LYON COUNTY UTILITIES DEPARTMENT
GENERAL NOTES

1. ALL WORK SHALL CONFORM TO THE STANDARD SPECIFICATIONS AND DETAILS FOR PUBLIC WORKS CONSTRUCTION AS ADOPTED BY LYON COUNTY. THE OWNER/CONTRACTOR SHALL OBTAIN A PERMIT FOR PUBLIC WORKS CONSTRUCTION FROM THE LYON COUNTY UTILITIES DEPARTMENT PRIOR TO THE START OF CONSTRUCTION.

2. ALL TRAFFIC CONTROL AND BARRICADING WITHIN THE LYON COUNTY RIGHT-OF-WAY SHALL CONFORM TO SECTION 130 OF THE STANDARD SPECIFICATIONS, PART VI OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND THE NEVADA WORK ZONE TRAFFIC CONTROL HANDBOOK, CURRENT EDITION. NO STREET CLOSURES WILL BE ALLOWED WITHOUT PRIOR APPROVAL OF A TRAFFIC CONTROL PLAN BY THE LYON COUNTY ROAD DEPARTMENT.

3. THE OWNER/CONTRACTOR SHALL CALL UNDERGROUND SERVICE ALERT "CALL BEFORE YOU DIG" (1-800-227-2600) FORTY-EIGHT (48) HOURS PRIOR TO START OF CONSTRUCTION.

4. THE OWNER/CONTRACTOR SHALL CALL THE LYON COUNTY UTILITIES DEPARTMENT ENGINEERING DIVISION FORTY-EIGHT (48) HOURS PRIOR TO THE START OF CONSTRUCTION. THE OWNER/CONTRACTOR SHALL CALL FORTY-EIGHT (48) HOURS PRIOR TO REQUIRED INSPECTIONS AND TESTING. THE REQUIRED INSPECTIONS AND TESTING ARE LISTED ON THE INSPECTION RECORD ISSUED WITH EACH PERMIT. THE OWNER/CONTRACTOR MUST HAVE THE PERMIT NUMBER AND THE DESCRIPTION LISTED ON THE INSPECTION RECORD TO SCHEDULE REQUIRED INSPECTIONS AND TESTING.

5. FINAL UTILITY INSPECTIONS WILL BE PERFORMED BY THE UTILITIES DEPARTMENT ACCORDING TO THE LYON COUNTY UTILITIES DEPARTMENT INSPECTIONS AND TESTING PROCEDURES. NOTE: THESE PROCEDURES REQUIRE SUBMITTAL OF RECORD DRAWING PRINTS BY THE OWNER/CONTRACTOR AND 10 WORKING DAYS FOR THE UTILITIES DEPARTMENT TO PREPARE A FINAL PUNCH LIST. ALL CONDITIONS OF THE FINAL INSPECTION MUST BE COMPLETED PRIOR TO FINAL ACCEPTANCE OR APPROVAL OF A CERTIFICATE OF OCCUPANCY BY THE UTILITIES DEPARTMENT.

6. MODIFICATIONS TO THE APPROVED UTILITY PLANS REQUIRES REVIEW AND APPROVAL BY LYON COUNTY UTILITIES DEPARTMENT. WORK PERFORMED WITHOUT WRITTEN APPROVAL BY THE DEPARTMENT WILL REQUIRE REMOVAL AT THE OWNERS/CONTRACTORS EXPENSE.

7. THE APPROVED PLAN, PERMIT AND INSPECTION RECORD MUST BE ON THE JOB SITE AT ALL TIMES.

8. PLAN APPROVAL SHALL EXPIRE ONE YEAR FROM DATE OF APPROVAL UNLESS CONSTRUCTION HAS BEEN INITIATED.

NO.	REVISION	DATE
1	REDRAW	1/05vp
2	REDRAW	1/10ss

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

LYON COUNTY UTILITIES DEPARTMENT

GENERAL NOTES

SECTION: LYON COUNTY

DRAWING NO.: LC-GN1

DATE: 1/2010

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LYON COUNTY UTILITIES DEPARTMENT
GRAVITY SEWER GENERAL NOTES

1. ALL SEWER MAINS AND LATERALS IN THE RIGHT-OF-WAY/EASEMENT SHALL BE PVC SDR35 UNLESS OTHERWISE NOTED.

2. MANHOLE BASE(S) SHALL BE PRECAST UNLESS OTHERWISE APPROVED BY LYON COUNTY UTILITIES DEPARTMENT. ANY FIELD MODIFICATIONS TO PRECAST BASES SHALL NOT BE ALLOWED.

3. NON-FLEXIBLE TRANSITION COUPLINGS ARE REQUIRED WHEN CONNECTING SEWER MAINS TO EXISTING MAINS. COUPLINGS SHALL BE ROMAC INDUSTRIES INC., STYLE 501 STRAIGHT AND TRANSITION COUPLINGS FOR SEWER OR APPROVED EQUAL WHEN CONNECTING PVC TO NON-PVC MAINS.

4. THE CONTRACTOR SHALL INSTALL A MECHANICAL (EXPANSION) PLUG AT THE POINT OF EXTENSION OF A SEWER MAIN PRIOR TO THE START OF CONSTRUCTION. THE PLUG SHALL REMAIN IN PLACE UNTIL ALL LINES HAVE BEEN INSPECTED, TESTED, CLEANED, AND FLUSHED. LCUD MUST INSPECT AND APPROVE PLUG AND PLACEMENT PRIOR TO CONSTRUCTION.

5. SEWER LINES SHALL BE TESTED PER SECTION 336.03.07 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 2000 LYON COUNTY UTILITIES DIVISION DESIGN CRITERIA AND STANDARDS, AND A DEFLECTION TEST PER SECTION 336.03.09 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION SHALL BE PERFORMED ON ALL SEWER LINES. SERVICE PROVIDER MUST APPROVE TEST METHOD.

6. MARKING TAPE SHALL BE INSTALLED 12" ABOVE ALL SEWER MAINS AND LATERALS. TAPE WIDTH SHALL BE THREE (3) INCHES; THICKNESS SHALL BE FOUR (4) MIL OR GREATER AND SHALL BE GREEN AND BEAR LARGE PRINTING DENOTING "CAUTION BURIED SEWER LINE BELOW" OR EQUIVALENT WORDING.

7. ALL SEWER MAINS AND LATERALS SHALL HAVE A COLOR TELEVISION INSPECTION PRIOR TO ACCEPTANCE BY THE COUNTY AND PRIOR TO PAVING.

8. SEWER MANHOLE MARKERS SHALL BE INSTALLED WHEN MANHOLES ARE LOCATED OFF THE PAVED SURFACE. SEWER MANHOLE MARKERS SHALL BE GREEN CARSONITE UTILITY MARKER (CRM 3066), 5'2" WITH MANHOLE DECAL (668-MH) OR APPROVED EQUAL. PLACE MARKERS ON EASEMENT LINE NEAREST TO MANHOLE OR AS DIRECTED BY THE UTILITIES DEPARTMENT.

NO.	REVISION	DATE
1	REDRAW	1/05vp

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

SEWER
GENERAL NOTES

SECTION: LYON COUNTY
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LYON COUNTY UTILITIES DEPARTMENT
VERTICAL CROSSING CONFLICTS SUMMARY

"WATER" INCLUDES WATER MAINS AND LATERALS.

"SEWER" INCLUDES SANITARY SEWER, STORM DRAIN AND RECLAIMED WASTEWATER MAINS AND LATERALS.

"SLEEVE" MEANS ENCASING THE WATER OR SEWER WITH A 20' LENGTH OF AWWA C900 CLASS 100 OR GREATER WATER QUALITY PIPE, CENTERED AT THE POINT OF WATER/SEWER CROSSING. TO AVOID BEING GROUTED IN PLACE, THE WATER MAIN INSIDE THE SLEEVE MUST HAVE A DIAMETER EQUAL TO OR GREATER THAN 2/3 THE DIAMETER OF THE SLEEVE.

USE OF A "SLEEVE" IS AN ACCEPTABLE ALTERNATIVE TO CENTERING THE WATER AND SEWER AT THE POINT OF CROSSING.

"RESTRAIN" MEANS USING MECHANICAL COUPLINGS TO RESTRICT JOINT MOVEMENT OR SEPARATION OF PIPE JOINTS WITHIN 10' EACH SIDE OF THE POINT OF CROSSING.

"SPECIAL CONSTRUCTION" IDENTIFIES ACCEPTABLE MITIGATION OR PROTECTION THAT ADDRESSES PHYSICALLY CONSTRAINED ENVIRONMENTS WHERE THE REQUIREMENTS OF NAC 445A.67175 INCLUSIVE CANNOT BE MET.

AREAS OF "SPECIAL CONSTRUCTION" ARE TO BE IDENTIFIED ON THE PLANS IN PLAN VIEW USING CROSS-HATCHING AND IN PROFILE VIEW BY REFERENCING A STANDARD DETAIL.

"CONCRETE ENCASEMENT" OF THE WATER AS MITIGATION OR PROTECTION IS DISCOURAGED.

EVERY EFFORT IS TO BE MADE TO KEEP WATER MAIN OR WATER LATERAL 18" ABOVE SEWER MAIN AND WATER MAIN 12" ABOVE SEWER LATERAL. OTHERWISE, THE FOLLOWING SPECIAL CONSTRUCTION METHODS APPLY:

SEWER MAIN ABOVE WATER MAIN, OR BELOW LESS THAN 18":

1. SLEEVE OR CENTER SEWER MAIN AND SLEEVE WATER MAIN OR CENTER AND RESTRAIN WATER MAIN

EXISTING SEWER MAIN ABOVE WATER MAIN, OR BELOW LESS THAN 18":

1. POLYETHYLENE WRAP AND CONCRETE ENCASE SEWER MAIN JOINTS WITHIN 10' EACH SIDE OF THE POINT OF CROSSING AND SLEEVE WATER MAIN OR CENTER AND RESTRAIN WATER MAIN

EXISTING SEWER FORCE MAIN ABOVE WATER MAIN, OR BELOW LESS THAN 18":

1. POLYETHYLENE WRAP AND CONCRETE ENCASE SEWER FORCE MAIN JOINTS WITHIN 10' EACH SIDE OF THE POINT OF CROSSING (UNLESS WELDED HDPE THEN NOT NECESSARY) AND SLEEVE WATER MAIN OR CENTER AND RESTRAIN WATER MAIN

<24" RCP STORM DRAIN ABOVE WATER MAIN, OR BELOW LESS THAN 18":

1. POLYETHYLENE WRAP AND CONCRETE ENCASE RCP STORM DRAIN JOINTS WITHIN 10' EACH SIDE OF THE POINT OF CROSSING AND SLEEVE WATER MAIN OR CENTER AND RESTRAIN WATER MAIN
2. USE EXTERNAL JOINT SEALANTS FOR RCP STORM DRAIN DIAMETERS FROM 16"-21" AND SLEEVE WATER MAIN OR CENTER AND RESTRAIN WATER MAIN

>OR=24" RCP STORM DRAIN ABOVE WATER MAIN, OR BELOW LESS THAN 18":

1. POLYETHYLENE WRAP AND CONCRETE ENCASE RCP STORM DRAIN JOINTS WITHIN 10' EACH SIDE OF THE POINT OF CROSSING AND SLEEVE WATER MAIN OR CENTER AND RESTRAIN WATER MAIN
2. USE EXTERNAL JOINT SEALANTS OR JOINT GASKETS ON RCP STORM DRAIN AND SLEEVE WATER MAIN OR CENTER AND RESTRAIN WATER MAIN
3. USE EXTERNAL JOINT SEALANTS FOR RCP STORM DRAIN DIAMETERS FROM 24"-168" AND SLEEVE WATER MAIN OR CENTER AND RESTRAIN WATER MAIN

PVC STORM DRAIN ABOVE WATER MAIN, OR BELOW LESS THAN 18":

1. SLEEVE OR CENTER PVC STORM DRAIN AND SLEEVE WATER MAIN OR CENTER AND RESTRAIN WATER MAIN

SEWER LATERAL ABOVE WATER MAIN, OR BELOW LESS THAN 12":

1. SLEEVE WATER MAIN OR CENTER AND RESTRAIN WATER MAIN AND SLEEVE SEWER LATERAL
2. SLEEVE WATER MAIN OR CENTER AND RESTRAIN WATER MAIN AND CENTER SEWER LATERAL

SEWER MAIN ABOVE WATER LATERAL, OR BELOW LESS THAN 18":

1. USE PE TUBING CONFORMING TO AWWA STANDARD C901-88 AND ASTM D2737 FOR WATER LATERAL AND SLEEVE OR CENTER SEWER MAIN

NO.	REVISION	DATE
1	REDRAW	1/05vp

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

VERTICAL CROSSING CONFLICTS

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DATE: 1/2010

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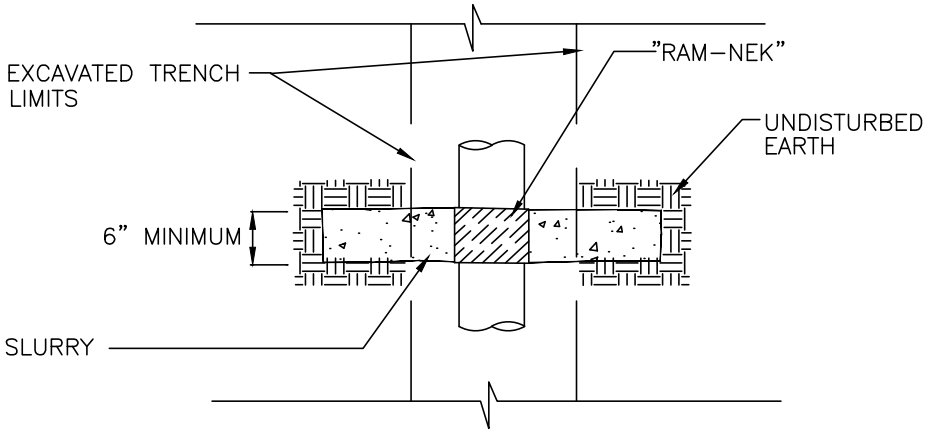
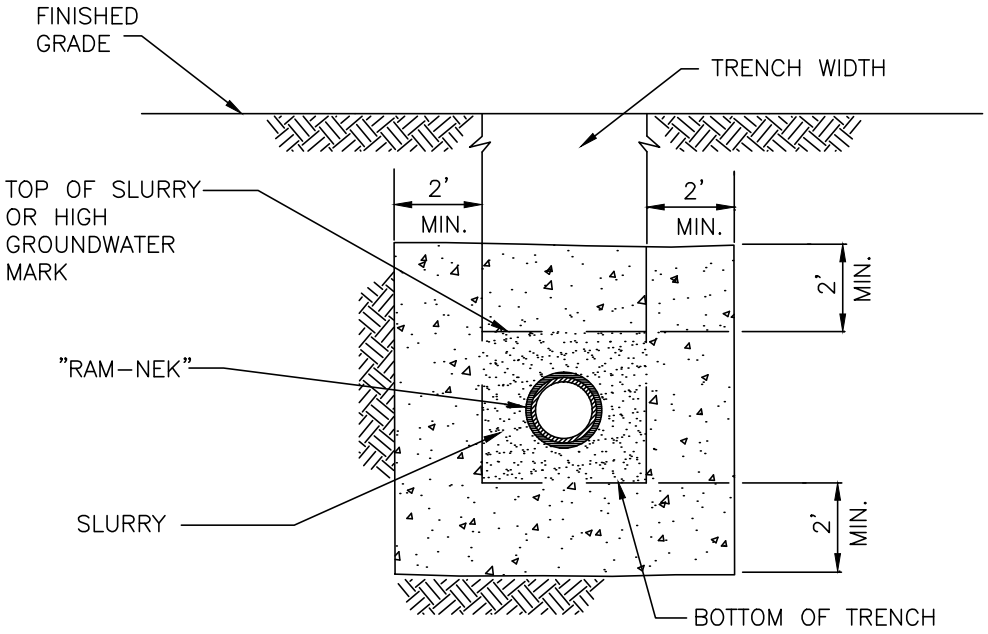


PLAN

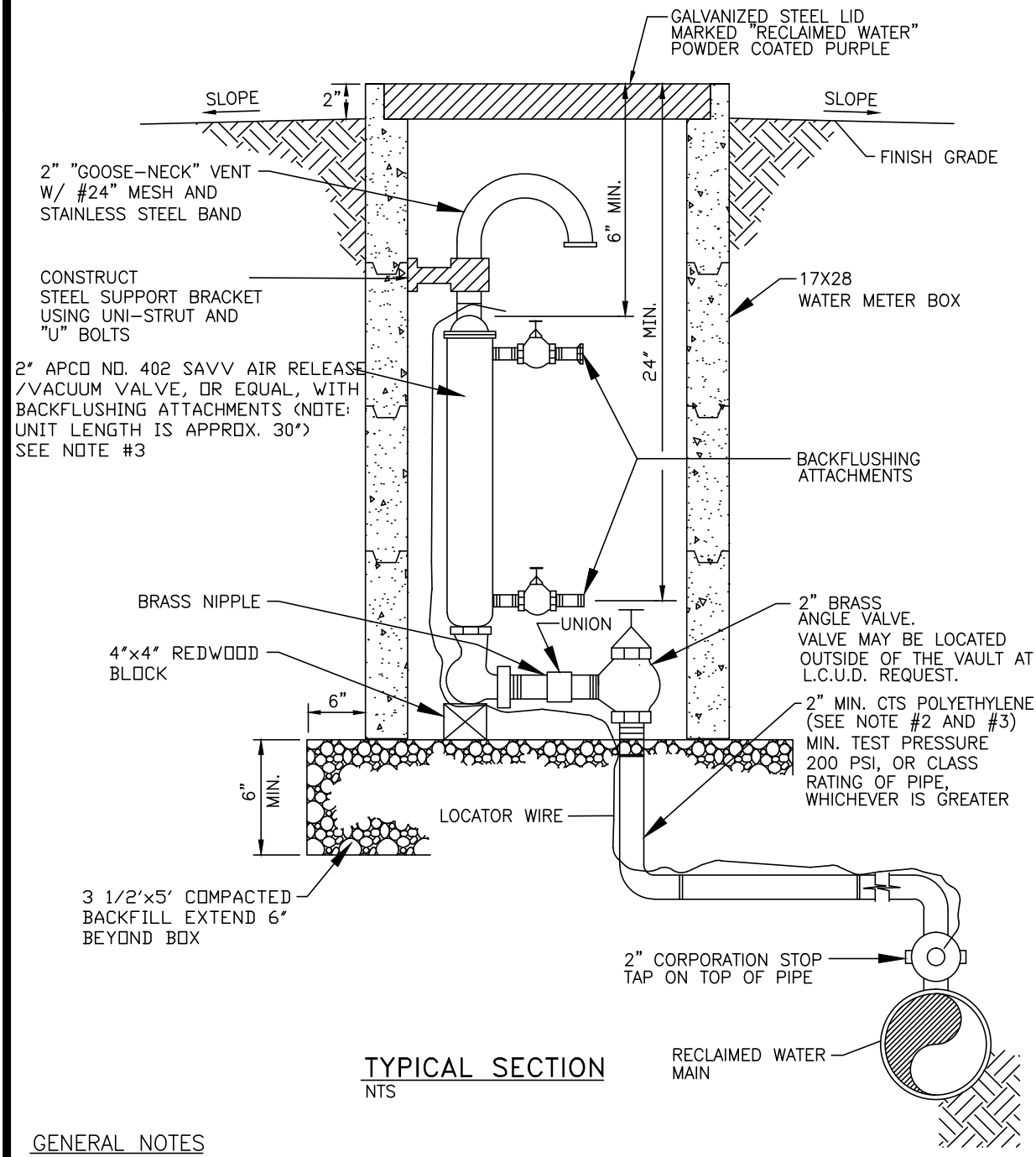


SECTION

GENERAL NOTES

1. WATER STOPS SHALL BE CONSTRUCTED AT 200' MAXIMUM SPACING IN GROUNDWATER CONDITIONS AND WHERE TYPE "C" BEDDING IS USED, AS DIRECTED BY THE ENGINEERING DIVISION.
2. WRAP PIPE WITH "RAM–NEK" OR EQUIVALENT WHERE PIPE IS EXPOSED TO CONCRETE PRIOR TO POURING.
3. USE LIGHT CONCRETE, TWO SACK SLURRY. IF DRYWALL IS USED FOR CONCRETE FORMS, IT MAY BE LEFT IN PLACE.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION LYON COUNTY	
1	REDRAW	1/05vp	WATER STOP DETAIL	DRAWING NO. LC-S3	
				DATE 6/2006	PAGE S3



TYPICAL SECTION
NTS

GENERAL NOTES

1. AIR RELEASE/VACUUM VALVES SHALL BE INSTALLED OUTSIDE PAVEMENT SECTION. SLOPE GROUND AWAY FROM VALVE BOX OR CONSTRUCT CURBING TO PROTECT FROM FLOODING BY SURFACE WATERS.
2. ALL PIPES SHALL HAVE POSITIVE SLOPE FROM MAIN LINE TO AIR/VACUUM VALVE.
3. SIZE AS DIRECTED BY THE ENGINEER.
4. A INSOLATOR BLANKET WILL BE REQUIRED FOR FREEZE PROTECTION.

NO.	REVISION	DATE
1	REDRAW	1/05vp
2	REDRAW	1/10ss

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

RECLAIMED WATER AIR/VACUUM DETAIL

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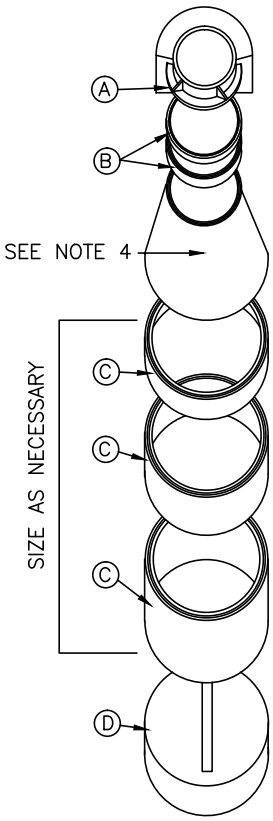
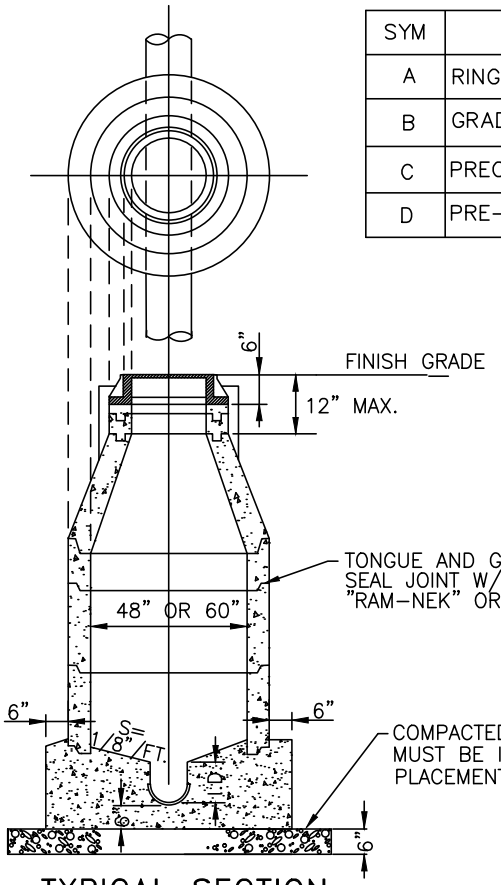
SYM	ITEM
A	RING & COVER (SEE NOTE 4)
B	GRADE ADJUSTING
C	PRECAST MANHOLE SECTION
D	PRE–CAST BASE

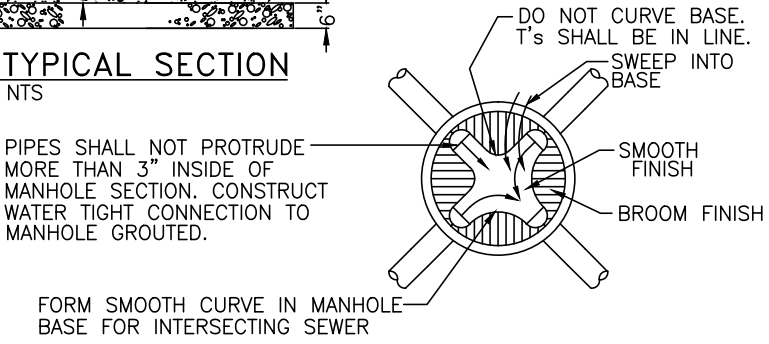
TAPER DIA.	HEIGHT H
48"	24"MIN.
60"	48"MIN.



EXPLODED VIEW
NTS



TYPICAL SECTION
NTS



PLAN VIEW–BASE
NTS

GENERAL NOTES:

1. MANHOLE SECTION LENGTHS ARRANGED TO FIT DEPTH. ALL SHIMS TO BE REMOVED AND VOIDS GROUTED.
2. POURED BASE MAY BE USED IF APPROVED BY THE UTILITY DEPARTMENT PRIOR TO CONSTRUCTION.
3. PRECAST MANHOLE COMPONENTS SHALL CONFORM TO ASTM C–478 MANHOLES TO BE SEALED WATER TIGHT.
4. NO "THRU" HOLE LIDS. CLOSED PICK HOLES ONLY: SBF 1900 CPH OR APPROVED EQUAL. NO LADDER RUNGS OR STEPS. CONCENTRIC CONES ONLY UNLESS APPROVED BY UTILITY DEPARTMENT.
5. COAT OUTSIDE OF MANHOLE WITH FLEXIBLE RUBBERIZED COATING IN HIGH GROUNDWATER AREAS.
6. BASE CONFIGURATION TO BE INSTALLED AS SHOWN ON THE APPROVED PLANS. NO PLUGGING OR MODIFYING ALLOWED.
7. MANHOLES LOCATED OUTSIDE PAVED AREAS SHALL REQUIRE ALL WEATHER ACCESS ROADWAY CONSISTING OF 6" TYPE II BASE.
8. VACUUM TESTING OF MANHOLES IN HIGH GROUND WATER OR FLOOD PLAIN AREAS MAY BE REQUIRED.

NO.	REVISION	DATE
1	REDRAW	1/05vp
2	REDRAW	1/10ss

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

MANHOLE TYPE 1

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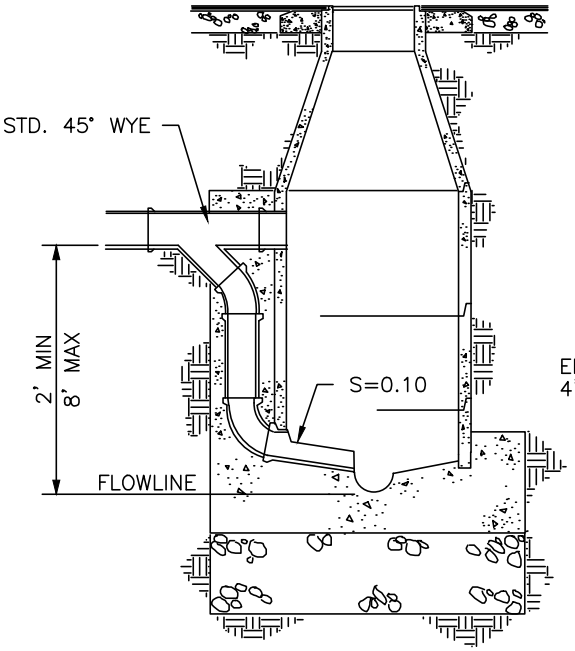
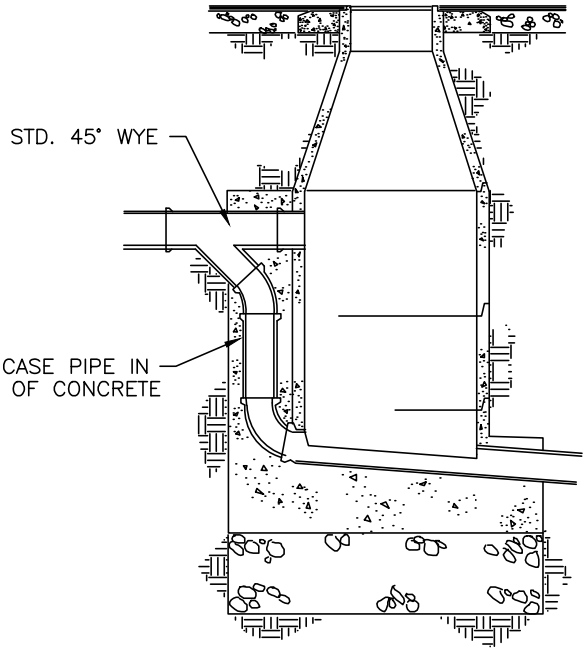


LATERAL TO MAIN



MAIN TO MAIN

NOTES:

1. DROP MANHOLES ARE TO BE USED ON ALL SANITARY SEWERS WITH MORE THAN 2 FEET VERTICAL DROP AT MANHOLE (DROP SHALL NOT EXCEED 8 FEET AT ANY MANHOLE).

2. MAINS SHALL BE SLOPED TO FALL AT LEAST 0.1 FEET ACROSS MANHOLE SECTION.

3. ALL OTHER DIMENSIONS, NOTES AND REQUIREMENTS AS SHOWN ON THE STANDARD SEWER MANHOLE DETAIL SHALL APPLY TO DROP MANHOLES.

4. DIMENSIONS NOT SHOWN ARE GIVEN ON STANDARD MANHOLE DETAIL.

5. ALL JOINTS AND CONNECTIONS TO NEW OR EXISTING MANHOLES SHALL BE WATERTIGHT.

NO.	REVISION	DATE
1	REDRAW	1/05vp

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

DROP MANHOLE

SECTION: LYON COUNTY

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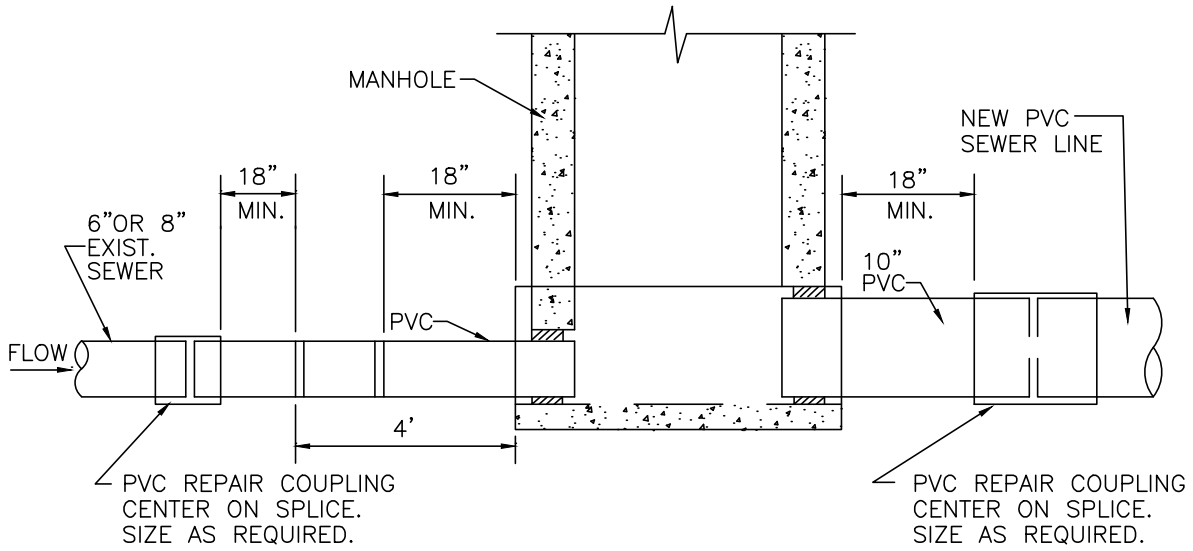

TYPICAL SEWER LINE & MANHOLE TRANSITIONAL DETAIL

GENERAL NOTES

1. COUPLER STYLE SHALL BE ROMAC SSI, SS2, OR SS3, OR EQUAL. STYLE AS REQUIRED.
2. COUPLER LENGTH SHALL EQUAL PIPE DIAMETER.
3. COUPLER SHALL BE USED AT ALL LOCATIONS WHERE TWO PIPES OF EQUAL DIAMETER ARE BEING JOINED.
4. PVC SEWER TRANSITIONS COUPLER SHALL BE USED AT ALL LOCATIONS WHERE TWO PIPES OF UNEQUAL DIAMETER ARE TO BE JOINED.
5. TRANSITIONS ARE TO BE MADE INSIDE OF THE MANHOLE WHENEVER POSSIBLE.

NO.	REVISION	DATE
1	REDRAW	1/05vp

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

SEWER LINE TRANSITION DETAIL

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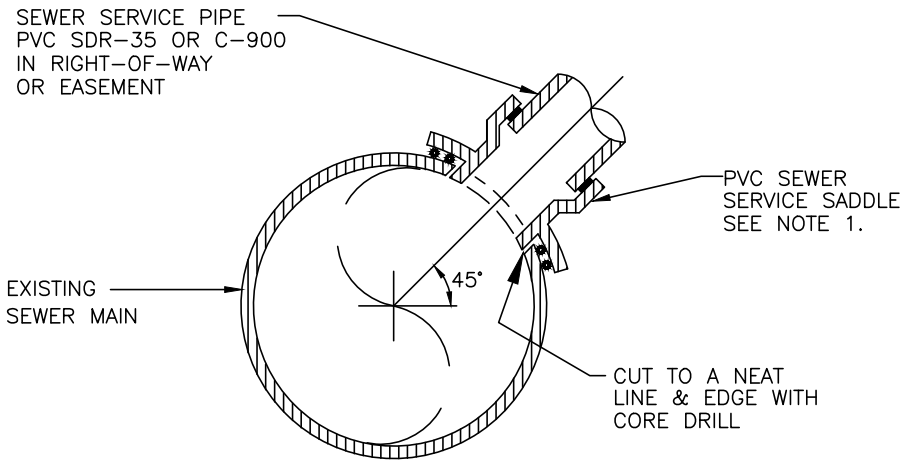
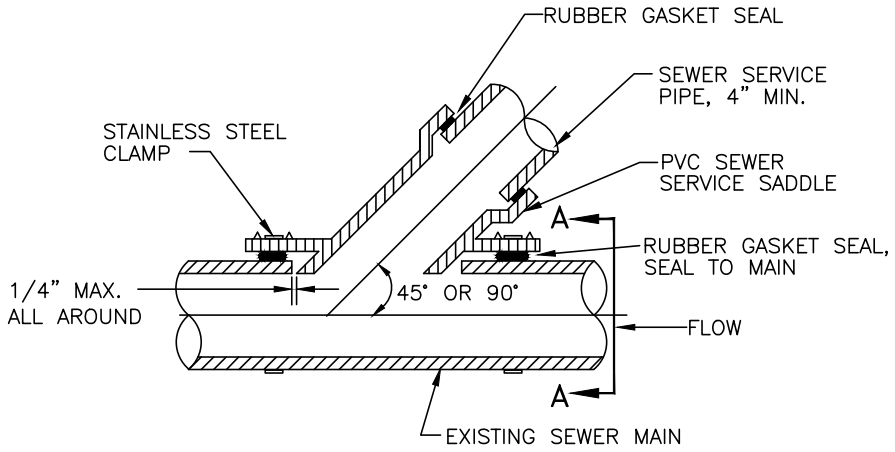


SECTION A-A
NTS

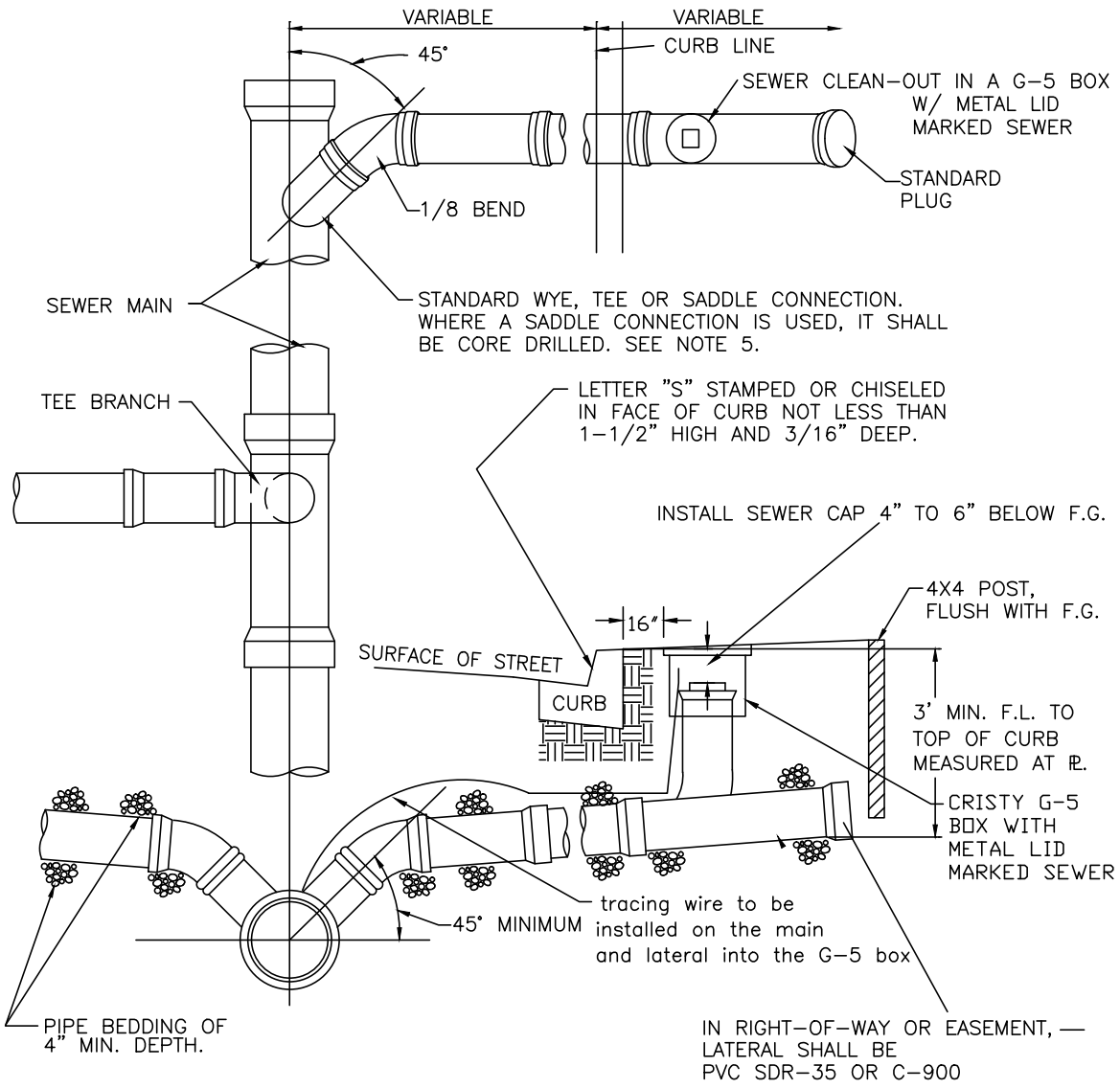


SIDE VIEW
NTS

GENERAL NOTES:

1. ROMAC "CB" SEWER SADDLES OR EQUAL MAY BE USED ON SEWER MAINS OTHER THAN PVC.
2. IN NO CASE SHALL A LATERAL CONNECT TO THE SEWER MAIN DIRECTLY ON TOP OR MATCH THE FLOWLINE OF THE PIPE.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION: LYON COUNTY
1	REDRAW	1/05vp	SEWER SERVICE SADDLE	DRAWING NO.: LC-S8
				DATE: 1/2010 / PAGE: S8



GENERAL NOTES

1. IN NO CASE SHALL A LATERAL CONNECT TO THE SEWER MAIN DIRECTLY ON TOP OR MATCH THE FLOWLINE OF THE PIPE.
2. SEWER LATERALS SHALL HAVE A MINIMUM SLOPE OF 2%.
3. ALL JOINTS ON SEWER LATERAL PIPE WITHIN THE RIGHT-OF-WAY SHALL BE RING TIGHT.
4. LATERAL SHALL EXTEND TO PROPERTY LINE UNLESS OTHERWISE SHOWN ON PLANS.
5. SADDLE CONNECTION SHALL BE PVC SADDLE WITH STAINLESS STEEL STRAPS. (ROMAC "CB" OR EQUAL)
6. ENTITY REQUESTING SEWER LATERAL ABANDONMENT SHALL CUT, CAP OR PLUG THE EXISTING SEWER LATERAL TO BE ABANDONED WITHIN 6 INCHES OF THE SEWER MAIN. INSPECTION BY LYON COUNTY UTILITIES IS REQUIRED PRIOR TO BACKFILL.
7. ALL SEWER CLEAN-OUTS WILL NEED TO BE SET 16" TO 24" BACK OF CURB OR SIDEWALK.

NO.	REVISION	DATE
1	REDRAW	1/05vp
2	REDRAW	1/10ss

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

SEWER LATERAL CONNECTION DETAIL

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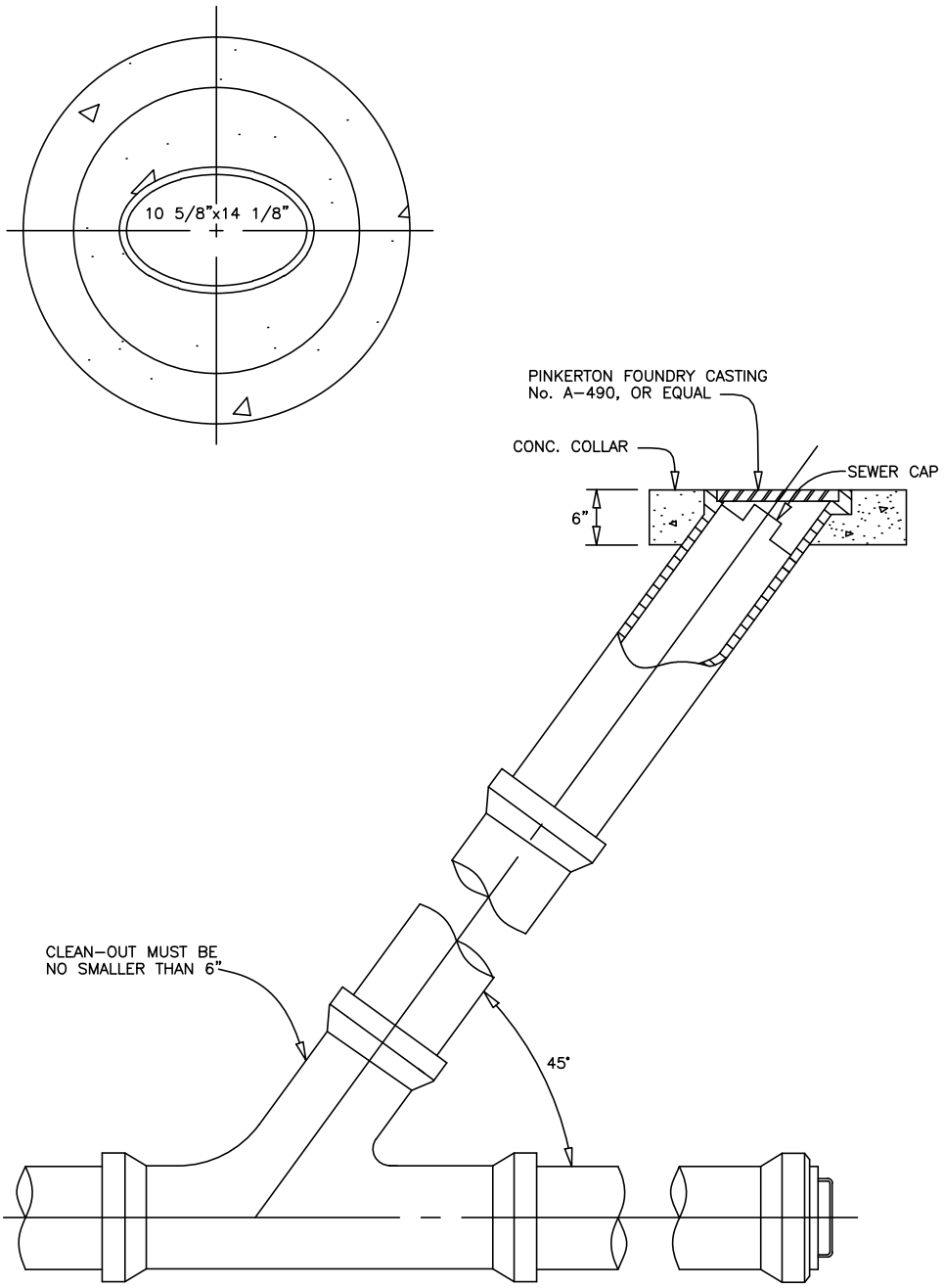

NOTE:
CLEANOUTS PERMITTED ONLY ON DEAD-END LINES SERVING 4 OR LESS LOTS OR BUILDINGS.

NO.	REVISION	DATE
1	REDRAW	1/05vp

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

SEWER MAIN CLEANOUT

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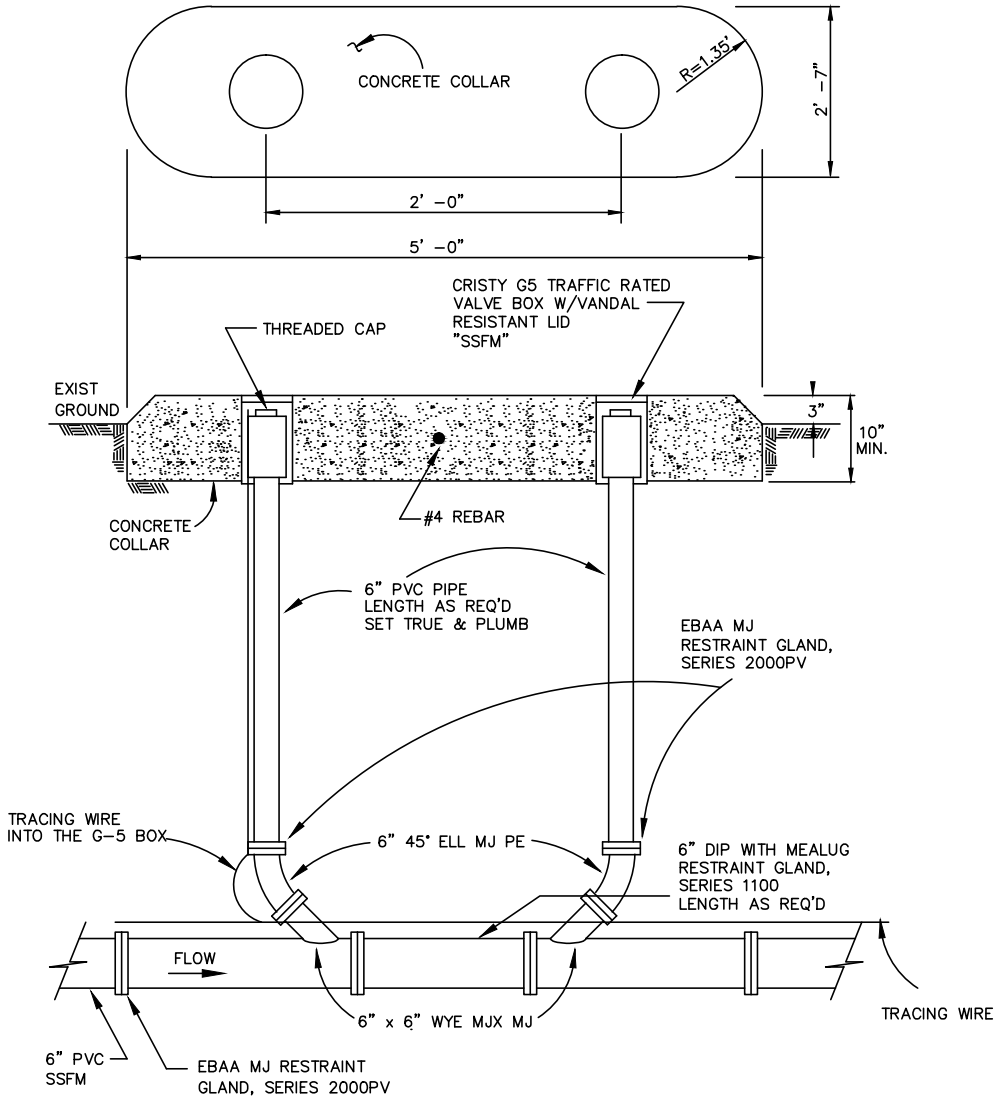

NOTE: ALL JOINTS AND CONNECTIONS SHALL BE WATERTIGHT

NO.	REVISION	DATE
1	REDRAW	1/05vp
2	REDRAW	1/10ss

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

FORCE MAIN CLEAN OUT

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LYON COUNTY UTILITIES DEPARTMENT
WATER GENERAL NOTES

1. WATER MAIN SHUTDOWNS/INTERRUPTION OF SERVICE; UTILITIES DEPT. APPROVAL IS REQUIRED 48 HOURS PRIOR TO NOTIFICATION OF CUSTOMERS. COMMERCIAL CUSTOMERS SHALL RECEIVE 48 HOURS WRITTEN NOTICE OF A SHUTDOWN AND SPECIAL ARRANGEMENTS MAY HAVE TO BE MADE TO ACCOMMODATE CUSTOMERS OPERATIONAL NEEDS. RESIDENTIAL CUSTOMERS SHALL RECEIVE 48 HOURS WRITTEN NOTICE. THE UTILITIES DEPT. IS RESPONSIBLE FOR THE NOTIFICATION WHEN WORK IS PERFORMED BY UTILITIES DEPT.; THE CONTRACTOR IS RESPONSIBLE IN ALL OTHER CASES. A LIST SHALL BE KEPT BY THE RESPONSIBLE PARTY LISTING THE DATE, TIME, AND ADDRESS OF ALL ADDRESSES NOTIFIED. THE ADDRESS NOTIFIED SHALL BE INCLUDED ON THE LIST FOR ALL COMMERCIAL CUSTOMERS. THE CONTRACTOR WILL BE SUBJECT TO DAMAGE CLAIMS SHOULD THEY FAIL TO NOTIFY CUSTOMERS OR MAINTAIN DOCUMENTATION OF NOTIFICATION OF CUSTOMERS. THE CONTRACTOR SHALL NOT OPERATE ANY EXISTING WATER VALVES WITHOUT AUTHORIZATION OF THE UTILITIES DEPARTMENT.
2. ALL WATER MAINS SHALL BE CLASS 150, OR 200 C900 PVC, AS SPECIFIED ON THE PLANS AND AS APPROVED BY LCUD. ALL WATER SERVICES 2" OR LESS SHALL BE IPS, PE PIPE; SERVICES 3" OR GREATER SHALL BE CLASS 150, C900 PVC OR AS SPECIFIED ON THE PLANS.
3. LINE SEPARATION MUST MEET THE PROVISIONS OF NAC 445 AND BE APPROVED BY LOCAL SERVICE PROVIDER.
4. ALL HOT TAPS ARE TO BE PERFORMED BY A LICENSED CONTRACTOR APPROVED BY LYON COUNTY UTILITIES DEPARTMENT. THE CONTRACTOR SHALL CONTACT THE UTILITIES DEPARTMENT AT LEAST 48 HOURS PRIOR TO SCHEDULING HOT TAP DATE AND TIME INSPECTION.
5. WATER VALVE MARKERS SHALL BE BLUE CARSONITE UTILITY MARKER (CRM–3066), 5'2" WITH LYON COUNTY UTILITIES DEPARTMENT DECAL (CWV–116) OR APPROVED EQUAL PLACE MARKER NO MORE THAN FIVE (5) FEET FROM THE VALVE OR AS DIRECTED BY THE WATER UTILITY DIVISION.
6. ALL WATER MAIN AND WATER SERVICE INSPECTIONS MUST BE APPROVED PRIOR TO ANY CERTIFICATE OF OCCUPANCY BY THE SERVICE PROVIDER ACCEPTING IMPROVEMENTS.
7. ALL WATERMAINS AND APPERTENANCES MUST BE DISINFECTED PER NAC 445A

NO.	REVISION	DATE
1	REDRAW	1/05vp
2	REDRAW	1/10ss

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

LYON COUNTY UTILITIES DEPARTMENT

WATER GENERAL NOTES

SECTION: LYON COUNTY

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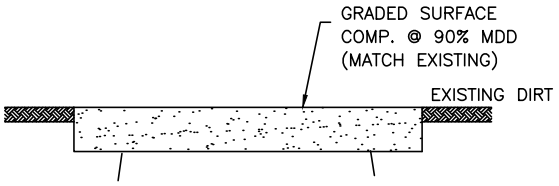
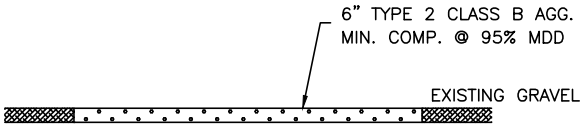
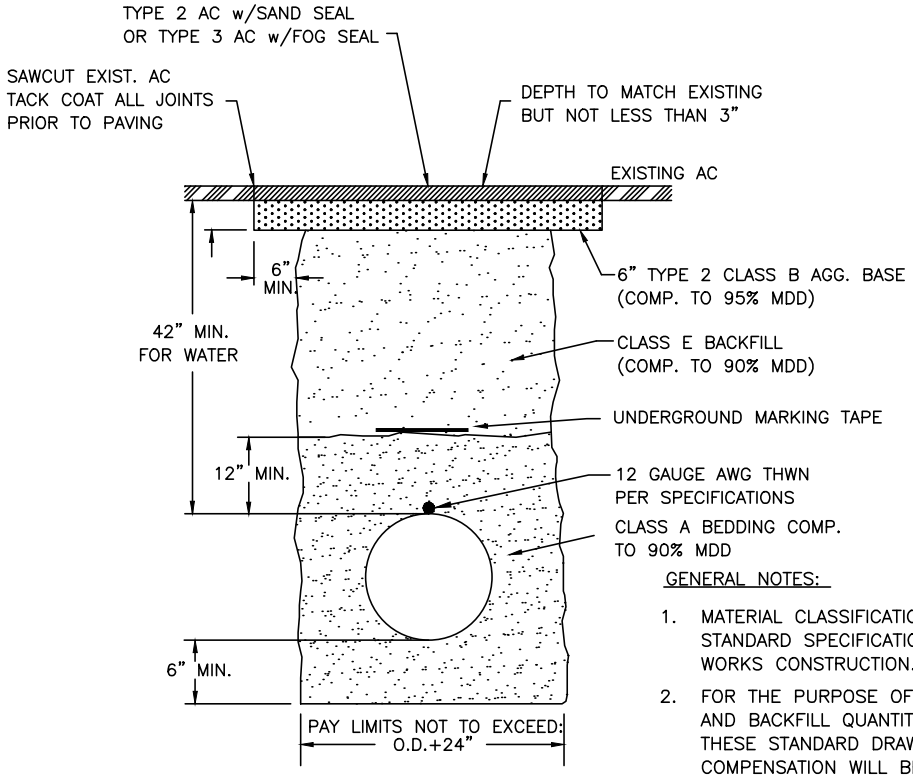


DIRT SURFACE REPLACEMENT



GRAVEL SURFACE REPLACEMENT



ASPHALT SURFACE REPLACEMENT

GENERAL NOTES:

1. MATERIAL CLASSIFICATION AS PER STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
2. FOR THE PURPOSE OF PAYMENT; EXCAVATION AND BACKFILL QUANTITIES ARE BASED ON THESE STANDARD DRAWINGS, AND NO ADDITIONAL COMPENSATION WILL BE MADE. SHORING OR SLOPED CUT SLOPES MAY BE NECESSARY, BUT THERE WILL BE NO ADDITIONAL PAYMENT. ALL EXCAVATIONS SHALL CONFORM TO THE LATEST O.S.H.A. REQUIREMENTS.
3. COMPACTION VALUES CAN BE MODIFIED BY LYON COUNTY ENGINEER.

NO.	REVISION	DATE
1	REDRAW	1/05vp
2	REDRAW	1/10ss

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

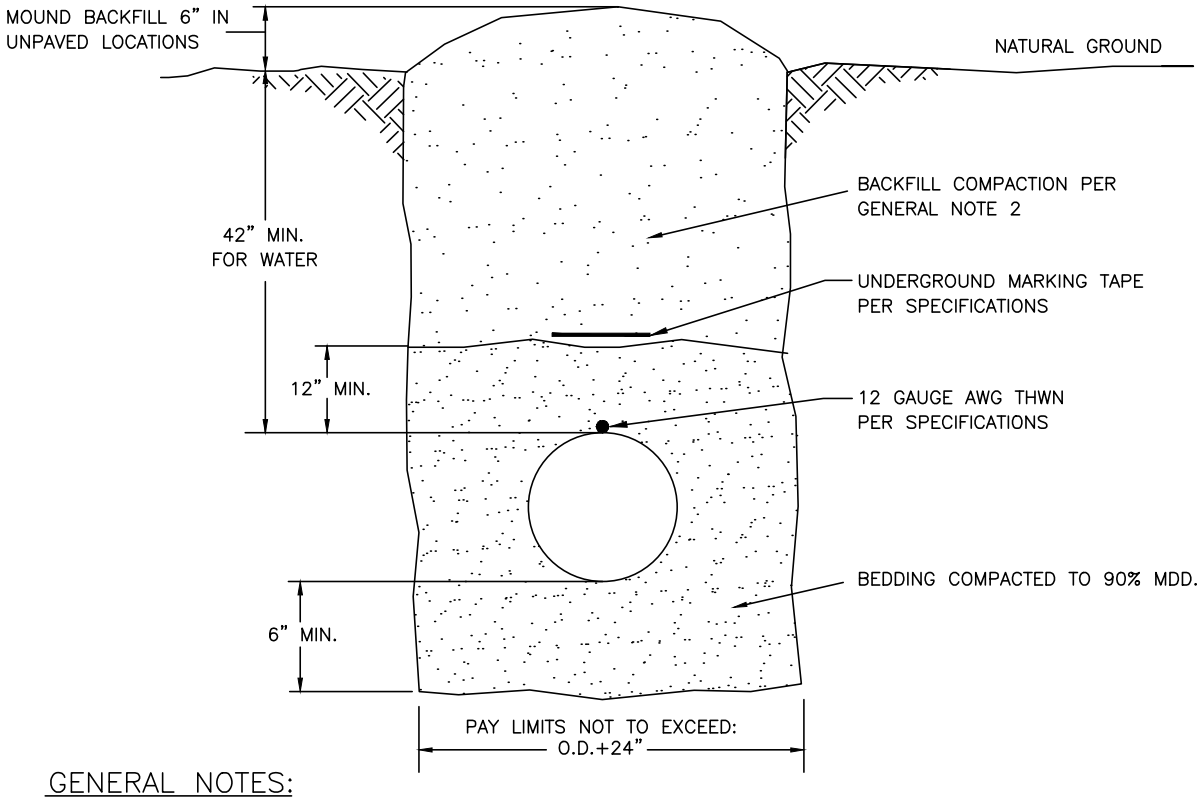
TRENCH EXCAVATION AND BACKFILL (TRAVELWAYS)

SECTION: LYON COUNTY

DRAWING NO.: LC-W2

DATE: 1/2010

PAGE: W2



GENERAL NOTES:

1. WATER DENSIFIED BACKFILL AND TUNNELING SHALL BE BY SPECIAL PROVISION ONLY.
2. BACKFILL SHALL MEET THE REQUIREMENTS FOR CLASS "E" BACKFILL AS SHOWN IN SUBSECTION 200.03.06 OF THE STANDARD SPECIFICATIONS OR AS SPECIFIED BY THE LYON COUNTY UTILITIES DIVISION. MATERIAL SHALL BE PLACED IN LIFT THICKNESSES SPECIFIED IN SUBSECTION 305.10 OF THE STD. SPECS. AND DENSIFIED TO 90% RELATIVE COMPACTION.
3. BEDDING SHALL MEET THE REQUIREMENTS FOR CLASS "A" BACKFILL AS SHOWN IN SUBSECTION 200.03.02 OF THE STANDARD SPECIFICATIONS OR AS SPECIFIED BY LYON COUNTY UTILITIES DIVISION. MATERIAL SHALL BE DENSIFIED TO 90% RELATIVE COMPACTION.
4. BEDDING FOR GRAVITY SEWER LINES MAY BE CLASS "C" BACKFILL.
5. CLASS "C" BACKFILL WITH FILTER FABRIC MAY BE USED TO SUPPORT BEDDING IN HIGH GROUND–WATER OR UNSTABLE SOIL CONDITIONS WITH THE APPROVAL OF THE LYON COUNTY UTILITIES DIVISION.
6. ALL EXCAVATIONS SHALL CONFORM TO THE LATEST O.S.H.A. REQUIREMENTS.
7. FOR SEWERS, 12 GAUGE INSULATED TRACING WIRE NEEDS TO BE INSTALLED ON FORCE MAINS AND GRAVITY LATERALS.

