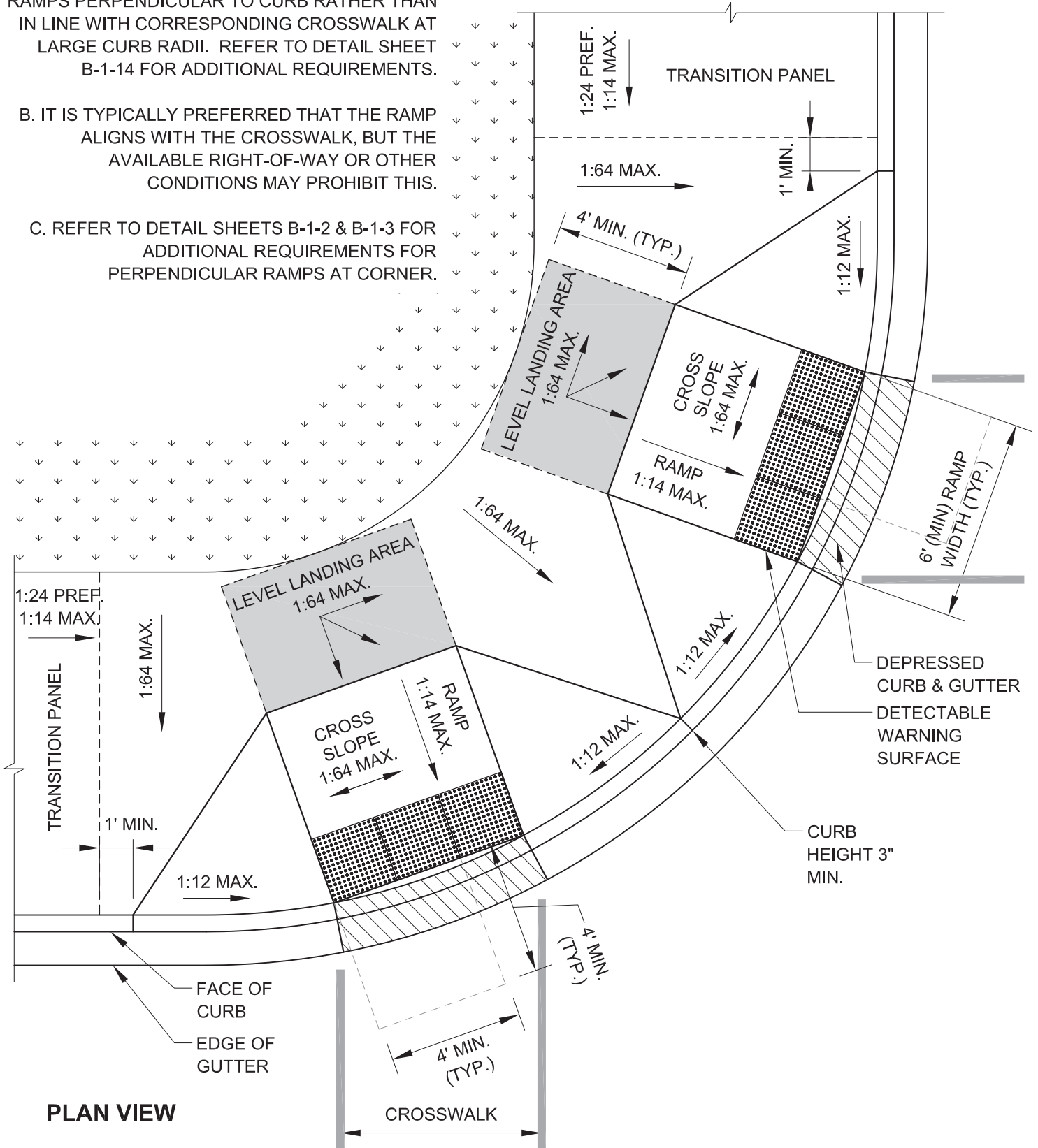


# NOTES:

A. IT MAY BE NECESSARY TO ALIGN THE CURB RAMPS PERPENDICULAR TO CURB RATHER THAN IN LINE WITH CORRESPONDING CROSSWALK AT LARGE CURB RADII. REFER TO DETAIL SHEET B-1-14 FOR ADDITIONAL REQUIREMENTS.

B. IT IS TYPICALLY PREFERRED THAT THE RAMP ALIGNS WITH THE CROSSWALK, BUT THE AVAILABLE RIGHT-OF-WAY OR OTHER CONDITIONS MAY PROHIBIT THIS.

C. REFER TO DETAIL SHEETS B-1-2 & B-1-3 FOR ADDITIONAL REQUIREMENTS FOR PERPENDICULAR RAMPS AT CORNER.



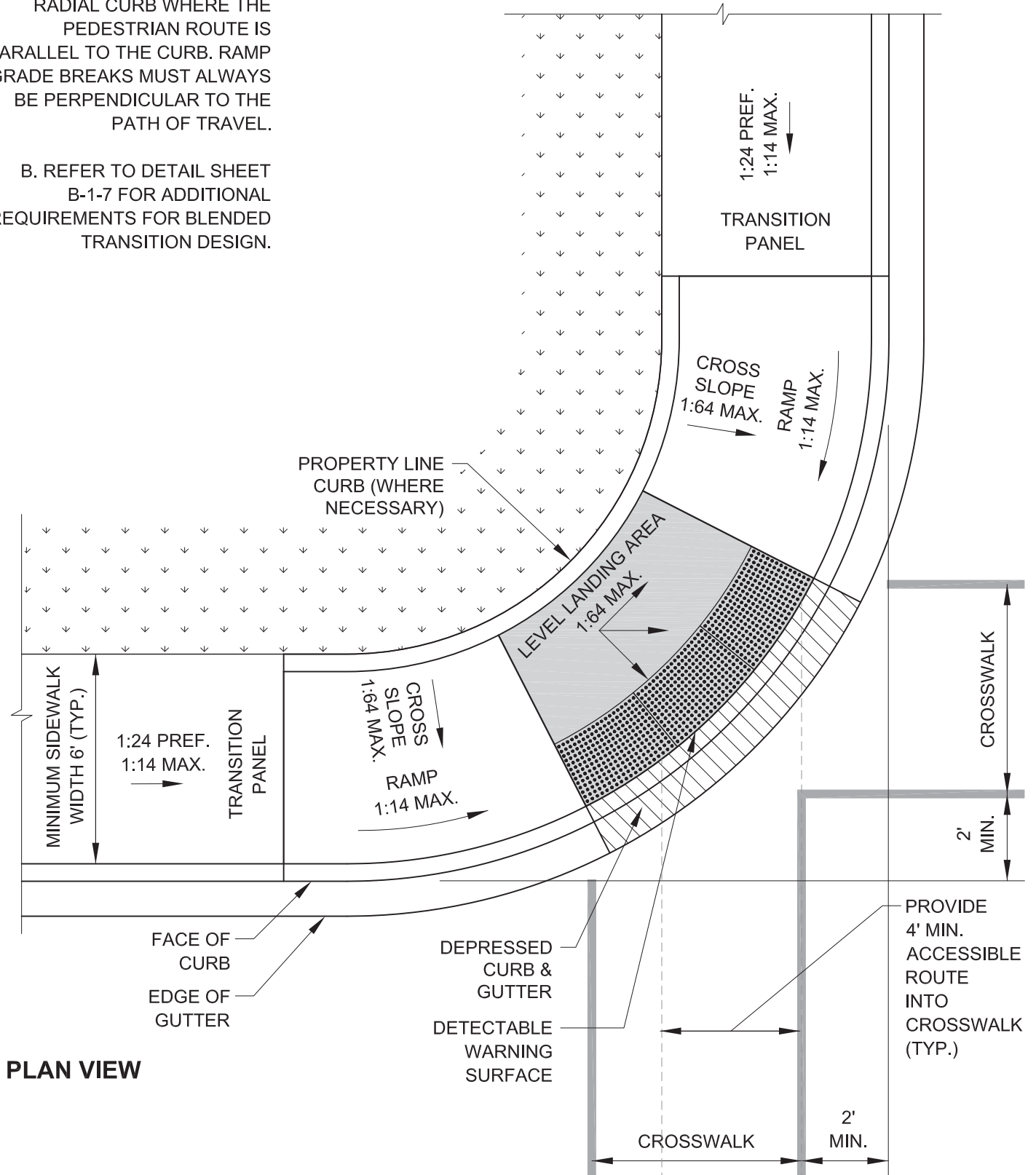
PLAN VIEW

DATE	REVISION
02/20/07	REVISION 1
11/15/07	REVISION 2
11/14/08	REVISION 3
11/02/09	REVISION 4
08/10/12	REVISION 5

# NOTES:

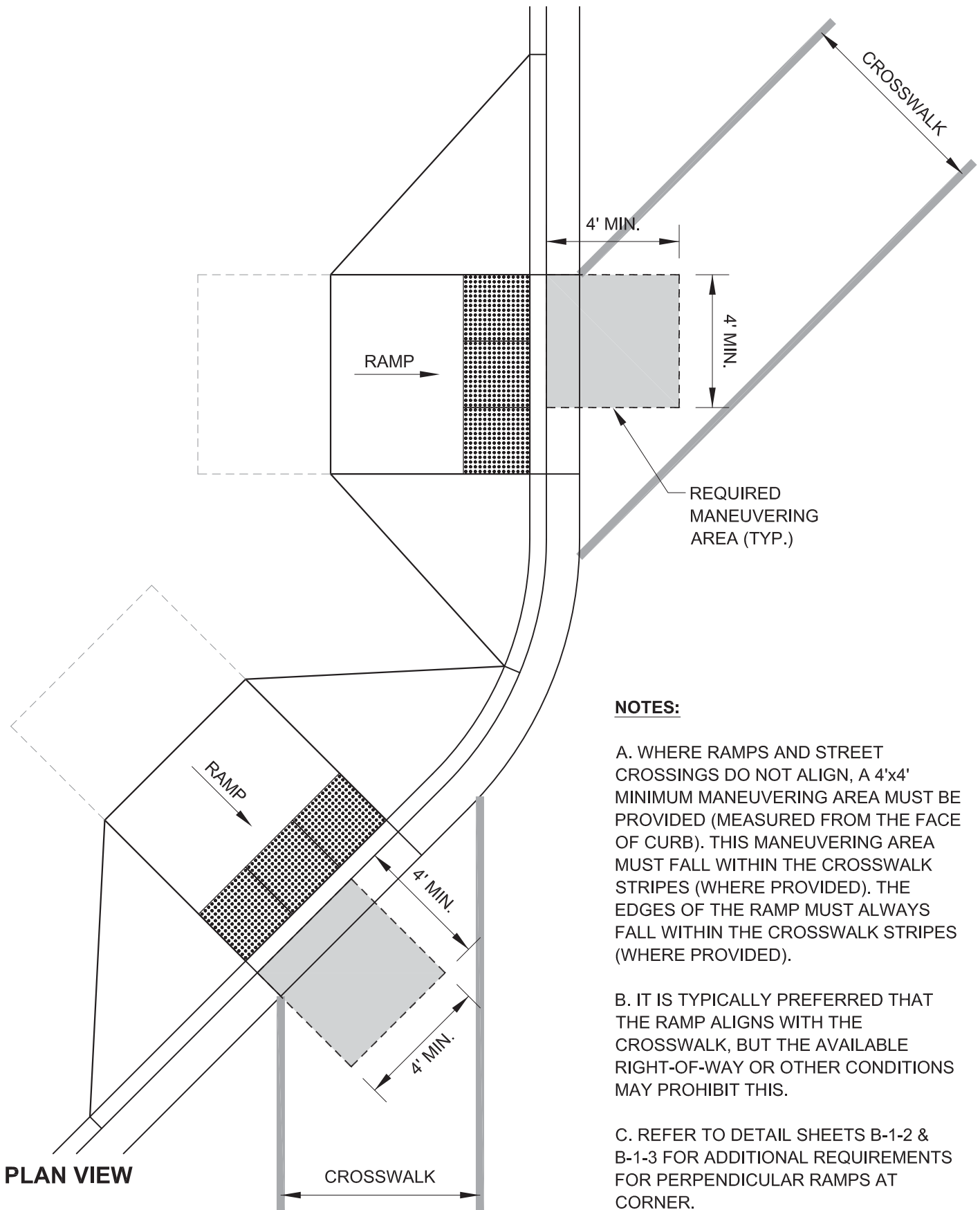
A. IT IS ACCEPTABLE TO RAMP DOWN PARALLEL TO THE RADIAL CURB WHERE THE PEDESTRIAN ROUTE IS PARALLEL TO THE CURB. RAMP GRADE BREAKS MUST ALWAYS BE PERPENDICULAR TO THE PATH OF TRAVEL.

B. REFER TO DETAIL SHEET B-1-7 FOR ADDITIONAL REQUIREMENTS FOR BLENDED TRANSITION DESIGN.



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11/14/08	REVISION 3
11/02/09	REVISION 4
08/10/12	REVISION 5





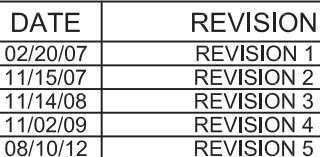
**NOTES:**

A. WHERE RAMPS AND STREET CROSSINGS DO NOT ALIGN, A 4'x4' MINIMUM MANEUVERING AREA MUST BE PROVIDED (MEASURED FROM THE FACE OF CURB). THIS MANEUVERING AREA MUST FALL WITHIN THE CROSSWALK STRIPES (WHERE PROVIDED). THE EDGES OF THE RAMP MUST ALWAYS FALL WITHIN THE CROSSWALK STRIPES (WHERE PROVIDED).

B. IT IS TYPICALLY PREFERRED THAT THE RAMP ALIGNS WITH THE CROSSWALK, BUT THE AVAILABLE RIGHT-OF-WAY OR OTHER CONDITIONS MAY PROHIBIT THIS.

C. REFER TO DETAIL SHEETS B-1-2 & B-1-3 FOR ADDITIONAL REQUIREMENTS FOR PERPENDICULAR RAMPS AT CORNER.

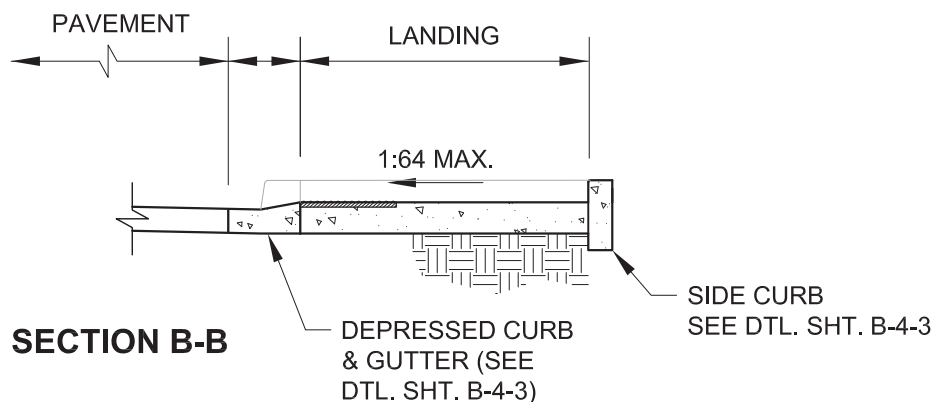
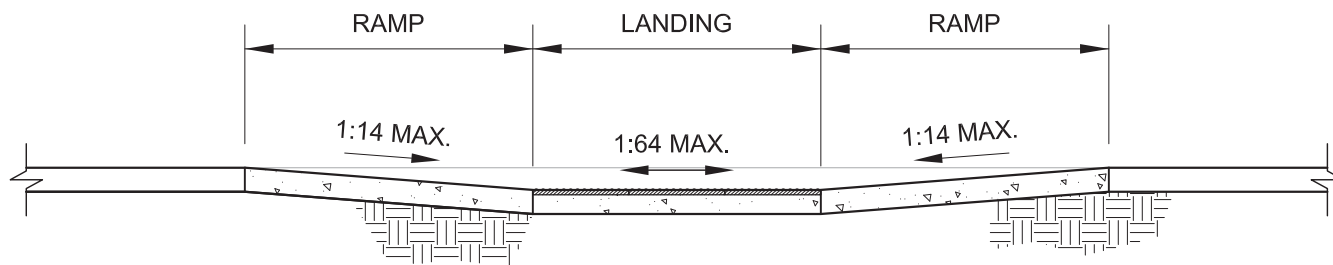
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11/15/07	REVISION 2
11/14/08	REVISION 3
11/02/09	REVISION 4
08/10/12	REVISION 5



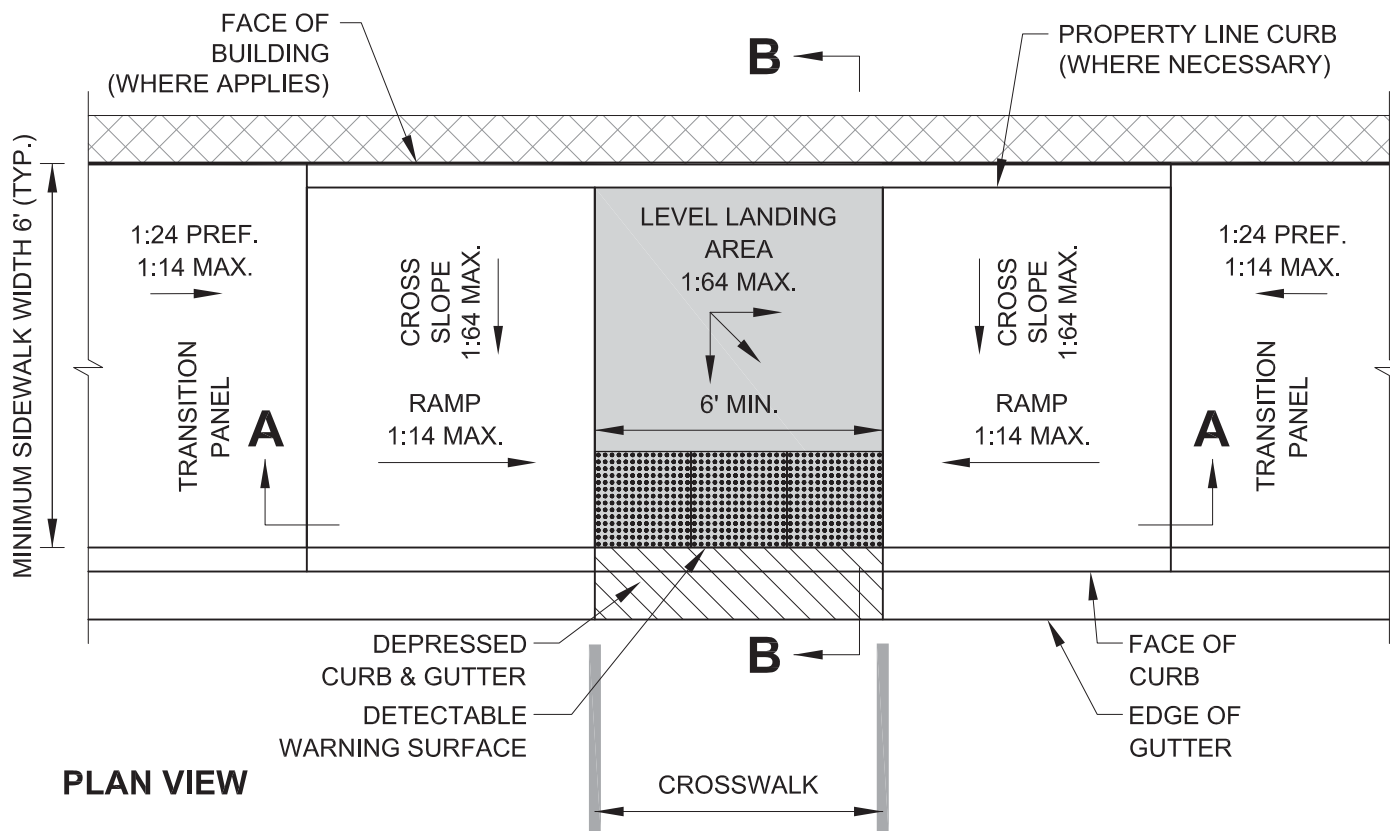
CITY OF CHICAGO  
PERPENDICULAR RAMP AT MID-BLOCK LOCATION  
**SHEET B-1-15**

SCALE: NOT TO SCALE  
DATE: 10/23/2006

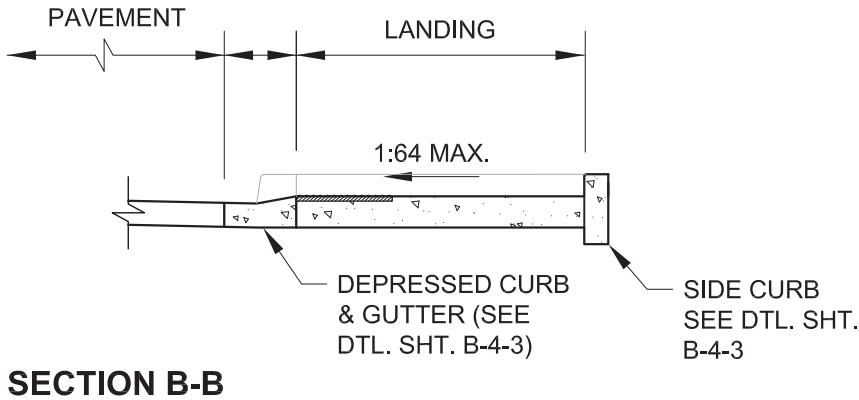
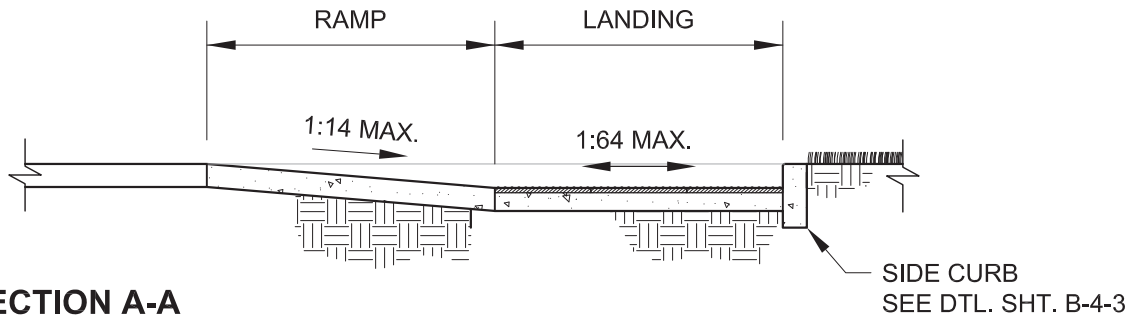
DRAWN BY: CDOT  
CHECKED BY: LCM



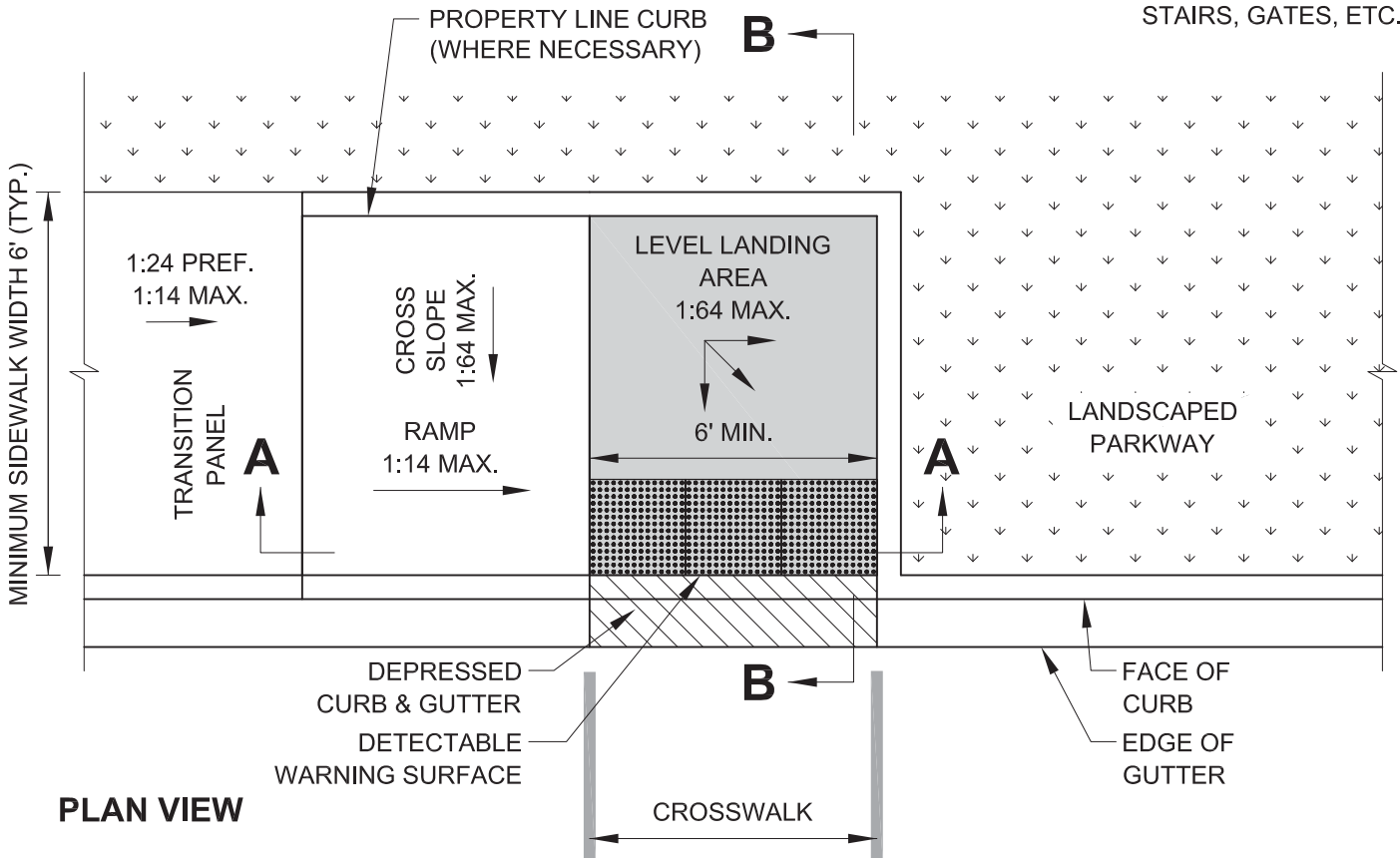
**NOTE:**  
DO NOT USE THIS  
DESIGN IF ACCESS TO  
EXISTING FACILITIES IS  
REDUCED  
(DO NOT RAMP IN  
FRONT OF ENTRIES,  
STAIRS, GATES, ETC.)



