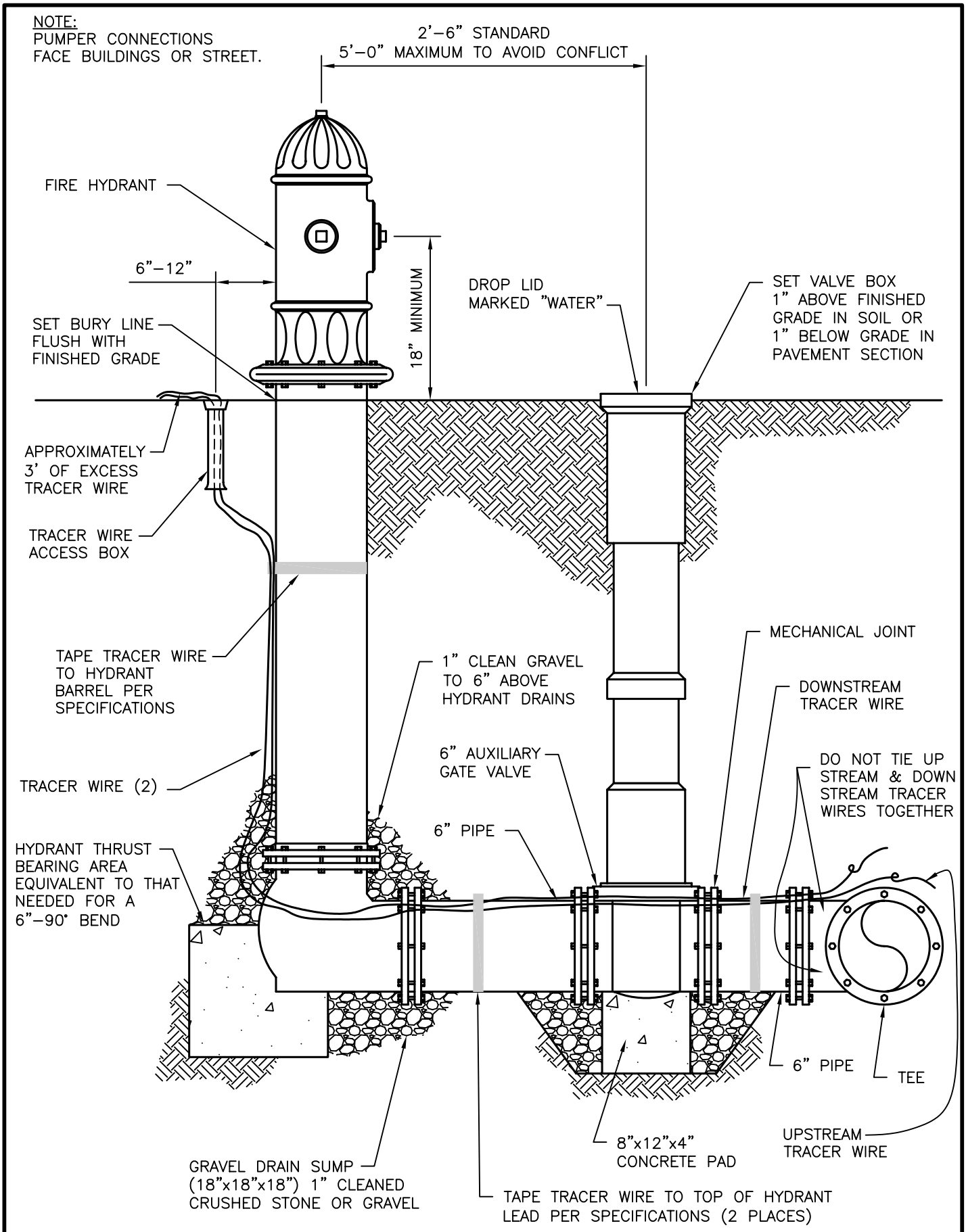
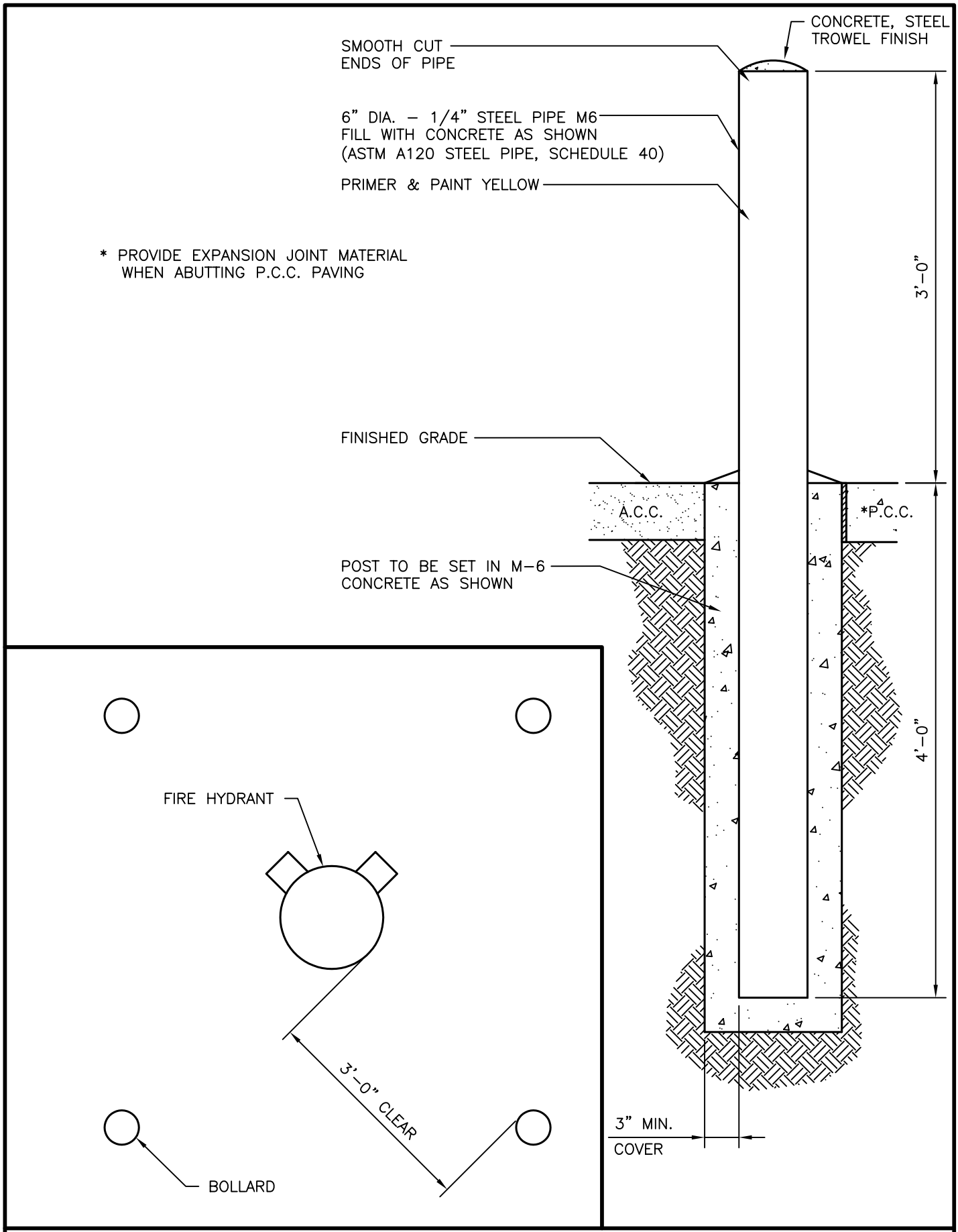


CITY OF RAPID CITY | PUBLIC WORKS DEPARTMENT

HYDRANT SETTING DETAIL

DATE: 5–1–07

SEC. 8–1 SHT.



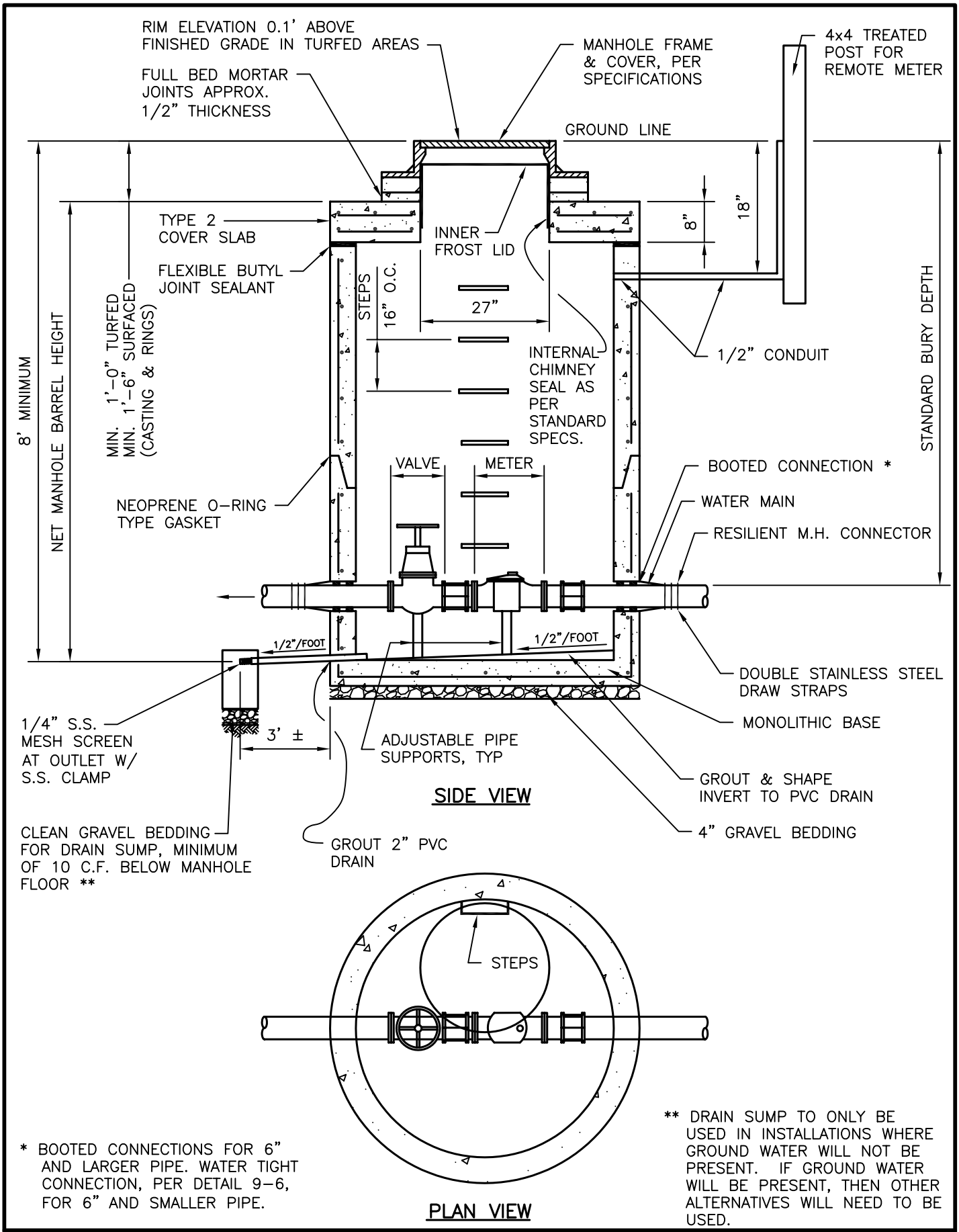
CITY OF RAPID CITY

PUBLIC WORKS DEPARTMENT

FIRE HYDRANT PROTECTION BOLLARD DETAIL

DATE: 5–1–07

SEC. 8–2 SHT.



* BOOTED CONNECTIONS FOR 6" AND LARGER PIPE. WATER TIGHT CONNECTION, PER DETAIL 9-6, FOR 6" AND SMALLER PIPE.

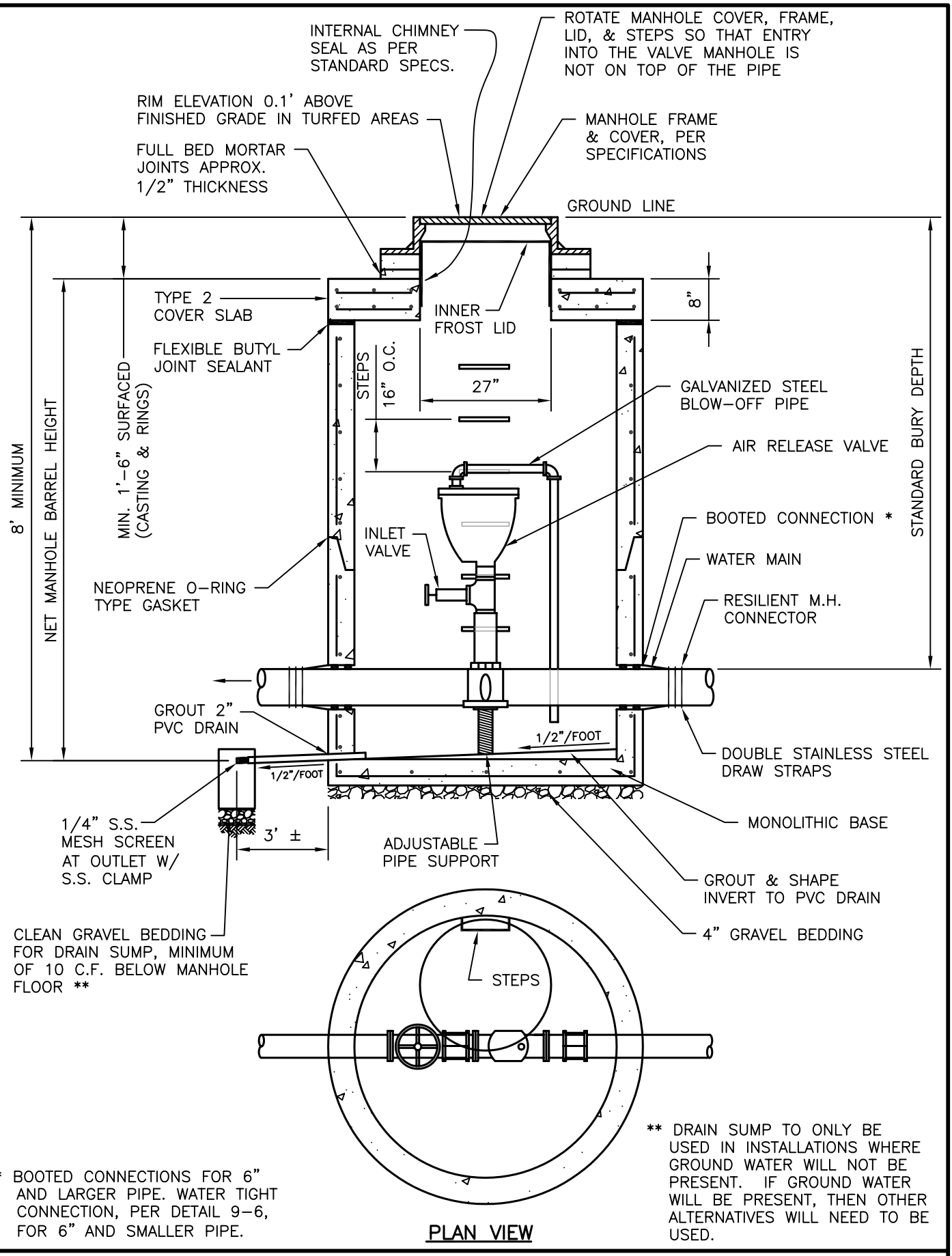
** DRAIN SUMP TO ONLY BE USED IN INSTALLATIONS WHERE GROUND WATER WILL NOT BE PRESENT. IF GROUND WATER WILL BE PRESENT, THEN OTHER ALTERNATIVES WILL NEED TO BE USED.

CITY OF RAPID CITY — PUBLIC WORKS DEPARTMENT

TYPICAL METER PIT DETAIL
4" METER & UNDER

DATE: 5-1-07

SEC. 8-3 SHT.



PLAN VIEW

* BOOTED CONNECTIONS FOR 6" AND LARGER PIPE. WATER TIGHT CONNECTION, PER DETAIL 9-6, FOR 6" AND SMALLER PIPE.

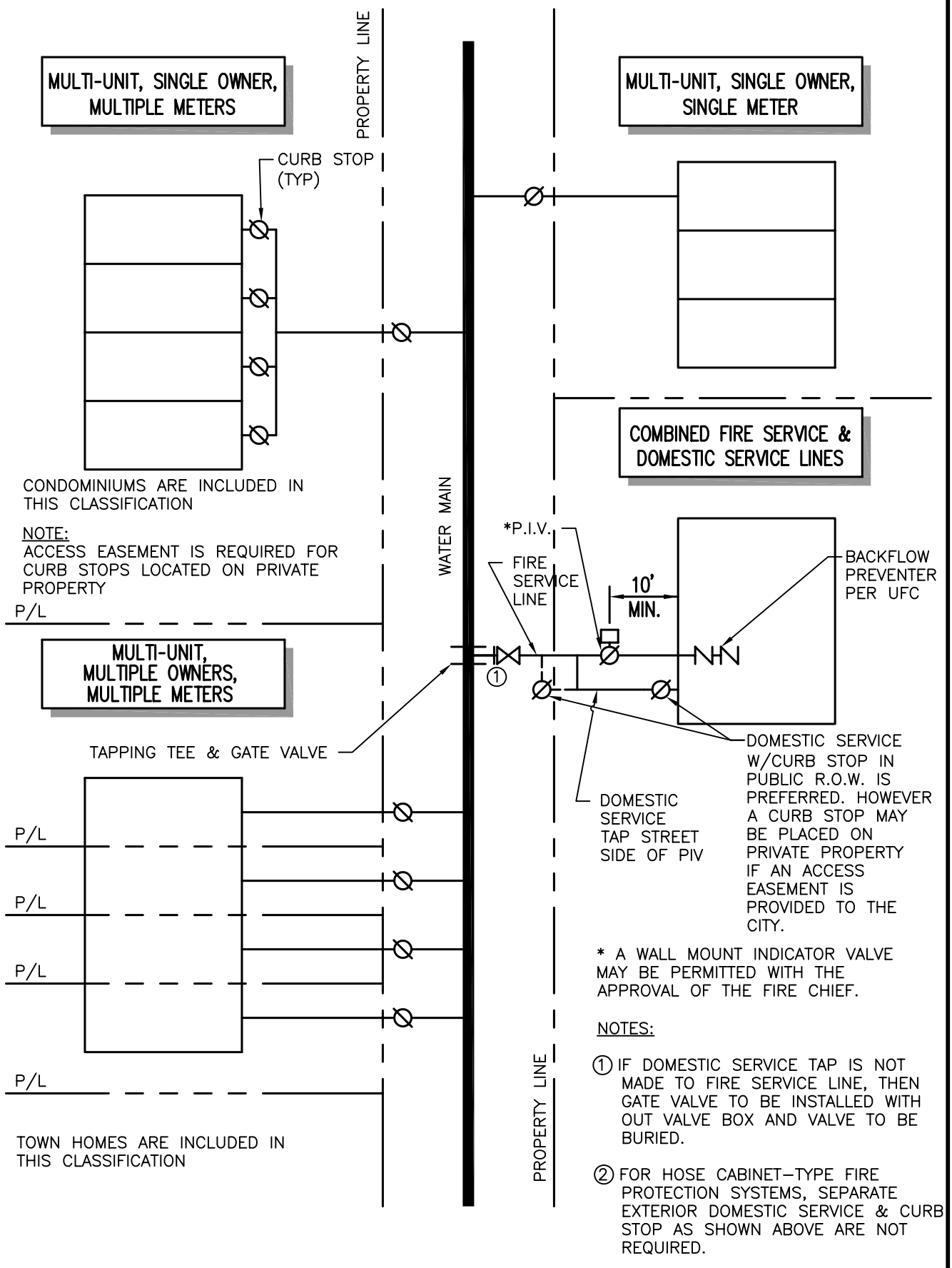
** DRAIN SUMP TO ONLY BE USED IN INSTALLATIONS WHERE GROUND WATER WILL NOT BE PRESENT. IF GROUND WATER WILL BE PRESENT, THEN OTHER ALTERNATIVES WILL NEED TO BE USED.

CITY OF RAPID CITY | PUBLIC WORKS DEPARTMENT

AIR RELEASE VALVE PIT

DATE: 5-1-07

SEC. 8-4 SHT.

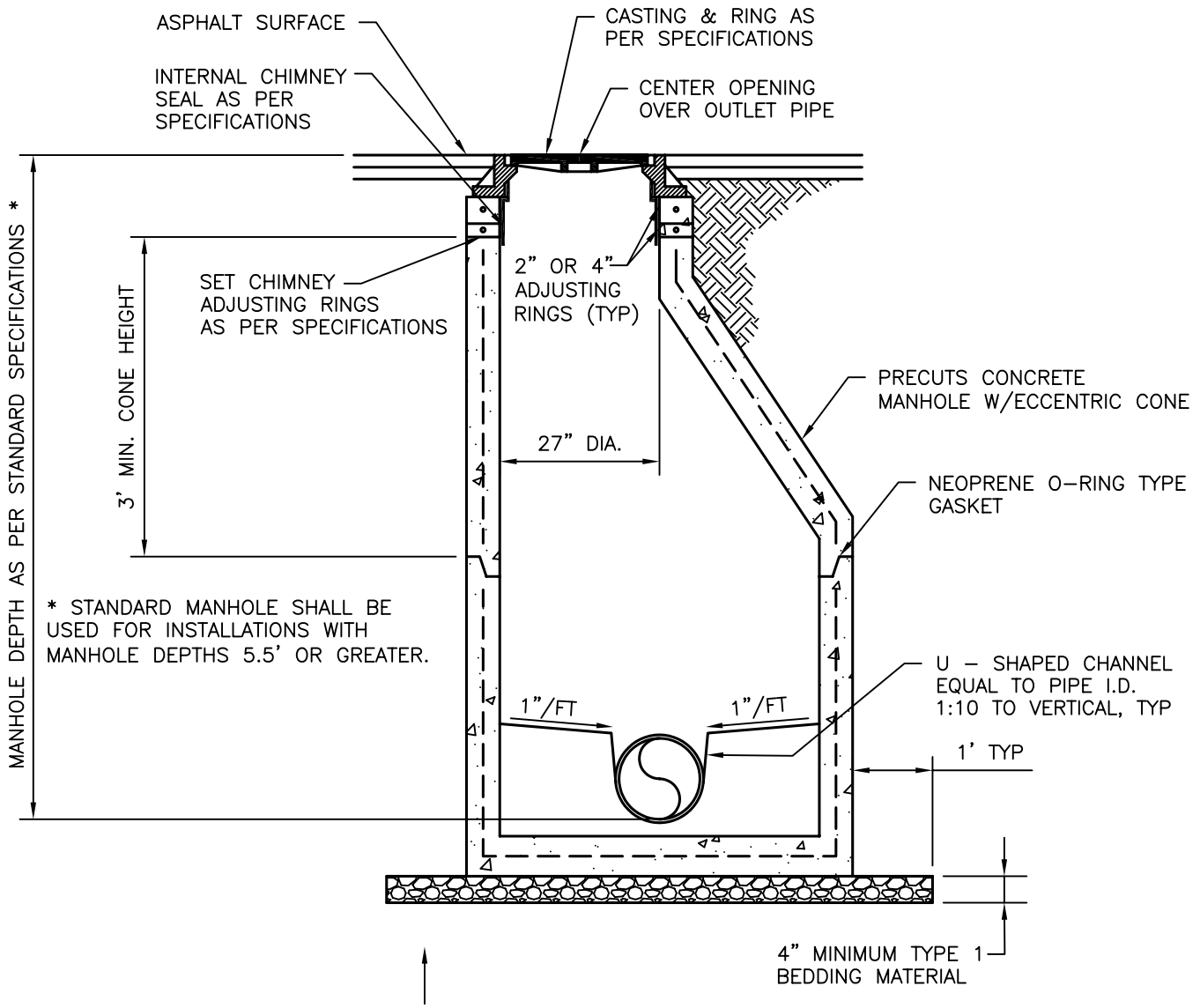


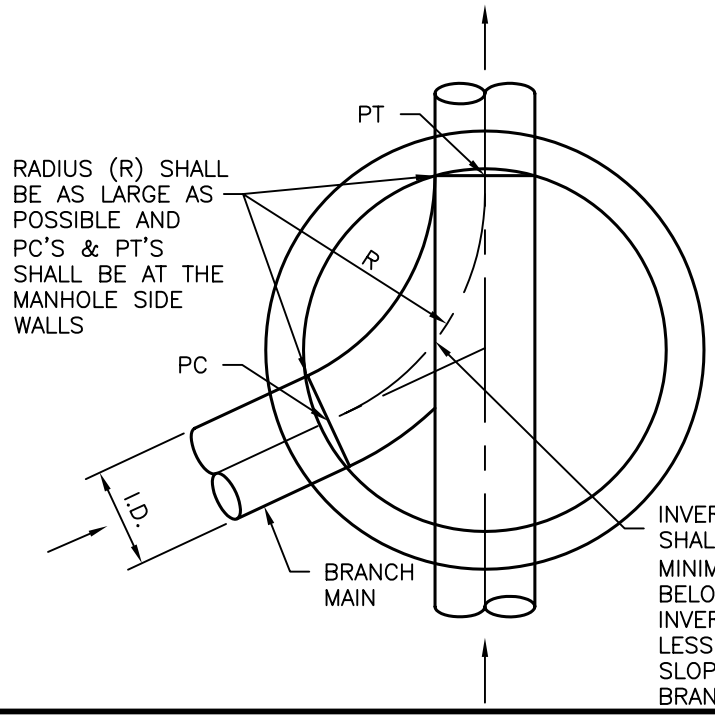
CITY OF RAPID CITY — PUBLIC WORKS DEPARTMENT

TYPICAL WATER SERVICE LINE LAYOUT

DATE: 5–1–07

SEC. 8–5 SHT.





NOTES:

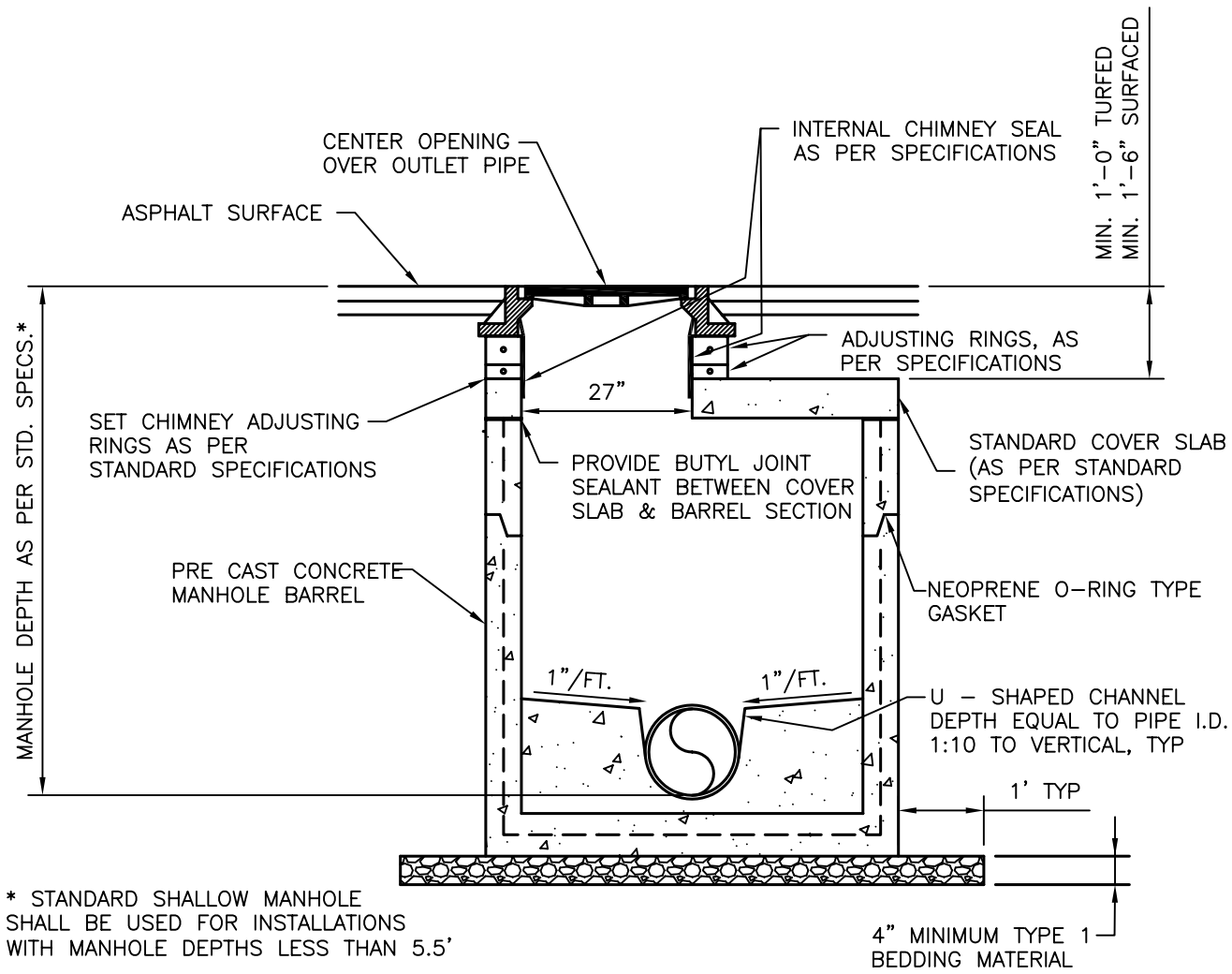
1. PC'S & PT'S ARE TO BE WITHIN THE MANHOLE.
2. ALL INVERTS TO BE U-SHAPED CHANNEL EQUAL TO PIPE I.D. AND SHALL BE CONSTRUCTED WITH SWEEPS.
3. A MINIMUM RADIUS (R) OF 2.5 TIMES THE I.D. OF THE BRANCH MAIN IS REQUIRED FOR ALL SWEEPS. IF THE 2.5 TIMES THE I.D. OF THE BRANCH CAN'T BE MET, A LARGER DIAMETER MANHOLE SHALL BE REQUIRED. SEE DETAIL SHEET 9-3.
4. MANHOLE PIPE CONNECTOR SHALL BE A RESILIENT WATER TIGHT SEAL.

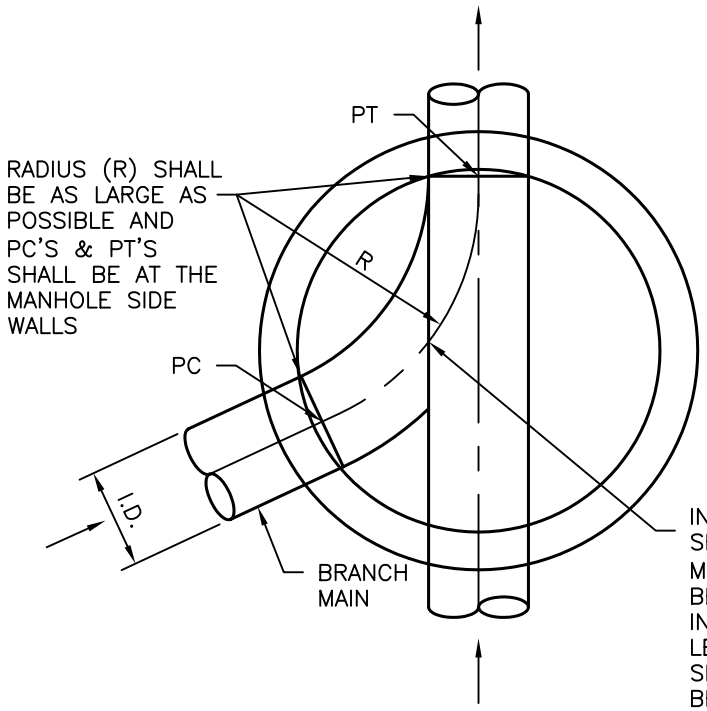
CITY OF RAPID CITY — PUBLIC WORKS DEPARTMENT

STANDARD MANHOLE DETAIL WITH MONOLITHIC BASE (48" & 60")

DATE: 5-1-07

SEC. 9 — SHT. 1





NOTES:

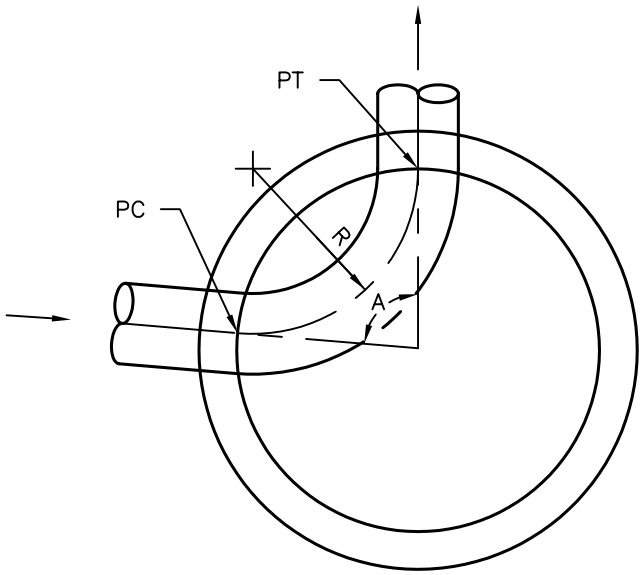
1. PC'S & PT'S ARE TO BE WITHIN THE MANHOLE.
2. ALL INVERTS TO BE U-SHAPED CHANNEL EQUAL TO PIPE I.D. AND SHALL BE CONSTRUCTED WITH SWEEPS.
3. A MINIMUM RADIUS (R) OF 2.5 TIMES THE I.D. OF THE BRANCH MAIN IS REQUIRED FOR ALL SWEEPS. IF THE 2.5 TIMES THE I.D. OF THE BRANCH CAN'T BE MET, A LARGER DIAMETER MANHOLE SHALL BE REQUIRED. SEE DETAIL SHEET 9-3.
4. MANHOLE PIPE CONNECTOR SHALL BE A RESILIENT WATER TIGHT SEAL.

CITY OF RAPID CITY — PUBLIC WORKS DEPARTMENT

STANDARD SHALLOW MANHOLE DETAIL WITH MONOLITHIC BASE (48" 60" & 72")

DATE: 5-1-07

SEC. 9-2 SHT.



OUTLET PIPE DIA.	INLET PIPE DIA.	MIN. ANGLE "A" IN DEGREES				
INCHES	INCHES	48" DIA.	60" DIA.	72" DIA.	84" DIA.	96" DIA.
8	8	80	75	75	75	75
10	8	81	75	75	75	75
10	10	94	80	75	75	75
12	8	81	75	75	75	75
12	10	94	81	75	75	75
12	12	104	91	80	75	75
15	8	83	75	75	75	75
15	10	95	81	75	75	75
15	12	106	92	81	75	75
15	15	117	104	94	84	77

ANGLES LESS THAN 90°

NOTE:

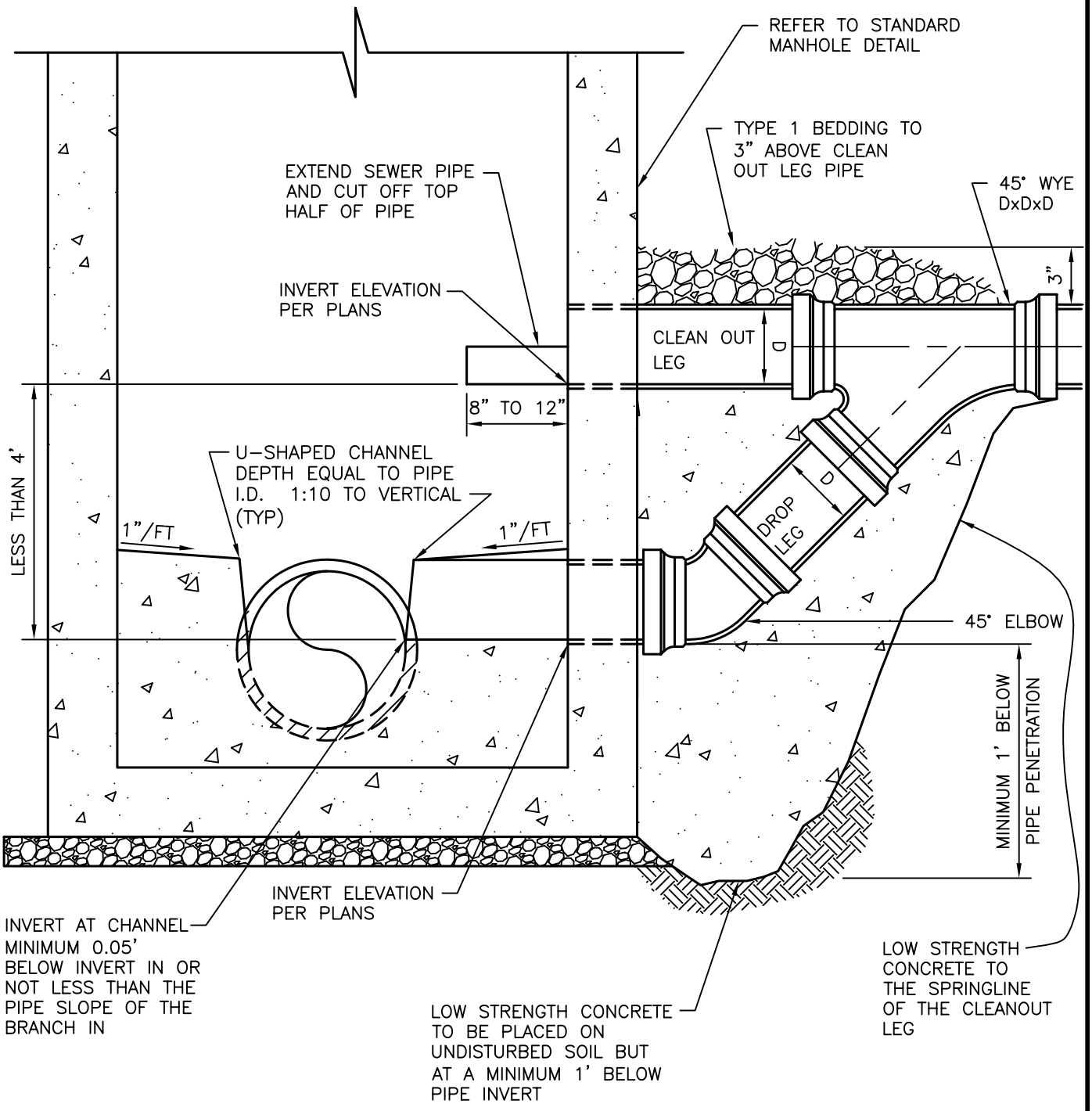
"A" ANGLES LESS THAN 90° REQUIRE THE DESIGN ENGINEER TO SUBMIT A WRITTEN REQUEST AND JUSTIFICATION FOR A DESIGN EXCEPTION, AND OBTAIN CITY APPROVAL. IN NO CASE SHALL THE "A" ANGLE BE LESS THAN 75°.

CITY OF RAPID CITY — PUBLIC WORKS DEPARTMENT

MINIMUM INVERT ANGLES FOR SANITARY MANHOLES

DATE: 5-1-07

SEC. 9 — SHT. 3

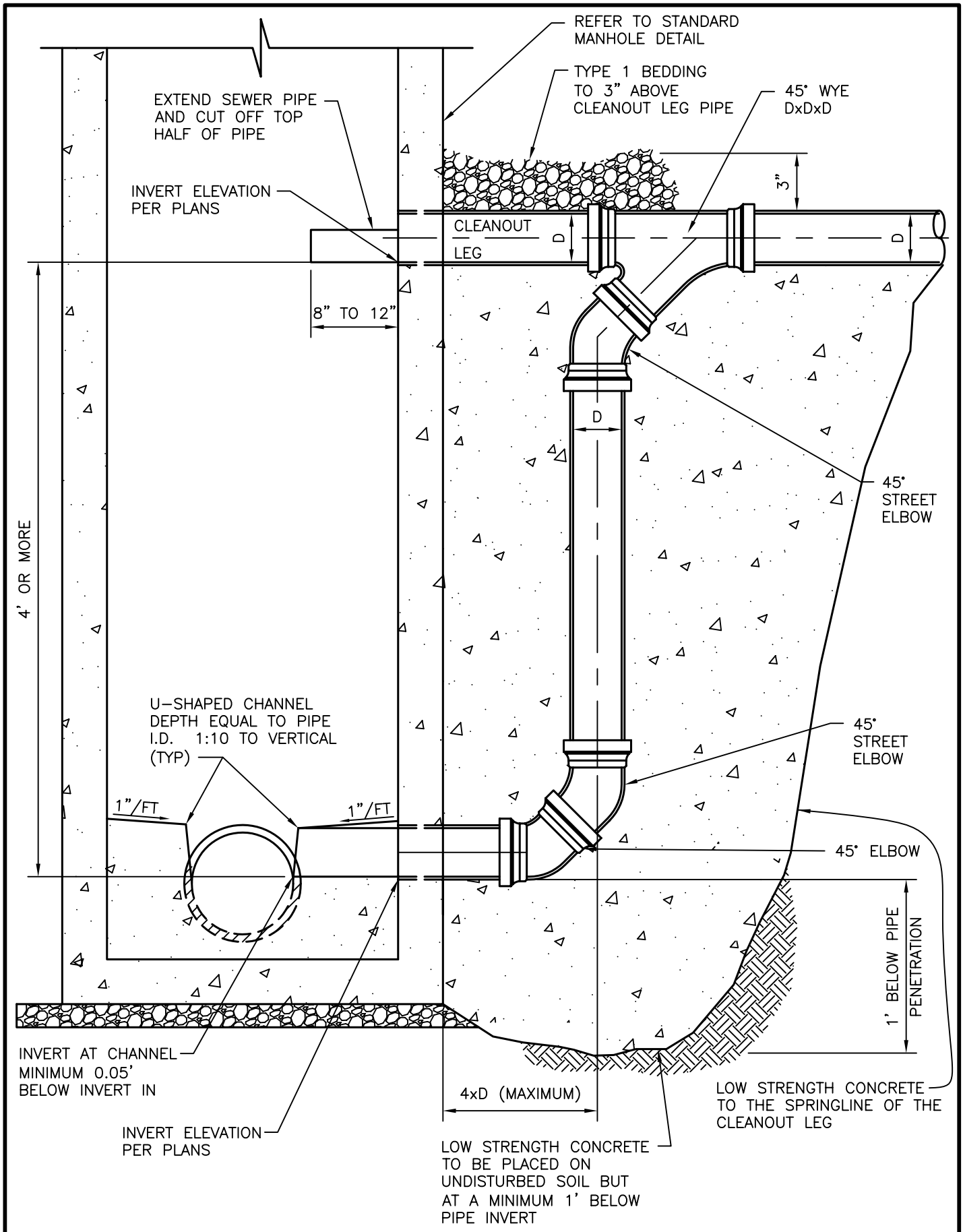


CITY OF RAPID CITY — PUBLIC WORKS DEPARTMENT

STANDARD DROP MANHOLE DETAIL FOR INVERT CHANGES LESS THAN 4'

DATE: 5-1-07

SEC. 9 — SHT. 4

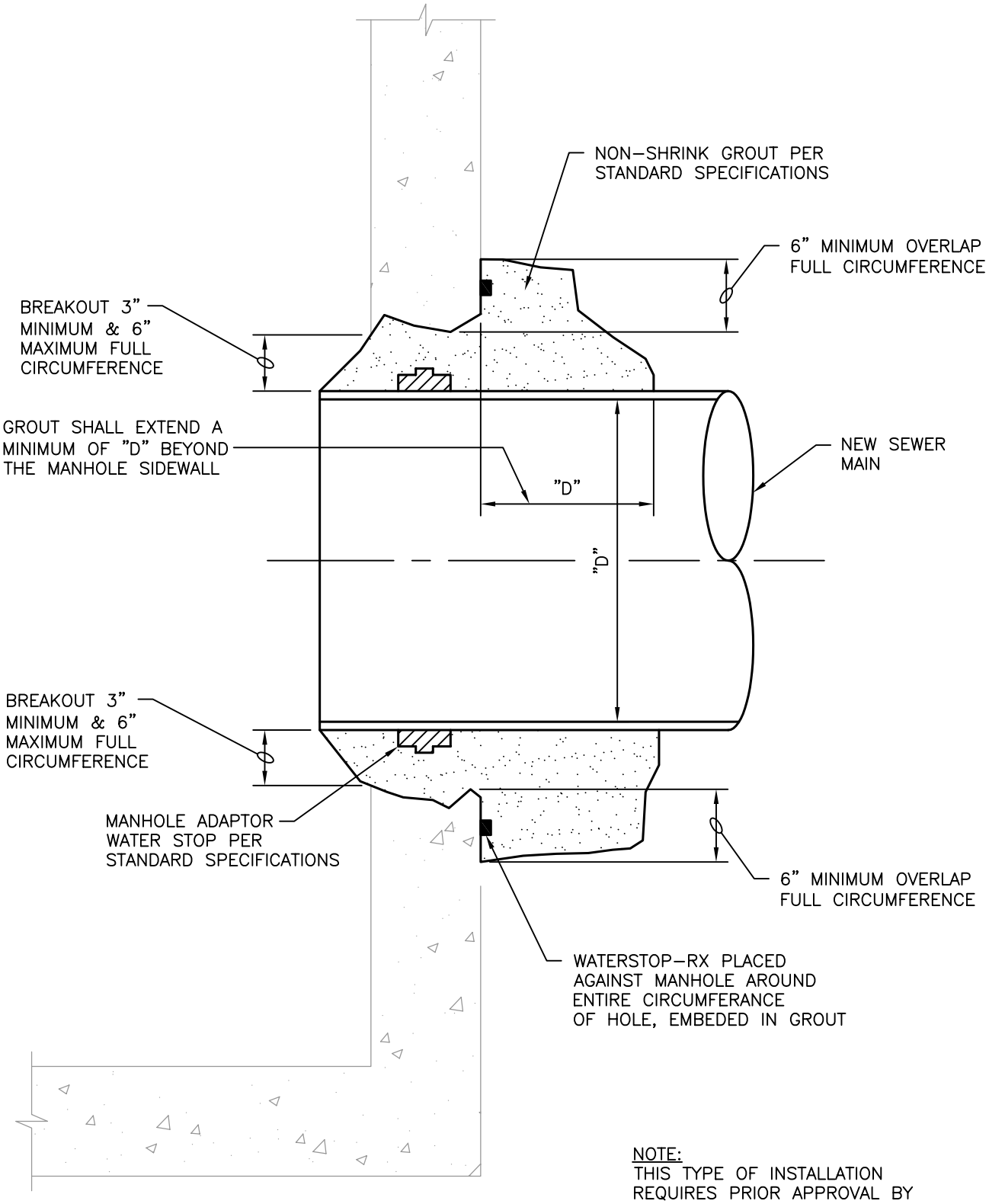


CITY OF RAPID CITY — PUBLIC WORKS DEPARTMENT

STANDARD DROP MANHOLE DETAILS FOR INVERT CHANGES MORE THAN 4'

DATE: 5-1-07

SEC. 9-5 SHT.



NOTE:
THIS TYPE OF INSTALLATION REQUIRES PRIOR APPROVAL BY ENGINEER.

CITY OF RAPID CITY — PUBLIC WORKS DEPARTMENT

PIPE CONNECTION TO EXISTING MANHOLE (GROUTED CONNECTION)

DATE: 5–1–07

SEC. 9–6 SHT.

NOTES:

1. DEPENDING ON LOCATION, CROSS–SLOPE OF STREET, HEIGHT ADJUSTMENT REQUIREMENTS, ETC.. THE INSPECTOR/ENGINEER RESERVES THE RIGHT TO REQUIRE A LARGER CUT TO ASSURE THAT ALL TRANSITIONS AND TOLERANCES AS CALLED FOR IN CITY SPECIFICATIONS WILL STILL BE MET.

