



STANDARD CONSTRUCTION DRAWINGS

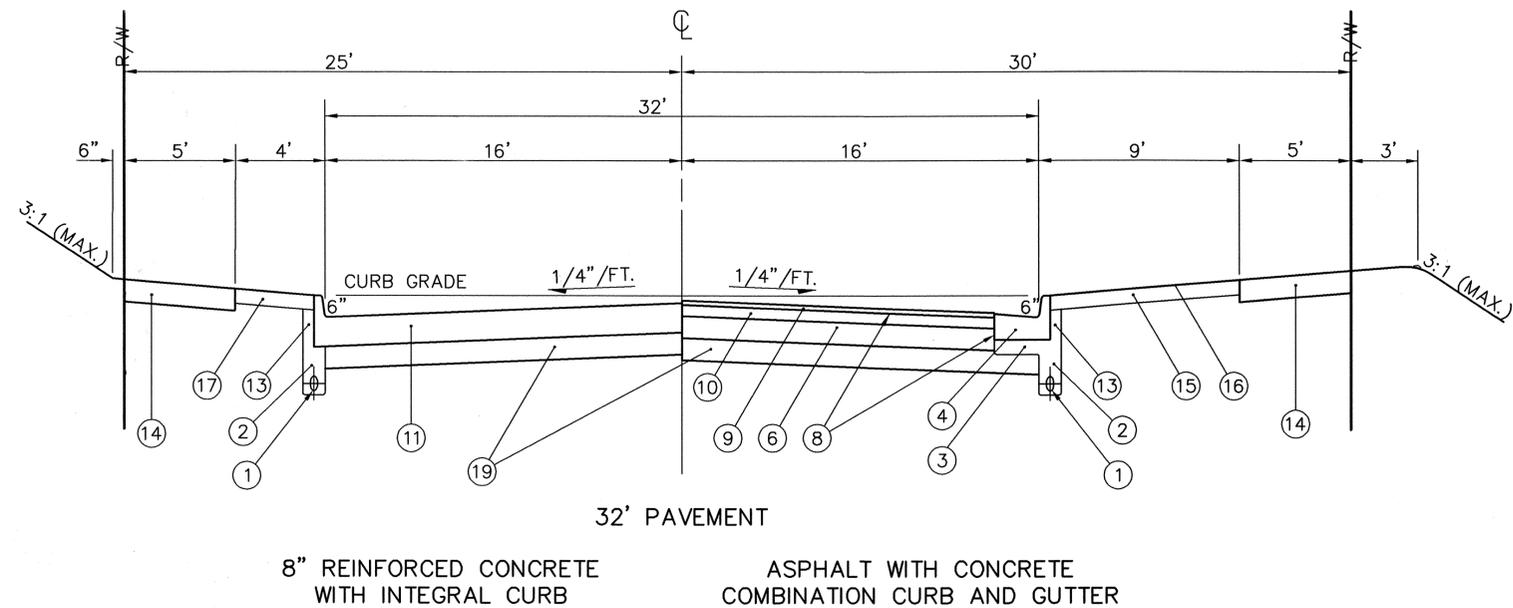
CITY OF AKRON
DEPARTMENT OF PUBLIC SERVICE
AKRON ENGINEERING BUREAU

STANDARD CONSTRUCTION DRAWINGS

REVISED DATE	ROADWAY ITEMS	
4-4-08	BP-1	PAVEMENT TYPICAL SECTIONS, RESIDENTIAL PAVEMENT
4-4-08	BP-1.1	PAVEMENT TYPICAL SECTIONS, COLLECTOR PAVEMENT AND ARTERIAL PAVEMENT
4-11-00	BP-1.2	PAVEMENT TYPICAL SECTIONS, NARROW RIGHTS OF WAY AND ALLEYS
4-11-16	BP-1.3	PAVEMENT TYPICAL SECTIONS, PARKING LOTS AND UNIVERSAL HANDICAP PARKING SPACES
4-4-08	BP-2	CONCRETE CURBS AND COMBINED CURB & GUTTERS
9-23-97	BP-3	PLAIN CONCRETE PAVEMENT
7-30-97	BP-4	REINFORCED CONCRETE PAVEMENT
3-15-05	BP-5.0	GENERAL NOTES FOR SIDEWALKS, CURB RAMPS, AND DRIVEWAYS
1-11-02	BP-5.1	SIDEWALKS, CURB RAMPS, DRIVEWAY APPROACHES
1-11-02	BP-5.2	SIDEWALK CURB RAMP LOCATIONS
1-11-02	BP-5.3	CURB RAMP TYPE 1 PERPENDICULAR
1-11-02	BP-5.4	CURB RAMP TYPE 2 PARALLEL
1-11-02	BP-5.5	CURB RAMP TYPE 3 COMBINATION
1-11-02	BP-5.6	CURB RAMP TYPE 4 IN-LINE
5-25-10	BP-6	PAVEMENT RESTORATION
5-2-97	BP-7	SIDEWALK VAULT RECONSTRUCTION & ABANDONMENT
6-20-96	BP-8	CAST IRON FRAME AND COVER FOR STREET MONUMENTS ITEM 622
4-4-08	BP-9	STANDARD METHOD OF SETTING HORIZONTAL CONTROL MONUMENT BOXES IN PAVEMENT

REVISED DATE	LANDSCAPE ITEMS	
4-4-08	LA-1	TREE GRATES, BRICK WALKS
3-27-07	LA-2A	TREE PLANTING, TREE PRUNING
3-27-07	LA-2B	TREE PLANTING ON SLOPES, SHRUB PLANTING
4-15-99	LA-3	LANDSCAPE TIMBER WALL, LANDSCAPE TIMBER EDGING, CONCRETE STEPS
5-18-05	LA-3.1	MODULAR BLOCK RETAINING WALL
IN PROCESS	LA-4.1	PICNIC TABLES, PARK BENCHES
9-23-97	LA-4.2	PLAYERS BENCH
12-9-98	LA-5	WOOD PARK SIGN
4-28-99	LA-6	SOCCER FIELD
1-30-08	LA-7	TENNIS COURTS
IN PROCESS	LA-8.1	PARK PLAY AREA - SOFT SURFACE AND UNDERDRAINS
IN PROCESS	LA-8.2	PARK PLAY AREA - PLAY EQUIPMENT FOUNDATIONS AND FENCING
4-4-08	LA-9	BASKETBALL COURTS
9-30-99	LA-10.1	HIGHSCHOOL STANDARD BACKSTOP
9-30-99	LA-10.2	LITTLE LEAGUE / SOFTBALL STANDARD BACKSTOP
9-30-99	LA-10.3	BASEBALL FIELD RELATED ITEMS

REVISED DATE	DRAINAGE ITEMS	
02-28-02	I-1	TYPE "D" INLET, JUNCTION BOX, HEADWALL
02-28-02	I-2	NO. 2 INLET
02-28-02	I-2.1	DOUBLE NO. 2 INLET
02-28-02	I-2.2	NO. 2R INLET
02-28-02	I-3	NO. 3 INLET
02-28-02	I-4	WING WALL INLET
02-12-07	I-5	NO. 5 INLET
02-12-07	I-5.1	NO. 5 INLET
02-12-07	I-5.2	DOUBLE NO. 5 INLET
02-12-07	I-5.3	DOUBLE NO. 5 INLET
4-6-10	MH-1	STORM SEWER BRICK MANHOLE 48", 60", 72" DIAMETER
4-6-10	MH-2	SANITARY OR STORM SEWER PRECAST CONCRETE MANHOLE 48", 60", 72" DIAMETER
4-6-10	MH-3	SANITARY OR STORM SEWER 48"-54" DIAMETER REINFORCED CONCRETE PIPE WITH 48" CONCENTRIC TEE
4-6-10	MH-4	SANITARY OR STORM SEWER 60"-72" DIAMETER REINFORCED CONCRETE PIPE WITH 48" ECCENTRIC TEE
3-25-99	MH-5	SANITARY OR STORM SEWER 8"-96" DIAMETER CAST-IN-PLACE BASE SECTION W/ PRECAST CONCRETE MANHOLE RISER SECTIONS
8-20-99	MH-6	MANHOLE CONNECTIONS, TRENCH CONSTRUCTION, MANHOLE SLAB TOPS
12-18-09	MH-7	FLAP GATES
4-20-10	MH-8	SEWER RELATED ITEMS
5-1-98	MH-9	DROP MANHOLES, MANHOLE INVERTS
3-4-99	S-1.1	Y BRANCHES, LATERALS, STACKS
2-12-98	S-1.2	STORM OR SUMP PUMP LATERAL
12-21-98	S-2	HOUSEDRAINS, TRENCH DRAINS
2-12-98	S-3	PILE SUPPORT, 6"-27" PIPE SEWER TO 10' DEEP
2-12-98	S-4	PILE SUPPORT, 6"-27" PIPE SEWER 10' TO 16' DEEP
2-12-98	S-5	PILE SUPPORT, 30"-66" PIPE SEWER
2-12-98	S-6	PILE SUPPORT, FOR MANHOLE ON 8",10",12" PIPE SEWER
2-12-98	S-7	PILE SUPPORT, FOR MANHOLE ON 15",18" PIPE SEWER
6-13-13	S-8	1000 GALLON GREASE INTERCEPTOR

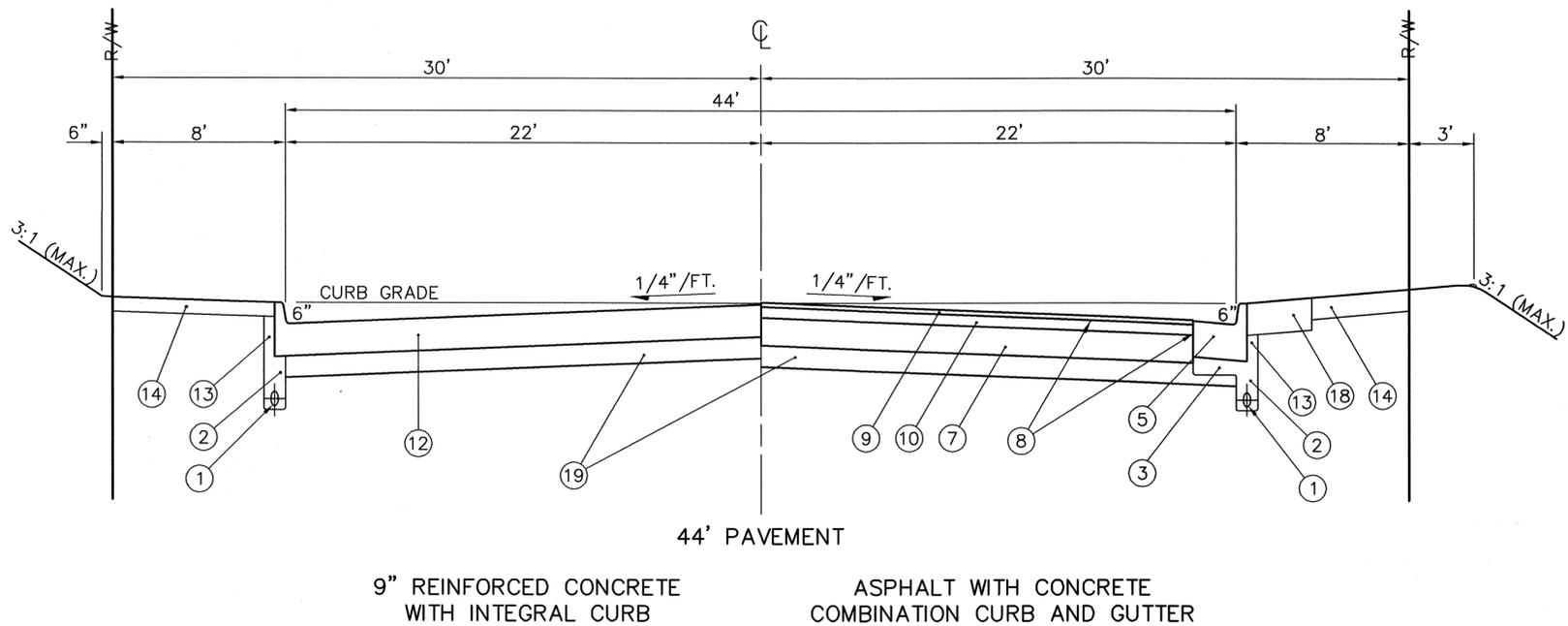


COLLECTOR PAVEMENT

CODE	DESCRIPTION	ITEM No.	PAYMENT
1	4" PIPE UNDERDRAINS	564	L.F.
2	WASHED GRAVEL OR CRUSHED STONE		INCLUDED 564
3	4" POROUS SUBBASE		INCLUDED 455
4	COMBINATION CURB AND GUTTER	455	L.F.
5	COMBINATION CURB AND GUTTER (MODIFIED)	455	L.F.
6	BITUMINOUS AGGREGATE BASE, 6" THICK	301	C.Y.
7	BITUMINOUS AGGREGATE BASE, 7 3/4" THICK	301	C.Y.
8	TACK COAT	407	GAL.
* 9	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, MEDIUM, PG 64-22, 1 1/4" THICK	446	C.Y.
10	ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, MEDIUM, PG 64-22, 3" THICK	446	C.Y.
11	8" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT	451	S.Y.
12	9" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT	451	S.Y.
13	POROUS BACKFILL		INCL. 451, 455
14	CONCRETE WALK, 4" THICK OR 6" THICK	456	S.F.
15	TOPSOIL, 4" THICK	653	S.Y.
16	LAWN SEEDING AND MULCHING	659	S.Y.
17	SODDING ON 4" TOPSOIL	660	S.Y.
18	BRICK WALK ON 6" CONCRETE	460	S.F.
19	AGGREGATE BASE, 6" THICK (LIMESTONE ONLY)	304	C.Y.

FOR CURB DETAILS, SEE DWG No. BP-2
 FOR REINFORCED CONCRETE PAVEMENT DETAILS, SEE DWG No. BP-4
 FOR SIDEWALK DETAILS, SEE DWG Nos. BP-5.0 AND 5.1
 FOR BRICKWALK DETAILS, SEE DWG No. LA-1

* USE ITEM 446 ASPHALT CONCRETE SURFACE COURSE, TYPE 1 HEAVY, PG 70-22M, 1-1/2" THICK, WHEN THE ADTT > 1500 (AVERAGE DAILY TRUCK TRAFFIC). WHEN A TYPE 1H SURFACE COURSE IS USED, ITEM 446 ASPHALT CONCRETE INTERMEDIATE COURSE, 2-3/4" THICK, TYPE 2, PG 64-28 SHALL BE USED.

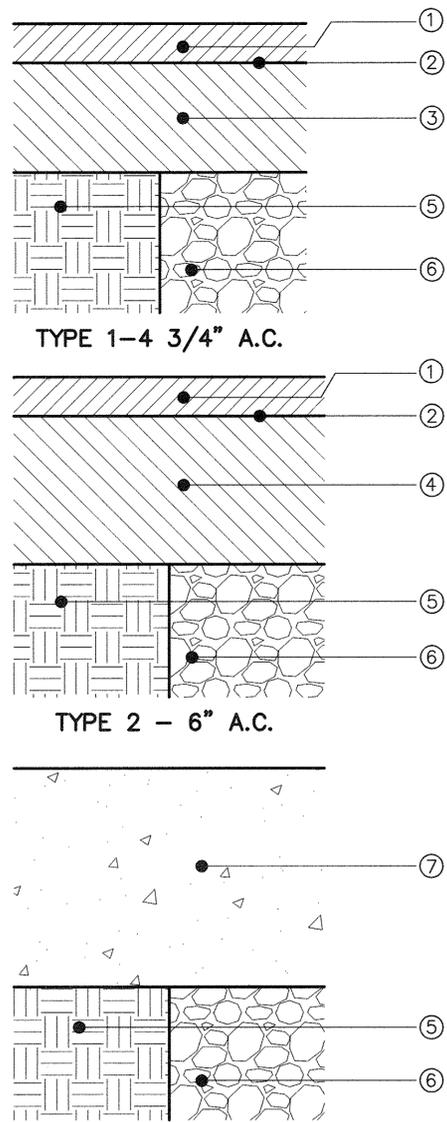


ARTERIAL PAVEMENT

DO NOT SCALE - USE DIMENSIONS ONLY

CITY OF AKRON BUREAU OF ENGINEERING	CONSTRUCTION STANDARD DWG. No. BP-1.1
<i>R.C. V. 5-30-08</i> ASSISTANT MANAGER, DESIGN DIVISION <i>James P. Wilson 6-2-08</i> MANAGER, CONSTRUCTION DIVISION <i>D. J. C. 6-2-08</i> CITY ENGINEER	PAVEMENT TYPICAL SECTIONS COLLECTOR PAVEMENT AND ARTERIAL PAVEMENT
REVISIONS: April 4, 2008	

LANDSCAPE SCREENING REQUIREMENTS FOR PARKING LOTS

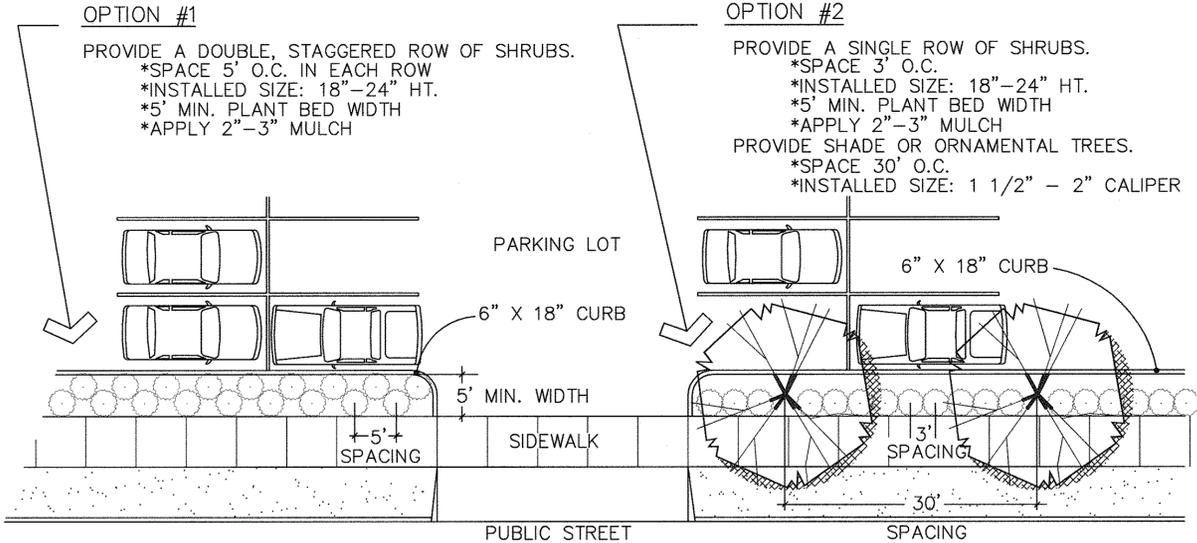


TYPE 1-4 3/4" A.C.

TYPE 2 - 6" A.C.

TYPE 3 - 7" P.C.C.

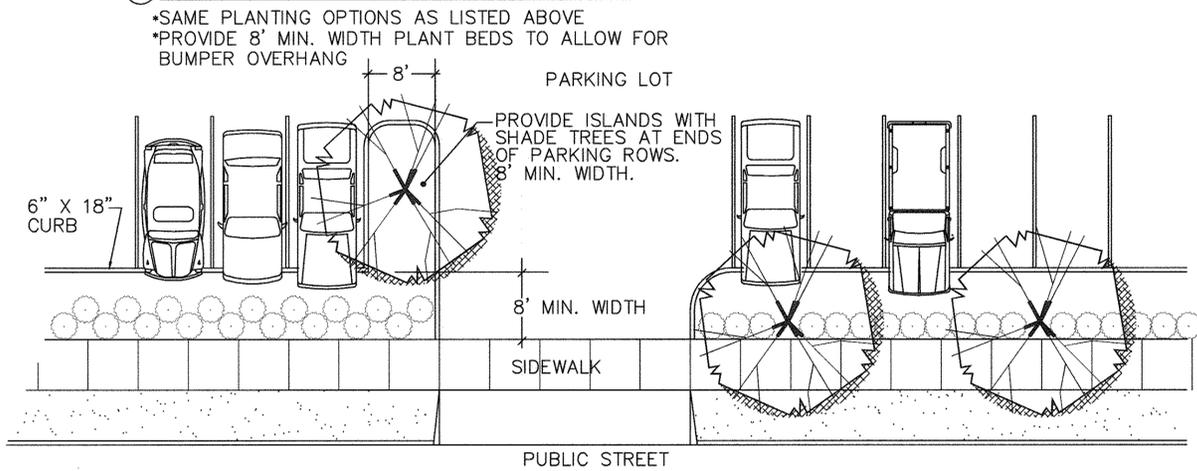
A. PARKING PARALLEL TO PLANT BED



OPTION #1
 PROVIDE A DOUBLE, STAGGERED ROW OF SHRUBS.
 *SPACE 5' O.C. IN EACH ROW
 *INSTALLED SIZE: 18"-24" HT.
 *5' MIN. PLANT BED WIDTH
 *APPLY 2"-3" MULCH

OPTION #2
 PROVIDE A SINGLE ROW OF SHRUBS.
 *SPACE 3' O.C.
 *INSTALLED SIZE: 18"-24" HT.
 *5' MIN. PLANT BED WIDTH
 *APPLY 2"-3" MULCH
 PROVIDE SHADE OR ORNAMENTAL TREES.
 *SPACE 30' O.C.
 *INSTALLED SIZE: 1 1/2" - 2" CALIPER

B. PARKING PERPENDICULAR TO PLANT BED



*SAME PLANTING OPTIONS AS LISTED ABOVE
 *PROVIDE 8' MIN. WIDTH PLANT BEDS TO ALLOW FOR BUMPER OVERHANG

PROVIDE ISLANDS WITH SHADE TREES AT ENDS OF PARKING ROWS.
 8' MIN. WIDTH.

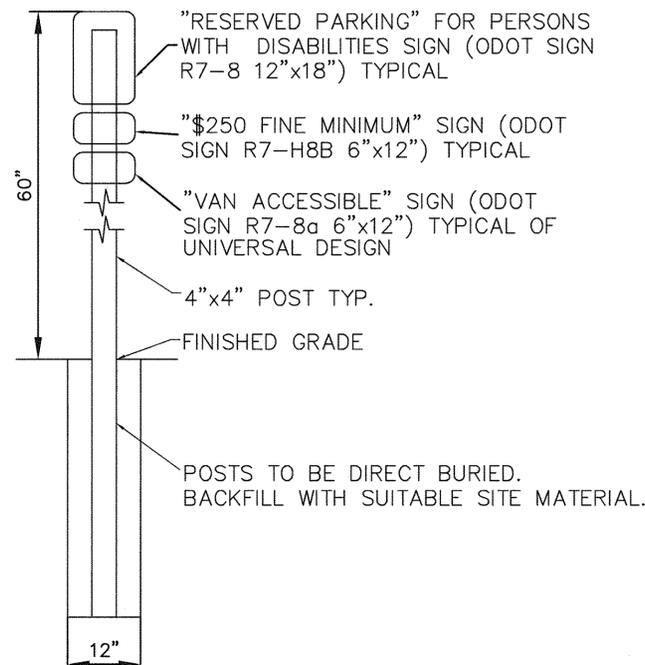
NOTES:

1. TYPICAL SECTIONS SHOWN ARE MINIMUM THICKNESSES ALLOWABLE FOR PARKING LOTS AND DRIVEWAYS WHERE PAVING IS REQUIRED BY THE CITY OF AKRON ZONING CODE.
2. THIS DRAWING REPLACES DWG. NO. A-4478-d PER SECTION 153.286(D)(4)(d) AND 153.287(D)(3)(c) OF THE CITY OF AKRON ZONING CODE.
3. ALL SUBGRADE SHALL BE PREPARED ACCORDING TO ITEM 203, OR COMPACTED SUBBASE ITEM 310.
4. TYPES 1, 2, AND 3 ARE TO BE USED FOR PARKING LOTS WITH NO MORE THAN 500 STALLS, 20 OR LESS HEAVY TRUCKS PER DAY, AND A CBR > FOR AREAS NOT MEETING THESE CONDITIONS, A PAVEMENT DESIGN STAMPED BY A PROFESSIONAL ENGINEER MUST BE SUBMITTED FOR APPROVAL BY THE CITY.
5. TYPE 1 PAVEMENT IS FOR PARKING LOTS WITH PASSENGER VEHICLES ONLY. TRUCK TRAFFIC IS OCCASIONAL.
6. TYPE 1 PAVEMENT MAY BE USED FOR TRUCKS (≤ 20 PER DAY) IF SUBGRADE WITH A CBR ≥ 17 (RESILIENT MODULUS ≥ 20,000 PSI) IS PRESENT, OR 6" AGGREGATE REFILL-TYPE 1 IS USED.
7. TYPE 2 PAVEMENT IS FOR PARKING LOTS THAT WILL HAVE AN AVERAGE OF 1 TO 20 HEAVY TRUCKS PER DAY.
8. TYPE 3 PAVEMENT IS ACCEPTABLE FOR BOTH PASSENGER VEHICLES & TRUCK TRAFFIC (≤ 20 TRUCKS PER DAY).
9. TYPES 1, 2 AND 3 WITH SUBGRADES THAT HAVE APPRECIABLE AMOUNTS OF CLAY AND FINE SILT, OR COARSER SILTS & SANDY LOAMS SUBJECT TO FROST, PROVIDE 6" AGGREGATE REFILL-TYPE 1, ITEM 203. THESE SOILS TYPICALLY HAVE A CBR = 3 TO 7 AND A RESILIENT MODULUS OF 4,000-9,000 PSI.
10. PAVEMENT UNDERDRAINS, WHEN REQUIRED, SHALL BE CONSTRUCTED IN ACCORDANCE WITH ITEM 564-UNDERDRAINS. DRAINS SHALL BE CONSTRUCTED PRIOR TO THE CONSTRUCTION OF THE PARKING LOT.
11. ALTERNATIVE PAVING SURFACES FOR THE PURPOSE OF ALLOWING WATER TO PENETRATE THE GROUND WILL BE REVIEWED ON AN INDIVIDUAL BASIS.

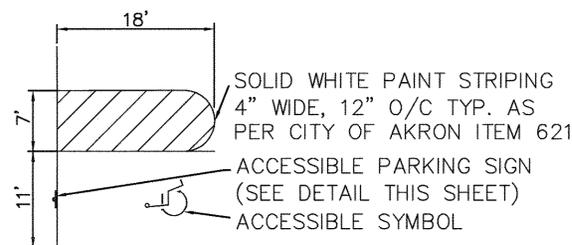
CODE	DESCRIPTION	No.	PAYMENT
1	ASPH. CONC. SURFACE COURSE, TYPE 1, 1 1/4" THICK	448	C.Y.
2	TACK COAT	407	GAL.
3	BITUMINOUS AGGREGATE BASE, 3 1/2" THICK	301	C.Y.
4	BITUMINOUS AGGREGATE BASE, 4 3/4" THICK	301	C.Y.
5	PREPARED SUBGRADE	203/310	
6	6" AGGREGATE REFILL-TYPE 1 (LIMESTONE)	203	C.Y.
7	7" PLAIN PORTLAND CEMENT CONCRETE PAVEMENT	452	S.Y.

ACCESSIBLE PARKING SIGN NOTES:

1. PROVIDE GALVANIZED CARRIAGE BOLTS APPROPRIATELY SIZED & SPACED FOR INSTALLATION OF SIGN FACE (2 PER POST)
2. POSTS SHALL BE PRESSURE TREATED USING AMMONIACAL COPPER QUATERNARY (ACQ), PER ASTM D 5654, AND DRESSED S4S.
3. ALL SIGNS TO BE LOCATED AS PER PLANS. LOCATIONS TO BE FIELD VERIFIED.
4. SIGN SHALL BE SINGLE POST DESIGN.
5. TOP OF SIGN SHALL BE 60" ABOVE FINISH GRADE.



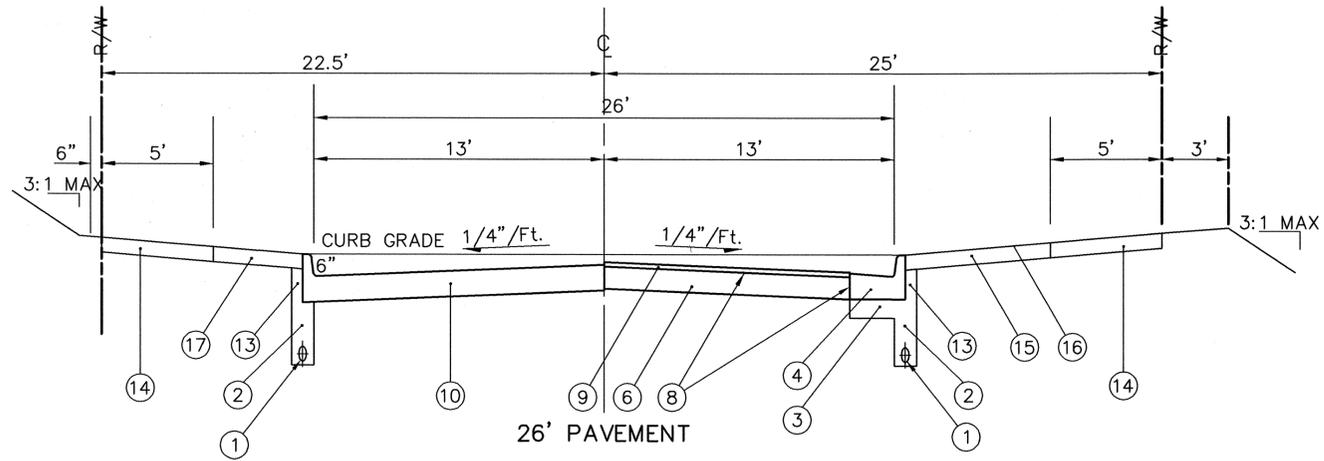
ACCESSIBLE PARKING SIGN
 NOT TO SCALE



ACCESSIBLE PARKING SPACE-UNIVERSAL DESIGN
 NOT TO SCALE

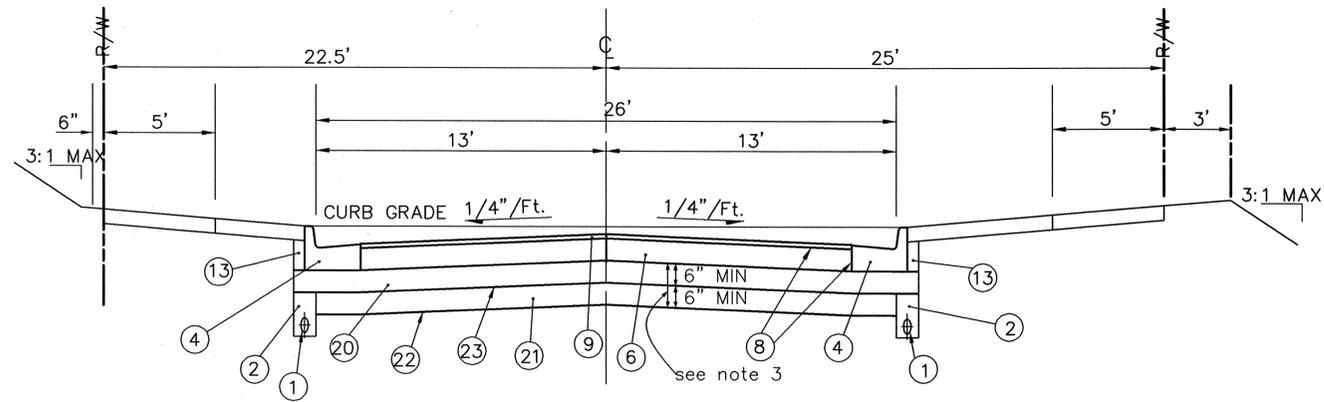
DO NOT SCALE - USE DIMENSIONS ONLY

CITY OF AKRON BUREAU OF ENGINEERING	CONSTRUCTION STANDARD DWG. No. BP-1.3
<i>Michael A. Teodoreski</i> 4-6-2016 MANAGER, DESIGN DIVISION <i>Travis Caputo</i> 4/6/16 MANAGER, CONSTRUCTION DIVISION <i>James P. ...</i> 4/6/16 CITY ENGINEER	PAVEMENT TYPICAL SECTIONS, PARKING LOTS AND UNIVERSAL HANDICAP PARKING SPACES AUTOCAD DRAWING - STD_BP-1.3 DWG JULY 30, 2002 REVISIONS: March 27, 2007 April 4, 2008 February 26, 2016



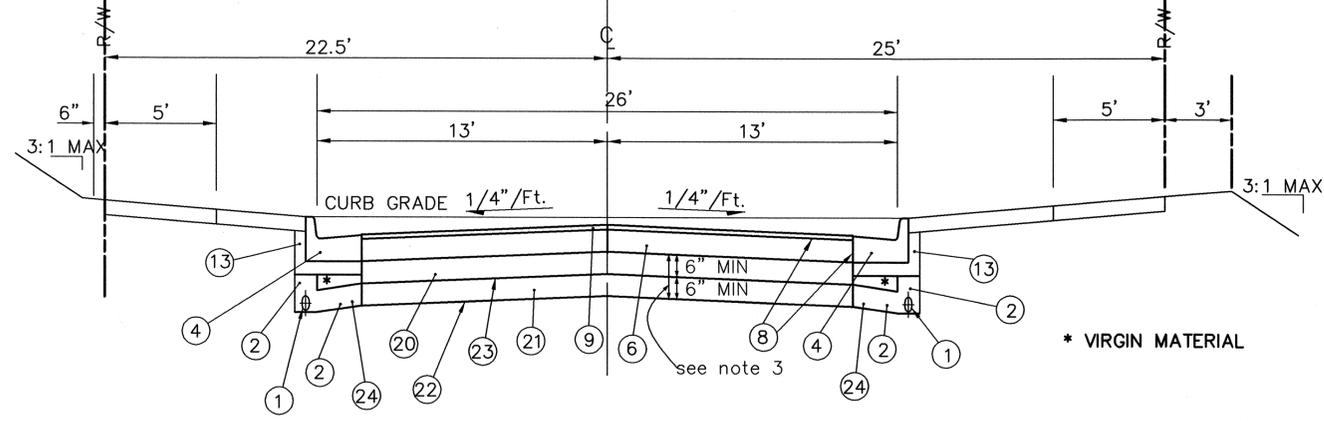
7" PLAIN CONCRETE WITH INTEGRAL CURB ASPHALT WITH CONCRETE COMBINATION CURB AND GUTTER

**RESIDENTIAL PAVEMENT
CONDITION 1**



**RESIDENTIAL PAVEMENT
CONDITION 1 (PLANNED UNDERCUT)**

ASPHALT WITH CONCRETE COMBINATION CURB AND GUTTER



**RESIDENTIAL PAVEMENT
CONDITION 1 (UNPLANNED UNDERCUT)**

ASPHALT WITH CONCRETE COMBINATION CURB AND GUTTER

* VIRGIN MATERIAL

NOTES

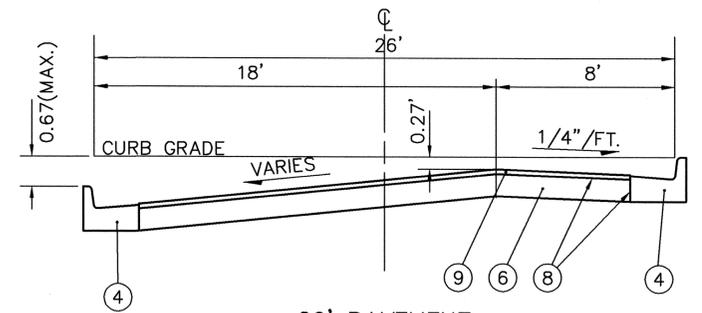
- 1 REFER TO CONDITION 1 PAVEMENT FOR ALL ITEMS NOT SHOWN ON CONDITION 2 AND CONDITION 3 PAVEMENT.
- 2 WHEN THE DESIGN CALLS FOR CONDITION 3 PAVEMENT, DETAILS SHOULD BE PROVIDED ON THE PLAN TO ADDRESS SPECIAL CONDITIONS FOR UNDERDRAIN AND HOUSEDRAIN PIPE.
- 3 THICKNESS AND TYPE OF EACH LAYER OF AGGREGATE REFILL SHALL BE DETERMINED BY THE ENGINEER. IF THE TOTAL THICKNESS OF BOTH LAYERS OF AGGREGATE REFILL EXCEEDS 12", AN ADDITIONAL LAYER OF GEOGRID WILL BE INSTALLED BETWEEN THE TYPES OF AGGREGATE REFILL AS INDICATED BY 23.

FOR CURB DETAILS, SEE DWG No. BP-2

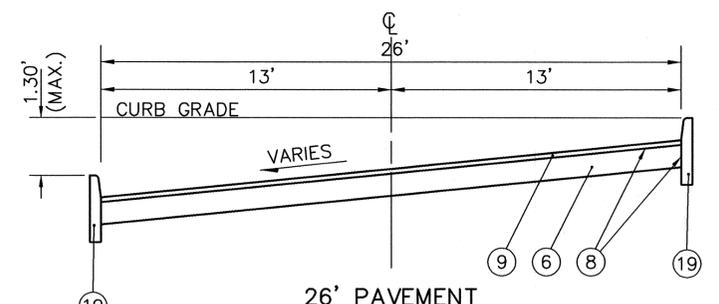
FOR PLAIN CONCRETE PAVEMENT DETAILS, SEE DWG No. BP-3

FOR SIDEWALK DETAILS, SEE DWG Nos. BP-5.0 AND 5.1

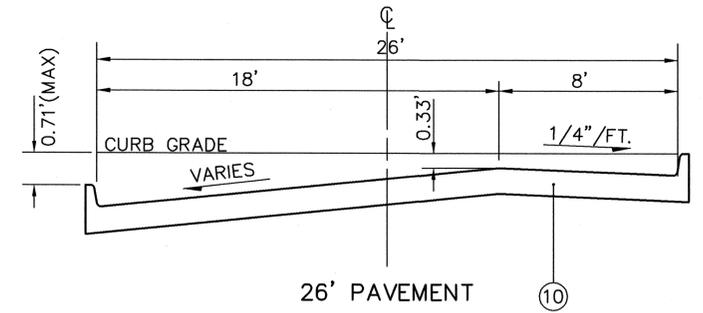
CODE	DESCRIPTION	ITEM No.	PAYMENT
1	4" PIPE UNDERDRAINS	564	L.F.
2	WASHED GRAVEL OR CRUSHED STONE		INCLUDED 564
3	4" POROUS SUBBASE		INCLUDED 455
4	COMBINATION CURB AND GUTTER	455	L.F.
6	BITUMINOUS AGGREGATE BASE, 6" THICK	301	C.Y.
8	TACK COAT	407	GAL.
9	ASPHALT CONCRETE SURFACE COURSE, TYPE 1, 1 1/4" THICK	448	C.Y.
10	7" PLAIN PORTLAND CEMENT CONCRETE PAVEMENT	452	S.Y.
13	POROUS BACKFILL		INCL. 452, 455
14	CONCRETE WALK, 4" THICK OR 6" THICK	456	S.F.
15	TOPSOIL, 4" THICK	653	S.Y.
16	SEEDING AND MULCHING	659	S.Y.
17	SODDING ON 4" TOPSOIL	660	S.Y.
19	CURB, 6" X 18", MODIFIED	455	L.F.
20	AGGREGATE REFILL TYPE 1 (LIMESTONE)	203	C.Y.
21	AGGREGATE REFILL TYPE 2	203	C.Y.
22	BX1300 GEOGRID	609	S.Y.
23	BX1200 GEOGRID, ONLY AS DIRECTED	609	S.Y.
24	DRAIN(12" WIDE X 6" THICK) EVERY 50' AND LOW POINTS, AS DIRECTED		INCLUDED 564



26' PAVEMENT
**SPLIT GRADE RESIDENTIAL PAVEMENT
CONDITION 2 - ASPHALT PAVEMENT**



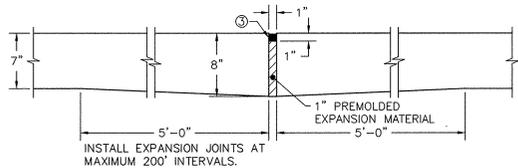
26' PAVEMENT
**SPLIT GRADE RESIDENTIAL PAVEMENT
CONDITION 3**



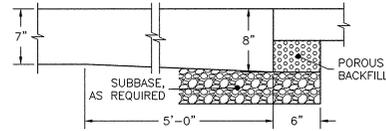
26' PAVEMENT
**SPLIT GRADE RESIDENTIAL PAVEMENT
CONDITION 2 - CONCRETE PAVEMENT W/ INTEGRAL CURB**

DO NOT SCALE - USE DIMENSIONS ONLY

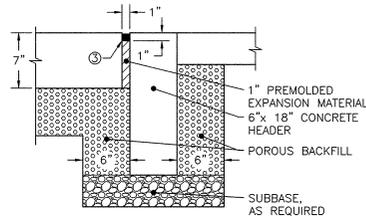
CITY OF AKRON BUREAU OF ENGINEERING	CONSTRUCTION STANDARD DWG. No. BP-1
<i>R.C. Wald</i> 5-30-08 ACTING MANAGER, DESIGN DIVISION	PAVEMENT TYPICAL SECTIONS RESIDENTIAL PAVEMENT
<i>Dennis O. Wald</i> 6-2-08 MANAGER, CONSTRUCTION DIVISION	REVISIONS: APRIL 4, 2008
<i>DJCH</i> 6-2-08 CITY ENGINEER	



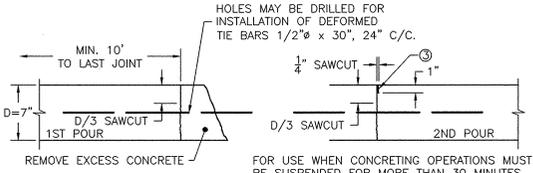
TRANSVERSE EXPANSION JOINT - TYPE E



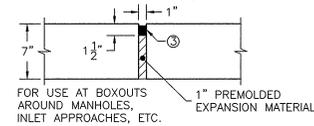
DETAILS FOR PAVEMENT ENDS



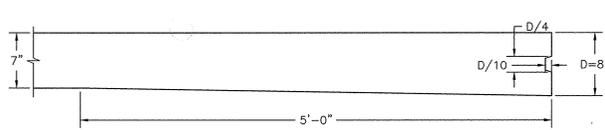
DETAILS FOR PAVEMENT ENDS



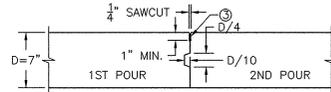
TRANSVERSE EMERGENCY CONSTRUCTION JOINT - TYPE EC



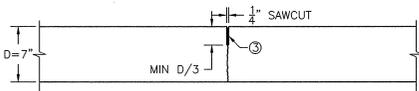
ISOLATION JOINT - TYPE I



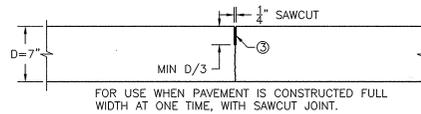
TRANSVERSE STANDARD CONSTRUCTION JOINT - TYPE SC



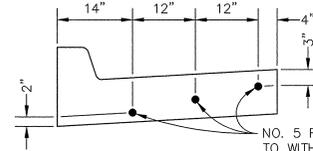
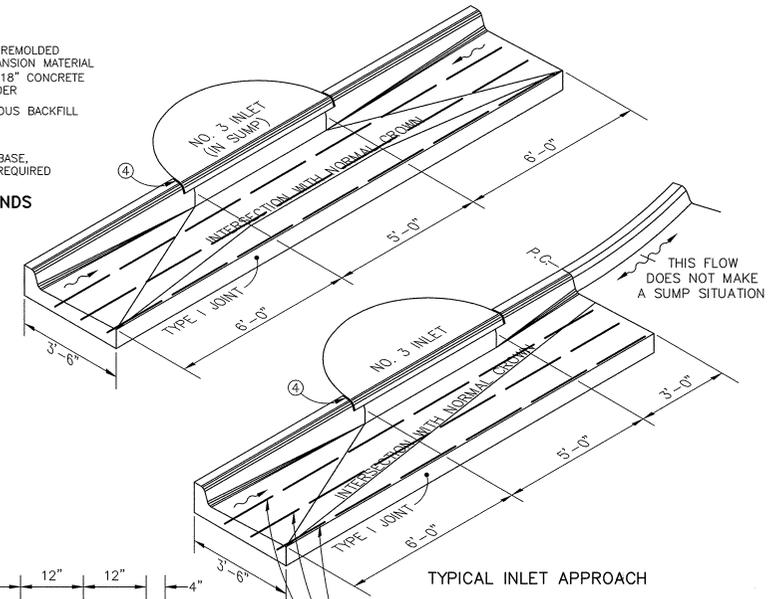
LONGITUDINAL KEYWAY JOINT - TYPE K



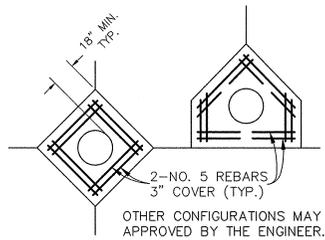
TRANSVERSE CONSTRUCTION JOINT - TYPE T



LONGITUDINAL CONTRACTION JOINT - TYPE L

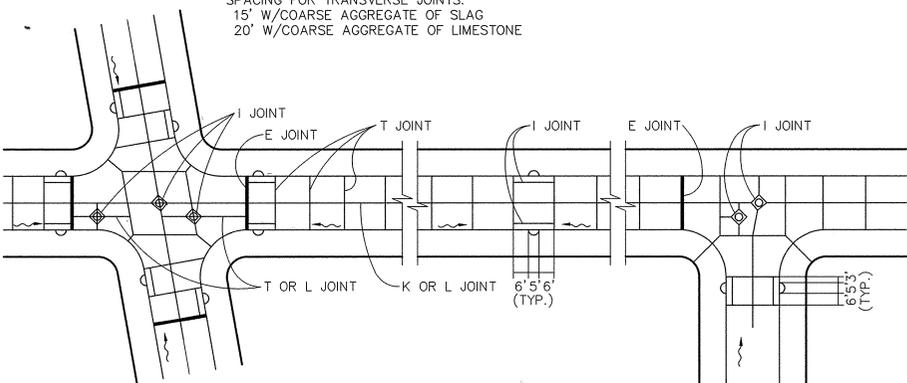


TYPICAL SECTION OF INLET APPROACH



TYPICAL BOXOUTS FOR MANHOLES

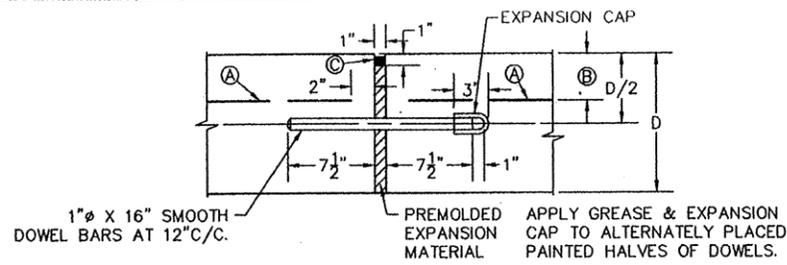
SPACING FOR TRANSVERSE JOINTS:
15' W/COARSE AGGREGATE OF SLAG
20' W/COARSE AGGREGATE OF LIMESTONE



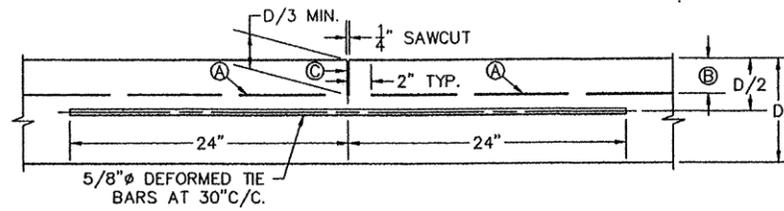
- END OF PAVEMENT:
- (1A) IF THE NEW PAVEMENT TERMINATES AGAINST AN EXISTING RIGID PAVEMENT OR STRUCTURE, PROVIDE FOR A TYPE E JOINT.
 - (1B) IF THE NEW PAVEMENT TERMINATES AT AN UNPAVED ROADWAY, INSTALL A CONCRETE HEADER OR THICKEN THE END, AS DESIGNATED BY THE ENGINEER.
 - (1C) IF THE NEW PAVEMENT CONSTRUCTION IS BEING STOPPED TEMPORARILY, BUT WILL RESUME UNDER THE SAME CONTRACT, PROVIDE FOR A TYPE SC JOINT.
 - (2) ALL FORMED EDGES SHALL HAVE A 1/4" RADIUS FINISH.
 - (3) FILL WITH JOINT SEALER--TO BE SLIGHTLY DEPRESSED BELOW CONCRETE SURFACE.
 - (4) DO NOT FILL WITH MORTAR--PROVIDE 1/2" PREMOLDED EXPANSION MATERIAL.
 - (5) ALL CONCRETE SHALL BE CLASS "C".
- PRIOR TO ANY CONSTRUCTION, THE CONTRACTOR SHALL PRESENT A DRAWING SHOWING ALL JOINT TYPES AND SPACINGS, WITH CONCERN TO INLET AND MANHOLE LOCATIONS, TO BE APPROVED BY THE ENGINEER.

DO NOT SCALE - USE DIMENSIONS ONLY

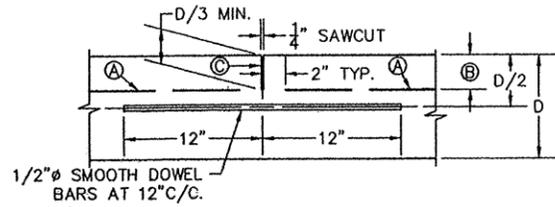
CITY OF AKRON BUREAU OF ENGINEERING	CONSTRUCTION STANDARD DWG. No. BP-3
<i>David S. Leik</i> 9-25-97 MANAGER, DESIGN DIVISION	PLAIN CONCRETE PAVEMENT
<i>Pawan K. Khaitan</i> 9-25-97 MANAGER, CONSTRUCTION DIVISION	AUTOCAD DRAWING - STD_BP-3.DWG September 23, 1997
<i>David S. Leik</i> 9/25/97 CITY ENGINEER	REVISIONS:



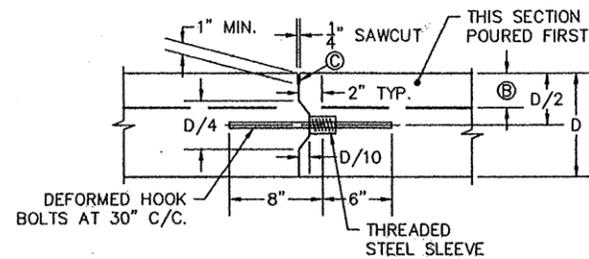
TRANSVERSE EXPANSION JOINT - TYPE E



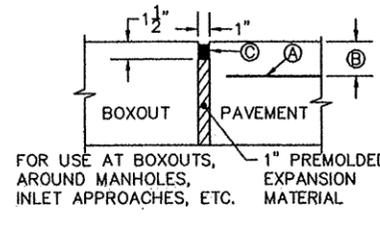
LONGITUDINAL CONTRACTION JOINT - TYPE L



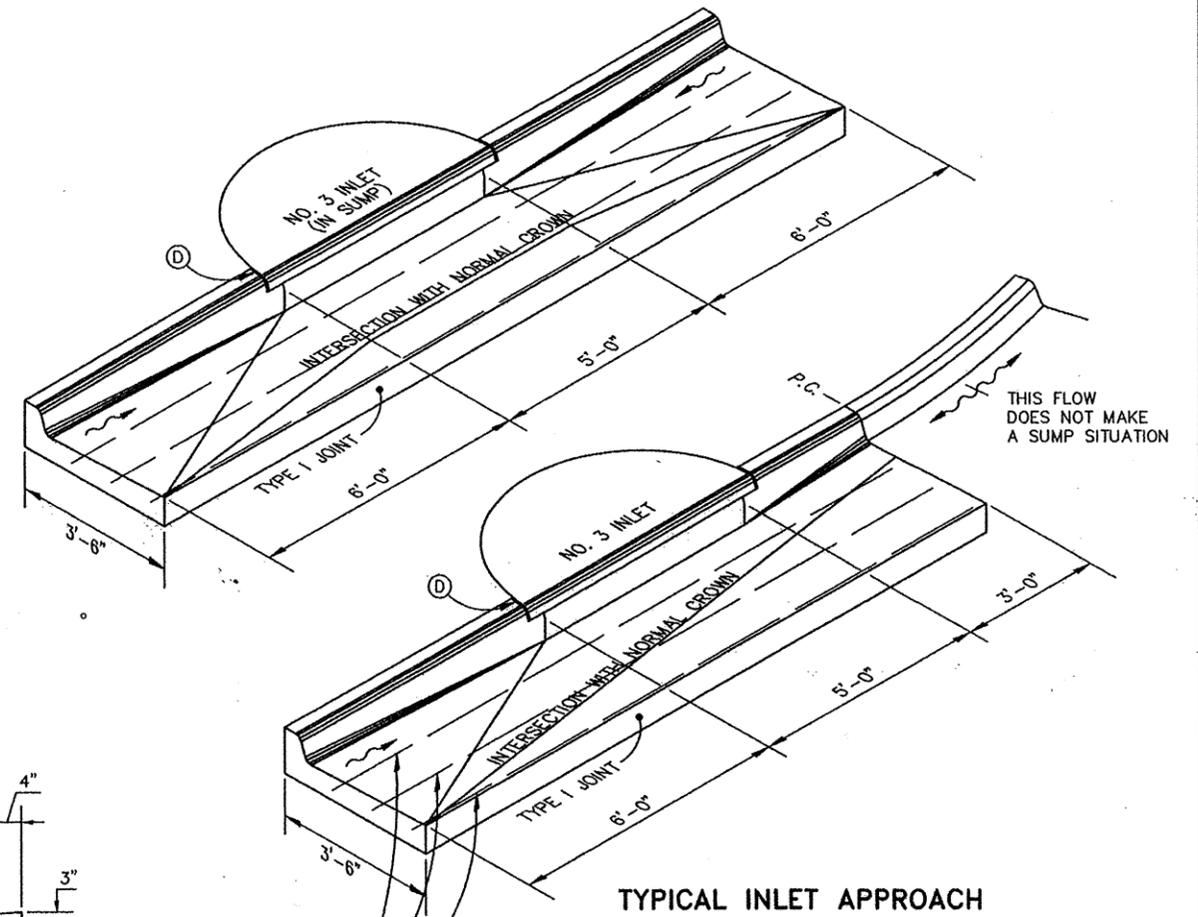
TRANSVERSE CONTRACTION JOINT - TYPE T



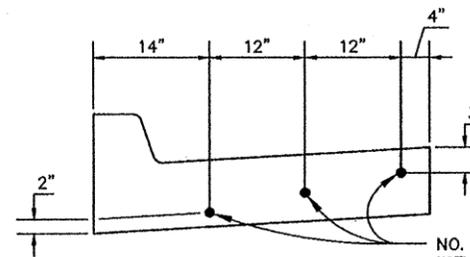
LONGITUDINAL KEYWAY JOINT - TYPE K



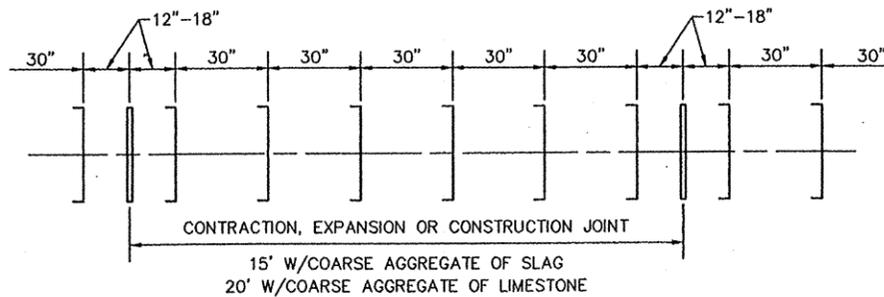
ISOLATION JOINT - TYPE I



TYPICAL INLET APPROACH



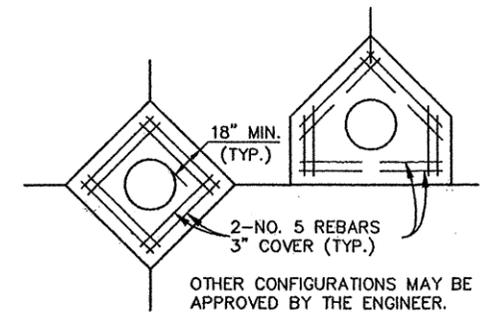
TYPICAL SECTION OF INLET APPROACH



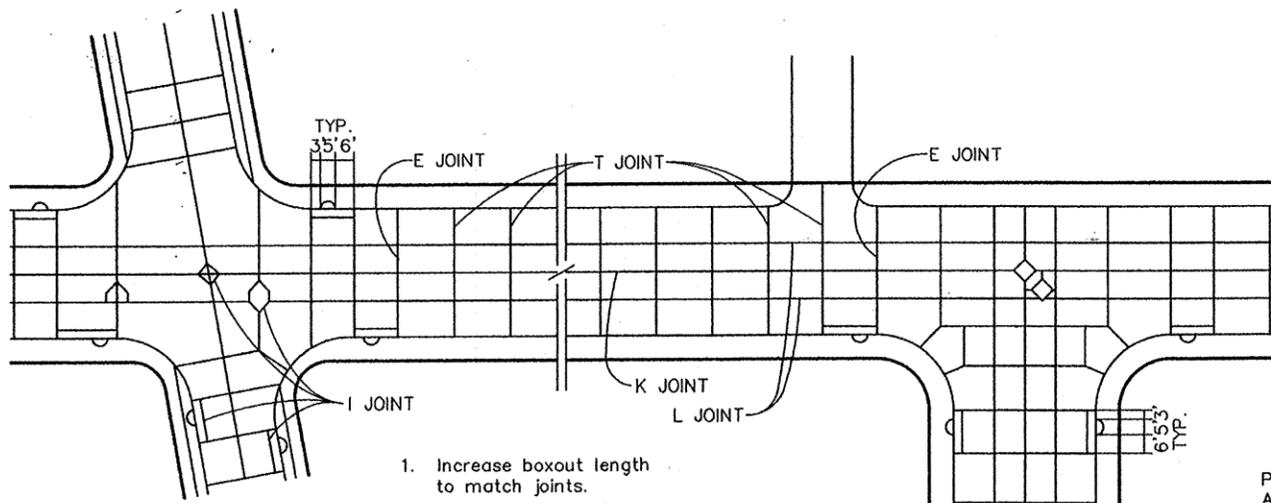
LONGITUDINAL JOINT HOOK BOLT AND TIE BAR SPACING

- Ⓐ STEEL WIRE FABRIC - FOR SIZES SEE O.D.O.T. BP-1.1
- Ⓑ 2 1/2" TO 3"+1.
- Ⓒ FILL WITH JOINT SEALER - TO BE SLIGHTLY DEPRESSED BELOW CONCRETE SURFACE.
- Ⓓ DO NOT FILL WITH MORTAR - PROVIDE 1/2" PREMOLDED EXPANSION MATERIAL.

- ① ALL CONCRETE SHALL BE CLASS "C".
- ② ALL FORMED EDGES SHALL HAVE A 1/4" RADIUS FINISH.



TYPICAL BOXOUTS FOR MANHOLES

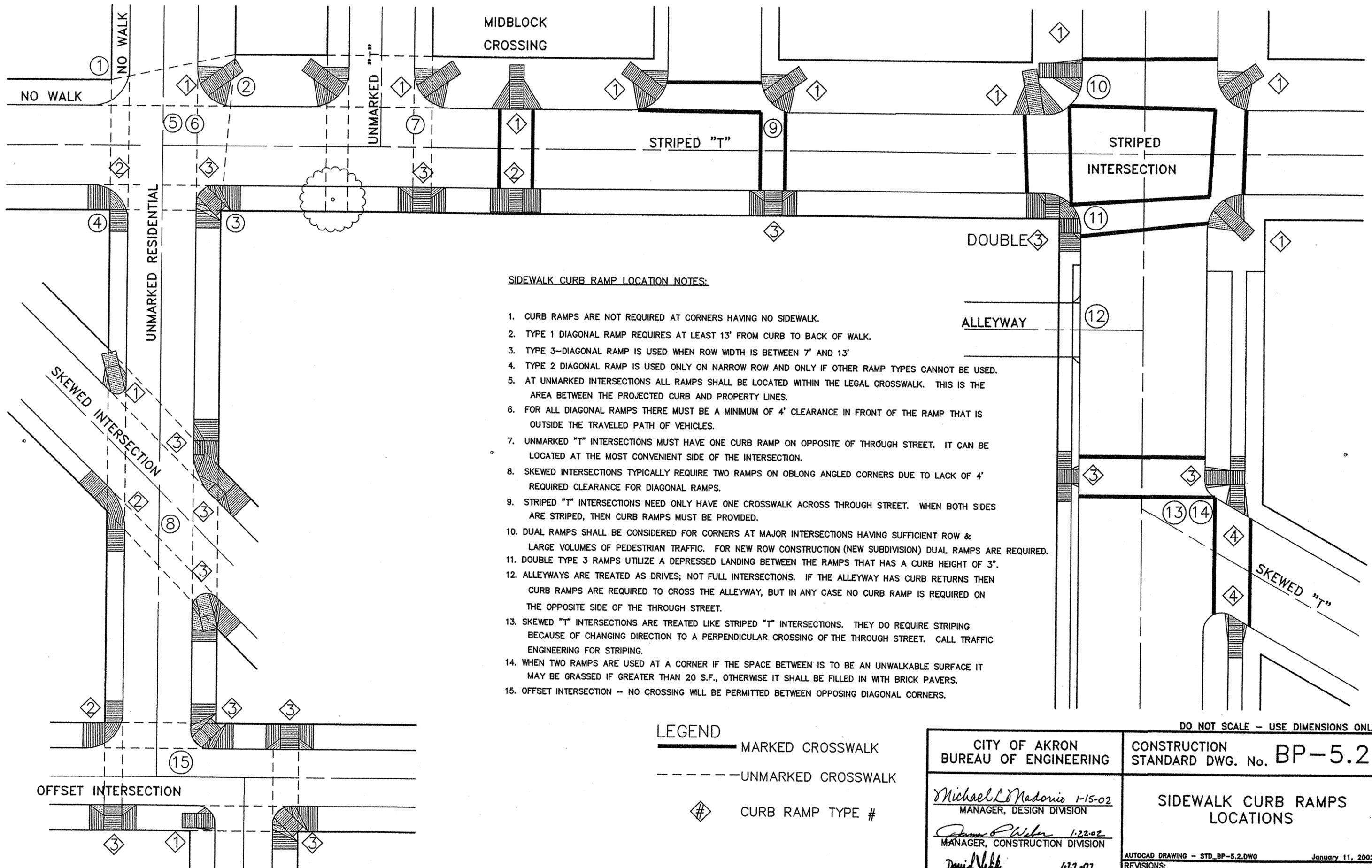


1. Increase boxout length to match joints.
2. Position inlet to match good joint pattern.

PRIOR TO ANY CONSTRUCTION THE CONTRACTOR SHALL PRESENT A DRAWING SHOWING ALL JOINT TYPES AND SPACINGS, WITH CONCERN TO INLET AND MANHOLE LOCATIONS, TO BE APPROVED BY THE ENGINEER.

DO NOT SCALE - USE DIMENSIONS ONLY

CITY OF AKRON BUREAU OF ENGINEERING	CONSTRUCTION STANDARD DWG. No. BP-4
<i>David D. Dilib</i> 9/25/97 MANAGER, DESIGN DIVISION	REINFORCED CONCRETE PAVEMENT
<i>Pawan K. Khaitan</i> 9/25/97 MANAGER, CONSTRUCTION DIVISION	AUTOCAD DRAWING - STD_BP-4.DWG REVISIONS:
<i>C. David Hough</i> 9/25/97 CITY ENGINEER	July 30, 1997



SIDEWALK CURB RAMP LOCATION NOTES:

1. CURB RAMPS ARE NOT REQUIRED AT CORNERS HAVING NO SIDEWALK.
2. TYPE 1 DIAGONAL RAMP REQUIRES AT LEAST 13' FROM CURB TO BACK OF WALK.
3. TYPE 3-DIAGONAL RAMP IS USED WHEN ROW WIDTH IS BETWEEN 7' AND 13'
4. TYPE 2 DIAGONAL RAMP IS USED ONLY ON NARROW ROW AND ONLY IF OTHER RAMP TYPES CANNOT BE USED.
5. AT UNMARKED INTERSECTIONS ALL RAMPS SHALL BE LOCATED WITHIN THE LEGAL CROSSWALK. THIS IS THE AREA BETWEEN THE PROJECTED CURB AND PROPERTY LINES.
6. FOR ALL DIAGONAL RAMPS THERE MUST BE A MINIMUM OF 4' CLEARANCE IN FRONT OF THE RAMP THAT IS OUTSIDE THE TRAVELED PATH OF VEHICLES.
7. UNMARKED "T" INTERSECTIONS MUST HAVE ONE CURB RAMP ON OPPOSITE OF THROUGH STREET. IT CAN BE LOCATED AT THE MOST CONVENIENT SIDE OF THE INTERSECTION.
8. SKEWED INTERSECTIONS TYPICALLY REQUIRE TWO RAMPS ON OBLONG ANGLED CORNERS DUE TO LACK OF 4' REQUIRED CLEARANCE FOR DIAGONAL RAMPS.
9. STRIPED "T" INTERSECTIONS NEED ONLY HAVE ONE CROSSWALK ACROSS THROUGH STREET. WHEN BOTH SIDES ARE STRIPED, THEN CURB RAMPS MUST BE PROVIDED.
10. DUAL RAMPS SHALL BE CONSIDERED FOR CORNERS AT MAJOR INTERSECTIONS HAVING SUFFICIENT ROW & LARGE VOLUMES OF PEDESTRIAN TRAFFIC. FOR NEW ROW CONSTRUCTION (NEW SUBDIVISION) DUAL RAMPS ARE REQUIRED.
11. DOUBLE TYPE 3 RAMPS UTILIZE A DEPRESSED LANDING BETWEEN THE RAMPS THAT HAS A CURB HEIGHT OF 3".
12. ALLEYS ARE TREATED AS DRIVES; NOT FULL INTERSECTIONS. IF THE ALLEYWAY HAS CURB RETURNS THEN CURB RAMPS ARE REQUIRED TO CROSS THE ALLEYWAY, BUT IN ANY CASE NO CURB RAMP IS REQUIRED ON THE OPPOSITE SIDE OF THE THROUGH STREET.
13. SKEWED "T" INTERSECTIONS ARE TREATED LIKE STRIPED "T" INTERSECTIONS. THEY DO REQUIRE STRIPING BECAUSE OF CHANGING DIRECTION TO A PERPENDICULAR CROSSING OF THE THROUGH STREET. CALL TRAFFIC ENGINEERING FOR STRIPING.
14. WHEN TWO RAMPS ARE USED AT A CORNER IF THE SPACE BETWEEN IS TO BE AN UNWALKABLE SURFACE IT MAY BE GRASSED IF GREATER THAN 20 S.F., OTHERWISE IT SHALL BE FILLED IN WITH BRICK PAVERS.
15. OFFSET INTERSECTION - NO CROSSING WILL BE PERMITTED BETWEEN OPPOSING DIAGONAL CORNERS.

LEGEND

———— MARKED CROSSWALK

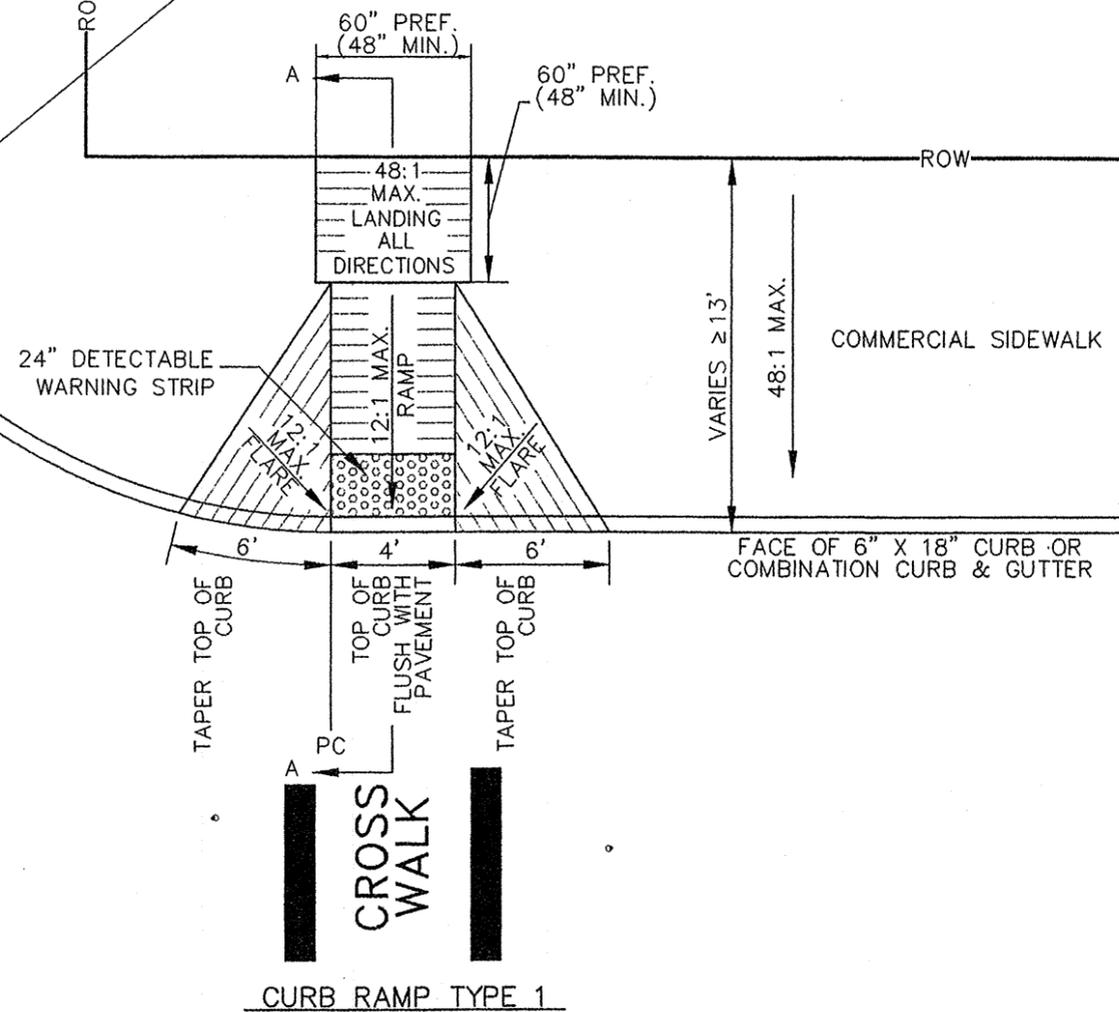
----- UNMARKED CROSSWALK

◆# CURB RAMP TYPE #

DO NOT SCALE - USE DIMENSIONS ONLY

<p>CITY OF AKRON BUREAU OF ENGINEERING</p>	<p>CONSTRUCTION STANDARD DWG. No. BP-5.2</p>
<p><i>Michael L. Madonia</i> 1-15-02 MANAGER, DESIGN DIVISION</p> <p><i>James P. Weber</i> 1-22-02 MANAGER, CONSTRUCTION DIVISION</p> <p><i>David Yelch</i> 1-22-02 CITY ENGINEER</p>	<p>SIDEWALK CURB RAMPS LOCATIONS</p> <p>AUTOCAD DRAWING - STD_BP-5.2.DWG REVISIONS: January 11, 2002</p>

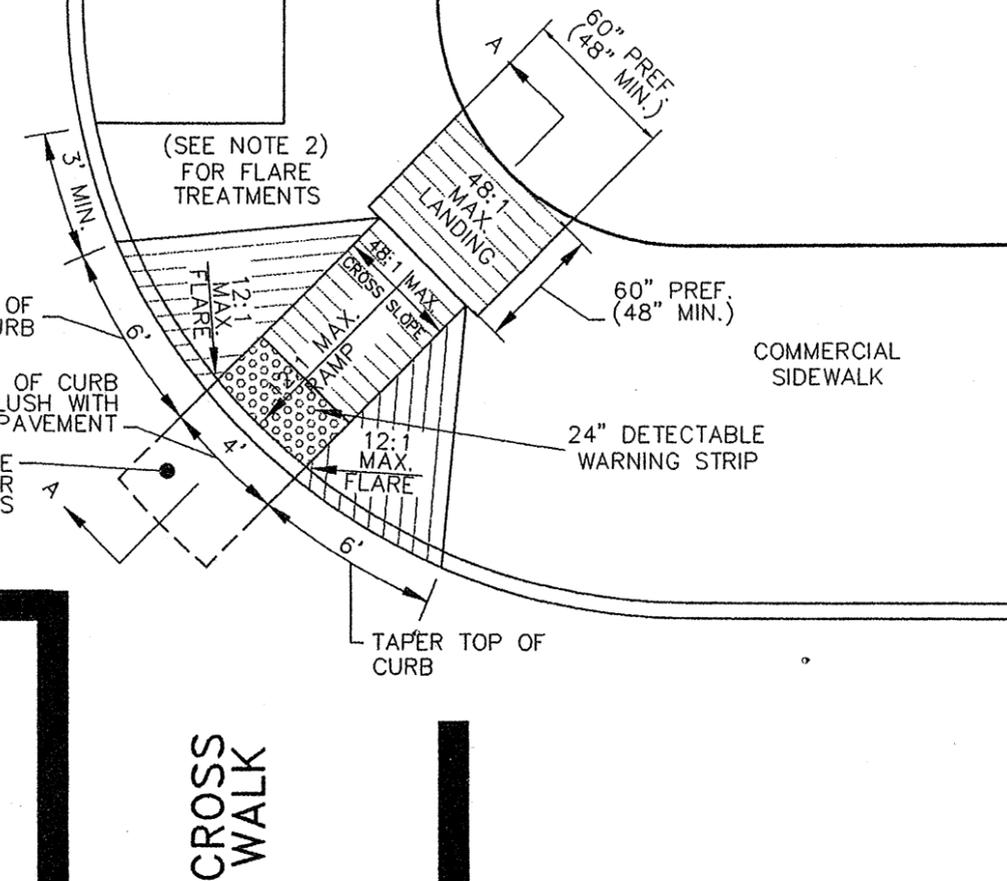
MUST MAINTAIN A 48" PREF. (36" MIN.) CLEAR WIDTH OF CONTINUOUS PASSAGE AROUND CORNER OR OBSTRUCTION.