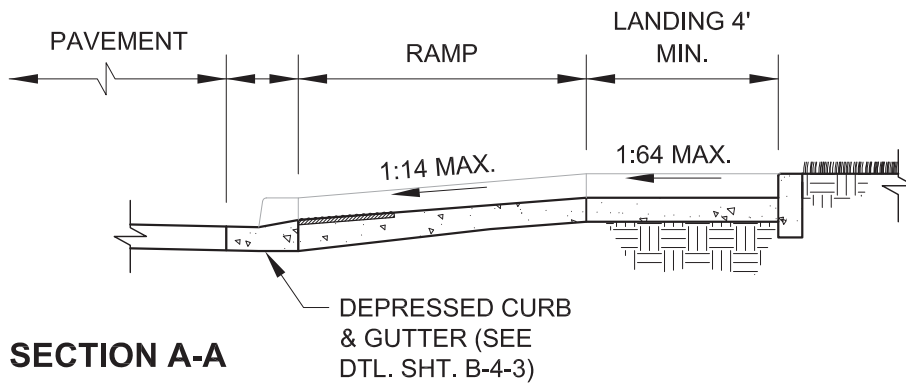
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11/14/08	REVISION 3
11/02/09	REVISION 4
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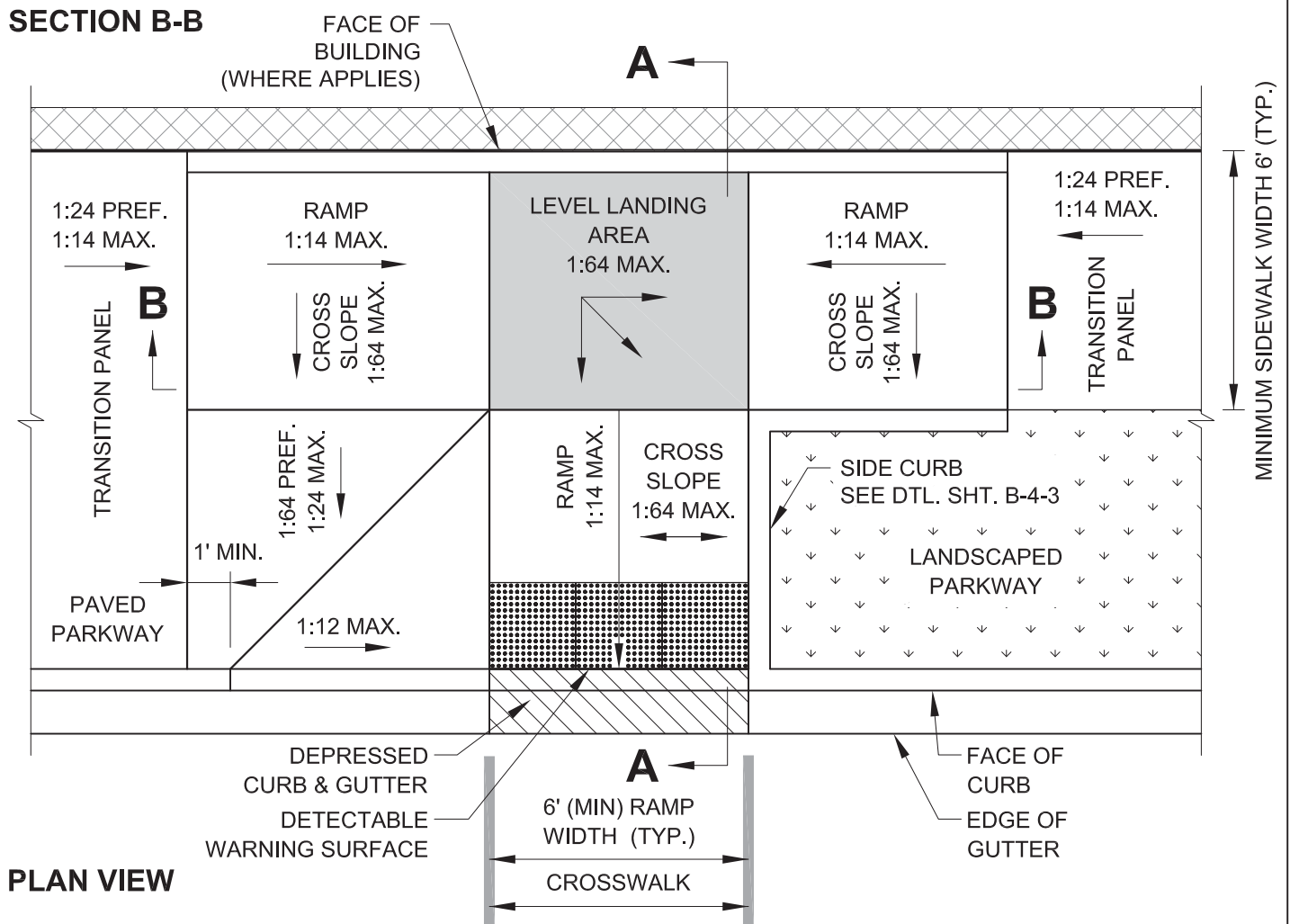
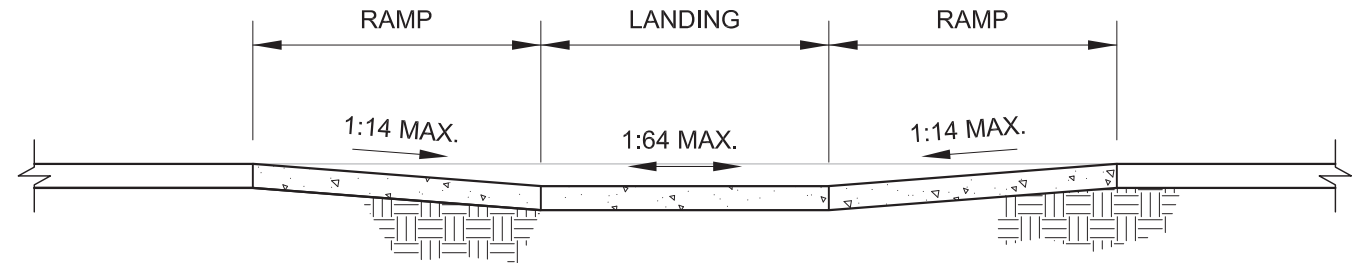
**NOTE:**  
DO NOT USE THIS DESIGN IF ACCESS TO EXISTING FACILITIES IS REDUCED  
(DO NOT RAMP IN FRONT OF ENTRIES, STAIRS, GATES, ETC.)



DATE	REVISION
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08/10/12	REVISION 5

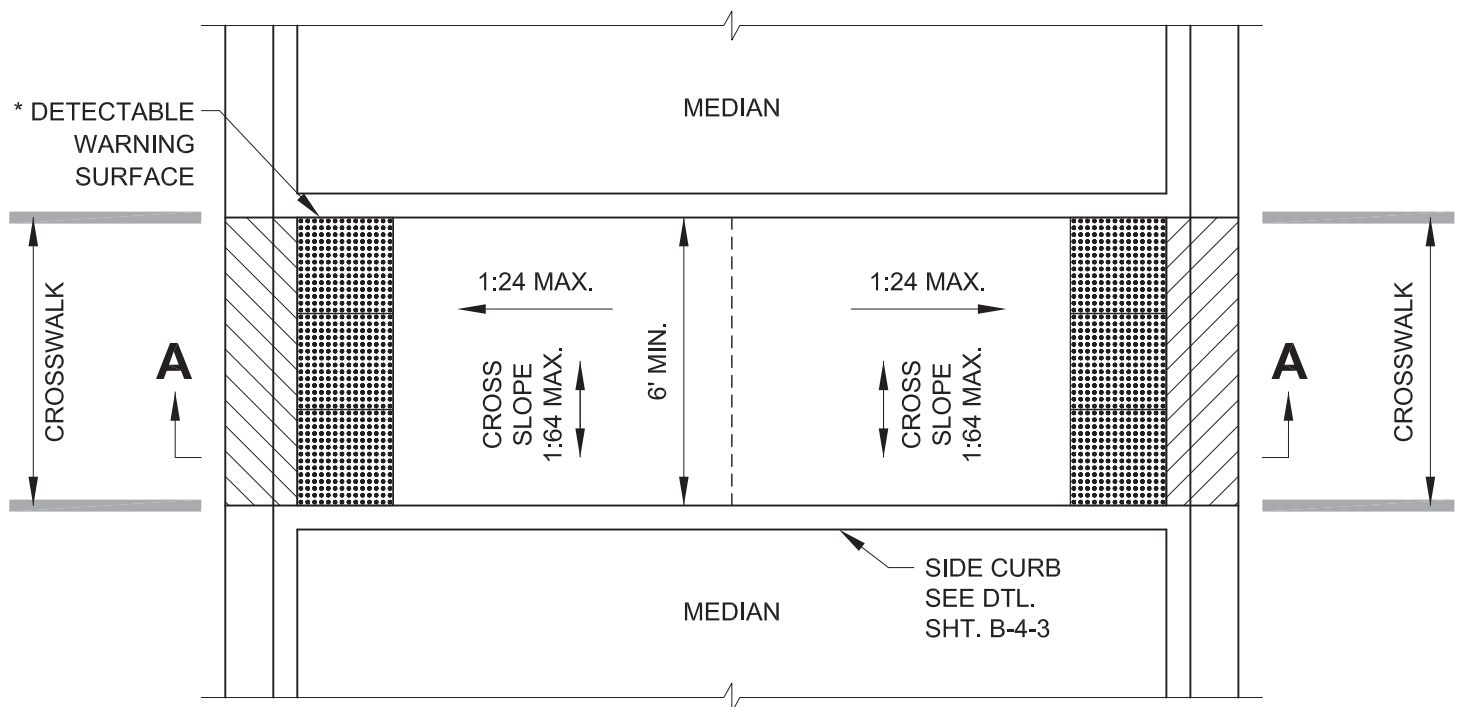
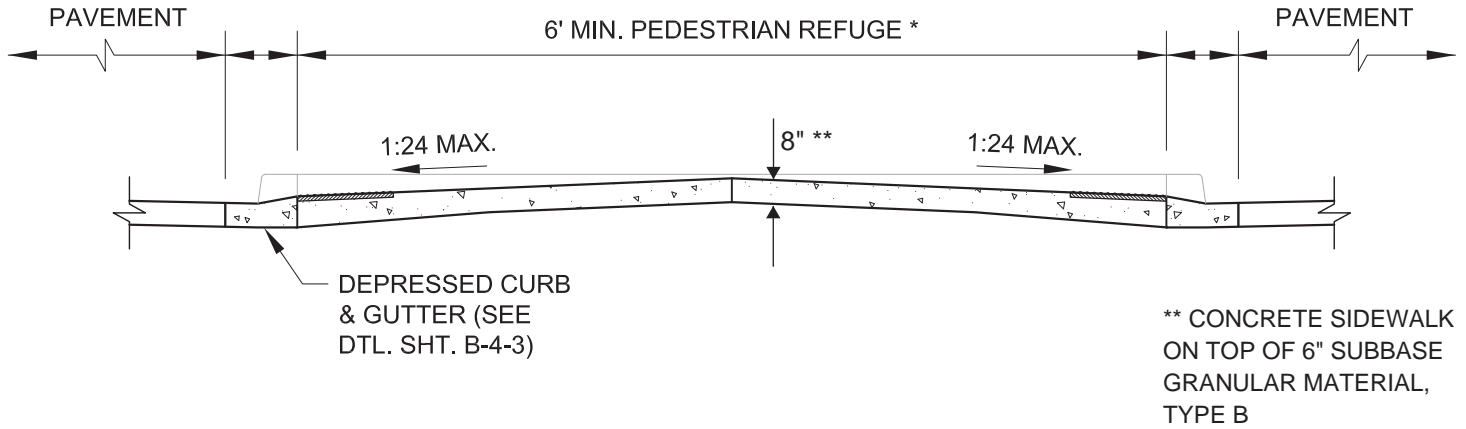


**NOTE:**  
DO NOT USE THIS DESIGN  
IF ACCESS TO EXISTING  
FACILITIES IS REDUCED  
(DO NOT RAMP IN FRONT  
OF ENTRIES, STAIRS,  
GATES, ETC.)



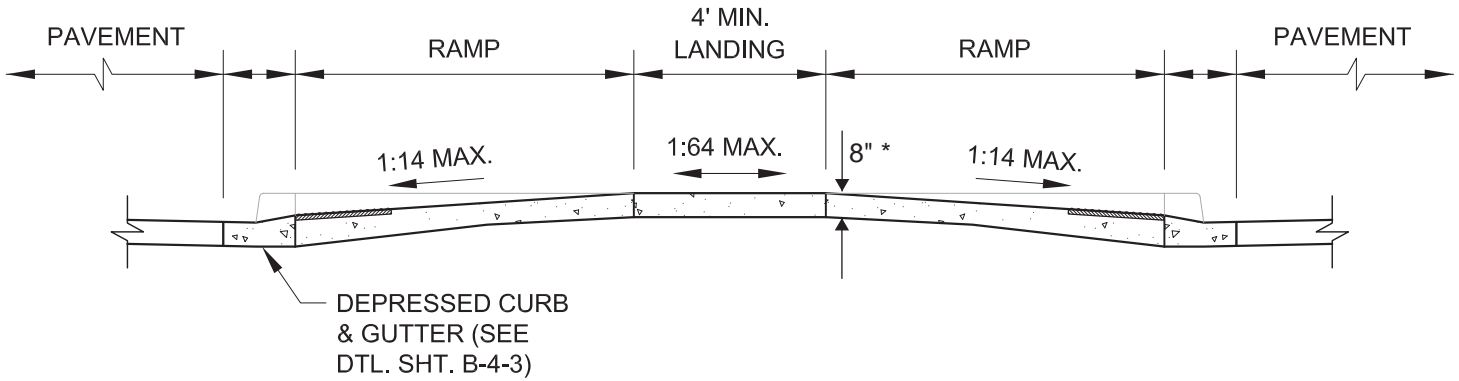
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02/20/07	REVISION 1
11/15/07	REVISION 2
11/14/08	REVISION 3
11/02/09	REVISION 4
08/10/12	REVISION 5

\* IF LENGTH OF 6' MIN.  
CANNOT BE PROVIDED  
FOR PEDESTRIAN  
REFUGE, DETECTABLE  
WARNING IS NOT TO BE  
PROVIDED

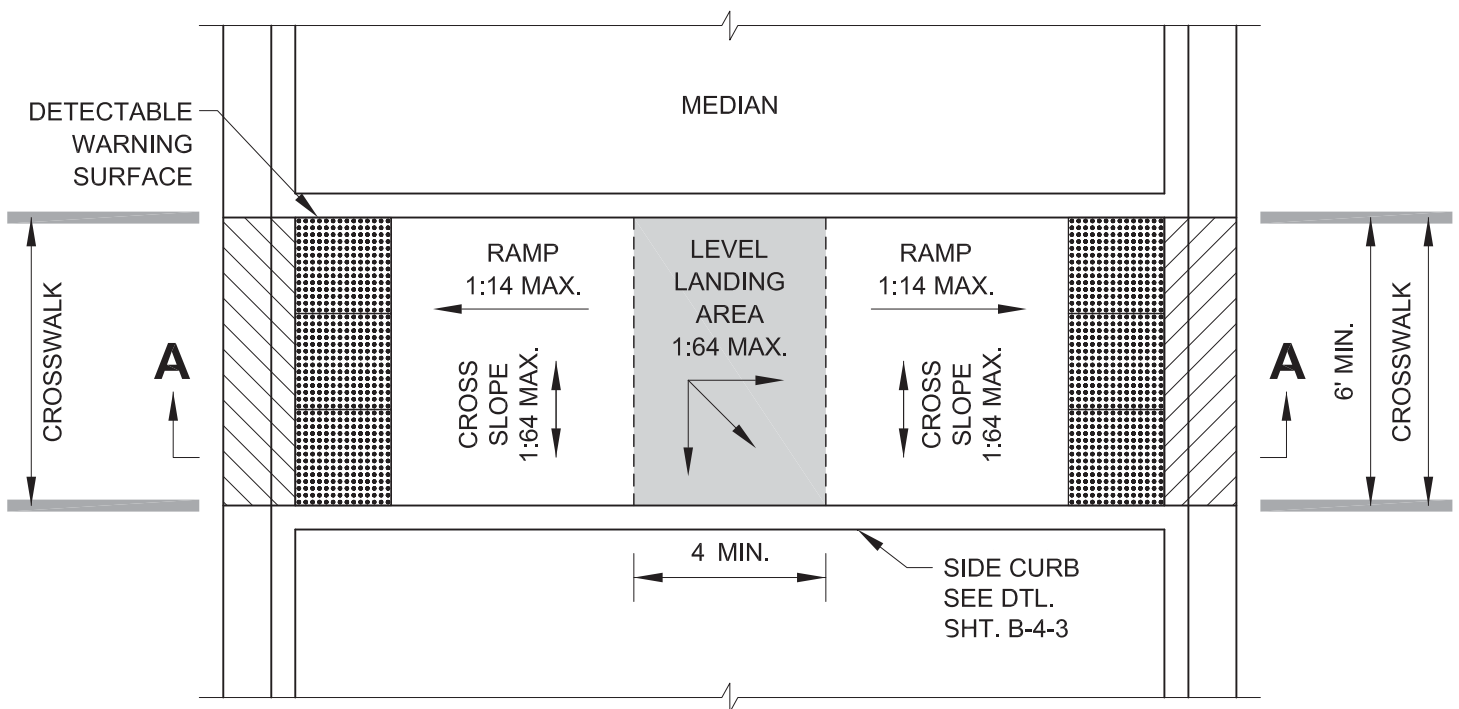


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11/14/08	REVISION 3
11/02/09	REVISION 4
08/10/12	REVISION 5
01/01/14	REVISION 6

\* CONCRETE SIDEWALK  
ON TOP OF 6" SUBBASE  
GRANULAR MATERIAL,  
TYPE B



## SECTION A-A



## PLAN VIEW

City of Chicago  
Rahm Emanuel, Mayor  
Department of Transportation  
Division of Engineering  
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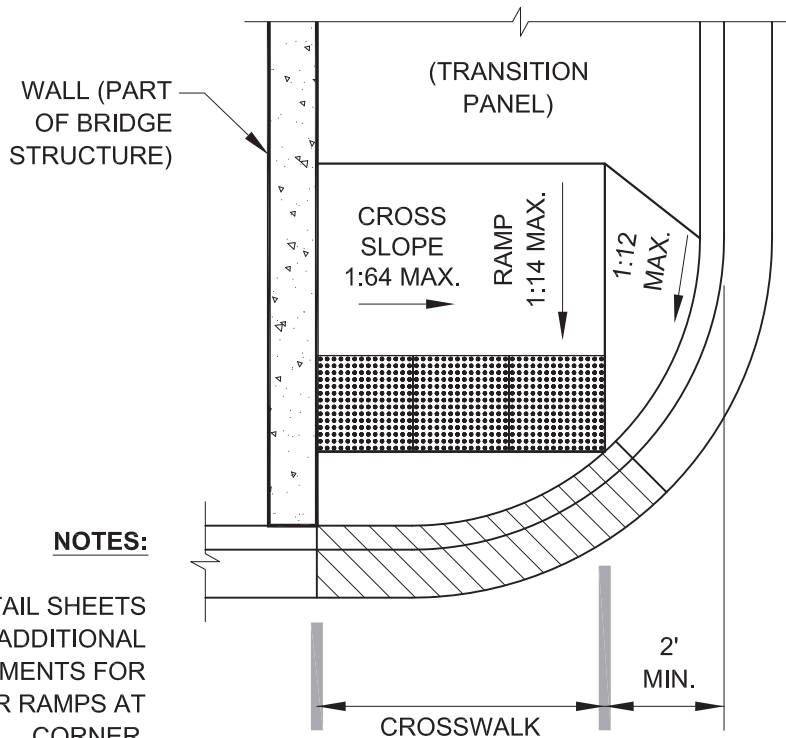
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02/20/07	REVISION 1
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11/14/08	REVISION 3
11/02/09	REVISION 4
08/10/12	REVISION 5
01/01/14	REVISION 6

## CITY OF CHICAGO MEDIAN PASS-THROUGH WITH RAMPS SHEET B-1-20

SCALE: NOT TO SCALE  
DATE: 10/23/2006

DRAWN BY: CDOT  
CHECKED BY: GK

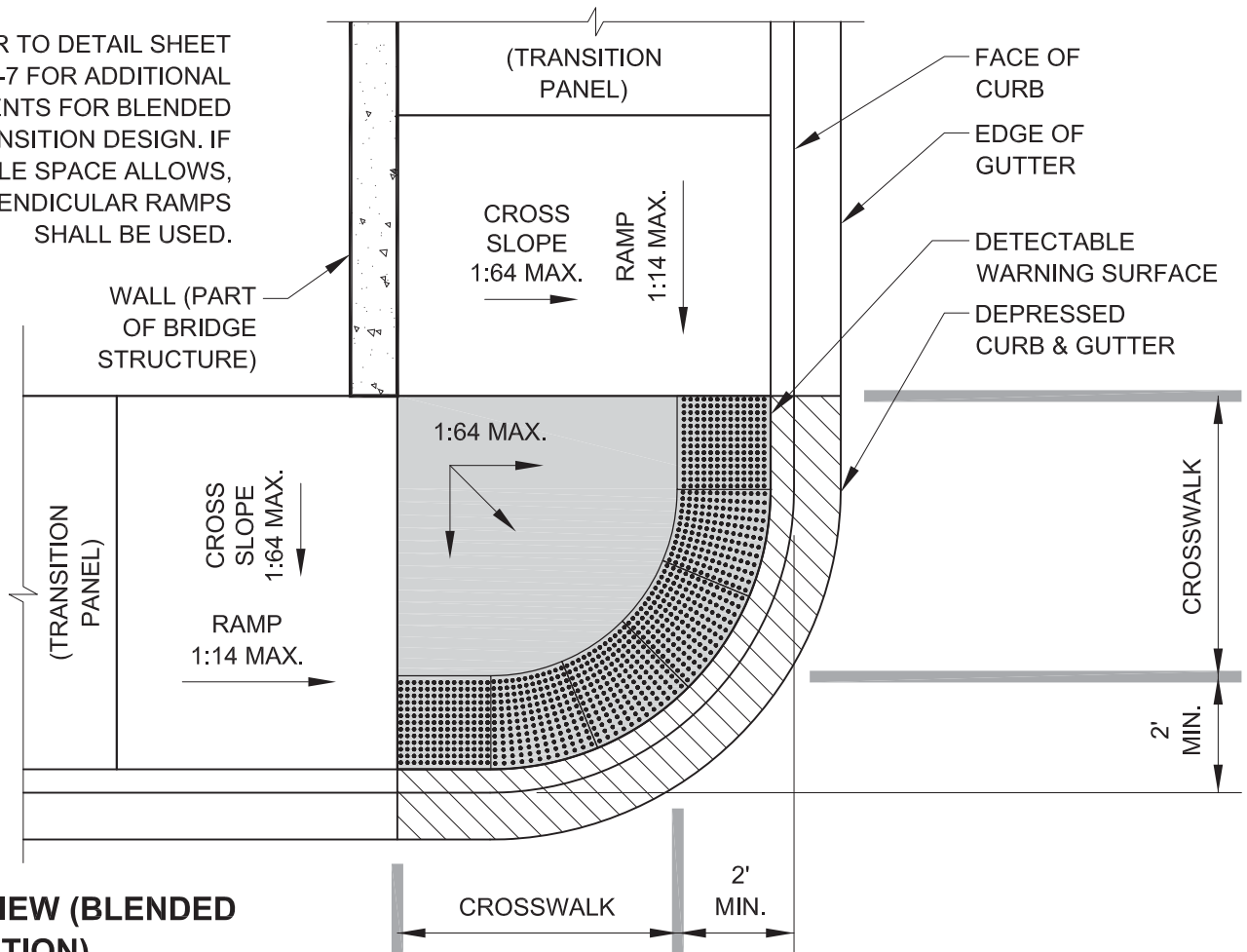
## PLAN VIEW - SINGLE AVAILABLE CROSSING



### NOTES:

A. REFER TO DETAIL SHEETS B-1-2 & B-1-3 FOR ADDITIONAL REQUIREMENTS FOR PERPENDICULAR RAMPS AT CORNER.

B. REFER TO DETAIL SHEET B-1-7 FOR ADDITIONAL REQUIREMENTS FOR BLENDED TRANSITION DESIGN. IF AVAILABLE SPACE ALLOWS, PERPENDICULAR RAMPS SHALL BE USED.