NO.	REVISION	DATE
1	REDRAW	1/05vp
2	REDRAW	1/10ss

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

TRENCH EXCAVATION AND BACKFILL (UNTRAVELED AREAS)

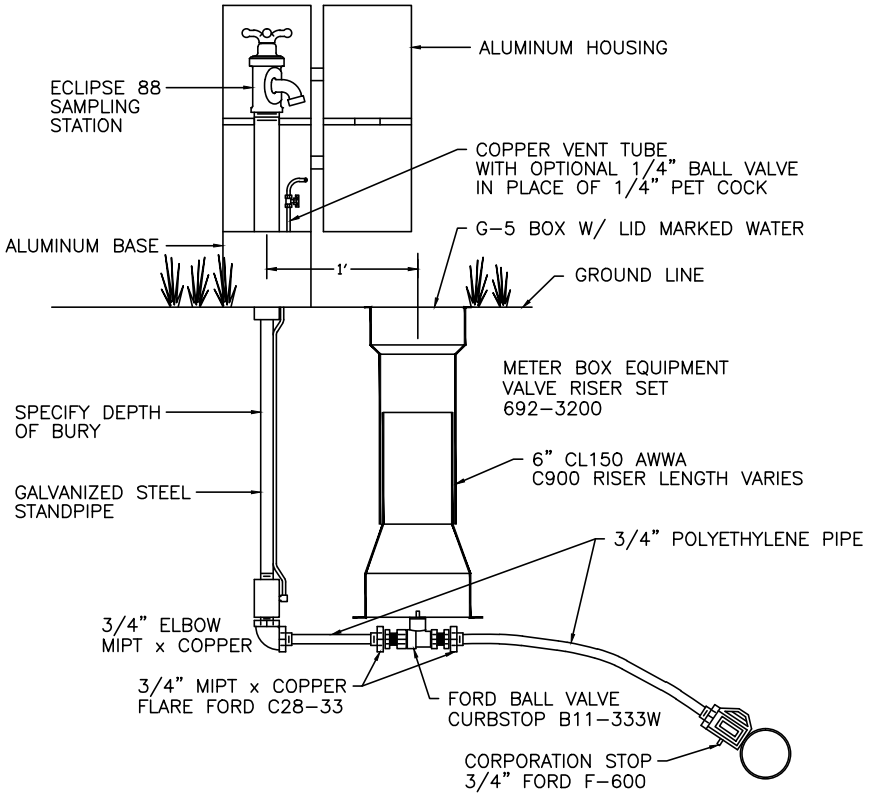
SECTION: LYON COUNTY

DRAWING NO.: LC-W3

DATE: 1/2010

PAGE: W3

ECLIPSE NO. 88 SAMPLING STATION



Sampling Stations shall be 30" bury, with a 3/4" FIP inlet, and on (unthreaded) nozzle.

All stations shall be enclosed in a lockable, nonremovable, aluminum-cast housing.

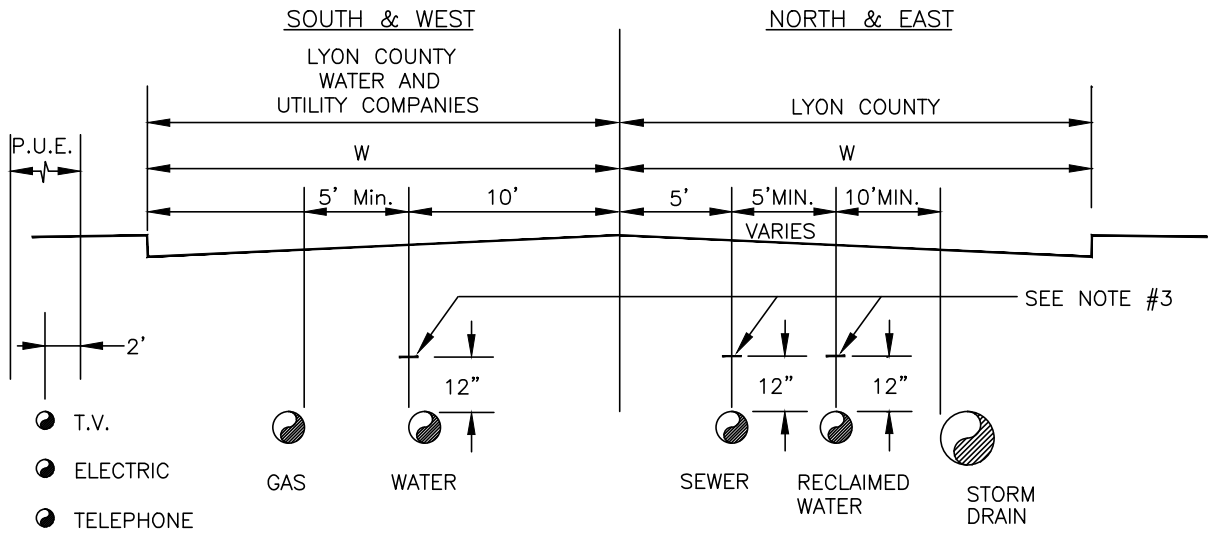
When opened, the station shall require no key for operation, and the water will flow in an all brass waterway.

All working parts will also be of brass and be removable from above ground with no digging. Exterior piping shall be galvanized steel (brass pipe also available).

A copper vent tube will enable each station to be pumped free of standing water to prevent freezing and to minimize bacteria growth.

Eclipse No. 88 Sampling Station shall be manufactured by Kupferle Foundry, St. Louis, MO 63102.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION LYON COUNTY	
1	REDRAW	1/05vp	SAMPLING STATION	DRAWING NO. LC-W4	
				DATE 6/2006	PAGE W4



TYPICAL SECTION

NTS

APPROX. DEPTH OF COVER	
STORM DRAIN	24"
SANITARY SEWER	84"*
WATER MAIN	42"
GAS MAIN	30"**
T.V.	48"**
ELECTRICITY	72"**
RECLAIMED WATER	60"

* SEE NOTE 5
** OR LOCAL UTILITY STANDARDS

GENERAL NOTES

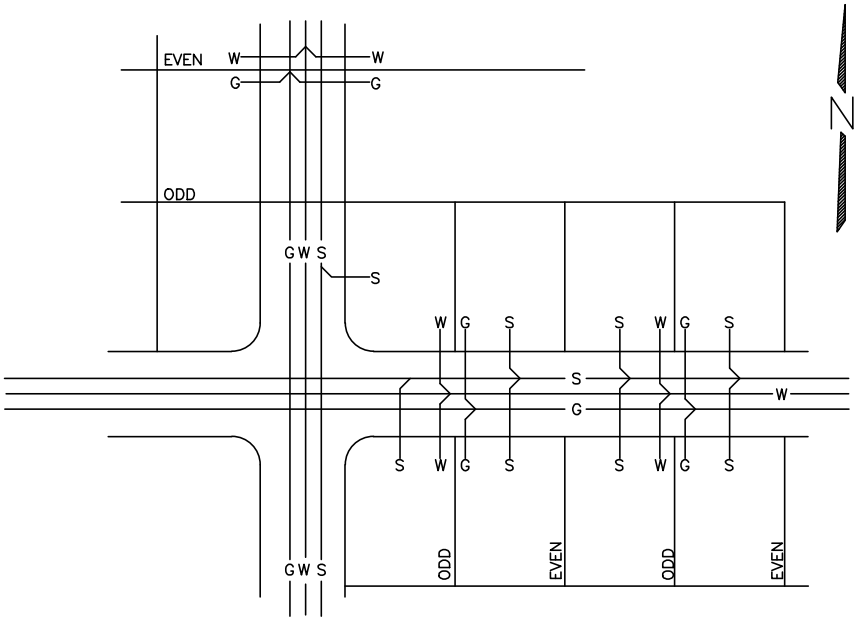
1. COMMON TRENCHES ARE NOT ALLOWED WITH WATER, WASTEWATER, OR STORM DRAIN.
2. P.U.E. INDICATES PUBLIC UTILITY EASEMENT.
3. PLACE WARNING TAPE 1' ABOVE WATER, RECLAIMED WATER & SEWER PIPE IN ADDITION TO WARNING TAPE, PLACE LOCATOR WIRE ON WATER, RECLAIMED WATER & SANITARY SEWER FORCE MAINS AND SEWER LATERALS.
4. DEPTHS OF COVER AND LOCATION OTHER THAN THOSE SHOWN ABOVE ARE SUBJECT TO LYON COUNTY UTILITIES DEPARTMENT APPROVAL.
5. DEPTH SHALL BE AS REQUIRED TO PROVIDE ADEQUATE CLEARANCE FROM OTHER UTILITIES AND TO SERVE UPSTREAM TRIBUTARY AREAS, AND TO MEET PROPER DESIGN SPECIFICATIONS FOR DOWNSTREAM CONNECTIONS.
6. RCW PIPE SHALL BE PURPLE IN COLOR.

NO.	REVISION	DATE
1	REDRAW	1/05vp
2	REDRAW	1/10ss

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

TYPICAL UTILITY MAIN LOCATIONS

SECTION: LYON COUNTY
DRAWING NO.: LC-W5
DATE: 1/2010
PAGE: W5



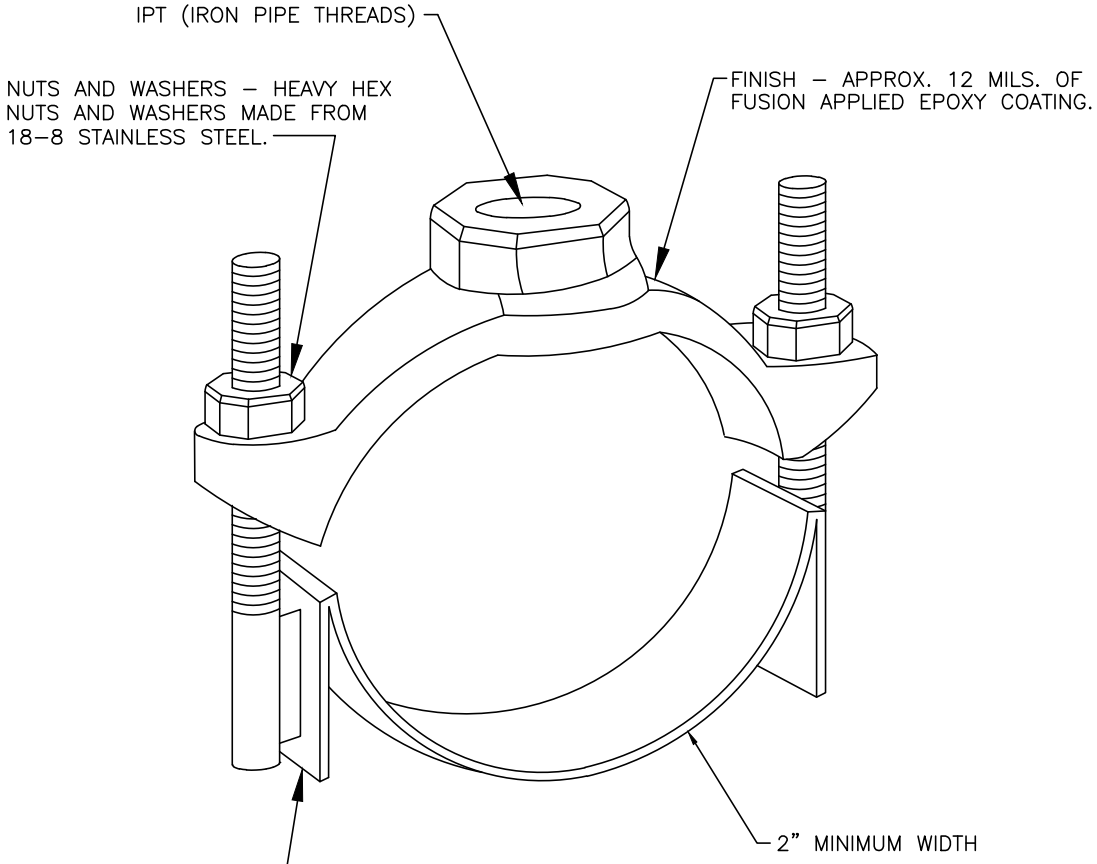
UTILITY LOCATION

NTS

GENERAL NOTES

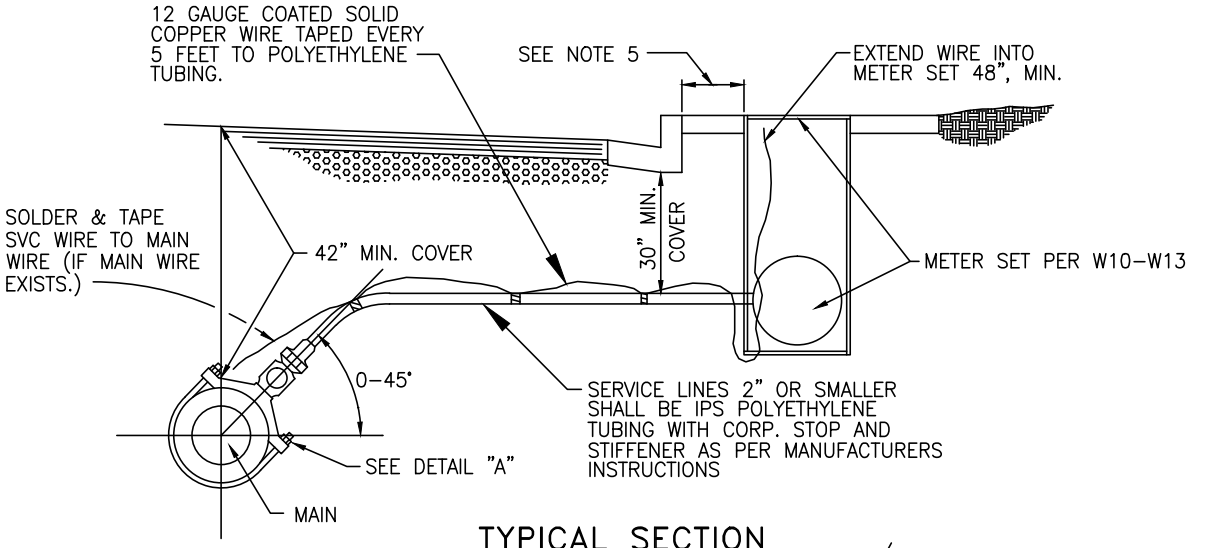
1. SANITARY SEWER LATERAL TO BE CENTERED ON LOT (CHANGES MAY BE PERMITTED UPON APPROVAL OF THE SEWER UTILITY). EACH LOT TO BE SERVED BY A SEWER MAIN IN AN ADJACENT STREET OR EASEMENT.
2. COMMON LOT CORNERS ARE DEFINED AS OF ODD OR EVEN AS COUNTED NORTH OR EAST FROM THE PRECEDING STREET INTERSECTION.
3. WATER SERVICES SHALL BE PLACED ON ODD LOT CORNERS ON EAST–WEST STREETS AND ON EVEN LOT CORNERS ON NORTH–SOUTH STREETS. ADDITIONALLY, WATER SERVICES SHALL BE ONE FOOT WEST OR NORTH OF THE RESPECTIVE LOT LINE (SEE DRAWING ABOVE).
4. GAS SERVICES SHALL BE PLACED ON THE SAME LOT CORNERS AS THE WATER DESCRIBED ABOVE–EXCEPT THAT IT SHALL BE FOUR FEET EAST OR SOUTH OF THE RESPECTIVE LOT LINE (OPPOSITE SIDE OF WATER) (SEE DRAWING ABOVE).
5. ELECTRICITY, TELEPHONE, AND CABLE T.V. SHALL BE PLACED ON EVEN LOT CORNERS ON EAST–WEST STREET AND ON ODD LOT CORNERS ON NORTH–SOUTH STREETS. MAINTAIN 5' CLEARANCE FROM WATER OR SEWER LATERALS.
6. FOR MAIN LOCATION SEE DETAIL LC–W5
7. LYON COUNTY UTILITIES DEPARTMENT MUST APPROVE SERVICE LINE LOCATIONS.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION LYON COUNTY
1	REDRAW	1/05vp	TYPICAL UTILITY LATERAL LOCATIONS	DRAWING NO. LC-W6
				DATE 1/2010 / PAGE W6

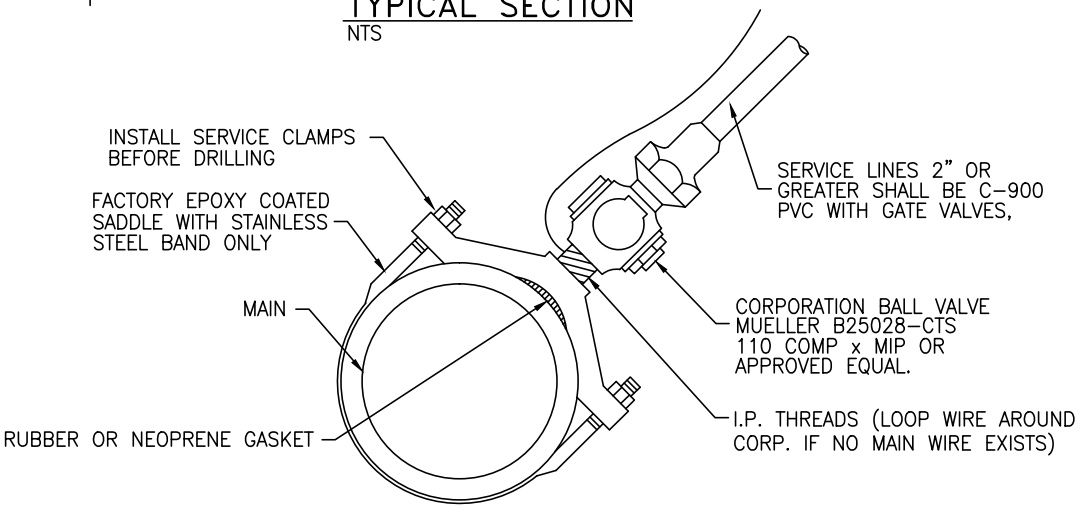


LYON COUNTY UTILITIES DEPARTMENT MAY ALSO APPROVE DOUBLE STRAP SADDLES.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION LYON COUNTY	
1	REDRAW	1/05vp	SERVICE SADDLE DETAIL (3/4" TO 2")	DRAWING NO. LC-W7	
				DATE 1/2010	PAGE W7



TYPICAL SECTION
NTS



DETAIL "A"
NTS

GENERAL NOTES

1. ALL SERVICE LINE COUPLING FITTINGS SHALL BE MUELLER IPS MIP OR APPROVED EQUAL.
2. ALL SERVICE VALVES SHALL BE SAME SIZE AS SERVICE LINES (ON 3" SERVICE, USE 4" GATE VALVE AND PIPE.)
3. SERVICE CLAMPS SHALL BE FACTORY COATED EPOXY WITH STAINLESS STEEL BAND. SEE DETAIL LC-W7
4. MINIMUM DISTANCE BETWEEN TAPS AND MAINLINE FITTINGS, SHALL BE 36". NO TAPS WITHIN 24" OF BELL/FITTINGS.
5. ALL METER SETS TO BE PLACED 16"-24" FROM BACK FACE OF CURB WITHIN P.U.E. OR R.O.W.. IN AREAS WHERE NO CURB IS PRESENT. THE FRONT OF THE METER IS TO BE SET AS DIRECTED BY LYON COUNTY UTILITIES DEPARTMENT.
6. TAPPING SADDLES 4" OR LARGER SHALL BE STAINLESS STEEL, HAVE A FULL CIRCUMFERENTIAL SEAL AND HAVE EITHER A STAINLESS STEEL OR DUCTILE IRON FLANGE.
7. UPON ABANDONING OF SERVICE TAP, WATER UTILITY SHALL BE NOTIFIED SO THAT METER CAN BE REMOVED.
8. ENTITY REQUESTING ABANDONMENT SHALL REMOVE EXISTING METER BOX AND EXPOSE CORP STOP FOR SHUTOFF. ALL PLUMBING SHALL BE DISCONNECTED FROM CORP AND PLUGGED AT BOTH ENDS. WATER UTILITY SHALL BE NOTIFIED FOR INSPECTION OF CORP ASSEMBLY PRIOR TO BACKFILLING.
9. TAPPING SADDLE MUST BE AT 45° ANGLE, EXCEPTIONS MUST BE APPROVED BY LYON COUNTY UTILITIES DEPARTMENT.

NO.	REVISION	DATE
1	REDRAW	1/05vp
2	REDRAW	1/10ss

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

WATER SERVICE TAP

SECTION: LYON COUNTY
DRAWING NO.: LC-W8
DATE: 1/2010
PAGE: W8

MATERIAL SPECIFICATIONS

SHELL: 304 STAINLESS STEEL

LUGS: 304 STAINLESS STEEL

BOLTS, WASHERS AND NUTS: NC ROLLED THREAD 304 STAINLESS STEEL, 5/8" DIAMETER.

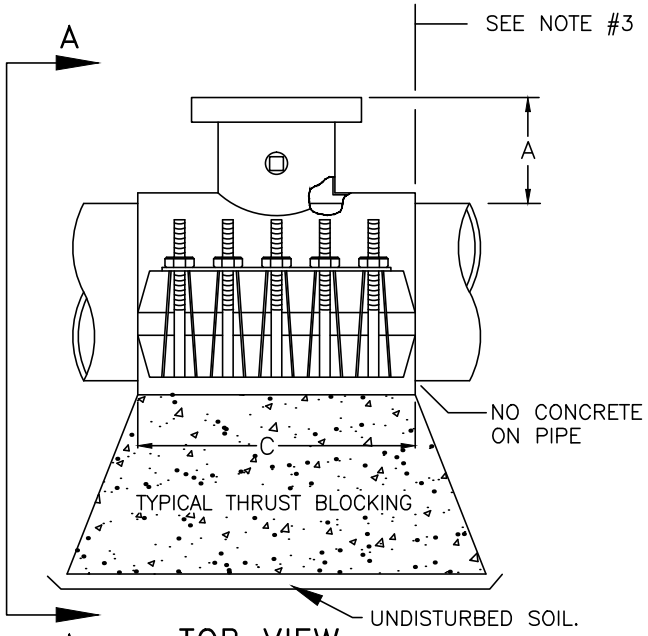
GASKETS: VIRGIN SBR COMPOUNDED FOR WATER SERVICE. ASTM D2000-80MA 4AA607 FULL GASKET. 360° PIPE COVERAGE 150 PSI WORKING PRESSURE.

FLANGE: 304 STAINLESS STEEL OR HIGH TENSILE DUCTILE (NODULAR) IRON, ASTM A536-80, GRADE 65-45-12.

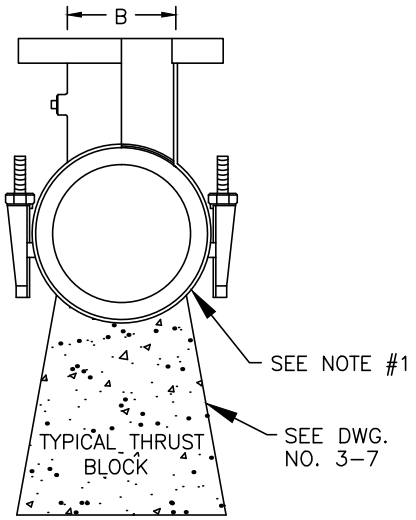
NOM. FLANGE	A	B	C	NO. BOLTS
4	4	5-1/32	16	10
6*	4-1/2	7-1/32	16	10
8*	4	9-1/32	20	14
10	5-1/2	11-1/32	24	16
12**	6-1/2	13-1/32	30	30

*TAPPING SLEEVES IN THE 24" NOMINAL PIPE SIZE RANGE WITH 6" OR 8" FLANGES ARE 24" LONG (C-DIMENSION) AND HAVE 24" BOLTS.

**TAPPING SLEEVES IN THE 12" & 14" NOMINAL PIPE SIZE RANGE W/ 12" FLANGE ARE 24" LONG AND HAVE 24 BOLTS.



TOP VIEW
NTS



SECTION A-A
NTS

GENERAL NOTES

1. MATERIAL USED FOR THRUST BLOCKING SHOULD NOT PREVENT ACCESS TO THE BOLT ASSEMBLY.
2. MINIMUM DISTANCE BETWEEN TAP SADDLE, COLLARS, JOINTS, SERVICE TAPS, ETC. WILL BE 36" CLEAR.
3. SADDLE TO BE HYDROSTATICALLY PRESSURE TESTED TO CLASS RATING OF THE PIPE PRIOR TO TAP.
4. SEE "WATER GENERAL NOTES" FOR HOT-TAP SCHEDULING INFORMATION.

NO.	REVISION	DATE
1	REDRAW	1/05vp
2	REDRAW	1/10ss

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

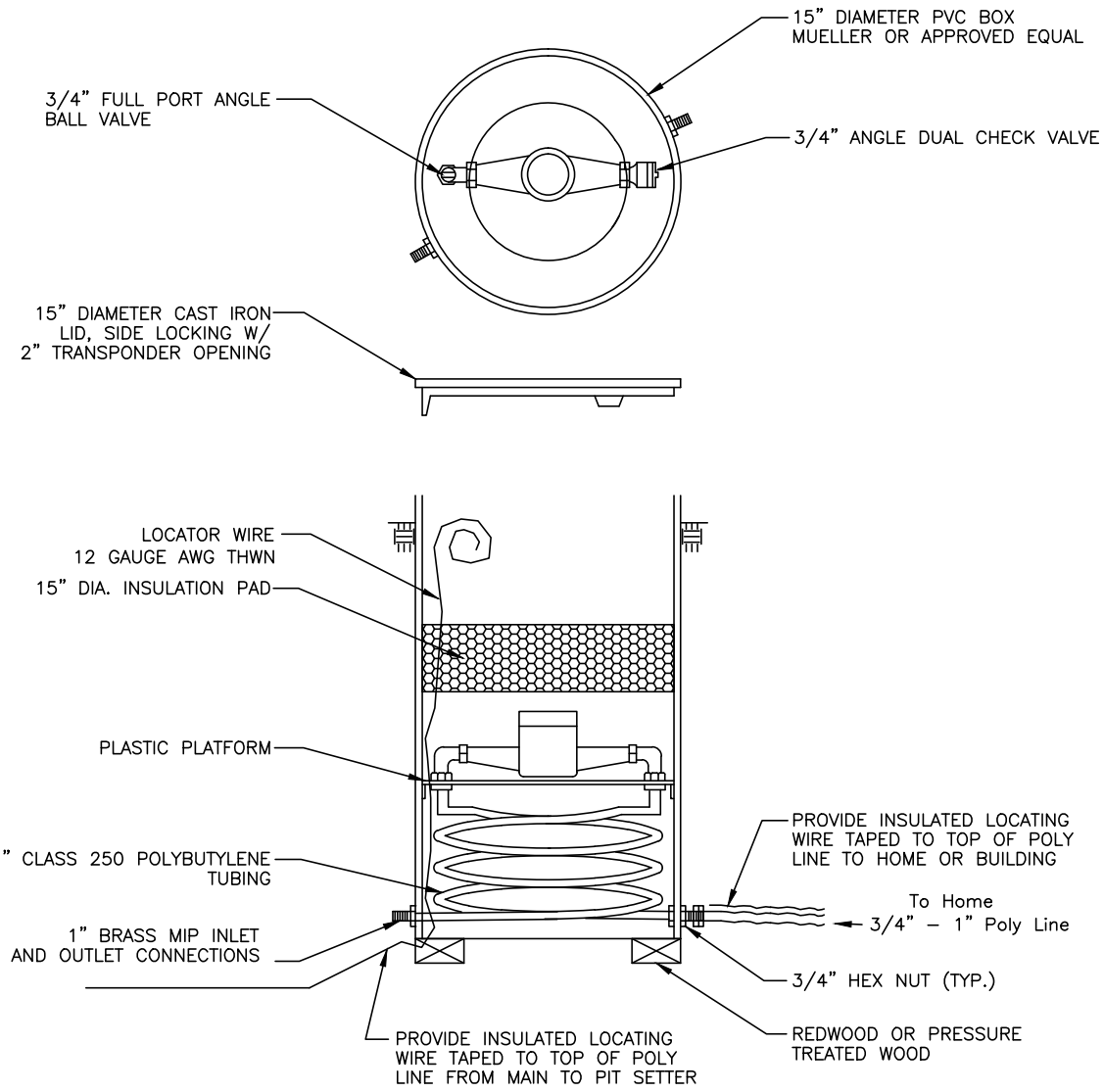
TAPPING SLEEVE DETAIL

SECTION: LYON COUNTY

DRAWING NO.: LC-W9

DATE: 1/2010

PAGE: W9



GENERAL NOTES

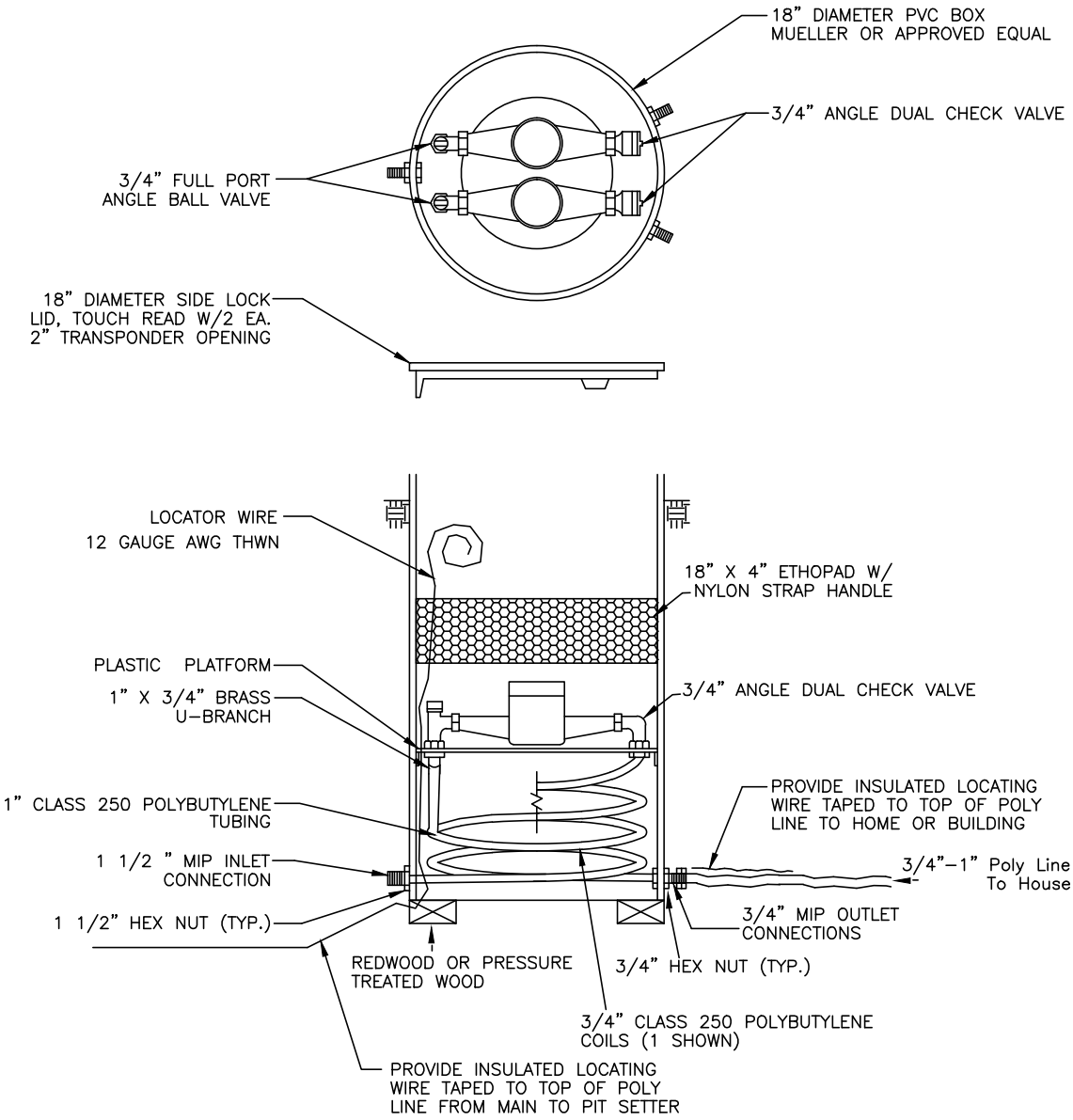
1) SERVICE LINE–SIZE AS SHOWN HEREON (1") WITH COUPLING ADAPTER.
2) PIT SETTER EXTENSION SHALL ONLY BE USED UPON APPROVAL BY LYON COUNTY UTILITIES DIVISION
3) SET METER PIT 2" ABOVE CURB OR SIDEWALK.
4) SET METER PITS 16" TO 24" BACK OF CURB OR SIDEWALK.
5) A 3' NYLON ROPE WILL NEED TO BE ATTACHED TO THE LID AND INSULATION PAD.
6) INSTALL CUSTOMER SHUT OFF VALVE AS CLOSE AS POSSIBLE TO HOUSE OR BUILDING.

NO.	REVISION	DATE
1	REDRAW	1/05vp
2	REDRAW	1/10ss

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

3/4" SINGLE PIT SETTER

SECTION: LYON COUNTY
DRAWING NO.: LC-W10
DATE: 1/2010
PAGE: W10



GENERAL NOTES

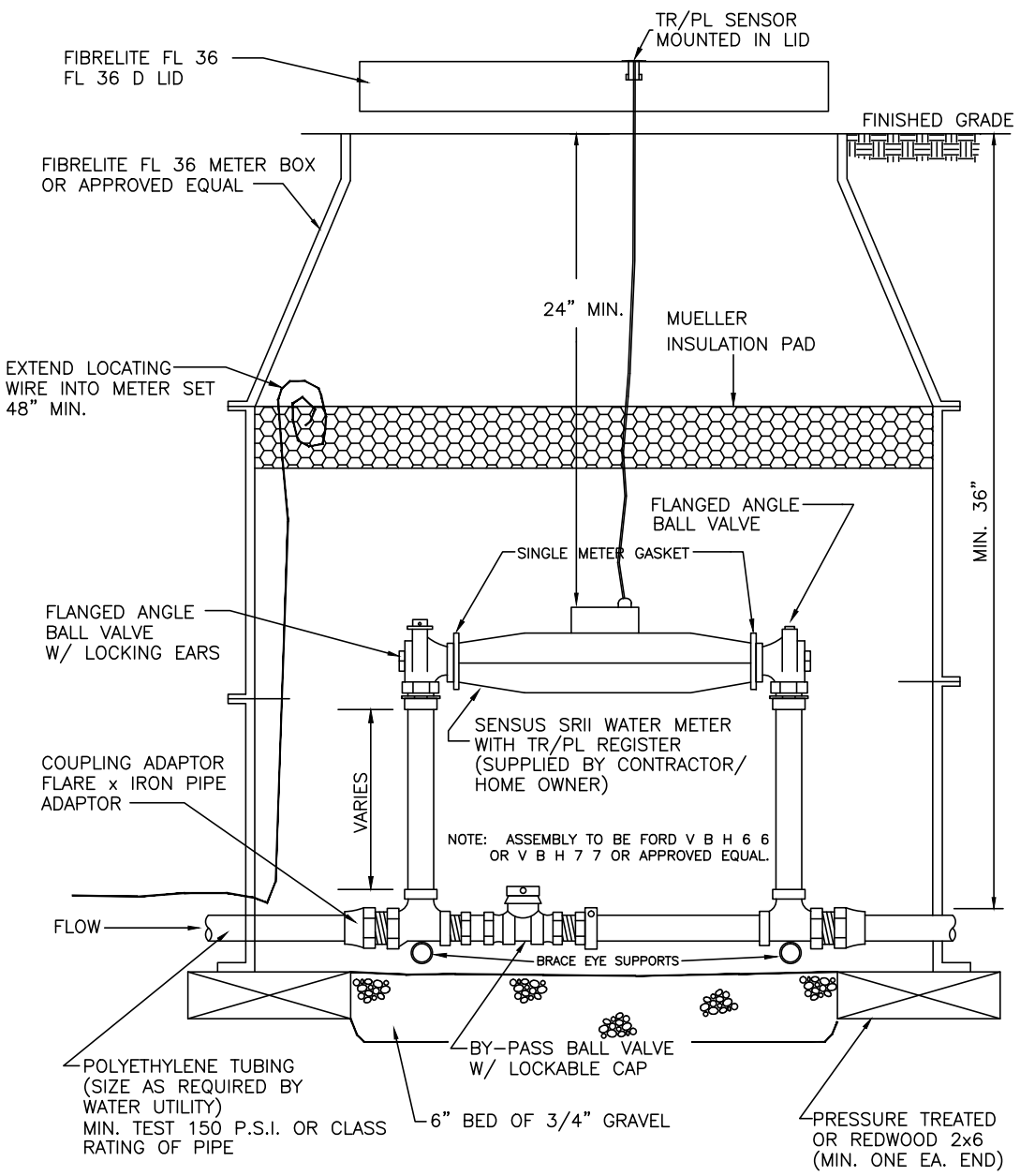
1) SERVICE LINE–SIZE AS SHOWN HEREON (1.5") WITH COUPLING ADAPTER.
2) PIT SETTER EXTENSION SHALL ONLY BE USED UPON APPROVAL BY LYON COUNTY UTILITIES DIVISION
3) SET METER PITS 2" ABOVE CURB OR SIDEWALK.
4) SET METER PITS 16" TO 24" BACK OF CURB OR SIDEWALK. IN P.U.E. OR R.O.W.
5) A 3' NYLON ROPE WILL NEED TO BE ATTACHED TO THE LID AND INSULATION PAD.
6) INSTALL CUSTOMER SHUT OFF VALVE AS CLOSE AS POSSIBLE TO HOUSE OR BUILDING.

NO.	REVISION	DATE
1	REDRAW	1/05vp
2	REDRAW	1/10ss

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

3/4" DOUBLE PIT SETTER

SECTION: LYON COUNTY
DRAWING NO.: LC-W11
DATE: 1/2010
PAGE: W11



GENERAL NOTES

1. USE A TRAFFIC RATED LID AND BOX WITH READING LID IN ALL TRAFFIC AREAS.
2. METER SHALL BE INSTALLED SO AS TO ACHIEVE A WATER TIGHT SEAL.
3. CUT TWO PIECES OF 1" METAL PIPE 18" LONG AND INSTALL THROUGH THE BRACE EYE SUPPORTS.
4. BYPASS NOT REQUIRED FOR SINGLE FAMILY RESIDENTIAL APPLICATION.

NO.	REVISION	DATE
1	REDRAW	1/05vp

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

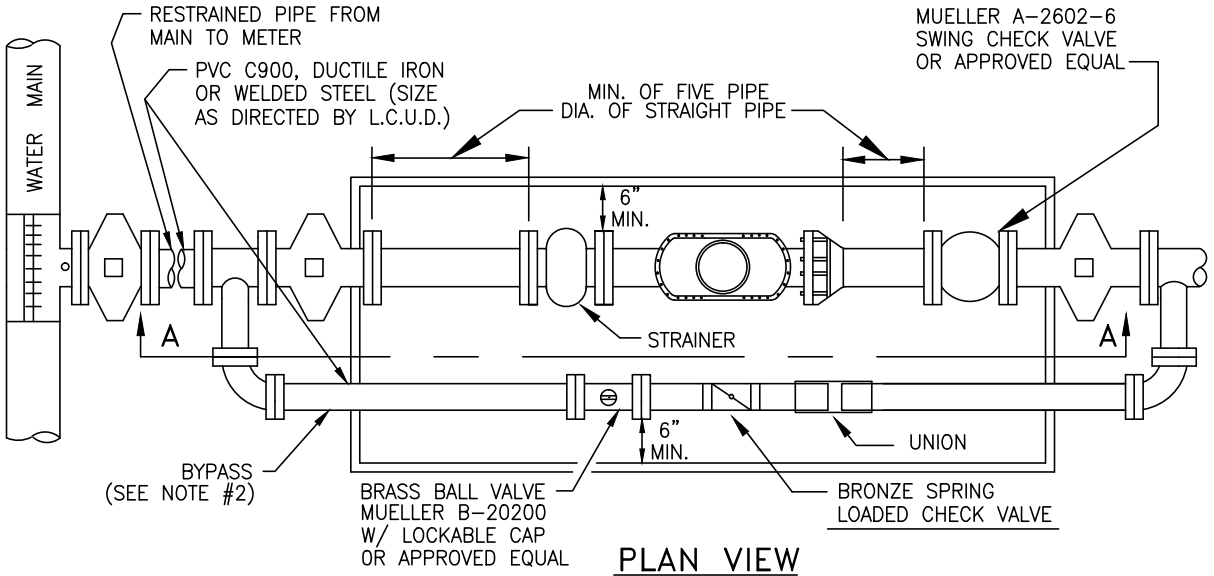
1 1/2" - 2"
PIT SETTER

SECTION: LYON COUNTY

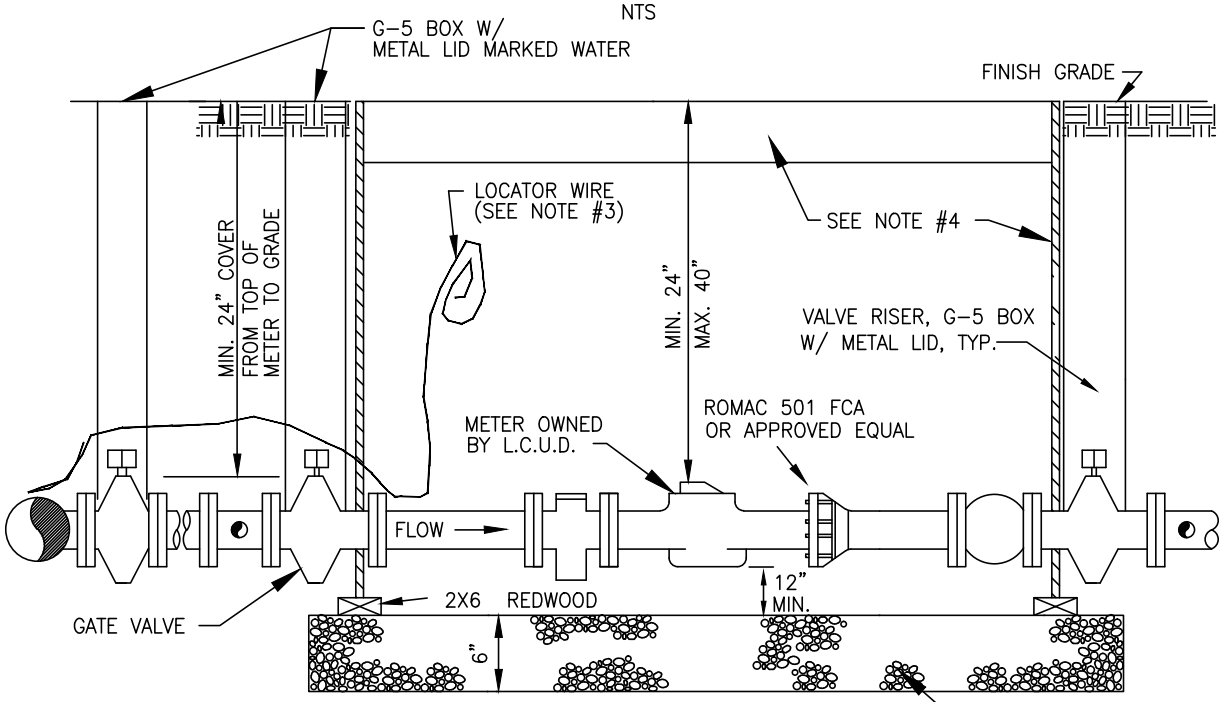
DRAWING NO.: LC-W12

DATE: 1/2010

PAGE: W12



PLAN VIEW
NTS



SECTION A-A
NTS

GENERAL NOTES

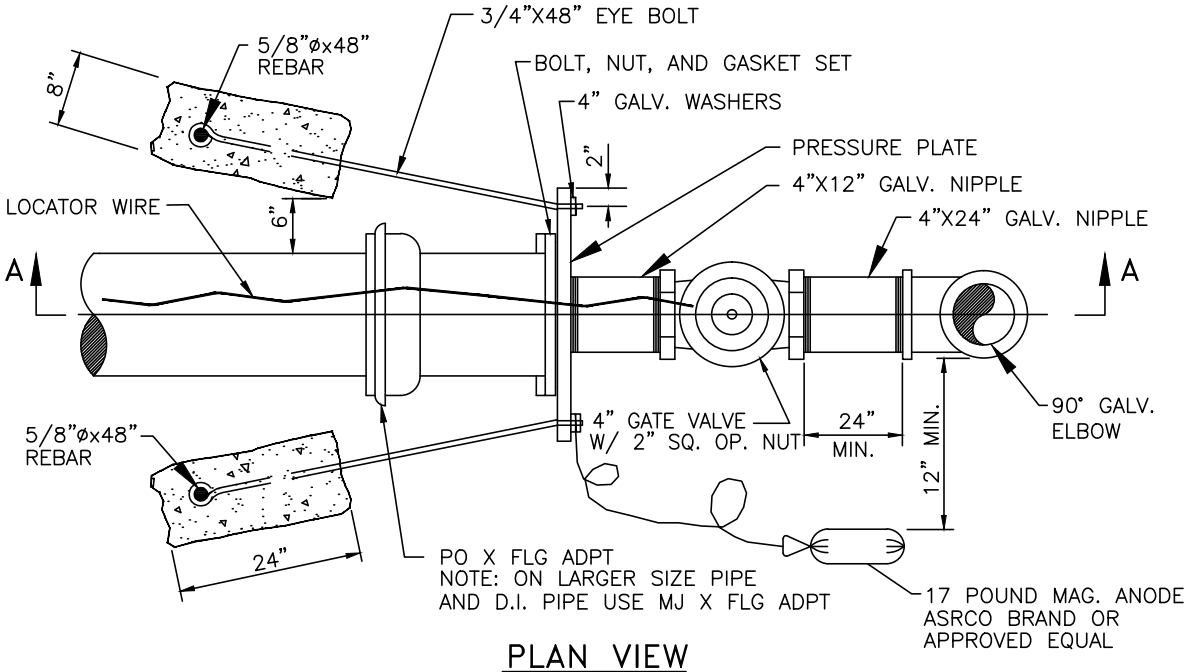
1. A 3" METER SET REQUIRES A 4" GATE VALVE.
2. 3" TO 4" METER SETS; USE 1-1/2" BY-PASS. 6" TO 8" METER SETS; USE 2" BY- PASS.
3. LOCATOR WIRE SHALL BE 12 GAUGE COATED SOLID COPPER WIRE, TAPED EVERY 5' TO PIPE; EXTEND FROM MAIN TO A MIN. OF 48" INTO BOX AND TO BUILDING.
4. METER VAULT MUST BE SIZED TO ALLOW FOR REPLACEMENT AND MAINTENANCE OF THE METER W/TRAFIC RATED LID AND BOX, MUST BE APPROVED BY LYON COUNTY UTILITIES DEPARTMENT.
5. ALL STEEL SHALL BE PRIMED AND WRAPPED (MIN. 10 MILS.)

NO.	REVISION	DATE
1	REDRAW	1/05vp

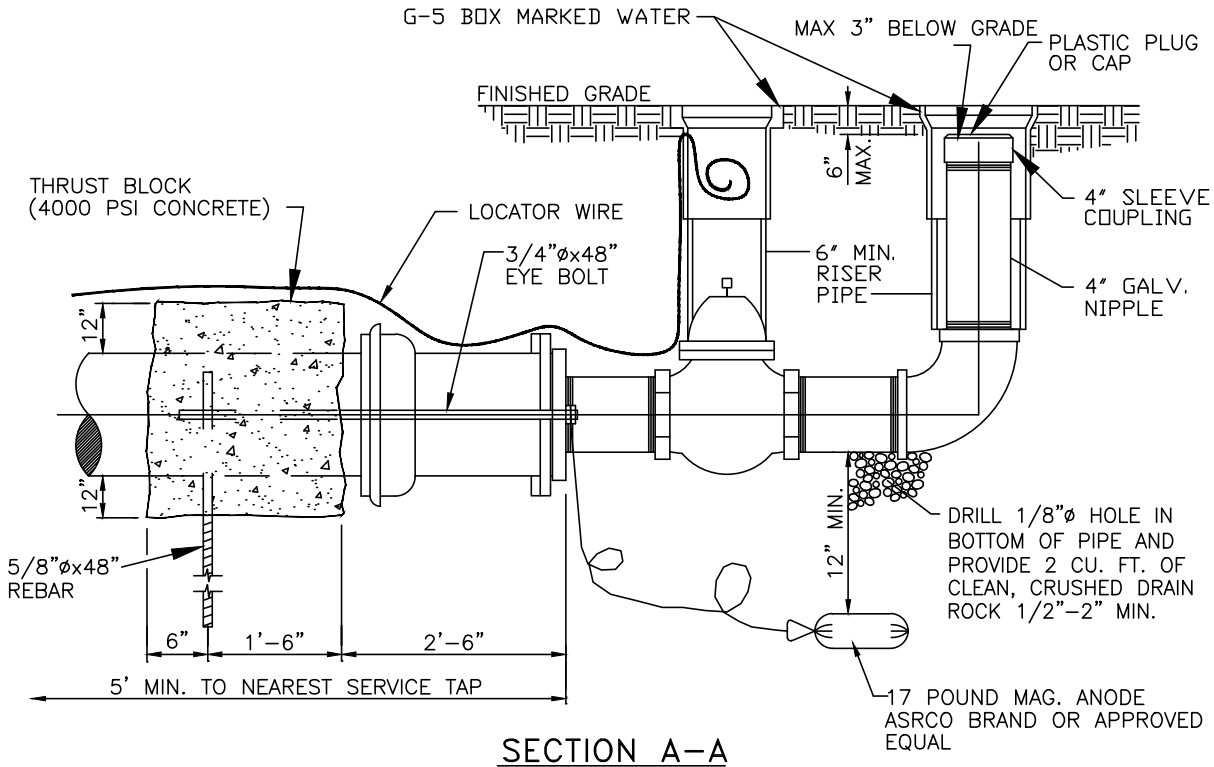
STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

3" TO 8" METER SET

SECTION: LYON COUNTY
DRAWING NO.: LC-W13
DATE: 1/2010
PAGE: W13

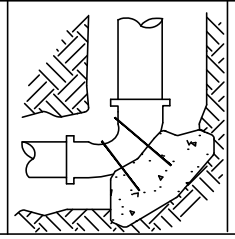
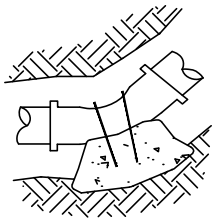
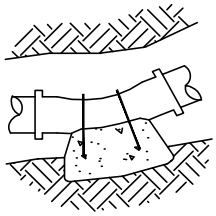
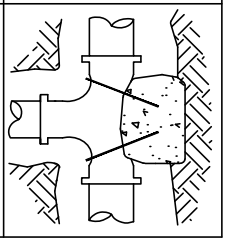


PLAN VIEW
NTS



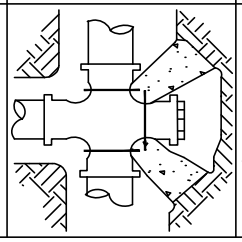
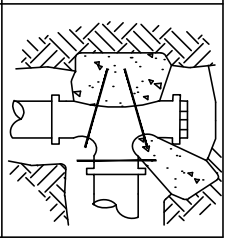
SECTION A–A
NTS

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION: LYON COUNTY
1	REDRAW	1/05vp	FLUSH ASSEMBLY	DRAWING NO.: LC-W14
2	REDRAW	1/10ss		DATE: 1/2010 PAGE: W14

TYPE OF FITTING	90° BEND	45° BEND	11 1/4° OR 22 1/2° BEND	TEE OR DEAD END
TYPICAL INSTALLATION				

THRUST BLOCK BEARING AREA (SQ. FT.)

TYPE OF FITTING		90° BEND	45° BEND	11 1/4° OR 22 1/2° BEND	TEE OR DEAD END	TEE W/PLUG	CROSS W/PLUG
SIZE OF PIPE	4"	2	1	1	2	2	2
	6"	4	4	2	4	4	4
	8"	7	4	2	5	7	7
	10"	12	6	3	8	12	12
	12"	16	10	5	12	16	16
	14"	20	12	6	14	20	20
	16"	27	15	8	18	27	27
	18"	45	25	13	32	45	45
	24"	65	35	18	46	65	65

TYPE OF FITTING	CROSS W/PLUG	TEE W/PLUG
TYPICAL INSTALLATION		

NOTES:

1. THRUST BLOCKS TO BE CONSTRUCTED OF 4000 PSI @ 28 DAYS CONCRETE.
2. AREAS GIVEN ARE FOR CLASS 150 PIPE AT TEST PRESSURE OF 150 P.S.I., WITH 2000 P.S.F. BEARING CAPACITY. INSTALLATIONS USING DIFFERENT PIPE, TEST PRESSURES, AND/OR SOIL TYPES SHOULD HAVE AREAS ADJUSTED ACCORDINGLY, SUBJECT TO THE APPROVAL OF THE ENGINEER.
3. BLOCKS TO BE POURED AGAINST UNDISTURBED SOIL. ALL FITTINGS TO BE RAPPED WITH PLASTIC PRIOR TO POURING CONCRETE.
4. JOINTS AND FACE OF PLUG TO BE KEPT CLEAR OF CONCRETE.
5. #4 REBAR OR 3/8" NICKEL PLATED OR STAINLESS STEEL CHAIN TO BE UTILIZED AS SHOWN. (BEND OVER TEE'S CROSSINGS AND BENDS)
6. AQUA–GRIP, ONE BOLT, OR MEGA LUG FITTINGS MAY BE USED IN PLACE OF THRUST BLOCKS WHEN APPROVED BY SERVICE PROVIDER.

NO.	REVISION	DATE
1	REDRAW	1/05vp

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

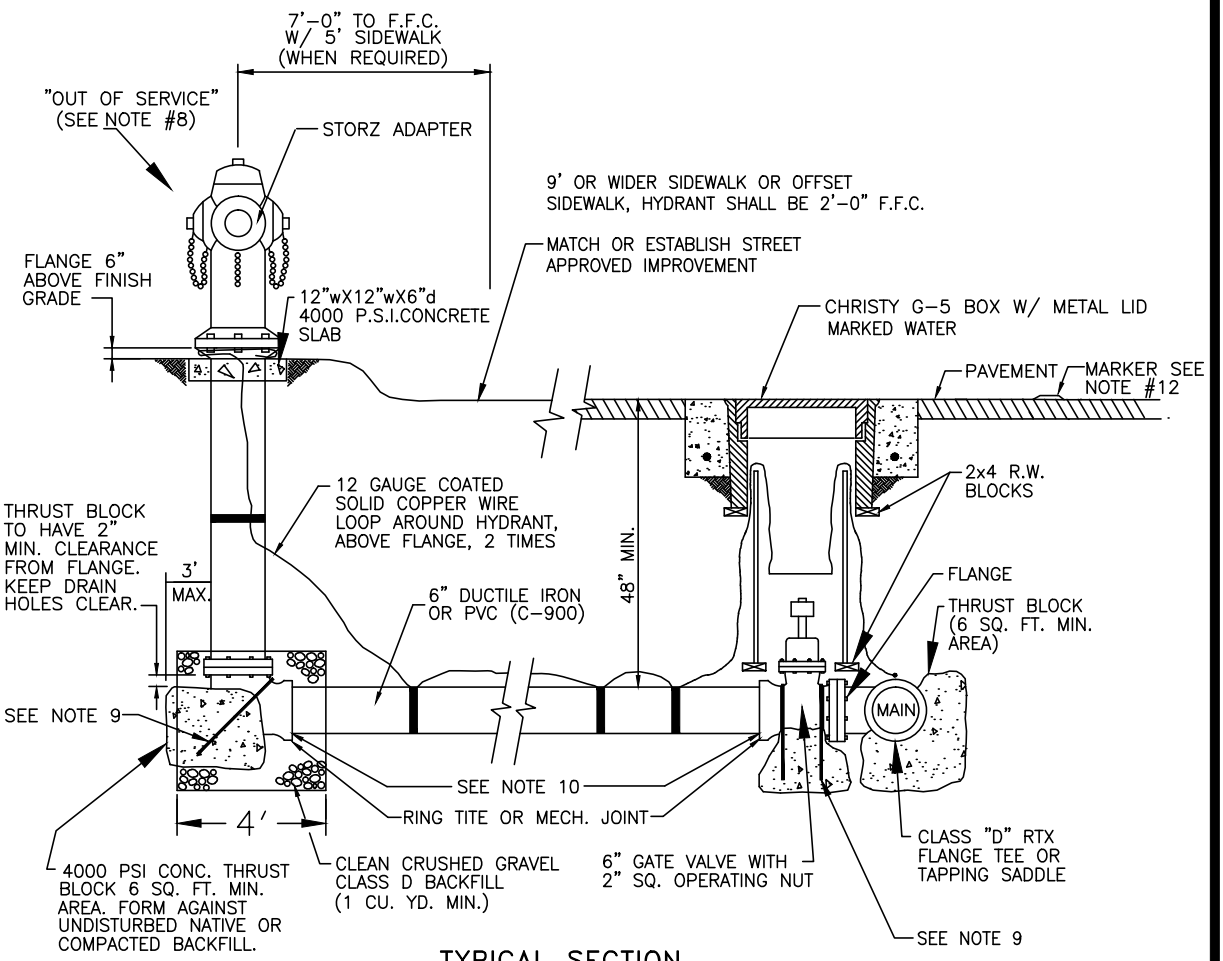
THRUST BLOCK BEARING AREAS

SECTION: LYON COUNTY

DRAWING NO.: LC-W15

DATE: 1/2010

PAGE: W15



TYPICAL SECTION
NTS

GENERAL NOTES

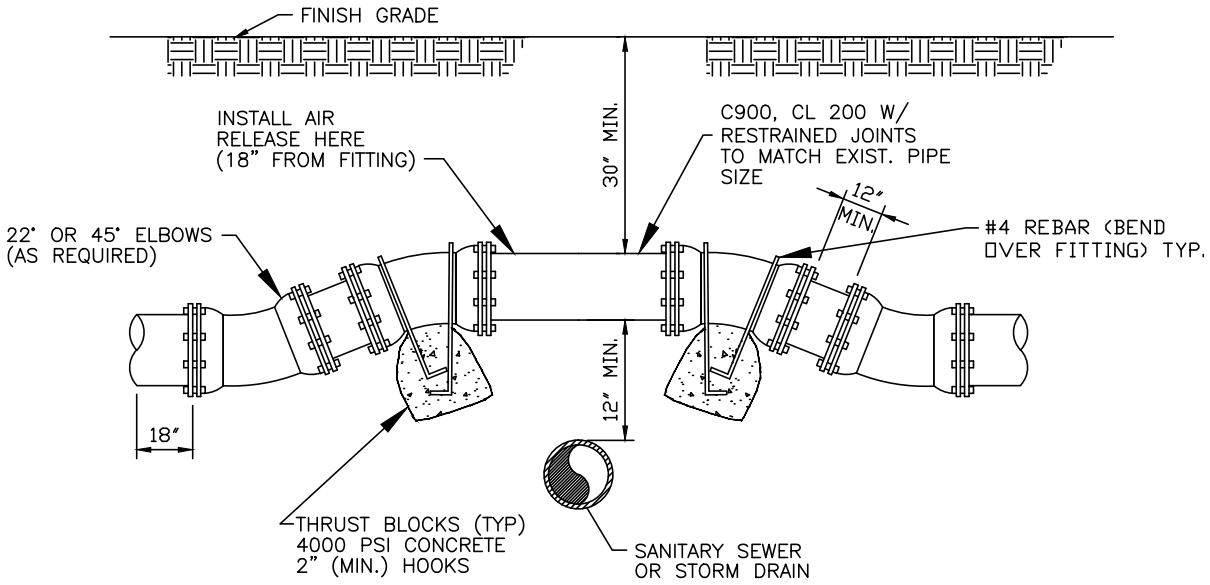
1. ALL FIRE HYDRANTS SHALL BE MUELLER SUPER CENTURION 200 WITH 5-1/4" VALVE OPENING OR WATEROUS "PACER" WB76DDP, OR APPROVED EQUAL. HYDRANT WILL BE INSTALLED SO AS TO PROVIDE A MIN. OF 3 FT. CLEARANCE IN ALL DIRECTIONS FROM OPERATING NUT.
2. ALL HYDRANTS SHALL BE PAINTED CHROME YELLOW (SAFETY YELLOW OR RED IF PRIVATE).
3. ALL HYDRANTS SHALL HAVE (2) 2-1/2" HOSE NOZZLES AND (1) 4-1/2" STEAMER NOZZLE. ALL THREADS SHALL BE AS SPECIFIED FOR AMERICAN NATIONAL HOSE COUPLING.
4. OPERATING NUT SHALL BE 1-1/2" PENTAGON.
5. INSPECTION BY LYON COUNTY UTILITIES DIVISION SHALL BE REQUIRED PRIOR TO BACKFILLING.
6. IF SIDEWALK NOT PRESENT, SET HYDRANT SO THAT OPERATING NUT IS 7'-0" BEHIND FRONT FACE OF CURB.
7. SET HYDRANT PLUMB.
8. OUT OF SERVICE HYDRANTS ARE TO BE "BAGGED" UNTIL PLACED INTO SERVICE.
9. 3/8" NICKEL PLATED OR GALVANIZED CHAIN, OR NUMBER 4 REBAR SHALL BE USED WITH ALL THRUST BLOCKS.
10. RESTRAINED FITTING, AQUA GRIP, FIELD LOC GASKET OR EQUIVALENT MAY BE USED IN PLACE OF THRUST BLOCKS. LCUD AND OR FIRE DEPT. MAY NEED TO APPROVE ON A CASE BY CASE BASIS.
11. A 5" STORZ ADAPTER WITH TAMPER PROOF GASKETS WILL NEED TO BE INSTALLED.
12. HYDRANT MARKER SHALL BE BLUE, 360 REFLECTIVE INDICATOR, RECESSED IN PAVEMENT 10' FROM CURB.

NO.	REVISION	DATE
1	REDRAW	1/05vp
2	REDRAW	1/10ss

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

FIRE HYDRANT

SECTION: LYON COUNTY
DRAWING NO.: LC-W16
DATE: 1/2010
PAGE: W16



TYPICAL CROSSING DETAIL

NTS

GENERAL NOTES

1. WATER LINES 12" AND LARGER SHALL REQUIRE SPECIAL DESIGN, AND APPROVAL BY LYON COUNTY UTILITIES DEPARTMENT.
2. THE ASSEMBLY ABOVE WILL BE INSTALLED USING RESTRAINED JOINTS.
3. ALL BOLTS TO BE TAR, OR EPOXY COATED UNLESS STAINLESS STEEL.
4. CONCRETE FOR THRUST BLOCKS SHALL NOT INTERFERE WITH THE REMOVAL OF BOLTED ASSEMBLIES.
5. AIR-RELEASE TO BE INSTALLED ON THE CENTER OF CROSSING. (18" MIN. FROM ANY FITTING) L.C.U.D. TO APPROVE ALTERNATES.
6. ROUTING WATER LINE OVER SEWER LINE OR "ROPING" UNDER SEWER LINE REQUIRES APPROVAL BY LYON COUNTY UTILITIES DEPARTMENT.
7. FOR PURPOSES OF SEPARATION AND PROTECTION OF THE WATER SUPPLY, RECLAIMED WATER SHALL BE CONSIDERED A SEWER LINE.
8. MUST MEET NAC 445A REQUIREMENTS. SEE VERTICAL CROSSING CONFLICTS DETAIL LC-S2.