CURB RAMP TYPE 1

CROSS WALK

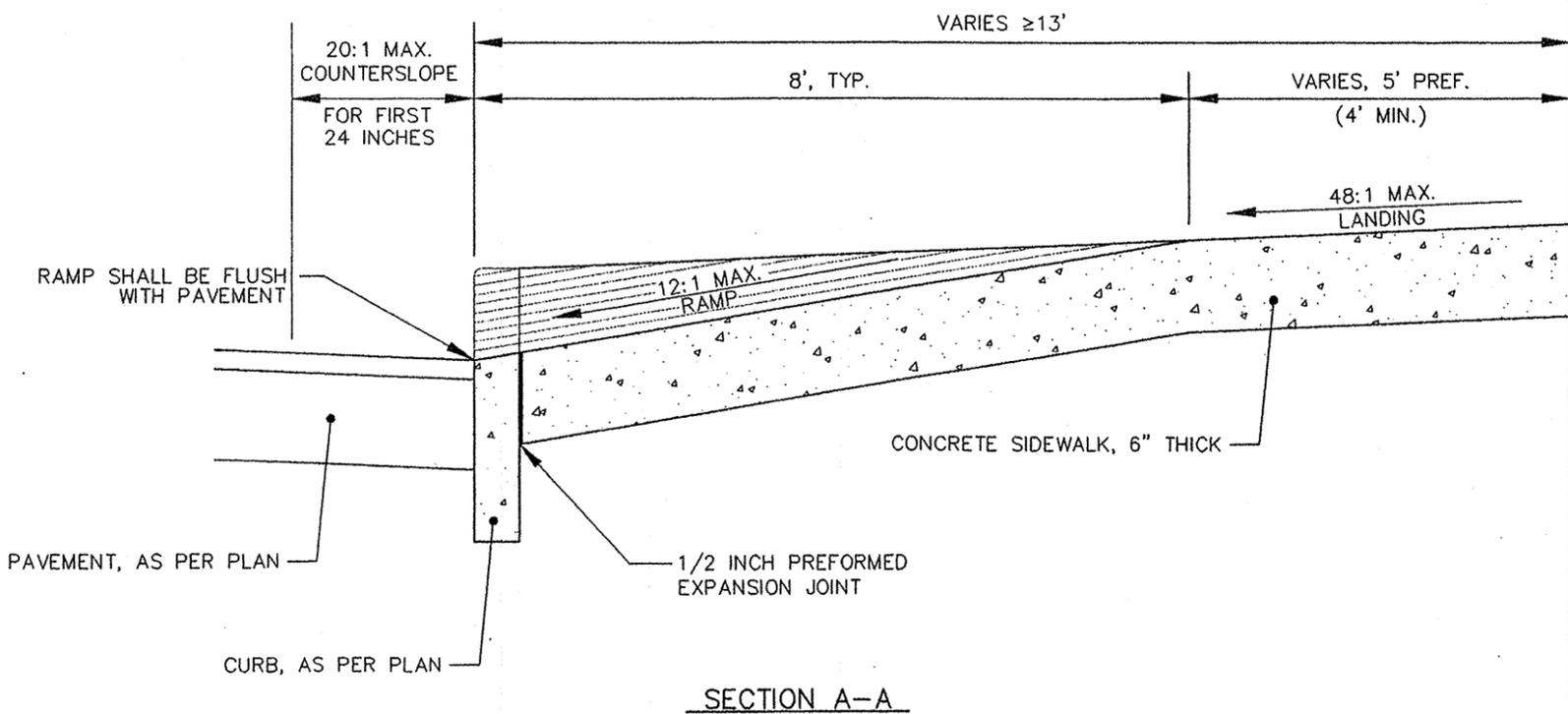
MUST PROVIDE MINIMUM 48"x48" CLEAR AREA WITHIN BOTH CROSSWALKS



CURB RAMP TYPE 1 DIAGONAL

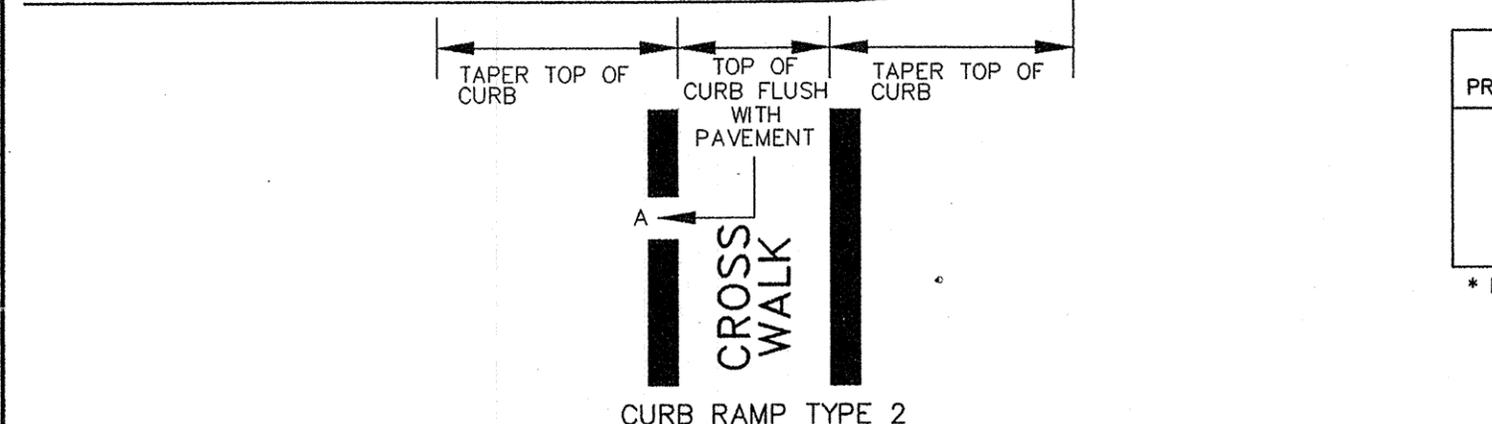
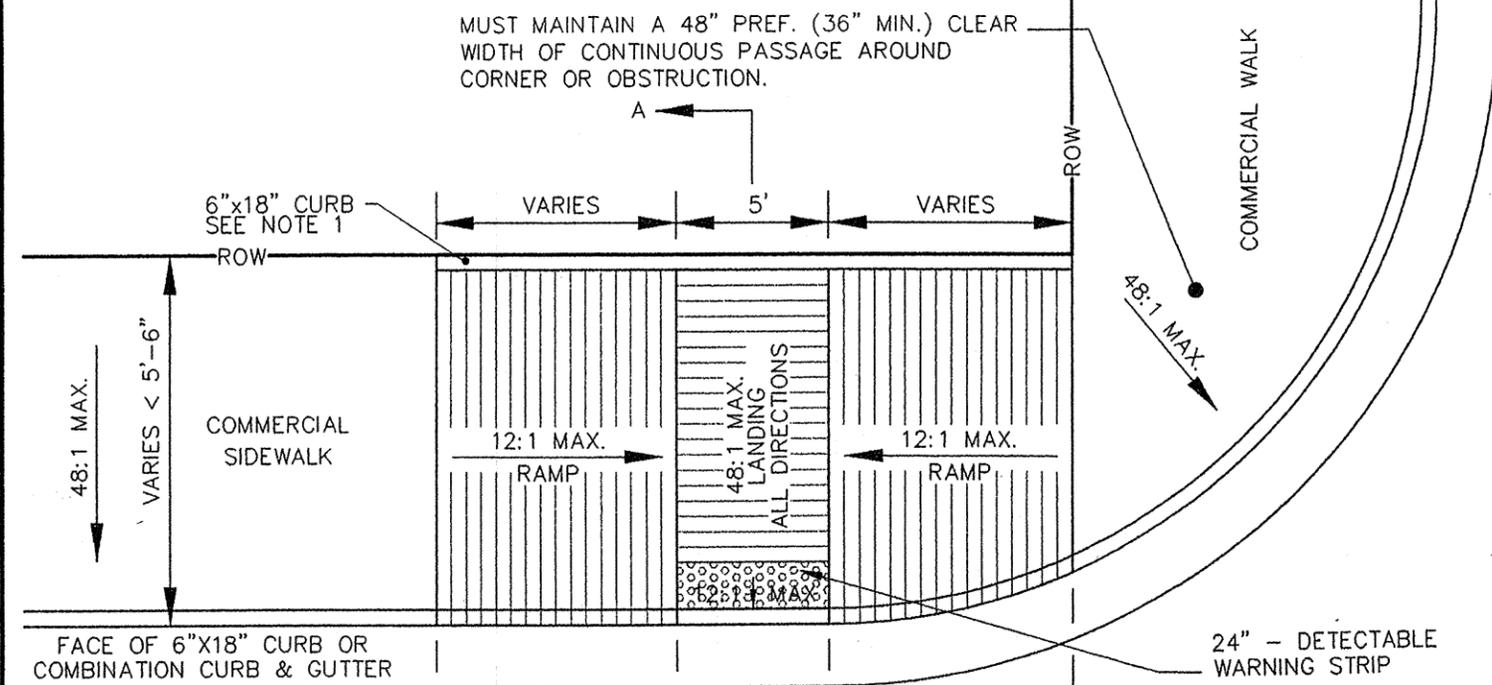
- NOTES:
1. FLARE OF 6' TYPICAL FOR 6" CURB REVEAL AND 12:1 SLOPE, MAY BE MORE OR LESS FOR EXISTING CURB REVEALS WHEN CURB REVEAL HEIGHT IS NOT BEING ALTERED.
 2. ALTERNATE FLARE TREATMENTS MAY BE USED UPON APPROVAL BY THE ENGINEER, AS FOLLOWS:
 - 1) INTEGRAL ROLLED CURBING AT 6-INCHES WIDTH
 - 2) NO CURBING OR FLARE TREATMENT
 - 3) CORNER SIDE FLARE MAY BE 12:1 TO CONCRETE WALK; PROVIDE MIN.3' CONCRETE AT TOP OF FLARE TO EXTENDED SIDEWALK LINE.

DO NOT SCALE - USE DIMENSIONS ONLY



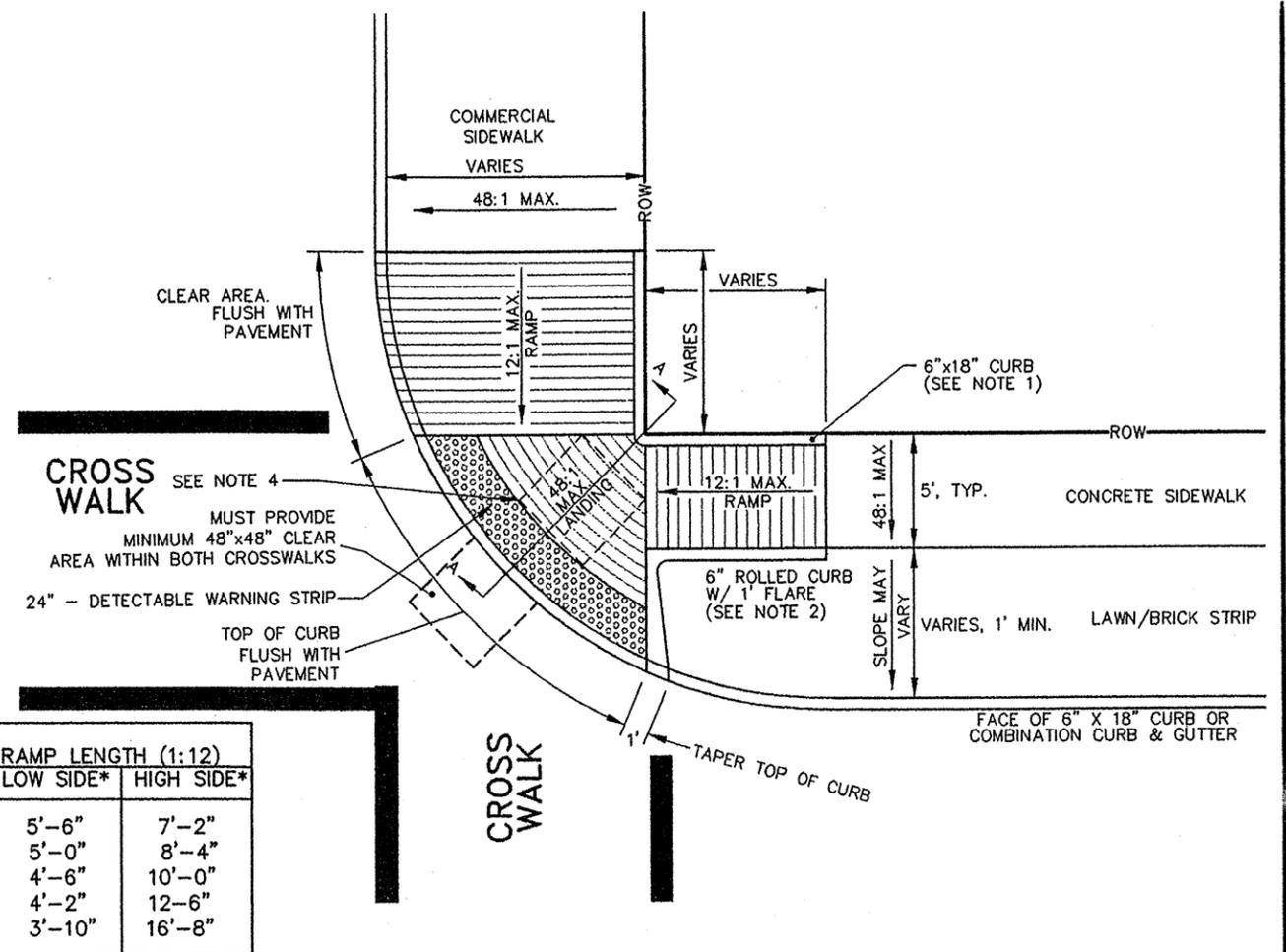
SECTION A-A

CITY OF AKRON BUREAU OF ENGINEERING	CONSTRUCTION STANDARD DWG. No. BP-5.3
<i>Michael L. Madonia</i> 1-15-02 MANAGER, DESIGN DIVISION	CURB RAMP TYPE 1 PERPENDICULAR
<i>James P. Welter</i> 1-22-02 MANAGER, CONSTRUCTION DIVISION	
<i>David J. ...</i> 1-22-02 CITY ENGINEER	
AUTOCAD DRAWING - STD_BP-5.3.DWG January 11, 2002	
REVISIONS:	



PROFILE GRADE	RAMP LENGTH (1:12)	
	LOW SIDE*	HIGH SIDE*
1%	5'-6"	7'-2"
2%	5'-0"	8'-4"
3%	4'-6"	10'-0"
4%	4'-2"	12'-6"
5%	3'-10"	16'-8"

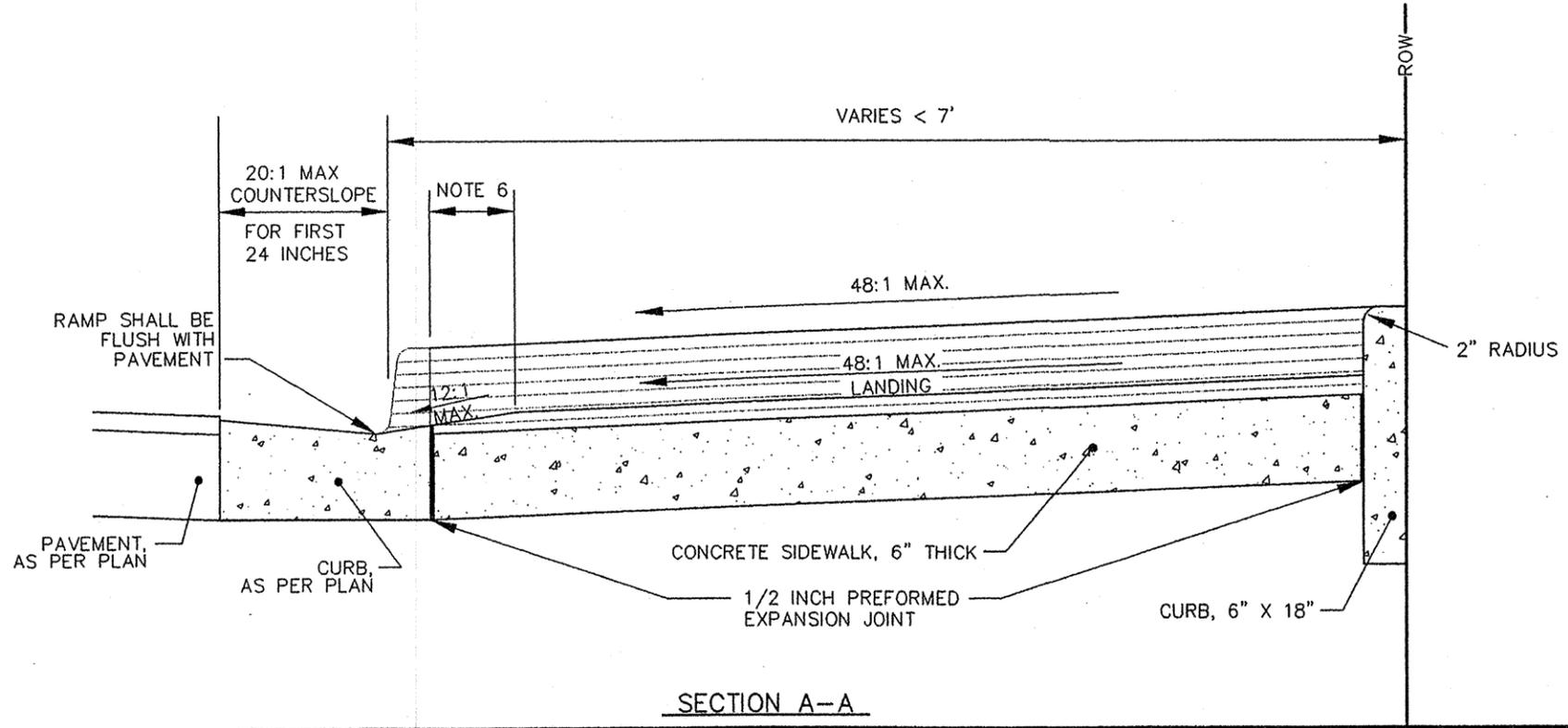
* MEASURED ALONG THE BACK OF CURB



CURB RAMP TYPE 2 DIAGONAL

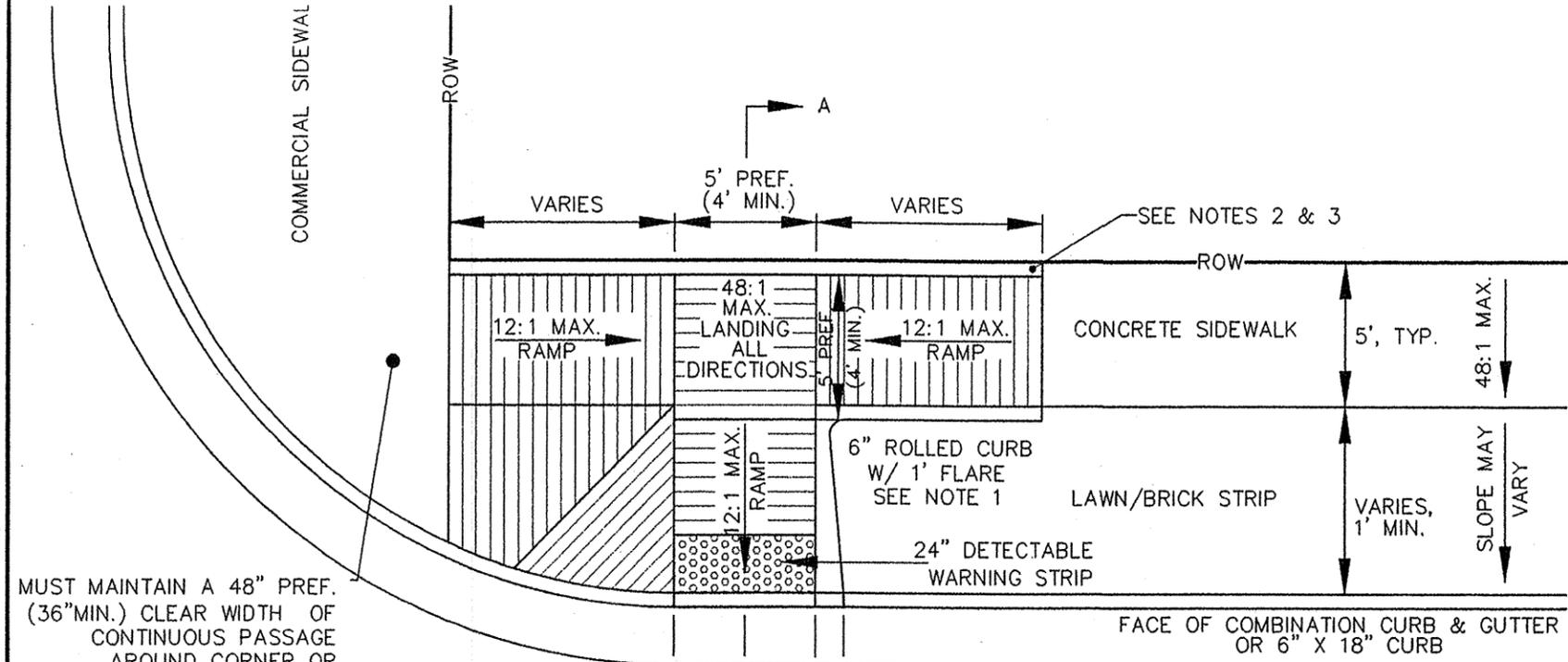
- NOTES:
- CURB AT BACK OF SIDEWALK IS FLUSH AT TOP OF SIDEWALK RAMPS. REVEAL GREATEST AT LANDING AND BASED ON RAMP'S EDGE SLOPES AND LENGTHS.
 - ALTERNATE FLARE TREATMENTS MAY BE USED UPON APPROVAL BY THE ENGINEER, AS FOLLOWS:
 - INTEGRAL ROLLED CURBING AT 6-INCHES WIDTH
 - NO CURBING OR FLARE TREATMENT
 - CORNER SIDE FLARE MAY BE 12:1 TO CONCRETE WALK; PROVIDE MIN.3' CONCRETE AT TOP OF FLARE TO EXTENDED SIDEWALK LINE.
 - RAMP LENGTHS FOR STREET GRADES GREATER THAN 5% MUST BE REVIEWED AND APPROVED BY THE ENGINEER.
 - MAINTAIN A PREFERRED 5'x5' (4'x4' MIN.) LANDING PERPENDICULAR TO THE CURB. FOR TYPE 2, NOT IN DIAGONAL POSITION (TRANSITION RAMPS FACE EACH OTHER), A 5' MIN. LANDING LENGTH BETWEEN TRANSITION RAMPS MUST BE MAINTAINED.
 - WHEN ROW WIDTH IS 4'-6" OR LESS, THE SIDEWALK MAY BE INACCESSIBLE AND CONSIDERATION SHOULD BE GIVEN TO OBTAINING ROW TO PROPERLY CONSTRUCT A CURB RAMP. ANY RAMPS LOCATED IN AREAS WITH 4'-6" ROW OR LESS MUST BE REVIEWED AND APPROVED BY THE ENGINEER.
 - 0"-24" BASED ON AVAILABLE ROW (LANDINGS < 5' WIDE WILL HAVE NO 12:1)

DO NOT SCALE - USE DIMENSIONS ONLY

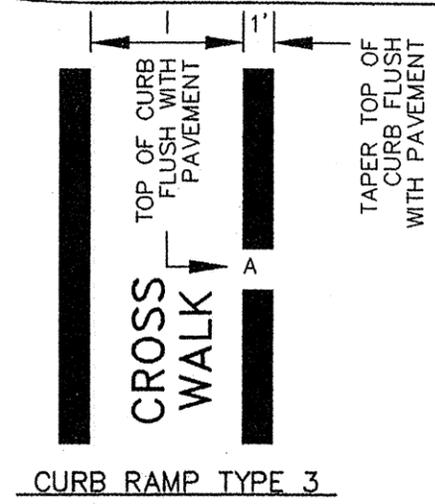


SECTION A-A

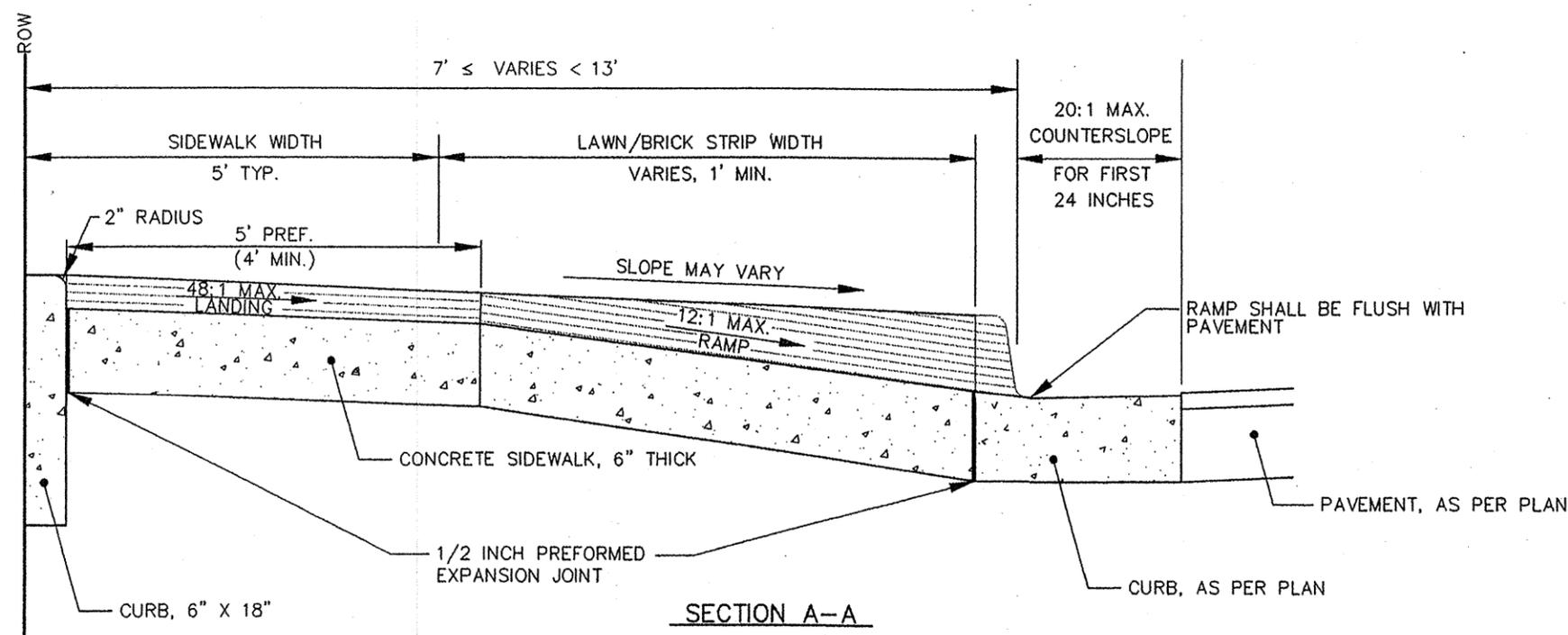
CITY OF AKRON BUREAU OF ENGINEERING	CONSTRUCTION STANDARD DWG. No. BP-5.4
<i>Michael L. Madonid</i> 1-15-02 MANAGER, DESIGN DIVISION	CURB RAMP TYPE 2 PARALLEL
<i>James P. Weber</i> 1-22-02 MANAGER, CONSTRUCTION DIVISION	
<i>David Velek</i> 1-22-02 CITY ENGINEER	
AUTOCAD DRAWING - STD_BP-5.4.DWG January 11, 2002	
REVISIONS:	



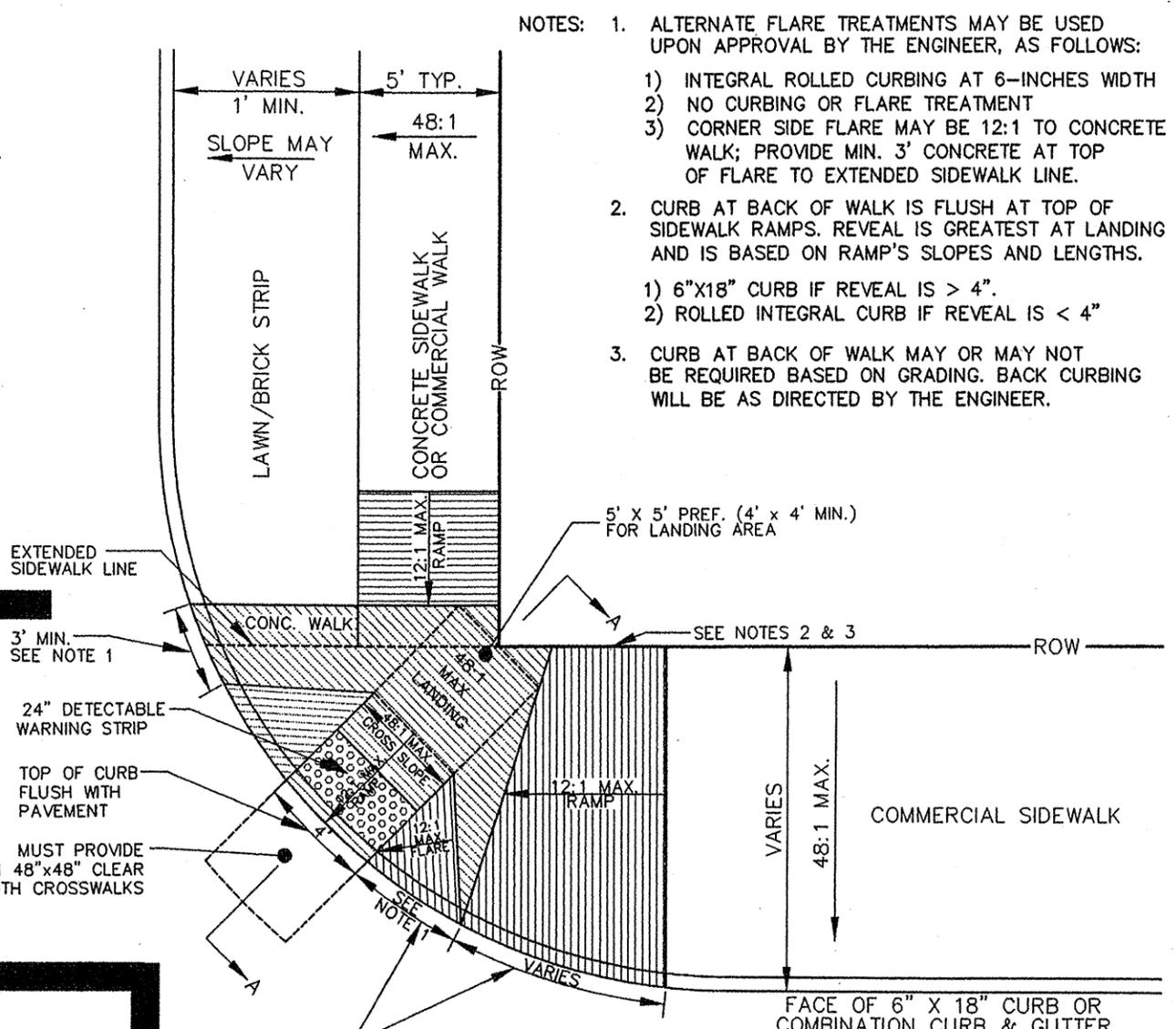
MUST MAINTAIN A 48" PREF. (36" MIN.) CLEAR WIDTH OF CONTINUOUS PASSAGE AROUND CORNER OR OBSTRUCTION.



CURB RAMP TYPE 3

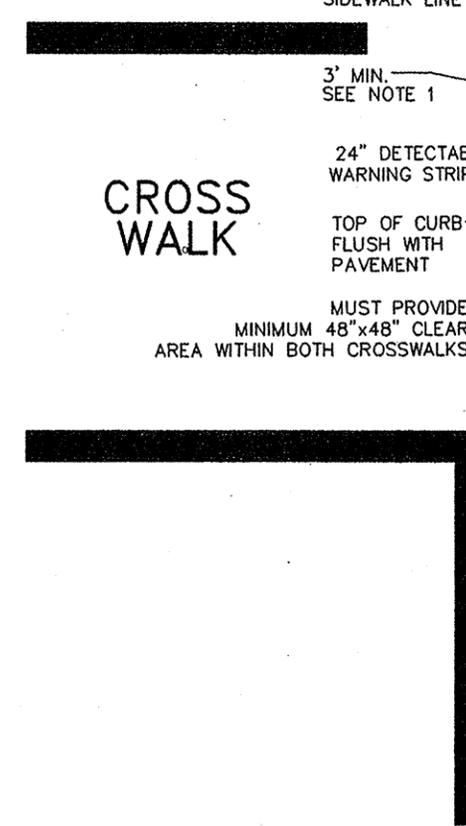


SECTION A-A



CURB RAMP TYPE 3 DIAGONAL

- NOTES:
- ALTERNATE FLARE TREATMENTS MAY BE USED UPON APPROVAL BY THE ENGINEER, AS FOLLOWS:
 - INTEGRAL ROLLED CURBING AT 6-INCHES WIDTH
 - NO CURBING OR FLARE TREATMENT
 - CORNER SIDE FLARE MAY BE 12:1 TO CONCRETE WALK; PROVIDE MIN. 3' CONCRETE AT TOP OF FLARE TO EXTENDED SIDEWALK LINE.
 - CURB AT BACK OF WALK IS FLUSH AT TOP OF SIDEWALK RAMPS. REVEAL IS GREATEST AT LANDING AND IS BASED ON RAMP'S SLOPES AND LENGTHS.
 - 6"X18" CURB IF REVEAL IS > 4"
 - ROLLED INTEGRAL CURB IF REVEAL IS < 4"
 - CURB AT BACK OF WALK MAY OR MAY NOT BE REQUIRED BASED ON GRADING. BACK CURBING WILL BE AS DIRECTED BY THE ENGINEER.

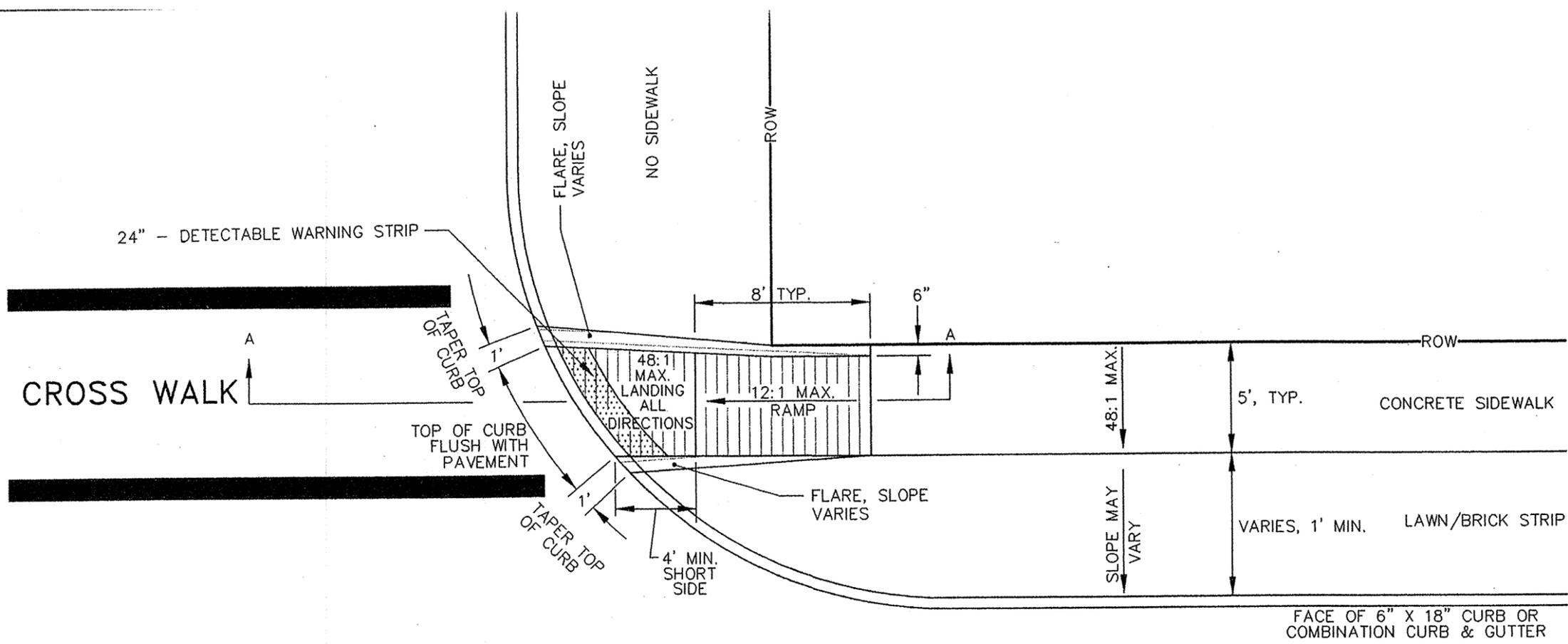


CROSS WALK

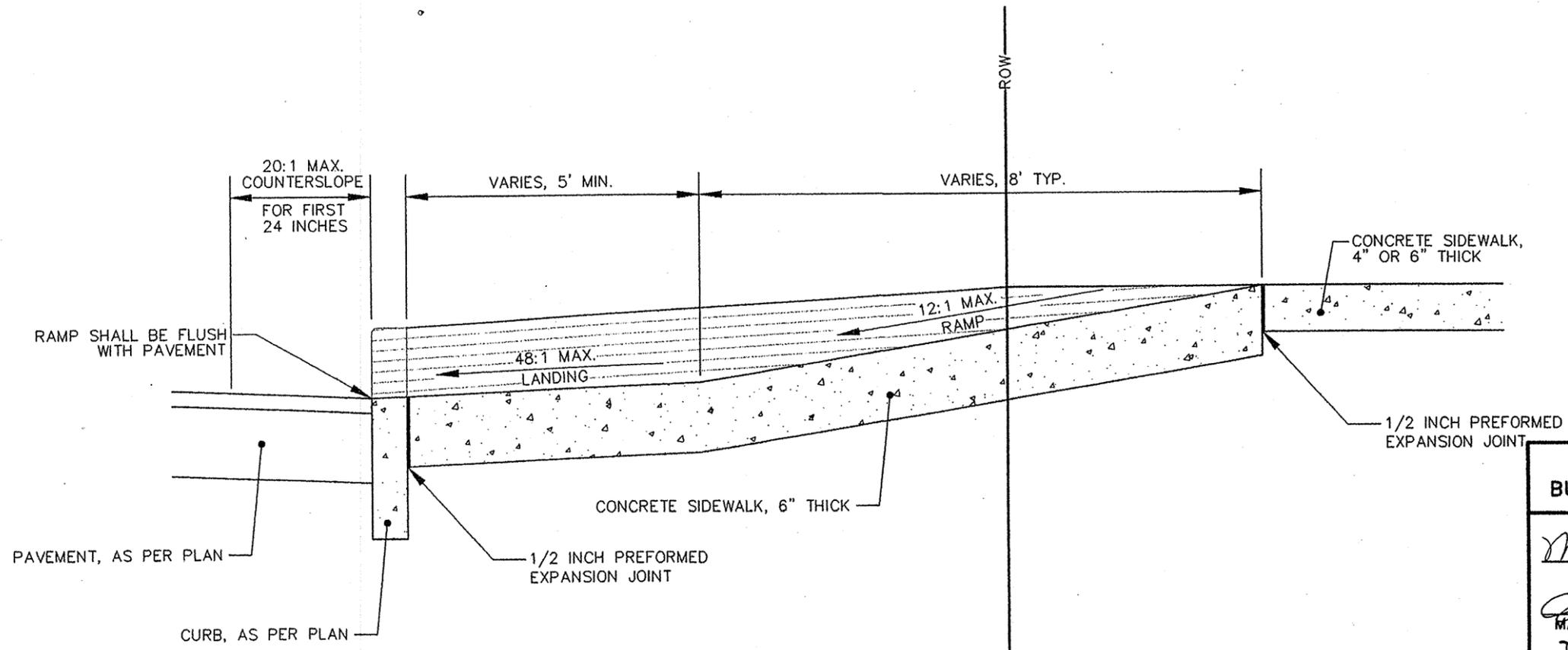
CROSS WALK

DO NOT SCALE - USE DIMENSIONS ONLY

CITY OF AKRON BUREAU OF ENGINEERING <i>Michael L. Madonia</i> 1-15-02 MANAGER, DESIGN DIVISION <i>James P. Weber</i> 1-22-02 MANAGER, CONSTRUCTION DIVISION <i>David Helik</i> 1-22-02 CITY ENGINEER	CONSTRUCTION STANDARD DWG. No. BP-5.5 CURB RAMP TYPE 3 COMBINATION <small>AUTOCAD DRAWING - STD_BP-5.5.DWG</small> <small>January 11, 2002</small> REVISIONS:
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CURB RAMP TYPE 4



SECTION A-A

DO NOT SCALE - USE DIMENSIONS ONLY	
CITY OF AKRON BUREAU OF ENGINEERING	CONSTRUCTION STANDARD DWG. No. BP-5.6
<i>Michael L. Nadonis</i> 1-15-02 MANAGER, DESIGN DIVISION	CURB RAMP TYPE 4 IN-LINE
<i>James P. Weber</i> 1-22-02 MANAGER, CONSTRUCTION DIVISION	AUTOCAD DRAWING - STD_BP-5.6.DWG REVISIONS:
<i>David Yelich</i> 1-22-02 CITY ENGINEER	January 11, 2002

GENERAL NOTES FOR SIDEWALKS, CURB RAMPS, AND DRIVEWAYS

GENERAL

1. ALL AREAS, ELEMENTS, AND FACILITIES FOR PEDESTRIAN ACCESS, CIRCULATION AND USE THAT ARE CONSTRUCTED, INSTALLED OR ALTERED IN THE PUBLIC RIGHT-OF-WAY AND WHICH ARE SUBJECT TO TITLE II OF THE AMERICANS WITH DISABILITIES ACT (ADA) SHALL COMPLY WITH ALL CURRENT FEDERAL REGULATIONS INCLUDING THE ADA ACCESSIBILITY GUIDELINES (ADAAG).
2. NEWLY CONSTRUCTED AND ALTERED STREETS OR PEDESTRIAN WALKWAYS MUST CONTAIN CURB RAMPS AT INTERSECTIONS. (28 CFR 35.151(d)) ALTERATIONS INCLUDE RESURFACING AND ANY WORK THAT IMPACTS THE MAJORITY OF THE STREET OR WALKWAY. THE ENTIRE INTERSECTION EFFECTED MUST BE BROUGHT INTO COMPLIANCE.
3. ALL MATERIALS SHALL CONFORM TO THE "CONSTRUCTION AND MATERIAL SPECIFICATIONS" OF THE CITY OF AKRON, DEPARTMENT OF PUBLIC SERVICE, AKRON ENGINEERING BUREAU, LATEST EDITION.
4. ALL SLOPES REFERRED TO ARE REFERENCED TO A HORIZONTAL PLANE.
5. FOR SIDEWALKS, CURB RAMPS, AND DRIVEWAYS THE "PREFERRED" DIMENSION SHALL BE THE NORMAL STANDARD TO BE MET, UNLESS EXISTING ROW WIDTH OR FEATURES MAKE COMPLIANCE INFEASIBLE. IN THIS CASE THE "MINIMUM" STANDARD MUST BE MET.

PUBLIC SIDEWALKS

1. MINIMUM WIDTH OF NEW SIDEWALKS SHALL BE FIVE FEET.
2. PREFERRED CLEAR WIDTH OF A CONTINUOUS PASSAGE SHALL BE 48 INCHES; FOR ALTERATIONS TO EXISTING ROWS, WHERE THE PREFERRED CLEAR WIDTH CANNOT BE MET, THE MINIMUM CLEAR WIDTH OF A CONTINUOUS PASSAGE SHALL BE 36 INCHES.
3. SIDEWALK CROSS SLOPE SHALL NOT EXCEED 48:1 (2%).

CURB RAMPS

1. A TYPICAL CURB RAMP IS COMPOSED OF THE FOLLOWING ELEMENTS: RAMP, LANDING, SIDES, SURFACE, AND INTERSECTION WITH THE ROADWAY.
2. RAMP. THE CURB RAMP MUST HAVE A SLOPE OF NO GREATER THAN 12:1 IN THE DIRECTION OF TRAVEL AND A CROSS SLOPE OF NO MORE THAN 48:1. THE MINIMUM WIDTH FOR A RAMP IS 48-INCHES (NOT INCLUDING SIDES).
3. THE LANDING IS THE LEVEL AREA AT THE TOP OF A RAMP AND MUST NOT HAVE A SLOPE MORE THAN 48:1 IN ANY DIRECTION. THE LANDING AREA IS USED FOR TURNING AND MUST MAINTAIN A PREFERRED LENGTH AND WIDTH OF 60"x60" FOR ALTERATIONS IN EXISTING ROWS WHERE PREFERRED CLEAR WIDTH CANNOT BE MET, THE MINIMUM LENGTH AND WIDTH SHALL BE 48"x48". IN ALL CASES, THE TYPE 2 CURB RAMP (PARALLEL) MUST HAVE A LANDING LENGTH OF 60-INCHES.
4. SIDES. THE CURB RAMP SHALL BE FLARED WHEN PEDESTRIANS ARE TO CROSS THE RAMP, OR HAVE CURBING IF THE ADJACENT AREA IS A NON-PEDESTRIAN SURFACE SUCH AS A LAWN STRIP, BRICKWORK, OR OBSTACLE. MAXIMUM FLARE SLOPES ARE 12:1 OR AS DIRECTED BY THE ENGINEER. DIAGONAL CURB RAMPS MUST HAVE WELL DEFINED EDGES THAT ARE TO BE PARALLEL TO THE DIRECTION OF PEDESTRIAN FLOW. A DIAGONAL CURB RAMP MUST ALSO HAVE A MINIMUM 24-INCH SEGMENT OF FULL HEIGHT CURB ON EACH SIDE OF THE RAMP WHICH IS WITHIN THE CROSSWALK LINES OR PEDESTRIAN RIGHT-OF-WAY.
5. FLARE TREATMENTS. VARIOUS FLARE TREATMENT ARE SHOWN IN THE DRAWINGS. IN GENERAL A 12:1 FLARE INCLUDING CONCRETE TO EXTENDED SIDEWALK LINE IS PREFERRED OVER SHORT ROLLED CURBING WHERE POSSIBLE. THIS PROVIDES A CONCRETE WALKING SURFACE THE ENTIRE SIDEWALK WIDTH IN THE DIRECTION OF TRAVEL. ROLLED CURBING ON DIAGONAL CURB RAMPS IS INTENDED TO ACCOMMODATE OBSTACLES OTHER THAN GRASS OR BRICK STRIPS.
6. SURFACE. THE CURB RAMP SURFACE MUST BE STABLE, FIRM, AND SLIP-RESISTANT. CHANGE IN LEVEL UP TO 0.25-INCH MAY BE VERTICAL WITHOUT EDGE TREATMENT. CHANGES BETWEEN 0.25 AND 0.5-INCHES MUST BE BEVELED WITH A SLOPE OF NO GREATER THAN 12:1. CHANGES IN LEVEL ABOVE 0.5-INCH MUST BE ACCOMPLISHED BY A RAMP. THE FINAL SURFACE TEXTURE SHALL BE ROUGHER THAN THE ADJACENT WALK AND SHALL BE OBTAINED BY COARSE BROOMING OR OTHER METHODS APPROVED BY THE ENGINEER TO OBTAIN STRIATIONS TRANSVERSE TO THE RAMP SLOPE. BROOM FINISH TOOLED JOINTS WITHOUT FILLING-IN THE JOINT.
7. LIP. THE INTERSECTION OF THE RAMP WITH THE ROADWAY SHALL BE PERPENDICULAR AND EDGES SHALL BE FLUSH. THE COUNTER SLOPE FROM THE END OF RAMP UP THE CROSS SLOPE OF THE ROADWAY SHALL BE NO MORE THAN 20:1 FOR THE FIRST 24-INCHES.
8. NO OBSTACLES OR PROTRUSIONS SHALL BE PLACED WITHIN THE CURB RAMP AREA. EXISTING MANHOLE COVERS, VALVE BOXES SHALL BE FLUSH MOUNTED WITH WALKING SURFACE.
9. THE THICKNESS OF ALL NEW CURB RAMPS SHALL BE 6-INCHES.
10. TRANSITIONAL SECTIONS OF SIDEWALK SHALL BE INSTALLED TO CONNECT NEW OR REPLACED CURB RAMPS WITH EXISTING SIDEWALKS, THAT DO NOT MEET CURRENT STANDARDS AND SPECIFICATIONS. THESE TRANSITION SEGMENTS OF SIDEWALK SHALL PROVIDE A SMOOTH TRANSITION BETWEEN EXISTING AND NEW CONCRETE. MAXIMUM WARPING (ROTATION) RATE SHALL BE 1/8" VERTICAL CHANGE PER L.F. HORIZONTAL DISTANCE TRAVELLED AND MINIMUM DISTANCE SHALL BE ONE FULL SIDEWALK BLOCK.
11. FOR PARALLEL AND COMBINATION RAMPS WHERE A RAMP IS LOCATED WITHIN THE PUBLIC SIDEWALK, THE MINIMUM LENGTH FOR THE RAMPS SHALL BE ONE SIDEWALK BLOCK LENGTH; AND THE MAXIMUM LENGTH SHALL BE WHAT IS REQUIRED TO MAINTAIN A 12:1 SLOPE TO MEET EXISTING SIDEWALK GRADE. WHEN THIS IS DETERMINED UNFEASIBLE DUE TO STEEP PITCH OF EXISTING ROADWAY, IN NO CASE SHALL THE RAMP BE LESS THAN 15 FEET.
12. STEEP SLOPES. ALL RAMPS LOCATED ON STREETS WITH A RUNNING PROFILE GRADE GREATER THAN 5% MUST BE REVIEWED AND APPROVED BY THE ENGINEER.

13. SLOPE AND CROSS-SLOPE CONVERSION TABLE:

RATIO	PERCENT	INCH/FOOT	DEGREES	WHERE UTILIZED
1:12	8.3	1	4.8	MAXIMUM SLOPE FOR RAMPS AND FLARES
1:20	5.0	5/8	2.9	AT THE FOOT OF THE CURB RAMP, THE TRANSITION FROM THE RAMP TO THE GUTTER COUNTER SLOPE SHALL BE NO MORE THAN 1:20 FOR A MINIMUM DISTANCE OF 24-INCHES
1:48	2.0	1/4	1.1	MAXIMUM SLOPE FOR LANDING AND CROSS-SLOPE OF LANDINGS, RAMPS AND SIDEWALK

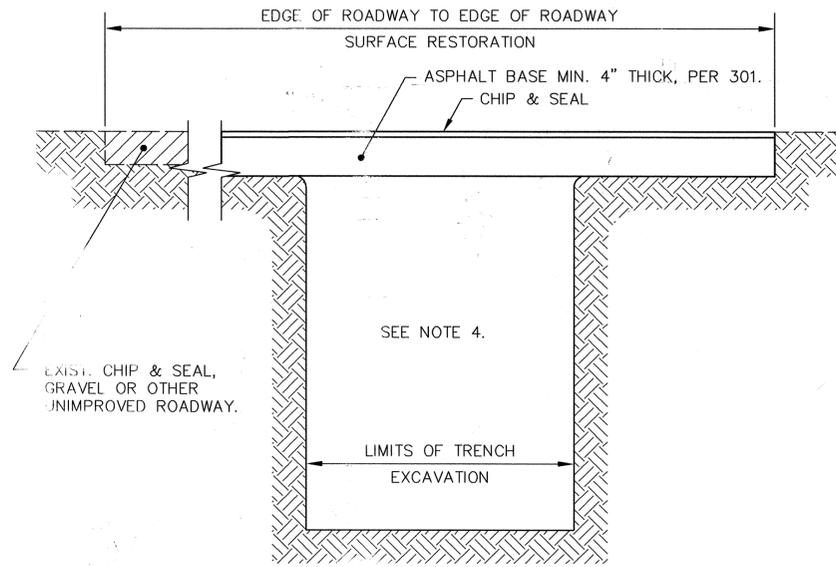
14. FOR CURB RAMP STANDARD DRAWINGS TYPICAL DIMENSIONS ARE USED BASED ON A FULL CURB HEIGHT OF 6-INCHES. ADJUSTMENTS MAY BE MADE TO LENGTH OF RAMPS AND FLARES BASED ON ACTUAL CURB REVEAL HEIGHT. REQUIRED SLOPES MUST BE MAINTAINED.
15. WHEN TWO RAMPS ARE USED AT A CORNER IF THE SPACE BETWEEN IS TO BE AN UNWALKABLE SURFACE IT MAY BE GRASSED IF GREATER THAN 20 S.F., OTHERWISE IT SHALL BE FILLED IN WITH BRICK PAVERS.
16. TYPES 2 & 3 RAMPS. WHEN BACK CURB HEIGHT IS 4" OR GREATER INSTALL SEPARATE 6"x18" CURB AT THE BACK OF WALK. IF LESS THAN 4" UTILIZE ROLLED INTEGRAL CURB. ROLLED CURB PAID AS 6" WALK.
17. DETECTABLE WARNING IS REQUIRED FOR ALL CURB RAMPS. TRUNCATED DOMES SHALL HAVE A DIAMETER OF 0.9 INCH AT THE BOTTOM, A DIAMETER OF 0.4 INCH AT THE TOP, A HEIGHT OF 0.2 INCH AND A CENTER-TO-CENTER SPACING OF 2.35 INCHES MEASURED ALONG ONE SIDE OF A SQUARE ARRANGEMENT.
18. DOME ALIGNMENT. DOMES SHALL BE ALIGNED ON A SQUARE GRID IN THE PREDOMINANT DIRECTION OF TRAVEL TO PERMIT WHEELS TO ROLL BETWEEN DOMES.
19. DETECTABLE WARNING SHALL BE A PREFORMED MATERIAL AS APPROVED BY THE CITY OF AKRON. THE USE OF CONCRETE STAMPING IS NOT PERMITTED. APPROVED DETECTABLE WARNING PRODUCTS ARE:
 1. ARMORTILE (CAST-IN-PLACE SYSTEM) - BY ENGINEERED PLASTICS, INC., 300 INTERNATIONAL DRIVE, SUITE 100, WILLIAMSVILLE, NY 14221.
 2. COMPOSITE TACTILE WARNING PAVER UNIT (CAST-IN-PLACE) - BY ADA SOLUTIONS, INC. ONE SURVEY CIRCLE - 2nd FLOOR, NORTH BILLERICA, MA 01862.
 OR: APPROVED EQUAL.
20. DRAINAGE. ALL CURB RAMPS SHALL BE DESIGNED AND CONSTRUCTED TO PROVIDE POSITIVE DRAINAGE SO AS TO PREVENT PONDING. PARTICULAR ATTENTION IS TO BE GIVEN TO RAMPS LOCATED IN EITHER FLAT OR STEEP AREAS, AND CURB RAMP TYPES 2 & 4 THAT HAVE LANDINGS AT STREET LEVEL.

DRIVEWAYS

1. DRIVEWAY LOCATIONS ARE GOVERNED BY CITY OF AKRON ORDINANCES.
2. THE SIDEWALK WIDTH AT TOP OF DRIVE SHALL BE PREFERRED WIDTH OF 48-INCHES; FOR ALTERATIONS TO EXISTING ROWS WHERE THE PREFERRED WIDTH CANNOT BE MET, THE MINIMUM WIDTH SHALL BE 36-INCHES.
3. LIP AT BOTTOM OF APRON SHALL BE 1-INCH TYPICAL.

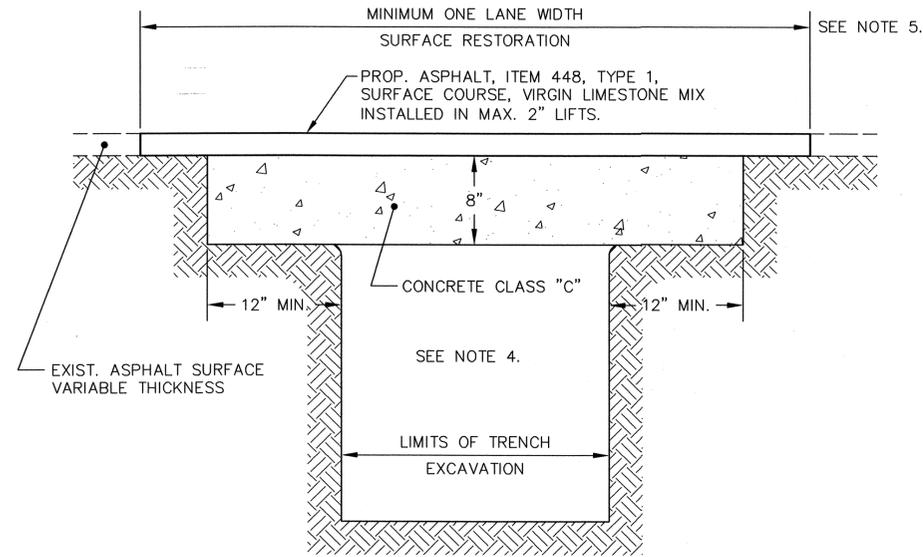
DO NOT SCALE - USE DIMENSIONS ONLY

CITY OF AKRON BUREAU OF ENGINEERING	CONSTRUCTION STANDARD DWG. No. BP-5.0
<i>Michael Madonia</i> 3/15/05 MANAGER, DESIGN DIVISION	SIDEWALKS, CURB RAMPS, AND DRIVEWAY APPROACHES
<i>Dennis P. White</i> 3/15/05 MANAGER, CONSTRUCTION DIVISION	AUTOCAD DRAWING - STD_BP-5.0.DWG REVISIONS:
<i>David J. Jelic</i> 3-16-05 CITY ENGINEER	March 5, 2005



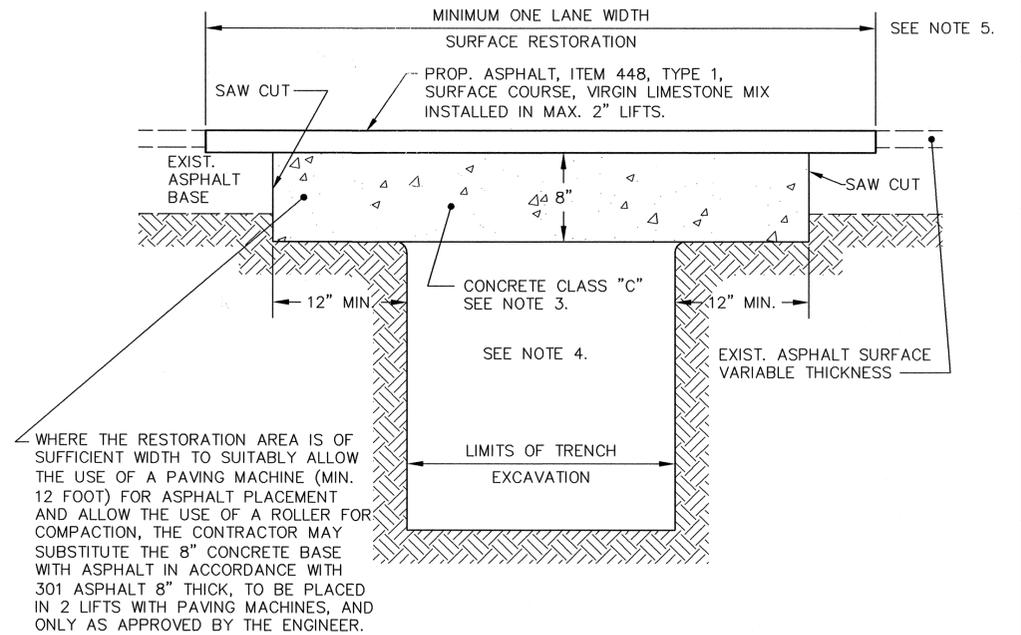
DUST TREATED, CHIP AND SEAL,
CINDER OR GRAVEL ROADWAYS
RESTORATION DETAIL

DETAIL NO. 1



ASPHALT SURFACE
RESTORATION DETAIL

DETAIL NO. 2



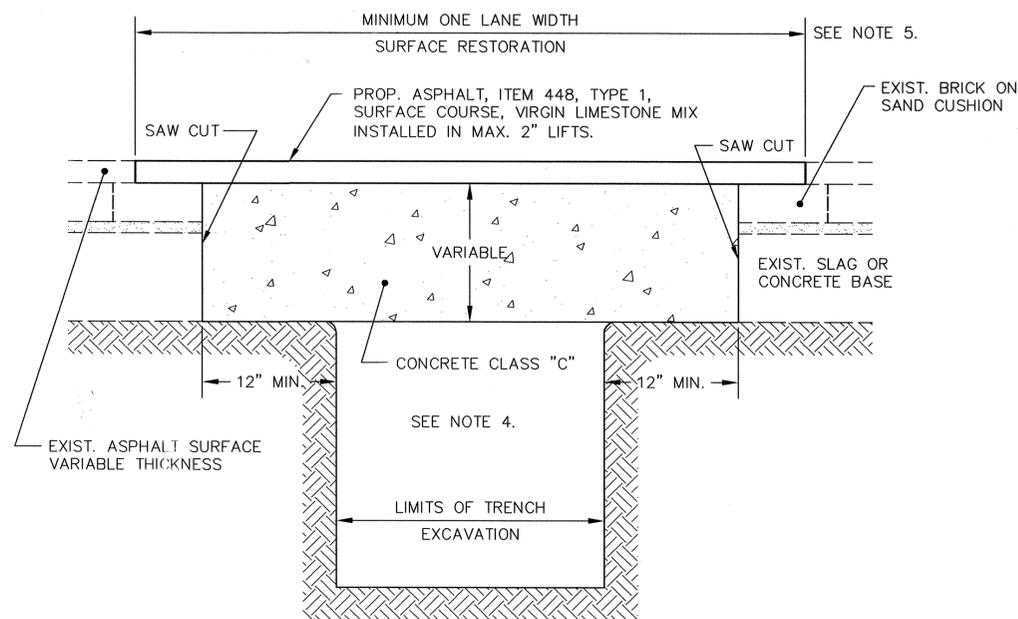
ASPHALT PAVEMENT
RESTORATION DETAIL

DETAIL NO. 3

NOTES:

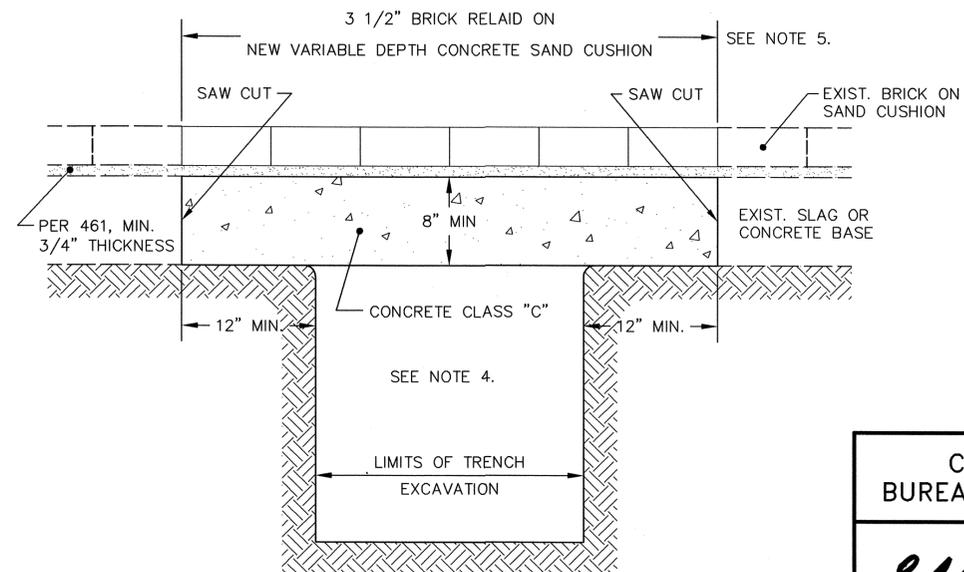
1. THE COST OF ALL RESTORATION SHALL BE INCLUDED IN THE PRICE BID FOR THE ITEM WHICH MADE NECESSARY THE RESTORATION, IN ACCORDANCE WITH 551.10 AND 104.07 UNLESS OTHERWISE PROVIDED FOR BY THE PLANS OR SPECIFICATIONS.
2. IF THE TRENCH WIDTH ENCOMPASSES TWO TRAVELED LANES THEN BOTH LANE SURFACES SHALL BE RESTORED.
3. THE TOP OF THE NEW CONCRETE BASE SHALL NOT BE CONSTRUCTED HIGHER THAN THE EXISTING ASPHALT BASE.
4. BACKFILL MEETING THE REQUIREMENTS OF 551.09.
5. LIMITS MAY BEGIN AT FACE OF CURB OR EDGE OF CURB AND GUTTER.
6. WHEN A TRENCH CROSSES THE ROADWAY PERPENDICULARLY, THE PAVEMENT BASE SHALL EXTEND A MINIMUM OF 12" OUTSIDE OF THE TRENCH LIMITS AND THE ASPHALT SURFACE SHALL EXTEND A MINIMUM OF 12" OUTSIDE OF THE PAVEMENT BASE LIMITS

DO NOT SCALE - USE DIMENSIONS ONLY



RESURFACED BRICK PAVEMENT
RESTORATION DETAIL

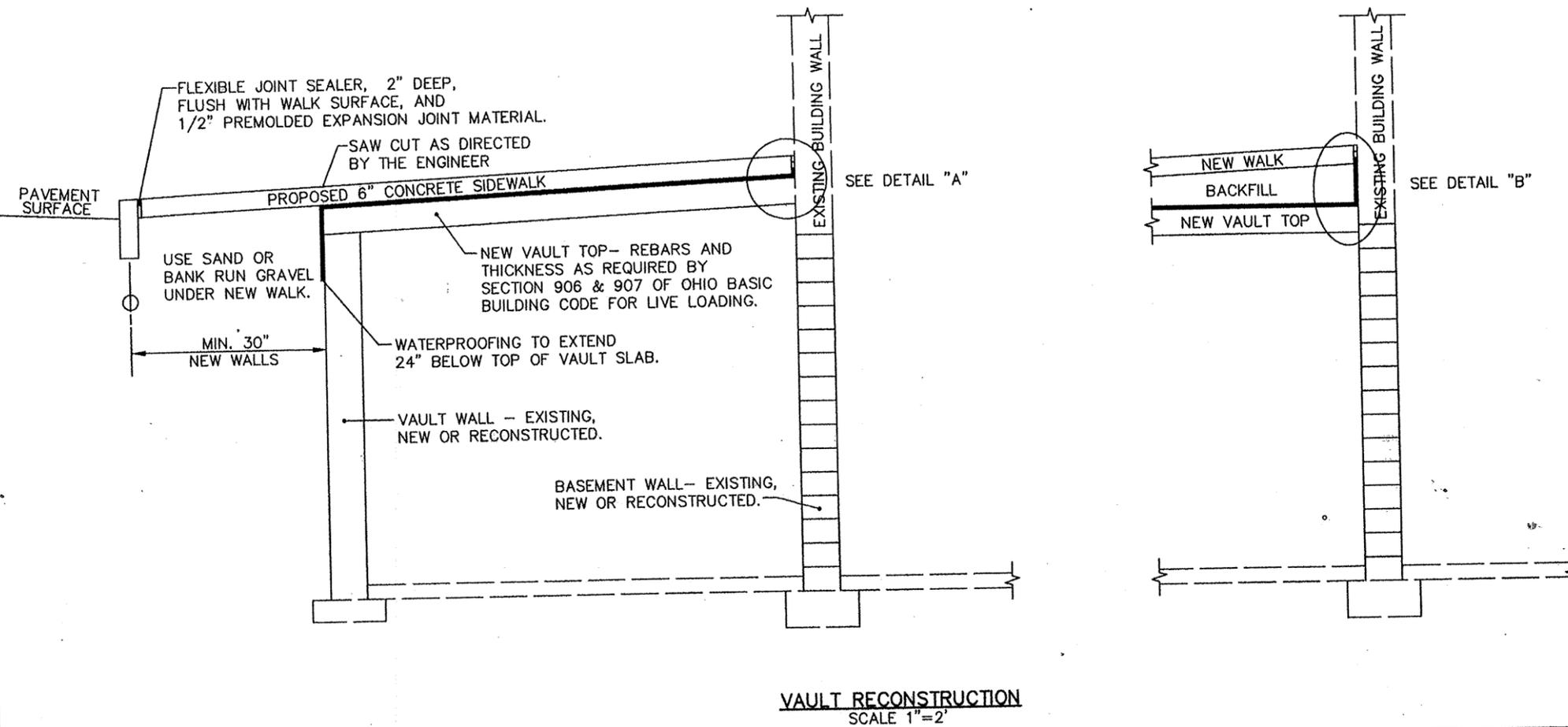
DETAIL NO. 4



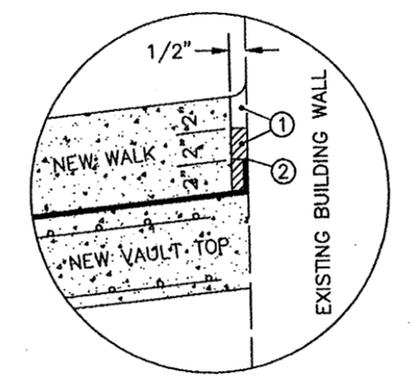
EXPOSED BRICK PAVEMENT
RESTORATION DETAIL

DETAIL NO. 5

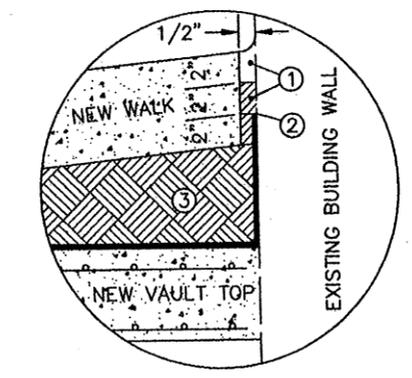
<p>CITY OF AKRON BUREAU OF ENGINEERING</p>	<p>CONSTRUCTION STANDARD DWG. No. BP-6</p>
<p><i>[Signature]</i> 5-13-08 ACTING MANAGER, DESIGN DIVISION</p> <p><i>[Signature]</i> 5-14-08 MANAGER, CONSTRUCTION DIVISION</p> <p><i>[Signature]</i> 5-23-08 CITY ENGINEER</p>	<p>PAVEMENT RESTORATION</p> <p>AUTOCAD DRAWING - STD_BP-6.DWG REVISIONS: April 4, 2008</p> <p>JUNE 3, 2002</p>



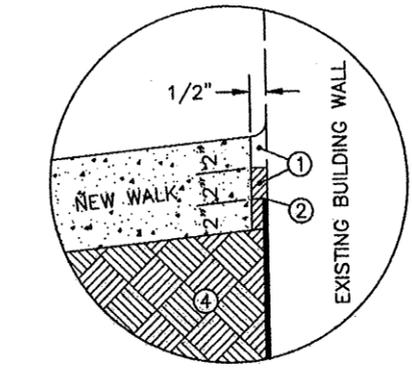
VAULT RECONSTRUCTION
SCALE 1"=2'



DETAIL "A"
VAULT SLAB TOP AND
SIDEWALK ABUTTING



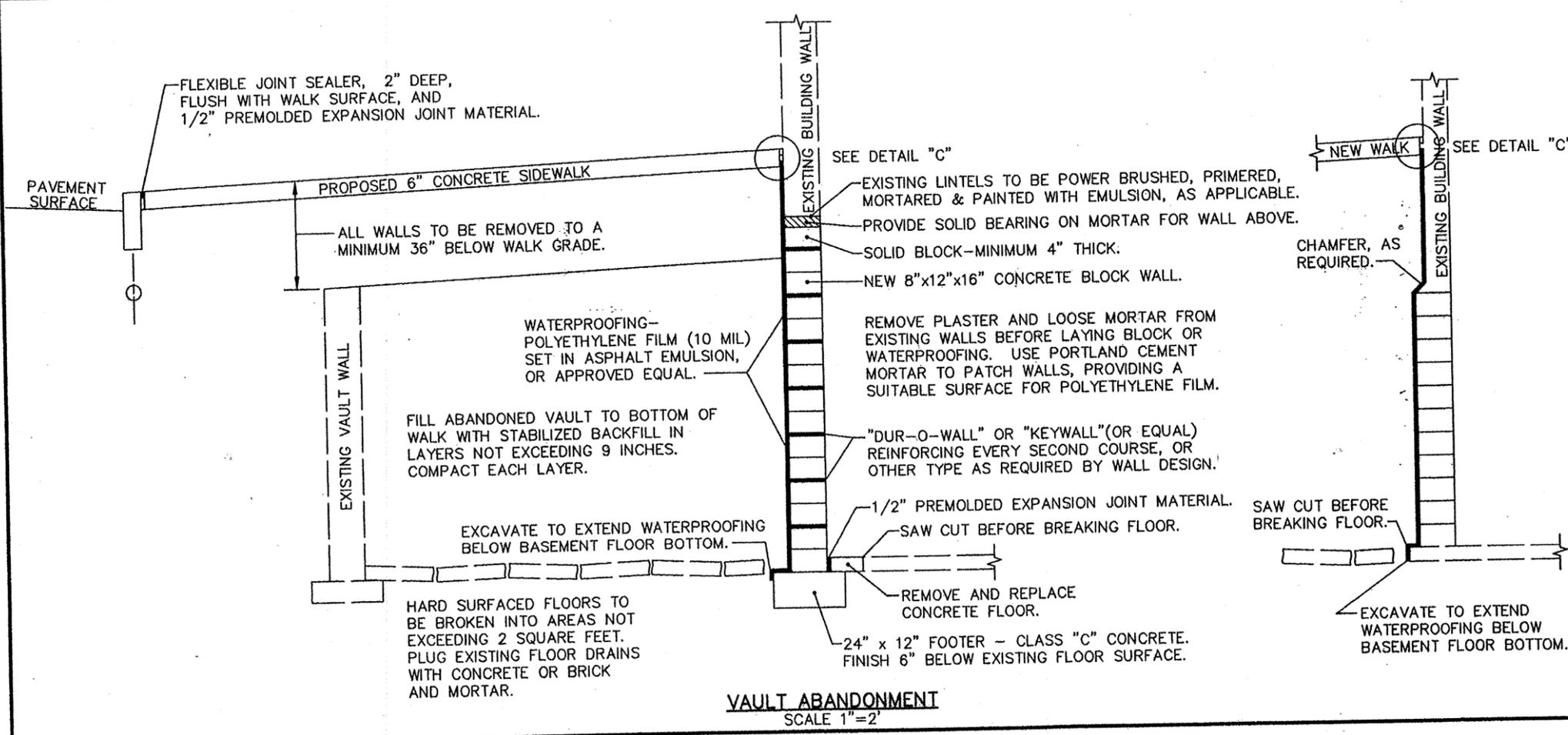
DETAIL "B"
VAULT SLAB TOP AND
SIDEWALK SEPARATED



DETAIL "C"
SIDEWALK ONLY

- ① 1/2" x 6" PREMOLDED EXPANSION JOINT MATERIAL. REMOVE TOP 2" AND FILL WITH FLEXIBLE JOINT SEALER, FILLETED AT THE WALL.
- ② EXTEND POLYETHYLENE FILM MINIMUM 2" ABOVE BOTTOM OF SIDEWALK.
- ③ COMPACTED STABILIZED BACKFILL (OR BULK CONCRETE).
- ④ COMPACTED STABILIZED BACKFILL.