## PLAN VIEW (BLENDED TRANSITION)



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Division of Engineering  
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08/10/12

### REVISION

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## CITY OF CHICAGO ON-GRADE RAMP AT BRIDGE OR OVERPASS SHEET B-1-21

SCALE: NOT TO SCALE  
DATE: 10/23/2006

DRAWN BY: CDOT  
CHECKED BY: LCM

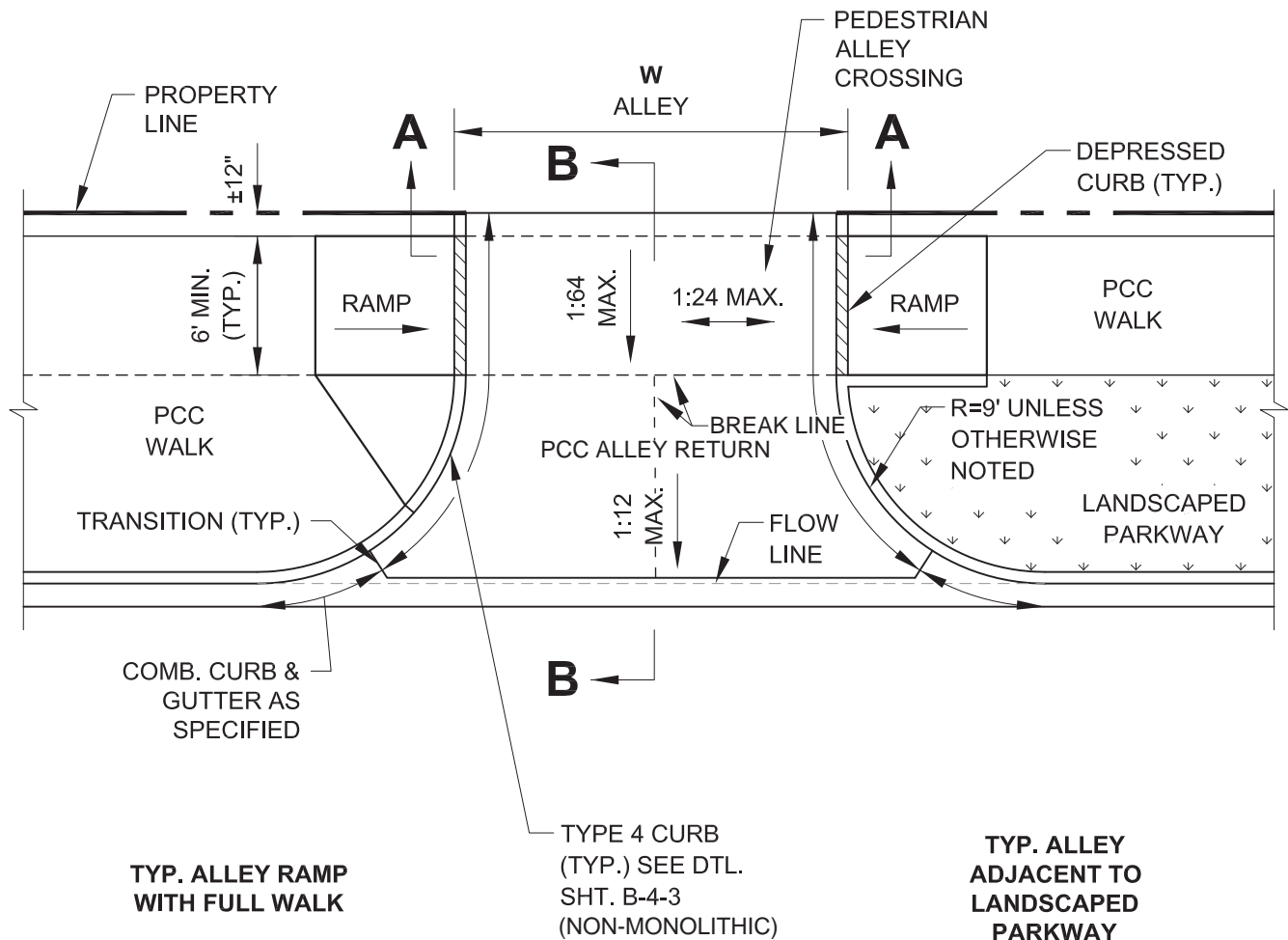


## NOTES:

A. DETECTABLE WARNING IS NOT REQUIRED AT ALLEY RETURNS.

B. RAMP DETAILS ARE DEPENDENT UPON SITE SPECIFIC CONDITIONS (WHERE RAMPS ARE NECESSARY). SEE APPROPRIATE RAMP SHEET AS REQUIRED (TYP.).

C. SEE DETAIL B-2-5 FOR REDUCED WIDTH (4' MIN.) PEDESTRIAN ACCESSIBLE ROUTE ACROSS ALLEY / DRIVEWAY (TO ALLOW FOR ADDITIONAL SLOPE AT ALLEY / DRIVEWAY).



## PLAN VIEW

## NOTE:

WORK THIS SHEET WITH SHEET B-2-2.

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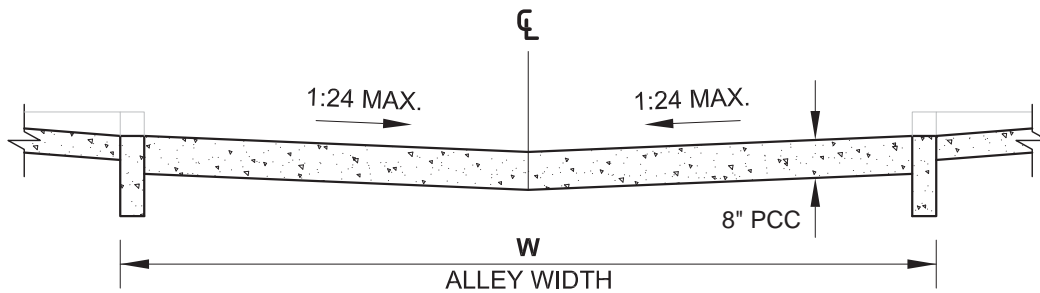


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11/02/09	REVISION 4
08/10/12	REVISION 5
01/01/14	REVISION 6

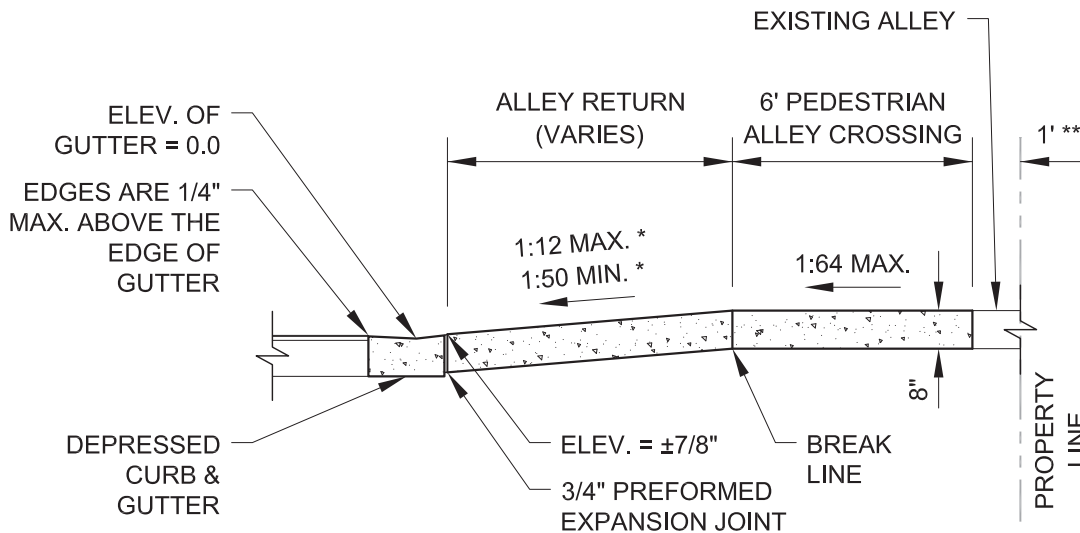
## CITY OF CHICAGO ALLEY RETURN PLAN VIEW SHEET B-2-1

SCALE: NOT TO SCALE  
DATE: 10/23/2006

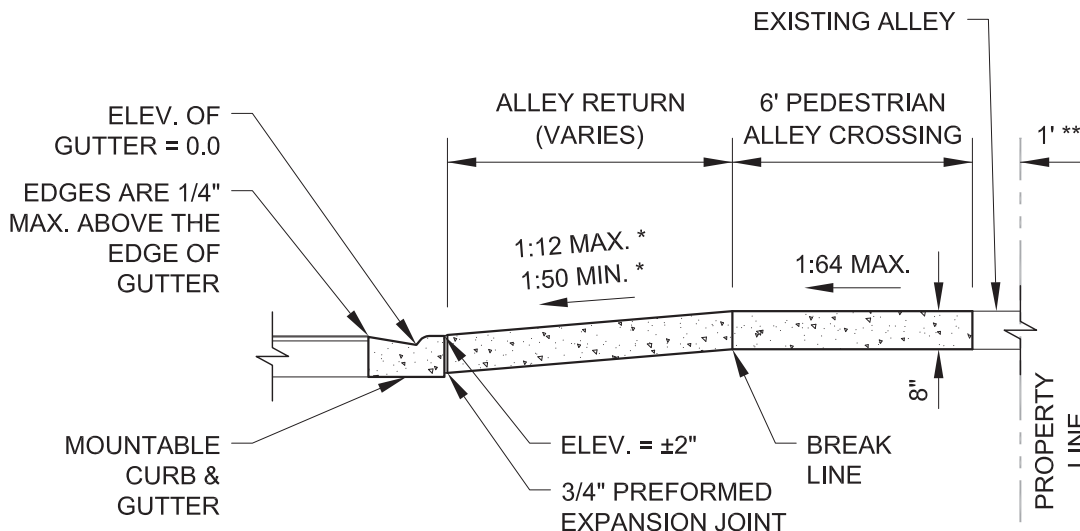
DRAWN BY: CDOT  
CHECKED BY: GK



**SECTION A-A: CROSS SECTION AT PROPERTY LINE**



**SECTION B-B: LONGITUDINAL SECTION SHOWING DEPRESSED CURB & GUTTER**



**SECTION B-B: LONGITUDINAL SECTION SHOWING MOUNTABLE CURB & GUTTER**

**ALLEY RETURN NOTES:**

A. WHEN A PORTION OF AN EXISTING PAVED ALLEY IS REMOVED TO ADJUST THE ALLEY PAVEMENT TO THE NEW GRADE, 3/4" PREFORMED EXPANSION JOINT MATERIAL SHALL BE PLACED ON THE PROPERTY LINE OTHERWISE THE JOINT IS OMITTED. THE COST OF FURNISHING AND PLACING THE 3/4" PREFORMED EXPANSION JOINT MATERIAL SHALL BE INCLUDED IN THE COST OF THE PORTLAND CEMENT CONCRETE ALLEY RETURN.

B. SAWED JOINTS SHALL BE SEALED WITH A POURED MATERIAL MEETING THE REQUIREMENTS OF SECTION 1050 OF THE SSRBC.

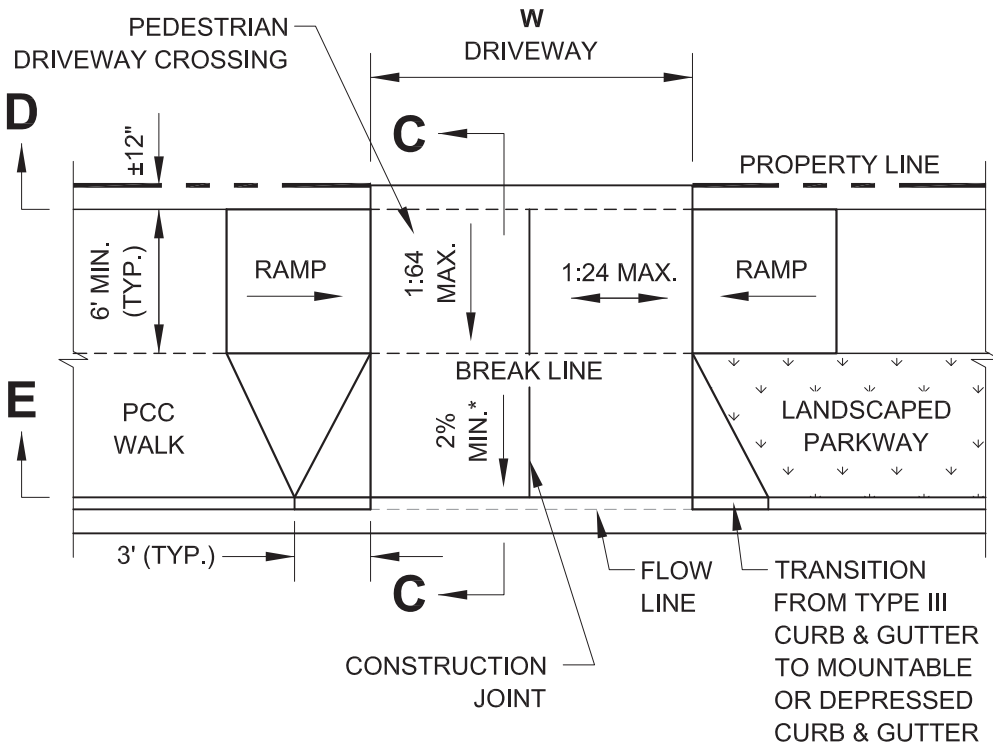
\* SLOPE VARIES AND IS NOT GOVERNED BY ADA

\*\* THE SLOPE OF THE ALLEY IN THE 1' SPACE ADJACENT TO THE PROPERTY LINE MAY BE ALTERED UP TO 10% TO MEET EXISTING CONDITIONS

**NOTE:**

WORK THIS SHEET WITH SHEET B-2-1.

DATE	REVISION
02/20/07	REVISION 1
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11/14/08	REVISION 3
11/02/09	REVISION 4
08/10/12	REVISION 5
01/01/14	REVISION 6

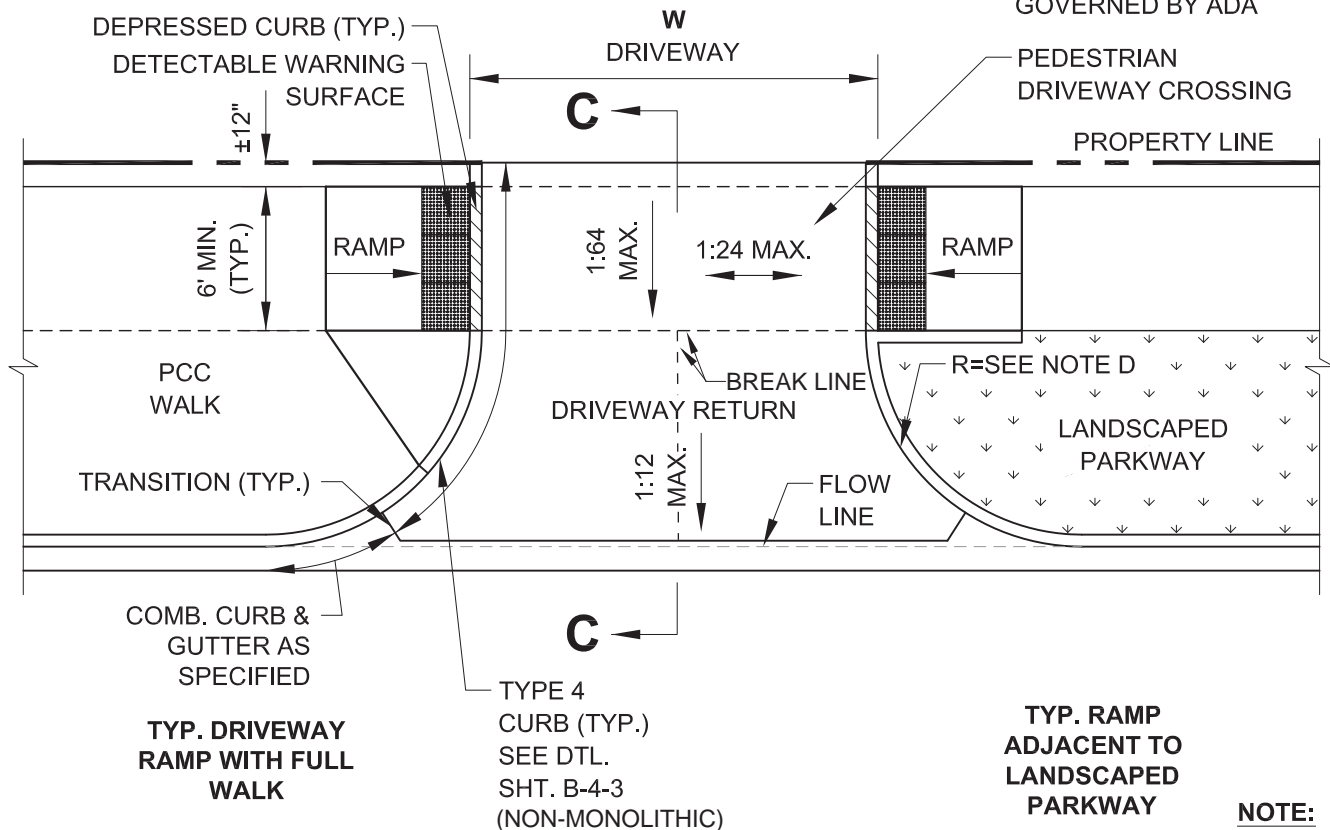


#### ALLEY NOTES:

- A. DETECTABLE WARNING IS NOT REQUIRED AT NON-SIGNALIZED DRIVEWAYS.
- B. RAMP DETAILS ARE DEPENDENT UPON SITE SPECIFIC CONDITIONS (WHERE RAMPS ARE NECESSARY). SEE APPROPRIATE RAMP SHEET AS REQUIRED (TYP.).
- C. SEE DETAIL B-2-5 FOR REDUCED WIDTH (4' MIN.) PEDESTRIAN ACCESSIBLE ROUTE ACROSS ALLEY / DRIVEWAY (TO ALLOW FOR ADDITIONAL SLOPE AT ALLEY / DRIVEWAY).
- D. DEPENDENT UPON TYPE & VOLUME OF TRAFFIC.