NO.	REVISION	DATE
1	REDRAW	1/05vp
2	REDRAW	1/10ss

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

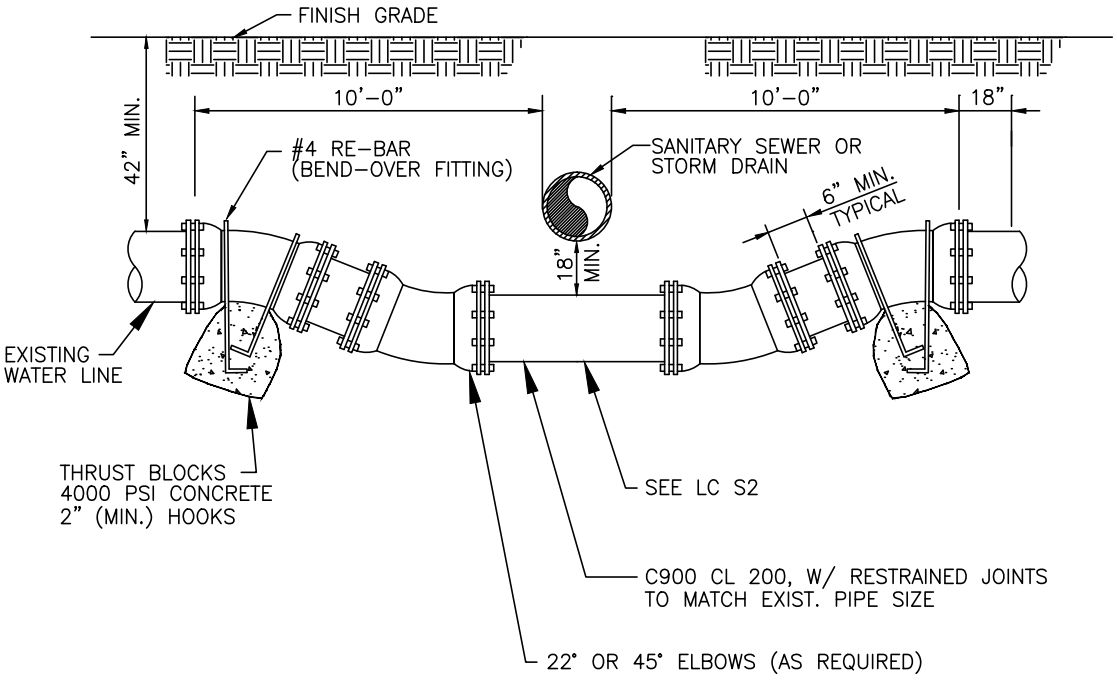
RAISING WATER MAINS

SECTION: LYON COUNTY

DRAWING NO.: LC-W17

DATE: 1/2010

PAGE: W17



TYPICAL CROSSING DETAIL

NTS

GENERAL NOTES

1. WATER LINES 12" AND LARGER SHALL REQUIRE SPECIAL DESIGN, AND APPROVAL BY LYON COUNTY UTILITIES DEPARTMENT.
2. THE ASSEMBLY ABOVE WILL BE INSTALLED USING RESTRAINED JOINTS.
3. ALL BOLTS TO BE TAR, OR EPOXY COATED UNLESS STAINLESS STEEL.
4. CONCRETE FOR THRUST BLOCKS SHALL NOT INTERFERE WITH THE REMOVAL OF BOLTED ASSEMBLIES.
5. ROUTING WATER LINE OVER SEWER LINE OR "ROPING" UNDER SEWER LINE REQUIRES APPROVAL BY LYON COUNTY UTILITIES DEPARTMENT.
6. FOR PURPOSES OF SEPARATION AND PROTECTION OF THE WATER SUPPLY, RECLAIMED WATER SHALL BE CONSIDERED A SEWER LINE.
7. MUST MEET NAC 445A REQUIREMENTS. SEE VERTICAL CROSSING CONFLICTS DETAIL LC-S2.

NO.	REVISION	DATE
1	REDRAW	1/05vp
2	REDRAW	1/10ss

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

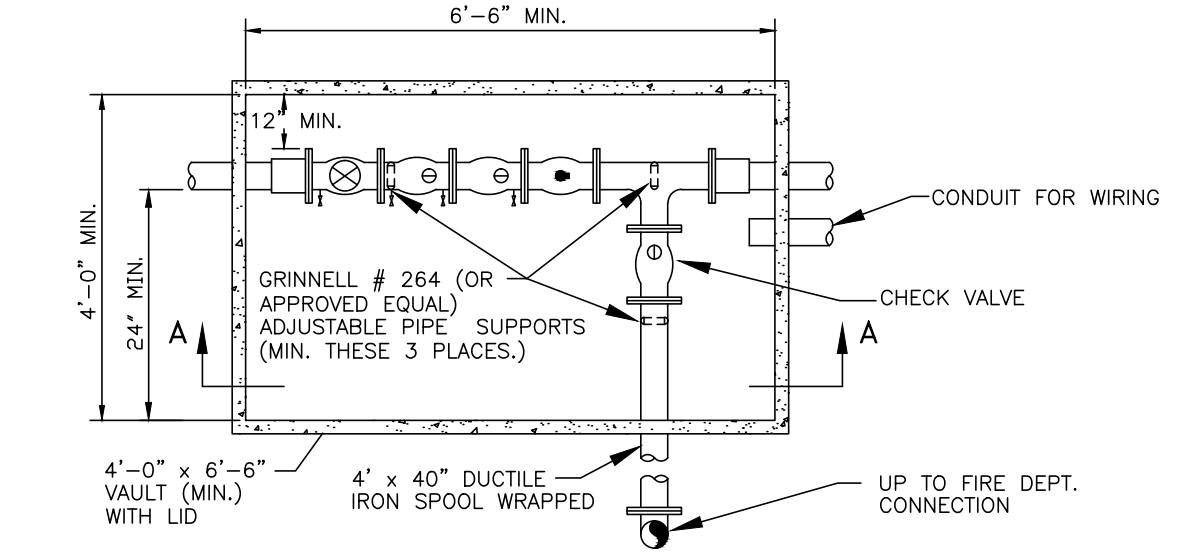
LOWERING WATER MAINS

SECTION: LYON COUNTY

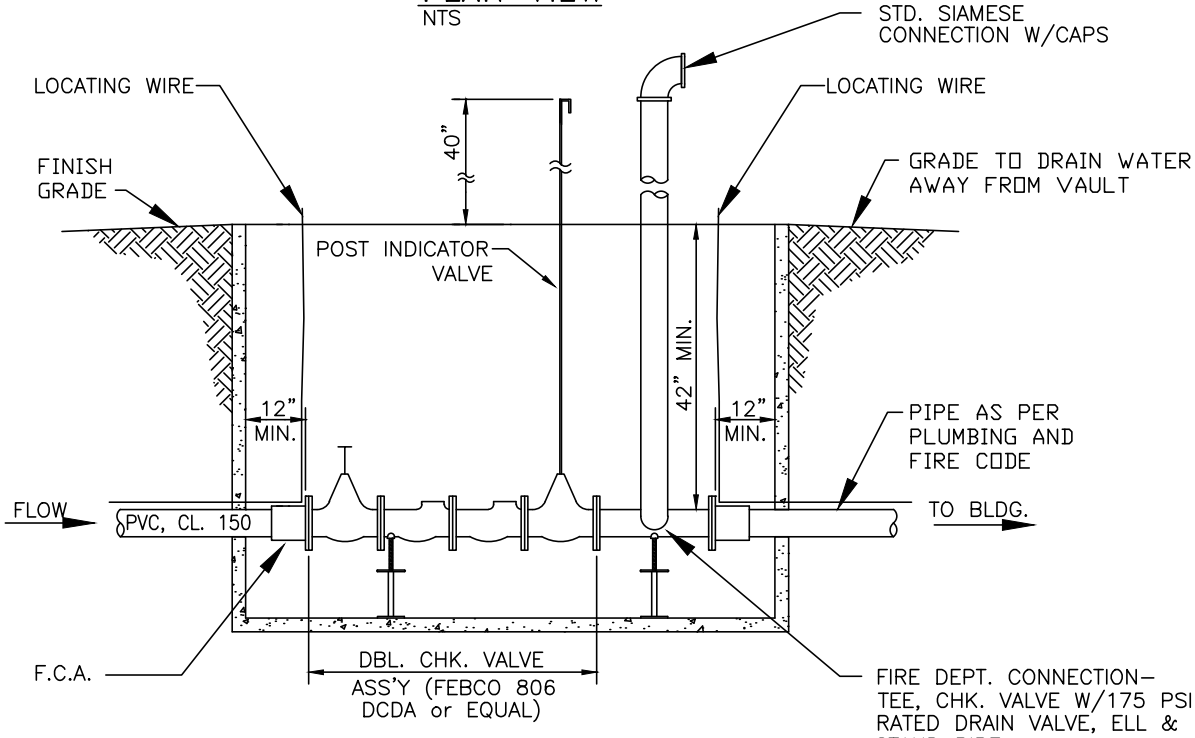
DRAWING NO.: LC-W18

DATE: 1/2010

PAGE: W18



PLAN VIEW
NTS



SECTION A–A
NTS

GENERAL NOTES

1. POST INDICATOR VALVE ASSEMBLY IS SCHEMATIC. FIRE SPRINKLER CONTRACTOR TO VERIFY LOCAL FIRE AGENCY REQUIREMENTS AND MODIFY IF NECESSARY WITH APPROVAL OF LYON COUNTY FIRE CHIEF AND SERVICE PROVIDER.
2. IN ACCORDANCE WITH USC CROSS CONNECTION CONTROL MANUAL.

NO.	REVISION	DATE
1	REDRAW	1/05vp

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

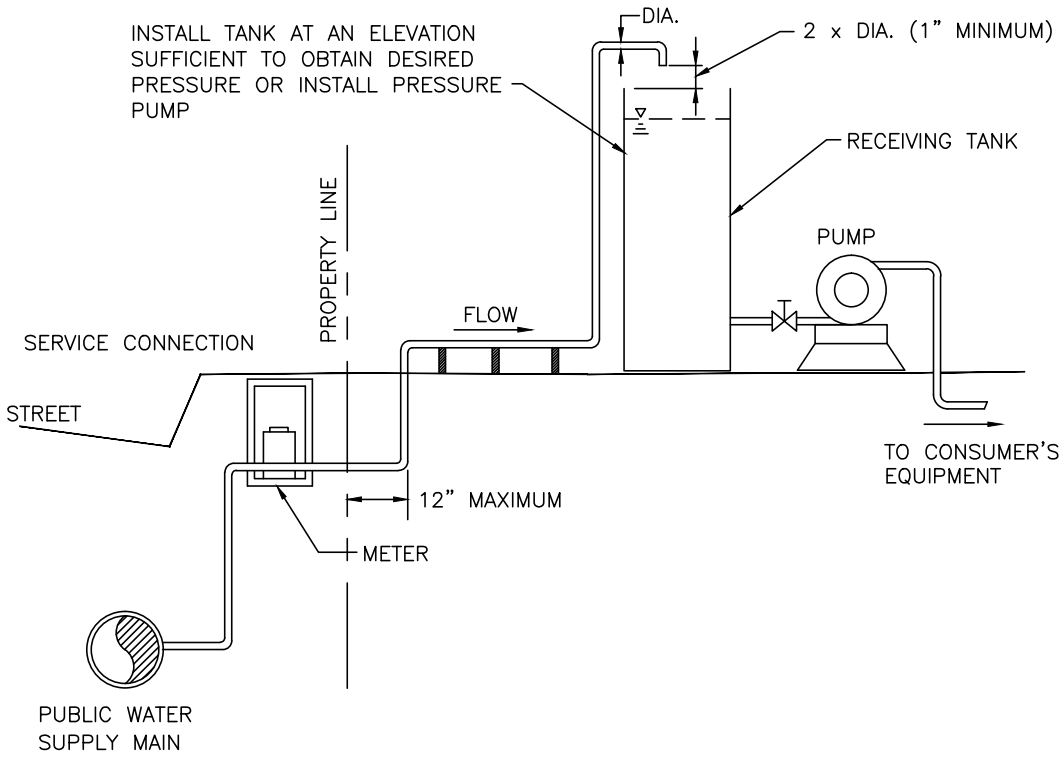
BELOW GRADE DOUBLE CHECK W/ POST INDICATOR VALVE AND FIRE DEPT CONNECTION

SECTION: LYON COUNTY

DRAWING NO.: LC-W19

DATE: 1/2010

PAGE: W19



TYPICAL AIR GAP SECTION

NTS

GENERAL NOTES

1. COORDINATE INSTALLATION WITH LYON COUNTY UTILITIES DEPARTMENT FOR APPROVAL.
2. NO OUTLET, TEE, TAP OR CONNECTION BETWEEN SERVICE CONNECTION AND RECEIVING TANK.
3. ALTERNATE DESIGNS MUST BE PREPARED AND STAMPED BY A LICENSED NV ENGINEER.

NO.	REVISION	DATE
1	REDRAW	1/05vp

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

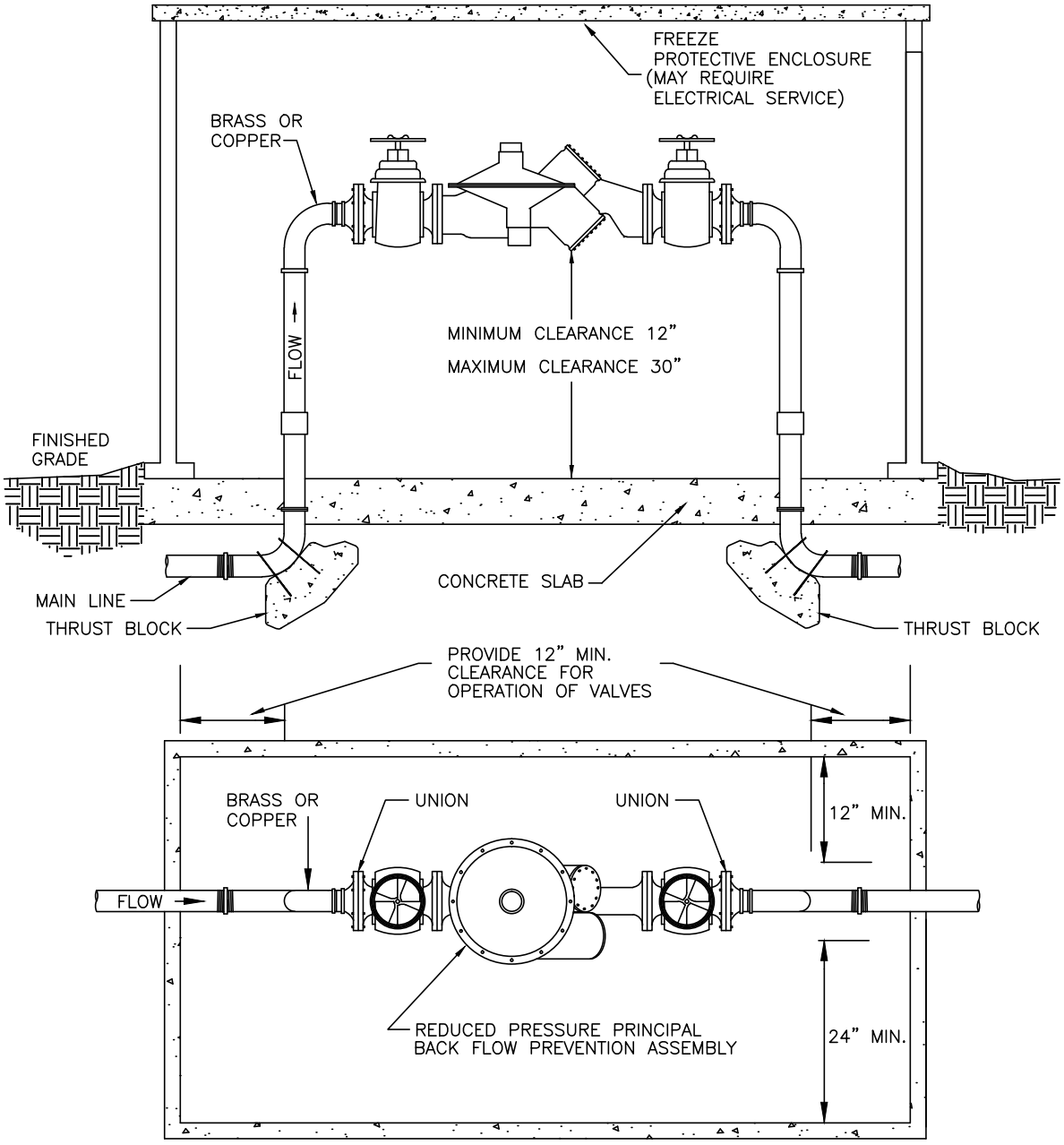
INSTALLATION FOR AIR-GAP SEPARATION

SECTION: LYON COUNTY

DRAWING NO.: LC-W20

DATE: 1/2010

PAGE: W20



NOTES

1. REDUCED PRESSURE PRINCIPLE BACKFLOW ASSEMBLY SHALL BE APPROVED BY USC–F.C.C.C.H.R., AND L.C.U.D. AND TESTED BY AN AWWA CERTIFIED BACKFLOW ASSEMBLY TESTER PRIOR TO APPROVAL OF ANY CERTIFICATE OF OCCUPANCY OR FINAL INSPECTION.
2. NO OUTLET TEE, TAP OR CONNECTION BETWEEN SERVICE CONNECTION AND BACKFLOW PREVENTION ASSEMBLY.
3. INSTALL ADEQUATE DRAINAGE, REFER TO RELIEF VALVE DISCHARGE RATE FOR SIZING.
4. SUPPORTS REQUIRED FOR ASSEMBLIES 2–1/2" AND LARGER.
5. LOCATE DIRECTLY BEHIND WATER METER, ALL OTHER LOCATIONS REQUIRE PRIOR APPROVAL BY THE UTILITIES DEPARTMENT.

NO.	REVISION	DATE
1	REDRAW	1/05vp
2	REDRAW	1/10ss

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

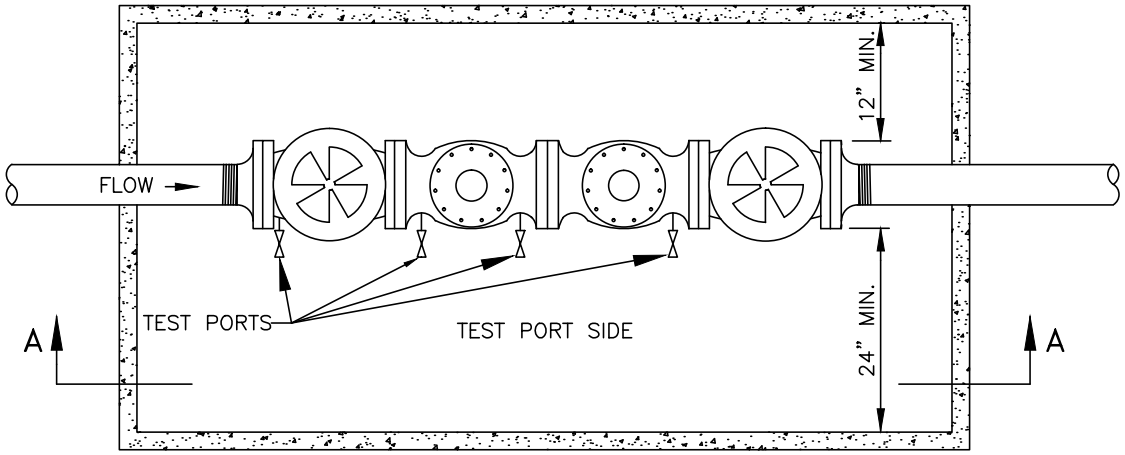
BACKFLOW PREVENTER ASSEMBLY (REDUCED PRESSURE TYPE)

SECTION: LYON COUNTY

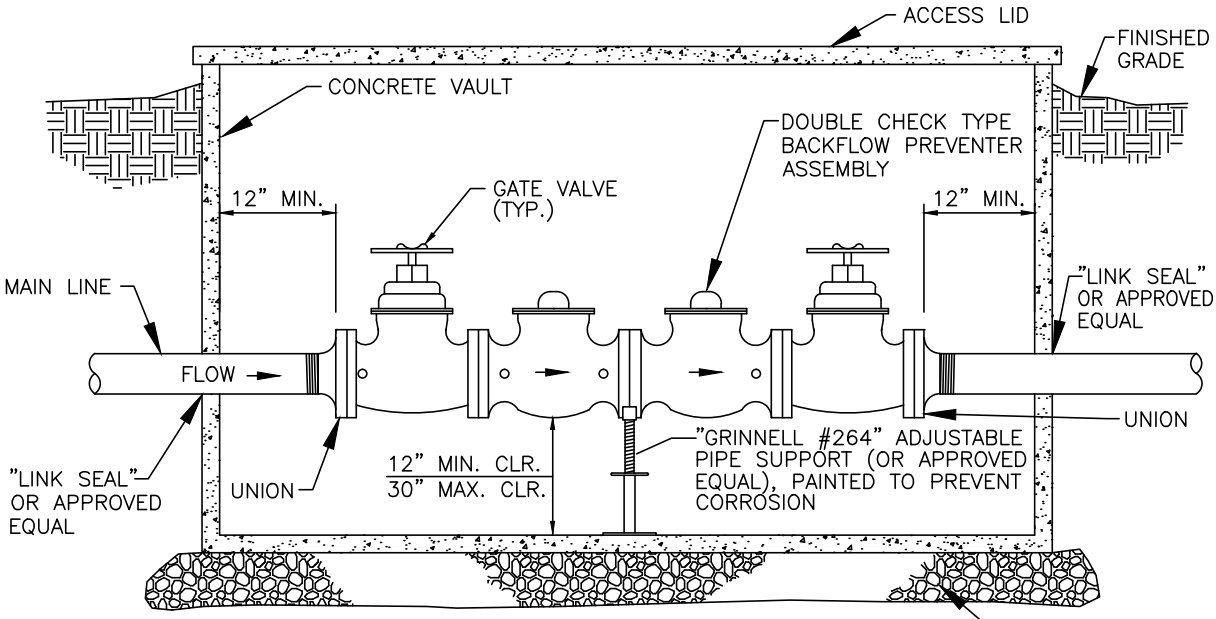
DRAWING NO.: LC-W21

DATE: 1/2010

PAGE: W21



PLAN
NTS



SECTION A–A
NTS

GENERAL NOTES

1. DOUBLE CHECK VALVE BACKFLOW ASSEMBLY SHALL BE APPROVED BY U.S.C., F.C.C.C.H.R., AND L.C.U.D. AND TESTED BY AN AWWA CERTIFIED BACKFLOW ASSEMBLY TESTER PRIOR TO APPROVAL OF ANY CERTIFICATE OF OCCUPANCY OR FINAL INSPECTION.
2. NO OUTLET TEE, TAP OR CONNECTION BETWEEN SERVICE CONNECTION AND BACKFLOW PREVENTION ASSEMBLY.
3. SUPPORTS REQUIRED FOR ASSEMBLIES 2–1/2" AND LARGER.
4. ELECTRICAL CONDUIT TO BE MOUNTED AND FASTENED ON THE SIDE WALLS OF THE VAULT AND SHALL NOT BE MOUNTED SO AS TO OBSTRUCT ACCESS TO MAINTAIN AND TEST ASSEMBLY.

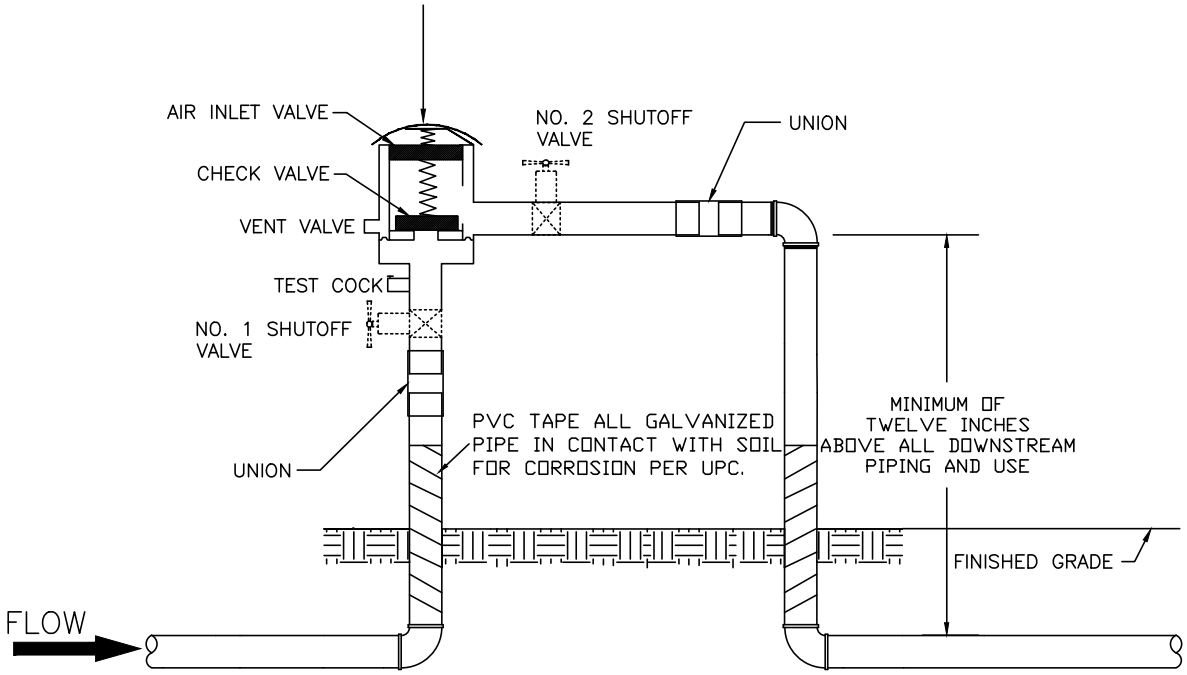
NO.	REVISION	DATE
1	REDRAW	1/05vp

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

BACKFLOW PREVENTER ASSEMBLY (DOUBLE CHECK TYPE)

SECTION: LYON COUNTY
DRAWING NO.: LC-W22
DATE: 1/2010
PAGE: W22

USC APPROVED BACKFLOW PREVENTION ASSEMBLY:
SPILL-RESISTANT PRESSURE VACUUM BREAKER

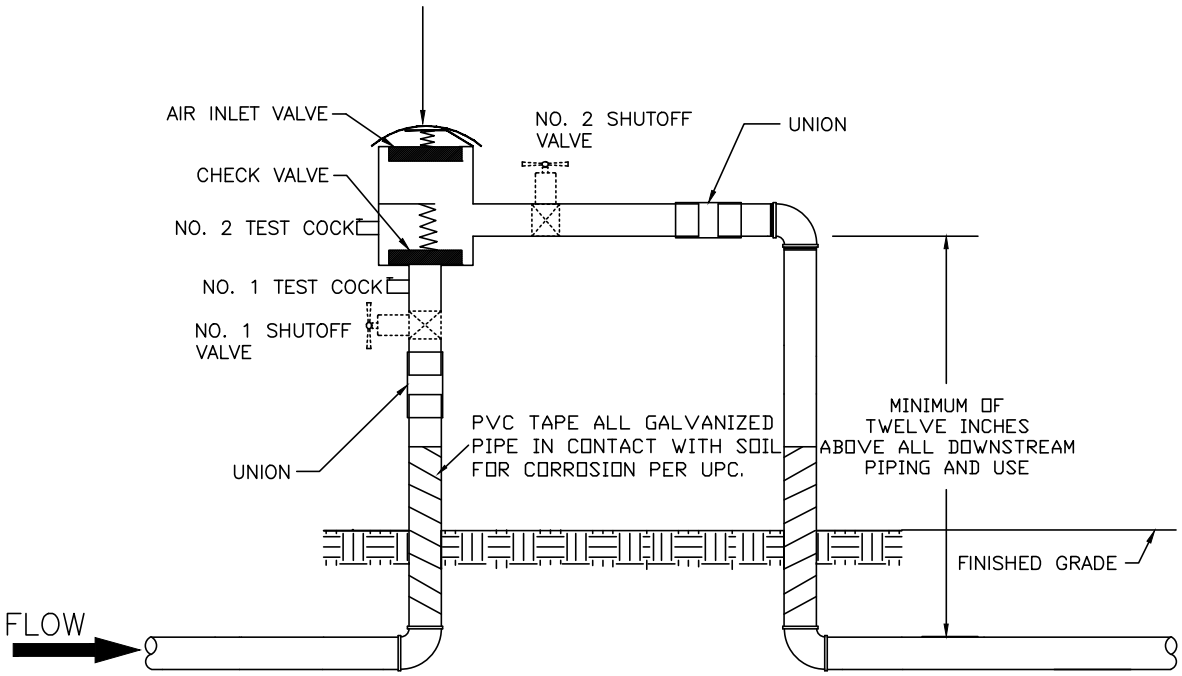


NOTES:

1. SVB MUST BE ABOVE GRADE.
2. MUST BE INSTALLED UPSTREAM FROM THE TERMINAL SHUTOFF VALVE
3. MUST NOT BE INSTALLED AT A LOCATION WHERE BACKPRESSURE WILL OCCUR.
4. MUST BE INSTALLED NOT LESS THAN TWELVE VERTICAL INCHES ABOVE THE HIGHEST POINT OF THE DOWNSTREAM PIPING.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION LYON COUNTY	
1	REDRAW	1/05vp	SPILL-RESISTANT VACUUM BREAKER (SVB) BACKFLOW PREVENTION ASSEMBLY TYPICAL INSTALLATION EXTERNAL BACKFLOW PREVENTER	DRAWING NO. LC-W23	
2	REDRAW	1/10ss		DATE 1/2010	PAGE W23

USC APPROVED BACKFLOW PREVENTION ASSEMBLY: PRESSURE VACUUM BREAKER



NOTES:

1. PVB MUST BE ABOVE GRADE.
2. MUST BE INSTALLED UPSTREAM FROM THE TERMINAL SHUTOFF VALVE
3. MUST NOT BE INSTALLED AT A LOCATION WHERE BACKPRESSURE WILL OCCUR.
4. MUST BE INSTALLED NOT LESS THAN TWELVE VERTICAL INCHES ABOVE THE HIGHEST POINT OF THE DOWNSTREAM PIPING.

NO.	REVISION	DATE
1	REDRAW	1/05vp
2	REDRAW	1/10ss

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

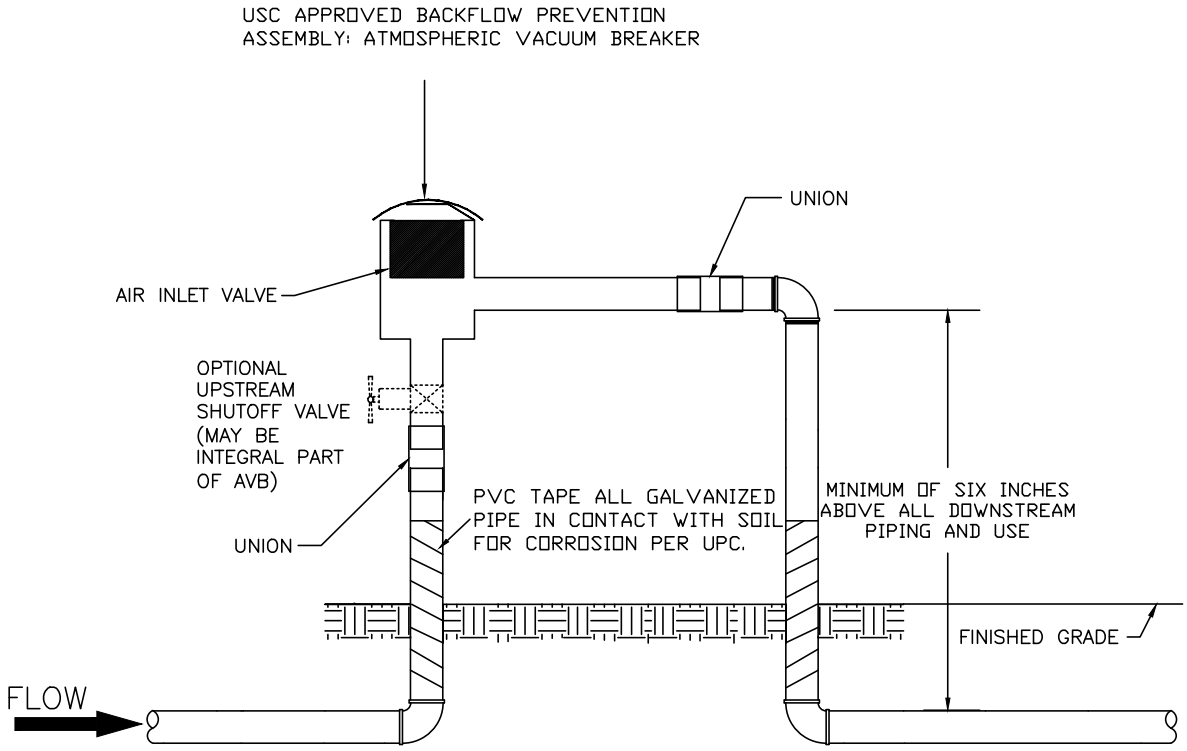
PRESSURE VACUUM BREAKER (PVB)
BACKFLOW PREVENTION ASSEMBLY
TYPICAL INSTALLATION
EXTERNAL BACKFLOW PREVENTER

SECTION: LYON COUNTY

DRAWING NO.: LC-W24

DATE: 1/2010

PAGE: W24



NOTES:

1. AVB MUST BE ABOVE GRADE AND FLOW FROM THE PROTECTED FIXTURE MUST BE TO THE ATMOSPHERE.
2. ANY ASSOCIATED SHUTOFF VALVE MUST BE INSTALLED UPSTREAM FROM THE VACUUM BREAKER.
3. THE AVB MUST NOT BE SUBJECTED TO OPERATING PRESSURE FOR MORE THAN 12 HOURS IN ANY 24–HOUR PERIOD.
4. THE AVB MUST BE INSTALLED NOT LESS THAN SIX VERTICAL INCHES ABOVE THE HIGHEST POINT OF THE DOWNSTREAM PIPING.

NO.	REVISION	DATE
1	REDRAW	1/05vp
2	REDRAW	1/10ss

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

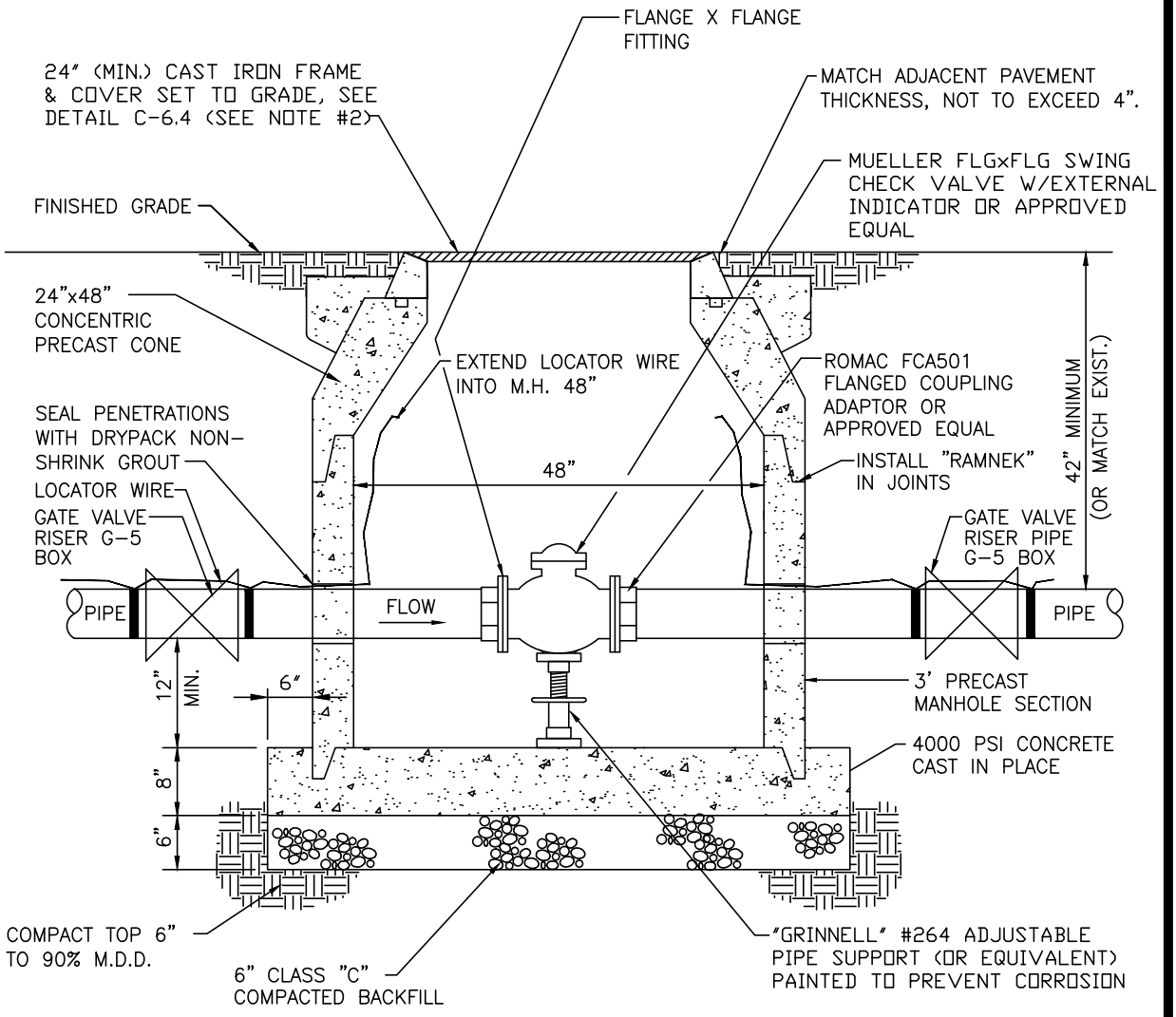
ATMOSPHERIC VACUUM BREAKER (AVB)
BACKFLOW PREVENTION ASSEMBLY
TYPICAL INSTALLATION
EXTERNAL BACKFLOW PREVENTER

SECTION: LYON COUNTY

DRAWING NO.: LC-W25

DATE: 1/2010

PAGE: W25



TYPICAL SECTION
NTS

GENERAL NOTES

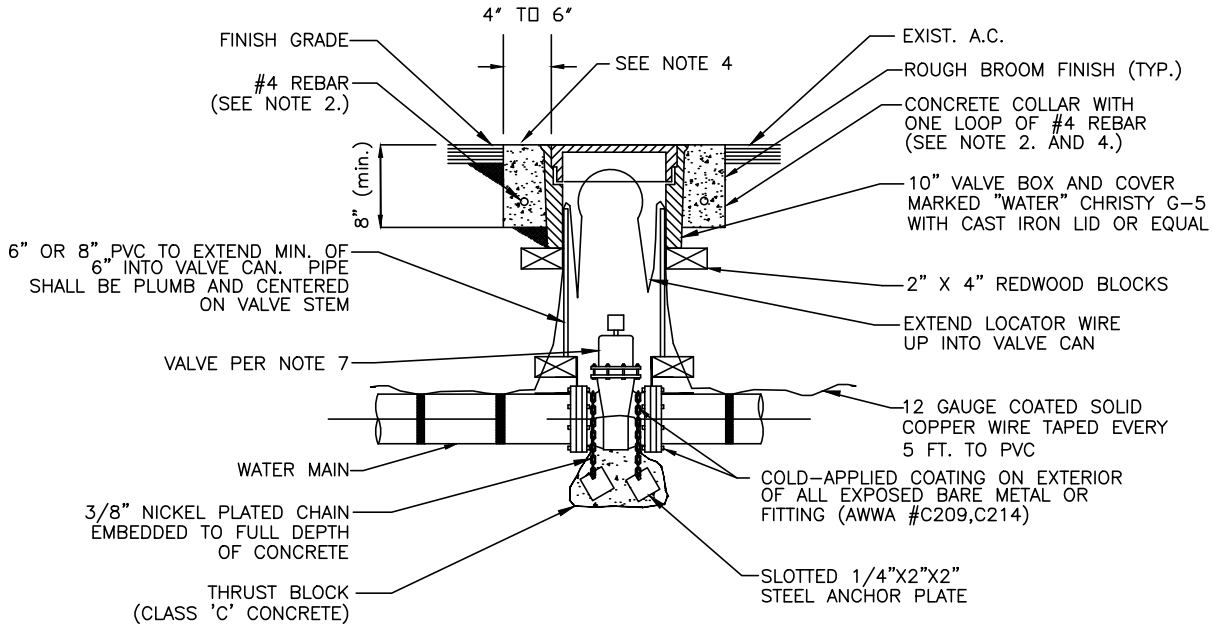
1. CENTER CHECK VALVE IN VAULT.
2. MANHOLE FRAME AND COVER TO BE SOUTH BAY FOUNDRY "SBF 1900 CPH" (CLOSED PICK HOLE) OR EQUAL AND TO BE MARKED "WATER".
3. COMPACT TOP 6" SUBGRADE TO 90% M.D.D. PRIOR TO PLACING CLASS "C" BACKFILL.
4. CHECK VALVES 12" OR LARGER REQUIRE SPECIAL DESIGN AND APPROVAL OF LYON COUNTY UTILITIES DEPARTMENT.
5. MANHOLES SHALL BE WATER-TIGHT.

NO.	REVISION	DATE
1	REDRAW	1/05vp

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

CHECK-VALVE DETAIL

SECTION: LYON COUNTY
DRAWING NO.: LC-W26
DATE: 1/2010
PAGE: W26



GENERAL NOTES

1. SEE DETAIL W-15 FOR THRUST BLOCK SIZE. (MATERIAL USED FOR THRUST BLOCKING SHOULD NOT PREVENT ACCESS TO THE BOLT ASSEMBLY).
2. CONCRETE SHALL MEET THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION. REBAR SHALL ONLY BE USED WHEN THE VALVE BOX IS LOCATED OUTSIDE PAVED AREAS.
3. IN ALL AREAS, LIDS SHALL BE SET FLUSH WITH FINISH GRADE UNLESS OTHERWISE NOTED.
4. THE CONCRETE COLLAR SHALL BE LEFT 2-1/2" - 3" BELOW FINISHED ASPHALT SURFACE. APPLY AN APPROVED TACK COAT AND FILL VOID BETWEEN ADJACENT PAVEMENT AND FRAME WITH TYPE 3 A.C. PAVING. CHIP OR FOG SEAL PAVED SURFACE. EXCEPTION: WHEN STRUCTURE NOT LOCATED IN ASPHALT PAVEMENT OR IN AN UNPAVED AREA, EXTEND CONCRETE TO FINISH GRADE. ALL CUTS IN A.C. SHALL BE STRAIGHT & EVEN.
5. SPLICES IN WIRE SHALL BE CONNECTED BY SOLDER OR WIRE NUTS AND WRAPPED WITH UL LISTED ELECTRICAL TAPE.
6. CONNECT TO PIPE PER SPECIFICATIONS OR LYON COUNTY UTILITIES DIVISION WRITTEN APPROVAL.
7. FULL FLOW DESIGN, O-RING SEAL, EPOXY COATED INSIDE AND OUT, RESILIENT WEDGE, AWWA APPROVED.
8. 48" MAXIMUM TO THE NUT OR ADD A VALVE EXTENSION.

NO.	REVISION	DATE
1	REDRAW	1/05vp
2	REDRAW	1/10ss

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

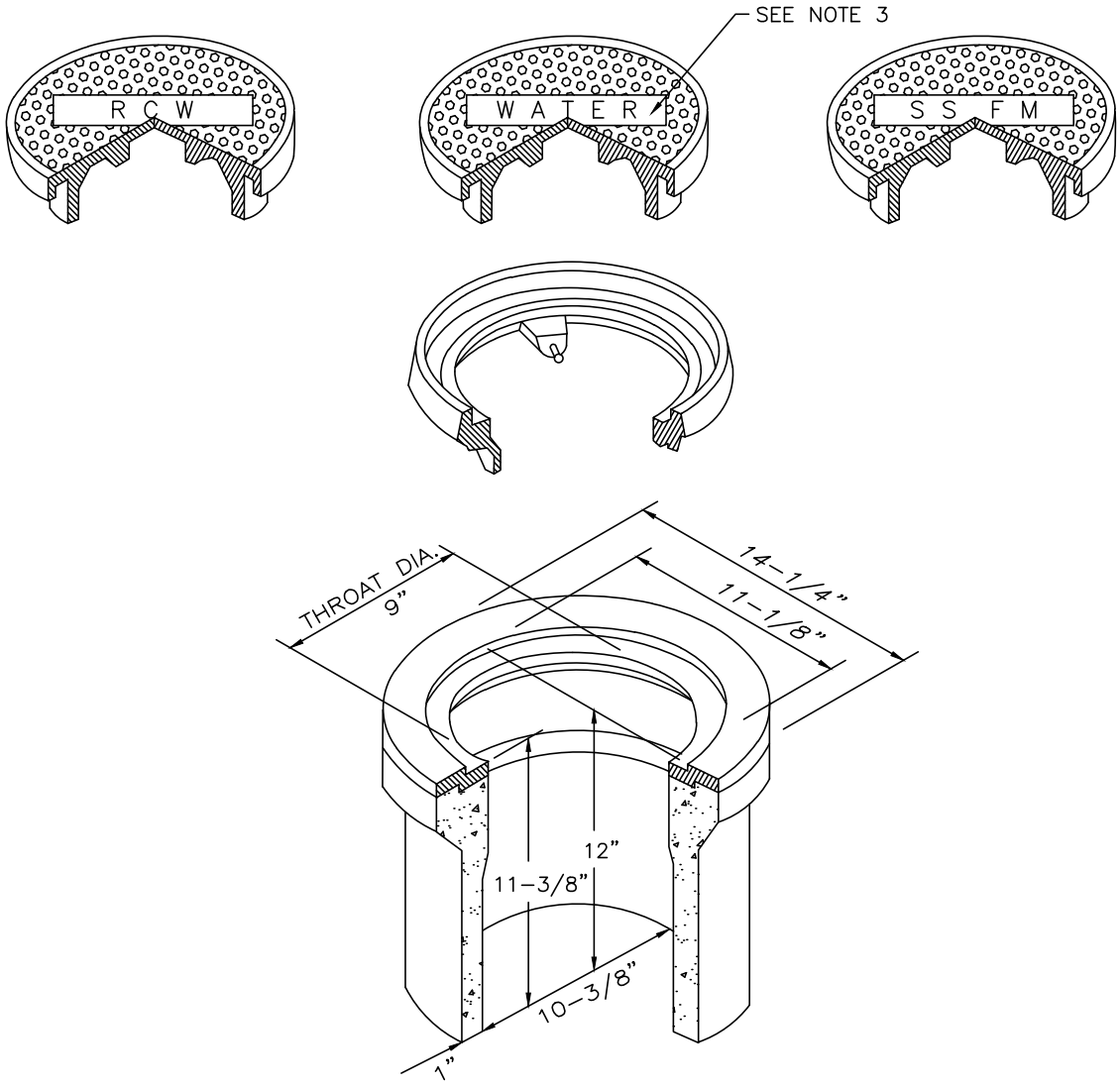
VALVE DETAIL

SECTION: LYON COUNTY

DRAWING NO.: LC-W27

DATE: 1/2010

PAGE: W27



GENERAL NOTES

1. VALVE BOX MUST BE TRAFFIC RATED. (CHRISTY G-5 BOX OR EQUAL)
2. MIN. OF 10" INSIDE DIAMETER.
3. CAST IRON LID MARKED "WATER" FOR WATER LINE APPLICATIONS. CAST IRON LID MARKED "RECLAIMED WATER" OR "RCW" WHEN INSTALLED ON A RECLAIMED WATER MAIN. LID SHALL BE MARKED "SS FORCE MAIN" OR "SS FM" WHEN INSTALLED ON A SANITARY SEWER FORCE MAIN.
4. RISER OF 6" OR 8" PVC EXTENDED IN VALVE CAN MIN. OF 6". USE SAME MATERIAL AS NEW MAIN LINE.
5. TORQUE BOLTS TO MANUFACTURER'S RECOMMENDATIONS.
6. ALL NEW VALVE BOXES TO BE SET TO GRADE ONLY ONE GRADE RING PER VALVE BOX.
7. R.C.W. TO BE POWDER COATED PURPLE.
8. CONCRETE COLLAR TO BE 6"X6" 4000 P.S.I. WITH FIBER MESH.

NO.	REVISION	DATE
1	REDRAW	1/05vp
2	REDRAW	1/10ss

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

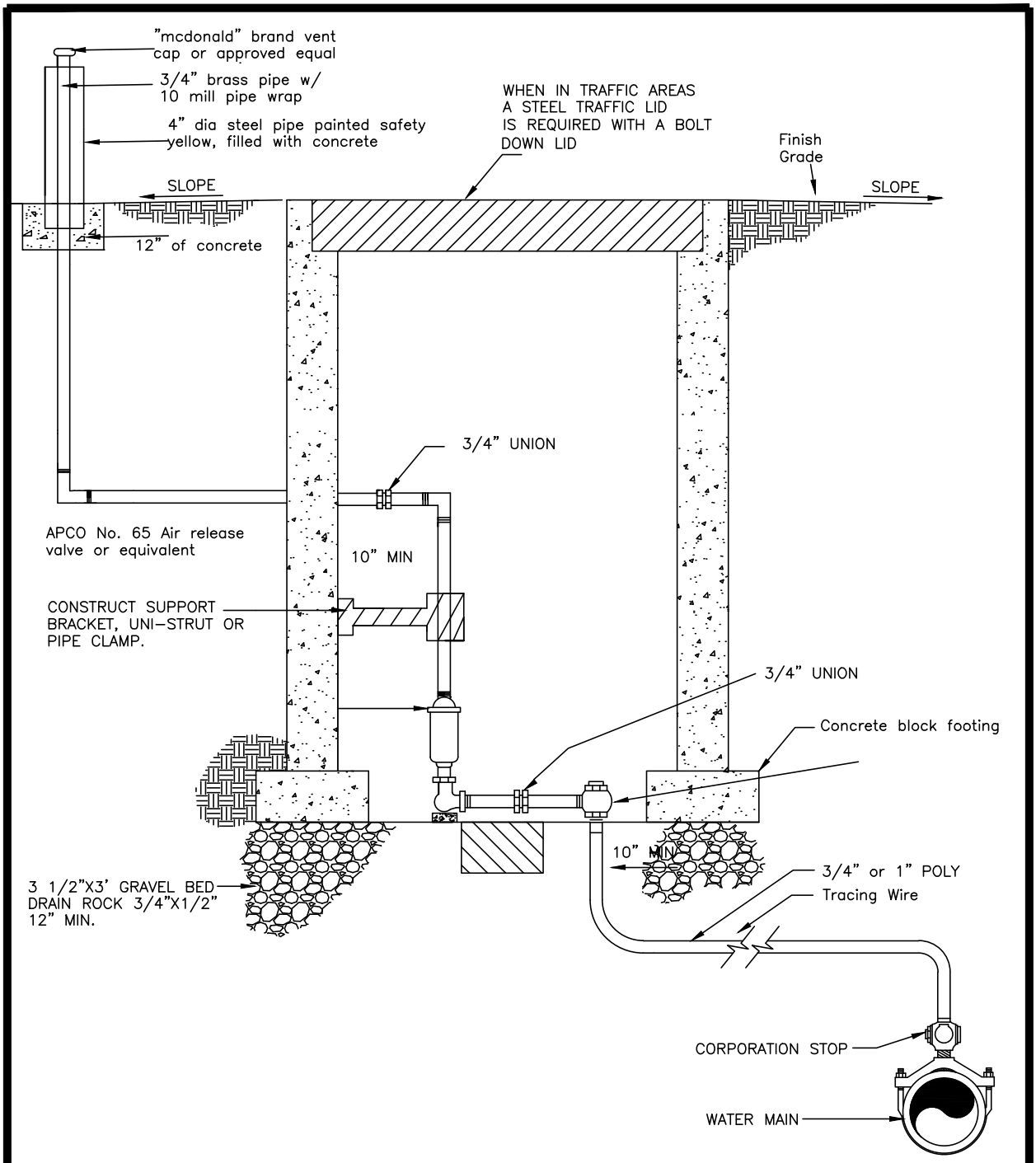
VALVE BOX DETAIL

SECTION: LYON COUNTY

DRAWING NO.: LC-W28

DATE: 1/2010

PAGE: W28



GENERAL NOTES

1. AIR RELEASE/VACUUM VALVES SHALL BE INSTALLED OUTSIDE PAVEMENT SECTION WHENEVER POSSIBLE. SLOPE GROUND AWAY FROM VALVE BOX OR CONSTRUCT CURBING TO PROTECT FROM FLOODING BY SURFACE WATERS.
2. A INSULATOR BLANKET WILL BE REQUIRED FOR FREEZE PROTECTION.
3. ALL PIPES WILL BE SLOPED UP TO AIR RELEASE VALVE.

NO.	REVISION	DATE
1	REDRAW	1/05vp
2	REDRAW	1/10ss

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

AIR-RELEASE VALVE

SECTION: LYON COUNTY

DRAWING NO.: LC-W29

DATE: 1/2010

PAGE: W29

PRESSURE REDUCING STATION, MATERIAL LIST:

ITEM NO.	QUANTITY	DESCRIPTION
1	(2)	COUPLING, ROMAC 501
2	(2)	DUCTILE IRON SPOOL, FLANGE x P.E. (2' 6")
3	(2)	FLANGED TEE
4	(2)	FLANGExFLANGE GATE VALVE, WITH HAND WHEEL OPERATOR.
5	(1)	PRESSURE REDUCING VALVE, FLANGExFLANGE, CLAYTON 91-01ACJ OR EQUAL, 125 LB. CLASS WITH 20 TO 200 PSI OPERATING RANGE.
6	(1)	COUPLING ADAPTOR, FLANGExSTEEL O.D. ROMAC FCA-501.
7	(1)	DUCTILE IRON SPOOL, FLANGExP.E. (±10")
8	(2)	(FLANGE) x 2" (SCREWED) REDUCER
9	(2)	GALVANIZED NIPPLE, THREADED BOTH ENDS, (8")
10	(2)	GALVANIZED 90° BEND (FEMALE THREAD)
11	(2)	GALVANIZED NIPPLE (THREAD BOTH ENDS) (10")
12	(2)	GATE VALVE (SCREWED), WITH HAND WHEEL OPERATOR.
13	(1)	GALVANIZED CLOSE NIPPLE
14	(1)	PRESSURE REDUCING VALVE, SCREWED ENDS, CLAYTON 91-01ACJ OR EQUAL, 125 LB. CLASS WITH 20 TO 200 PSI OPERATING RANGE.
15	(2)	SCHEDULE 40 GALVANIZED SPOOL, THREADxP.E. (±8")
16	(1)	COUPLING ADAPTOR, ROMAC 511
17	(2)	BRASS COCK WITH 2" BRASS NIPPLE, 3/8", 1/4 TURN BRASS AIR BLEED VALVE, AND 0 TO 200 PSI PRESSURE GUAGE WITH SNUBBER. (ASHCROFT #1279 LIQUID FILLED GUAGE, OR APPROVED EQUAL).
18	(1)	VAL-MATIC AIR RELEASE, MODEL #22 WITH 1/16" ORIFICE.
19	(1)	JENSEN PRE-CAST VAULT, OR APPROVED EQUAL. PROVIDE 4x6' MINIMUM ACCESS COVER. (TRAFFIC RATED COVER IS NOT REQUIRED IF LOCATED OUTSIDE OF ROADWAY & PROTECED BY PIPE BOLLARDS.
20	(4)	ADJUSTABLE PIPE SUPPORT WITH FLOOR FLANGE. GRINNELL #264 OR APPROVED EQUAL.
21	(1)	PRESSURE RELIEF DISCHARGE PIPE. LOCATION MUST BE APPROVED BY SERVICE PROVIDER.

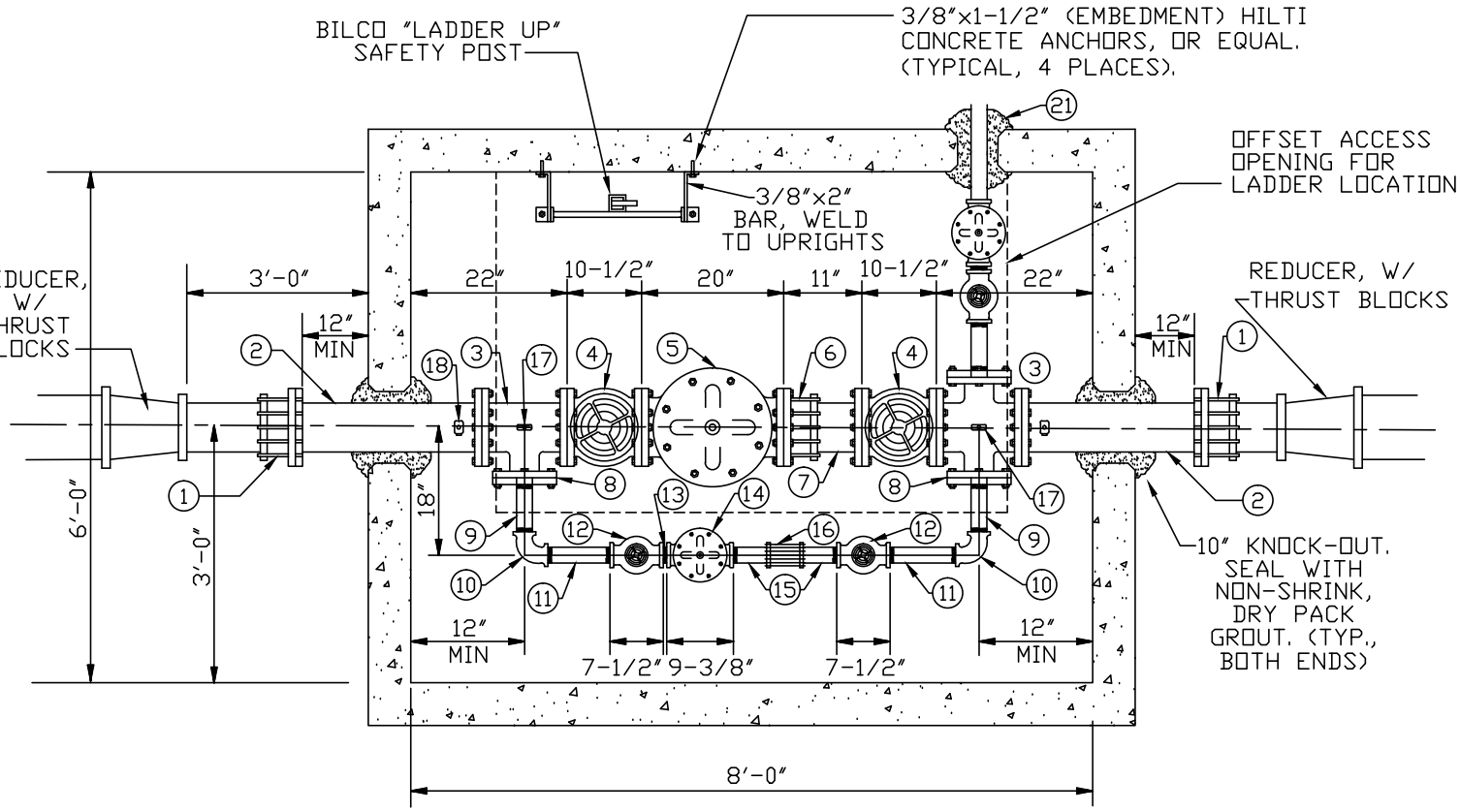
NOTE:
USE OF PRE-ASSEMBLED PRE-TESTED PACKAGE SYSTEM PRODUCED BY HyDEC OR APPROVED EQUAL WILL ALSO BE ALLOWED.

NO.	REVISION	DATE
1	REDRAW	1/05vp

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

PRESSURE REDUCING STATION MATERIAL LIST

SECTION: LYON COUNTY
DRAWING NO.: LC-W30
DATE: 6/2006
PAGE: W30



PLAN VIEW

NTS

NOTE:
USE OF PRE-ASSEMBLED PRE-TESTED PACKAGE SYSTEM PRODUCED BY HyDEC OR APPROVED EQUAL WILL ALSO BE ALLOWED.