PERMIT IS REQUIRED FROM
BUILDING DEPARTMENT



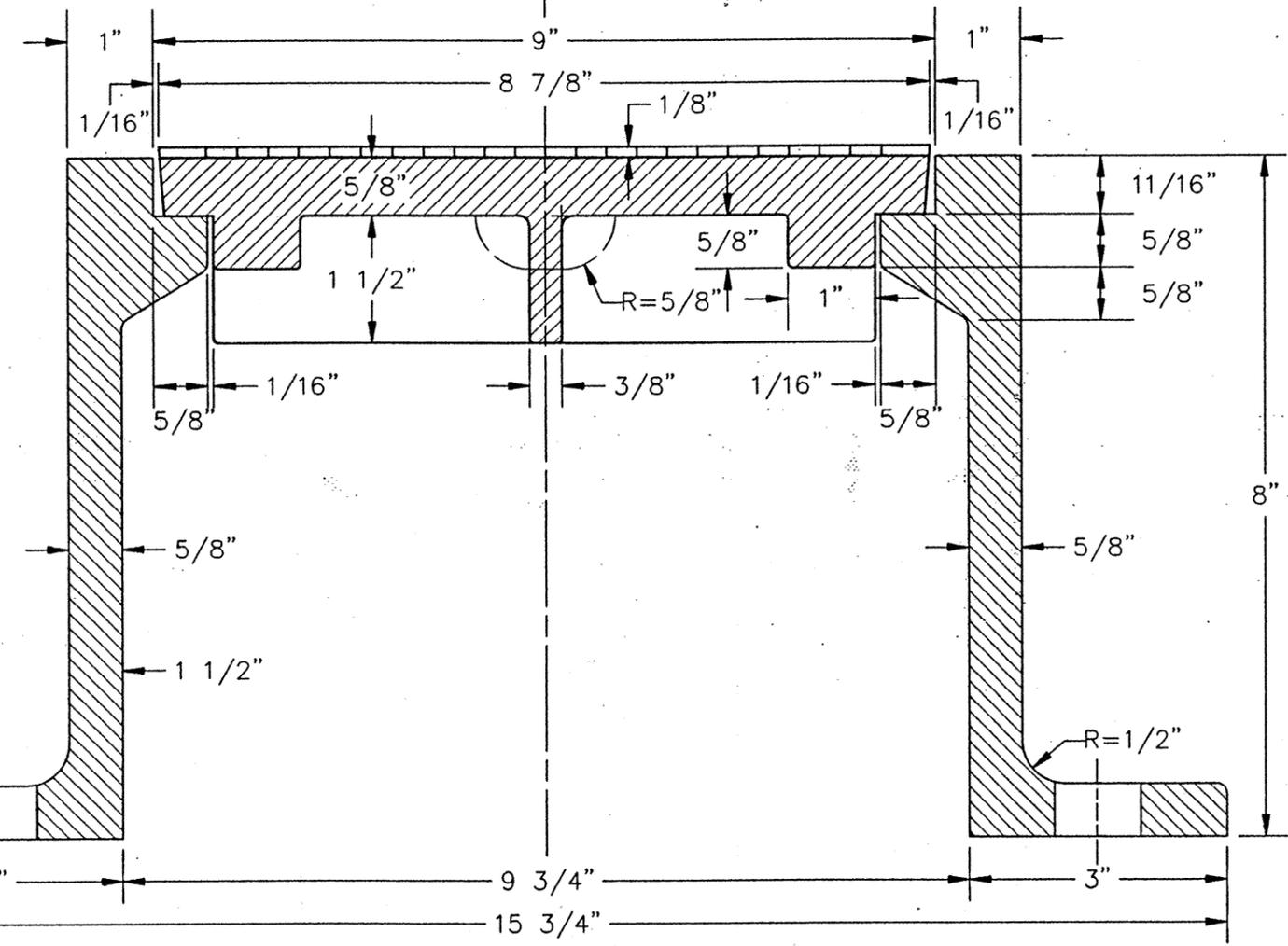
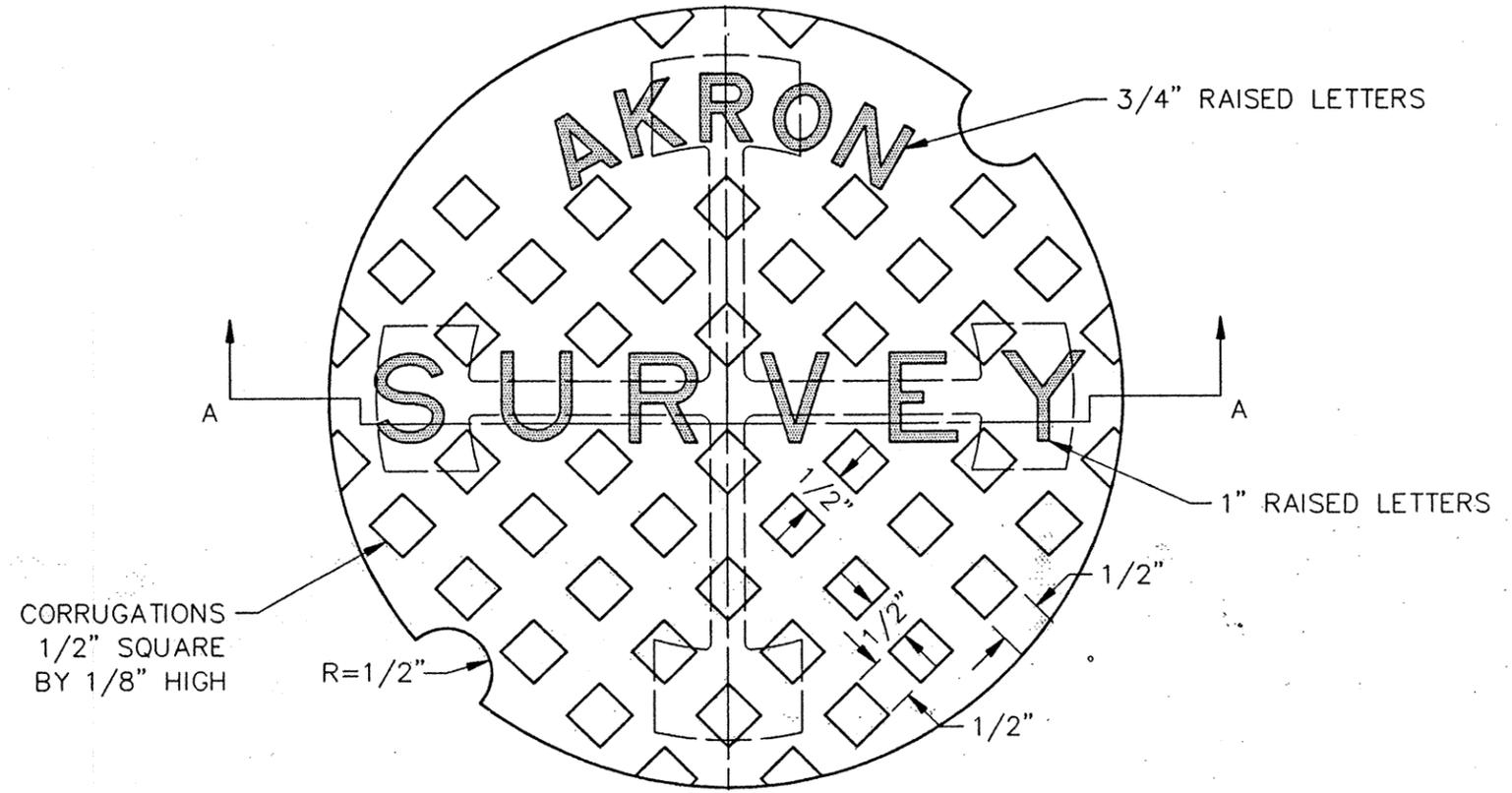
VAULT ABANDONMENT
SCALE 1"=2'



SEE DETAIL "C"

DO NOT SCALE - USE DIMENSIONS ONLY

CITY OF AKRON BUREAU OF ENGINEERING	CONSTRUCTION STANDARD DWG. No. BP-7
<i>David Melek</i> 5-6-97 MANAGER, DESIGN DIVISION <i>Pawan K. Khailan</i> 5/13/97 MANAGER, CONSTRUCTION DIVISION <i>C. David Smith</i> 5/13/97 CITY ENGINEER	SIDEWALK VAULTS RECONSTRUCTION & ABANDONMENT REVISIONS:



NOTE:
 TO BE CAST OF 1% NICKEL ALLOY
 CAST IRON MACHINED TO PREVENT
 ROCKING OF COVER. CASTING TO
 BE SMOOTH AND PAINTED WITH TWO
 COATS OF ASPHALT PAINT, AFTER
 BEING INSPECTED.

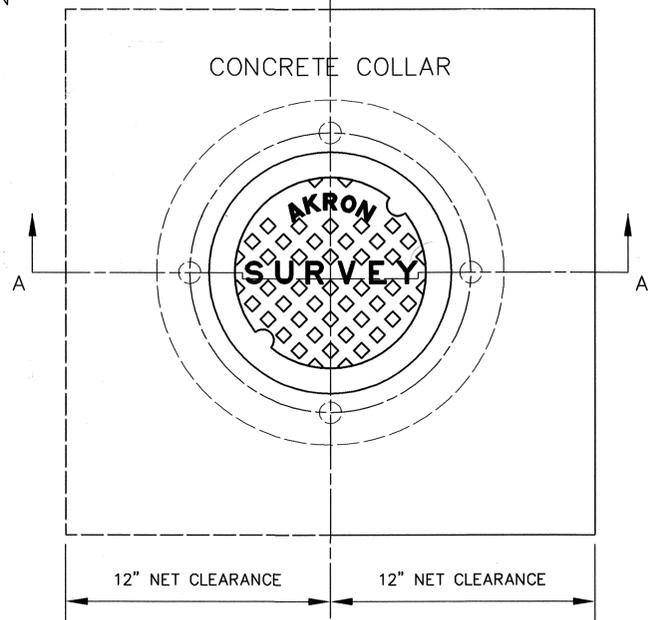
DRILL 1" DIA. HOLE, 4 EA.

SECTION A-A

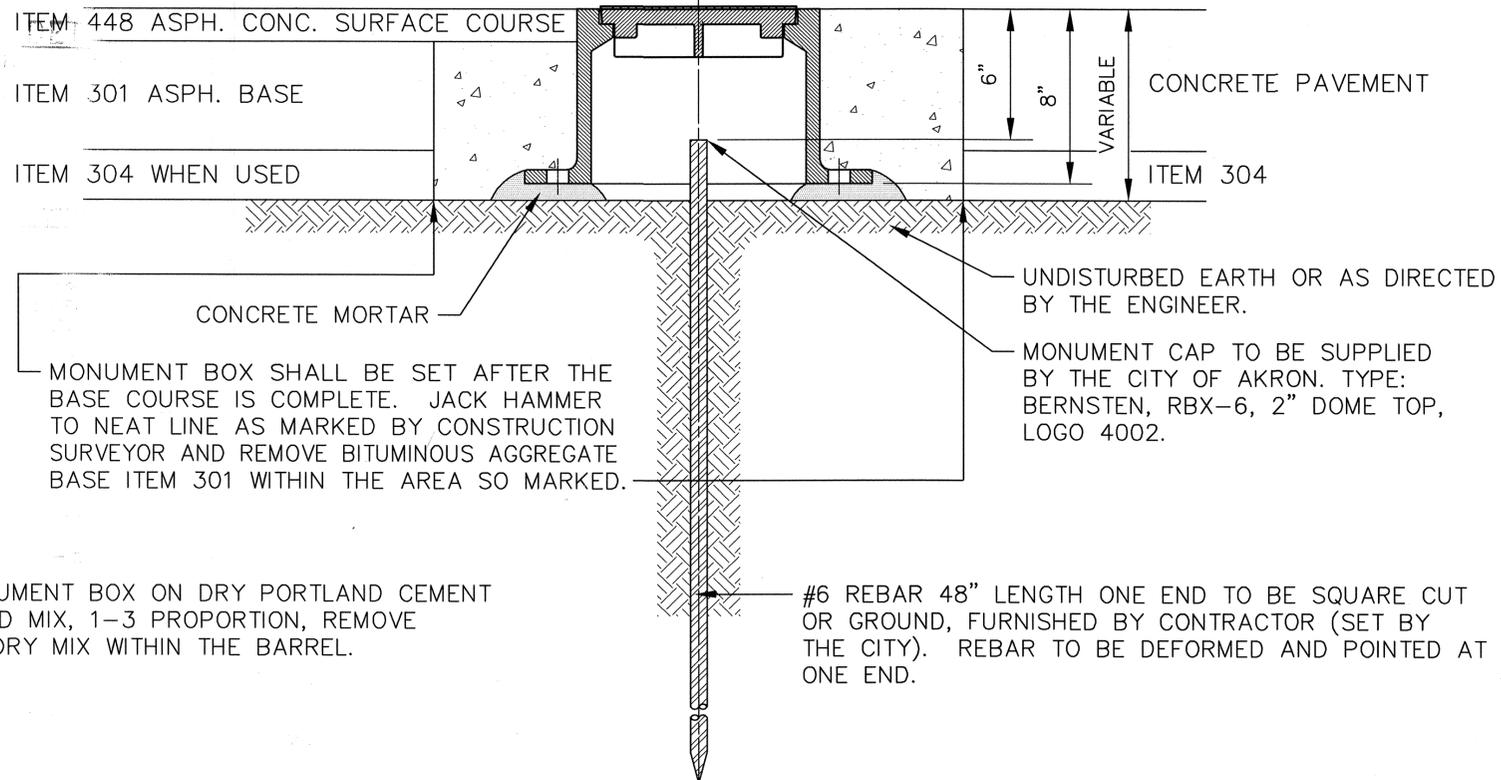
DO NOT SCALE - USE DIMENSIONS ONLY	
CITY OF AKRON BUREAU OF ENGINEERING	CONSTRUCTION STANDARD DWG. No. BP-8
<i>David J. Celik</i> /MLM 6/28/96 MANAGER, DESIGN DIVISION	CAST IRON FRAME AND COVER FOR STREET MONUMENTS ITEM 622
<i>Pawan K. Khaitan</i> 7/17/96 MANAGER, CONSTRUCTION DIVISION	
<i>Chinid Hassan</i> 7/22/96 CITY ENGINEER	
REVISIONS:	

ASPHALT PAVEMENT
HALF SECTION

CONCRETE PAVEMENT
HALF SECTION



FOR DETAILS OF MONUMENT BOX SEE
CONSTRUCTION STANDARD DWG. NO. BP-8
PATTERN NO.
149 & 150 EAST AKRON CASTING
R-1973-A NEENAH
1574 E JORDAN



MONUMENT BOX SHALL BE SET AFTER THE
BASE COURSE IS COMPLETE. JACK HAMMER
TO NEAT LINE AS MARKED BY CONSTRUCTION
SURVEYOR AND REMOVE BITUMINOUS AGGREGATE
BASE ITEM 301 WITHIN THE AREA SO MARKED.

UNDISTURBED EARTH OR AS DIRECTED
BY THE ENGINEER.

MONUMENT CAP TO BE SUPPLIED
BY THE CITY OF AKRON. TYPE:
BERNSTEN, RBX-6, 2" DOME TOP,
LOGO 4002.

#6 REBAR 48" LENGTH ONE END TO BE SQUARE CUT
OR GROUND, FURNISHED BY CONTRACTOR (SET BY
THE CITY). REBAR TO BE DEFORMED AND POINTED AT
ONE END.

NOTE:
SET MONUMENT BOX ON DRY PORTLAND CEMENT
AND SAND MIX, 1-3 PROPORTION, REMOVE
EXCESS DRY MIX WITHIN THE BARREL.

DO NOT SCALE - USE DIMENSIONS ONLY

CITY OF AKRON
BUREAU OF ENGINEERING

CONSTRUCTION
STANDARD DWG. No. **BP-9**

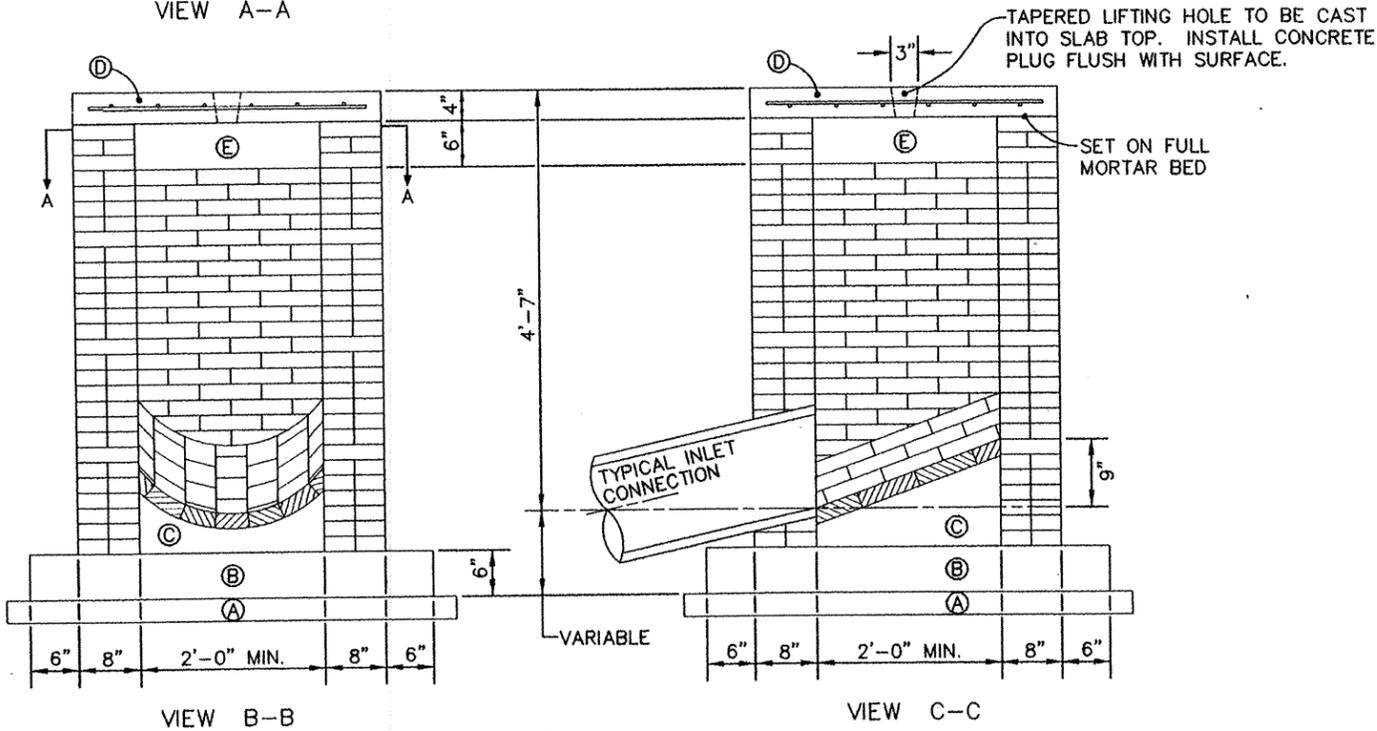
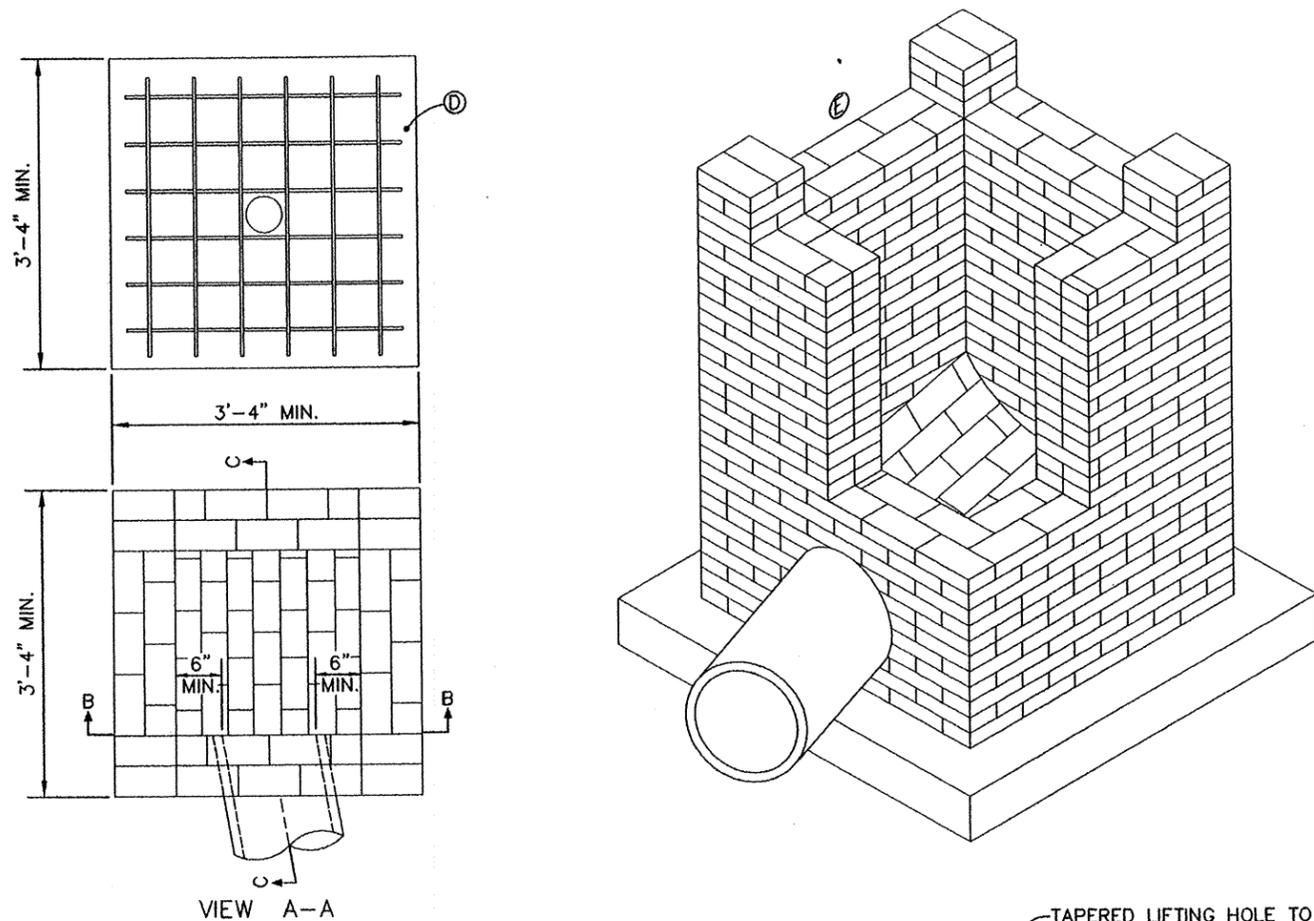
R.L.C. Vink 5-13-08
ACTING MANAGER, DESIGN DIVISION

James B. Weber 5-14-08
MANAGER, CONSTRUCTION DIVISION

W. C. Hill 5-23-08
CITY ENGINEER

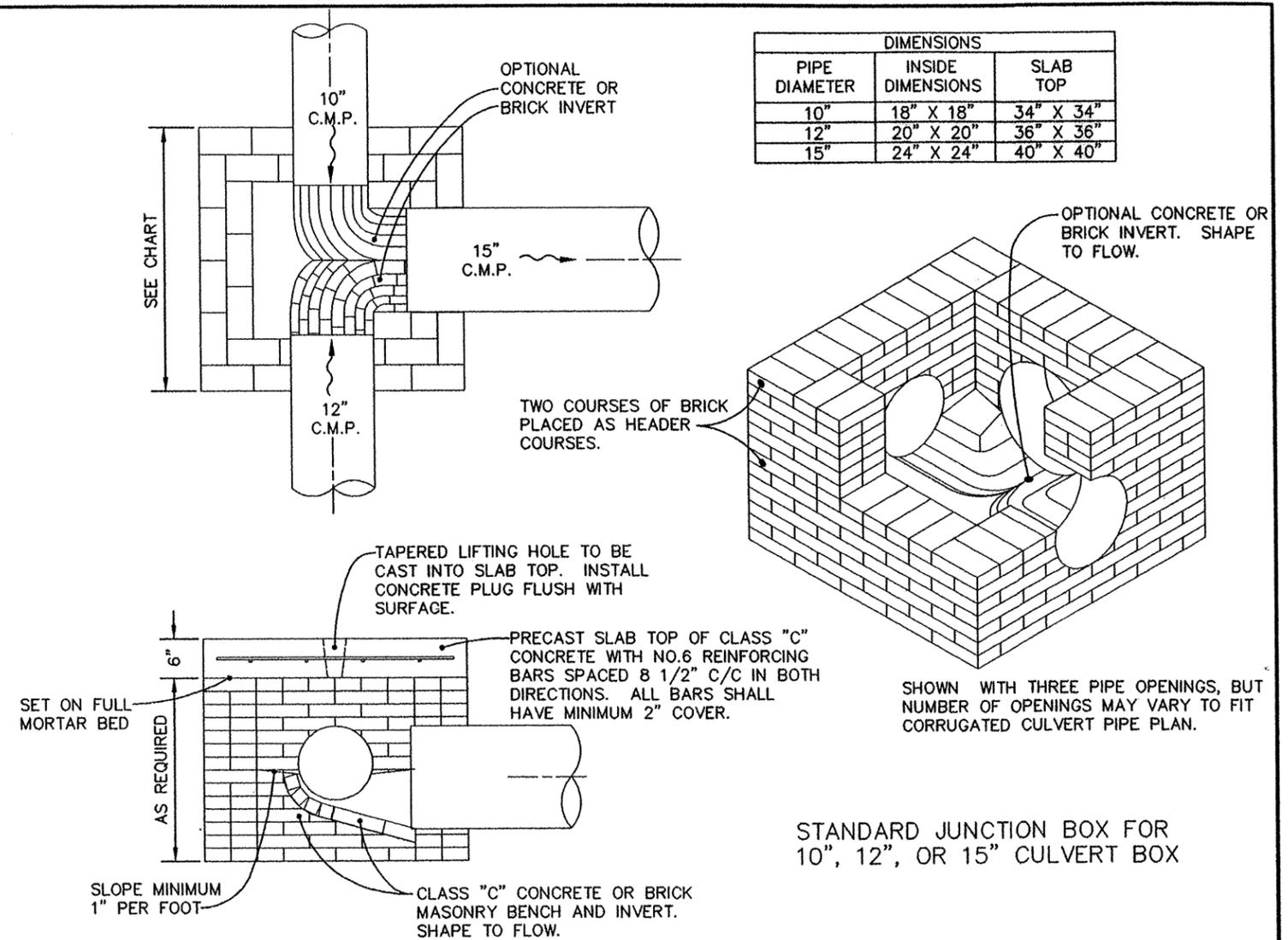
STANDARD METHOD
OF
SETTING HORIZONTAL
CONTROL MONUMENT
BOXES IN PAVEMENT

REVISIONS:
APRIL 4, 2008



INLET SHALL BE CONSTRUCTED OF 8" BRICK WALLS LAID UP IN PORTLAND CEMENT MORTAR, WITH EVERY SEVENTH COURSE BEING A HEADER COURSE. AT THE OPTION OF THE CONTRACTOR, INLET MAY BE CONSTRUCTED OF CLASS "C" CONCRETE WITH 8" WALLS. INLET MAY BE CONSTRUCTED TO FIT ANY SIZE PIPE BY VARYING THE LENGTH AND WIDTH.

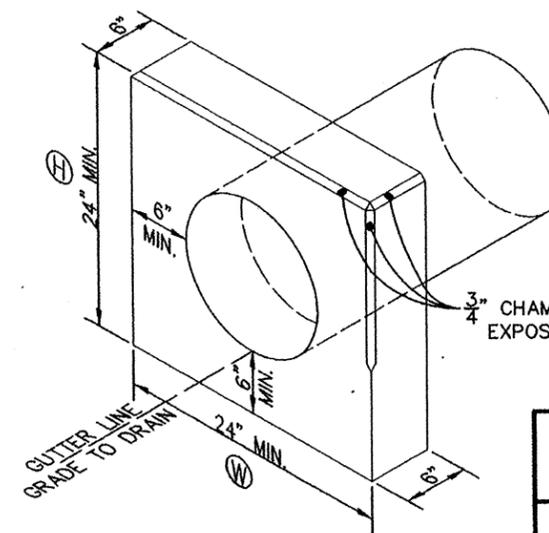
- (A) No.57 SLAG OR LIMESTONE, MINIMUM 3" THICK ON UNDISTURBED GROUND.
- (B) CLASS "C" CONCRETE.
- (C) CLASS "C" CONCRETE OR BRICK MASONRY.
- (D) PRECAST SLAB TOP OF CLASS "C" CONCRETE, W/36" LONG No.3 REINFORCING BARS SPACED 6" C/C BOTH DIRECTIONS. ALL BARS SHALL HAVE MINIMUM 1 1/2" COVER.
- (E) INLET IS SHOWN OPEN ON FOUR SIDES, ANY OF WHICH MAY BE CLOSED AS REQUIRED.



DIMENSIONS		
PIPE DIAMETER	INSIDE DIMENSIONS	SLAB TOP
10"	18" X 18"	34" X 34"
12"	20" X 20"	36" X 36"
15"	24" X 24"	40" X 40"

SHOWN WITH THREE PIPE OPENINGS, BUT NUMBER OF OPENINGS MAY VARY TO FIT CORRUGATED CULVERT PIPE PLAN.

STANDARD JUNCTION BOX FOR 10", 12", OR 15" CULVERT BOX



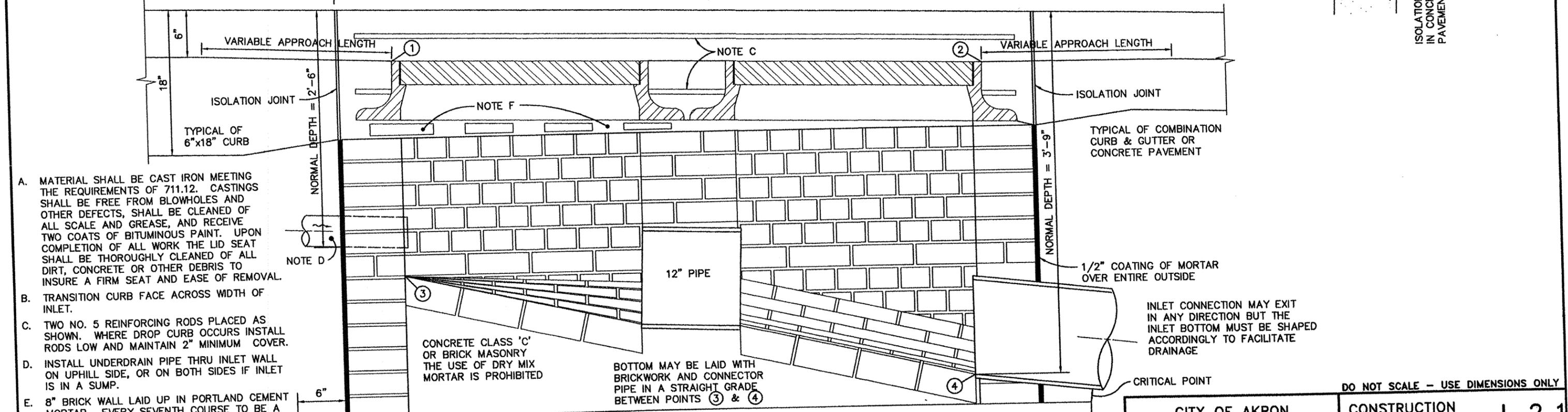
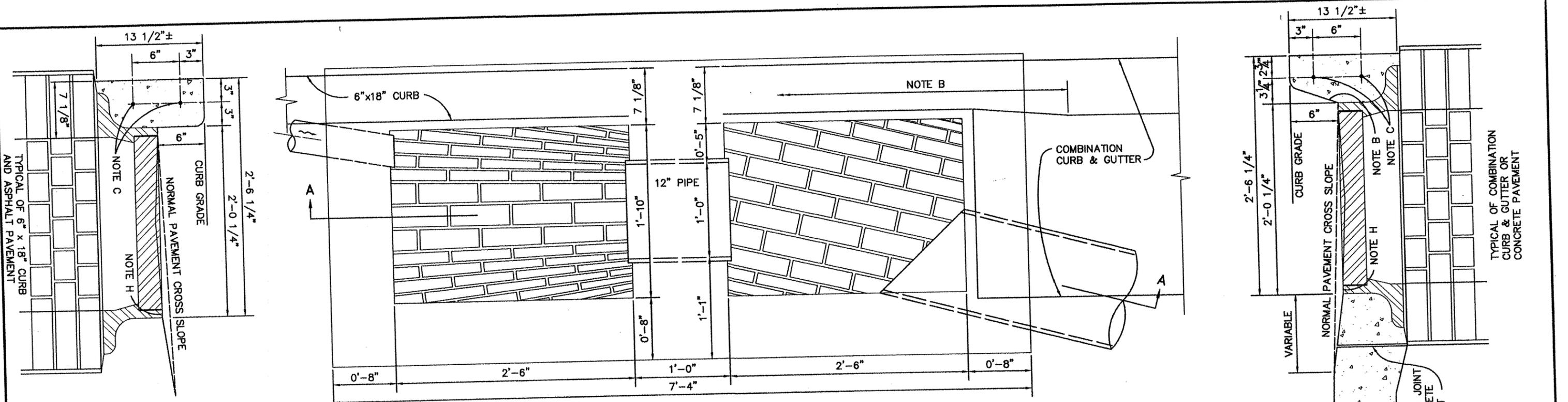
UNLESS OTHERWISE NOTED, THIS TYPE OF HEADWALL SHALL BE USED WHENEVER HEADWALLS ARE REQUIRED FOR ROADWAY DRAINAGE, AS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER. HEADWALL SHALL BE CONSTRUCTED OF CLASS "C" CONCRETE IN ACCORDANCE WITH ITEM 602.

QUANTITY OF CONCRETE REQUIRED		(H)	(W)
10" PIPE = .064 C.Y., 1.72 C.F.		24"	24"
12" PIPE = .060 C.Y., 1.61 C.F.		24"	24"
15" PIPE = .071 C.Y., 1.91 C.F.		27"	27"

STANDARD HEADWALL FOR 10", 12" OR 15" CULVERT PIPE

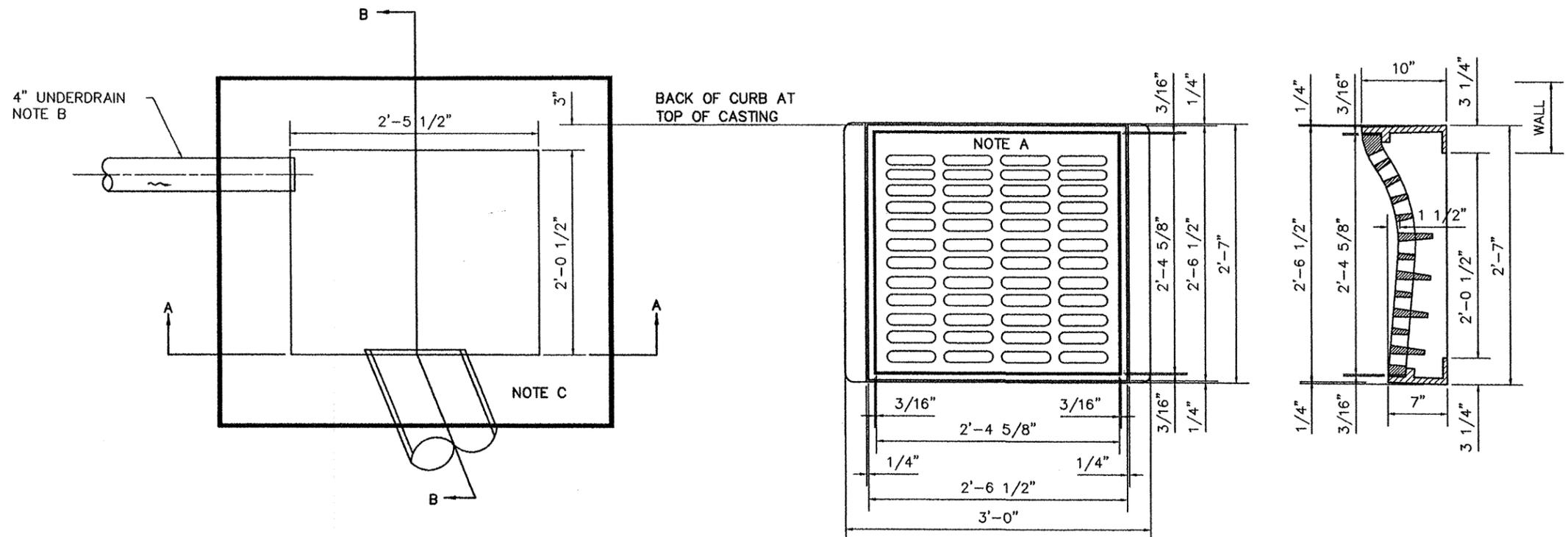
DO NOT SCALE - USE DIMENSIONS ONLY

CITY OF AKRON BUREAU OF ENGINEERING <i>Michael L. Madonia</i> 3/14/02 MANAGER, DESIGN DIVISION <i>James P. Miller</i> 3-15-02 MANAGER, CONSTRUCTION DIVISION <i>David J. Jelic</i> 3-15-02 CITY ENGINEER	CONSTRUCTION STANDARD DWG. No. 1-1
	TYPE "D" INLET JUNCTION BOX HEADWALL <small>AUTOCAD DRAWING - STD_1-3.DWG February 28, 2002</small> <small>REVISIONS:</small>

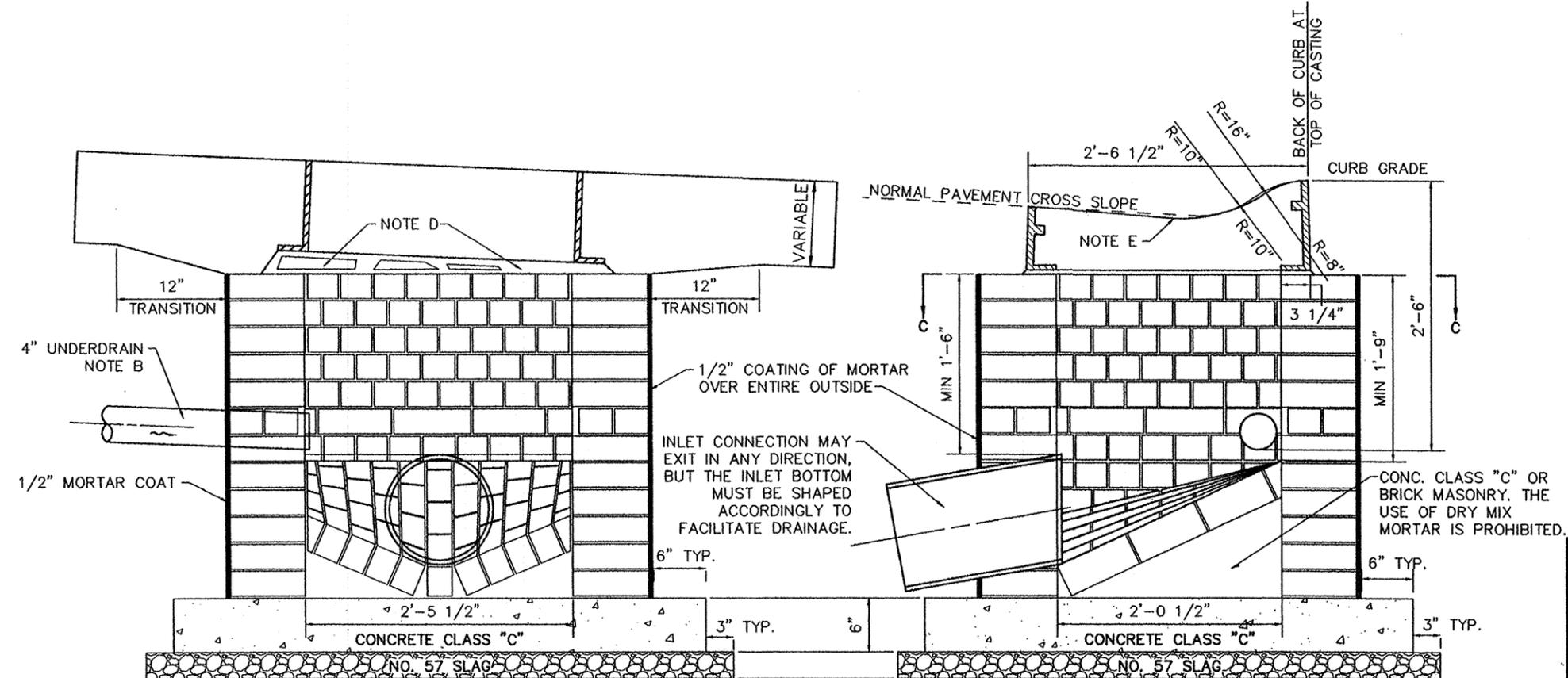


- A. MATERIAL SHALL BE CAST IRON MEETING THE REQUIREMENTS OF 711.12. CASTINGS SHALL BE FREE FROM BLOWHOLES AND OTHER DEFECTS, SHALL BE CLEANED OF ALL SCALE AND GREASE, AND RECEIVE TWO COATS OF BITUMINOUS PAINT. UPON COMPLETION OF ALL WORK THE LID SEAT SHALL BE THOROUGHLY CLEANED OF ALL DIRT, CONCRETE OR OTHER DEBRIS TO INSURE A FIRM SEAT AND EASE OF REMOVAL.
- B. TRANSITION CURB FACE ACROSS WIDTH OF INLET.
- C. TWO NO. 5 REINFORCING RODS PLACED AS SHOWN. WHERE DROP CURB OCCURS INSTALL RODS LOW AND MAINTAIN 2" MINIMUM COVER.
- D. INSTALL UNDERDRAIN PIPE THRU INLET WALL ON UPHILL SIDE, OR ON BOTH SIDES IF INLET IS IN A SUMP.
- E. 8" BRICK WALL LAID UP IN PORTLAND CEMENT MORTAR. EVERY SEVENTH COURSE TO BE A STRETCHER COURSE.
- F. USE BRICK PIECES FOR FILLER WHEN CASTING IS MORE THAN 1" OFF BRICK. SET CASTING ON FULL MORTAR BED.
- G. IN CASE OF CONFLICT WITH EXISTING UTILITIES, NOTIFY THE RESPECTIVE OWNERS FOR RELOCATION OF LINES. DO NOT INCORPORATE UTILITY LINE INTO ANY PART OF THE INLET.
- H. DEPRESS CASTING SLIGHTLY LOWER THAN PAVEMENT SURFACE.
- I. SEE STD. DWG. NO. I-1 FOR CASTING DETAILS
- J. CASTINGS MUST BE INSTALLED ON A STRAIGHT GRADE BETWEEN POINTS ① & ②.

CITY OF AKRON BUREAU OF ENGINEERING		CONSTRUCTION STANDARD DWG. No. 1-2.1	
<i>Michael Madonis</i> 3/14/02 MANAGER, DESIGN DIVISION		DOUBLE NO. 2 INLET	
<i>Damon P. Weber</i> 3/15/02 MANAGER, CONSTRUCTION DIVISION			
<i>David J. Hill</i> CITY ENGINEER		REVISIONS:	



TOP VIEW C-C



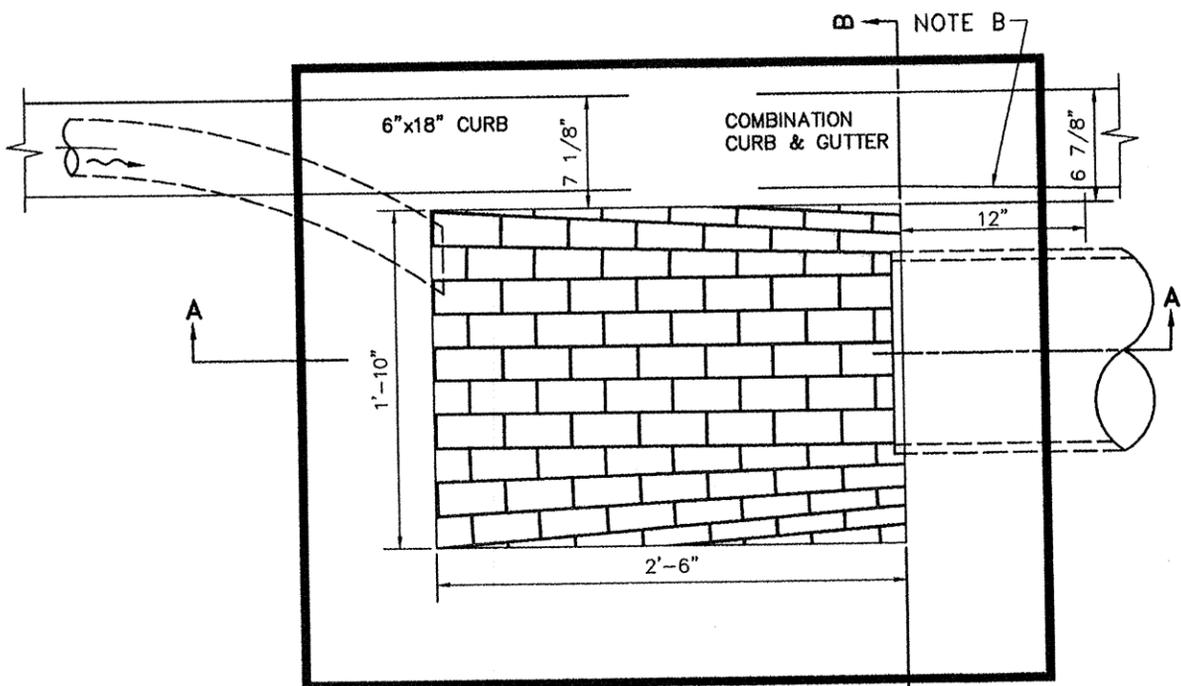
FRONT VIEW SECTION A-A

SIDE VIEW SECTION B-B

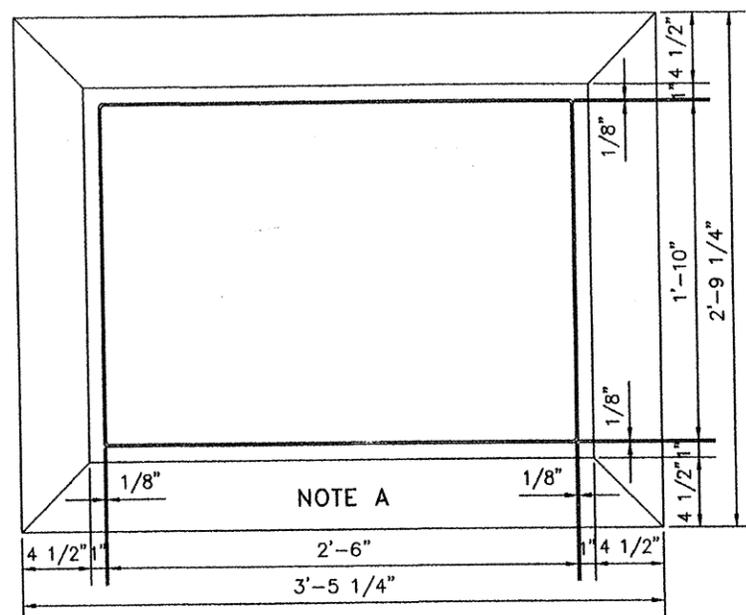
TYPICAL OF 4" ROLLED COMBINATION CURB AND GUTTER OR CONCRETE PAVEMENT WITH 4" ROLLED CURB.

- A. MATERIAL SHALL BE CAST IRON MEETING THE REQUIREMENTS OF 711.12. UPON COMPLETION OF ALL WORK, THE LID SEAT SHALL BE THOROUGHLY CLEANED OF ALL DIRT, CONCRETE OR OTHER DEBRIS TO INSURE A FIRM SEAT AND EASE OF REMOVAL.
- B. INSTALL UNDERDRAIN PIPE THROUGH INLET WALL ON UPHILL SIDE, OR ON BOTH SIDES IF INLET IS IN A SUMP.
- C. 8" BRICK WALL LAID UP IN PORTLAND CEMENT MORTAR, EVERY SEVENTH COURSE TO BE A STRETCHER COURSE.
- D. USE BRICK PIECES FOR FILLER WHEN CASTING IS MORE THAN 1" OFF BRICK. SET CASTING ON FULL MORTAR BED.
- E. DEPRESS CASTING SLIGHTLY BELOW PAVEMENT SURFACE.

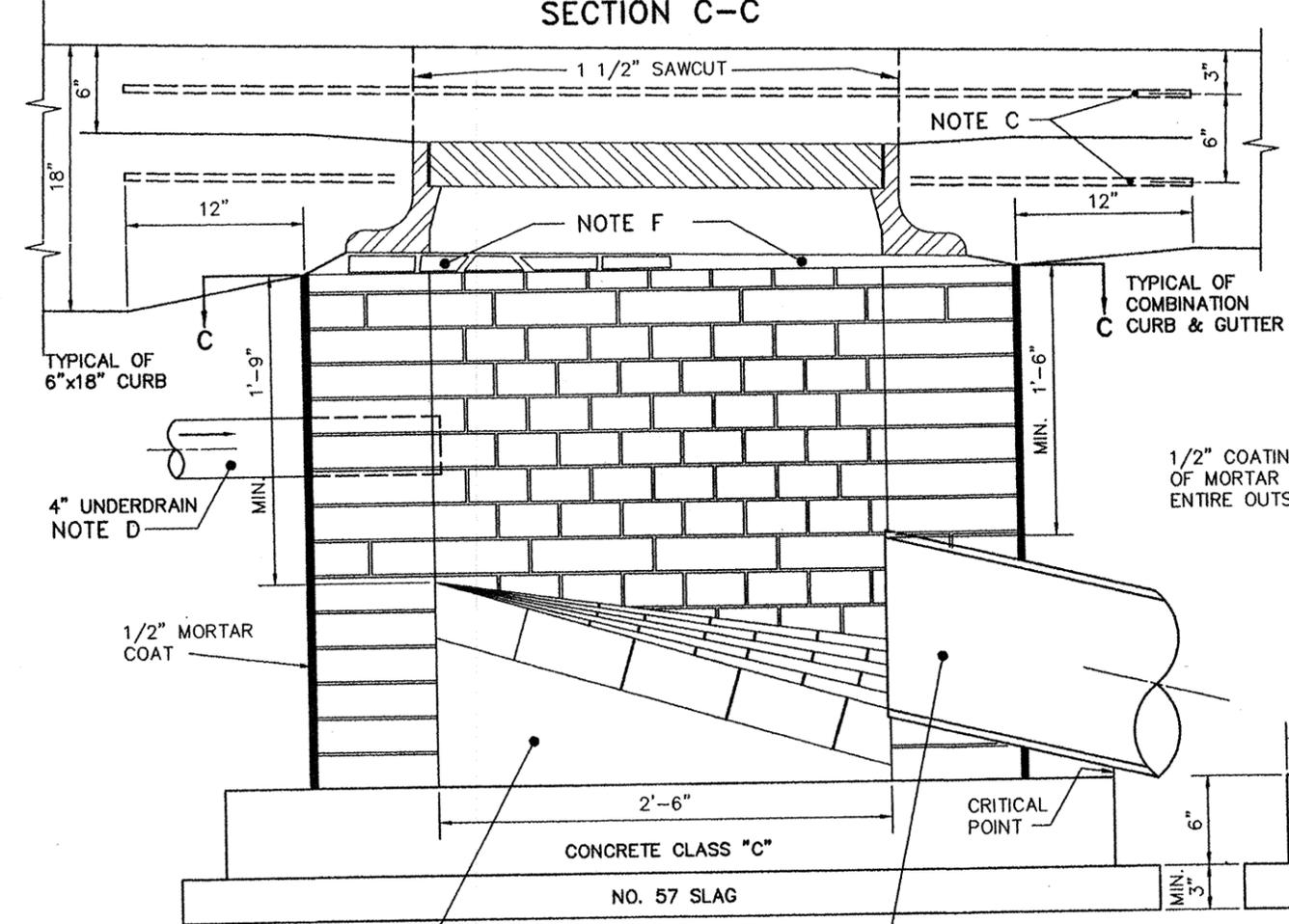
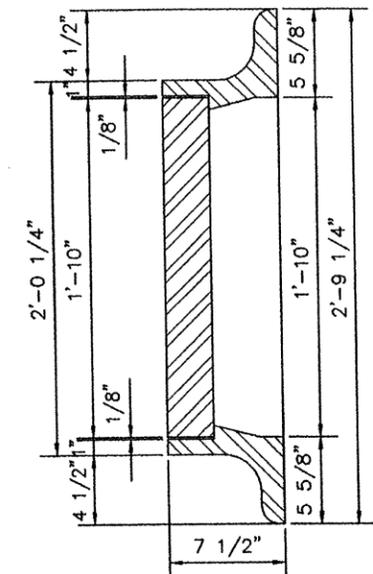
DO NOT SCALE - USE DIMENSIONS ONLY	
CITY OF AKRON BUREAU OF ENGINEERING	CONSTRUCTION STANDARD DWG. No. 1-2.2
<i>Michael J. Madonia</i> 3/14/02 MANAGER, DESIGN DIVISION	NO. 2R INLET
<i>James P. Phelan</i> 3/15/02 MANAGER, CONSTRUCTION DIVISION	
<i>David J. Jelic</i> 3-15-02 CITY ENGINEER	
AUTOCAD DRAWING -- STD_J-5.DWG February 28, 2002	
REVISIONS:	



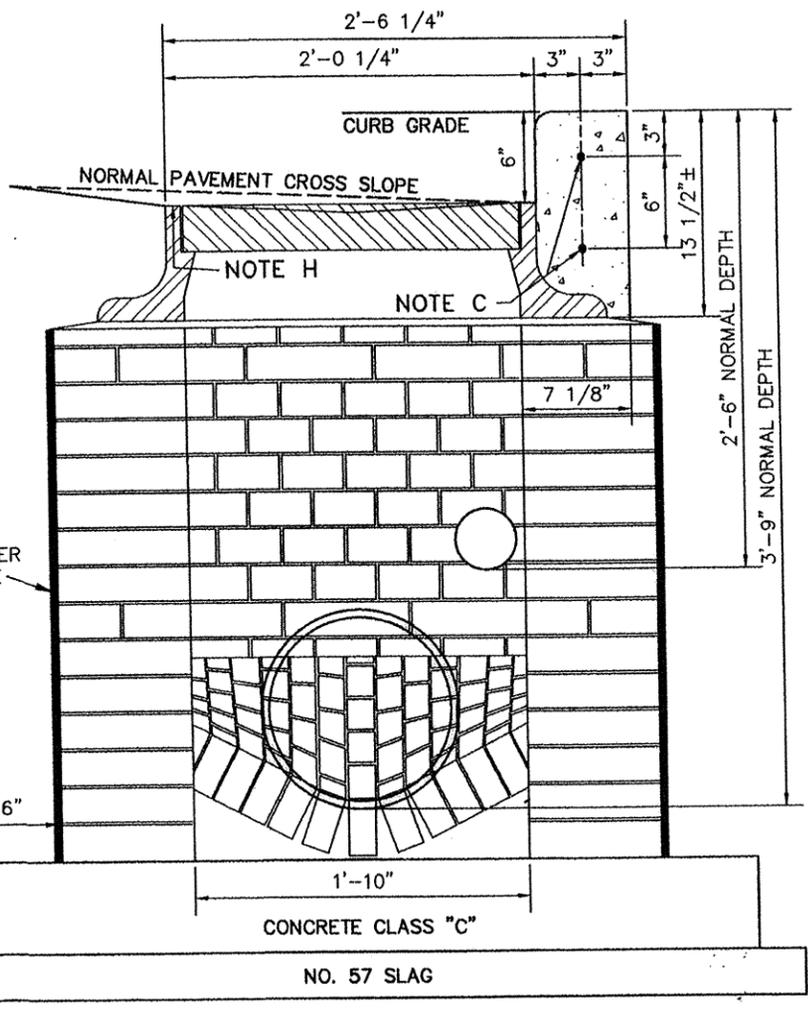
TOP VIEW SECTION C-C



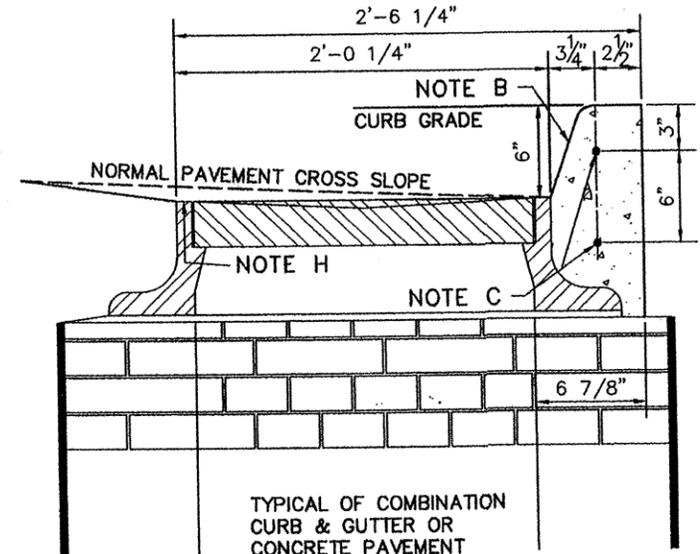
NOTE A



FRONT VIEW SECTION A-A



SIDE VIEW SECTION B-B



SIDE VIEW SECTION B-B

- A. MATERIAL SHALL BE CAST IRON MEETING THE REQUIREMENTS OF 711.12. CASTINGS SHALL BE FREE FROM BLOWHOLES AND OTHER DEFECTS, SHALL BE CLEANED OF ALL SCALE AND GREASE, AND SHALL RECEIVE TWO COATS OF BITUMINOUS PAINT. UPON COMPLETION OF ALL WORK, THE LID SEAT SHALL BE THOROUGHLY CLEANED OF ALL DIRT, CONCRETE OR OTHER DEBRIS TO INSURE A FIRM SEAT AND EASE OF REMOVAL.
- B. TRANSITION CURB FACE ACROSS WIDTH OF CASTING.
- C. TWO No.5 REINFORCING RODS PLACED AS SHOWN, WHERE DROP CURB OCCURS INSTALL RODS LOWER AND MAINTAIN 2" MINIMUM COVER.
- D. INSTALL UNDERDRAIN PIPE THROUGH INLET WALL ON UPHILL SIDE, OR ON BOTH SIDES IF INLET IS IN A SUMP.
- E. 8" BRICK WALL LAID UP IN PORTLAND CEMENT MORTAR, EVERY SEVENTH COURSE TO BE A STRETCHER COURSE.
- F. USE BRICK PIECES FOR FILLER WHEN CASTING IS MORE THAN 1" OFF BRICK. SET CASTING ON FULL MORTAR BED.
- G. IN CASE OF CONFLICT WITH EXISTING UTILITIES, NOTIFY THE RESPECTIVE OWNERS FOR POSSIBLE RELOCATION OF LINES. DO NOT INCORPORATE UTILITY LINES INTO ANY PART OF THE INLET.
- H. DEPRESS CASTING SLIGHTLY LOWER THAN PAVEMENT SURFACE.

DO NOT SCALE - USE DIMENSIONS ONLY

CITY OF AKRON BUREAU OF ENGINEERING	CONSTRUCTION STANDARD DWG. No. 1-2
<i>Michael Madoni</i> 3/10/02 MANAGER, DESIGN DIVISION <i>James P. Weber</i> 3/15/02 MANAGER, CONSTRUCTION DIVISION <i>David Yelich</i> 3/15/02 CITY ENGINEER	No. 2 INLET AUTOCAD DRAWING - STD_I-2.DWG February 28, 2002 REVISIONS:

CONCRETE CLASS "C" OR BRICK MASONRY. THE USE OF DRY MIX MORTAR IS PROHIBITED.

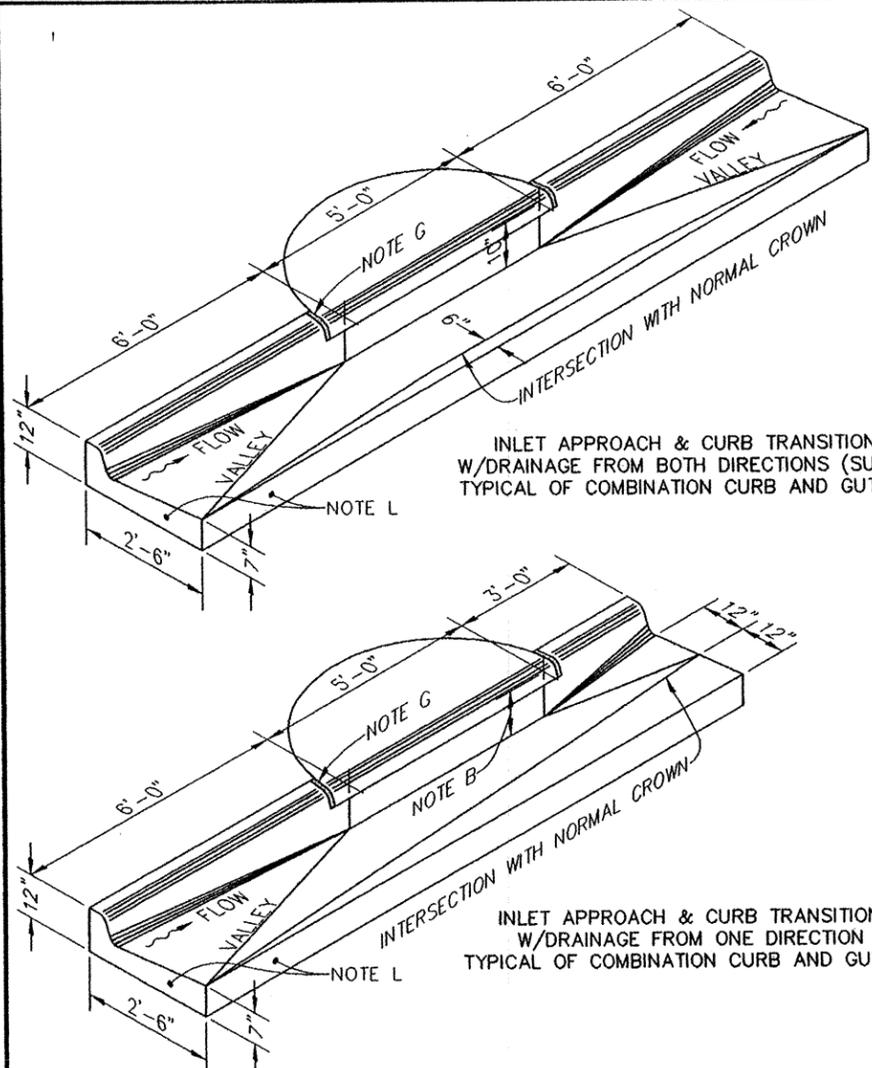
INLET CONNECTION MAY EXIT IN ANY DIRECTION, BUT THE INLET BOTTOM MUST BE SHAPED ACCORDINGLY TO FACILITATE DRAINAGE.

TYPICAL OF COMBINATION CURB & GUTTER

TYPICAL OF COMBINATION CURB & GUTTER OR CONCRETE PAVEMENT

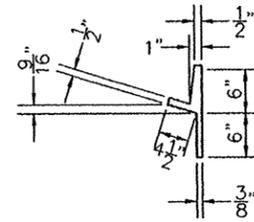
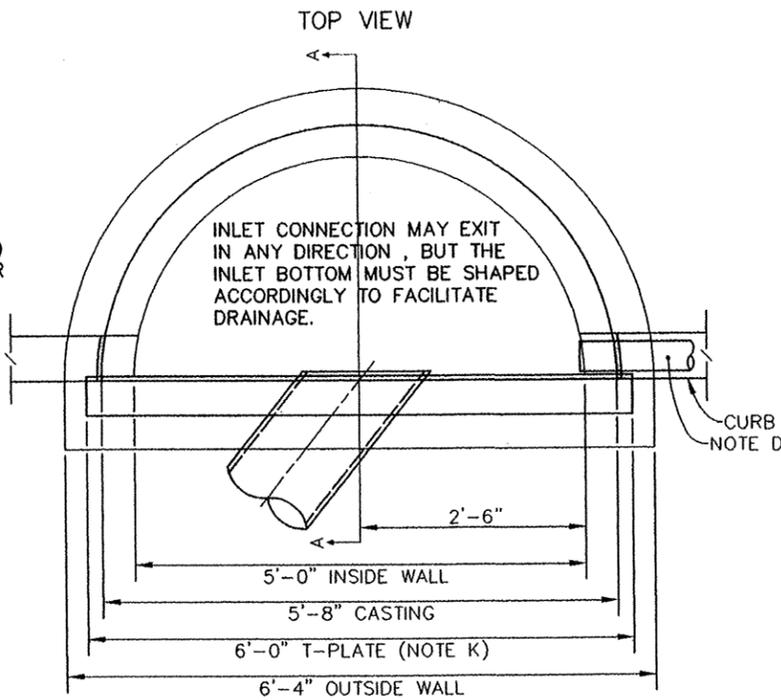
TYPICAL OF 6"x18" CURB AND ASPHALT PAVEMENT

NO. 3 INLET CASTINGS	WITH 6"x18" CURB			W/COMB. CURB & GUTTER			T-PLATE	
	CATALOG NUMBER		WT./LBS	CATALOG NUMBER		WT./LBS	CATALOG NUMBER	WT./LBS
	FRAME	COVER		FRAME	COVER			
EAST AKRON CASTING CO.	122	116-A	515	125	116-A	515	123	160
NEENAH FOUNDRY CO.	R-3326		525	R-3326-A		525	R-3326-007	
EAST JORDAN IRON WORKS, INC.			7265	7266		515		160

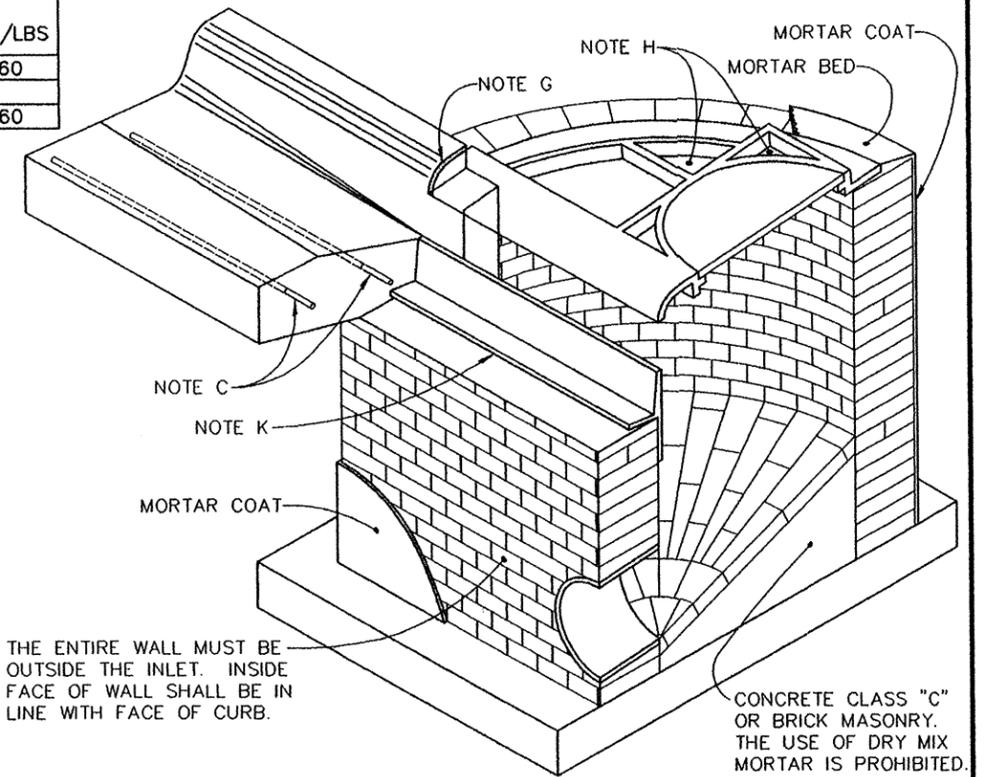


INLET APPROACH & CURB TRANSITION W/DRAINAGE FROM BOTH DIRECTIONS (SUMP) TYPICAL OF COMBINATION CURB AND GUTTER

INLET APPROACH & CURB TRANSITION W/DRAINAGE FROM ONE DIRECTION TYPICAL OF COMBINATION CURB AND GUTTER



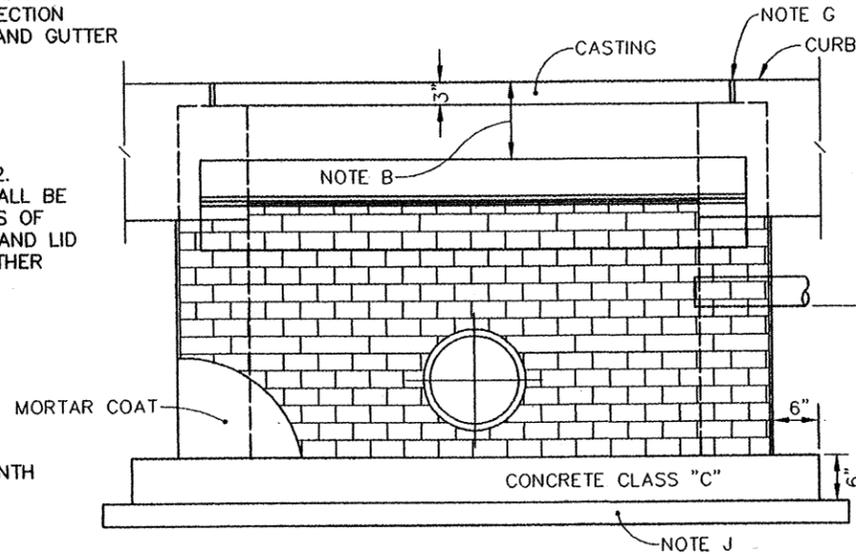
T-PLATE SECTION



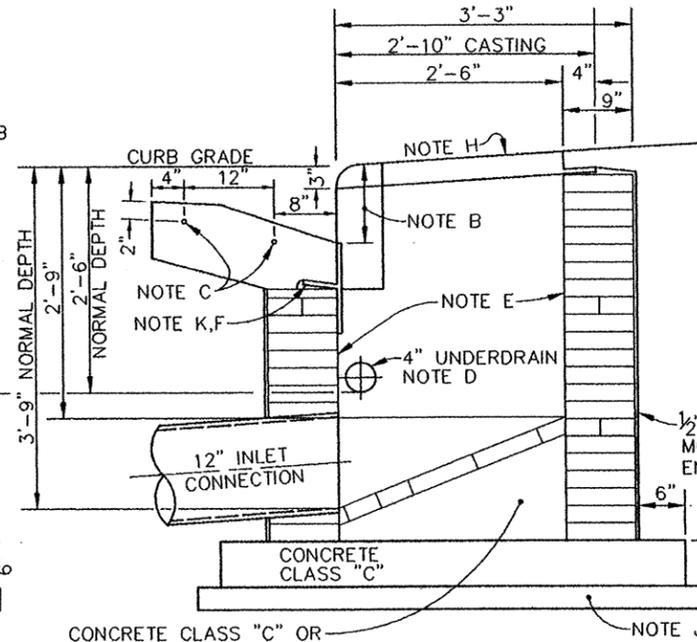
THE ENTIRE WALL MUST BE OUTSIDE THE INLET. INSIDE FACE OF WALL SHALL BE IN LINE WITH FACE OF CURB.