2. BLOCKS FOR SHIMMING PER SPECIFICATIONS.

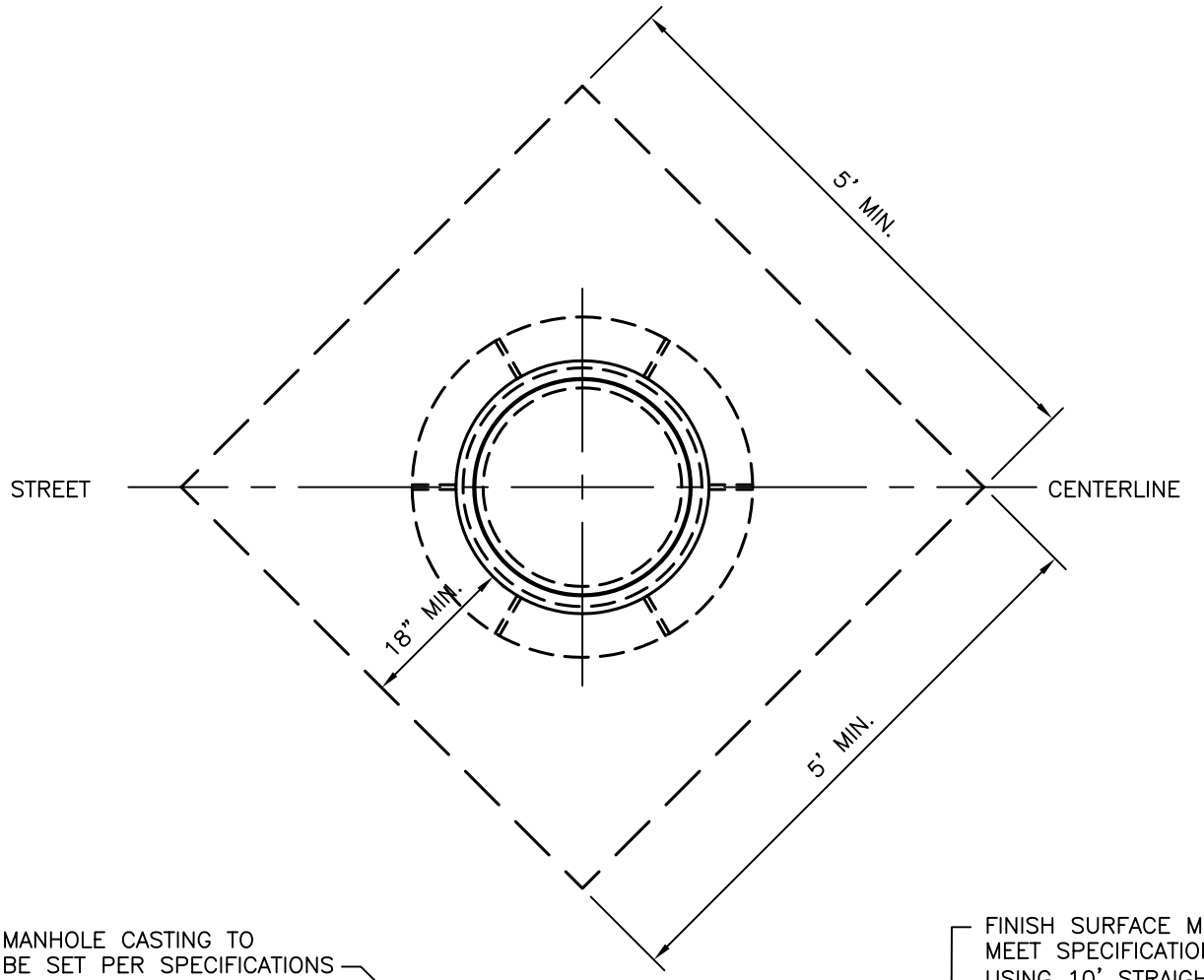
3. 0.25 INCH MAX.. SURFACE DEVIATION IN 10 FEET.

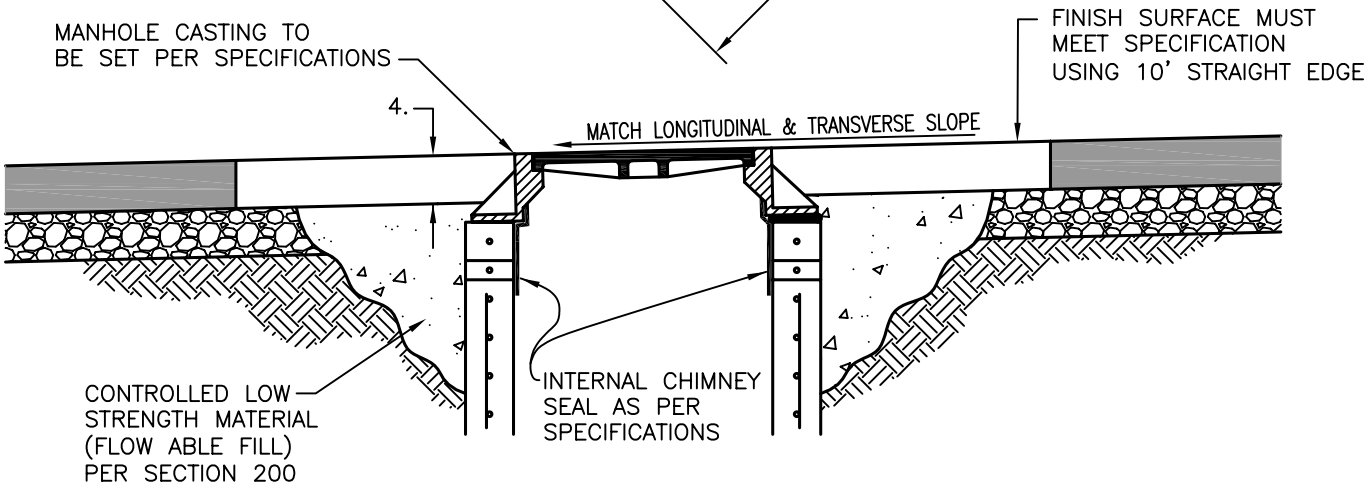
4. PATCH MATERIAL – PATCH MATERIAL SHALL MATCH THE EXISTING PAVEMENT MATERIAL. (i.e. PCC PAVEMENT SHALL BE PATCHED WITH PCC AND EXISTING ASPHALT PAVEMENT WITH ASPHALT).

MINIMUM PATCH DEPTHS SHALL BE:

*PCC–6" PCC PAVEMENT OR MATCH MINIMUM EXISTING PAVEMENT DEPTH WHICHEVER IS GREATER.

*ASPHALT–5" MINIMUM. (2 LIFTS COMPACTED OR MATCH EXISTING PAVEMENT DEPTH WHICHEVER IS GREATER.



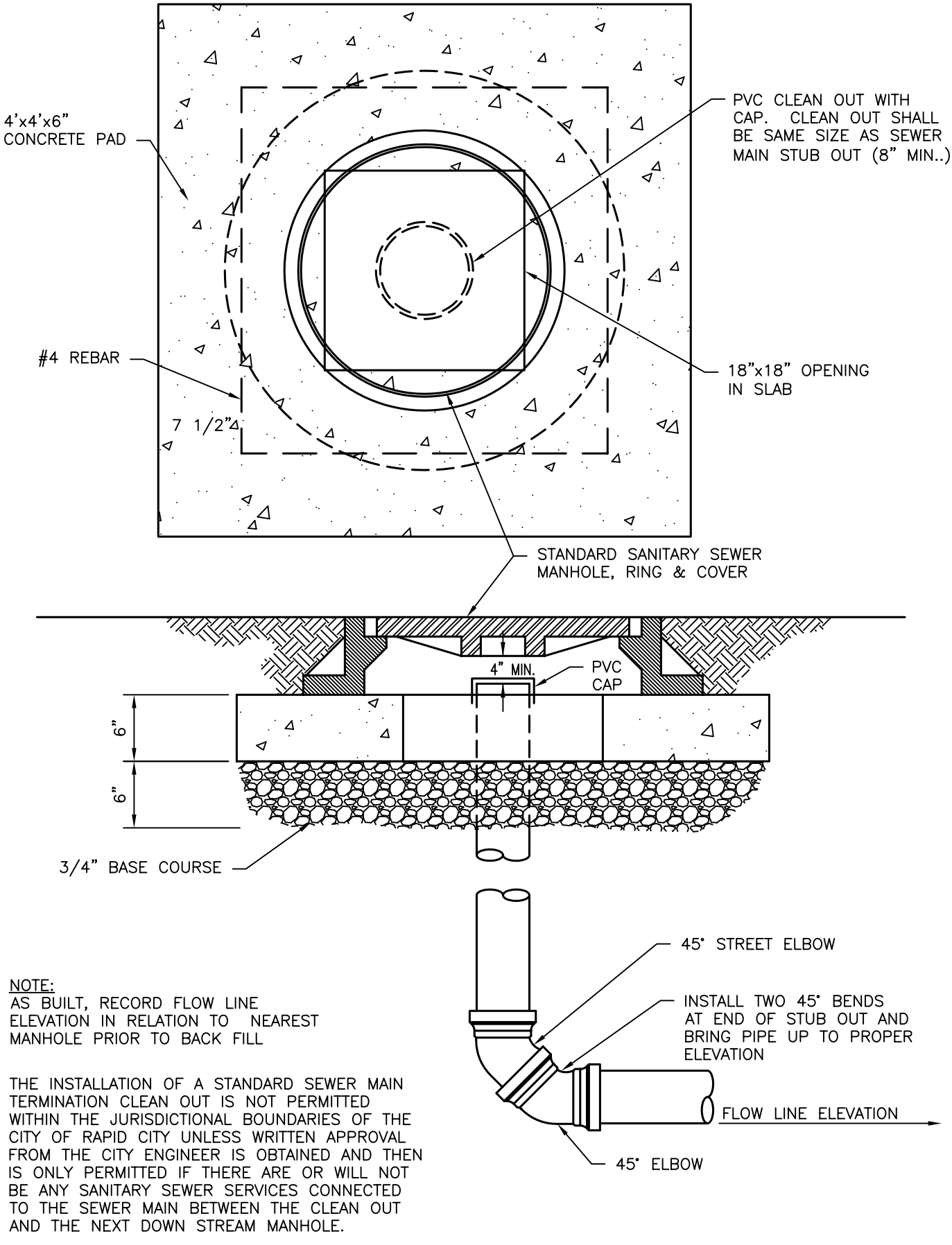


CITY OF RAPID CITY — PUBLIC WORKS DEPARTMENT

MANHOLE ADJUSTMENT AND PATCH DETAIL

DATE: 5–1–07

SEC. 9–7 SHT.



NOTE:
AS BUILT, RECORD FLOW LINE ELEVATION IN RELATION TO NEAREST MANHOLE PRIOR TO BACK FILL

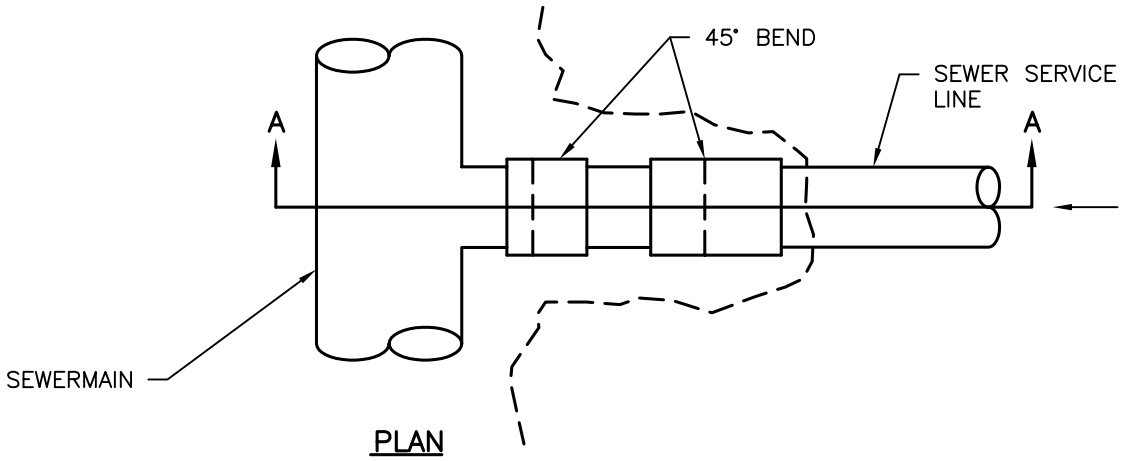
THE INSTALLATION OF A STANDARD SEWER MAIN TERMINATION CLEAN OUT IS NOT PERMITTED WITHIN THE JURISDICTIONAL BOUNDARIES OF THE CITY OF RAPID CITY UNLESS WRITTEN APPROVAL FROM THE CITY ENGINEER IS OBTAINED AND THEN IS ONLY PERMITTED IF THERE ARE OR WILL NOT BE ANY SANITARY SEWER SERVICES CONNECTED TO THE SEWER MAIN BETWEEN THE CLEAN OUT AND THE NEXT DOWN STREAM MANHOLE.

CITY OF RAPID CITY | PUBLIC WORKS DEPARTMENT

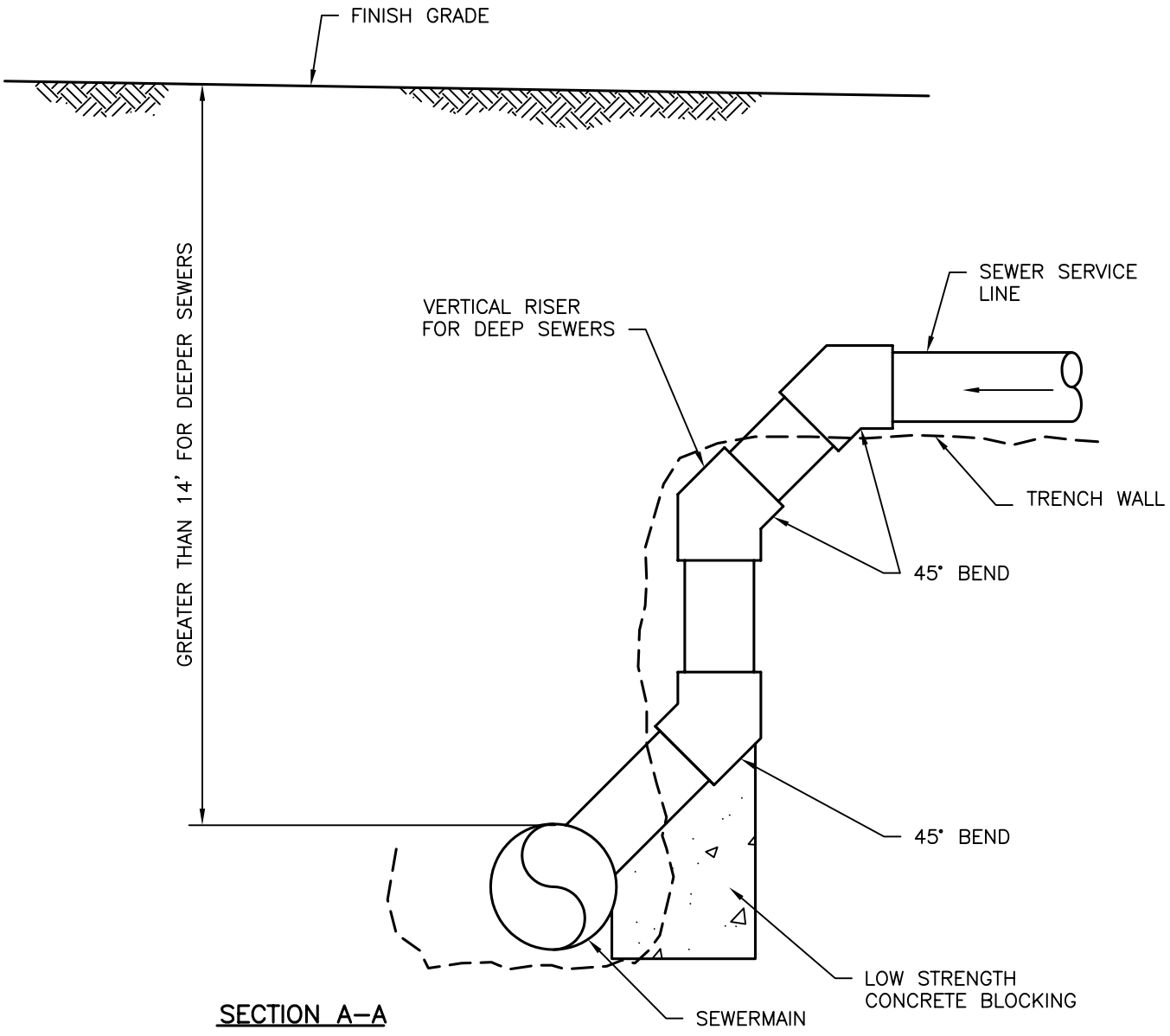
STANDARD SEWER MAIN TERMINATION CLEAN OUT

DATE: 5-1-07

SEC. 9-8 SHT.



PLAN



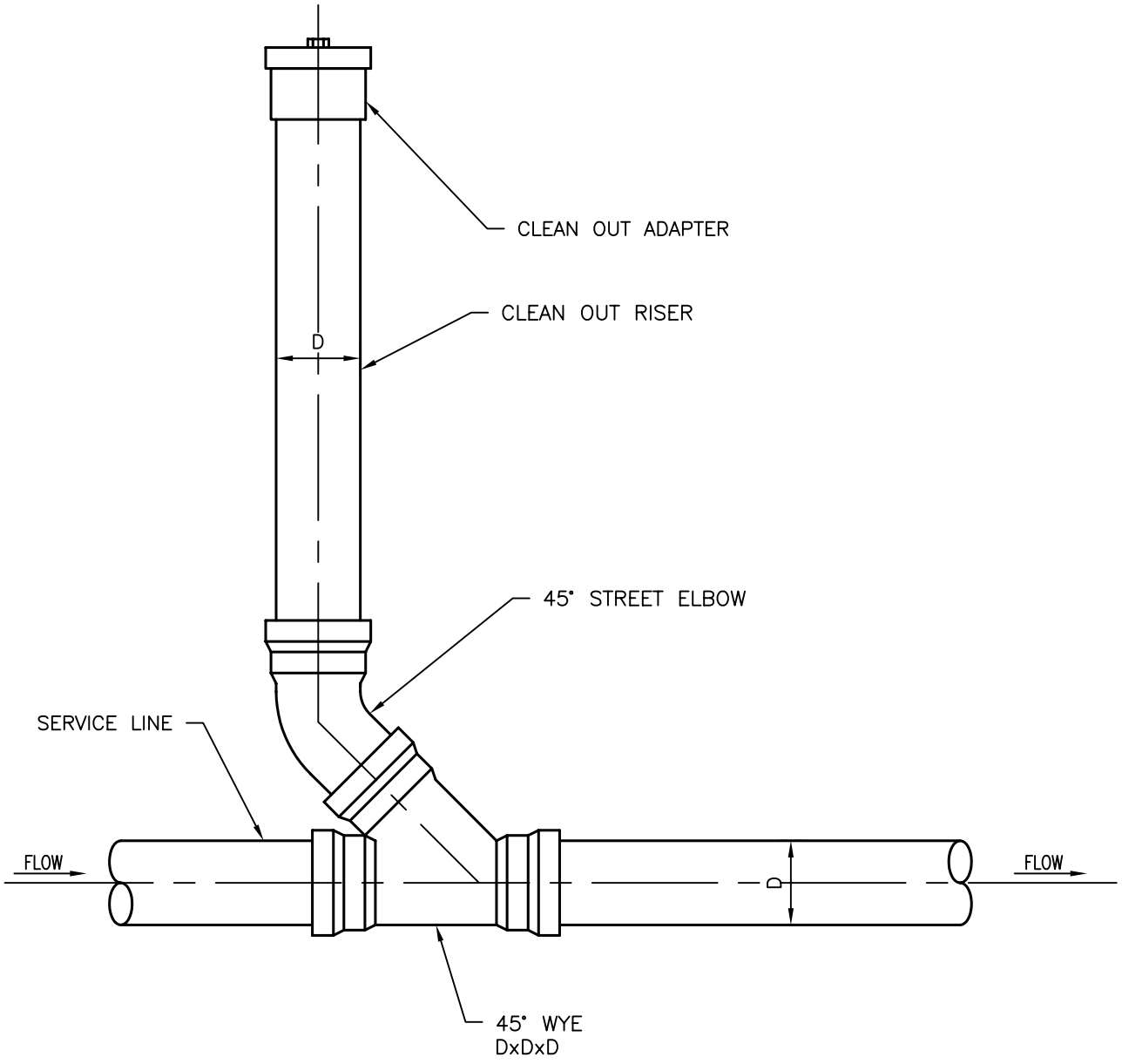
SECTION A–A

CITY OF RAPID CITY | PUBLIC WORKS DEPARTMENT

DEEP SANITARY SERVICE CONNECTION

DATE: 5–1–07

SEC. 9–9 SHT.



ELEVATION

NOTES:

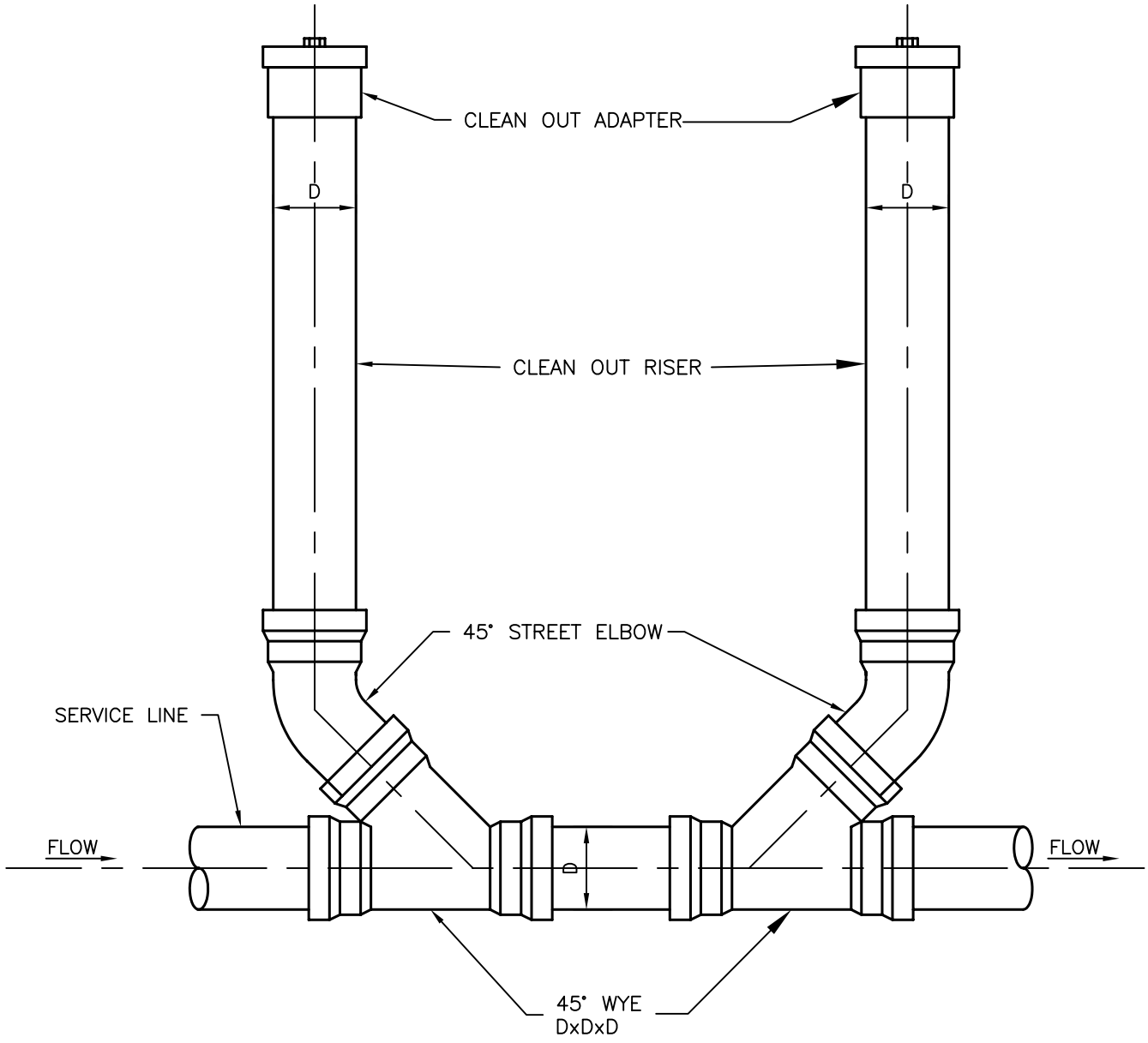
1. ALL FITTINGS SHALL BE GASKETED.
2. CLEAN OUTS TO BE SAME DIAMETER (D) AS SERVICE LINE.

CITY OF RAPID CITY | PUBLIC WORKS DEPARTMENT

SANITARY SEWER SERVICE CLEAN OUT DETAIL

DATE: 5-1-07

SEC. 9 SHT. 10



ELEVATION

NOTES:

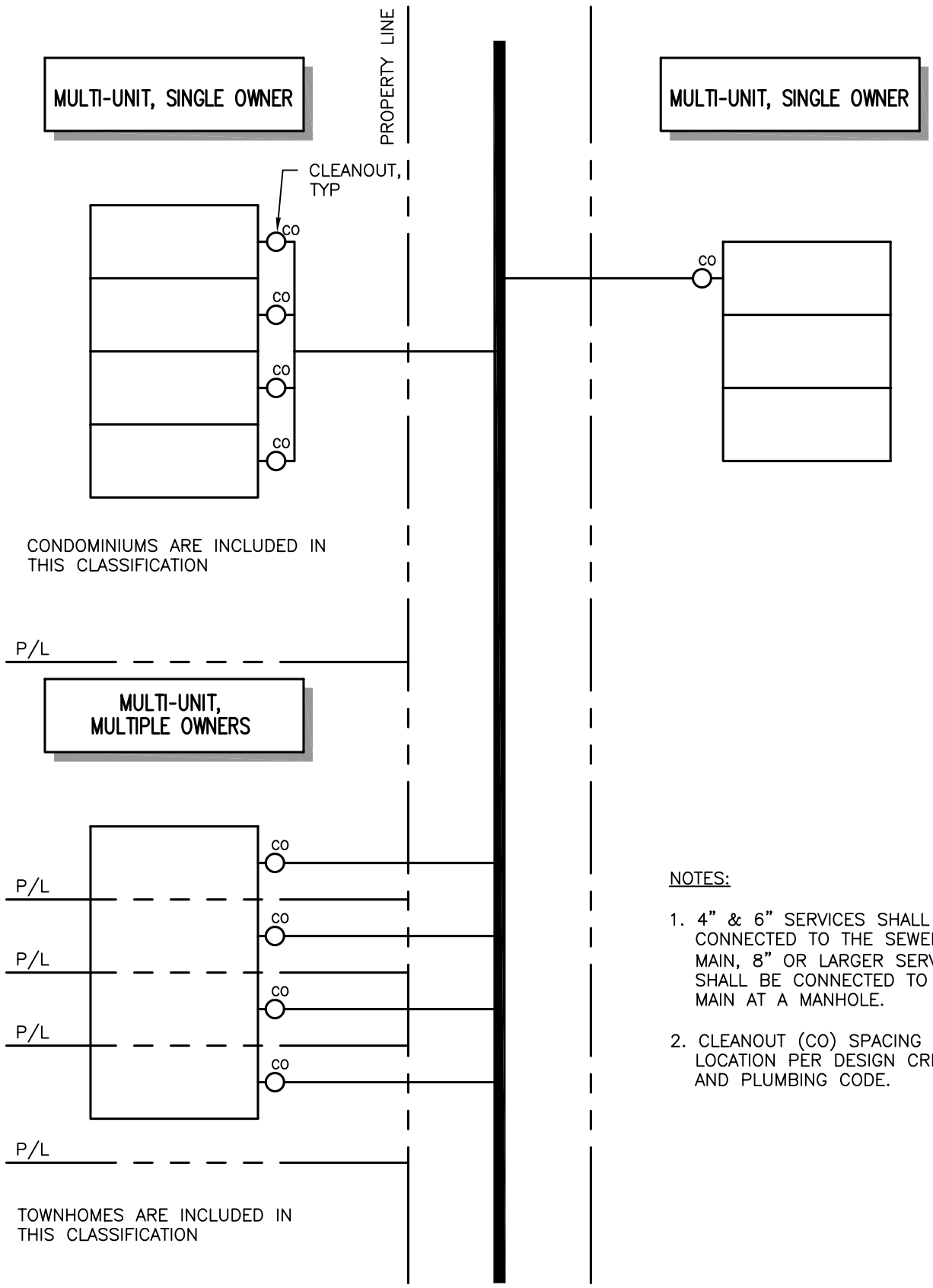
1. ALL FITTINGS SHALL BE GASKETED
2. CLEAN OUTS TO BE SAME DIAMETER (D) AS SERVICE LINE

CITY OF RAPID CITY — PUBLIC WORKS DEPARTMENT

SANITARY SEWER SERVICE DOUBLE CLEAN OUT DETAIL

DATE: 5-1-07

SEC. 9 — SHT. 11



NOTES:

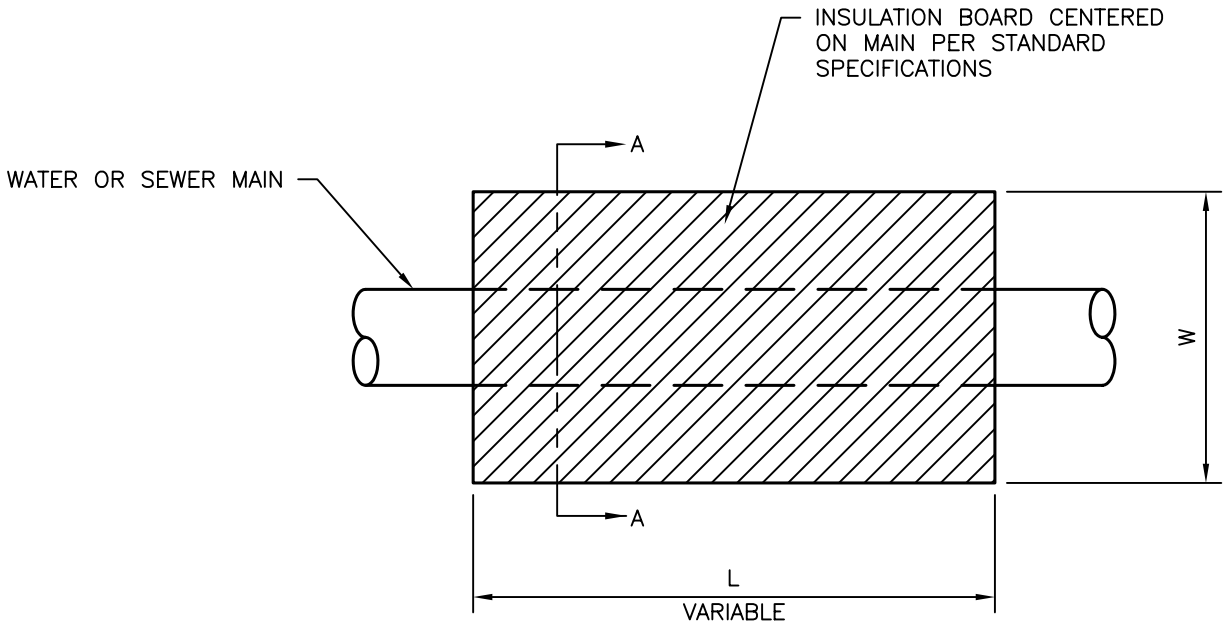
1. 4" & 6" SERVICES SHALL BE CONNECTED TO THE SEWER MAIN, 8" OR LARGER SERVICES SHALL BE CONNECTED TO THE MAIN AT A MANHOLE.
2. CLEANOUT (CO) SPACING & LOCATION PER DESIGN CRITERIA AND PLUMBING CODE.

CITY OF RAPID CITY — PUBLIC WORKS DEPARTMENT

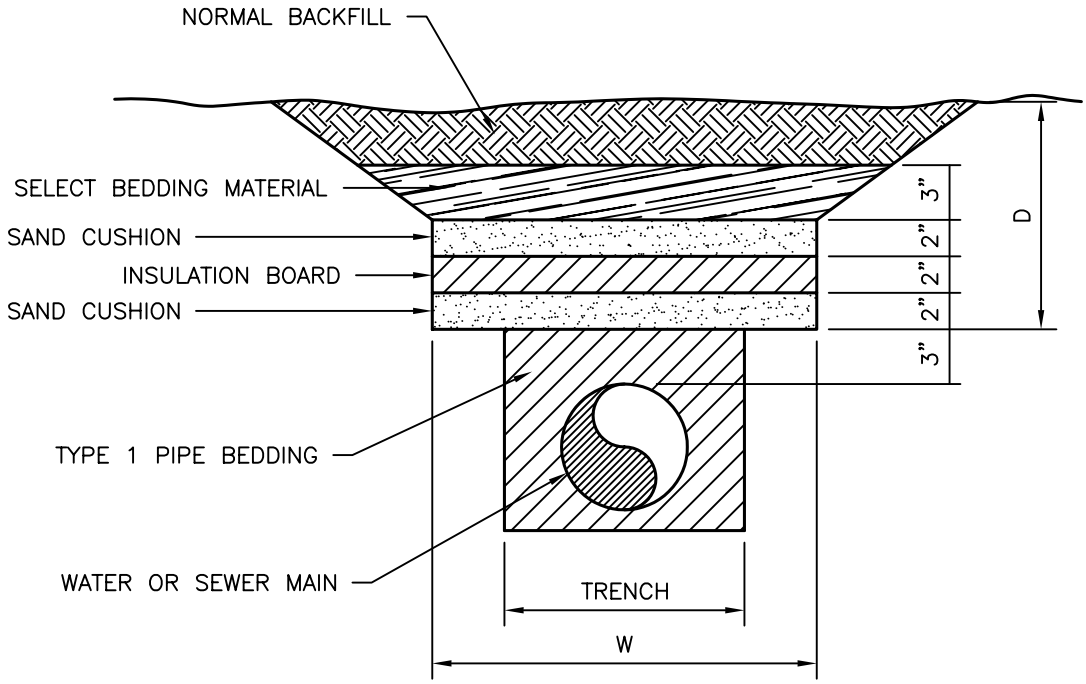
TYPICAL SEWER SERVICE LINE LAYOUT

DATE: 5-7-07

SEC. 9 — SHT. 12



PLAN



SECTION A–A

INSULATION WIDTH VS. PIPE DEPTH

WATER		SEWER	
D (FEET)	W (FEET)	D (FEET)	W (FEET)
3	8	2.5	8
4	6	3	6
5	4	3.5	4

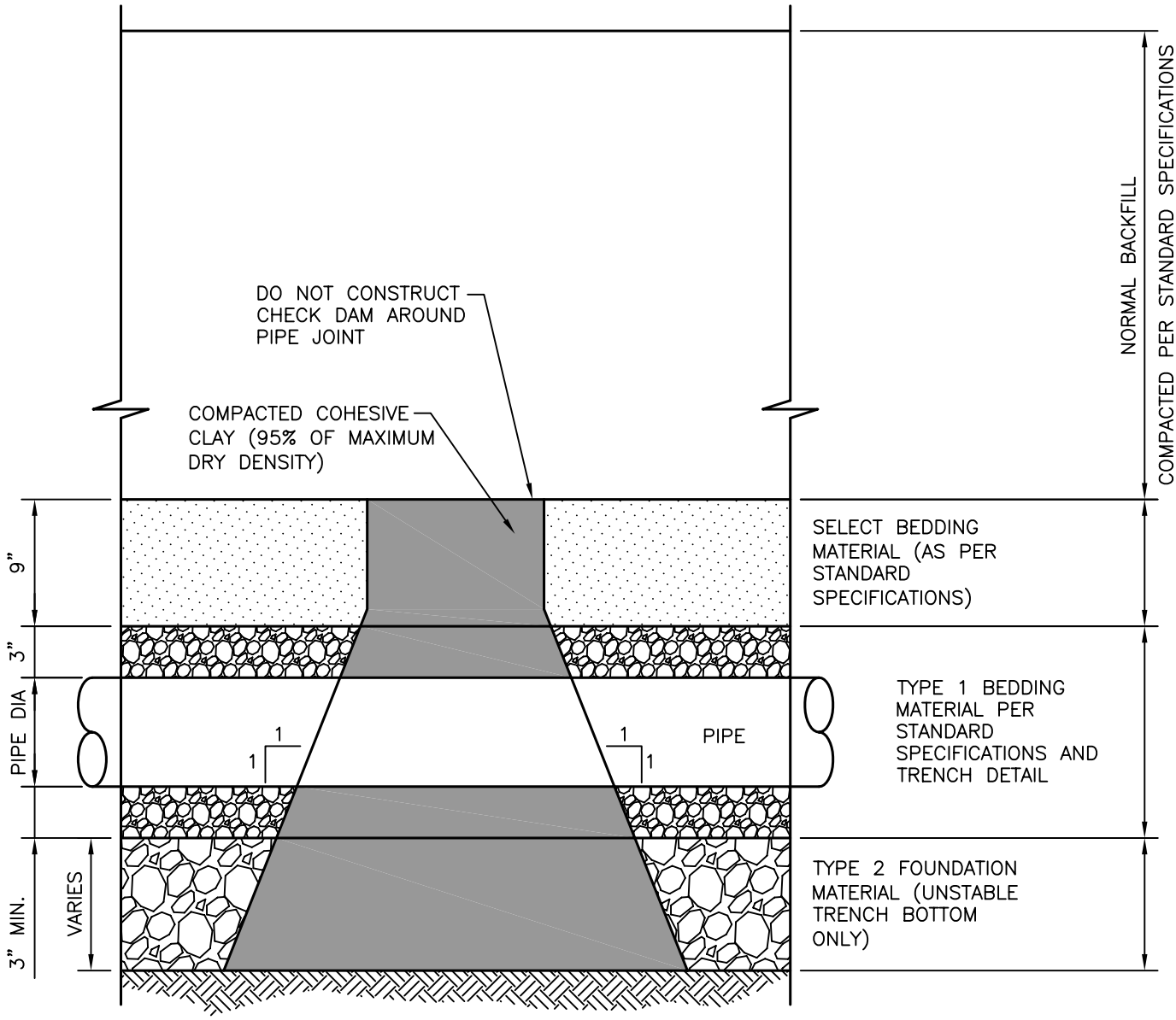
* THE USE OF INSULATION REQUIRES PRIOR APPROVAL BY THE ENGINEER.

CITY OF RAPID CITY — PUBLIC WORKS DEPARTMENT

WATER & SEWER MAIN INSULATION DETIAL

DATE: 5–1–07

SEC. 11–1 SHT.



ELEVATION

NOTE:

CHECK DAM INSTALLATION LOCATIONS SHALL BE AS INDICATED ON THE PLANS. HOWEVER DURING CONSTRUCTION, CHECK DAM INSTALLATION LOCATIONS MAY BE MOVED DUE TO FIELD CONDITIONS.

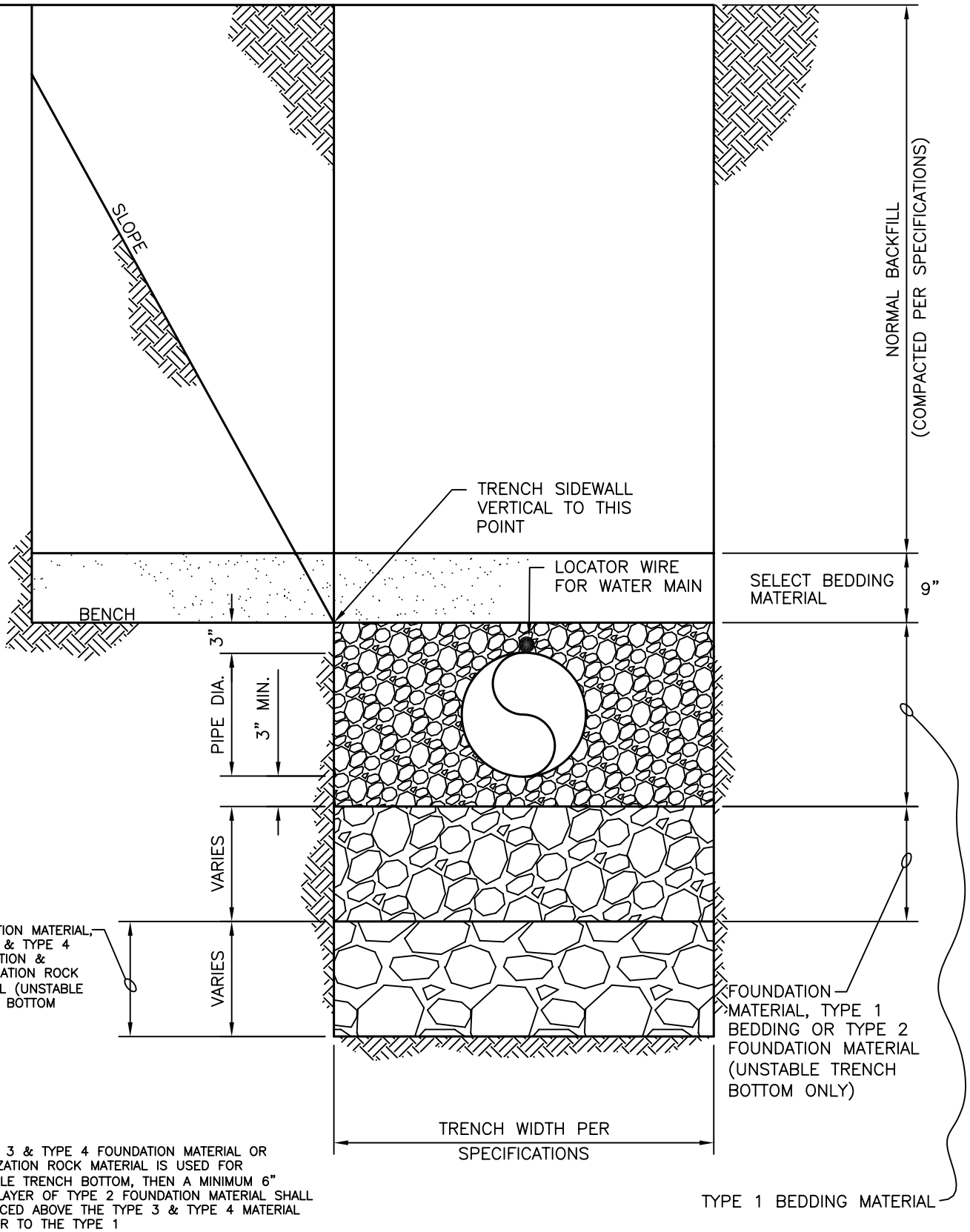
THE CHECK DAM SHALL EXTEND FROM THE BOTTOM OF THE EXCAVATION THROUGH THE BEDDING MATERIAL TO THE "NORMAL BACKFILL" AND SHALL EXTEND COMPLETELY TO EACH TRENCH SIDEWALL. CHECK DAM MATERIAL SHALL BE COMPACTED COHESIVE CLAY THAT CONTAINS A MINIMUM OF 25% MINUS NO. 200 SIEVE MATERIAL, WITH 70% PASSING A 3/4 INCH SIEVE. IF THE NORMAL EXCAVATED MATERIAL IS NOT SUITABLE FOR CONSTRUCTION OF THE CHECK DAM, THEN THE CONTRACTOR SHALL OBTAIN MATERIAL FROM OUTSIDE SOURCES. CHECK DAM INSTALLATION AND MATERIAL SHALL BE CONSIDERED AS INCIDENTAL TO THE PIPE INSTALLATION.

CITY OF RAPID CITY — PUBLIC WORKS DEPARTMENT

TYPICAL TRENCH CHECK DAM DETAIL FOR WATER & SEWER MAINS

DATE: 5-1-07

SEC. 11 — SHT. 2



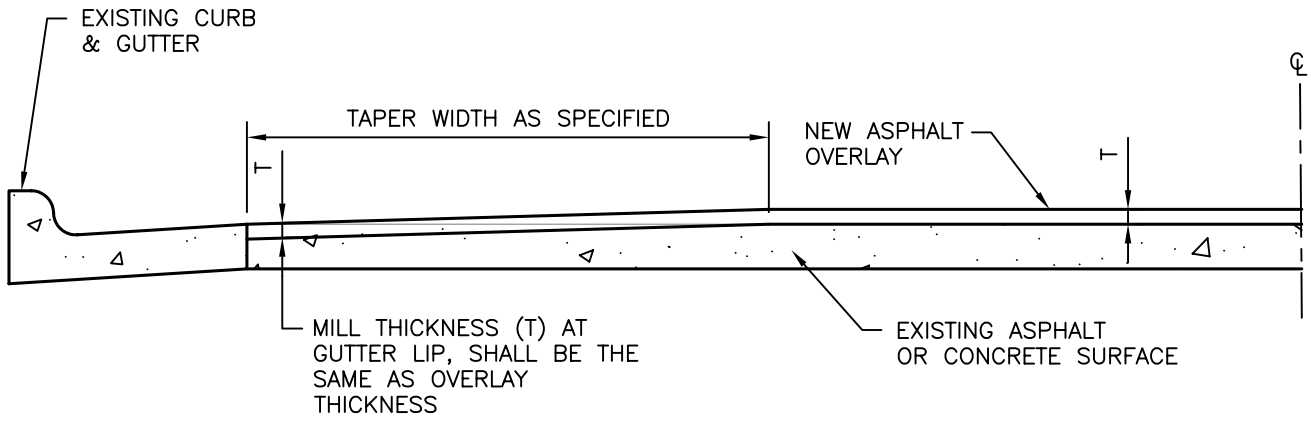
* IF TYPE 3 & TYPE 4 FOUNDATION MATERIAL OR STABILIZATION ROCK MATERIAL IS USED FOR UNSTABLE TRENCH BOTTOM, THEN A MINIMUM 6" THICK LAYER OF TYPE 2 FOUNDATION MATERIAL SHALL BE PLACED ABOVE THE TYPE 3 & TYPE 4 MATERIAL & PRIOR TO THE TYPE 1 BEDDING MATERIAL.

CITY OF RAPID CITY — PUBLIC WORKS DEPARTMENT

TRENCH DETAIL FOR WATER & SEWER MAIN

DATE: 5-1-07

SEC. 11 — SHT. 3



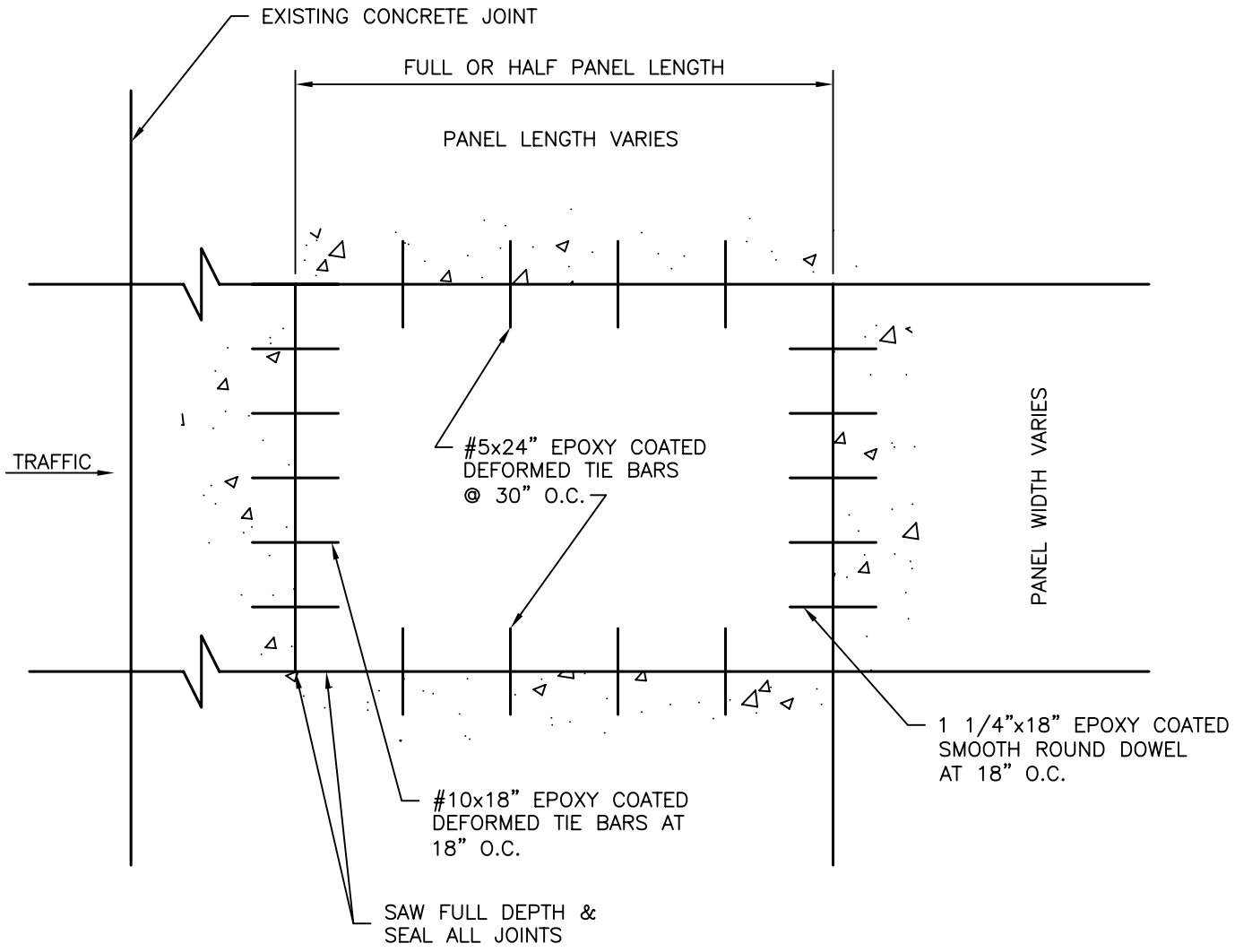
CITY OF RAPID CITY | PUBLIC WORKS DEPARTMENT

ASPHALT OVERLAY TAPER DETAIL

DATE: 5-1-07

SEC. 31 SHT. 1

NOTE:
THE CONTRACTOR SHALL PROVIDE TRANSVERSE CONTRACTION JOINTS AND LONGITUDINAL JOINTS TO MATCH EXISTING JOINTS.