#### OPTION A - DRIVEWAY WITH FLARES

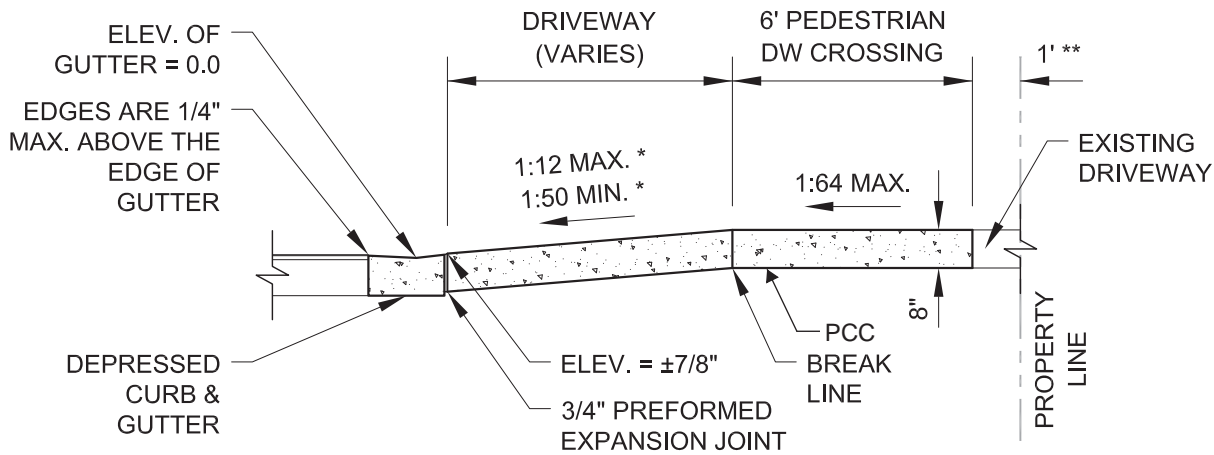
\* SLOPE VARIES AND IS NOT GOVERNED BY ADA



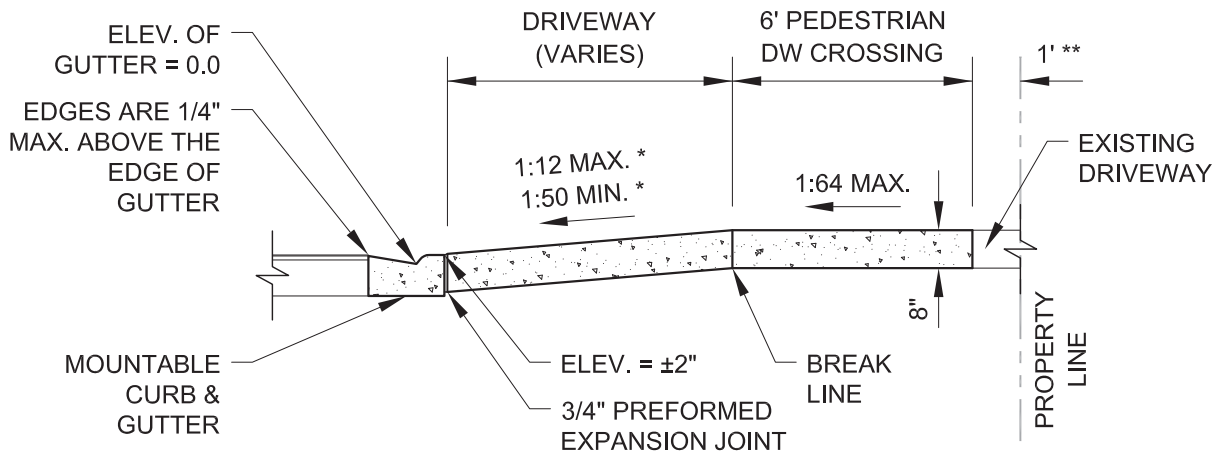
#### OPTION B - COMMERCIAL AND RESIDENTIAL DRIVEWAY WITH CURB FOR USE WITH TRAFFIC SIGNALIZATION APPROVED BY CITY ORDINANCE

**NOTE:**  
WORK THIS SHEET WITH SHEET B-2-4.

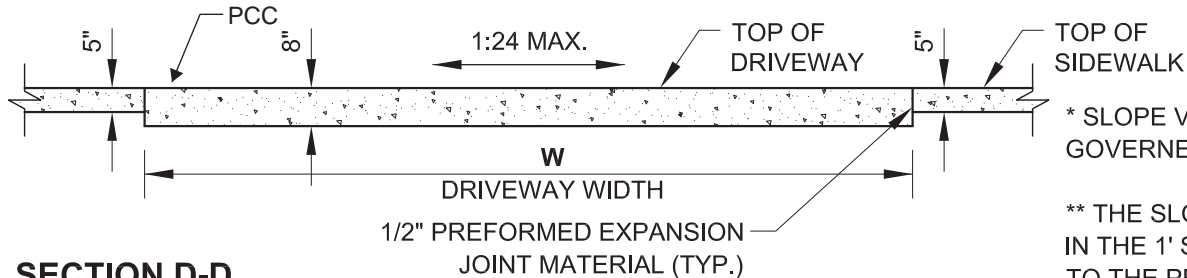
DATE	REVISION
02/20/07	REVISION 1
11/15/07	REVISION 2
11/14/08	REVISION 3
11/02/09	REVISION 4
08/10/12	REVISION 5
01/01/16	REVISION 6



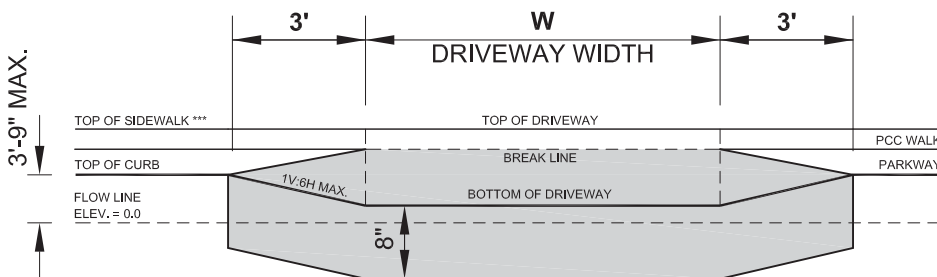
### SECTION C-C: SECTION SHOWING DEPRESSED CURB & GUTTER



### SECTION C-C: SECTION SHOWING MOUNTABLE CURB & GUTTER



### SECTION D-D



### SECTION E-E

\* SLOPE VARIES AND IS NOT GOVERNED BY ADA

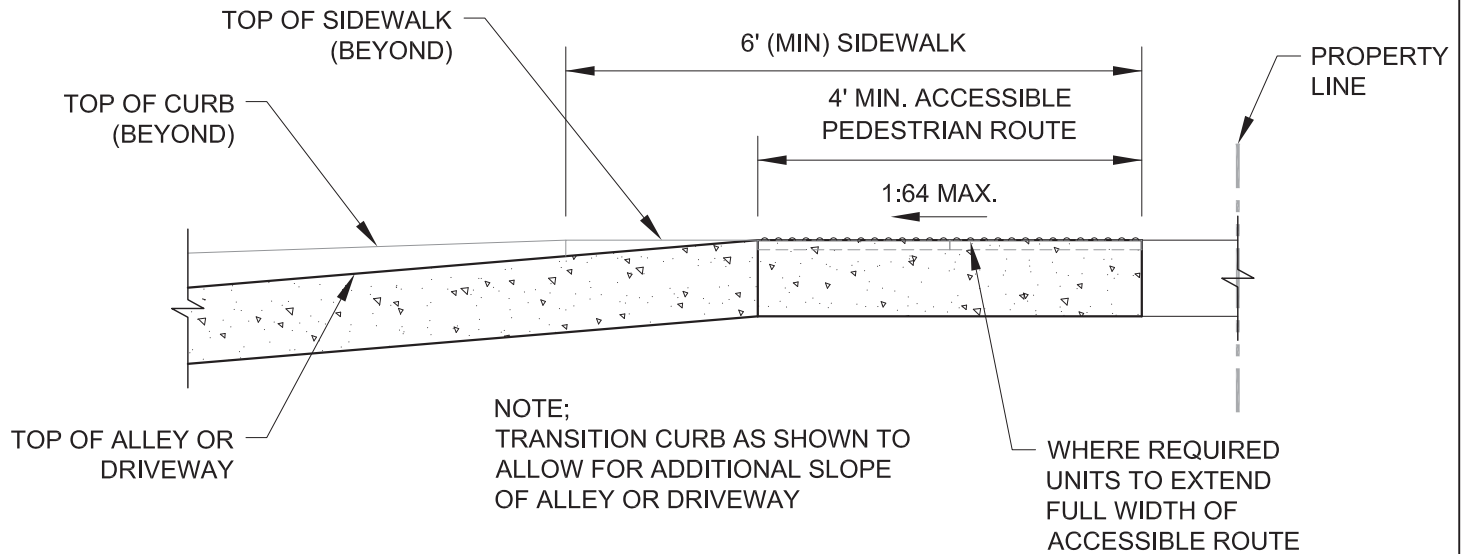
\*\* THE SLOPE OF THE ALLEY IN THE 1' SPACE ADJACENT TO THE PROPERTY LINE MAY BE ALTERED UP TO 10% TO MEET EXISTING CONDITIONS

\*\*\* HEIGHT OF FLARE + WIDTH OF SIDEWALK x 1.56% + WIDTH OF PARKWAY x 1.56% TO 4%

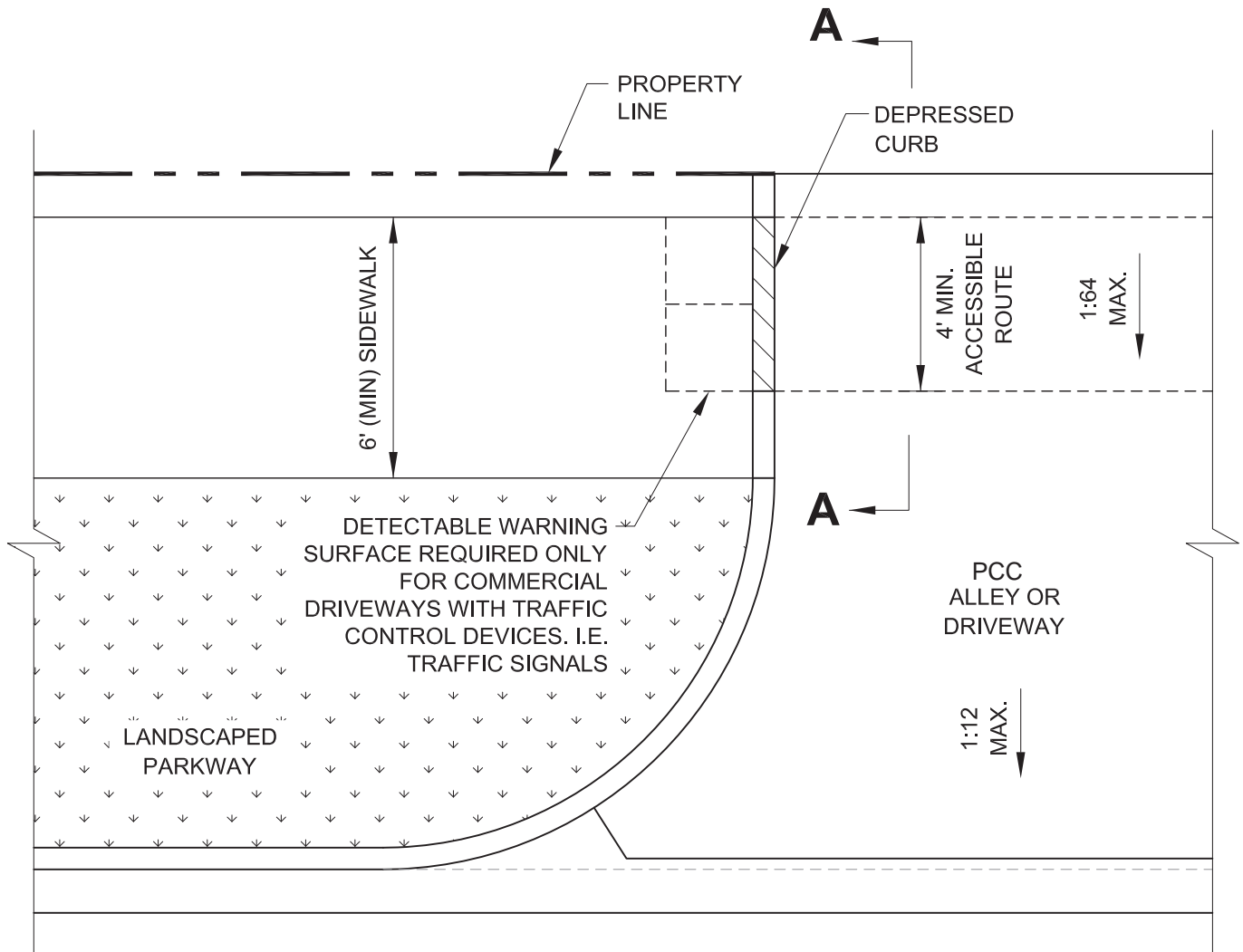
#### NOTE:

WORK THIS SHEET WITH SHEET B-2-3.

DATE	REVISION
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11/14/08	REVISION 3
11/02/09	REVISION 4
08/10/12	REVISION 5
01/01/14	REVISION 6



## SECTION A-A



## PLAN VIEW

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11/02/09	REVISION 4
08/10/12	REVISION 5
01/01/14	REVISION 6

## SLOPE CONVERSION CHART

% SLOPE	SLOPE RATIO	INCHES PER FOOT	DECIMAL FEET PER FOOT
16.67%	1:6	2"	0.167'
10%	1:10	1 1/4"	0.104'
8.33%	1:12	1"	0.083'
7.14%	1:14	7/8"	0.073'
5%	1:20	5/8"	0.052'
4.17%	1:24	1/2"	0.042'
2%	1:50	1/4"	0.021'
1.56%	1:64	3/16"	0.016'



City of Chicago  
Rahm Emanuel, Mayor  
Department of Transportation  
Division of Engineering  
[www.cityofchicago.org](http://www.cityofchicago.org)



### DATE

02/20/07  
11/15/07  
11/14/08  
11/02/09  
08/10/12

### REVISION

REVISION 1  
REVISION 2  
REVISION 3  
REVISION 4  
REVISION 5

## CITY OF CHICAGO CONVERSION CHARTS SHEET B-3-1

SCALE: NOT TO SCALE  
DATE: 10/23/2006

DRAWN BY: CDOT  
CHECKED BY: LCM

## GENERAL NOTES:

1. THE DETECTABLE WARNING USED SHALL BE CHOSEN FROM THE CHICAGO DEPARTMENT OF TRANSPORTATION LIST OF APPROVED DETECTABLE WARNING PRODUCTS (AVAILABLE ON THE CITY OF CHICAGO WEBSITE). IT IS NOT ACCEPTABLE TO INSTALL TWO DIFFERENT DETECTABLE WARNING PRODUCTS ADJACENT TO ONE ANOTHER AT ANY LOCATION. IN THE CENTRAL BUSINESS DISTRICT, GRANITE OR OTHER SPECIALTY PAVING MATERIALS MAY BE SUBMITTED TO THE COMMISSIONER FOR APPROVAL.
2. THE DETECTABLE WARNING MUST BE INSTALLED A MAXIMUM OF 8" OR LESS FROM FACE OF CURB (SEE DETAIL SHEET B-4-2).
3. THE DETECTABLE WARNING MUST COVER FULL WIDTH OF RAMP EXCLUDING SIDE FLARES FOR A MINIMUM UNOBSTRUCTED DEPTH OF 24". THE DETECTABLE WARNING LOCATED ON THE SURFACES OF RAMPS IS TYPICALLY ORIENTED PERPENDICULAR TO THE RUN OF THE RAMP UNLESS SPECIAL CIRCUMSTANCES OCCUR (SEE DETAIL SHEET B-1-5). THE DETECTABLE WARNING MUST BE PROVIDED FOR A MINIMUM DEPTH OF 24" FOR THE ENTIRE LENGTH OF THE SIDEWALK WHERE THE SIDEWALK IS FLUSH WITH THE STREET (DEPRESSED CURB OR FLUSH TRANSITION). IF IT IS NECESSARY TO CUT A UNIT(S) IN THE PROVISION OF A COMPLIANT RAMP OR SIDEWALK WITH 24" MINIMUM DEPTH OF DETECTABLE WARNING, THE UNITS SHALL BE CUT IN A NEAT AND WORKMAN LIKE MANNER PER MANUFACTURER'S REQUIREMENTS WITH A MINIMUM OF THREE PINS OR ANCHOR POINTS (WHERE APPLICABLE). THE UNITS SHALL BE ARRANGED SO THAT THE CUT UNITS ARE LARGE ENOUGH TO BE PROPERLY AND ADEQUATELY SECURED. CUT UNITS SHALL NOT BE USED UNLESS ALL OTHER DESIGN OPTIONS HAVE BEEN EXHAUSTED. THE USE OF SALVAGE PIECES FROM UNITS THAT ARE CUT WILL NOT BE PERMITTED WITHOUT WRITTEN APPROVAL OF THE COMMISSIONER. CUT UNIT SALVAGE PIECES NOT APPROVED FOR USE MUST BE REMOVED FROM THE SITE AND DISPOSED OF PROPERLY.
4. WHERE APPLICABLE, A COMBINATION OF STRAIGHT AND RADIAL DETECTABLE WARNING UNITS MAY BE USED ON COMPOUND AND LARGE RADII. CONTRACTOR MUST MAKE THIS DETERMINATION AND VERIFY IN FIELD.
5. THE DETECTABLE WARNING MUST CONTRAST WITH ADJACENT PAVEMENT. IF LIGHT COLORED PAVEMENT IS USED THE DETECTABLE WARNING COLOR SHALL BE RED. IF A DARK COLORED PAVEMENT IS USED THE DETECTABLE WARNING COLOR SHALL BE YELLOW. CONTRACTOR TO VERIFY THAT PROPER CONTRAST IS OBTAINED.
6. PRIOR TO PLACING CONCRETE FOR DEPRESSED CURBS, RAMPS, OR SIDEWALKS THE CONTRACTOR SHALL VERIFY THAT LAYOUT OR DESIGN COMPLIES WITH THE REQUIREMENTS OF THE CDOT ADA STANDARDS.
7. RAMP WIDTH MUST BE A MINIMUM OF 6'-0" AND IN INCREMENTS OF 1'-0", EXCEPT WHEN USING THE PERPENDICULAR RAMP AT CORNER (OR OTHER SPECIAL CDOT APPROVED CONDITIONS), WHICH HAS A MINIMUM WIDTH OF 4'-0".
8. THE MAXIMUM ALLOWABLE RAMP RUNNING SLOPE IS 1:14, MEASURED AT ANY PORTION OF THE RAMP. IF POSSIBLE, A MORE GRADUAL SLOPE SHALL BE USED. GRADE BREAKS AT THE TOP AND BOTTOM OF RAMPS SHALL BE PERPENDICULAR TO THE DIRECTION OF RAMP RUN.
9. THE MAXIMUM ALLOWABLE RAMP CROSS SLOPE IS 1:64, MEASURED AT ANY PORTION OF THE RAMP. IF POSSIBLE, A MORE GRADUAL SLOPE SHALL BE USED.
10. THE MAXIMUM ALLOWABLE RAMP LANDING SLOPE IS 1:64, MEASURED AT ANY LOCATION AND IN ANY DIRECTION ON THE LANDING. THE RAMP LANDING WIDTH SHALL MATCH THE FULL WIDTH OF THE RAMP FOR A MINIMUM UNOBSTRUCTED DEPTH OF 4'-0". RAMP LANDINGS SHALL BE PROVIDED AT THE TOP AND/OR BOTTOM OF RAMPS WHERE TURNING IS REQUIRED.
11. RAMP SIDE FLARES SHALL BE INSTALLED AT ANY LOCATION WHERE THE SURFACE ADJACENT TO THE RAMP SURFACE IS INTENDED FOR PEDESTRIAN USE. TRIPPING HAZARDS, INCLUDING STEPS, DROP-OFFS, OR CURBS SHALL NOT BE LOCATED WITHIN THE LIMITS OF THE SIDEWALK. RAMP SIDE FLARES ARE NOT REQUIRED WHERE THE SURFACE ADJACENT TO THE RAMP SURFACE IS LANDSCAPED OR IS OCCUPIED BY A BARRIER THAT BLOCKS PEDESTRIAN ACCESS. EXCEPTIONS TO THIS RULE MAY BE SUBMITTED TO THE COMMISSIONER FOR APPROVAL.

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08/10/12	REVISION 5



**GENERAL NOTES (CONTINUED):**

12. UTILITIES, SUCH AS LIGHT POLES, TRAFFIC POLES AND HYDRANTS, MAY BE LOCATED IN THE FLARE OF THE RAMP BUT ARE NOT ALLOWED ON THE RAMP SURFACE OR LANDING AREAS. EXISTING UTILITY STRUCTURE LIDS MAY REMAIN WITHIN THE FLARE OR ON THE SURFACE OF THE RAMP IF THE REQUIREMENTS OF GENERAL NOTE #19 ARE MET.

13. ALL LOCATIONS WITH TYPE 4 OR TYPE B CURB (EXCEPT ALLEY APRONS) SHALL BE CONSTRUCTED AS CURB AND GUTTER TYPE BV.12 THROUGH THE LIMITS OF THE CORNER AND THE CURB RAMPS.

14. ALTERATIONS SHALL NOT DECREASE THE ACCESSIBILITY TO EXISTING FACILITIES, SIDEWALKS LEADING TO EXISTING FACILITIES, OR DOOR OR GATE ACCESS POINTS TO FACILITIES. THE ELEVATION AT THE EXISTING PROPERTY LINE OR FACILITY ACCESS POINT SHALL BE MAINTAINED AT A MINIMUM. ANY ALTERATIONS ADJACENT TO OR AFFECTING A FACILITY ACCESS POINT SHALL RESULT IN IMPROVED ACCESS OR AT A MINIMUM A REPLICATION OF EXISTING CONDITIONS, INCLUDING SIDEWALK SLOPES AND SURFACE CONDITIONS. FACILITIES INCLUDE, BUT ARE NOT LIMITED TO PRIVATE BUSINESSES, PUBLIC BUILDINGS, RESIDENCES, BUS STOPS, PUBLIC BENCHES, PAY PHONES, AND PARKING METERS.

15. THE MINIMUM CROSSWALK WIDTH IS 6'-0". CROSSWALKS SHALL BE LOCATED AS SHOWN IN THE PLAN SHEETS DEPENDING ON THE TYPE OF CURB RAMP USED. BEYOND THE CURB FACE AT THE BASE OF CURB RAMPS, A CLEAR SPACE OF 4'-0" BY 4'-0" MINIMUM SHALL BE PROVIDED WITHIN THE STRIPES OF THE CROSSWALK (WHERE PROVIDED).

16. IF SIDEWALK AND ALLEY ARE AT THE SAME GRADE, A RAMP IS NOT REQUIRED. IF SIDEWALK AND DRIVEWAY ARE AT THE SAME GRADE, A RAMP IS NOT REQUIRED BUT DETECTABLE WARNING UNITS ARE STILL REQUIRED IF THE DRIVEWAY HAS TRAFFIC CONTROL DEVICES (I.E. TRAFFIC SIGNALS).

17. MAIN LINE SIDEWALK SHALL HAVE A MAXIMUM CROSS SLOPE NOT TO EXCEED 1:64 FOR THE FULL WIDTH OF WALK UNLESS OTHERWISE APPROVED BY THE COMMISSIONER. WHERE TURNING IS REQUIRED AND WHERE SIDEWALKS INTERSECT, THE SLOPE OF THE SIDEWALK SHALL NOT EXCEED 1:64 IN ANY DIRECTION.

18. MAIN LINE SIDEWALK RUNNING SLOPES SHALL NOT EXCEED 1:24 OR THE GENERAL GRADE ESTABLISHED FOR THE ADJACENT STREET, WHICH EVER IS HIGHER.

19. THERE SHALL BE NO VERTICAL LEVEL DIFFERENCES BETWEEN SURFACES GREATER THAN 1/4" ON THE MAIN LINE SIDEWALK. THERE SHALL BE NO HORIZONTAL GAPS OR OPENINGS GREATER THAN 1/2" ON THE MAIN LINE SIDEWALK.

20. WHERE OBSTRUCTIONS EXIST ON THE MAINLINE SIDEWALK, THE CLEAR WIDTH OF USEABLE SIDEWALK SHALL NOT BE LESS THAN 4'-0". OBSTRUCTIONS INCLUDE, BUT ARE NOT LIMITED TO SIDEWALK BENCHES, FIRE HYDRANTS, SIGNAL OR LIGHT POLES, NEWSPAPER DISPENSERS, TRASH RECEPTACLES, AND UTILITY PEDESTALS.

21. CURB RAMPS AND LANDING (KEYSTONE) TO BE CONSTRUCTED WITH 8" THICK CONCRETE AT ALL TRAFFIC SIGNALIZED INTERSECTIONS AND INDUSTRIAL STREET INTERSECTIONS. AT ALL OTHER LOCATIONS, 5" THICK CONCRETE TO BE USED.

22. DEPRESSED CURB, RAMP, OR SIDEWALK DESIGNS OR LAYOUTS SHALL MAINTAIN OR IMPROVE EXISTING DRAINAGE AND THE EXISTING INTERSECTION GEOMETRY SHALL NOT BE MODIFIED WITHOUT CDOT APPROVAL.

23. ALL CONSTRUCTION DOCUMENTS MUST BE STAMPED BY A LICENSED ARCHITECT/LANDSCAPE ARCHITECT/ENGINEER TO CERTIFY THAT THEY ARE IN ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT (ADA) AND ALL CODES AND BUILDING ORDINANCES OF THE CITY OF CHICAGO AND THE STATE OF ILLINOIS.