CONCRETE CLASS "C" OR BRICK MASONRY. THE USE OF DRY MIX MORTAR IS PROHIBITED.

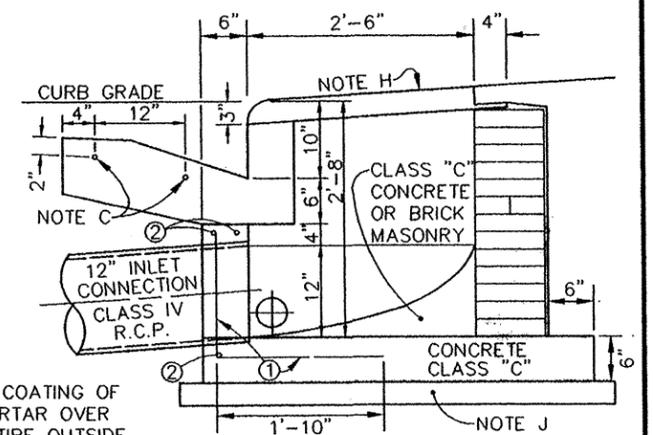
- A. MATERIAL SHALL BE CAST IRON MEETING THE REQUIREMENTS OF 711.12. CASTINGS SHALL BE FREE FROM BLOWHOLES AND OTHER DEFECTS, SHALL BE CLEANED OF ALL SCALE AND GREASE, AND SHALL RECEIVE TWO COATS OF BITUMINOUS PAINT. UPON COMPLETION OF ALL WORK, THE PICKHOLE AND LID SEAT SHALL BE THOROUGHLY CLEANED OF ALL DIRT, CONCRETE OR OTHER DEBRIS TO INSURE A FIRM SEAT AND EASE OF REMOVAL.
- B. 10" FOR GRADES OF 5% AND UNDER, 11" FOR GRADES OVER 5%.
- C. 2 NO.5 REINFORCING RODS PLACED THE FULL LENGTH OF THE INLET APPROACH SLAB. MAINTAIN 2" MINIMUM COVER ON ALL REINFORCING STEEL.
- D. INSTALL UNDERDRAIN PIPE THROUGH INLET WALL ON UPHILL SIDE, OR ON BOTH SIDES IF INLET IS IN A SUMP.
- E. 8" BRICK WALL LAID UP IN PORTLAND CEMENT MORTAR. EVERY SEVENTH COURSE TO BE A STRETCHER COURSE.
- F. THE T-PLATE MUST BE MORTARED INTO THE BRICKWORK SO AS TO BECOME PART OF THE INLET WALL, PRIOR TO PLACING THE CONCRETE GUTTER. IN NO CASE SHALL THE T-PLATE BE INSTALLED IN CONJUNCTION WITH THE PLACEMENT OF THE GUTTER.
- G. DO NOT FILL WITH MORTAR. PROVIDE PREMOLDED EXPANSION MATERIAL, MINIMUM 1/2" THICK, AT EACH END OF THE CASTING, TO BE INCLUDED IN THE COST OF THE INLET. NOTCH IN CURB SHALL BE SAWCUT.
- H. THE CASTING SHALL BE SET TO THE SIDEWALK SLOPE ON A FULL BED OF MORTAR. THE SPACE BETWEEN THE WEBS IS TO BE FILLED WITH CLASS "C" CONCRETE AND FINISHED IN LIKE MANNER AS THE SIDEWALK.
- I. IN CASE OF CONFLICT WITH EXISTING UTILITIES, NOTIFY THE RESPECTIVE OWNERS FOR POSSIBLE RELOCATION OF LINES. DO NOT INCORPORATE UTILITY LINES INTO ANY PART OF THE INLET.
- J. No. 57 SLAG OR LIMESTONE, MINIMUM 3" THICK.
- K. WHERE A CONCRETE GUTTER IS TO BE CONSTRUCTED IN CONJUNCTION WITH THE INLET THE T-PLATE MAY BE ELIMINATED, BUT A TEMPORARY FORM MUST BE CORRECTLY UTILIZED TO PLACE AND FINISH THE CONCRETE.
- L. IN CONCRETE PAVEMENTS, PLACE TYPE I JOINT WITH 1" PREMOLDED EXPANSION MATERIAL.



NO. 3 INLET FRONT VIEW



SECTION A-A



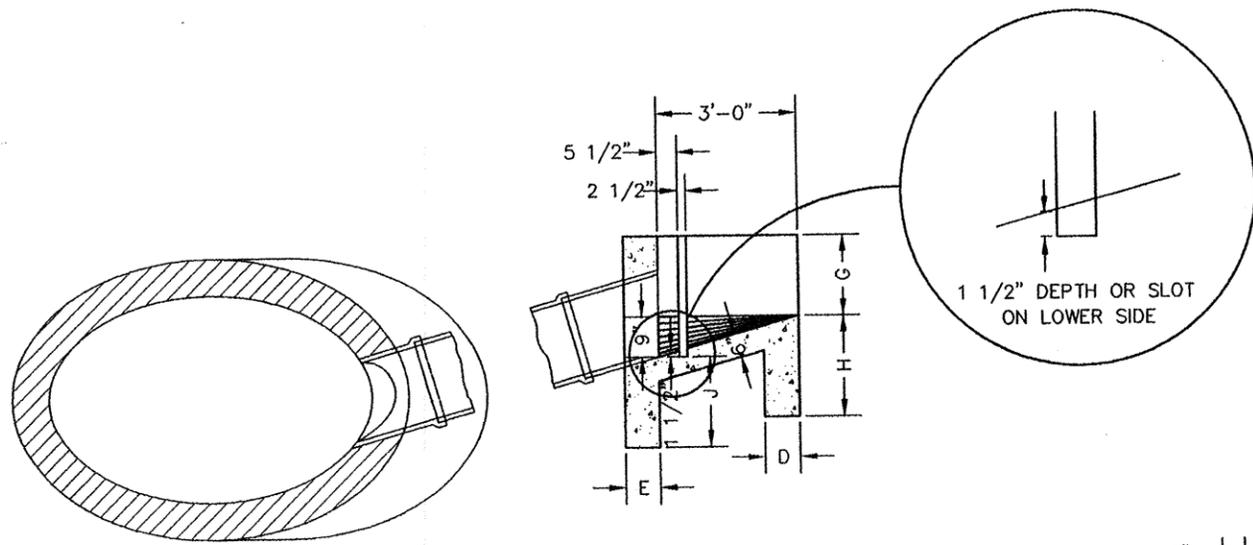
MODIFIED NO.3 INLET
TO BE USED ONLY WHEN SHOWN ON PLANS, OR WHEN DIRECTED BY THE ENGINEER.

*

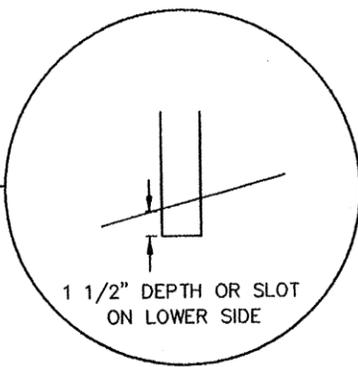
MODIFIED NO. 3 INLET REINFORCING ROD SCHEDULE				
LOCATION	QUANTITY	SIZE	LENGTH	
①	6	NO.5	3'-2"	12" ON CENTER-PERPENDICULAR TO CURB.
②	3	NO.5	5'-11"	STRAIGHT IN FRONT WALL.

DO NOT SCALE - USE DIMENSIONS ONLY

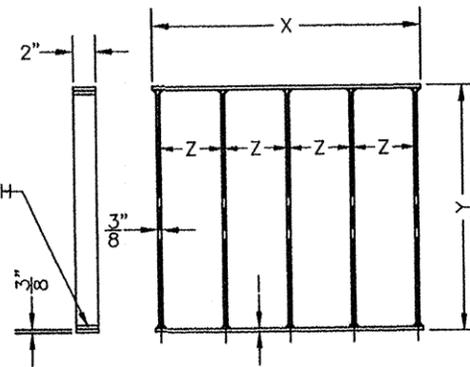
CITY OF AKRON BUREAU OF ENGINEERING	CONSTRUCTION STANDARD DWG. No. 1-3
<i>Michael Madonis</i> 3/15/02 MANAGER, DESIGN DIVISION	NO. 3 INLET
<i>James P. Weber</i> 3-15-02 MANAGER, CONSTRUCTION DIVISION	
<i>David J. Leitch</i> 3-15-02 CITY ENGINEER	
AUTOCAD DRAWING - STD_I-2.DWG February 28, 2002	



SECTION A-A



1 1/2" DEPTH OR SLOT ON LOWER SIDE



DETAIL OF GRATING

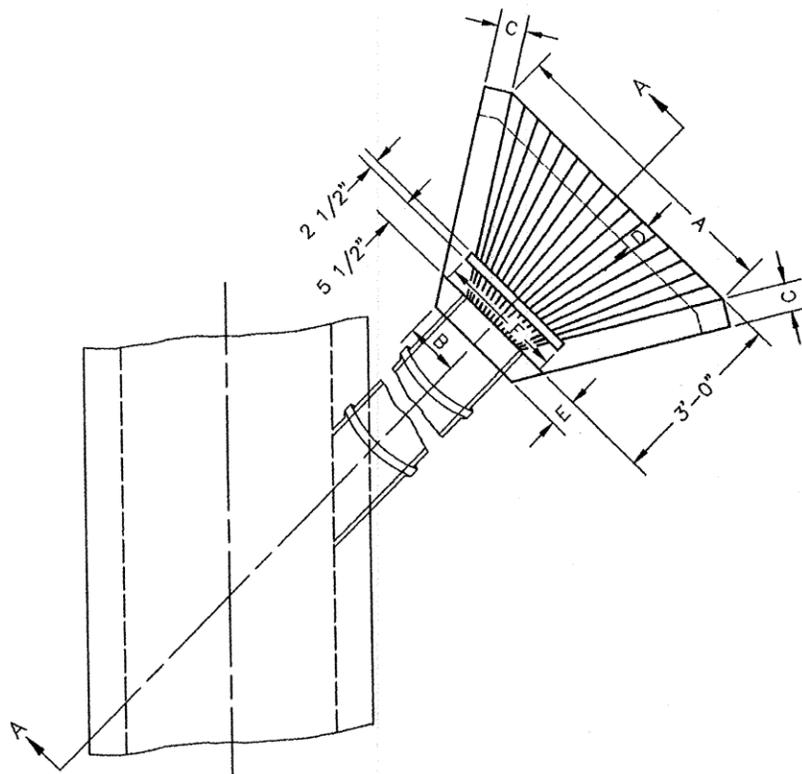
3/16" FILLET WELD EACH SIDE OF BAR AT EACH JOINT TOP AND BOTTOM

DIMENSIONS OF INLETS									
PIPE SIZE	A	B	C	D	E	F	G	H	J
12"	4'-0"	0'-11"	0'-9"	0'-9"	0'-9"	1'-11"	1'-3"	1'-6"	1'-6"
15"	4'-6"	1'-0 1/2"	0'-9"	0'-9"	0'-9"	2'-2 1/2"	1'-6"	1'-9"	1'-9"
18"	5'-0"	1'-2"	0'-9"	0'-9"	0'-9"	2'-6"	1'-9"	2'-0"	2'-0"
21"	5'-6"	1'-5"	0'-9"	0'-9"	0'-9"	2'-10 1/2"	2'-0"	2'-3"	2'-0"
24"	6'-0"	1'-6 1/2"	1'-1"	1'-1"	1'-1"	3'-1 1/2"	2'-3"	2'-3"	2'-0"
27"	6'-6"	1'-7 1/2"	1'-1"	1'-1"	1'-1"	3'-5 1/2"	2'-6"	2'-6"	2'-3"
30"	7'-0"	1'-9"	1'-1"	1'-1"	1'-1"	3'-9 1/2"	2'-9"	2'-6"	2'-3"
33"	7'-6"	1'-10 1/2"	1'-1"	1'-1"	1'-1"	4'-0 1/2"	3'-0"	2'-9"	2'-3"
36"	8'-0"	1'-11 1/2"	1'-1"	1'-1"	1'-1"	4'-4"	3'-3"	2'-9"	2'-3"

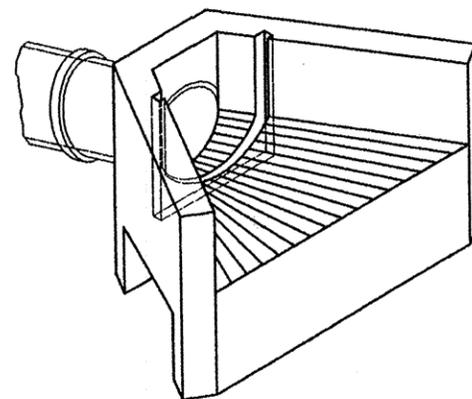
DIMENSIONS OF GRATINGS					
PIPE SIZE	X	Y	Z	# BARS	WEIGHT
12"	1'-10 1/4"	1'-9"	5 3/8"	5	35#
15"	2'-1 3/4"	2'-0"	5"	6	35#
18"	2'-5 1/2"	2'-3"	5 3/4"	6	40#
21"	2'-9 3/8"	2'-6"	5 1/2"	7	50#
24"	3'-0 5/8"	2'-9"	5 1/8"	8	65#
27"	3'-5"	3'-0"	5 3/4"	8	80#
30"	3'-8 3/4"	3'-3"	5 1/2"	9	85#
33"	4'-0"	3'-6"	5 1/4"	10	100#
36"	4'-3 3/8"	3'-9"	5 5/8"	10	120#

NOTES:

- INLET MAY BE BUILT OF BRICK MASONRY AT OPTION OF CONTRACTOR. EXPOSED JOINTS TO BE STRUCK AND BRICK TO MEET REQUIREMENTS OF GENERAL CONSTRUCTION AND MATERIAL SPECIFICATIONS, AS SET FORTH UNDER ITEM OF BRICK MASONRY.
- WHEN INLET IS CONSTRUCTED OF BRICK MASONRY, A CLASS "F" CONCRETE PAD SHALL BE PROVIDED 6" THICK AND EXTENDING 6" BEYOND OUTSIDE EDGES OF INLET AS A FOUNDATION FOR THE MASONRY. EXCAVATION FOR THE CONCRETE PAD SHALL BE TO UNDISTURBED EARTH.
- CONNECTION OF INLET TO SEWER TO BE MADE AT AN ANGLE OF 45° IF POSSIBLE.
- ALL SLOTS FOR GRATINGS TO BE 2 1/2" WIDE AND 1 1/2" DEEP IN CENTER OF INVERT.
- GRATING TO BE MADE OF 3/8"x2" WELDABLE MILD CARBON STEEL.
- IRON GRATING TO BE HOT DIPPED GALVANIZED, AFTER FABRICATION.
- UNLESS THE PROPOSALS PROVIDE A SEPARATE ITEM FOR THE PAYMENT OF THE GRATING CALLED FOR BY THIS DRAWING, PAYMENT SHALL BE INCLUDED IN THE COST OF THE CONCRETE USED IN THE WINGS.

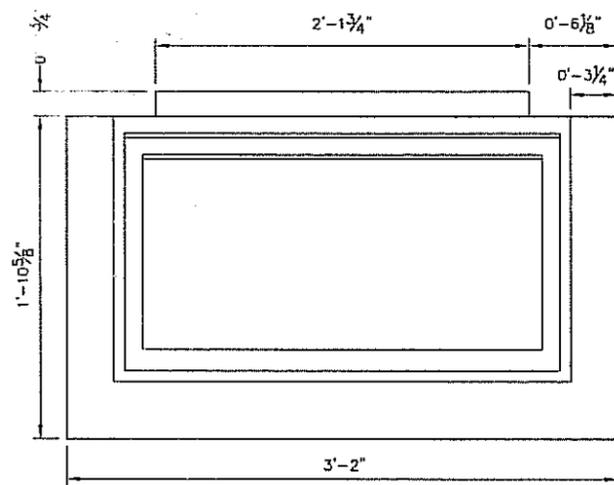


PLAN SECTION

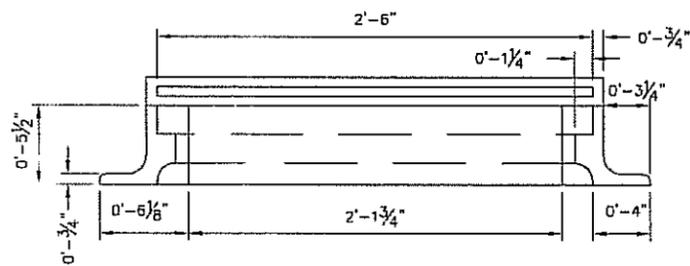


DO NOT SCALE - USE DIMENSIONS ONLY

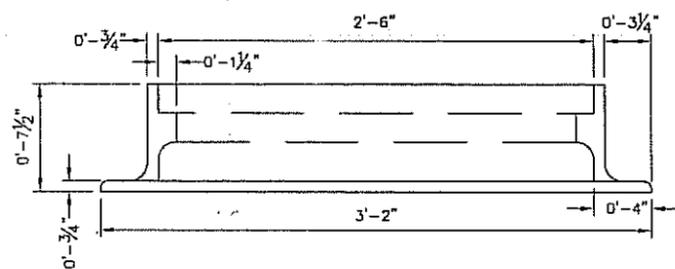
CITY OF AKRON BUREAU OF ENGINEERING	CONSTRUCTION STANDARD DWG. No. 1-4
<i>Michael L. Madonia</i> 3/14/02 MANAGER, DESIGN DIVISION	WING WALL INLETS
<i>Dana P. Weber</i> 3-15-02 MANAGER, CONSTRUCTION DIVISION	
<i>Daniel J. Felik</i> 3-15-02 CITY ENGINEER	
AUTOCAD DRAWING - STD_I-4.DWG February 28, 2002	
REVISIONS:	



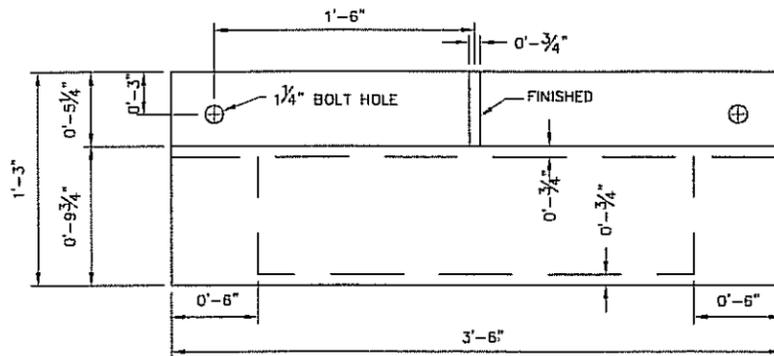
PLAN FRAME



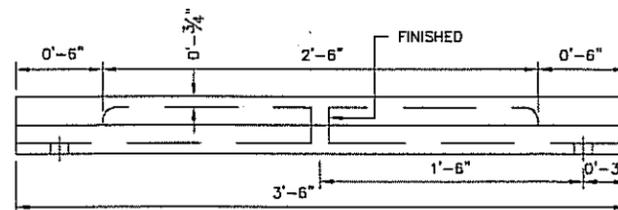
BACK VIEW FRAME



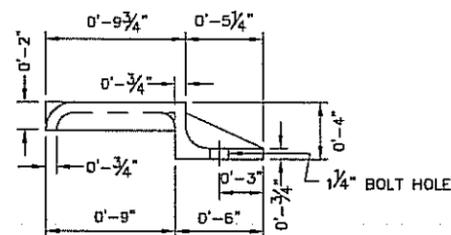
FRONT VIEW FRAME



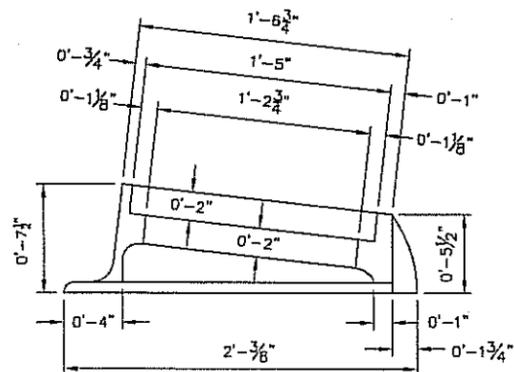
PLAN CURB CASTING



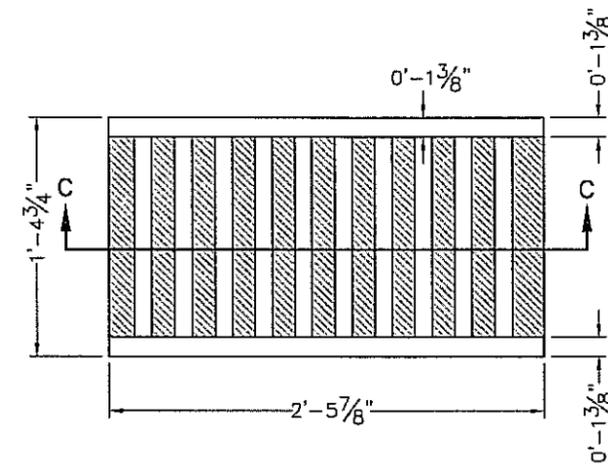
FRONT VIEW CURB CASTING



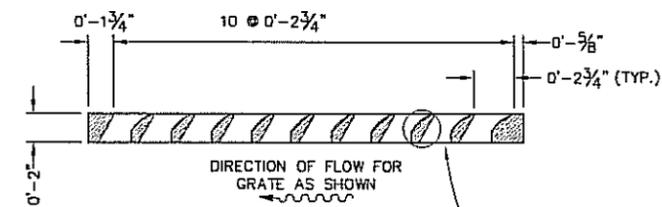
END VIEW CURB CASTING



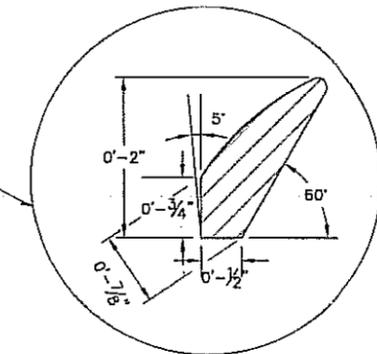
END VIEW FRAME



PLAN GRATE "V"



SECTION C-C



DO NOT SCALE - USE DIMENSIONS ONLY

CITY OF AKRON
BUREAU OF ENGINEERING

CONSTRUCTION
STANDARD DWG. No. 1-5.1

Michael Madonia 2/15/07
MANAGER, DESIGN DIVISION

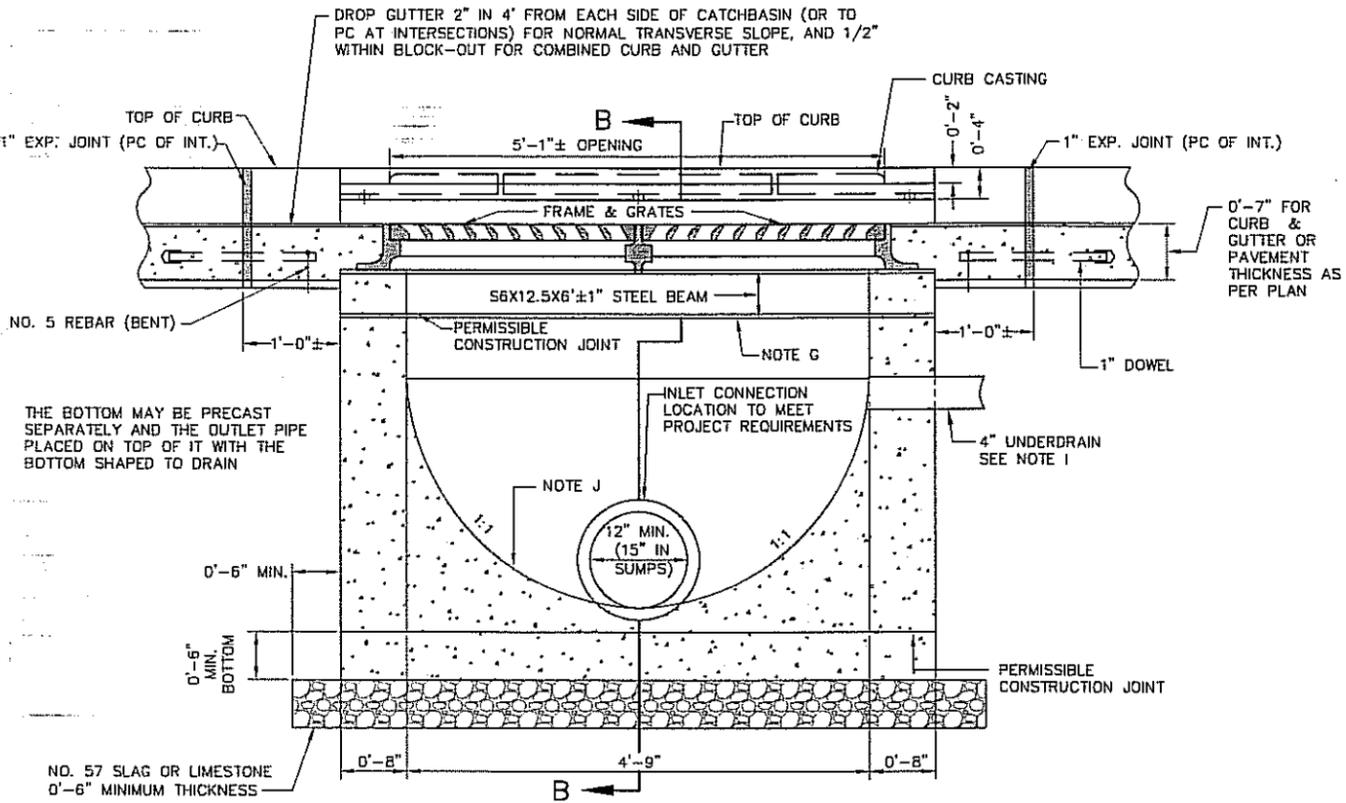
NO. 5 INLET
CASTING AND GRATE

Daniel Weber 2/26/07
MANAGER, CONSTRUCTION DIVISION

Daniel Fletch 2/26/07
CITY ENGINEER

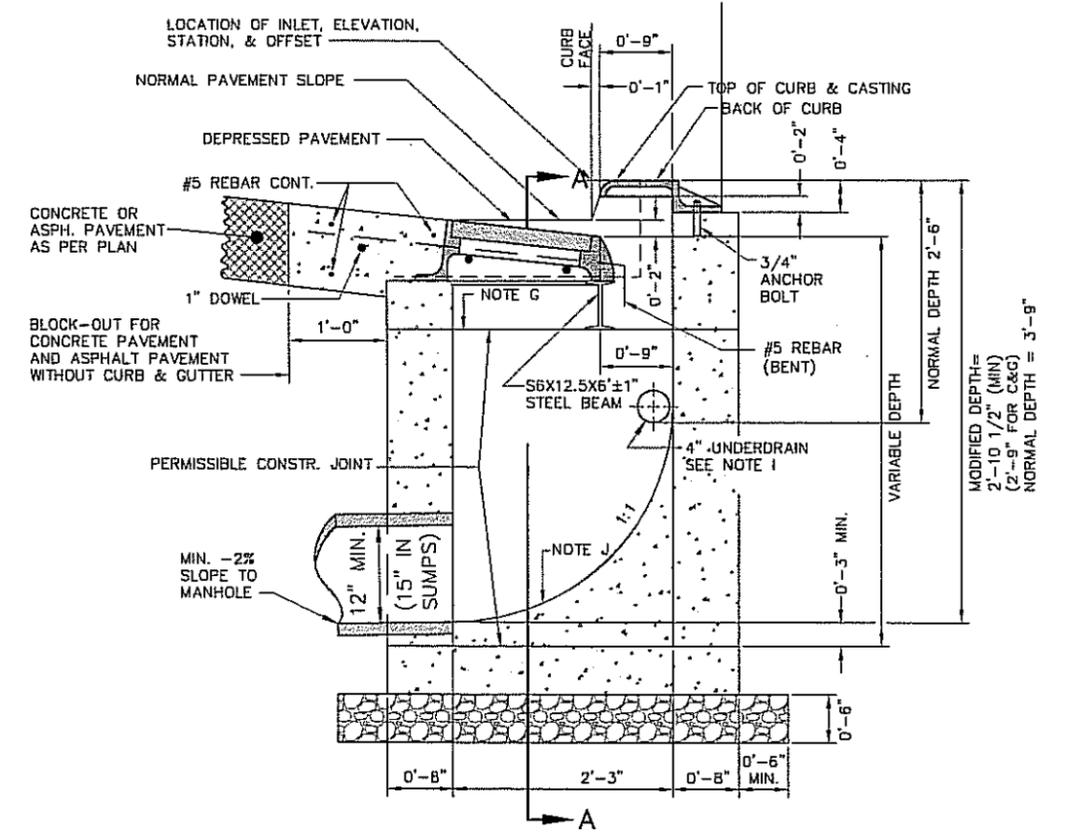
AUTOCAD DRAWING - STD_1-B.DWG
REVISIONS: FEBRUARY 12, 2007

JUNE 25, 2003

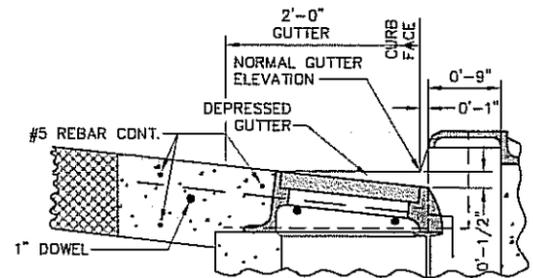


SECTION A-A

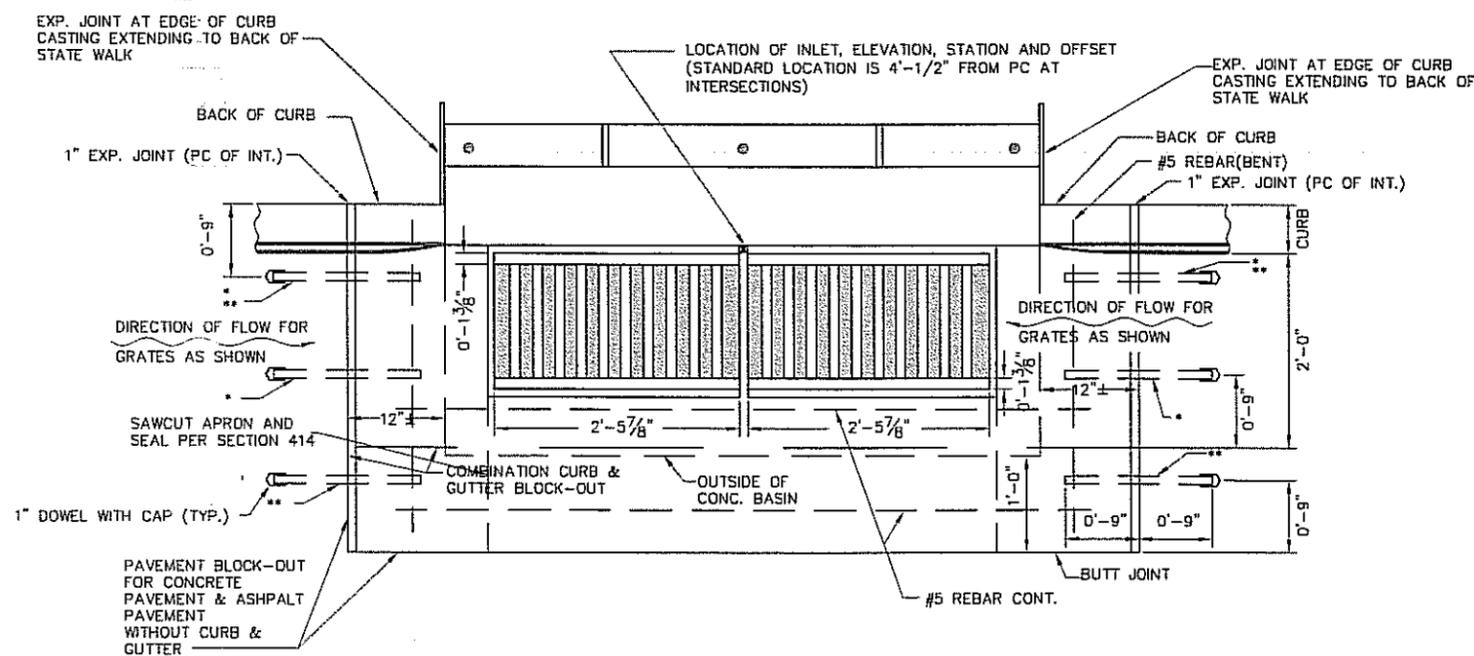
FOR GENERAL NOTES G, I, J AND K SEE DWG. No. I-5.3



SECTION B-B WITH CURB, 6"X18"



SECTION B-B WITH CURB & GUTTER

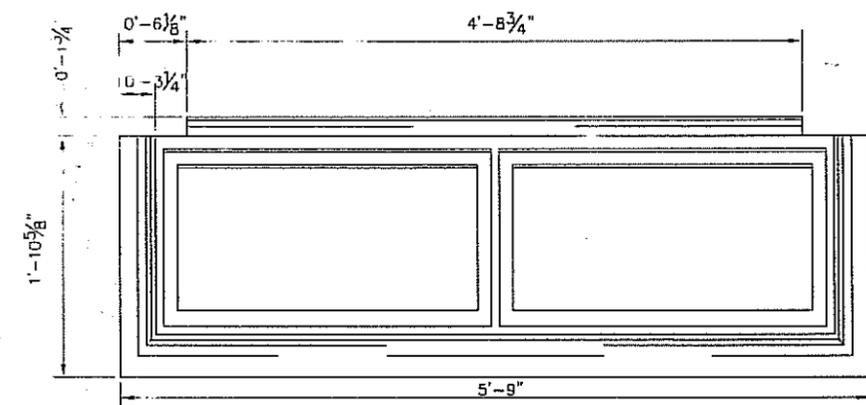


PLAN VIEW

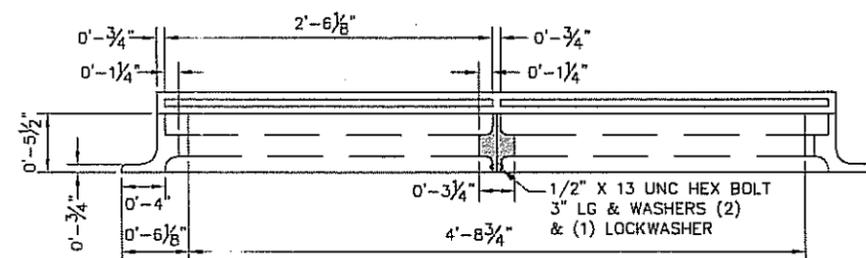
* DOWEL LOCATION FOR CURB & GUTTER
 ** DOWEL LOCATION FOR CONCRETE PAVEMENT

DO NOT SCALE - USE DIMENSIONS ONLY

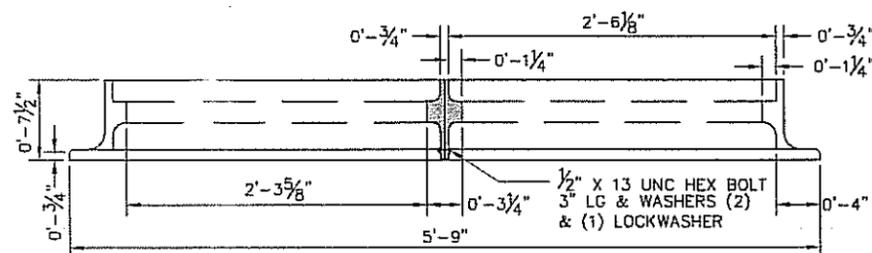
CITY OF AKRON BUREAU OF ENGINEERING	CONSTRUCTION STANDARD DWG. No. 1-5.2
<i>Michael Madonia</i> 2/15/07 MANAGER, DESIGN DIVISION	DOUBLE NO. 5 INLET
<i>James Wilson</i> 2/26/07 MANAGER, CONSTRUCTION DIVISION	
<i>Daniel Glavin</i> 2/26/07 CITY ENGINEER	
AUTOCAD DRAWING - STD. I-9.DWG REVISIONS: FEBRUARY 12, 2007	
JULY 9, 2003	



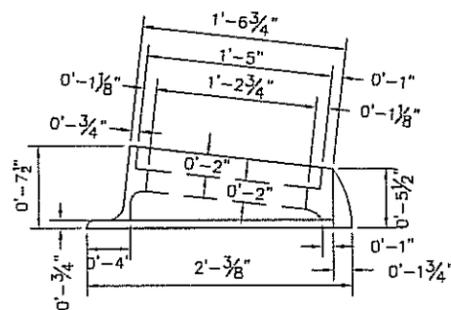
PLAN FRAME



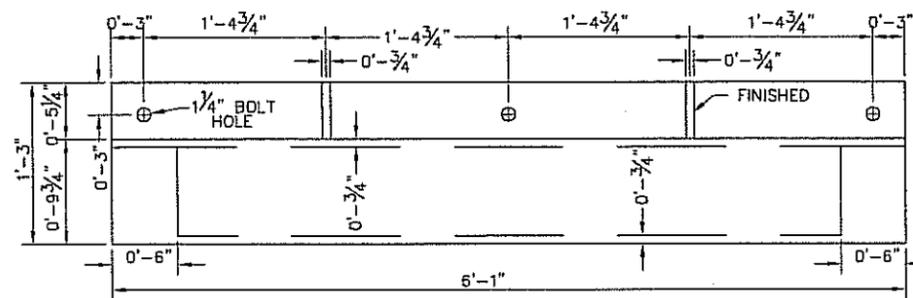
BACK VIEW - FRAME



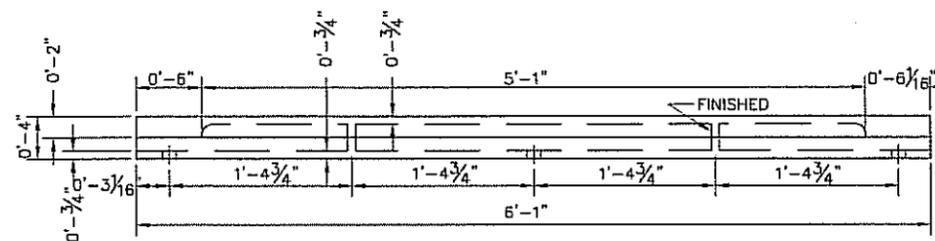
FRONT VIEW - FRAME



END VIEW FRAME



PLAN - CURB CASTING



FOR END VIEW OF CURB CASTING, SEE DRAWING I-5.1

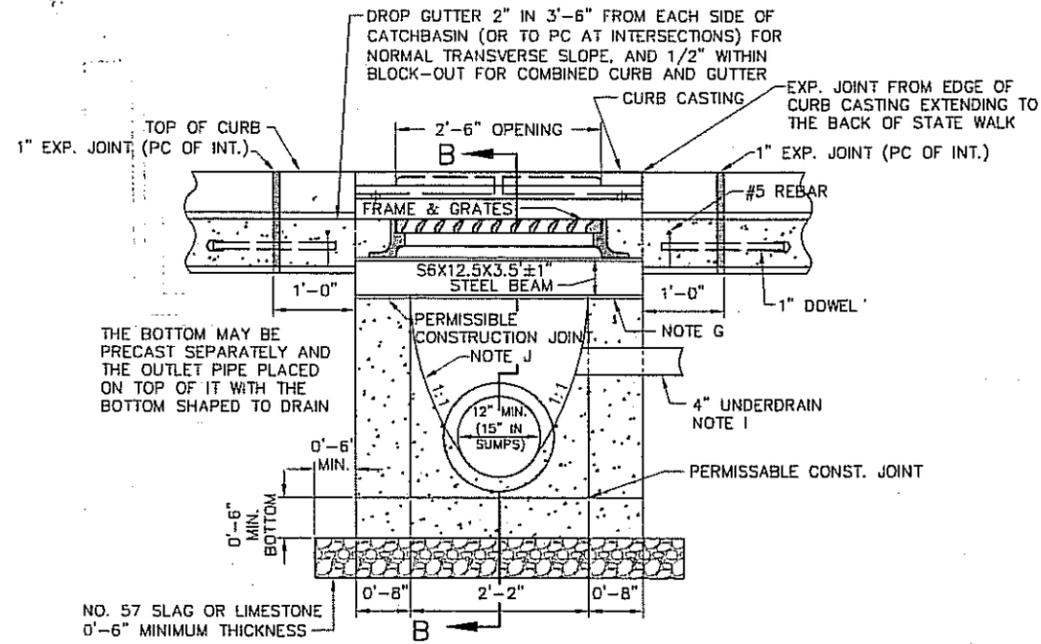
FRONT VIEW - CURB CASTING

- GENERAL NOTES**
- TWO GRATES, BOLTED TOGETHER, ARE REQUIRED. FOR DETAILS, SEE STD. CONSTR. DWG. I-5.1. GRATE 'V' SHALL BE PROVIDED UNLESS THE PLANS SPECIFICALLY REQUIRE THE DIAGONAL GRATE. IF THE DIAGONAL GRATE IS SPECIFIED, IT SHALL BE PLACED SO THAT THE DIAGONAL BARS DIRECT DRAINAGE FLOW TOWARD THE CURB. THE GRATES SHALL BE PROPERLY ORIENTED BASED ON WATER FLOW.
 - THE DESIGN OF THE CASTINGS SHALL BE ESSENTIALLY THE SAME AND EQUALLY AS STRONG AS THOSE SHOWN. MINIMUM MASS: CURB CASTING 265 LBS., FRAME 620 LBS., AND TWO GRATES 'V' 260 LBS. SEE STD. DWG. MH-8 FOR ACCEPTABLE CASTINGS.
 - THE FRAME AND GRATE SHALL BE SO FITTED AND FINISHED AS TO PROVIDE A FIRM AND EVEN SEAT. NO PROJECTIONS SHALL EXIST ON BEARING AREAS AND THE GRATE SHALL SEAT IN ITS FRAME WITHOUT ROCKING.
 - WHEN USED IN PLACE OF CONCRETE, BRICK SIDE WALLS SHALL BE 8" NOMINAL THICKNESS WITH 1/2" MORTAR COAT ON OUTSIDE OF WALLS. EVERY SEVENTH COURSE TO BE A STRETCHER COURSE.
 - PRECAST CONSTRUCTION IS PERMITTED, EXCEPT FOR THE BLOCK-OUT. PRECAST CONCRETE SHALL BE 4000 PSI (MIN.) AND SHALL MEET REQUIREMENTS OF 706.13 WITH A MINIMUM OF 6±2% ENTRAINED AIR IN THE HARDENED CONCRETE. PRECAST WALLS SHALL HAVE A MINIMUM THICKNESS OF 6" AND REINFORCING SHALL BE SUFFICIENT TO PERMIT SHIPPING AND PLACEMENT WITHOUT DAMAGE.
 - PIPE OPENINGS SHALL BE THE O.D. OF THE PIPE BEING SUPPLIED PLUS 2". FIELD MODIFICATIONS SHALL BE PERFORMED AS DIRECTED BY THE ENGINEER. THE ANNULAR SPACE SHALL BE FILLED WITH NON-SHRINK GROUT PER 701.11. ANY UNUTILIZED OPENINGS AS A RESULT OF FIELD MODIFICATIONS SHALL BE FILLED USING BRICK AND MORTAR.
 - ADJUSTMENTS, IF REQUIRED, SHALL BE MADE USING BRICK AND NON-SHRINK MORTAR. PRECAST ADJUSTMENT SECTIONS WILL NOT BE ALLOWED.
 - BLOCKOUTS SHALL BE PAVED USING CLASS 'C' CONCRETE. COSTS FOR BLOCK OUT SHALL BE INCLUDED IN THE COST OF THE INLET. FOUR 1"X18" DOWELS ARE REQUIRED FOR BLOCKOUTS. SEE BP-4 FOR DOWEL DETAILS. ALL REINFORCING IN APRON AND CURB & GUTTER SHALL BE EPOXY-COATED WITH MINIMUM 2" COVER.
 - INSTALL UNDERDRAIN PIPE THROUGH INLET WALL ON UPHILL SIDE, OR BOTH SIDES IF INLET IS IN A SUMP.
 - SLOPED BOTTOM SHALL BE POURED AFTER OUTLET PIPE IS IN PLACE. CONTRACTOR SHALL USE A READY MIX CONCRETE, CLASS 'C'.
 - INLETS CONSTRUCTED AT NORMAL DEPTH OR DEEPER SHALL BE PAID FOR AS DOUBLE NO. 5 INLET. ALL DEPTHS SHALLOWER THAN NORMAL DEPTH SHALL BE PAID FOR AS DOUBLE NO. 5 INLET. DO NOT SCALE - USE DIMENSIONS ONLY

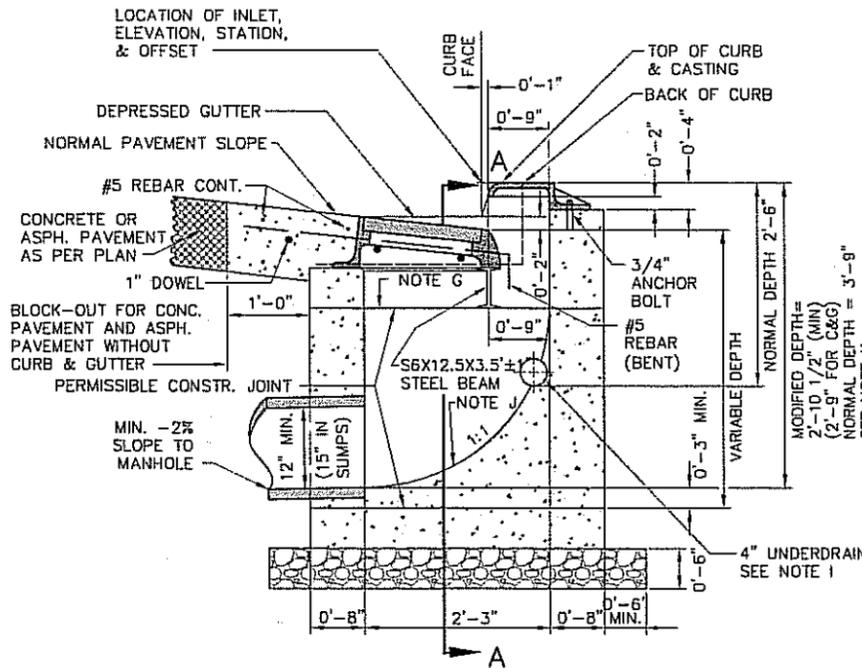
CITY OF AKRON BUREAU OF ENGINEERING	CONSTRUCTION STANDARD DWG. No. 1-5.3
<i>Michael Madonia</i> 2/14/07 MANAGER, DESIGN DIVISION	DOUBLE NO. 5 INLET CASTING AND GRATE
<i>James P. Wilson</i> 2/26/07 MANAGER, CONSTRUCTION DIVISION	AUTOCAD DRAWING - STD_I-9.DWG REVISIONS: FEBRUARY 12, 2007
<i>Daniel G. Leitch</i> 2/26/07 CITY ENGINEER	JUNE 26, 2003

GENERAL NOTES

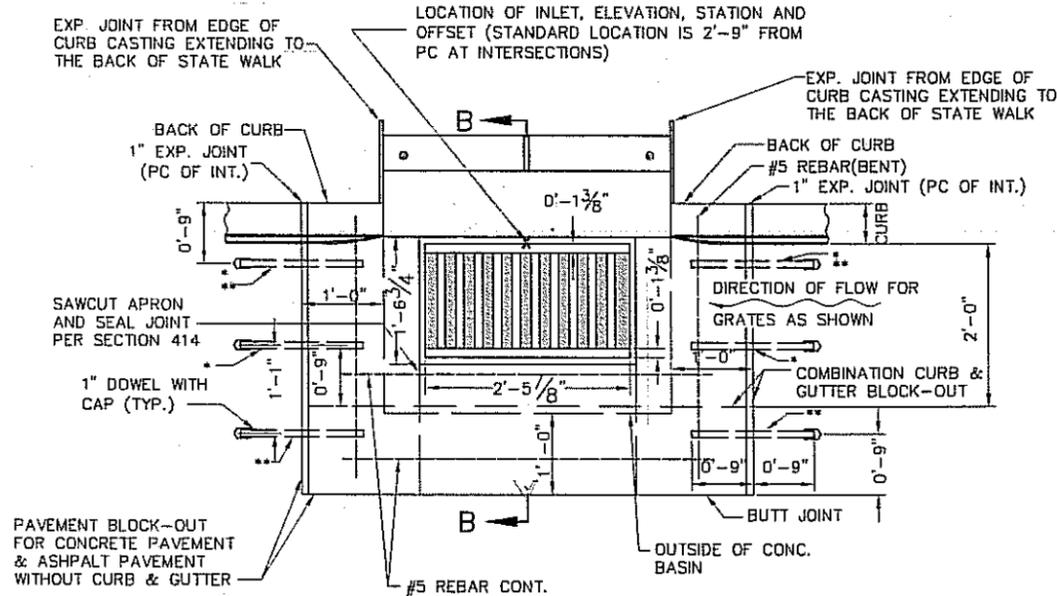
- A. ONE GRATE IS REQUIRED. FOR DETAILS, SEE STD. CONSTR. DWG. I-5.1. GRATE 'V' SHALL BE PROVIDED UNLESS THE PLANS SPECIFICALLY REQUIRE THE DIAGONAL GRATE. IF THE DIAGONAL GRATE IS SPECIFIED, IT SHALL BE PLACED SO THAT THE DIAGONAL BARS DIRECT DRAINAGE FLOW TOWARD THE CURB.
- B. THE DESIGN OF THE CASTINGS SHALL BE ESSENTIALLY THE SAME AND EQUALLY AS STRONG AS THOSE SHOWN. MINIMUM MASS: CURB CASTING 150 LBS., GRATE 'V' 130 LBS., AND FRAME 320 LBS. SEE STD. DWG MH-8 FOR ACCEPTABLE CASTINGS.
- C. THE FRAME AND GRATE SHALL BE SO FITTED AND FINISHED AS TO PROVIDE A FIRM AND EVEN SEAT. NO PROJECTIONS SHALL EXIST ON BEARING AREAS AND THE GRATE SHALL SEAT IN ITS FRAME WITHOUT ROCKING.
- D. WHEN USED IN PLACE OF CONCRETE, BRICK SIDE WALLS SHALL BE 8" NOMINAL THICKNESS WITH 1/2" MORTAR COAT ON OUTSIDE OF WALLS. EVERY SEVENTH COURSE TO BE A STRETCHER COURSE.
- E. PRECAST CONSTRUCTION IS PERMITTED, EXCEPT FOR THE BLOCK-OUT. PRECAST CONCRETE SHALL BE 4000 PSI (MIN.) AND SHALL MEET REQUIREMENTS OF 706.13 WITH A MINIMUM OF 6±2% ENTRAINED AIR IN THE HARDENED CONCRETE. PRECAST WALLS SHALL HAVE A MINIMUM THICKNESS OF 6" AND REINFORCING SHALL BE SUFFICIENT TO PERMIT SHIPPING AND PLACEMENT WITHOUT DAMAGE.
- F. PIPE OPENINGS SHALL BE THE O.D. OF THE PIPE BEING SUPPLIED PLUS 2". FIELD MODIFICATIONS SHALL BE PERFORMED AS DIRECTED BY THE ENGINEER. THE ANNULAR SPACE SHALL BE FILLED WITH NON-SHRINK GROUT PER 701.11. ANY UNUTILIZED OPENINGS AS A RESULT OF FIELD MODIFICATIONS SHALL BE FILLED USING BRICK AND MORTAR.
- G. ADJUSTMENTS, IF REQUIRED, SHALL BE MADE USING BRICK AND NON-SHRINK MORTAR. PRECAST ADJUSTMENT SECTIONS WILL NOT BE ALLOWED.
- H. BLOCKOUTS SHALL BE POURED USING CLASS 'C' CONCRETE. COSTS FOR BLOCK OUT SHALL BE INCLUDED IN THE COST OF THE INLET. FOUR 1"X18" DOWELS ARE REQUIRED FOR BLOCKOUTS. SEE BP-4 FOR DOWEL DETAILS. ALL REINFORCING IN APRON AND CURB & GUTTER SHALL BE EPOXY-COATED WITH MINIMUM 2" COVER.
- I. INSTALL UNDERDRAIN PIPE THROUGH INLET WALL ON UPHILL SIDE, OR BOTH SIDES IF INLET IS IN A SUMP.
- J. SLOPED BOTTOM SHALL BE POURED AFTER OUTLET PIPE IS IN PLACE. CONTRACTOR SHALL USE A READY MIX CONCRETE, CLASS 'C'.
- K. INLETS CONSTRUCTED AT NORMAL DEPTH OR DEEPER SHALL BE PAID FOR AS NO. 5 INLET. ALL DEPTHS SHALLOWER THAN NORMAL SHALL BE PAID FOR AS A NO. 5 INLET MODIFIED.



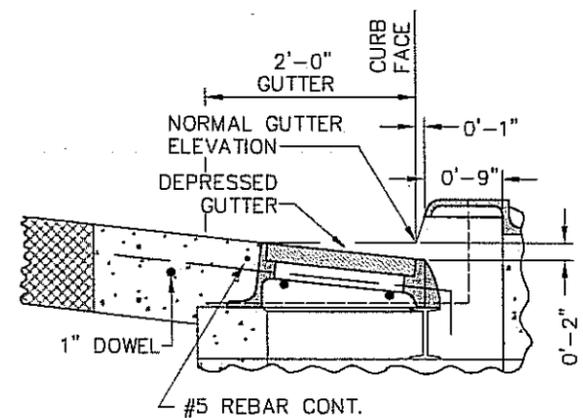
SECTION A-A



SECTION B-B WITH CURB, 6"X18"



PLAN VIEW



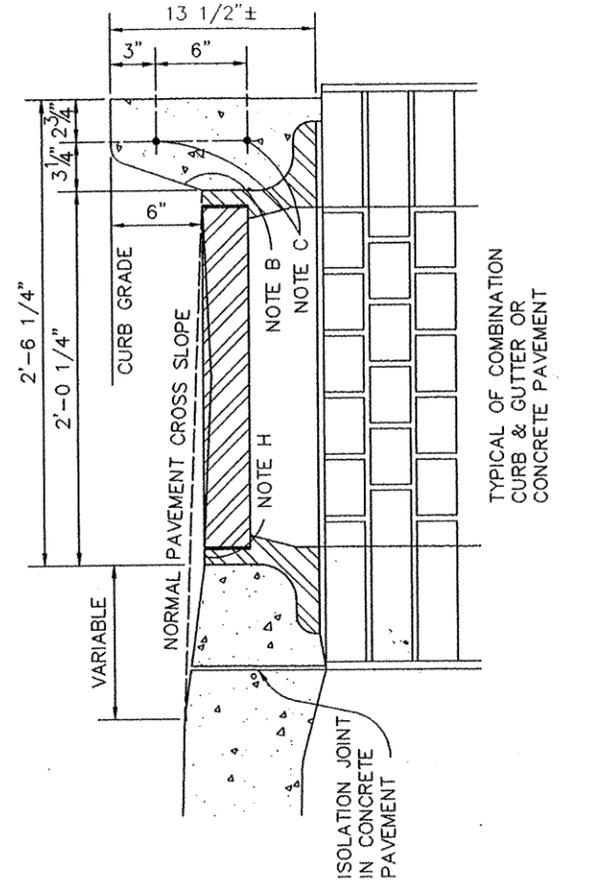
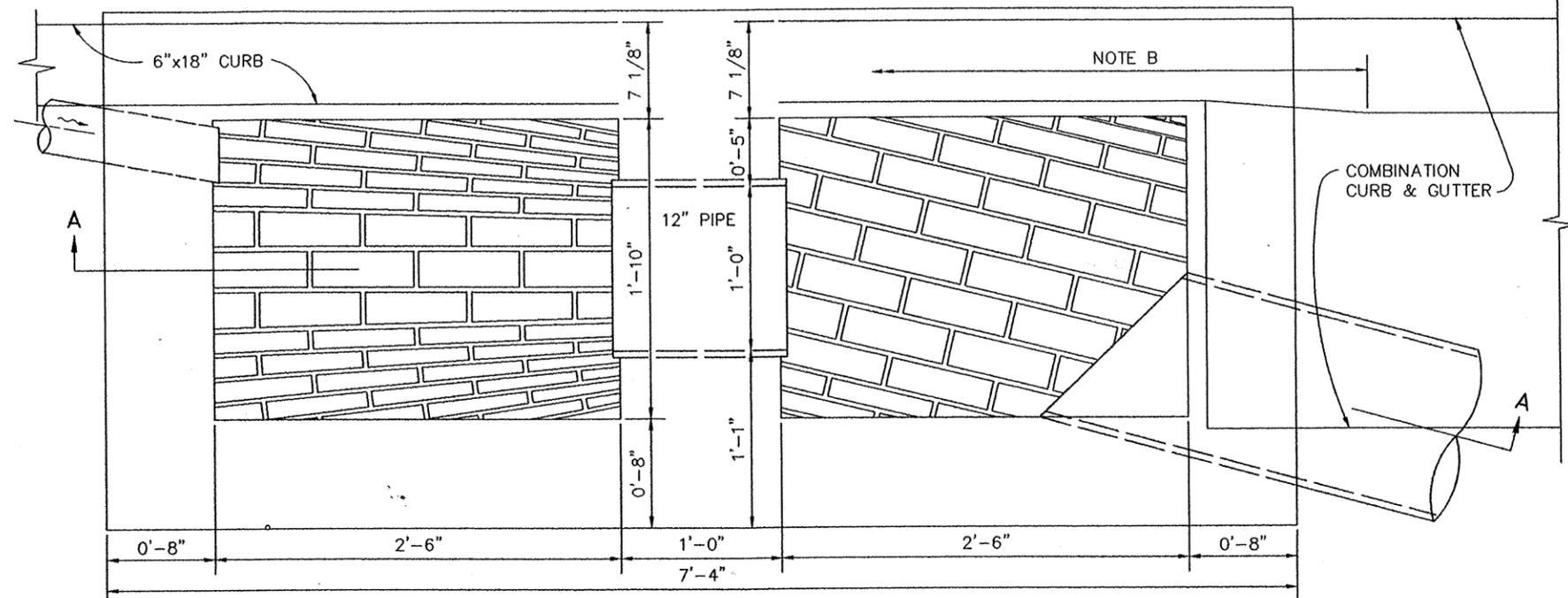
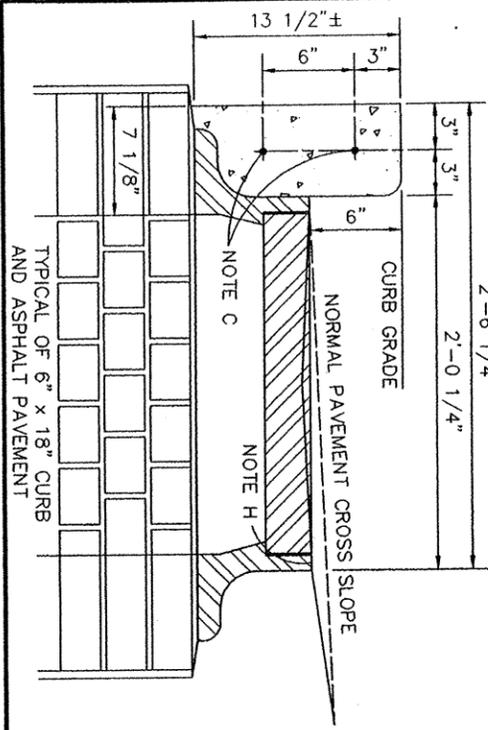
SECTION B-B WITH CURB & GUTTER

* DOWEL LOCATION FOR CURB & GUTTER
 ** DOWEL LOCATION FOR CONCRETE PAVEMENT

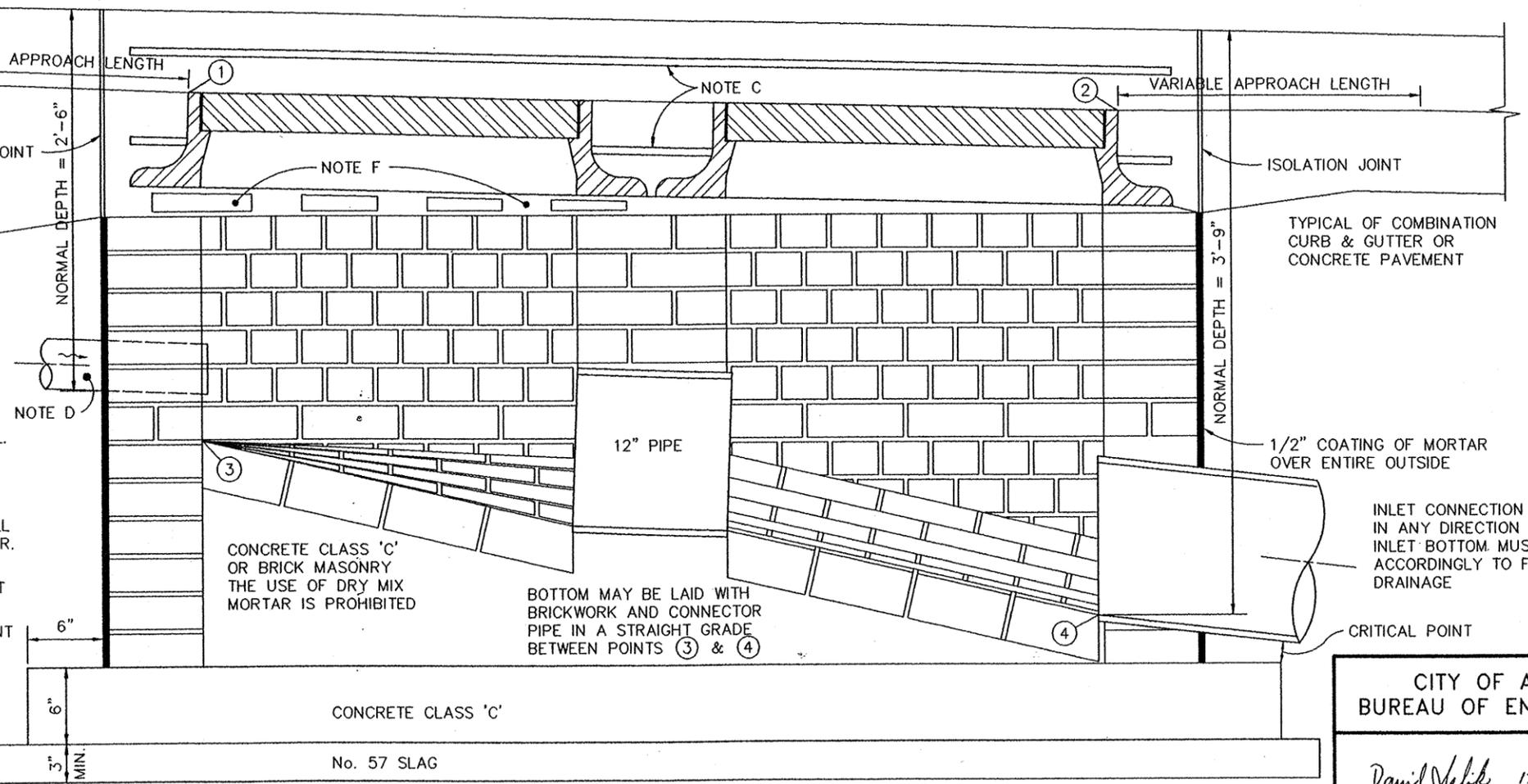
DO NOT SCALE - USE DIMENSIONS ONLY

CITY OF AKRON BUREAU OF ENGINEERING	CONSTRUCTION STANDARD DWG. No. 1-5
<i>Michael Madonis</i> 2/16/07 MANAGER, DESIGN DIVISION	NO. 5 INLET
<i>Dennis P. Walker</i> 2-26-07 MANAGER, CONSTRUCTION DIVISION	
<i>Daniel J. Lehib</i> 2/26/07 CITY ENGINEER	
AUTOCAD DRAWING - STD. I-8.DWG REVISIONS: FEBRUARY 12, 2007	

JULY 11, 2005

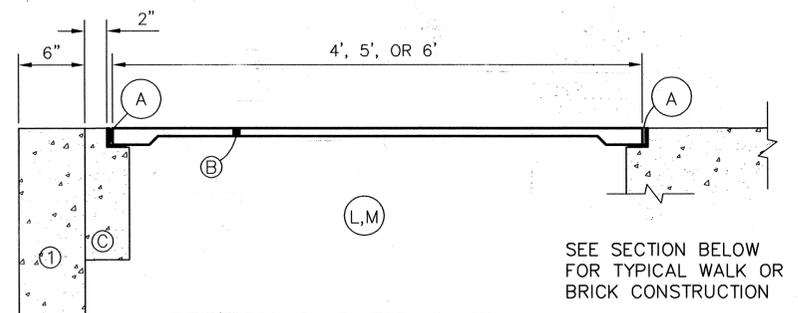


- A. MATERIAL SHALL BE CAST IRON MEETING THE REQUIREMENTS OF 711.12. CASTINGS SHALL BE FREE FROM BLOWHOLES AND OTHER DEFECTS, SHALL BE CLEANED OF ALL SCALE AND GREASE, AND RECEIVE TWO COATS OF BITUMINOUS PAINT. UPON COMPLETION OF ALL WORK THE LID SEAT SHALL BE THOROUGHLY CLEANED OF ALL DIRT, CONCRETE OR OTHER DEBRIS TO INSURE A FIRM SEAT AND EASE OF REMOVAL.
- B. TRANSITION CURB FACE ACROSS WIDTH OF INLET.
- C. TWO NO. 5 REINFORCING RODS PLACED AS SHOWN. WHERE DROP CURB OCCURS INSTALL RODS LOW AND MAINTAIN 2" MINIMUM COVER.
- D. INSTALL UNDERDRAIN PIPE THRU INLET WALL ON UPHILL SIDE, OR ON BOTH SIDES IF INLET IS IN A SUMP.
- E. 8" BRICK WALL LAID UP IN PORTLAND CEMENT MORTAR. EVERY SEVENTH COURSE TO BE A STRETCHER COURSE.
- F. USE BRICK PIECES FOR FILLER WHEN CASTING IS MORE THAN 1" OFF BRICK. SET CASTING ON FULL MORTAR BED.
- G. IN CASE OF CONFLICT WITH EXISTING UTILITIES, NOTIFY THE RESPECTIVE OWNERS FOR RELOCATION OF LINES. DO NOT INCORPORATE UTILITY LINE INTO ANY PART OF THE INLET.
- H. DEPRESS CASTING SLIGHTLY LOWER THAN PAVEMENT SURFACE.
- I. SEE STD. DWG. NO. 1-1 FOR CASTING DETAILS
- J. CASTINGS MUST BE INSTALLED ON A STRAIGHT GRADE BETWEEN POINTS ① & ②.



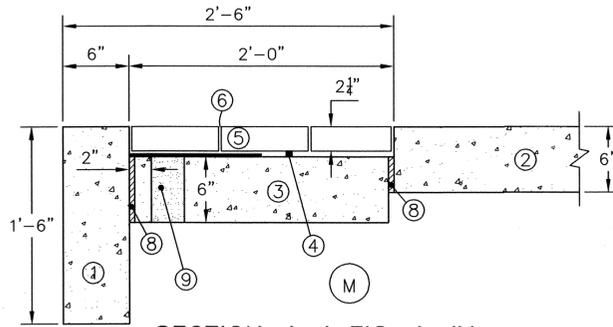
SECTION A-A

DO NOT SCALE - USE DIMENSIONS ONLY	
CITY OF AKRON BUREAU OF ENGINEERING	CONSTRUCTION STANDARD DWG. No. 1-7
<i>David Velch</i> 12-8-98 MANAGER, DESIGN DIVISION <i>Pawan K. Khaitan</i> MANAGER, CONSTRUCTION DIVISION <i>C. David Haugh</i> 12/9/98 CITY ENGINEER	DOUBLE NO. 2 INLET REVISIONS:



SECTION C-C FIG. I, III
SECTION D-D FIG. II

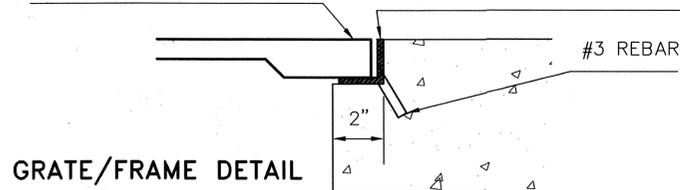
SEE SECTION BELOW
FOR TYPICAL WALK OR
BRICK CONSTRUCTION



SECTION J-J FIG. I, IV

TREE GRATE TO BE
INSTALLED IN ACCORDANCE
WITH MANUFACTURER'S
RECOMMENDATIONS*

CAST IRON OR STEEL FRAME
TO BE INSTALLED IN
ACCORDANCE WITH
MANUFACTURER'S
RECOMMENDATIONS



GRATE/FRAME DETAIL

DESIGNER NOTES:

4'x6' GRATE IS PREFERRED,
5'x5' GRATE ONLY USED WHEN NECESSARY
PREFER 4' OR GREATER CLEAR BEHIND GRATE
MINIMUM 3' CLEAR BEHIND GRATE
INCLUDED IN THE COST OF CURB, BRICK, OR WALK

- ① CONCRETE CURB, 6"x18" (OR COMBINATION CURB AND GUTTER)
- ② CONCRETE WALK, 6", CLASS "C"
- ③ CONCRETE BASE, 6", CLASS "C"
- ④ CONCRETE SAND PER ASTM C-33, 1" THICK
- ⑤ BRICK (8"x4"x2 1/4" NOMINAL) PER ASTM C-902 TYPE 1, ENGLISH EDGE-FR AS MANUFACTURED BY PINE HALL OR CLASS SX AS MANUFACTURED BY THE BELDEN BRICK CO. COLOR FOR BELDEN BRICK SHALL BE REGIMENTAL MEDIUM RANGE, PV-23.
- ⑥ CONCRETE SAND PER ASTM C-33
- ⑦ SAWCUT OR FORMED JOINTS
- ⑧ 1/2" PRE-MOLDED EXPANSION MATERIAL
- ⑨ 3" CORE HOLE THROUGH BASE WITH MAX. 5' SPACING (AND AT SUMP LOCATIONS) FILLED WITH WASHED DURABLE NATURAL AGGREGATES, NO.8 OR NO.9. A 12"x12" NONWOVEN ENGINEERING FABRIC IN ACCORDANCE WITH 712.09 TYPE B SHALL BE PLACED OVER EACH CORE HOLE. MIN. OF 1 HOLE PER BRICK AREA. A 3" PVC PIPE MAY BE INSTALLED DURING THE CONCRETE PLACEMENT IN LIEU OF CORING.