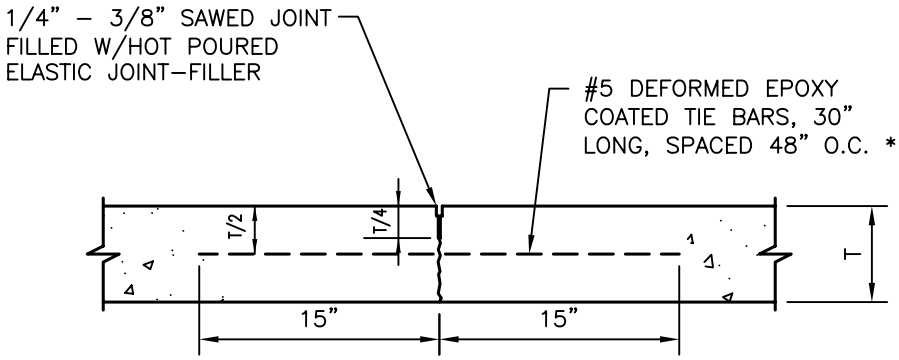


CITY OF RAPID CITY | PUBLIC WORKS DEPARTMENT

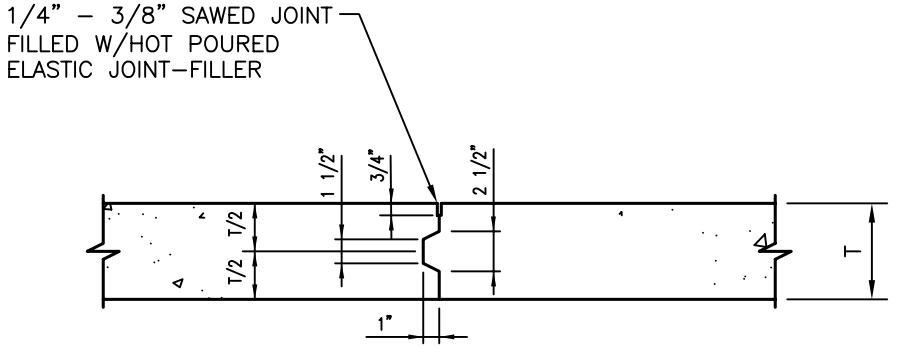
CONCRETE PANEL REPLACEMENT LAYOUT

DATE: 5-1-07

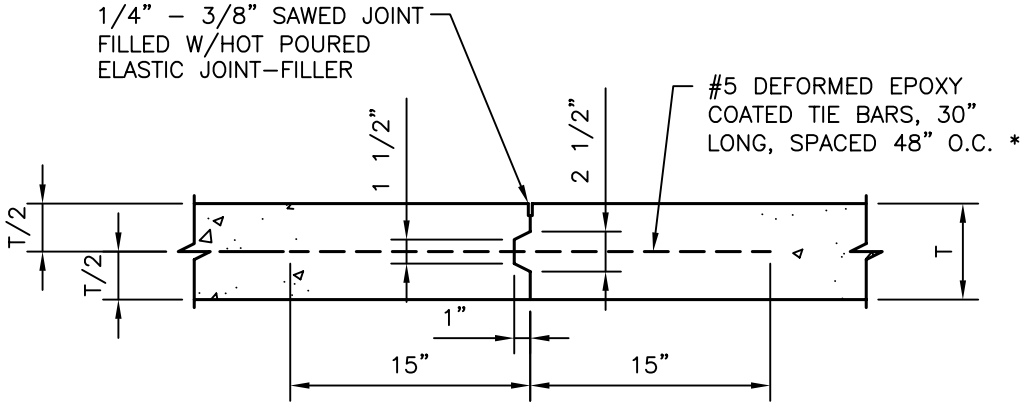
SEC. 40 SHT. 1



LONGITUDINAL SAWED JOINT
(NEW CONSTRUCTION)



LONGITUDINAL CONSTRUCTION JOINT W/O TIE BARS
(NEW CONSTRUCTION)



LONGITUDINAL CONSTRUCTION JOINT W/ TIE BARS
(NEW CONSTRUCTION)

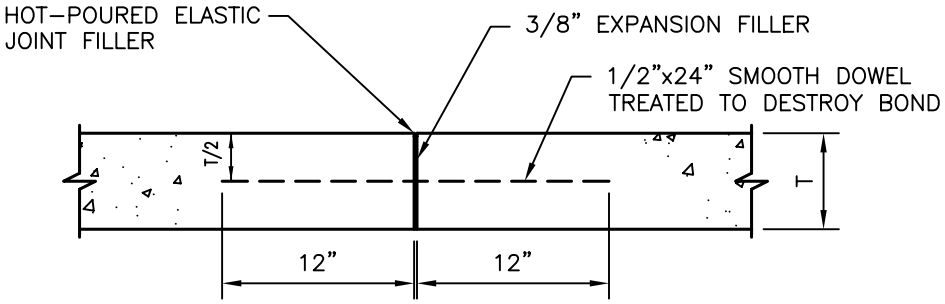
* #4 DEFORMED EPOXY COATED TIE BAR, 30" LONG, SPACED 36" O.C. IF BENT BARS ARE PROPOSED

CITY OF RAPID CITY | PUBLIC WORKS DEPARTMENT

LONGITUDINAL JOINT DETAILS

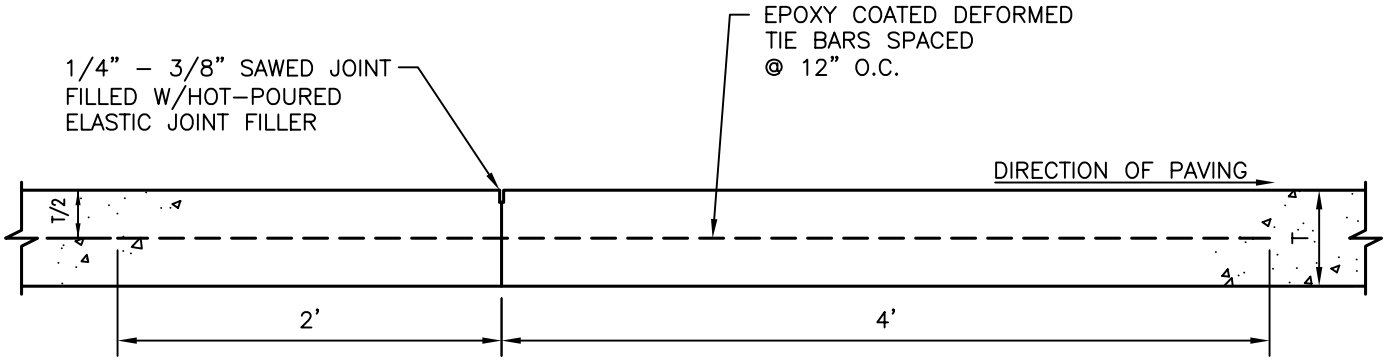
DATE: 5–1–07

SEC. 40–2 SHT.



TRANSVERSE EXPANSION JOINT

NEW CONSTRUCTION



TRANSVERSE CONSTRUCTION JOINT WITH TIE BARS

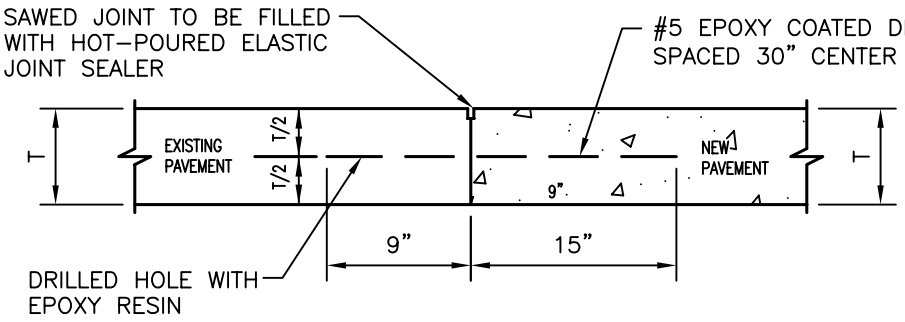
NEW CONSTRUCTION

NOTES:

FOR TRANSVERSE CONSTRUCTION JOINTS, THE #4 EPOXY COATED DEFORMED TIE BARS SHALL BE SPACED 12" CENTER TO CENTER AND APPROXIMATELY 6" FROM THE PAVEMENT EDGES. WHEN A TRANSVERSE CONSTRUCTION JOINT IS MADE, NO PAVING WILL BE DONE IN THIS AREA FOR 12 HOURS.

THE DISTANCE BETWEEN A TRANSVERSE CONSTRUCTION JOINT WITH TIE BARS AND AN ADJACENT TRANSVERSE CONTRACTION JOINT AT ROADWAY CENTERLINE SHALL BE 7 TO 8 FEET.

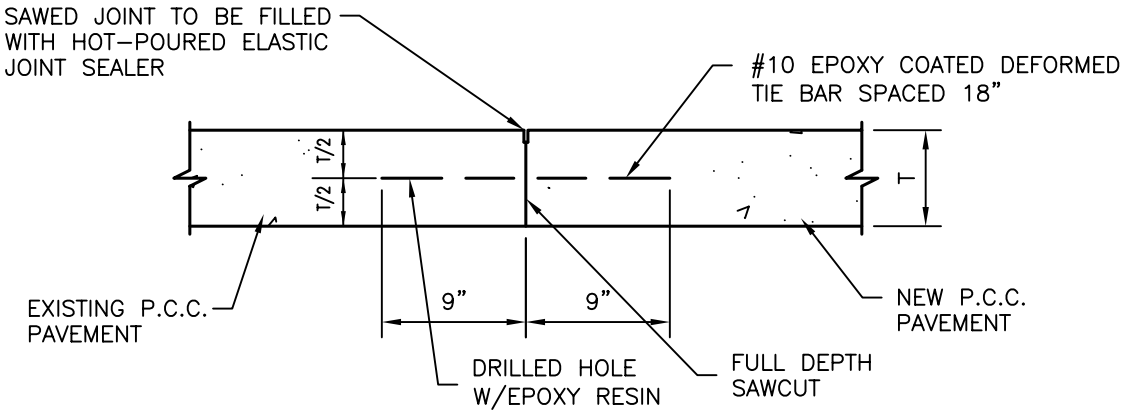
CITY OF RAPID CITY	PUBLIC WORKS DEPARTMENT
TRANSVERSE JOINT DETAILS	DATE: 5–1–07
	SEC. 40–3 SHT.



NOTE:
THE TIE BAR IS TO BE ANCHORED INTO THE EXISTING PAVEMENT WITH AN EPOXY RESIN ADHESIVE. TIE BARS SHALL BE PLACED A MINIMUM OF 15" FROM EXISTING TRANSVERSE CONTRACTION JOINTS.

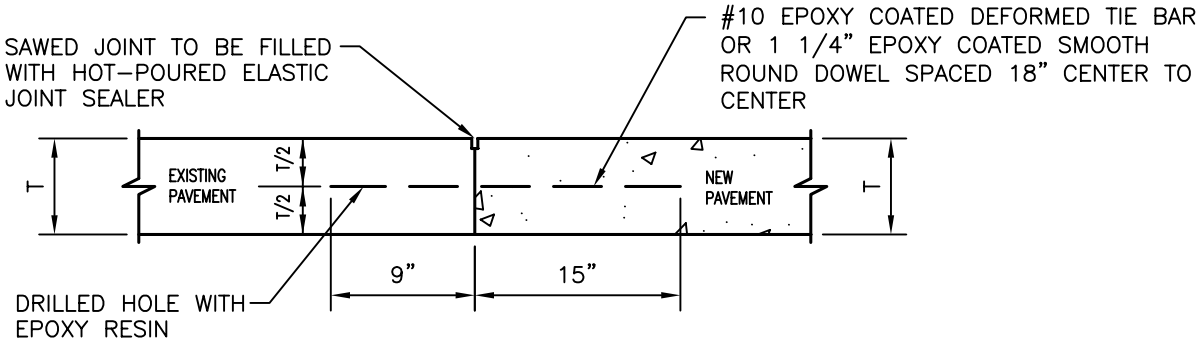
LONGITUDINAL SAWED JOINT

T = EXISTING AND NEW PAVEMENT THICKNESS



TRANSVERSE/LONGITUDINAL CONSTRUCTION JOINT W/ TIE BARS

(EXISTING P.C.C. PAVEMENT)

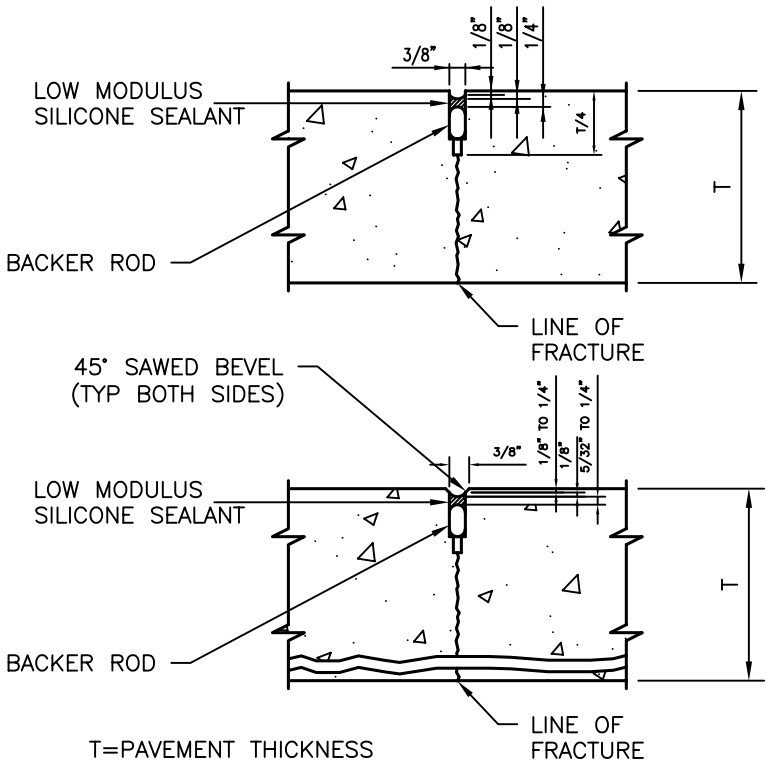


NOTE:
THE #10 EPOXY COATED DEFORMED TIE BAR IS TO BE ANCHORED INTO THE EXISTING PAVEMENT WITH AN EPOXY RESIN ADHESIVE. TIE BARS SHALL BE PLACED A MINIMUM OF 9" FROM EXISTING LONGITUDINAL JOINTS.

TRANSVERSE EXPANSION JOINT

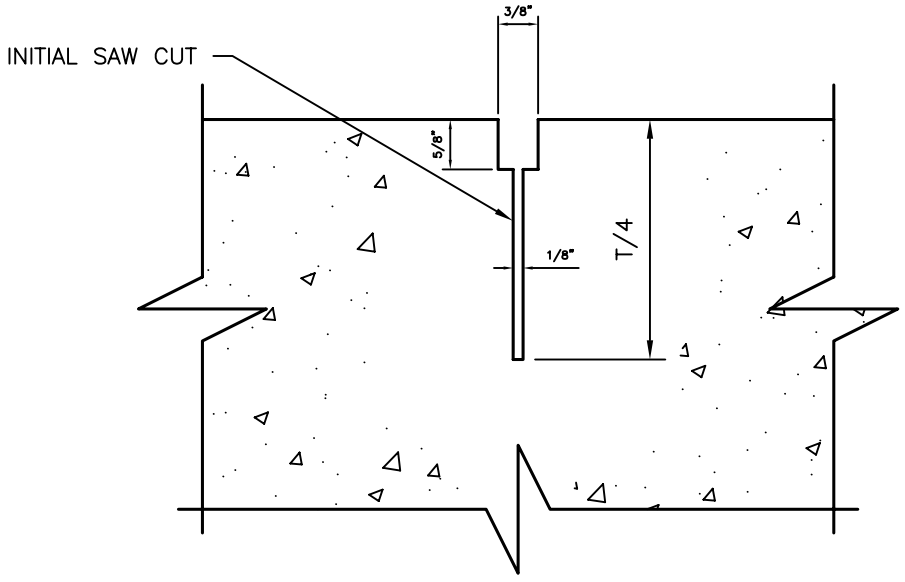
T = EXISTING AND NEW PAVEMENT THICKNESS

CITY OF RAPID CITY	PUBLIC WORKS DEPARTMENT
LONGITUDINAL & TRANSVERSE JOINTS CONNECTING NEW PAVEMENT OT EXISTING	DATE: 5–1–07
	SEC. 40 SHT. 4



NOTE:
THE FIRST SAW CUT TO CONTROL CRACKING SHALL BE A MINIMUM OF 1/4 THE DEPTH OF THE PAVEMENT. ADDITIONAL SAWING FOR WIDENING THE SAW CUT TO PROVIDE THE WIDTH FOR THE INSTALLATION OF THE LOW MODULUS SILICONE JOINT SEALANT WILL BE NECESSARY. BACKER ROD SHALL BE NON-MOISTURE ABSORBING RESILIENT MATERIAL APPROXIMATELY 25% LARGER IN DIAMETER THAN THE WIDTH OF THE JOINT TO BE SEALED.

TRANSVERSE CONTRACTION JOINT
W/ BACKER ROD & SILICONE SEAL
NEW CONSTRUCTION



DETAIL A

CITY OF RAPID CITY | PUBLIC WORKS DEPARTMENT

JOINT DETAILS

DATE: 5-1-07

SEC. 40-5 SHT.

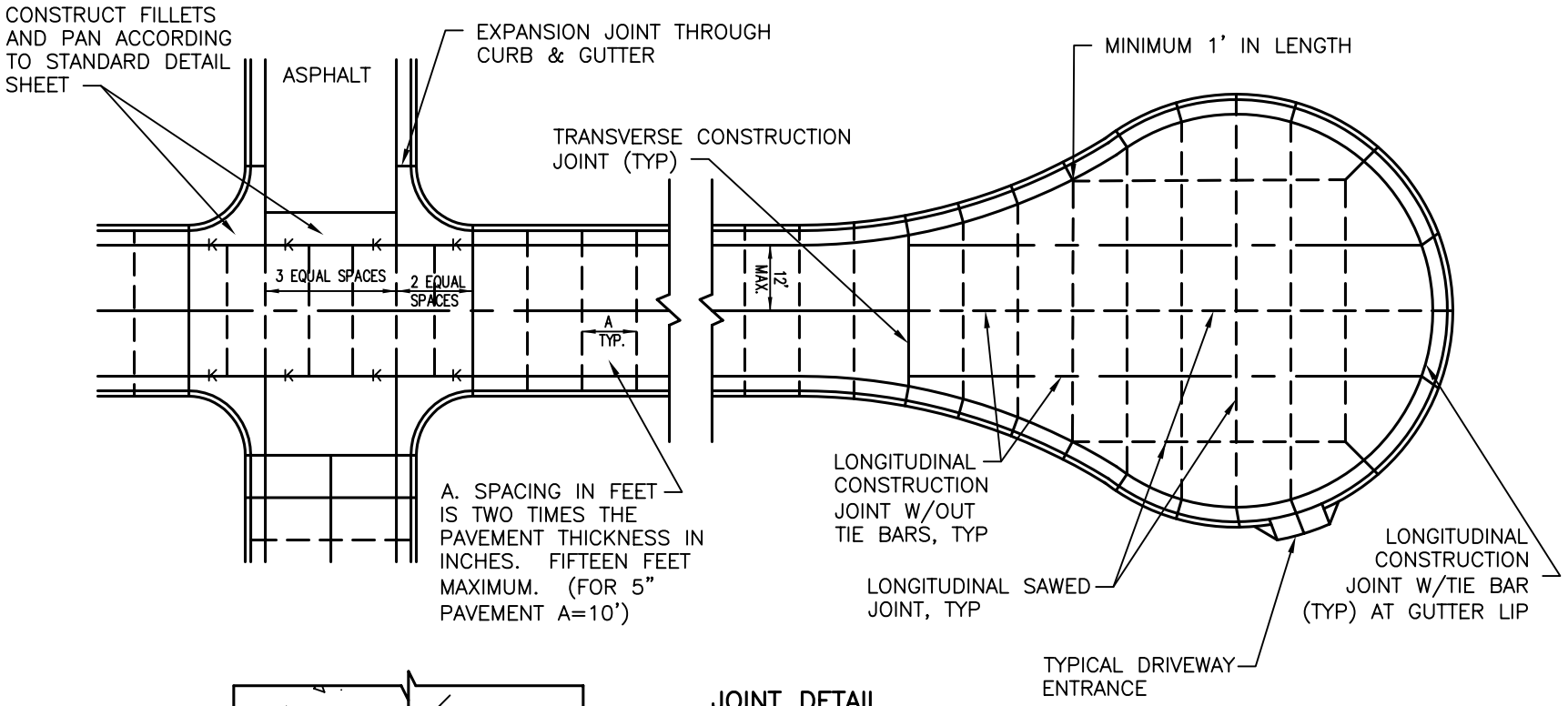
CONCRETE PAVEMENT

CITY OF RAPID CITY

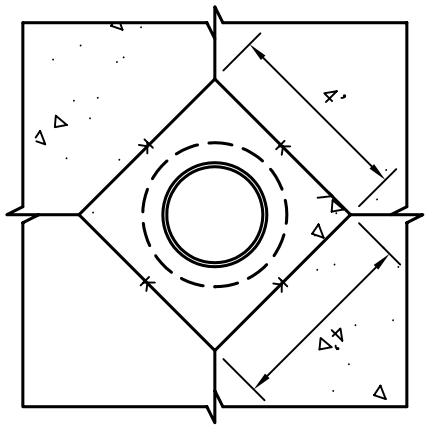
PUBLIC WORKS DEPARTMENT

SEC. 40-6 SHT.

DATE: 5-1-07



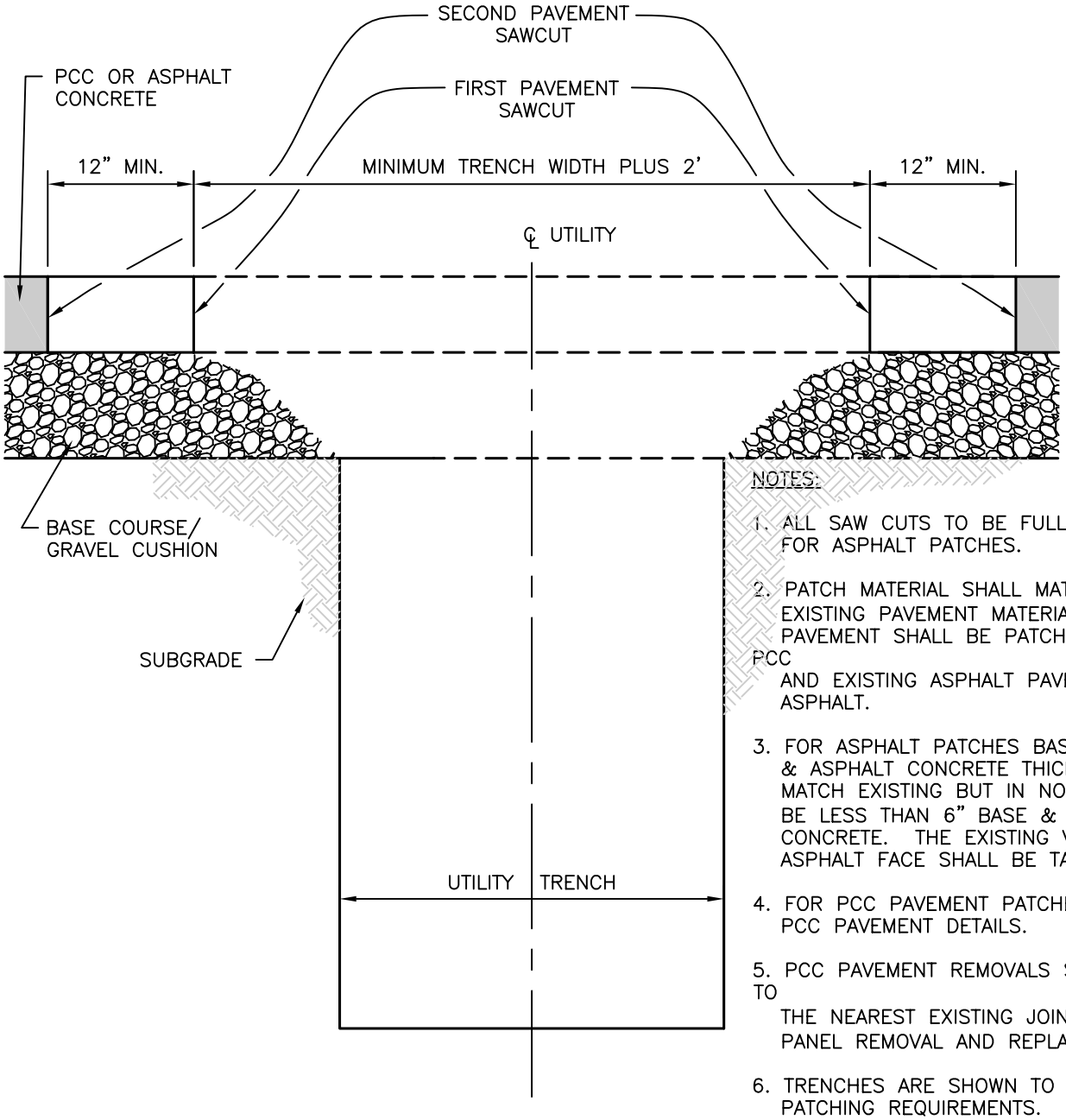
JOINT DETAIL



MANHOLE BLOCKOUT DETAIL

NOTE:
THE CONTRACTOR MAY POUR THE MAINLINE CURB AND GUTTER MONOLITHICALLY WITH THE P.C.C. PAVEMENT. IF THIS METHOD OF CONSTRUCTION IS USED, THE CURB & GUTTER VERTICAL THICKNESS SHALL MATCH PAVEMENT BUT BE NO LESS THAN 6 INCHES, AND THE METAL RECESS STRIP MAY BE ELIMINATED. IN ADDITION, THE CURB & GUTTER MUST BE SAWED AND SEALED LONGITUDINALLY AND TRANSVERSELY AT EACH MAINLINE TRANSVERSE CONTRACTION JOINT THE SAME AS FOR TRANSVERSE CONTRACTION JOINTS IN THE P.C.C. PAVEMENT. THE CROSS-SECTIONAL SLOPE OF THE GUTTER SHALL REMAIN AT 3/4" PER FOOT. TIE BARS SHALL BE USED. CONTRACTOR SHALL PREPARE A CONCRETE JOINT LAYOUT PRIOR TO PLACING CONCRETE.

NOTE:
ALL MANHOLE CASTINGS LOCATED WITHIN THE PAVEMENT LIMITS SHALL BE SEPARATED FROM THE PAVEMENT BY BOXING THEM OUT AS SHOWN IN THE DETAIL. MATCH PAVEMENT JOINTS TO MANHOLE BLOCKOUT CORNERS AS DIRECTED BY THE ENGINEER.



NOTES:

1. ALL SAW CUTS TO BE FULL DEPTH. FOR ASPHALT PATCHES.
2. PATCH MATERIAL SHALL MATCH THE EXISTING PAVEMENT MATERIAL (eg PCC PAVEMENT SHALL BE PATCHED WITH PCC AND EXISTING ASPHALT PAVEMENT WITH ASPHALT.
3. FOR ASPHALT PATCHES BASE COURSE & ASPHALT CONCRETE THICKNESS TO MATCH EXISTING BUT IN NO CASE WILL BE LESS THAN 6" BASE & 5" ASPHALT CONCRETE. THE EXISTING VERTICAL ASPHALT FACE SHALL BE TACKED.
4. FOR PCC PAVEMENT PATCHES – SEE PCC PAVEMENT DETAILS.
5. PCC PAVEMENT REMOVALS SHALL BE TO THE NEAREST EXISTING JOINT (eg FULL PANEL REMOVAL AND REPLACEMENT).
6. TRENCHES ARE SHOWN TO DIAGRAM PATCHING REQUIREMENTS. TRENCHES SHALL BE CONSTRUCTED TO MEET OSHA REQUIREMENTS.
7. PAVEMENT REMOVAL BETWEEN FIRST AND SECOND SAW CUT SHALL BE REMOVED AT TIME OF PATCHING.

TABLE 11–1 MINIMUM TRENCH WIDTH TABLE

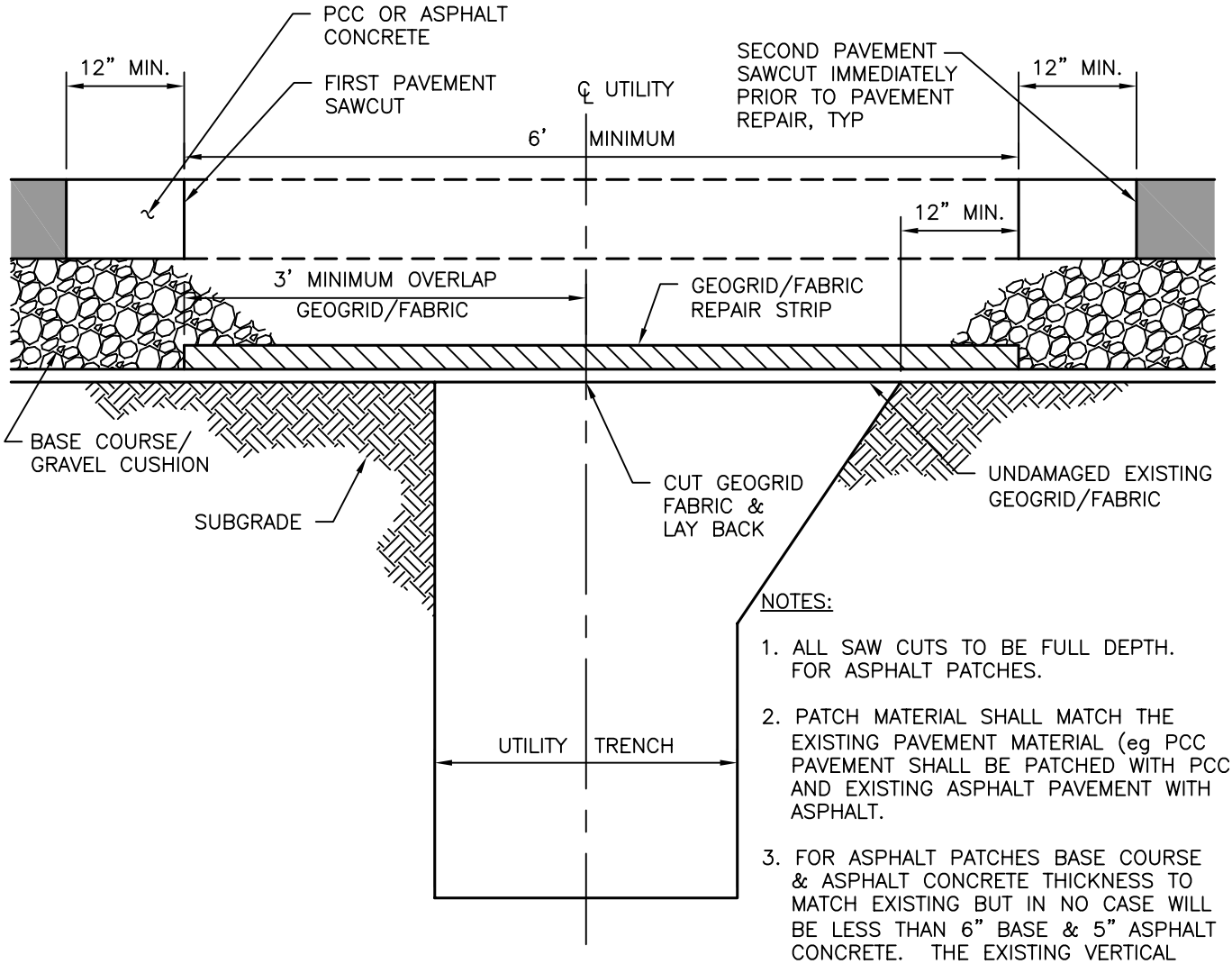
PIPE DIAMETER	MINIMUM WIDTH	MINIMUM BETWEEN FIRST SAWCUTS	MINIMUM BETWEEN SECOND SAWCUTS	PCC PAVEMENT
<8 in.	24"	4'	6'	SECOND SAWCUTS SHALL BE AT EXISTING JOINTS SEE NOTE #5
8in. – 12in.	30"	4'–6"	6'–6"	
14in. – 18in.	36"	5'	7'	
20in. – 21in.	42"	5'–6"	7'–6"	
24in. – 36in.	1.25 (PIPE OD) PLUS 12in.	MIN. WIDTH PLUS 2'	MIN. WIDTH PLUS 4'	
>36in.	PER PLANS	MIN. WIDTH PLUS 2'	MIN. WIDTH PLUS 4'	

CITY OF RAPID CITY — PUBLIC WORKS DEPARTMENT

UTILITY TRENCH PATCH DETAIL

DATE: 5–1–07

SEC. 41–1 SHT.



NOTES:

1. ALL SAW CUTS TO BE FULL DEPTH. FOR ASPHALT PATCHES.
2. PATCH MATERIAL SHALL MATCH THE EXISTING PAVEMENT MATERIAL (eg PCC PAVEMENT SHALL BE PATCHED WITH PCC AND EXISTING ASPHALT PAVEMENT WITH ASPHALT.
3. FOR ASPHALT PATCHES BASE COURSE & ASPHALT CONCRETE THICKNESS TO MATCH EXISTING BUT IN NO CASE WILL BE LESS THAN 6" BASE & 5" ASPHALT CONCRETE. THE EXISTING VERTICAL ASPHALT FACE SHALL BE TACKED.
4. FOR PCC PAVEMENT PATCHES – SEE PCC PAVEMENT DETAILS.
5. PCC PAVEMENT REMOVALS SHALL BE TO THE NEAREST EXISTING JOINT (eg FULL PANEL REMOVAL AND REPLACEMENT).
6. TRENCHES ARE SHOWN TO DIAGRAM PATCHING REQUIREMENTS. TRENCHES SHALL BE CONSTRUCTED TO MEET OSHA REQUIREMENTS.
7. PAVEMENT REMOVAL BETWEEN FIRST AND SECOND SAW CUT SHALL BE REMOVED AT TIME OF PATCHING.

TABLE 11–1 MINIMUM TRENCH WIDTH TABLE

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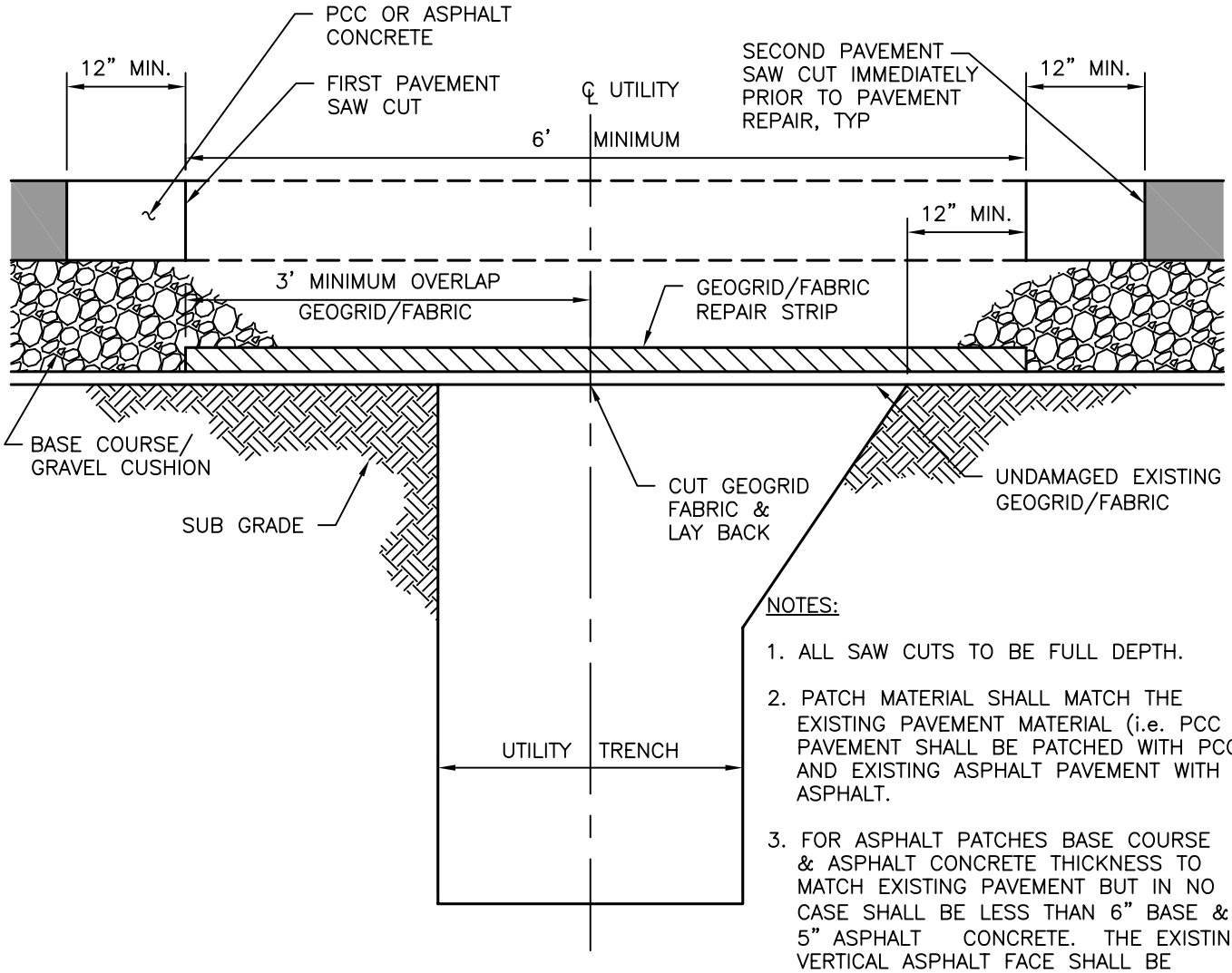
>36in.	PER PLANS	MIN. WIDTH PLUS 2'	MIN. WIDTH PLUS 4'	

CITY OF RAPID CITY — PUBLIC WORKS DEPARTMENT

GEOGRID/FABRIC UTILITY TRENCH PATCH DETAIL

DATE: 5–1–07

SEC. 41–2 SHT.



NOTES:

1. ALL SAW CUTS TO BE FULL DEPTH.
2. PATCH MATERIAL SHALL MATCH THE EXISTING PAVEMENT MATERIAL (i.e. PCC PAVEMENT SHALL BE PATCHED WITH PCC AND EXISTING ASPHALT PAVEMENT WITH ASPHALT.
3. FOR ASPHALT PATCHES BASE COURSE & ASPHALT CONCRETE THICKNESS TO MATCH EXISTING PAVEMENT BUT IN NO CASE SHALL BE LESS THAN 6" BASE & 5" ASPHALT CONCRETE. THE EXISTING VERTICAL ASPHALT FACE SHALL BE TACKED.
4. FOR PCC PAVEMENT PATCHES – SEE PCC PAVEMENT DETAILS.
5. PCC PAVEMENT REMOVALS SHALL BE TO THE NEAREST EXISTING JOINT (i.e. FULL PANEL REMOVAL AND REPLACEMENT).
6. TRENCHES ARE SHOWN TO DIAGRAM PATCHING REQUIREMENTS. TRENCHES SHALL BE CONSTRUCTED TO MEET OSHA REQUIREMENTS.
7. PAVEMENT REMOVAL BETWEEN FIRST AND SECOND SAW CUT SHALL BE REMOVED AT TIME OF PATCHING.

TABLE 11–1 MINIMUM TRENCH WIDTH TABLE

PIPE DIAMETER	MINIMUM WIDTH	MINIMUM BETWEEN FIRST SAW CUTS	MINIMUM BETWEEN SECOND SAW CUTS	PCC PAVEMENT
<8 in.	24"	4'	6'	SECOND SAW CUTS SHALL BE AT EXISTING JOINTS SEE NOTE #5
8in. – 12in.	30"	4'–6"	6'–6"	
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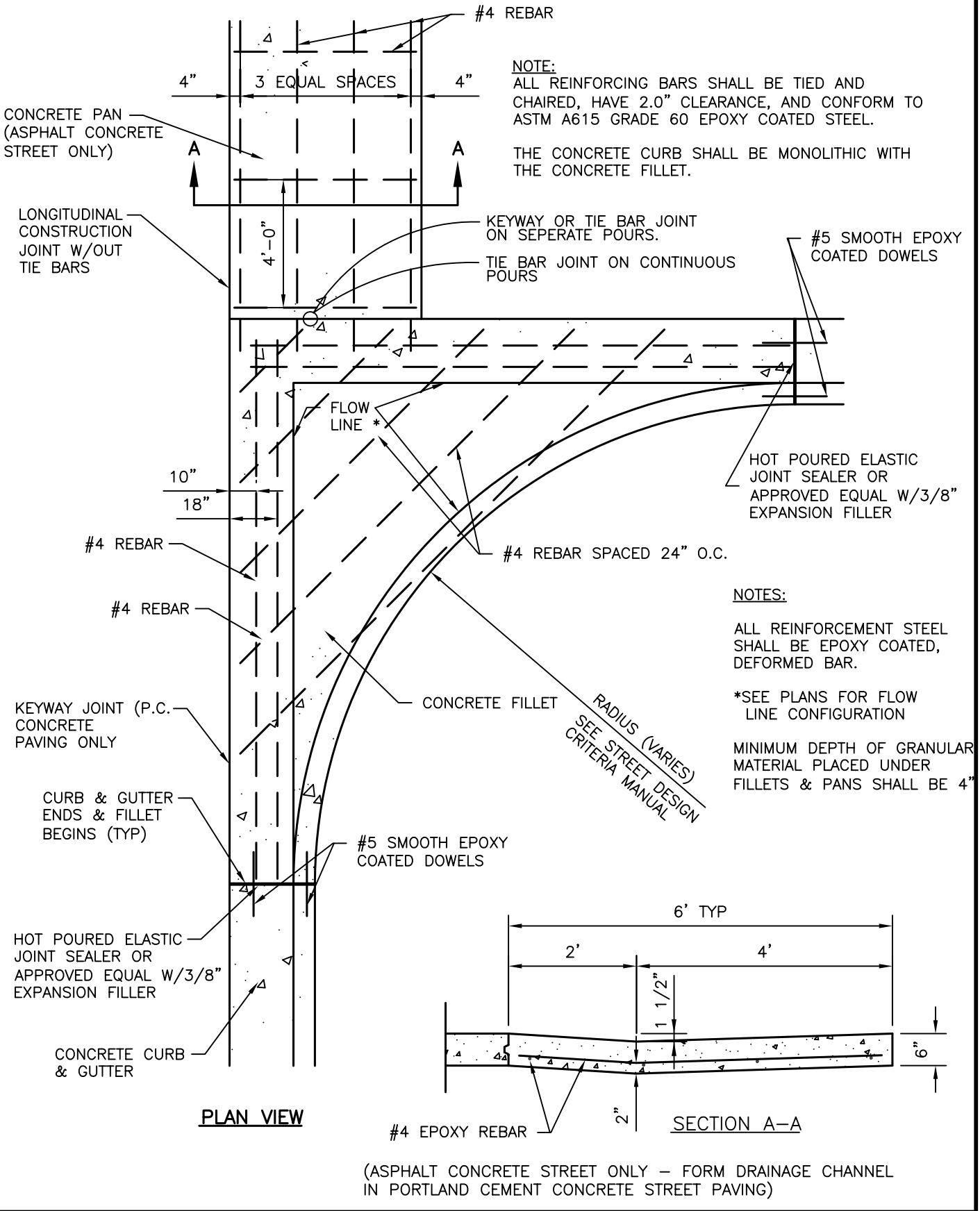
24in. – 36in.	1.25 (PIPE OD) PLUS 12in.	MIN. WIDTH PLUS 2'	MIN. WIDTH PLUS 4'	
>36in.	PER PLANS	MIN. WIDTH PLUS 2'	MIN. WIDTH PLUS 4'	

CITY OF RAPID CITY — PUBLIC WORKS DEPARTMENT

GEOGRID/FABRIC UTILITY TRENCH PATCH DETAIL

DATE: 5–1–07

SEC. 41–2 SHT.



NOTE:
ALL REINFORCING BARS SHALL BE TIED AND CHAIRED, HAVE 2.0" CLEARANCE, AND CONFORM TO ASTM A615 GRADE 60 EPOXY COATED STEEL.

THE CONCRETE CURB SHALL BE MONOLITHIC WITH THE CONCRETE FILLET.

NOTES:

ALL REINFORCEMENT STEEL SHALL BE EPOXY COATED, DEFORMED BAR.

*SEE PLANS FOR FLOW LINE CONFIGURATION

MINIMUM DEPTH OF GRANULAR MATERIAL PLACED UNDER FILLETS & PANS SHALL BE 4"

(ASPHALT CONCRETE STREET ONLY – FORM DRAINAGE CHANNEL IN PORTLAND CEMENT CONCRETE STREET PAVING)

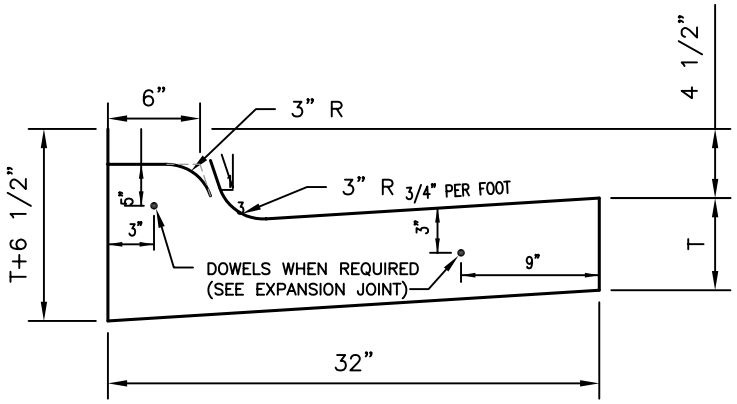
CITY OF RAPID CITY

PUBLIC WORKS DEPARTMENT

REINFORCED PORTLAND CEMENT CONCRETE FILLET & PAN

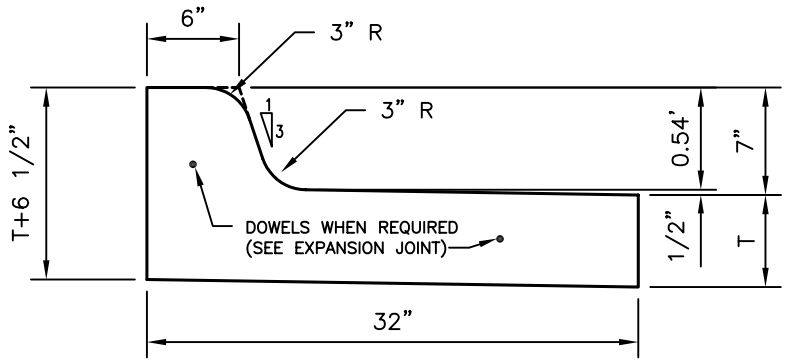
DATE: 5-1-07

SEC. 60 SHT. 1

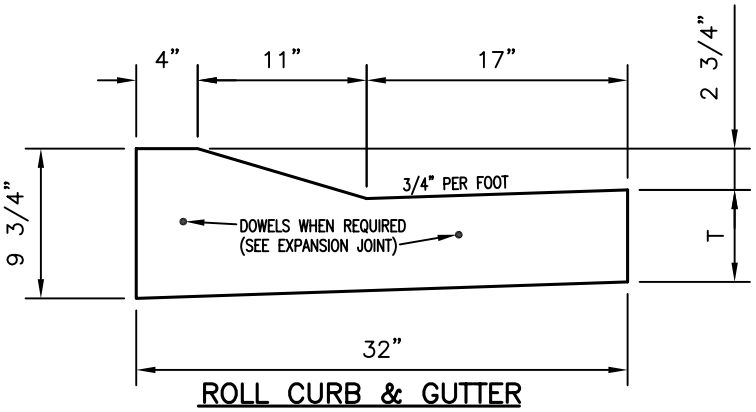


STANDARD CURB & GUTTER (TYPE B)

WHERE T IS EQUAL TO PAVEMENT THICKNESS OR 6", WHICHEVER IS GREATER

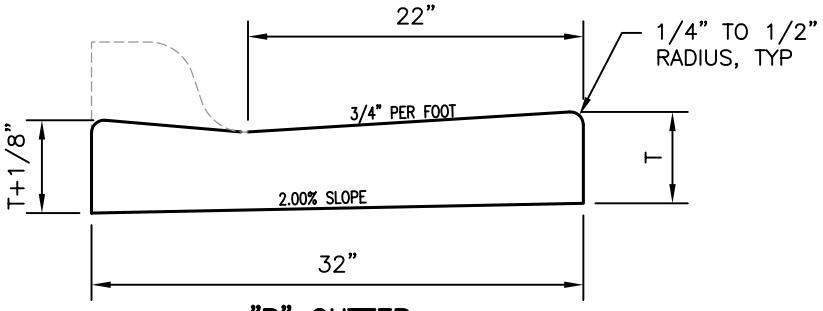


TILTED CURB & GUTTER (TYPE BL)



ROLL CURB & GUTTER

(WHEN APPROVED)



"P" GUTTER

NOTES:

ALL CURB & GUTTER SHALL HAVE A 28 DAY COMPRESSIVE STRENGTH OF NOT LESS THAN 4000 P.S.I. & AIR ENTRAINED 6% ± 1.5% (4.5% TO 7.5%). ALL DESIGN GRADES ARE TOP OF CURB ELEVATIONS UNLESS OTHERWISE INDICATED ON PLANS. EXPANSION JOINT FILLER IS TO BE PLACED IN THE CURB & GUTTER AT EACH JUNCTION OF A RADIUS. IT SHALL BE PLACED AS PER DETAIL. 60-7, TRANSVERSE EXPANSION JOINT OR CONTRACTION JOINTS SHALL BE PLACED IN THE CURB & GUTTER AT 15' MAXIMUM INTERVALS OR MATCH JOINTS OF CONCRETE PAVEMENT. DOWELS WHEN REQUIRED SHALL BE #5 SMOOTH EPOXY COATED.