24. NO DEVIATIONS FROM THESE STANDARDS ARE ALLOWED WITHOUT WRITTEN APPROVAL FROM THE COMMISSIONER.



## ADA COMPLIANCE AND TRANSITION GUIDELINES

POLICY STATEMENT: ANY ALTERATION OF THE PUBLIC WAY MUST BE RESTORED IN AN ADA COMPLIANT MANNER

### I. STREET/ALLEY RESTORATION

FOR ANY PROJECT WHERE, WITHIN THE PROJECT LIMITS, A CROSSWALK IS ENCOUNTERED OR WHERE THE PROJECT LIMITS TERMINATE WITHIN 4' OR LESS OF A CROSSWALK, THOSE CROSSWALKS AND THE ASSOCIATED CURB RAMPS MUST BE IMPROVED TO CURRENT ADA STANDARDS IF THEY ARE NOT COMPLIANT (SEE APPENDIX A.)

WHEN A PROJECT CALLS FOR ONLY AN INTERSECTION TO BE REPAVED, THE INTERSECTION LIMITS AS DEFINED BY THE AREA OUTLINED BY OUTERMOST CROSSWALK LINES AND ADJACENT CURB FACES AND ALL ADJOINING CROSSWALKS AND CURB RAMPS MUST BE IMPROVED TO CURRENT ADA STANDARDS IF THEY ARE NOT COMPLIANT (SEE APPENDIX A).

WHEN WORK IS LIMITED TO A SINGLE CORNER OF AN INTERSECTION, THE CURB RAMP MUST BE IMPROVED TO CURRENT ADA STANDARDS AND THE ADJACENT PAVEMENT MUST BE RESURFACED, AS NECESSARY TO PROVIDE FOR A FLUSH TRANSITION (SEE APPENDIX A).

WHEN ADA WORK IS LIMITED TO A SINGLE CORNER OF AN INTERSECTION, THE ADJACENT PAVEMENT MUST BE RESTORED (SEE APPENDIX A).

FOR ANY CONSTRUCTION WHERE, WITHIN THE PROJECT LIMITS, AN ALLEY APRON IS ENCOUNTERED, THE ASSOCIATED CURB RAMPS, ALLEY APRON, AND SIDEWALKS MUST BE IMPROVED TO CURRENT ADA STANDARDS IF THEY ARE NOT COMPLIANT (SEE APPENDIX A).

### II. SIDEWALK INSTALLATION / REPAIRS / RECONSTRUCTION

THE LIMITS OF ANY MAINLINE SIDEWALK REPLACEMENT, GREATER THAN TEN FEET (10') IN LENGTH, THAT ABUT AN EXISTING RAMP, KEYSTONE, TRANSITION PANEL, AND/OR LANDING AREA (THIS TOTAL LENGTH INCLUDES THE PRIOR ELEMENTS), SHALL BE EXTENDED TO INCLUDE THE AFFECTED RAMPS AND THESE RAMPS SHALL BE RECONSTRUCTED TO CURRENT ADA STANDARDS. IN ADDITION, ALL NEWLY PLACED SIDEWALK TEN FEET (10') OR MORE IN LENGTH SHALL BE CONSTRUCTED IN ACCORDANCE WITH ALL CURRENT APPLICABLE STANDARDS WHICH INCLUDE PROVIDING A MINIMUM FOUR FEET (4') WIDTH ACCESSIBLE PATHWAY WITH A CROSS SLOPE NOT TO EXCEED 1:64 (SEE APPENDIX A).

### III. GUIDELINES FOR TRANSITIONING TO EXISTING NON-COMPLIANT CONDITION

#### NEW SIDEWALK PLACEMENTS GREATER THAN TEN FEET IN CONTIGUOUS LENGTH:

THE LIMITS OF ANY MAINLINE SIDEWALK REPLACEMENT, GREATER THAN TEN FEET (10') IN LENGTH, MUST BE EXTENDED FOR A MINIMUM FIVE ADDITIONAL FEET (5') EITHER SIDE IN ORDER TO PROVIDE A TRANSITION TO MATCH THE EXISTING SIDEWALK. THE LENGTH OF TRANSITION SHALL BE LENGTHENED AS NECESSARY TO ENSURE THAT THE RUNNING SLOPE OF THE TRANSITION DOES NOT EXCEED A SLOPE OF 1:24 (PREFERRED) OR 1:14 (MAXIMUM) AT ANY POINT.

#### NEW SIDEWALK REPLACEMENTS TEN FEET OR LESS IN CONTIGUOUS LENGTH (REPAIRS):

IT IS ACCEPTABLE PRACTICE TO MATCH ADJACENT SIDEWALKS AT THE EXISTING SLOPE.

#### CURB RAMP REPLACEMENTS

WHEN REPLACING AN ADA RAMP, THE SIDEWALK REPLACEMENT MUST EXTEND BEYOND THE LIMITS OF THE LANDING AREA AND/OR THE "KEYSTONE" A MINIMUM OF AN ADDITIONAL FIVE FEET (5') ON EITHER SIDE IN ORDER TO PROVIDE A TRANSITION TO MATCH THE EXISTING SIDEWALK. THE TRANSITION PANEL SHALL BE LENGTHENED AS NECESSARY TO ENSURE THAT THE RUNNING SLOPE OF THE TRANSITION PANEL DOES NOT EXCEED A SLOPE OF 1:24 (PREFERRED) OR 1:14 (MAXIMUM) AT ANY POINT.

NO EXCEPTIONS TO THE ABOVE WILL BE ALLOWED WITHOUT WRITTEN APPROVAL FROM THE COMMISSIONER.

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08/10/12	REVISION 5
01/01/14	REVISION 6

ALL DRAWINGS FOR WORK IN THE PUBLIC WAY  
MUST BE STAMPED AND SIGNED BY A LICENSED  
ARCHITECT, LANDSCAPE ARCHITECT OR  
LICENSED ENGINEER FOR CERTIFICATION

## CERTIFICATION:



THIS CERTIFIED THAT THESE DRAWINGS HAVE BEEN  
REVIEWED TO THE BEST OF MY KNOWLEDGE AND THAT  
I BELIEVE THEY ARE IN ACCORDANCE WITH THE  
AMERICANS WITH DISABILITIES ACT (ADA), AND ALL  
CODES AND BUILDING ORDINANCES OF THE CITY OF  
CHICAGO, STATE OF ILLINOIS.

\_\_\_\_\_  
LICENSED ARCHITECT / LANDSCAPE ARCHITECT /  
LICENSED ENGINEER



City of Chicago  
Rahm Emanuel, Mayor  
Department of Transportation  
Division of Engineering  
[www.cityofchicago.org](http://www.cityofchicago.org)



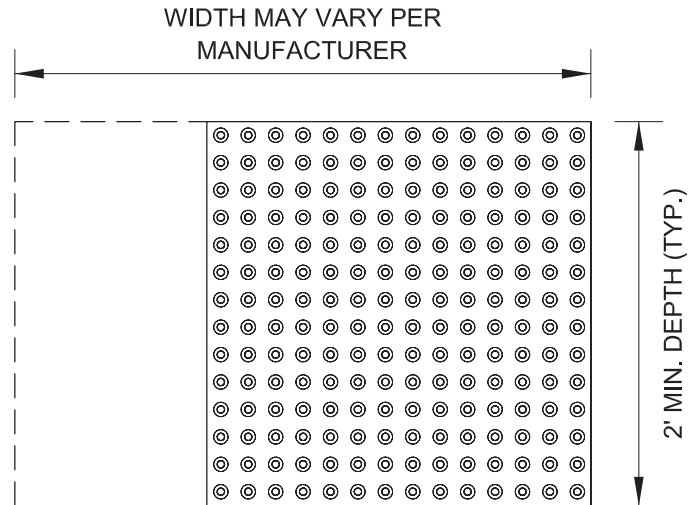
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11/02/09	REVISION 4
08/10/12	REVISION 5

CITY OF CHICAGO  
SEAL  
**SHEET B-3-5**

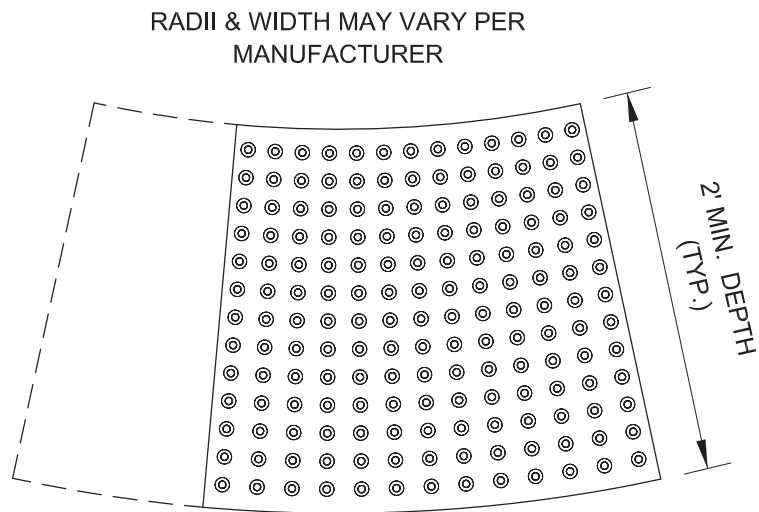
SCALE: NOT TO SCALE  
DATE: 10/23/2006

DRAWN BY: CDOT  
CHECKED BY: LCM

## STRAIGHT DETECTABLE WARNING UNITS



## RADIAL DETECTABLE WARNING UNITS



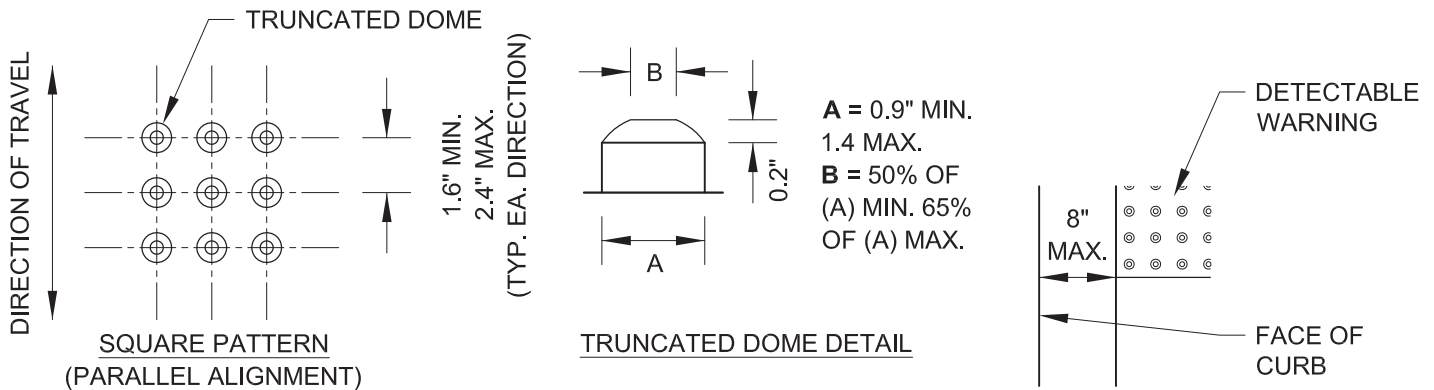
## DETECTABLE WARNING UNIT SIZES

- VERIFY ALL DIMENSIONS WITH THE PRODUCT MANUFACTURER.
- IF USING RADIAL UNITS, VERIFY THAT THE CURB RADIUS MATCHES AVAILABLE UNIT RADII WITH THE PRODUCT MANUFACTURER.
- APPROVED LIST OF DETECTABLE WARNING PRODUCTS CAN BE FOUND ON CDOT'S WEBSITE ([www.cityofchicago.org](http://www.cityofchicago.org)).

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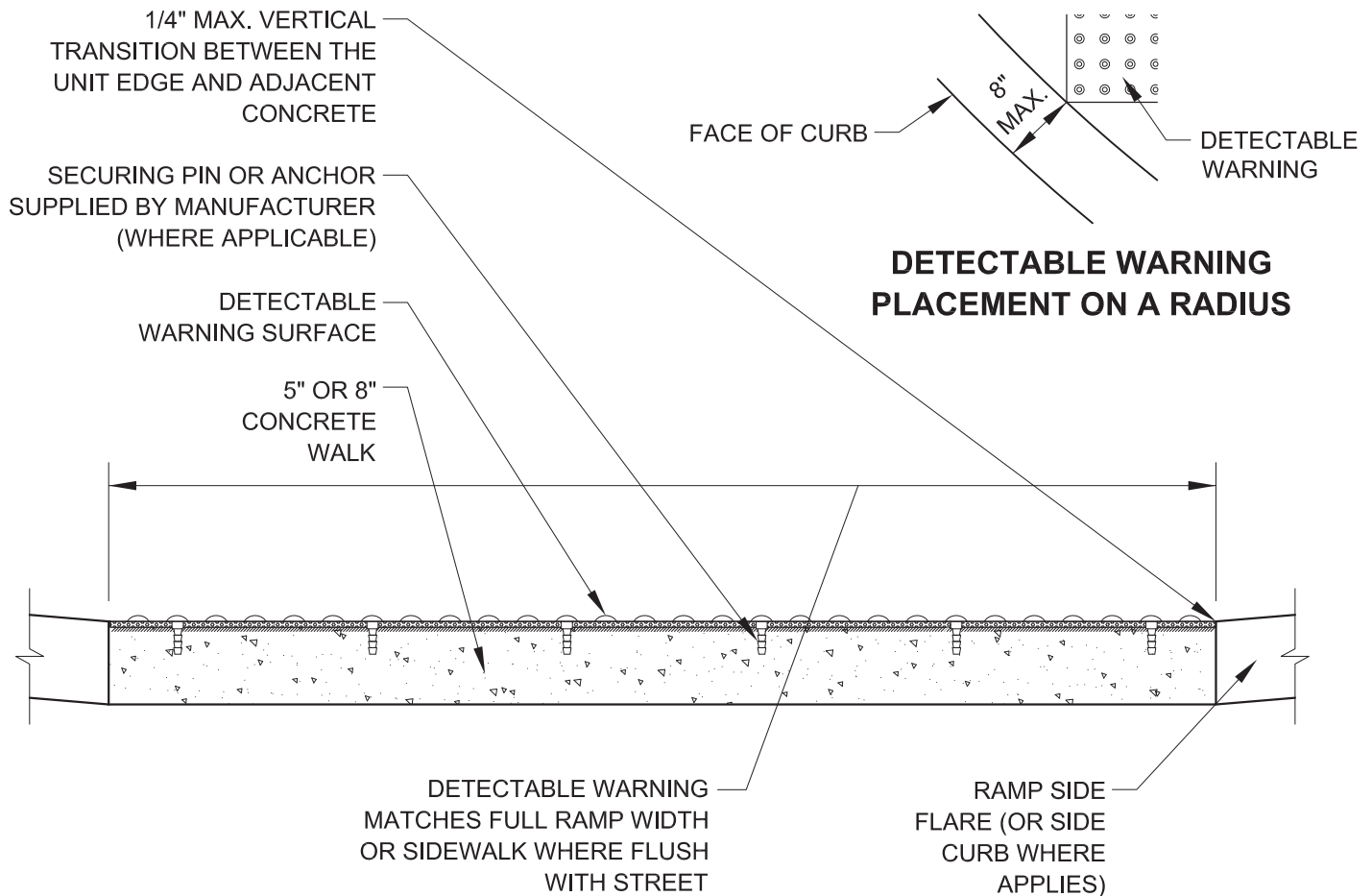
### GENERAL NOTE:

THE ROWS OF DOMES IN THE DETECTABLE WARNING MATERIAL MUST BE ALIGNED WITH THE PATH OF WHEELCHAIR TRAVEL WHICH IS REQUIRED TO BE PERPENDICULAR TO THE GRADE BREAK AT THE BOTTOM OF THE RAMP TO PERMIT TRACKING BETWEEN DOME ROWS. ON BLENDED TRANSITIONS OR FLUSH TRANSITIONS, WHERE RADIAL UNITS ARE SITUATED ABOUT THE CURB RADIUS, DOME ORIENTATION IS NOT SIGNIFICANT.



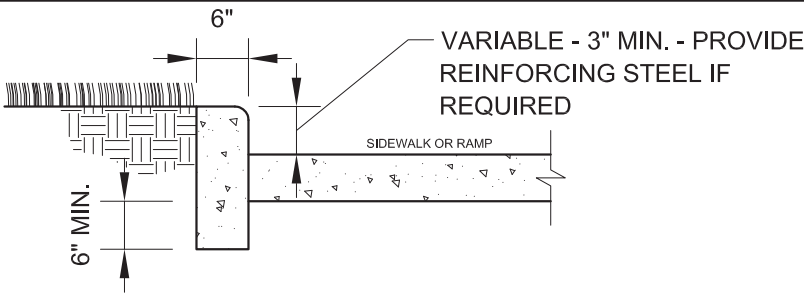
### UNIT PATTERN & DOME DETAIL

### TYPICAL DETECTABLE WARNING PLACEMENT

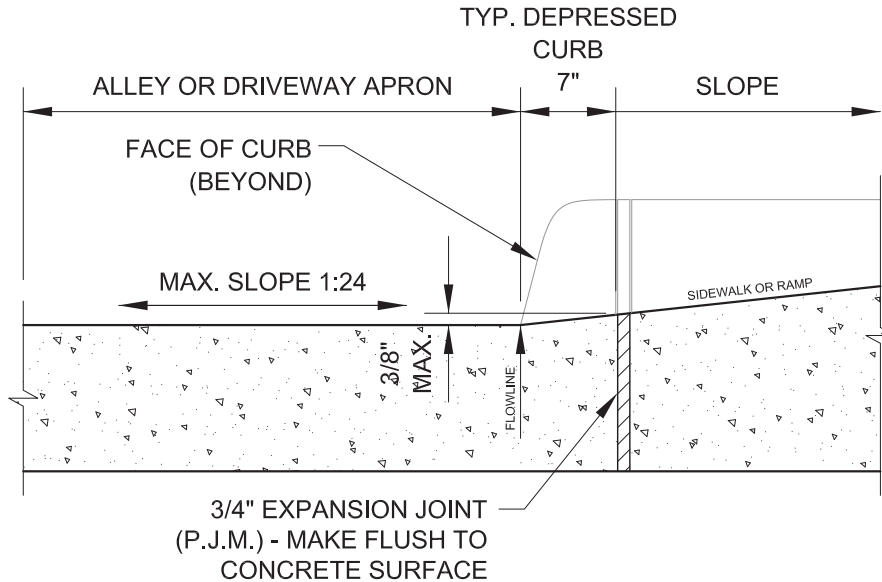


### DETECTABLE WARNING UNIT SECTION

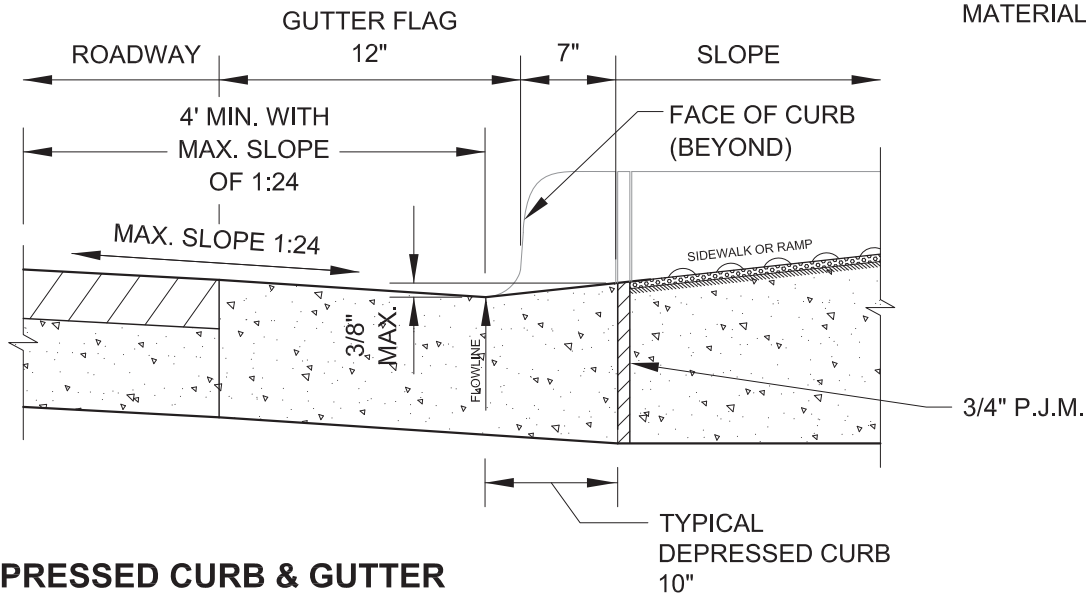
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**SIDE CURB - SECTION**



**DEPRESSED CURB & GUTTER  
AT ALLEY/DRIVEWAY APRON (TYPE 4 OR B CURB)**



**DEPRESSED CURB & GUTTER  
AT BOTTOM OF TYPICAL CURB RAMP**

**NOTES FOR CURB & GUTTER  
DETAILS THIS SHEET:**

A. CROSS SLOPE AT  
DEPRESSED CURB & GUTTER  
NOT TO EXCEED 1:64.

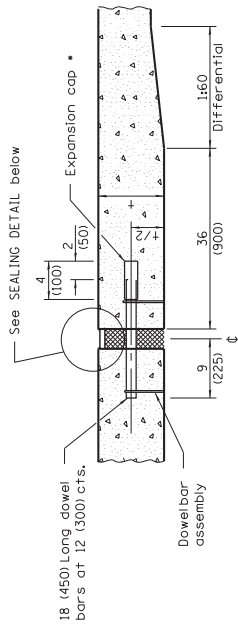
B. DETECTABLE WARNING  
SURFACE AT DRIVEWAYS  
REQUIRED ONLY FOR  
COMMERCIAL  
DRIVEWAYS WITH TRAFFIC  
CONTROL  
DEVICES, I.E. SIGNALS.

C. REFER TO *REGULATIONS  
FOR OPENINGS,  
CONSTRUCTION AND REPAIR IN  
THE PUBLIC WAY (CDOT)* FOR  
ADDITIONAL REQUIREMENTS  
FOR CURB AND GUTTER  
INSTALLATION.

D. RAMP SIDE FLARES SHALL  
BE INSTALLED AT ANY  
LOCATION WHERE THE  
SURFACE ADJACENT TO THE  
RAMP SURFACE IS INTENDED  
FOR PEDESTRIAN USE.  
TRIPPING HAZARDS, INCLUDING  
STEPS, DROP-OFFS, OR SIDE  
CURBS SHALL NOT BE LOCATED  
WITHIN THE LIMITS OF THE  
SIDEWALK.

E. 'P.J.M.' THIS SHEET REFERS  
TO PREFORMED JOINT  
MATERIAL.





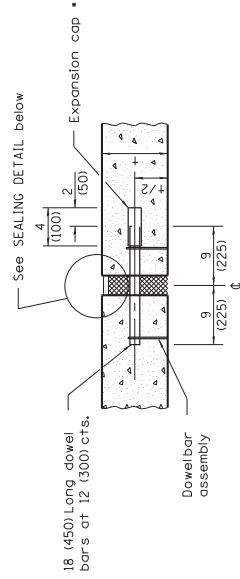
18 (450) Long dowel  
bars at 12 (300) cts.

Dowel bar  
assembly

Differential  
1:60

### **TRANSVERSE EXPANSION JOINT** (FOR PAVEMENTS WITH UNEQUAL THICKNESS)

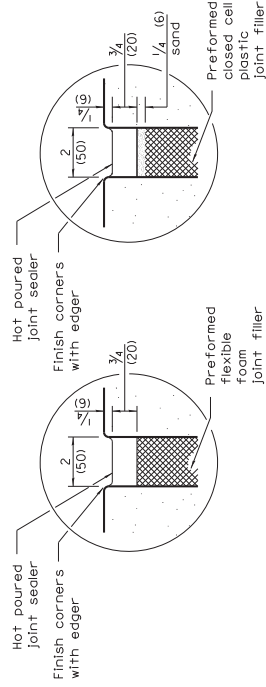
- Expansion caps shall be installed on the exposed end of each dowelbar once the header has been removed and the joint filler material has been installed.