INCLUDED IN THE COST OF TREE GRATES

- (A) CAST IRON OR STEEL FRAME
 - (B) TREE GRATE: NEENAH R-8811 (4'x6'), EAST JORDAN IRON WORKS 8691 (4'x6'), V-8955 (5'x5'), OR APPROVED EQUAL
 - (C) 4"x12" CONCRETE CURB
- INCLUDED IN THE COST OF TREE PLANTING**
- (L) EXCAVATION FOR TREES
 - (M) APPROVED BACKFILL

*CASTINGS AND FRAMES PAINTED BY THE CONTRACTOR SHALL RECEIVE A BLACK POWDER PAINT, DIAMOND VOGEL PLX2613-02, MID GLOSS BLACK L/C, TGIC POLYESTER FINISH COAT TO ALL SURFACES (4 MILS AVERAGE), OR APPROVED EQUAL. ALL CASTINGS AND FRAMES WHICH ARE SHOP PAINTED AT THE FOUNDARY SHALL BE DIPPED IN A TANK LARGE ENOUGH TO COMPLETELY SUBMERGE THE CASTING. THE COATING SHALL BE A WATER BASE EMULSION AND BOTH THE CASTING/FRAME AND THE COATING SHALL BE AT LEAST 60° F. THE COATING THICKNESS SHALL BE A MINIMUM OF 3 MILS AND SHALL DRY TO A HARD, BLACK GLOSS FINISH. THE COATING MATERIAL SHALL BE IN COMPLIANCE WITH ANSI C104, C110, C151, AND C153.

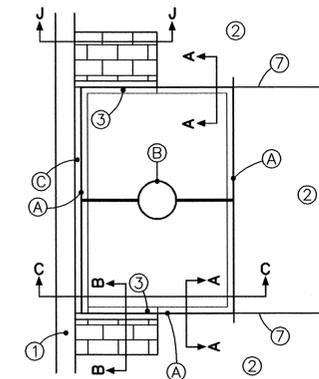


FIG. I

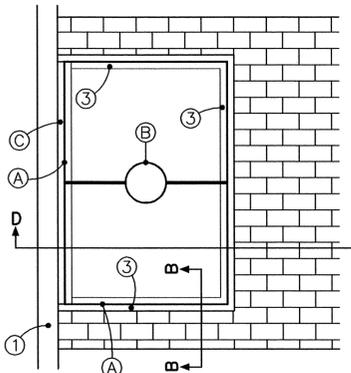


FIG. II

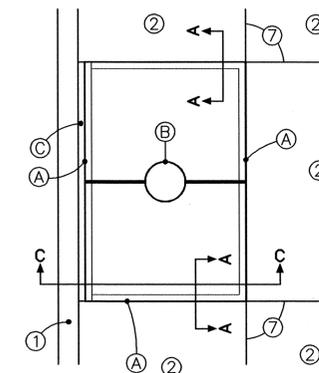


FIG. III

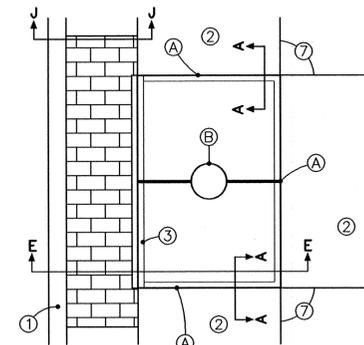


FIG. IV

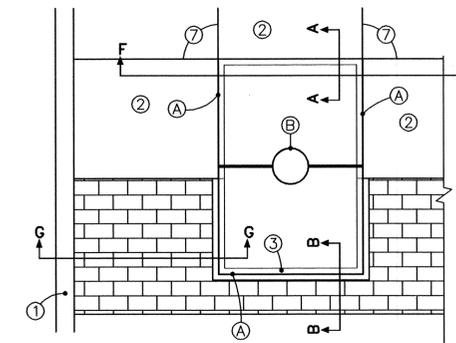


FIG. V

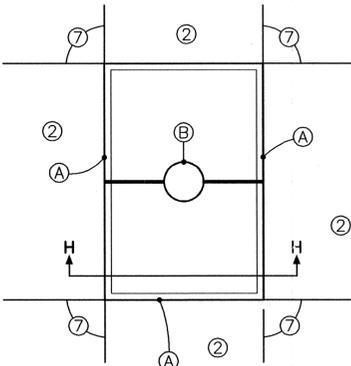
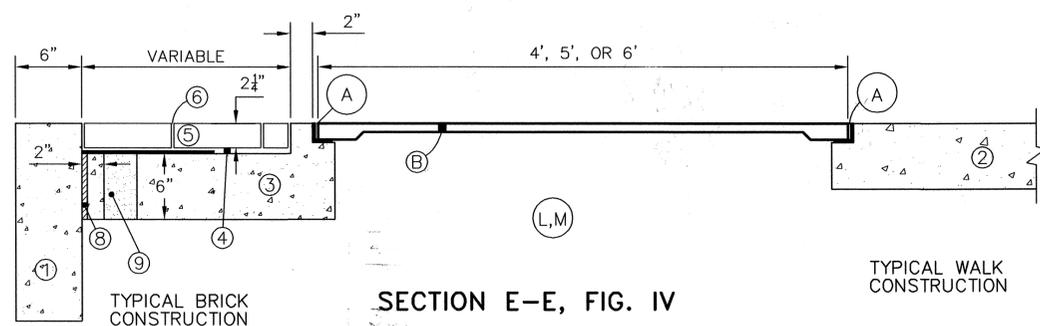


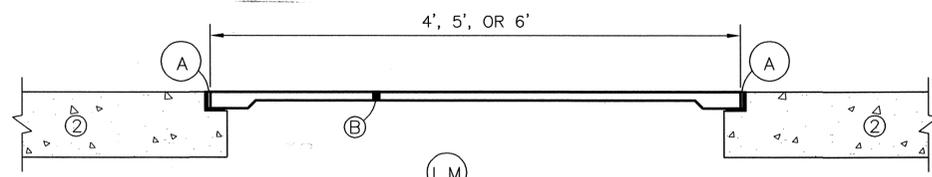
FIG. VI



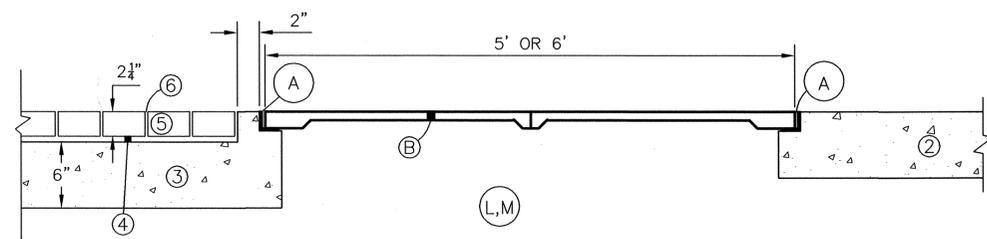
SECTION E-E, FIG. IV

TYPICAL WALK
CONSTRUCTION

SECTION G-G, FIG. V



SECTION H-H, FIG. VI
SECTION F-F, FIG. V



SECTION B-B
TYPICAL BRICK
CONSTRUCTION

SECTION A-A
TYPICAL WALK
CONSTRUCTION

DO NOT SCALE - USE DIMENSIONS ONLY

CITY OF AKRON
BUREAU OF ENGINEERING

CONSTRUCTION
STANDARD DWG. No.

LA-1

R.C. Uhl 5-13-08
ACTING MANAGER, DESIGN DIVISION

TREE GRATES

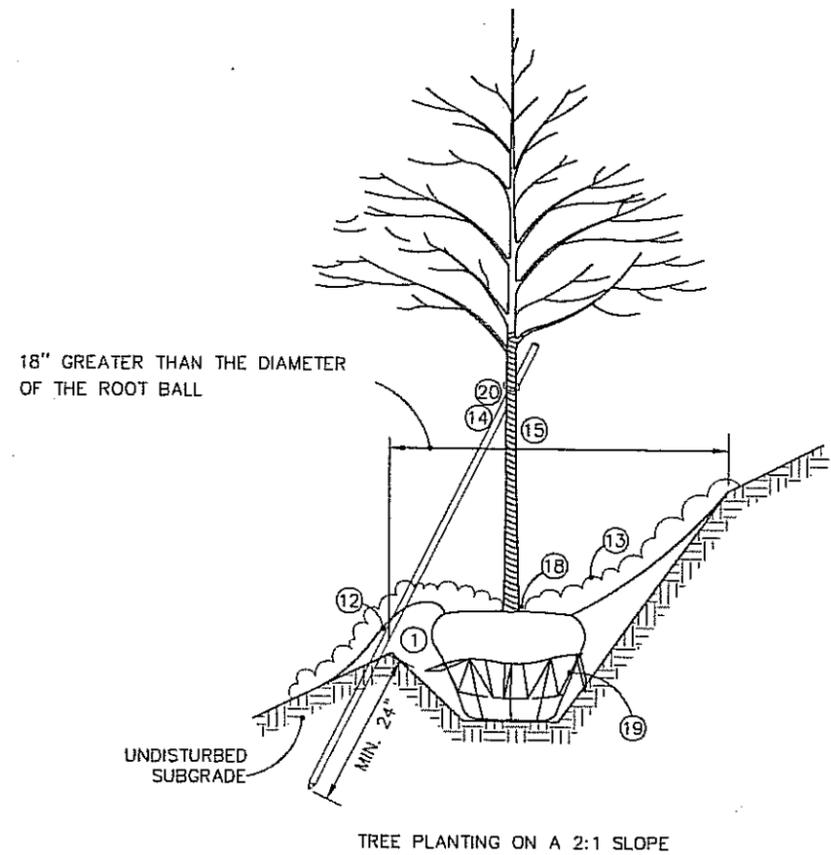
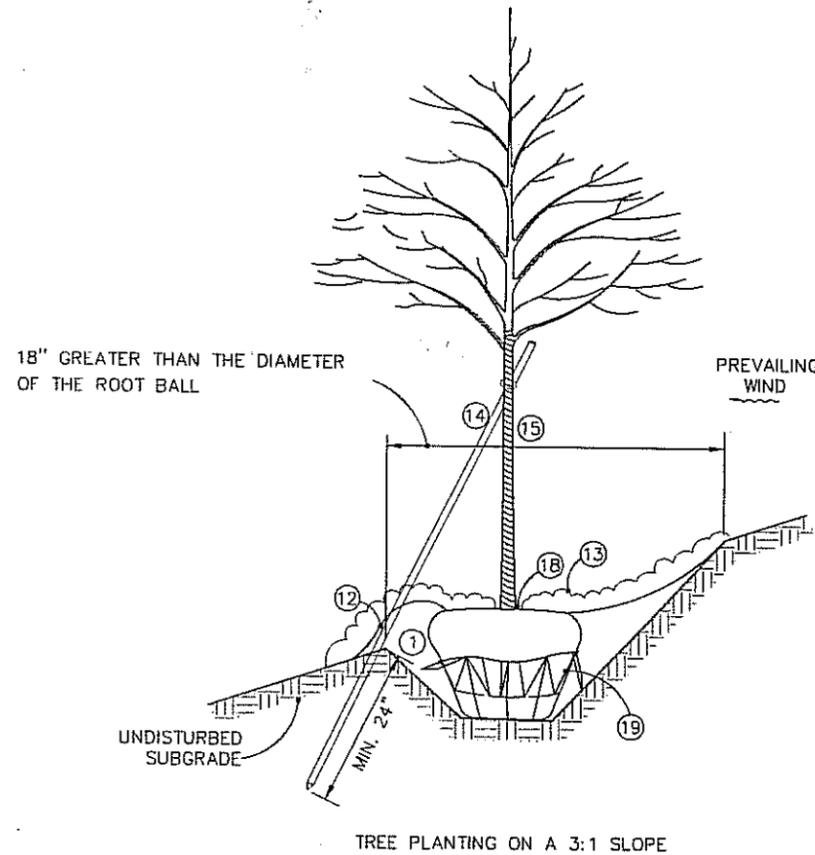
James B. White 5-11-08
MANAGER, CONSTRUCTION DIVISION

BRICK WALKS

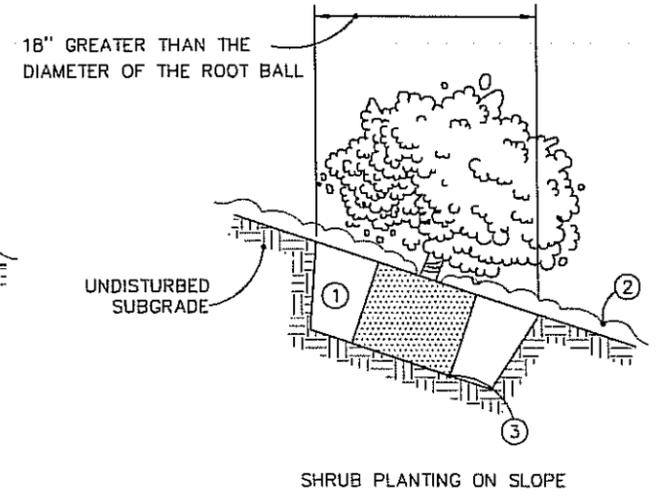
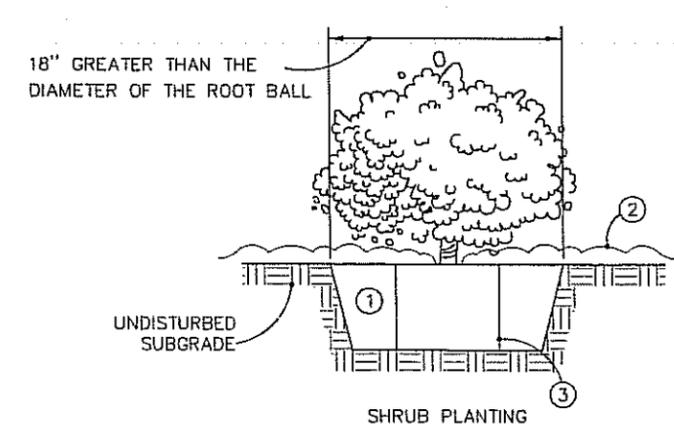
D. J. Cull 5-23-08
CITY ENGINEER

AUTOCAD DRAWING - STD_LA-1.DWG JANUARY 17, 2002

REVISIONS:
MARCH 27, 2007
APRIL 4, 2008



- ① BACKFILL LAWNSTRIPS & BED PLANTINGS: SOIL EXCAVATED FROM TREE HOLE WITH 20% SOIL MAGIC (AKRON MUNICIPAL COMPOST) OR APPROVED TOPSOIL PER 653.02.
- ⑫ FORMED SOIL SAUCER, 2" HIGH
- ⑬ MULCHING MATERIAL, 3" THICK, AS PER 661.07. DO NOT PLACE MULCH IN CONTACT WITH TREE TRUNK
- ⑭ BRACING STAKE, WHEN REQUIRED, AS PER 663.05
- ⑮ WRAPPING AND TYING, AS PER 663.05
- ⑰ TREE MUST BE PLANTED SUCH THAT THE TRUNK FLARE IS VISIBLE AT THE TOP OF THE ROOT BALL.
- ⑲ REMOVE ALL TWINE, ROPE AND WIRE, AND BURLAP FROM TOP HALF OF THE ROOT BALL. CUT THE WIRE BASKET IN FOUR PLACES AND FOLD DOWN 8" INTO PLANTING HOLE.
- ⑳ STAKE IS ALWAYS OPPOSITE THE PREVAILING WIND



- ① BACKFILL LAWNSTRIPS & BED PLANTINGS: SOIL EXCAVATED FROM TREE HOLE WITH 20% SOIL MAGIC (AKRON MUNICIPAL COMPOST) OR APPROVED TOPSOIL PER 653.02.
- ② MULCHING MATERIAL, 3" THICK, AS PER 661.07. DO NOT PLACE MULCH IN CONTACT WITH SHRUB'S ROOT CROWN.
- ③ SEVER ALL GIRDLING ROOTS.

DO NOT SCALE - USE DIMENSIONS ONLY

CITY OF AKRON BUREAU OF ENGINEERING	CONSTRUCTION STANDARD DWG. No. LA-2B
<i>Michael Madonio</i> 3/28/07 MANAGER, DESIGN DIVISION	TREE PLANTING ON SLOPES
<i>James P. Hill</i> 3-30-07 MANAGER, CONSTRUCTION DIVISION	SHRUB PLANTING
<i>Daniel J. Glick</i> 4/2/07 CITY ENGINEER	AUTOCAD DRAWING - STD_LA-2.DWG April 28, 1998 REVISIONS: MARCH 27, 2007

1. THIS DRAWING DEPICTS MINIMUM BASIC INSTALLATION OF A MODULAR BLOCK RETAINING WALL. VARIATIONS MAY BE MADE TO FIT VARIABLE CONDITIONS, HOWEVER GUIDELINES DEPICTED ON THIS DRAWING SHALL BE FOLLOWED.

2. MODULAR BLOCK RETAINING WALLS SHALL BE CONSTRUCTED IN ACCORDANCE WITH ITEM 611, INCLUDING THE APPLICABLE APPROVAL AND PERMITTING PROCESS, AND MANUFACTURER'S RECOMMENDATIONS.

3. MODULAR BLOCK RETAINING WALL INSTALLATION PROCEDURES SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL IN ACCORDANCE WITH ITEM 611.03 WITH THE FOLLOWING ADDITIONAL INFORMATION AS A MINIMUM:

- * INDICATE MODULAR BLOCK MANUFACTURER, UNIT, AND COLOR.
- * PROVIDE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
- * "RECENT" TEST DATA INDICATING STANDARD UNIT'S CONFORMANCE TO ASTM C-1372 (SEE NOTE 4 BELOW).
- * INDICATE FACE SETBACK DISTANCE.
- * INDICATE TIEBACK (ENGINEERING GEOGRID) LENGTH.
- * DEPICT PROPOSED METHOD OF CONSTRUCTING VERTICAL FACE RETURNS AT LOCATIONS REQUIRING A VERTICAL FACE (SEE NOTE 6 BELOW).
- * INDICATE TOE DETAIL, IF APPLICABLE (SEE NOTE 7 BELOW).
- * PROVIDE MANUFACTURER RECOMMENDED SEALANT SPECIFICATIONS (SEE NOTE 11 BELOW).
- * INDICATE SEALANT'S CONFORMANCE TO ASTM'S E-514, D-1653-93, & d-3273-94 (SEE NOTE 11 BELOW).

4. MODULAR BLOCK STANDARD UNITS SHALL CONFORM TO ASTM 1372 AND SHALL BE ONE OF THE FOLLOWING:

- * ALLAN BLOCK - "STONES"
- * KEYSTONE - "STRAIGHT SPLIT" (STANDARD AND COMPACT)
- * UNILOCK - "PISA II"
- * VERSA-LOK - "STANDARD UNIT"

5. MODULAR BLOCK RETAINING WALLS SHALL BE ONE OF THE FOLLOWING COLORS AS DESIGNATED ON THE PLAN SET OR SELECTED BY THE ENGINEER DURING INSTALLATION PROCEDURE APPROVAL:

- * NATURAL GRAY
- * RUSTIC RED
- * SANDSTONE/BUFF

6. VERTICAL FACE RETURNS SHALL BE BUILT AGAINST ADJACENT EXISTING WALLS, STEPS, AND/OR OTHER STRUCTURES REQUIRING A VERTICAL FACE RETURN. THE LENGTH OF RETURNS SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.

7. MODULAR BLOCK RETAINING WALLS SHALL BURY BELOW THE TOP OF THE SIDEWALK OR FINISHED GRADE ONE (1) INCH OF BLOCK FACE FOR EVERY ONE (1) FOOT OF WALL HEIGHT WITH A MINIMUM OF ONE-HALF BLOCK FACE BURIED. MODULAR BLOCK WALLS SIX (6) FEET OR MORE IN HEIGHT SHALL SUBMIT TO THE ENGINEER FOR REVIEW AND APPROVAL A PROPOSED TOE DETAIL DEPICTING BURY DEPTH AND HORIZONTAL PLACEMENT OF BURIED BLOCK UNITS.

8. BACKFILL BEHIND THE RETAINING WALL SHALL BE COMPACTED IN INTERVALS EQUIVALENT TO THE THICKNESS OF ONE (1) COURSE OF MODULAR BLOCK UNITS BY HAND OPERATED VIBRATORY MACHINES. NO HEAVY MACHINERY MAY BE USED BEHIND THE WALL.

9. ENGINEERING GEOGRID SHALL BE INSTALLED EVERY THREE (3) COURSES MAXIMUM, BUT NEVER WITHIN THE TWO (2) COURSES BELOW THE CAPSTONE.

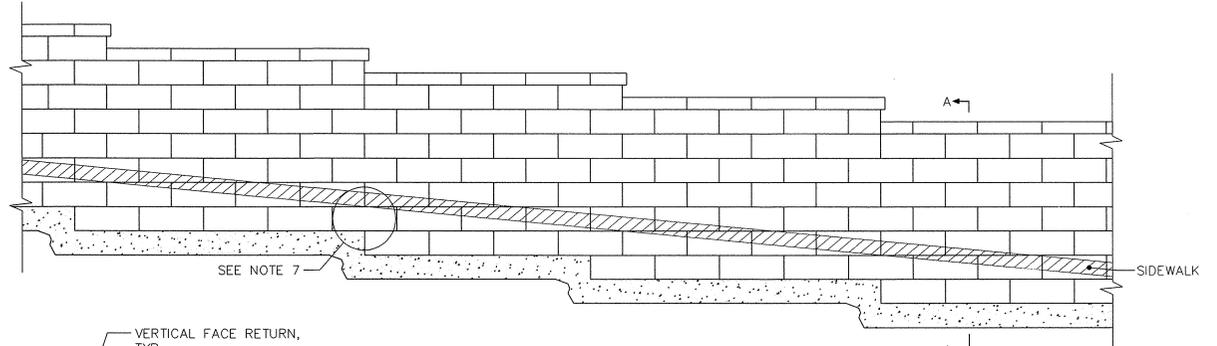
10. MAXIMUM FINISHED SLOPE ABOVE A MODULAR BLOCK WALL SHALL NOT EXCEED 3 TO 1. SLOPES FLATTER THAN 3 TO 1 ARE ACCEPTABLE PROVIDED POSITIVE DRAINAGE TOWARD THE STREET IS MAINTAINED.

11. ALL EXPOSED FACES OF MODULAR BLOCK WALLS SHALL BE COATED WITH A CLEAR, PENETRATING SEALANT THAT RESISTS WATER, WEATHER, MOLD, CORROSION, DE-ICING COMPOUNDS AND CONFORMS TO ASTM'S E-514, D-1653-93, AND D-3273-94. COST CONSIDERED INCIDENTAL TO ITEM 611.

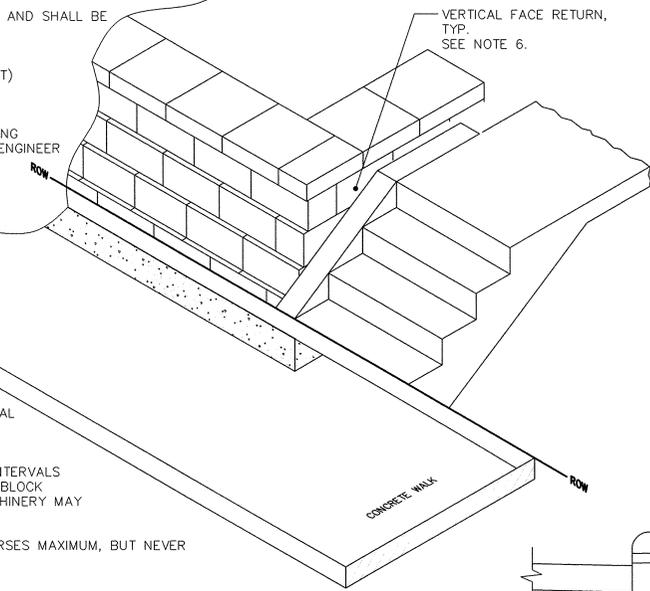
12. NATIVE SOILS EQUIVALENT TO THE THICKNESS OF ONE (1) COURSE OF MODULAR BLOCK UNITS SHALL BE PROVIDED ABOVE THE DRAINAGE AGGREGATE AND BELOW THE TOPSOIL.

13. ALL CAPSTONES SHALL BE GLUED.

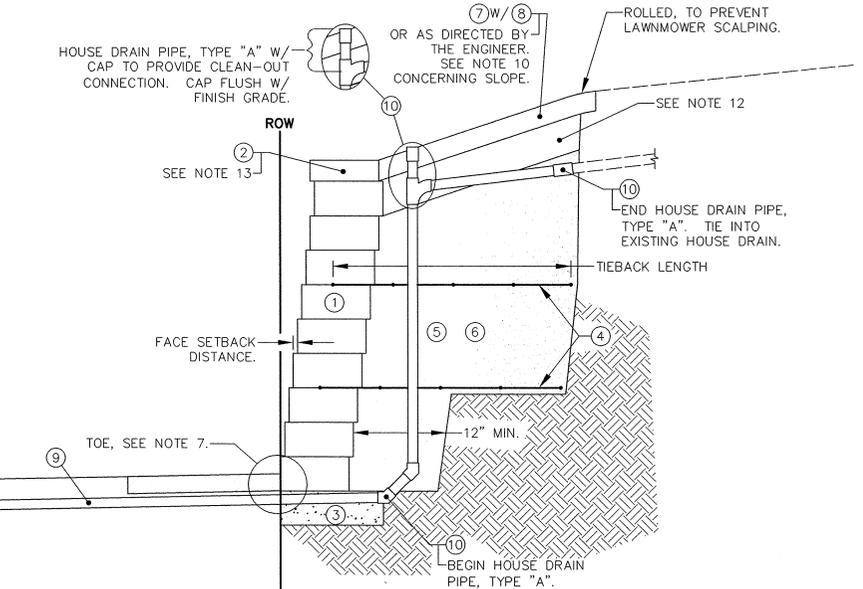
14. MODULAR BLOCK RETAINING WALLS SHALL BE CONSTRUCTED SO THAT THE FACE OF THE WALL ABUTS THE RIGHT-OF-WAY FOR THE ENTIRE LENGTH OF THE WALL. WHERE AN INCLINING STREET GRADE AND SPECIFIED FACE SETBACK RESULTS IN THE WALL TO FALL AWAY FROM THE RIGHT-OF-WAY, THEN ADJUSTMENTS TO THE WALLS ALIGNMENT SHALL BE MADE TO MAINTAIN ABUTMENT TO THE RIGHT-OF-WAY.



ITEM 611 - MODULAR BLOCK WALL: FACE VIEW



VERTICAL FACE RETURN: ISOMETRIC VIEW



SECTION A-A

DO NOT SCALE - USE DIMENSIONS ONLY

CODE	DESCRIPTION	ITEM No.	PAYMENT
1	MODULAR BLOCK WALL	611	S.F.
2	CAP STONE		INCLUDED WITH 611
3	COMPACTED GRANULAR BASE, 6" THICK (NO. 57)		INCLUDED WITH 611
4	TIEBACK (ENGINEERING GEOGRID FOR ROADWAYS, TENSAR BX1200, PER 609)		INCLUDED WITH 611
5	DRAINAGE AGGREGATE (NO. 57)		INCLUDED WITH 611
6	AGGREGATE REFILL, TYPE 1 (PER 203)		INCLUDED WITH 611
7	TOPSOIL FURNISHED AND PLACED, 4" THICK (PER 653)		INCLUDED WITH 611
8	LAWN SEEDING AND MULCHING (PER 659)		INCLUDED WITH 611
9	HOUSE DRAIN PIPE, COMPLETE	556	EACH
10	HOUSE DRAIN PIPE, TYPE "A"	556	L.F.

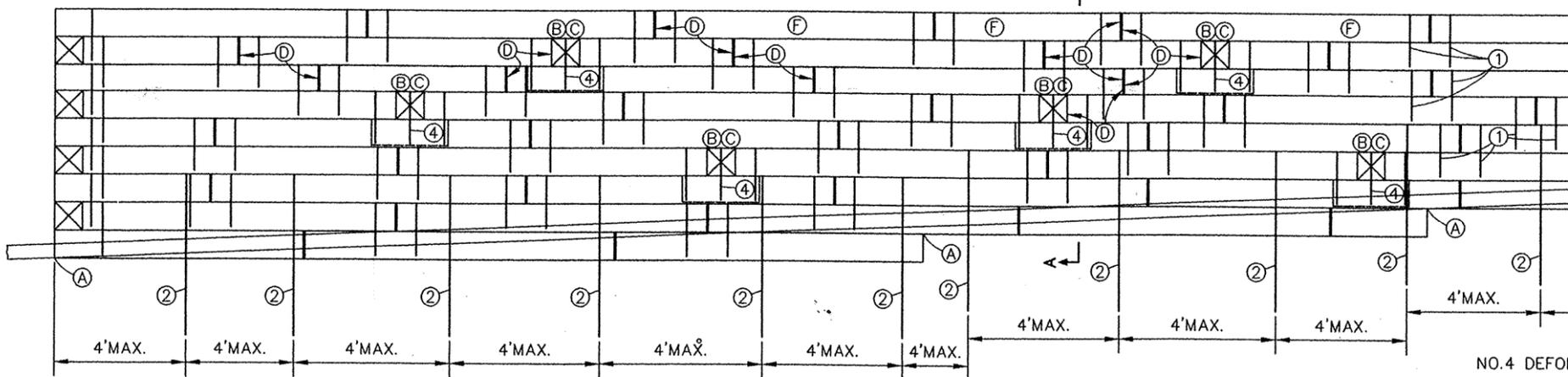
CITY OF AKRON ENGINEERING BUREAU	CONSTRUCTION STANDARD DWG. No. LA-3.1
<i>Michael Madonia</i> 5/18/05 MANAGER, DESIGN DIVISION	MODULAR BLOCK RETAINING WALL
<i>Dawn Wilson</i> 5/19/05 MANAGER, CONSTRUCTION DIVISION	AUTOCAD DRAWING - STD_LA-3.1.DWG REVISIONS:
<i>Daniel Yelick</i> 5/20/05 CITY ENGINEER	May 18, 2005

THIS DRAWING DEPICTS A MINIMUM BASIC INSTALLATION. VARIATIONS MAY BE MADE TO FIT VARIABLE CONDITIONS, BUT THE GUIDELINES NOTED BELOW MUST BE FOLLOWED.

- (A) BOTTOM OF FIRST COURSE TIMBERS SHALL BE AT OR BELOW BOTTOM OF WALK ON UNDISTURBED OR COMPACTED GROUND.
- (B) INSTALL TIEBACK WITH DEADMAN EVERY TWO COURSES, AND 16" APART IN THE SAME COURSE. DO NOT INSTALL TIEBACK IN THE TOP COURSE.

- (C) PLACE FIRST TIEBACK TWO TIMBER LENGTHS FROM CORNER (OR END) IN SECOND FULL EXPOSED COURSE. PLACE SECOND TIEBACK ONE TIMBER LENGTH FROM CORNER (OR END) TWO COURSES HIGHER. PLACE THIRD TIEBACK ONE AND ONE-HALF TIMBER LENGTHS FROM CORNER (OR END) TWO COURSES HIGHER. ADDITIONAL TIEBACKS MAY BE REQUIRED AS DIRECTED BY THE ENGINEER.
- (D) JOINTS IN ADJACENT COURSES SHALL BE STAGGERED A MINIMUM OF 24". TIEBACKS SHALL BE NO CLOSER THAN 18" FROM A JOINT IN AN ADJACENT COURSE.

- (E) MINIMUM LENGTH TIMBER SECTIONS SHALL BE 36", AND ONLY WHERE IT CAN BE FULLY SECURED TO ADJACENT TIMBERS, AND NEVER ON TOP COURSE.
- (F) FINISH OFF TOP COURSE WITH FULL LENGTH TIMBERS, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
- (G) ALL HOLES THRU TIMBERS REQUIRED FOR REINFORCING RODS SHALL BE DRILLED, AND ONLY LARGE ENOUGH TO ALLOW THE RODS TO BE DRIVEN THRU.



FRONT FACE SHALL BE BATTERED AS DIRECTED BY THE ENGINEER

CONCRETE SIDEWALK

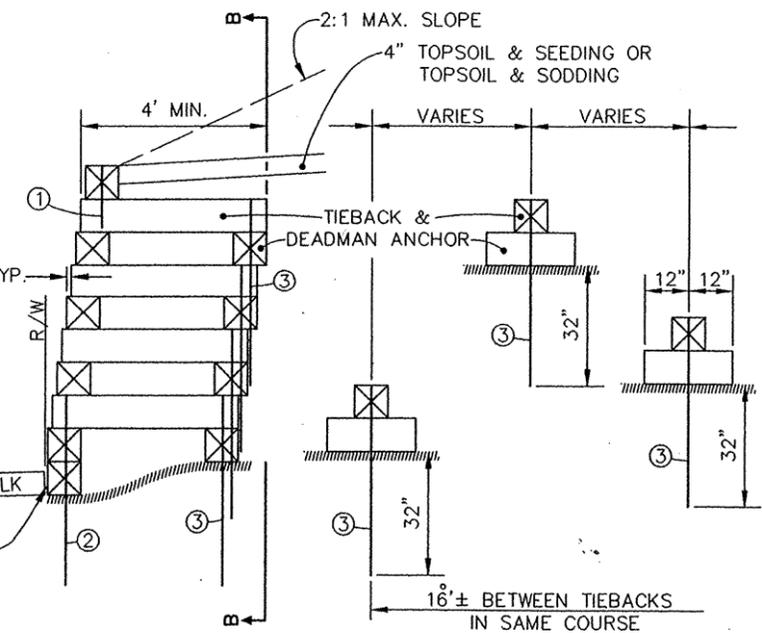
CONCRETE SIDEWALK
1/2" PREMOLDED EXPANSION MATERIAL

NO.4 DEFORMED REINFORCING RODS

- ① 16"(2 TIMBERS) LONG - 8" FROM END.
- ② 48"(3 TIMBERS+24") LONG AT MAXIMUM 4' INTERVALS AND MINIMUM 2 RODS PER TIMBER.
- ③ 48"(2 TIMBERS+32") LONG THRU TIEBACKS.
- ④ 16"(2 TIMBERS) LONG - INTO TIMBER BELOW.

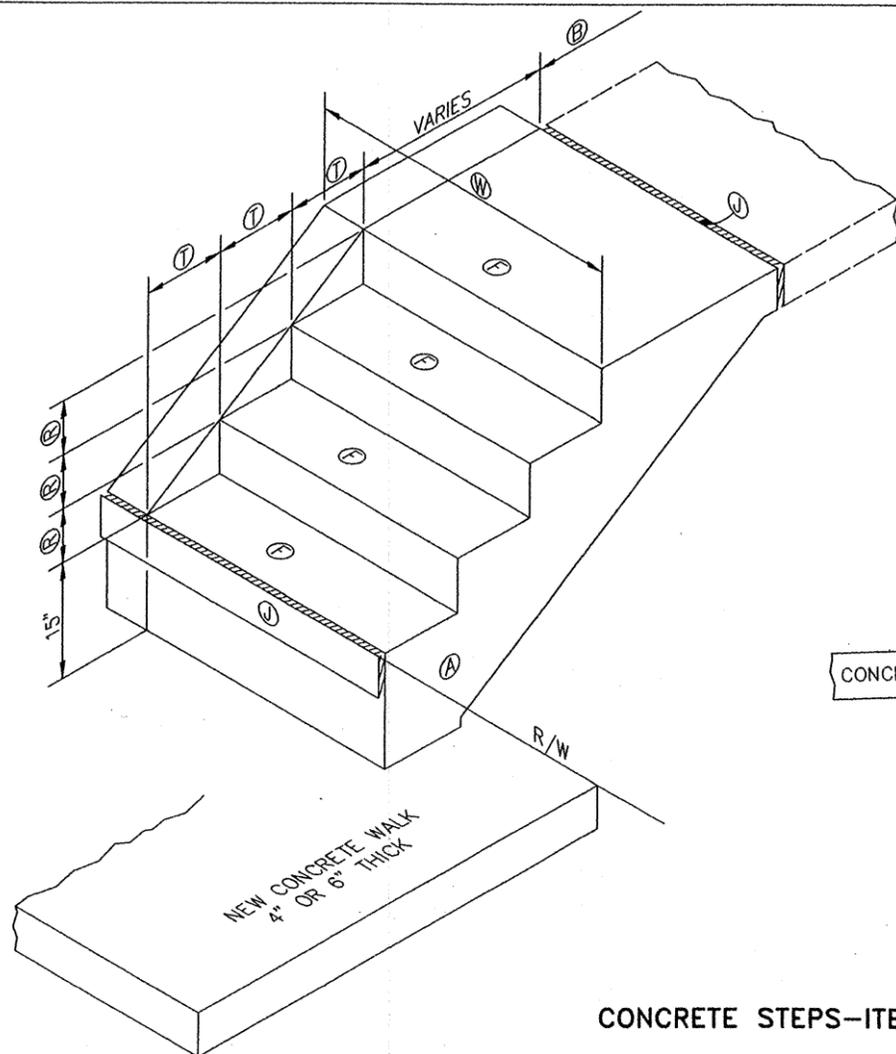
PERMIT IS REQUIRED FROM BUILDING DEPARTMENT WHEN WALL IS THREE FEET OR MORE IN HEIGHT.

LANDSCAPE TIMBER WALL-ITEM 611



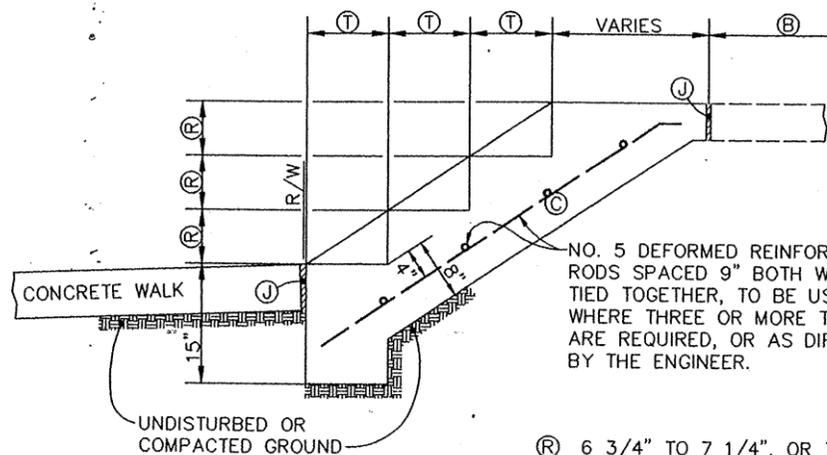
VIEW A-A

VIEW B-B



CONCRETE STEPS-ITEM 456

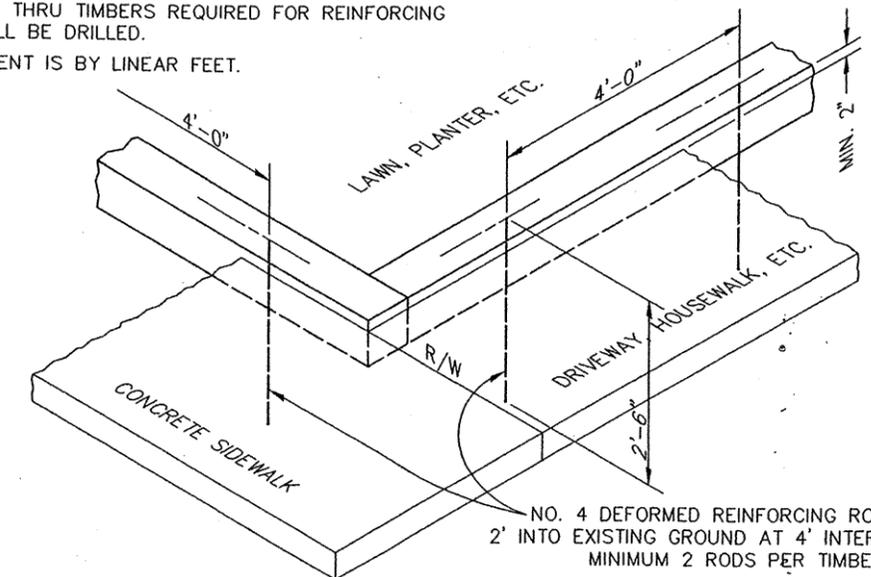
- (A) BEFORE NEW WALK IS CONSTRUCTED, ALL STEPS INTENDED FOR REMOVAL THAT ENCRANCH INTO THE R/W SHALL BE REMOVED TO ALLOW THE USE OF BACK SIDEWALK FORMS. THE NUMBER & SIZE OF NEW STEPS REQUIRED WILL VARY TO FIT EXISTING CONDITIONS. STEPS RECONSTRUCTED ONLY IN PART SHALL BE RECONSTRUCTED TO CONFORM TO ORIGINAL SIZE & SHAPE OF EXISTING STEPS.
- (B) ANY HOUSEWALK REQUIRED TO BE REPLACED SHALL BE PAID FOR UNDER ITEM 456, CONCRETE HOUSEWALK RECONSTRUCTION.
- (C) MAINTAIN MINIMUM 2" COVER ON ALL REINFORCING RODS.



NO. 5 DEFORMED REINFORCING RODS SPACED 9" BOTH WAYS, TIED TOGETHER, TO BE USED WHERE THREE OR MORE TREADS ARE REQUIRED, OR AS DIRECTED BY THE ENGINEER.

- (R) 6 3/4" TO 7 1/4", OR TO FIT EXISTING.
- (T) 10" MINIMUM, OR TO FIT EXISTING.
- (W) TO MEET EXISTING, OR AS DIRECTED BY THE ENGINEER.
- (F) SLOPE TREADS 1/4" PER FOOT TOWARD SIDEWALK AND FINISH TO PRODUCE A SANDY TEXTURE.
- (J) PREMOLDED EXPANSION JOINT MATERIAL, FULL DEPTH OF THE WALK.

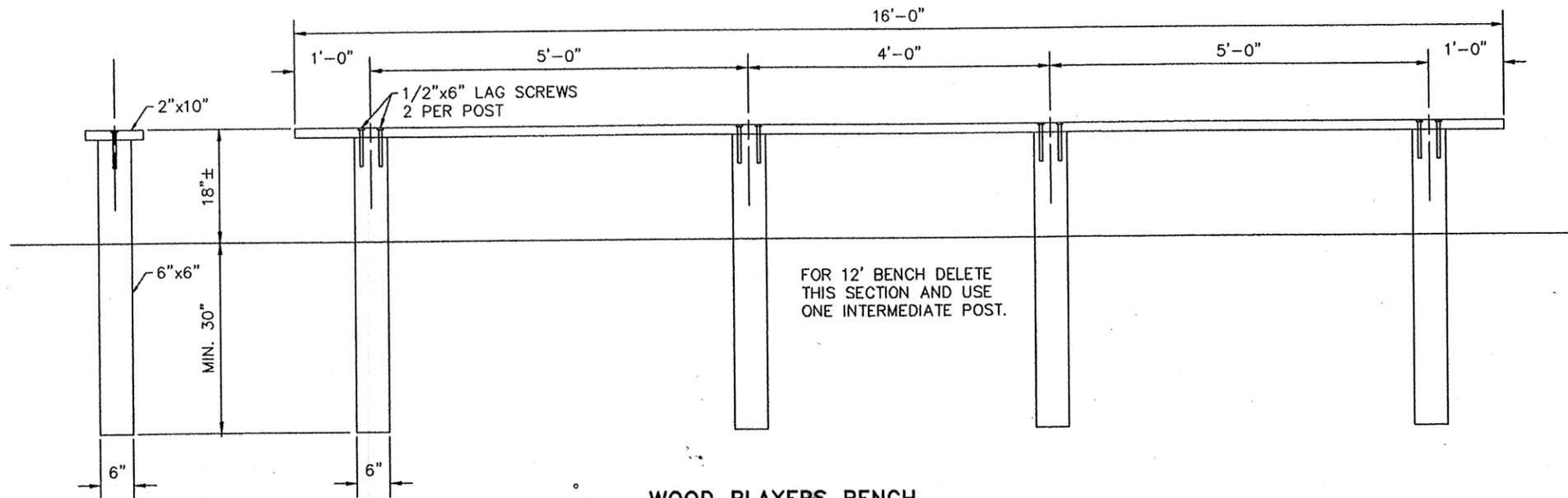
SET TIMBERS ON UNDISTURBED OR COMPACTED GROUND. ALL HOLES THRU TIMBERS REQUIRED FOR REINFORCING RODS SHALL BE DRILLED. MEASUREMENT IS BY LINEAR FEET.



LANDSCAPE TIMBER EDGING-ITEM 612

DO NOT SCALE - USE DIMENSIONS ONLY

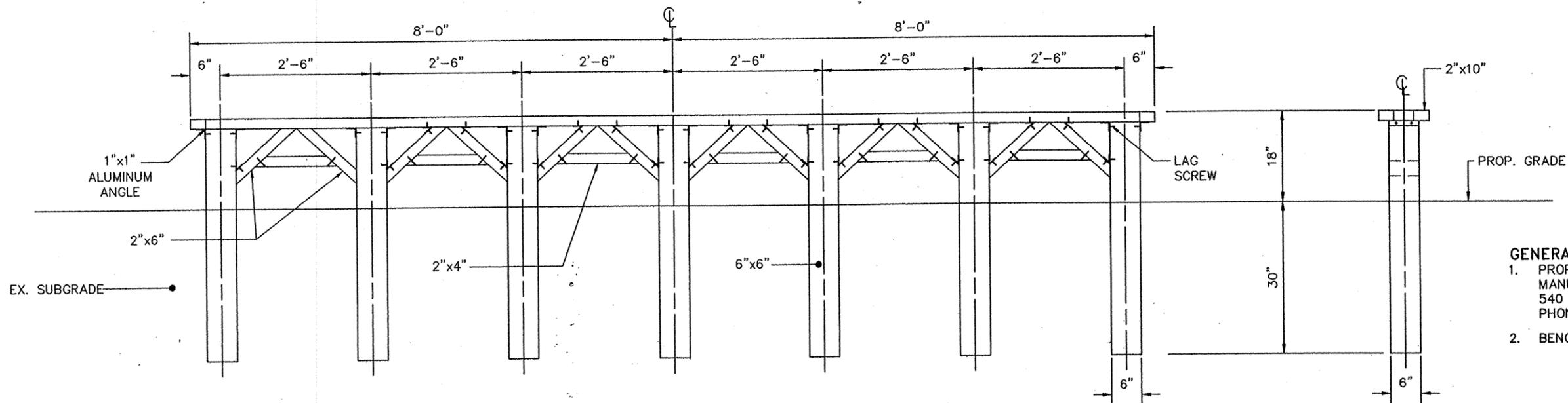
CITY OF AKRON BUREAU OF ENGINEERING	CONSTRUCTION STANDARD DWG. No.	LA-3
David J. Jelic 4-21-99 MANAGER, DESIGN DIVISION	LANDSCAPE TIMBER WALL LANDSCAPE TIMBER EDGING CONCRETE STEPS	
Pawan K. Khailan MANAGER, CONSTRUCTION DIVISION	AUTOCAD DRAWING - STD_LA-3.DWG REVISIONS: 4-15-99	
David J. Jelic CITY ENGINEER	September 23, 1997	



WOOD PLAYERS BENCH

GENERAL NOTES, WOOD BENCH

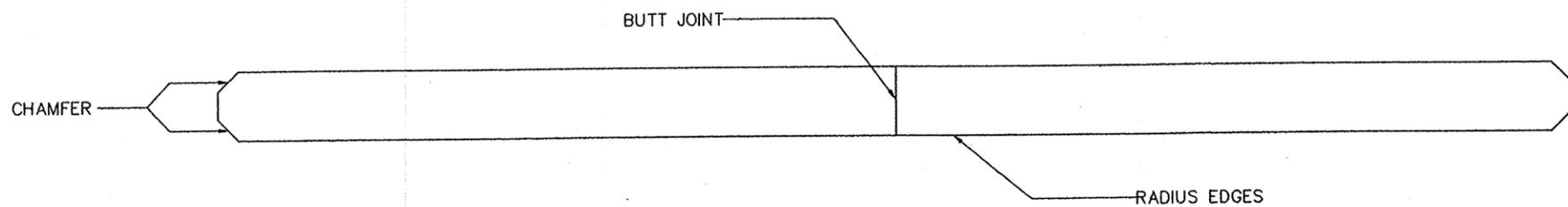
1. ALL WOOD SHALL BE PRESSURE TREATED NO. 1 GRADE SOUTHERN YELLOW PINE.
2. ALL WOOD SHALL HAVE EDGES RADIUS TO 1/4."
3. ALL MOUNTING BOLTS SHALL BE CORROSION-RESISTANT AND TAMPER-PROOF.
4. ALL METAL SHALL BE FINISHED WITH APPROVED ELECTROSTATICALLY APPLIED BLACK DRY POWDER EPOXY BAKED-ON ENAMEL FINISH.



PLASTIC PLAYERS BENCH

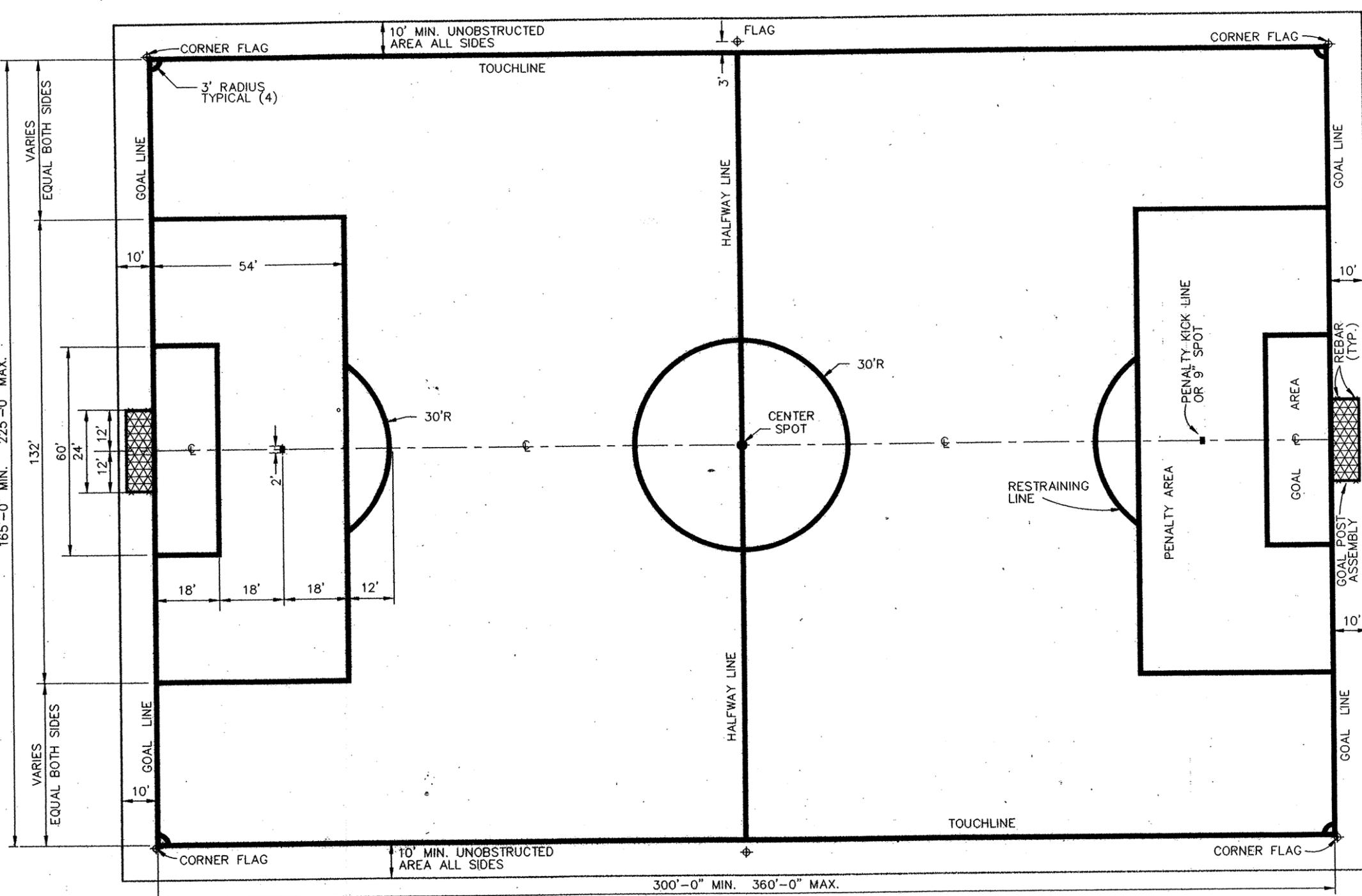
GENERAL NOTES, PLASTIC BENCH

1. PROPOSED PLAYERS BENCH SHALL BE MODEL # FP2065 MANUFACTURED BY THE PLASTIC LUMBER CO., INC., 540 SOUTH MAIN ST., AKRON, OHIO 44311 PHONE: 762-8989 OR APPROVED EQUAL.
2. BENCH COLOR SHALL BE CEDAR/BROWN.

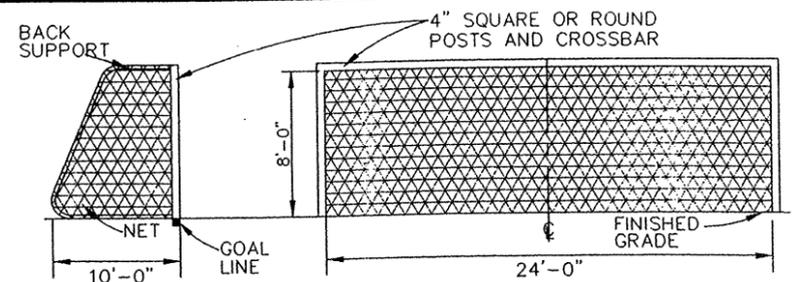


DO NOT SCALE - USE DIMENSIONS ONLY

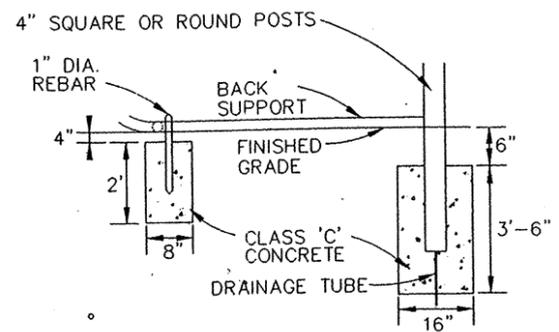
CITY OF AKRON BUREAU OF ENGINEERING	CONSTRUCTION STANDARD DWG. No. LA-4.2
<i>David Jelic</i> 9-25-97 MANAGER, DESIGN DIVISION	PLAYERS BENCH
<i>Pawan K. Khaitan</i> 9/25/97 MANAGER, CONSTRUCTION DIVISION	
<i>David Haugh</i> 9/25/97 CITY ENGINEER	
AUTOCAD DRAWING - STD_LA41.DWG September 23, 1997	
REVISIONS:	



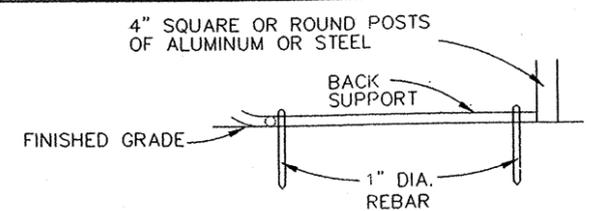
Soccer Field Layout



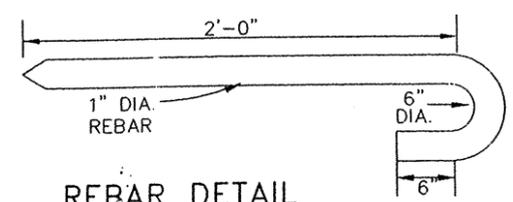
Goal Post Assembly



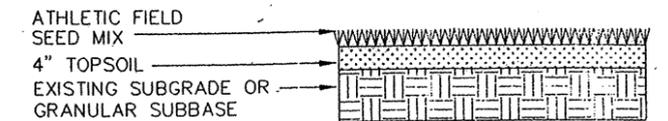
Permanent Goal Installation



Portable Goal Detail



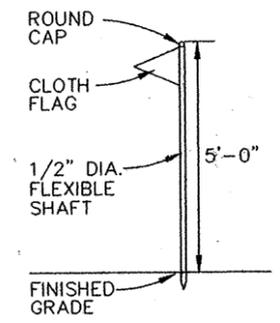
Rebar Detail



Turf Detail

NOTES:

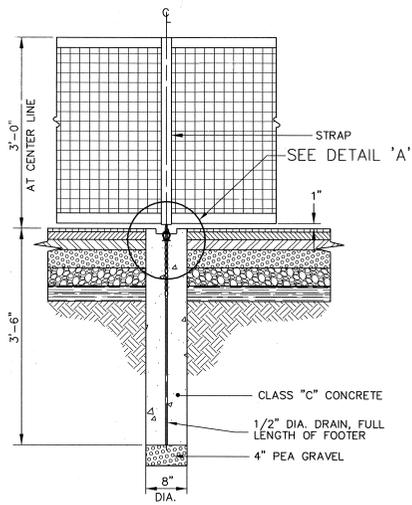
1. SOCCER FIELD AND ACCESSORIES SHALL BE INSTALLED AS INDICATED IN THE PLAN SET, THIS DRAWING, THE SUPPLEMENTAL SPECIFICATIONS, AND ACCORDING TO THE MANUFACTURERS' RECOMMENDATIONS.
2. PREFERRED ORIENTATION IS FOR THE LONG AXIS TO BE NORTHWEST-SOUTHEAST TO SUIT THE ANGLE OF THE SUN IN THE FALL PLAYING SEASON OR NORTH-SOUTH FOR LONGER PLAY PERIODS. PREFERRED GRADING IS A LONGITUDINAL CROWN WITH A 1% SLOPE FROM THE CENTER TO THE SIDES OF THE FIELD. GRADING MAY BE FROM END TO END, CORNER TO CORNER, OR AS INDICATED IN THE PLAN SET TO FIT EXISTING CONDITIONS.
3. ALL DIMENSIONS ARE TO THE INSIDE EDGE OF THE LINES. ALL LINES SHALL BE 4" WIDE EXCEPT FOR THE 9" SPOT MARKINGS. THE GOAL LINE SHOULD EXTEND BETWEEN THE GOAL POSTS IN THE GOAL AREA.
4. THE 1" DIAMETER REBAR SHALL BE EPOXY COATED AND CONFORM TO SECTION 509 - REINFORCING STEEL.



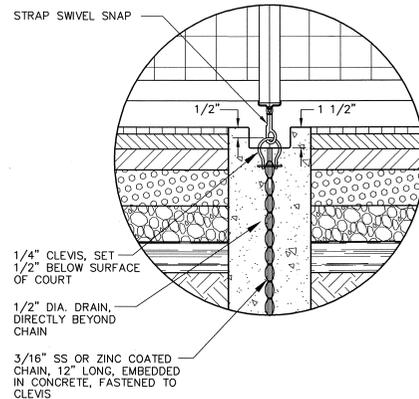
Flag Detail

DO NOT SCALE - USE DIMENSIONS ONLY

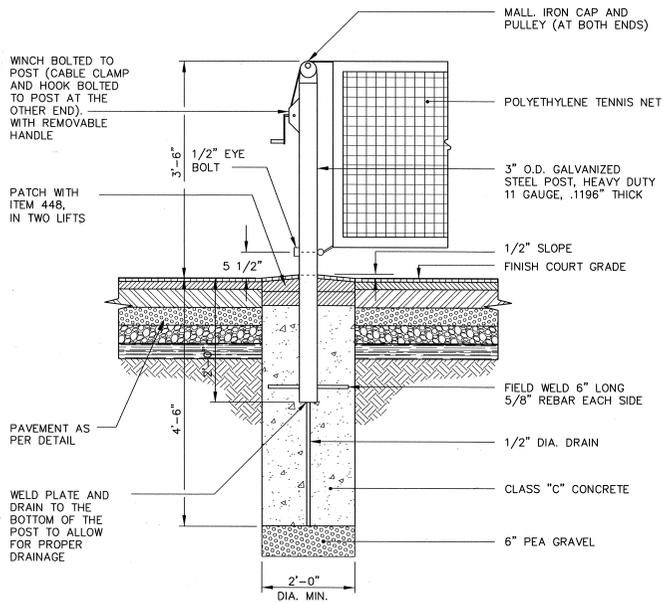
CITY OF AKRON BUREAU OF ENGINEERING	CONSTRUCTION STANDARD DWG. No. LA-6
<i>David Jelic</i> 4-29-99 MANAGER, DESIGN DIVISION	SOCCER FIELD
<i>Pawan K. Khaitan</i> 5-3-99 MANAGER, CONSTRUCTION DIVISION	
<i>C. David Hough</i> 5/3/99 CITY ENGINEER	AUTOCAD DRAWING - STD_LA6.DWG REVISIONS: April 28, 1999



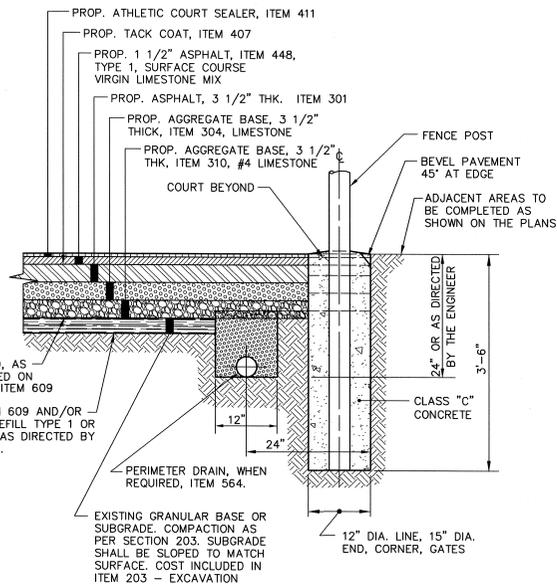
NET ANCHOR DETAIL



DETAIL 'A'



NET POST DETAIL



PAVEMENT DETAIL

LINE MARKING SHALL BE COMPLETED IN ACCORDANCE WITH ITEM 415 - LINE MARKING. ALL LINES SHALL BE 2" WIDE. OVERALL DIMENSIONS FOR COURT MARKINGS ARE TO THE OUTSIDE OF LINES EXCEPT FOR THOSE INVOLVING THE CENTER SERVICE LINE WHICH IS EQUALLY DIVIDED BETWEEN THE RIGHT AND LEFT SERVICE COURTS.

FENCE ENCLOSURE, IF PROVIDED, SHALL BE ITEM 607 - FENCE, TYPE CLTRBRMR, 120 INCH. FENCE SHALL BE 9 GAUGE, WITH 2" MESH AND SHALL INCLUDE A TOP RAIL, BOTTOM RAIL AND MIDDLE RAIL.

ALL NET POST AND ANCHOR FOOTERS SHALL BE CORED AFTER ASPHALT IS COMPLETE AND IN PLACE.

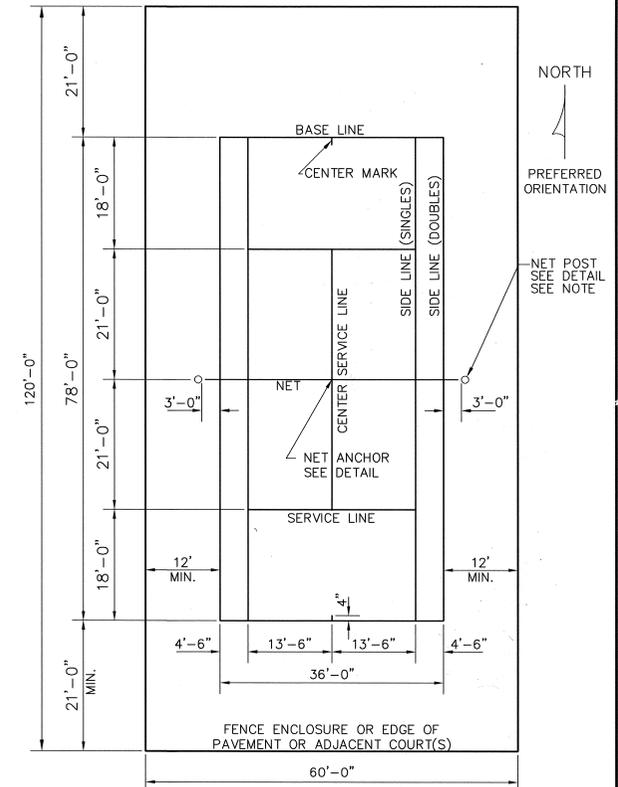
NET POSTS SHALL BE SPACED 42' FROM INSIDE FACE TO INSIDE FACE, OR AS DIRECTED BY THE MANUFACTURER. CONTRACTOR TO VERIFY WIDTH OF NET BEFORE CORING HOLES FOR POSTS.

NET POSTS AND CAPS SHALL BE MANUFACTURED BY EDWARDS SPORTS PRODUCTS, MODEL NO. 1234404, OR APPROVED EQUAL. TENNIS NET (42') SHALL BE MANUFACTURED BY MACGREGOR, SUPER PRO 5000, MODEL NO. TN500, OR APPROVED EQUAL. TENNIS STRAP SHALL BE MANUFACTURED BY MACGREGOR, MODEL NO. MTCSTRAP, OR APPROVED EQUAL. ALL EQUIPMENT TO BE SUPPLIED BY BSN SPORTS, P.O. BOX 7726, DALLAS, TX 75209, PHONE 1-800-527-7510, OR AN APPROVED EQUAL.

PERIMETER DRAINS, WHEN REQUIRED, SHALL BE CONSTRUCTED AS SHOWN AND IN ACCORDANCE WITH ITEM 564-UNDERDRAINS. DRAINS SHALL BE CONSTRUCTED PRIOR TO CONSTRUCTION OF THE ASPHALT COURT, WITH CONSIDERATION BEING GIVEN TO THE RELATIONSHIP OF THE DEPTH OF PIPE TO TOP OF ASPHALT TO INSURE POSITIVE DRAINAGE.

ASPHALT PLAYING SURFACE SHALL BE IN ONE PLANE, SLOPED 1" IN 10' FROM SIDE TO SIDE, END TO END, OR CORNER TO CORNER DIAGONALLY, OR AS DETAILED ON THE PLANS. CONSTANT THICKNESS SUBBASE, WHEN REQUIRED, SHALL FOLLOW THE SAME SLOPE.

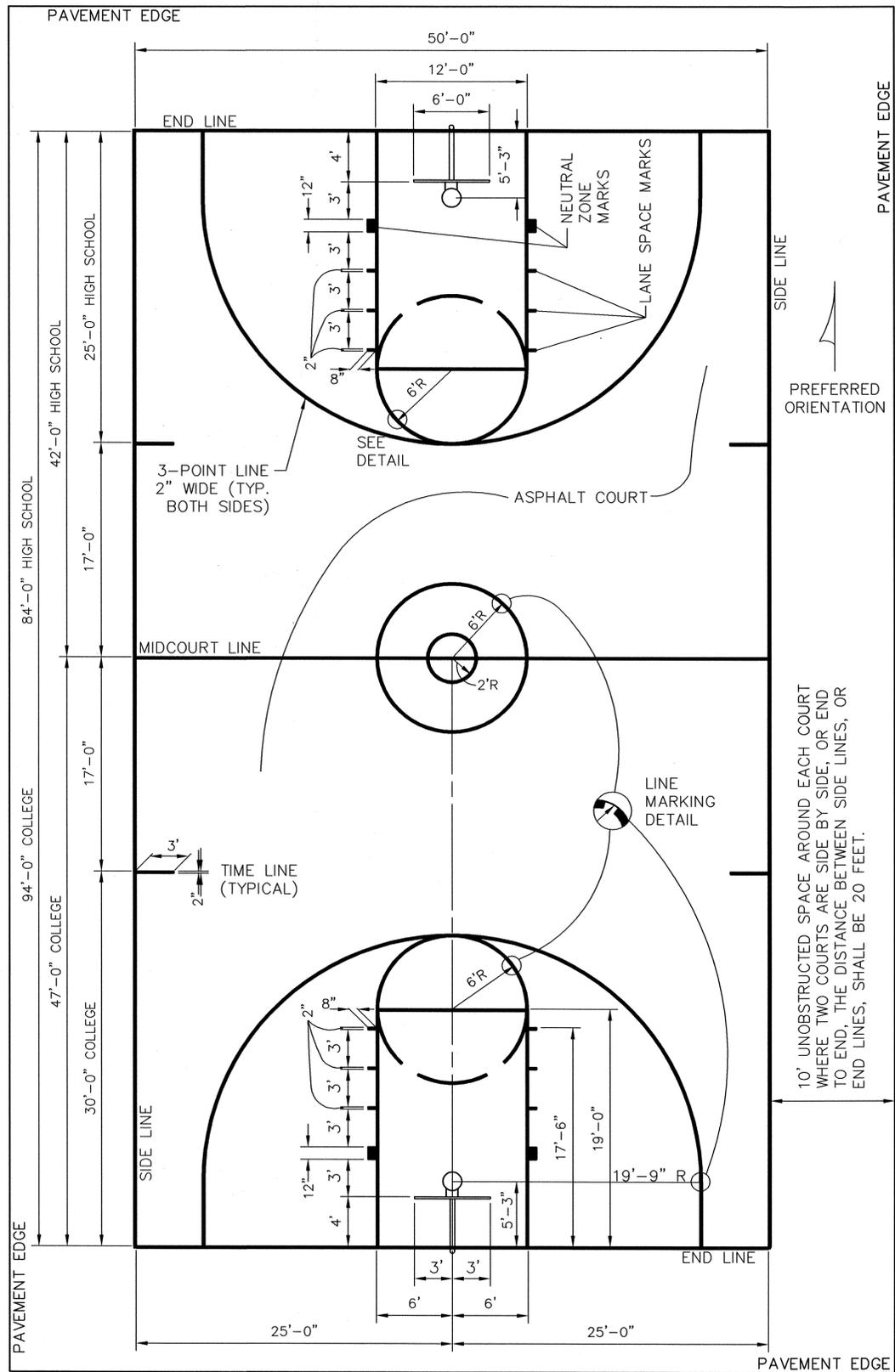
ASPHALT PLAYING SURFACE SHALL BE FINISHED IN ACCORDANCE WITH ITEM 411 - ATHLETIC COURT SEALCOAT.



TENNIS COURT LAYOUT

DO NOT SCALE - USE DIMENSIONS ONLY

CITY OF AKRON BUREAU OF ENGINEERING	CONSTRUCTION STANDARD DWG. No. LA-7
Red C. W. 4/1/08 MANAGER, DESIGN DIVISION Dan O. Wilson 4/1/08 MANAGER, CONSTRUCTION DIVISION Kenneth F. Koston ACTING CITY ENGINEER	TENNIS COURT AUTOCAD DRAWING - STD_LA-7.DWG July 30, 1997 REVISIONS: May 22, 2000 January 30, 2008



LIMESTONE BASE, SUPPORT BRICK, CONCRETE FOOTER, STEEL PIPE W/ANCHOR RODS, MOUNTING HARDWARE, BACKBOARD, RIM AND NET TO BE INSTALLED AND PAID FOR UNDER ITEM 673 - BASKETBALL GOAL ASSEMBLY.

BACKBOARD SHALL BE 4'x 6' RECTANGULAR ONE-PIECE ALL STEEL CONSTRUCTION, MODEL 590-0025, AND THE PIPE SHALL BE 4 1/2" O.D. GALVANIZED STEEL, WITH 20" RADIUS 90° OFFSET BEND, WITH 1/4"x 6"x 9" ATTACHMENT PLATE ELECTRICALLY WELDED ON THE CANTILEVER END, MODEL 590-0026, BOTH AS MANUFACTURED BY BCI BURKE COMPANY, FOND-DU-LAC, WISCONSIN, 54936, PHONE 1-800-356-2070, OR AN APPROVED EQUAL.

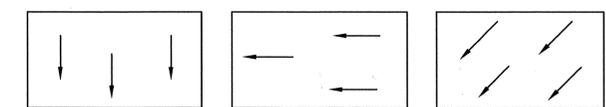
RIM SHALL BE A REGULATION 18" DIAMETER, DOUBLE RIM, 5/8" ROUND STEEL, FINISHED WITH TWO COATS ORANGE BAKED-ON ENAMEL, WITH NO-TIE CLIPS, MODEL 046-0038, WITH STANDARD 12 LOOP, 120 THREAD NYLON NET, BOTH AS MANUFACTURED BY BCI BURKE COMPANY OR AN APPROVED EQUAL. THE RIM SHALL BE CAPABLE OF SUPPORTING 600 POUNDS CONCENTRATED LOAD ON ITS OUTERMOST EDGE WITHOUT PERMANENT DISTORTION OR BENDING.

COMPLETE PACKAGE, INCLUDING BACKBOARD, PIPE, AND RIM WITH NET, MODEL 590-0038, AS MANUFACTURED BY BCI BURKE COMPANY, OR AN APPROVED EQUAL.

FENCE ENCLOSURE, IF PROVIDED, SHALL BE ITEM 607 - FENCE, TYPE CLTRBMR, 120 INCH. FENCE SHALL BE 9 GAUGE, WITH 2" MESH AND SHALL INCLUDE A TOP RAIL, BOTTOM RAIL AND MIDDLE RAIL.

PERIMETER DRAINS, WHEN REQUIRED, SHALL BE CONSTRUCTED AS SHOWN AND IN ACCORDANCE WITH ITEM 564-UNDERDRAINS. DRAINS SHALL BE CONSTRUCTED PRIOR TO CONSTRUCTION OF THE ASPHALT COURT, WITH CONSIDERATION BEING GIVEN TO THE RELATIONSHIP OF THE DEPTH OF PIPE TO TOP OF ASPHALT TO INSURE POSITIVE DRAINAGE.