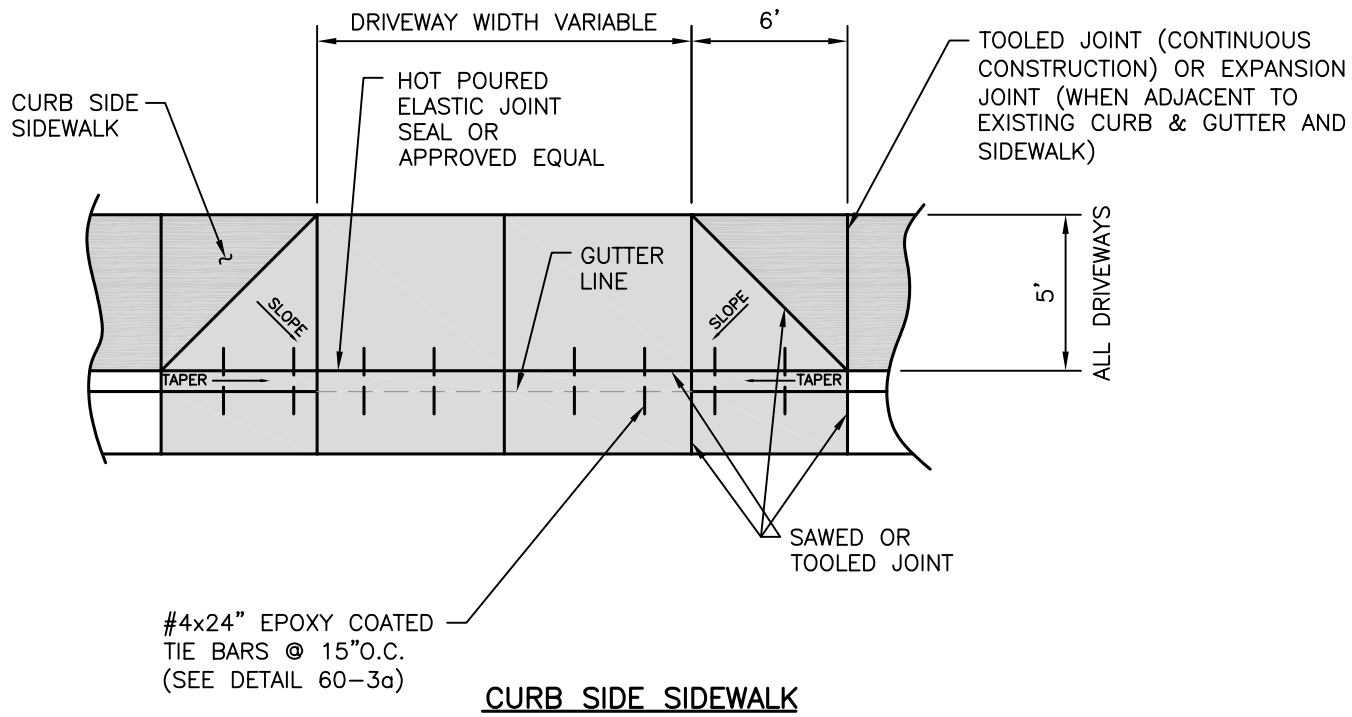
MINIMUM DEPTH OF GRANULAR MATERIAL PLACED UNDER CURB & GUTTER SHALL BE 4".

CITY OF RAPID CITY — PUBLIC WORKS DEPARTMENT

CURB & GUTTER

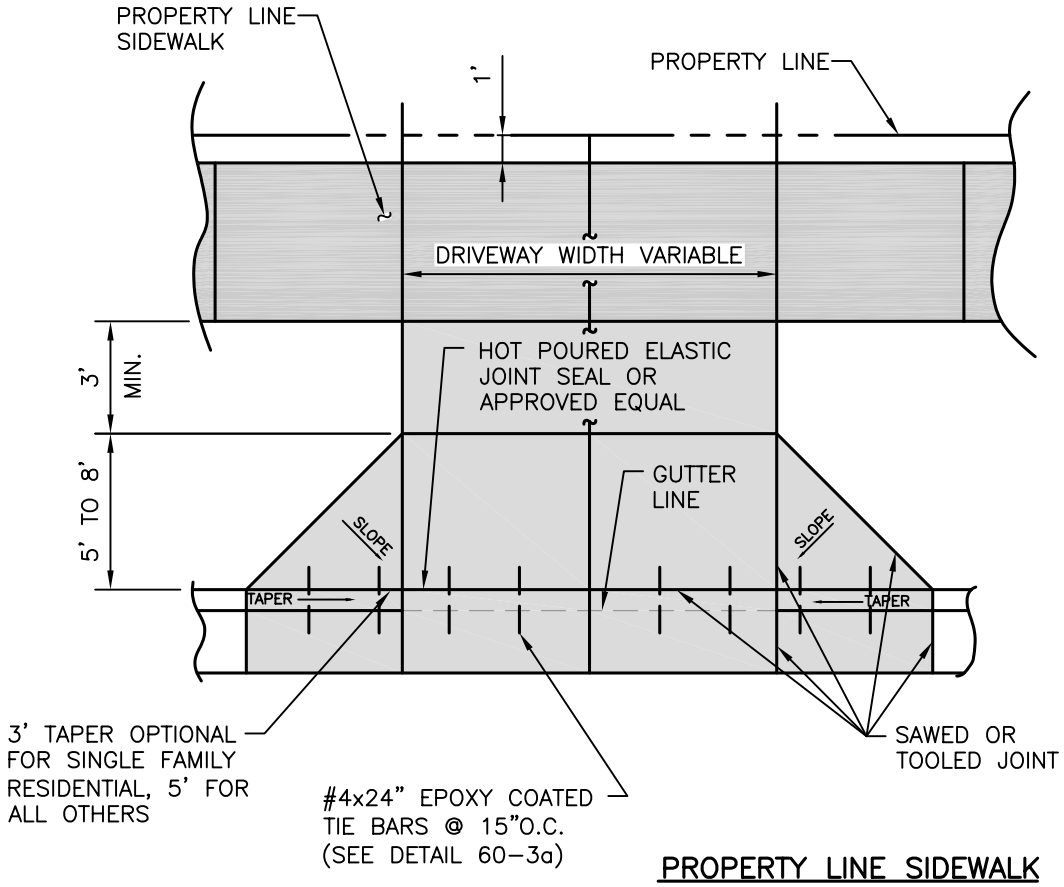
DATE: 5-1-07

SEC. 60-2 SHT.



CURB SIDE SIDEWALK

NOTE:
MINIMUM DEPTH OF GRANULAR MATERIAL PLACED UNDER DRIVEWAY APPROACH SHALL BE 4".



PROPERTY LINE SIDEWALK

CITY OF RAPID CITY — PUBLIC WORKS DEPARTMENT

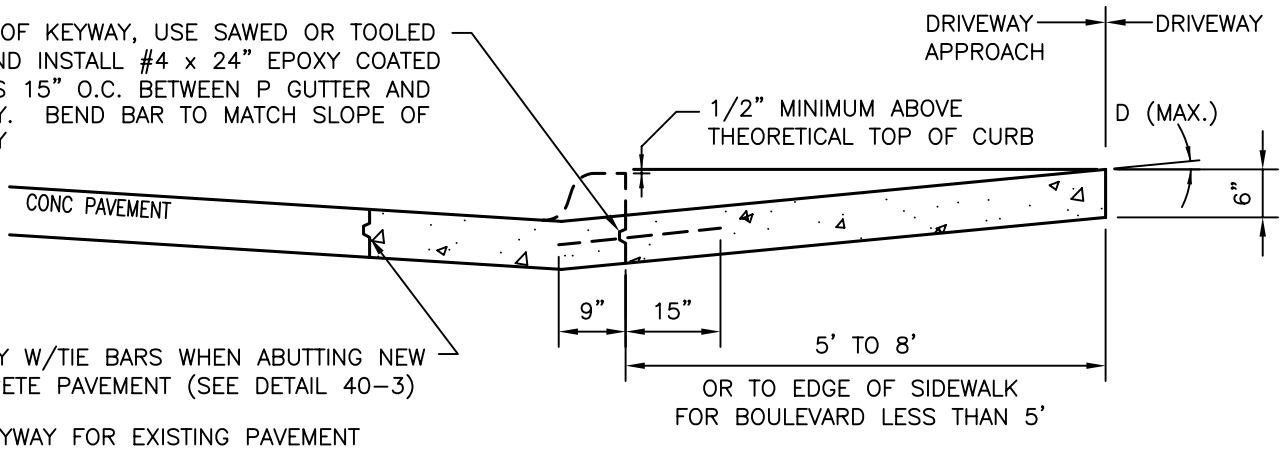
STANDARD DRIVEWAY APPROACH PAVEMENT

DATE: 5-1-07

SEC. 60-3 SHT.

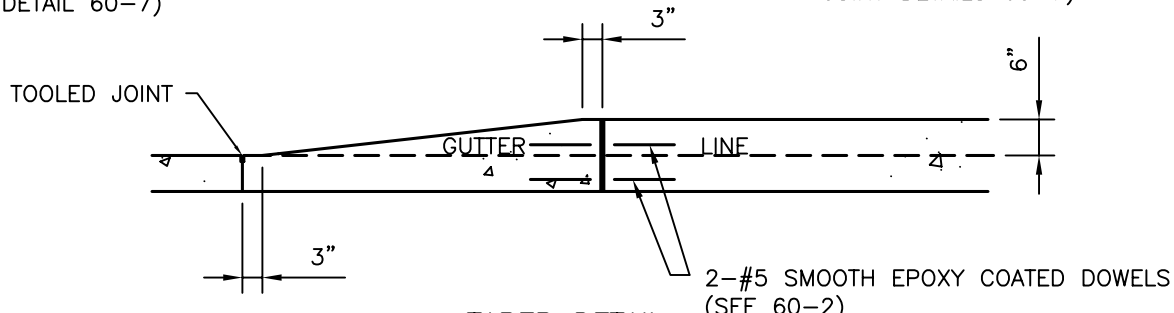
MAXIMUM GRADE CHANGE (D)

	DESIRABLE	MIN.	MAX.
HIGH VOLUME DRIVEWAY	0%	−3%	+3%
LOW−VOLUME DRIVEWAY ON MAJOR OR COLLECTOR STREETS	+3%	−6%	+6%
LOW−VOLUME DRIVEWAY ON LOCAL STREETS	+6%	−6%	+10%



NOTE:
TOOLED JOINT (CONTINUOUS CONSTRUCTION) OR EXPANSION JOINT (WHEN ADJACENT TO EXISTING CURB & GUTTER) (SEE CURB & GUTTER DETAILS 60−2 AND EXPANSION JOINT DETAIL 60−7)

NOTE:
WHEN REMOVING EXISTING CURB & GUTTER FOR NEW APPROACH CONSTRUCTION, AN EXPANSION JOINT SHALL BE CONSTRUCTED. (SEE JOINT DETAILS 60−7)



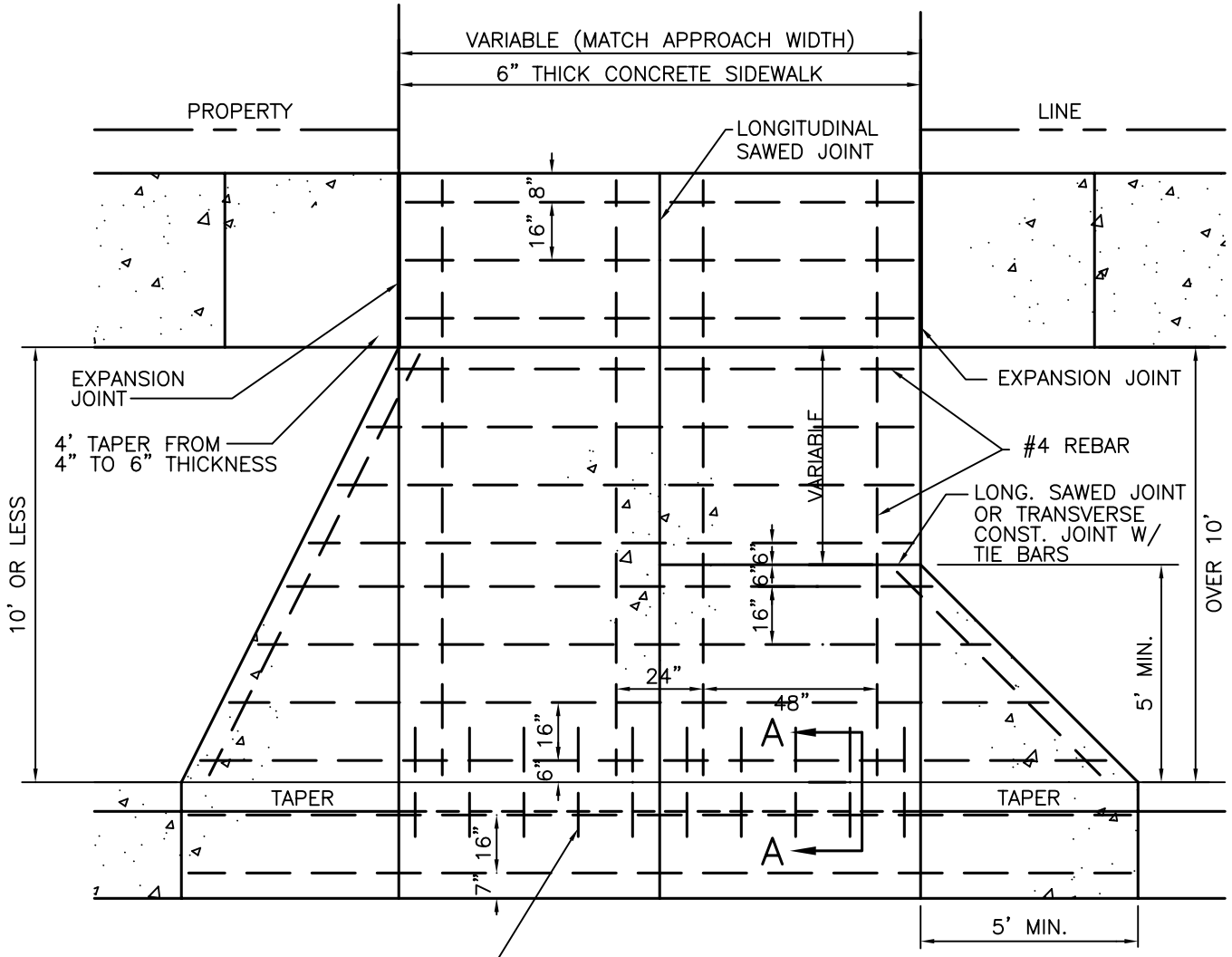
TAPER DETAIL

CITY OF RAPID CITY — PUBLIC WORKS DEPARTMENT

STANDARD DIRVEWAY

DATE: 5−1−07

SEC. 60−3a SHT.

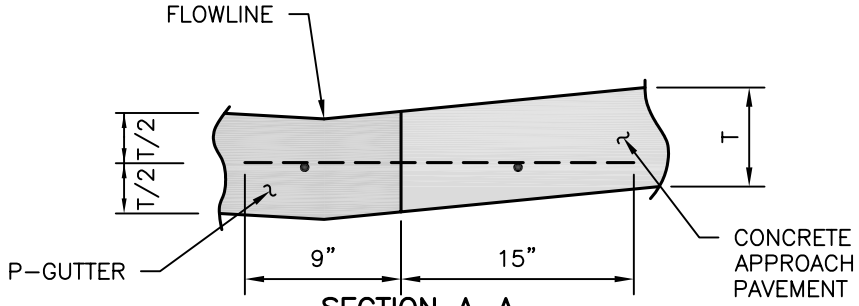


#4 x 24" EPOXY COATED TIE BARS @ 15" O.C. TO BE PLACED BETWEEEN P-GUTTER & DRIVEWAY

NOTE:
MINIMUM DEPTH OF GRANULAR MATERIAL PLACED UNDER REINFORCED DRIVEWAY APPROACH SHALL BE 4".

WHEN REMOVING EXISTING CURB & GUTTER FOR NEW APPROACH CONSTRUCTION, AN EXPANSION JOINT SHALL BE CONSTRUCTED. (SEE JOINT DETAILS 60-7)

REINFORCED DRIVEWAY & SIDEWALK SHALL BE PLACED AT ALL ALLEY ENTRANCES & AT DRIVEWAYS INTO PROPERTY WHICH IS MULTI-FAMILY, COMMMERCIAL, LIGHT INDUSTRIAL & HEAVY INDUSTRIAL. #4 EPOXY COATED REBAR SHALL BE PLACED AS PER DETAIL & TIED TOGETHER. TWO INCH (2") CLEARANCE SHALL BE MAINTAINED BETWEEN BOTTOM OF CONCRETE & REBAR. (PROPERTY LINE SIDEWALK SHOWN)



SECTION A-A

CITY OF RAPID CITY

PUBLIC WORKS DEPARTMENT

REINFORCED DRIVEWAY APPROACH

DATE: 5-1-07

SEC. 60-4 SHT.

DRIVEWAY PROFILE GRADE

CITY OF RAPID CITY

PUBLIC WORKS DEPARTMENT

SEC. 60-5 SHT.

DATE: 5-1-07

HEIGHT OF GARAGE FLOOR ABOVE GUTTER FLOWLINE

$H = WS + WS + WS + WS + WS$

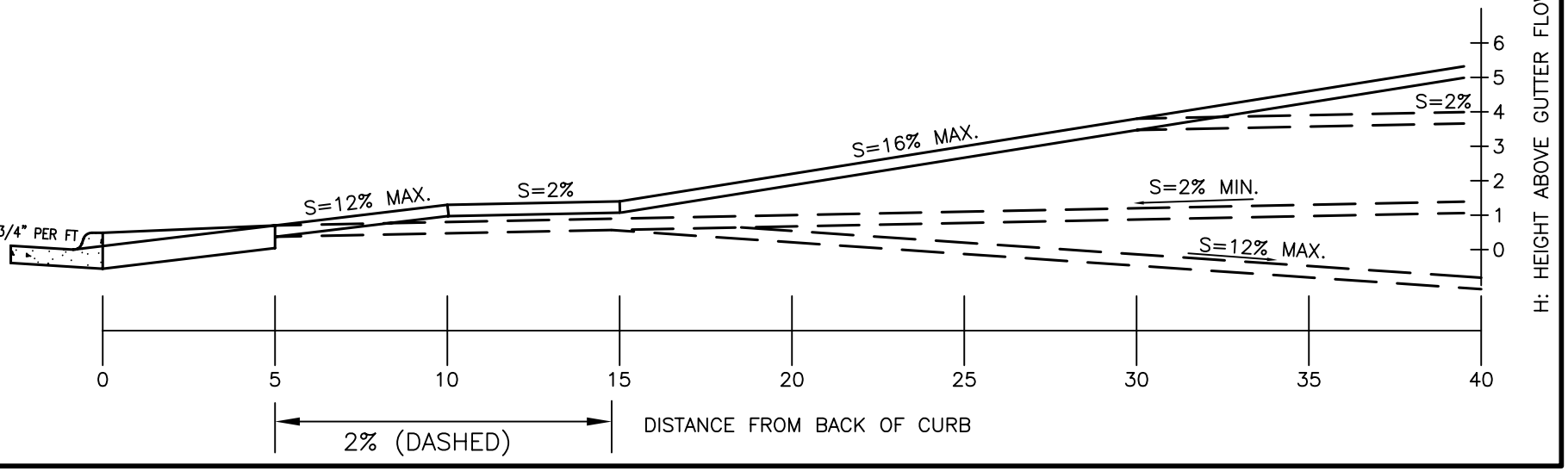
$= 0.6 + \_\_\_\_ + \_\_\_\_ + \_\_\_\_ + \_\_\_\_$

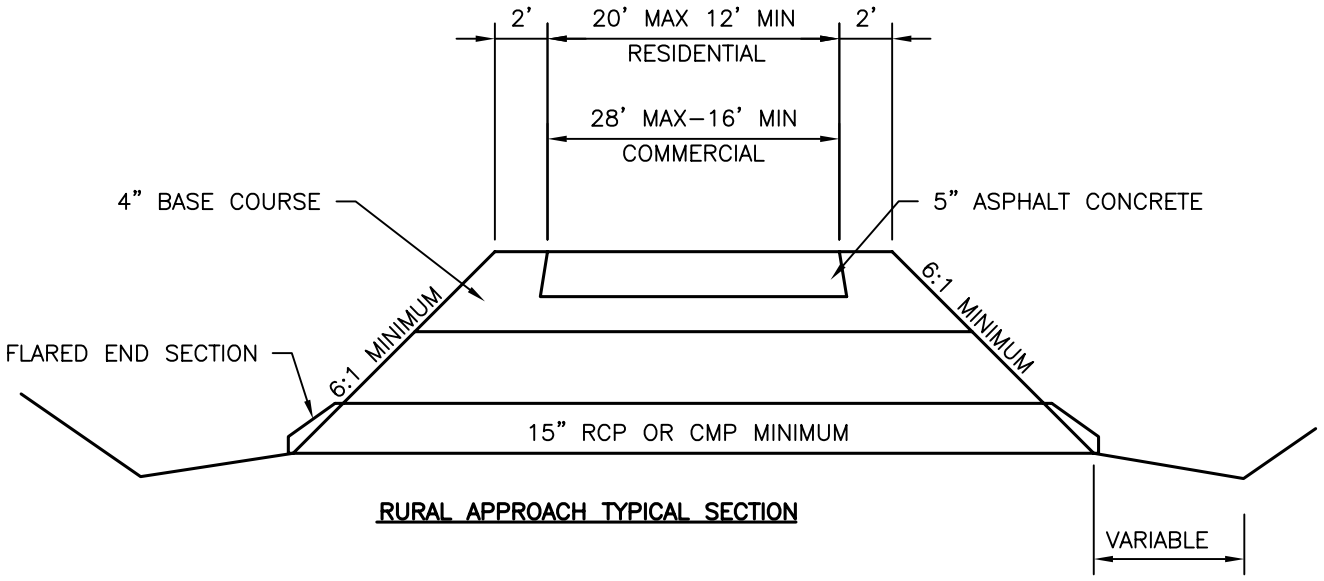
$= \_\_\_\_$

DISTANCE FROM BACK OF CURB TO GARAGE

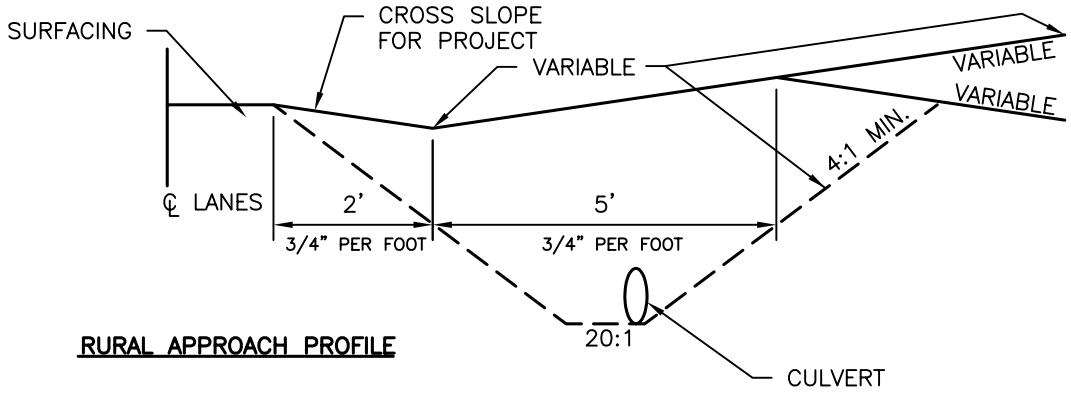
$W = W_1 + W_2 + W_3 + W_4 + W_5 = \_\_\_\_$

W_1 5' S_1 0.12	W_2 ____ S_2 ____	W_3 ____ S_3 0.02	W_4 ____ S_4 ____	W_5 ____ S_5 ____
APPROACH PAVEMENT BIKE PATH	EXTENSION	SIDEWALK OR BIKE PATH	DRIVEWAY	DRIVEWAY LEVELING

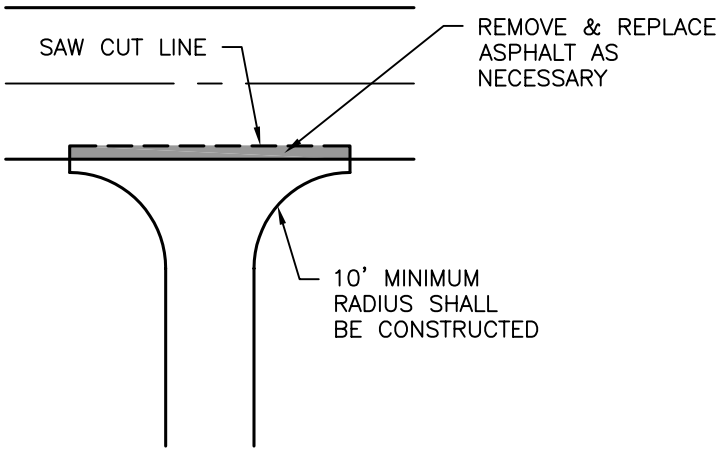




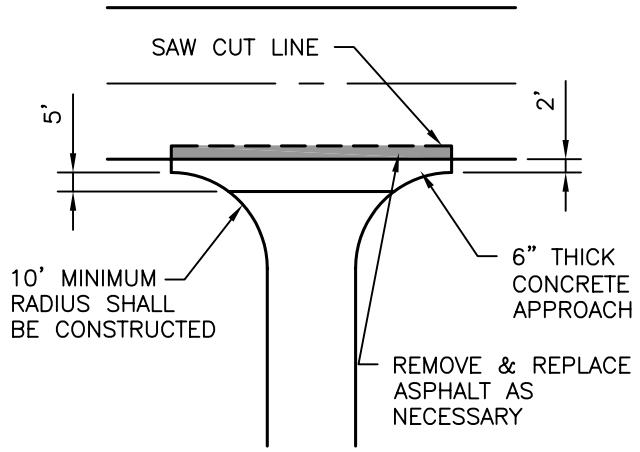
RURAL APPROACH TYPICAL SECTION



RURAL APPROACH PROFILE



ASPHALT APPROACH PLAN



CONCRETE APPROACH PLAN

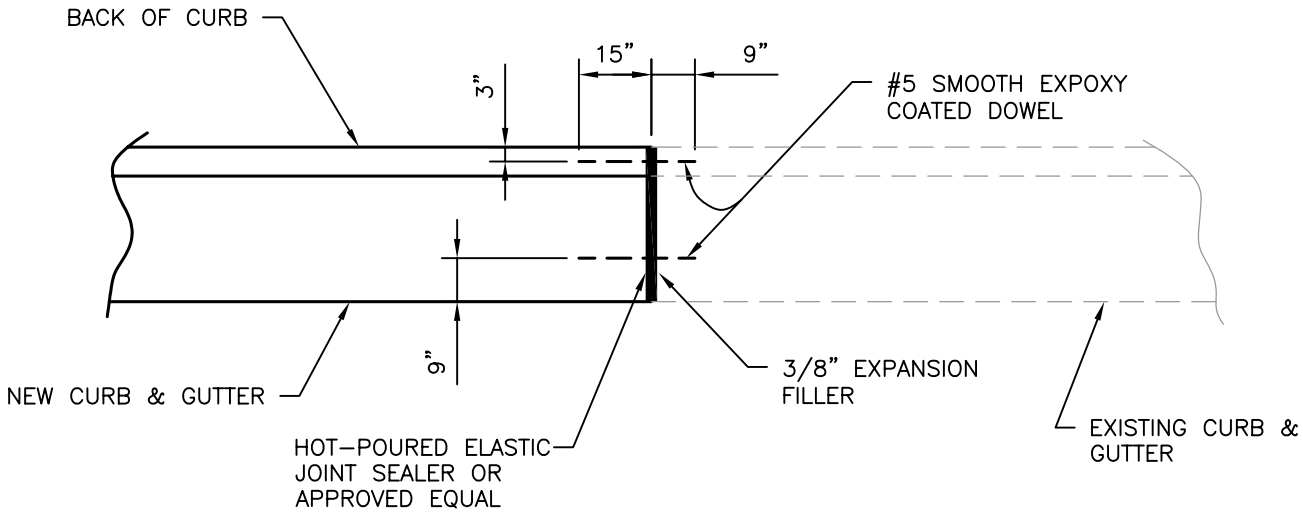
MAXIMUM GRADE OF THE APPROACH IN THE RIGHT–OF–WAY SHALL NOT EXCEED 10%.
CULVERTS SHALL BE SIZED TO ASSURE PROPER DRAINAGE.
CONSTRUCT APPROACH SO AS NOT TO TO DIRECT DRAINAGE ONTO THE ROADWAY.
CONSTRUCT APPROACH PERPENDICULAR TO THE STREET OR ROAD.

CITY OF RAPID CITY — PUBLIC WORKS DEPARTMENT

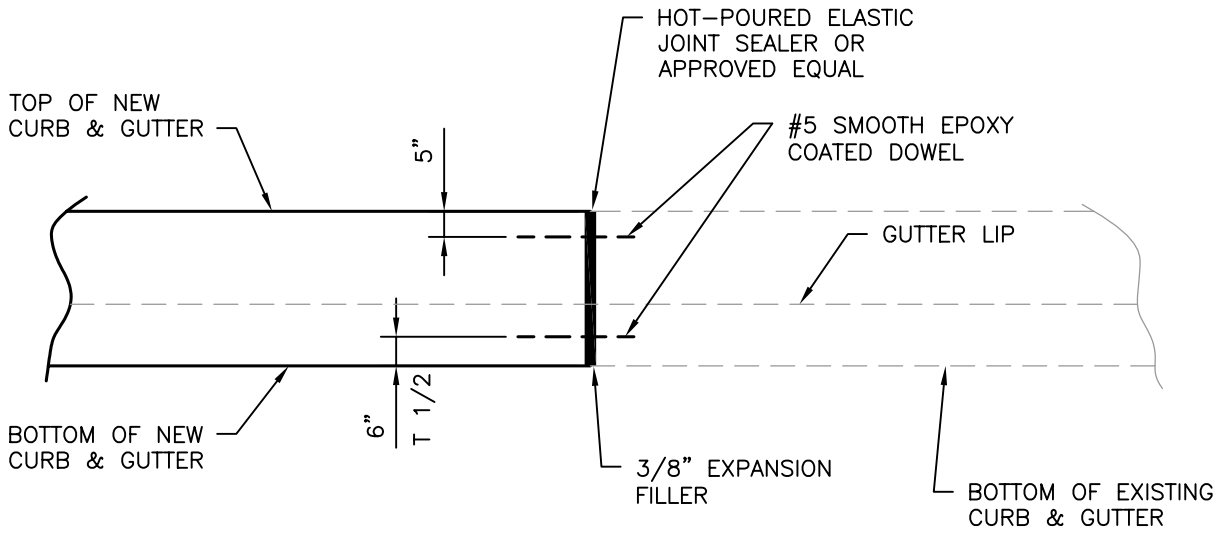
RURAL STREET SECTION STANDARD
DRIVEWAY APPROACH PAVEMENT

DATE: 5–1–07

SEC. 60–6 SHT.



PLAN



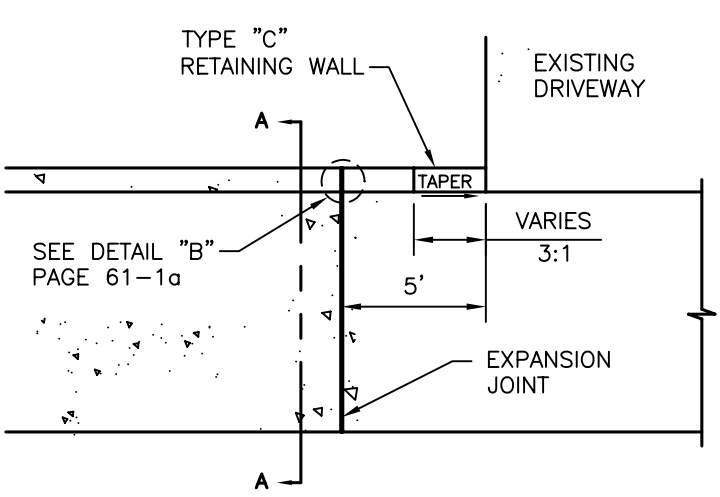
PROFILE

CITY OF RAPID CITY | PUBLIC WORKS DEPARTMENT

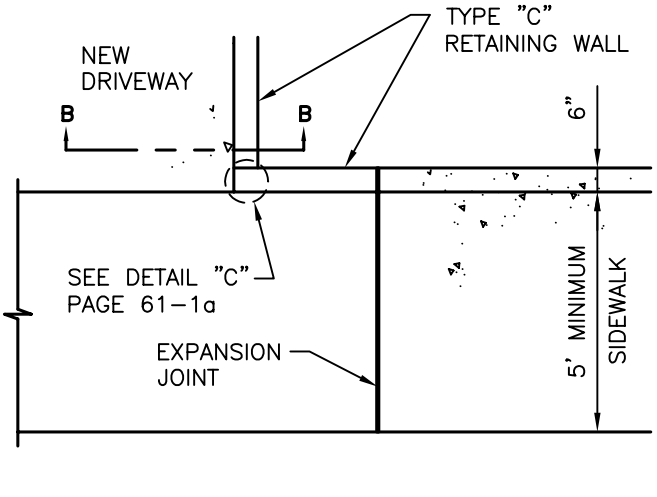
CURB & GUTTER EXPANSION JOINT

DATE: 5-1-07

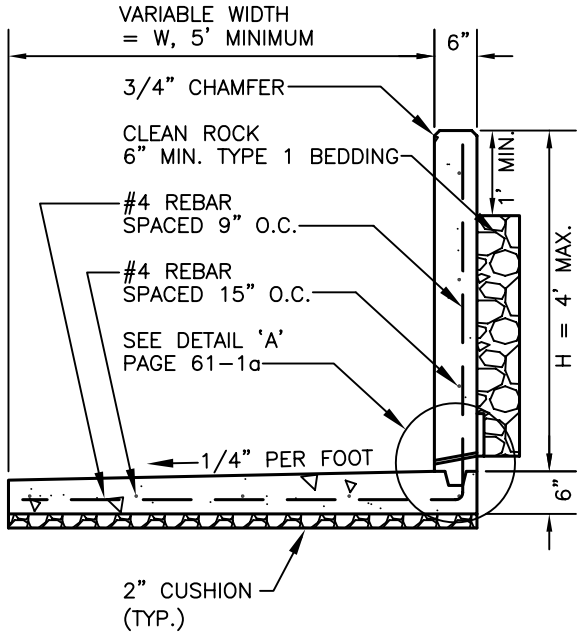
SEC. 60-7 SHT.



PLAN VIEW – EXISTING DRIVEWAY

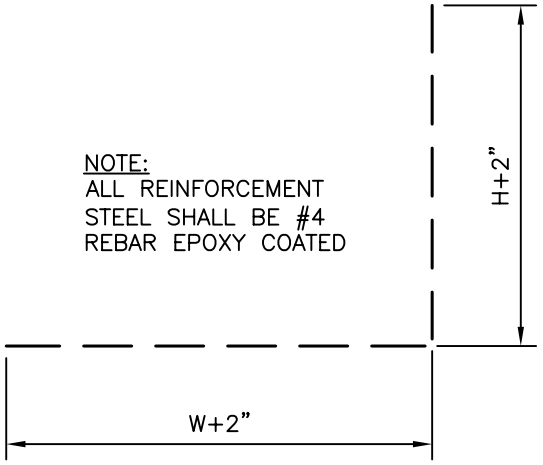


PLAN VIEW – NEW DRIVEWAY

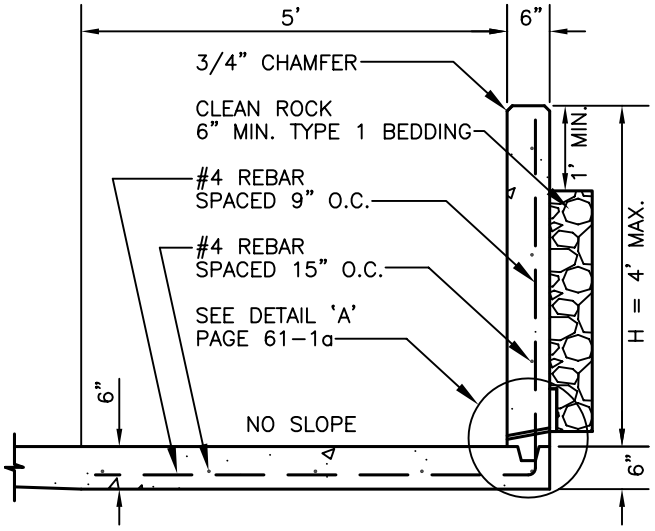


SECTION A–A

NOTE:
ALL REINFORCEMENT
STEEL SHALL BE #4
REBAR EPOXY COATED



BAR BENDING



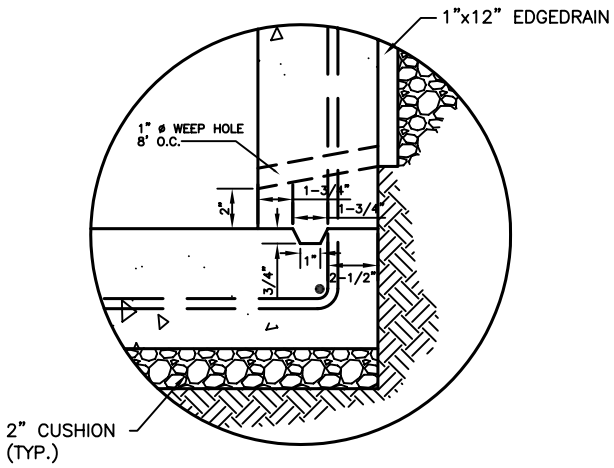
SECTION B–B

CITY OF RAPID CITY | PUBLIC WORKS DEPARTMENT

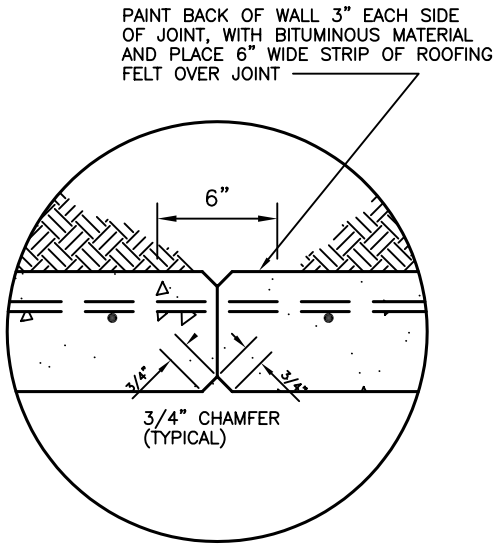
TYPE "C" RETAINING WALL

DATE: 5-1-07

SEC. 61-1 SHT.



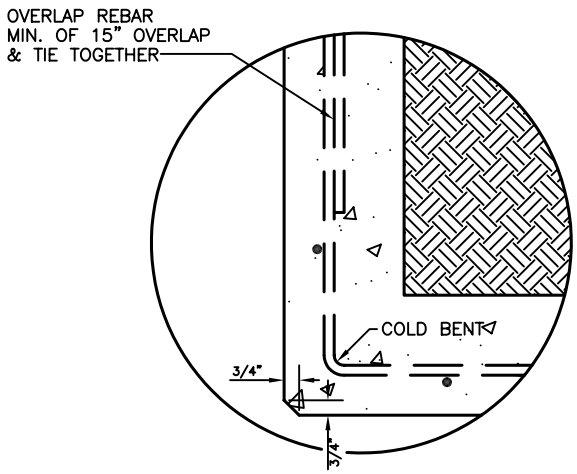
DETAIL 'A'



JOINTS SPACED 15' MAX. &
COINCIDE WITH SIDEWALK JOINTS.

DETAIL 'B'

PLAN VIEW



DETAIL 'C'

PLAN VIEW

GENERAL NOTES:

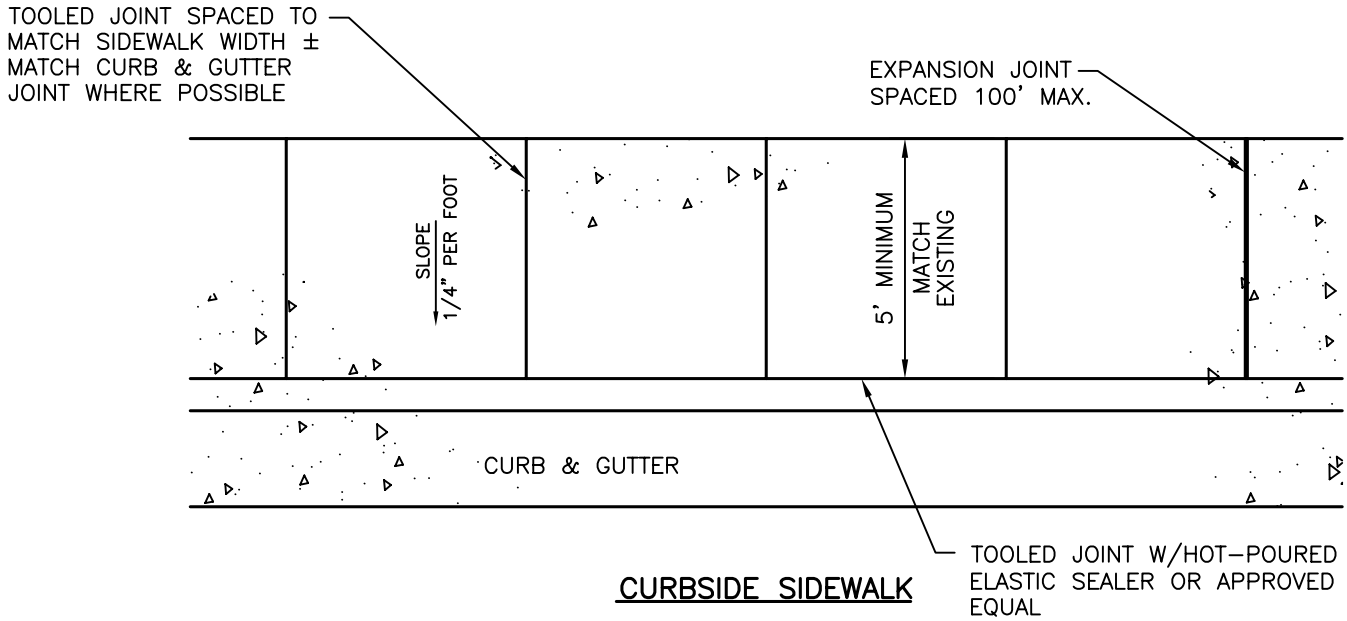
1. CONCRETE FOR RETAINING WALLS SHALL BE POURED ON UNDISTURBED SOIL. ANY NECESSARY BACK FILLING SHALL BE WITH A MECHANICAL TAMPER, OR AS APPROVED BY THE ENGINEER.
2. THE CONTRACTOR MUST USE KEY JOINT WHEN THE SLAB AND THE WALL ARE POURED SEPARATELY. (SEE DETAIL 'A').
3. A 3/4" CHAMFER SHALL BE USED ON ALL EXPOSED EDGES OF THE RETAINING WALL.
4. ON VARIABLE HEIGHT WALLS THE TOP BAR SHALL BE PLACED PARALLEL TO THE TOP OF THE WALL
5. ALL STEEL SHALL BE PLACED 2" FROM THE BACK AND BOTTOM OF THE RETAINING WALL AND SLAB.
6. ALL STEEL SHALL BE OVERLAPPED 15" AT EACH SPLICE.

CITY OF RAPID CITY | PUBLIC WORKS DEPARTMENT

TYPE "C" RETAINING WALLS

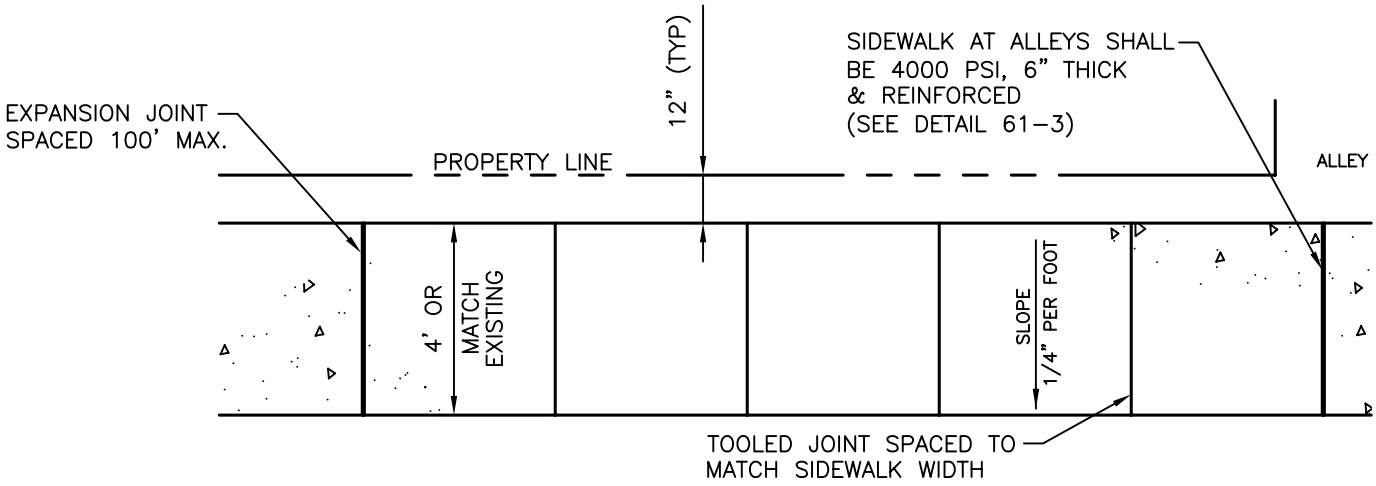
DATE: 5-1-07

SEC. 61-1a | SHT.



CURBSIDE SIDEWALK

ALL SIDEWALKS SHALL BE A MINIMUM OF 4" THICK 4000 PSI CONCRETE WITH A MINIMUM OF 2" OF COMPACTED CUSHION MATERIAL PLACED UNDER THE SIDEWALK



PROPERTY LINE SIDEWALK

CITY OF RAPID CITY	PUBLIC WORKS DEPARTMENT
SIDEWALKS	DATE: 5-1-07
	SEC. 61-2 SHT.

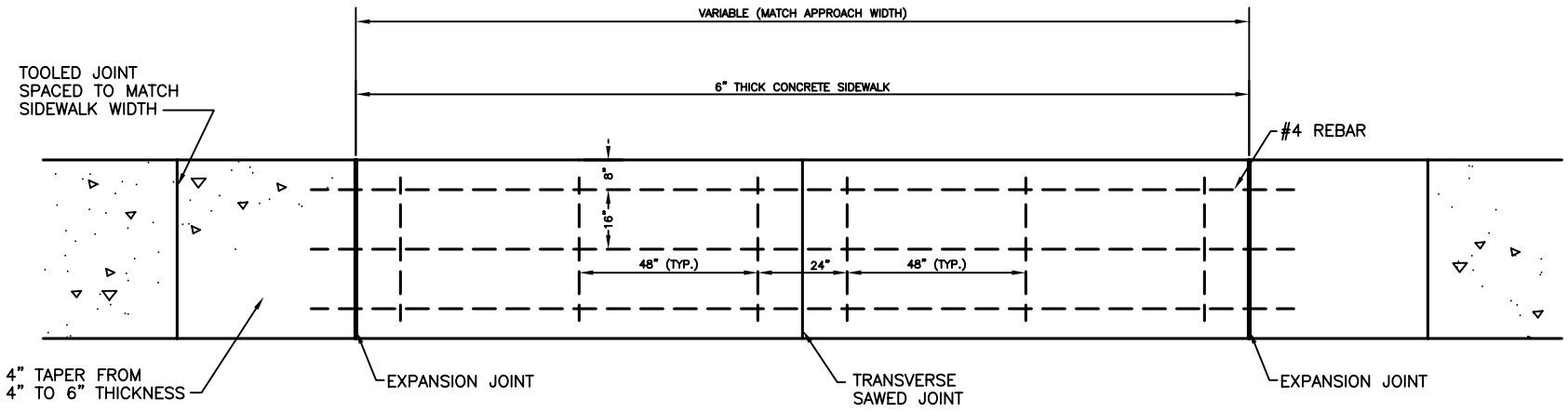
CITY OF RAPID CITY

PUBLIC WORKS DEPARTMENT

REINFORCED SIDEWALKS (MULTI-FAMILY, ALLEY ENTR., INDUSTRIAL & COMMERCIAL APPLICATIONS

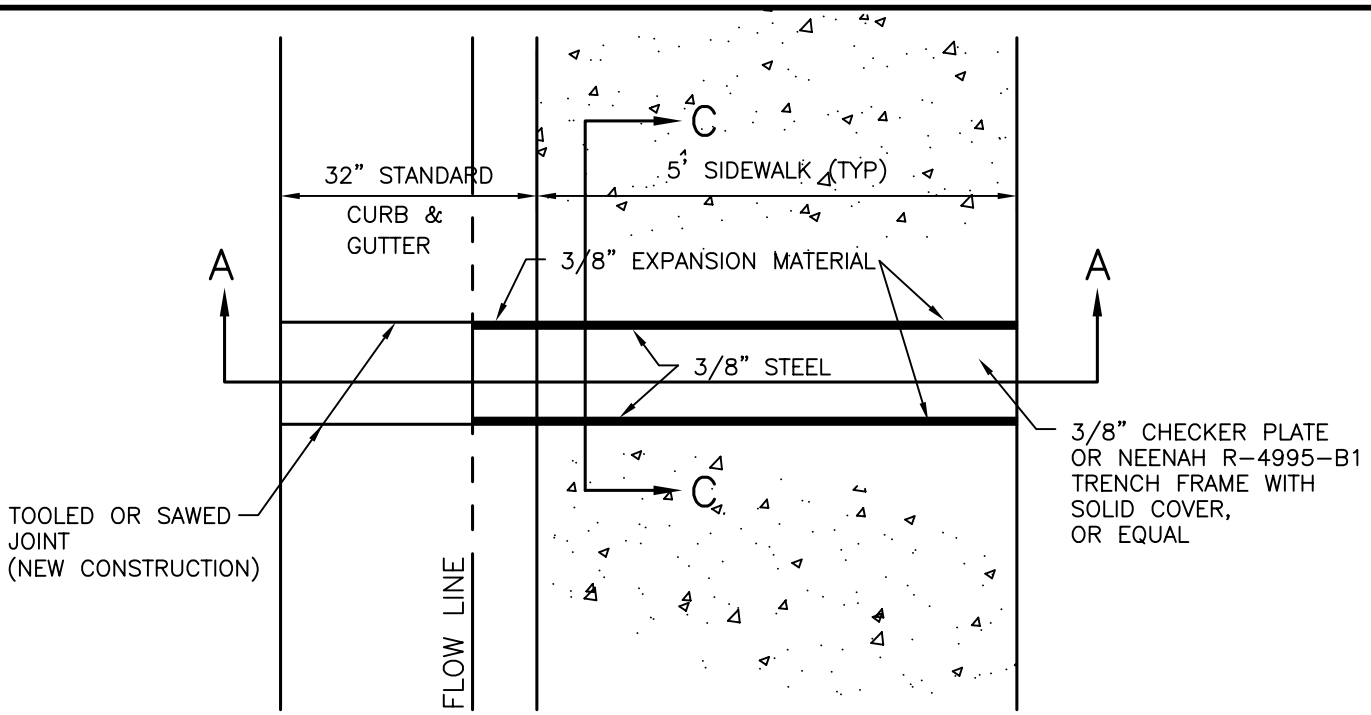
DATE: 5-1-07

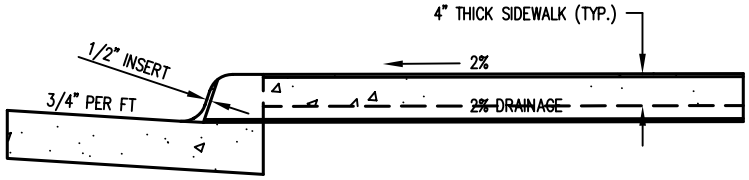
SEC. 61 – 3 SHT.