18 (450) Long dowel  
bars at 12 (300) cts.

Dowel bar  
assembly

**TRANSVERSE EXPANSION JOINT**  
(FOR PAVEMENTS WITH EQUAL THICKNESS)



Finish corn  
with edger

sh corr  
edger

sh corr  
edger

reformed  
flexible  
foam  
point filler

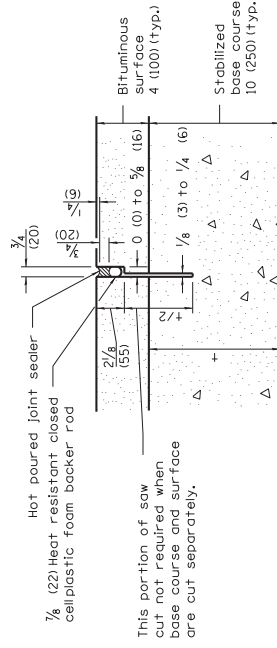
Preformed closed cell plastic joint filler

## SEALING DETAIL

DOWEL BAR TABLE	
PAVEMENT THICKNESS	DOWEL BAR DIAMETER
8 (200) or greater	1 1/2 (38)
7 (175) thru 7.99 (199)	1 1/4 (32)
Less than 7 (175)	1 (25)

## TRANSVERSE CONTRACTION JOINT

**THE FIRST COURSE IN LFA**  
(FOR CAM, CFA AND LFA BASE COURSE MIXTURES)



7/8 (22) Heat resistant cellular plastic foam backed

— This portion of saw cut not required when base course and surface are cut separately.

Stabilized  
base course  
10 (250) (typ.)Stabilized  
base course  
10 (250) (typ.)

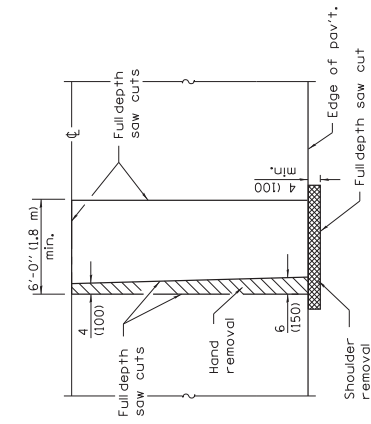
## PAVEMENT JOINTS

(Sheet 2 of 2)

STANDARD 420001-07

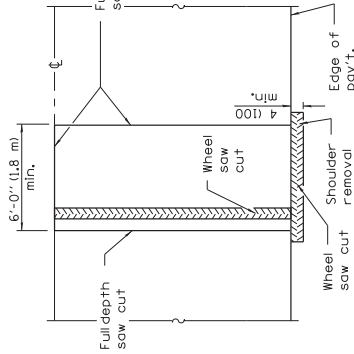






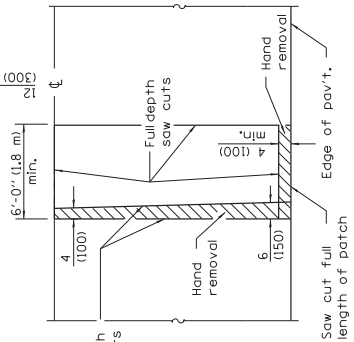
**PAVEMENT SAWING DETAIL**

(HMA SHOULDER)



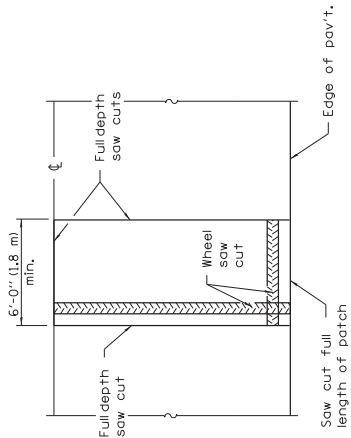
**ALTERNATE SAWING DETAIL**

(HMA SHOULDER)



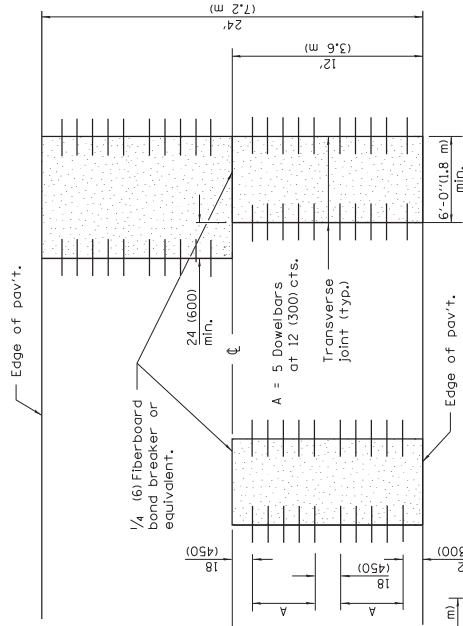
**PAVEMENT SAWING DETAIL**

(PCC SHOULDER)

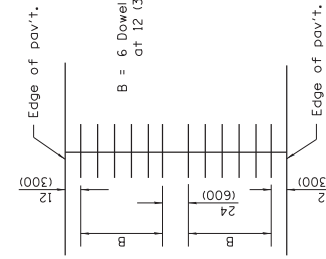


**ALTERNATE SAWING DETAIL**

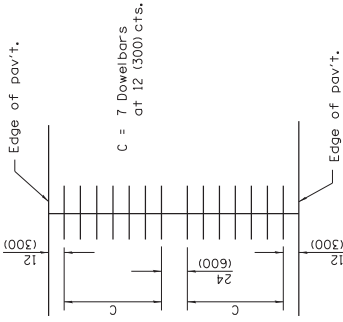
(PCC SHOULDER)



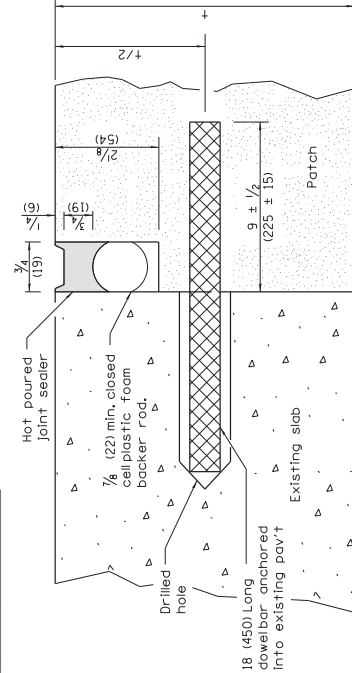
**12' (3.6 m) WIDE LANES**



**14' (4.2 m) WIDE RAMP**



**16' (4.8 m) WIDE RAMP**



**TRANSVERSE JOINT**

PAVEMENT THICKNESS	DOWEL BAR DIAMETER	HOLE DIAMETER
8 (200) or greater	1 1/2 (38)	1 3/4 (41)
7 (180) thru 7.99 (199)	1 1/4 (32)	1 3/4 (35)
Less than 7 (180)	1 (25)	1 1/8 (29)

**GENERAL NOTES**

The transverse joints for Class B patches shall align with joints or cracks in the adjacent lane whenever possible.

See Standard 420701 for details of pavement fabric.

All dimensions are in inches (millimeters) unless otherwise shown.

DATE	REVISIONS
1-1-08	Switched units to English (metric).
1-1-07	Revised General Notes.

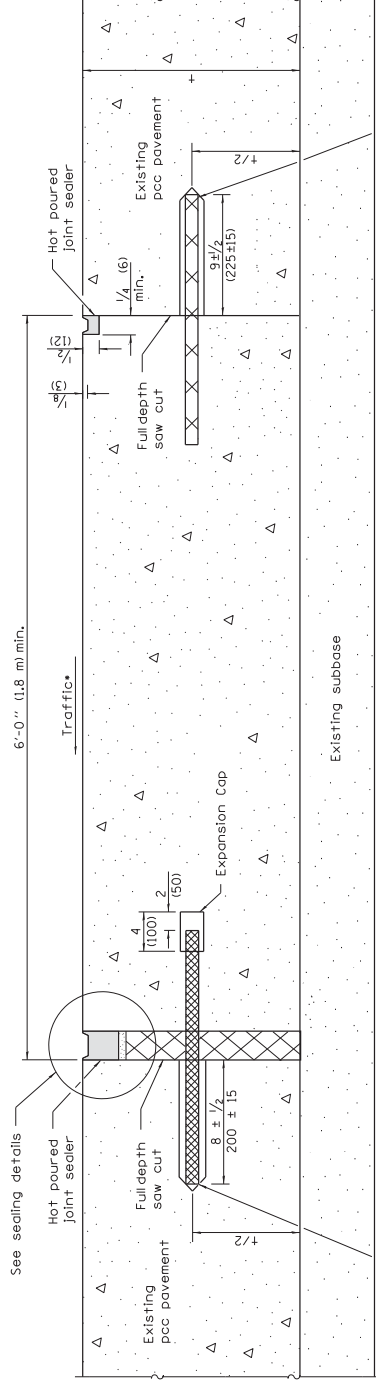
**CLASS B PATCHES**

(Sheet 1 of 2)

**STANDARD 442101-07**

Illinois Department of Transportation	ISSUED	1-1-97
PASSED	January 1, 2008	
ENGINEER OF POLICY AND PROCEDURES		
APPROVED	January 1, 2008	
ENGINEER OF DESIGN AND ENVIRONMENT		

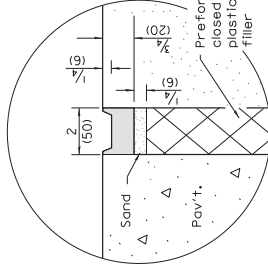
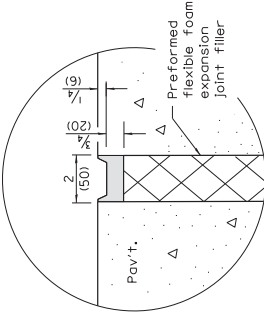
# TRANSVERSE EXPANSION JOINTS



No. 10x18 (No. 32x450)  
Tie bars anchored  
into existing pavement  
at 12 (300) cfs.

## METHOD I (Without Resurfacing)

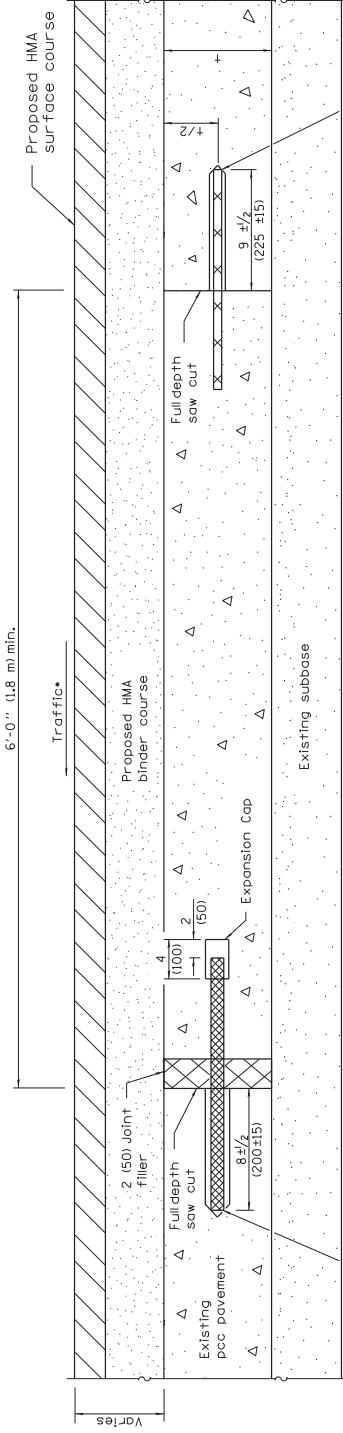
### SEALING DETAIL



### SEALING DETAIL

## NOTE

- When re-establishing a transverse expansion joint on a two-lane, two-way road, reverse the orientation of the dowel bars with respect to traffic for one of the patches such that the joint will be continuous across both lanes.



No. 10x18 (No. 32x450)  
Tie bars anchored  
into existing pavement  
at 12 (300) cfs.

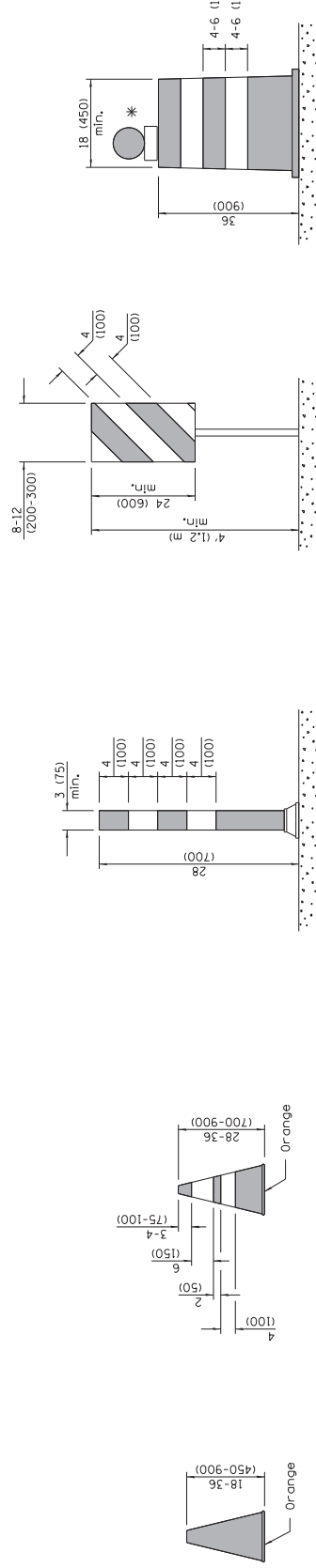
## METHOD II (With Resurfacing)

Illinois Department of Transportation	
PASSED	JANUARY 1, 2008
ENGINEER OF POLICY AND PROCEDURES	<i>Jeffrey L. Smith</i>
APPROVED	JANUARY 1, 2008
ENGINEER OF DESIGN AND ENVIRONMENT	<i>Lee E. Hays</i>

## CLASS B PATCHES

(Sheet 2 of 2)

STANDARD 442101-07



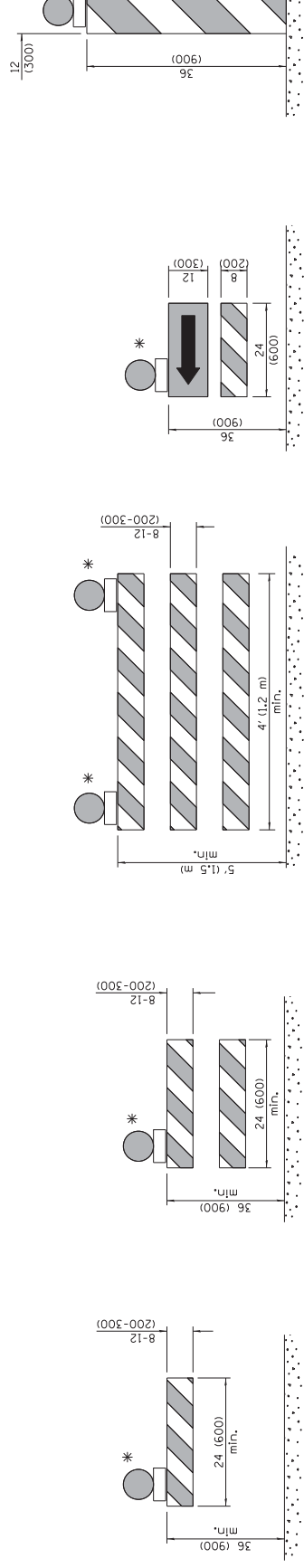
**CONE**

**REFLECTORIZED CONE**

**FLEXIBLE DELINEATOR**

**VERTICAL PANEL POST MOUNTED**

**DRUM**



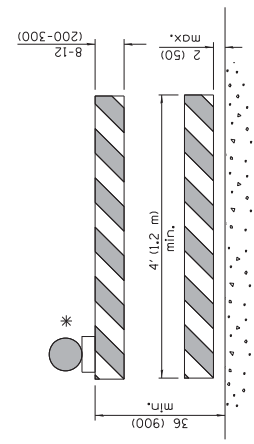
**TYPE I BARRICADE**

**TYPE II BARRICADE**

**TYPE III BARRICADE**

**DIRECTION INDICATOR BARRICADE**

**VERTICAL BARRICADE**



**DETECTABLE PEDESTRIAN CHANNELIZING BARRICADE**

\* Warning lights (if required)

**GENERAL NOTES**

All heights shown shall be measured above the pavement surface.

All dimensions are in inches (millimeters) unless otherwise shown.

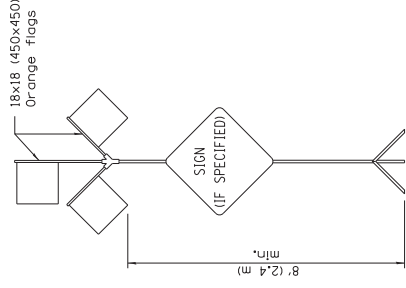
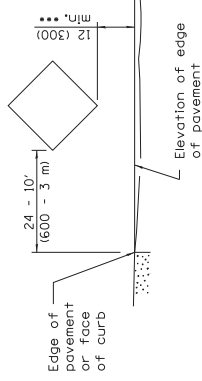
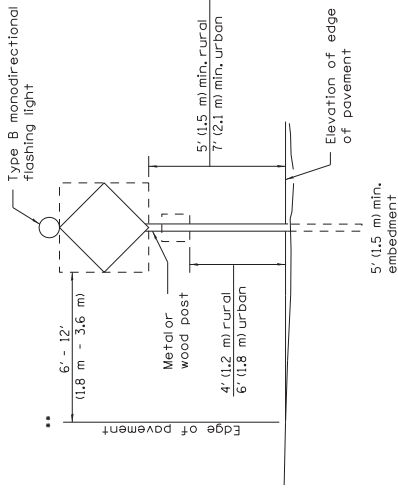
Illinois Department of Transportation		ISSUED	1-1-97
APPROVED	JANUARY 1, 2012		
ENGINEER OF OPERATIONS	JANUARY 1, 2012		
APPROVED	JANUARY 1, 2012		
ENGINEER OF DESIGN AND ENVIRONMENT	JANUARY 1, 2012		

DATE	REVISIONS
1-1-12	Added DETECTABLE PEDESTRIAN CHANNELIZING BARRICADE.
1-1-09	Switched units to English (metric). Omitted light on vertical panel.

**TRAFFIC CONTROL DEVICES**

STANDARD 701901-02

(Sheet 1 of 3)



## POST MOUNTED SIGNS

- When curb or paved shoulder are present this dimension shall be 24 (600) to the face of curb or 6' (1.8 m) to the outside edge of the paved shoulder.

## SIGNS ON TEMPORARY SUPPORTS

- \*\*\* When work operations exceed four days, this dimension shall be 5' (1.5 m) min. If located behind other devices, the height shall be sufficient to be seen by motorists.

## HIGH LEVEL WARNING DEVICE

**WORK LIMIT SIGNING**



G20-1(0)-6036

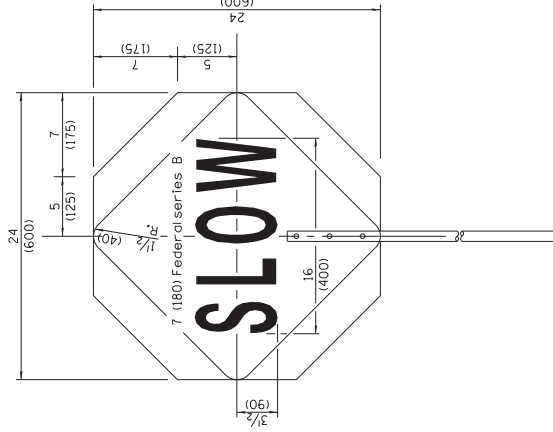
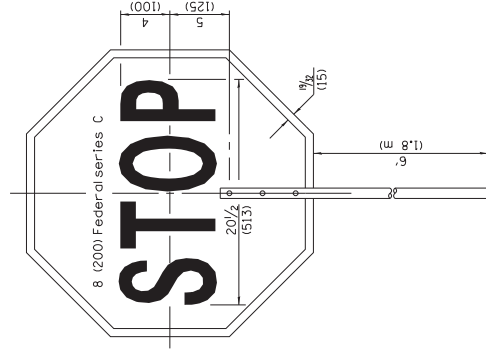
G20-2a(0)-6024

This signing is required for all projects 2 miles (3200 m) or more in length.

ROAD CONSTRUCTION NEXT X MILES sign shall be placed 500' (150 m) in advance of project limits.

END CONSTRUCTION sign shall be erected at the end of the job unless another job is within 2 miles (3200 m).

Dual sign displays shall be utilized on multi-lane highways.



FRONT SIDE

REVERSE SIDE


All dimensions are in inches (millimeters) unless otherwise shown.