ASPHALT PLAYING SURFACE SHALL BE IN ONE PLANE, SLOPED 1" IN 10' FROM SIDE TO SIDE, END TO END, OR CORNER TO CORNER DIAGONALLY, AS SHOWN BELOW OR AS DETAILED ON THE PLANS. CONSTANT THICKNESS SUBBASE, WHEN REQUIRED, SHALL FOLLOW THE SAME SLOPE.

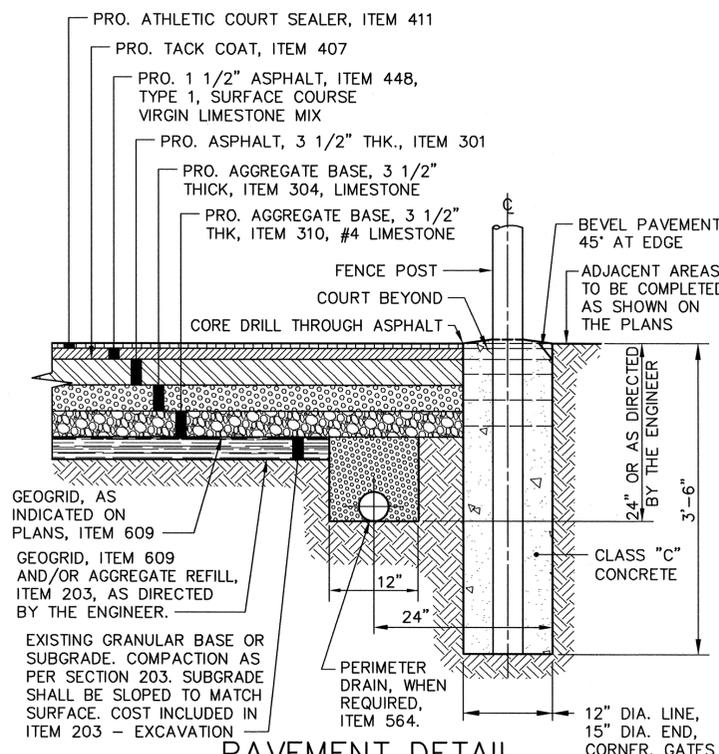
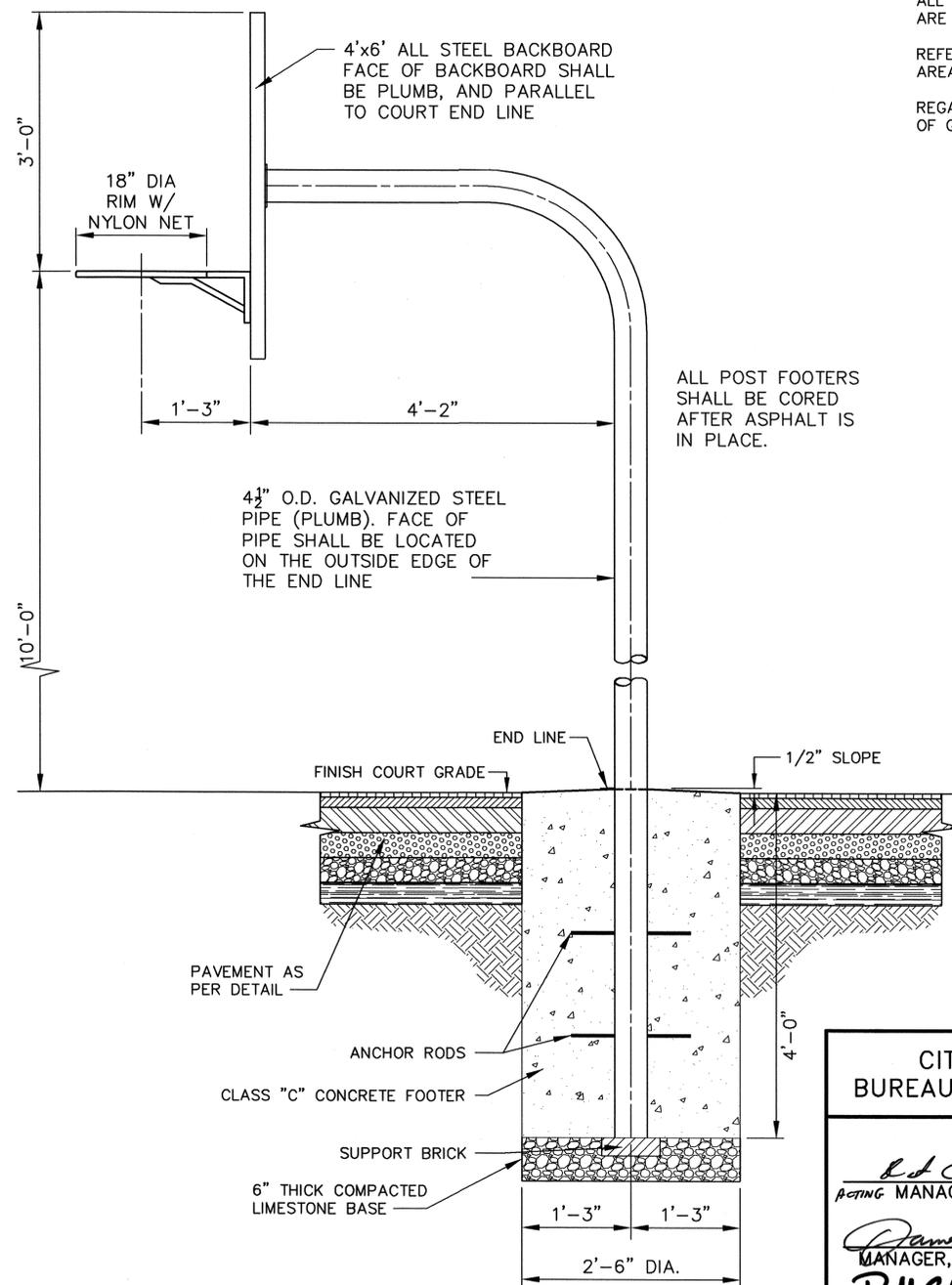


ASPHALT PLAYING SURFACE SHALL BE FINISHED IN ACCORDANCE WITH ITEM 411-ATHLETIC COURT SEALCOAT.

LINE MARKING SHALL BE COMPLETED IN ACCORDANCE WITH ITEM 415-LINE MARKING. ALL LINES SHALL BE 2" WIDE EXCEPT NEUTRAL ZONE MARKS. OVERALL DIMENSIONS ARE TO THE INSIDE EDGE OF SIDE AND END LINES.

REFER TO PLANS FOR DETAIL OF SURFACE DRAINAGE OF COURT AND ADJACENT AREAS, AND FOR DETAIL OF PERIMTER DRAIN, IF REQUIRED.

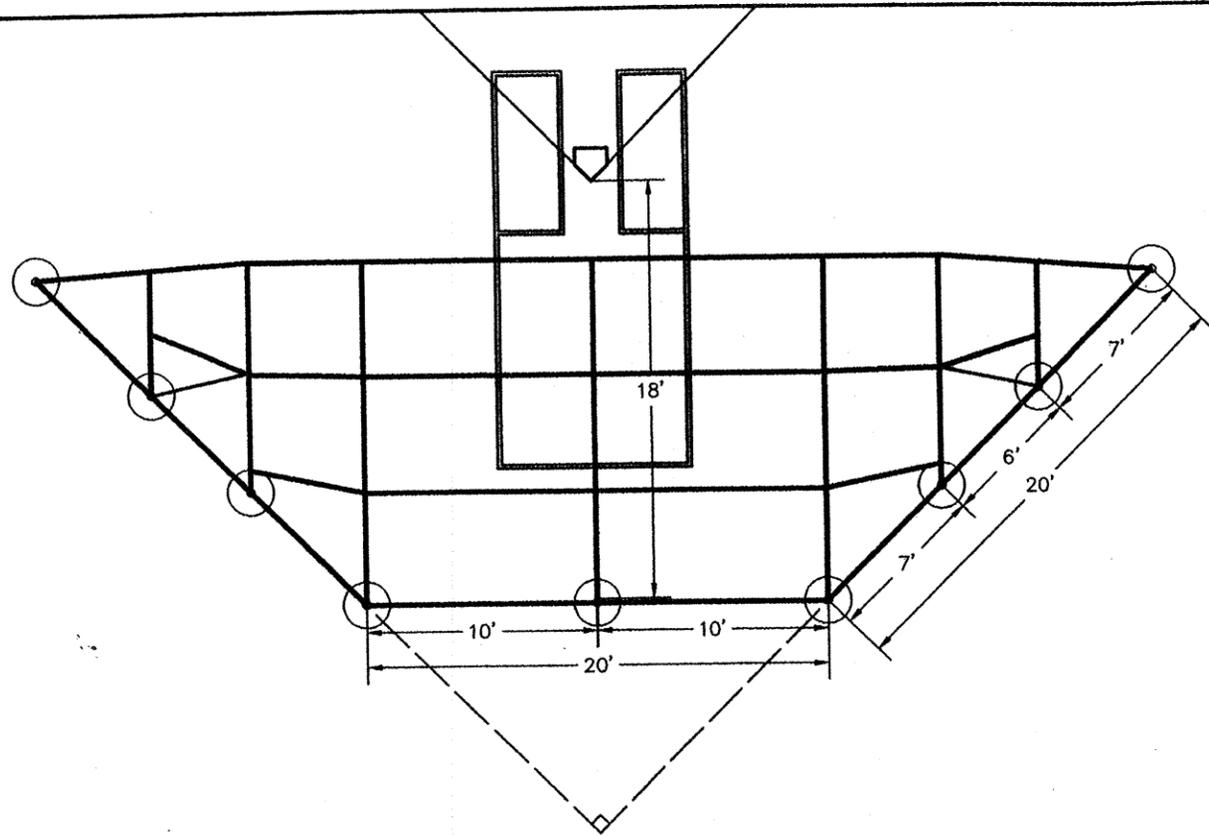
REGARDLESS OF COURT SIZE, LINE MARKINGS SHALL BE DETERMINED BY LOCATION OF GOAL AND ITS RELATIONSHIP TO ALL OTHER LINE MARKINGS.



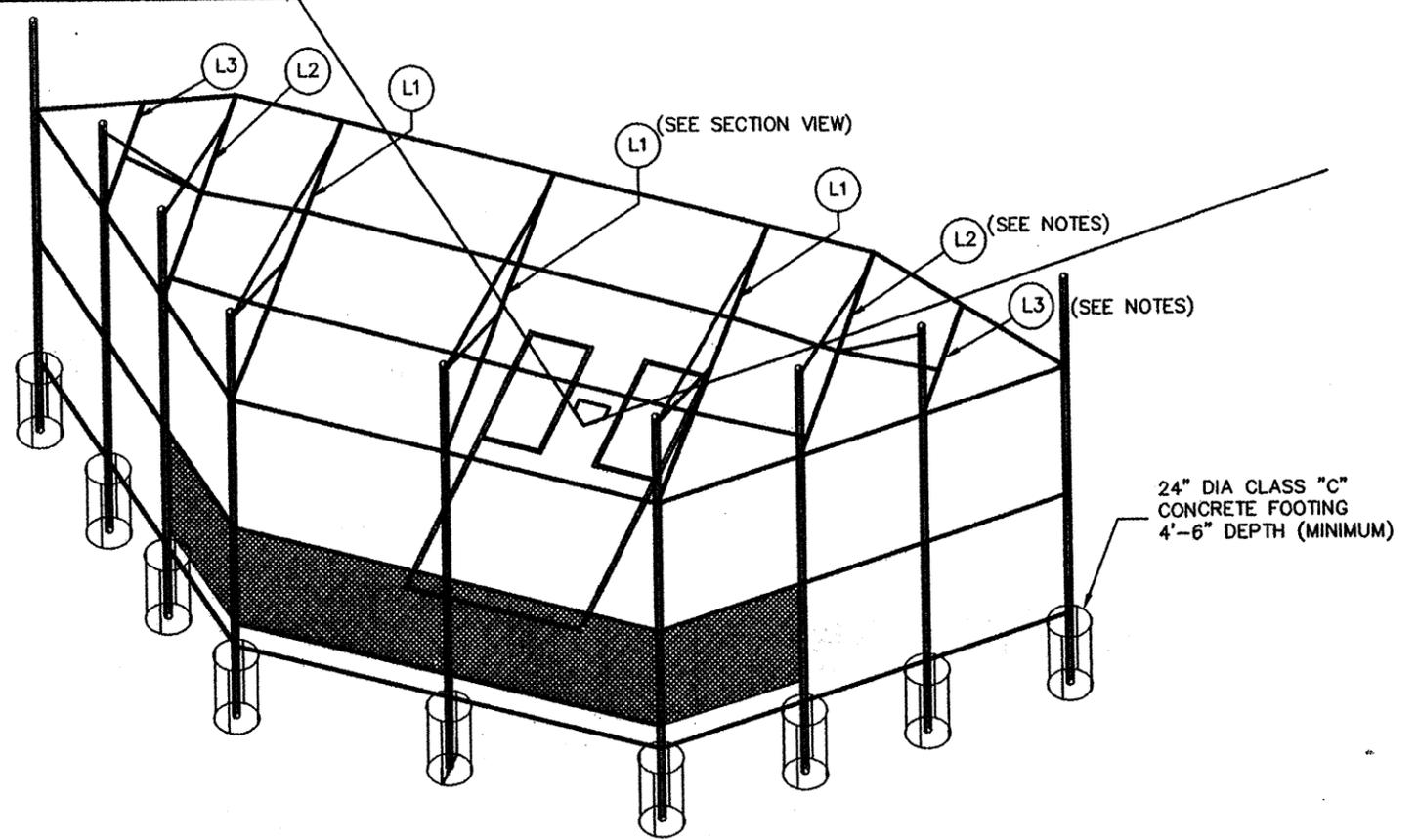
BASKETBALL GOAL ASSEMBLY TYPICAL INSTALLATION

PAVEMENT DETAIL DO NOT SCALE - USE DIMENSIONS ONLY

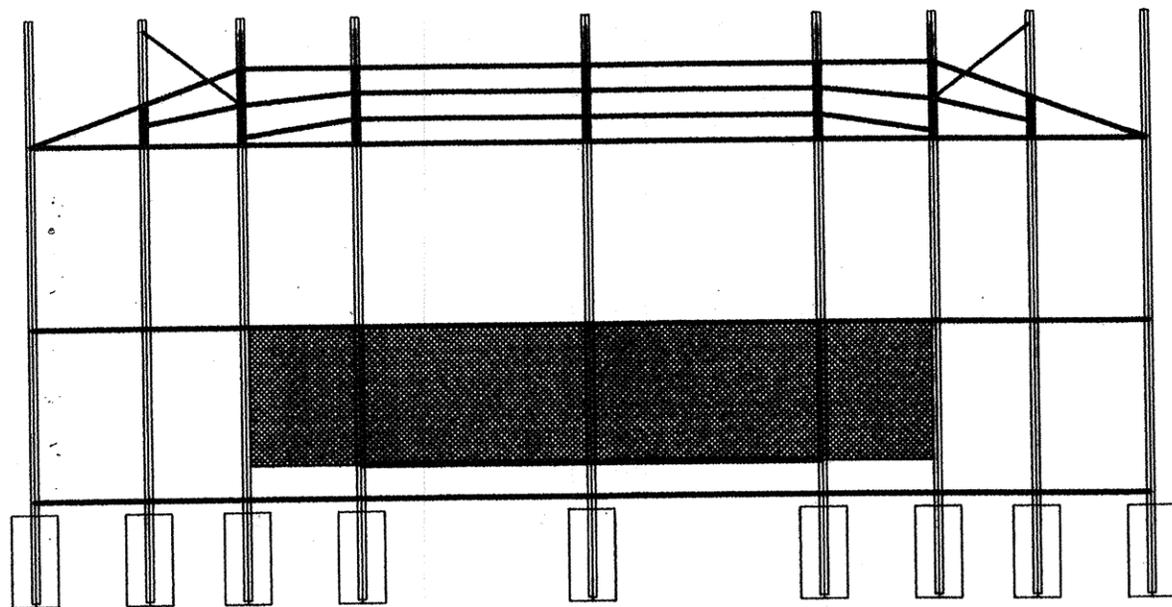
CITY OF AKRON BUREAU OF ENGINEERING	CONSTRUCTION STANDARD DWG. No. LA-9
<i>R.C. Wald</i> 5-30-08 ACTING MANAGER, DESIGN DIVISION	
<i>Dennis Wilson</i> 6-2-08 MANAGER, CONSTRUCTION DIVISION	
<i>R. J. C. H.</i> 6-2-08 CITY ENGINEER	
BASKETBALL COURT	
AUTOCAD DRAWING - STD_LA-9.DWG REVISIONS: APRIL 4, 2008	
September 23, 1997	



TOP VIEW - BACKSTOPS

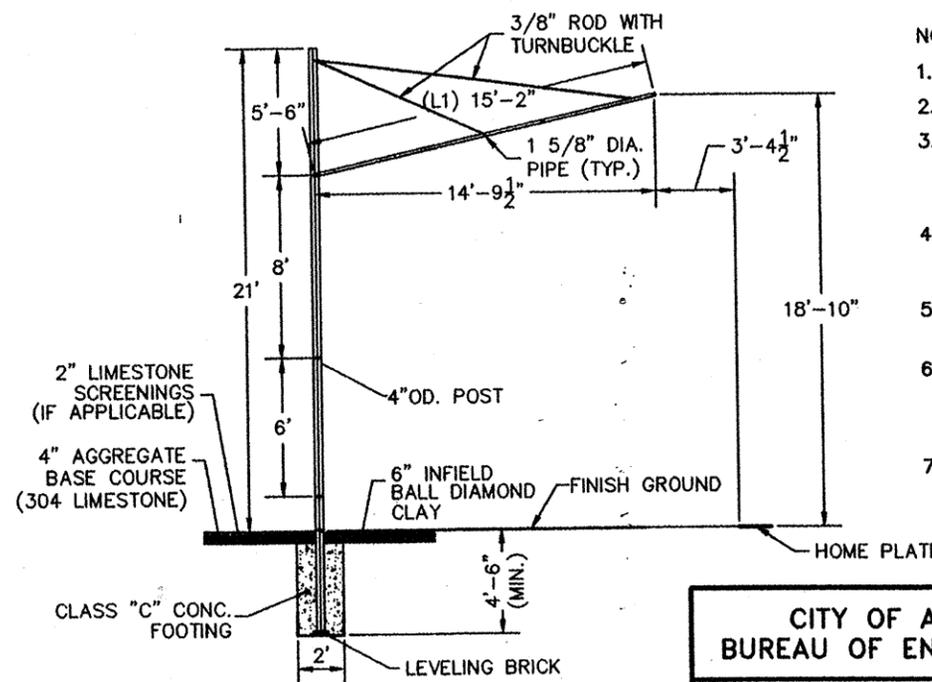


ISOMETRIC VIEW - BACKSTOPS



ATTACH 6' HIGH BACKSTOP SCREENING
(SEE NOTE #7)

FRONT VIEW - BACKSTOPS



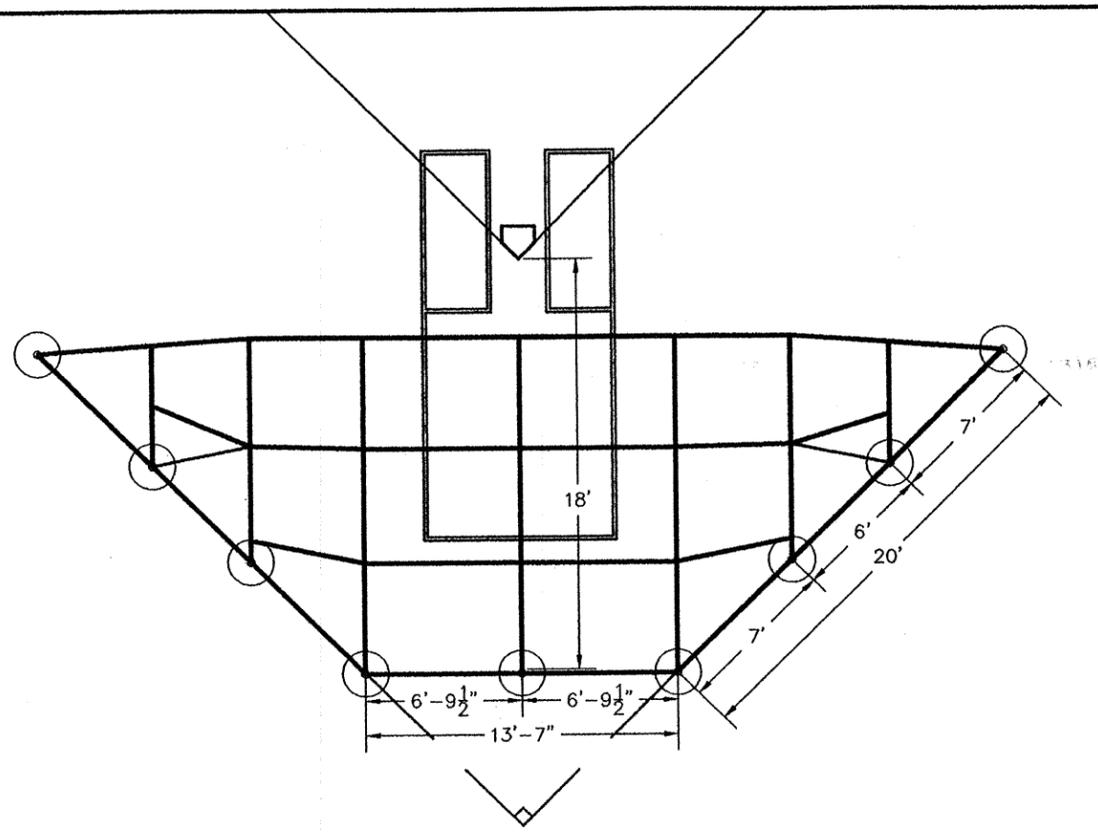
SECTION - BACKSTOPS

NOTES:

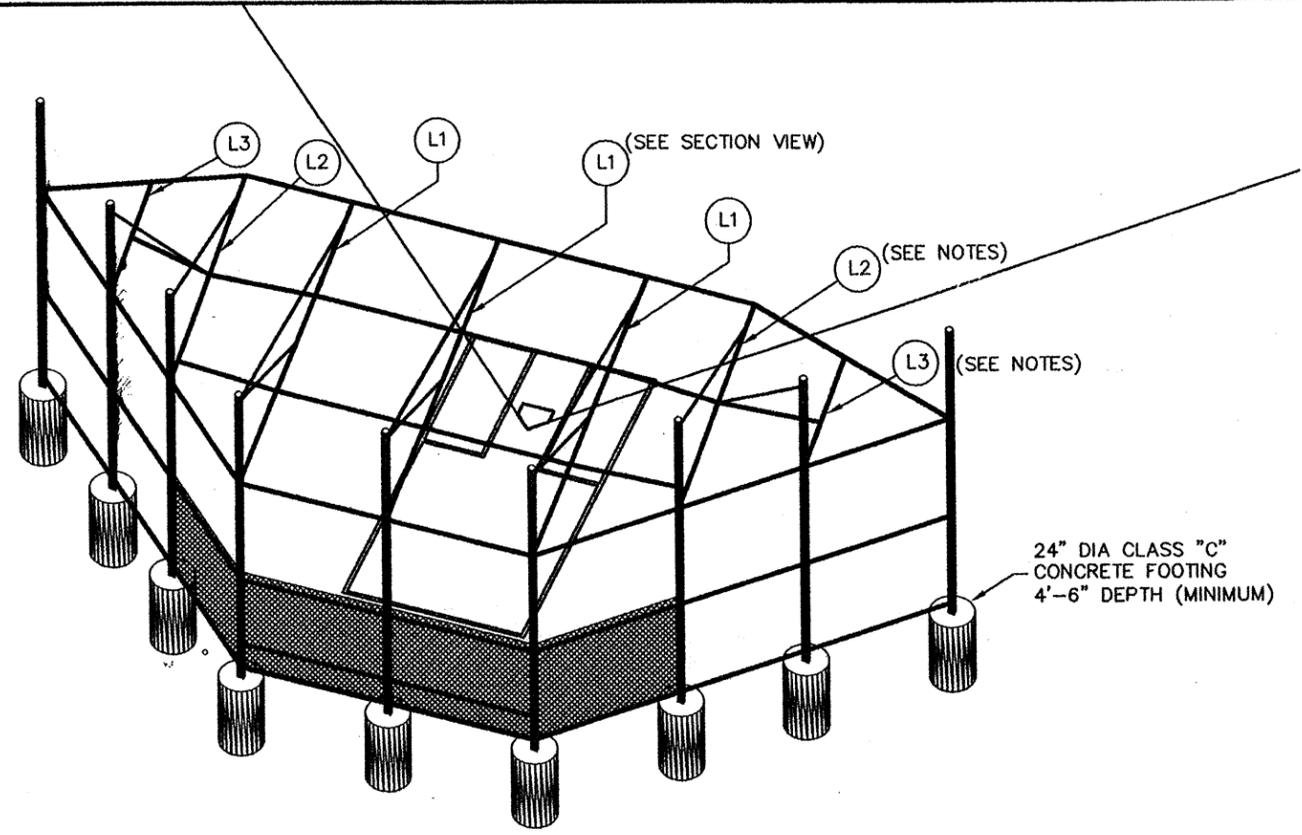
1. MAIN SUPPORT POSTS TO BE 4" O.D. GALVANIZED PIPE.
2. ALL INTERNAL SUPPORT MEMBERS TO BE 1-5/8" O.D. GALV. PIPE.
3. CANOPY SUPPORT MEMBER LENGTHS:
L1 = 15'-2" ±
L2 = 10'-4 1/2" ±
L3 = 5'-7" ±
4. FOOTING SIZE AND DEPTHS SHOWN ARE MINIMUM. THEY ARE TO BE ADJUSTED AS SITE SOIL CONDITIONS REQUIRE. FOOTING DETAILS TO BE SHOWN ON CONSTRUCTION PLANS.
5. BACKSTOP FENCING TO MEET THE GENERAL REQUIREMENTS OF ITEM 607 - FENCE.
6. THE BACKSTOP FABRICS SHALL BE AS FOLLOWS:
BACKS - 6 GAUGE X 2" MESH
SIDES - 9 GAUGE X 2" MESH
TOPS - 9 GAUGE X 2" MESH
7. ATTACH 6' HIGH OPEN MESH SCREENING TO INSIDE OF BACKSTOP. FASTENERS TO BE INJURY SAFE WITH NO JAGGED EDGES. SCREENING TO BE 'BSN SPORTS' CATALOG # BSN-MT6LPXXX. FOR INFORMATION CALL: 1-800-527-7510.

DO NOT SCALE - USE DIMENSIONS ONLY

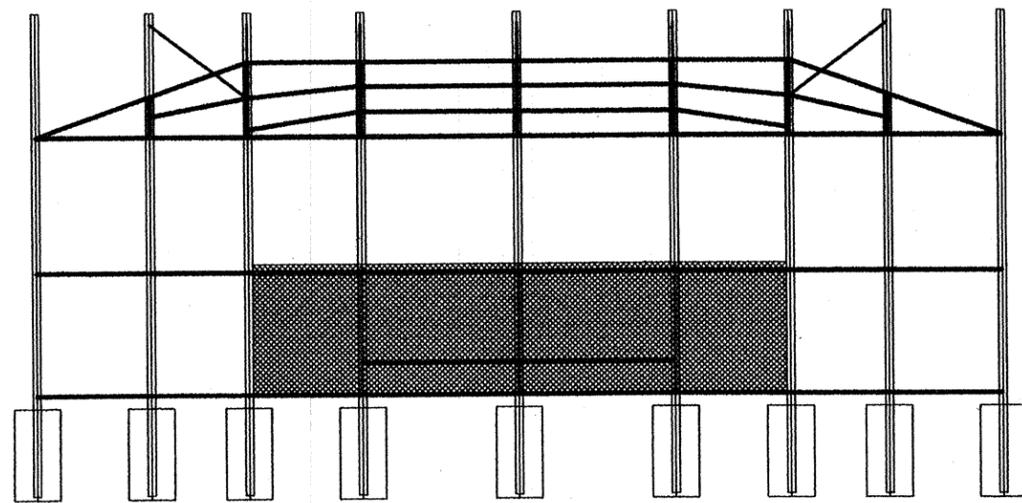
<p>CITY OF AKRON BUREAU OF ENGINEERING</p>	<p>CONSTRUCTION STANDARD DWG. No. LA-10.1</p>
<p><i>David Ulich</i> 9-14-99 MANAGER, DESIGN DIVISION <i>Pawan K. Khaitan</i> 9-28-99 MANAGER, CONSTRUCTION DIVISION <i>G. David Hough</i> 1/28/00 9-30-99 CITY ENGINEER</p>	<p>HIGH SCHOOL STANDARD BACKSTOP</p> <p>AUTOCAD DRAWING - STD LA-10.1.DWG REVISIONS: Sept. 15, 1999</p>



TOP VIEW - BACKSTOPS

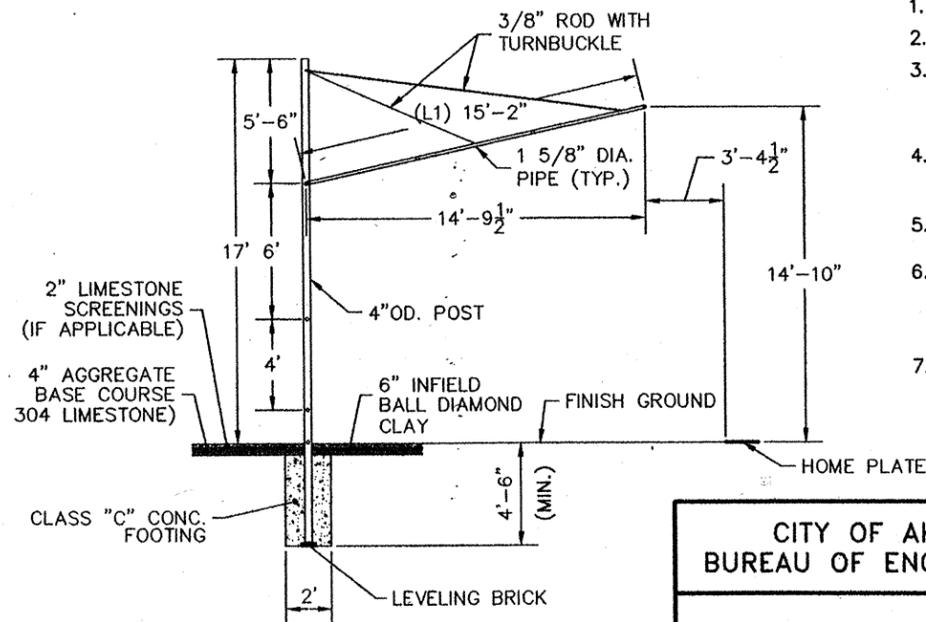


ISOMETRIC VIEW - BACKSTOPS



ATTACH 6' HIGH BACKSTOP SCREENING FROM GROUND UP.
(SEE NOTE #7)

FRONT VIEW - BACKSTOPS



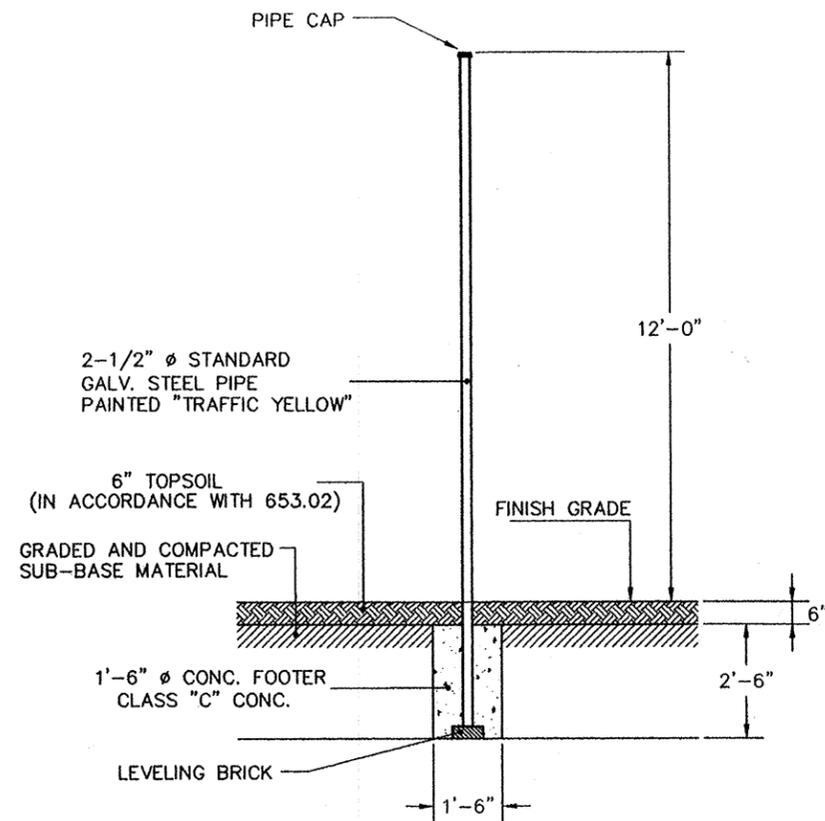
SECTION - BACKSTOPS

NOTES:

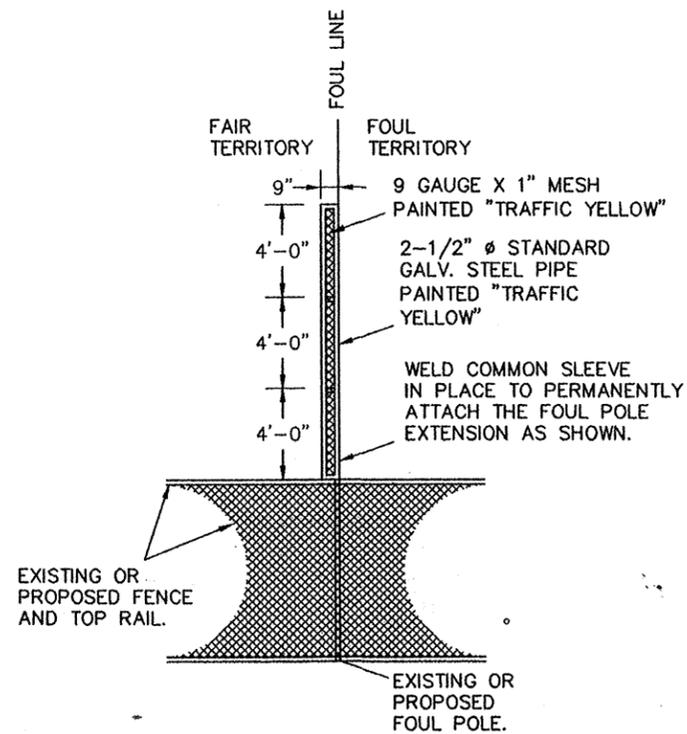
1. MAIN SUPPORT POSTS TO BE 4" O.D. GALVANIZED PIPE.
2. ALL INTERNAL SUPPORT MEMBERS TO BE 1-5/8" O.D. GALV. PIPE.
3. CANOPY SUPPORT MEMBER LENGTHS:
L1 = 15'-2" ±
L2 = 10'-4 1/2" ±
L3 = 5'-7" ±
4. FOOTING SIZE AND DEPTHS SHOWN ARE MINIMUM. THEY ARE TO BE ADJUSTED AS SITE SOIL CONDITIONS REQUIRE. FOOTING DETAILS TO BE SHOWN ON CONSTRUCTION PLANS.
5. BACKSTOP FENCING TO MEET THE GENERAL REQUIREMENTS OF ITEM 607 - FENCE.
6. THE BACKSTOP FABRICS SHALL BE AS FOLLOWS:
BACKS - 6 GAUGE X 2" MESH
SIDES - 9 GAUGE X 2" MESH
TOPS - 9 GAUGE X 2" MESH
7. ATTACH 6' HIGH OPEN MESH SCREENING TO INSIDE OF BACKSTOP. FASTENERS TO BE INJURY SAFE WITH NO JAGGED EDGES. SCREENING TO BE 'BSN SPORTS' CATALOG # BSN-MT6LPXXX. FOR INFORMATION CALL: 1-800-527-7510.

DO NOT SCALE - USE DIMENSIONS ONLY

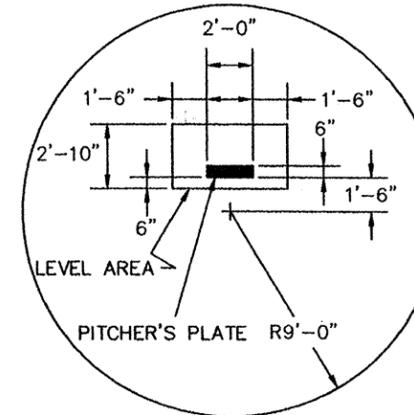
<p>CITY OF AKRON BUREAU OF ENGINEERING</p>	<p>CONSTRUCTION STANDARD DWG. No. LA-10.2</p>
<p><i>David Uehil</i> 9-14-99 MANAGER, DESIGN DIVISION <i>Pawan K. Khaitan</i> 9-28-99 MANAGER, CONSTRUCTION DIVISION <i>C. David Hamel</i> 9-30-99 CITY ENGINEER</p>	<p>LITTLE LEAGUE / SOFTBALL STANDARD BACKSTOP</p> <p>AUTOCAD DRAWING - STD_LA-10.2.DWG REVISIONS: Sept. 15, 1999</p>



**FOUL BALL MARKER SECTION
FOR FIELDS WITH NO FENCING**

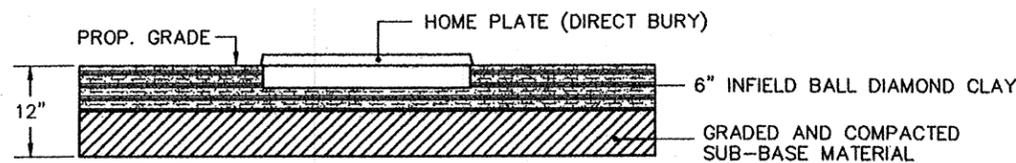


FOUL MARKER EXTENSION



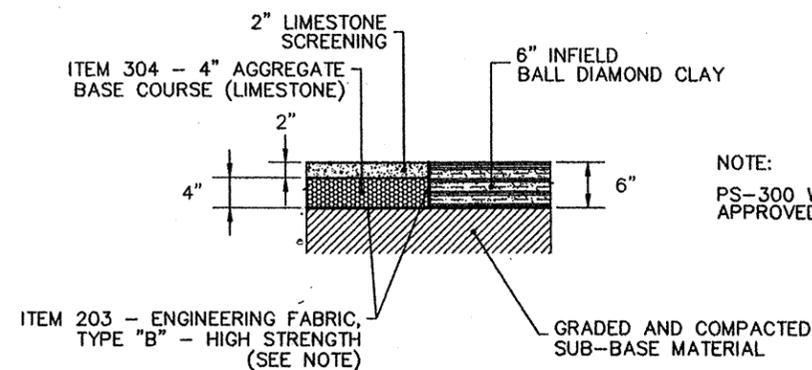
LAYOUT AT PITCHER'S PLATE

NOTE:
THE DEGREE OF SLOPE FROM A POINT 6" IN FRONT OF THE PITCHER'S PLATE TO A POINT 10' TOWARD HOME PLATE SHALL BE 1"/FT. AND SUCH DEGREE OF SLOPE SHALL BE UNIFORM. REAR SLOPE GRADUAL TO EDGE OF 18' DIA. CIRCLE.



NOTES:
HOME PLATE : BSN SPORTS, CAT. #BSN-BBHPSAFE
BSN SPORTS
PHONE: 1-800-527-7510
OR APPROVED EQUAL.

HOME PLATE DETAIL

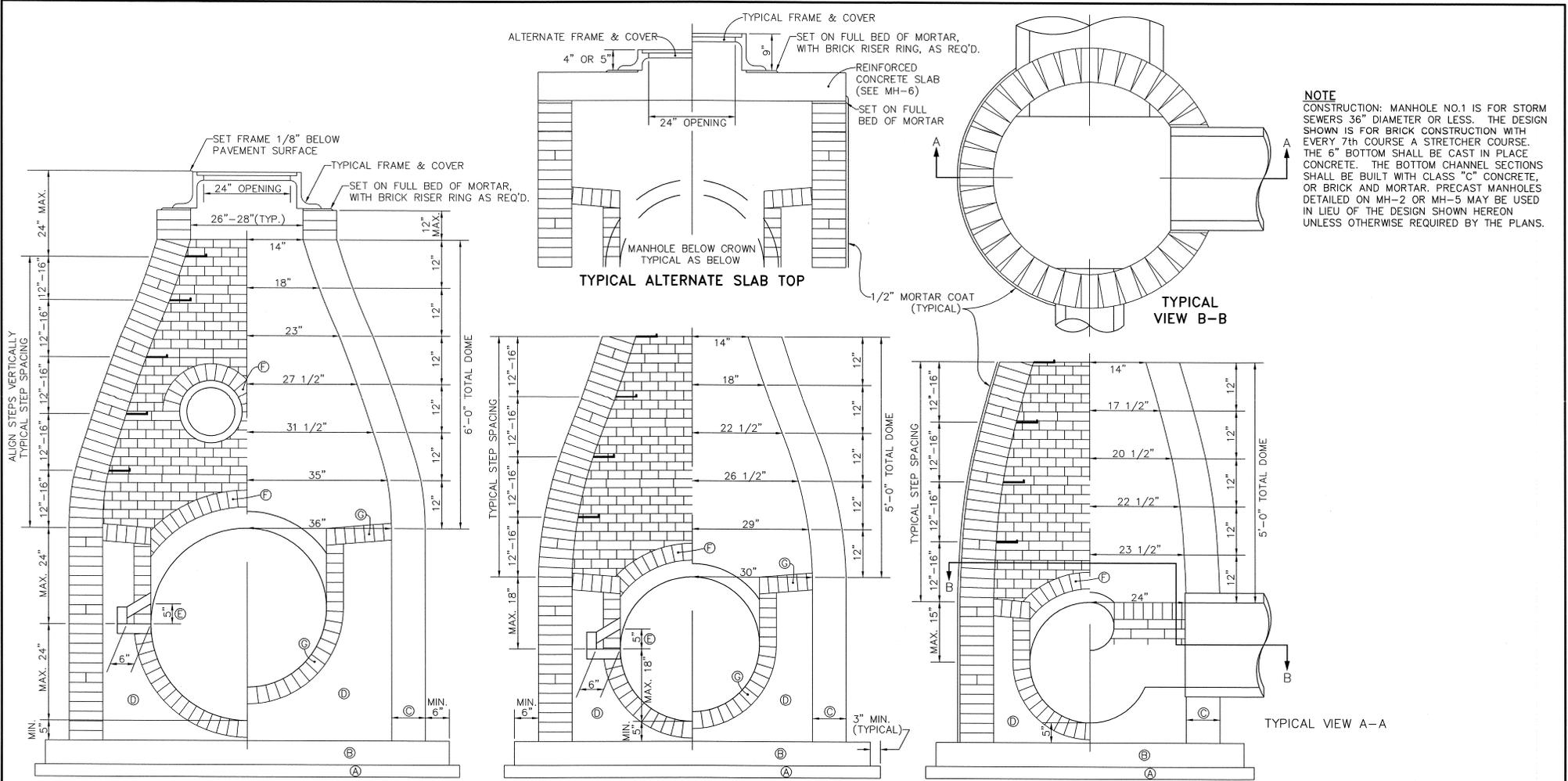


NOTE:
PS-300 WOVEN FABRIC AS SUPPLIED BY PS FABRICS INC. OR APPROVED EQUAL.

SECTION-LIMESTONE SURFACE & INFIELD BALL DIAMOND CLAY

DO NOT SCALE - USE DIMENSIONS ONLY

CITY OF AKRON BUREAU OF ENGINEERING	CONSTRUCTION STANDARD DWG. No. LA-10.3
<i>David Glick</i> 9-14-99 MANAGER, DESIGN DIVISION <i>Pawan K. Kherian</i> 9-28-99 MANAGER, CONSTRUCTION DIVISION <i>C. David Haugh</i> 10/1/99 CITY ENGINEER	BASEBALL FIELD RELATED ITEMS <small>AUTOCAD DRAWING - STD_LA-10.3.DWG</small> <small>REVISIONS:</small> <small>Sept. 15, 1999</small>



NOTE
 CONSTRUCTION: MANHOLE NO.1 IS FOR STORM SEWERS 36" DIAMETER OR LESS. THE DESIGN SHOWN IS FOR BRICK CONSTRUCTION WITH EVERY 7th COURSE A STRETCHER COURSE. THE 6" BOTTOM SHALL BE CAST IN PLACE CONCRETE. THE BOTTOM CHANNEL SECTIONS SHALL BE BUILT WITH CLASS "C" CONCRETE, OR BRICK AND MORTAR. PRECAST MANHOLES DETAILED ON MH-2 OR MH-5 MAY BE USED IN LIEU OF THE DESIGN SHOWN HEREON UNLESS OTHERWISE REQUIRED BY THE PLANS.

**MH-1C 72" DIAMETER
 30"-36" DIAMETER PIPE**

**MH-1B 60" DIAMETER
 21"-27" DIAMETER PIPE**

**MH-1A 48" DIAMETER
 12"-18" DIAMETER PIPE**

DO NOT SCALE - USE DIMENSIONS ONLY

- Ⓐ NO. 57 SLAG OR LIMESTONE, 3" THICK.
- Ⓑ CLASS "C" CONCRETE, 6" THICK.
- Ⓒ NOMINAL 8" WALL. WHEN OVERALL MANHOLE DEPTH EXCEEDS 15', INCREASE WALL THICKNESS TO 12" BELOW THE 12' DEPTH.
- Ⓓ CLASS "C" CONCRETE, OR BRICK AND MORTAR. THE USE OF "DRY MIX" IS PROHIBITED.
- Ⓔ WHEN PIPE DIAMETER IS MORE THAN 24", CONSTRUCT TOE HOLES IN CHANNEL TO FORM STEPS.
- Ⓕ CONSTRUCT BRICK ARCH OVER ALL PIPE.
- Ⓖ CONSTRUCT VITRIFIED BRICK OR CLASS "C" CONCRETE CHANNEL & BENCH. SLOPE BENCH 1"/FOOT.
- Ⓗ APPLY 1/2" MORTAR COAT OVER ENTIRE BRICKWORK.

CITY OF AKRON
 BUREAU OF ENGINEERING

Kenneth F. Kistner 4/20/10
 MANAGER, DESIGN DIVISION

Diana B. Wilson 4/20/10
 MANAGER, CONSTRUCTION DIVISION

R. J. Cella 4/20/10
 CITY ENGINEER

CONSTRUCTION
 STANDARD DWG. No. **MH-1**

STORM SEWER
 BRICK MANHOLE
 48", 60", 72" DIAMETER

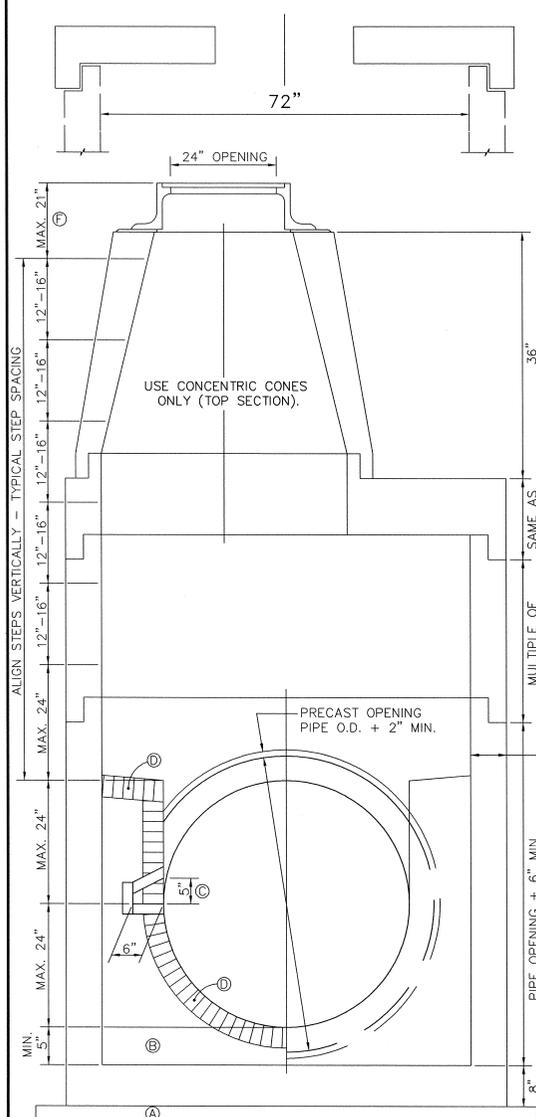
AUTOCAD DRAWING - STD_MH-1.DWG
 REVISIONS: DECEMBER 18, 2009
 APRIL 6, 2010
 September 23, 1997

ALTERNATE 72" SLAB TOP

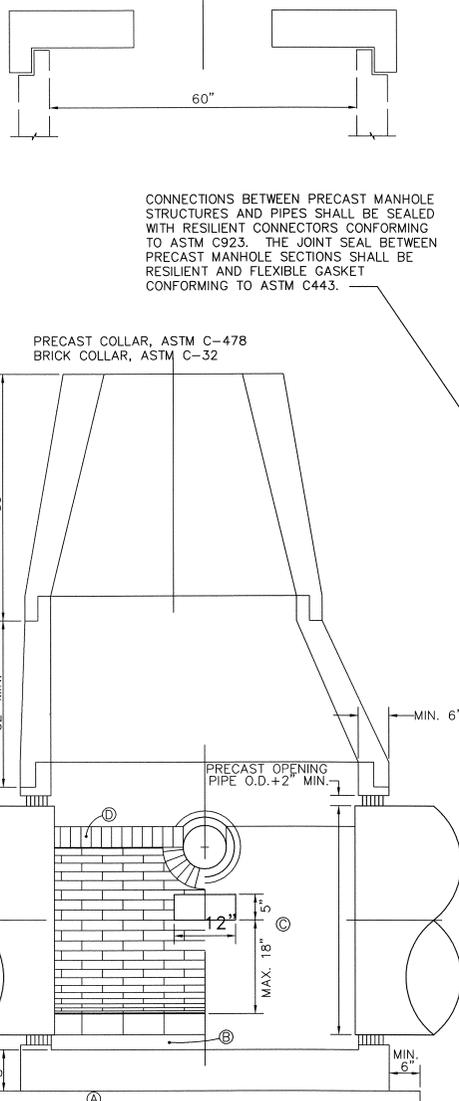
ALTERNATE 60" SLAB TOP

ALTERNATE 48" SLAB TOP WITH TYPICAL STANDARD CASTING

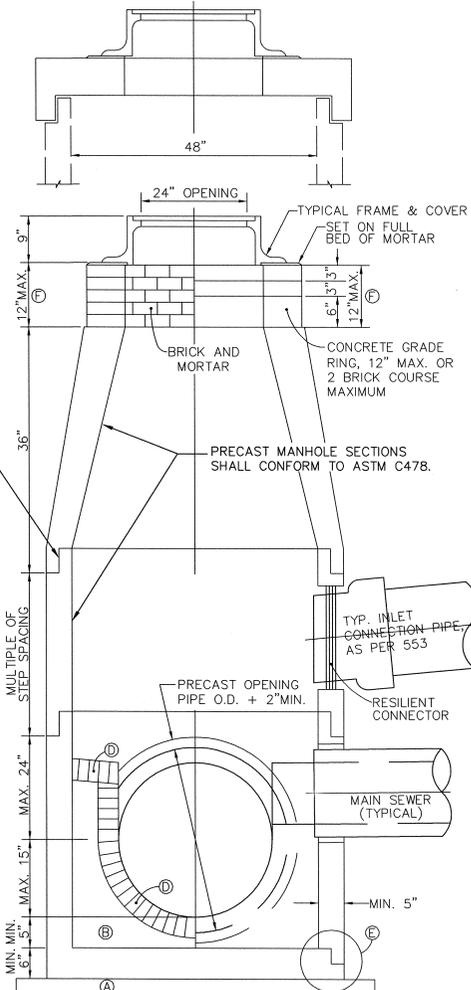
ALTERNATE SLAB REDUCER FOR 60" DIAMETER MANHOLE



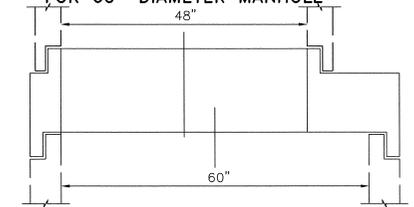
MH-2C 72" DIAMETER
30"-36" DIAMETER PIPE



MH-2B 60" DIAMETER
21"-27" DIAMETER PIPE



MH-2A 48" DIAMETER
8"-18" DIAMETER PIPE



- Ⓐ NO. 57 SLAG OR LIMESTONE, 3" THICK
- Ⓑ CLASS "C" CONCRETE, TYPE 2 CEMENT OR BRICK AND MORTAR, AFTER MANHOLE AND PIPE ARE IN PLACE. THE USE OF "DRY MIX" IS PROHIBITED.
- Ⓒ WHEN PIPE DIAMETER IS MORE THAN 24", CONSTRUCT TOE HOLES IN CHANNEL TO FORM STEPS.
- Ⓓ CONSTRUCT BRICK CHANNEL AND BENCH IN SANITARY AND COMBINATION MANHOLES. SLOPE BENCH 1"/FOOT.
- Ⓔ BASES ARE SHOWN AS BEING ONE-PIECE. A PERMISSIBLE ALTERNATE IS TO CAST AND SHIP THE FLOOR AND BARREL SEPARATELY.
- Ⓕ MANHOLES SHOULD BE DESIGNED AND CONSTRUCTED SO THAT UNDER NORMAL CIRCUMSTANCES CONSTRUCTION OF A CHIMNEY WOULD NOT BE REQUIRED.
- Ⓖ OPENINGS IN BASE SECTIONS AND RISER SECTIONS FOR MAIN SEWER PIPES SHALL BE PROVIDED WHEN THE UNIT IS CAST TO MEET PROJECT REQUIREMENTS. OPENINGS IN RISER SECTIONS FOR INLET CONNECTIONS MAY BE PREFABRICATED OR CORED IN THE FIELD. IN BOTH CASES THE PIPE MUST BE PLACED OR TRIMMED SO IT DOES NOT PROJECT INTO THE MANHOLE.

GENERAL NOTES

WITH NORMAL SOIL AND SITE CONDITIONS THIS STANDARD PRECAST MANHOLE MAY BE USED FOR ANY REQUIRED MANHOLE DEPTH. SECTIONS OF THE PRECAST MANHOLE SHALL BE CAST AND ASSEMBLED WITH EITHER ALL TONGUE OR ALL GROOVE ENDS UP. LIFT HOLES MAY BE PROVIDED IN EACH SECTION FOR HANDLING.

CONNECTIONS BETWEEN PRECAST MANHOLE STRUCTURES AND PIPES SHALL BE SEALED WITH RESILIENT CONNECTORS CONFORMING TO ASTM C923, AS SHOWN ON MH-6, AS PER 706.14.

JOINT SEAL BETWEEN PRECAST MANHOLE SECTIONS SHALL BE RESILIENT AND FLEXIBLE GASKET CONFORMING TO ASTM C443, AS PER 706.11.

PRECAST MANHOLES SHALL BE COATED IN ACCORDANCE WITH SECTION 706.13 ON SANITARY SEWERS.

DROP PIPE, WHEN SPECIFIED ON THE PLANS, SHALL BE CONSTRUCTED AS SHOWN ON MH-9.

STEPS, FRAMES AND COVERS SHALL CONFORM WITH THE REQUIREMENTS SET FORTH ON MH-8.

DO NOT SCALE - USE DIMENSIONS ONLY

CITY OF AKRON
BUREAU OF ENGINEERING

Kenneth E. Martin 4/20/00
MANAGER, DESIGN DIVISION

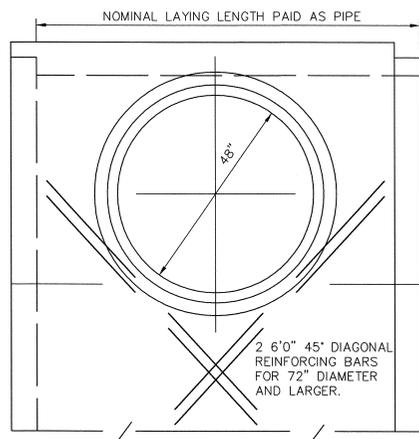
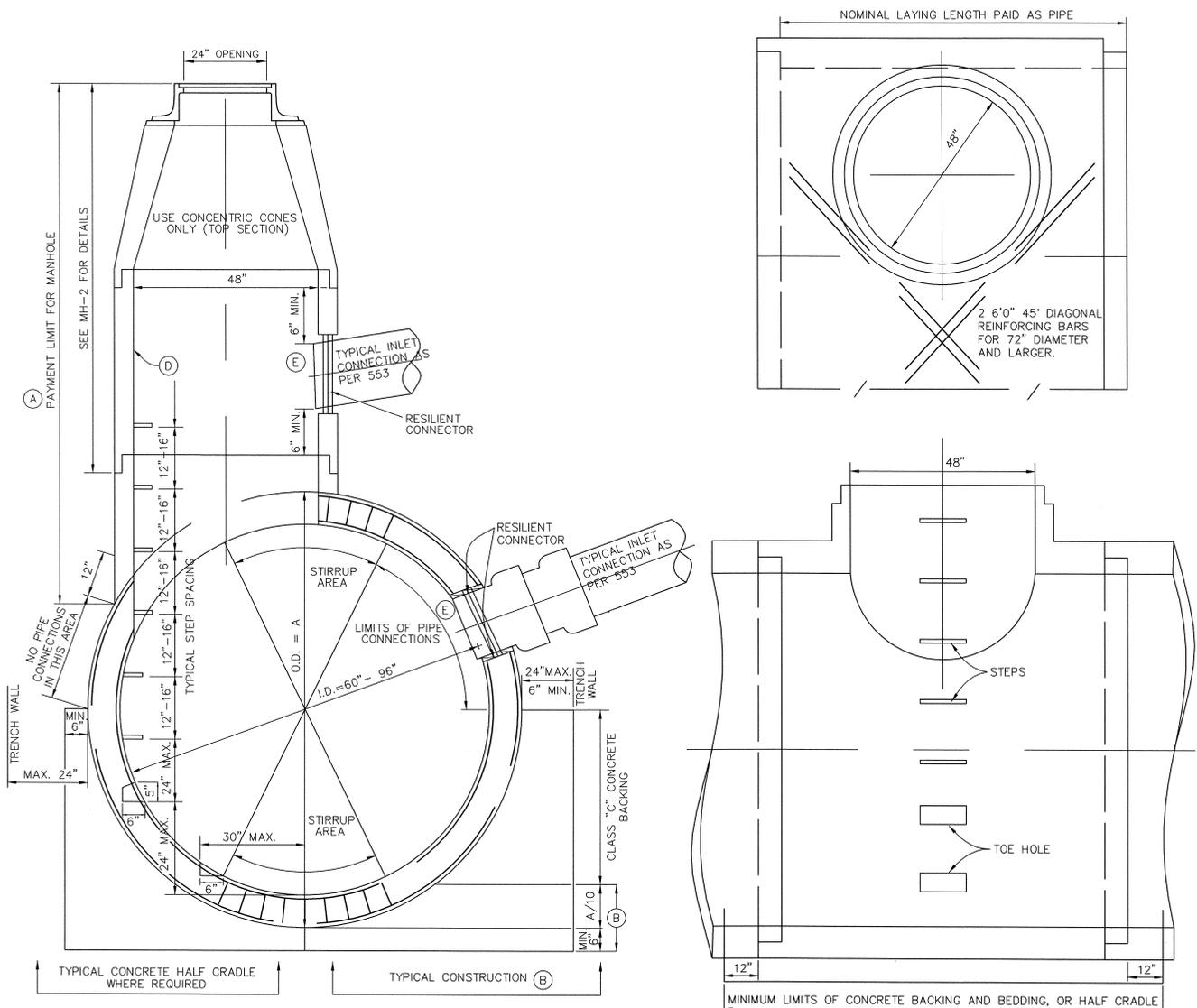
Dennis P. Wilson 4-20-2000
MANAGER, CONSTRUCTION DIVISION

Eric 4-20-70
CITY ENGINEER

CONSTRUCTION
STANDARD DWG. No. **MH-2**

SANITARY OR STORM SEWER
PRECAST CONCRETE MANHOLE
48", 60", 72" DIAMETER

AUTOCAD DRAWING - STD_MH-2.DWG
REVISIONS: DECEMBER 18, 2009
September 23, 1997
APRIL 6, 2010

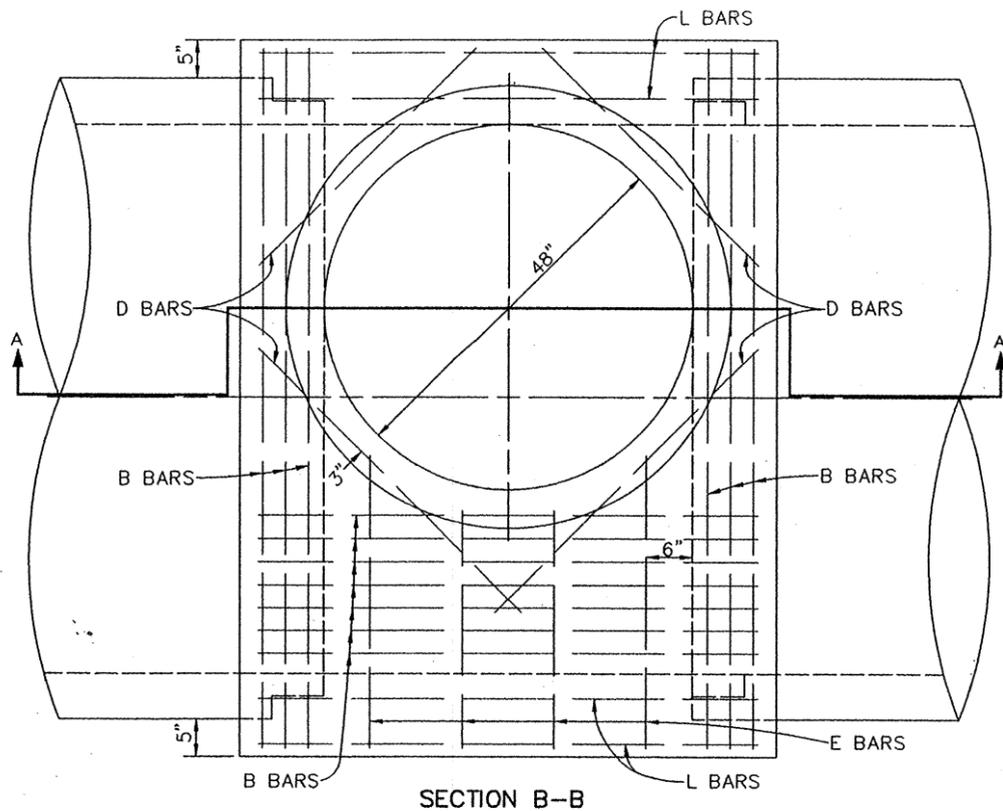


- (A) PAYMENT FOR NO. 4 MANHOLE SHALL INCLUDE THE COST OF THE ECCENTRIC SPUR, ADDITIONAL PIPE REINFORCING, CONCRETE BACKING AND BEDDING, TOE HOLES, STEPS, RISER AND CONE SECTIONS, GRADE RINGS AND CASTINGS. NO DEDUCTION WILL BE MADE IN THE PIPE MEASUREMENT.
- (B) BEDDING SHALL BE AS SHOWN ON PLAN FOR SEWER.
- (C) MANHOLES ON PIPE LARGER THAN 96" DIAMETER WILL BE INDIVIDUALLY DESIGNED.
- (D) PRECAST MANHOLES SHALL BE COATED IN ACCORDANCE WITH 706.03(PPIPE SECTIONS) AND 706.13(RISER SECTIONS) ON SANITARY SEWER.
- (E) OPENINGS IN TEE OR RISER SECTION FOR MAIN SEWER PIPES SHALL BE PREFABRICATED WHEN THE UNIT IS CAST TO MEET PROJECT REQUIREMENTS. OPENINGS FOR INLET CONNECTIONS MAY BE PREFABRICATED OR CORED IN THE FIELD. THE PIPE MUST BE PLACED OR TRIMMED SO IT DOES NOT PROJECT INTO THE MANHOLE. NO PIPES ARE TO ENTER THE MANHOLE THRU THE STEP AREA.