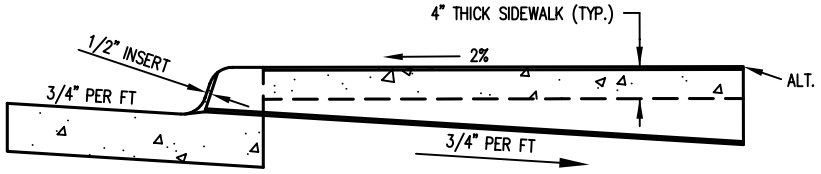
6" REINFORCED SIDEWALK

REINFORCED SIDEWALK SHALL BE PLACED AT ALL ENTRANCES INTO ALLEYS, PARKING LOTS, AND PROPERTY WHICH IS ZONED COMMERCIAL, LIGHT INDUSTRIAL & HEAVY INDUSTRIAL. #4 EPOXY COATED REBAR SHALL BE PLACED AS PER DETAIL AND TIED TOGETHER. TWO INCH (2") CLEARANCE SHALL BE MAINTAINED BETWEEN BOTTOM OF CONCRETE & REBAR. MINIMUM DEPTH OF GRANULAR MATERIAL PLACED UNDER REINFORCED SIDEWALK SHALL BE 4".

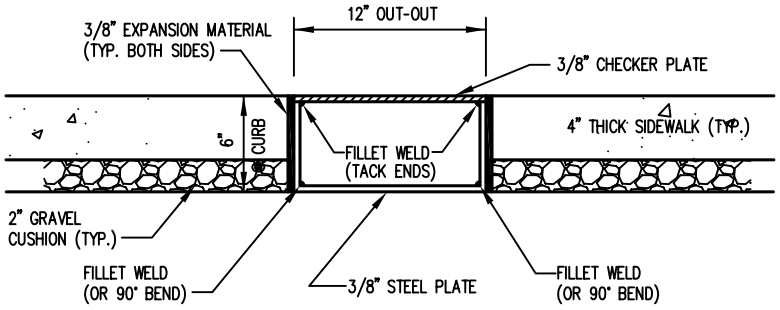




SECTION A–A – DRAINAGE INTO GUTTER



SECTION A–A – DRAINAGE FROM GUTTER TO DESIGNATED DISCHARGE LOCATION



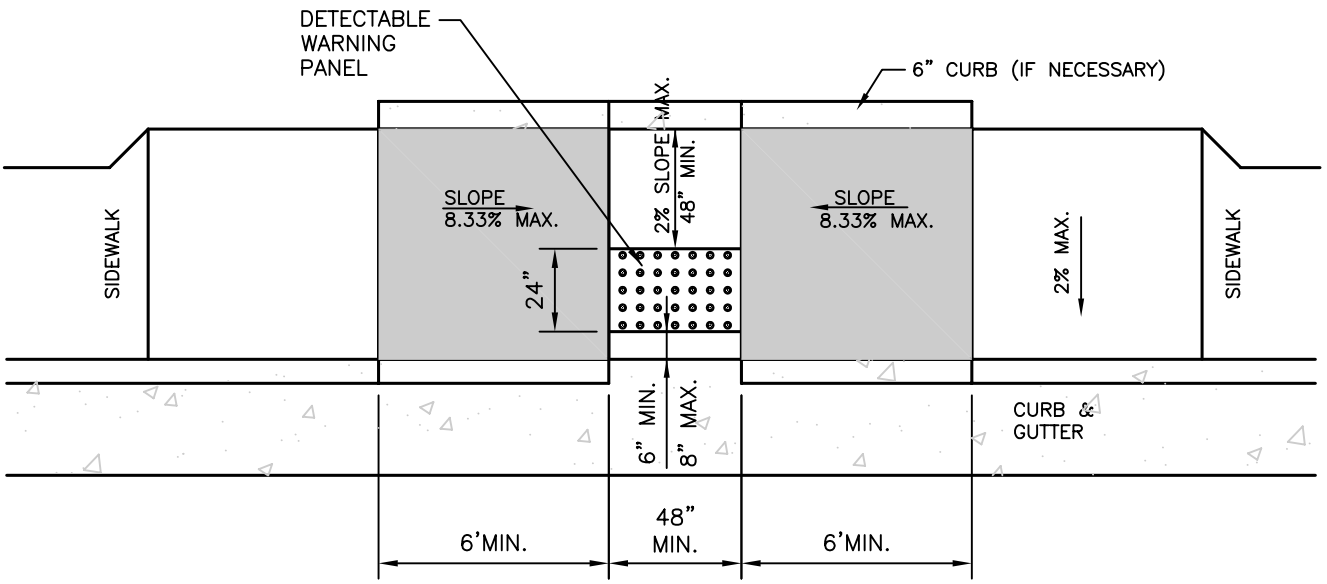
SECTION C–C

CITY OF RAPID CITY | PUBLIC WORKS DEPARTMENT

SIDEWALK GUTTER DRAINS (CURB SIDE SIDEWALK)

DATE: 5–1–07

SEC. 61–4 SHT.



CURB SIDEWALK RAMP

GENERAL NOTES:

SURFACE TEXTURE OF THE RAMP SHALL BE OBTAINED BY A COARSE BROOMING PERPENDICULAR TO THE SLOPE OF THE RAMP.

DETECTABLE WARNING PANEL SHALL BE PER SPECIFICATIONS.

CARE SHALL BE TAKEN TO ASSURE A UNIFORM GRADE ON THE RAMP, FREE OF SAGS AND SHORT GRADE CHANGES.

THE NORMAL GUTTER LINE PROFILE SHALL BE MAINTAINED THROUGH THE AREA OF THE RAMP OPENING.

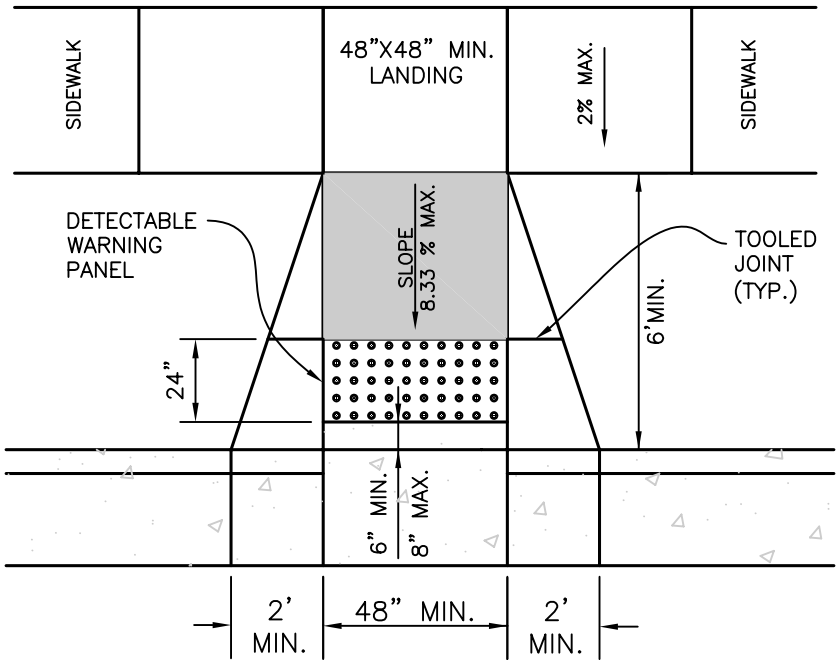
CROSS SLOPES SHALL NOT EXCEED 2%.

WHEN REMOVING EXISTING CURB AND GUTTER FOR NEW RAMP CONSTRUCTION AN EXPANSION JOINT SHALL BE CONSTRUCTED PER DETAIL 60–7.

ALL RAMPS ARE REQUIRED TO HAVE A MAXIMUM 48 INCH BY 48 INCH LANDING AREA WITH NO MORE THAN A 2% SLOPE IN ANY DIRECTION.

ALL RAMPS SHALL HAVE A MAXIMUM RUNNING SLOPE OF 8.33% (1 INCH PER FT.).

OBSTRUCTIONS SUCH AS SIGNAL POLES, LIGHT POLES, TRAFFIC CONTROLLER CABINETS, ETC. CAN NOT BE LOCATED IN THE LANDING AREA OR THE RAMP SLOPE.



PROPERTY LINE SIDEWALK RAMP

ENSURE THE SURFACE OF THE DETECTABLE WARNING PANEL IS CLEAN AND FREE OF RESIDUE.

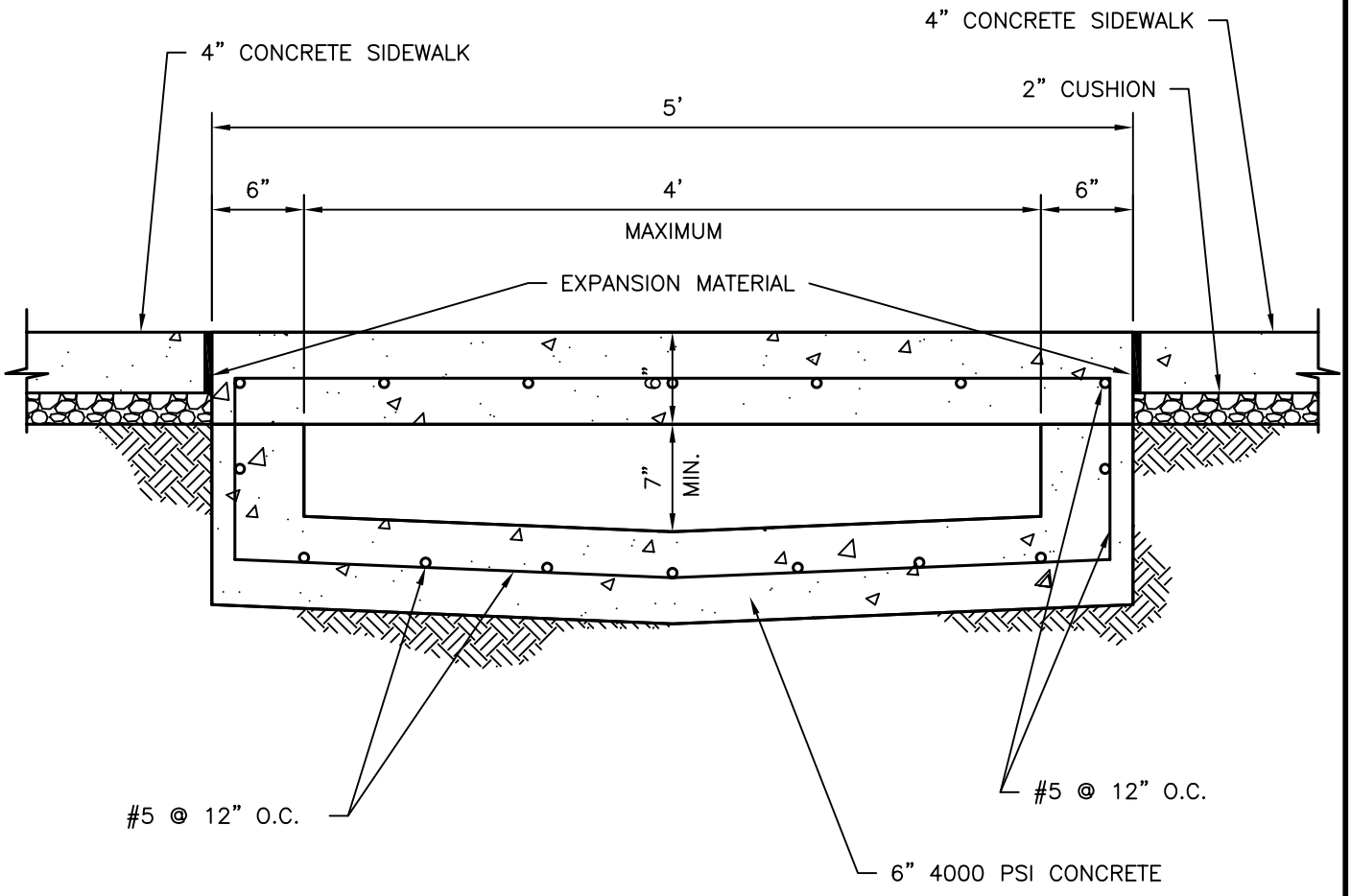
JOINTS SHALL BE TOOLED INTO THE CONCRETE ADJACENT TO THE DETECTABLE WARNING PANELS TO ALLEVIATE POSSIBLE CORNER CRACKING.

CITY OF RAPID CITY — PUBLIC WORKS DEPARTMENT

HANDICAP ACCESS RAMPS

DATE: 5–1–07

SEC. 61–5 SHT.

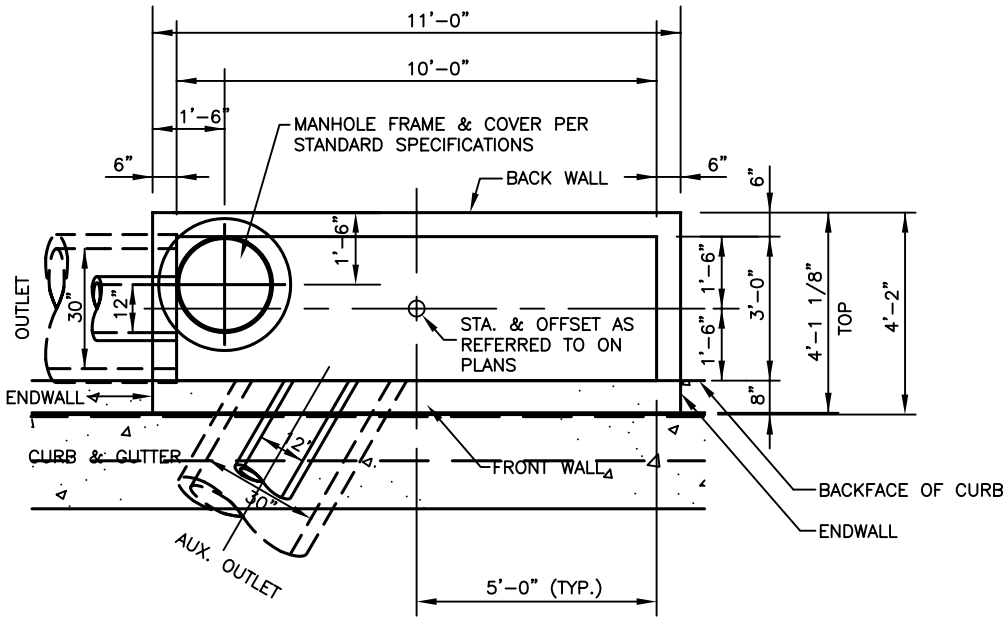


CITY OF RAPID CITY | PUBLIC WORKS DEPARTMENT

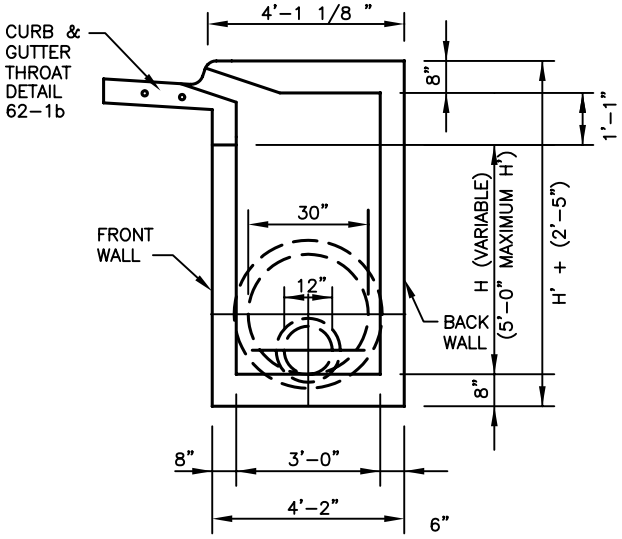
CONCRETE DRAINAGE CHANNEL SECTION

DATE: 5-1-07

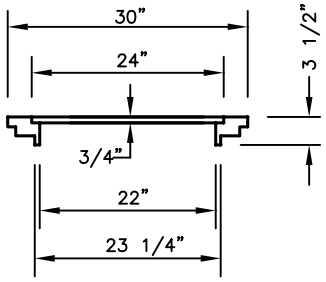
SEC. 61 SHT. 6



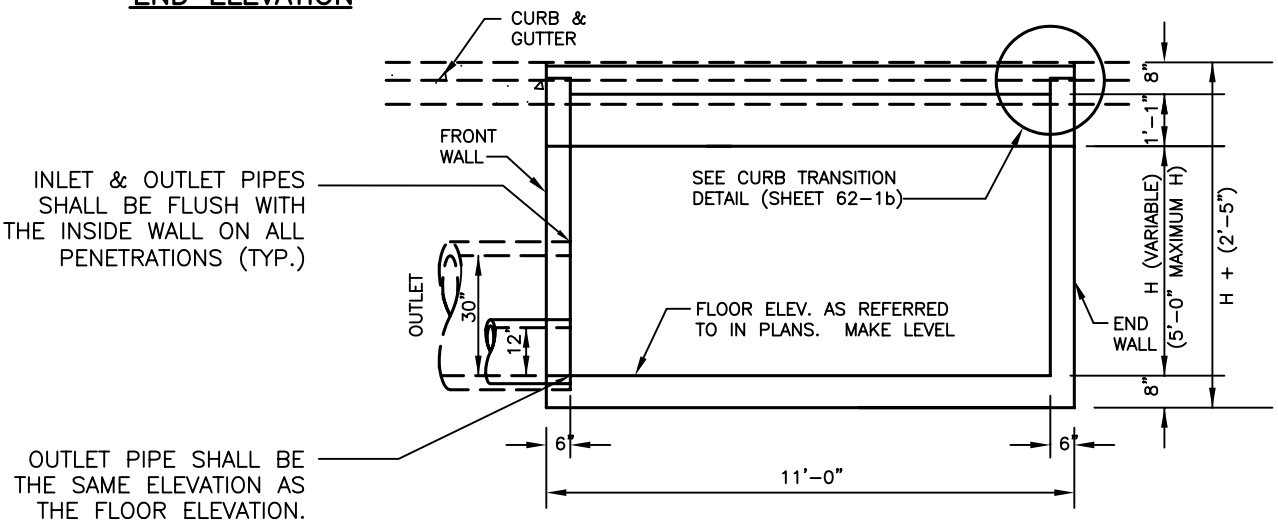
PLAN



END ELEVATION



TYPICAL SECTION THRU
TYPE M FRAME & LID
ASSEMBLY (WEIGHT 140 LBS.)



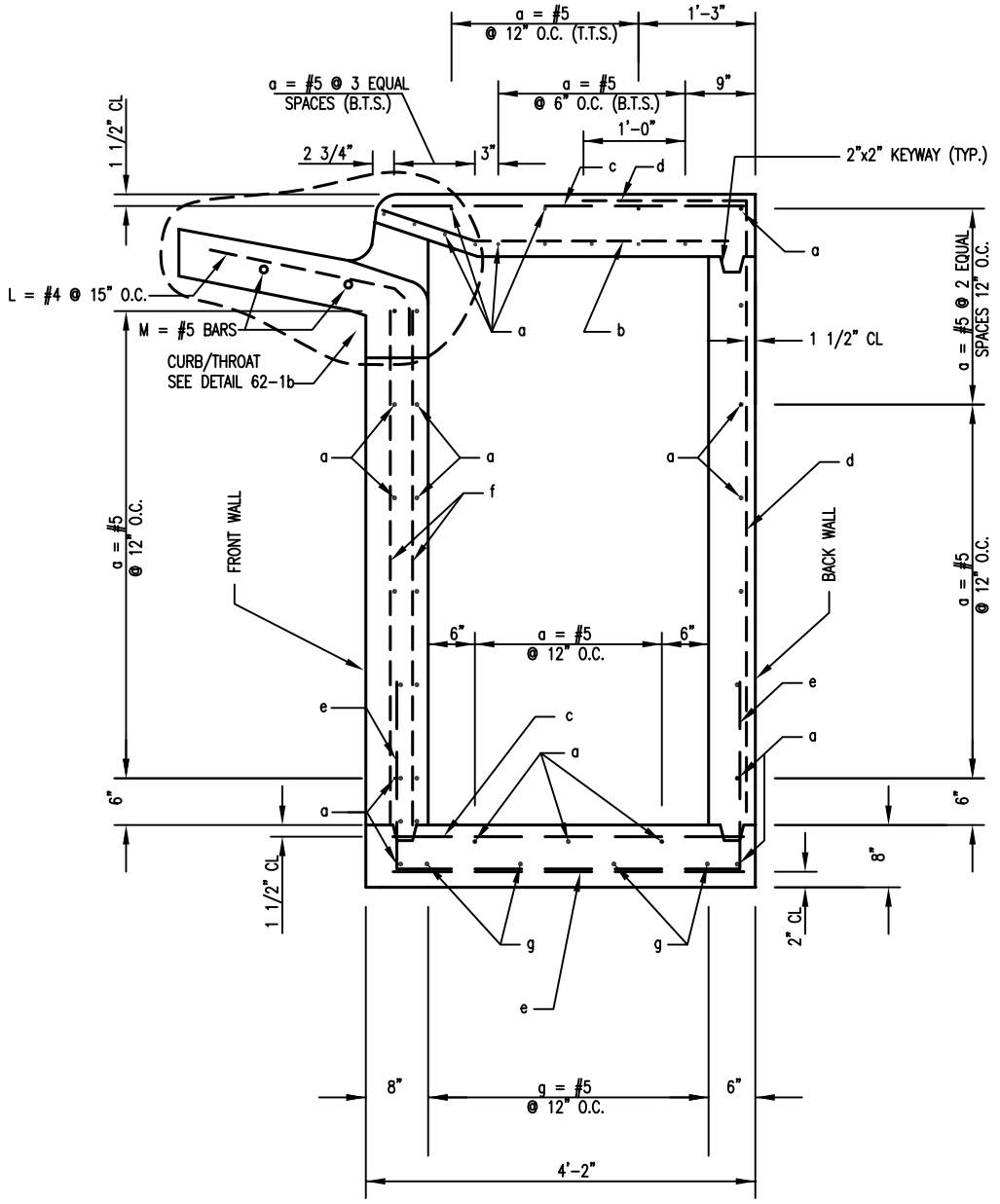
FRONT ELEVATION

CITY OF RAPID CITY — PUBLIC WORKS DEPARTMENT

STANDARD TYPE "E" INLET (12"–30" DIA. PIPE)

DATE: 5–1–07

SEC. 62–1 SHT.



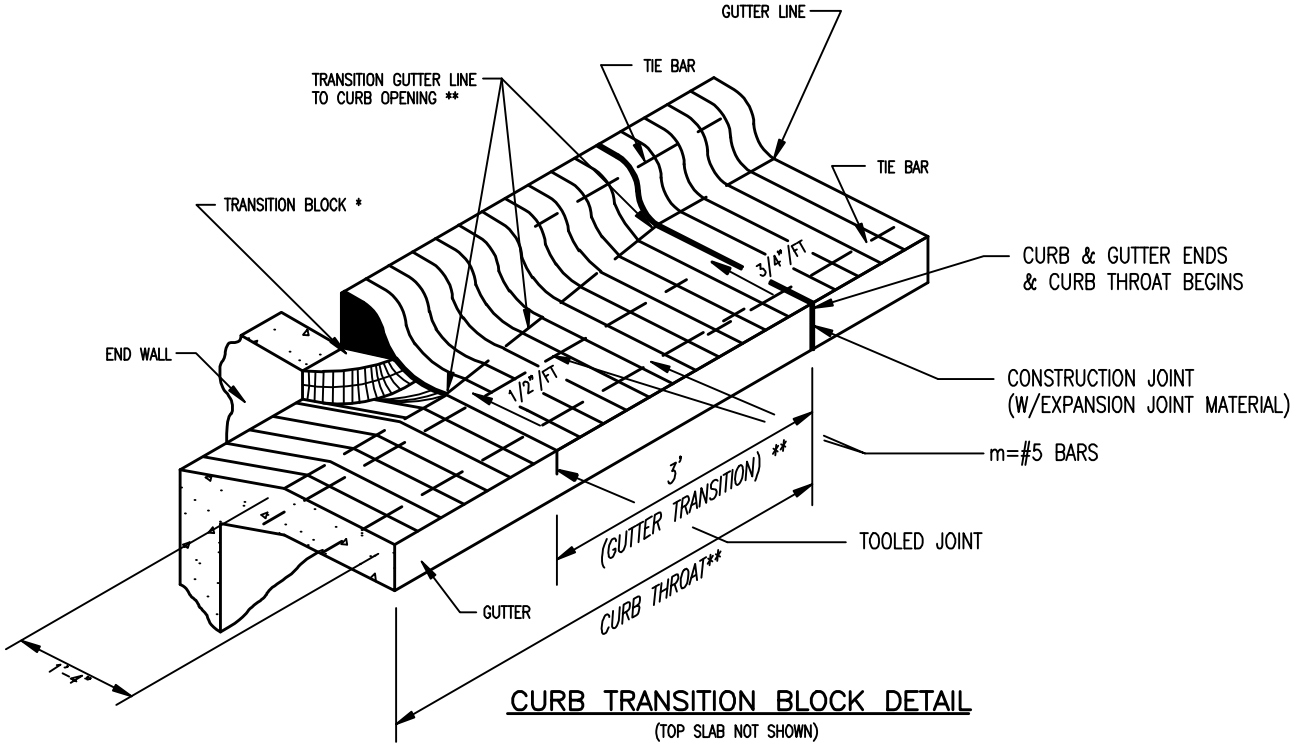
TYPICAL SECTION

CITY OF RAPID CITY — PUBLIC WORKS DEPARTMENT

STANDARD TYPE "E" INLET (12"–30" DIA. PIPE)

DATE: 5–1–07

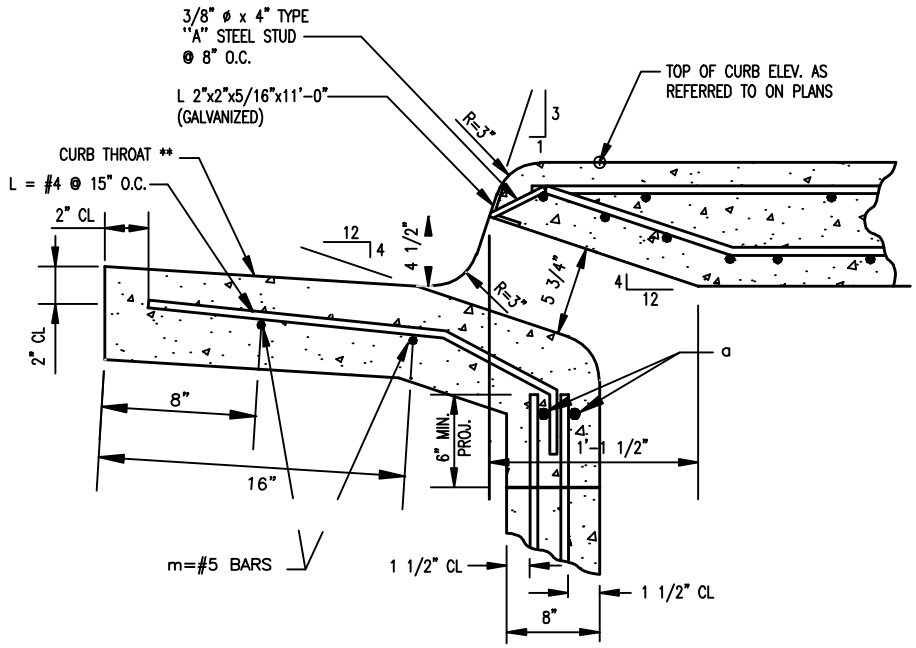
SEC. 62–1a SHT.



CURB TRANSITION BLOCK DETAIL

(TOP SLAB NOT SHOWN)

*TRANSITION BLOCK TO BE POURED MONOLITHIC WITH BOX OR THROAT



* TRANSITION BLOCK TO BE POURED MONOLITHIC WITH BOX OR THROAT.

** THE CURB THROAT COMPONENT SHALL BE THE LAST POUR ON THE INLET (AFTER THE LID).

** NO CURB OPENINGS (HANDICAP RAMPS, DRAINS, ETC) SHALL BE PERMITTED WITHIN THE CURB TRANSITION AREA. THIS INCLUDES THE TRANSITION/TAPER OF THE CURB OPENINGS

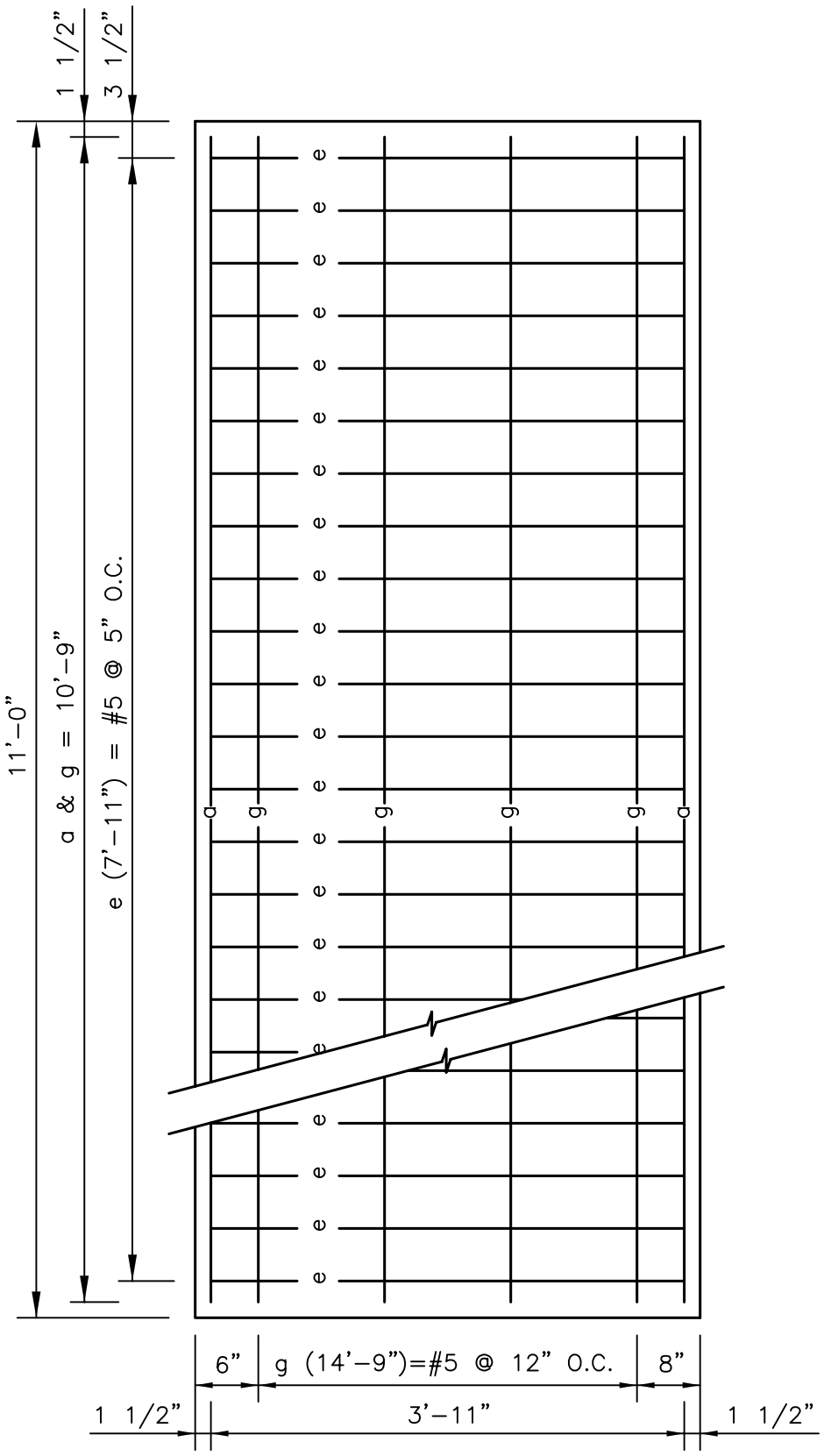
CURB/THROAT DETAIL

CITY OF RAPID CITY — PUBLIC WORKS DEPARTMENT

GUTTER TRANSITION AND CURB TRANSITION BLOCK DETAIL

DATE: 5-1-07

SEC. 62 — SHT. 1b

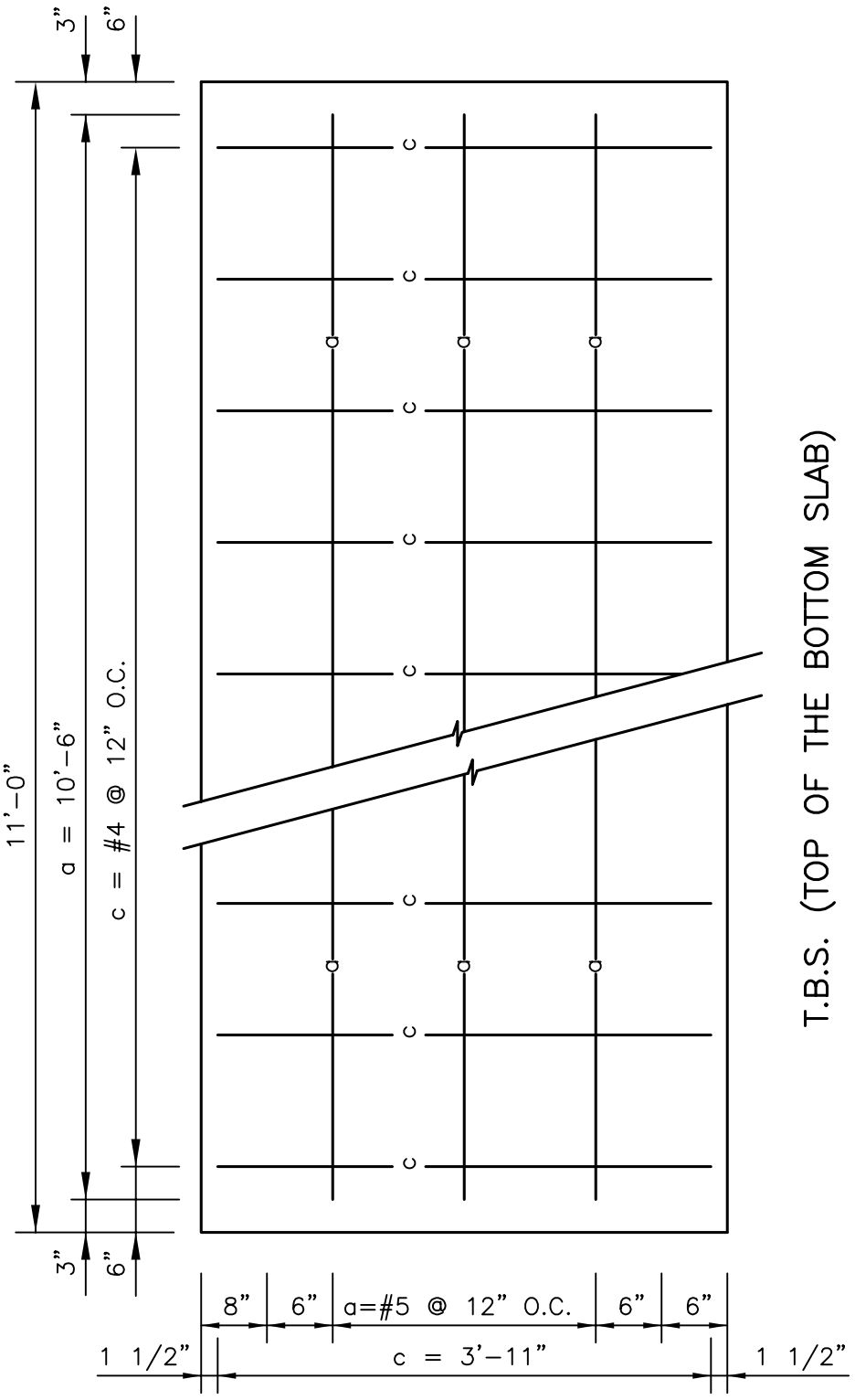


CITY OF RAPID CITY — PUBLIC WORKS DEPARTMENT

STANDARD TYPE "E" INLET (12"–30" DIA. PIPE)

DATE: 5–1–07

SEC. 62 — SHT. 1c

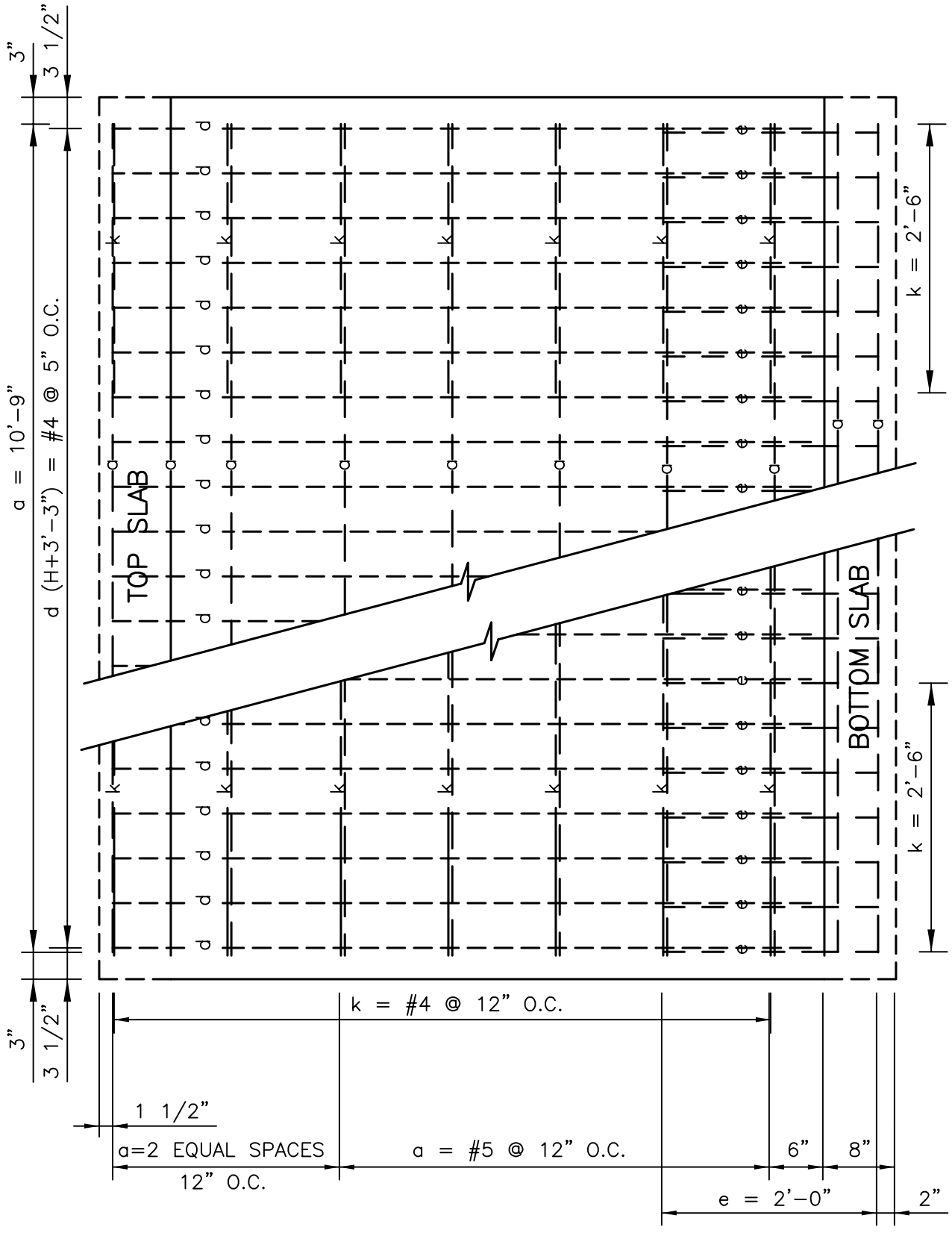


CITY OF RAPID CITY — PUBLIC WORKS DEPARTMENT

STANDARD TYPE "E" INLET (12"–30" DIA. PIPE)

DATE: 5–1–07

SEC. 62 — SHT. 1d



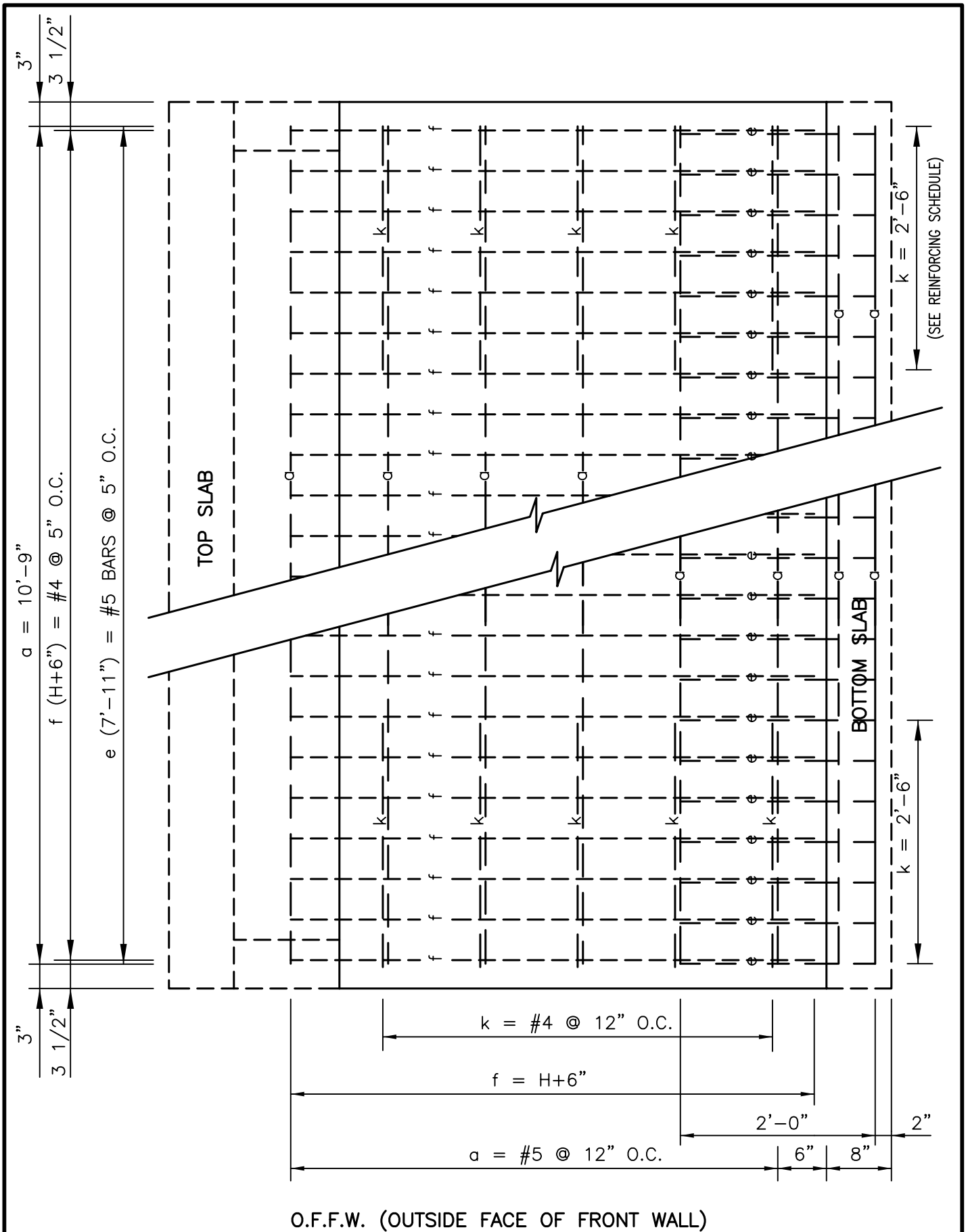
B.W. (BACK WALL)

CITY OF RAPID CITY — PUBLIC WORKS DEPARTMENT

STANDARD TYPLE "E" INLET (12"–30" DIA. PIPE)

DATE: 5–1–07

SEC. 62–1e SHT.



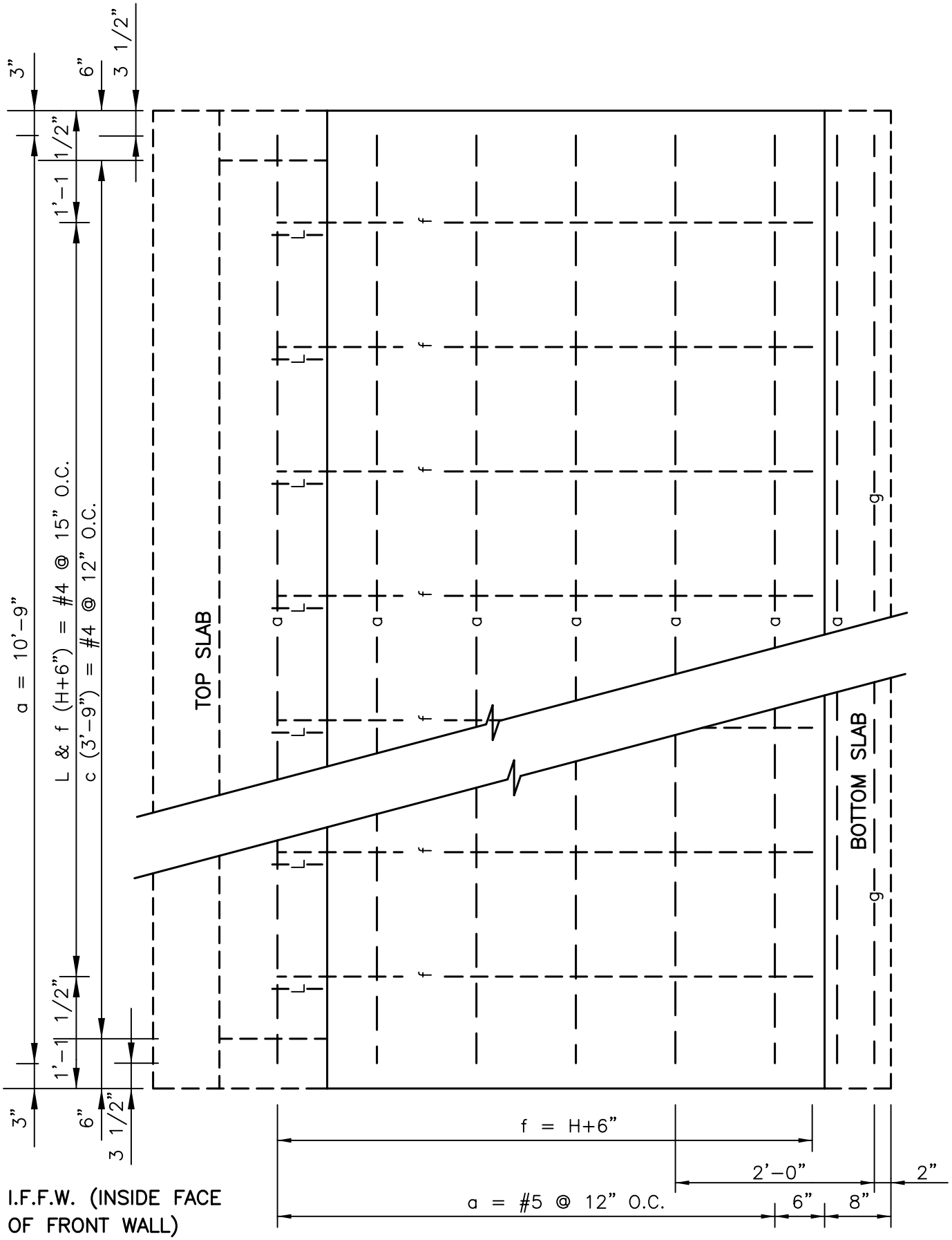
O.F.F.W. (OUTSIDE FACE OF FRONT WALL)

CITY OF RAPID CITY — PUBLIC WORKS DEPARTMENT

STANDARD TYPE "E" INLET (12"–30" DIA. PIPE)

DATE: 5–1–07

SEC. 62–1f SHT.