## TRAFFIC CONTROL DEVICES

(Sheet 2 of 3)

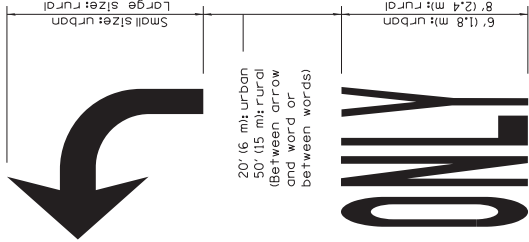
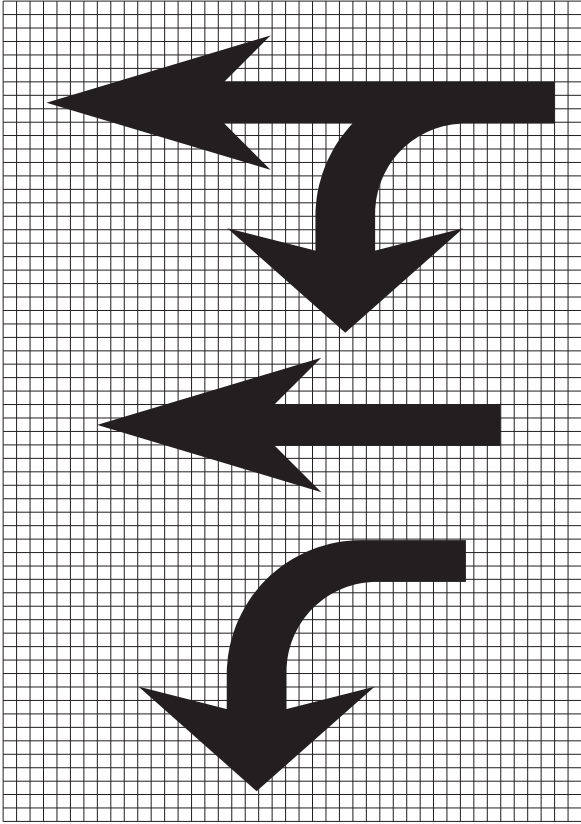
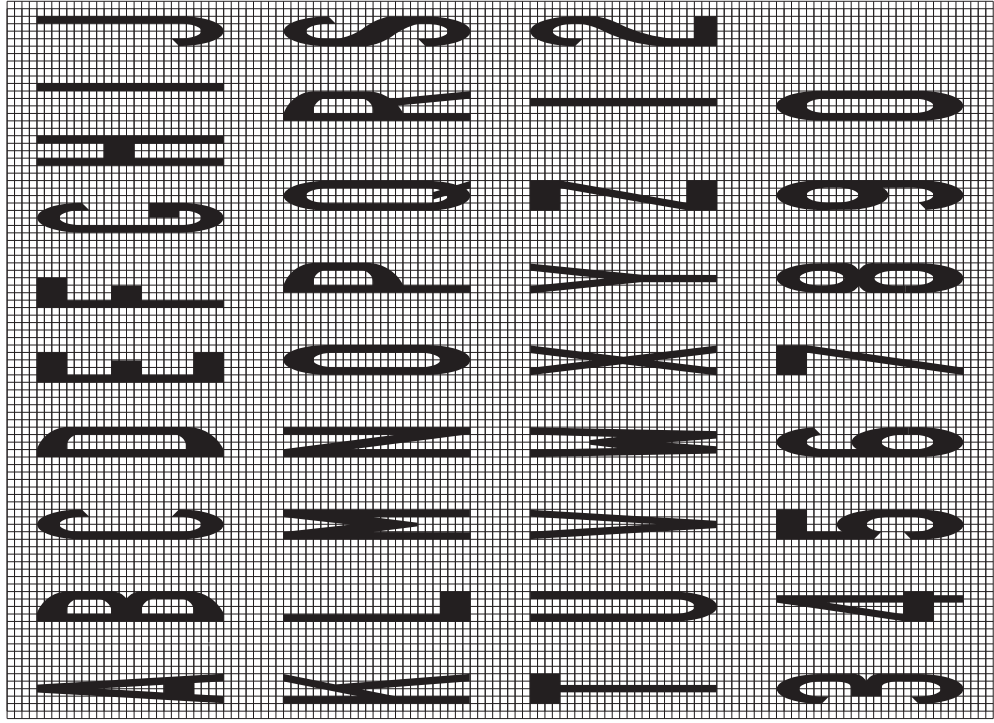
STANDARD 701901-02

**FLAGGER TRAFFIC CONTROL SIGN**

 Illinois Department of Transportation	APPROVED _____ January 1, 2012 ENGINEER/OF OPERATIONS _____ APPROVED _____ January 1, 2012 ENGINEER/DESIGN AND ENVIRONMENT _____	ISSUED 1-1-97
	APPROVED _____ January 1, 2012 ENGINEER/OF OPERATIONS _____ APPROVED _____ January 1, 2012 ENGINEER/DESIGN AND ENVIRONMENT _____	ISSUED 1-1-97





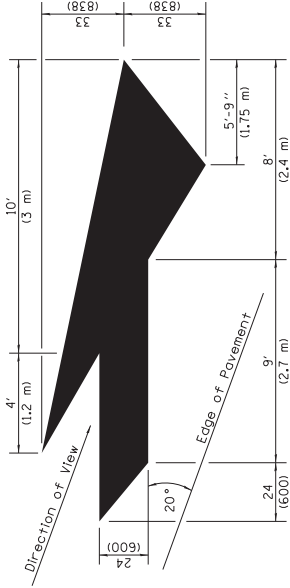


WORD AND ARROW LAYOUT

Legend Height	Arrow Size	a
6' (1.8 m)	Small	2.9 (74)
8' (2.4 m)	Large	3.8 (96)

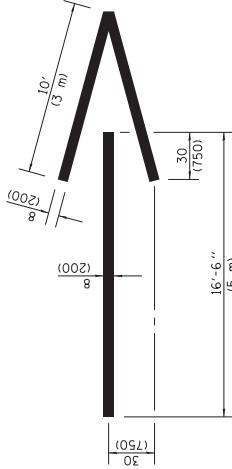
The space between adjacent letters or numerals should be approximately 3 (75) for 6' (1.8 m) legend and 4 (100) for 8' (2.4 m) legend.

LETTER AND ARROW GRID SCALE



LANE DROP ARROW

Right lane drop arrow shown.  
Use mirror image for left lane.



WRONG WAY ARROW

TYPICAL PAVEMENT MARKINGS

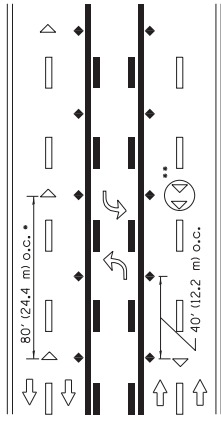
(Sheet 2 of 2)

STANDARD 780001-03



Reduce to 40' (12.2 m) o.c. on curves with posted or advisory speeds of 45 mph (70 km/h) or less.

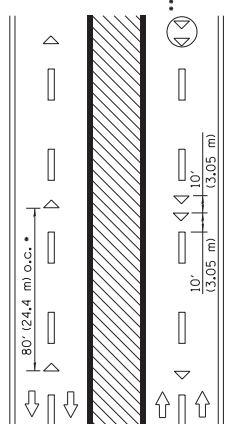
### TWO-LANE / TWO-WAY



\*\*\* See MULTI-LANE DIVIDED detail for lane marker notes.

### TWO-WAY LEFT TURN

### LANE REDUCTION TRANSITION

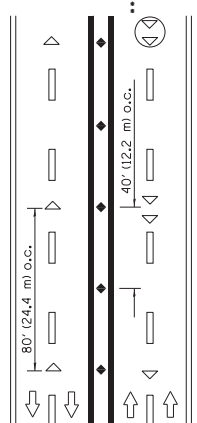


• Reduce to 40' (12.2 m) o.c. on curves where advisory speeds are 10 mph (15 km/h) lower than posted speeds.

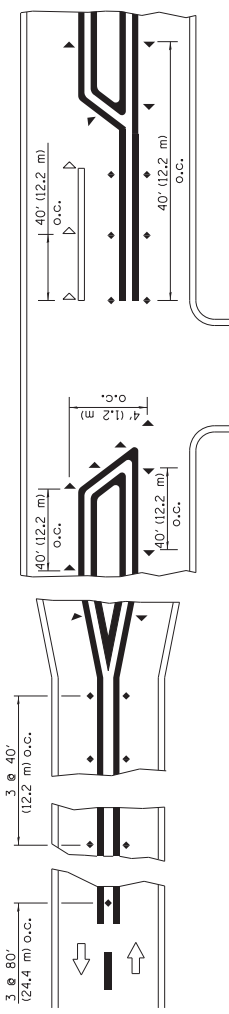
• Where double lane line markers are specified, they shall be spaced as shown.

### MULTI-LANE UNDIVIDED

\*\*\* See MULTI-LANE DIVIDED detail for lane marker notes.

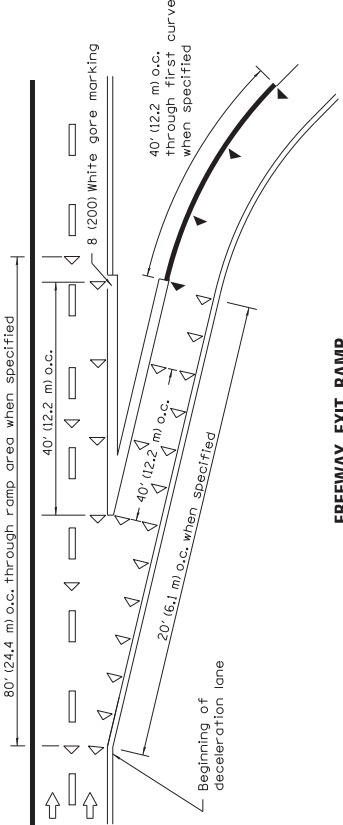


### MULTI-LANE DIVIDED



### RURAL LEFT TURN

### FREEWAY EXIT RAMP



### SYMBOLS

- Yellow stripe
- White stripe
- One-way amber marker
- One-way crystal marker
- Two-way amber marker

All dimensions are in inches (millimeters) unless otherwise shown.

DATE	REVISIONS	TYPICAL APPLICATIONS
1-1-09	Switched units to English (metric).	RAISED REFLECTIVE PAVEMENT MARKERS
1-1-99	Extended double line to show different scenario in RURAL LEFT TURN.	STANDARD 781001-03

APPROVED	JANUARY 1, 2009	ILLINOIS Department of Transportation
ENGINEER OF OPERATIONS		
APPROVED	JANUARY 1, 2009	ISSUED 1-1-97
ENGINEER OF DESIGN AND ENVIRONMENT		



APPENDIX B

**METER INSTALLATION DETAILS**

## **WATER METER INSTALLATION DRAWINGS AND APPROVED MATERIALS LIST**

### Approved Materials List

#### Meter Type Installation Flowchart (WM-1)

Flowchart to determine the proper type of meter installation for the conditions found at the work site.

#### Typical Inside Meter Installation - Vertical Pipe (WM-2)

#### Typical Inside Meter Installation - Horizontal Pipe (WM-3)

#### Typical Inside Meter Installation – Horizontal Pipe with Contractor Spread (WM-4)

#### Typical Outside Meter Installation in Vault (WM-5)

### Water Meter Sealing Diagram

### Meter Control Information

Meter information to be collected at the time of installation

### Meter Box Frame

East Jordan Iron Works

### Meter Box Lid

Nicor, Inc.

### Water Meter Enclosure

Old Castle Precast Carson

### B-Box

**Approved Materials List  
for  
Water Meter Installations  
Revised 12/16/2011**

**Note:** The Department of Water Management will furnish water meters, meter interface units, seals and seal crimping tools.

Where approved meter materials reference Ford Meter Box Company model numbers, equal meter materials from A.Y. McDonald or Mueller are allowed. Other substitutions are not permitted.

The following Standards will apply:

- 1) Underwriters Laboratories Inc. (UL) Classified to NSF/ANSI Standard 61
- 2) Applicable AWWA and ASTM standards (latest versions) including but not limited to AWWA C700, AWWA C800, ASTM B-62, ASTM B-75, ASTM B-584
- 3) City of Chicago Plumbing Code (latest version)
- 4) All pipes, fittings, valves and solder joints must be "Lead Free" as described below.

**Reduction of Lead in Drinking Water Act:**

Any part of a pipe, pipe fitting, plumbing fitting or fixture used in the installation of meters under this Contract that is in contact with potable water for human consumption must be "Lead Free" in compliance with Federal Public Law 111-380 and the Safe Drinking Water Act. This includes but is not limited to corporation stops, curb stops, roundways, service fittings and couplings, meter valves, meter couplings, copper meter setters, plumbing valves, pipe and pipe fittings.

This "Lead Free" requirement will be effective immediately upon award of Contract.

Proof of certification by an ANSI accredited test lab per ANSI/NSF Standard 61, Drinking Water Components – Health Effects, Section 8 is required. The lead content of the wetted components in contact with potable water must also be verified by an ANSI accredited test lab.

Materials identified as "Lead Free" or "No-Lead" must have a manufacturer's mark, e.g., "NL" cast or permanently stamped into the main body for proper identification.

**An affidavit certifying compliance with these standards and specifications must be signed and submitted by the manufacturing firm's Quality Assurance or Engineering Manager.**

**Water Meter Indoor Installation**

**Meter Settings:**

CH11-233-NL (Copper Horn, FIP swivel inlet / swivel outlet 3/4" x 3/4", 5/8" x 3/4" Meter- No Lead)

CH11-243-NL (Copper Horn, FIP swivel inlet / swivel outlet 1" x 3/4", 5/8" x 3/4" Meter- No Lead)

CH11-244-NL (Copper Horn, FIP swivel inlet / swivel outlet 1" x 1", 5/8" x 3/4" Meter- No Lead)

CH11-444-NL (Copper Horn, FIP swivel inlet / swivel outlet 1" x 1", 1" Meter- No Lead)

**Straight Meter Ball Valves:**

B13-332W-NL (3/4" Ball Valve, 3/4" FIP x 5/8"x 3/4" Meter Swivel, Locking Wing- No Lead)

B13-342W-NL (3/4" Ball Valve, 1" FIP x 5/8"x 3/4" Meter Swivel, Locking Wing- No Lead)

B13-444W-NL (1" Ball Valve, 1" FIP x 1" Meter Swivel, Locking Wing- No Lead)

B11-666W-NL (1-1/2" Ball Valve, 1-1/2" FIP x 1-1/2" FIP, Locking Wing- No Lead)\*

B11-777W-NL (2" Ball Valve, 2" FIP x 2" FIP, Locking Wing- No Lead)\*

B83-332W-NL (3/4" Ball Valve, 3/4" MIP x 5/8"x 3/4" Meter Swivel, Locking Wing- No Lead)

B83-444W-NL (1" Ball Valve, 1" MIP x 1" Meter Swivel, Locking Wing- No Lead)

B81-666W-NL (1-1/2" Ball Valve, 1-1/2" MIP x 1-1/2" FIP", Locking Wing- No Lead)\*

B81-777W-NL (2" Ball Valve, 2" MIP x 2" FIP", Locking Wing- No Lead)\*

\*Use with Straight Meter Coupling and RA ("Meter Spud") Fitting

**Straight Meter Couplings:**

C38-xx-NL (Coupling, Meter Swivel x MIP, Size x Size- No Lead)

C31-xx-NL (Coupling, Meter Swivel x FIP, Size x Size- No Lead)

**Regulator Adapter (RA or "Meter Spud") Fittings:**

RA-6-NL (Regulator Adapter 1-1/2" Meter, Male Meter Threads x 1-1/2" MIP)

RA-7-NL (Regulator Adapter 2" Meter, Male Meter Threads x 2" MIP)

**Bent Meter Couplings:**

L38-xx-NL (1/4 Bend, Meter Swivel x MIP, Size x Size- No Lead)

L31-xx-NL (1/4 Bend, Meter Swivel x FIP, Size x Size- No Lead)

**Compression Couplings\*\*:**

C14-xx-NL (Coupling, FIP x CTS Comp, size x size- No Lead)

C17-xx-NL (Coupling, FIP x PVC,(IPS) Comp, size x size- No Lead)

C84-xx-NL (Coupling, MIP x CTS Comp, size x size- No Lead)

C87-xx-NL (Coupling, MIP x PVC,(IPS) Comp, size x size- No Lead)

**\*\*To be used only on new installations of 5/8" and 1" meters (service not presently metered)**

**Ball Valves:**

B11-333-NL (3/4" Ball Valve, 3/4" FIP x 3/4" FIP- No Lead)

B11-444-NL (1" Ball Valve, 1" FIP x 1" FIP- No Lead)

B11-666-NL (1-1/2" Ball Valve, 1-1/2" FIP x 1-1/2" FIP- No Lead)

B11-777-NL (2" Ball Valve, 2" FIP x 2" FIP- No Lead)

HB-34S (Straight Lever Handle (3-1/4" Long) For 3/4" and 1" Ball Valves)

HB-67S (Straight Lever Handle (4-7/8" Long) For 1-1/2" and 2" Ball Valves)

**Access Panels:**

Watts Springfit Access Panel, APU-15, 15" X 15"

ACUDOR Plastic Access Door, PA-3000, 14"x29" OR 22"x22"

**Water Meter Pit (Outdoor) Installation**

**Meter Setters:**

Ford Model VBB82W-22-44-FP-NL (5/8"x3/4"meter w/ 2 full port ball valves, flare copper inlet & outlet)

Ford Model VBB84W-22-44-FP-NL (1"meter w/ 2 full port ball valves, flare copper inlet & outlet)

**Compression Couplings:**

Ford Model Qx2-x4 (Pack Joint for lead pipe by 1" flare copper)

**Water Meter Enclosures:**

Oldcastle Precast Carson, Model MS24558, 3 layer rotational molded polyethylene blend, 53 1/2"L X 23 1/2" I.D. X 5/8" Wall. Black exterior / white interior. (See attached drawing)

**Meter Box Frame:** East Jordan Iron Works, Product No. 144011, Catalog No. 1440Z.  
(See attached drawing)

**Meter Box Cover:** Nicor 15 inch Read Rite (See attached drawing)

**Roundway and B-Box Replacement**

**Roundways:**

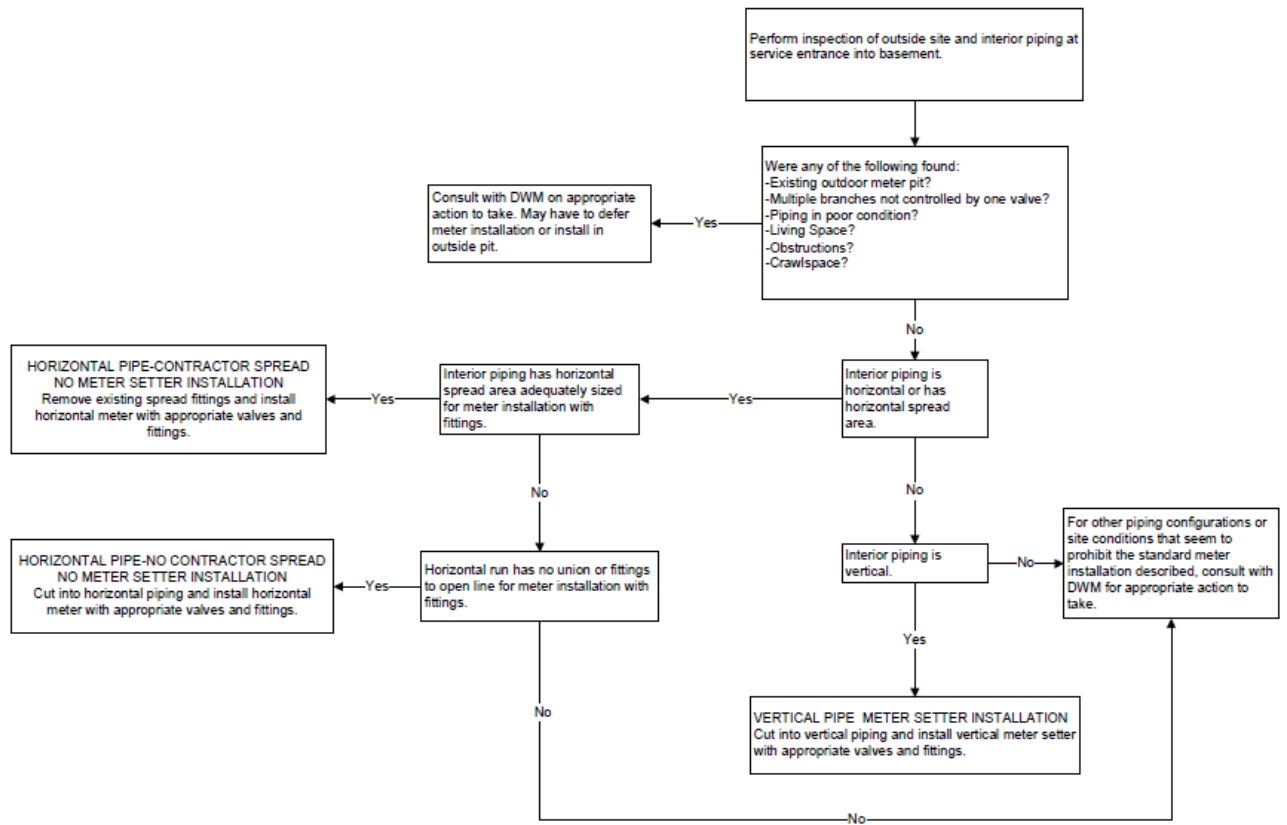
B22-444M-NL (1" Ball Valve-Minneapolis, 1"Flare Copper x 1" Flare Copper- No Lead)

**B-Boxes (Shut-off Boxes):**

VALCO Model 3113636M2 (City of Chicago, cast iron lid and rim, brass pentagon head bolt, ABS plastic tube sections, screw style bottom for attachment to 1" Minneapolis roundways) or approved equal (See attached drawing).

11/7/11

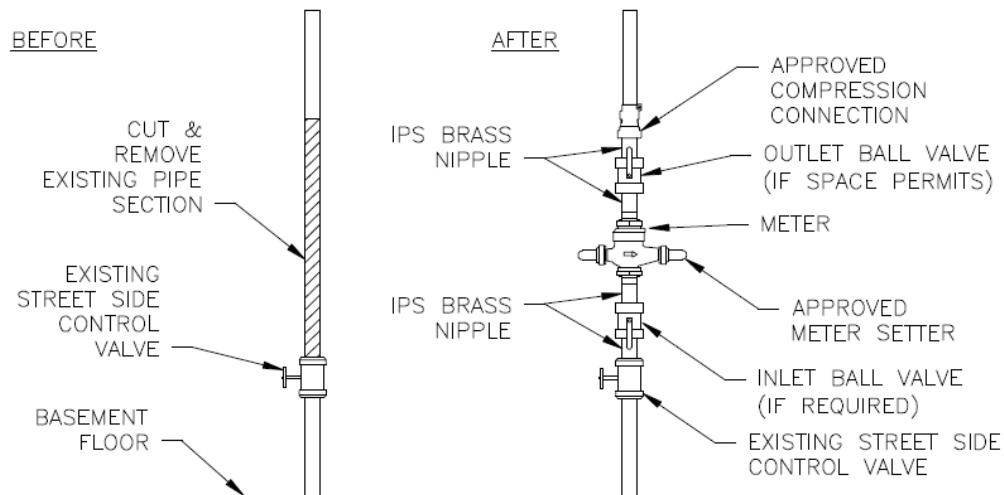
# METER TYPE INSTALLATION FLOWCHART (SERVICE IS PRESENTLY UNMETERED)



WM-1  
Revised 11/7/11

## TYPICAL INSIDE METER INSTALLATION VERTICAL PIPE\*

(SERVICE IS PRESENTLY UNMETERED)



NOTE: CUT WALL OPENING AND ADD ACCESS DOOR AS REQUIRED FOR CONCEALED PIPING.

\*INSTALLATION SHOWN IS TYPICAL. ACTUAL FIELD CONDITIONS MAY VARY AND REQUIRE ADDITIONAL FITTINGS NOT SHOWN TO PROPERLY COMPLETE THE METER INSTALLATION.

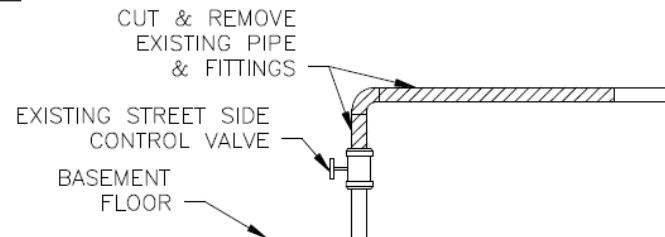
WM-2  
NOT TO SCALE  
REVISED 11/7/11



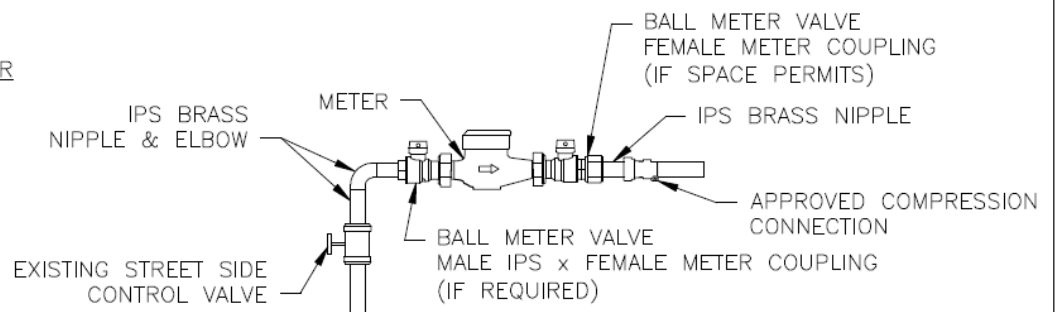
## TYPICAL INSIDE METER INSTALLATION HORIZONTAL PIPE\*

(SERVICE IS PRESENTLY UNMETERED)

BEFORE



AFTER



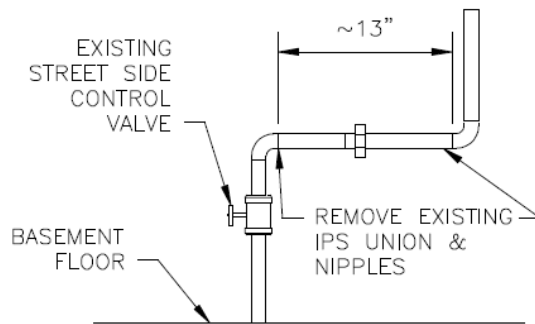
NOTE: CUT WALL OPENING AND ADD ACCESS DOOR AS REQUIRED FOR CONCEALED PIPING.