NO.	REVISION	DATE
1	REDRAW	1/05vp

PRESSURE REDUCING STATION

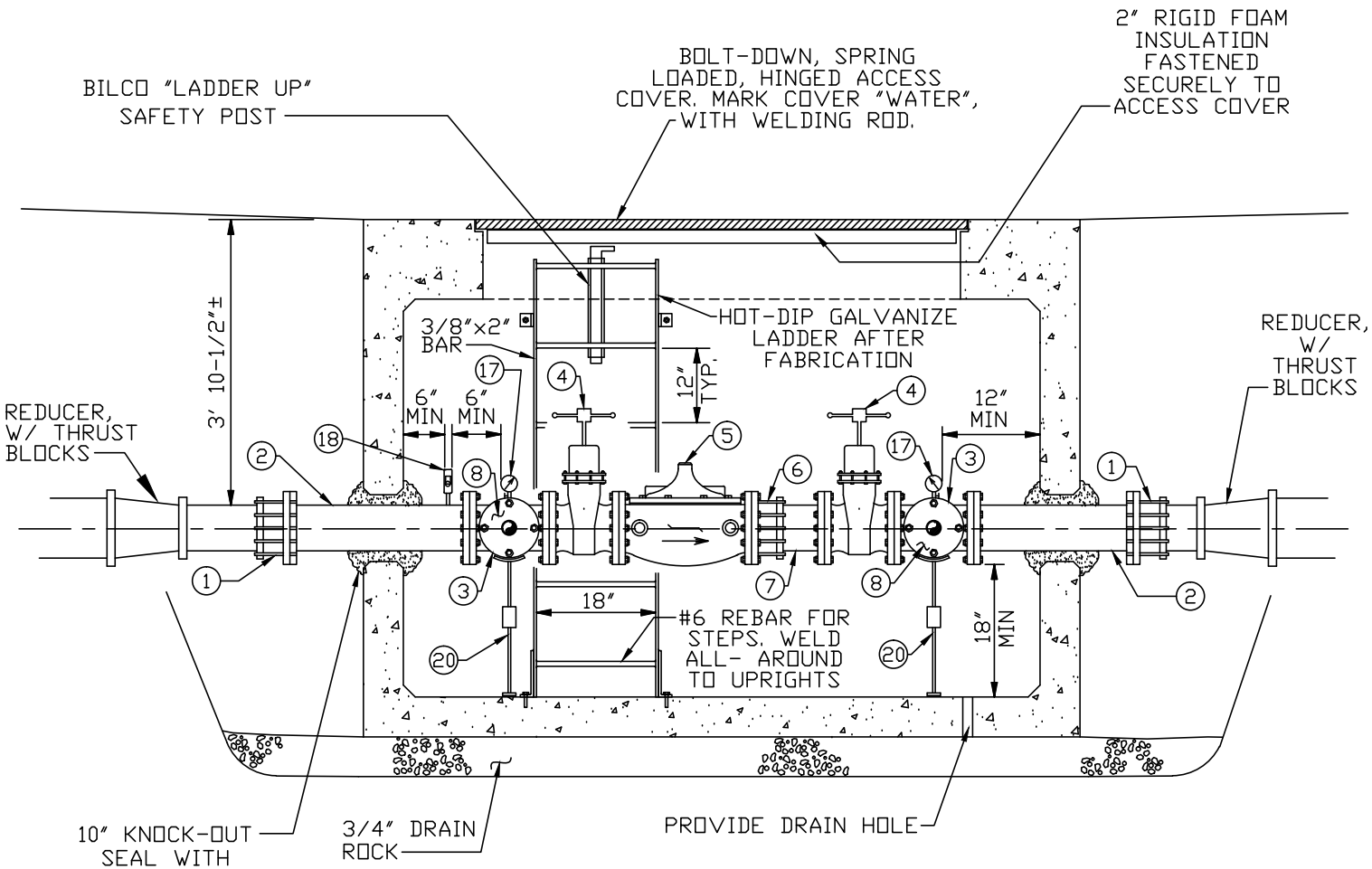
STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

SECTION: LYON COUNTY

DRAWING NO.: LC-W31

DATE: 6/2006

PAGE: W31



SECTION VIEW

NTS

NOTE:
USE OF PRE-ASSEMBLED PRE-TESTED PACKAGE SYSTEM PRODUCED BY HyDEC OR APPROVED EQUAL WILL ALSO BE ALLOWED.

NO.	REVISION	DATE
1	REDRAW	1/05vp

PRESSURE REDUCING STATION

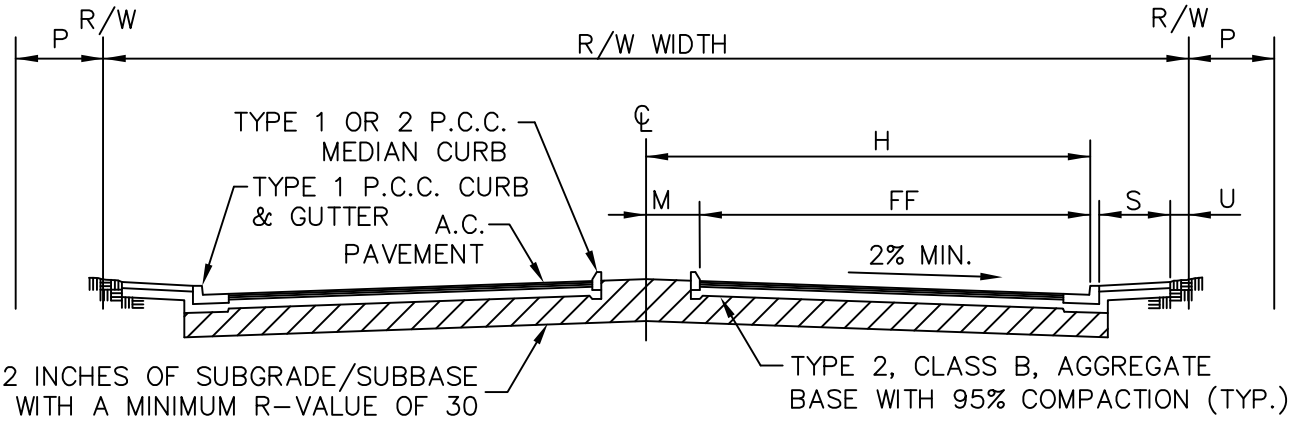
STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

SECTION: LYON COUNTY

DRAWING NO.: LC-W32

DATE: 6/2006

PAGE: W32



R/W WIDTH	H	FF	M	S	U	P (MIN.)	A.D.T. (MAX)	TYPE	REMARKS
100	43	36	7	5	1.5	7.5	–	MAJOR ARTERIAL	TRAFFIC STUDY REQUIRED
80	34	–	–	5	0.5	7.5	15,000	MINOR ARTERIAL	MIN. 6" AC W/ 12" AGG. BASE
60	21	–	–	5	3.5	7.5	8,000	MAJOR COLLECTOR	MIN. 5" AC W/ 10" AGG. BASE
50	18	–	–	4	2.5	7.5	2,000	MINOR COLLECTOR (RESIDENTIAL)	MIN. 4" AC W/ 8" AGG. BASE
50	18	–	–	4	2.5	7.5	500	RESIDENTIAL ROADS	MIN. 3" AC W/ 6" AGG. BASE

NOTES:

1. FF AND H ARE MEASURED TO THE FRONT FACE OF CURB.
2. CURB & GUTTER SECTIONS SHALL BE POURED SEPARATELY FROM SIDEWALK SECTIONS.
3. STRUCTURAL SECTION SHALL BE DETERMINED BY ENGINEERING DESIGN BASED ON R-VALUE TESTING, BUT IN NO CASE SHALL THE A.C. BE LESS THAN THE MINIMUM SHOWN. SUBGRADE/SUBBASE R-VALUE SHALL BE VERIFIED/CERTIFIED IN WRITING BY PROJECT GEOTECHNICAL ENGINEER.
4. A.C. SURFACES SHALL BE SEALED IN ACCORDANCE WITH LYON COUNTY STANDARDS.
   a. OIL FOR ALL A.C. MIXES SHALL BE PG-64-28NV.
   b. MIX DESIGNS FOR MAJOR AND MINOR ARTERIAL STREETS SHALL CONSIST OF 75 BLOW MARSHALL MIXES WITH TYPE 2 AGGREGATE AND TARGET 4% AIR VOIDS.
   c. MIX DESIGNS FOR MAJOR AND MINOR COLLECTORS SHALL CONSIST OF 50 BLOW MARSHALL MIXES WITH TYPE 2 AGGREGATE AND TARGET 4% AIR VOIDS.
   d. MIX DESIGNS FOR RESIDENTIAL STREETS SHALL CONSIST OF 50 BLOW MARSHALL MIXES WITH TYPE 3 AGGREGATE AND TARGET 3% AIR VOIDS.
5. ADDITIONAL R/W MAY BE REQUIRED ON ARTERIAL STREETS AT INTERSECTIONS.
6. WIDER SIDEWALKS ARE TO BE PROVIDED WHEN REQUIRED BY THE COUNTY ENGINEER.
7. RESIDENTIAL DRIVEWAY ACCESS SHALL NOT BE ALLOWED ON COLLECTORS WHERE THE A.D.T. IS GREATER THAN 2,000.
8. SLOPE EASEMENTS MAY BE REQUIRED IN CERTAIN TERRAIN TO ACCOMMODATE THE ROADWAY SECTION.
9. MINIMUM 10 FT PUBLIC UTILITY/TRAFFIC CONTROL SIGNAGE/PLOWED SNOW STORAGE EASEMENT IS REQUIRED ON BOTH SIDES OF R/W.
10. ASPHALT CONCRETE TESTING: IN ADDITION TO THE STANDARD SPECIFICATIONS SAMPLING AND TESTING, LYON COUNTY MAY REQUIRE PLANTMIX AGGREGATE AND OIL SAMPLING AT THE ASPHALT PAVING PLANT. IF AGGREGATE SAMPLING IS REQUIRED, IT SHALL BE FROM THE BINS AND SHALL BE TESTED TO DETERMINE CONFORMANCE WITH TABLES 200.02.03-I AND 200.02.03-II OF THE STANDARD SPECIFICATIONS. IF OIL SAMPLING IS REQUIRED IT SHALL BE TESTED TO VERIFY CONFORMANCE WITH TABLE 201.02-IV OF THE STANDARD SPECIFICATIONS. TESTING SHALL BE AT LEAST ONCE PER JOB PERMIT AND EVERY 5,000 TONS OF MATERIALS USED IN THE BITUMINOUS MIXTURE.

NO.	REVISION	DATE
1	SPELLING	10-14-86
2	CLM	3-1-05
3	CLM	6-4-12

STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION

ROADWAY SECTIONS
URBAN AND SUBURBAN AREAS

SECTION
LYON COUNTY

DRAWING NO.
L-1 (314, 319)

DATE
6-12

PAGE
1

Standard Details for Public Works Construction

STANDARD DETAILS
FOR
PUBLIC WORKS
CONSTRUCTION

SPONSORED AND DISTRIBUTED BY

CARSON CITY

DOUGLAS COUNTY

CITY OF ELKO

EUREKA COUNTY

CITY OF FALLON

HUMBOLDT COUNTY

LANDER COUNTY

CITY OF LOVELOCK

LYON COUNTY

NYE COUNTY

CITY OF RENO

CITY OF SPARKS

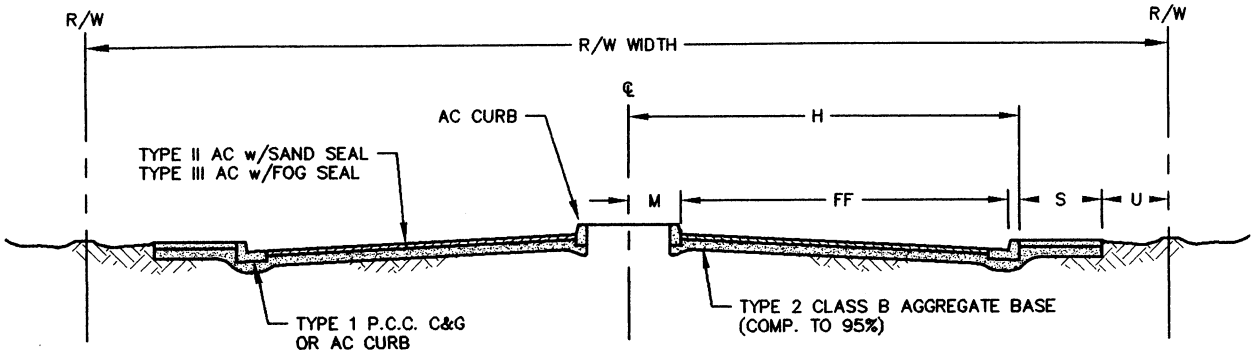
WASHOE COUNTY

CITY OF WINNEMUCCA

CITY OF YERINGTON

PREPARED BY:

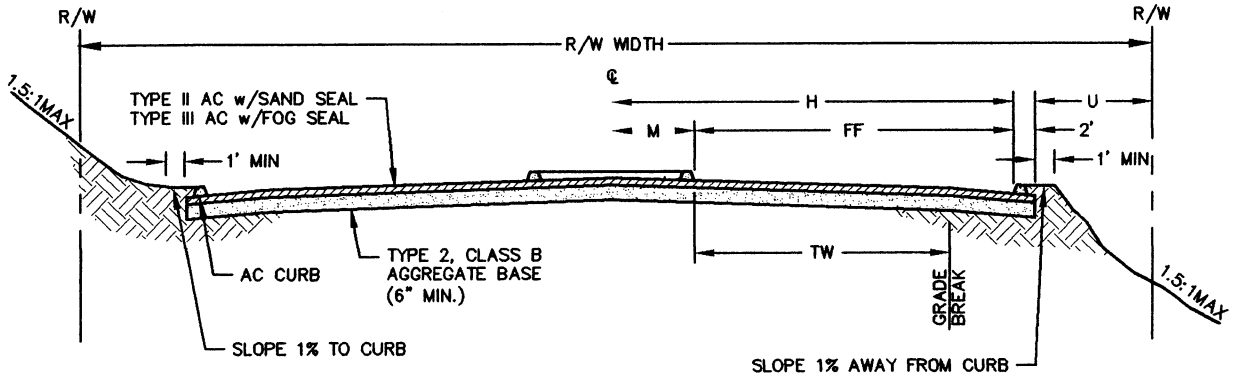
LUMOS & ASSOCIATES, INC
625 FAIRVIEW DR., SUITE 102
CARSON CITY, NEVADA 89701
(702) 883-7077



NOTE:

1. FF AND H ARE MEASURED TO TBC FOR TYPE 1 AND TYPE 2 CURB.
2. STRUCTURAL SECTION SHALL BE DETERMINED BY ENGINEERING DESIGN BASED ON R-VALUE OR CBR TESTING, BUT IN NO CASE LESS THAN THE MINIMUM SHOWN.

R/W WIDTH	H	FF	M	S	U	NOTES OR REMARKS
125	56.5	49.5	7	5	1	EXPRESSWAY (MIN. 4" AC w/6" AGG. BASE)
100	43.5	36.5	7	4	2.5	MAJOR ARTERIAL (MIN. 4" AC w/6" AGG. BASE)
80	34.5	–	–	4	1.5	MINOR ARTERIAL (MIN. 2-1/2" AC w/6" AGG. BASE)
60	21.5	–	–	4	4.5	COLLECTOR (MIN. 2-1/2" AC w/6" AGG. BASE)
50	18.5	–	–	4	2.5	LOCAL (MIN. 2-1/2" AC w/6" AGG. BASE)



R/W WIDTH	H	FF	M	TW	U	NOTES OR REMARKS
125	56	49	7	38	4.5	EXPRESSWAY (MIN. 4" AC w/6" AGG. BASE)
100	43	36	7	24	5.0	MAJOR ARTERIAL (MIN. 4" AC w/6" AGG. BASE)
80	34	–	–	24	4.0	MINOR ARTERIAL (MIN. 2-1/2" AC w/6" AGG. BASE)
60	21	–	–	12	7.0	COLLECTOR – NO CURB (MIN. 2-1/2" AC w/6" AGG. BASE)
50	18	–	–	12	5.0	LOCAL – NO CURB (MIN. 2-1/2" AC w/6" AGG. BASE)

NO.	REVISION	DATE
1	SPELLING	10-14-86
2	SEAL COATING DIMENSIONS	8-3-98

STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION

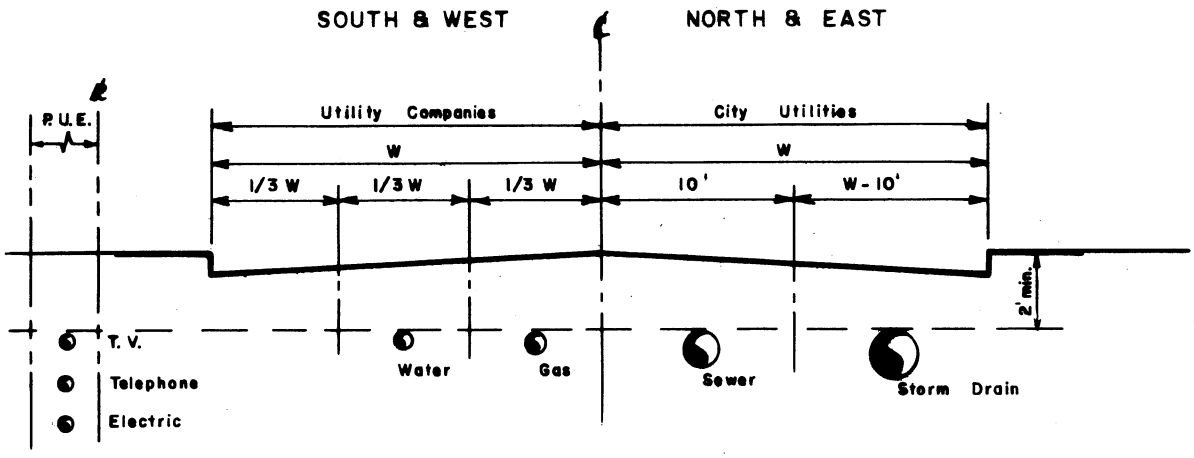
ROADWAY SECTIONS

SECTION
LYON COUNTY

DRAWING NO.
L-1 (314, 319)

DATE
7-81

PAGE
1



TYPICAL SECTION "A"

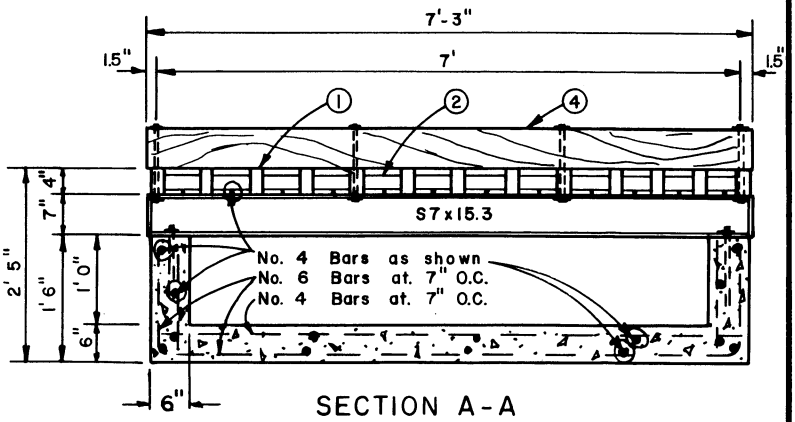
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION LYON CO.	
			TYPICAL UTILITY MAIN LOCATIONS	DRAWING NO. L-2	
				DATE 7-81	PAGE 2

GENERAL NOTES

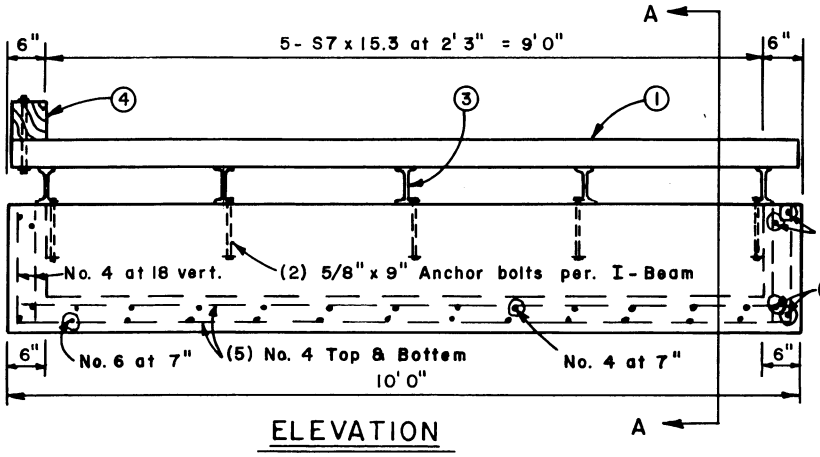
1. All conc. shall be class DA
2. All steel connections shall be welded - 1/4" fillet unless otherwise shown.
3. Provide 8" dia. hole at ends for drainage of conc. box.
4. All nailing to be with 20d nails.
5. Structure width can be made in any multiple of the grate width.
6. Manufactured approved equal Cattle Guard by.

   a) Heaton Steel Supply Co. Klamath Falls, Ore.

   b) Sixth St. Steel and Oxygen Co. Salt Lake City, Utah



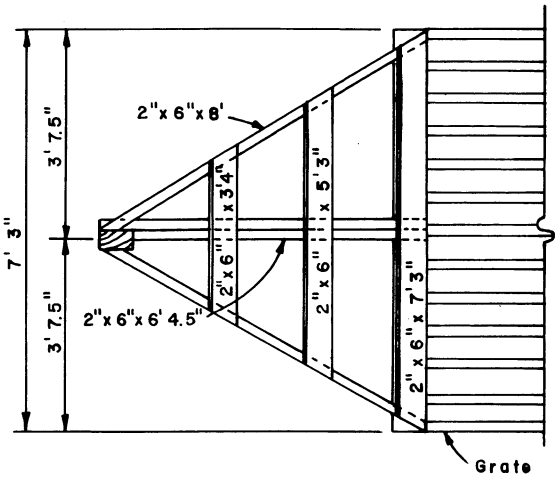
SECTION A-A



ELEVATION

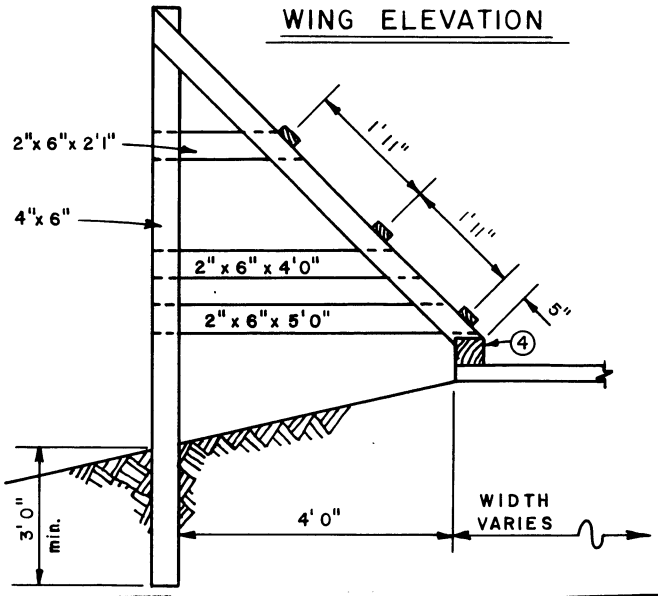
MATERIALS LEGEND

① 4"x 2"x 1/4" struc. tubing at 7" O.C.
② 5"x 2 1/2"x 5/16" PL
③ S7x 15.3 at 2'3" O.C.
④ 6"x 6"x 7'3" Timber

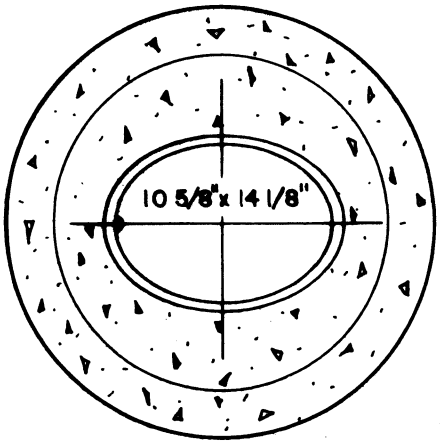


WING PLAN

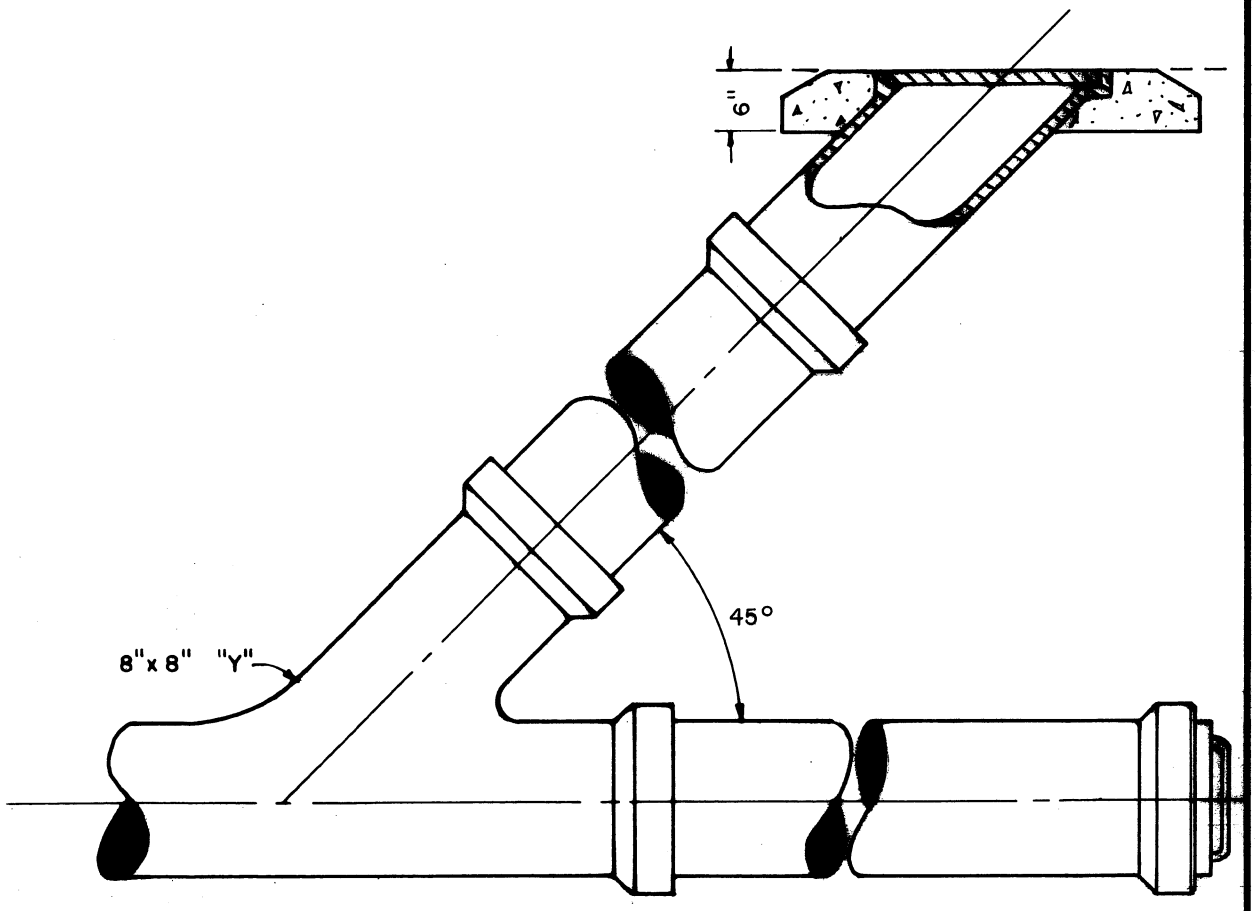
WING ELEVATION



NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION LYON CO.
			CATTLE GUARD	DRAWING NO. L-3 (324,328)
				DATE 7-81 / PAGE 3

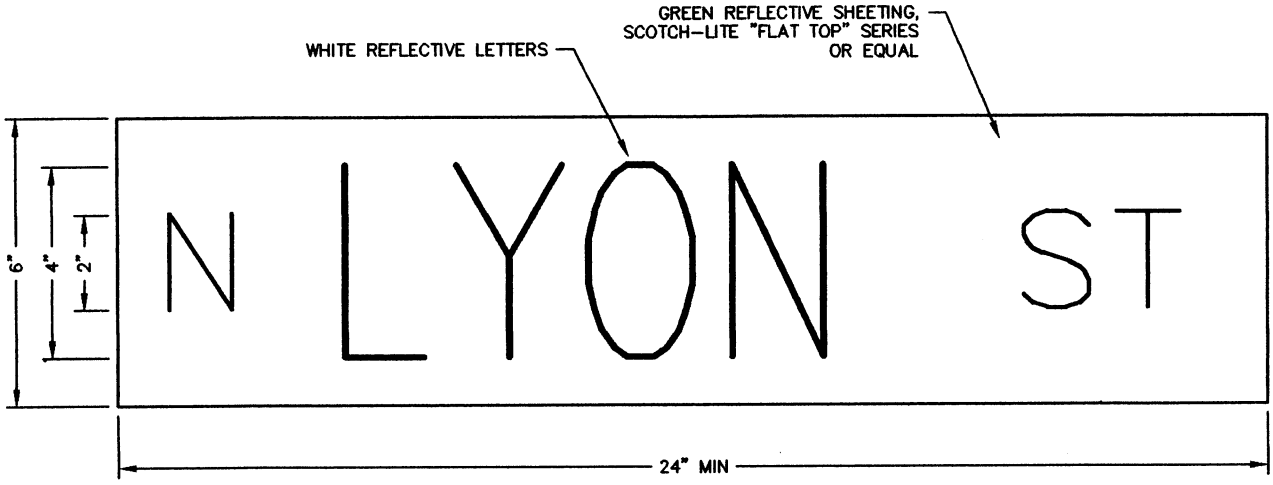


PINKERTON FOUNDRY
CASTING No. A-490
OR EQUAL



NOTE:
Cleanouts permitted only on dead-end lines serving 4 or less lots or buildings

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION LYON CO.	
			SEWER MAIN CLEANOUT	DRAWING NO. L-4	
				DATE 7-81	PAGE 4

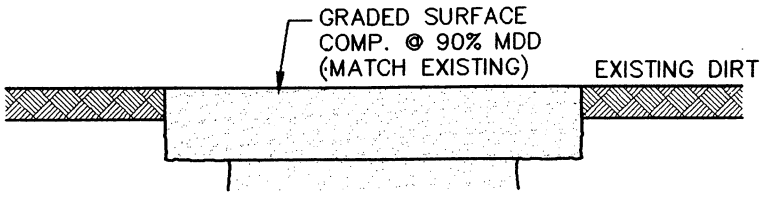


NOTES:

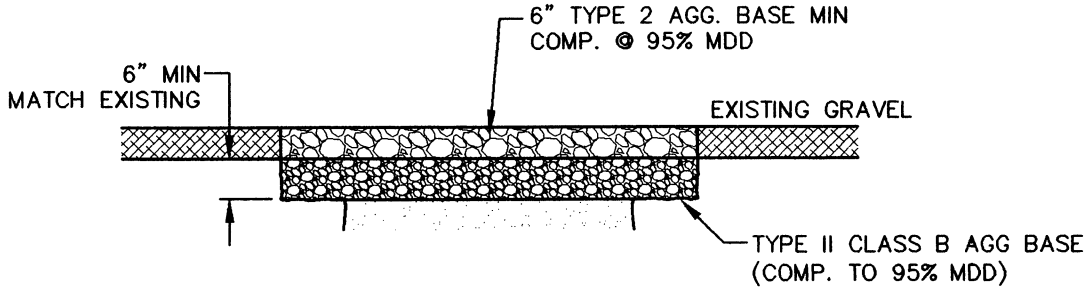
1. STREET NAME SIGN SHALL BE IN CONFORMANCE WITH THE LATEST EDITION OF THE M.U.T.C.D.
2. REFLECTIVE MATERIALS SHALL BE MOUNTED ON 0.080 GAUGE FLAT PLATE ALUMINUM No. 6061-T6.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION LYON Co.	
1	REMOVE BLOCK	8/98	STREET NAME SIGN	DRAWING NO. L-5	
				DATE 7/81	PAGE 5

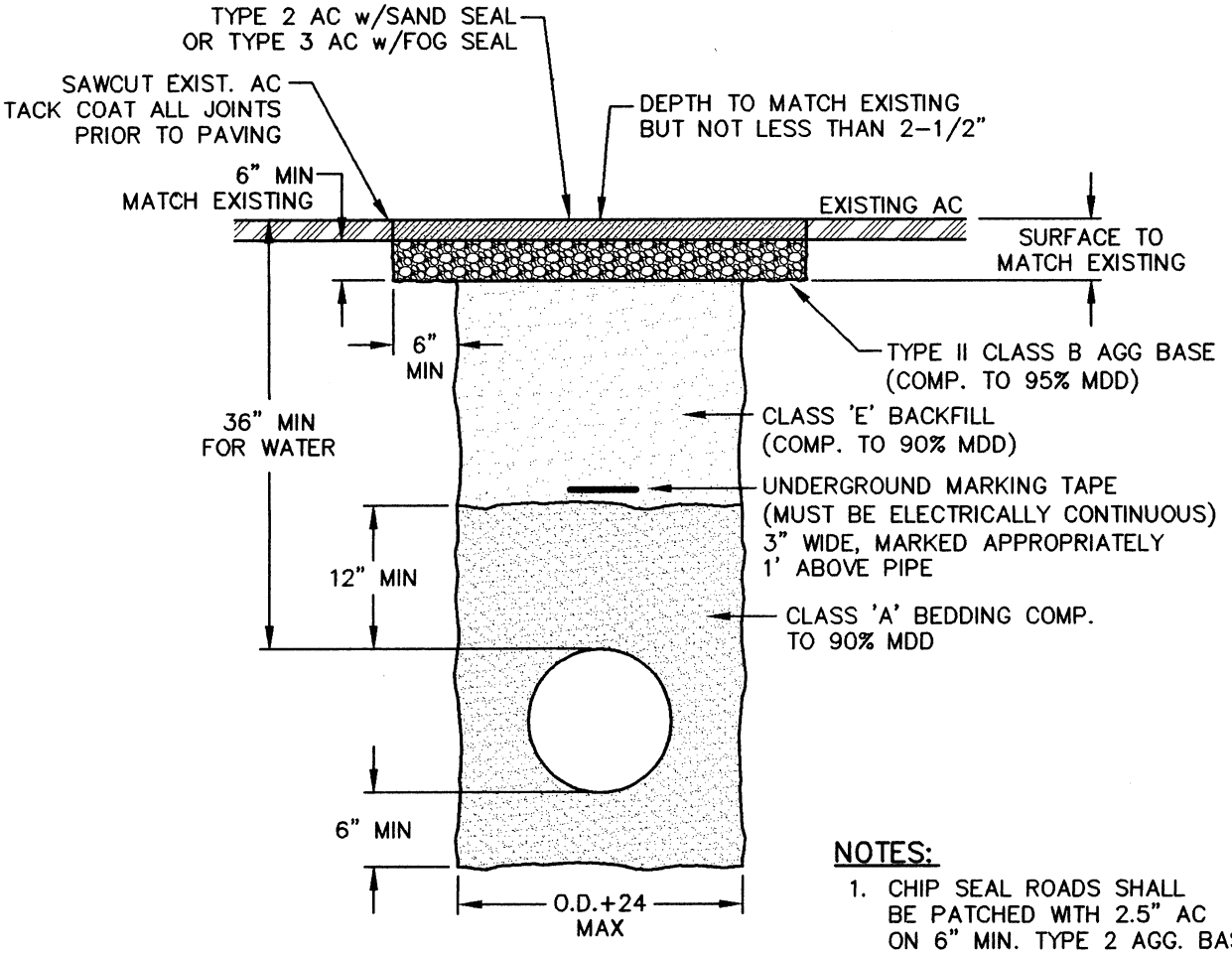
339658LI



DIRT SURFACE REPLACEMENT



GRAVEL SURFACE REPLACEMENT



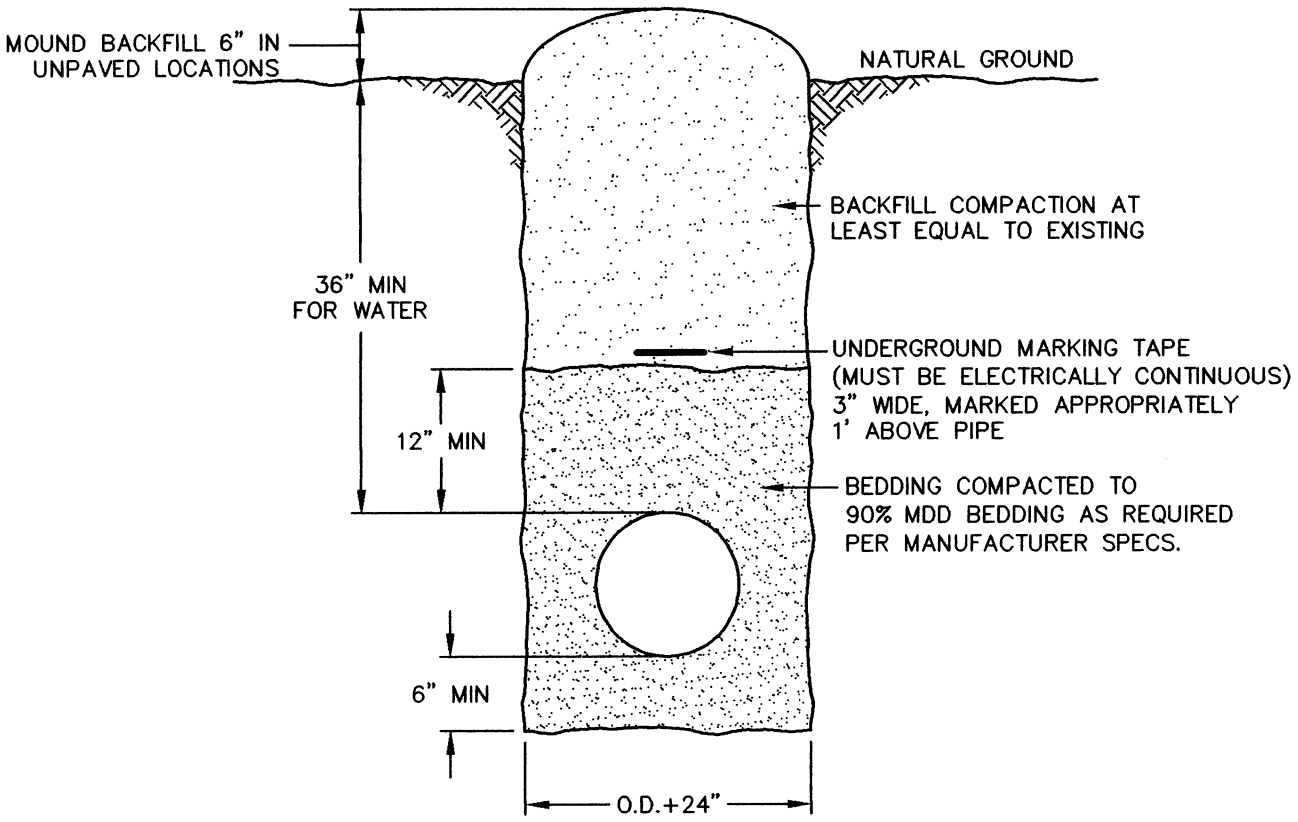
NOTES:

1. CHIP SEAL ROADS SHALL BE PATCHED WITH 2.5" AC ON 6" MIN. TYPE 2 AGG. BASE.

ASPHALT SURFACE REPLACEMENT

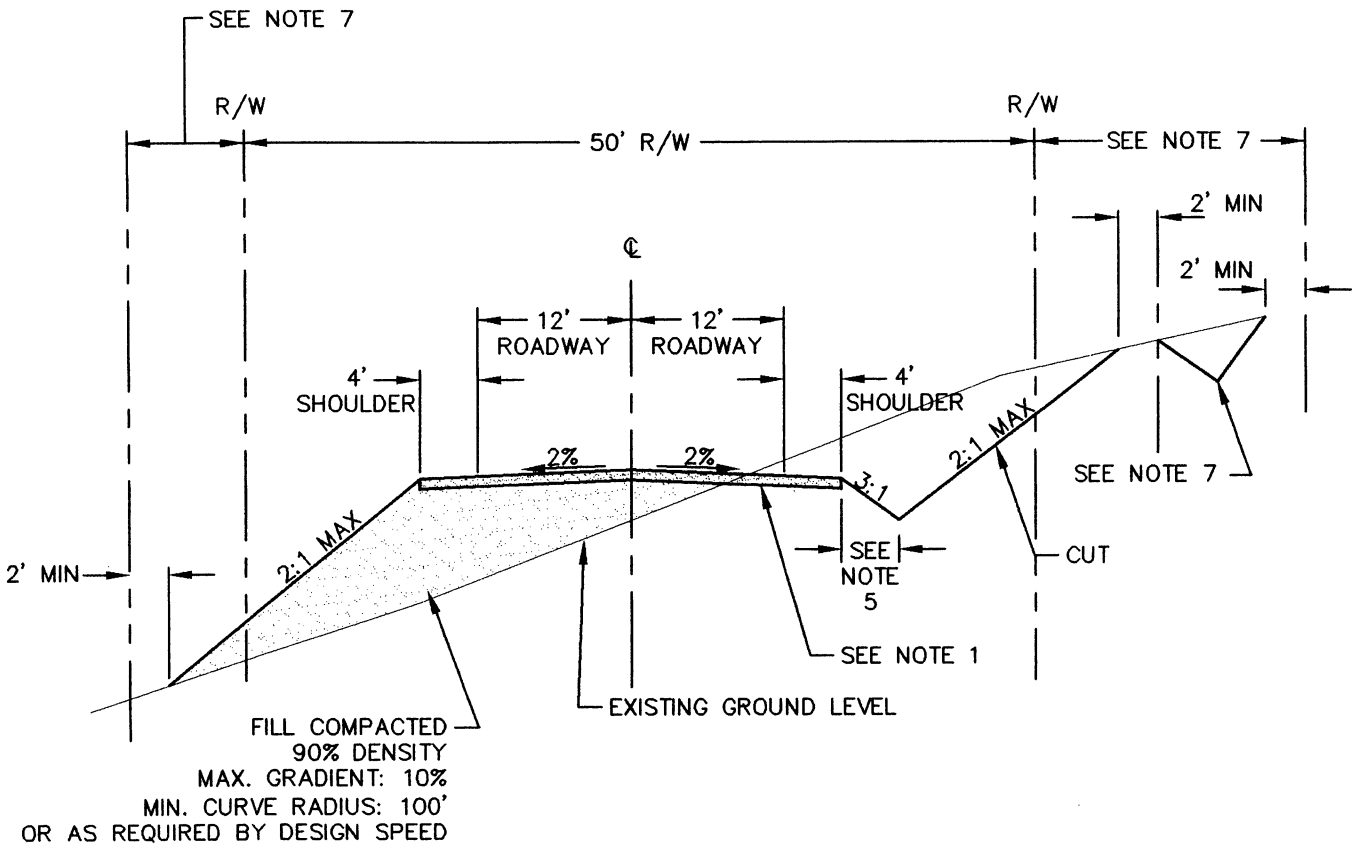
NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION LYON COUNTY	
1	REPLACE 2/87	8/97	TYPICAL IMPROVED ROAD TRENCH SECTION	DRAWING NO. L-6	
				DATE 8/97	PAGE 6

339658LA



NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION LYON COUNTY	
			TYPICAL UNTRAVELED TRENCH SECTION	DRAWING NO. L-6.1	
				DATE 8/97	PAGE 6.1

339658L9



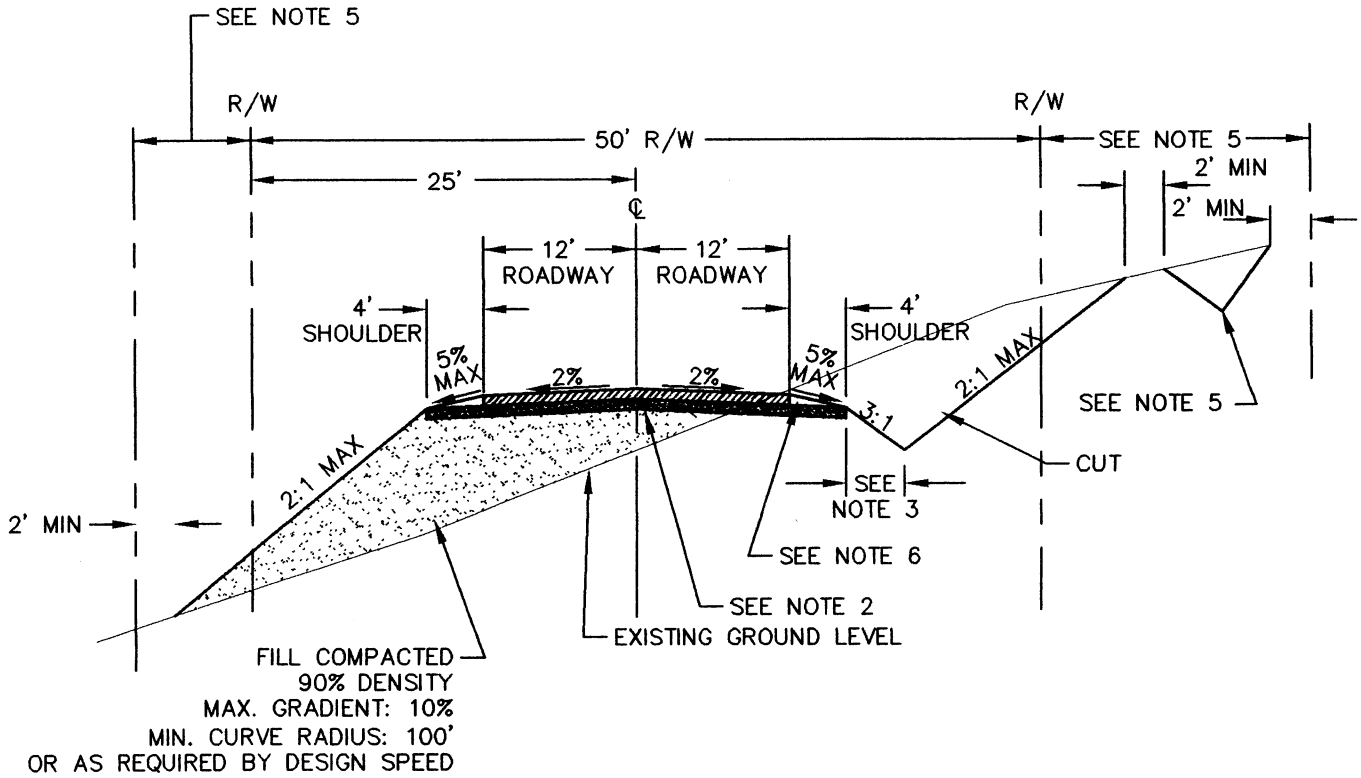
LOCAL STREETS WITH NO ON-STREET PARKING

GENERAL NOTES:

1. FIFTY (50) FOOT RIGHT-OF-WAY IS ACCEPTABLE FOR LOCAL STREET WITH NO FUTURE POSSIBILITY OF SERVING MORE THAN FORTY (40) LOTS.
2. USE 6" TYPE 2 AGGREGATE BASE COMPACTED TO A MINIMUM OF 90% RELATIVE DENSITY.
3. SUB-GRADE TO BE COMPACTED TO A RELATIVE DESTINY OF 90% OR BETTER.
4. GRAVEL ROADS AND ASSOCIATED DRAINAGE FACILITIES WILL NOT BE MAINTAINED BY LYON COUNTY.
5. DITCH DEPTH SHALL BE 6" MIN OR AS REQUIRED.
6. IF ON-STREET PARKING IS TO BE PROVIDED THE SHOULDERS SHALL INCREASE FROM 4 FEET TO 8 FEET AND THE RIGHT-OF-WAY MAY BE INCREASED AS NEEDED.
7. ADDITIONAL R/W OR SLOPE EASEMENT SHALL BE PROVIDED AS NEEDED TO AT LEAST 2' OUTSIDE HIGH POINT. TOP OF CUT DITCH MAY ALSO BE REQUIRED (CHPT 33 UBC).
8. TO BE USED PER LCC SECTION 11.07.15.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION LYON COUNTY	
			GRAVEL ROADWAY TYPE 3G	DRAWING NO. L-7	
				DATE 8/97	PAGE 7

339658L2



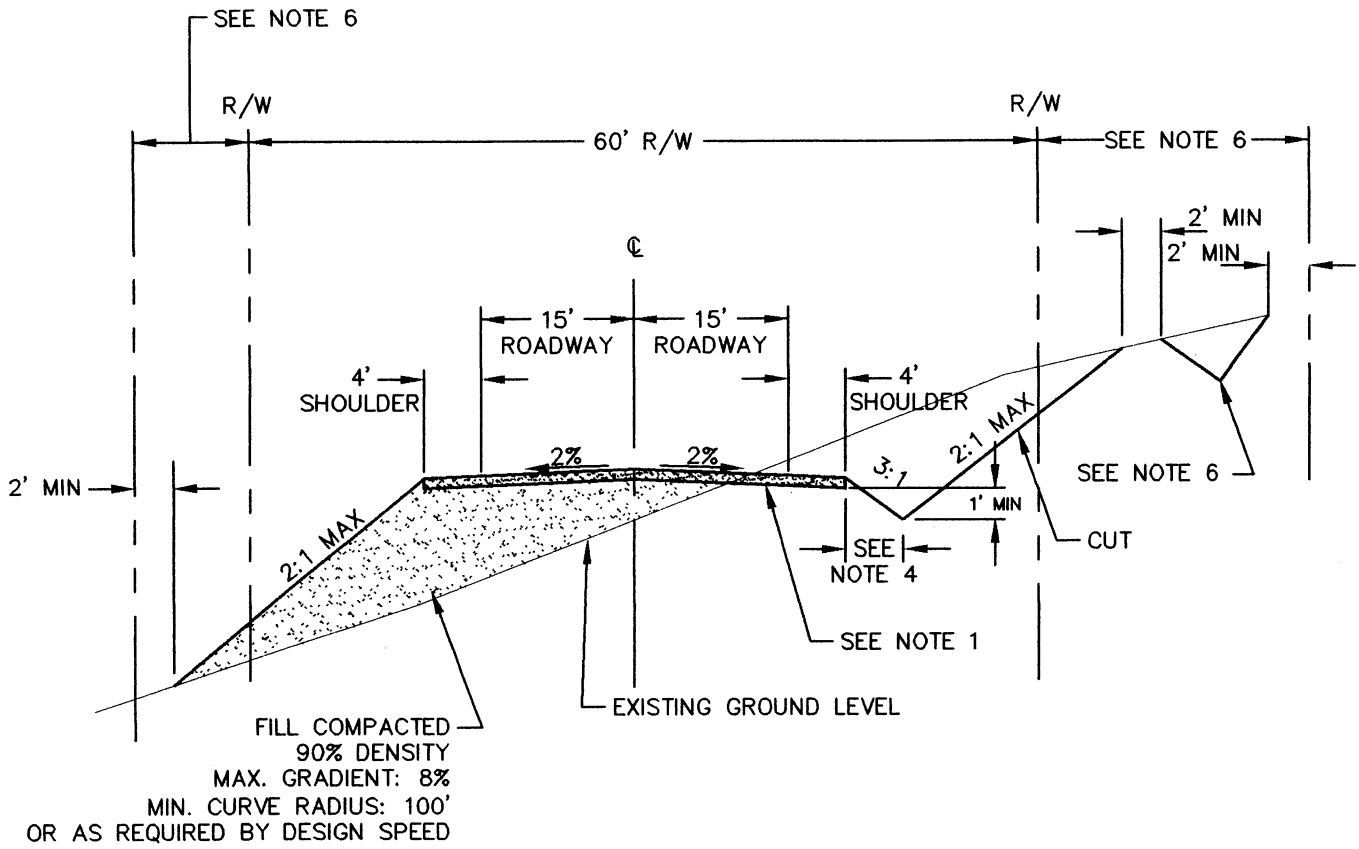
LOCAL STREETS WITH NO ON-STREET PARKING

GENERAL NOTES:

1. FIFTY (50) FOOT RIGHT-OF-WAY IS ACCEPTABLE FOR LOCAL STREETS WITH NO FUTURE POSSIBILITY OF SERVING MORE THAN FORTY (40) LOTS.
2. MINIMUM SECTION TO BE 2-1/2" TYPE 2 AC WITH SAND SEAL OR TYPE 3 WITH FOG SEAL TO BE COMPACTED TO 96% MARSHALL DENSITY WITH 6" TYPE 2 AGGREGATE BASE COMPACTED TO A MINIMUM OF 95% MDD. ACTUAL SECTION TO BE VERIFIED BY A SOILS REPORT. SUB-GRADE TO BE COMPACTED TO A RELATIVE DENSITY OF 90% OR BETTER.
3. DITCH DEPTH SHALL BE 6" MIN OR AS REQUIRED.
4. STEEPER SLOPES TO BE PERMITTED IF PROPERLY SUPPORTED BY A SOILS REPORT INCLUDING A SLOPE STABILITY ANALYSIS.
5. ADDITIONAL R/W OR SLOPE EASEMENT SHALL BE PROVIDED AS NEEDED TO AT LEAST 2' OUTSIDE HIGH POINT. TOP OF CUT DITCH MAY ALSO BE REQUIRED (CHPT 33 UBC)
6. AFTER PAVING IS COMPLETE ROAD SHALL BE SHOULDERED WITH BASE TO EDGE OF PAVEMENT.
7. LYON COUNTY MAY MAINTAIN PAVING AND DITCHES.
8. IF ON-STREET PARKING IS TO BE PROVIDED THE SHOULDERS SHALL INCREASE FROM 4 FEET TO 8 FEET AND THE RIGHT-OF-WAY MAY BE INCREASED AS NEEDED.
9. TO BE USED PER LCC SECTION 11.07.15.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION LYON COUNTY	
			RURAL ROADWAY TYPE 3P	DRAWING NO. L-8	
				DATE 8/97	PAGE 8

339658L4



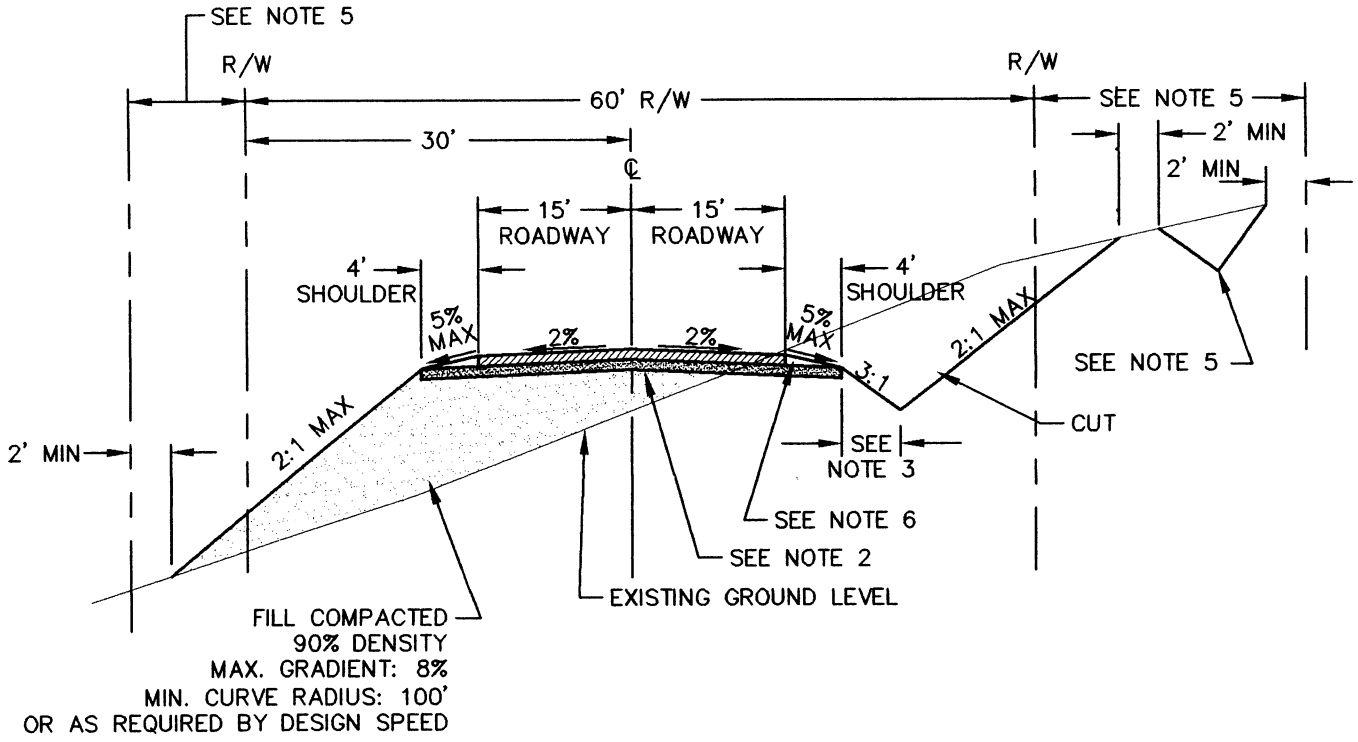
COLLECTOR ROADS AND RESIDENTIAL STREETS WITH NO ON-STREET PARKING

GENERAL NOTES:

1. USE 6" TYPE 2 AGGREGATE BASE COMPACTED TO A MINIMUM OF 90% RELATIVE DENSITY.
2. SUB-GRADE TO BE COMPACTED TO A RELATIVE DENSITY OF 90% OR BETTER.
3. GRAVEL ROADS AND ASSOCIATED DRAINAGE FACILITIES WILL NOT BE MAINTAINED BY LYON COUNTY.
4. DITCH DEPTH SHALL BE 6" MIN OR AS REQUIRED.
5. IF ON-STREET PARKING IS TO BE PROVIDED THE SHOULDERS SHALL INCREASE FROM 4 FEET TO 8 FEET AND THE RIGHT-OF-WAY MAY BE INCREASED AS NEEDED.
6. ADDITIONAL R/W OR SLOPE EASEMENT SHALL BE PROVIDED AS NEEDED TO AT LEAST 2' OUTSIDE HIGH POINT. TOP OF CUT DITCH MAY ALSO BE REQUIRED (CHPT 33 UBC)
7. TO BE USED PER LCC SECTION 11.07.15.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION LYON COUNTY	
			GRAVEL ROADWAY TYPE 1G	DRAWING NO. L-9	
				DATE 8/97	PAGE 9

339658L5



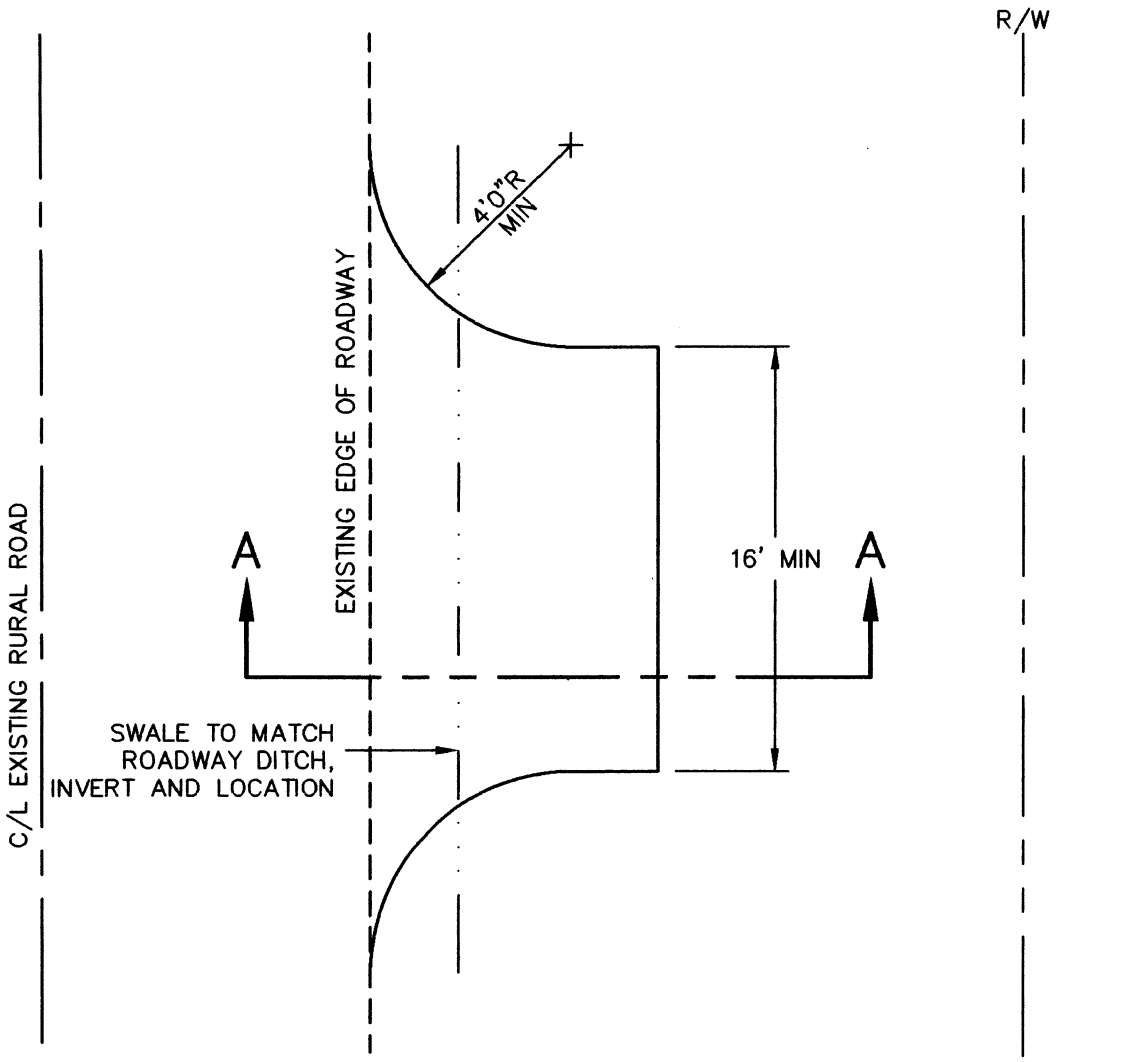
COLLECTOR ROADS AND RESIDENTIAL STREETS WITH NO ON-STREET PARKING

GENERAL NOTES:

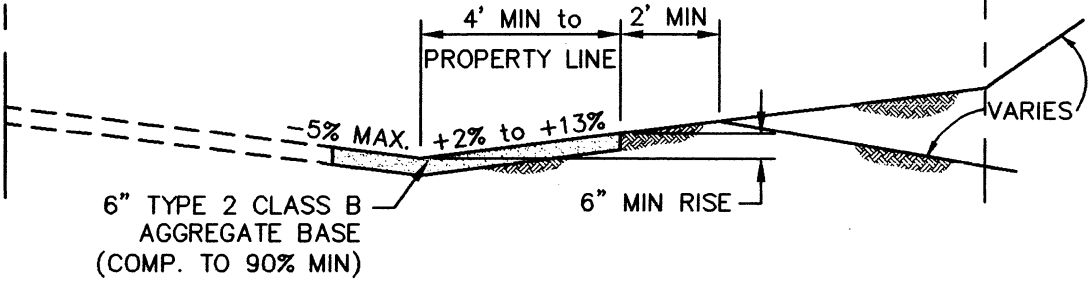
1. SIXTY (60) FOOT RIGHT-OF-WAY IS REQUIRED FOR ENTRANCE AND COLLECTOR STREETS, LOCAL STREETS SERVING NONRESIDENTIAL USES, AND LOCAL STREETS SERVING OR WITH THE POTENTIAL TO SERVE MORE THAN FORTY (40) LOTS.
2. MINIMUM SECTION TO BE 2-1/2" TYPE 2 AC WITH SAND SEAL OR TYPE 3 WITH FOG SEAL TO BE COMPACTED TO 96% MARSHALL DENSITY WITH 6" TYPE 2 AGGREGATE BASE COMPACTED TO A MINIMUM OF 95% MDD. ACTUAL SECTION TO BE VERIFIED BY A SOILS REPORT. SUB-GRADE TO BE COMPACTED TO A RELATIVE DENSITY OF 90% OR BETTER.
3. DITCH DEPTH SHALL BE 6" MIN OR AS REQUIRED.
4. STEEPER SLOPES TO BE PERMITTED IF PROPERLY SUPPORTED BY A SOILS REPORT INCLUDING A SLOPE STABILITY ANALYSIS.
5. ADDITIONAL R/W OR SLOPE EASEMENT SHALL BE PROVIDED AS NEEDED TO AT LEAST 2' OUTSIDE HIGH POINT. TOP OF CUT DITCH MAY ALSO BE REQUIRED (CHPT 33 UBC)
6. AFTER PAVING IS COMPLETE ROAD SHALL BE SHOULDERED WITH BASE TO EDGE OF PAVEMENT.
7. LYON COUNTY MAY MAINTAIN PAVING AND DITCHES.
8. IF ON-STREET PARKING IS TO BE PROVIDED THE SHOULDERS SHALL INCREASE FROM 4 FEET TO 8 FEET AND THE RIGHT-OF-WAY MAY BE INCREASED AS NEEDED.
9. TO BE USED PER LCC SECTION 11.07.15.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION LYON COUNTY	
			GRAVEL ROADWAY TYPE 1P	DRAWING NO. L-10	
				DATE 8/97	PAGE 10

339658L3



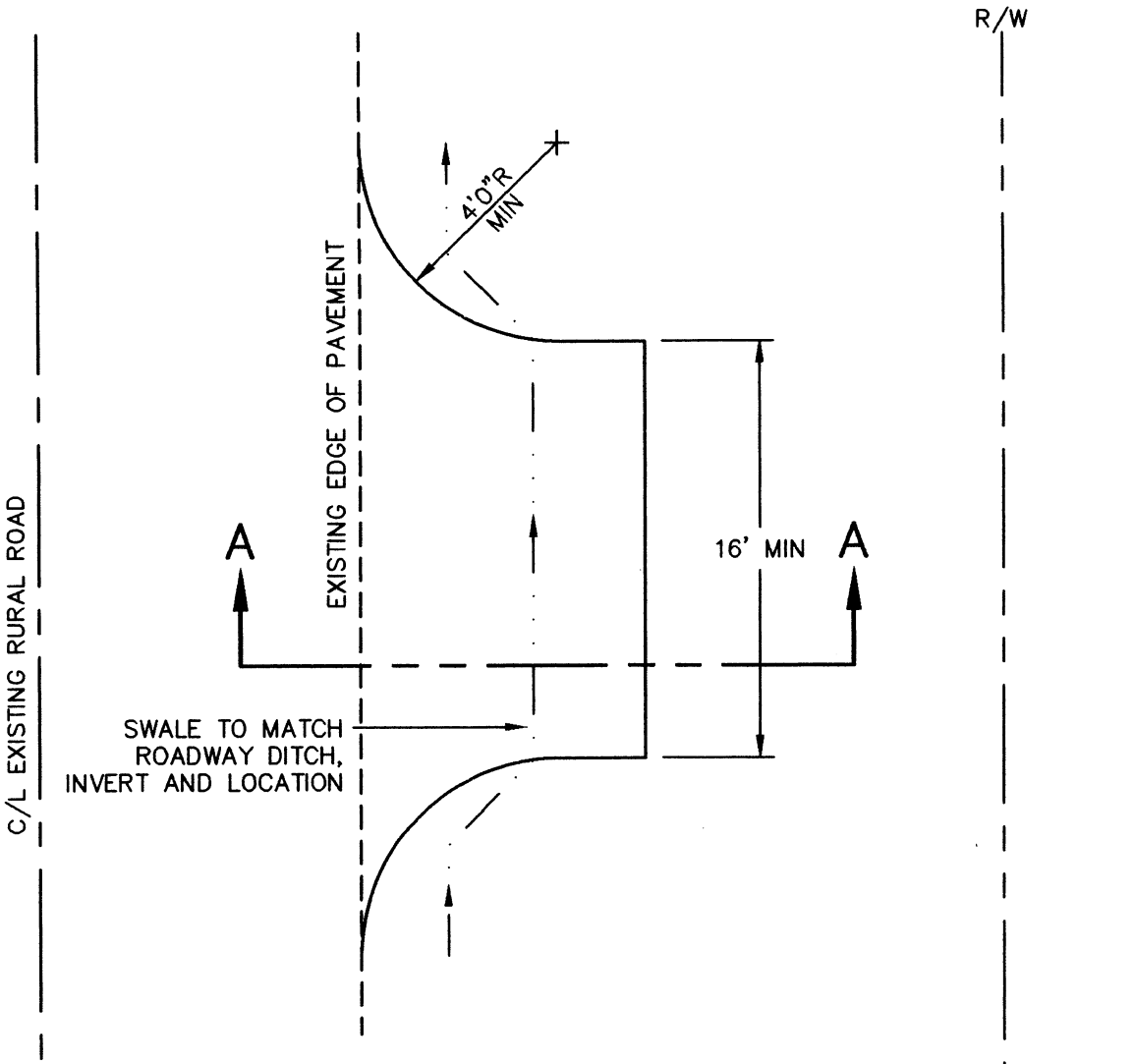
PLAN



SECTION 'A'

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION LYON Co.	
			RURAL ROADS DRIVEWAY APRON	DRAWING NO. L-11	
				DATE 8/97	PAGE 11

339658LE



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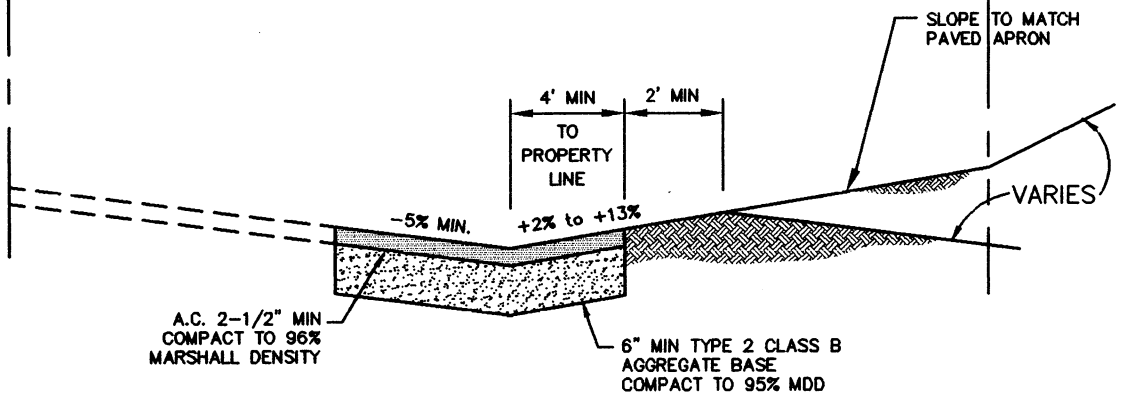
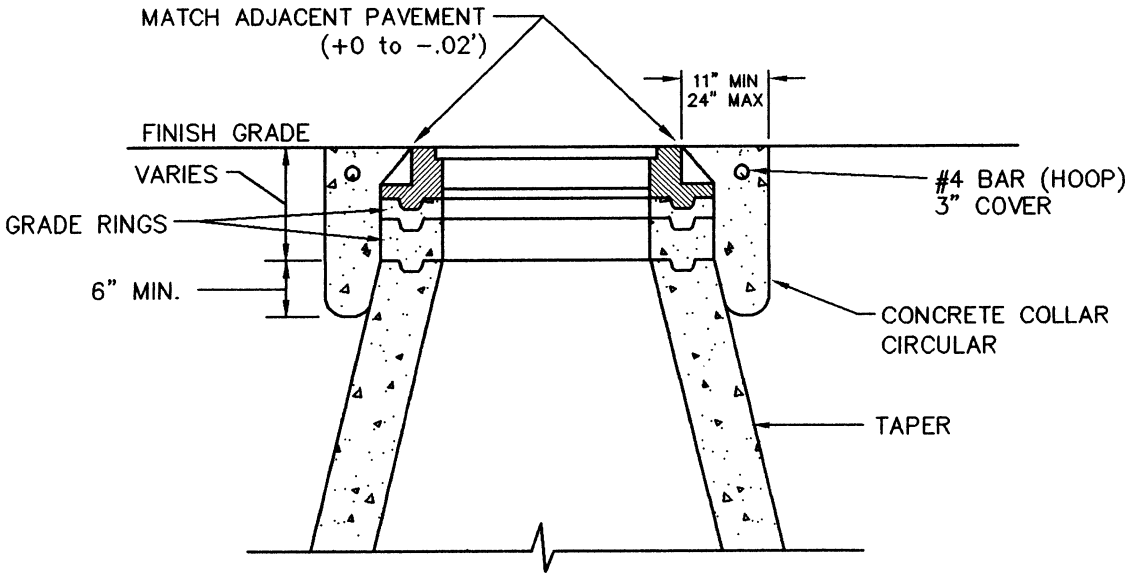


SECTION 'A'

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION LYON Co.	
			RURAL ROADS A.C. DRIVEWAY APRON	DRAWING NO. L-12	
				DATE 8/97	PAGE 12

339658LF

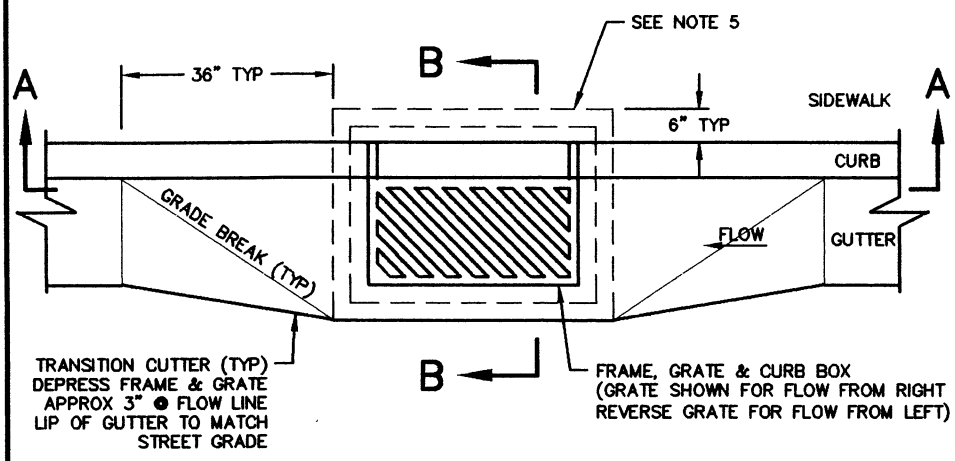


GENERAL NOTES

1. CONCRETE SHALL BE 4,000 PSI PORTLAND CEMENT CONCRETE.
2. CONCRETE COLLAR SHALL BE FLUSH WITH ADJACENT PAVEMENT (+0' to −0.2')
3. CONSTRUCT AFTER PAVING IS COMPLETED.
4. ALL CONCRETE SHALL MEET ORANGE BOOK REQUIREMENTS FOR FREEZE & THAW ENVIRONMENTS.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION LYON COUNTY	
			MANHOLE COLLAR	DRAWING NO. L-13	
				DATE 8/97	PAGE 13

339658L1



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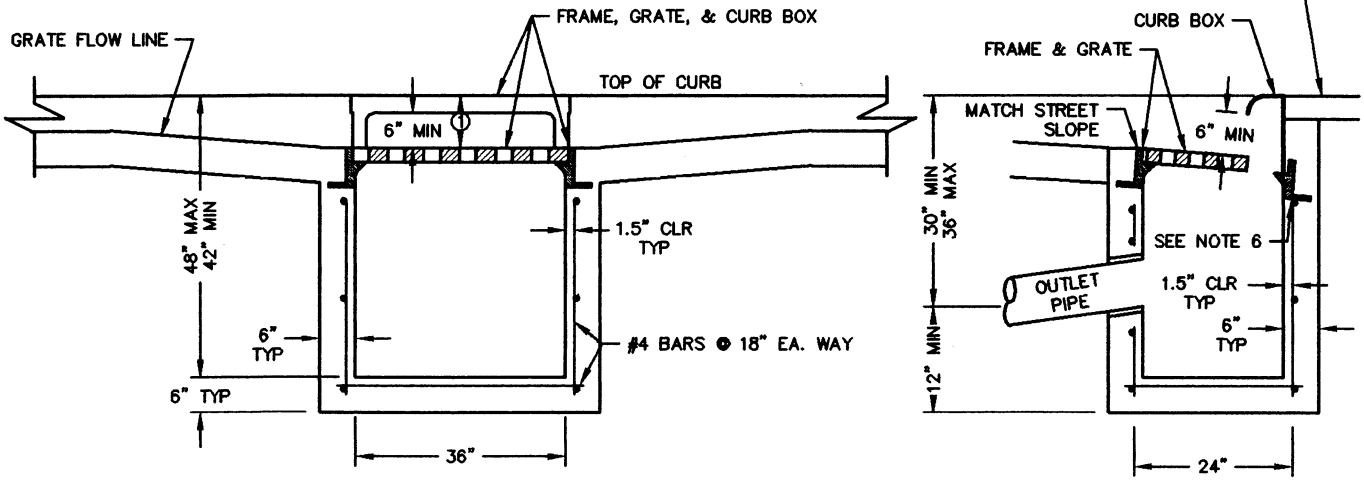


① 9" TOP OF CURB TO TOP OF GRATE @ FFLLOW LINE. DEPRESS FRAME & GRATE APPROX. 3" TO PROVIDE 6" MIN FLOW OPENING. SEE NOTE 6

SECTION A–A

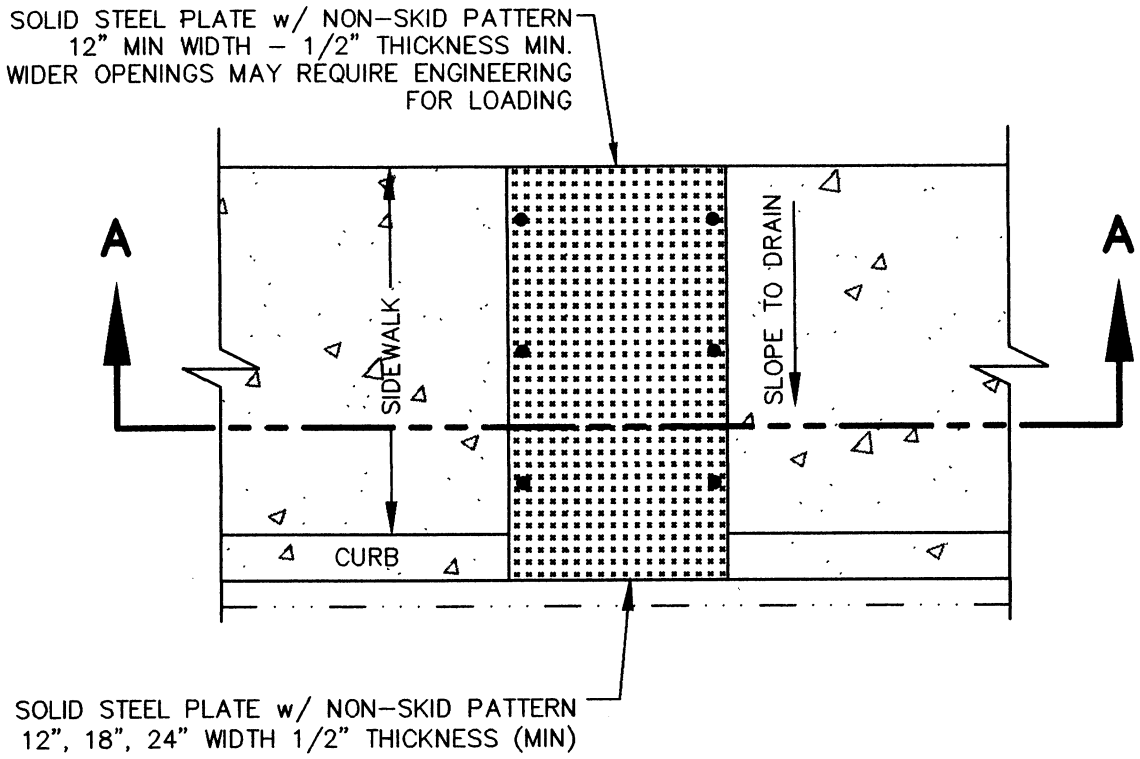
SECTION B–B

NOTES:

1. PORTLAND CEMENT CONCRETE (PCC) SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4,000 PSI MIN COMPRESSIVE STRENGTH @ 28 DAYS, MINIMUM 6 SACKS OF CEMENT PER CUBIC YARD WITH A MAX. WATER/CEMENT RATIO OF 0.45 AIR ENTRAINMENT 6% ±1.5% SLUMP AT 1–4 INCHES. ALL MATERIALS SHALL CONFORM TO SSPWC SECTION 202.
2. REINFORCED STEEL SHALL BE GRADE 40 AND HAVE 1.5" MINIMUM CLEAR COVER
3. CONCRETE STRUCTURE MAY BE A PRE–CAST CONCRETE UNIT UPON APPROVAL OF THE COUNTY ENGINEER. BASE OF PRE–CAST CONCRETE UNIT SHALL BE PLACED ON 6" COMPACTED DRAIN ROCK.
4. FRAME, GRATE & CURB BOX SHALL BE NEENAH R–3067 OR APPROVED EQUAL (w/ EQUAL FLOW CAPACITY AND WEIGHT.)
5. CONCRETE SHALL BE PLACED AS SHOWN WHEN NOT LOCATED IN A SIDEWALK.
6. TILT FRAME & GRATE AS REQUIRED TO ATTAIN 6" MIN FLOW OPENING & SHIM BETWEEN CURB BOX & FRAME AS REQUIRED TO MATCH CURB BOX TO TOP OFF CURB AND FACE OF CURB (SEE SECTION B–B.)

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION LYON Co.	
			CATCH BASIN TYPE 4–R	DRAWING NO. L–14	
				DATE 8/97	PAGE 14

339658LJ



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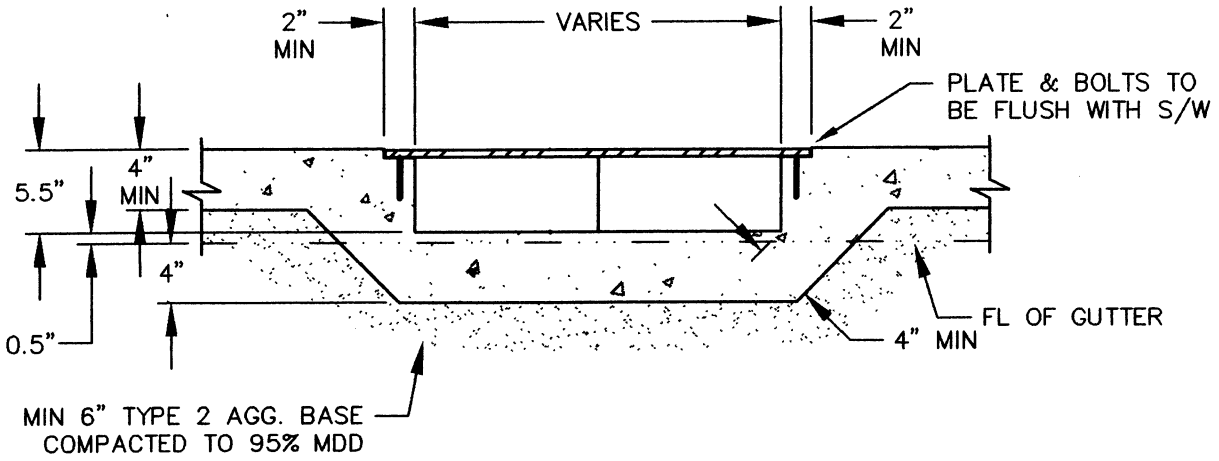
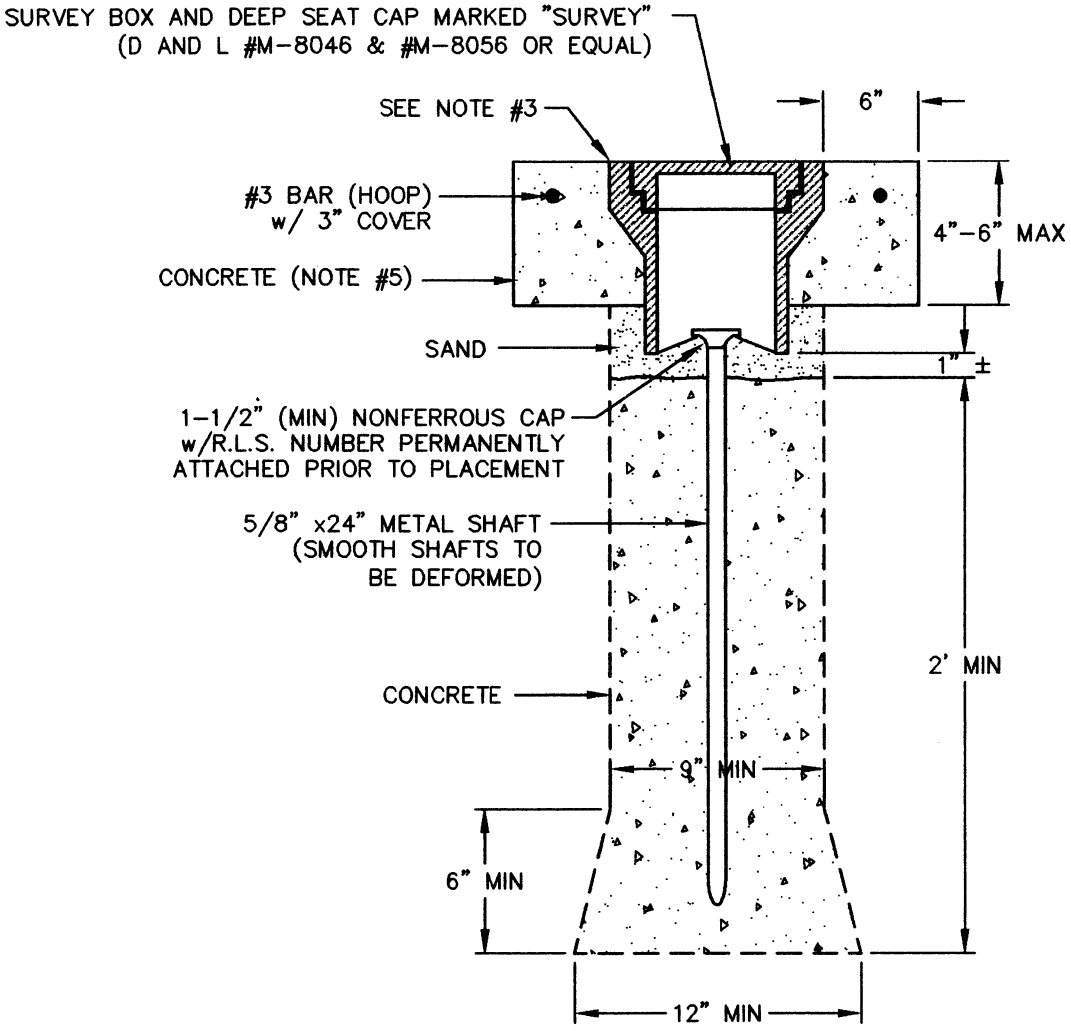


SECTION A–A

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION LYON Co.	
			SIDEWALK CROSS–DRAIN	DRAWING NO. L–15	
				DATE 8/97	PAGE 15

339658LH

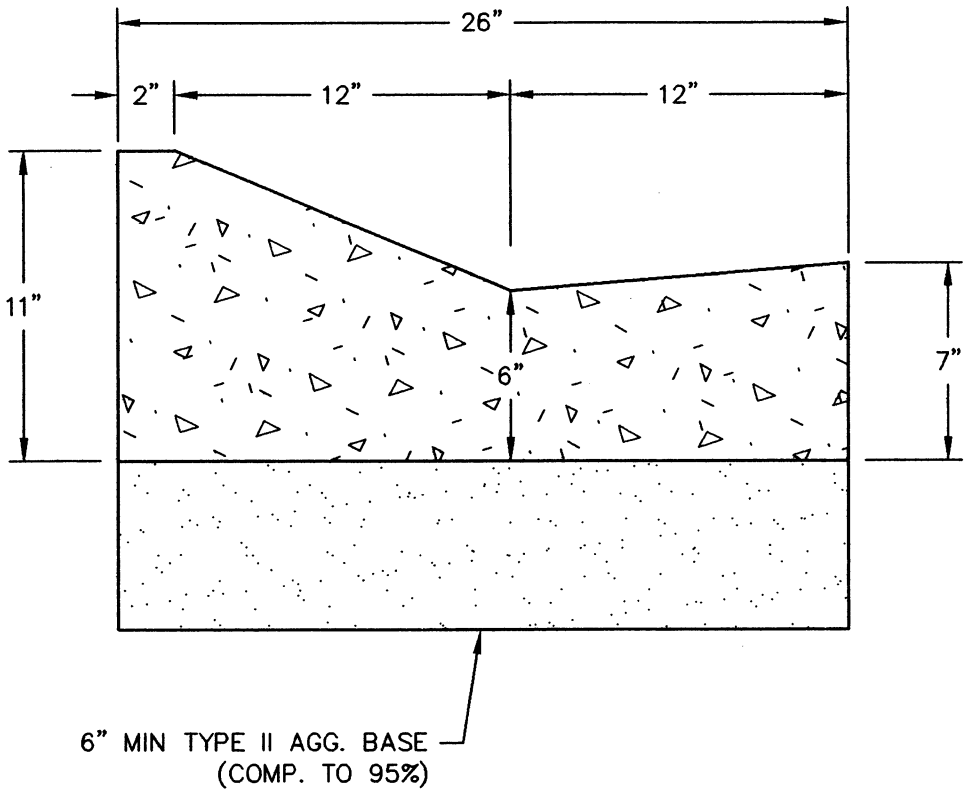


NOTES:

1. PLACE MONUMENTS AT ALL BC's, EC's, PRC's, PCC's, AND INTERSECTIONS ON STREET CENTERLINES.
2. BRONZE SURVEY MARKER (SERVCO #286 OR EQUAL) MAY BE SUBSTITUTED FOR THE 5/8" SHAFT AND CAP.
3. CONCRETE COLLAR SHALL BE FLUSH WITH ADJACENT PAVEMENT (+0' to -0.2')
4. CONSTRUCT AFTER PAVING IS COMPLETED.
5. CONCRETE SHALL MEET ORANGE BOOK REQUIREMENTS FOR FREEZE & THAW ENVIRONMENTS.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION LYON COUNTY	
			CLASS "A" MONUMENT	DRAWING NO. LYON Co.	
				DATE 8/97	PAGE 16

339658L8

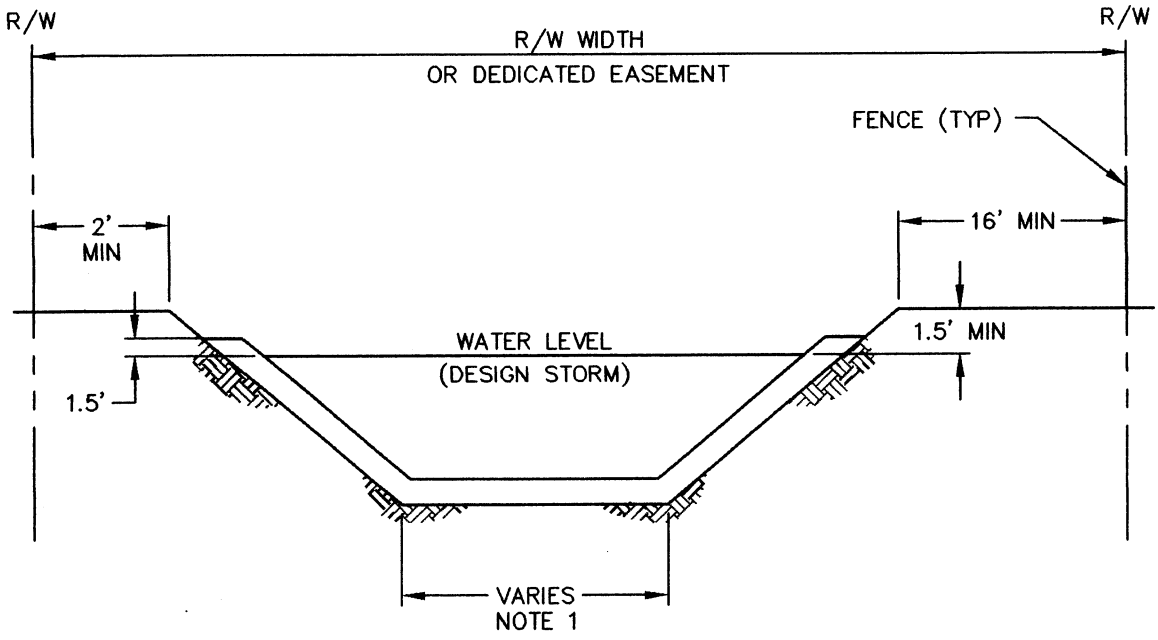


NOTE:

1. ALL P.C.C. CURB, GUTTER AND SIDEWALK SHALL BE MIN 6sack OF CEMENT PER CU.YD. OF CONC UNLESS OTHERWISE SPECIFIED (4000psi) W/4.5–7.5% AIR. MAX SLUMP SHALL BE 4." MAX WATER/CEMENT RATIO SHALL BE .45.
2. (a) ALL CONC CURB, GUTTER, AND SIDEWALK SHALL HAVE WEAKENED PLANE JOINTS EVERY 10 FEET.
   (b) EXPANSION JOINTS 1/2" WIDE SHALL BE LOCATED IN CURBS & GUTTERS @ EA. SIDE OF STRUCTURES @ ENDS OF ALL CURB RETURNS, & ABUTTING HARDENED IN–PLACE CURB & GUTTER, EXCEPT THAT EXPANSION JTS. SHALL NOT BE INSTALLED WITHIN 20' OF AN ISLAND NOSE. EXPANSION JOINTS SHALL BE 1/2" THICK, SHAPED TO THE CROSS–SECTION OF THE CURB & GUTTER, & SHALL BE CONSTRUCTED @ RIGHT ANGLES TO THE CURB & GUTTER. JOINT FILLER MATERIAL SHALL CONFORM TO SECTION 202.10.
3. THIS TYPE OF CURB AND GUTTER IS ALLOWED ONLY IN RESIDENTIAL AREAS AND ONLY ON LOCAL AND COLLECTOR SECTIONS.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION LYON Co.	
			TYPE 2 P.C.C. CURB & GUTTER	DRAWING NO. L–17	
				DATE 8/97	PAGE 17

339658LG



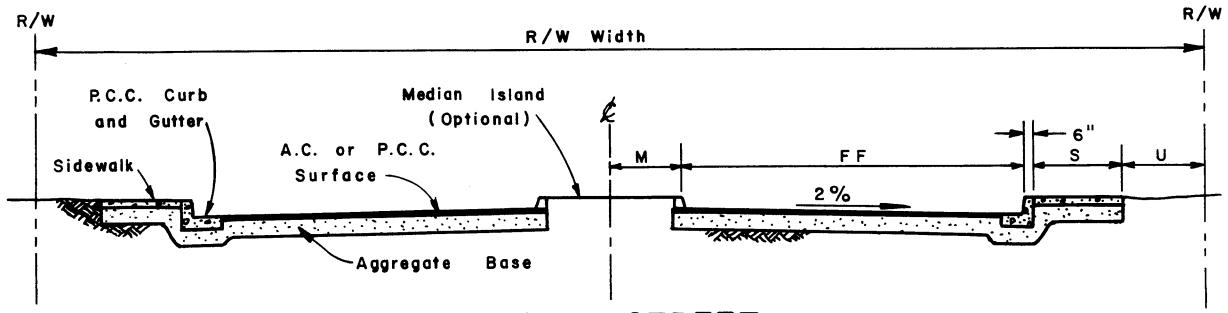
NOTES:

1. THE DESIGN ENGINEER SHALL SUBMIT CALCULATIONS SUPPORTING: STABILITY AT DESIGN VELOCITY, SLOPE STABILITY, PROPOSED LINING SECTION, SEDIMENT TRANSPORT, UPLIFT, SUBDRAINS, APPROPRIATE FREEBOARD, AND ANY OTHER PERTINENT DESIGN CONSIDERATIONS.
2. EARTHEN CHANNELS WITH BOTTOM WIDTHS LESS THAN 10 FEET SHALL HAVE SIDE SLOPES OF 3:1 OR FLATTER UNLESS OTHERWISE APPROVED. MINIMUM BOTTOM WIDTH 6 FEET.
3. FOR UNLINED CHANNELS, A "V" CHANNEL IS PREFERRED TO A TRAPEZOIDAL CHANNEL WITH A NARROW BOTTOM WIDTH TO FACILITATE MAINTENANCE.
4. ACCESS ROAD SHALL BE CONSTRUCTED AS REQUIRED PER ORDINANCE (16 FOOT MINIMUM WIDTH REQUIRED ON BOTH SIDES UNLESS OTHERWISE APPROVED.) TURN AROUNDS SHALL BE PROVIDED FOR NON-CONTINUOUS ACCESS ROAD (30 FOOT MIN. RADIUS).
5. A MINIMUM 4 FOOT SETBACK SHALL BE PROVIDED AT GRADE ALONG THE TOP OF THE CHANNEL WHERE ACCESS ROADS ARE NOT REQUIRED.
6. THE DEVELOPER SHALL PROVIDE EASEMENTS COVERING THE CHANNEL, ACCESS ROADS, AND SETBACK AREAS PRIOR TO COUNTY APPROVAL OF IMPROVEMENT PLANS.
7. FENCING, GUARD RAILS, DELINEATORS, ETC. SHALL BE PROVIDED AS APPROPRIATE FOR PUBLIC SAFETY.
8. ACCESS ROADS SHALL SUPPORT ALL WEATHER ACCESS. ROAD BASE WILL BE REQUIRED WHERE COMPACTED NATIVE SOILS ARE NOT DEMONSTRATED TO BE ADEQUATE.
9. UNCONTROLLED INFLOWS DOWN THE CHANNEL BANKS SHALL NOT BE PERMITTED.
10. CHANNEL ACCESS SHALL BE PROVIDED AS NECESSARY FOR MAINTENANCE, RAMPS SHALL BE ACCESSIBLE FROM PUBLIC RIGHT-OF-WAY.

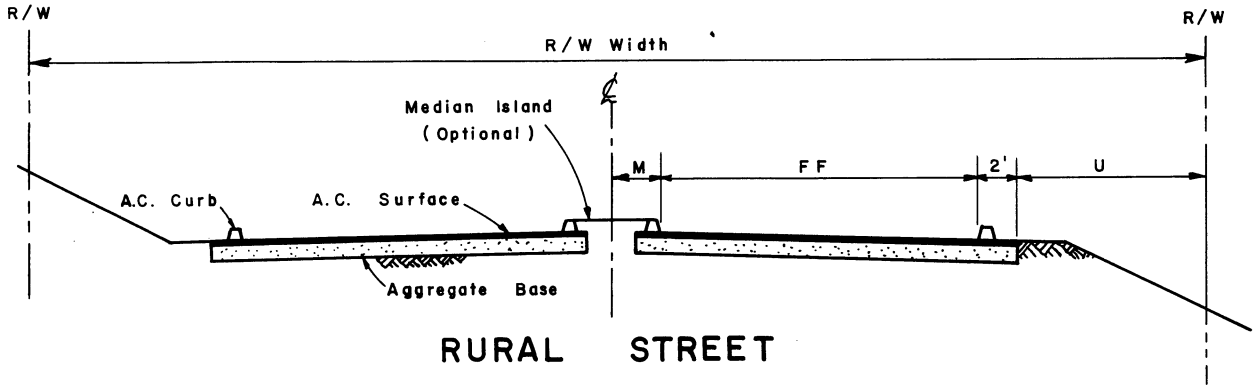
NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION LYON COUNTY	
			DRAINAGE CHANNEL (BOTTOM WIDTH GREATER THAN 6 FEET)	DRAWING NO. L-18	
				DATE 8/97	PAGE 18

339658LB

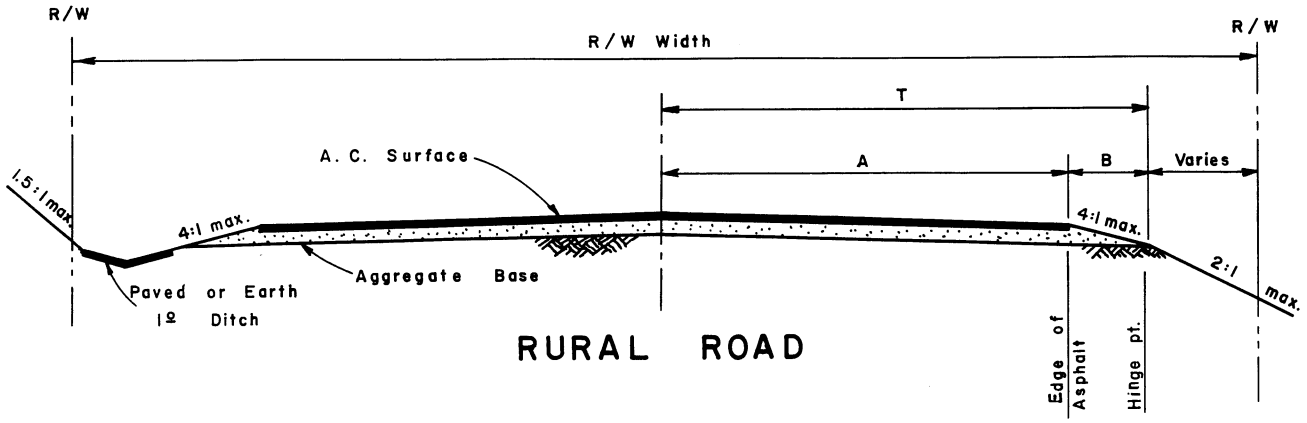
SECTION 1
GENERAL SURFACE



URBAN STREET



RURAL STREET



RURAL ROAD

FOR ALLOWABLE SECTIONS AND DIMENSIONS, SEE SPECIFIC GOVERNING AGENCY SECTION.

NO.	REVISION	DATE
1	SPELLING	10-16-86

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

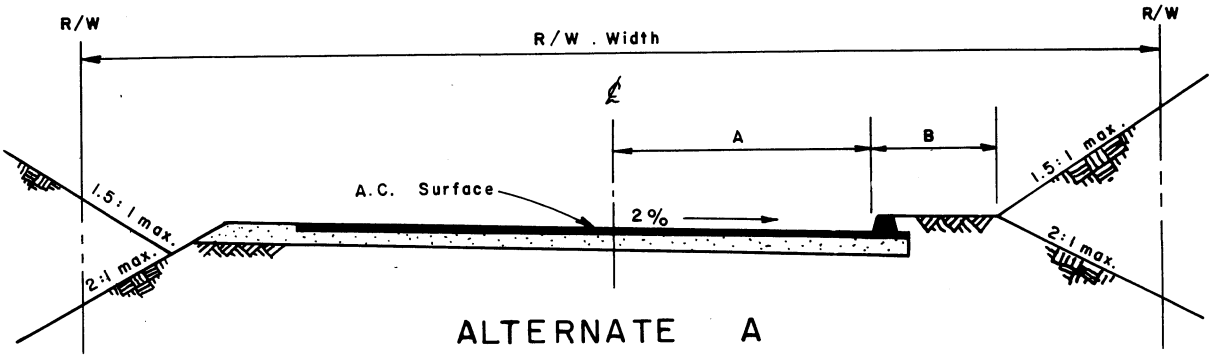
ROADWAY SECTIONS

SECTION 1

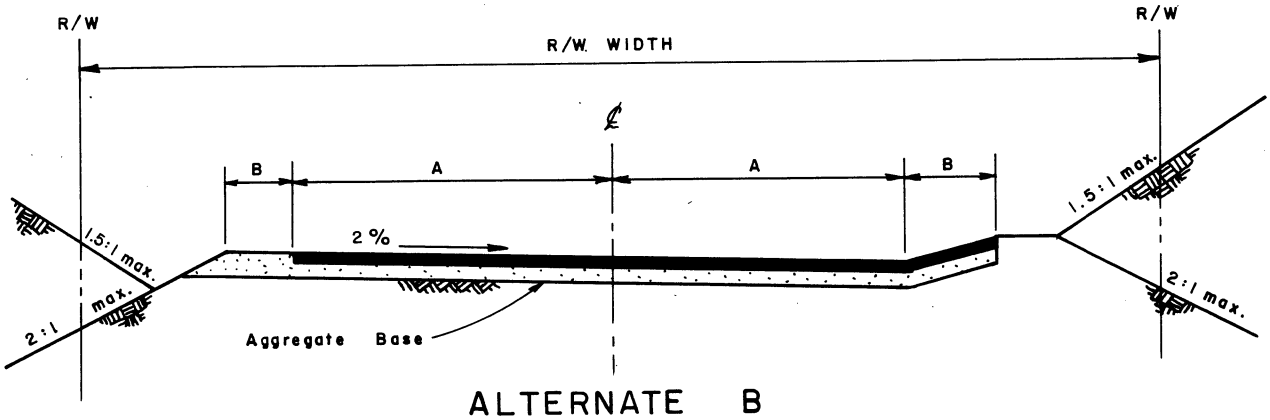
DRAWING NO. 1-1.1 (314, 319)

DATE 7-81

PAGE 1



ALTERNATE A



ALTERNATE B

RURAL HILLSIDE ROAD

FOR ALLOWABLE SECTIONS AND DIMENSIONS, SEE SPECIFIC GOVERNING AGENCY SECTION.

NO.	REVISION	DATE
1	SHOULDER	3-83

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

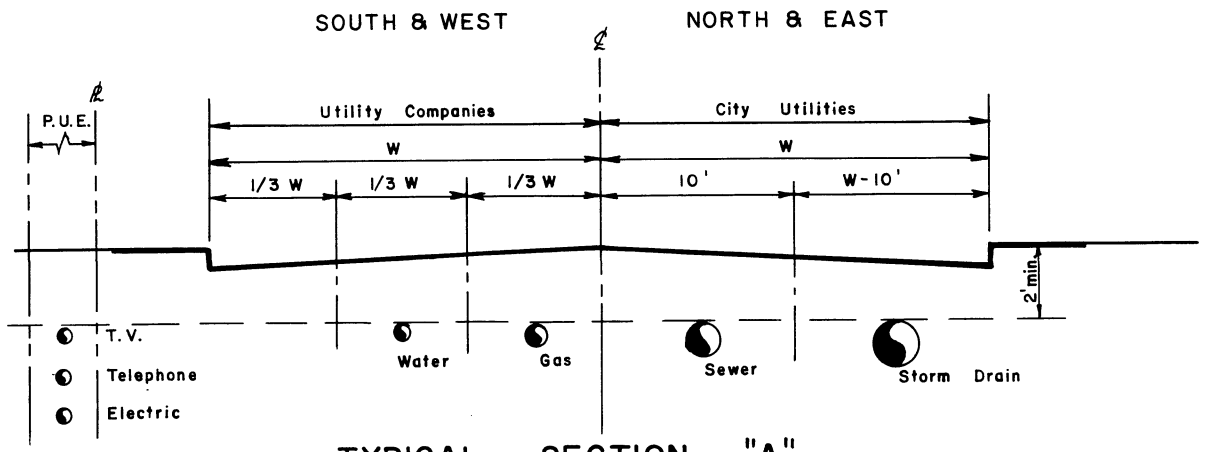
ROADWAY SECTIONS

SECTION 1

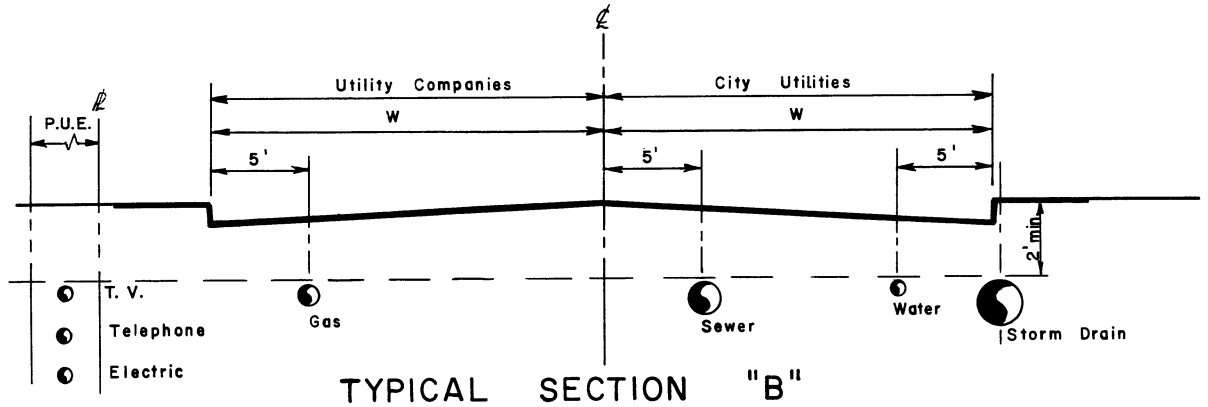
DRAWING NO. 1-1.2 (319)

DATE 7-81

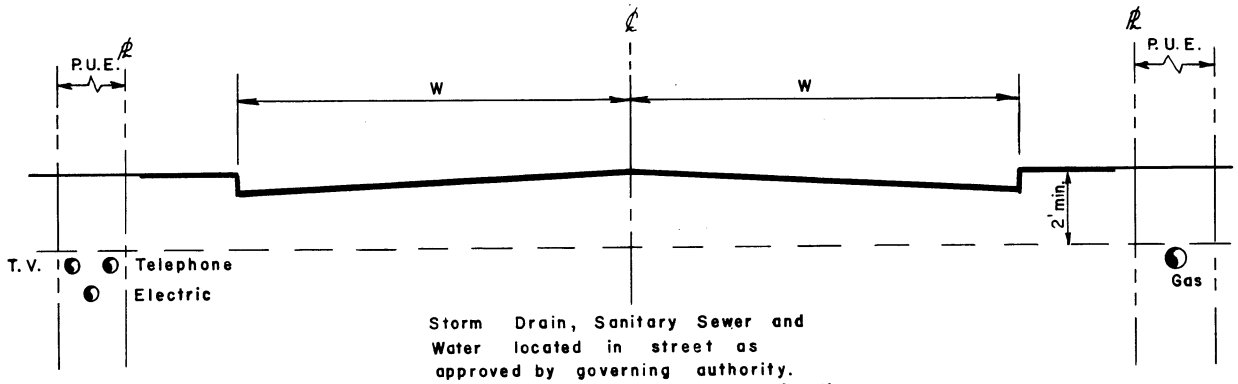
PAGE 2



TYPICAL SECTION "A"



TYPICAL SECTION "B"



Storm Drain, Sanitary Sewer and Water located in street as approved by governing authority.

TYPICAL SECTION "C"

FOR ALLOWABLE SECTIONS AND DIMENSIONS, SEE SPECIFIC GOVERNING AGENCY SECTION.

NO.	REVISION	DATE

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

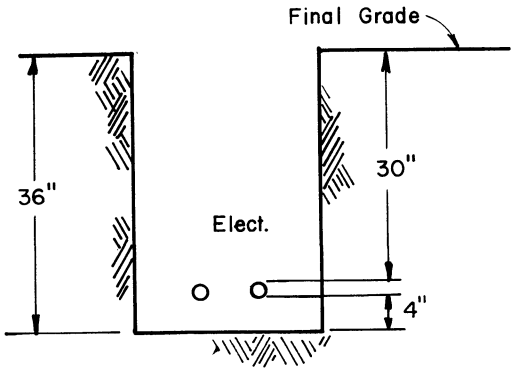
TYPICAL UTILITY MAIN LOCATIONS

SECTION 1

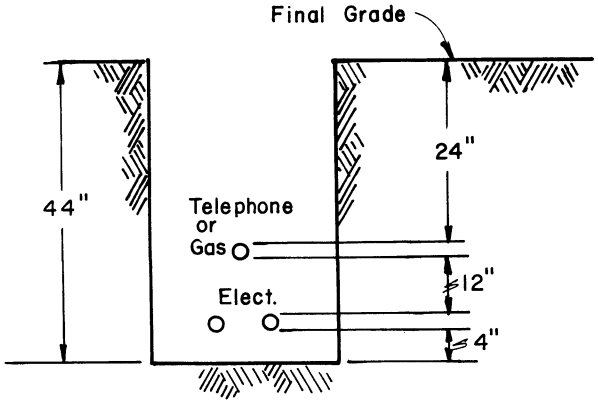
DRAWING NO. 1-2 (142)

DATE 7-81

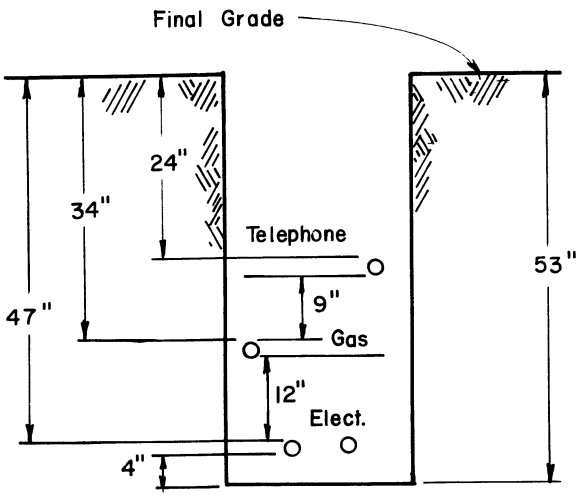
PAGE 3



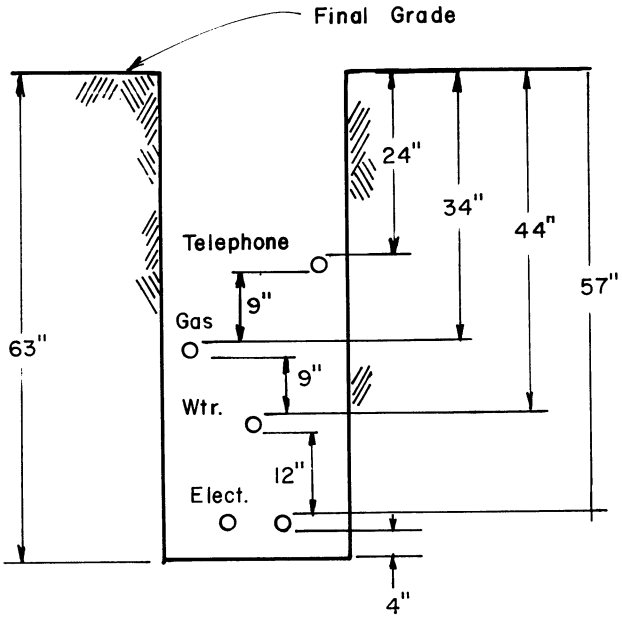
ELECTRIC ALONE



ELECTRIC & GAS
or
ELECTRIC & TELEPHONE



ELECTRIC, GAS & TELEPHONE



ELECTRIC, GAS, WATER
& TELEPHONE

(Not Permitted in Lander County
or in Carson City.)

NOTES:

1.) Combined trenches shall be used only when permitted by the participating Utility Companies.

2.) If Telephone is in conduit, and in a common trench with Gas, their relative position shall be reversed ~ Gas above Telephone.

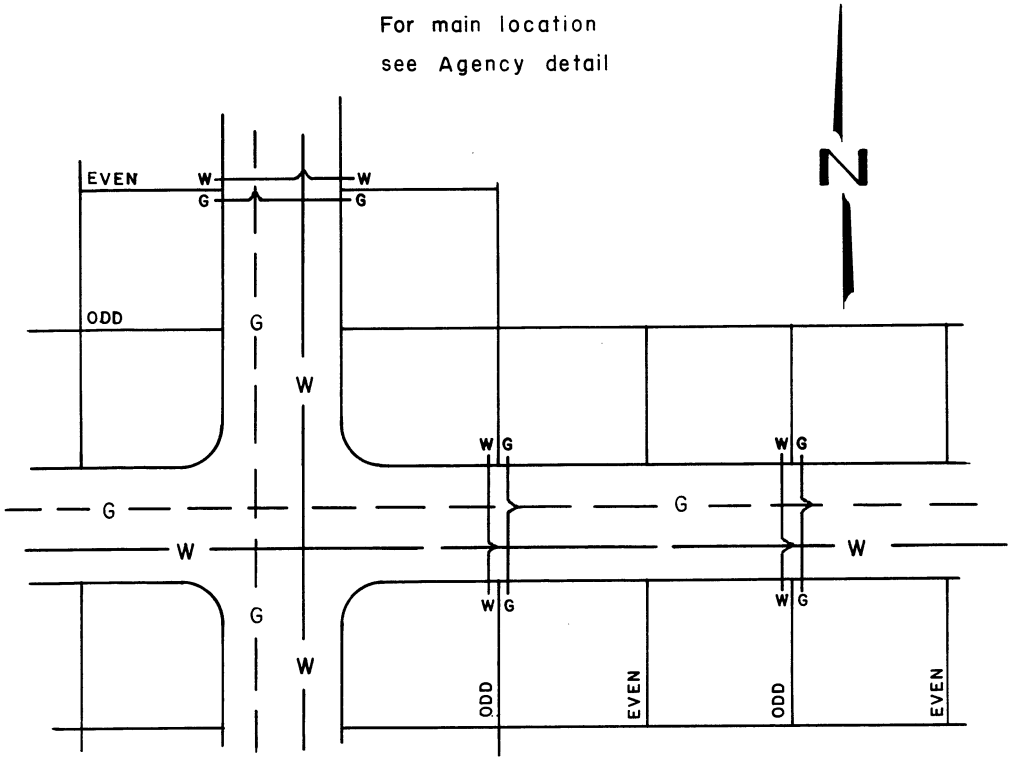
3.) Backfill limits (all compacted to 90%); Elec.~Class "B" from 4" below to 12" above, thence Class "E" to surface; Gas or Water ~ Class "B" from 6" below to ground surface; Telephone ~ Class "E" from 4" below to ground surface

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 1	
			UTILITY TRENCH	DRAWING NO. 1-3 (142)	
				DATE 7-81	PAGE 4

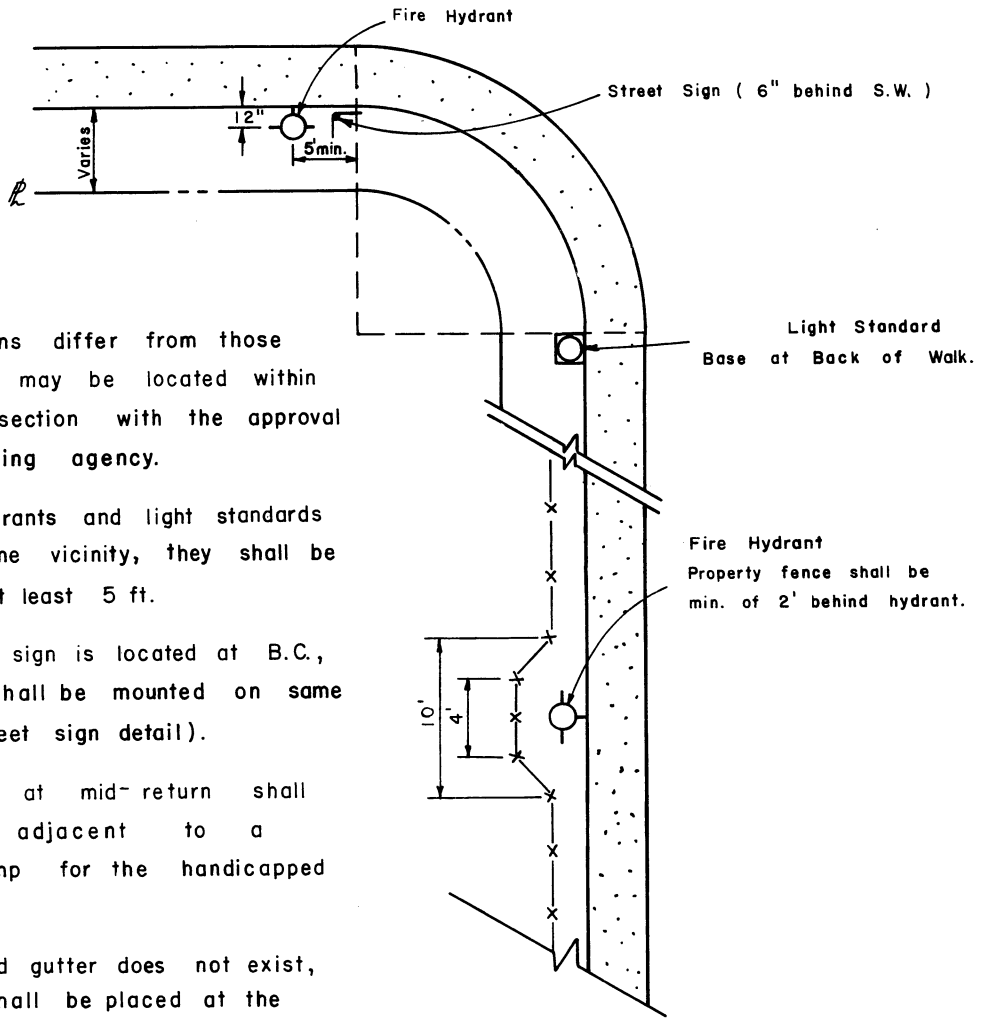
UTILITY LOCATION
GENERAL NOTES

1. Sanitary sewer lateral to be centered on lot (changes may be permitted upon approval of governing agency).
2. Common lot corners are defined as odd or even as counted North or East from the preceding street intersection.
3. Water services shall be placed on odd lot corners on East - West Streets and on even lot corners on North - South Streets. Additionally, water service shall be one foot West or North of the respective lot line (see sketch).
4. Gas services shall be placed on the same lot corners as for the water described above - except that it shall be one foot East or South of the respective lot line (opposite side of water) (see sketch).
5. Electricity, telephone, and cable T.V. shall be placed on even lot corners on East - West Streets and on odd lot corners on North - South Streets.
6. CARSON CITY ONLY - No dual services will be permitted. Single services must have at least 12" of separation.

NOTE:
For main location
see Agency detail



NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 1	
1	NOTE 6	10-85	UTILITY LATERALS LOCATION	DRAWING NO. 1-4 (142)	
				DATE 7-81	PAGE 5



NOTE :

1. Where conditions differ from those shown, utilities may be located within the sidewalk section with the approval of the governing agency.
2. When fire hydrants and light standards are in the same vicinity, they shall be separated by at least 5 ft.
3. When "STOP" sign is located at B.C., street signs shall be mounted on same pole (see street sign detail).
4. Street signs at mid- return shall be located adjacent to a pedestrian ramp for the handicapped if applicable.
5. Where curb and gutter does not exist, "STOP" sign shall be placed at the beginning of curve 6 feet from edge of paving.

NO.	REVISION	DATE
1	SPELLING	10-16-86

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

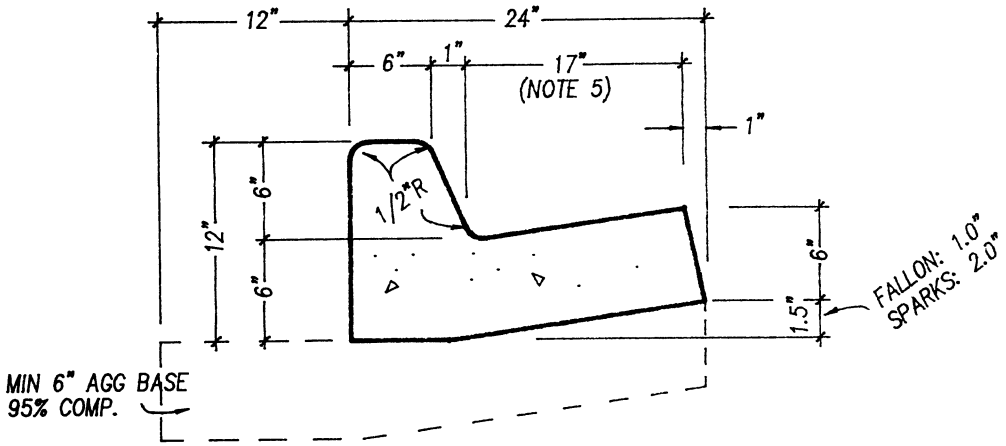
FIRE HYDRANT & STREET LIGHT LOCATIONS

SECTION 1

DRAWING NO. 1-5 (142)

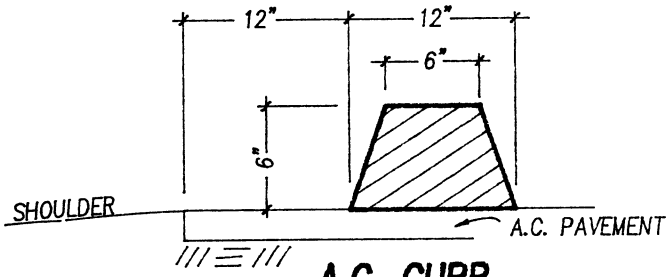
DATE 7-81

PAGE 6



TYPE 1 CURB & GUTTER

N.T.S.