PIPE DIAMETER	MANHOLE
60"	MH-4A
66"	MH-4B
72"	MH-4C
78"	MH-4D
84"	MH-4E
90"	MH-4F
96"	MH-4G

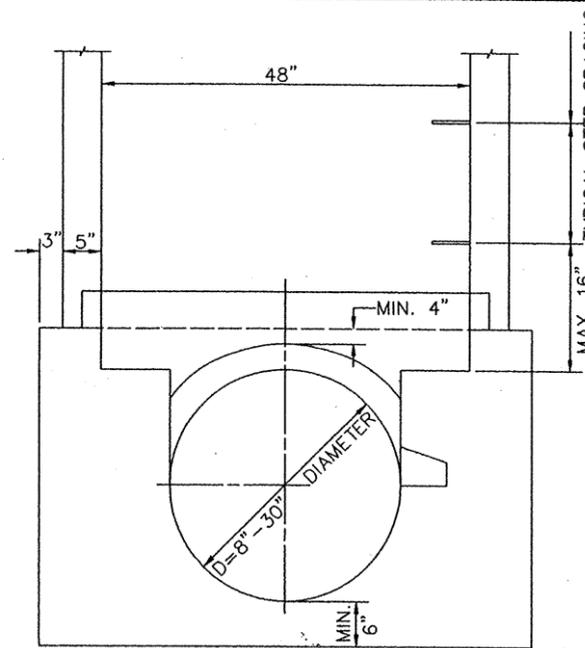
DO NOT SCALE - USE DIMENSIONS ONLY

CITY OF AKRON BUREAU OF ENGINEERING	CONSTRUCTION STANDARD DWG. No. MH-4
<i>Kenneth F. Kistner</i> 4/20/10 MANAGER, DESIGN DIVISION	SANITARY OR STORM SEWER 60"-96" DIAMETER REINFORCED CONCRETE PIPE WITH 48" ECCENTRIC TEE
<i>James O. Wilson</i> 4-20-10 MANAGER, CONSTRUCTION DIVISION	<small>AUTOCAD DRAWING - STD_MH-4.DWG</small> <small>REVISIONS: DECEMBER 18, 2009</small> <small>APRIL 8, 2010</small>
<i>R. J. Cuth</i> 4-20-10 CITY ENGINEER	<small>March 25, 1999</small>

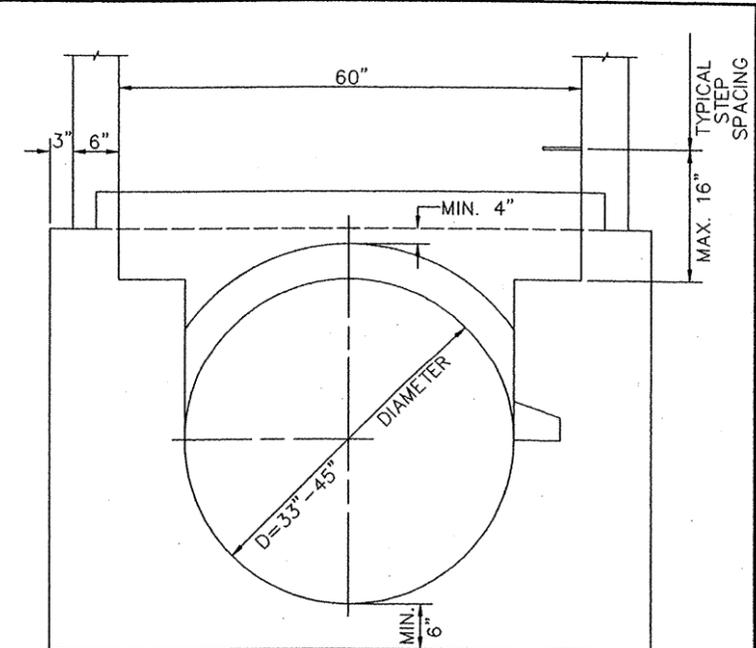


BAR	SPACING	BAR Ø FOR SEWERS		
		48-60	66-78	84-96
A	12" C/C BOTH WAYS	5/8"	3/4"	7/8"
B	3" C/C BOTH WAYS	5/8"	3/4"	7/8"
L	AS SHOWN	5/8"	3/4"	7/8"
D	AS SHOWN	5/8"	5/8"	5/8"
E	12" C/C	5/8"	5/8"	5/8"

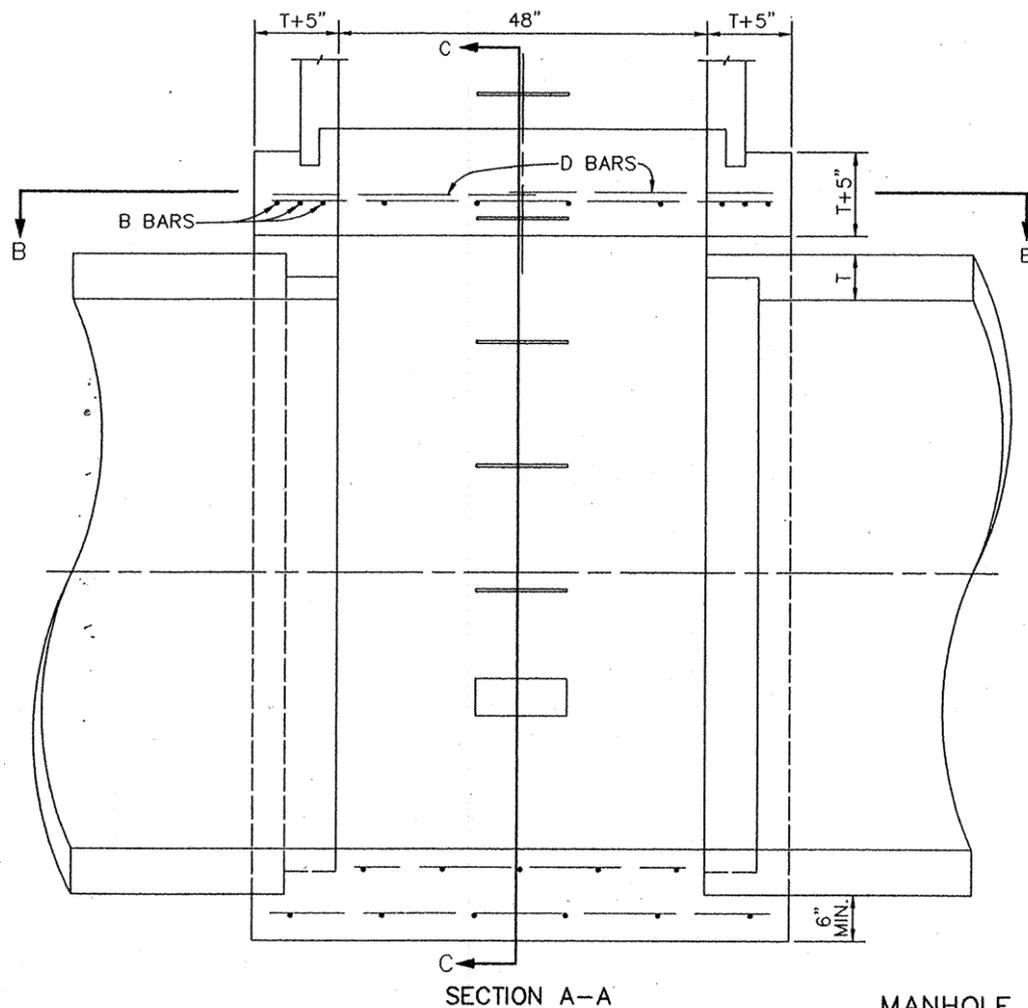
ALL REINFORCING STEEL SHALL HAVE MINIMUM 3" COVER



MANHOLE 5-A
8"-30" PIPE

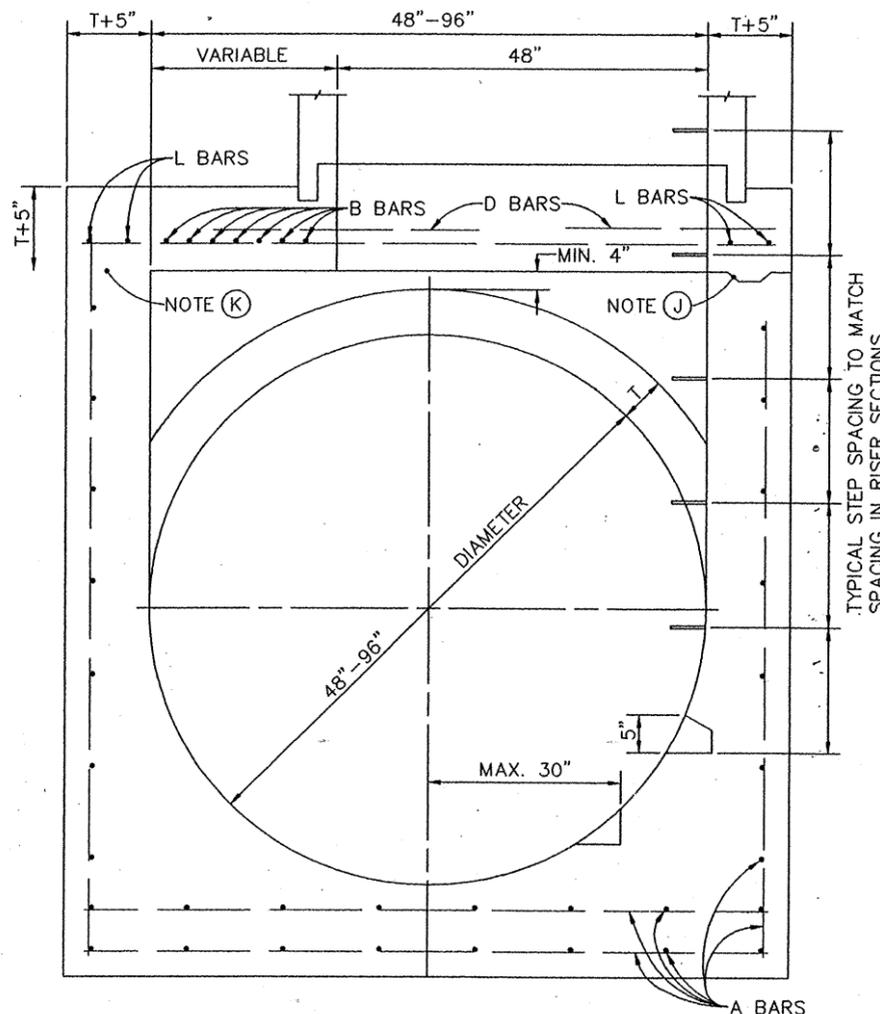


MANHOLE 5-B
33"-45" PIPE



SECTION A-A

MANHOLE 5-C
48"-96" PIPE

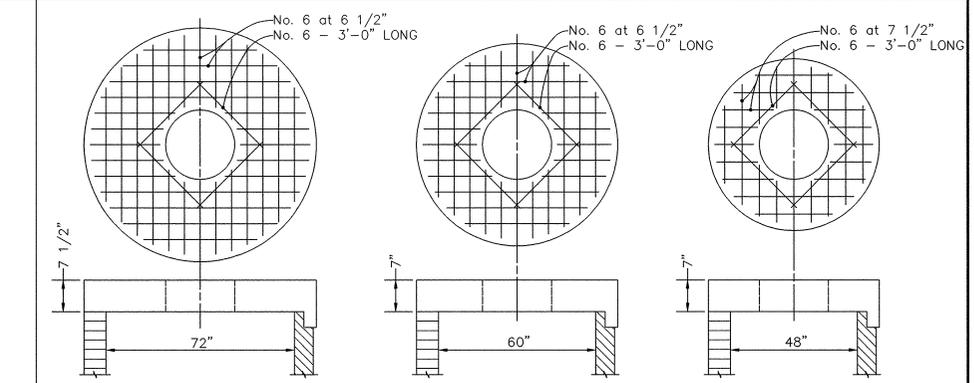
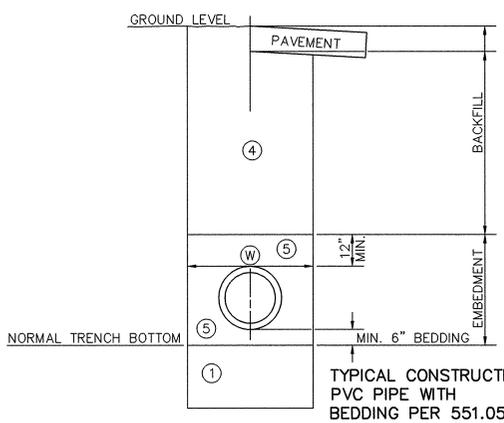
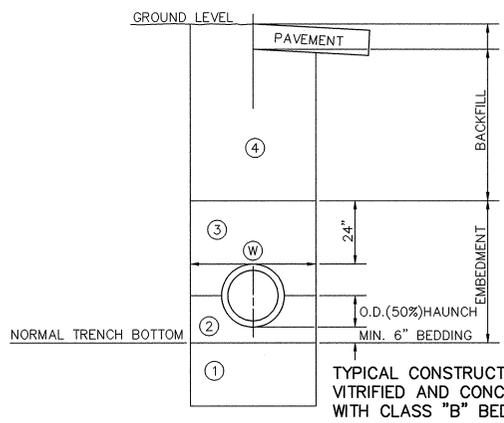
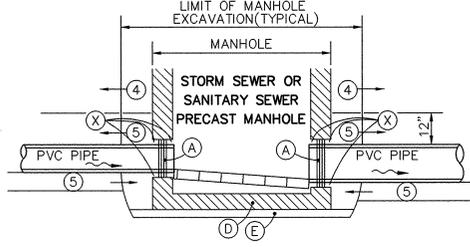
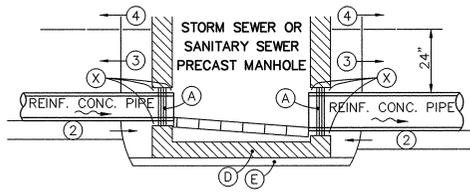
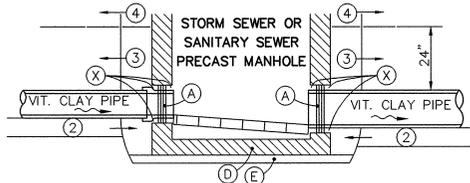
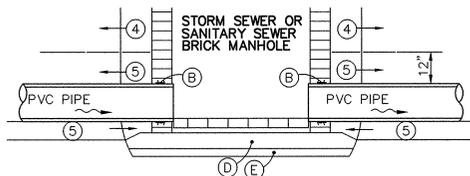
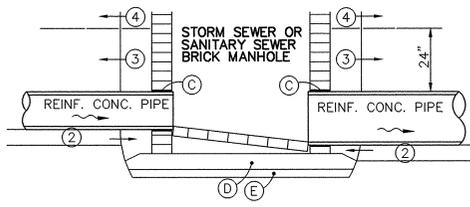
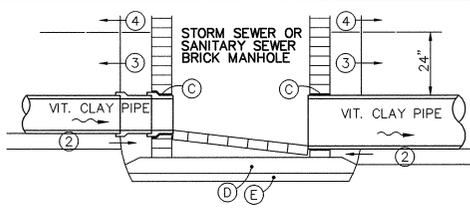


SECTION C-C

- (A) PAYMENT FOR No. 5 MANHOLE SHALL INCLUDE THE COST OF THE CONCRETE AND REINFORCING STEEL IN THE BASE SECTION, BEDDING, STEPS, RISER AND CONE SECTIONS, GRADE RINGS AND CASTINGS.
- (B) BEDDING SHALL BE AS SHOWN ON THE PLAN FOR SEWER.
- (C) MANHOLES ON PIPE LARGER THAN 96" DIAMETER WILL BE INDIVIDUALLY DESIGNED.
- (D) PRECAST MANHOLES SHALL BE COATED IN ACCORDANCE WITH 562.02 AND 706.13.
- (E) OPENINGS IN RISER SECTION FOR MAIN SEWER PIPES SHALL BE PREFABRICATED WHEN THE UNIT IS CAST TO MEET PROJECT REQUIREMENTS. OPENINGS FOR INLET CONNECTIONS MAY BE PREFABRICATED OR CORED IN THE FIELD. THE PIPE MUST BE PLACED OR TRIMMED SO IT DOES NOT PROJECT INTO THE MANHOLE. NO PIPES ARE TO ENTER THE MANHOLE THRU THE STEP AREA.
- (F) SEE MH-2 FOR DETAILS OF MANHOLE RISER AND CONE SECTIONS.
- (G) ALL REINFORCING STEEL SHALL CONFORM TO THE REINFORCING STEEL LIST.
- (H) CONCRETE FOR THE CAST-IN-PLACE BASE SECTION SHALL BE CLASS "C".
- (J) CONSTRUCTION JOINT IF SLAB IS CAST SEPARATELY. SLAB MUST BE DOWELED OR KEYED IN PLACE.
- (K) CONSTRUCTION JOINT MAY BE OMITTED IF STEEL IS EXTENDED AND TIED.
- (L) WHEN PIPE DIAMETER IS MORE THAN 24", CONSTRUCT TOE HOLES IN THE CHANNEL TO FORM STEPS.
- (M) REINFORCED CONCRETE BASE SECTION AND SLAB TOP MUST BE CONSTRUCTED IN THE PRESENCE OF A CITY INSPECTOR, OTHERWISE THEY WILL NOT BE ACCEPTED.

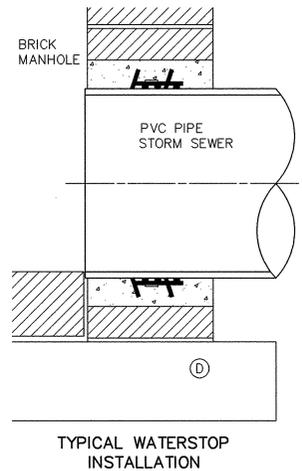
DO NOT SCALE - USE DIMENSIONS ONLY

CITY OF AKRON BUREAU OF ENGINEERING	CONSTRUCTION STANDARD DWG. No. MH-5
<i>David J. Lib...</i> 3-26-99 MANAGER, DESIGN DIVISION	SANITARY OR STORM SEWER, 8"-96" DIAMETER CAST-IN- PLACE CONCRETE BASE SECTION W/PRECAST CONCRETE MANHOLE RISER SECTIONS
<i>Pawan K. Khailan</i> 3-26-99 MANAGER, CONSTRUCTION DIVISION	AUTOCAD DRAWING - STD_MH-5.DWG REVISIONS:
<i>Chavil...</i> 3-26-99 CITY ENGINEER	March 25, 1999



REINFORCED CONCRETE SLAB TOPS FOR
BRICK AND PRECAST MANHOLES

REINFORCED CONCRETE SLAB TOPS AND SLAB REDUCERS SHALL BE FABRICATED IN ACCORDANCE WITH THESE MINIMUM SPECIFICATIONS. UNITS FABRICATED BY A MATERIAL SUPPLIER MUST BE DELIVERED WITH A WRITTEN CERTIFICATION THAT THEY MEET OR EXCEED THE MINIMUM SPECIFICATIONS. OTHERWISE THEY WILL NOT BE ACCEPTED. UNITS FABRICATED BY THE CONTRACTOR MUST HAVE A CITY INSPECTOR PRESENT DURING FABRICATION, OTHERWISE THEY WILL NOT BE ACCEPTED.



- (A) RESILIENT CONNECTOR MEETING THE REQUIREMENT OF ASTM C 923, AS PER 706.13.
 - (B) WATERSTOP AND MORTAR.
 - (C) MORTAR.
 - (D) MANHOLE BOTTOM.
 - (E) No. 57 SLAG, MINIMUM 3" THICK.
 - (W) TRENCH WIDTH IN ACCORDANCE WITH 551.03.
 - (X) DO NOT FILL WITH MORTAR.
- (1) ADDITIONAL BEDDING WHERE REQUIRED BY GROUND CONDITIONS, IN ACCORDANCE WITH 551.03. DEPTH AND SIZE OF AGGREGATE TO BE DETERMINED BY THE ENGINEER.
 - (2) BEDDING MEETING THE REQUIREMENTS OF 703.04, AS PER 551.05.
 - (3) EMBEDMENT MEETING THE REQUIREMENTS OF 604.02.
 - (4) BACKFILL MEETING THE REQUIREMENTS OF 551.09.
 - (5) NON-RIGID PIPE EMBEDMENT MEETING REQUIREMENTS OF 703.04 AS PER 551.05. (USE OF SLAG NOT PERMITTED)

DO NOT SCALE - USE DIMENSIONS ONLY

CITY OF AKRON BUREAU OF ENGINEERING	CONSTRUCTION STANDARD DWG. No. MH-6
<i>David Melik</i> 8-25-99 MANAGER, DESIGN DIVISION <i>Pawan K. Khaitan</i> MANAGER, CONSTRUCTION DIVISION <i>C. David</i> CITY ENGINEER	MANHOLE CONNECTIONS TRENCH CONSTRUCTION MANHOLE SLAB TOPS
<small>AUTOCAD DRAWING - STD_MH-6.DWG August 20, 1999 REVISIONS:</small>	

PART NO.	NO. REQ'D	DESCRIPTION OF MATERIALS REQUIRED
(1)	1	3/8" RUBBER SHEET (4 PLY CONVEYOR BELTING)
(2)	1	1/8" STAINLESS STEEL PLATE - 10" DIA.
(3)	1	1/8" STAINLESS STEEL PLATE - 14" DIA.
(4)	4	5/16" SS -18NC-1 3/8" BOLT W/NUT
(5)	8	5/16" STAINLESS STEEL FLAT WASHER
(6)	4	5/16" STAINLESS STEEL LOCK WASHER
(7)	2	1/8" FLAT STAINLESS STEEL BAR
(8)	2	3/8"x4" SS THREADED ROD
(9)		SS SHIMS-SEE NOTE BELOW
(10)	2	3/8" STAINLESS STEEL LOCK WASHER
(11)	2	3/8" STAINLESS STEEL NUT
(12)	2	TWO-PART EPOXY FOR ANCHORING

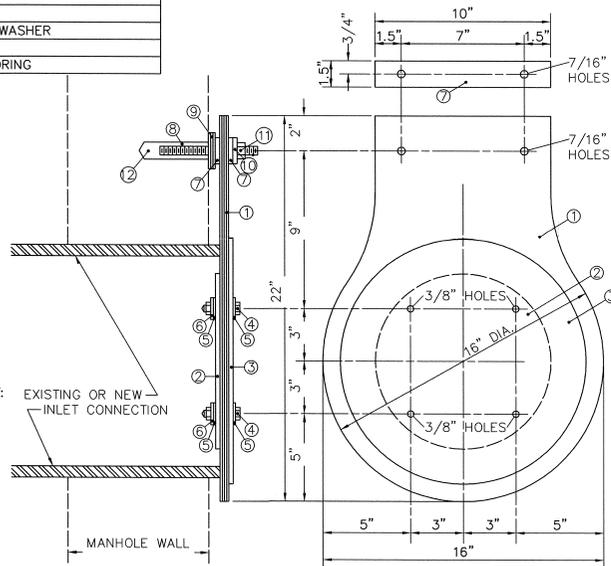
NOTES :

ATTACH RUBBER IN VERTICAL POSITION FLUSH WITH AND CENTERED ON PIPE OPENING. SHIMS MAY BE REQUIRED TO MAINTAIN VERTICAL POSITION.

DIMENSIONS SHOWN ARE FOR 12" PIPE. USE PROPORTIONAL DIMENSIONS FOR LARGER OR SMALLER PIPE AS APPROVED BY THE ENGINEER.

END OF PIPE SHALL BE SMOOTH AND SQUARE TO PROPERLY RECEIVE FLAP GATE.

CONVEYOR BELT AS MANUFACTURED BY:
MURDOCK INDUSTRIAL SUPPLY
553 CARROLL ST.
AKRON, OH 44304
(330) 535-7105
OR APPROVED EQUAL



STANDARD FLAP GATE

DO NOT SCALE - USE DIMENSIONS ONLY

ALL BOLTS, NUTS, PLATES AND OTHER HARDWARE SHALL BE STAINLESS STEEL UNLESS SPECIFIED OTHERWISE.

INSURE THAT LID WILL OPEN TO FULL HORIZONTAL POSITION WITHOUT BINDING, AND CLOSE ON ITS OWN ACCORD. WHERE MULTIPLE FLAP GATES ARE INSTALLED IN ONE MANHOLE, CARE MUST BE TAKEN TO MAINTAIN CLEARANCE SO ALL LIDS WILL OPEN FULLY.

CITY OF AKRON
BUREAU OF ENGINEERING

CONSTRUCTION
STANDARD DWG. No.

MH-7

Kurt F. Kester 1/27/10
MANAGER, DESIGN DIVISION

James P. Wilson 4-27-2010
MANAGER, CONSTRUCTION DIVISION

R. M. C. E. T. 4-27-10
CITY ENGINEER

FLAP GATES

AUTOCAD DRAWING - STD_MH-7.DWG January 22, 2003
REVISIONS: 12/02 - Removed AIT. 1 & 2
DECEMBER 18, 2009

ACCEPTABLE CASTINGS & RELATED ITEMS	NEENAH FOUNDRY COMPANY NUMBER	EAST JORDAN IRON WORKS, INC. NUMBER
MANHOLE, 9" HIGH FRAME	R-1642-B	1048Z
MANHOLE, 5" HIGH FRAME (REVERSIBLE FRAME)	R-1642-A	
MANHOLE, 4" HIGH FRAME		1046Z
MANHOLE COVER, SOLID	R-1642 PLATEN LID "CITY OF AKRON, SEWER"	1040A LID "CITY OF AKRON, SEWER"
MANHOLE COVER, SOLID, WITH TYPE K LOCK	R-1642 LID, WITH TYPE K LOCK "CITY OF AKRON, SEWER"	
MANHOLE COVER, SOLID, WITH CAM LOCK	R-1642 LID, WITH "G" CAM LOCK "CITY OF AKRON, SEWER"	1040AGS CAM COVER "CITY OF AKRON, SEWER"
MANHOLE COVER, ALTERNATE, SLOTTED GRATE	R-2370 GRATE	1040M1, 1040M2, 1040M3
MANHOLE COVER, ALTERNATE, SLOTTED GRATE, DOME		1040N
MANHOLE COVER, ALTERNATE, SLOTTED GRATE, BEEHIVE	2560-0015 BEEHIVE	1040-02
MANHOLE ADJUSTING RING (TO BE USED ONLY AS DIRECTED BY THE ENGINEER)	1642 SIZES (1 1/2", 2", 2 1/2" & 3")	1040H 3", 1040H 2"
MANHOLE STEP (NEW)	R-3357	
MANHOLE STEP (REPLACEMENT)	R-3514-F	
NO. 2 INLET FRAME & GRATE	R-3357	5385
NO. 2R INLET FRAME & GRATE	R-3514-F	7390
NO. 3 INLET FRAME & COVER, W/6"x18" CURB	R-3326	7266
NO. 3 INLET FRAME & COVER, W/COMB. CURB	R-3326-A	7266
NO. 3 INLET T-PLATE	R-3326-007	7265J
NO. 5 INLET, FRAME, CURB CASTING, GRATE "V"	R-3289-HV, GRATE TYPE V	7350, GRATE TYPE M3
NO. 5 INLET, FRAME, CURB CASTING, DIAGONAL GRATE	R-3289-HV, GRATE TYPE R	7350, GRATE TYPE M2
NO. 5 INLET (DOUBLE), FRAME, CURB CASTING, GRATE "V" (2)	R-3288-HV, GRATE TYPE V	7358, GRATE TYPE M3
NO. 5 INLET (DOUBLE), FRAME, CURB CASTING, DIAGONAL GRATE (2)	R-3288-HV, GRATE TYPE R	7358, GRATE TYPE M2
MONUMENT BOX, FRAME & COVER	R-1973-A	1574 "HAS RISERS AVAILABLE"
HEAVY DUTY TRENCH FRAME & GRATE	R-4990, GRATE TYPE A,C,P	6900 GRATE TYPE M
HEAVY DUTY TRENCH FRAME & COVER (SOLID)	R-4990, GRATE TYPE D,E	6900 GRATE TYPE A

BEARING PARTS OF FRAMES AND COVERS SHALL BE MACHINED TO PROVIDE A FIRM AND EVEN SEAT FOR ANY POSITION OF THE COVER.

CASTINGS SHALL NOT VARY MORE THAN 1/16" PER FOOT IN ANY DIMENSION OR MORE THAN 5% IN WEIGHT FROM THOSE CALLED FOR BY THE MANUFACTURER AND BE FREE OF ALL DEFECTS.

ALL CASTINGS SHALL BE MARKED TO SHOW THE MANUFACTURER'S NAME, PART NUMBER, AND CAST DATE IN CAST-ON LETTERS/NUMBERS.

STEP TREADS SHALL HAVE SHARP WELL DEFINED CHECKS AND ALL CORNERS SHALL BE ROUNDED.

MANHOLE STEPS FOR PRECAST MANHOLES SHALL MEET OR EXCEED ASTM C-478 AND SHALL BE POLYPROPYLENE MEETING THE REQUIREMENTS OF 711.31.

SOLID MANHOLE COVERS SHALL BE USED FOR SANITARY AND COMBINED SEWERS.

SOLID MANHOLE COVERS SHALL BE USED FOR STORM SEWERS UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

ALL CASTINGS, COVERS, GRATES AND RELATED APPURTENANCES MUST MEET ASHTO M-306.

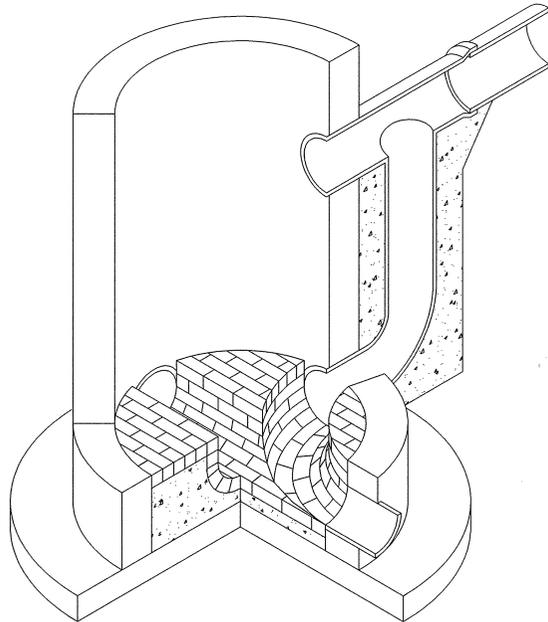
ALTERNATE CASTINGS, USE ONLY AS DIRECTED BY THE ENGINEER, NEENAH FOUNDRY R-1642-LM, LIFTMATE FRAME AND COVER.

MANHOLE STEPS BY M.A. INDUSTRIES, INC.
PSI-PF-DF 004-501-DF OR APPROVED EQUAL.

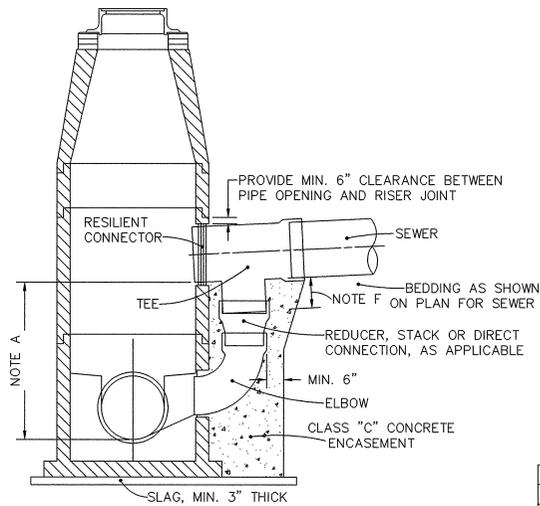
MANHOLE IDENTIFICATION				
MANHOLE			SEWER TYPE	PIPE DIAMETER
DESIGNATION	DIAMETER	MATERIAL		
MH-1A	48"	BRICK	STORM	12" - 18"
MH-1B	60"			21" - 27"
MH-1C	72"			30" - 36"
MH-2A	48"	PRECAST	SANITARY & STORM	8" - 18"
MH-2B	60"			21" - 27"
MH-2C	72"			30" - 36"
MH-3A	48"	CONCENTRIC PIPE TEE	SANITARY & STORM	42"
MH-3B	48"			48"
MH-3C	48"			54"
MH-4A	48"	ECCENTRIC PIPE TEE	SANITARY & STORM	60"
MH-4B	48"			66"
MH-4C	48"			72"
MH-4D	48"			78"
MH-4E	48"			84"
MH-4F	48"			90"
MH-4G	48"	96"		
MH-5A	48"	CAST-IN-PLACE BASE SECTION PRECAST RISER	SANITARY & STORM	8" - 30"
MH-5B	60"			33" - 45"
MH-5C	48"			48" - 96"

DO NOT SCALE - USE DIMENSIONS ONLY

CITY OF AKRON BUREAU OF ENGINEERING	CONSTRUCTION STANDARD DWG. No. MH-8
<i>Kevin F. Korman</i> 4/20/10 MANAGER, DESIGN DIVISION	SEWER RELATED ITEMS
<i>James P. Weln</i> 4/20/2010 MANAGER, CONSTRUCTION DIVISION	
<i>RJCEH</i> 4-20-10 CITY ENGINEER	
AUTOCAD DRAWING - STD_MH-8.DWG REVISIONS: APRIL 4, 2008 DECEMBER 18, 2009 APRIL 20, 2010	February 28, 2002



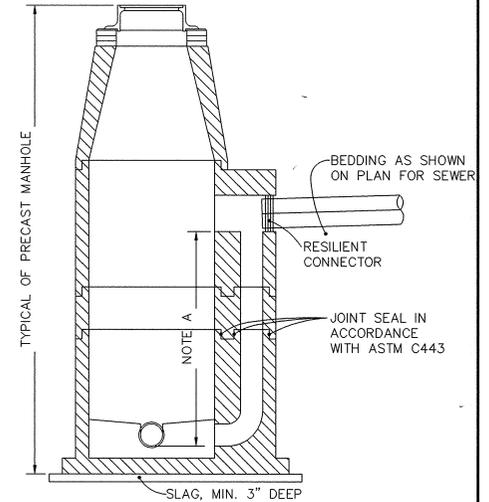
TYPICAL DROP MANHOLE
TYPICAL Y-INTERSECTION



TYPICAL PRECAST DROP MANHOLE

- A. A DROP MANHOLE SHOULD BE DESIGNED WHEN THE ELEVATION DIFFERENCE BETWEEN THE TWO INVERTS IS MORE THAN 24".
- B. IN MANHOLES 1A, 2A & 5A THE ELBOW SHALL BE PLACED CROWN TO CROWN WITH THE MAIN SEWER PIPE. IN ALL OTHER MANHOLES THE ELBOW SHALL BE PLACED WITH THE INVERT AT THE SPRING LINE OF THE MAIN SEWER PIPE.
- C. OPENINGS IN BASE & RISER SECTIONS SHALL BE PROVIDED WHEN THE UNITS ARE CAST TO MEET THE PROJECT REQUIREMENTS.
- D. THE TEE MUST BE PLACED OR TRIMMED SO IT DOES NOT PROJECT INTO THE MANHOLE.
- E. ATTACH APPROVED CORROSION RESISTANT STRAPS INTO MANHOLE WALL, SPACED SUFFICIENTLY TO SECURE STACK, PRIOR TO PLACING ENCASEMENT.
- F. WHEN USING ABS OR PVC PIPE, CONCRETE ENCASEMENT MUST BE STOPPED 12" BELOW MAIN SEWER PIPE.

RECOMMENDED INSTALLATION				
SEWER	TEE	REDUCER	STACK	ELBOW
8"	8" X 8"		8"	8"
10"	10" X 10"		10"	10"
12"	12" X 12"		12"	12"
15"	15" X 12"		12"	12"
18"	18" X 15"	15" X 12"	12"	12"
21"	21" X 15"	15" X 12"	12"	12"
24"	24" X 15"	15" X 12"	12"	12"
27"	27" X 18"	18" X 15"	15"	15"

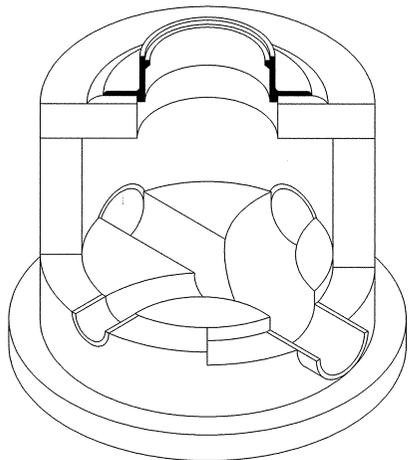


PRECAST MANHOLE WITH INTEGRAL DROP

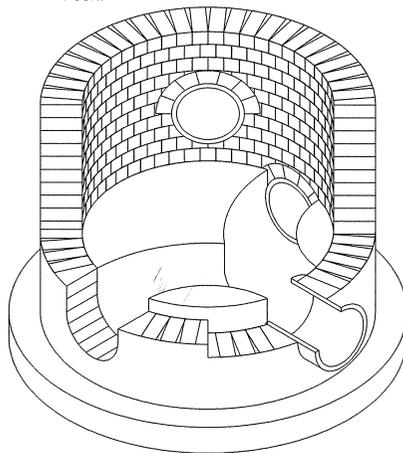
THE CHANNEL & BENCH IN STORM PRECAST MANHOLES MAY BE CLASS "C" CONCRETE IN PLACE OF BRICK, AND IT MUST BE PLACED & FINISHED COMPLETE IN ONE POUR.

CHANNEL FOR 8", 10" & 12" SEWER SHALL BE WIDENED AS SHOWN TO PROVIDE BUCKET & CAMERA CLEARANCE.

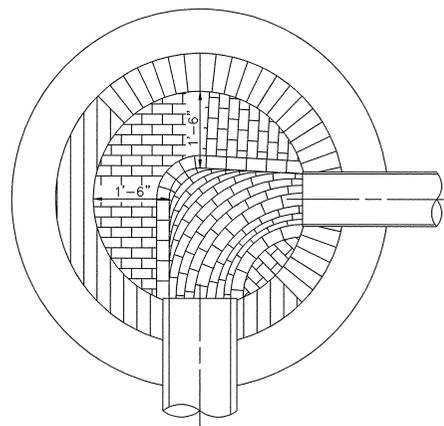
SEE MH-1 FOR TYPICAL BRICK MANHOLE.
SEE MH-2 FOR TYPICAL PRECAST MANHOLE.
SEE MH-3, MH-4, MH-5 FOR TYPICAL PIPE MANHOLE.
SEE MH-6 FOR TYPICAL MANHOLE/PIPE CONNECTIONS AND TYPICAL SLAB TOP.



TYPICAL SLAB TOP MANHOLE
TYPICAL X-INTERSECTION



TYPICAL INLET CONNECTION
TYPICAL T-INTERSECTION



TYPICAL L-INTERSECTION

DO NOT SCALE - USE DIMENSIONS ONLY

CITY OF AKRON
BUREAU OF ENGINEERING

CONSTRUCTION
STANDARD DWG. No.

MH-9

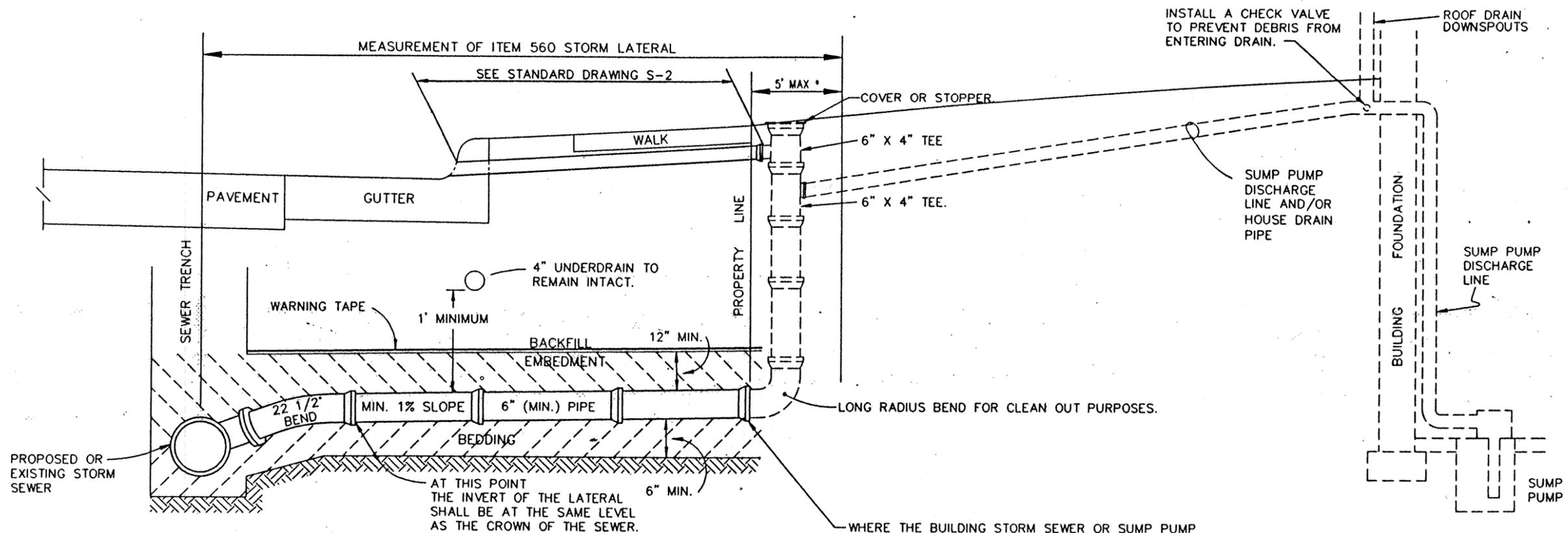
David J. Leht 4/24/98
MANAGER, DESIGN DIVISION

Pawan K. Khaitan 5/1/98
MANAGER, CONSTRUCTION DIVISION

Charles Hand 5/1/98
CITY ENGINEER

DROP MANHOLES
MANHOLE INVERTS

AUTOCAD DRAWING - STD_MH-9.DWG April 28, 1998
REVISIONS:



----- CONSTRUCTED BY DEVELOPER OR PROPERTY OWNER. (SUGGESTED DESIGN)
 _____ CONSTRUCTED BY CONTRACTOR FOR THE CITY OF AKRON.
 * FOR NEW DEVELOPMENTS SEE NOTE 8.

WHERE THE BUILDING STORM SEWER OR SUMP PUMP LINE EXISTS, THIS CONNECTION SHALL BE MADE BY THE CONTRACTOR AT NO EXTRA COST. WHERE THE BUILDING STORM SEWER OR SUMP PUMP LINE DOES NOT EXIST, THE END OF THE LATERAL SHALL BE PLUGGED AT THE PROPERTY LINE AND MARKED WITH A STAKE TO THE GROUND SURFACE. SEE NOTE 6.

NOTES

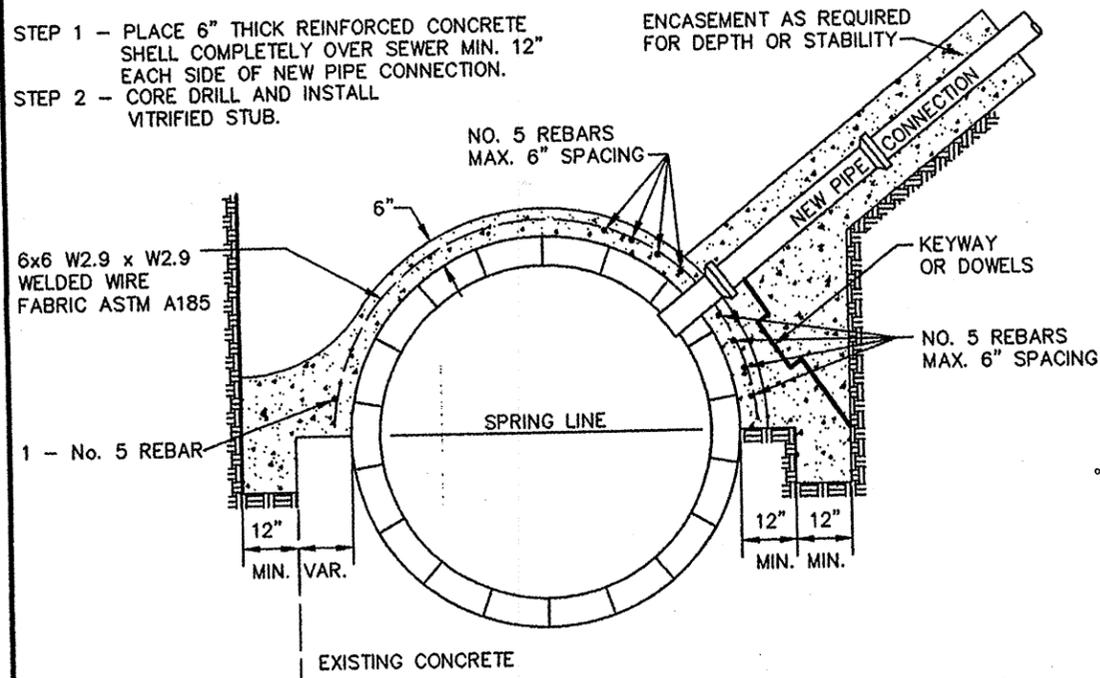
1. THE STORM LATERAL SHALL BE USED FOR SUMP PUMP DISCHARGE AND MAY BE USED FOR ROOF DRAIN(S) OR OTHER STORM WATER RUNOFF.
2. PIPE SIZE AND MATERIAL SHALL BE SPECIFIED ON THE PLAN.
3. BEDDING FOR VITRIFIED CLAY PIPE (EXTRA STRENGTH) OR REINFORCED CONCRETE PIPE SHALL BE CLASS "B", MEETING THE REQUIREMENTS OF 551.05, UNLESS OTHERWISE SPECIFIED BY THE PLANS.
4. EMBEDMENT FOR FLEXIBLE PIPE SHALL MEET THE REQUIREMENTS OF 551.05, UNLESS OTHERWISE SPECIFIED BY THE PLANS.
5. BACKFILL SHALL MEET THE REQUIREMENTS OF 551.09.
6. WHERE THE SAME PIPE MATERIAL IS NOT USED FOR THE ENTIRE LATERAL LENGTH, MANUFACTURED FITTINGS MUST BE USED TO CONNECT DIFFERENT MATERIALS.
7. WHERE EXISTING UTILITIES ARE ENCOUNTERED, THE STORM SEWER LATERAL SHALL BE PLACED TO MAINTAIN THE FOLLOWING MINIMUM CLEARANCES:
 WATER MAINS (1 FOOT - HORIZONTAL AND VERTICAL)
 GAS MAINS (1 FOOT - HORIZONTAL AND VERTICAL)
 ELECTRICAL CONDUIT (1 FOOT - HORIZONTAL AND VERTICAL)
 SANITARY LATERALS (5 FOOT - HORIZONTAL)
 WHERE THE MINIMUM CLEARANCES CANNOT BE MAINTAINED, THE CONTRACTOR SHALL CONTACT THE AFFECTED UTILITY OWNER FOR ADJUSTMENT OF THE UTILITY LINE.
8. FOR LATERALS CONSTRUCTED IN A NEW DEVELOPMENT, THE LATERAL SHALL BE EXTENDED TO 10 FEET BEYOND THE RIGHT OF WAY, OR TO THE OUTSIDE EDGE OF THE UTILITY EASEMENT WHICH EVER IS THE GREATER DISTANCE, UNLESS OTHERWISE SPECIFIED BY THE PLANS. THE END OF THE LATERAL SHALL BE MARKED WITH A 1" HARDWOOD STAKE INSIDE A 2" PVC POLE.
9. THE LATERAL SHALL BE INSTALLED WITH WARNING TAPE ON TOP OF EMBEDMENT WHICH IS 12" ABOVE TOP OF DRAIN AS REQUIRED IN NOTE 2, BY SPECIFICATION 551.05.
10. FOR PROPOSED STORM SEWER, THE CONTRACTOR SHALL PROVIDE A NEW TEE OR WYE ON THE PROPOSED SEWER FOR THE PROPOSED LATERAL CONNECTION. WHEN INDICATED ON THE PLANS AND APPROVED BY THE ENGINEER, THE CONTRACTOR MAY CORE DRILL THE PROPOSED STORM SEWER AND CONNECT THE PROPOSED STORM LATERAL BY USING A "KOR 'N TEE" CONNECTION.
11. FOR EXISTING STORM SEWER, THE CONTRACTOR SHALL INSTALL A NEW TEE OR WYE ON THE EXISTING SEWER FOR THE PROPOSED LATERAL CONNECTION. WHERE INDICATED BY THE PLANS AND APPROVED BY THE ENGINEER, THE CONTRACTOR MAY CORE DRILL THE EXISTING STORM SEWER AND CONNECT THE PROPOSED STORM LATERAL BY USING A "KOR 'N TEE" CONNECTION.
12. FOR STORM SEWERS CONSTRUCTED IN A NEW DEVELOPMENT, THE SEWER SHALL BE EXTENDED TO THE TOP END OF DEVELOPMENT SO EVERY BUILDABLE LOT CAN ACCESS THE STORM SEWER.

DO NOT SCALE - USE DIMENSIONS ONLY

CITY OF AKRON BUREAU OF ENGINEERING	CONSTRUCTION STANDARD DWG. No. S-1.2
<i>Dani Alhik</i> 2-12-98 MANAGER, DESIGN DIVISION <i>Pawan K. Khairan</i> MANAGER, CONSTRUCTION DIVISION <i>Charles Hough</i> CITY ENGINEER	STORM OR SUMP PUMP LATERAL
AUTOCAD DRAWING - STD_S-1A.DWG February 11, 1998 REVISIONS:	

TYPICAL CONNECTION TO EXISTING SEGMENTAL BLOCK SEWER. TYPICAL OF CONNECTION TO EXISTING BRICK SEWER, EXCEPT CONCRETE SHELL IS NOT REQUIRED IF SEWER IS IN GOOD CONDITION. ONLY ENCASEMENT OF STUB AND CONNECTION IS REQUIRED.

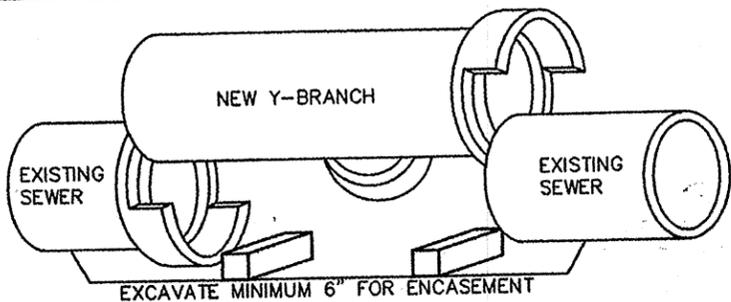
- STEP 1 - PLACE 6" THICK REINFORCED CONCRETE SHELL COMPLETELY OVER SEWER MIN. 12" EACH SIDE OF NEW PIPE CONNECTION.
- STEP 2 - CORE DRILL AND INSTALL VITRIFIED STUB.



WHERE A CONCRETE HAUNCH DOES EXIST, THICKEN REINFORCED CONCRETE SHELL TO UNDISTURBED GROUND. DO NOT DISTURB CONCRETE HAUNCH.

WHERE NO CONCRETE HAUNCH EXISTS, THICKEN REINFORCED CONCRETE SHELL TO UNDISTURBED GROUND. DO NOT DISTURB GROUND BELOW SPRING LINE.

ENCASEMENT AS REQUIRED FOR DEPTH OR STABILITY



SAWCUT AND REMOVE THE UPPER HALF OF THE BELL OF THE NEW Y-BRANCH. SAWCUT AND REMOVE THE UPPER HALF OF THE BELL OF THE EXISTING SEWER PIPE OR NEW SHORT.

PLACE THE NEW Y-BRANCH ON SUITABLE BLOCKING WITH THE "Y" ON THE OPPOSITE SIDE OF THE SEWER FROM THE PROPOSED LATERAL.

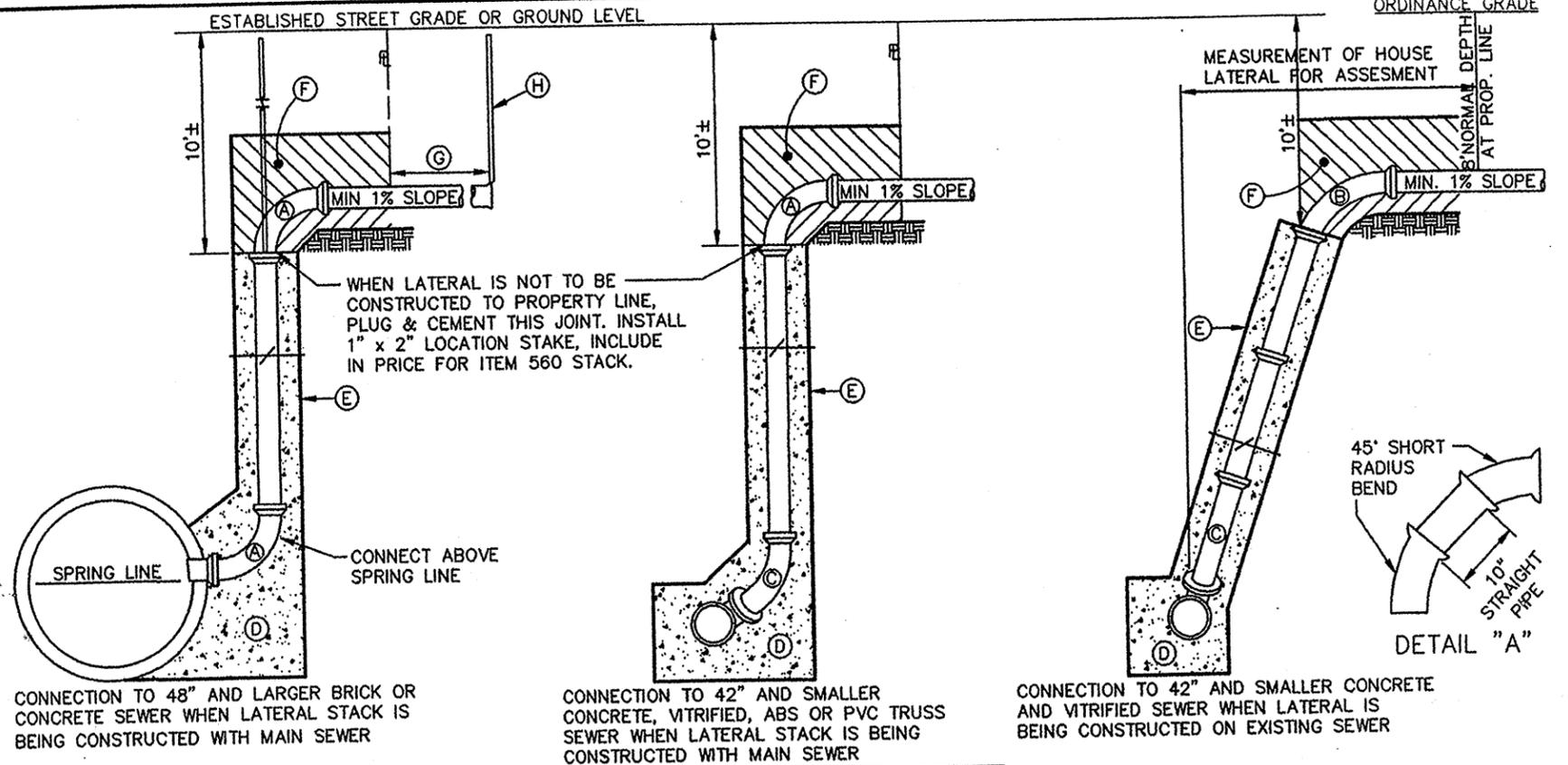
ROTATE THE Y-BRANCH 180°, BRINGING THE "Y" INTO THE CORRECT POSITION FOR THE PROPOSED LATERAL, WITH THE STUB TURNED SLIGHTLY UPWARDS. THE GOOD PORTION OF THE BELL OF EACH PIPE WILL NOW BE AT THE BOTTOM OF EACH JOINT.

ALIGN INVERTS OF ALL PIPE AND PLACE JUTE PACKING INTO VOID AREAS IN THE BELLS.

FULLY ENCASE THE NEW Y-BRANCH WITH CLASS "C" CONCRETE 6" THICK, COMPLETELY COVERING BOTH BELLS OF THE SEWER AND THE BARREL AND BELL OF THE STUB.

STANDARD FOR INSTALLING Y-BRANCH IN VITRIFIED PIPE FOR SANITARY OR STORM LATERAL. AN ACCEPTABLE ALTERNATE IS TO USE MANUFACTURED RUBBER COUPLINGS AS SUPPLIED BY LOGAN CLAY PIPE CO., OR EQUAL

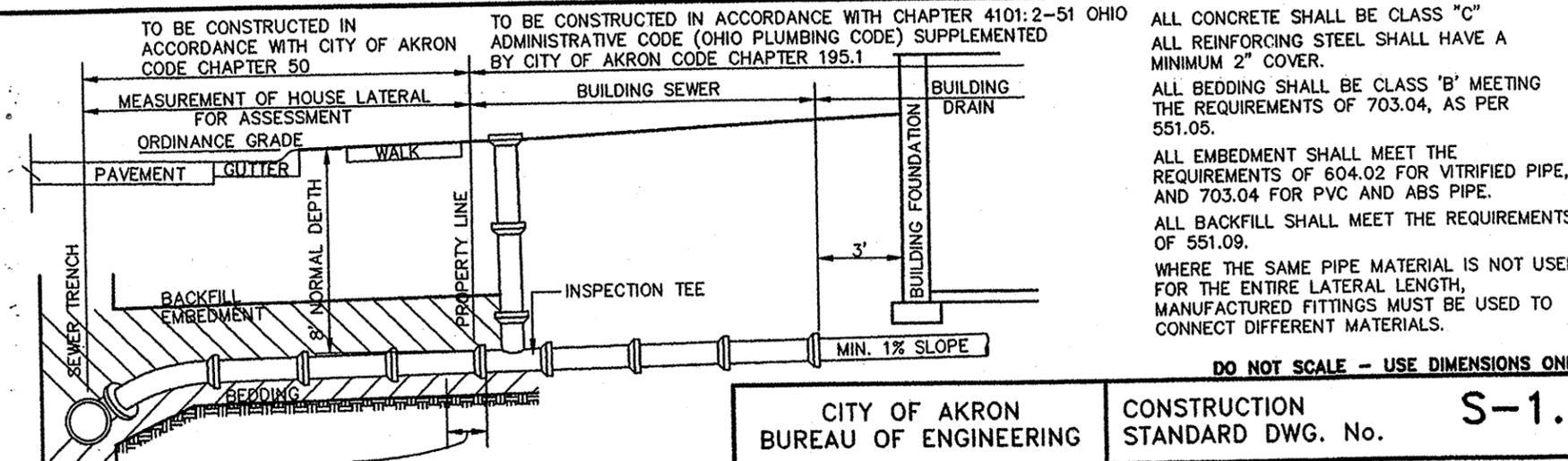
TYPICAL Y-BRANCH INSTALLATION OR SEWER RECONSTRUCTION REPAIR METHOD.



	VCP	PVC OR ABS
A	90° LONG RADIUS BEND	90° LONG RADIUS BEND OR AS PER DETAIL A
B	45° LONG RADIUS	45° LONG OR SHORT RADIUS BEND
C	LONG RADIUS BEND	LONG RADIUS BEND OR SHORT RADIUS BENDS NOT TO EXCEED 45°
D	CONCRETE ENCASEMENT (MIN. 6" THICKNESS)	# 57 STONE ENCASEMENT MINIMUM 6" THICKNESS
E	SONOTUBE (OPTIONAL) INCLUDE IN COST OF 560	SONOTUBE (REQUIRED) INCLUDE IN COST OF 560 STACK
F	BEDDING IN ACCORDANCE WITH 551.05, INCLUDED IN COST OF 560 STACK.	
G	MINIMUM 3' LENGTH BEHIND PROPERTY LINE	
H	WHEN LATERAL IS NOT TO BE CONNECTED TO AN EXISTING LATERAL, FINISH WITH A BELL END, USE A REMOVABLE PLUG IN THE END, AND INSTALL A 1" x 2" LOCATION STAKE, INCLUDE IN THE COST OF ITEM 560 STACK.	

NOTE: SONOTUBES MAY BE USED TO FORM CONCRETE ENCASEMENT PROVIDED THE MINIMUM 6" THICKNESS IS MAINTAINED. CONCRETE ENCASEMENT SHOULD BE STOPPED ONLY AT BELLS. STACKS SHALL BE CONSTRUCTED TO WITHIN 10"± OF ESTABLISHED STREET GRADE OR GROUND LEVEL. ENCASEMENT SHALL BE INCLUDED IN THE PRICE BID FOR ITEM 560 STACK, WHEN NOT CONSTRUCTED TO PROPERTY LINE OR ITEM 560 HOUSE LATERAL, WHEN CONSTRUCTED TO PROPERTY LINE.

METHODS OF CONSTRUCTING SANITARY LATERALS WHEN DEPTH OF SEWER IS 14' OR GREATER

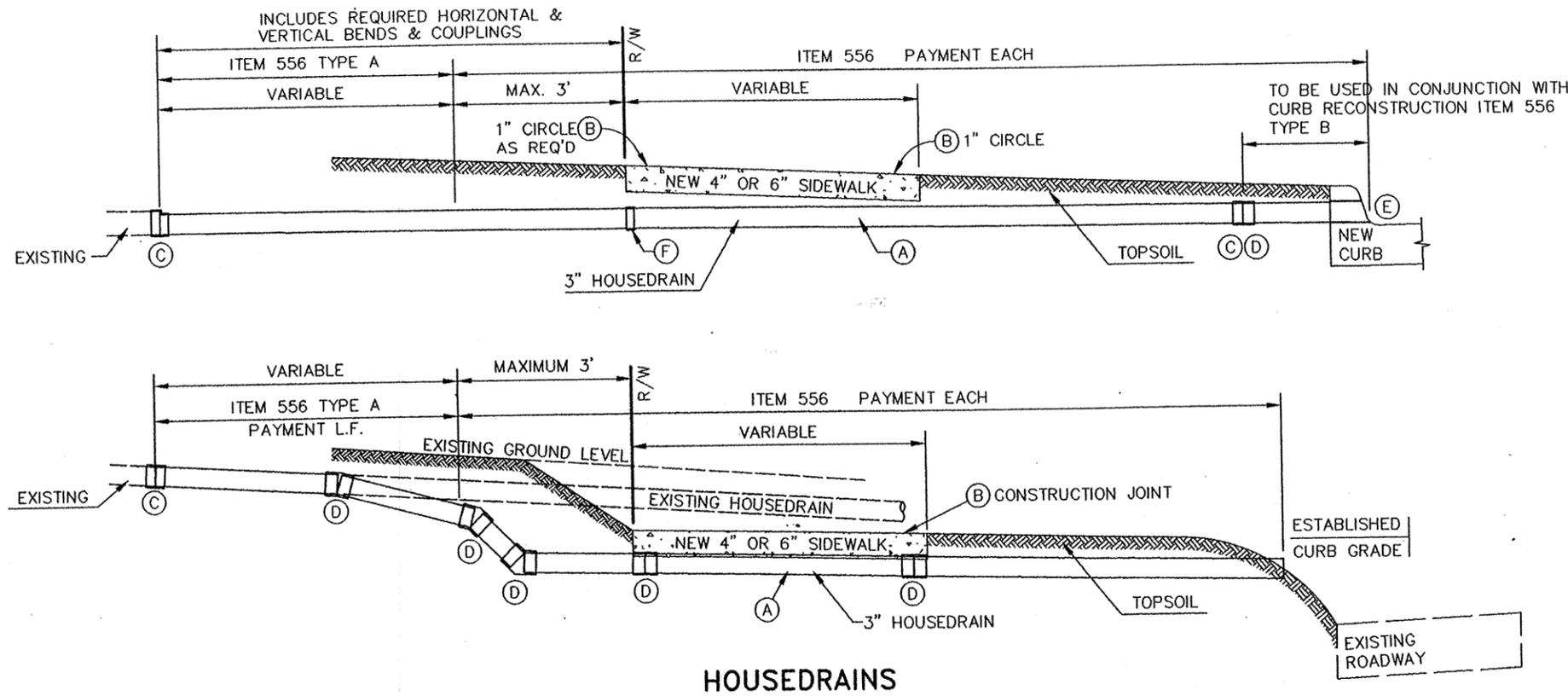


THE INVERT OF THE LATERAL SHALL BE AT THE SAME LEVEL AS THE CROWN OF THE SEWER.

WHERE THE BUILDING SEWER EXISTS THIS CONNECTION SHALL BE MADE BY THE CONTRACTOR AT NO EXTRA COST. WHERE THE BUILDING SEWER DOES NOT EXIST THE END OF THE LATERAL SHALL BE PLUGGED AT THE PROPERTY LINE AND MARKED WITH A STAKE TO THE GROUND SURFACE.

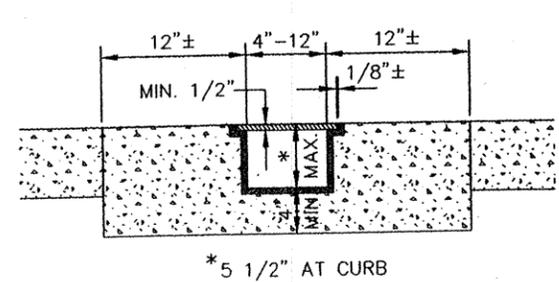
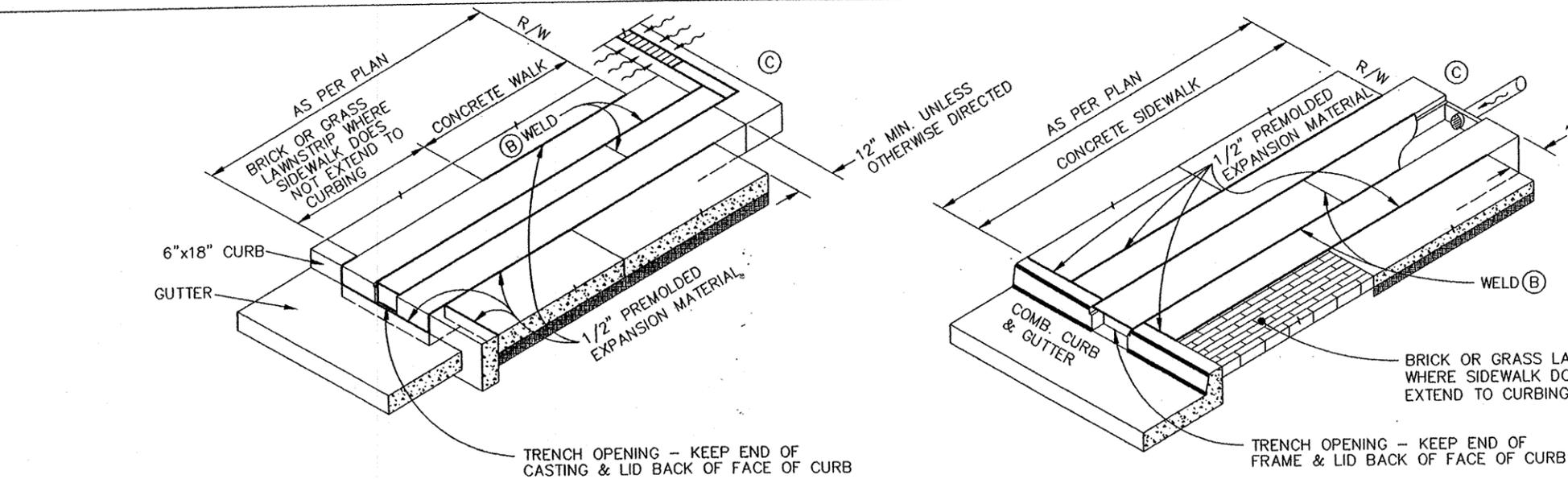
CITY OF AKRON BUREAU OF ENGINEERING	CONSTRUCTION STANDARD DWG. No. S-1.1
<i>David J. Jelic</i> 3-4-99 MANAGER, DESIGN DIVISION <i>Pawan K. Khaitan</i> 3-4-99 MANAGER, CONSTRUCTION DIVISION <i>Charles H. ...</i> 3-4-99 CITY ENGINEER	Y-BRANCH LATERAL STACK
REVISIONS:	

DO NOT SCALE - USE DIMENSIONS ONLY

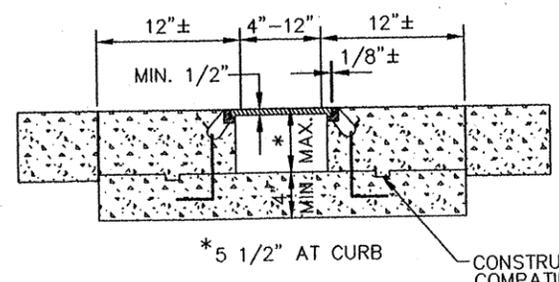


- ### HOUSEDRAINS
- (A) HOUSEDRAINS MUST BE LAID ON UNDISTURBED OR COMPACTED GROUND ON A CONTINUOUS SLOPE FROM R/W TO CURB. CAUTION SHALL BE EXERCISED TO PREVENT THE PIPE FROM SAGGING OR BEING CRUSHED UNDER THE CONCRETE.
 - (B) WHERE HOUSEDRAINS CROSS UNDER WALKS, THE WALK SHALL BE MARKED WITH A 1" DIAMETER CIRCLE ON THE FRONT EDGE OVER THE PIPE. WHERE THE PIPE IS SKEWED 5' OR MORE BOTH EDGES OF THE WALK SHALL BE MARKED WITH A CIRCLE. WHERE ANY PORTION OF THE PIPE IS EMBEDDED IN THE CONCRETE, A CONSTRUCTION JOINT SHALL BE SAWCUT 2" INTO THE WALK DIRECTLY OVER THE PIPE.
 - (C) CONNECTIONS TO EXISTING DRAIN PIPES SHALL INCLUDE ALL SUITABLE FITTINGS AND JOINTING AS NECESSARY.
 - (D) COUPLINGS SHALL BE PROVIDED AS SHOWN. BELL END PIPE MAY BE USED IN LIEU OF COUPLINGS, AS DIRECTED BY THE ENGINEER.
 - (E) HOLES SIZED COMPATIBLY TO THE PIPE SHALL BE PROVIDED THROUGH THE FINISHED CURB ONLY BY DRILLING. KEEP PIPE RECESSED 1/2".
 - (F) PIPE SHALL TERMINATE WITH BELL OR COUPLING (PLUGGED) WHEN THERE IS NO EXISTING HOUSEDRAIN TO CONNECT.

- ### COVERED TRENCH DRAINS
- (A) THESE DRAWINGS SHOW TYPICAL METHODS OF CONSTRUCTING COVERED TRENCHES IN THE SIDEWALK AND LAWNSTRIP AREAS. SEVERAL MANUFACTURERS SUPPLY THE METAL TROUGHS, COVERS, ANGLE IRON, ETC., AND SLIGHT VARIATIONS IN DIMENSIONS OF THESE ITEMS MAY BE APPROVED BY THE ENGINEER.
 - (B) COVERS SHALL BE FIELD WELDED TO THE FRAME ALONG EACH TOP EDGE AT INTERVALS NOT EXCEEDING 12". THE WELD SHALL BE 1" IN LENGTH. IF THE COVER IS COMPRISED OF TWO OR MORE PIECES, THE PIECES SHALL BE JOINED TOGETHER WITH A CONTINUOUS BUTT WELD. COVERS SHALL HAVE A NON-SLIP FINISH. OPEN TYPE GRATING WILL NOT BE PERMITTED.
 - (C) COVERED TROUGHS MAY BE USED IN CONJUNCTION WITH DRIVEWAY TRENCH DRAINS OR LARGER ROOF DRAIN PIPES, OR AS APPROVED BY THE ENGINEER.



ALL METAL TROUGH IN CONCRETE



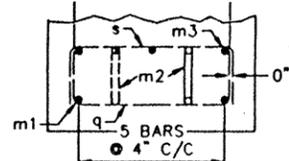
CONCRETE TROUGH WITH METAL COVER

DO NOT SCALE - USE DIMENSIONS ONLY

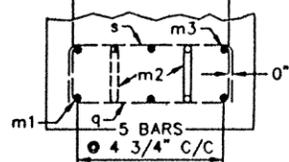
CITY OF AKRON BUREAU OF ENGINEERING	CONSTRUCTION STANDARD DWG. No. S-2
<i>Daniel J. Leik</i> 12-17-98 MANAGER, DESIGN DIVISION <i>Pawan K. Khaitan</i> MANAGER, CONSTRUCTION DIVISION <i>David H. ...</i> 12/21/98 CITY ENGINEER	HOUSEDRAINS TRENCH DRAINS
REVISIONS:	

SECTION A - A
SPACING DIAGRAMS FOR
MAIN LONGITUDINAL STEEL
FOR s, q, AND x BARS SEE NOTE 2

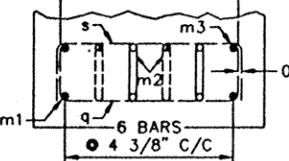
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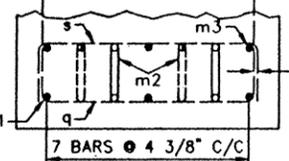
6" & 8" PIPE SEWER



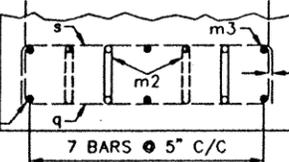
10" PIPE SEWER



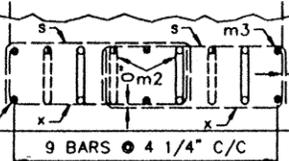
12" PIPE SEWER



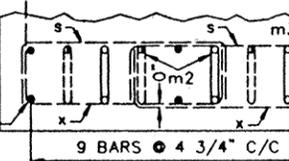
15" PIPE SEWER



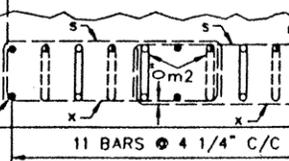
18" PIPE SEWER



21" PIPE SEWER



24" PIPE SEWER



27" PIPE SEWER

BAR SCHEDULE PER 12' SPAN

BAR	6" & 8"	10"	12"	15"	18"	21"	24"	27"	SHAPE	POSITION
m1	2-#8(1"φ) SEE NOTE 1. SEE SECT. A-A	3-#8(1"φ) SEE NOTE 1. SEE SECT. A-A	2-#8(1"φ) SEE NOTE 1. SEE SECT. A-A	3-#8(1"φ) SEE NOTE 1. SEE SECT. A-A	STR.	LONGITUDINAL BOTTOM OF CRADLE				
m2	1-#8(1"φ) 18'-9" NOTE 4. SEE SECT. A-A	1-#8(1"φ) 18'-9" NOTE 4. SEE SECT. A-A	2-#8(1"φ) 18'-9" NOTE 4. SEE SECT. A-A	2-#8(1"φ) 18'-9" NOTE 4. SEE SECT. A-A	2-#8(1"φ) 18'-9" NOTE 4. SEE SECT. A-A	3-#8(1"φ) 18'-9" NOTE 4. SEE SECT. A-A	3-#8(1"φ) 18'-9" NOTE 4. SEE SECT. A-A	4-#8(1"φ) 18'-9" NOTE 4. SEE SECT. A-A	BENT	LONGITUDINAL BOTTOM OF CRADLE AND BENT OVER SUPPORT
m3	3-#8(1"φ) SEE NOTE 1. SEE SECT. A-A	3-#8(1"φ) SEE NOTE 1. SEE SECT. A-A	2-#8(1"φ) SEE NOTE 1. SEE SECT. A-A	2-#8(1"φ) SEE NOTE 1. SEE SECT. A-A	3-#8(1"φ) SEE NOTE 1. SEE SECT. A-A	STR.	LONGITUDINAL TOP OF CRADLE			
p	2-#4(1/2"φ) SEE NOTE 1. AS SHOWN	2-#4(1/2"φ) SEE NOTE 1. AS SHOWN	2-#4(1/2"φ) SEE NOTE 1. AS SHOWN	4-#4(1/2"φ) SEE NOTE 1. 0'-5"	4-#4(1/2"φ) SEE NOTE 1. 0'-6"	4-#4(1/2"φ) SEE NOTE 1. 0'-7"	4-#4(1/2"φ) SEE NOTE 1. 0'-8"	4-#4(1/2"φ) SEE NOTE 1. 0'-9"	STR.	LONGITUDINAL SIDE OF CRADLE
q or x	7-#3(3/8"φ) 4'-2 1/2" NOTE 4. 8" C-C	7-#3(3/8"φ) 4'-8" NOTE 4. 8" C-C	7-#3(3/8"φ) 5'-2" NOTE 4. 8" C-C	7-#3(3/8"φ) 5'-10" NOTE 4. 8" C-C	7-#3(3/8"φ) 6'-8" NOTE 4. 8" C-C	18-#3(3/8"φ) 4'-6 1/2" NOTE 4. 8" C-C	18-#3(3/8"φ) 4'-11" NOTE 4. 8" C-C	18-#3(3/8"φ) 5'-2 1/4" NOTE 4. 8" C-C	BENT	LONG VERTICAL STIRRUPS IN CRADLE
r	2-#4(1/2"φ) 1'-6" 1'-4 1/2"	2-#4(1/2"φ) 1'-9" 1'-4 1/2"	2-#5(5/8"φ) 2'-0" 1'-4 1/2"	2-#5(5/8"φ) 2'-4" 1'-4 1/2"	3-#5(5/8"φ) 2'-8" 0'-8"	3-#6(3/4"φ) 3'-0" 0'-8"	3-#6(3/4"φ) 3'-4" 0'-8"	3-#7(7/8"φ) 3'-8" 0'-8"	STR.	UPPER TRANSVERSE HORIZONTAL IN CAPITAL
s	6-#3(3/8"φ) 2'-7" NOTE 4. 8" C-C	6-#3(3/8"φ) 2'-10" NOTE 4. 8" C-C	6-#3(3/8"φ) 3'-1" NOTE 4. 8" C-C	6-#3(3/8"φ) 3'-5" NOTE 4. 8" C-C	6-#3(3/8"φ) 3'-9" NOTE 4. 8" C-C	12-#3(3/8"φ) 3'-0" NOTE 4. 8" C-C	12-#3(3/8"φ) 3'-2 1/2" NOTE 4. 8" C-C	12-#3(3/8"φ) 3'-4 1/4" NOTE 4. 8" C-C	BENT	SHORT VERTICAL STIRRUPS IN CRADLE
t	2-#3(3/8"φ) 7'-1" NOTE 4. AS SHOWN	BENT	VERTICAL STIRRUPS IN CAPITAL							
u	4-#5(5/8"φ) 3'-11" NOTE 4. AS SHOWN	BENT	PILE DOWELS							
v	2-#4(1/2"φ) 1'-6" 1'-4 1/2"	2-#4(1/2"φ) 1'-9" 1'-4 1/2"	2-#4(1/2"φ) 2'-0" 1'-4 1/2"	2-#4(1/2"φ) 2'-4" 1'-4 1/2"	2-#4(1/2"φ) 2'-8" 1'-4 1/2"	2-#4(1/2"φ) 3'-0" 1'-4 1/2"	2-#4(1/2"φ) 3'-4" 1'-4 1/2"	2-#4(1/2"φ) 3'-8" 1'-4 1/2"	STR.	LOWER TRANSVERSE HORIZONTAL IN CAPITAL

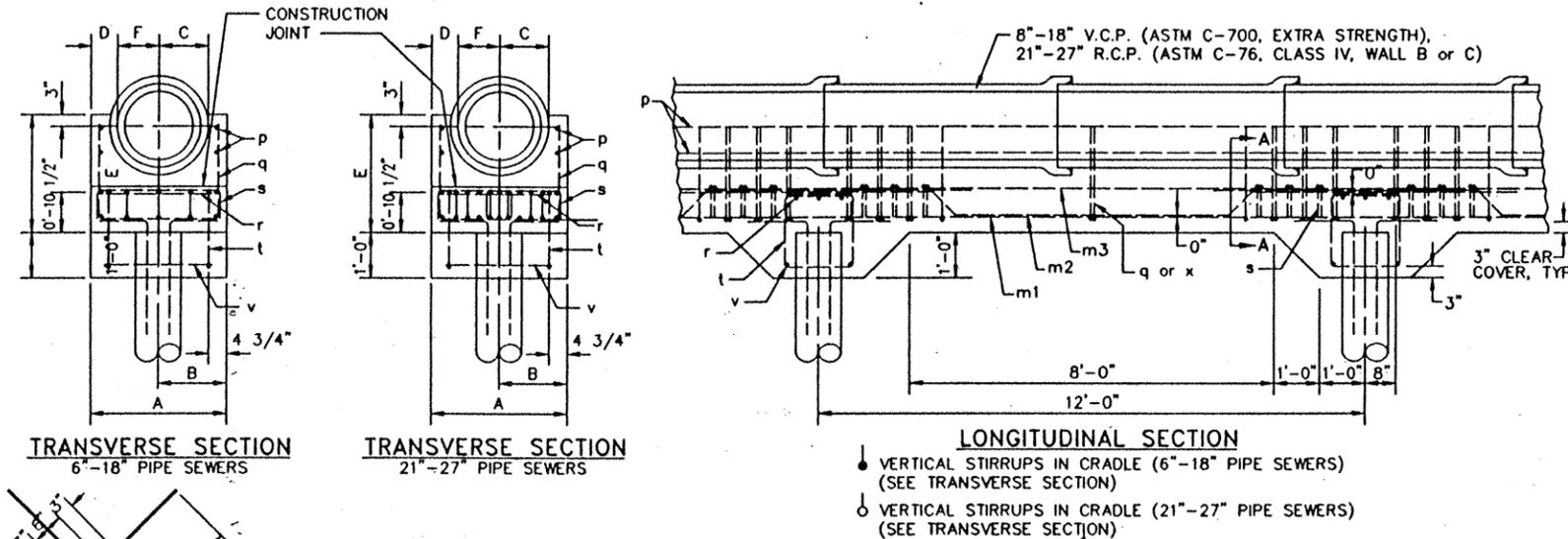
GIVEN: NO.-SIZE
LENGTH
SPACING

CRADLE DIMENSIONS

PIPE DIA	A	B	C NOTE 3.	D	E	F
6"	2'-0"	1'-0"	0'-5"	0'-8 1/4"	1'-11 1/4"	0'-3 3/4"
8"	2'-0"	1'-0"	0'-6 1/2"	0'-7"	1'-11 1/4"	0'-5"
10"	2'-3"	1'-1 1/2"	0'-7 1/2"	0'-7 3/4"	2'-0 1/2"	0'-6"
12"	2'-6"	1'-3"	0'-9 1/4"	0'-7 3/4"	2'-2"	0'-7 1/4"
15"	2'-10"	1'-5"	0'-11 1/2"	0'-7 3/4"	2'-4"	0'-9 1/4"
18"	3'-2"	1'-7"	1'-1"	0'-8"	2'-7"	0'-11"
21"	3'-6"	1'-9"	1'-3 1/4"	0'-7"	2'-8"	1'-2"
24"	3'-10"	1'-11"	1'-5 1/4"	0'-7 1/4"	2'-10"	1'-3 3/4"
27"	4'-2"	2'-1"	1'-7 1/4"	0'-7 1/2"	3'-0"	1'-5 1/2"

BAR DIMENSIONS

PIPE DIA	G	H	J	CONCRETE CU. YD./FT.	REIN. STL. LBS./FT. NOTE 1.	PILE CAP. TONS
6"	1'-5 1/4"	1'-6"		0.149	25.2	25
8"	1'-5 1/4"	1'-6"		0.142	25.2	25
10"	1'-6 1/2"	1'-9"		0.165	28.6	30
12"	1'-8"	2'-0"		0.189	26.7	30
15"	1'-10"	2'-4"		0.220	31.7	35
18"	2'-1"	2'-8"		0.264	35.4	40
21"	2'-2"	1'-11"	0'-7 1/2"	0.275	41.6	45
24"	2'-4"	2'-1 1/2"	0'-7 1/2"	0.311	42.1	50
27"	2'-6"	2'-3 1/4"	0'-7 1/2"	0.349	47.1	55



NOTES:

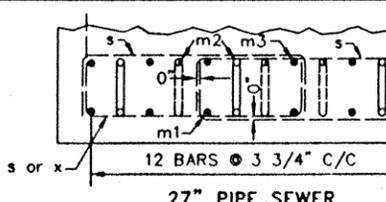
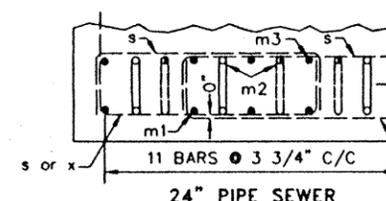
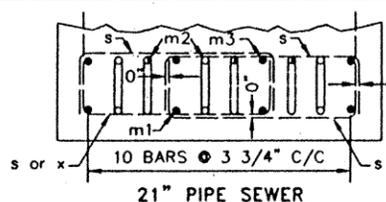
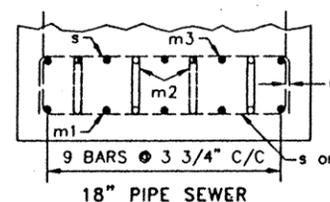
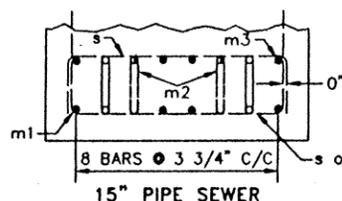
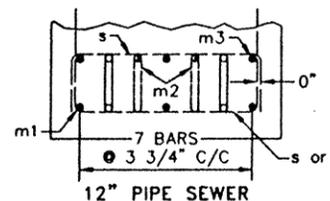
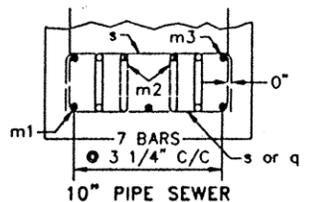
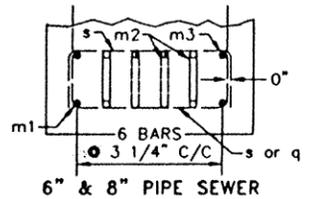
- STEEL QUANTITIES ARE FOR ESTIMATING PURPOSES ONLY. A 40 DIAMETER LAP IS FIGURED FOR ALL SPLICES AND A STOCK BAR LENGTH OF 20' IS FIGURED FOR ALL STRAIGHT BARS. THE STEEL QUANTITY PAID SHALL BE THE ACTUAL WEIGHT OF STEEL IN PLACE.
- SEE LONGITUDINAL SECTION FOR s, q, AND x BAR POSITIONS.
- 'C' DIMENSION IS OUTSIDE RADIUS OF BELL FOR WALL C R.C.P.
- LENGTH GIVEN IN TABLES FOR BENT BARS IS APPROXIMATELY THE LENGTH ALONG THE CENTERLINE OF THE BAR. SEE DETAIL FOR DIMENSIONS.
- POSITIONS OF TRUSS BARS WILL BE REVERSED IN ALTERNATE SPANS.
- THE MINIMUM RADIUS OF BENT BARS SHALL BE 3 BAR DIAMETERS. THE RADIUS OF A BEND IS TO THE INSIDE OF THE BAR.
- ALL REINFORCING STEEL SHALL HAVE A MINIMUM COVER OF 3".
- LENGTH OF LAP FOR SPLICING REINFORCEMENT SHALL BE 40 BAR DIAMETERS.
- DIMENSIONS FOR REINFORCING BARS ARE OUT TO OUT.
- AT THE LIMITS OF EACH POUR A BULKHEAD OR OTHER SUITABLE METHOD SHALL BE USED TO PROVIDE A PROPER JOINT IN KEEPING WITH GOOD ENGINEERING PRACTICE.
- ALL CONCRETE SHALL BE CLASS "C".