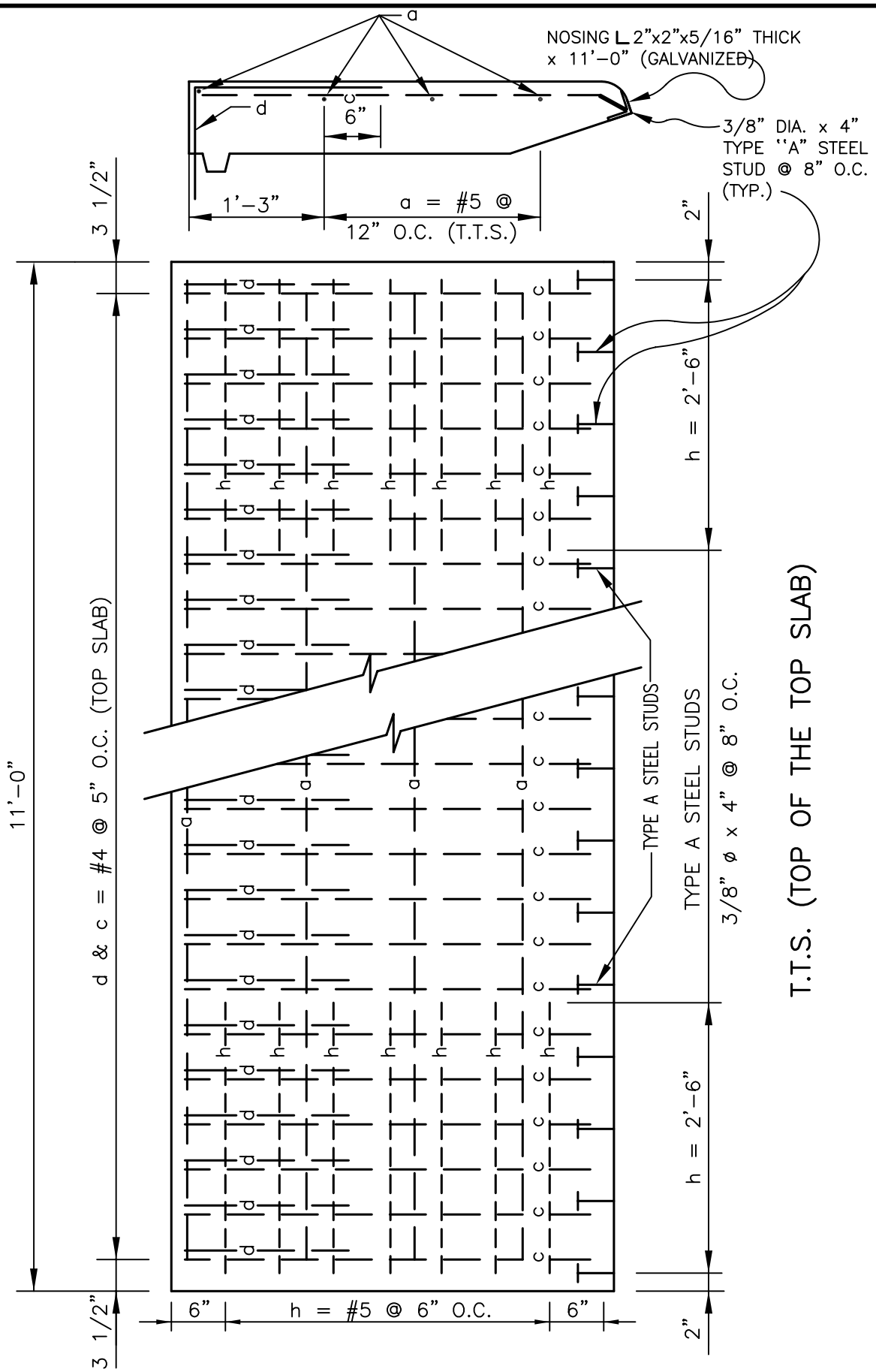


CITY OF RAPID CITY — PUBLIC WORKS DEPARTMENT

STANDARD TYPE "E" INLET (12"–30" DIA. PIPE)

DATE: 5–1–07

SEC. 62–1g SHT.

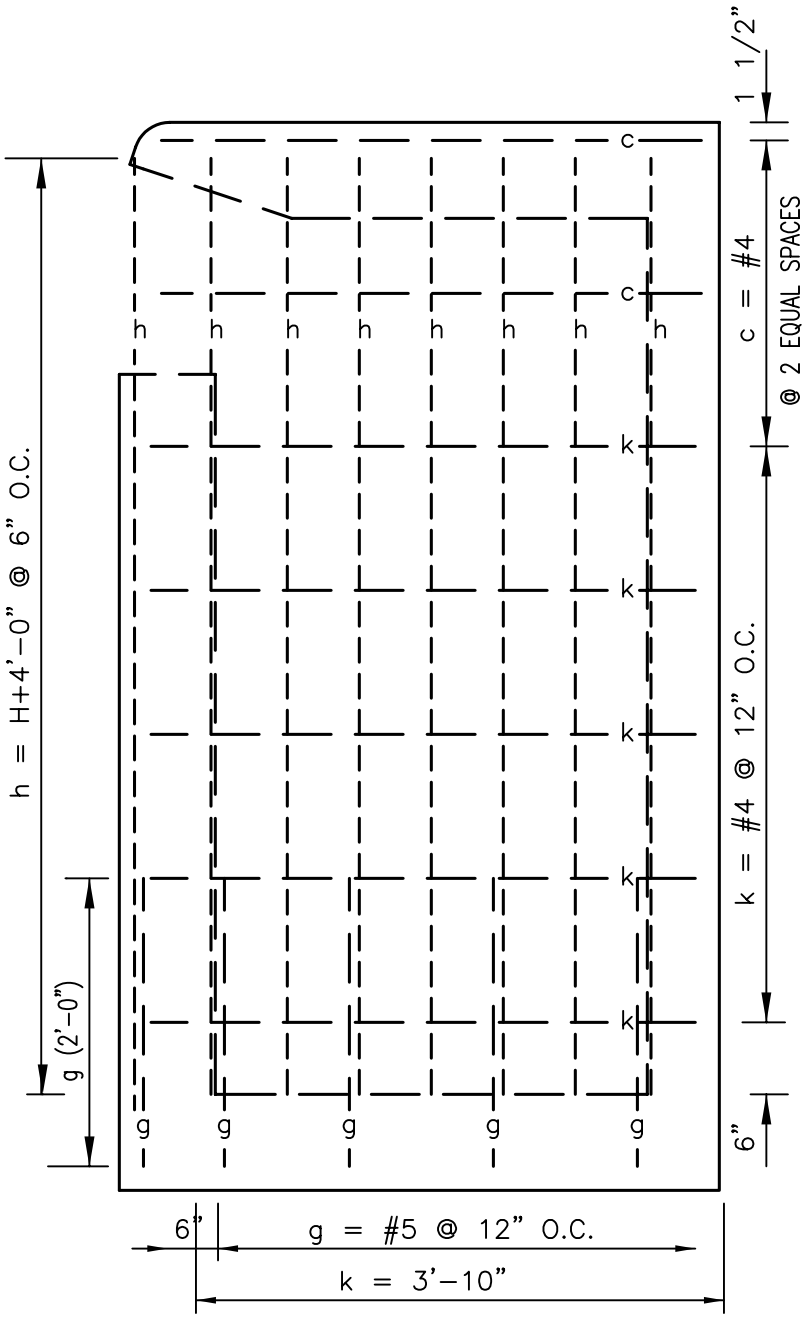


CITY OF RAPID CITY — PUBLIC WORKS DEPARTMENT

STANDARD TYPE "E" INLET
(12"–30" DIA. PIPE)

DATE: 5–1–07

SEC. 62 — SHT. 1i



E.W. (END OF WALL)

CITY OF RAPID CITY — PUBLIC WORKS DEPARTMENT

STANDARD TYPE "E" INLET (12"–30" DIA. PIPE)

DATE: 5–1–07

SEC. 62–1j SHT.

GENERAL NOTES

1. INLETS SHALL BE BUILT IN CONFORMANCE WITH CURRENT CITY OF RAPID CITY SPECIFICATIONS.
2. DESIGN LOADING: HF 20 – 44 AND ALTERNATE LOADING.
3. ALL REINFORCING STEEL SHALL BE EPOXY COATED CONFORMING TO ASTM A615.
4. STRUCTURAL STEEL SHALL CONFORM TO ASTM A36.
5. THE 3/8" DIA. HEADED TYPE A STEEL STUD SHALL CONFORM TO SECTION 7 OF THE LATEST EDITION OF ANSI/AWS D1.1 STRUCTURAL STEEL WELDING CODE.
6. AFTER WELDING IS COMPLETE GALVANIZE THE ANGLE AND STEEL STUDS IN ACCORDANCE WITH AASHTO M111 (ASTM A123).
7. USE MINIMUM 1" CLEAR COVER ON ALL REINFORCING STEEL EXCEPT AS SHOWN.
8. CUT AND BEND REINFORCING STEEL IN FIELD AS NECESSARY TO FIT PIPE AND MANHOLE OPENINGS. SUCH OPENINGS ARE NOT SHOWN IN THESE DETAILS. THE NUMBER, SIZE AND LOCATION OF PIPE ENTERING THE DROP INLET ARE SHOWN ELSEWHERE IN THE PLANS.
9. CAST IRON FRAME AND LID ASSEMBLY SHALL CONFORM TO AASHTO M105 CLASS 30.
10. THE DIMENSIONS OF ''H" IS IN FEET
11. INLETS SHALL BE CAST IN–PLACE. PRE–CASTING IS NOT PERMITTED.

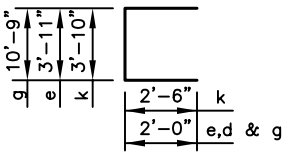
SPECIFICATION NOTES:

1. DESIGN SPECIFICATIONS: A.A.S.H.T.O. STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES 1992 EDITION. (SERVICE LOAD).
2. CONSTRUCTION SPECIFICATIONS: CURRENT CITY OF RAPID CITY STANDARD SPECIFICATIONS, LATEST EDITION.

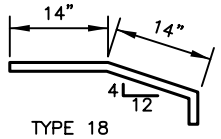
LEGEND FOR PLACING RE-STEEL	
T.T.S.	– TOP OF TOP SLAB
B.T.S.	– BOTTOM OF TOP SLAB
T.B.S.	–TOP OF BOTTOM SLAB
B.B.S.	– BOTTOM OF BOTTOM SLAB
O.F.F.W.	–OUTSIDE FACE OF FRONT WALL
I.F.F.W.	– INSIDE FACE OF FRONT WALL
B.W.	– BACK WALL
E.W.	– END WALL

BENDING DETAILS

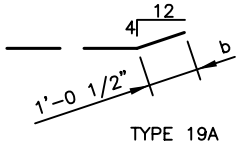
NOTE:
ALL DIMENSIONS ARE OUT TO OUT OF BAR



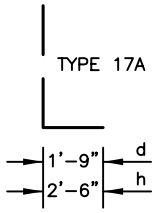
TYPE 17



TYPE 18



TYPE 19A



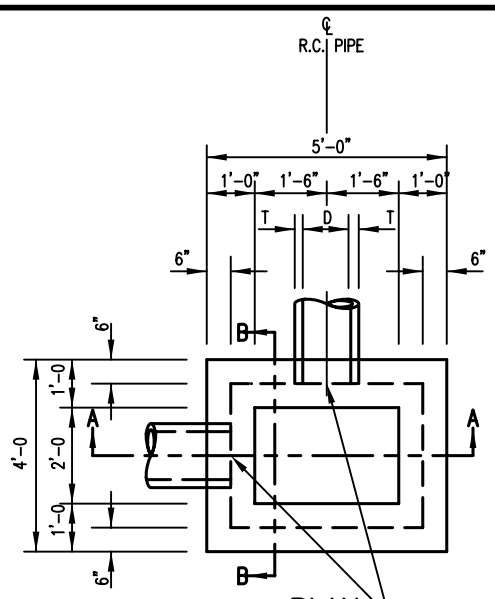
MK.	SIZE	TYPE
a	5	STR.
b	4	19A
c	4	STR.
d	4	17A
e	5	17
f	4	STR.
g	5	17
h	5	17A
k	4	17
L	4	18
m	5	STR

CITY OF RAPID CITY — PUBLIC WORKS DEPARTMENT

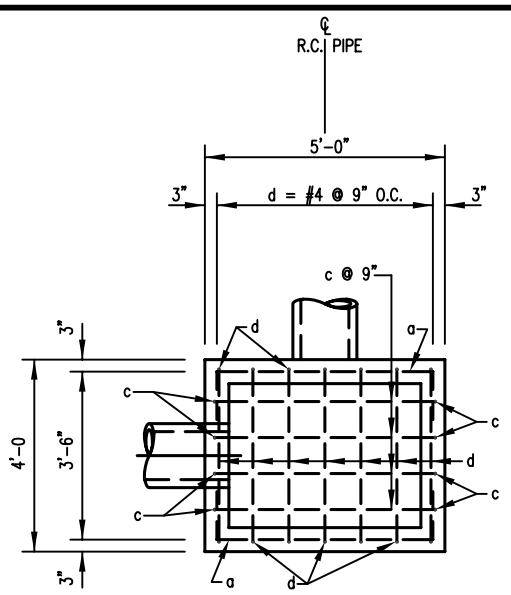
STANDARD TYPE ''E'' INLET (12"–30" DIA. PIPE)

DATE: 5–1–07

SEC. 62–1k SHT.

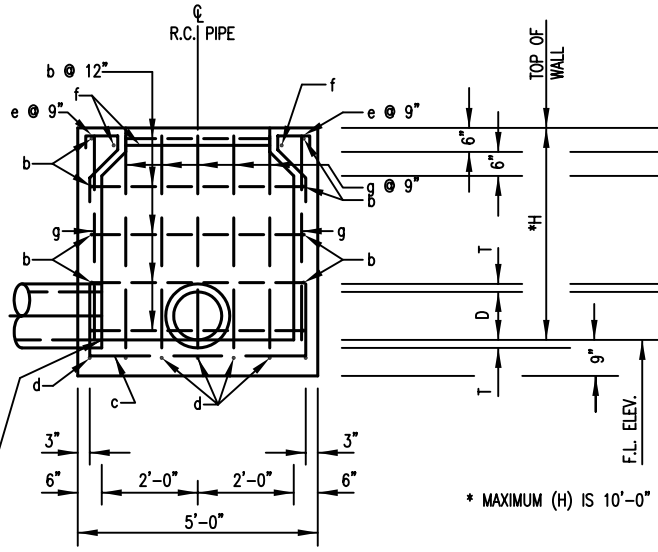


PLAN



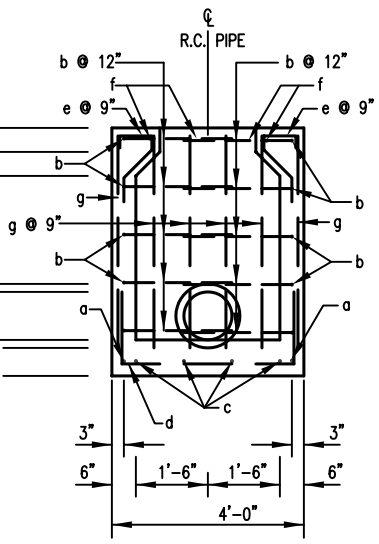
BOTTOM SECTION

INLET AND OUTLET PIPES SHALL BE FLUSH WITH THE INSIDE WALL OF THE INLET ON ALL PENETRATIONS. (TYP.)



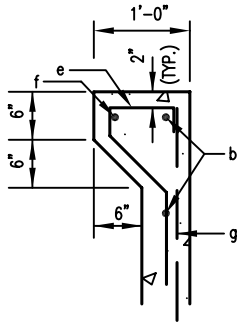
SECTION A–A

* MAXIMUM (H) IS 10'-0"



SECTION B–B

OUTLET PIPE INVERT SHALL BE THE SAME ELEVATION AS THE FLOOR ELEVATION



TYP. SECTION TOP OF WALL

CITY OF RAPID CITY — PUBLIC WORKS DEPARTMENT

REINFORCED CONCRETE SPECIAL TYPE "B" INLET

DROP INLETS FOR 12" TO 36" DIA. PIPE

DATE: 5–1–07

SEC. 62–4 SHT.

GENERAL NOTES:

* REDUCE TOTAL QUANTITIES OF CONCRETE BY THE AMOUNT OF CONCRETE DISPLACED BY THE PIPE. TOTAL QUANTITY OF CONCRETE TO BE COMPUTED TO NEAREST HUNDREDTH OF A CU. YD. TOTAL QUANTITY OF REINFORCING STEEL TO BE COMPUTED TO THE NEAREST POUND,

DROP INLETS SHOWN MAY BE MODIFIED BY THE ADDITION OR OMISSION OF CONNECTING PIPES AS SHOWN IN LAYOUT.

EPOXY COATED REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60 LAP b AND f BARS 12 INCHES. CUT AND BEND REINFORCING STEEL AS REQUIRED TO PLACE PIPE(S) THRU DROP INLET WALL. ALL REINFORCING STEEL SHALL BE TIED & CHAIRED. ALL REBAR SHALL BE COLD BENT AT CORNERS.

PRE CASTING OF REINFORCED DROP INLETS MAY BE PERMISSIBLE. PRIOR TO PRE CASTING, THE CONTRACTOR SHALL SUBMIT DETAILS TO THE ENGINEER FOR APPROVAL.

ALL STRUCTURAL JOINTS SHALL BE KEYED AND WATER TIGHT.

MAXIMUM PIPE DIAMETER SHOULD NOT EXCEED 30 INCHES OF THE 4 FOOT SIDE SIDE OF THE DROP INLET.

IN SITUATIONS WHERE MULTIPLE INLETS ARE TO BE CONSTRUCTED ADJACENT TO ONE ANOTHER, THE COMMON INLET WALL SHALL BE CONSTRUCTED 12" THICK WITH THE EQUIVALENT AMOUNT OF REBAR AS REQUIRED FOR EACH INLET INDIVIDUALLY. THE CONVEYANCE OF STORM WATER THRU THE COMMON WALL SHALL BE BY INSTALLING THE APPROPRIATELY SIZED REINFORCED CONCRETE PIPE.

NOTE: STRUCTURE EXCAVATION INFORMATIONAL

ESTIMATED QUANTITIES

ITEM	UNIT	VARIABLE QUANTITY	VARIABLE QUANTITY
*CLASS M-6 CONCRETE	CU. YD.	0.72	0.2963H
REINFORCING STEEL	LB.	89	26.7200H
GRATE ASSEMBLY	EACH	1	
STRUCTURE EXCAVATION	CU. YD.	0.56	

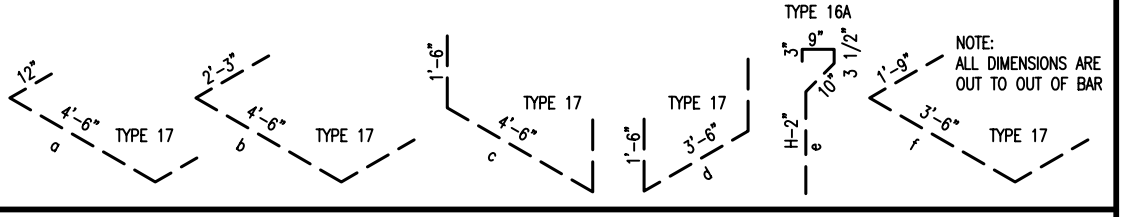
PIPE DISPLACEMENT REDUCTIONS

R.C. PIPE DIAMETER INCHES	T INCHES	CLASS M-6 CONCRETE CU. YD.
12	2	0.03
15	2 1/4	0.04
18	2 1/2	0.05
24	3	0.09
30	3 1/2	0.14
36	4	0.20

REINFORCING SCHEDULE

MK.	NO.	SIZE	LENGTH	TYPE
a	2	4	6'-6"	17
b	2H	4	9'-0"	17
c	4	4	7'-6"	17
d	7	4	6'-6"	17
e	24	4	36"	16A
f	2	4	8'-0"	17
g	18	4	H-2"	STR.

BENDING DETAILS



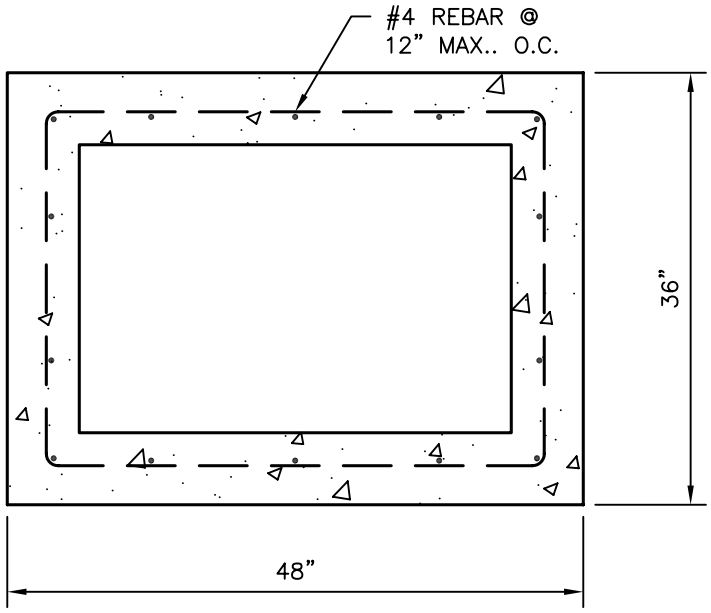
CITY OF RAPID CITY — PUBLIC WORKS DEPARTMENT

REINFORCED CONCRETE SPECIAL TYPE "B" INLET

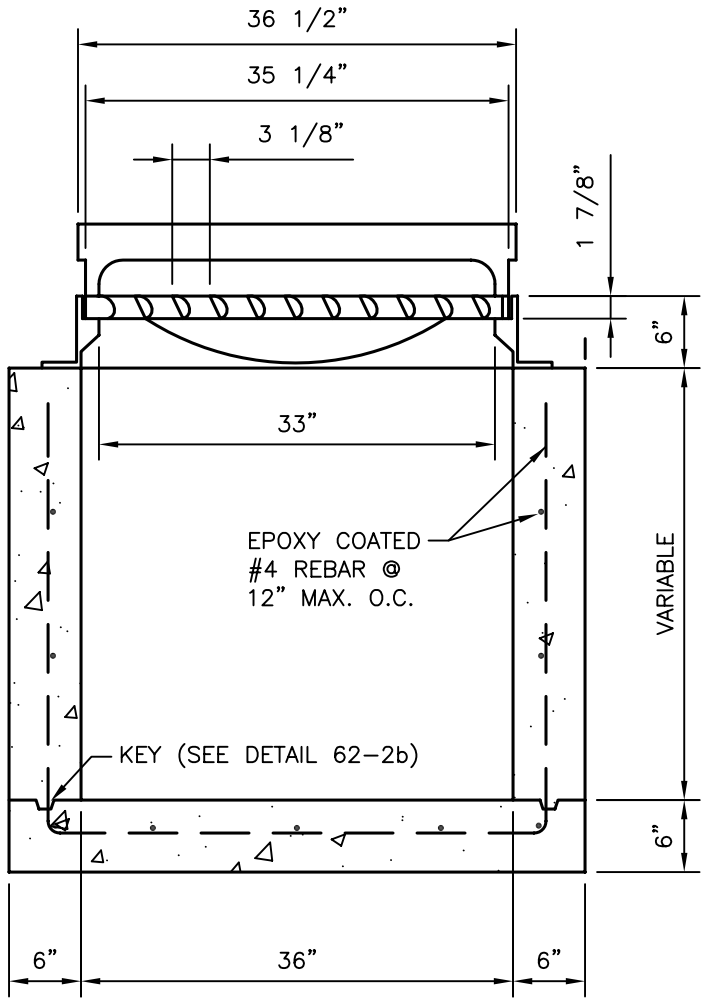
DROP INLETS FOR 12" TO 36" DIA. PIPE

DATE: 5-1-07

SEC. 62-4a SHT.



TOP VIEW



FRONT VIEW

GENERAL NOTES:

CONCRETE SHALL HAVE 4000 PSI COMPRESSIVE STRENGTH AT 28 DAYS.

ALL STRUCTURAL JOINTS SHALL BE KEYED & WATER TIGHT.

EPOXY COATED REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60. CUT AND BEND BARS AS REQUIRED TO PLACE PIPE(S) THRU DROP INLET WALL.

PRE CASTING OF TYPE ''B'' INLETS MAY BE PERMISSIBLE PRIOR TO RECASTING, THE CONTRACTOR SHALL SUBMIT DETAILS TO ENGINEER FOR APPROVAL.

MAXIMUM PIPE DIAMETER SHOULD NOT EXCEED 21 INCHES ON THE 3 FOOT WIDE SIDE OF THE TYPE ''B'' INLET.

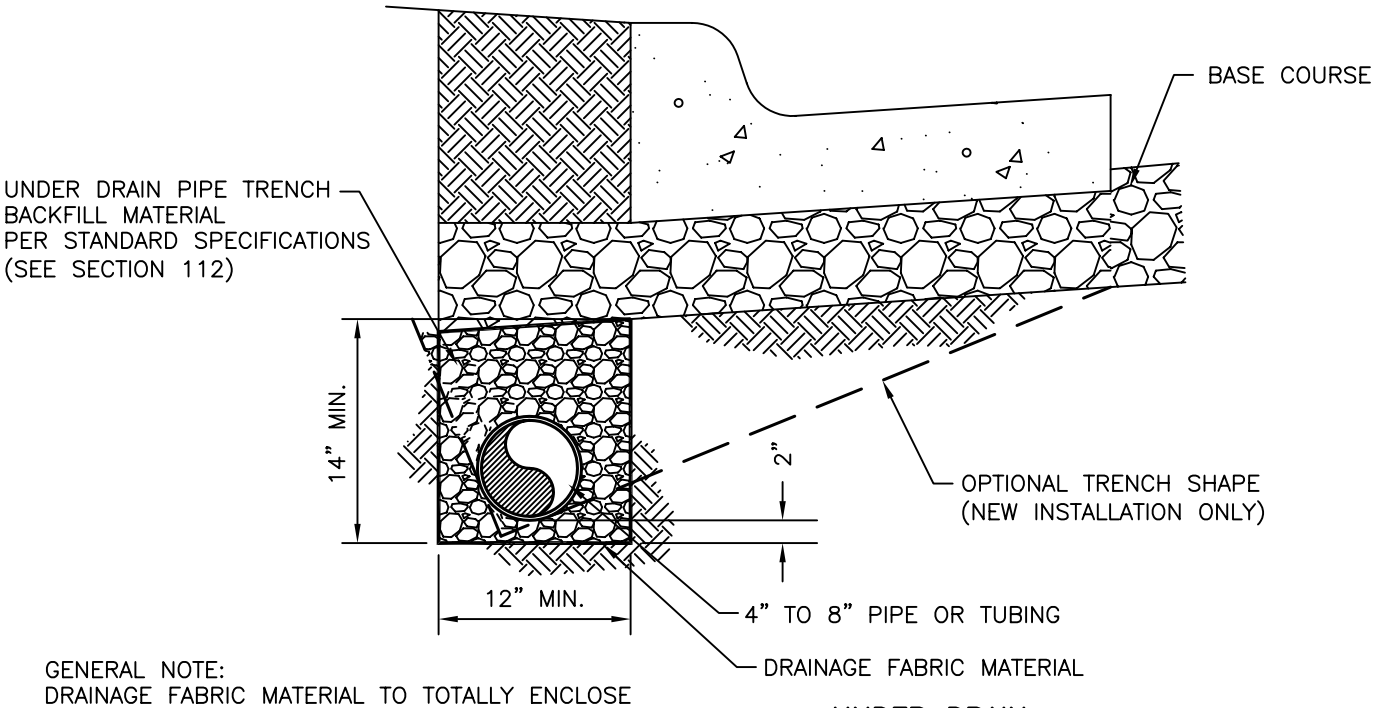
IN SITUATIONS WHERE MULTIPLE INLETS ARE TO BE CONSTRUCTED ADJACENT TO ONE ANOTHER, THE COMMON INLET WALL SHALL BE CONSTRUCTED 12 INCHES THICK WITH THE EQUIVALENT AMOUNT OF REBAR AS IS REQUIRED FOR EACH INLET INDIVIDUALLY. THE CONVEYANCE OF STORM WATER THRU THE COMMON WALL SHALL BE BY INSTALLING THE APPROPRIATELY SIZED REINFORCED CONCRETE PIPE.

CITY OF RAPID CITY — PUBLIC WORKS DEPARTMENT

TYPE ''B'' INLET
FOR 12" TO 30" DIA. PIPE

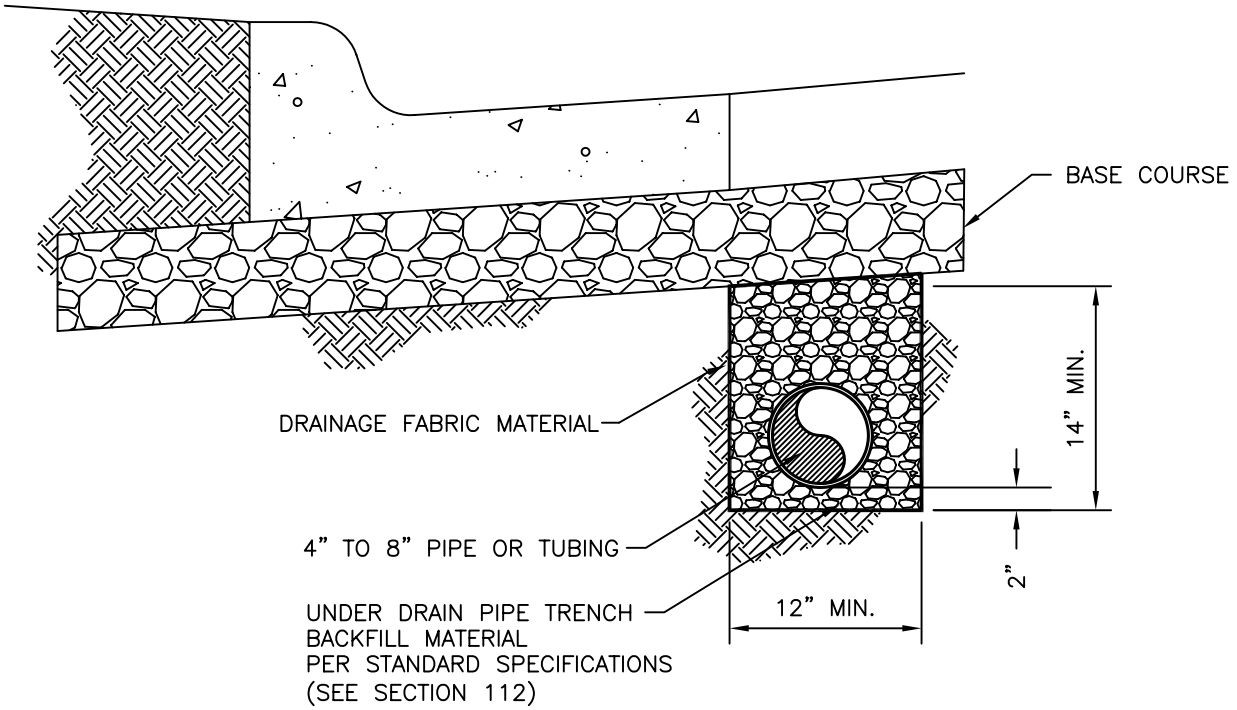
DATE: 5-1-07

SEC. 62-5 SHT.



GENERAL NOTE:
DRAINAGE FABRIC MATERIAL TO TOTALLY ENCLOSE UNDER DRAIN PIPE TRENCH BACKFILL MATERIAL AND PIPE. PROVIDE 12" MIN. OVERLAP ON TOP AND 12" MIN. OVERLAP END–TO–END.

UNDER DRAIN
NEW CURB & GUTTER



UNDER DRAIN
EXISTING CURB & GUTTER

CITY OF RAPID CITY | PUBLIC WORKS DEPARTMENT

PIPE UNDER DRAIN DETAILS

DATE: 5–1–07

SEC. 64–1 SHT.

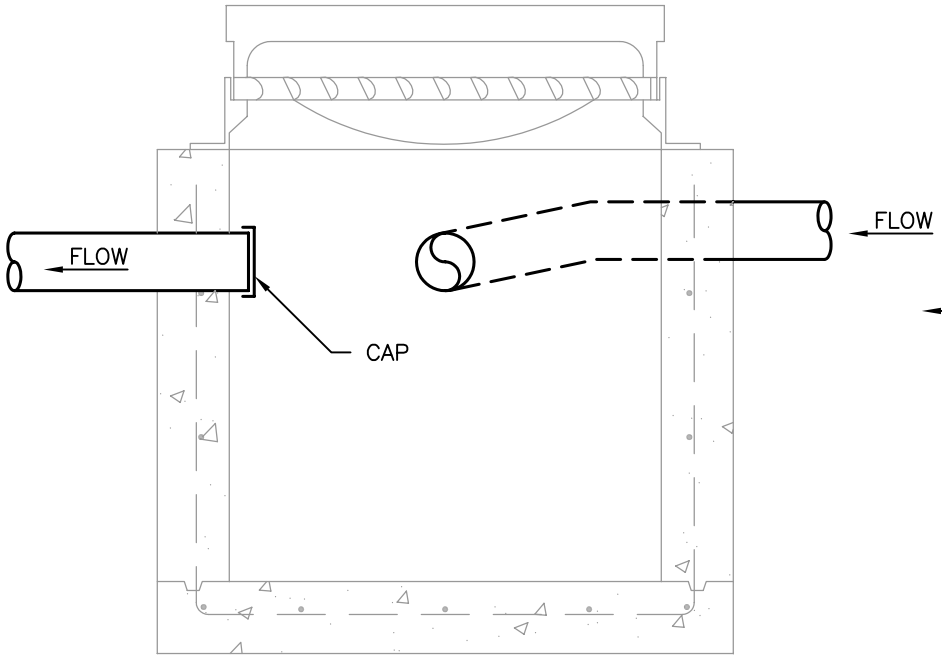
UNDERDRAIN CONNECTION TO INLETS

CITY OF RAPID CITY

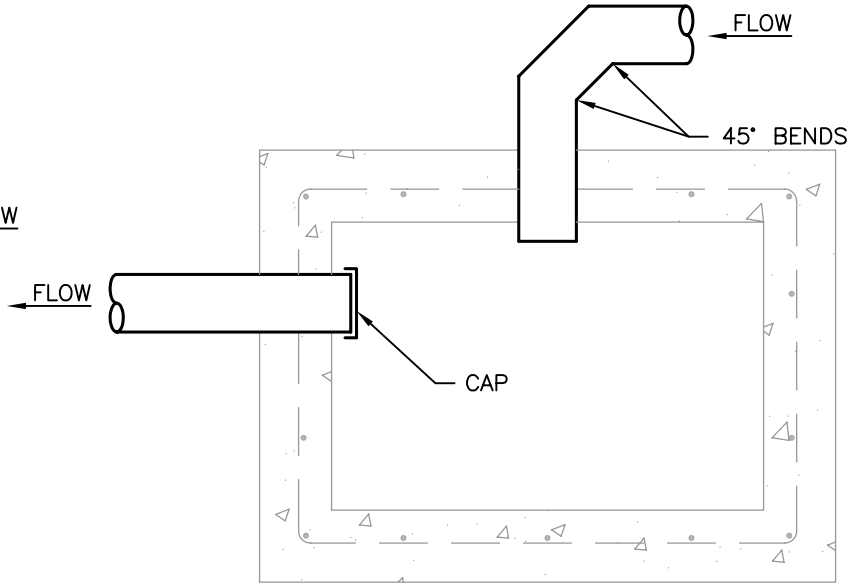
PUBLIC WORKS DEPARTMENT

DATE: 5-1-07

SEC. 64-2 SHT.



FRONT VIEW

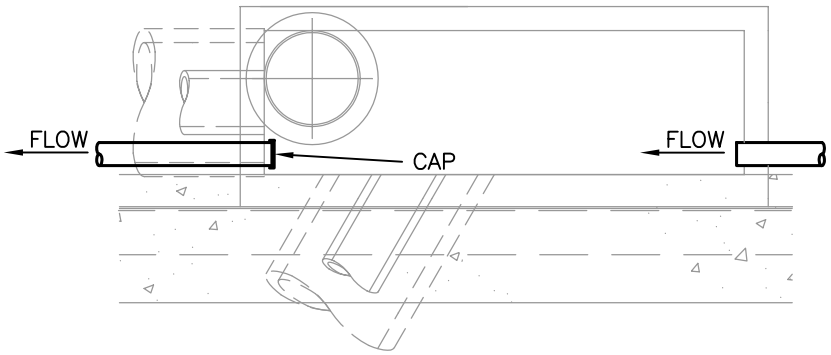


PLAN VIEW

TYPE "B" INLET CONNECTION

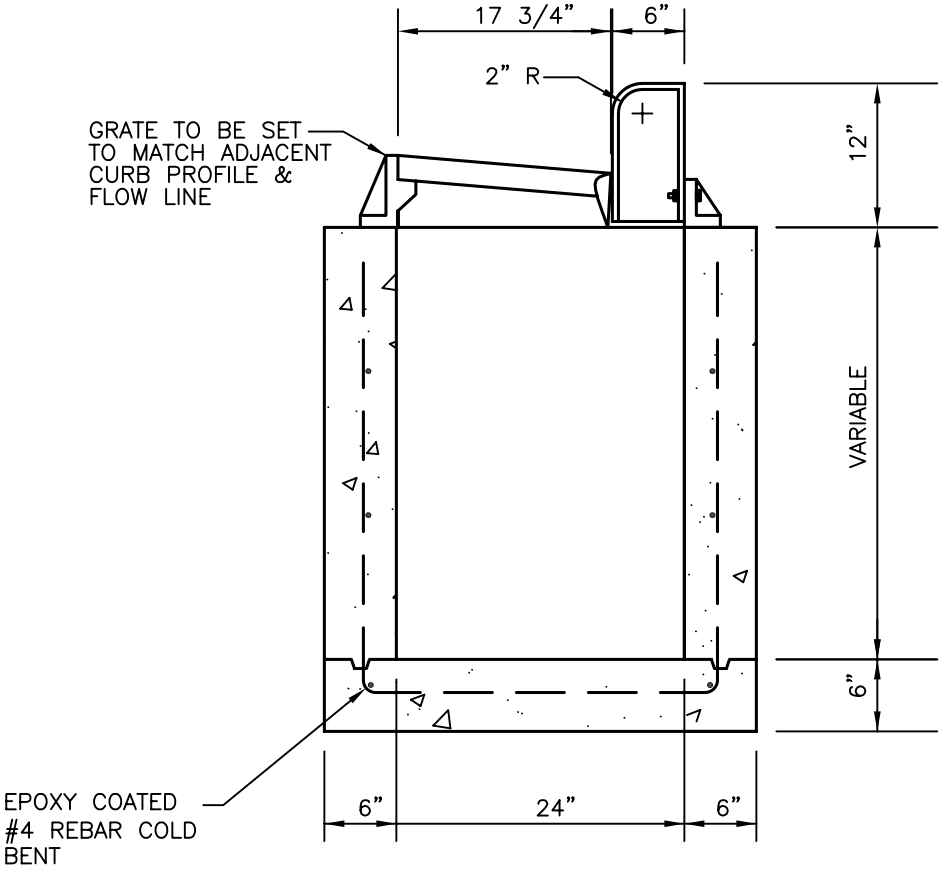
FRONT VIEW

NOTE:
CONNECT UNDERDRAINS INTO INLET BY CONNECTING TO A PIPE SLEEVE PASSING THROUGH THE INLET WALL.
(TYPICAL ALL CONNECTIONS)



PLAN VIEW

TYPE "E" INLET CONNECTION



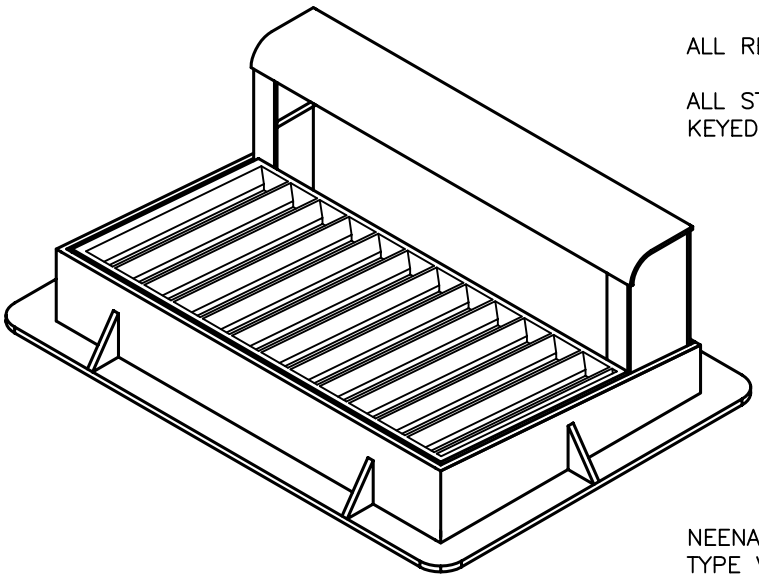
GENERAL NOTES:

CONCRETE SHALL HAVE 4000 P.S.I. COMPRESSIVE STRENGTH AT 28 DAYS

ALL REINFORCING STEEL SHALL BE TIED & CHAIRED

ALL REBAR SHALL BE COLD BENT AT CORNERS

ALL STRUCTURAL JOINTS SHALL BE KEYED & WATER TIGHT



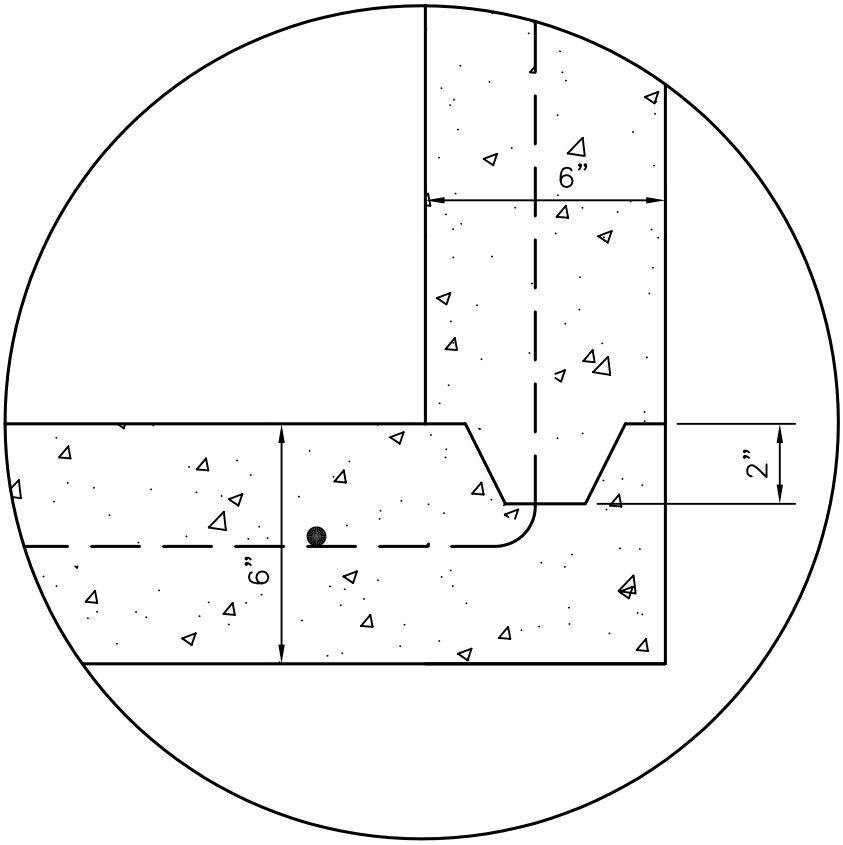
NEENAH R-3067, V CURB INLET, OR EQUAL WITH TYPE V GRATE (FLOW-RIGHT SHOWN)

CITY OF RAPID CITY | PUBLIC WORKS DEPARTMENT

TYPE "B" INLET

DATE: 5-1-07

SEC. 62-5a SHT.



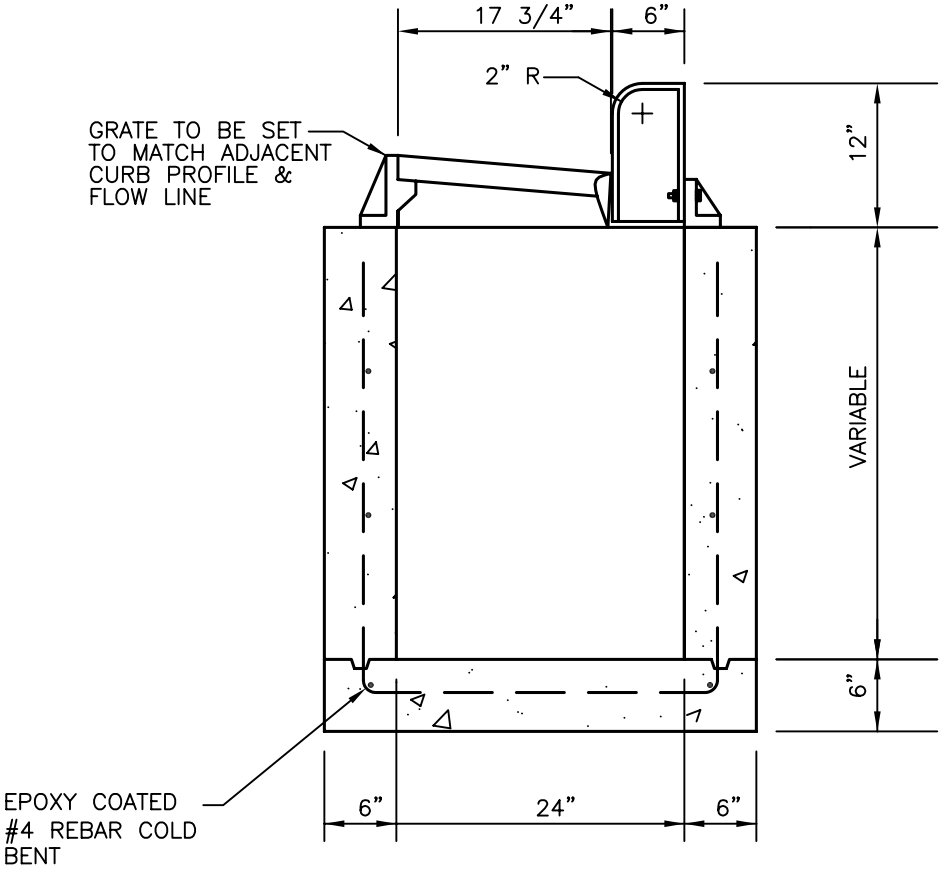
NOTE: BOX MANHOLE, TYPE ''B'' DETAILS

CITY OF RAPID CITY | PUBLIC WORKS DEPARTMENT

TYPICAL KEY JOINT

DATE: 5–1–07

SEC. 62–5b SHT.