\*INSTALLATION SHOWN IS TYPICAL. ACTUAL FIELD CONDITIONS MAY VARY AND REQUIRE ADDITIONAL FITTINGS NOT SHOWN TO PROPERLY COMPLETE THE METER INSTALLATION.

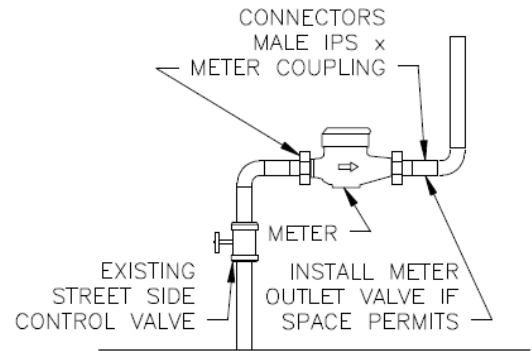
WM-3  
NOT TO SCALE  
REVISED 11/7/11

TYPICAL INSIDE METER INSTALLATION  
HORIZONTAL PIPE WITH  
CONTRACTOR SPREAD\*  
 (SERVICE IS PRESENTLY UNMETERED)

BEFORE



AFTER

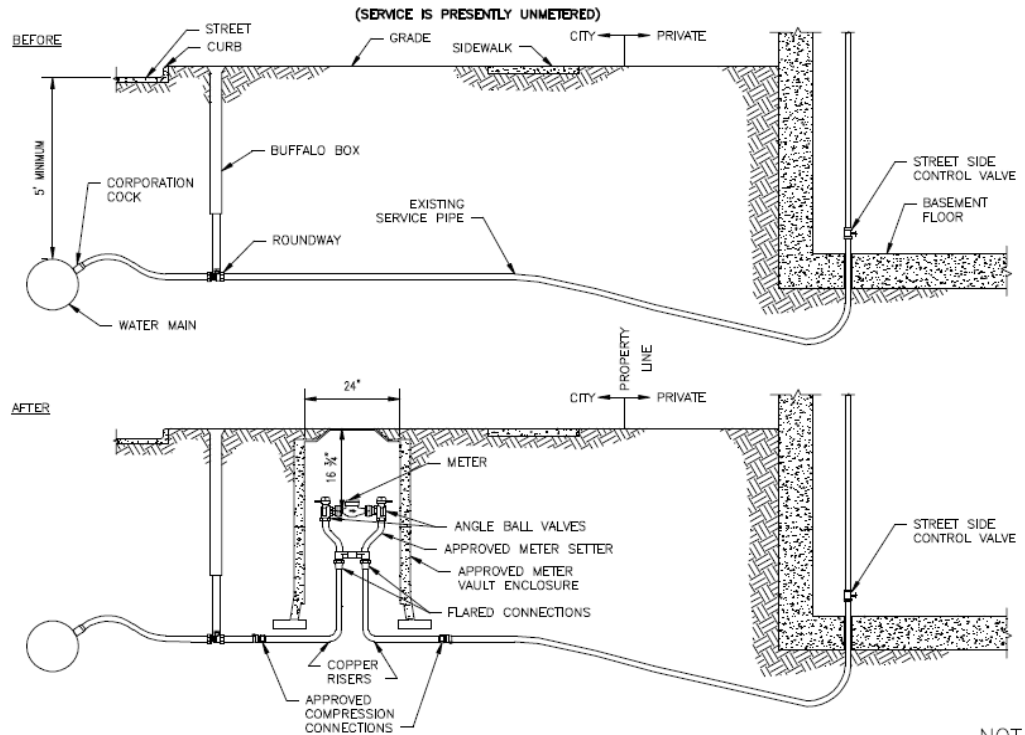


NOTE: CUT WALL OPENING AND ADD ACCESS DOOR AS REQUIRED FOR CONCEALED PIPING.

\*INSTALLATION SHOWN IS TYPICAL. ACTUAL FIELD CONDITIONS MAY VARY AND REQUIRE ADDITIONAL FITTINGS NOT SHOWN TO PROPERLY COMPLETE THE METER INSTALLATION.

WM-4  
 NOT TO SCALE  
 REVISED 11/7/11

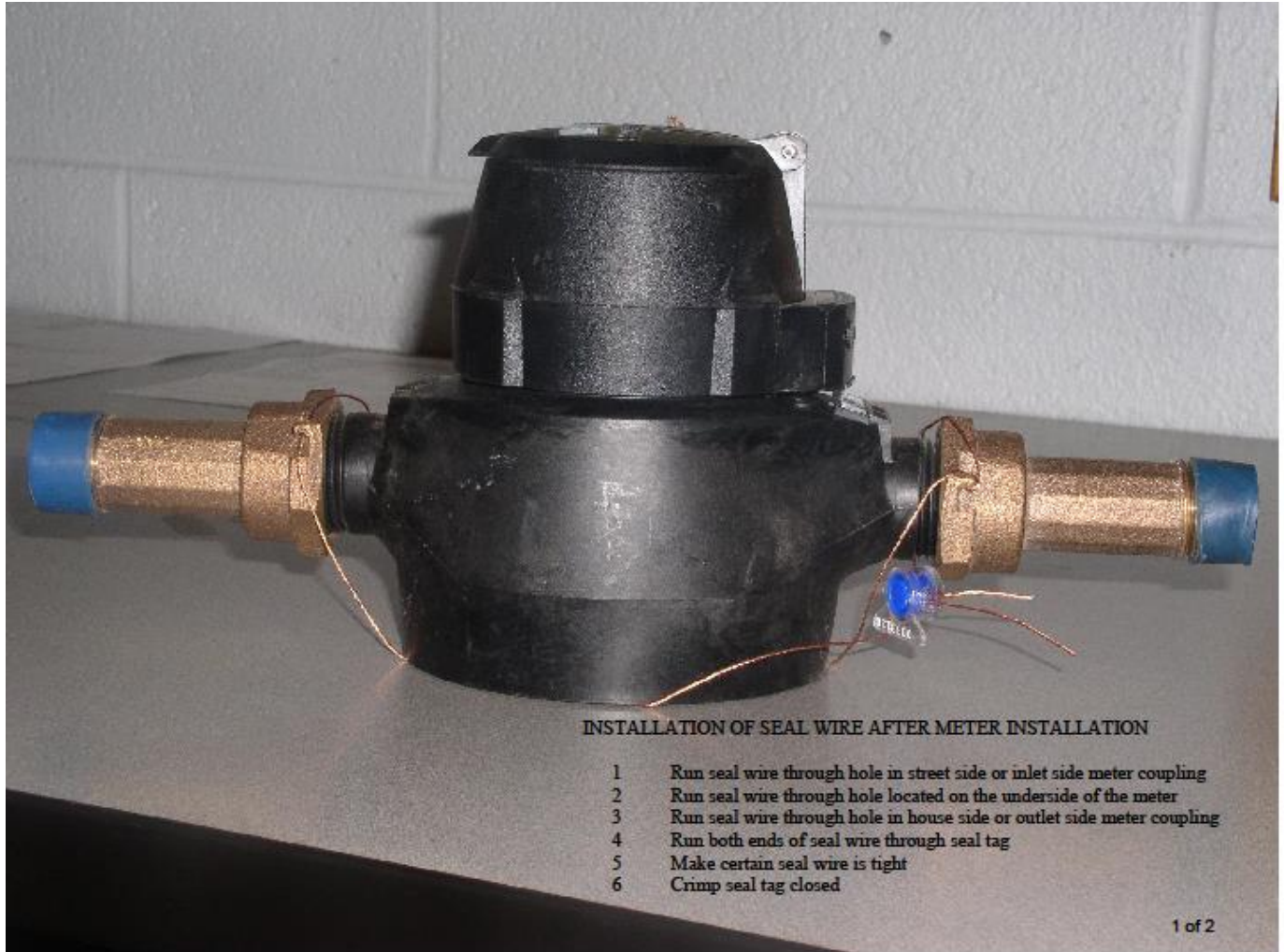
# **TYPICAL OUTSIDE METER INSTALLATION IN VAULT\***



**NOTE:** INSTALL INSULATED METER PONCHO OVER METER AND SETTER

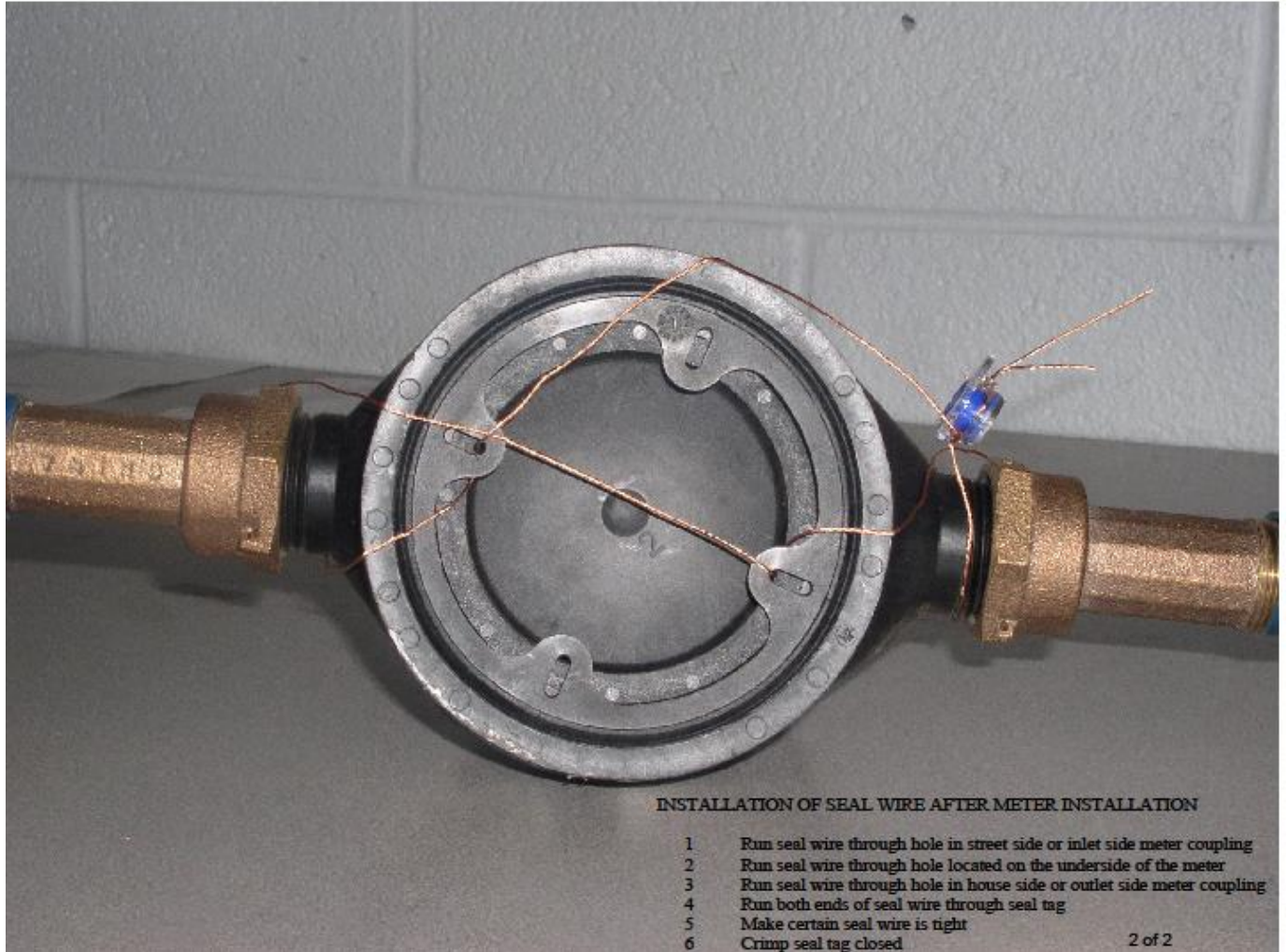
\*INSTALLATION SHOWN IS TYPICAL. ACTUAL FIELD CONDITIONS MAY VARY AND REQUIRE ADDITIONAL FITTINGS NOT SHOWN TO PROPERLY COMPLETE THE METER INSTALLATION.

WM-5  
NOT TO SCALE  
REVISED 11/7/11



INSTALLATION OF SEAL WIRE AFTER METER INSTALLATION

- 1 Run seal wire through hole in street side or inlet side meter coupling
- 2 Run seal wire through hole located on the underside of the meter
- 3 Run seal wire through hole in house side or outlet side meter coupling
- 4 Run both ends of seal wire through seal tag
- 5 Make certain seal wire is tight
- 6 Crimp seal tag closed



### **Meter Control Information**

The following information is required by the Department for control of water meters and is to be recorded at the time of meter installation:

Address

Make of Meter

Size of Meter

Meter Serial #

Meter Location ( bsmt., 1st flr., crawl space., sdwk. vlt./ pky. vlt., )

Nature of Occupancy - Old SFR , Old Condos/Apt.'s w/ # of units.

Date Occupied - This will be FOR YEARS unless occupied within last year.

Meter Set Date

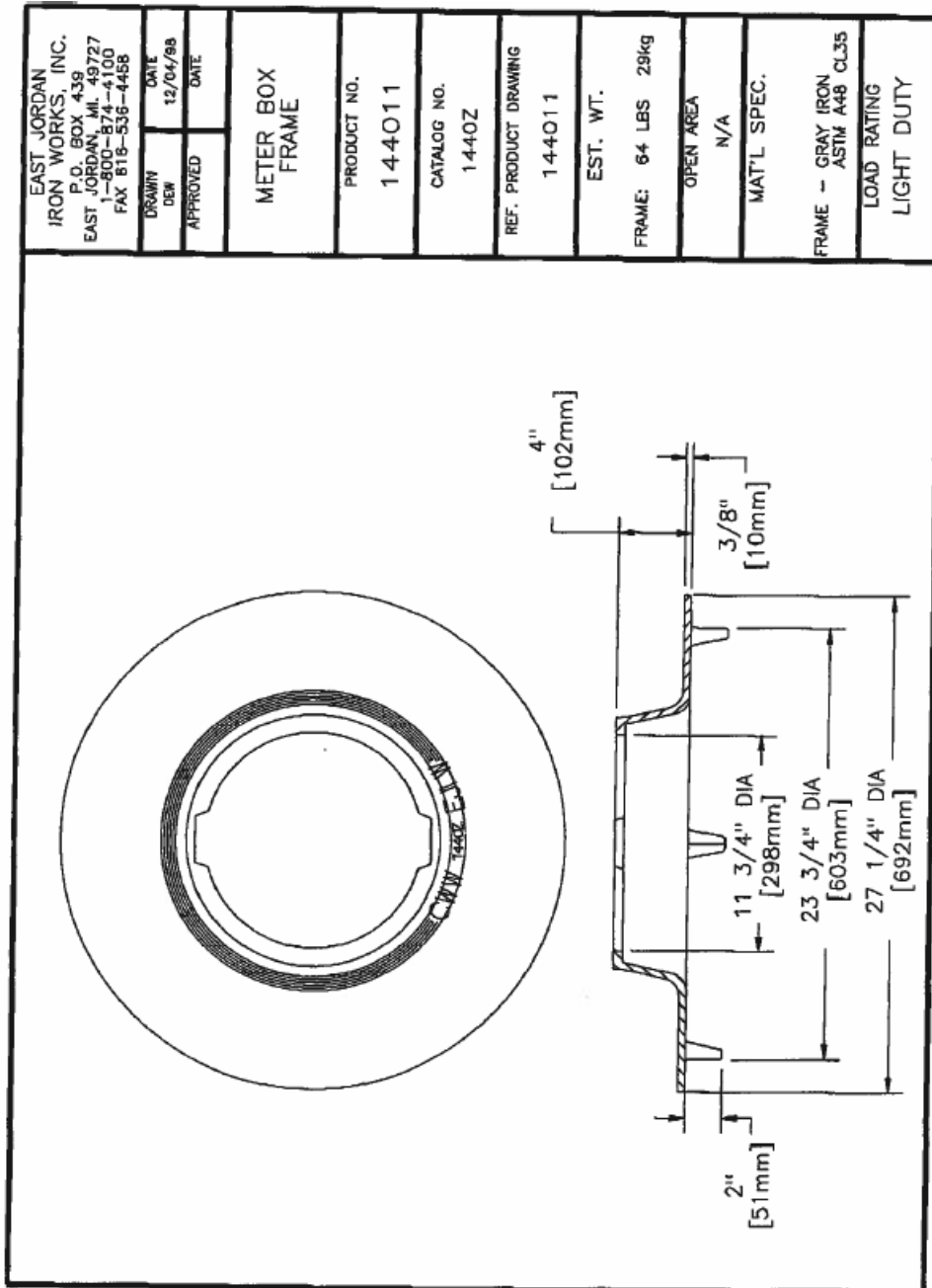
Control Date

Building Size - (ex. 2x20x64)

Meter Transmitter #

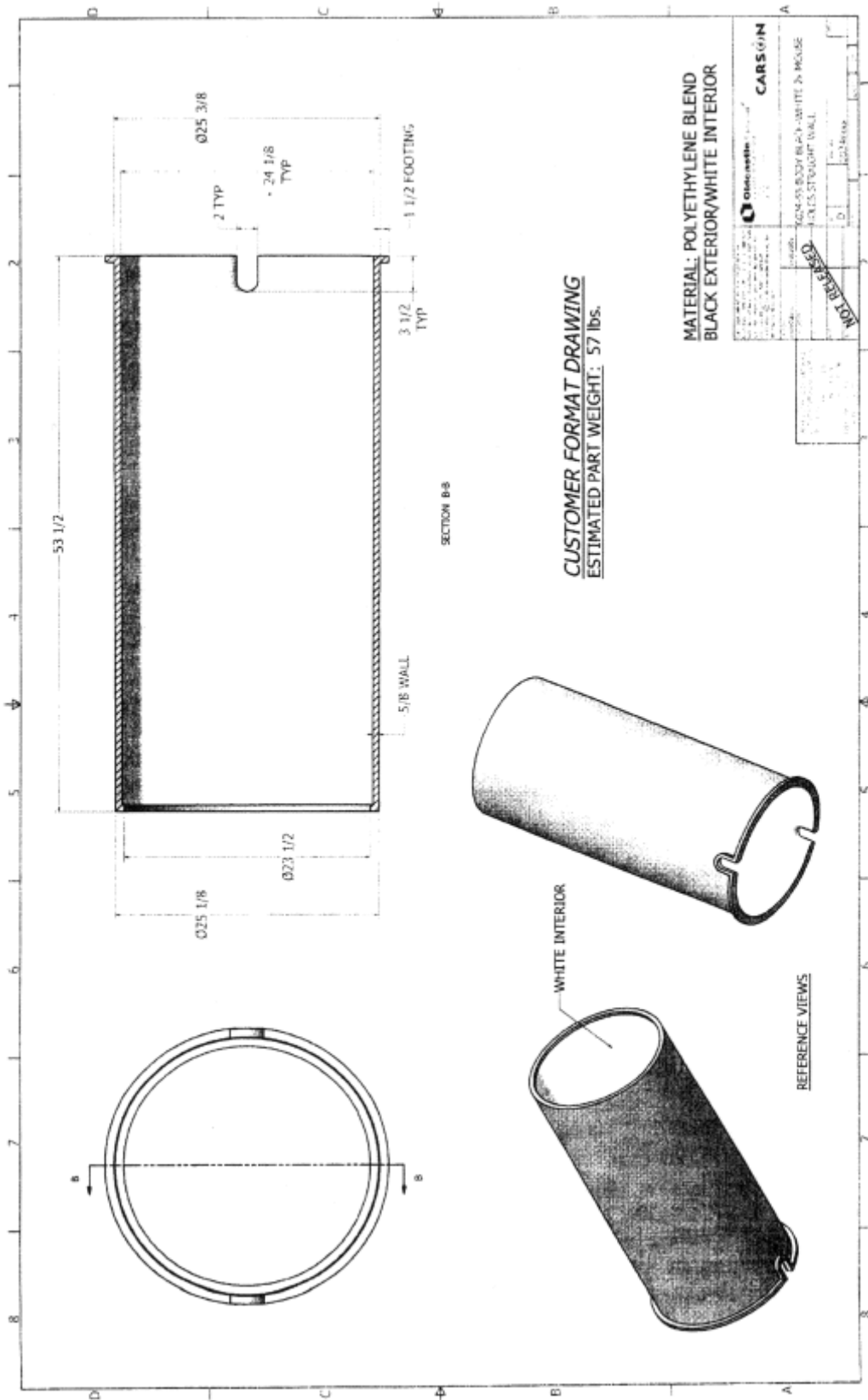
Meter Registration

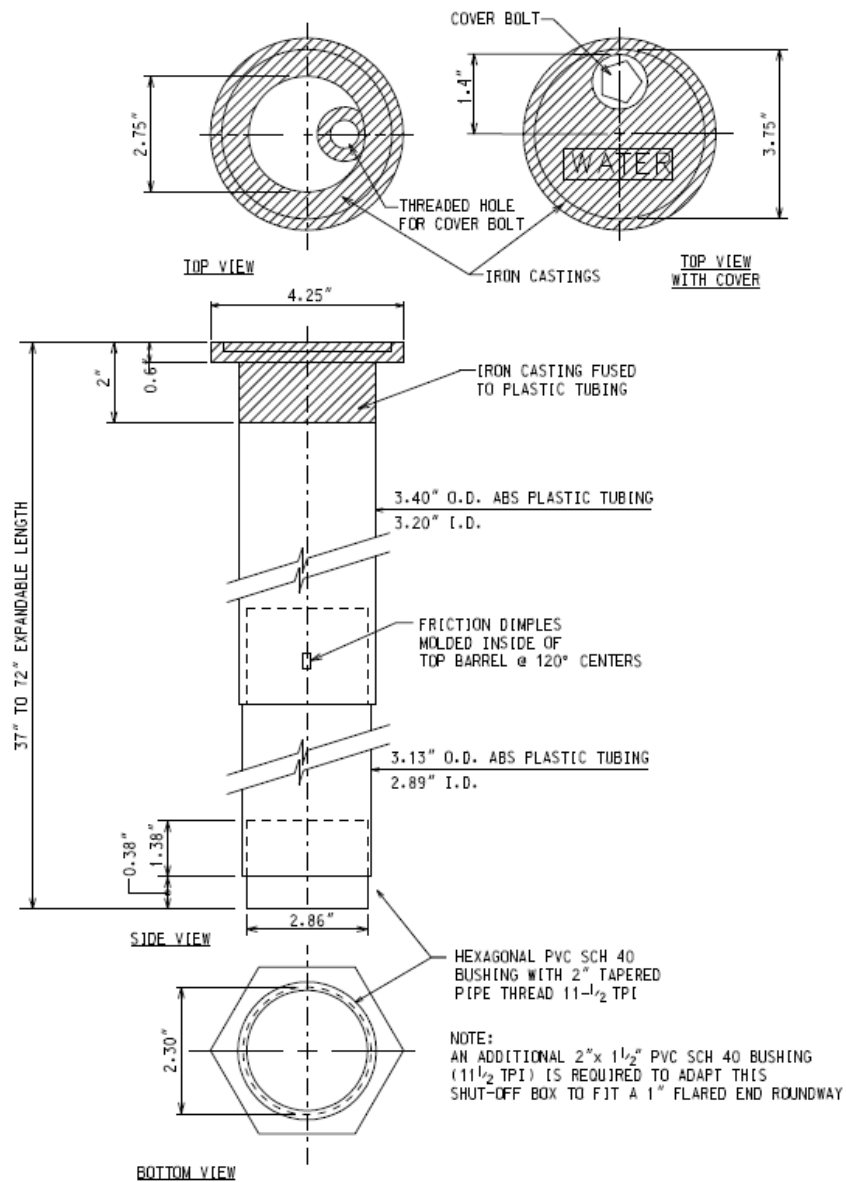
Meter Location (relative to public right-of-way measurements for nearest intersection)











**PLASTIC SHUT-OFF BOX  
FOR SERVICES 2" & SMALLER**

REV:04-07

D-17