A.C. CURB

N.T.S.

NOTES

1. ALL PCC CURB/GUTTER/SIDEWALK SHALL BE MIN 6sack OF CEMENT PER CU.YD. OF CONC UNLESS OTHERWISE SPECIFIED (4000psi) W/4.5–7.5% AIR. MAX SLUMP SHALL BE 4". MAX WATER/CEMENT RATIO SHALL BE .45
2. (a) ALL CONC CURB/GUTTER/VALLEY GUTTER SHALL HAVE WEAKENED PLANE JOINTS EVERY 10 FEET.
   (b) EXPANSION JOINTS 1/2" WIDE SHALL BE LOCATED IN CURBS & GUTTERS @ EA SIDE OF STRUCTURES, @ ENDS OF ALL CURB RETURNS, & ABUTTING HARDENED IN–PLACE CURB & GUTTER, EXCEPT THAT EXPANSION JTS. SHALL NOT BE INSTALLED WITHIN 20' OF AN ISLAND NOSE. EXPANSION JOINTS SHALL BE 1/2" THICK, SHAPED TO THE CROSS–SECTION OF THE CURB & GUTTER, & SHALL BE CONSTRUCTED @ RIGHT ANGLES TO THE CURB & GUTTER. JOINT FILLER MATERIAL SHALL CONFORM TO SECTION 202.10.
3. AGG BASE MATERIAL SHALL CONFORM TO SPECIFICATIONS FOR TYPE 2 CLASS B AGG BASE & BE COMP. TO A MIN 95% M.D.D.
4. WHEN A.C. CURB CONSTRUCTED IN CARSON CITY OR LANDER CO. MODIFY EDGE AS SHOWN IN CARSON CITY OR LANDER COUNTY SPECIAL SECTION.
5. CITY OF RENO ONLY: WHEN DIRECTED BY CITY ENGR. USE 23" GUTTER PAN (STD. DET. R–7A).
6. ALL A.C. CURB INSTALLED IN WASHOE CO TO BE MFD W/ASPHALTIC CEMENT, GRADE AC–20.
7. CARSON CITY ONLY: NO FELT PAPER TO BE USED FOR EXPANSION JOINTS FOR CURB, GUTTER OR SIDEWALK.

NO.	REVISION	DATE
1	REDRAWN	1/95vp

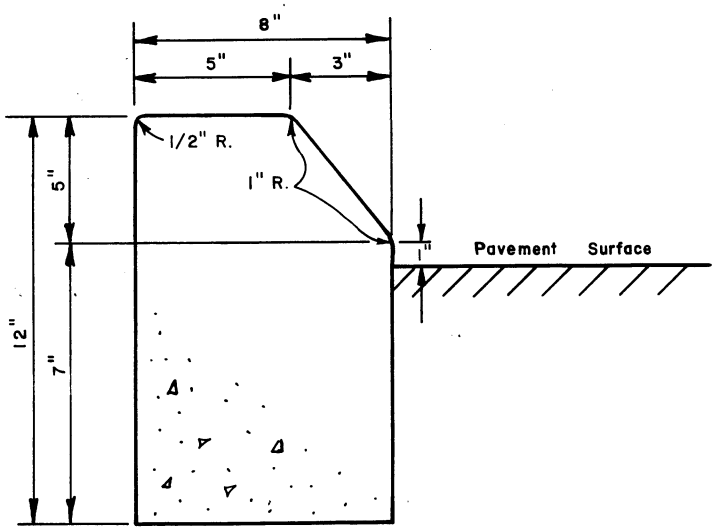
STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

TYPE 1 PCC CURB/GUTTER & A.C. CURB

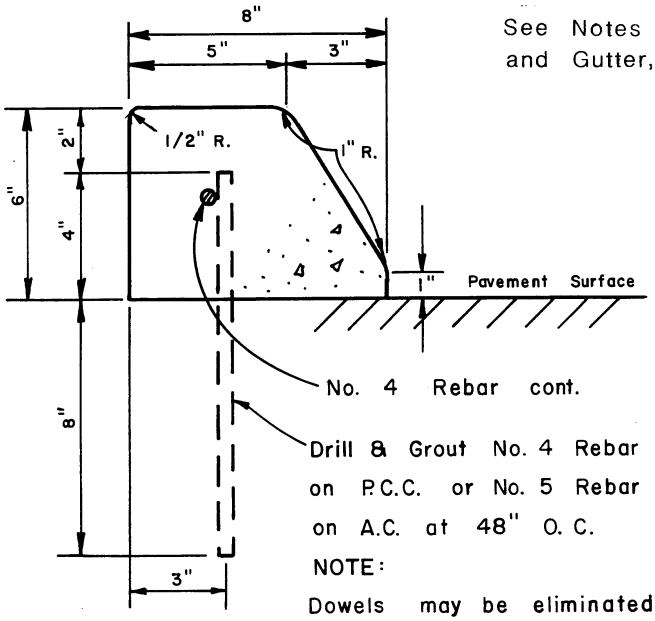
SECTIONS 1

DRAWING NO. 1–6.1 (312)

DATE 1/95vp | PAGE 7



TYPE 1 P.C.C. MEDIAN CURB



See Notes for Type 1 Curb and Gutter, Dwg. No. 1-6.1.

No. 4 Rebar cont.

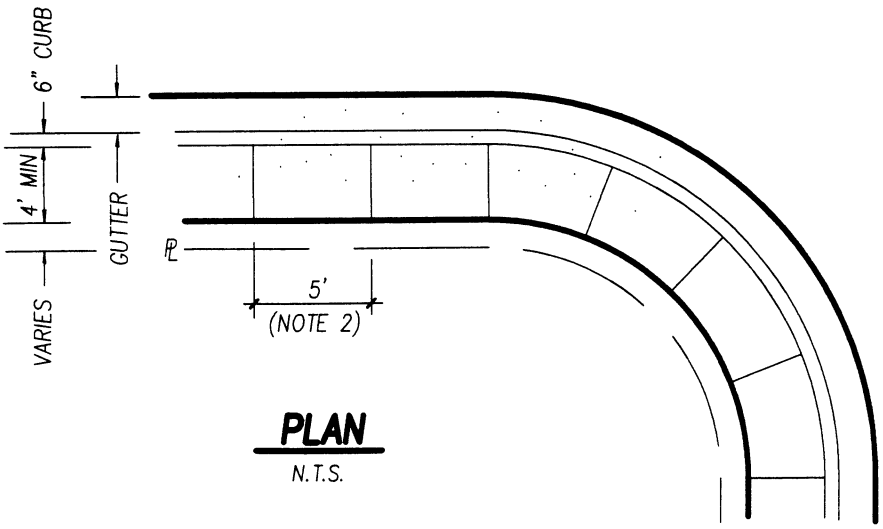
Drill & Grout No. 4 Rebar on P.C.C. or No. 5 Rebar on A.C. at 48" O. C.

NOTE:

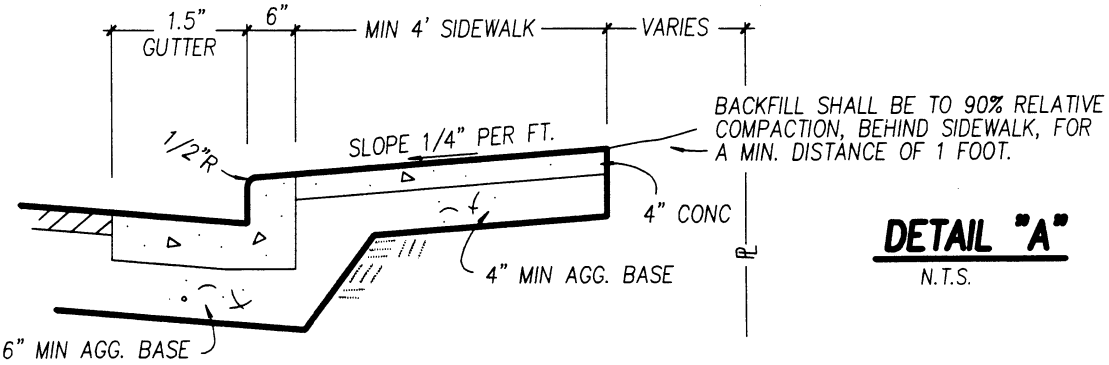
Dowels may be eliminated in lieu of an approved epoxy coat between the curb and pavement surface.

TYPE 2 P.C.C. MEDIAN CURB

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 1	
1	NOTE	3-83	P.C.C. MEDIAN CURB	DRAWING NO. 1 - 6.2 (312)	
				DATE 7-81	PAGE 8



PLAN
N.T.S.



DETAIL "A"
N.T.S.

NOTES

1. MIN CURB RETURN RADIUS SHALL BE 20 FEET UNLESS OTHERWISE SPECIFIED (15' IN FALLON & RENO)
2. (a) WEAKENED PLANE JOINTS SHALL BE CONSTRUCTED IN ACCORDANCE W/DETAIL "A". IN WASHOE COUNTY, REFER TO DWG. W-16.2
   (B) TRANSVERSE EXPANSION JOINTS 1/2" WIDE SHALL BE CONSTRUCTED AT ALL SIDEWALK RETURNS, OPPOSITE EXPANSION JOINTS IN ADJACENT CURB, & @ REGULAR INTERVALS NOT EXCEEDING 30'. ISOLATION JOINTS SHALL BE INSTALLED AROUND ALL STRUCTURES. EXPANSION & ISOLATION JOINTS SHALL BE FILLED W/JOINT FILLER STRIPS 1/2" THICK. JOINT MATERIAL SHALL CONFORM TO SEC.202.10.
3. ALL AGG. BASE SHALL BE TYPE 2 CLASS B.
4. RENO: COLORED CONC NOT ALLOWED.
5. ON SIDEWALKS WIDER THAN 5', JOINTING PATTERN SHALL BE .8 – 1.2 TIMES THE WIDTH OF THE SIDEWALK.
6. PORTLAND CEMENT CONC (P.C.C.) SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4000psi MIN COMP STRENGTH @ 28 DAYS, MIN 6 SACKS OF CEMENT PER CU.YD. W/MAX WATER-CEMENT RATIO OF 0.45, AIR ENTRAINMENT 6% ± 1.5%, SLUMP 1 TO 4 INCHES. ALL MATEIALS SHALL CONFORM TO SSPWC SEC. 202.

NO.	REVISION	DATE
1	REDRAWN	1/95vp
2	Corr Note 6	4/95vp
3	Corr 1/4"PerFt	3/96vp
4	Note 2	5/96 vp

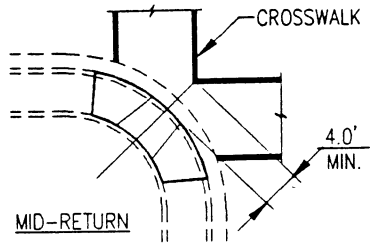
STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

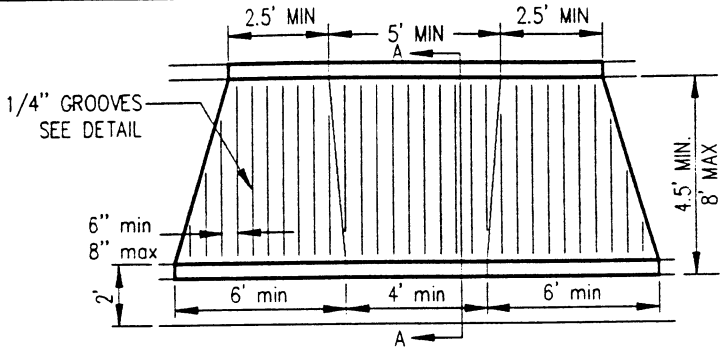
TYPICAL SIDEWALK

SECTIONS 1

DRAWING NO. 1-7 (312)

DATE 1/95vp | PAGE 9





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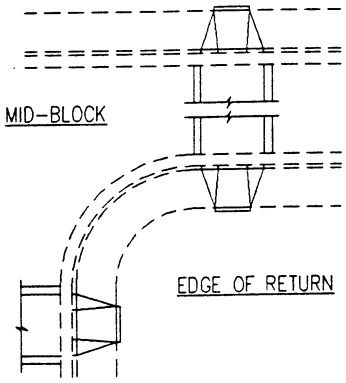
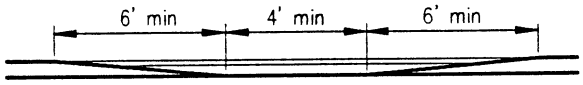
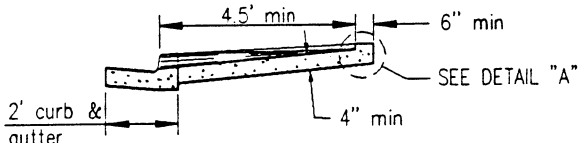
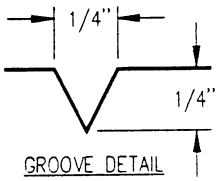


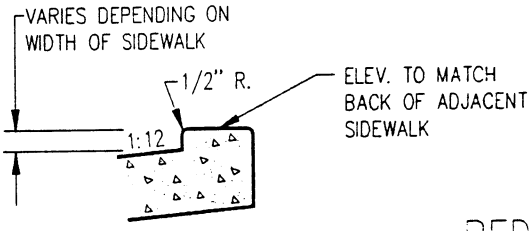


ELEVATION



SECTION "A-A"





DETAIL "A"

PEDESTRIAN RAMP FOR THE DISABLED

NOT TO SCALE

NOTES:

1. If obstructions such as inlets, Utility Poles, Fire Hydrants, etc. are encountered,the location and dimensions may be adjusted upon approval of the Engineer.
2. Texture to be heavy broom finish transverse to axis of ramp.
3. The mid-block ramp shown in detail shall be centered in the crosswalk, and have a minimum curb opening of 6 feet.
4. Slope to meet existing conditions.
5. All ramps shall be located within crosswalks areas.
6. All concrete to be removed to sawcut or expansion joints.
7. The gutter pan – sidewalk transition section (Section A-A) will be smooth with no lip at gutter flowline. This transition section may be a monolithic pour.
8. Slope on wings at 1:12, slope on ramp from flowline to back of walk 1:12 with curb on the back side if, needed
9. Curb detail "A" used only where an elevation difference is present between rear edge of walk and adjacent back edge of walk.
10. Portland cement concrete (P.C.C.) shall have the following characteristics: 4000 psi min compressive strength @ 28 days, min. 6 sacks of cement per cubic yard with a max. water/cement ratio of 0.45, air entrainment 6% ±1.5%, slump at 1 to 4 inches. All materials shall conform to SSPW Section 202.

NO.	REVISION	DATE
1	REDRAWN	8/92
2	REV. NOTE 7	12-92
3	ADD G/N 10.	3-95
APPROVED BY		3-95

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

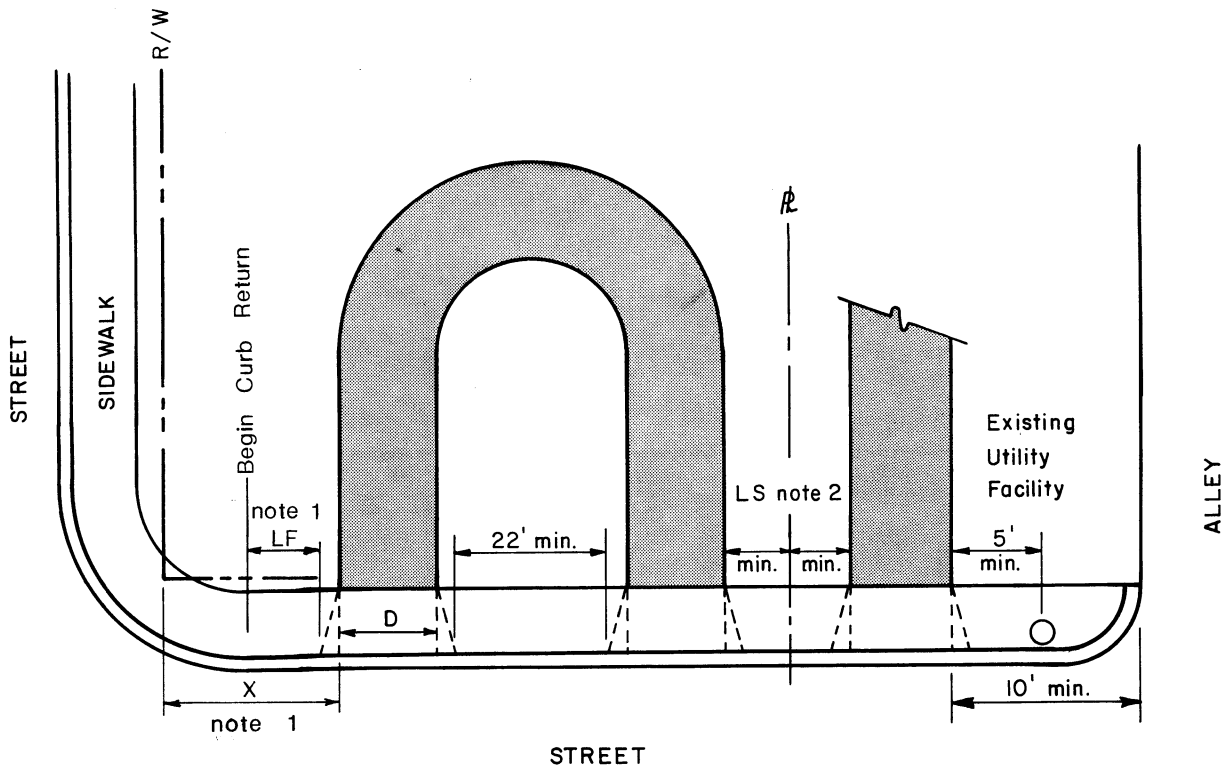
PEDESTRIAN RAMP
FOR THE DISABLED

SECTION 1

DRAWING NO. 1-8 (312)

DATE 7-81

PAGE 10



	RESIDENTIAL	LIGHT * COMMERCIAL	HEAVY COMMERCIAL** AND INDUSTRIAL
D (Driveway Width) See note 3	12' min. 24' max.	14' min. (one-way) 24' min. (two-way) 34' max. See note 3	14' min. (one-way) 30' min. (two-way) 54' max. (heavy truck) See note 3

NOTES:

1. LF (front-sideyard setback) Carson City, Yerington and Nye Co. = 20' min. Lyon Co. = 30' min. Elsewhere = 10' min. DOES NOT APPLY TO ELKO (See note 3).
2. LS (sideyard setback) Carson City = 10', Elsewhere = 5'

* Light Commercial includes office buildings and other commercial buildings 2 stories in height. Motel driveways shall not exceed 30', DOES NOT APPLY TO ELKO.

** Heavy Commercial includes drive-in establishments, factories, service stations and warehouses, DOES NOT APPLY TO ELKO.

3. Elko only, X = 40' (Measured from the intersection of the R/W line) on arterial streets, 25' elsewhere. Maximum driveway width at curb = 30'. Maximum driveway width at back of walk = 24'.

ANY DEVIATION FROM THESE DIMENSIONS MUST BE SUBMITTED AND APPROVED BY THE AGENCY ENGINEER.

NO.	REVISION	DATE
1	LF Dim.	3-83
2	NOTE 3	2-84

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

DRIVEWAY GEOMETRICS

SECTION 1

DRAWING NO. 1-9 (312)

DATE 7-81

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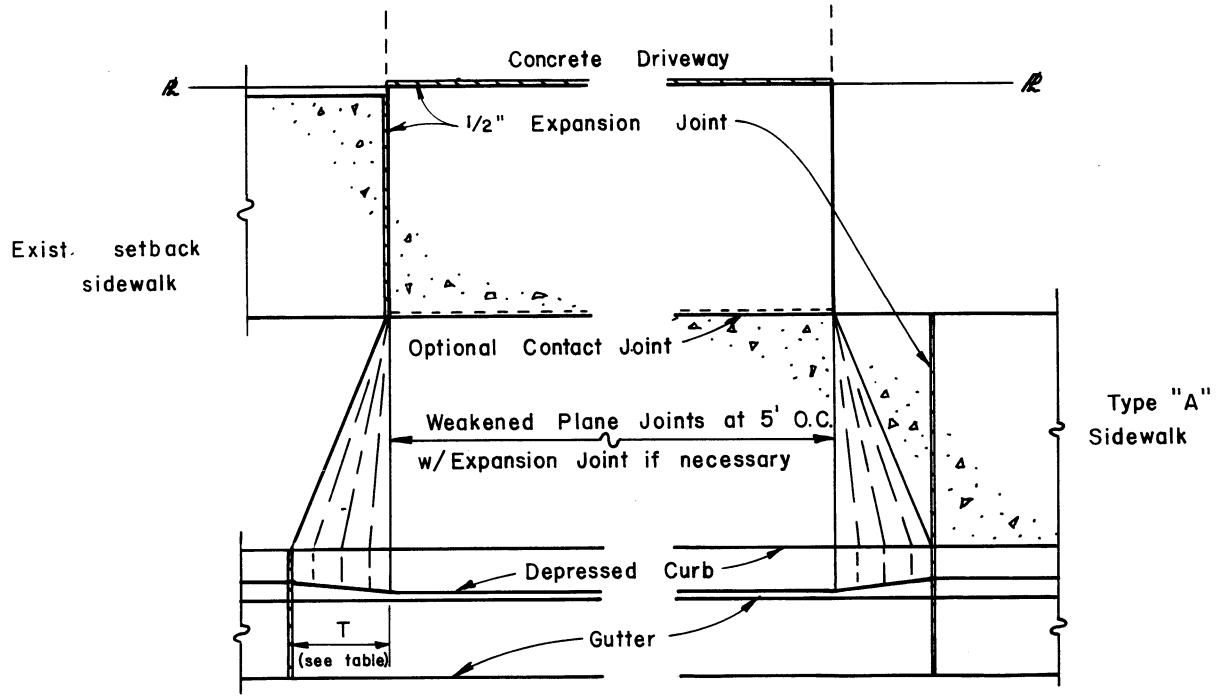
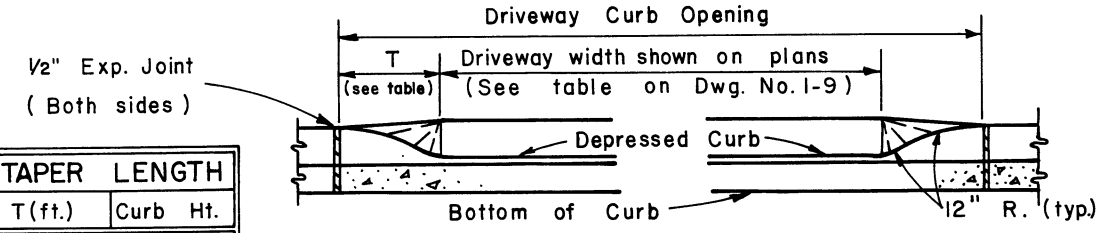
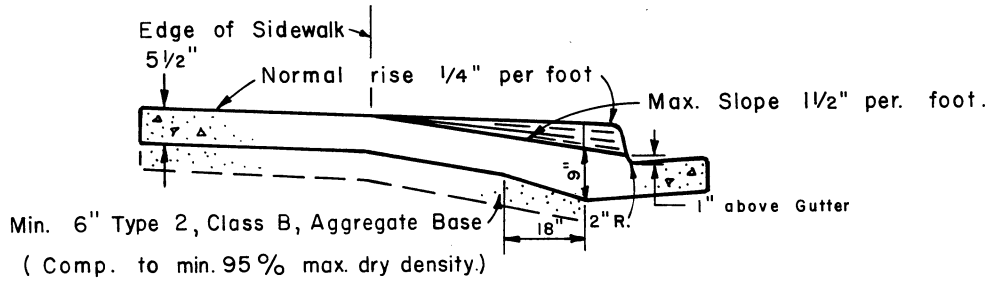




TAPER LENGTH	
T(ft.)	Curb Ht.
2.5'	≤ 5"
3.0'	6"
3.5'	7"
4.0'	8"
4.5'	≥ 9"



NOTES:

1. Not approved for construction in Douglas Co. or Fallon - see Agency Section.
2. No concrete shall be placed until forms and subgrade are inspected by the agency.
3. Concrete shall be class AA or DA.
4. Commercial driveways to have 6"x 6" 10/10 wire mesh extending into gutter pan.
5. If expansion joint exists within 4 feet of driveway, remove sidewalk and curb and gutter to that joint.
6. Concrete removal shall be to neat sawcut lines.
7. Remove concrete when constructing driveway where curb and gutter exist. Driveway to be monolithic to A.C. line.

NO.	REVISION	DATE
1	SPELLING	10-15-86

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

P.C.C. DRIVEWAY APRON

SECTION 1

DRAWING NO. 1-10 (312)

DATE 7-81

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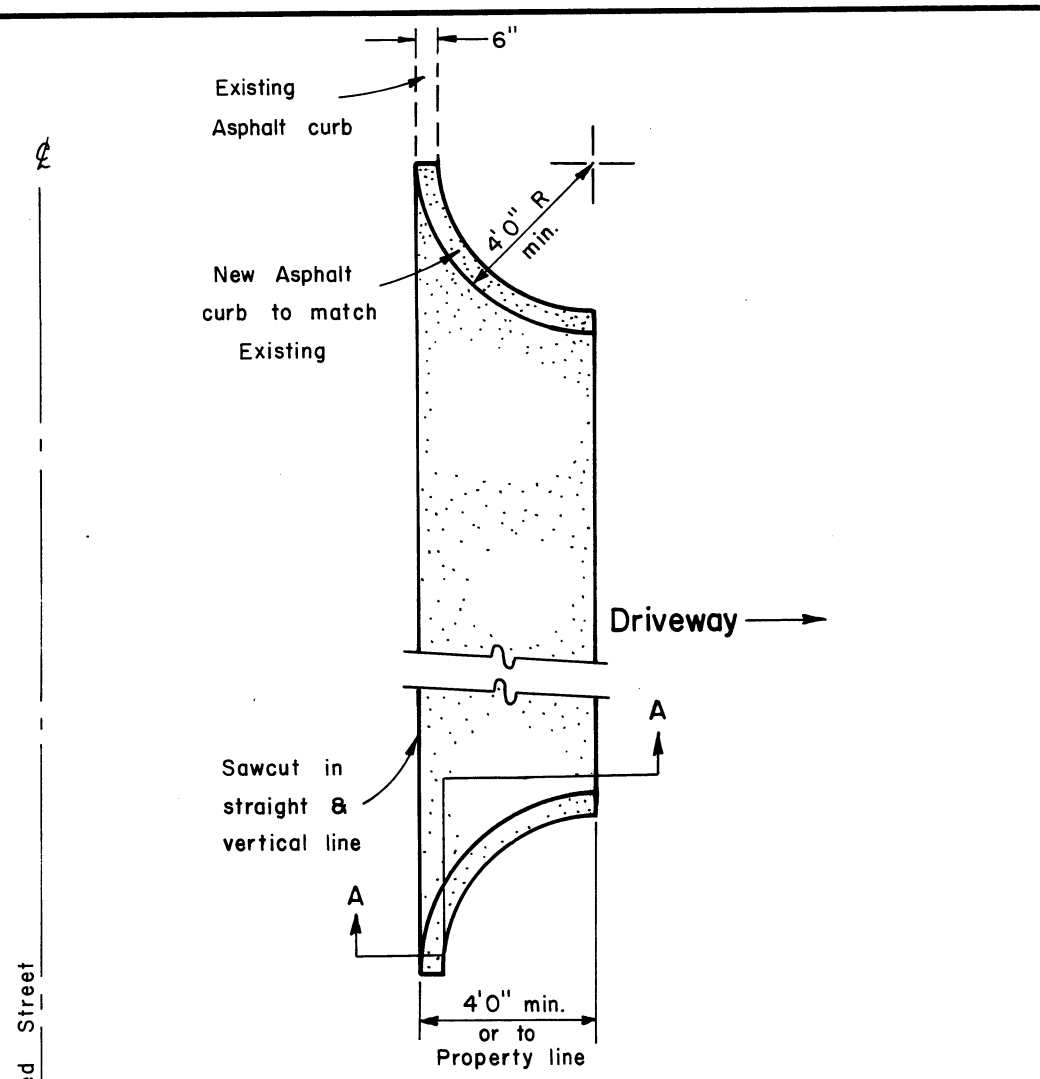
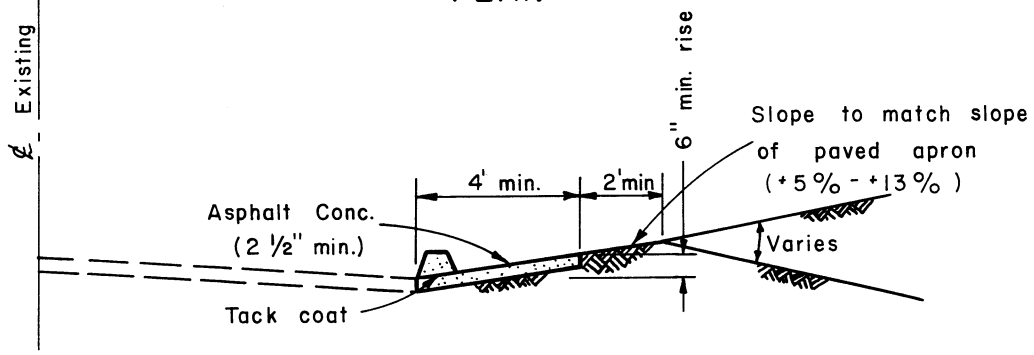


PLAN

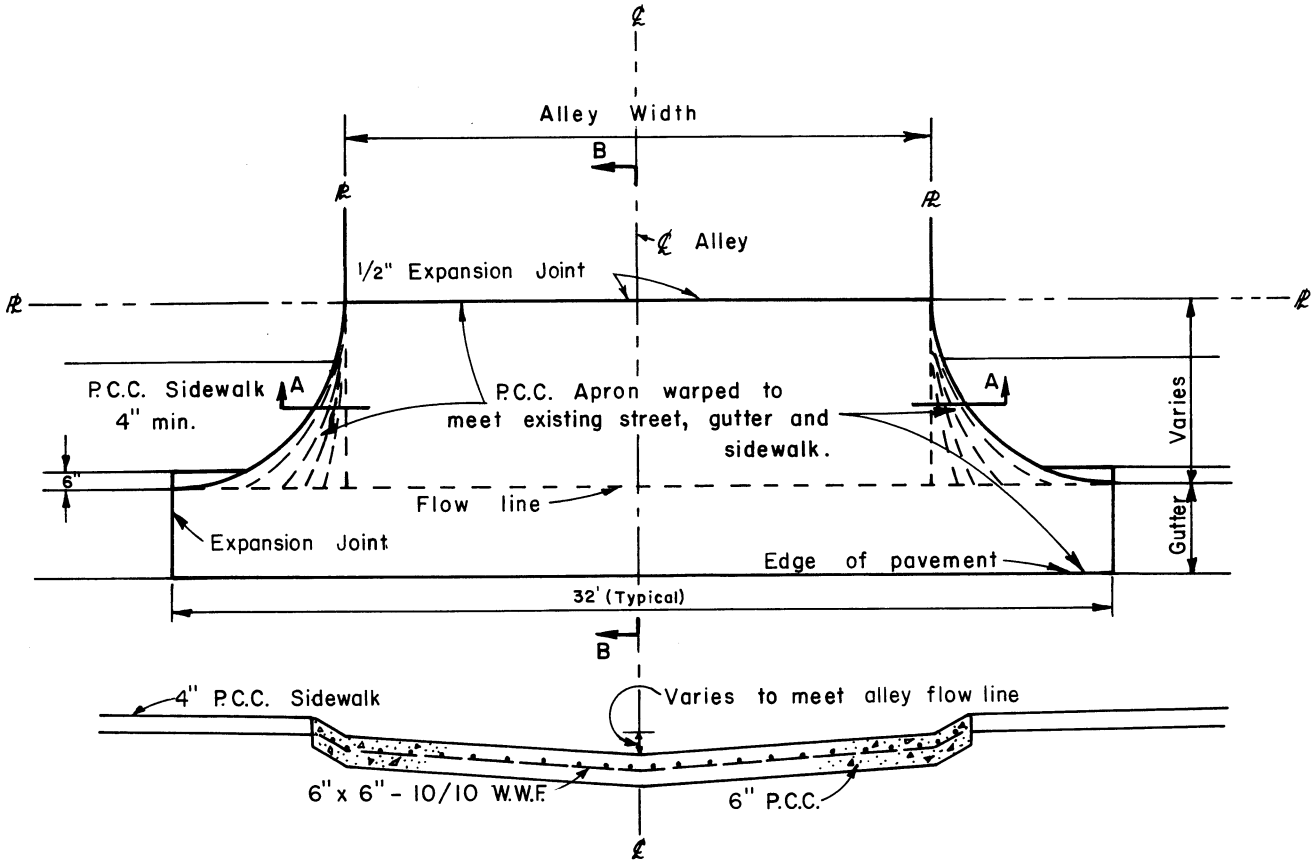


SECTION "A"

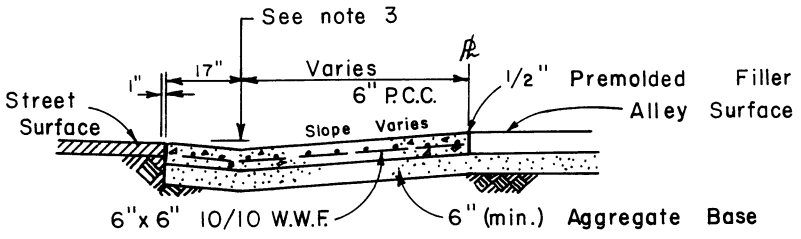
NOTE:

Approved for new construction only in Washoe County, Lander County, Lyon County, Yerington, and Carson City (see Carson City for modified apron on rural roads).

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION
1	NOTE	3-83	ASPHALT CONCRETE DRIVEWAY APRON	1
				DRAWING NO. 1-11 (319)
				DATE 7-81 / PAGE 13



SECTION A-A

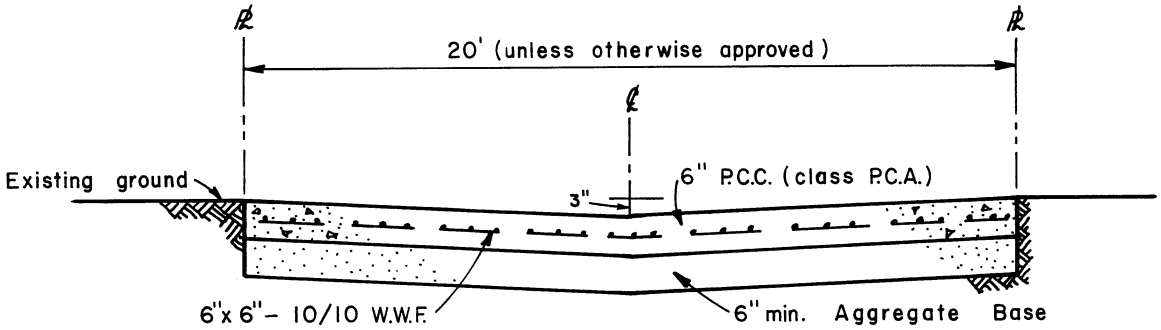


SECTION B-B

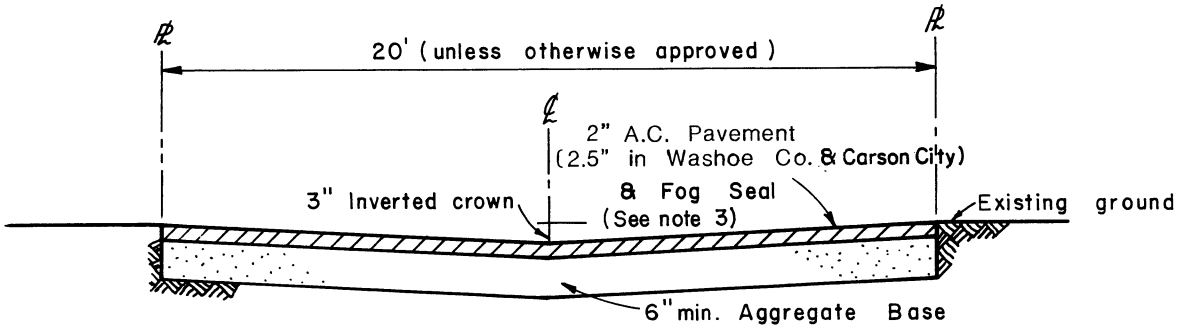
NOTES:

1. Portland Cement concrete shall be class AA or DA
2. Aggregate Base material shall conform to the requirements for Type 2, Class B, Aggregate base and be compacted to a min. 95% of max. dry density.
3. Flow line varies to match gutter - 1½" except Fallon = 1" and Sparks = 2½".

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 1	
			P.C.C. ALLEY APRON	DRAWING NO. 1-12 (312)	
				DATE 7-81	PAGE 14



P.C.C. ALLEY SECTION



(Not permitted in Reno for new construction)

A.C. ALLEY SECTION

NOTES:

1. See Fallon special section for aggregate alley section.
2. Aggregate base shall be Type 2, Class B and be compacted to a min. 95% of max. dry density.
3. Sparks - A.C. pavement will be finished with open graded pavement in lieu of fog seal.

NO.	REVISION	DATE
1	A.C. Thickness	3-83

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

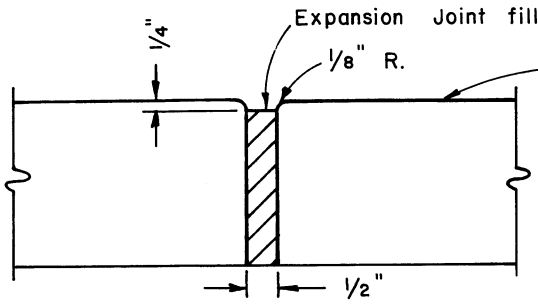
TYPICAL ALLEY SECTIONS (P.C.C. and A.C.)

SECTION 1

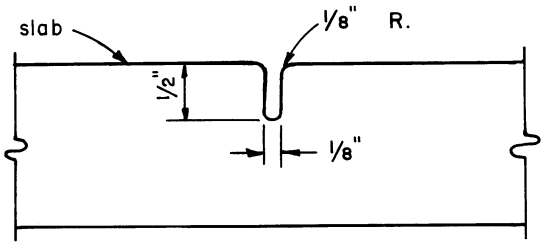
DRAWING NO. 1-13 (314/319)

DATE 7-81

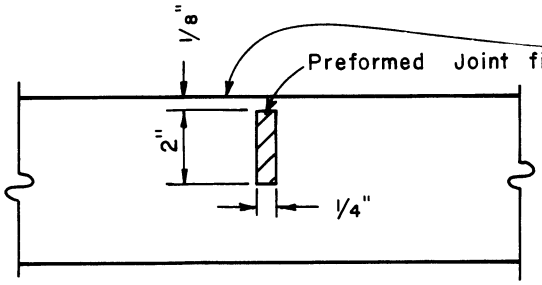
PAGE 15



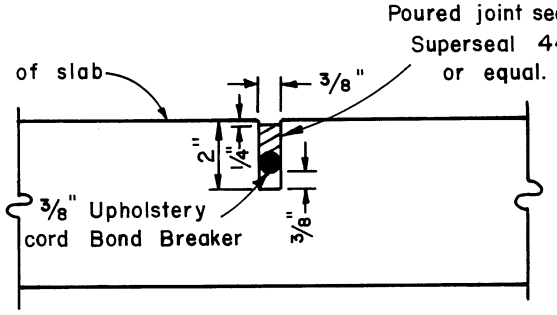
EXPANSION JOINT



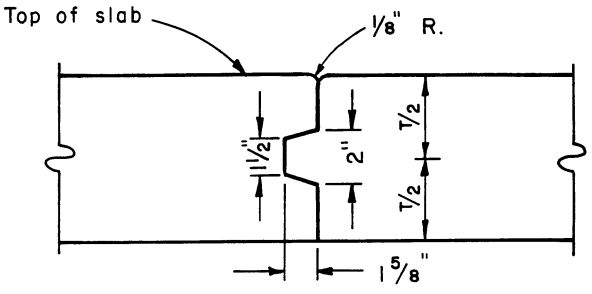
WEAKENED PLANE JOINT
SIDEWALK, CURB & GUTTER



WEAKENED PLANE JOINT
P.C.C. PAVEMENT

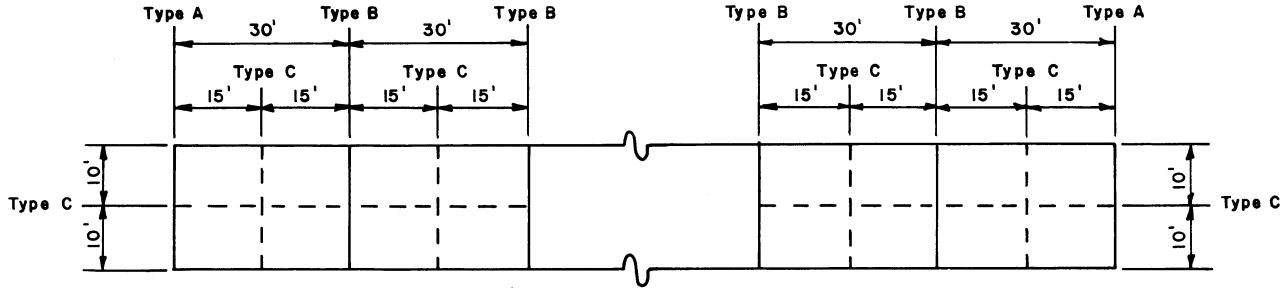


SAWED OR PREMOLDED
STRIP JOINT

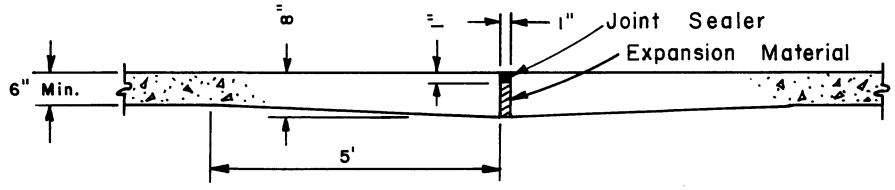


KEYED JOINT

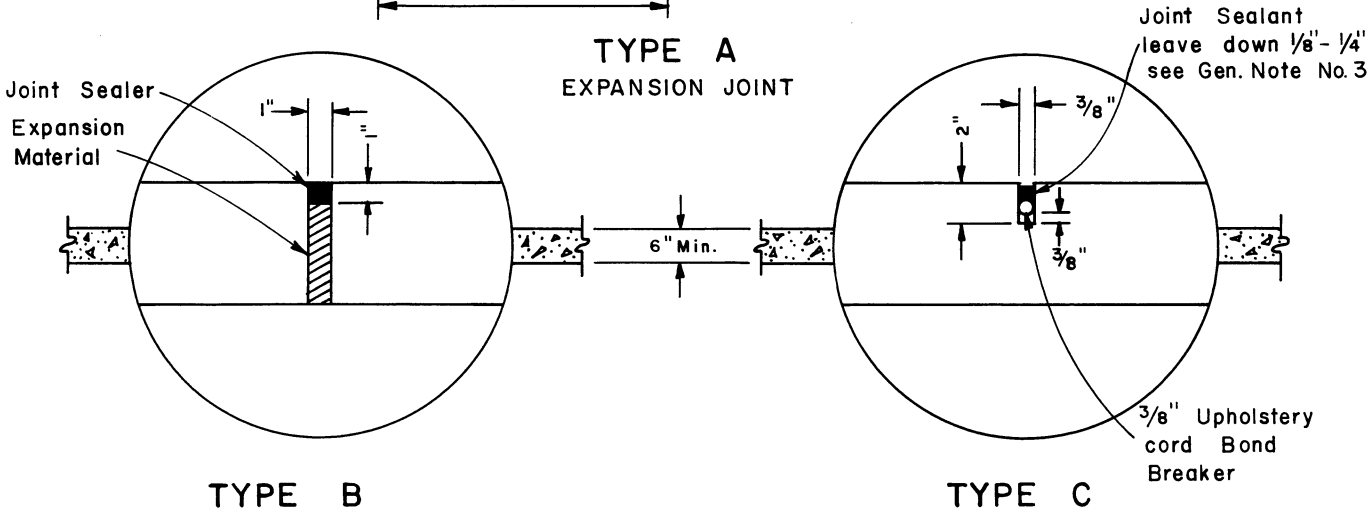
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 1	
			P.C.C. JOINTING DETAILS	DRAWING NO. 1-14.1 (312)	
				DATE 7-81	PAGE 16



ALLEY JOINT SPACING



TYPE A
EXPANSION JOINT



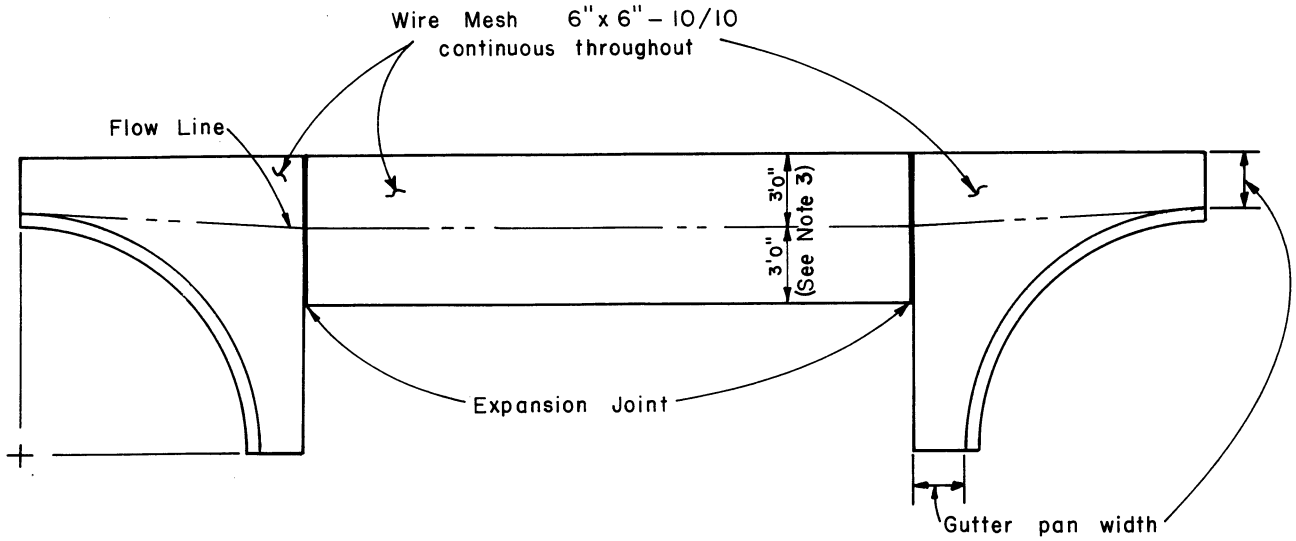
TYPE B
EXPANSION JOINT

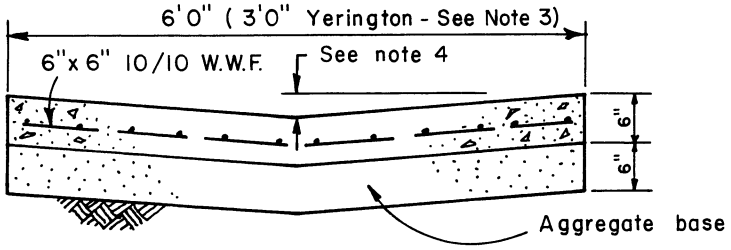
TYPE C
SAWED or PREMOLDED STRIP JOINT

NOTES

1. Portland Cement concrete shall be class P.C.A.
2. Base material will conform to the requirements for Type 2 Aggregate Base and shall be compacted to at least 95 % max dry density.
3. Type C joint sealers will be hot poured Super Seal 444 or equal.
4. Joint spacing for P.C.C. pavement not in alley sections shall be as specified in the contract documents.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 1	
			P.C.C. ALLEY JOINTING DETAILS	DRAWING NO. 1-14.2 (314)	
				DATE 7-81	PAGE 17





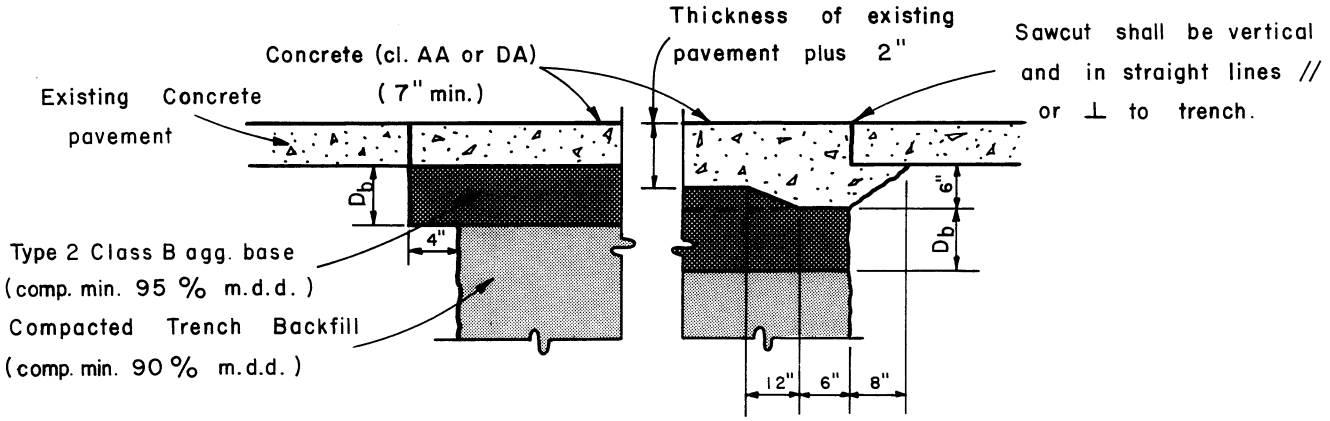
NOTES:

1. Aggregate Base shall be Type 2, Class B and be compacted to a min. 95% of max. density.
2. Portland Cement concrete shall be class AA or DA.
3. Gutter pan width shall be 3'0" total width in Yerington or 1'-6" half width.
4. Flow line varies to match gutter - 1½" except Fallon = 1" and Sparks = 2½".
5. Lyon County Engineer may required #4 bars at 12" each direction

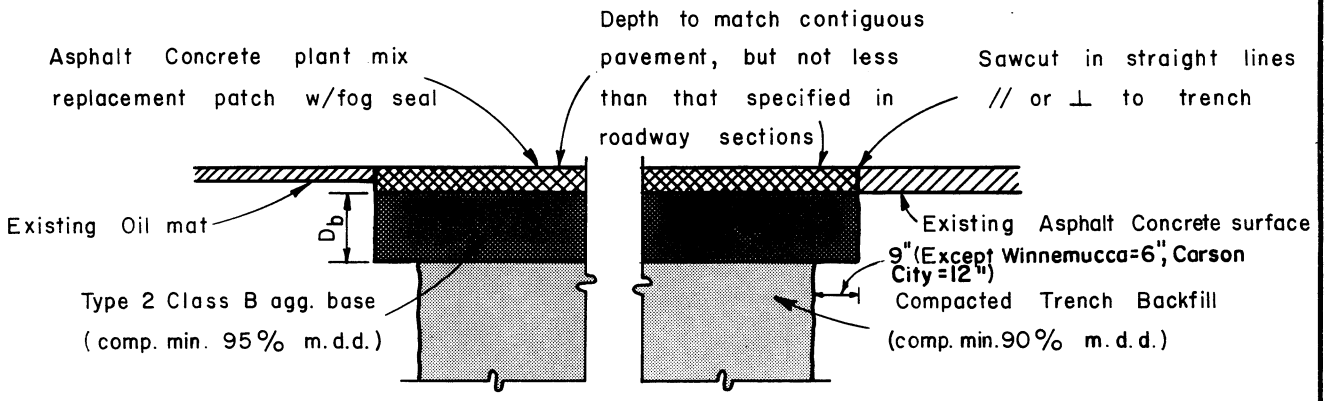
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 1	
			P.C.C. VALLEY GUTTER	DRAWING NO. 1-15 (312)	
				DATE 7-81	PAGE 18

NOTE:

1. If sawcut is within 12" of existing P.C.C. pavement, remove P.C.C. to existing edge and replace entire section.
2. D_b = 8" min. except Washoe Co. = 6" min.



TYPICAL PATCH FOR RIGID PAVEMENT



NOTE:

1. If sawcut is within 24" of edge of A.C. pavement remove existing pavement to that edge and replace entire section.
2. D_b = 8" min. except Washoe Co. = 6" min.

TYPICAL PATCH FOR FLEXIBLE PAVEMENT

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 1	
1	Backfill Dem.	11-83	**PAVEMENT PATCH (PERMANENT)**	DRAWING NO. 1-16 (314, 319)	
				DATE 7-81	PAGE 19

WALL TYPES

I - Toe Support
II - Heel Support
III - Toe & Heel Support
L - Level Backfill
S - Sloping Backfill

DESIGN CONDITIONS

Walls are to be used for the loading conditions shown for each type wall. Design H shall not be exceeded. Footing key is required except as shown otherwise. Special footing design is required where foundation material is incapable of supporting toe pressure listed in tables.

DESIGN DATA

Reinforced Concrete:
Fc = 1200 psi F'c = 3000 psi
Fs = 20,000 psi n = 10

Reinforced Masonry:
F'm = 600 psi Fm = 200 psi
Fs = 20,000 psi n = 50

Earth = 120 pcf and equivalent fluid pressure = 36 psf per foot of height.

Walls shown for 1 1/2:1 unlimited sloping surcharge are designed in accordance with Rankine's formula for unlimited sloping surcharge with $\phi = 33^{\circ}\ 42'$

REINFORCEMENT

Intermediate grade, hard grade, or rail steel deformation shall conform to ASTM A615, A616, A617. Bars shall lap 40 diameters, where spliced, unless otherwise shown on the plans. Bends shall conform to the Manual of Standard Practice, A.C.I. Backing for hooks is four diameters. All bar embedments are clear distances to outside of bar. Spacing for parallel bars is center to center of bars. All reinforcing shall be 3" clear unless otherwise shown.

CONCRETE

All concrete shall be class AA or DA.

MASONRY

All masonry shall conform to the requirements of sub-section 311.13 "Masonry Construction" of the "Standard Specifications for Public Works Construction". All masonry shall conform to the regulations of the U.B.C.

FOOTINGS

Bottom of footings will be placed at least 24" below finished ground surface (12" in Yerington). Changes in footing elevations shall be made in equal increments of masonry block height.

TESTING

Sufficient testing will be conducted to verify design data.

NO.	REVISION	DATE
1	FOOTINGS	2-84

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

MASONRY RETAINING WALL GENERAL NOTES

SECTION 1

DRAWING NO. 1-17.1 (311)

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MASONRY MORTAR

The mortar shall conform to the requirements of sub-section 311.13 "Masonry Construction" of the "Standard Specifications for Public Works Construction". Mortar in horizontal joints shall fully cover all face shell and web members. Vertical joints shall be buttered to a depth greater than the thickness of the face shells of the block. Furrowing of mortar will not be permitted.

GROUT

The grout shall conform to the requirements of sub-section 311.13 "Masonry Construction" of the "Standard Specifications for Public Works Construction." All cells shall be poured solid with grout.

EXCAVATION AND BACKFILL

Compaction of backfill material by jetting or ponding with water will not be permitted. Each layer of backfill shall be moistened to its optimum and thoroughly tamped, rolled or otherwise compacted to at least 90% of its maximum dry density. No backfill material shall be deposited against masonry retaining walls until the grout has developed a strength of 2,000 pounds per square inch in compression as determined by test 2" cubes, or until the masonry retaining wall has cured for a minimum of 14 days.

OPTIONAL MORTAR KEY

Embedment of the first course of block in a poured footing may be omitted by providing a mortar key. The key is formed by embedding a flat 2 x4 flush with the top of the freshly poured footing. Remove the 2 x4 after the concrete has started to harden.

EXPANSION JOINTS

Walls over 50 feet in length shall have expansion joints at 25'± intervals (See Details).

WEEP HOLES

Weep holes shall be installed at 10'o.c. in the first row of blocks above finished ground surface. Back face of wall will be waterproofed.

INTERCEPTOR SWALES

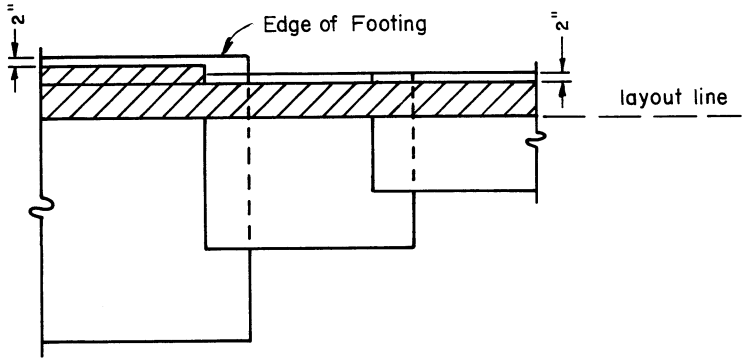
Interceptor swale to be constructed at back of wall when directed by the Agency Engineer.

NO.	REVISION	DATE
1	SWALES	3-83

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

MASONRY RETAINING WALL GENERAL NOTES

SECTION	1
DRAWING NO.	1-17.2 (311)
DATE	7-81
PAGE	21



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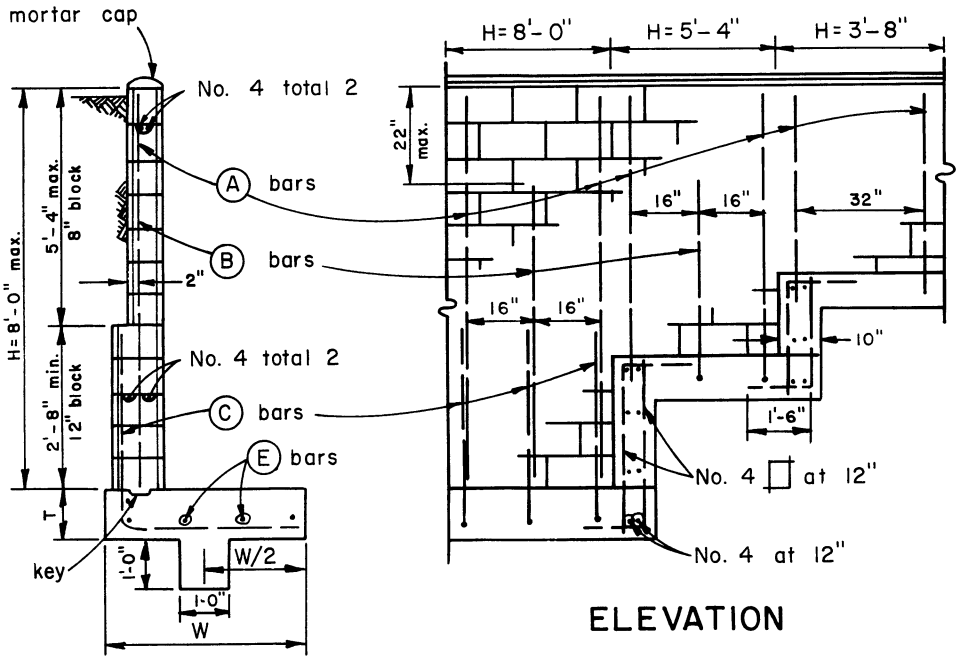
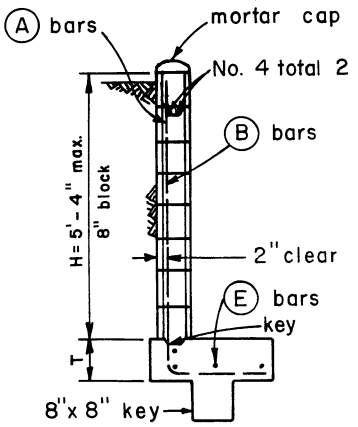


TYPICAL SECTION
over 5'-4"

ELEVATION



TYPICAL SECTION
5'-4" max.

NOTE:

See Masonry Retaining Wall General Notes, Dwg. No. 1-17.1 and 1-17.2, and Details, Dwg. No. 1-19.