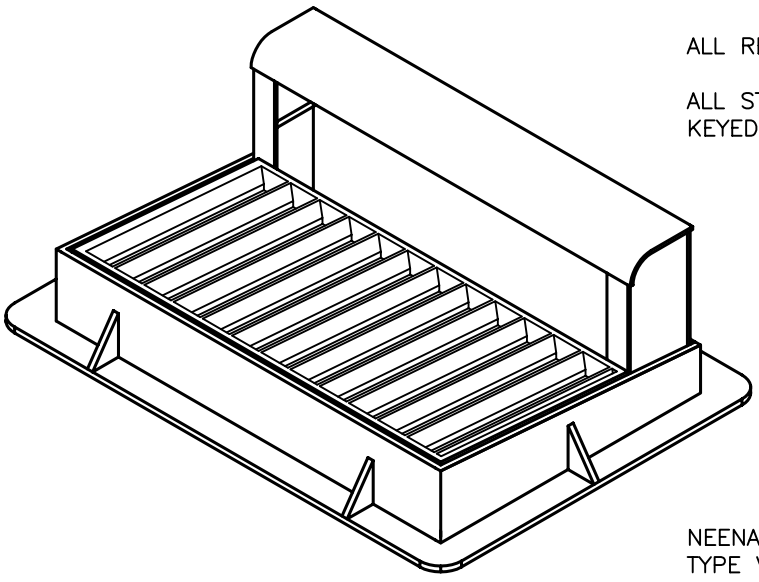
GENERAL NOTES:

CONCRETE SHALL HAVE 4000 P.S.I. COMPRESSIVE STRENGTH AT 28 DAYS

ALL REINFORCING STEEL SHALL BE TIED & CHAIRED

ALL REBAR SHALL BE COLD BENT AT CORNERS

ALL STRUCTURAL JOINTS SHALL BE KEYED & WATER TIGHT



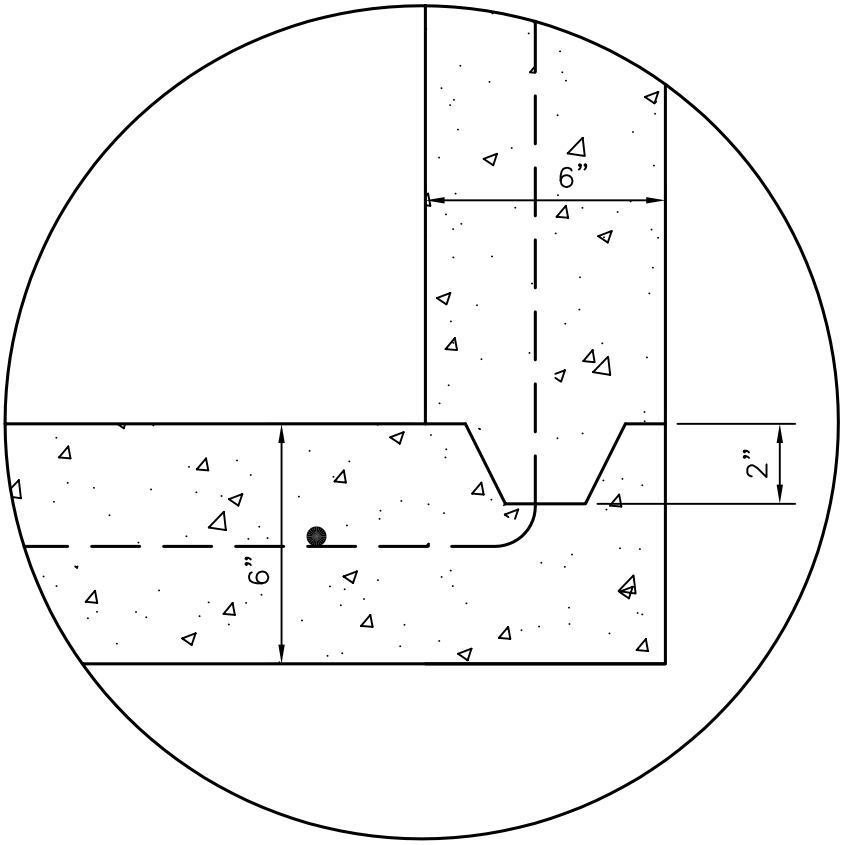
NEENAH R-3067, V CURB INLET, OR EQUAL WITH TYPE V GRATE (FLOW-RIGHT SHOWN)

CITY OF RAPID CITY | PUBLIC WORKS DEPARTMENT

TYPE "B" INLET

DATE: 5-1-07

SEC. 62-5a SHT.



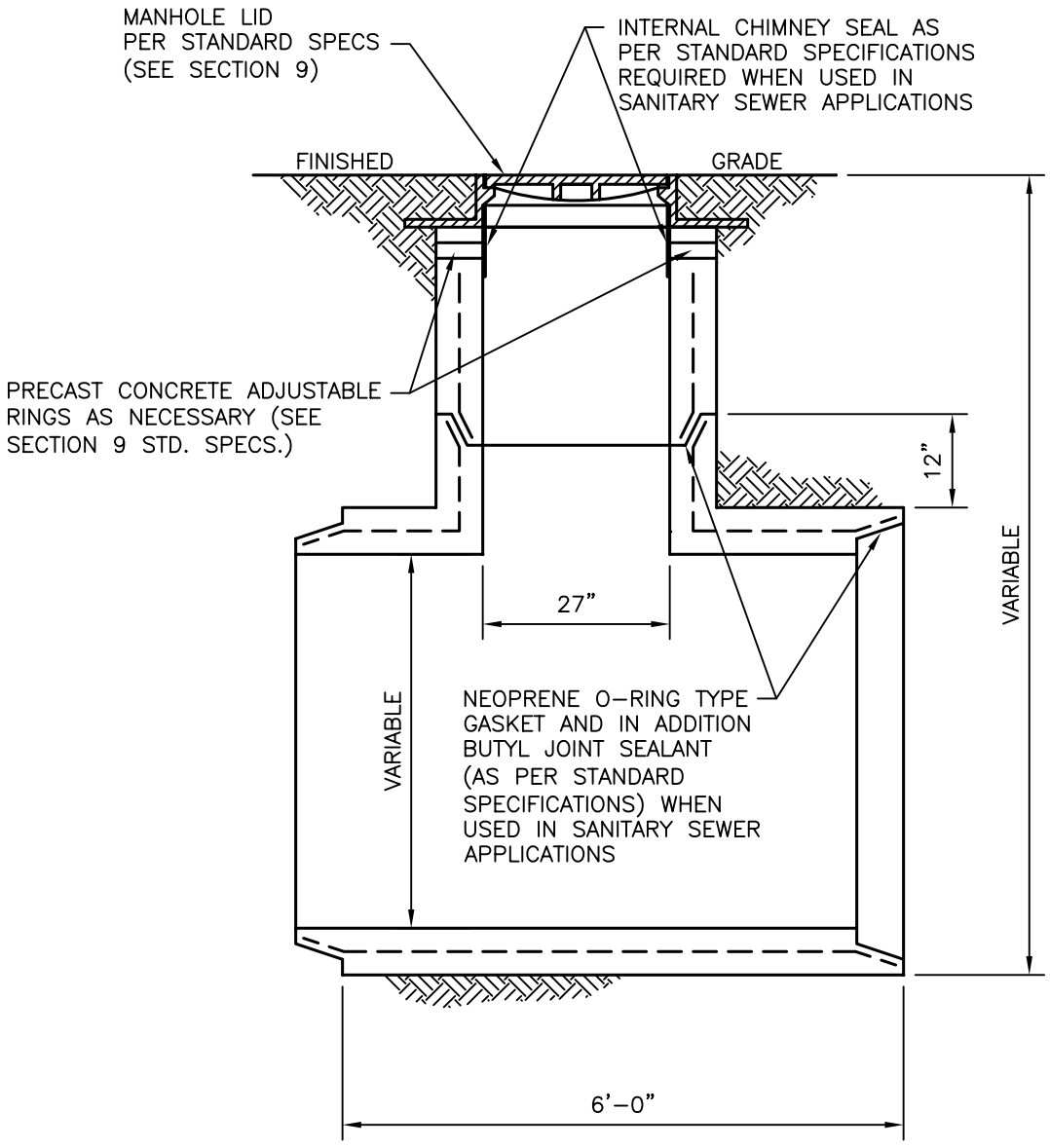
NOTE: BOX MANHOLE, TYPE ''B'' DETAILS

CITY OF RAPID CITY | PUBLIC WORKS DEPARTMENT

TYPICAL KEY JOINT

DATE: 5–1–07

SEC. 62–5b SHT.

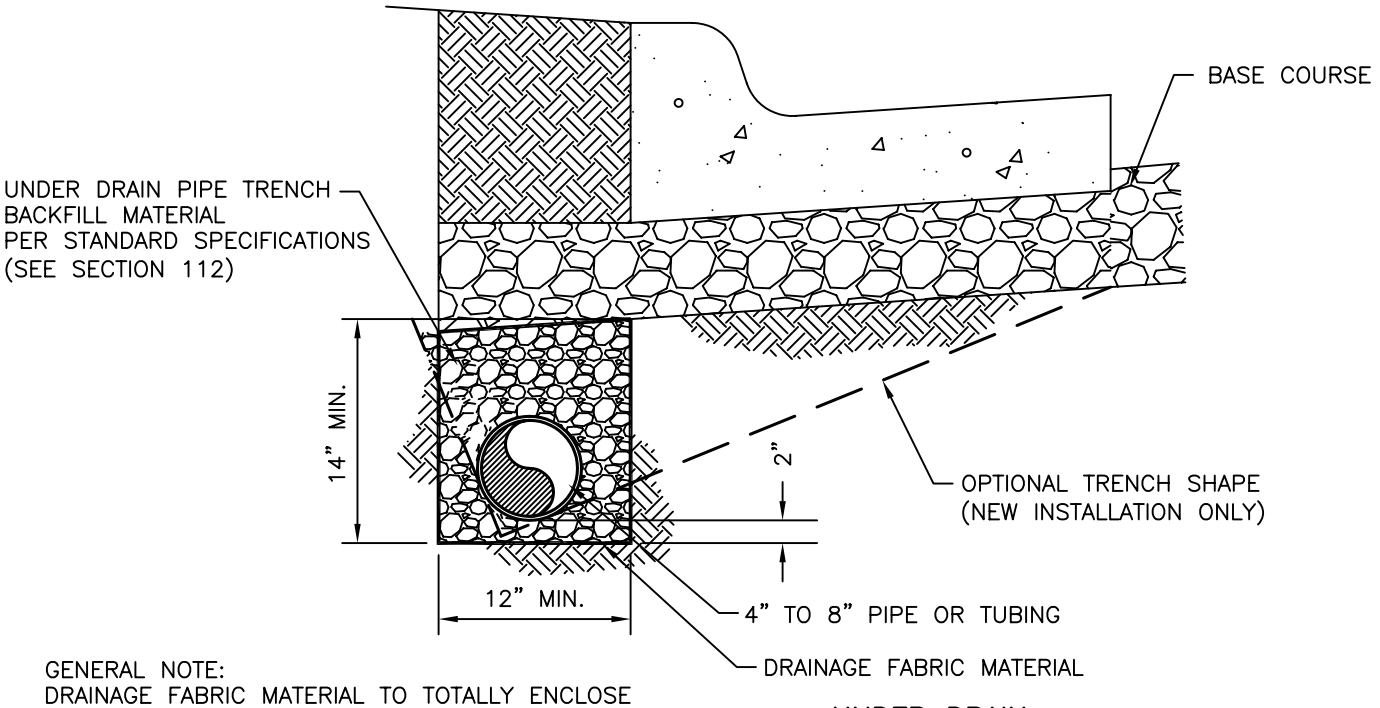


CITY OF RAPID CITY | PUBLIC WORKS DEPARTMENT

PRECAST TEE TYPE MANHOLE

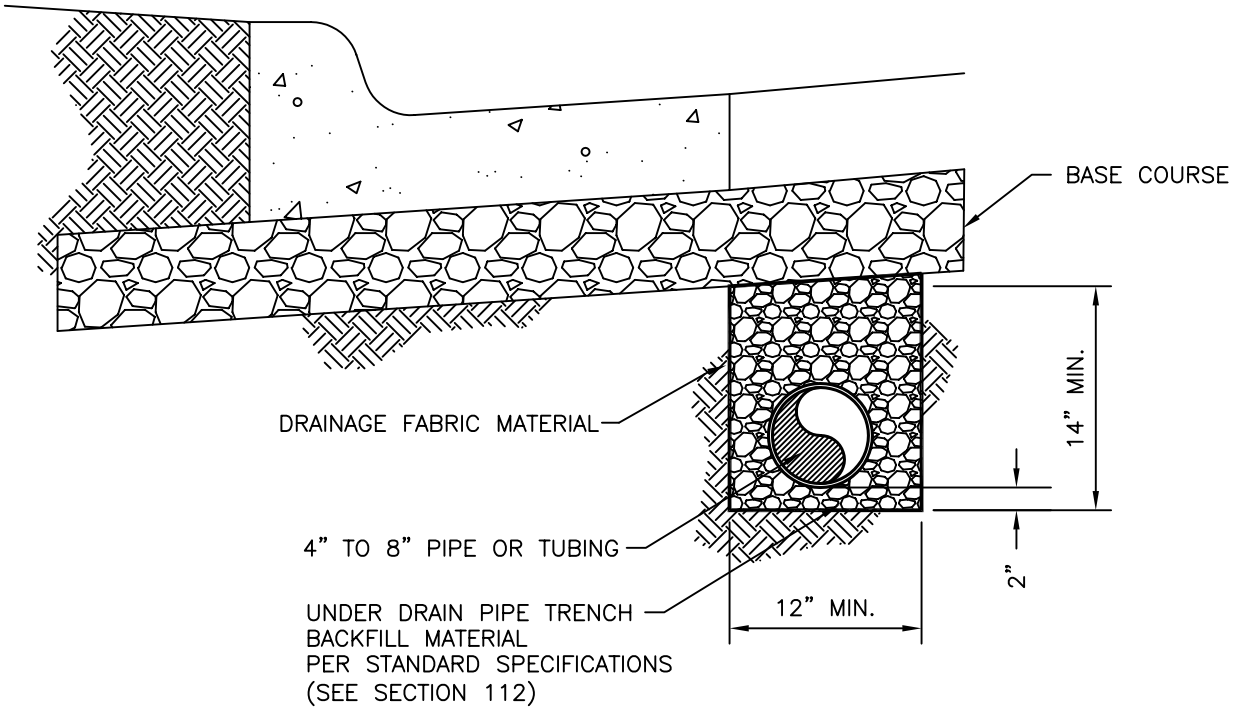
DATE: 5-1-07

SEC. 63-2 SHT.



GENERAL NOTE:
DRAINAGE FABRIC MATERIAL TO TOTALLY ENCLOSE UNDER DRAIN PIPE TRENCH BACKFILL MATERIAL AND PIPE. PROVIDE 12" MIN. OVERLAP ON TOP AND 12" MIN. OVERLAP END–TO–END.

UNDER DRAIN
NEW CURB & GUTTER



UNDER DRAIN
EXISTING CURB & GUTTER

CITY OF RAPID CITY | PUBLIC WORKS DEPARTMENT

PIPE UNDER DRAIN DETAILS

DATE: 5–1–07

SEC. 64–1 SHT.

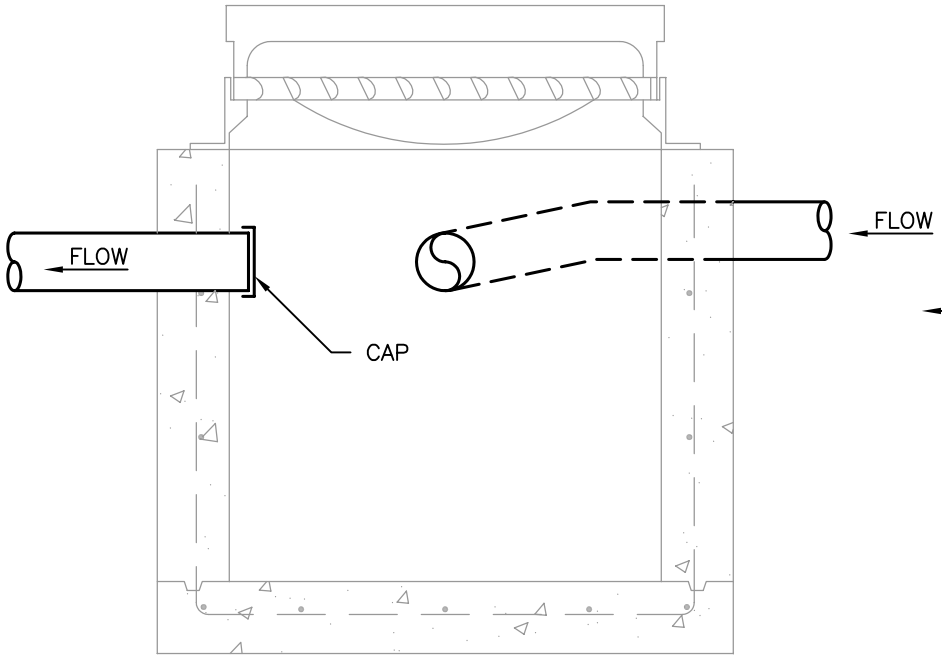
UNDERDRAIN CONNECTION TO INLETS

CITY OF RAPID CITY

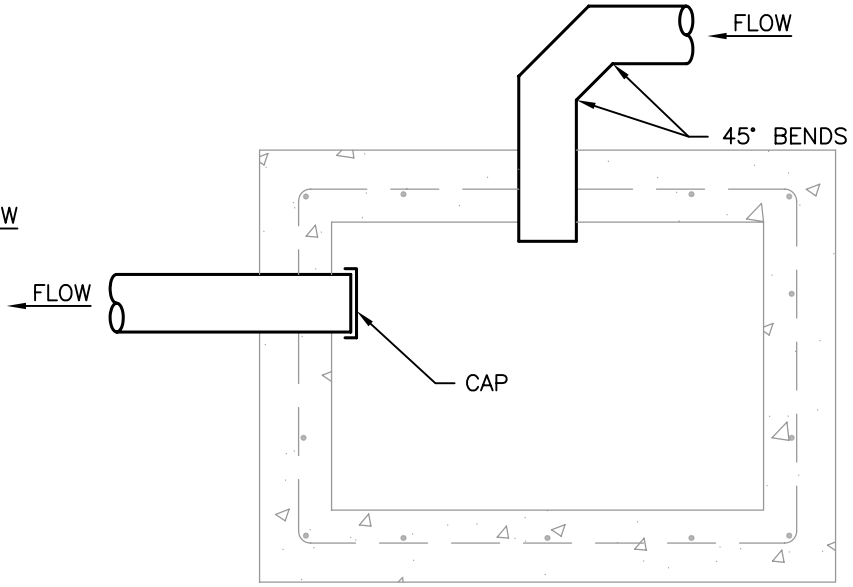
PUBLIC WORKS DEPARTMENT

DATE: 5-1-07

SEC. 64-2 SHT.



FRONT VIEW

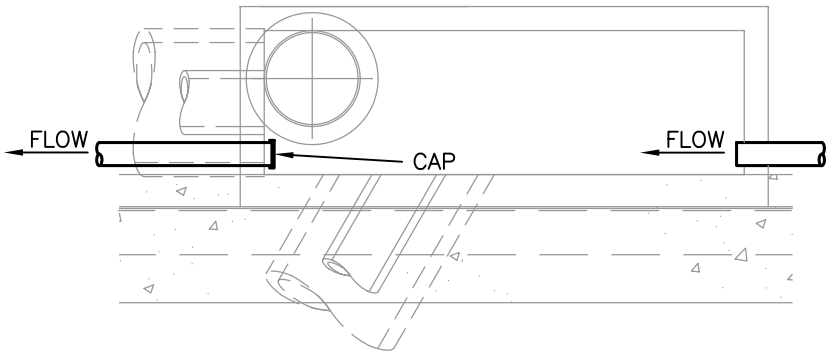


PLAN VIEW

TYPE "B" INLET CONNECTION

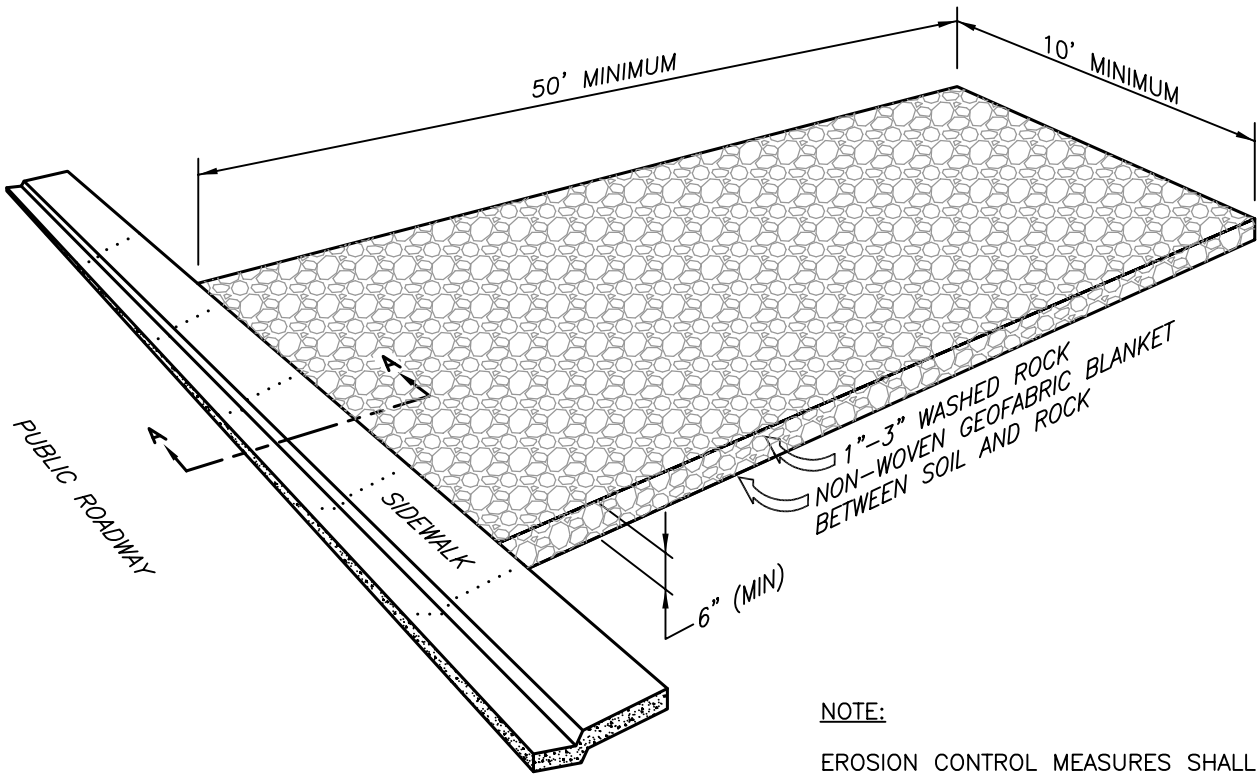
FRONT VIEW

NOTE:
CONNECT UNDERDRAINS INTO INLET BY CONNECTING TO A PIPE SLEEVE PASSING THROUGH THE INLET WALL.
(TYPICAL ALL CONNECTIONS)



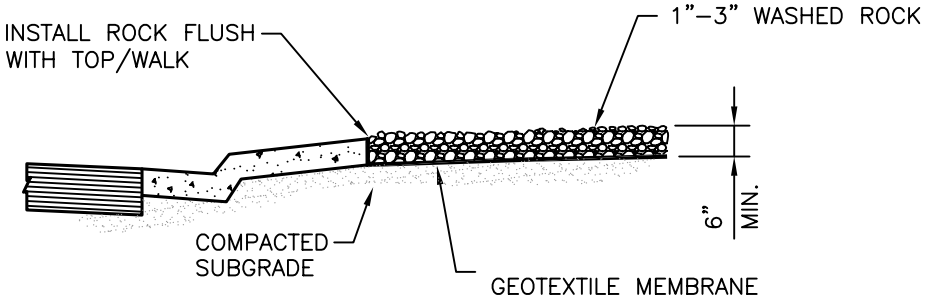
PLAN VIEW

TYPE "E" INLET CONNECTION



NOTE:

EROSION CONTROL MEASURES SHALL BE MAINTAINED AT ALL TIMES.



SECTION A–A

CONSTRUCTION STAGING PAD

NOTES:

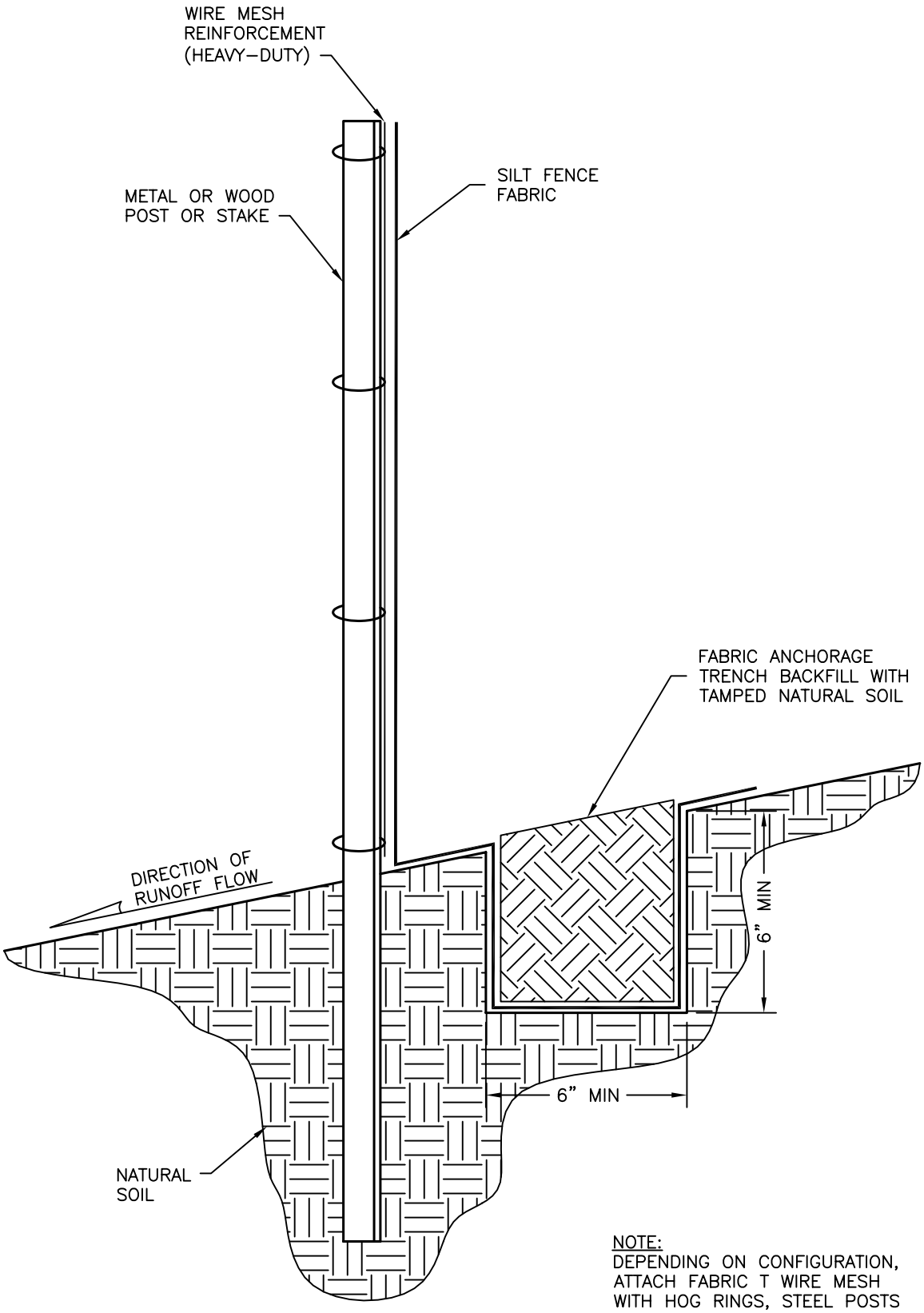
1. ALL ROCK TO BE REMOVED UPON COMPLETION OF CONSTRUCTION.
2. PUBLIC ROADWAY TO BE KEPT CLEAN AND FREE OF MUD, DIRT AND DEBRI AT ALL TIMES.

CITY OF RAPID CITY — PUBLIC WORKS DEPARTMENT

ROCK CONSTRUCTION ENTRANCE

DATE: 5–1–07

SEC. 146–2 SHT.



NOTE:
DEPENDING ON CONFIGURATION, ATTACH FABRIC T WIRE MESH WITH HOG RINGS, STEEL POSTS WITH WIRES OR WOOD POSTS WITH STAPLES

CITY OF RAPID CITY | PUBLIC WORKS DEPARTMENT

SILT FENCE INSTALLATION

DATE: 5–1–07

SEC. 146–1 SHT.

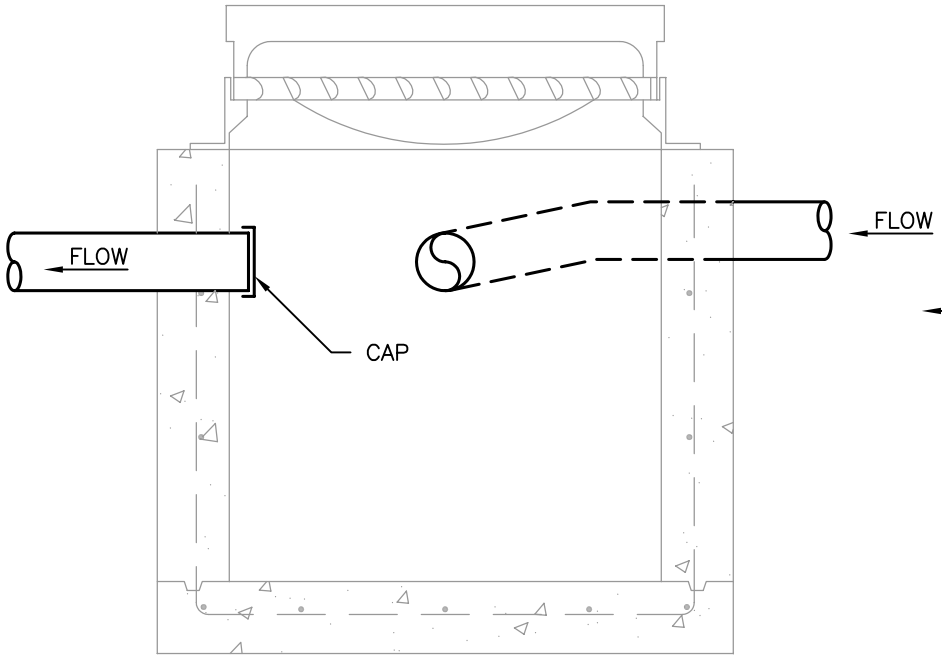
UNDERDRAIN CONNECTION TO INLETS

CITY OF RAPID CITY

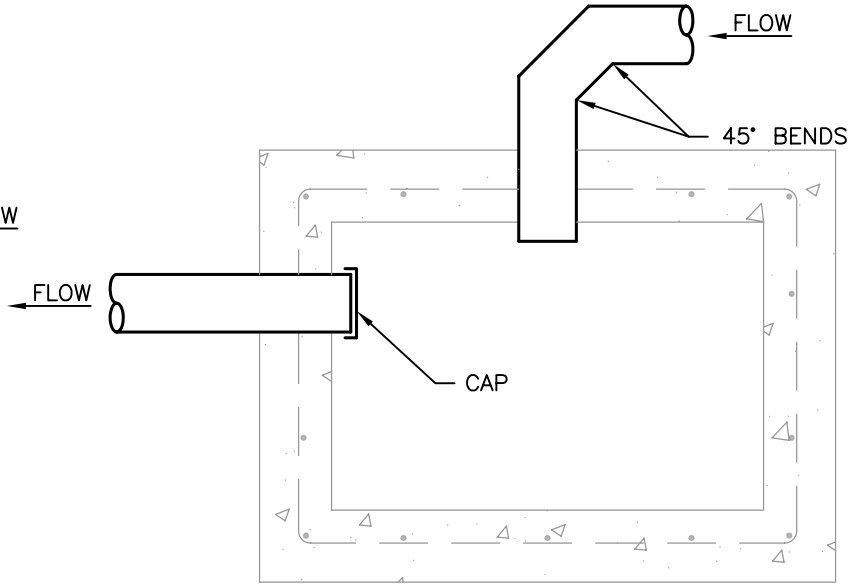
PUBLIC WORKS DEPARTMENT

DATE: 5-1-07

SEC. 64-2 SHT.



FRONT VIEW

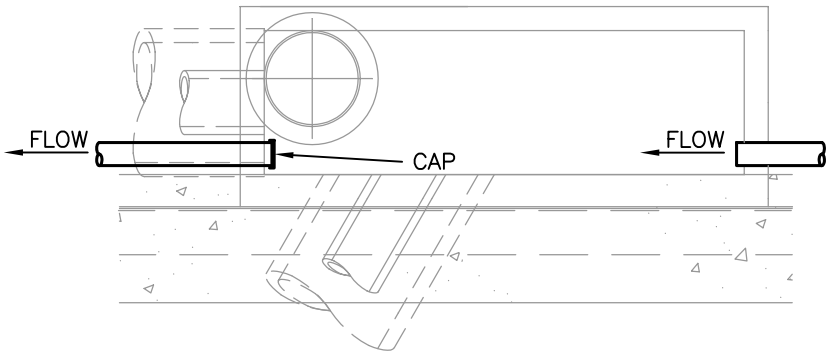


PLAN VIEW

TYPE "B" INLET CONNECTION

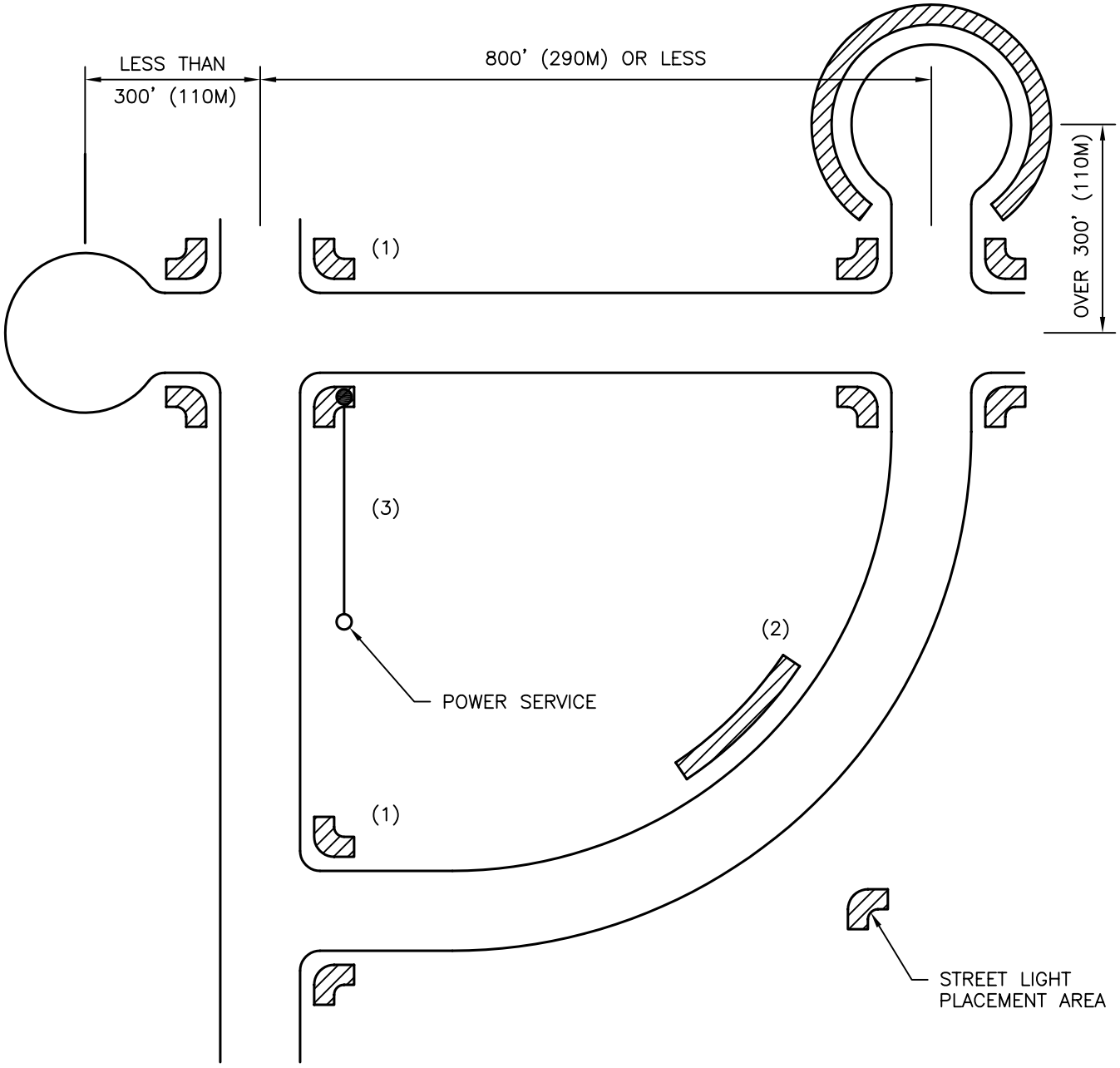
FRONT VIEW

NOTE:
CONNECT UNDERDRAINS INTO INLET BY CONNECTING TO A PIPE SLEEVE PASSING THROUGH THE INLET WALL.
(TYPICAL ALL CONNECTIONS)



PLAN VIEW

TYPE "E" INLET CONNECTION



NOTES:

1. LIGHTS SHALL BE LOCATED IN ONE OF THE CORNERS OF EACH INTERSECTION.
2. LIGHTS LOCATED ON CURVES SHALL BE LOCATED ON THE INSIDE OF SUCH CURVES.
3. UNDERGROUND CABLE SHALL BE INSTALLED BETWEEN AN APPROPRIATE POWER SERVICE AND THE STREET LIGHT LOCATION (SEE SHEET SL3).
4. ALL STREET LIGHT POLES SHALL BE OUT OF THE ROADWAY CLEAR ZONE.
5. IN NO CASE SHALL A POLE BE INSTALLED WITH LESS THAN 2' CLEAR DISTANCE FROM THE FACE OF THE POLE TO THE BACK OF CURB.
6. IF NOT AT AN INTERSECTION, STREET LIGHTS ARE TYPICALLY LOCATED NEAR A PROPERTY LINE.

CITY OF RAPID CITY — PUBLIC WORKS DEPARTMENT

TRAFFIC DESIGN STANDARDS
STREET LIGHT LOCATIONS – SL2

DATE: 5–1–07

SEC. 91–4a SHT.

STREET LIGHT LOCATIONS:

THE FOLLOWING APPLIES TO LOCATIONS NOT ALREADY ILLUMINATED TO A LEVEL MEETING THESE STANDARDS

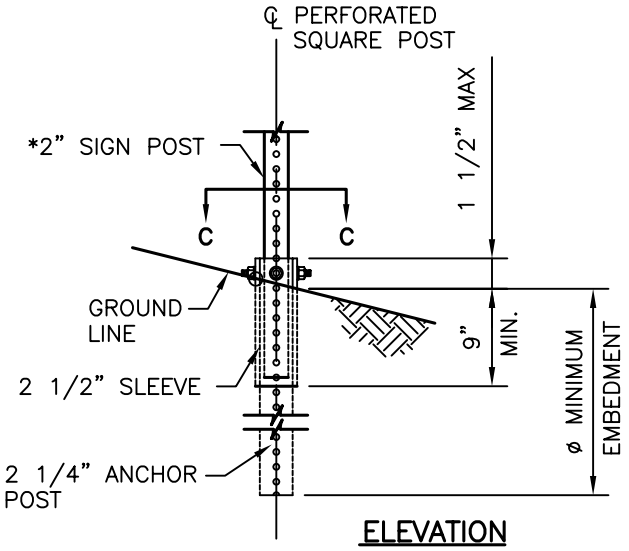
RESIDENTIAL OR LOCAL STREETS REQUIRE STREET LIGHTS AT LOCATIONS FOLLOWING THESE GUIDELINES:

1. ALL INTERSECTIONS.
2. AT INTERMEDIATE LOCATIONS WHEN ADJACENT INTERSECTIONS ARE SPACED OVER 290 METERS (800 FEET) APART.
3. AT THE END OF DEAD END STREETS OVER 110 METERS (300 FEET) LONG.
4. CHANGES IN VERTICAL OR HORIZONTAL ROADWAY ALIGNMENT.

COLLECTOR AND ARTERIAL STREETS SHALL BE LIT WITH STREET LIGHT POLE SPACING FOLLOWING ILLUMINATING SOCIETY ROADWAY STANDARDS. CONTACT THE CITY TRAFFIC ENGINEER FOR ASSISTANCE WITH STREET LIGHT LOCATIONS ON COLLECTOR AND ARTERIAL ROADWAYS.

STREET LIGHT INSTALLATION:

1. CABLE INSTALLATION IS TO BE COORDINATED WITH APPROPRIATE POWER COMPANY AT TIME OF SUBDIVISION CONSTRUCTION.
2. CABLE SHALL BE IN USABLE CONDITION WHEN SUBDIVISION IMPROVEMENTS ARE COMPLETED
3. CABLE TYPE & INSTALLATION IS TO MEET LOCAL POWER COMPANY REQUIREMENTS
4. IF POLES ARE TO BE OWNED OR MAINTAINED BY THE CITY, THE CABLE TYPE AND INSTALLATION IS TO MEET CITY REQUIREMENTS AND MUST BE ENCLOSED IN SCH. 80 PVC CONDUIT UNDER ROADWAYS AND SCH. 40 ELSEWHERE.
5. AS BUILT PLANS SHOWING ALL STREET LIGHT CABLE LOCATIONS SHALL BE PROVIDED TO CITY ENGINEERING DEPARTMENT.



ELEVATION

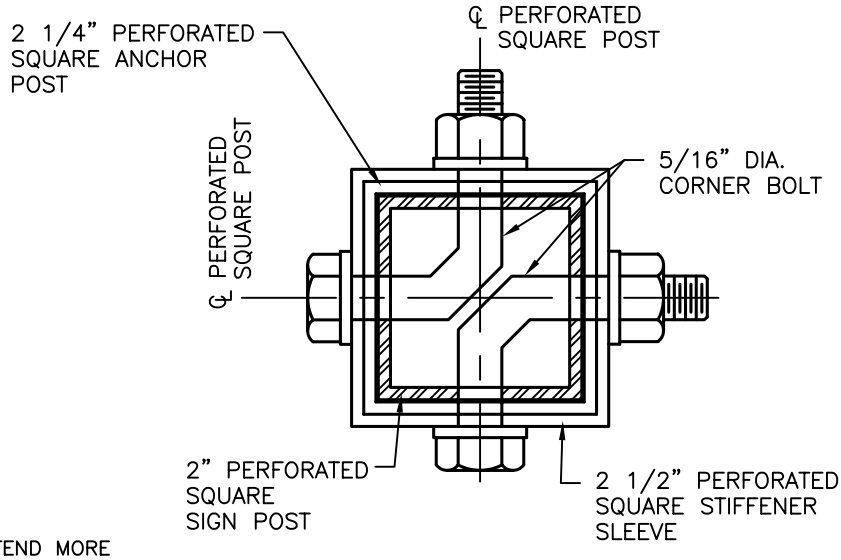
MINIMUM EMBEDMENT LENGTH ø SHALL BE 3'–0".

GENERAL NOTES:

1. ALL POSTS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A653.
2. ALL HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153.

INSTALLATION PROCEDURE:

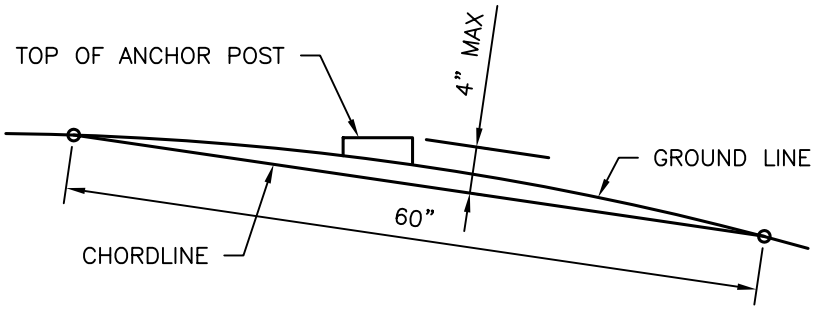
1. DRIVE ANCHOR POST AND SLEEVE TO WITHIN APPROXIMATELY 1 1/2 '' ABOVE GROUND LEVEL.
2. INSERT SIGN POST INTO ANCHOR TO A MINIMUM DEPTH OF 9'' BELOW GROUND LEVEL.
3. PLACE CORNER BOLTS AND FLAT WASHERS THROUGH TOP HOLES IN ANCHOR POST. REMOVE DIRT FROM AROUND THE POST AS NECESSARY TO ALLOW ROOM FOR BOLTS
4. PLACE A FLAT WASHER & NUT ON EACH BOLT.
5. TIGHTEN NUTS AND TAMP EARTH AROUND BASE POST FIRMLY.
6. FOR SIGNS OVER 48" WIDE, TWO POSTS ARE REQUIRED.



SECTION C–C

NOTE:

THE TOP OF ANCHOR POST SHALL NOT EXTEND MORE THAN 4" MAX. ABOVE THE CHORDLINE WITHIN A 60" CHORD.



BREAKAWAY SUPPORT STUB CLEARANCE DIAGRAM

CITY OF RAPID CITY — PUBLIC WORKS DEPARTMENT

SIGN POST INSTALLATION DETAIL

DATE: 5–1–07

SEC. 91–3d SHT.

TRAFFIC SIGN SPECIFICATIONS:

THE FOLLOWING SPECIFICATIONS APPLY TO ALL TRAFFIC CONTROL SIGNS INSTALLED WITHIN THE CITY. ALL SIGNS SHALL BE MANUFACTURED AND INSTALLED PER CITY SPECIFICATIONS/STANDARDS. ITEMS NOT SPECIFICALLY DEFINED BY THE CITY SHALL FOLLOW SDDOT SPECIFICATIONS, AND THOSE IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND TRAFFIC CONTROL DEVICES HANDBOOK.

MANUFACTURE:

THE FOLLOWING PERTAINS TO ALL TRAFFIC CONTROL SIGNS SIGN FACES:

1. SIGNS SHALL BE STANDARD SIZE.
2. SIGN FACES SHALL BE MANUFACTURED USING HIGH INTENSITY OR DIAMOND GRADE SHEETING MATERIAL.
3. SILK SCREENED FACES SHALL BE FREE OF DRIPS, SMEARS, THIN SPOTS OR OTHER DEFECTS THAT WILL AFFECT THEIR USEFULNESS OR LONGEVITY.
4. COLOR SHALL BE UNIFORM AND MATCH FEDERAL COLOR STANDARDS.
5. FACES SHALL BE FULLY ADHERED TO THE BACKING MATERIAL.

BACKING MATERIAL:

1. ALUMINUM SHALL BE ANODIZED AND 0.080 MINIMUM GAUGE THICKNESS.
2. ALUMINUM SHALL BE MINIMUM GRADE TYPE 5000.
3. RECYCLED PLASTIC SIGN BLANKS ARE ALLOWED. USE OF PLASTIC BLANKS MUST BE APPROVED BY THE CITY TRAFFIC ENGINEER PRIOR TO USE.
4. WOOD, PAPER, OR OTHER MATERIALS ARE NOT ALLOWED.
5. BACK OF SIGN BLANK SHALL BE FREE OF ALL OBJECTS EXCEPT DATE STICKER.

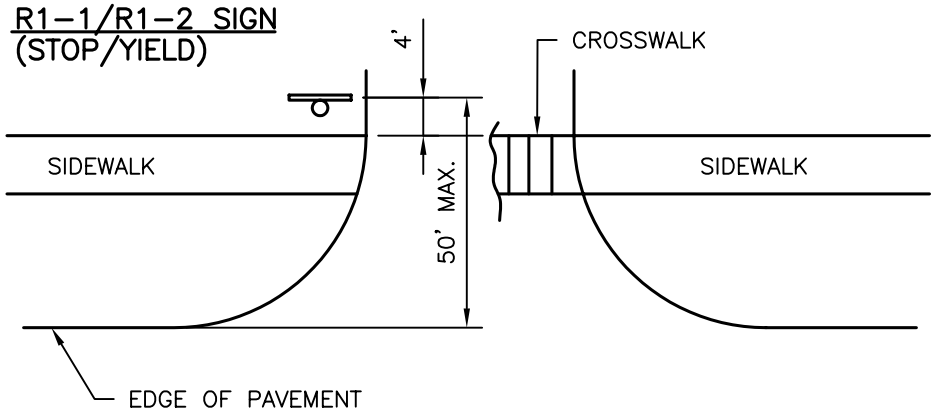
INSTALLATION:

GENERALLY, TRAFFIC CONTROL SIGNS SHALL BE INSTALLED IN ACCORDANCE WITH THE PROJECT PLANS, THESE SPECIFICATIONS AND THE FOLLOWING NOTES AND DETAIL:

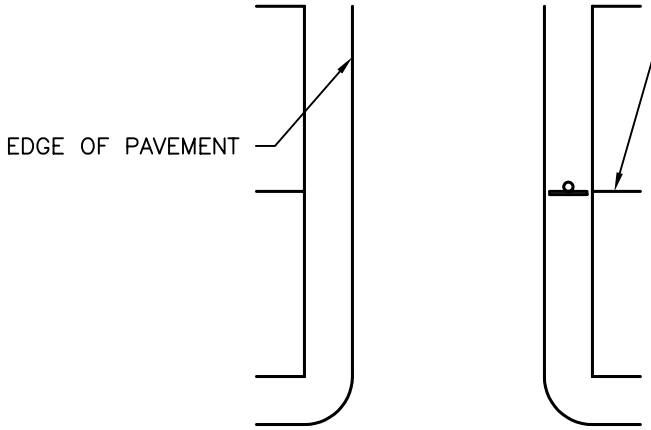
1. ALL TRAFFIC CONTROL SIGNS SHALL BE INSTALLED 7 FEET ABOVE THE ROADWAY ELEVATION
2. THE POST(S) SHALL EXTEND TO THE TOP OF THE SIGN.
3. SQUARE TUBE TYPE SIGN POSTS SHALL BE USED. THESE POSTS SHALL MEET ALL APPLICABLE FEDERAL BREAK–AWAY STANDARDS, OR, BE OF THE SAME MANUFACTURE/TYPE AS USED BY THE CITY.
4. ALL POSTS SHALL BE FULLY GALVANIZED.