DO NOT SCALE - USE DIMENSIONS ONLY

CITY OF AKRON BUREAU OF ENGINEERING	CONSTRUCTION STANDARD DWG. No. S-3
David J. Hill MANAGER, DESIGN DIVISION	February 11, 1998
Pawan K. Khaitan MANAGER, CONSTRUCTION DIVISION	PILE SUPPORT 6" - 27" PIPE SEWERS TO 10' DEEP
Chand Singh CITY ENGINEER	AUTOCAD DRAWING - STD_5-3.DWG REVISIONS:

SECTION A - A
SPACING DIAGRAMS FOR
MAIN LONGITUDINAL STEEL
FOR s, q, AND x BARS SEE NOTE 2

KEY



BAR SCHEDULE PER 12' SPAN

BAR	6" & 8"	10"	12"	15"	18"	21"	24"	27"	SHAPE	POSITION
m ₁	2-#8(1"φ) SEE NOTE 1. SEE SECT. A-A	3-#8(1"φ) SEE NOTE 1. SEE SECT. A-A	3-#8(1"φ) SEE NOTE 1. SEE SECT. A-A	4-#8(1"φ) SEE NOTE 1. SEE SECT. A-A	5-#8(1"φ) SEE NOTE 1. SEE SECT. A-A	4-#8(1"φ) SEE NOTE 1. SEE SECT. A-A	5-#8(1"φ) SEE NOTE 1. SEE SECT. A-A	6-#8(1"φ) SEE NOTE 1. SEE SECT. A-A	STR.	LONGITUDINAL BOTTOM OF CRADLE
m ₂	2-#8(1"φ) 18'-9" NOTE 4. SEE SECT. A-A	3-#8(1"φ) 18'-9" NOTE 4. SEE SECT. A-A	3-#8(1"φ) 18'-9" NOTE 4. SEE SECT. A-A	3-#8(1"φ) 18'-9" NOTE 4. SEE SECT. A-A	BENT	LONGITUDINAL BOTTOM OF CRADLE AND BENT OVER SUPPORT				
m ₃	2-#8(1"φ) SEE NOTE 1. SEE SECT. A-A	2-#8(1"φ) SEE NOTE 1. SEE SECT. A-A	3-#8(1"φ) SEE NOTE 1. SEE SECT. A-A	4-#8(1"φ) SEE NOTE 1. SEE SECT. A-A	5-#8(1"φ) SEE NOTE 1. SEE SECT. A-A	4-#8(1"φ) SEE NOTE 1. SEE SECT. A-A	5-#8(1"φ) SEE NOTE 1. SEE SECT. A-A	6-#8(1"φ) SEE NOTE 1. SEE SECT. A-A	STR.	LONGITUDINAL TOP OF CRADLE
p	2-#4(1/2"φ) SEE NOTE 1. AS SHOWN	2-#4(1/2"φ) SEE NOTE 1. AS SHOWN	2-#4(1/2"φ) SEE NOTE 1. AS SHOWN	4-#4(1/2"φ) SEE NOTE 1. 0'-5"	4-#4(1/2"φ) SEE NOTE 1. 0'-6"	4-#4(1/2"φ) SEE NOTE 1. 0'-7"	4-#4(1/2"φ) SEE NOTE 1. 0'-8"	4-#4(1/2"φ) SEE NOTE 1. 0'-9"	STR.	LONGITUDINAL SIDE OF CRADLE
q or x	18-#4(1/2"φ) 4'-2 1/2" NOTE 4. 8" C-C	18-#4(1/2"φ) 4'-8" NOTE 4. 8" C-C	18-#4(1/2"φ) 5'-2" NOTE 4. 8" C-C	18-#4(1/2"φ) 5'-10" NOTE 4. 8" C-C	24-#4(1/2"φ) 6'-8" NOTE 4. 8" C-C	36-#4(1/2"φ) 4'-8" NOTE 4. 8" C-C	36-#4(1/2"φ) 5'-2" NOTE 4. 8" C-C	36-#4(1/2"φ) 5'-4" NOTE 4. 8" C-C	BENT	LONG VERTICAL STIRRUPS IN CRADLE
r	2-#8(1"φ) 1'-6" 1'-4"	2-#8(1"φ) 1'-9" 1'-4"	2-#8(1"φ) 2'-0" 1'-4"	3-#8(1"φ) 2'-4" 0'-8"	3-#8(1"φ) 2'-8" 0'-8"	4-#8(1"φ) 3'-0" 0'-5 1/4"	5-#8(1"φ) 3'-4" 0'-4"	6-#8(1"φ) 3'-8" 0'-3 1/4"	STR.	UPPER TRANSVERSE HORIZONTAL IN CAPITAL
s	18-#4(1/2"φ) 2'-7" NOTE 4. 8" C-C	18-#4(1/2"φ) 2'-10" NOTE 4. 8" C-C	18-#4(1/2"φ) 3'-1" NOTE 4. 8" C-C	18-#4(1/2"φ) 3'-5" NOTE 4. 8" C-C	24-#4(1/2"φ) 3'-9" NOTE 4. 8" C-C	36-#4(1/2"φ) 3'-2" NOTE 4. 8" C-C	36-#4(1/2"φ) 3'-6" NOTE 4. 8" C-C	36-#4(1/2"φ) 3'-6" NOTE 4. 8" C-C	BENT	SHORT VERTICAL STIRRUPS IN CRADLE
t	2-#3(3/8"φ) 7'-1" NOTE 4. AS SHOWN	BENT	VERTICAL STIRRUPS IN CAPITAL							
u	4-#5(5/8"φ) 3'-11" NOTE 4. AS SHOWN	BENT	PILE DOWELS							
v	2-#8(1"φ) 1'-6" 1'-4"	2-#8(1"φ) 1'-9" 1'-4"	2-#8(1"φ) 2'-0" 1'-4"	2-#8(1"φ) 2'-4" 1'-4"	2-#8(1"φ) 2'-8" 1'-4"	2-#8(1"φ) 3'-0" 1'-4"	2-#8(1"φ) 3'-4" 1'-4"	2-#8(1"φ) 3'-8" 1'-4"	STR.	LOWER TRANSVERSE HORIZONTAL IN CAPITAL

GIVEN: NO.-SIZE
LENGTH
SPACING

CRADLE DIMENSIONS

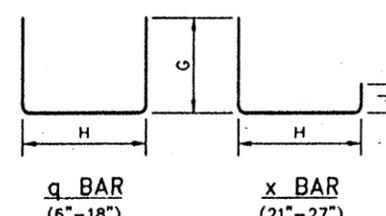
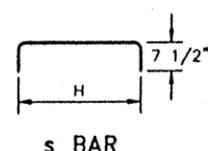
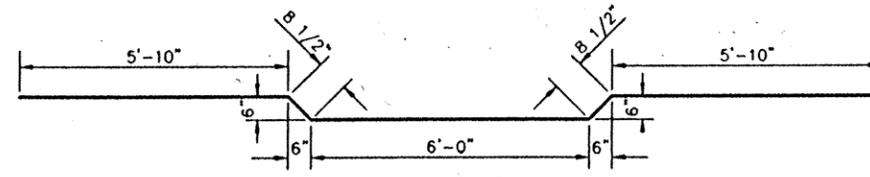
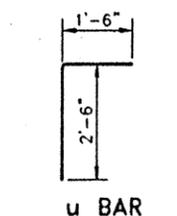
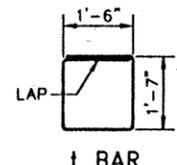
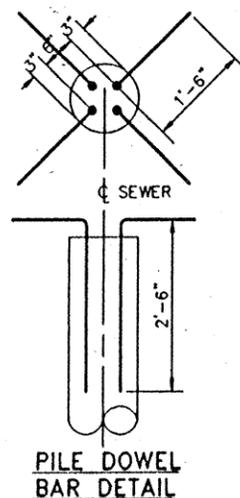
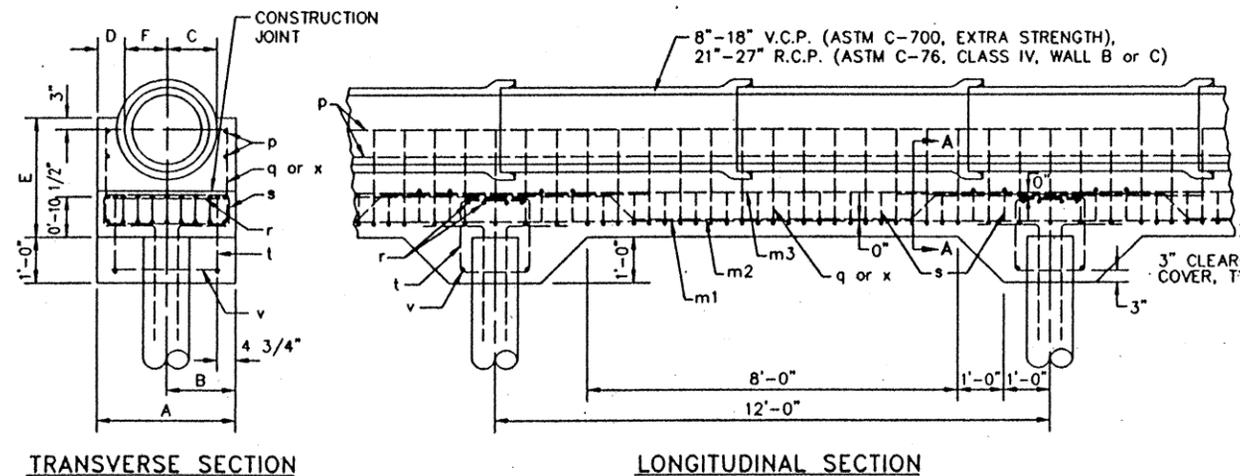
PIPE DIA	A	B	C NOTE 3	D	E	F
6"	2'-0"	1'-0"	0'-5"	0'-8 1/4"	1'-11 1/4"	0'-3 3/4"
8"	2'-0"	1'-0"	0'-6 1/2"	0'-7"	1'-11 1/4"	0'-5"
10"	2'-3"	1'-1 1/2"	0'-7 1/2"	0'-7 1/2"	2'-0 1/2"	0'-6"
12"	2'-6"	1'-3"	0'-9 1/4"	0'-7 3/4"	2'-2"	0'-7 1/4"
15"	2'-10"	1'-5"	0'-11 1/2"	0'-7 3/4"	2'-4"	0'-9 1/4"
18"	3'-2"	1'-7"	1'-1"	0'-8"	2'-7"	0'-11"
21"	3'-6"	1'-9"	1'-3 1/4"	0'-7"	2'-8"	1'-2"
24"	3'-10"	1'-11"	1'-5 1/4"	0'-7 1/4"	2'-10"	1'-3 3/4"
27"	4'-2"	2'-1"	1'-7 1/4"	0'-7 1/2"	3'-0"	1'-5 1/2"

BAR DIMENSIONS

PIPE DIA	G	H	J	CONCRETE CU. YD./FT.	REIN. STL. LBS./FT. NOTE 1.	PILE CAP. TONS
6"	1'-5 1/4"	1'-6"		0.149	32.6	30
8"	1'-5 1/4"	1'-6"		0.142	32.6	30
10"	1'-6 1/2"	1'-9"		0.165	36.7	35
12"	1'-8"	2'-0"		0.189	40.9	35
15"	1'-10"	2'-4"		0.220	50.6	40
18"	2'-1"	2'-8"		0.264	62.0	40
21"	2'-2"	2'-0 1/2"	0'-7 1/2"	0.275	62.6	50
24"	2'-4"	2'-4 1/4"	0'-7 1/2"	0.311	71.8	55
27"	2'-6"	2'-4 1/4"	0'-7 1/2"	0.349	79.9	60

NOTES:

1. STEEL QUANTITIES ARE FOR ESTIMATING PURPOSES ONLY. A 40 DIAMETER LAP IS FIGURED FOR ALL SPLICES AND A STOCK BAR LENGTH OF 20' IS FIGURED FOR ALL STRAIGHT BARS. THE STEEL QUANTITY PAID SHALL BE THE ACTUAL WEIGHT OF STEEL IN PLACE.
2. SEE LONGITUDINAL SECTION FOR s, q, AND x BAR POSITIONS.
3. 'C' DIMENSION IS OUTSIDE RADIUS OF BELL FOR WALL C R.C.P.
4. LENGTH GIVEN IN TABLES FOR BENT BARS IS APPROXIMATELY THE LENGTH ALONG THE CENTERLINE OF THE BAR. SEE DETAIL FOR DIMENSIONS.
5. POSITIONS OF TRUSS BARS WILL BE REVERSED IN ALTERNATE SPANS.
6. THE MINIMUM RADIUS OF BENT BARS SHALL BE 3 BAR DIAMETERS. THE RADIUS OF A BEND IS TO THE INSIDE OF THE BAR.
7. ALL REINFORCING STEEL SHALL HAVE A MINIMUM COVER OF 3".
8. LENGTH OF LAP FOR SPLICING REINFORCEMENT SHALL BE 40 BAR DIAMETERS.
9. DIMENSIONS FOR REINFORCING BARS ARE OUT TO OUT.
10. AT THE LIMITS OF EACH POUR A BULKHEAD OR OTHER SUITABLE METHOD SHALL BE USED TO PROVIDE A PROPER JOINT IN KEEPING WITH GOOD ENGINEERING PRACTICE.
11. ALL CONCRETE SHALL BE CLASS "C".



DO NOT SCALE - USE DIMENSIONS ONLY

CITY OF AKRON BUREAU OF ENGINEERING	CONSTRUCTION STANDARD DWG. No. S-4
<i>Daniel M. Hill</i> MANAGER, DESIGN DIVISION	PILE SUPPORT 6"-27" PIPE SEWERS 10'-16' DEEP
<i>Pawan K. Khairan</i> MANAGER, CONSTRUCTION DIVISION	AUTOCAD DRAWING - STD_S-4.DWG February 11, 1998
<i>Cheril Hand</i> CITY ENGINEER	REVISIONS:

SECTION A - A
SPACING DIAGRAMS FOR
MAIN LONGITUDINAL STEEL
FOR s AND q BARS SEE NOTE 2

BAR SCHEDULE PER 12' SPAN

GIVEN: NO.-SIZE
LENGTH
SPACING

CRADLE DIMENSIONS

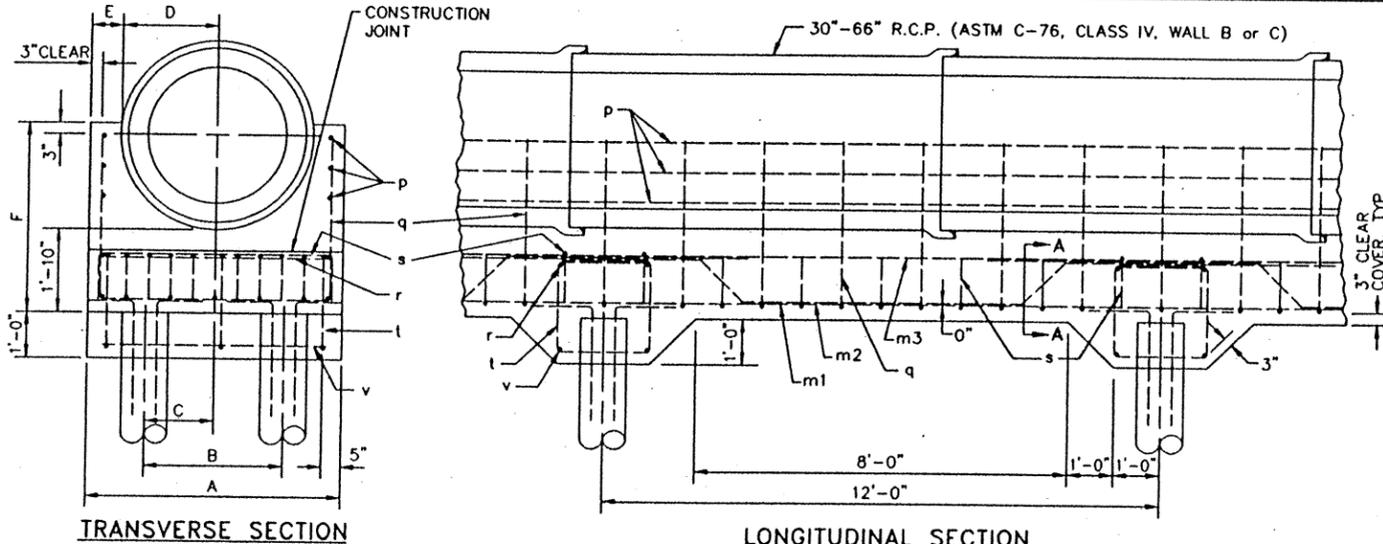
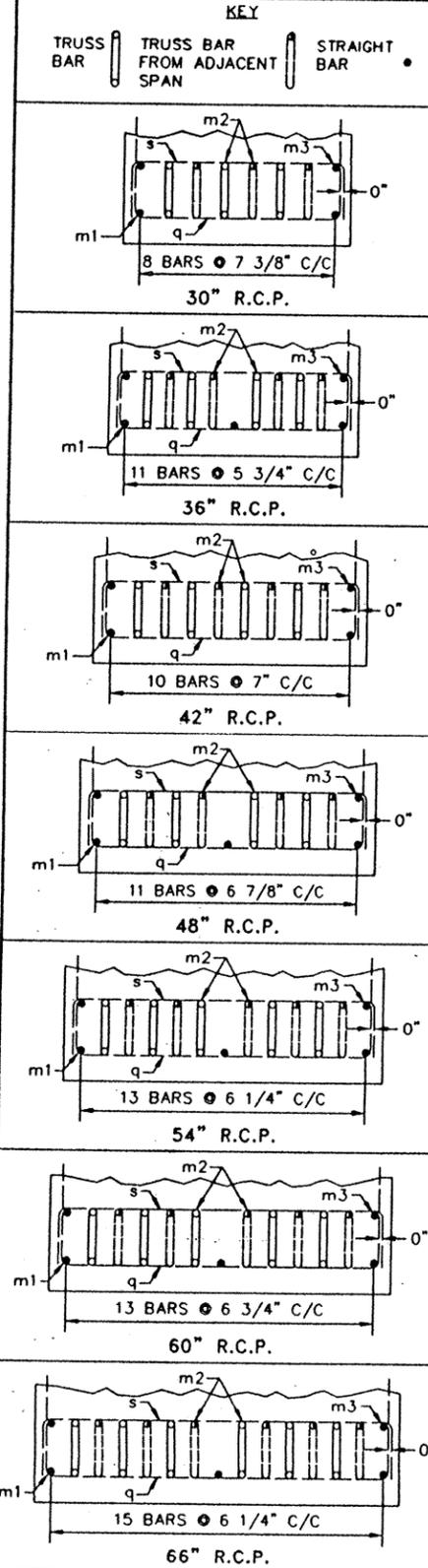
PIPE DIA	A	B	C	D NOTE 11.	E	F
30"	5'-0"	3'-0"	1'-6"	1'-9 1/2"	0'-8 1/2"	3'-10 1/2"
36"	5'-6"	3'-0"	1'-6"	2'-1"	0'-8"	4'-2"
42"	6'-0"	3'-0"	1'-6"	2'-3 3/4"	0'-8 1/4"	4'-4 3/4"
48"	6'-6"	3'-4"	1'-8"	2'-7 1/4"	0'-7 3/4"	4'-8 1/4"
54"	7'-0"	3'-8"	1'-10"	2'-9 1/4"	0'-8 3/4"	4'-10 1/4"
60"	7'-6"	4'-0"	2'-0"	3'-0 3/4"	0'-8 1/4"	5'-1 3/4"
66"	8'-0"	4'-4"	2'-2"	3'-4 1/4"	0'-7 3/4"	5'-5 1/4"

BAR	30"	36"	42"	48"	54"	60"	66"	SHAPE	POSITION
m1	2-#8(1"φ) SEE NOTE 1. SEE SECT. A-A	3-#8(1"φ) SEE NOTE 1. SEE SECT. A-A	2-#9(1 1/8"φ) SEE NOTE 1. SEE SECT. A-A	3-#9(1 1/8"φ) SEE NOTE 1. SEE SECT. A-A	STR.	LONGITUDINAL			
m2	3-#8(1"φ) 19'-11" NOTE 4. SEE SECT. A-A	4-#8(1"φ) 19'-11" NOTE 4. SEE SECT. A-A	4-#9(1 1/8"φ) 19'-11" NOTE 4. SEE SECT. A-A	4-#9(1 1/8"φ) 19'-11" NOTE 4. SEE SECT. A-A	5-#9(1 1/8"φ) 19'-11" NOTE 4. SEE SECT. A-A	5-#9(1 1/8"φ) 19'-11" NOTE 4. SEE SECT. A-A	6-#9(1 1/8"φ) 19'-11" NOTE 4. SEE SECT. A-A	BENT	LONGITUDINAL BOTTOM OF CRADLE AND BENT OVER SUPPORT
m3	2-#8(1"φ) SEE NOTE 1. SEE SECT. A-A	2-#8(1"φ) SEE NOTE 1. SEE SECT. A-A	2-#9(1 1/8"φ) SEE NOTE 1. SEE SECT. A-A	STR.	LONGITUDINAL				
p	6-#4(1/2"φ) SEE NOTE 1. 0'-5"	6-#4(1/2"φ) SEE NOTE 1. 0'-6 1/4"	6-#4(1/2"φ) SEE NOTE 1. 0'-8 1/4"	6-#4(1/2"φ) SEE NOTE 1. 0'-10"	6-#4(1/2"φ) SEE NOTE 1. 0'-11"	6-#4(1/2"φ) SEE NOTE 1. 1'-0"	6-#4(1/2"φ) SEE NOTE 1. 1'-1"	STR.	LONGITUDINAL
q	6-#5(5/8"φ) 11'-0" NOTE 4. 2'-0"	7-#5(5/8"φ) 12'-1" NOTE 4. 1'-8 1/2"	10-#5(5/8"φ) 13'-0 1/2" NOTE 4. 1'-2 1/2"	11-#5(5/8"φ) 14'-1 1/2" NOTE 4. 1'-1"	13-#5(5/8"φ) 14'-11 1/2" NOTE 4. 0'-11"	14-#5(5/8"φ) 16'-0 1/2" NOTE 4. 0'-10 1/4"	15-#5(5/8"φ) 17'-1 1/2" NOTE 4. 0'-9 1/2"	BENT	LONG VERTICAL
r	2-#4(1/2"φ) 4'-6" 1'-10"	2-#5(5/8"φ) 5'-0" 1'-10"	2-#6(3/4"φ) 5'-6" 1'-10"	2-#6(3/4"φ) 6'-0" 1'-10"	2-#7(7/8"φ) 6'-6" 1'-10"	2-#7(7/8"φ) 7'-0" 1'-10"	2-#7(7/8"φ) 7'-6" 1'-10"	STR.	UPPER TRANSVERSE HORIZONTAL IN CAPITAL
s	6-#5(5/8"φ) 6'-3" NOTE 4. 2'-0"	7-#5(5/8"φ) 6'-9" NOTE 4. 1'-8 1/2"	10-#5(5/8"φ) 7'-3" NOTE 4. 1'-2 1/2"	11-#5(5/8"φ) 7'-9" NOTE 4. 1'-1"	13-#5(5/8"φ) 8'-3" NOTE 4. 0'-11"	14-#5(5/8"φ) 8'-9" NOTE 4. 0'-10 1/4"	15-#5(5/8"φ) 9'-3" NOTE 4. 0'-9 1/2"	BENT	SHORT VERTICAL
t	3-#3(3/8"φ) 8'-11" NOTE 4. 2'-1"	3-#3(3/8"φ) 8'-11" NOTE 4. 2'-4"	3-#3(3/8"φ) 8'-11" NOTE 4. 2'-7"	3-#3(3/8"φ) 8'-11" NOTE 4. 2'-10"	3-#3(3/8"φ) 8'-11" NOTE 4. 3'-1"	3-#3(3/8"φ) 8'-11" NOTE 4. 3'-4"	3-#3(3/8"φ) 8'-11" NOTE 4. 3'-7"	BENT	VERTICAL STIRRUPS IN CAPITAL
u	8-#5(5/8"φ) 3'-11" NOTE 4. AS SHOWN	8-#5(5/8"φ) 3'-11" NOTE 4. AS SHOWN	8-#5(5/8"φ) 3'-11" NOTE 4. AS SHOWN	8-#5(5/8"φ) 3'-11" NOTE 4. AS SHOWN	8-#5(5/8"φ) 3'-11" NOTE 4. AS SHOWN	8-#5(5/8"φ) 3'-11" NOTE 4. AS SHOWN	8-#5(5/8"φ) 3'-11" NOTE 4. AS SHOWN	BENT	PILE DOWELS
v	2-#8(1"φ) 4'-6" 1'-10"	2-#8(1"φ) 5'-0" 1'-10"	2-#8(1"φ) 5'-6" 1'-10"	2-#8(1"φ) 6'-0" 1'-10"	2-#8(1"φ) 6'-6" 1'-10"	2-#8(1"φ) 7'-0" 1'-10"	2-#8(1"φ) 7'-6" 1'-10"	STR.	LOWER TRANSVERSE HORIZONTAL IN CAPITAL

BAR DIMENSIONS

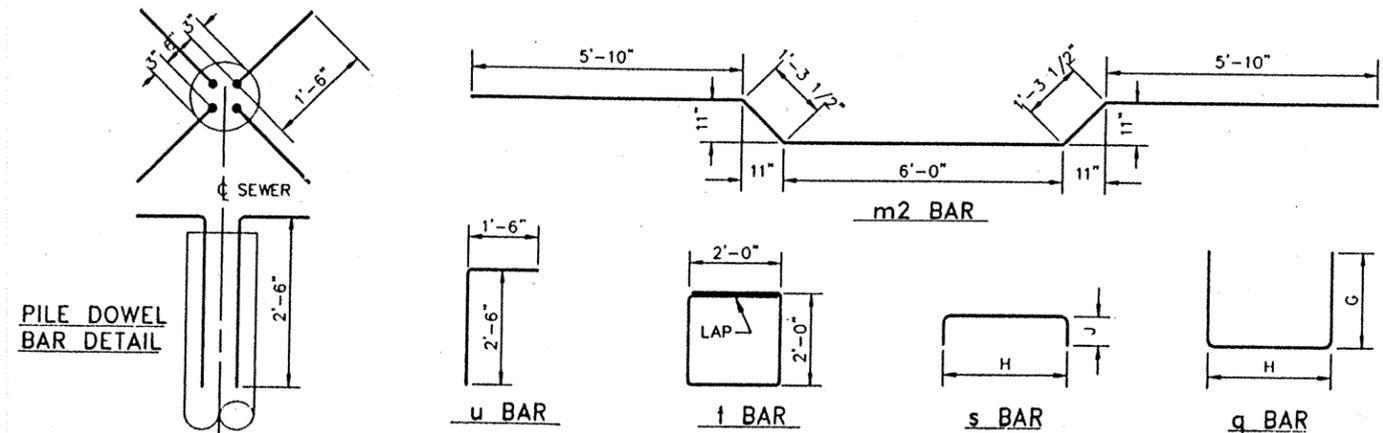
PIPE DIA	G	H	J	*CONCRETE CU. YD./FT.	REIN. STL. LBS./FT. NOTE 1.	PILE CAP. TONS
30"	3'-4 1/2"	4'-6"	1'-0"	0.580	45.3	40
36"	3'-8"	5'-0"	1'-0"	0.651	56.2	45
42"	3'-10 3/4"	5'-6"	1'-0"	0.709	68.7	55
48"	4'-2 1/4"	6'-0"	1'-0"	0.781	76.5	60
54"	4'-4 1/4"	6'-6"	1'-0"	0.820	88.4	65
60"	4'-7 3/4"	7'-0"	1'-0"	0.892	92.7	65
66"	4'-11 1/4"	7'-6"	1'-0"	0.964	103.0	70

* CONCRETE QUANTITIES ARE ESTIMATED FOR WALL 'C' PIPE.



NOTES:

1. STEEL QUANTITIES ARE FOR ESTIMATING PURPOSES ONLY. A 40 DIAMETER LAP IS FIGURED FOR ALL SPLICES AND A STOCK BAR LENGTH OF 20' IS FIGURED FOR ALL STRAIGHT BARS. THE STEEL QUANTITY PAID SHALL BE THE ACTUAL WEIGHT OF STEEL IN PLACE.
2. SEE LONGITUDINAL SECTION FOR s AND q BAR POSITIONS.
3. THE MINIMUM RADIUS OF BENT BARS SHALL BE 3 BAR DIAMETERS. THE RADIUS OF A BEND IS TO THE INSIDE OF THE BAR.
4. LENGTH GIVEN IN TABLES FOR BENT BARS IS APPROXIMATELY THE LENGTH ALONG THE CENTERLINE OF THE BAR. SEE DETAIL FOR DIMENSIONS.
5. POSITIONS OF TRUSS BARS WILL BE REVERSED IN ALTERNATE SPANS.
6. ALL REINFORCING STEEL SHALL HAVE A MINIMUM COVER OF 3".
7. LENGTH OF LAP FOR SPLICING REINFORCEMENT SHALL BE 40 BAR DIAMETERS.
8. DIMENSIONS FOR REINFORCING BARS ARE OUT TO OUT.
9. AT THE LIMITS OF EACH POUR A BULKHEAD OR OTHER SUITABLE METHOD SHALL BE USED TO PROVIDE A PROPER JOINT IN KEEPING WITH GOOD ENGINEERING PRACTICE.
10. ALL CONCRETE SHALL BE CLASS "C".
11. "D" DIMENSION IS OUTSIDE RADIUS OF BELL. (DIMENSIONS FOR WALL 'C' PIPE ARE SHOWN.)



DO NOT SCALE - USE DIMENSIONS ONLY

CITY OF AKRON BUREAU OF ENGINEERING <i>David J. Lib</i> 2-12-98 MANAGER, DESIGN DIVISION <i>Pawan K. Khaitan</i> MANAGER, CONSTRUCTION DIVISION <i>Clayton Haugh</i> CITY ENGINEER	CONSTRUCTION STANDARD DWG. No. S-5 PILE SUPPORT 30"-66" PIPE SEWERS AUTOCAD DRAWING - STD_S-5.DWG REVISIONS: February 11, 1998
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BAR SCHEDULE PER 12' SPAN

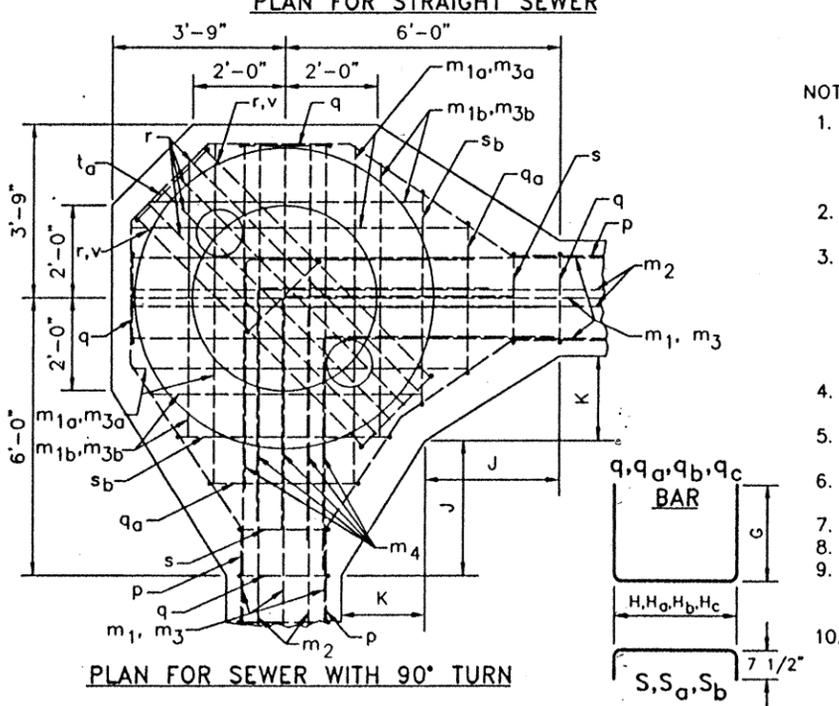
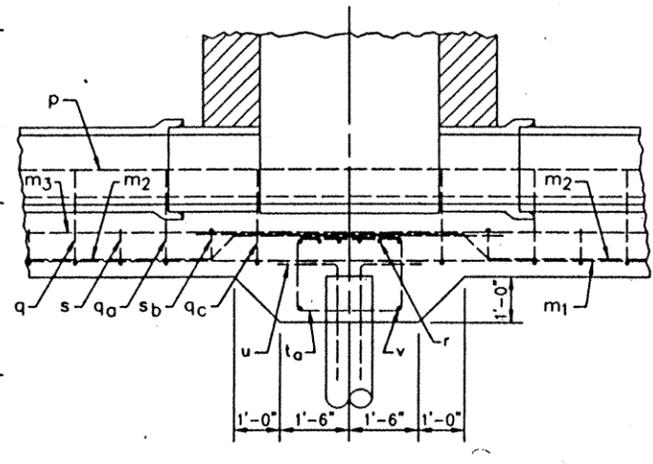
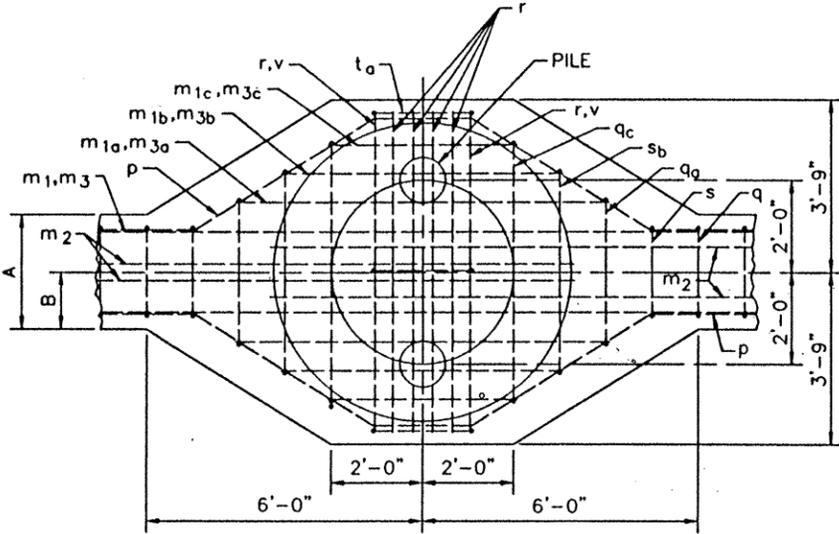
FROM 6' DOWN STATION TO 6' UP STATION FROM PILE Q

NO. - SIZE
LENGTH
DISTANCE FROM Q MH.

BAR	8" STRAIGHT	8" 90° TURN	10" STRAIGHT	10" 90° TURN	12" STRAIGHT	12" 90° TURN	SHAPE	POSITION
m ₁	SAME AS PILE SUPPORT FOR SEWER (CONST. STD. DWG. NO. S-3 AND S-4).							
m ₂	SAME AS PILE SUPPORT FOR SEWER (CONST. STD. DWG. NO. S-3 AND S-4).							
m ₃	SAME AS PILE SUPPORT FOR SEWER (CONST. STD. DWG. NO. S-3 AND S-4).							
m ₄	NONE	6-#8(1"φ) 9'-9 1/2" NOTE 1.	NONE	7-#8(1"φ) 9'-9 1/2" NOTE 1.	NONE	6-#8(1"φ) 9'-9 1/2" NOTE 1.	BENT	SPECIAL TIE BAR TOP & BOTTOM OF SLAB
m _{1a}	2-#8(1"φ) 8'-0" 1'-3 1/2"	4-#8(1"φ) 7'-4" 1'-3 1/2"	2-#8(1"φ) 8'-0" 1'-5"	4-#8(1"φ) 7'-4" 1'-5"	2-#8(1"φ) 8'-0" 1'-6 1/2"	4-#8(1"φ) 7'-4" 1'-6 1/2"	STR.	SPECIAL LONGITUDINAL BOTTOM OF SLAB
m _{3a}	2-#8(1"φ) 8'-0" 1'-3 1/2"	4-#8(1"φ) 7'-4" 1'-3 1/2"	2-#8(1"φ) 8'-0" 1'-5"	4-#8(1"φ) 7'-4" 1'-5"	2-#8(1"φ) 8'-0" 1'-6 1/2"	4-#8(1"φ) 7'-4" 1'-6 1/2"	STR.	SPECIAL LONGITUDINAL TOP OF SLAB
m _{1b}	2-#8(1"φ) 6'-0" 1'-11"	4-#8(1"φ) 6'-0" 1'-11"	2-#8(1"φ) 6'-0" 2'-0 1/2"	4-#8(1"φ) 6'-0" 2'-0 1/2"	2-#8(1"φ) 6'-0" 2'-2"	4-#8(1"φ) 6'-0" 2'-2"	STR.	SPECIAL LONGITUDINAL BOTTOM OF SLAB
m _{3b}	2-#8(1"φ) 6'-0" 1'-11"	4-#8(1"φ) 6'-0" 1'-11"	2-#8(1"φ) 6'-0" 2'-0 1/2"	4-#8(1"φ) 6'-0" 2'-0 1/2"	2-#8(1"φ) 6'-0" 2'-2"	4-#8(1"φ) 6'-0" 2'-2"	STR.	SPECIAL LONGITUDINAL TOP OF SLAB
m _{1c}	2-#8(1"φ) 4'-0" 2'-6 1/2"	NONE	2-#8(1"φ) 4'-0" 2'-8"	NONE	2-#8(1"φ) 4'-0" 2'-9 1/2"	NONE	STR.	SPECIAL LONGITUDINAL BOTTOM OF SLAB
m _{3c}	2-#8(1"φ) 4'-0" 2'-6 1/2"	NONE	2-#8(1"φ) 4'-0" 2'-8"	NONE	2-#8(1"φ) 4'-0" 2'-9 1/2"	NONE	STR.	SPECIAL LONGITUDINAL TOP OF SLAB
p	SAME AS PILE SUPPORT FOR SEWER (CONST. STD. DWG. NO. S-3 AND S-4) EXCEPT BENT AROUND MANHOLE AS SHOWN ON PLAN.							
q	2-#5(5/8"φ) 4'-1 1/2" 6'-0"	4-#5(5/8"φ) 4'-1 1/2" SEE PLAN	2-#5(5/8"φ) 4'-7" 6'-0"	4-#5(5/8"φ) 4'-7" SEE PLAN	2-#5(5/8"φ) 5'-1" 6'-0"	4-#5(5/8"φ) 5'-1" SEE PLAN	BENT	LONG VERTICAL STIRRUPS
q _a	2-#5(5/8"φ) 5'-5 1/2" 4'-0"	2-#5(5/8"φ) 5'-5 1/2" 4'-0"	2-#5(5/8"φ) 5'-11" 4'-0"	2-#5(5/8"φ) 5'-11" 4'-0"	2-#5(5/8"φ) 6'-5" 4'-0"	2-#5(5/8"φ) 6'-5" 4'-0"	BENT	SPECIAL LONG VERTICAL STIRRUPS
q _b	NONE	NONE	NONE	NONE	NONE	NONE	BENT	SPECIAL LONG VERTICAL STIRRUPS
q _c	2-#5(5/8"φ) 7'-11 1/2" 2'-0"	NONE	2-#5(5/8"φ) 8'-5" 2'-0"	NONE	2-#5(5/8"φ) 8'-11" 2'-0"	NONE	BENT	SPECIAL LONG VERTICAL STIRRUPS
r	6-#8(1"φ) 7'-0" NOTE 2.	6-#8(1"φ) 7'-0" NOTE 2.	6-#8(1"φ) 7'-0" NOTE 2.	6-#8(1"φ) 7'-0" NOTE 2.	6-#8(1"φ) 7'-0" NOTE 2.	6-#8(1"φ) 7'-0" NOTE 2.	STR.	UPPER TRANSVERSE HORIZONTAL IN CAPITAL
s	2-#5(5/8"φ) 2'-6" 5'-0"	2-#5(5/8"φ) 2'-6" 5'-0"	2-#5(5/8"φ) 2'-9" 5'-0"	2-#5(5/8"φ) 2'-9" 5'-0"	2-#5(5/8"φ) 3'-0" 5'-0"	2-#5(5/8"φ) 3'-0" 5'-0"	BENT	SHORT VERTICAL STIRRUPS
s _a	NONE	NONE	NONE	NONE	NONE	NONE	BENT	SPECIAL SHORT VERTICAL STIRRUPS
s _b	2-#5(5/8"φ) 5'-1" 3'-0"	2-#5(5/8"φ) 5'-1" 3'-0"	2-#5(5/8"φ) 5'-4" 3'-0"	2-#5(5/8"φ) 5'-4" 3'-0"	2-#5(5/8"φ) 5'-7" 3'-0"	2-#5(5/8"φ) 5'-7" 3'-0"	BENT	SPECIAL SHORT VERTICAL STIRRUPS
t _a	3-#3(3/8"φ) 8'-7" 0'-0" & 3'-6"	3-#3(3/8"φ) 8'-7" 0'-0" & 3'-6"	3-#3(3/8"φ) 8'-7" 0'-0" & 3'-6"	3-#3(3/8"φ) 8'-7" 0'-0" & 3'-6"	3-#3(3/8"φ) 8'-7" 0'-0" & 3'-6"	3-#3(3/8"φ) 8'-7" 0'-0" & 3'-6"	BENT	VERTICAL STIRRUPS IN CAPITAL
u	8-#5(5/8"φ) 3'-11" AS SHOWN	8-#5(5/8"φ) 3'-11" AS SHOWN	8-#5(5/8"φ) 3'-11" AS SHOWN	8-#5(5/8"φ) 3'-11" AS SHOWN	8-#5(5/8"φ) 3'-11" AS SHOWN	8-#5(5/8"φ) 3'-11" AS SHOWN	BENT	PILE DOWELS
v	2-#8(1"φ) 7'-0" 1'-0 1/2"	2-#8(1"φ) 7'-0" 1'-0 1/2"	2-#8(1"φ) 7'-0" 1'-0 1/2"	2-#8(1"φ) 7'-0" 1'-0 1/2"	2-#8(1"φ) 7'-0" 1'-0 1/2"	2-#8(1"φ) 7'-0" 1'-0 1/2"	STR.	LOWER TRANSVERSE HORIZONTAL IN CAPITAL

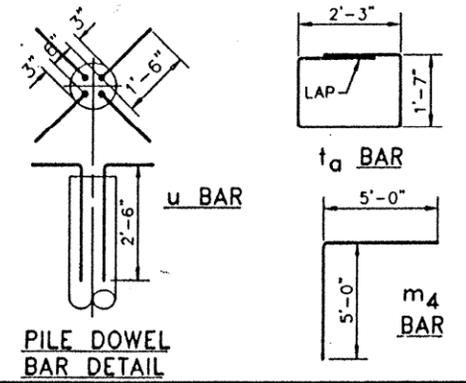
PIPE DIA	DIMENSIONS									STRAIGHT		90° TURN		PILE CAP. TONS
	A	B	G	H	H _a	H _b	H _c	J	K	CONCRETE CU. YD.	REIN. STL. LBS.	CONCRETE CU. YD.	REIN. STL. LBS.	
8"	2'-0"	1'-0"	1'-5 1/4"	1'-6"	2'-10"	4'-1"	5'-4"	2'-11 1/2"	2'-0 1/2"	5.7	698.3 Ⓣ	5.7	1051.6 Ⓣ	60
10"	2'-3"	1'-1 1/2"	1'-6 1/2"	1'-9"	3'-1"	4'-4"	5'-7"	2'-11"	1'-11 1/2"	6.0	740.5 Ⓣ	6.0	1142.3 Ⓣ	60
12"	2'-6"	1'-3"	1'-8"	2'-0"	3'-4"	4'-7"	5'-10"	2'-10 1/2"	1'-10 1/2"	6.3	717.7 Ⓣ	6.3	1048.6 Ⓣ	60

Ⓣ m₁, m₂, m₃ BARS INCLUDED PER STD. DWG. S-3.



- NOTES:
- m₄ BAR IS USED TO PROVIDE A SPLICE BETWEEN m₁, m₂, AND m₃ BARS FROM ADJACENT SPANS WHICH WOULD OTHERWISE CONTINUE ACROSS THE PILE IN STRAIGHT SEWERS.
 - r BAR SPACED AT 0'-2 1/2", 0'-7 1/2", 1'-0 1/2" FROM Q THROUGH BOTH PILES.
 - WHEN THE DISTANCE BETWEEN PILE CENTERS IS LESS THAN 10'-0", ALL TRUSS BARS IN THE SPAN SHALL BE REPLACED WITH STRAIGHT BARS TOP AND BOTTOM, WHICH SHALL BE CONTINUED AT LEAST 3' TO 4' PAST THE PILE CENTER INTO THE ADJACENT SPAN.
 - LENGTH GIVEN IN TABLES FOR BENT BARS IS APPROXIMATELY THE LENGTH ALONG THE CENTERLINE OF THE BAR.
 - LENGTH OF LAP FOR SPLICING REINFORCEMENT SHALL BE 40 BAR DIAMETERS.
 - ALL REINFORCING STEEL SHALL HAVE A MINIMUM COVER OF 3".
 - ALL CONCRETE SHALL BE CLASS "C".
 - DIMENSIONS FOR REINFORCING BARS ARE OUT TO OUT.
 - THE MINIMUM RADIUS OF BENT BARS SHALL BE 3 BAR DIAMETERS. THE RADIUS OF A BEND IS TO THE INSIDE OF THE BAR.
 - STEEL QUANTITIES ARE FOR ESTIMATING PURPOSES ONLY. THE STEEL QUANTITY PAID SHALL BE THE ACTUAL WEIGHT OF STEEL IN PLACE.

DO NOT SCALE - USE DIMENSIONS ONLY



CITY OF AKRON
BUREAU OF ENGINEERING

David J. Jelic 2-12-98
MANAGER, DESIGN DIVISION

Pawan K. Khaitan
MANAGER, CONSTRUCTION DIVISION

Chavil Haugh
CITY ENGINEER

CONSTRUCTION STANDARD DWG. No. **S-6**

PILE SUPPORT FOR MANHOLE ON 8", 10", & 12" SEWERS

AUTOCAD DRAWING - STD_S-6.DWG February 11, 1998

REVISIONS:

BAR SCHEDULE PER 12' SPAN

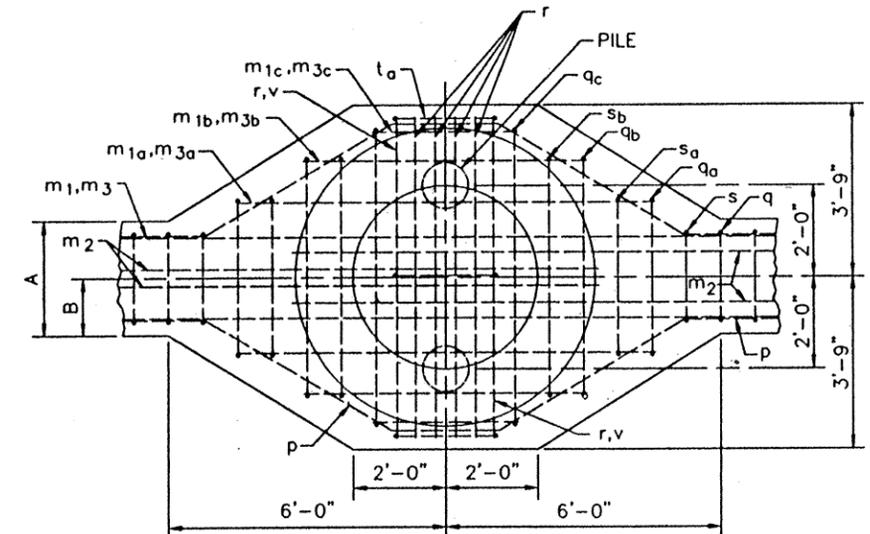
FROM 6' DOWN STATION TO 6' UP STATION FROM PILE ϕ

NO. - SIZE
LENGTH
DISTANCE FROM ϕ MH.

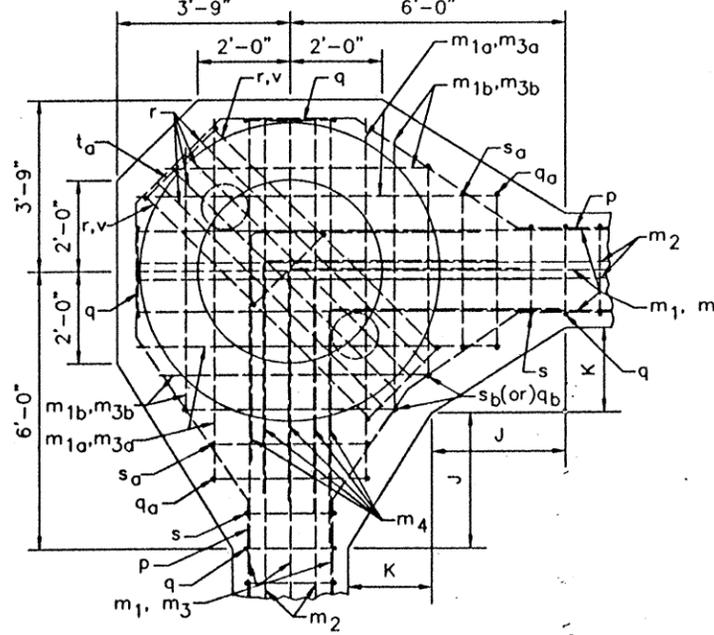
BAR	15" STRAIGHT	15" 90° TURN	18" STRAIGHT	18" 90° TURN	SHAPE	POSITION
m_1	SAME AS PILE SUPPORT FOR SEWER (CONST. STD. DWG. NO. S-3 AND S-4).					
m_2	SAME AS PILE SUPPORT FOR SEWER (CONST. STD. DWG. NO. S-3 AND S-4).					
m_3	SAME AS PILE SUPPORT FOR SEWER (CONST. STD. DWG. NO. S-3 AND S-4).					
m_4	NONE	7-#8(1" ϕ) 9'-9 1/2" NOTE 1.	NONE	8-#8(1" ϕ) 9'-9 1/2" NOTE 1.	BENT	SPECIAL TIE BAR TOP & BOTTOM OF SLAB
m_{1a}	2-#8(1" ϕ) 8'-0" 1'-8 1/2"	4-#8(1" ϕ) 7'-4" 1'-8 1/2"	2-#8(1" ϕ) 9'-0" 1'-10 1/2"	4-#8(1" ϕ) 7'-10" 1'-10 1/2"	STR.	SPECIAL LONGITUDINAL BOTTOM OF SLAB
m_{3a}	2-#8(1" ϕ) 8'-0" 1'-8 1/2"	4-#8(1" ϕ) 7'-4" 1'-8 1/2"	2-#8(1" ϕ) 9'-0" 1'-10 1/2"	4-#8(1" ϕ) 7'-10" 1'-10 1/2"	STR.	SPECIAL LONGITUDINAL TOP OF SLAB
m_{1b}	2-#8(1" ϕ) 6'-0" 2'-4"	4-#8(1" ϕ) 6'-0" 2'-4"	2-#8(1" ϕ) 6'-0" 2'-5 1/2"	4-#8(1" ϕ) 6'-0" 2'-5 1/2"	STR.	SPECIAL LONGITUDINAL BOTTOM OF SLAB
m_{3b}	2-#8(1" ϕ) 6'-0" 2'-4"	4-#8(1" ϕ) 6'-0" 2'-4"	2-#8(1" ϕ) 6'-0" 2'-5 1/2"	4-#8(1" ϕ) 6'-0" 2'-5 1/2"	STR.	SPECIAL LONGITUDINAL TOP OF SLAB
m_{1c}	2-#8(1" ϕ) 4'-0" 2'-11 1/2"	NONE	2-#8(1" ϕ) 3'-0" 3'-1"	NONE	STR.	SPECIAL LONGITUDINAL BOTTOM OF SLAB
m_{3c}	2-#8(1" ϕ) 4'-0" 2'-11 1/2"	NONE	2-#8(1" ϕ) 3'-0" 3'-1"	NONE	STR.	SPECIAL LONGITUDINAL TOP OF SLAB
p	SAME AS PILE SUPPORT FOR SEWER (CONST. STD. DWG. NO. S-3 & S-4) EXCEPT BENT AROUND MANHOLE AS SHOWN IN PLAN.					
q	2-#5(5/8" ϕ) 5'-9" 6'-0"	4-#5(5/8" ϕ) 5'-9" SEE PLAN	2-#5(5/8" ϕ) 6'-7" 6'-0"	4-#5(5/8" ϕ) 6'-7" SEE PLAN	BENT	LONG VERTICAL STIRRUPS
q_a	2-#5(5/8" ϕ) 7'-1" 4'-0"	2-#5(5/8" ϕ) 7'-1" 4'-0"	2-#5(5/8" ϕ) 7'-11" 4'-6"	2-#5(5/8" ϕ) 7'-11" 4'-6"	BENT	SPECIAL LONG VERTICAL STIRRUPS
q_b	NONE	NONE	2-#5(5/8" ϕ) 9'-1" 3'-0"	2-#5(5/8" ϕ) 9'-1" 3'-0"	BENT	SPECIAL LONG VERTICAL STIRRUPS
q_c	2-#5(5/8" ϕ) 9'-7" 2'-0"	NONE	2-#5(5/8" ϕ) 10'-4" 1'-6"	NONE	BENT	SPECIAL LONG VERTICAL STIRRUPS
r	6-#8(1" ϕ) 7'-0" NOTE 2.	6-#8(1" ϕ) 7'-0" NOTE 2.	6-#8(1" ϕ) 7'-0" NOTE 2.	6-#8(1" ϕ) 7'-0" NOTE 2.	STR.	UPPER TRANSVERSE HORIZONTAL IN CAPITAL
s	2-#5(5/8" ϕ) 3'-4" 5'-0"	2-#5(5/8" ϕ) 3'-4" 5'-0"	2-#5(5/8" ϕ) 3'-8" 5'-3"	2-#5(5/8" ϕ) 3'-8" 5'-3"	BENT	SHORT VERTICAL STIRRUPS
s_a	NONE	NONE	2-#5(5/8" ϕ) 5'-0" 3'-9"	2-#5(5/8" ϕ) 5'-0" 3'-9"	BENT	SPECIAL SHORT VERTICAL STIRRUPS
s_b	2-#5(5/8" ϕ) 5'-11" 3'-0"	2-#5(5/8" ϕ) 5'-11" 3'-0"	2-#5(5/8" ϕ) 6'-2" 2'-3"	NONE	BENT	SPECIAL SHORT VERTICAL STIRRUPS
t_a	3-#3(3/8" ϕ) 8'-7" 0'-0" & 3'-6"	3-#3(3/8" ϕ) 8'-7" 0'-0" & 3'-6"	3-#3(3/8" ϕ) 8'-7" 0'-0" & 3'-6"	3-#3(3/8" ϕ) 8'-7" 0'-0" & 3'-6"	BENT	VERTICAL STIRRUPS IN CAPITAL
u	8-#5(5/8" ϕ) 3'-11" AS SHOWN	8-#5(5/8" ϕ) 3'-11" AS SHOWN	8-#5(5/8" ϕ) 3'-11" AS SHOWN	8-#5(5/8" ϕ) 3'-11" AS SHOWN	BENT	PILE DOWELS
v	2-#8(1" ϕ) 7'-0" 1'-0 1/2"	2-#8(1" ϕ) 7'-0" 1'-0 1/2"	2-#8(1" ϕ) 7'-0" 1'-0 1/2"	2-#8(1" ϕ) 7'-0" 1'-0 1/2"	STR.	LOWER TRANSVERSE HORIZONTAL IN CAPITAL

DIMENSIONS										STRAIGHT		90° TURN		PILE CAP. TONS
PIPE DIA	A	B	G	H	H _a	H _b	H _c	J	K	CONCRETE CU. YD.	REIN. STL. LBS.	CONCRETE CU. YD.	REIN. STL. LBS.	
15"	2'-10"	1'-5"	1'-10"	2'-4"	3'-8"	4'-11"	6'-2"	2'-10"	1'-9"	6.6	780.4 ϕ	6.6	1007.8 ϕ	60
18"	3'-2"	1'-7"	2'-1"	2'-8"	4'-0"	5'-2"	6'-5"	2'-9 1/2"	1'-7 1/2"	7.2	854.5 ϕ	7.2	1098.0 ϕ	60

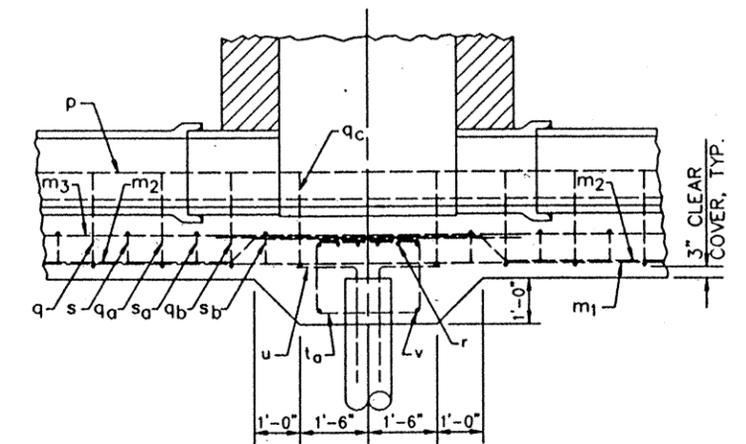
ϕ m_1, m_2, m_3 BARS INCLUDED PER STD. DWG. S-3.



PLAN FOR STRAIGHT SEWER



PLAN FOR SEWER WITH 90° TURN

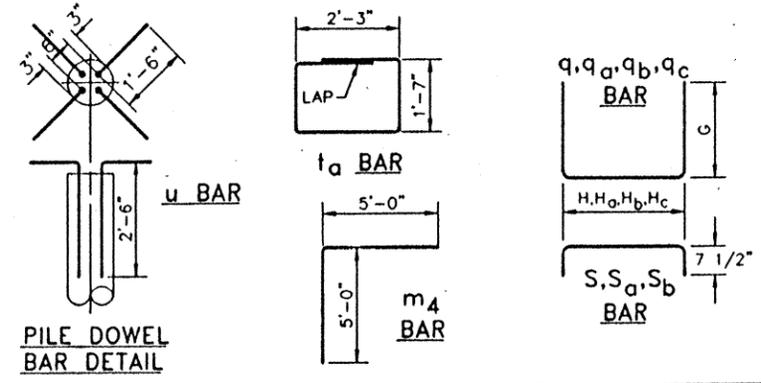


LONGITUDINAL SECTION FOR STRAIGHT SEWER

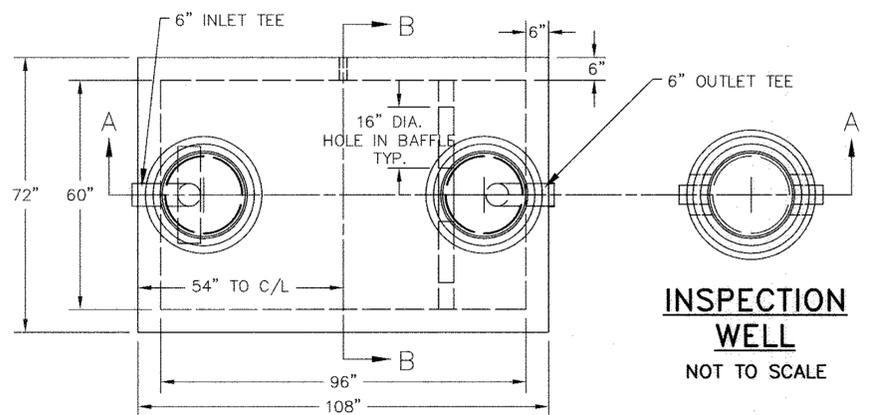
NOTES:

- m_4 BAR IS USED TO PROVIDE A SPLICE BETWEEN $m_1, m_2,$ AND m_3 BARS FROM ADJACENT SPANS WHICH WOULD OTHERWISE CONTINUE ACROSS THE PILE IN STRAIGHT SEWERS.
- r BAR SPACED AT 0'-2 1/2", 0'-7 1/2", 1'-0 1/2" FROM ϕ THROUGH BOTH PILES.
- WHEN THE DISTANCE BETWEEN PILE CENTERS IS LESS THAN 10'-0", ALL TRUSS BARS IN THE SPAN SHALL BE REPLACED WITH STRAIGHT BARS TOP AND BOTTOM, WHICH SHALL BE CONTINUED AT LEAST 3' TO 4' PAST THE PILE CENTER INTO THE ADJACENT SPAN.
- LENGTH GIVEN IN TABLES FOR BENT BARS IS APPROXIMATELY THE LENGTH ALONG THE CENTERLINE OF THE BAR.
- LENGTH OF LAP FOR SPLICING REINFORCEMENT SHALL BE 40 BAR DIAMETERS.
- ALL REINFORCING STEEL SHALL HAVE A MINIMUM COVER OF 3".
- ALL CONCRETE SHALL BE CLASS "C".
- DIMENSIONS GIVEN FOR REINFORCING BARS ARE OUT TO OUT.
- THE MINIMUM RADIUS OF BENT BARS SHALL BE 3 BAR DIAMETERS. THE RADIUS OF A BEND IS TO THE INSIDE OF THE BAR.
- STEEL QUANTITIES ARE FOR ESTIMATING PURPOSES ONLY. THE STEEL QUANTITY PAID SHALL BE THE ACTUAL WEIGHT OF STEEL IN PLACE.

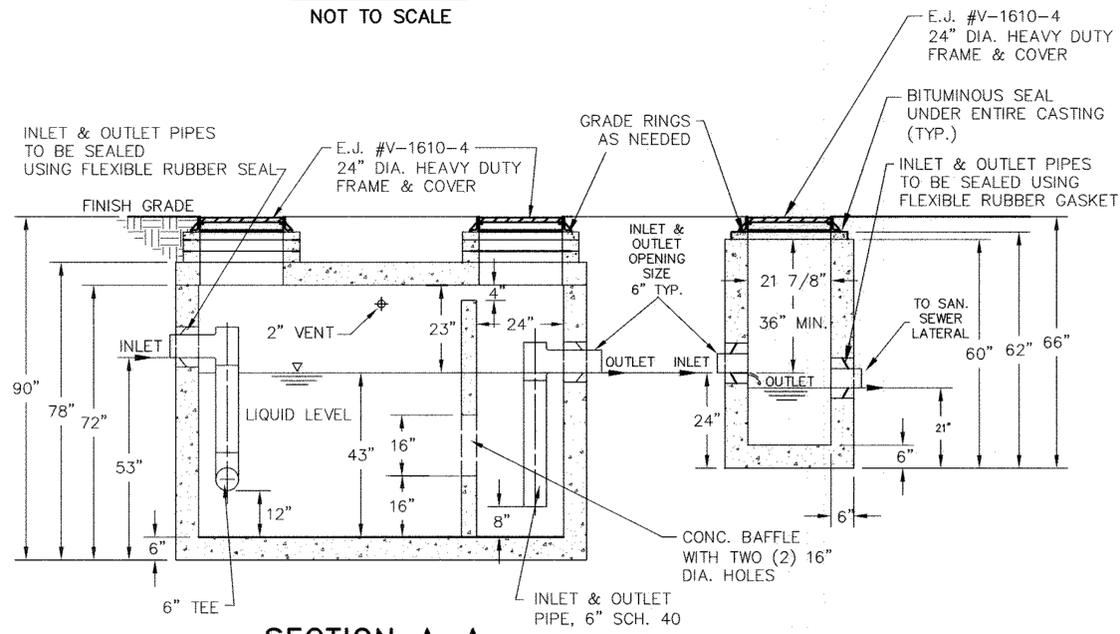
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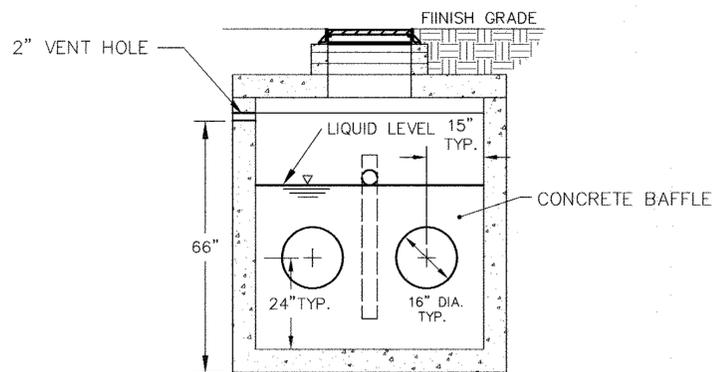
CITY OF AKRON BUREAU OF ENGINEERING	CONSTRUCTION STANDARD DWG. No. S-7
<i>David V. Vitek</i> MANAGER, DESIGN DIVISION <i>Pawan K. Khaitan</i> MANAGER, CONSTRUCTION DIVISION <i>Chandil Singh</i> CITY ENGINEER	PILE SUPPORT FOR MANHOLE ON 15" & 18" SEWERS AUTOCAD DRAWING - STD_S-7.DWG February 11, 1998 REVISIONS:



PLAN VIEW
NOT TO SCALE



SECTION A-A
NOT TO SCALE



SECTION B-B
NOT TO SCALE

NOTE:

1. REINFORCED PRECAST CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 5000 PSI AT 28 DAYS.
2. CONSTRUCTION JOINTS TO BE SEALED WITH 1" CONSEAL CS-102 SEALANT.
3. SHALL MEET HS-20-44 OR EQUAL TRAFFIC-BEARING-LOADING.
4. THE ACCESS MANHOLES AND INSPECTION WELL SHALL BE PROVIDED WITH AN INFLOW PREVENTER AND INTERNAL CHIMNEY SEAL.
5. EACH STRUCTURE SHALL BE PLACED ON A BED OF #57 CRUSHED LIMESTONE OR WASHED GRAVEL NO LESS THAN 6" IN DEPTH ON COMPACTED SUBGRADE.
6. THE STRUCTURE WILL NOT MAINTAINED BY THE CITY OF AKRON.
7. THE STRUCTURE IS TO BE INSTALLED OUT OF THE PUBLIC RIGHT-OF-WAY.
8. TYPICAL DESIGN WILL VARY BY MANUFACTURER.
9. ANY VARIANCE FROM THIS DETAIL MUST HAVE PRIOR APPROVAL FROM THE CITY OF AKRON.

DO NOT SCALE - USE DIMENSIONS ONLY

CITY OF AKRON BUREAU OF ENGINEERING	CONSTRUCTION STANDARD DWG. No. S-8
<i>Mimi A. Toosecki</i> 6-13-13 ACTING MANAGER, DESIGN DIVISION <i>Dennis P. Wilson</i> 6-18-2013 MANAGER, CONSTRUCTION DIVISION <i>Joseph J. Duleski</i> ENGINEERING BUREAU MANAGER	1000 GALLON GREASE INTERCEPTOR AND INSPECTION WELL <small>AUTOCAD DRAWING - STD. S-8.DWG</small> <small>JUNE 13, 2013</small> <small>REVISIONS:</small>