DIMENSIONS AND REINFORCING STEEL			
H (max)	3'-8"	5'-4"	8'-0"
T (min)	0'-8"	0'-10"	1'-0"
W (min)	2'-4"	3'-6"	5'-4"
(A) bars	No.4 at 32"	No. 4 at 32"	No. 4 at 32"
(B) bars	——	No.4 at 32"	No. 4 at 32"
(C) bars	——	——	No. 6 at 16"
(E) bars	No. 4 total 4	No. 4 total 5	No. 4 total 6
max soil press. (psf)	500	600	800

NO.	REVISION	DATE

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

MASONRY RETAINING WALL I-L

SECTION 1

DRAWING NO. 1-18.1 (311)

DATE 7-81

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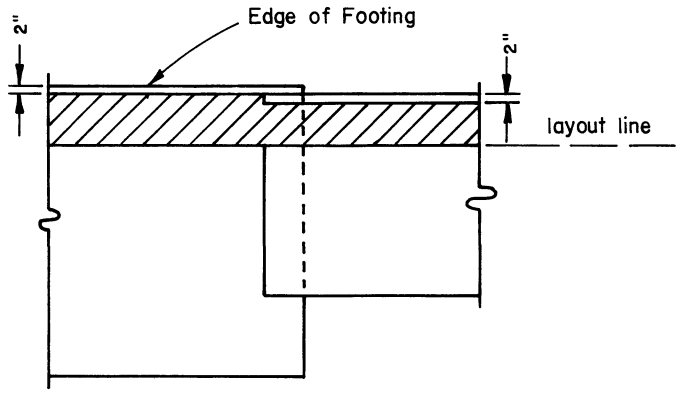
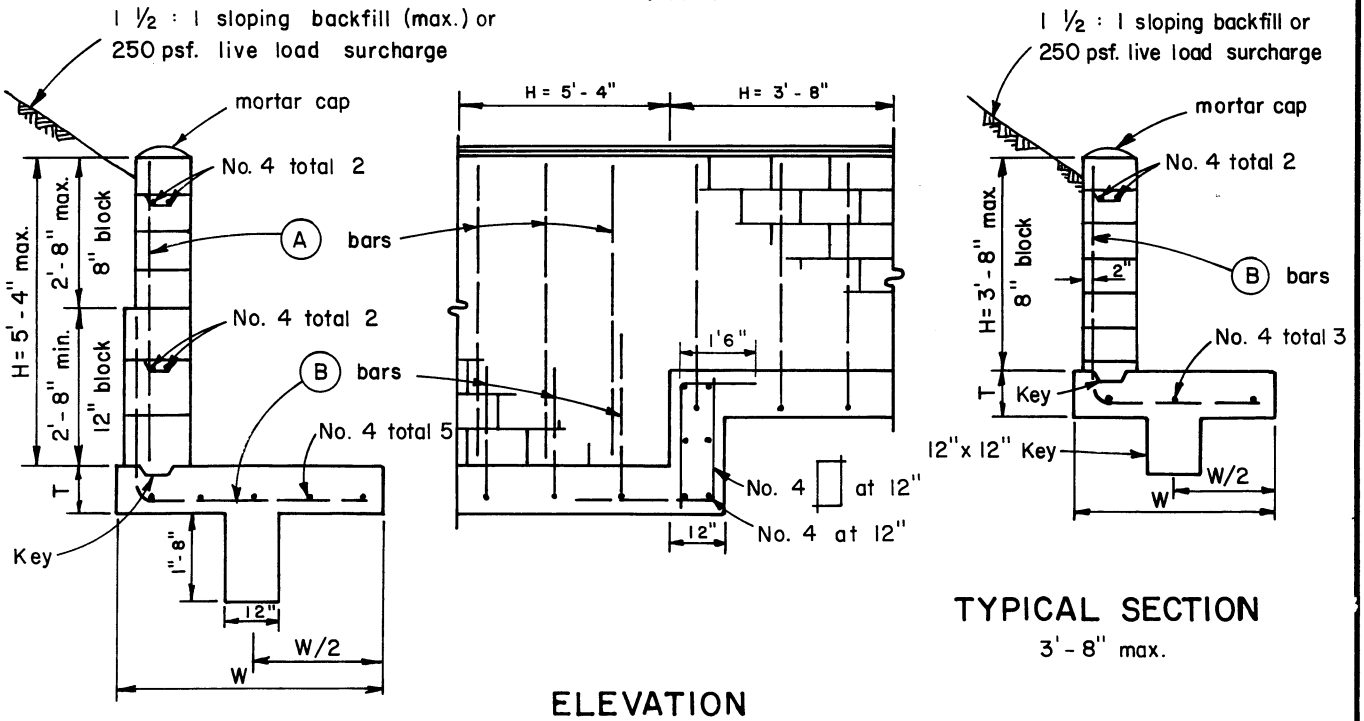


PLAN



ELEVATION

TYPICAL SECTION
3'-8" max.

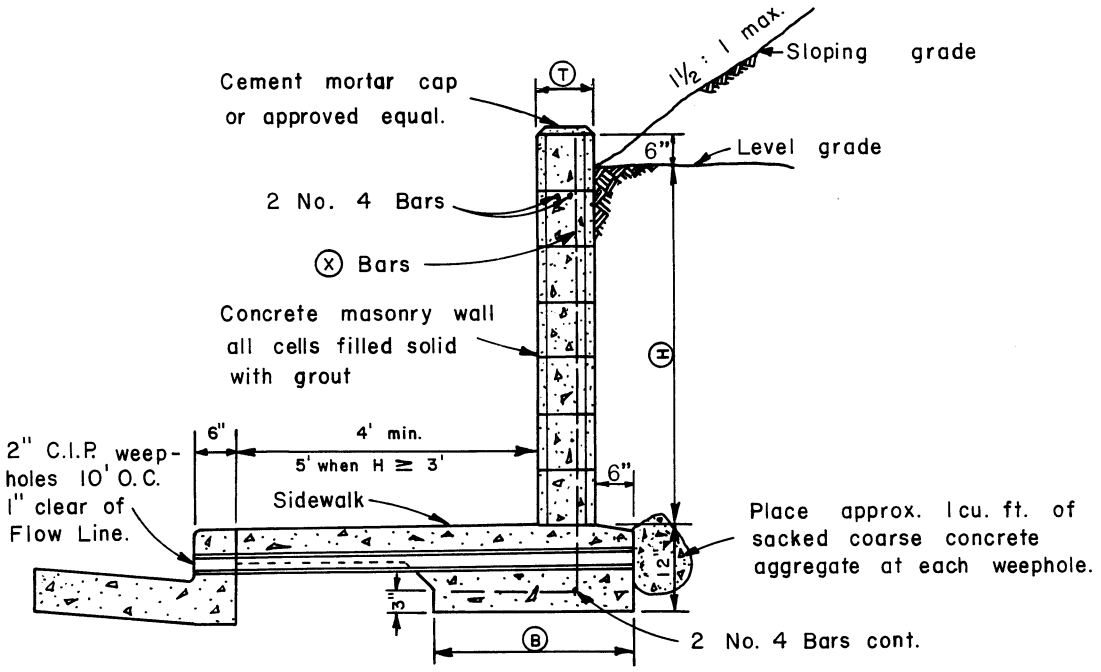
TYPICAL SECTION
over 3'-8"

NOTE:

See Masonry Retaining Wall General Notes., Dwg. No. 1-17.1 and 1-17.2, and Details, Dwg. No. 1-19

DIMENSIONS AND REINFORCING STEEL		
H (max.)	5'-4"	3'-8"
T (min.)	0'-10"	0'-10"
W (min.)	5'-0"	3'-9"
(A) bars	No. 4 at 16"	—
(B) bars	No. 6 at 16"	No. 4 at 16"
max. toe press. (psf)	700	550

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 1	
			MASONRY RETAINING WALL I-S	DRAWING NO. 1-18.2 (311)	
				DATE 7-81	PAGE 23



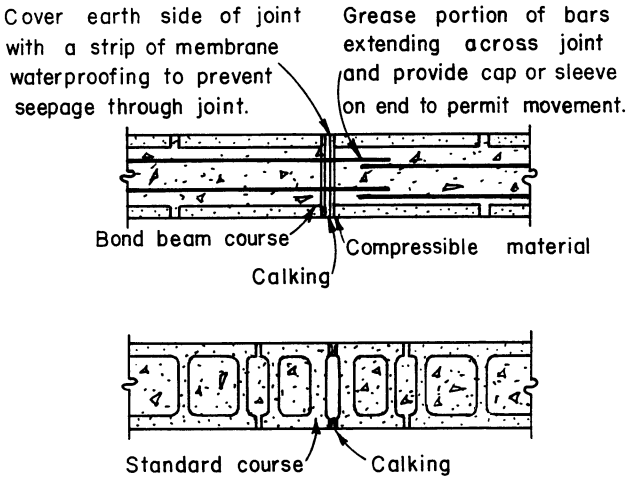
TYPICAL SECTION 5' MAX.

H	T	B	X Bars
1'	7 5/8	1'-2"	No. 4 at 32" O.C.
2'	7 5/8	1'-2"	No. 4 at 32" O.C.
3'	7 5/8	1'-9"	No. 4 at 32" O.C.
4'	7 5/8	2'-2"	No. 4 at 32" O.C.
5'	7 5/8	2'-9"	No. 4 at 24" O.C.

Design for level grade above wall

H	T	B	X Bars
1	7 5/8	1-8	No. 4 at 24 O.C.
2	7 5/8	1-8	No. 4 at 24 O.C.
3	7 5/8	2-3	No. 4 at 24 O.C.
4	7 5/8	3-0	No. 4 at 24 O.C.
5	7 5/8	3-6	No. 5 at 16 O.C.

Design for sloping grade above wall



TYPICAL EXPANSION JOINT DETAIL

NOTES:

1. Not permitted in Douglas County.
2. See Masonry Retaining Wall General Notes, Dwg. No. 1-17.1 and 1-17.2, and Details, Dwg. No. 1-19.

NO.	REVISION	DATE
1	DIMENSIONS	3-83

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

MASONRY RETAINING WALL I-L&S

SECTION 1

DRAWING NO. 1-18.3 (311)

DATE 7-81

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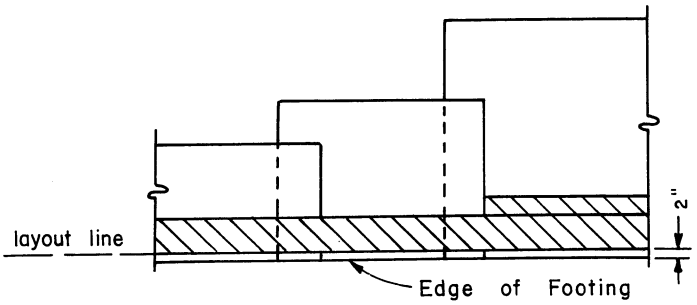

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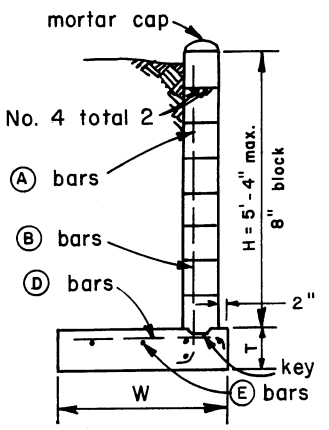
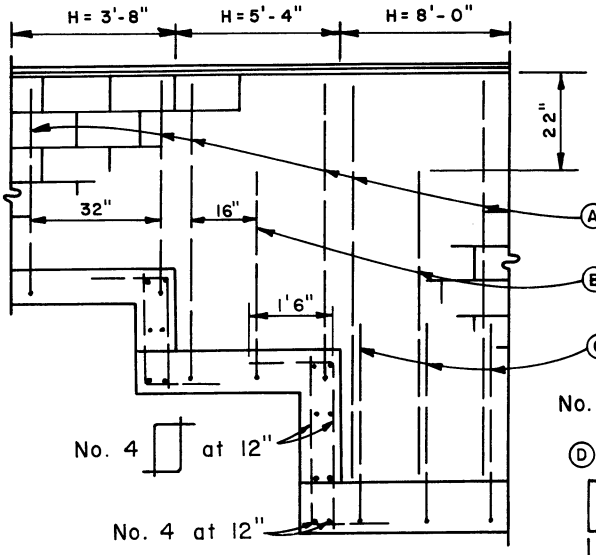


TYPICAL SECTION

5'-4" max.



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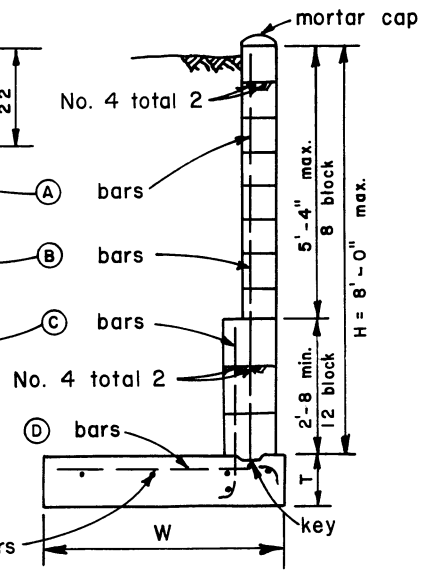

TYPICAL SECTION

over 5'-4"

DIMENSIONS AND REINFORCING STEEL			
H (max.)	3'-8"	5'-4"	8'-0"
T (min.)	0'-8"	0'-10"	1'-0"
W (min.)	2'-4"	3'-2"	4'-9"
Ⓐ bars	No. 4 at 32"	No. 4 at 32"	No. 4 at 32"
Ⓑ bars	—	No. 4 at 32"	No. 4 at 32"
Ⓒ bars	—	—	No. 6 at 16"
Ⓓ bars	No. 4 at 32"	No. 4 at 16"	No. 6 at 16"
Ⓔ bars	No. 4 total 4	No. 4 total 5	No. 4 total 6
max. soil press. (psf)	1100	1600	2200

NOTE:

See Masonry Retaining Wall General Notes, Dwg. No. 1-17.1 and 1-17.2 and Details, Dwg. No. 1-19.

NO.	REVISION	DATE

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

MASONRY RETAINING WALL II-L

SECTION 1

DRAWING NO. 1-18.4 (311)

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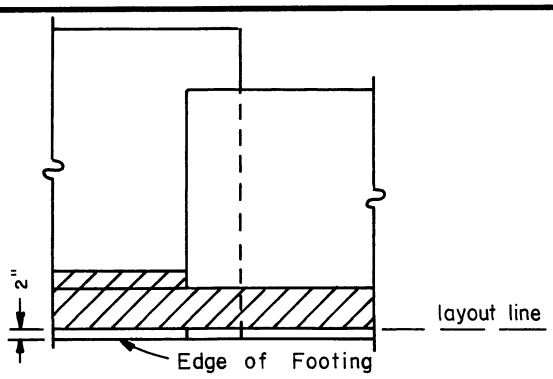

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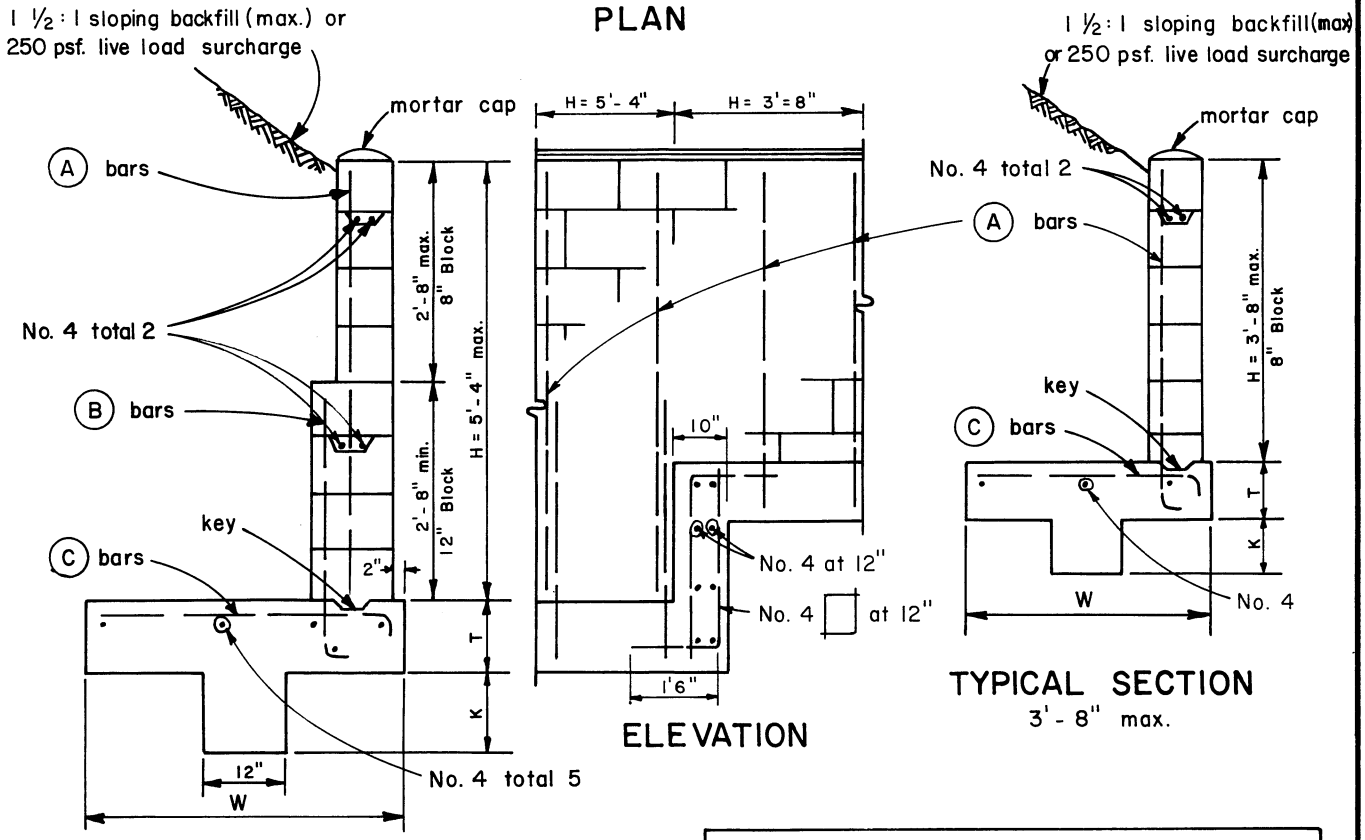

TYPICAL SECTION
over 3'-8"

TYPICAL SECTION
3'-8" max.

NOTE:
See Masonry Retaining Wall General Notes, Dwg. No. 1-17.1 and 1-17.2, and Details, Dwg. No. 1-19.

DIMENSIONS AND REINFORCING STEEL				
H (max)	5'-4"		3'-8"	
T (min.)	0'-10"		0'-8"	
W (min.)	4'-0"		3'-0"	
(A) bars	No. 4 at 16"		No. 4 at 16"	
(B) bars	No. 6 at 16"		———	
Surcharge	sloping	live load	sloping	live load
(C) bars	No. 6 at 8"	No. 6 at 16"	No. 6 at 16"	No. 6 at 16"
K (min.)	1'-0"	0'-8"	1'-0"	0'-8"
Toe press	2700 psf.	1900 psf.	1700 psf.	1430 psf.

NO.	REVISION	DATE

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

MASONRY RETAINING WALL II-S

SECTION 1

DRAWING NO. 1-18.5 (311)

DATE 7-81

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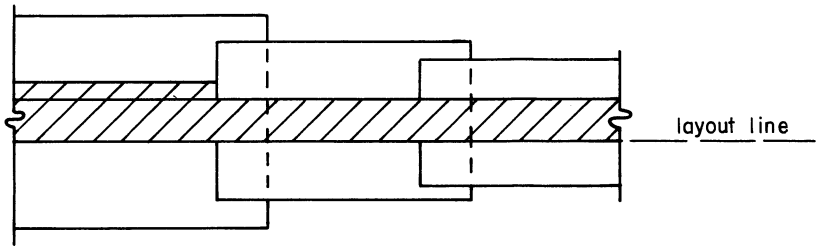

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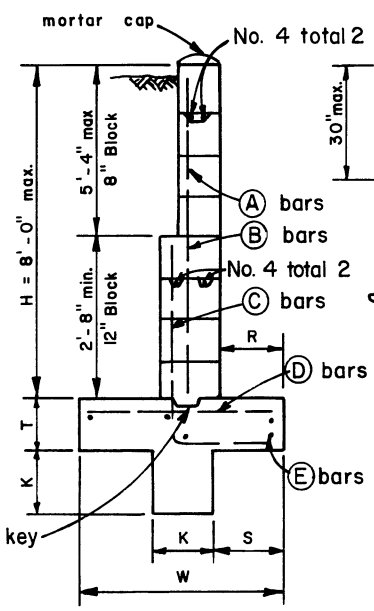
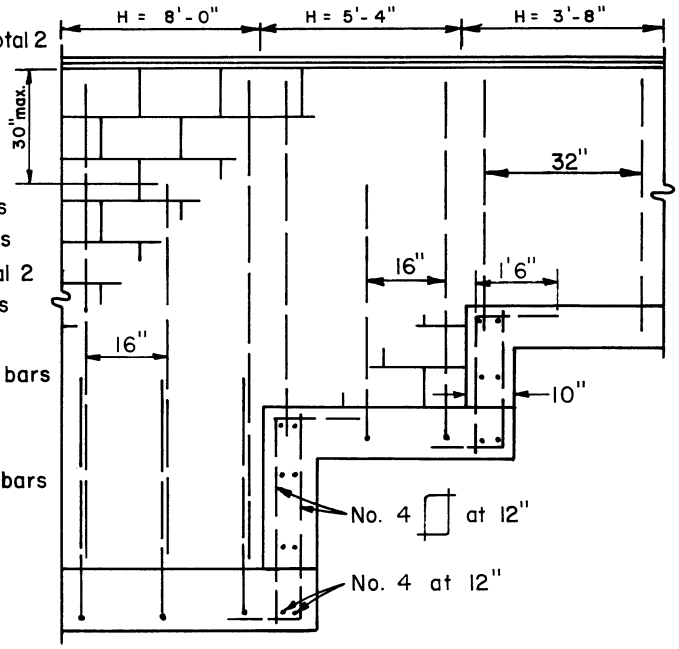
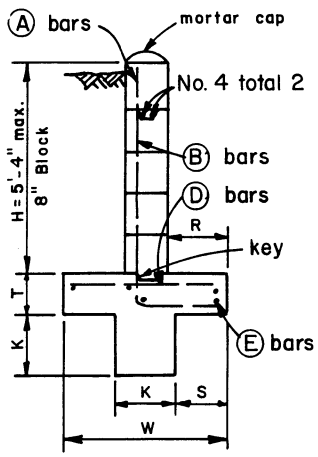


TYPICAL SECTION
over 5'-4"



ELEVATION



TYPICAL SECTION
5'-4" max.

NOTE:
See Masonry Retaining Wall General Notes, Dwg. No. 1-17.1 and 1-17.2 and Details, Dwg. No. 1-19.

DIMENSIONS AND REINFORCING STEEL			
H (max.)	3'-8"	5'-4"	8'-0"
T (min.)	0'-8"	0'-10"	1'-0"
W (min.)	2'-1"	3'-1"	4'-3"
R	0'-9"	1'-2"	1'-5"
S	0'-8½"	1'-½"	1'-7½"
K	0'-8"	0'-8"	0'-12"
Ⓐ bars	No. 4 at 32"	No. 4 at 32"	No. 4 at 32"
Ⓑ bars	——	No. 4 at 32"	No. 4 at 32"
Ⓒ bars	——	——	No. 7 at 16"
Ⓓ bars	No. 4 at 32"	No. 4 at 16"	No. 4 at 16"
Ⓔ bars	No. 4 total 5	No. 4 total 5	No. 4 total 6
max. soil press (psf.)	774	1030	1660

NO.	REVISION	DATE

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

MASONRY RETAINING WALL III-L

SECTION 1

DRAWING NO. 1-18.6 (311)

DATE 7-81

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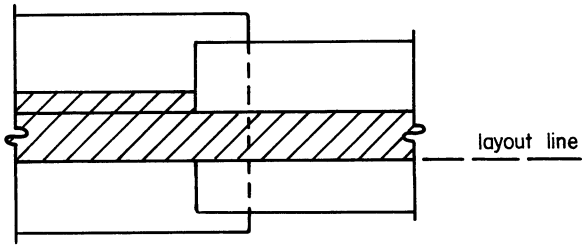
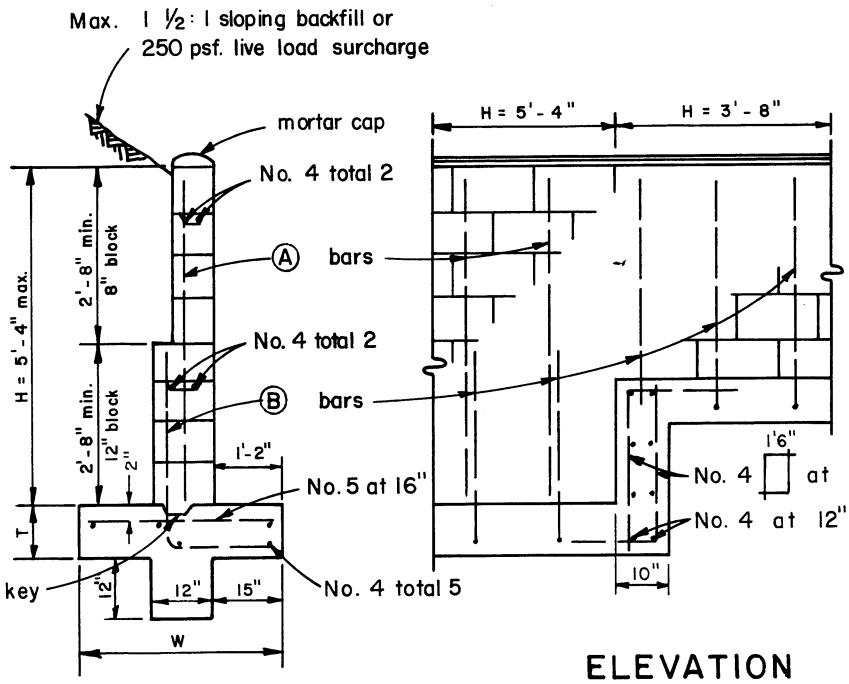
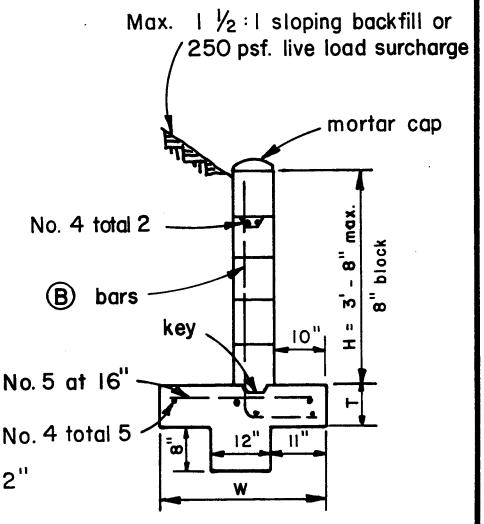


PLAN



TYPICAL SECTION
over 3'-8"

ELEVATION



TYPICAL SECTION
3'-8" max.

NOTE:
See Masonry Retaining Wall General Notes, Dwg. No. 1-17.1 and 1-17.2, and Details, Dwg. No. 1-19.

DIMENSIONS AND REINFORCING STEEL		
H (max.)	5'-4"	3'-8"
T (min.)	0'-10"	0'-8"
W (min.)	3'-10"	2'-9"
Ⓐ bars	No. 4 at 16"	——
Ⓑ bars	No. 6 at 16"	No 4 at 16"
Max. Toe Press. P.S.F.	2000	1400

NO	REVISION	DATE

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

MASONRY RETAINING WALL III-S

SECTION 1

DRAWING NO. 1-18.7 (311)

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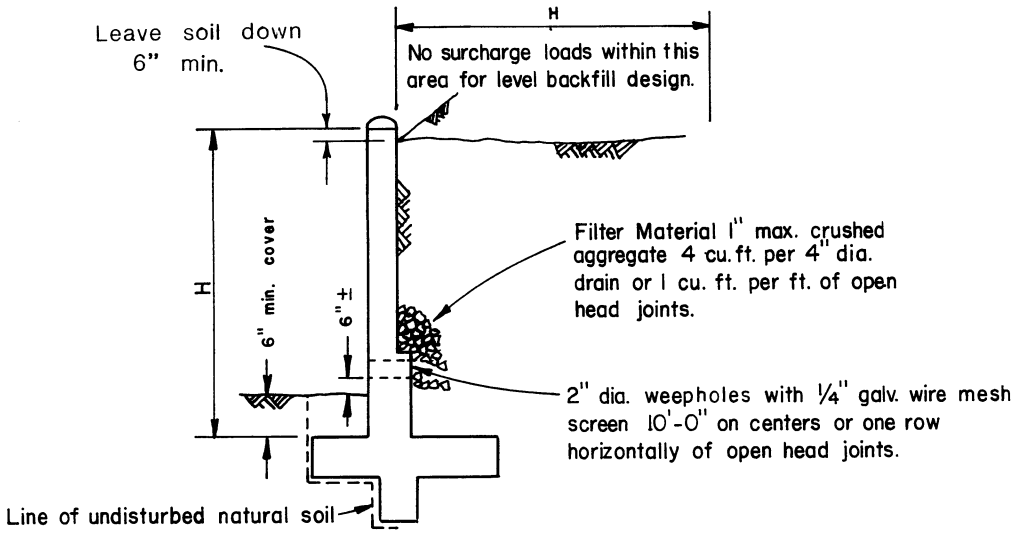
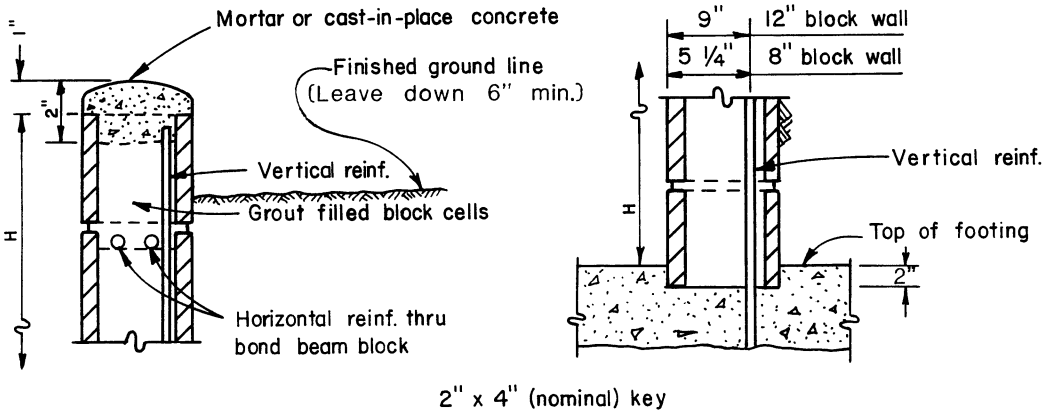


TYPICAL SECTION



CAP DETAIL

KEY DETAIL

NOTE:

All masonry retaining walls shall be constructed with cap, key and drainage details as shown hereon.

NO.	REVISION	DATE
1	GROUND LINE	3-83

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

MASONRY RETAINING WALL DETAILS

SECTION 1

DRAWING NO. 1-19 (311)

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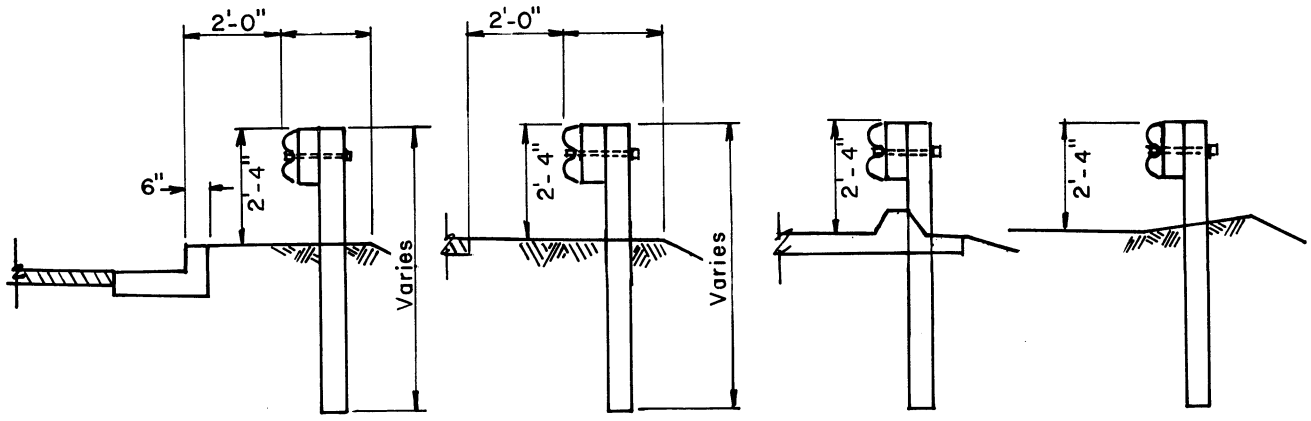
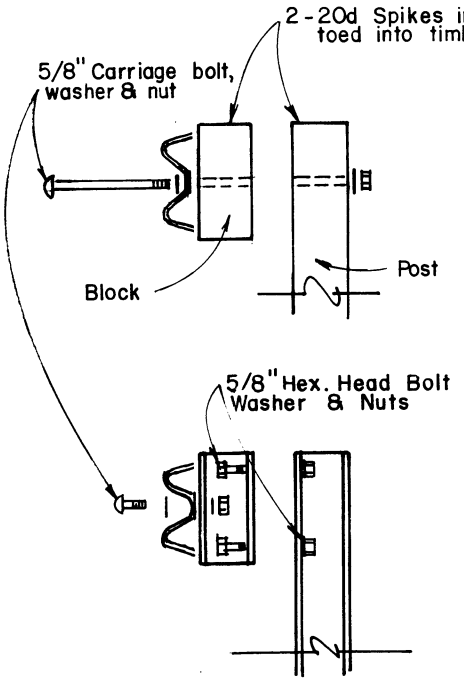
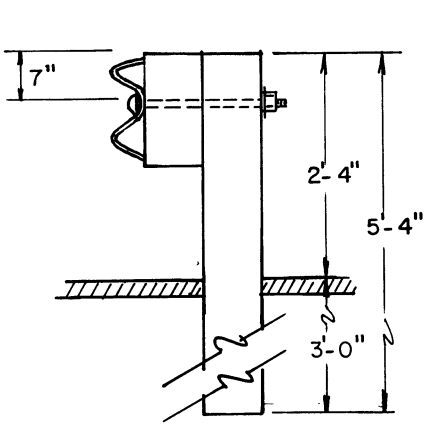
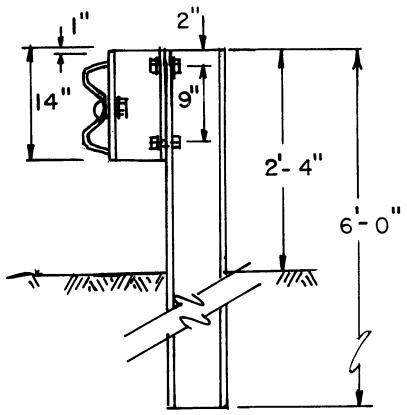


TYPICAL GUARDRAIL INSTALLATIONS





TIMBER POST



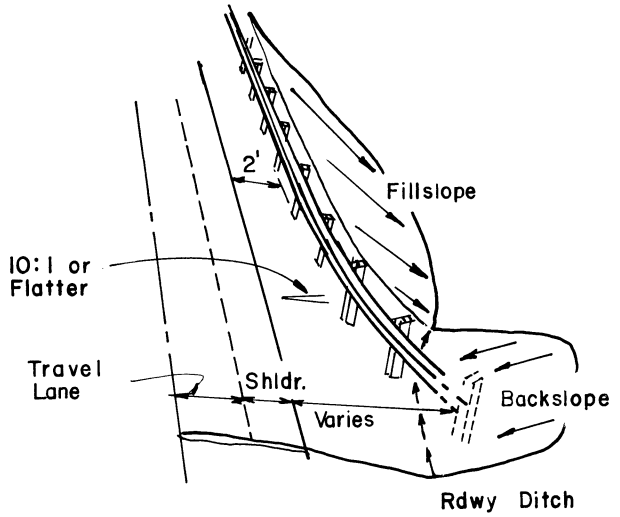
METAL POST

NOTES:

1. All holes 3/4"Ø
2. Rail mounts to block with bolt on approching traffic side of block and post web.
3. Block mounts to post with 2 bolts staggered. Lower bolt on approching traffic side of block and post web.

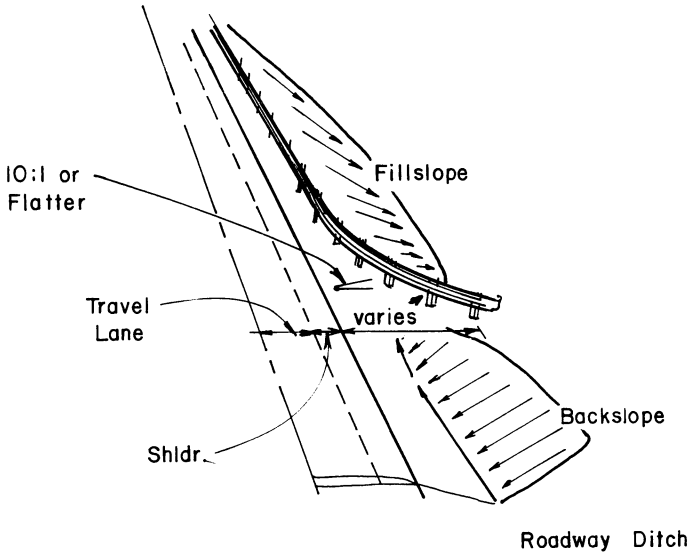
POST MATERIAL	
WOOD (D.F.)	STEEL
Post 10"x 10"x 5'-4" Block 6"x 8"x 1'-2" or Post 6"x 8"x 5'-4" Block 6"x 8"x 1'-2"	W6x15.5x 6'-0" W6x 8.5x 1'-2" or W6x 8.5x 6'-0" W6x 8.5x 1'-2"

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 1
			GUARDRAIL DETAILS	DRAWING NO. 1-20 (329)
				DATE 7-81 / PAGE 30



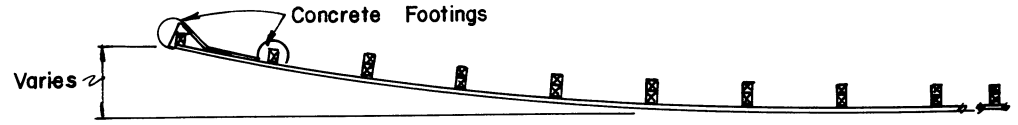
NOTE: Breakaway Cable Terminal shall be eliminated when guardrail is buried in backslope.

APPROACH END BURIED IN BACKSLOPE

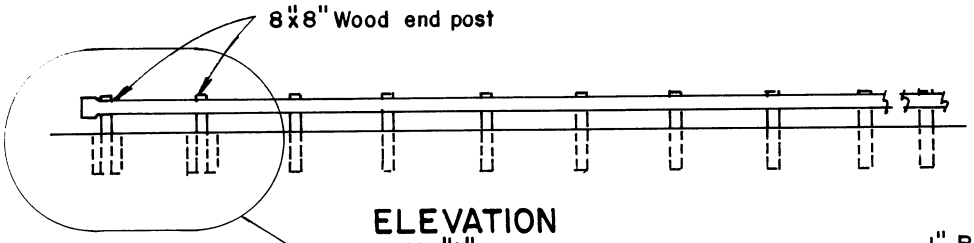


APPROACH END POSITIONED BEHIND BACKSLOPE

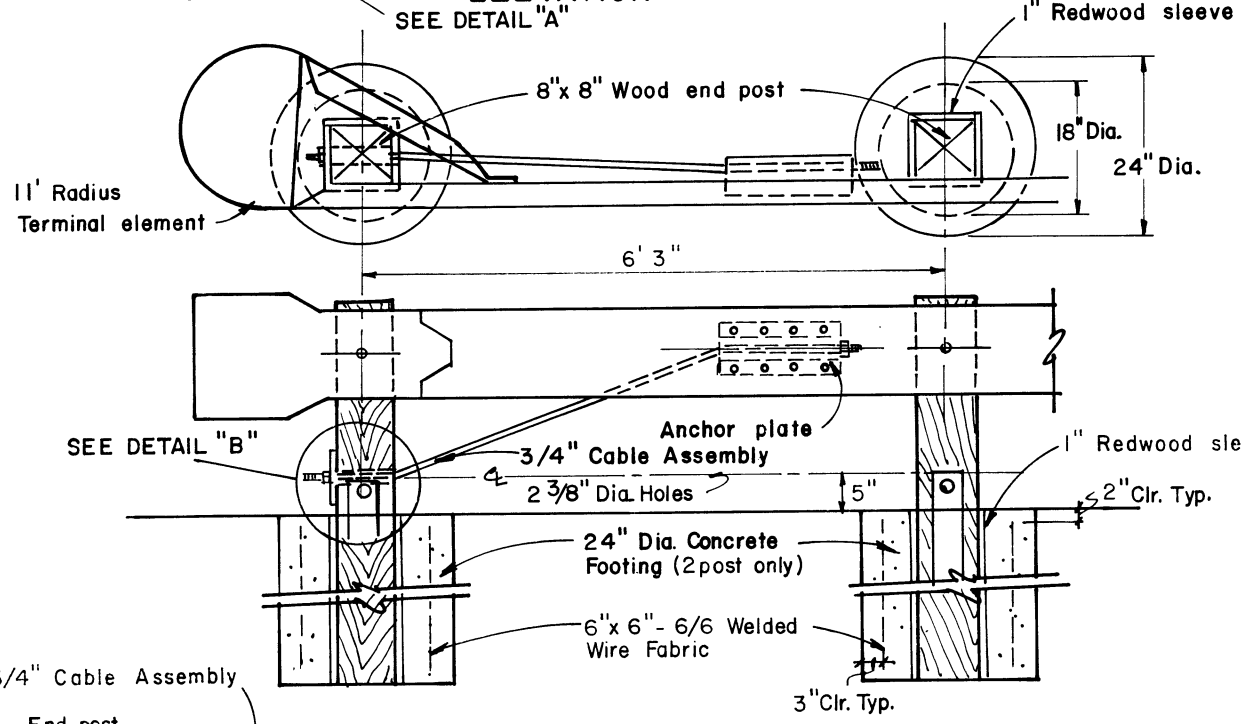
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 1	
			GUARDRAIL FLAIR	DRAWING NO. 1-21 (329)	
				DATE 7-81	PAGE 31

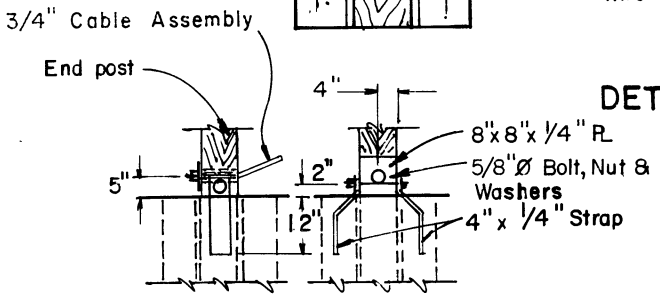


PLAN



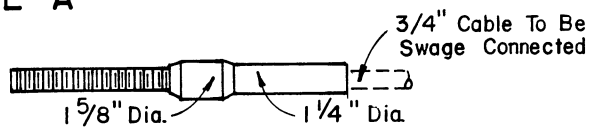
ELEVATION



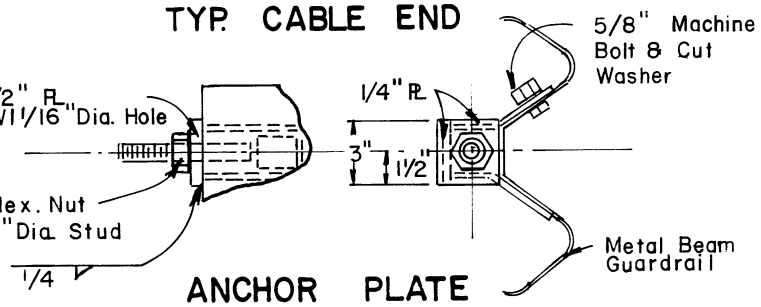


DETAIL "A"

DETAIL "B"



TYP. CABLE END

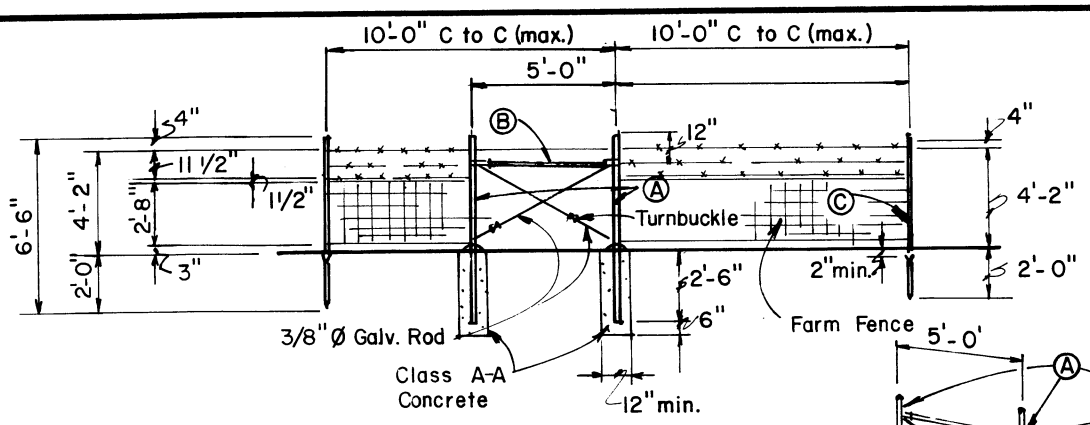


ANCHOR PLATE DETAILS

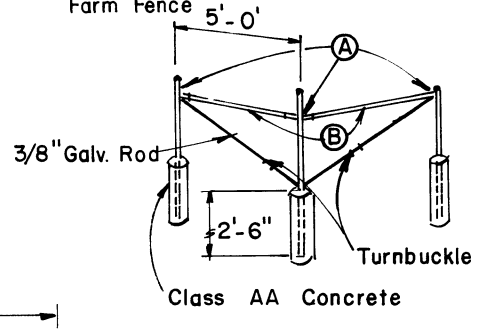
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

GUARDRAIL BREAKAWAY TERMINAL

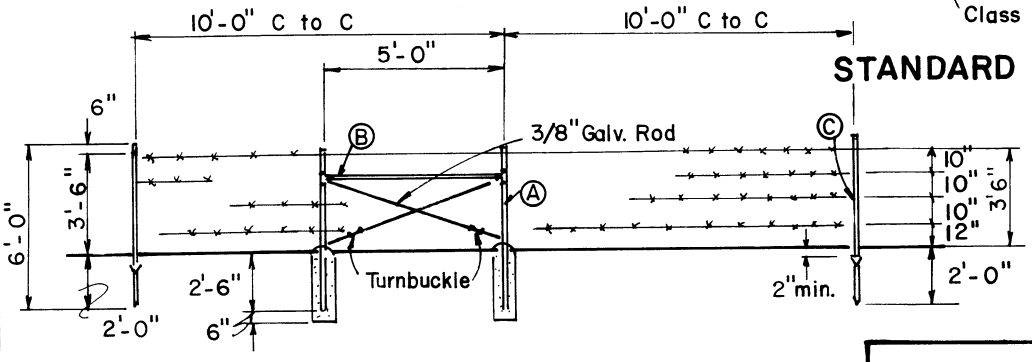
SECTION	1
DRAWING NO.	1-22 (329)
DATE	7-81
PAGE	32



TYPE A

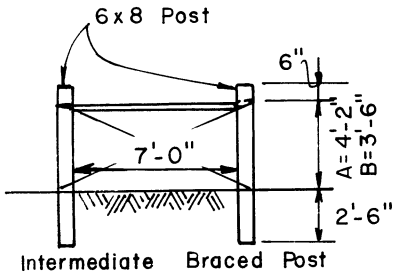


STANDARD CORNER BRACE

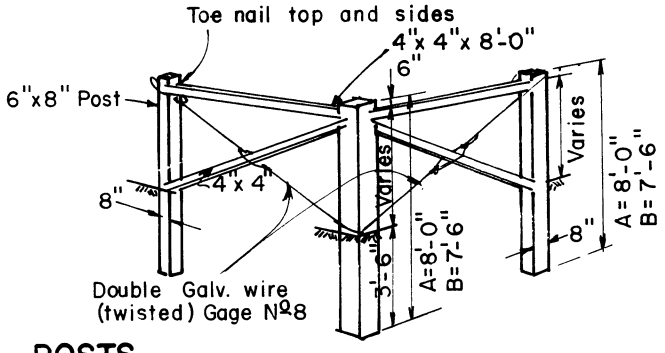


TYPE B

POST MATERIAL	
Ⓐ	2.351"O.D.(3.10 #/ft.) Galv. pipe
Ⓑ	1.630"O.D.(1.93 #/ft.) Galv. pipe
Ⓒ	Drive Steel Line Post (T or H Section)



ALTERNATE CORNER AND BRACED POSTS

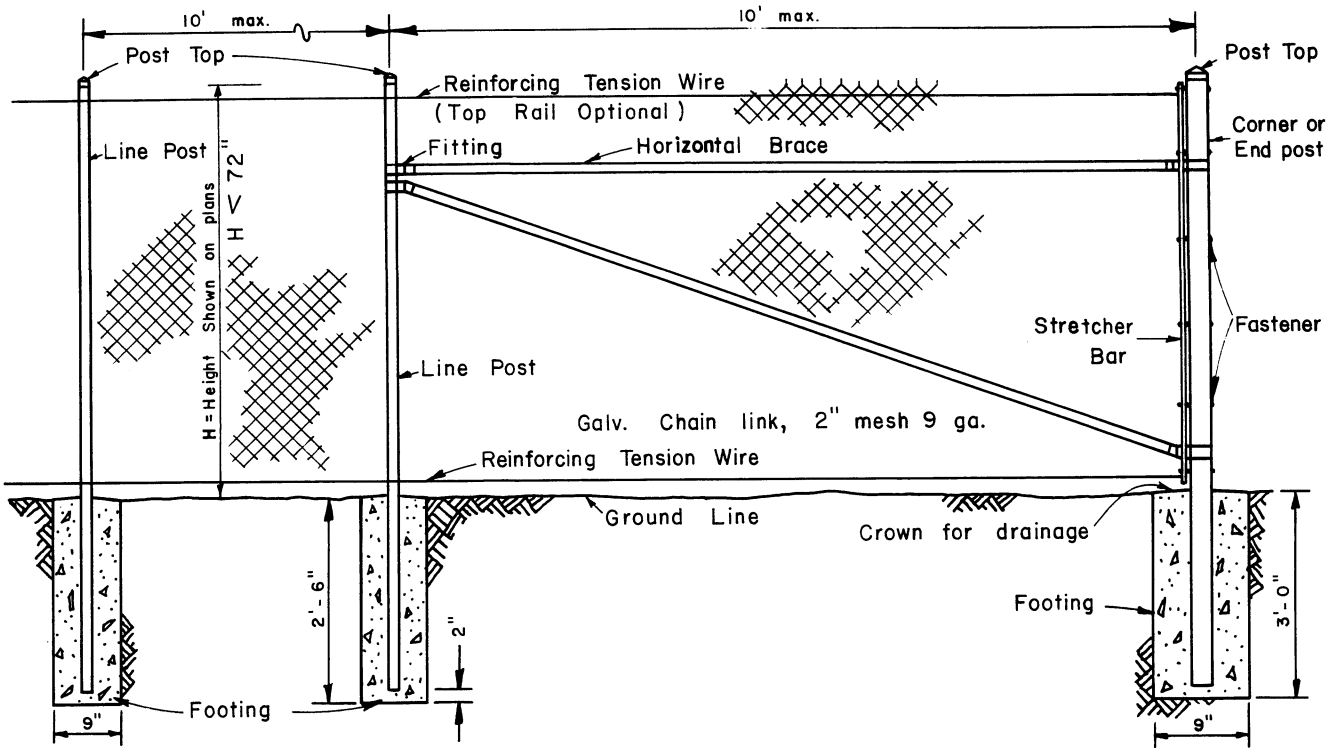


Timber Corner Brace

GENERAL NOTES:

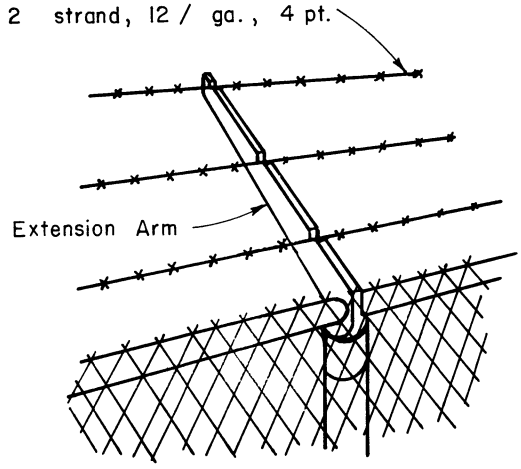
1. Type A Fence will have 3 lines of barb wire equally spaced.
2. All barb wire will be 2 strand, 12½ ga., 4 point.
3. Brace post interval shall not exceed 500 feet.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 1	
			PROPERTY FENCE TYPE "A" & "B"	DRAWING NO. 1-23 (325)	
				DATE 7-81	PAGE 33



NOTES:

1. Fencing shall be chain link and shall consist of galvanized chain link fabric on steel posts.
   (a) All post tops shall be fitted with suitable finials.
   (b) Braces shall be spaced approximately 12" below top of terminal posts and shall extend from end, gate, or corner posts to first adjacent line post.
   (c) All fittings shall be hot dipped galvanized malleable, cast iron, or pressed steel.
   (d) Top and bottom selvages of the fence shall have a twisted and barbed finish.
2. Barbed Wire, Extension Arms, and Top Horizontal Rails shall be installed only when shown on the plans and/or called for in the special provisions.



EXTENSION ARM AND BARBED WIRE

TABLE I

For Chain Link Fence 72" and Less

Location	Min. Size	Min. Weight (#/ft.)
End, corner & pull	2.351 O.D.	3.10
Line	1.869 O.D.	2.72
Braces	1.630 O.D.	2.27
Top Rail	1.630 O.D.	2.27

NO.	REVISION	DATE
1	LINE SIZE	3-83
2	SPELLING	10-16-86

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

CHAIN LINK FENCE

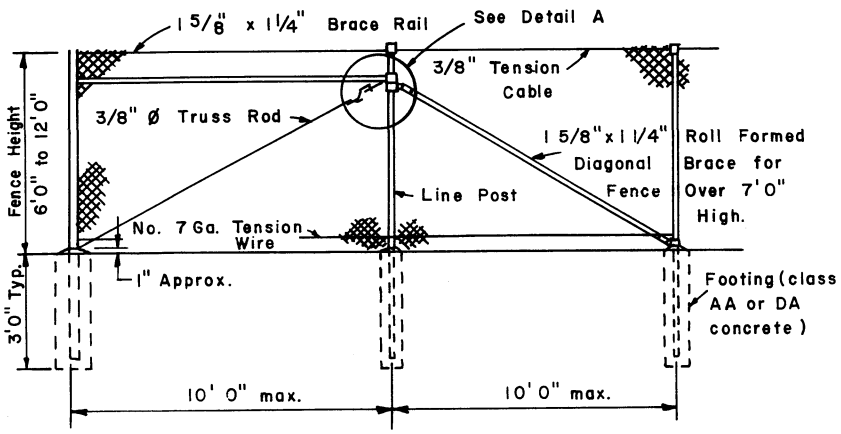
(72" High or Less)

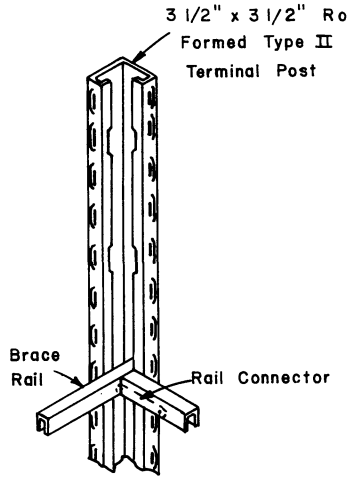
SECTION 1

DRAWING NO. 1-24.1 (325)

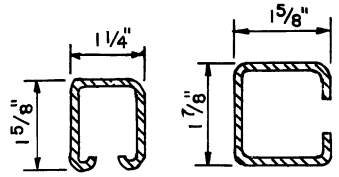
DATE 7-81

PAGE 34

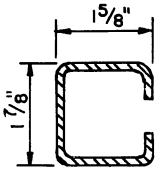




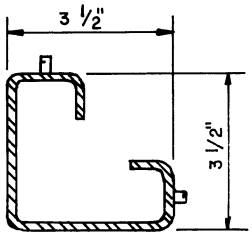
RAIL CONNECTION AT CORNER POSTS



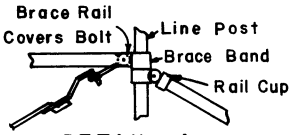
BRACE RAIL



LINE POST



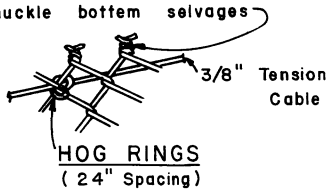
TYPE II TERMINAL POST



DETAIL A

CHAIN LINK FABRIC

No. 9 Ga. - 2" Mesh. Twist top & knuckle bottem selvages



NOTES:

1. Chain Link fencing shall consist of galvanized chain link fabric on steel posts (H - column, Tubular or C - column)
2. (A) Braces shall be spaced approx. 12" below top of terminal posts and shall extend from end, gate or corner posts to first adjacent line post.
   (B) All fittings shall be hot dipped galvanized malleable, cast iron, or pressed steel.
   (C) Fabric shall be fastened to line posts with fabric bands spaced approx. 14" apart, and to top and bottom tension cable with hog rings at 24".
3. Barbed Wire, Extension Arms, and top Horzontal Rails shall be installed only when shown on the plans and/or called for in the special provisions.

NO.	REVISION	DATE
1	SPELLING	10-16-86

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

CHAIN LINK FENCE

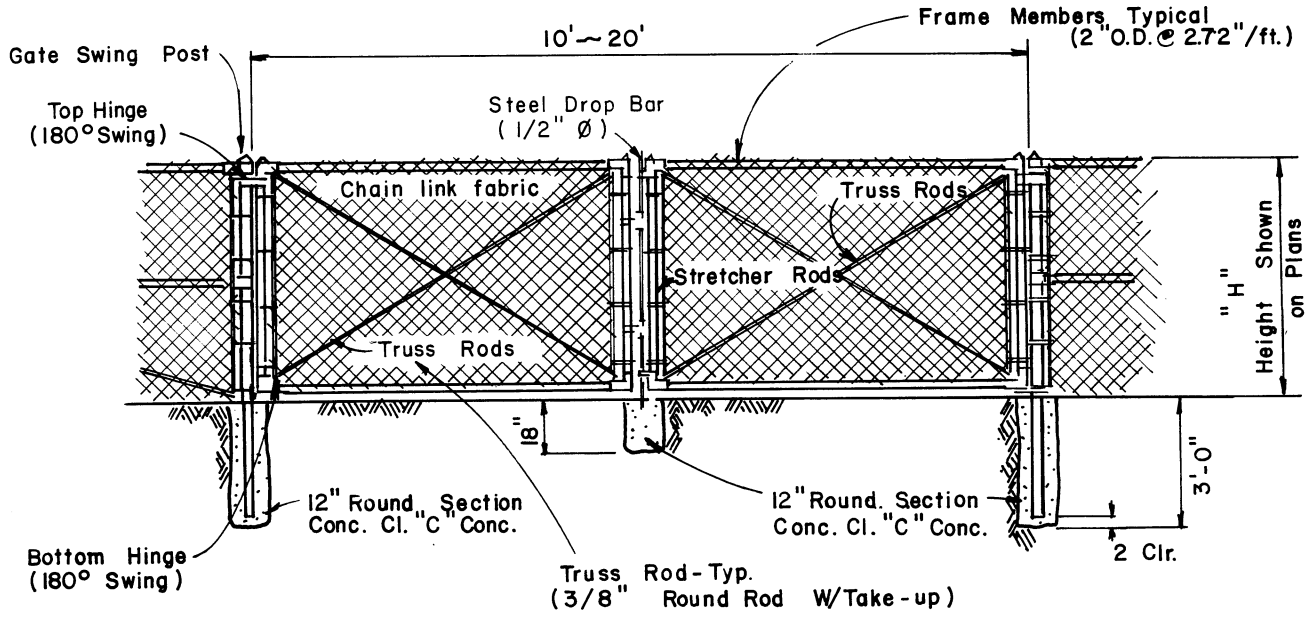
(6' to 12' High)

SECTION 1

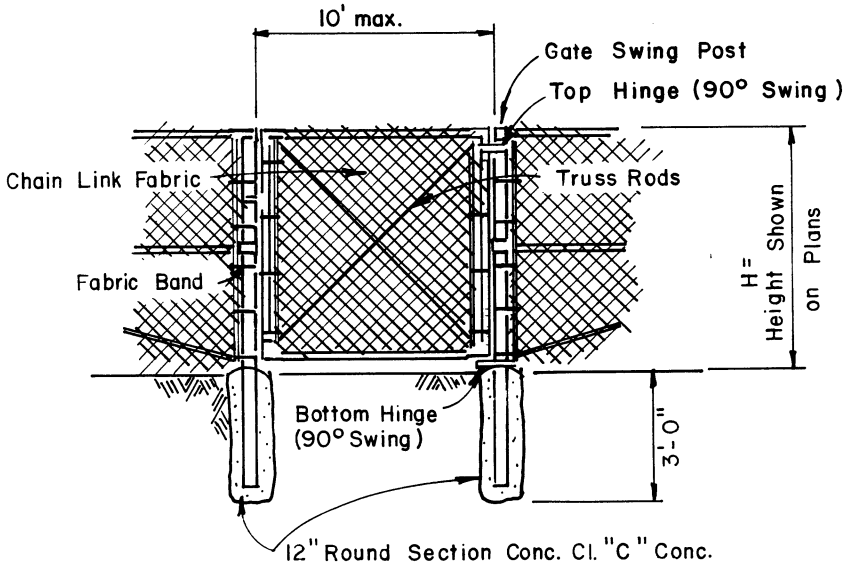
DRAWING NO. 1-24.2 (325)

DATE 7-81

PAGE 35



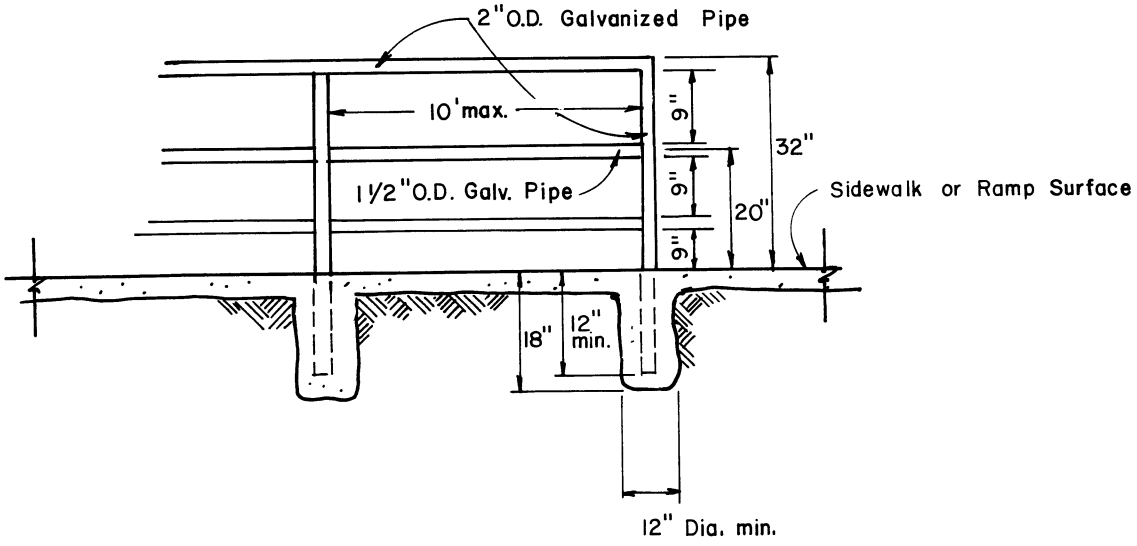
DOUBLE SWING GATE



SINGLE GATE

GATE SWING POST DIA.	
Gate Size	Pipe Dia.
6' and less	3" O.D. ~ 5.79 #/ft.
6' - 10'	4" O.D. ~ 9.10 #/ft.