SPECIFIC INTERPRETATIONS OF THESE SPECIFICATIONS SHALL BE MADE BY THE CITY TRAFFIC ENGINEER.

R1–1/R1–2 SIGN (STOP/YIELD)



R2–1 SIGN (SPEED LIMIT)

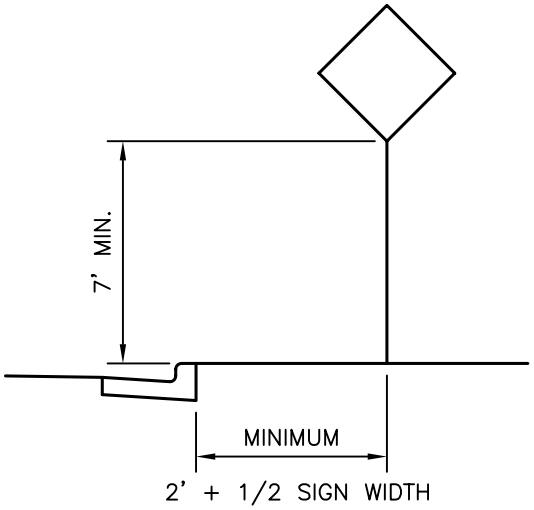


*PLACED AT OR NEAR THE FIRST LOT LINE AWAY FROM INTERSECTION

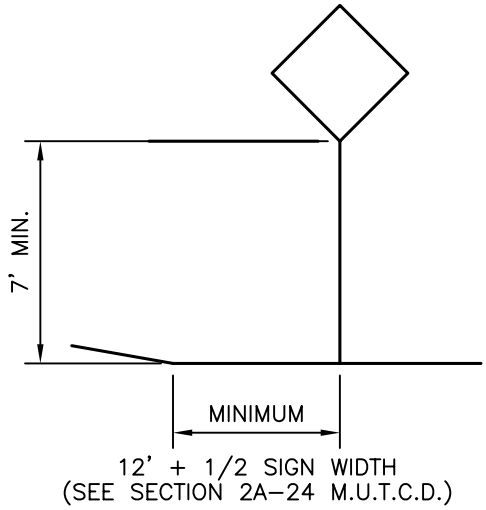
*SPEED LIMIT SIGNS ARE REQUIRED AT THE CHANGE IN LIMIT SPEED

LATERAL PLACEMENT

WITH CURB



WITHOUT CURB



CITY OF RAPID CITY — PUBLIC WORKS DEPARTMENT

TRAFFIC DESIGN STANDARDS
SIGN LOCATIONS –SI3

DATE: 5–1–07

SEC. 91–3b SHT.

STREET NAME SIGNS – LEGENDS:

STREET NAME SIGNS ARE REQUIRED AT ALL STREET INTERSECTIONS, OR LOCATIONS WHERE THE NAME OF THE STREET CHANGES. UNIFORMITY IN THEIR DESIGN IS IMPORTANT IN THE UNDERSTANDING OF THESE SIGNS BY MOTORISTS.

THE FOLLOWING SET OF GUIDELINES SHALL BE USED WHEN DESIGNING THE LEGEND OF STREET NAME SIGNS:

1. THE NAME OF THE STREET SHALL BE USED IN FULL, WHILE ALL PREFIXES AND SUFFIXES SHALL BE ABBREVIATED.

2. ALL CAPITAL LETTERS SHALL BE USED.

3. DIRECTIONS (NORTH, NORTHEAST, EAST, ETC.) SHALL BE ABBREVIATED, UNLESS SUCH DIRECTION IS THE STREET NAME (ie: EAST BOULEVARD).

4. SUFFIXES (STREET, PLACE, COURT, AVENUE, ETC.) SHALL BE ABBREVIATED USING THE ABBREVIATIONS BELOW.

5. NUMBERED STREETS SHALL BE IDENTIFIED WITH NUMBERS (ie 5TH ST, NOT FIFTH ST)

6. ALL PARTS OF THE STREET NAME MUST APPEAR ON THE STREET NAME SIGN

7. STREET NAME SIGNS SHALL BE 9 INCHES HIGH WITH 6 INCH LETTERS (EXCEPT AS OUTLINED IN NO. 8 BELOW).

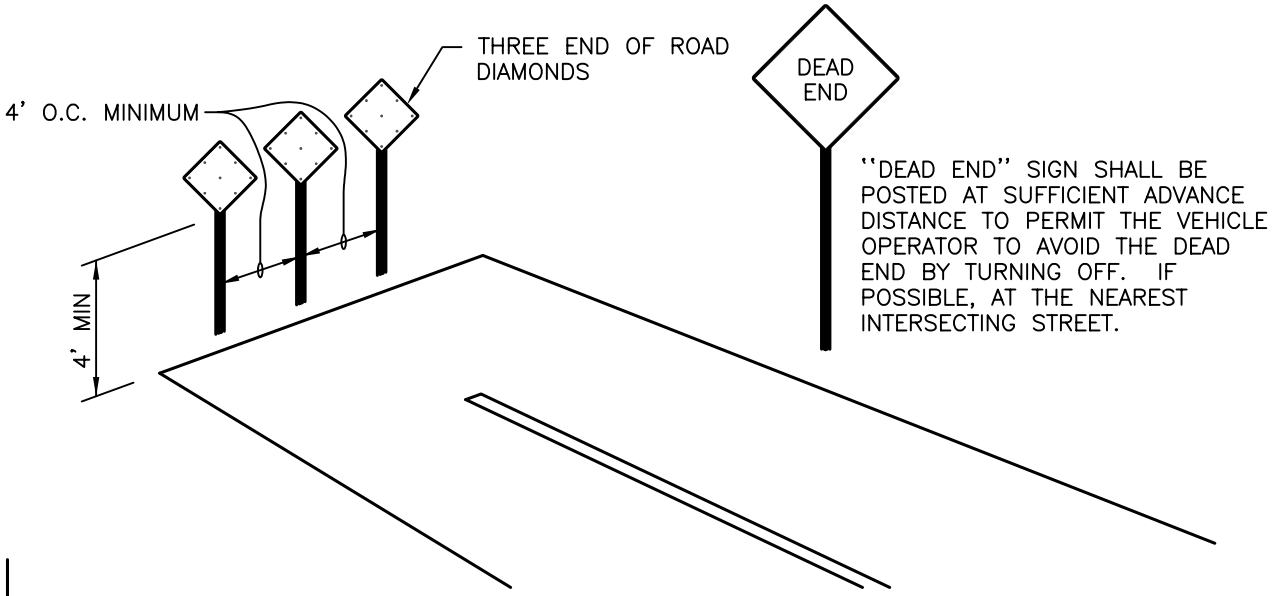
8. MINIMUM SIGN LENGTH IS 24 INCHES.

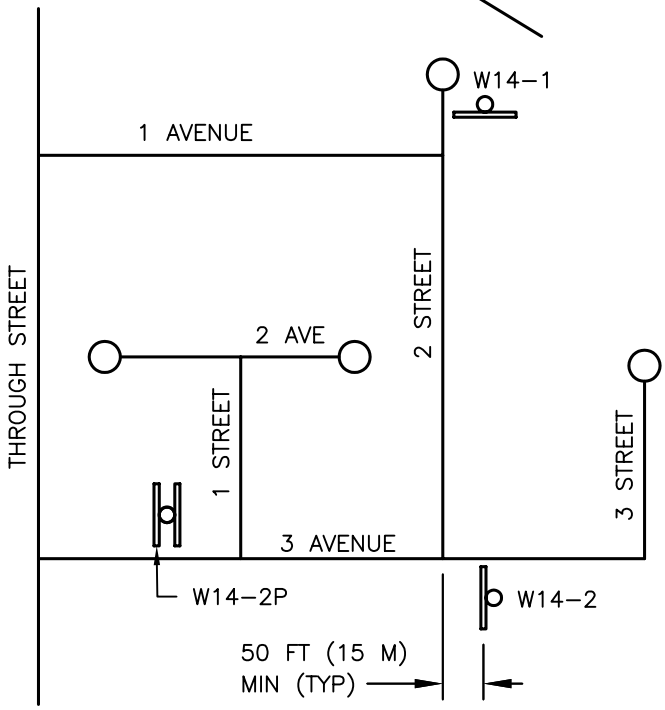
9. PRIVATE STREETS SHALL HAVE A 'P' INSTALLED ON THE STREET NAME SIGN. THIS LETTER IS TO BE 3 INCHES HIGH, LOCATED TO THE RIGHT OF THE STREET NAME LEGEND AND BE SEPARATED FROM THE LEGEND BY AT LEAST 2 INCHES.

THE FOLLOWING LIST OF ACCEPTABLE ABBREVIATIONS SHALL BE USED FOR STREET SIGN NAMES:

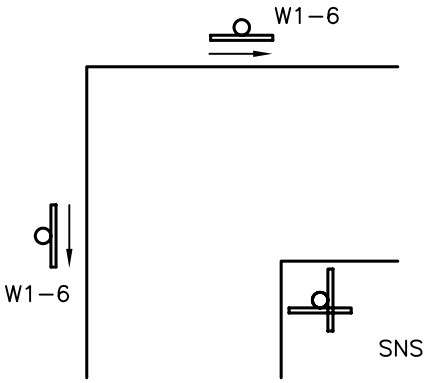
AVENUE - AVE	BOULEVARD - BLVD
CIRCLE - CIR	COURT - CT
LANE - LN	PLACE - PL
ROAD - RD	STREET - ST
NORTH - N	NORTHEAST - NE
EAST - E	SOUTHEAST - SE
SOUTH - S	SOUTHWEST - SW
WEST - W	NORTHWEST - NW

SPECIFIC INTERPRETATIONS OF THESE SPECIFICATION SHOULD BE DIRECTED TO THE CITY TRAFFIC ENGINEER.





DEAD END



STREET TURN

TYPICAL USE OF ''DEAD END'' AND ''NO OUTLET'' SIGNS
(W14-1) (W14-2)

NOTES:

1. THIS SHEET APPLICABLE TO RESIDENTIAL AND MINOR STREETS ONLY. MAJOR STREETS ARE TO BE EVALUATED INDIVIDUALLY.
2. END OF ROAD DIAMOND IS A RED 18" REFLECTIVE SIGN WITH HIGH INTENSITY SIGN SHEETING.
3. ''DEAD END'' SIGNS ARE NOT REQUIRED WHERE CONDITION IS READILY EVIDENT FROM THE THROUGH STREET
4. USE W14-1P AND W14-2P SIGNS WHEN APPLICABLE ON THE STEM OF "T" INTERSECTIONS. MOUNT ON SAME POST AS STOP AND STREET NAME SIGNS.

CITY OF RAPID CITY | PUBLIC WORKS DEPARTMENT

TRAFFIC DESIGN STANDARDS
STREET TERMINATIONS

DATE: 5-1-07

SEC. 91 SHT. 3

IN GENERAL, BOTH THE REGULATORY R4-7 (KEEP RIGHT) SIGN AND /OR FLEXIBLE DELINEATOR POSTS (FDP) SHOULD BE USED AT THE FOLLOWING LOCATIONS:

* THE FIRST MEDIAN OF A DIVIDED SECTION
* SIGNALIZED INTERSECTIONS
* OTHER MAJOR INTERSECTIONS
* LOCATIONS WHERE NEED HAS BEEN DETERMINED BY AN ENGINEERING STUDY

ALL TRAFFIC CONTROLS ARE TO CONFORM TO MUTCD REQUIREMENTS

NOTES:

1. IT IS RECOMMENDED THAT BOTH THE KEEP RIGHT SIGN AND FDP'S BE USED ONLY WHERE THE NEED HAS BEEN DETERMINED BY AN ENGINEERING STUDY.

2. ON MEDIANS UNDER 4 FEET IN WIDTH, INSTALL ONE (1) FDP AT A LOCATION ONE (1) FOOT BACK FROM THE MEDIAN NOSE.

3. FDP'S SHOULD MATCH THE ADJACENT PAVEMENT MARKING STRIPE COLOR IF USED TO REINFORCE SUCH MARKINGS. HIGH INTENSITY SHEETING SHALL MATCH THE ADJACENT PAVEMENT MARKING STRIPE.

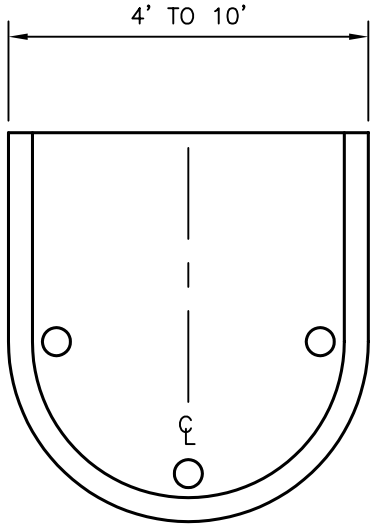
4. FDP'S SHOULD BE 42 INCHES HIGH, OR, SUCH A HEIGHT SO AS TO BE VISIBLE TO THE DRIVER.

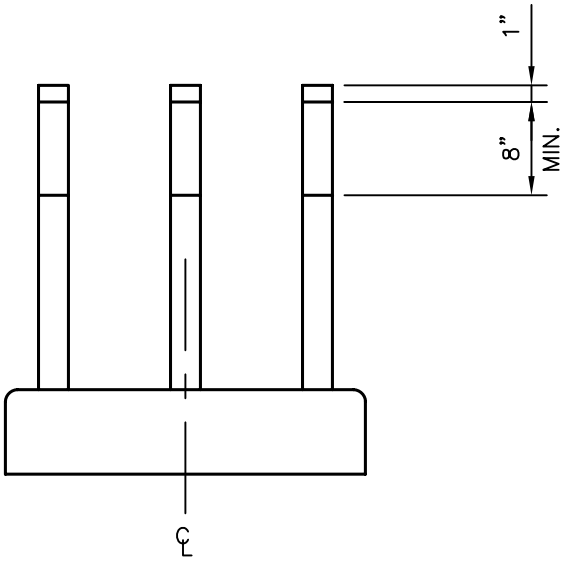
5. LAYOUT SHOULD FOLLOW SHEET PM4a OF THE RAPID CITY TRAFFIC DESIGN STANDARDS, OR AS DIRECTED BY THE TRAFFIC ENGINEER.

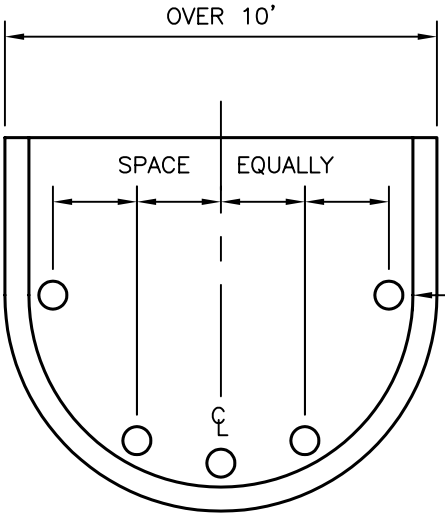
6. WHEN SHOWN ON CONSTRUCTION PLANS, FDP'S SHALL BE IDENTIFIED IN A MANNER SIMILAR TO THAT SHOWN ON SHEET PM4a (SOLID DONUT SHAPE). COLOR, NUMBER AND BASE TYPE (SURFACE OR GROUND MOUNT) MUST BE SPECIFIED ON ALL QUANTITY SHEETS. COLOR AND BASE TYPE ARE TO BE SPECIFIED FOR EACH FDP GROUP ON THE PLAN SHEET.

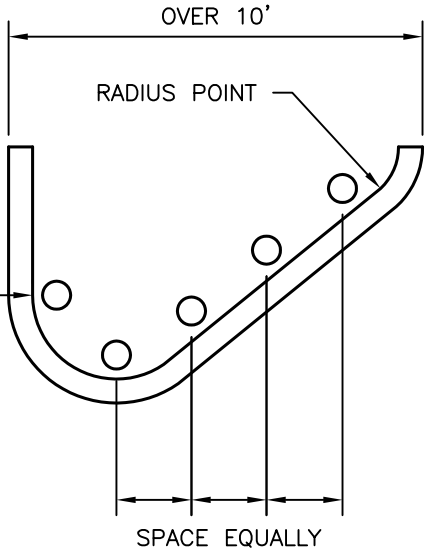
7. FDP TYPE AND INSTALLATION METHODS MUST BE APPROVED BY THE TRAFFIC ENGINEER PRIOR TO USE.

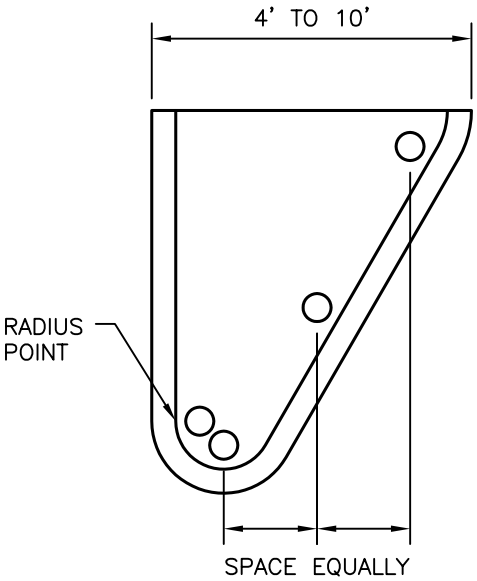
8. ON DIRECTIONAL MEDIANS, THE OPTIONAL FDP'S ARE TO SUPPLEMENT OTHER SIGNING AND MARKINGS TO DETER WRONG WAY MANEUVERS.

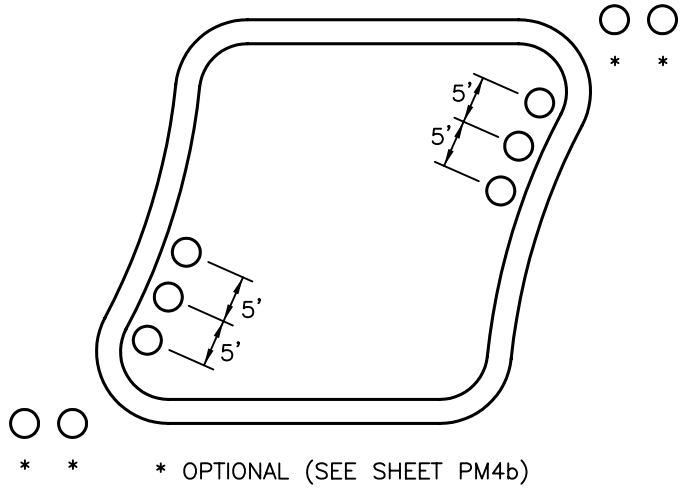












CITY OF RAPID CITY | PUBLIC WORKS DEPARTMENT

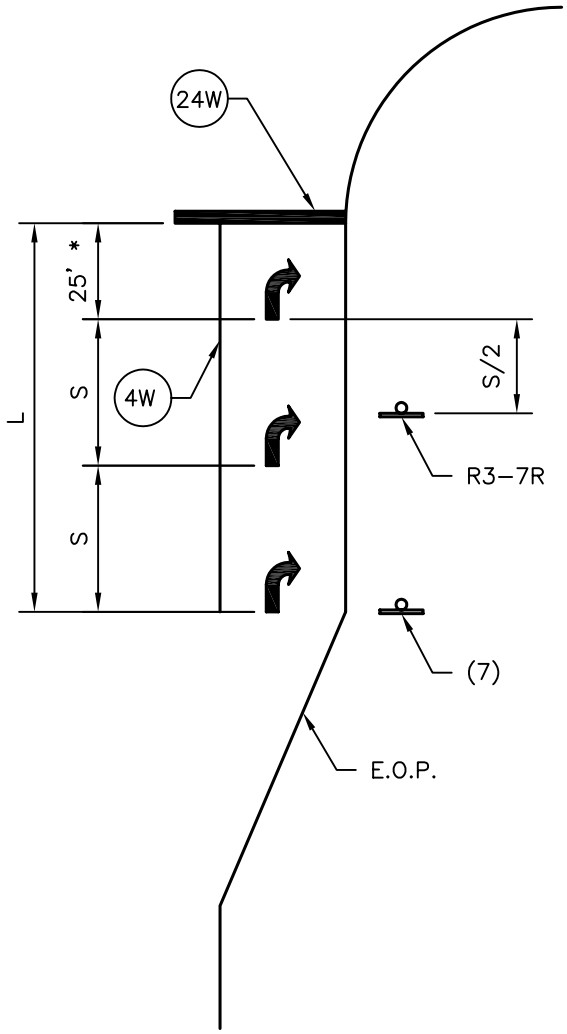
TRAFFIC DESIGN STANDARDS
FLEXIBLE DELINEATOR POSTS – PM4

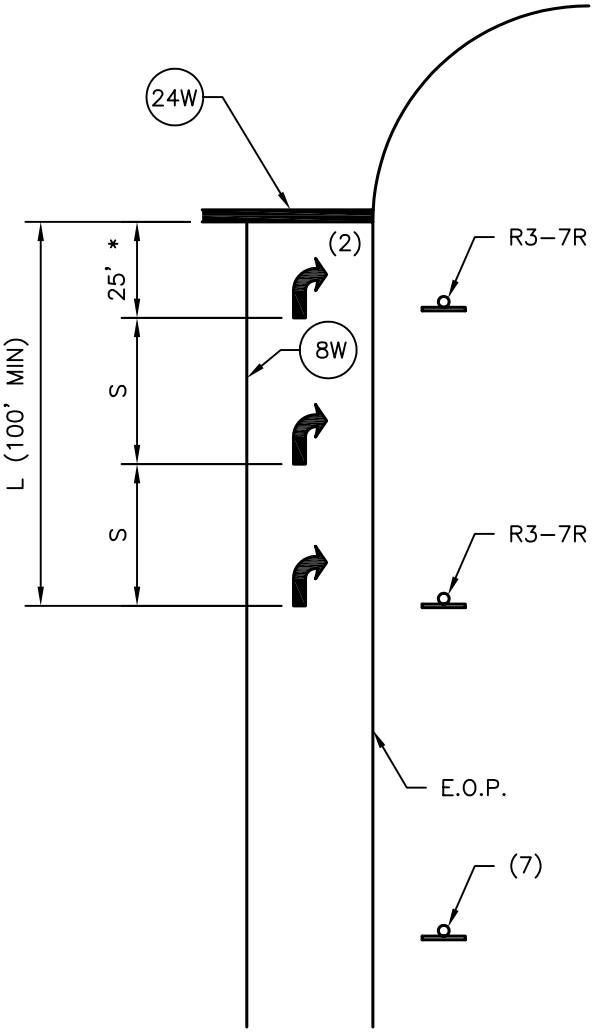
DATE: 5–1–07

SEC. 91–2c | SHT.

TURN LANE – LANE USED SOLELY FOR TURNING VEHICLES

DROP LANE – THRU LANE THAT DIRECTLY BECOMES AN EXCLUSIVE TURN LANE





NOTES:

1. ALL SIGNS AND PAVEMENT MARKINGS ARE TO BE IN ACCORDANCE WITH THE CURRENT EDITION OF THE M.U.T.C.D.
2. ARROW SPACING (S) MEASURED FROM BASE TO BASE: $32' \leq S \leq 80'$.
3. FOR TURN LANE LENGTH $L \geq 89'$, USE THREE ARROW SYMBOLS.
4. RIGHT TURN LANES SHOWN. LEFT TURN LANES SHALL BE REVERSED.
5. TURN LANE LENGTH (L) IS TO BE DESIGNED BASED ON ESTIMATED QUEUE LENGTHS IN TURN LANE AND IN THE ADJACENT THRU LANE.
6. FOR $L > 185'$, THE 25' DIMENSION MAY BE INCREASED. *
7. ADVANCED INTERSECTION LANE CONTROL SIGNS (R3–8 SERIES) MAY BE REQUIRED.

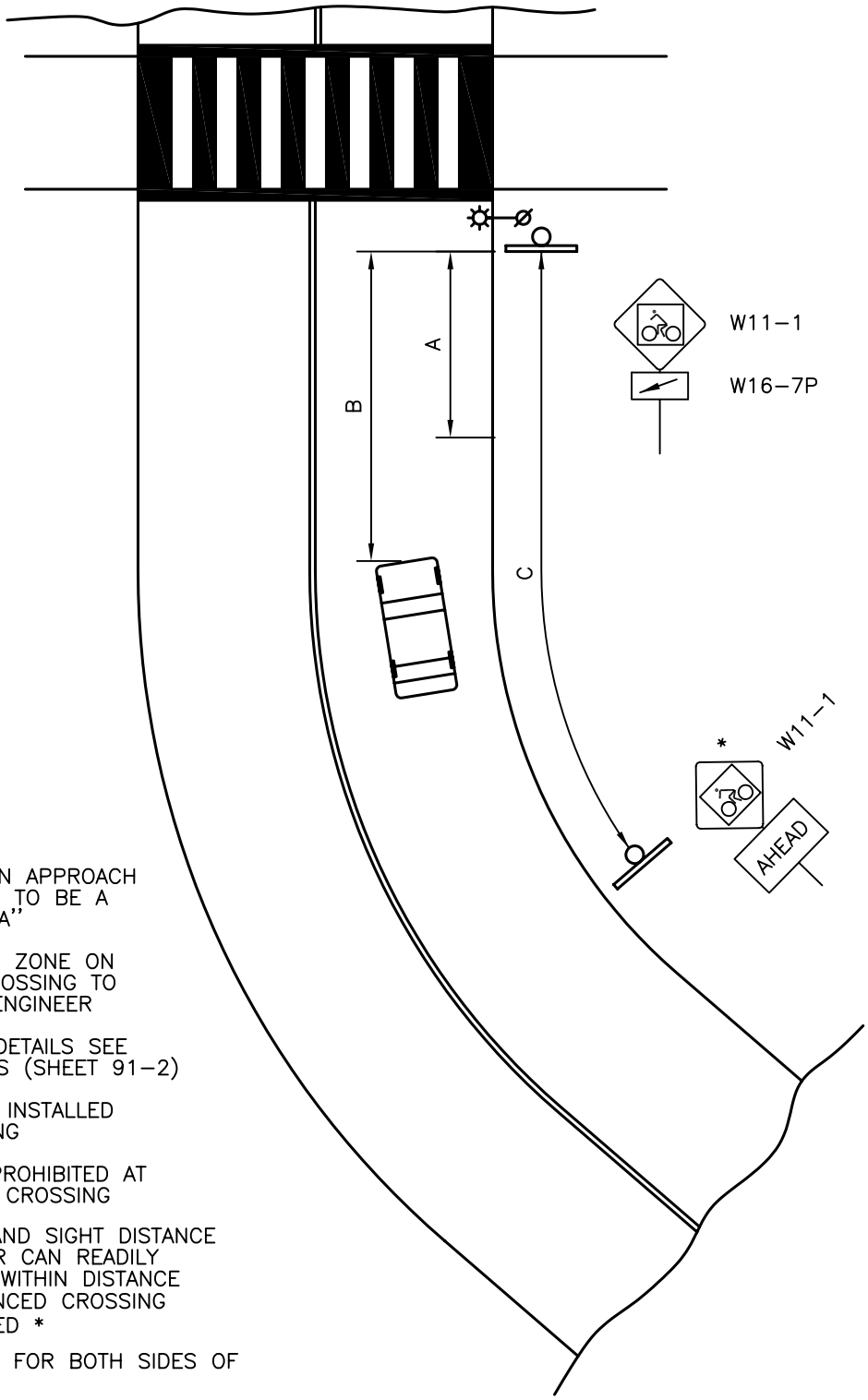
CITY OF RAPID CITY — PUBLIC WORKS DEPARTMENT

TRAFFIC DESIGN STANDARDS

TURN LANE SIGNING & MARKINGS – PM3

DATE: 5–1–07

SEC. 91 — SHT. 2b



NOTES:

1. NO PASSING ZONE ON APPROACH TOWARD CROSSWALKS TO BE A MINIMUM DISTANCE "A"
2. PASSING/NO PASSING ZONE ON DEPARTURE FROM CROSSING TO BE DETERMINED BY ENGINEER
3. CROSSWALK DESIGN DETAILS SEE CROSSWALK MARKINGS (SHEET 91-2)
4. STREET LIGHT TO BE INSTALLED AT OR NEAR CROSSING
5. PARKING SHALL BE PROHIBITED AT DISTANCE "A" FROM CROSSING
6. IF ROAD GEOMETRY AND SIGHT DISTANCE IS SUCH THAT DRIVER CAN READILY SEE CROSSING SIGN WITHIN DISTANCE "B", THEN THE ADVANCED CROSSING SIGN IS NOT REQUIRED *
7. THIS LAYOUT APPLIES FOR BOTH SIDES OF CROSSWALK

APPROACH SPEED (MPH)	DISTANCE A (FEET)	DISTANCE B (FEET)	DISTANCE C (FEET)
UNDER 30	50	170	200
30	100	220	250
35	150	275	300

CHART IS NOT APPLICABLE FOR GRADES OVER 6% OR SPEEDS OVER 35 MPH

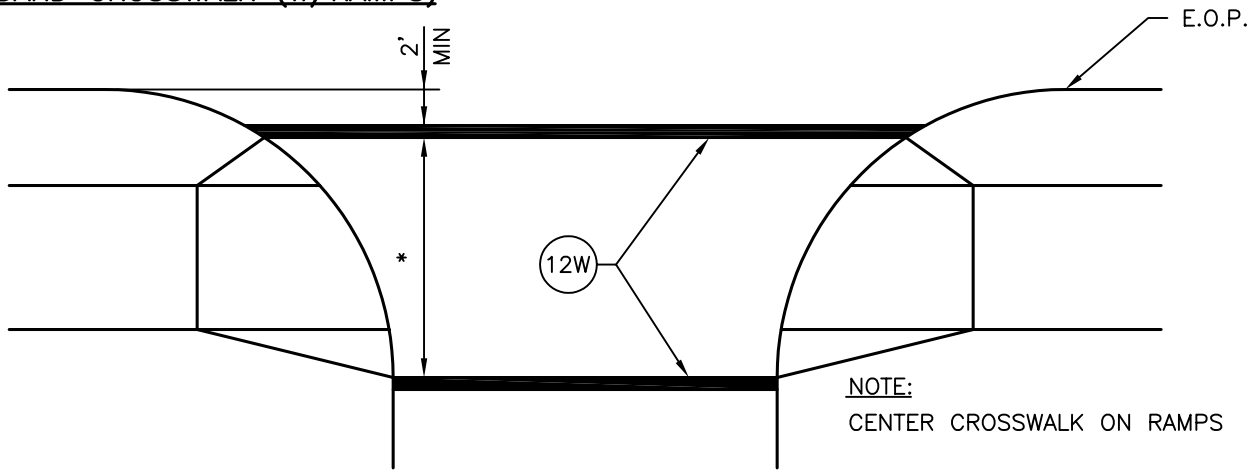
CITY OF RAPID CITY — PUBLIC WORKS DEPARTMENT

TRAFFIC DESIGN STANDARDS
PATHWAY STREET CROSSING – PM2

DATE: 5-1-07

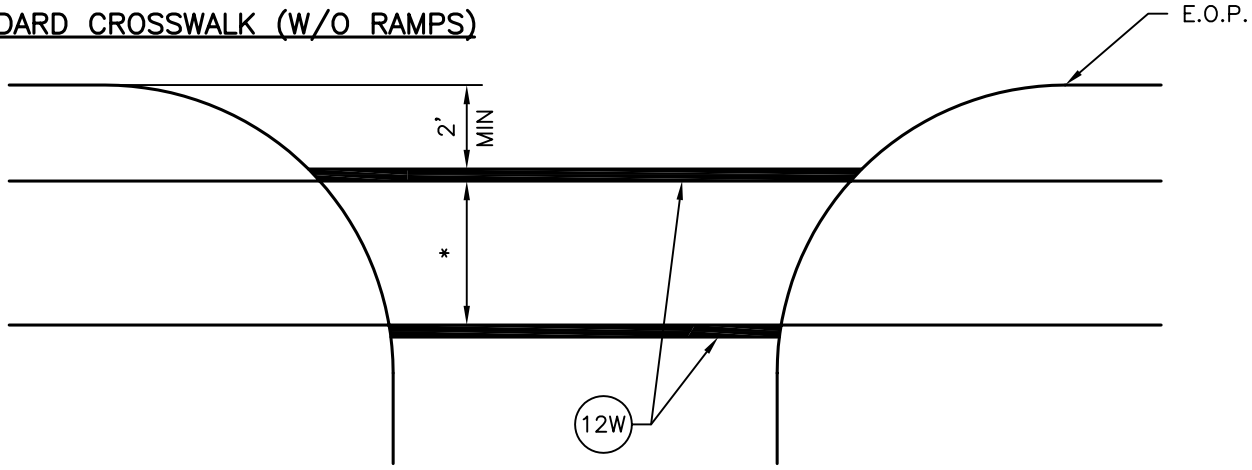
SEC. 91 — SHT. 2a

STANDARD CROSSWALK (W/RAMPS)

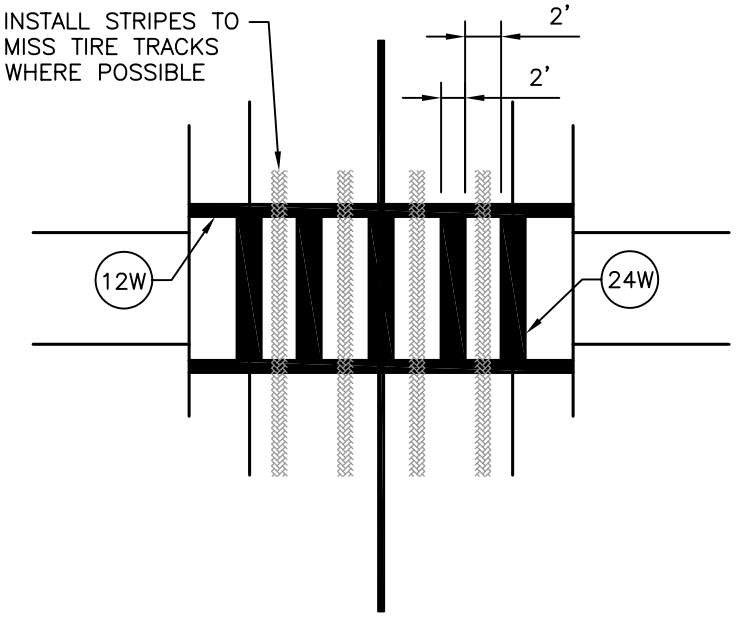


NOTE:
CENTER CROSSWALK ON RAMPS

STANDARD CROSSWALK (W/O RAMPS)



HIGH VISIBILITY CROSSWALK



* CROSSWALK WIDTH TO MATCH ADJACENT SIDEWALK OR PATH WIDTH BUT NOT LESS THAN 6' MEASURED BETWEEN LINES

HIGH VISIBILITY CROSSWALK:
LOCATION AND WIDTH:
SEE STANDARD CROSSWALK DETAIL

USE:
SCHOOL, PATHWAY AND OTHER CROSSING LOCATIONS WITH HIGH PEDESTRIAN VOLUMES

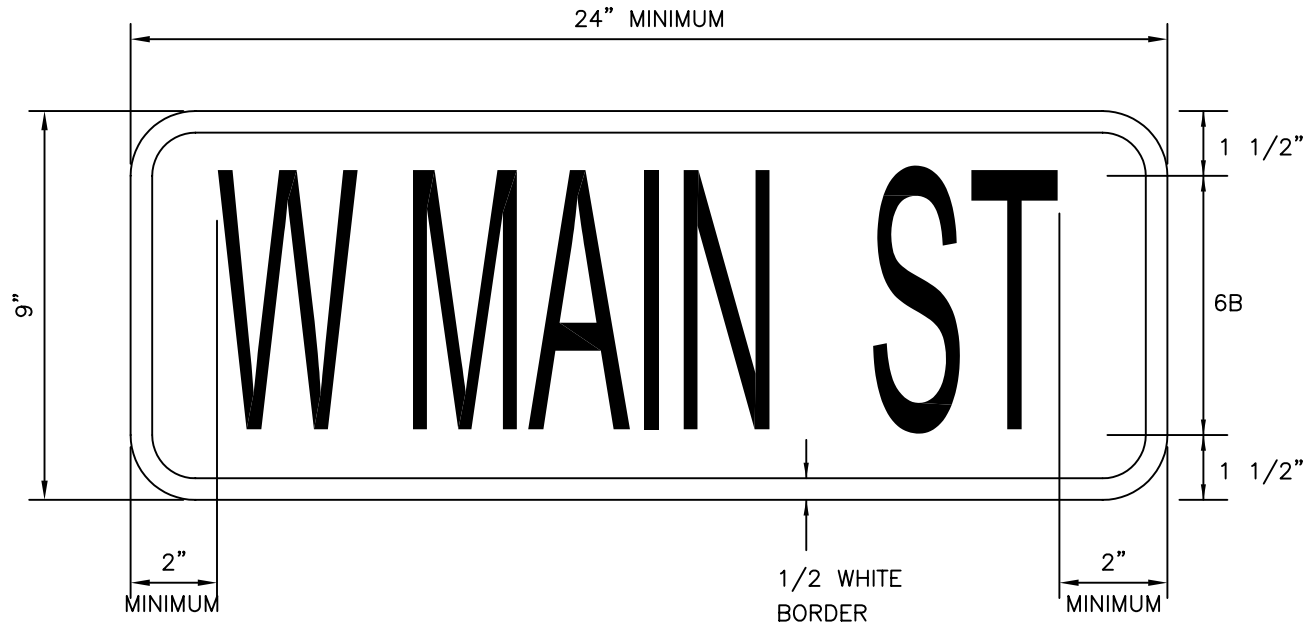
CITY OF RAPID CITY — PUBLIC WORKS DEPARTMENT

TRAFFIC DESIGN STANDARDS
PATHWAY STREET CROSSING – PM1

DATE: 5–1–07

SEC. 91 — SHT. 2

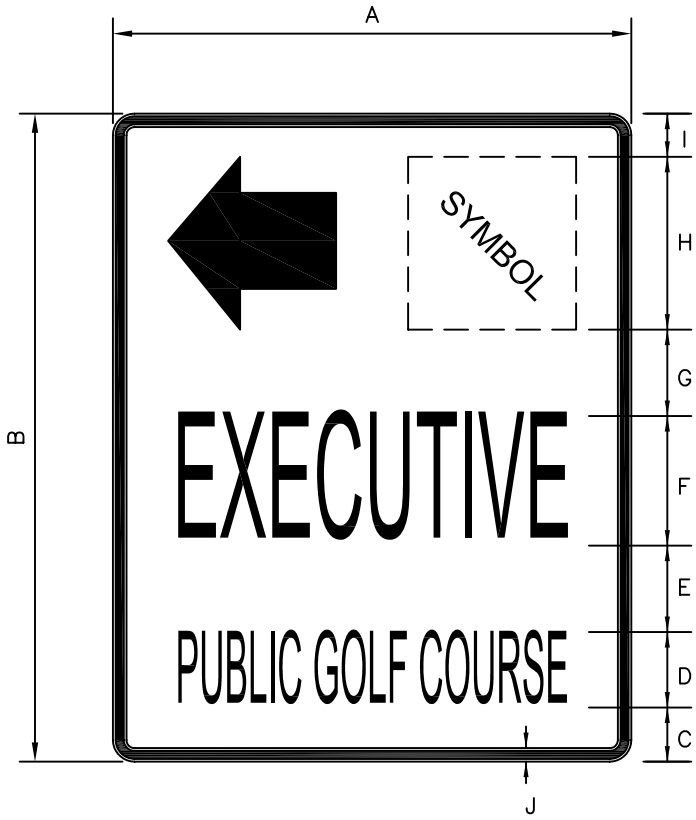
RAPID CITY TRAFFIC ENGINEERING & OPERATIONS
SIGN DETAIL SHEET



LEGEND – WHITE (DIAMOND GRADE (VIP)
BACKGROUND – GREEN (DIAMOND GRADE (VIP) OR OVERLAY)

CITY OF RAPID CITY	PUBLIC WORKS DEPARTMENT
TRAFFIC CONTROL DEVICES SIGNS	DATE: 5–1–07 SEC. 91–1b SHT.

RAPID CITY TRAFFIC ENGINEERING & OPERATIONS
SIGN DETAIL SHEET



OR
RIGHT TURN
2 BLOCKS AHEAD

	A	B	C	D	E	F	G	H	I	J
MIN.										
STD.	24	30	2.5	3.5B	4	6C	4	8	2	5/8

LEGEND – WHITE (REFLECTIVE)
BACKGROUND – GREEN (REFLECTIVE)

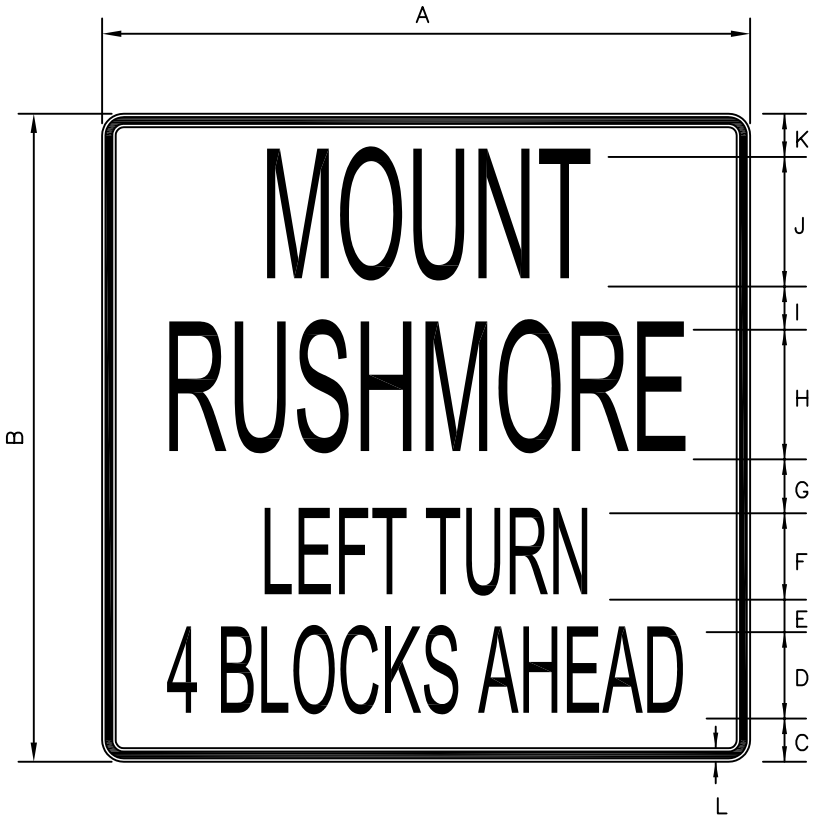
CITY OF RAPID CITY — PUBLIC WORKS DEPARTMENT

TRAFFIC CONTROL DEVICES
SIGNS

DATE: 5–1–07

SEC. 91 — SHT. 1a

RAPID CITY TRAFFIC ENGINEERING & OPERATIONS
SIGN DETAIL SHEET



OR
RIGHT TURN
2 BLOCKS AHEAD

	A	B	C	D	E	F	G	H	I	J	K	L
MIN.												
STD.	30	30	2	4C	1.5	4C	2.5	6C	2	6C	2	5/8

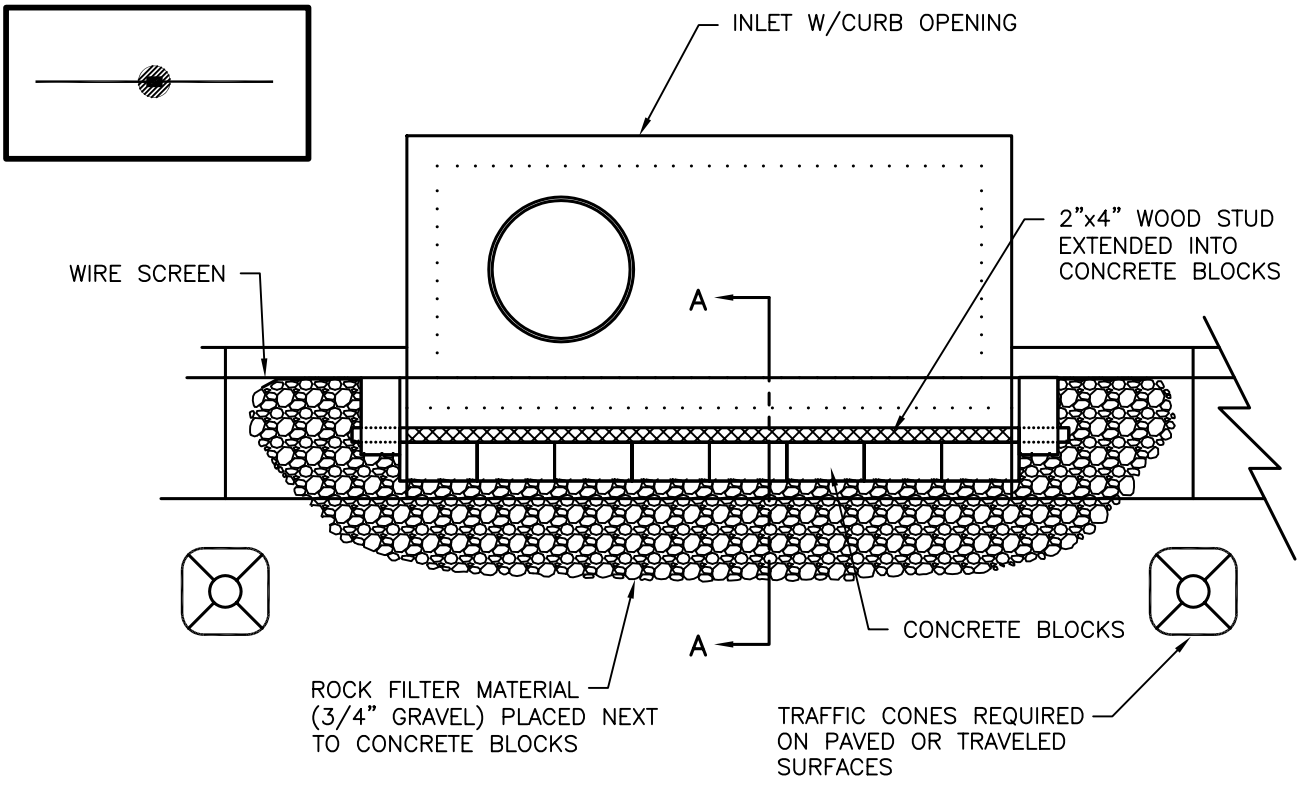
LEGEND – WHITE (REFLECTIVE)
BACKGROUND – GREEN (REFLECTIVE)

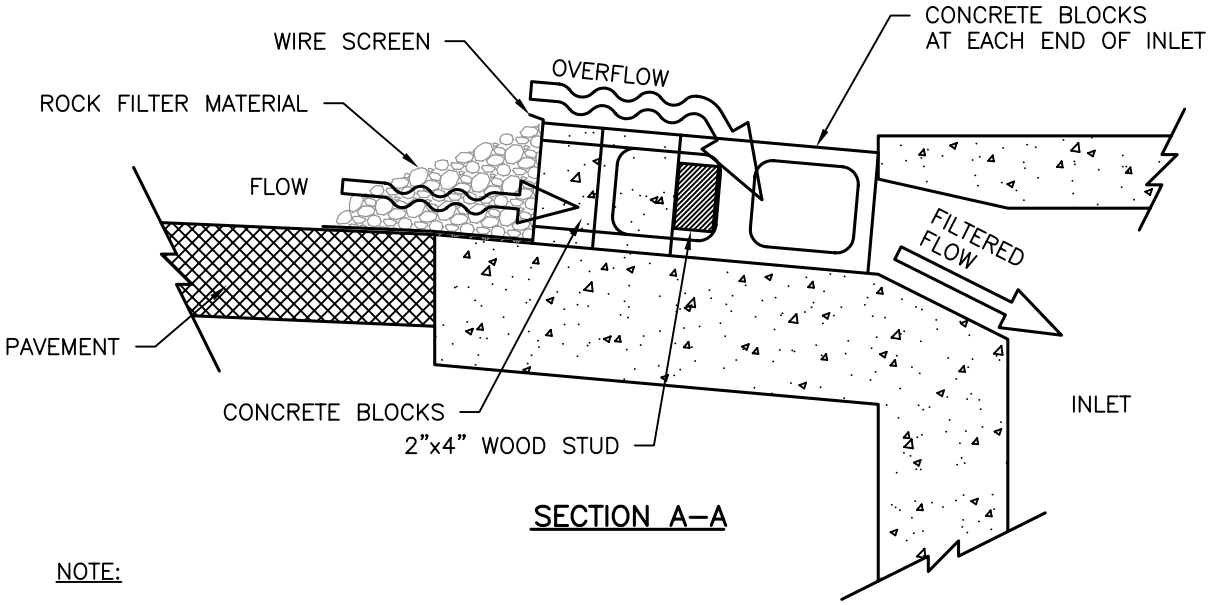
CITY OF RAPID CITY — PUBLIC WORKS DEPARTMENT

TRAFFIC CONTROL DEVICES
SIGNS

DATE: 5–1–07

SEC. 91 — SHT. 1





SECTION A–A

NOTE:

EROSION CONTROL MEASURES SHALL BE MAINTAINED AT ALL TIMES.

CURB INLET GRAVEL FILTER

DETAILS BASED ON THOSE PROVIDED BY THE CITY OF BROOMFIELD, COLORADO, AND URBAN DRAINAGE & FLOOD CONTROL DISTRICT.

CITY OF RAPID CITY — PUBLIC WORKS DEPARTMENT

CURB INLET GRAVEL FILTER

DATE: 5–1–07

SEC. 146–3 SHT.