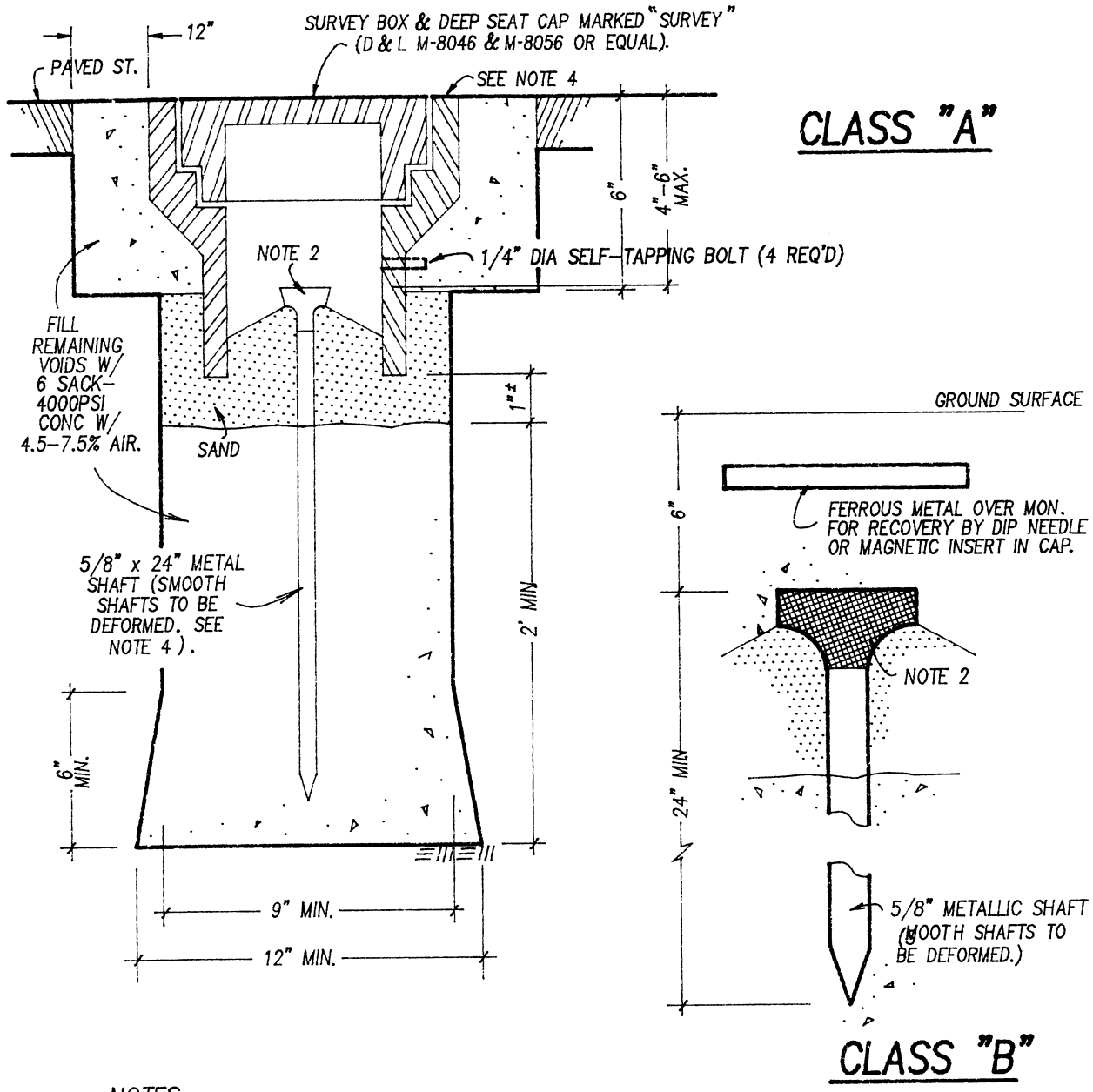
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 1
1	DIMENSIONS	3-83	CHAIN LINK GATES	DRAWING NO. 1-25 (325)
				DATE 7-81 / PAGE 36



NOTES:

1. Handrail may be installed on top of all standard retaining walls when next to walkway.
2. All concrete footings shall be Class AA or DA concrete.
3. All pipe joints shall be welded and ground smooth.
4. Any areas where galvanizing has been removed through abuse, welding or grinding shall be finished with a liquid galvanizing solution.
5. All handrail construction shall conform to the latest edition of the UBC and as approved by the governing authority.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 1	
			PIPE HANDRAIL	DRAWING NO. 1-26 (324)	
				DATE 7-81	PAGE 37



NOTES

1. BRONZE SURVEY MARKER (SERVCO #286 OR EQUAL) MAY BE SUBSTITUTED FOR THE 5/8" SHAFT & CAP – NOT PERMITTED IN CITY OF RENO.
2. 1 1/2" MIN NONFERROUS CAP W/PLS # PERMANENTLY ATTACHED PRIOR TO PLACEMENT.
3. IN CARSON CITY, SUPPORT BOX ON (2) 2x4 REDWOOD BLOCKS & PROVIDE 1" SAND BED.
4. IN WASHOE COUNTY, INSTALL IN ACCORDANCE WITH DWG. W-18.
5. PRE-PUNCHED CAPS SHALL NOT BE PERMITTED.

NO.	REVISION	DATE
1	REDRAW	1/93vp
2	NOTES	1/95vp

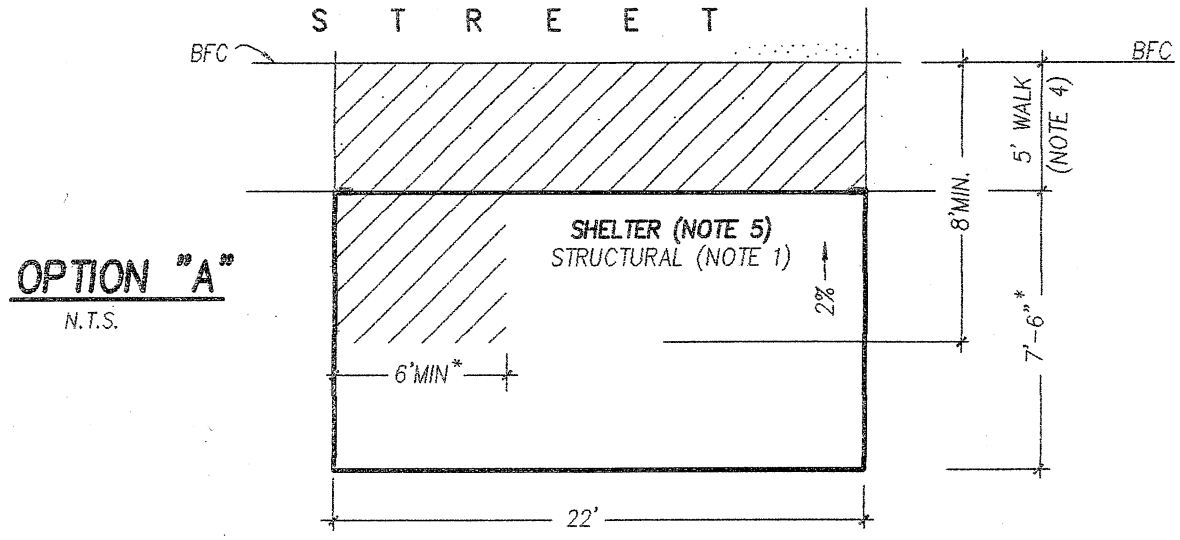
STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

MONUMENTS

SECTIONS 1

DRAWING NO. 1-27 (332)

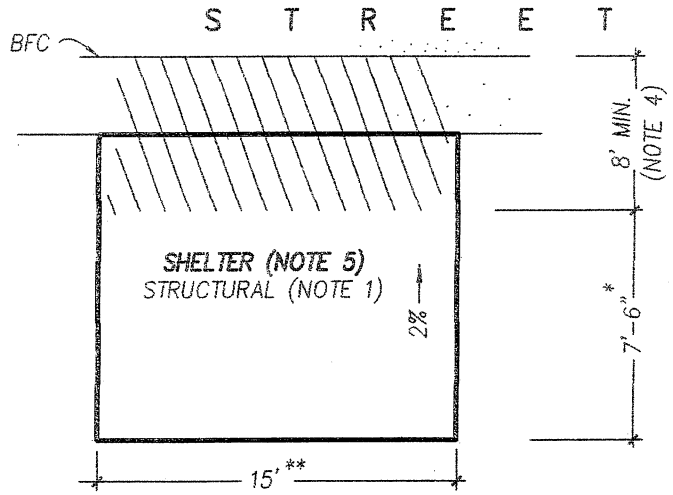
DATE 1/93 vp



OPTION "A"

N.T.S.

= NO OBSTACLES WITHIN AREA (MIN ADA CLEAR ZONE: 5'x8').



OPTION "B"

N.T.S.

* = REDUCE 1' IF BOLLARDS/CURB/RET'G. WALLS ARE NOT REQ'D BY RTC @ REAR OF PAD.
** = REDUCE 1' IF CURB/RET'G. WALL IS NOT REQ'D BY RTC @ ONE SIDE OF PAD.
REDUCE 2' IF CURBS/RET'G. WALLS ARE NOT REQ'D BY RTC @ BOTH SIDES OF PAD.

NOTES

1. 4" PORTLAND CEMENT CONC (PCC) ON 4" TYPE 2 CLASS B BASE OR 6" PCC ON COMPACTED NATIVE SUB-GRADE. PCC SHALL BE 4000psi MIN COMPRESSIVE STRENGTH @ 28 DAYS, 6-8 SACKS OF CEMENT PER CU.YD. W/MAX WATER-CEMENT RATIO OF 0.45, AIR ENTRAINMENT 6%± 1.5%, SLUMP @ 1"-4". ALL MATERIALS SHALL CONFORM TO SSPWC SEC.202. REINFORCING SHALL CONSIST OF COLLATED, FIBRILLATED, POLYPROPYLENE FIBERS AS MFD. BY FIBERMESH OR APPROVED EQUAL. USE 1 1/2 LBS. PER CU.YD. OF CONCRETE.
2. PREPARE SUBGRADE IN ACCORDANCE W/STD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
3. WEATHER PROOFING SILANE SEALER, HAVING A 40% SOLIDS CONCENTRATION, SUCH AS EUCO-GUARD S-40, ENVIROSEAL 40, OR OTHER EQUIVALENT SILANE SEALER APPROVED BY THE RTC SHALL BE APPLIED TO CONCRETE SURFACE PER MANUFACTURER SPECIFICATIONS.
4. IF NO SIDEWALK EXISTS BETWEEN CURB & SHELTER SITE, EXTEND PCC PAD TO BACK FACE OF CURB (BFC).
5. EXACT LOCATION OF CONC PAD & ORIENTATION OF SHELTER TO BE DETERMINED BY R.T.C.
6. OPTION "A" & "B": CURB, RET WALLS OR OTHER PROTECTION ACCEPTABLE TO RTC SHALL BE REQ'D FOR SLOPES LOCATED WITHIN 2' OF PAD.

NO.	REVISION	DATE
1	REDRAW	1/95vp
2	Note 3	4/95vp
3	Notes 1,3 clear zone	7/01vp
4	Opt.A min. add BFC	9/01vp

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

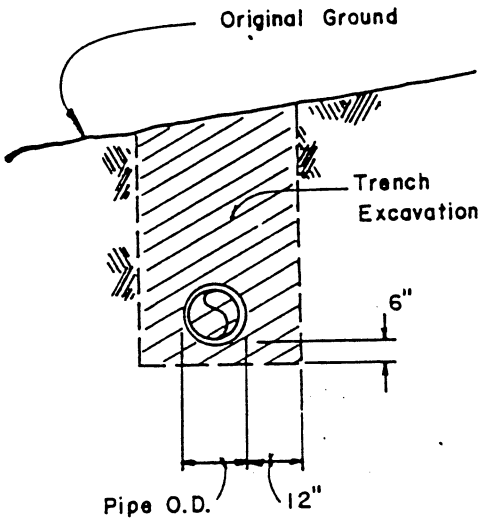
BUS STOP SHELTER PAD

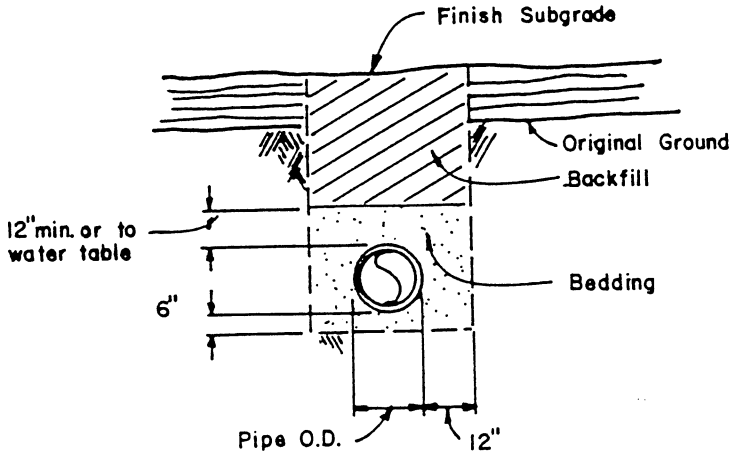
SECTIONS 1

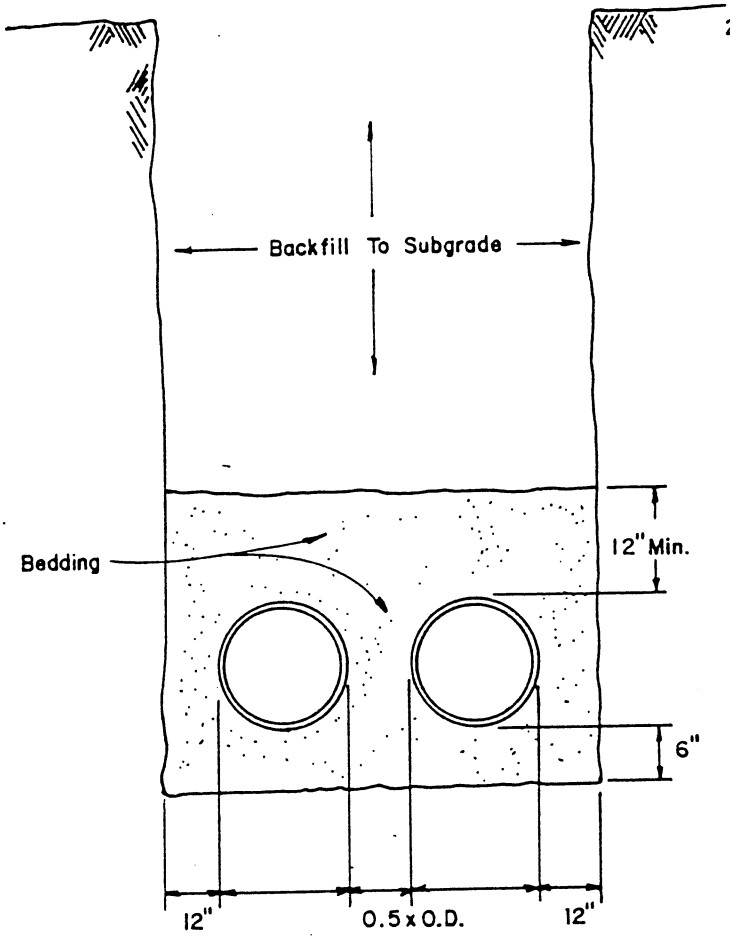
DRAWING NO. 1-28

DATE 1/95vp | PAGE 39

SECTION 2
SEWER/STORM DRAIN







GENERAL NOTES:

1.) Water densified backfill and tunneling shall be by special provision only.

2.) Backfill shall meet the requirements for Class "E" backfill with no rocks over 4" compacted in 6" (max.) lifts to min. 90% of max. dry density.

3.) Bedding Material shall meet requirements for Class "A" Backfill as shown in subsection 200.03.02 of Standard Specifications or as specified by the Agency and shall be compacted to at least 95% of max. dry density.

4.) For trenches in roadway section, see trench patch details See Dwg. No. 1-16

5.) For the purpose of payment, excavation and backfill quantities are based on these standard drawings, and no additional compensation will be made. Shoring or sloped cut slopes may be necessary, but there will be no additional payment. All excavations shall conform to the latest O.S.H.A. - requirements.

6.) Not for use in City of Reno. Refer to Dwg. R-24.

7.) Place metallic location tape 1 ft. above water pipe, Carson City.

NO.	REVISION	DATE
1	Note 6	6-95

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

TRENCH EXCAVATION AND BACKFILL

SECTION 2

DRAWING NO. 2-1 (305)

DATE 7 - 81

PAGE 1

GENERAL NOTES

1. Manhole materials & construction shall conform to the requirements of Sec.204 "Manholes & Catch Basins" of the Standard Specifilcations.

2. Portland Cement Concrete (PCC) shall have the following characteristics: 3000psi min. compressive strength @ 28 days, min. 6 sacks of cement per cu.yd. Slump @ 1–4 inches. All materials shall conform to SSPWC Sec.202. 3000psi conc shall be permitted on manhole bases only.

3. Reinforcing steel shall be as shown, wired tightly at all intersections & embedded at least one inch clear unless otherwise noted.

4. All manholes shall include Pinkerton A–107 frame & cover assembly, or equal, with identification of storm drain or sewer clearly displayed on the cover. City of Reno ONLY – eccentric manholes over 5 feet deep shall have Pinkerton A–463 assembly, or equal. Eureka County ONLY – sanitary sewer manhole frame & cover assembly shall be COMCO 1035 or approved equal. City of Elko ONLY – D&L A–1181 or approved equal.

5. Excavation & backfill shall be as specified for "Trench Excavation & Backfill" in Sec.305.00 of the Standard Specifications.

6. Excavation shall be as nearly vertical as possible, (sheet & shore if soil conditions require), in existing street sections, alley sections & confined areas such as limited easements, or adjacent to structures. Natural angle of repose will be allowed in all other areas. City of Elko – NOSHA stds. min.

7. City of Reno & Washoe Co. ONLY – Steps ("MA" Manhole step by MA Industries or equivalent) will be required in all manholes 5 feet or more in depth.

8. City of Carson ONLY – Manhole cover will have no "thru" holes in it. "Blind" pick holes will be required (South Bay Foundry A45 or approved equal).

9. Precast manhole sections, other than grade rings, shall be joined with flexible plastic gasket material such as "Ram–Nek" or equal as per manufacturer's recommendations.

10. Manhole design for pipe larger than 60" shall be submitted to the governing agency for approval.

NO.	REVISION	DATE
1	Redraw	5/95vp

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

MANHOLES GENERAL NOTES

SECTIONS 2

DRAWING NO. 2–2.1 (306)

DATE 5/95vp | PAGE 2

GENERAL NOTES

11. Manhole design for depths exceeding 18 feet shall be submitted to the governing agency for approval.

12. Lander County – Manhole exterior shall be sealed with one coat of asphaltic tar.

13. Type & size of manhole to be constructed in a particular location shall be determined by the pipe size, alignment & grade as follows:

TYPE I

48" size

a. All cases for pipe 18" and smaller
b. 24" and smaller pipe on tangent line and grade

60" size

a. 27" through 36" pipe on tangent line and grade
b. 21" through 27" pipe at angle points and changes in grade or pipe size

TYPE I–A

Used in place of Type I as authorized by the governing agency.

TYPE I–B

Used in place of Type I only as authorized by the agency when cover above conduit is limited.

TYPE II

48" size

30" through 60" pipe on tangent line with a change in grade or pipe size.

TYPE III

Used in place of Type I when 2' or more drop is desired in sewer main.

TYPE IV (for City of Reno – MH cover to be 36" dia.)

Tangent

60" size

a. 39" through 60" pipe on tangent line & grade with no change in pipe size.
b. In Washoe Co. 36" dia. manhole cover required for all Type IV manholes.

Angle Point

60" size

30" through 60" pipe at angle point in line

14. Manhole min. wall thickness shall be 5" when steps are required. Within City of Reno min. wall thickness shall be in accordance with ASTM C–478.

NO.	REVISION	DATE
1	Redraw	5/95vp

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

MANHOLES GENERAL NOTES

SECTIONS 2

DRAWING NO. 2–2.2 (306)

DATE 5/95vp | PAGE 3

GENERAL NOTES

15. Reno – a. Manhole Type V for pipe 18' or greater in depth.
b. See Std. Det. 2–7 for concrete collar

16. City of Reno – an agency approved form of seal or water stop is required on all sanitary sewer installations & in other applications as required by the City to provide a watertight connection.

17. City of Reno – a flexible joint shall be installed within 1' (min.), 3' (max.) of the manhole on all sanitary sewer installations.

18. City of Reno – a resilient flexible connector installed in accordance with Std. Dwg. R–14A (311) may be used to satisfy the requirements

NO.	REVISION	DATE
1	Redraw	5/95vp

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

MANHOLES GENERAL NOTES

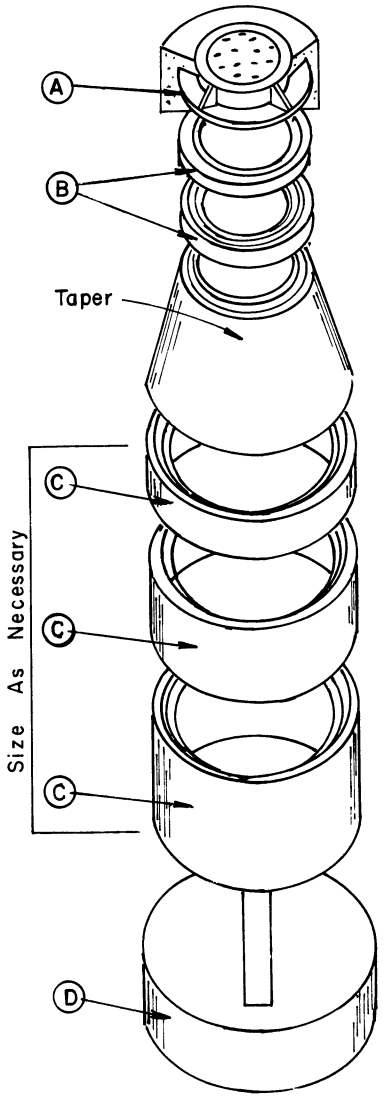
SECTIONS 2

DRAWING NO. 2-2.3 (306)

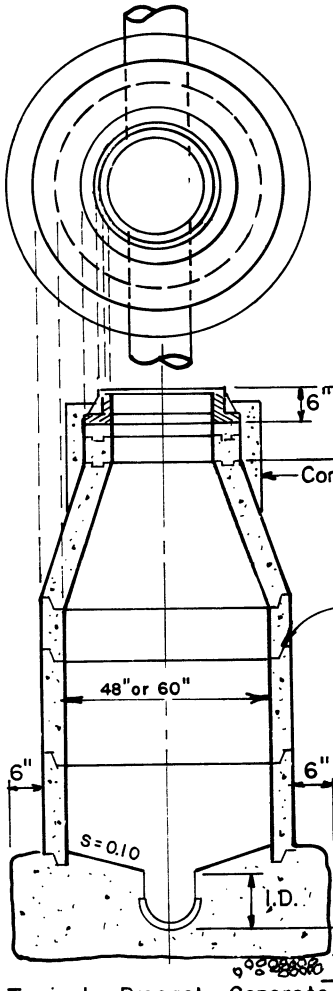
DATE 5/95vp | PAGE 3-A

Precast Manhole Components shall conform to ASTM C-478

SYM.	ITEM
A	Ring & Cover
B	Grade Adjusting Ring
C	Precast manhole section
D	Base

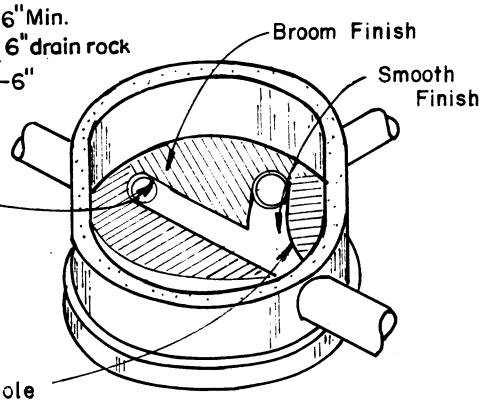


EXPLODED VIEW



Typical Precast Concrete Manhole with Concentric Taper

TAPER HEIGHT	
Dia.	h
48"	24" min.
60"	48" min.



Pipes shall not protrude more than 3" inside of Manhole Section. Construct Water tight connection to Manhole

Form smooth curve in manhole base for intersecting sewer

ISOMETRIC VIEW

NOTES:

1.) Manhole section lengths arranged to fit depth

2.) Precast base may be used if approved by Governing Agency

NO.	REVISION	DATE
1	SEE NOTE	3-83
2	ITEM C, D	8-85
3	Collar, dr. rock	5-95vp

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

MANHOLE TYPE I

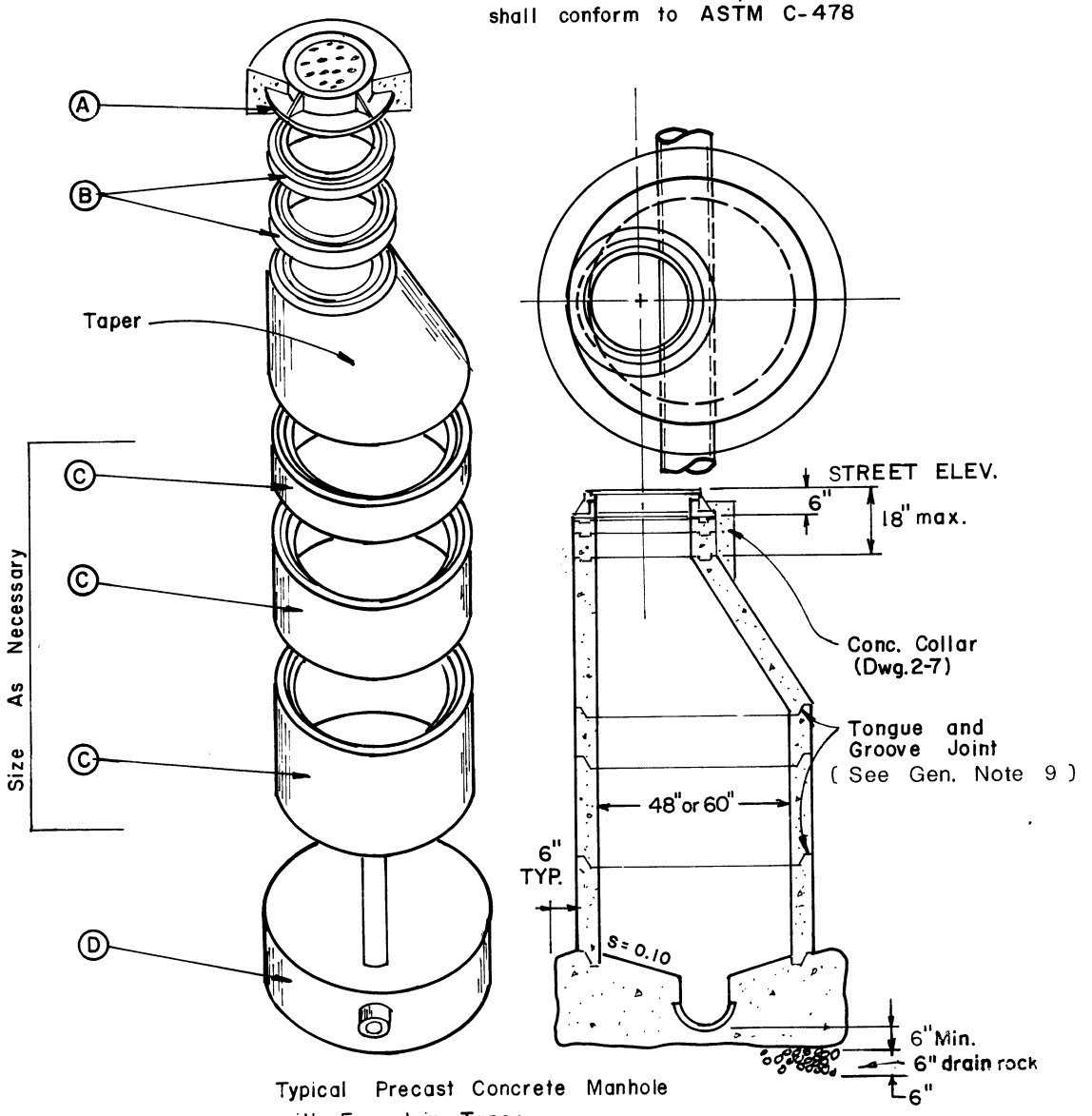
SECTION 2

DRAWING NO. 2 - 3.1 (306)

DATE 7 - 81

PAGE 4

Precast Manhole Components shall conform to ASTM C-478



Typical Precast Concrete Manhole with Eccentric Taper

EXPLODED VIEW

SYM.	ITEM
A	Ring & Cover
B	Grade Adjusting Ring
C	Precast manhole section
D	Base

NOTES:

1. Manhole section lengths arranged to fit depth.
2. Precast base may be used if approved by Governing Agency.
3. Lander Co. Only - Manholes constructed in non-paved area shall have min. wall thickness of 5" on cone and barrel sections

NO.	REVISION	DATE
1	NOTE 3	3-83
2	ITEM C,D	8-85
3	Collar, dr. rock	5-95 vp

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

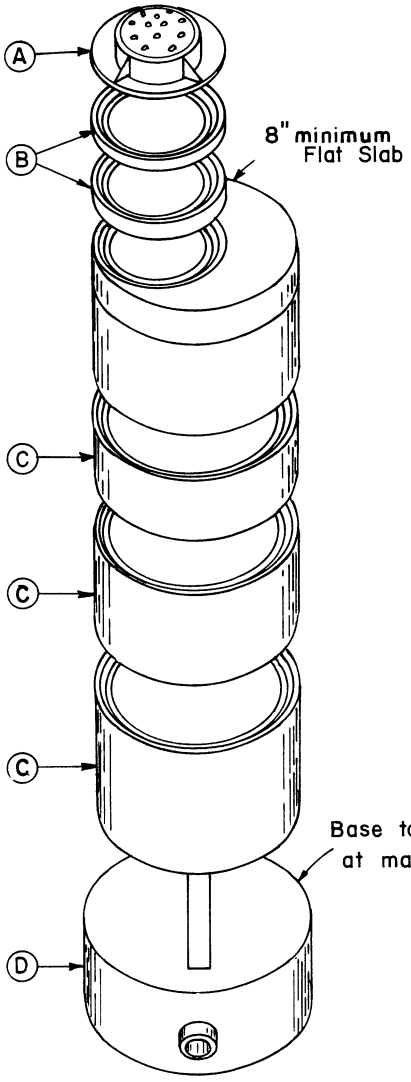
MANHOLE TYPE I-A

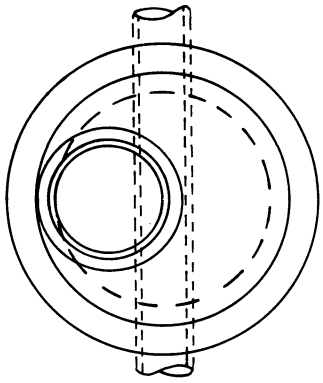
SECTION 2

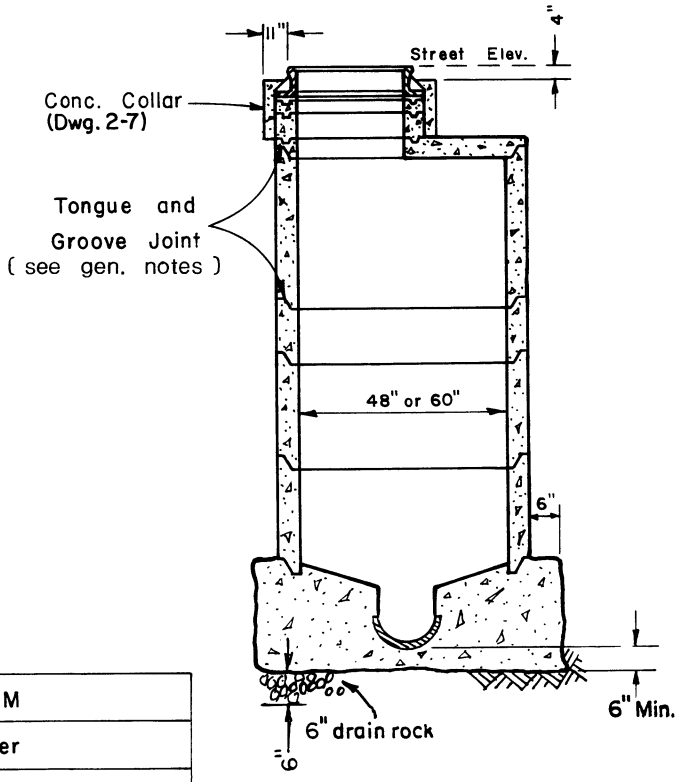
DRAWING NO. 2 - 3.2 (306)

DATE 7 - 81

PAGE 5







SYM.	ITEM
A	Ring & Cover
B	Grade Adjusting Ring
C	Precast manhole section
D	Base

NOTES:

1. Manhole section lengths arranged to fit depth.
2. Precast base may be used if approved by Governing Agency.
3. Lander Co. Only - Manholes constructed in non-paved areas shall have min. wall thickness of 5" on cone and barrel sections.

NO.	REVISION	DATE
1	NOTE 3	3-83
2	ITEM C, D	8-85
3	Collar, dr.rock	5-95vp

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

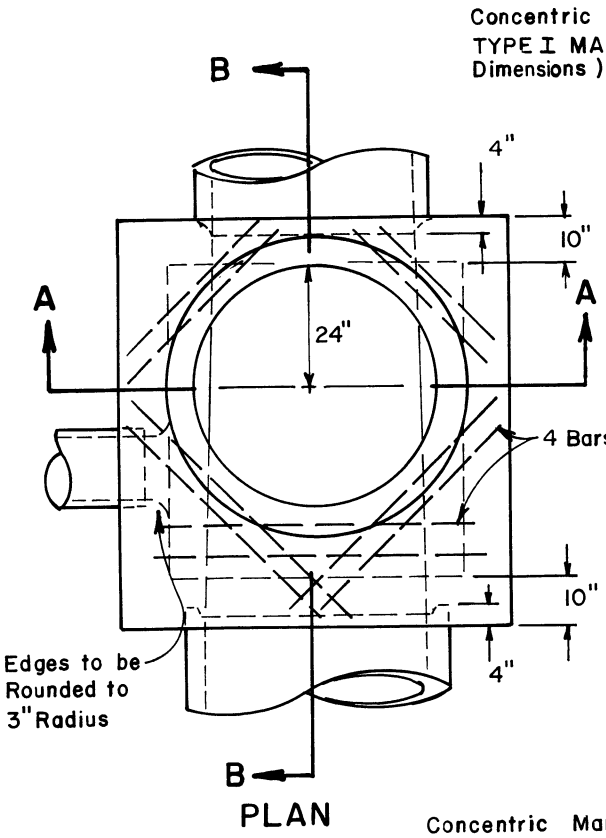
MANHOLE TYPE I-B

SECTION 2

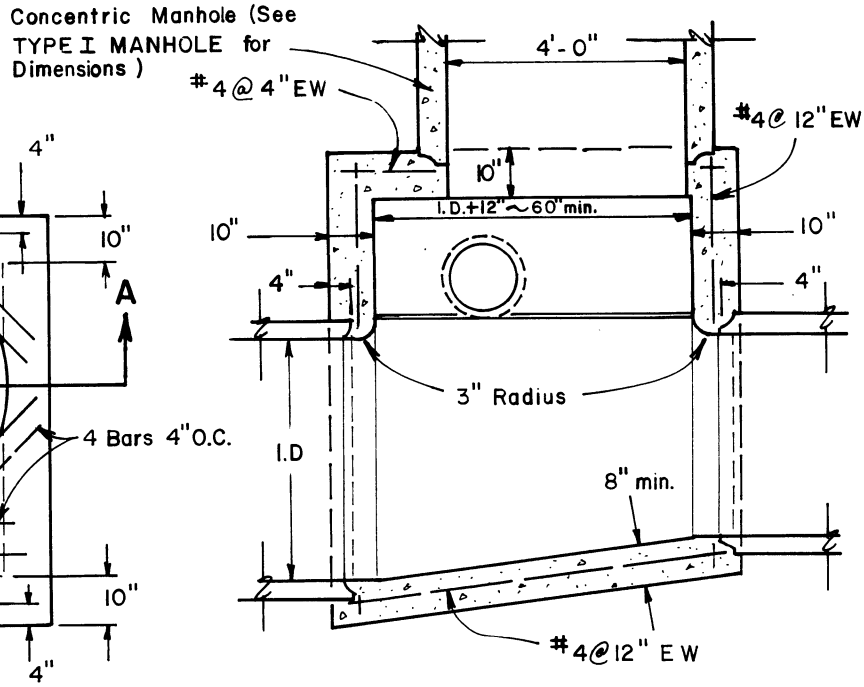
DRAWING NO. 2 - 3.3 (306)

DATE 7 - 81

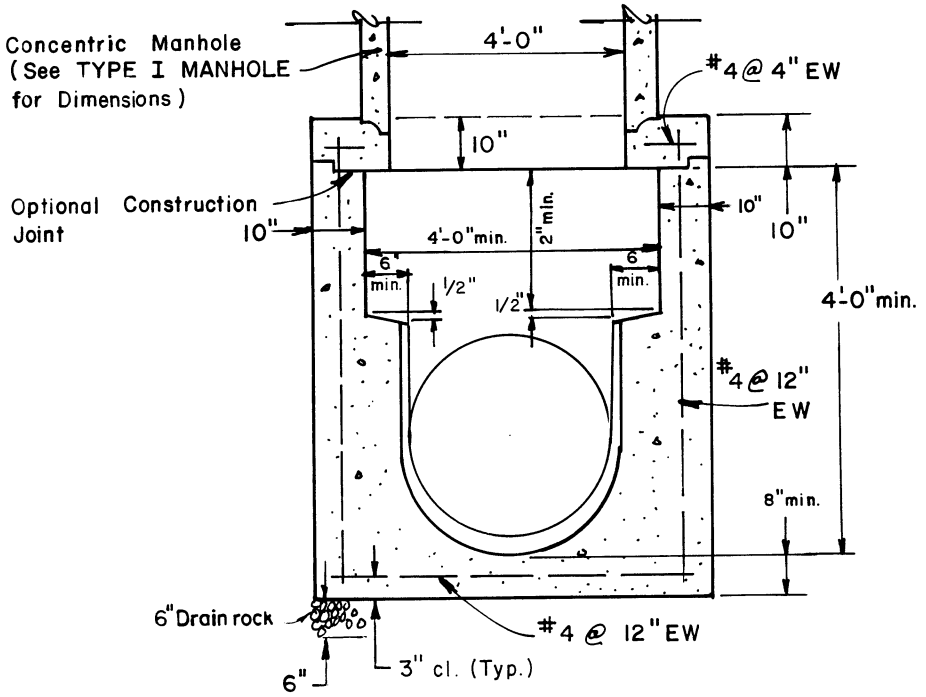
PAGE 6



PLAN



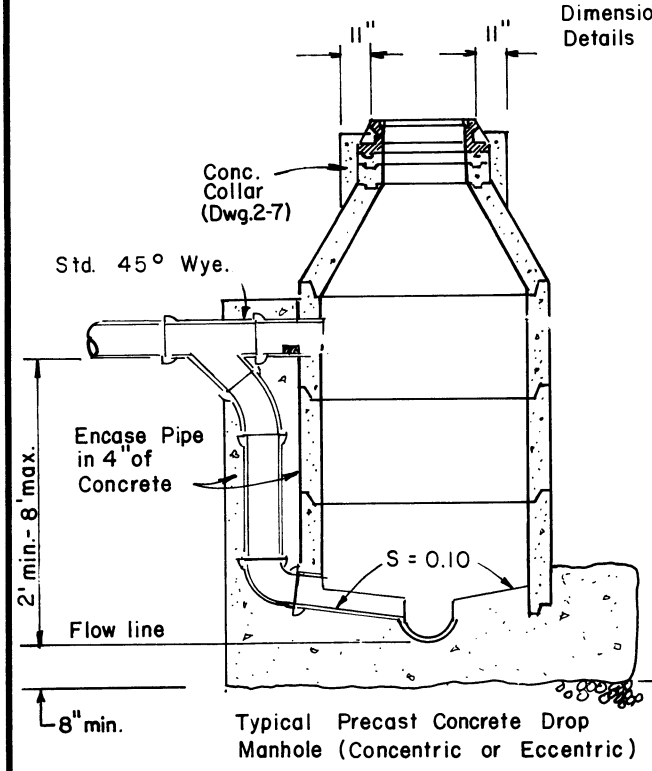
SECTION BB



SECTION AA

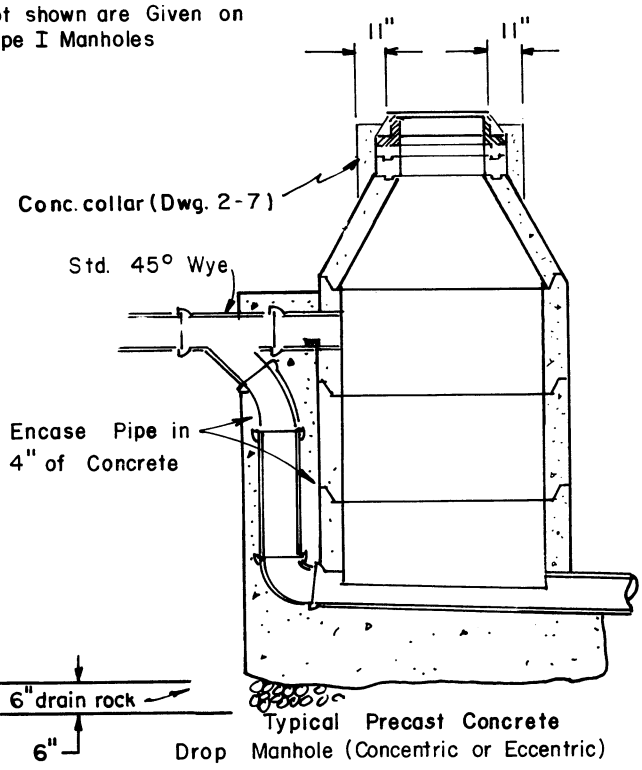
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 2	
1	dr. rock	5-95vp	MANHOLE TYPE II	DRAWING NO. 2 - 4 (306)	
				DATE 7 - 81	PAGE 7

NOTE:
Dimensions not shown are Given on Details on Type I Manholes



Typical Precast Concrete Drop Manhole (Concentric or Eccentric)

LATERAL TO MAIN



Typical Precast Concrete Drop Manhole (Concentric or Eccentric)

MAIN TO MAIN

NOTES:

1.) Drop manholes are to be used on all Sanitary Sewers with more than 2 feet vertical drop at manhole, not to exceed 8 feet.

2.) Eccentric Cones may be used at the direction of the governing authority.

3.) Mains shall be sloped to fall at least 0.1 feet across manhole section.

4.) Pipe section within manhole may be P.V.C.

5.) Not for use in Carson City, See Agency Section.

6.) 8 Foot vertical drop may only be exceeded in Washoe County & the City of Reno upon approval of the Sanitary Engineers.

NO.	REVISION	DATE
1	ADD NOTE 6	7-83
2	collar,dele,dr.rk.	5-95 vp

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

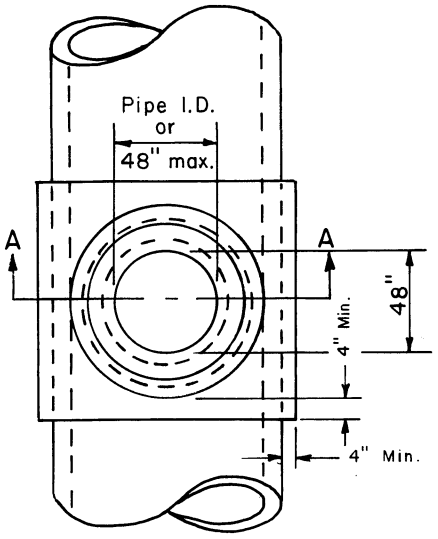
MANHOLE TYPE III

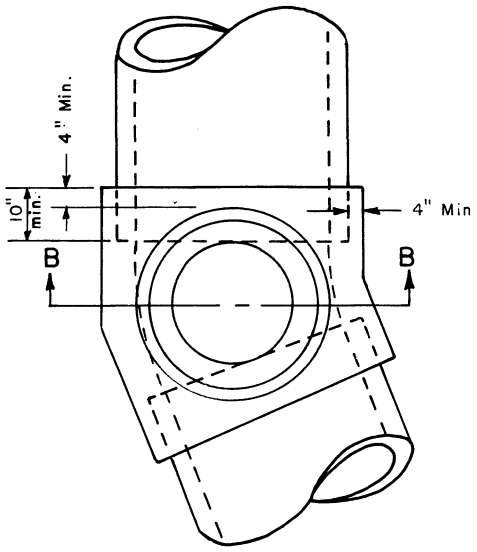
SECTION 2

DRAWING NO. 2 - 5 (306)

DATE 7 - 81

PAGE 8





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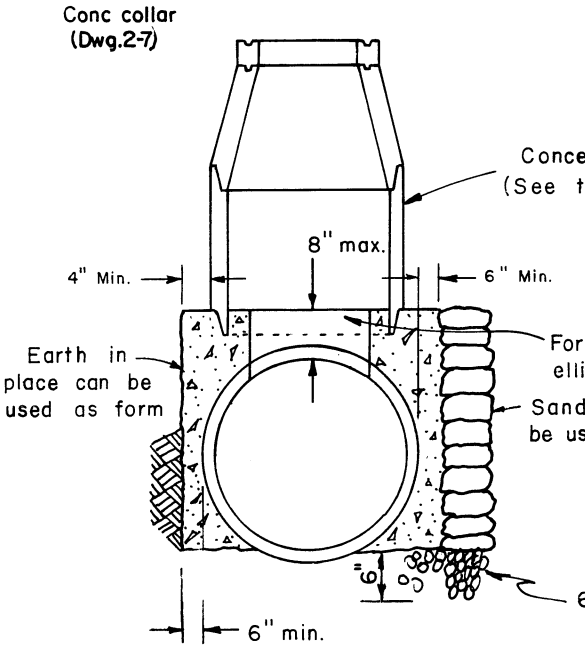
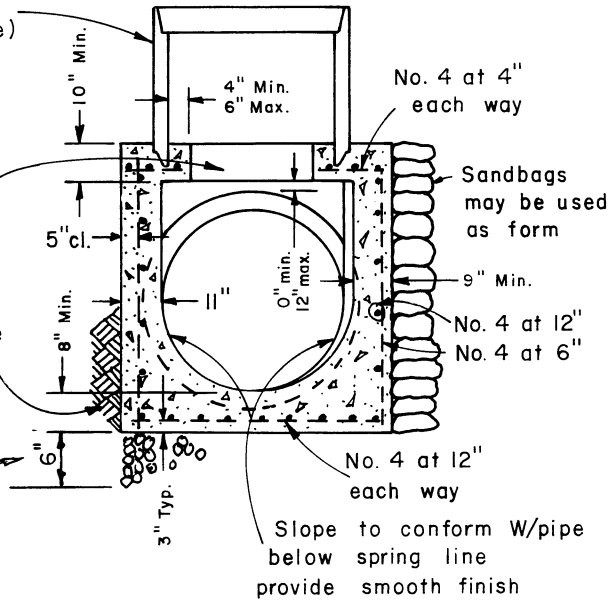


SECTION A-A

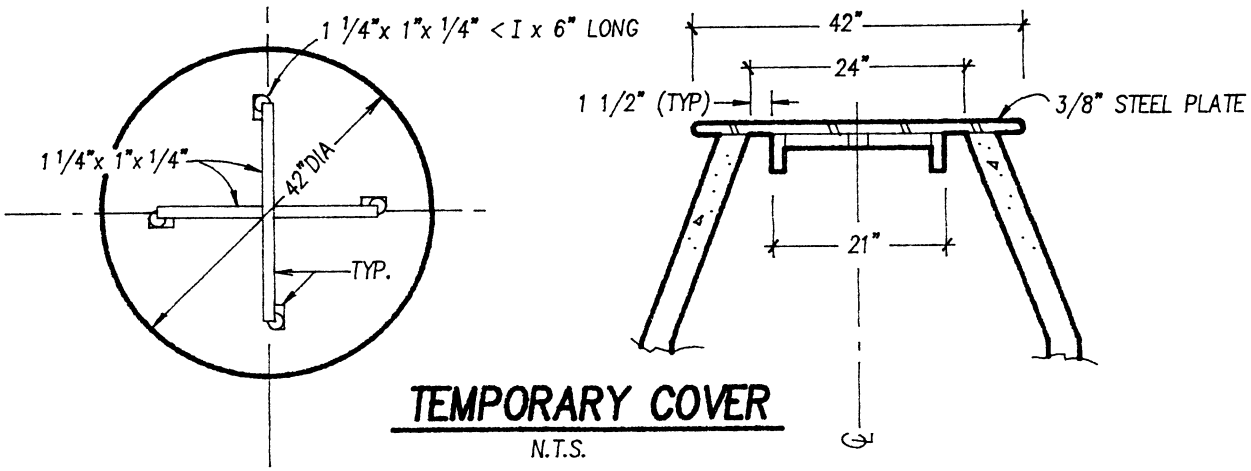
TANGENT



SECTION B-B

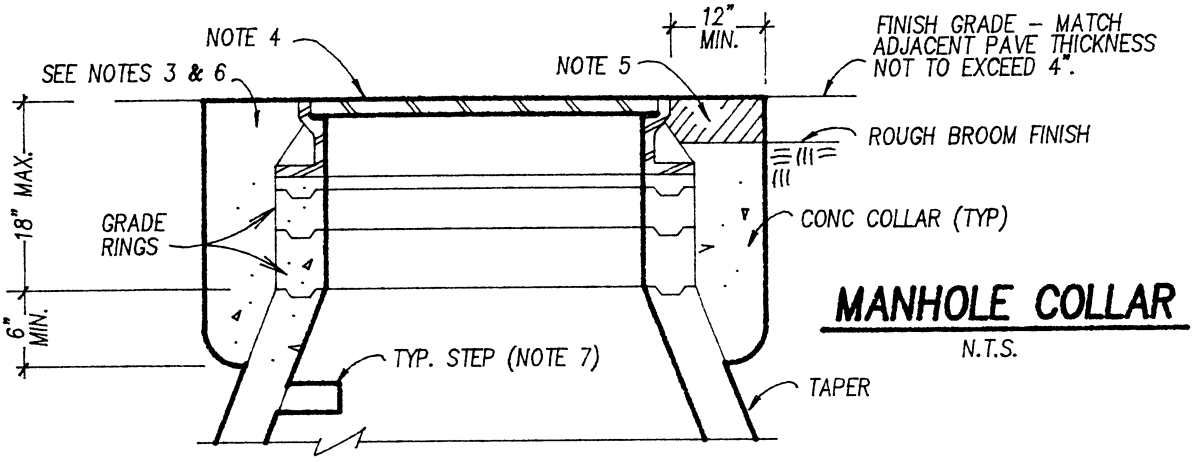
ANGLE POINT

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 2	
1	Drain rock	5-95vp		DRAWING NO. 2-6 (306)	
			MANHOLE TYPE IV	DATE 7-81	PAGE 9



TEMPORARY COVER

N.T.S.



MANHOLE COLLAR

N.T.S.

NOTES

1. CONC COLLAR TO BE PORTLAND CEMENT CONC (P.C.C.) W/THE FOLLOWING CHARACTERISTICS: 4000psi MIN COMP STRENGTH @ 28 DAYS, MIN 6 SACKS OF CEMENT PER CU.YD. W/MAX WATER-CEMENT RATIO OF 0.45, AIR ENTRAINMENT 6% ± 1.5%, SLUMP @ 1 TO 4 INCHES. IN WASHOE CO. MIN CEMENT CONTENT TO BE 16.25sack. ALL MATERIAL SHALL CONFORM TO SSPWC SEC.202.
2. HEIGHT OF COLLAR SHALL BE CONSISTANT ALL AROUND MANHOLE.
3. RENO - CONC COLLAR SHALL BE FLUSH W/ADJACENT PAVEMENT.
4. WASHOE CO.-MANHOLE RING SHALL BE SET 3/8"-5/8" BELOW FINISH ROADWAY SURFACE. MANHOLES IN ALL OTHER AREAS SHALL BE SET FLUSH W/FINISH GRADE UNLESS OTHERWISE NOTED.
5. WASHOE CO.-CONC COLLAR SHALL BE LEFT 2" BELOW FINISH ASPH SURFACE. PLACE 2" THICK TYPE 3 A.C. PAVING AROUND MANHOLES & APPLY SS-1 TACK COAT BEFORE PAVING, SEAL A.C. SURFACE W/SS-1 & SAND CHIP SEAL, SLURRY SEAL, SAND SEAL OR FOG SEAL PAVED SURFACE AS REQ'D BY PLANS OR SPECS. EXCEPTION - EXTEND CONC COLLAR TO FIN. GRADE WHEN NOT LOCATED IN ASPH PAVE OR IN AN UNPAVED AREA.
6. SPARKS-CONC COLLAR SHALL BE FLUSH W/ADJACENT PAVEMENT. PLACE ONE #3 REBAR RING IN COLLAR IN UNIMPROVED AREAS.
7. WASHOE CO.-STEPS ARE REQ'D FOR SANITARY SEWER/STORM DRAIN MANHOLES OF 5 FEET OR GREATER DEPTH.
8. CARSON CITY-REFER TO DETAIL C-6.4

NO.	REVISION	DATE
1	REDRAW	11/94vp
2	NOTE 2,9	1/94vp
3	Note 4,7	1/95vp
4	Corr Note 1	4/95vp

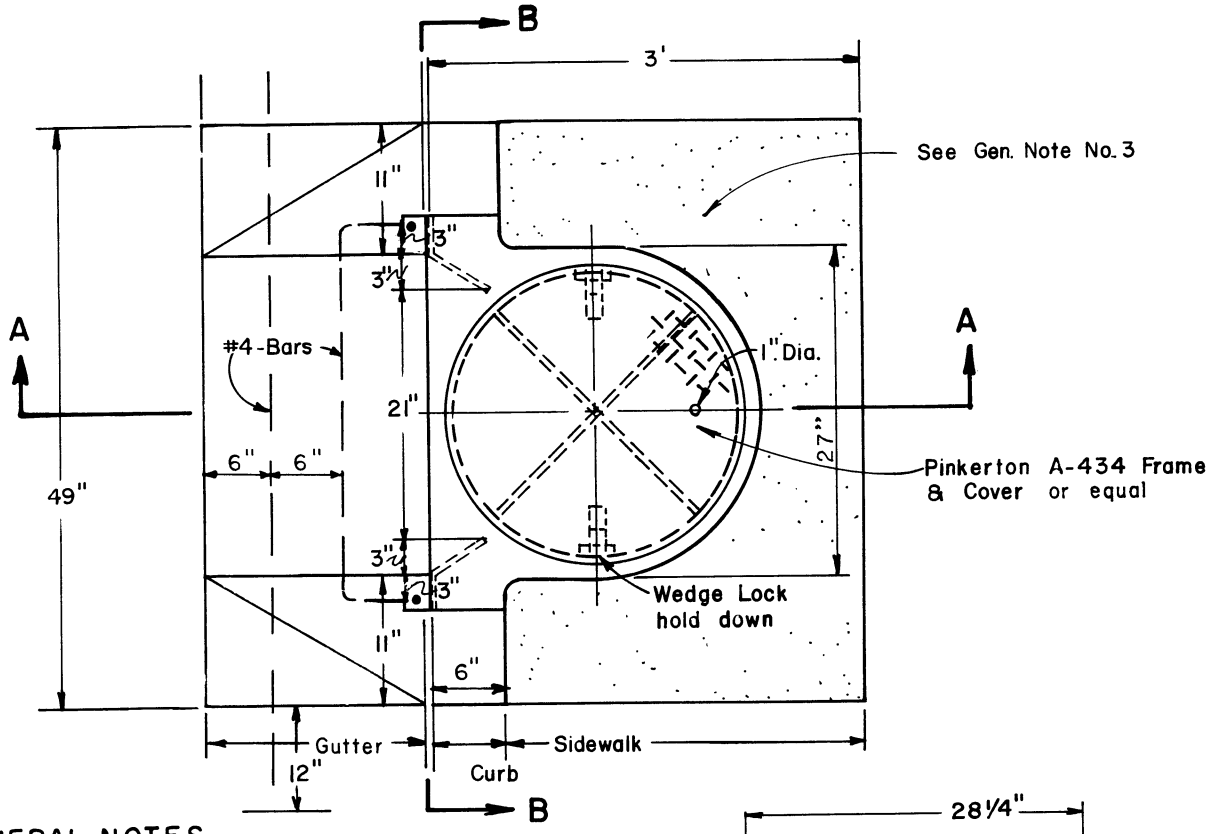
STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

MANHOLE COLLAR & TEMPORARY COVER

SECTIONS 2

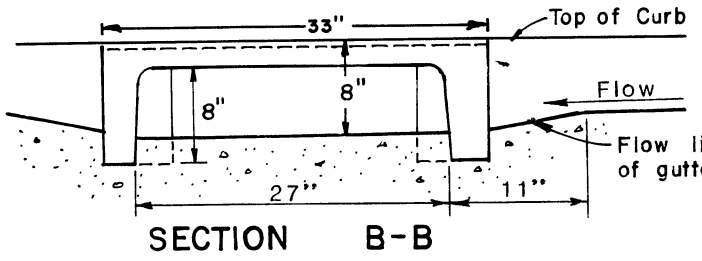
DRAWING NO. 2-7 (306)

DATE 11/92 vp

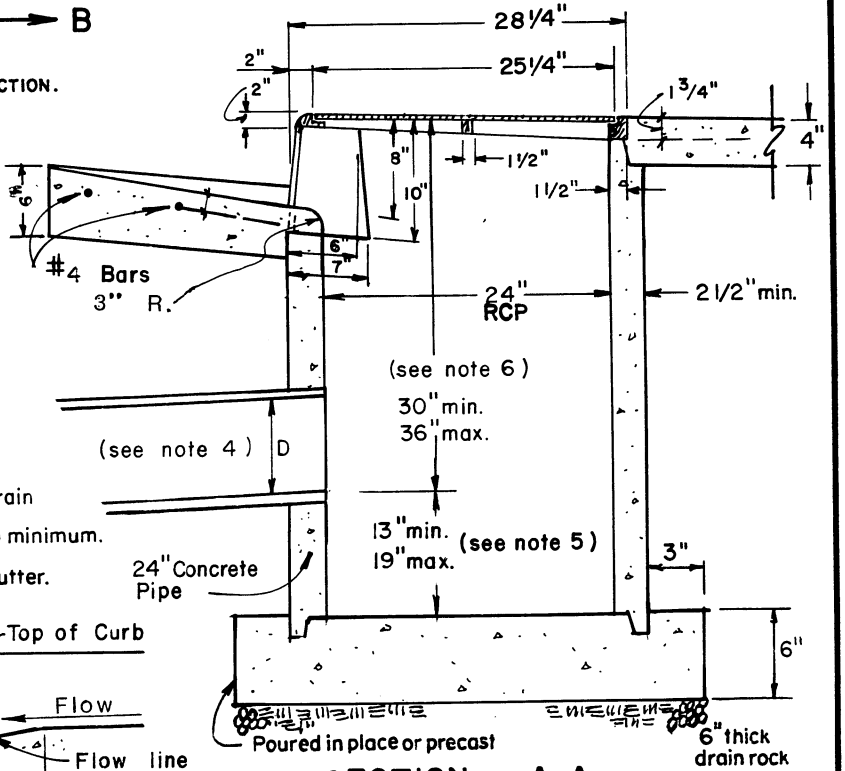


GENERAL NOTES

1. NOT PERMITTED IN FALLON. SEE FALLON SPECIAL SECTION.
2. PORTLAND CEMENT CONCRETE (PCC) SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4000 PSI MIN. COMPRESSIVE STRENGTH AT 28 DAYS, MIN. 6 SACKS OF CEMENT PER CU. YD. W/MAX. WATER-CEMENT RATIO OF 0.45, AIR ENTRAINMENT 6.0% ± 1.5%, SLUMP AT 1 TO 4 INCHES. ALL MATERIALS SHALL CONFORM TO SSPWC SEC. 202
3. A 4" THICK CONC. PAD SHALL BE CONSTRUCTED AS SHOWN WHEN NOT LOCATED IN A SIDEWALK.
4. "D" shall have a min. dia. as shown below:
   - a.) Lyon Co. Carson City — D = 15"
   - b.) Douglas Co. Lander Co. — D = 12"
   - c.) Elsewhere — D = 10"
5.) Carson City - Remove sump, slope base to drain
6.) Yerington - Depth to pipe as necessary, no minimum.
7.) Reno - For use only in low point (sump) in curb and gutter.



SECTION B-B



SECTION A-A

NO.	REVISION	DATE
1	FLOW	3-83
2	Dim's.	8-85
3	Notes	6-95

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

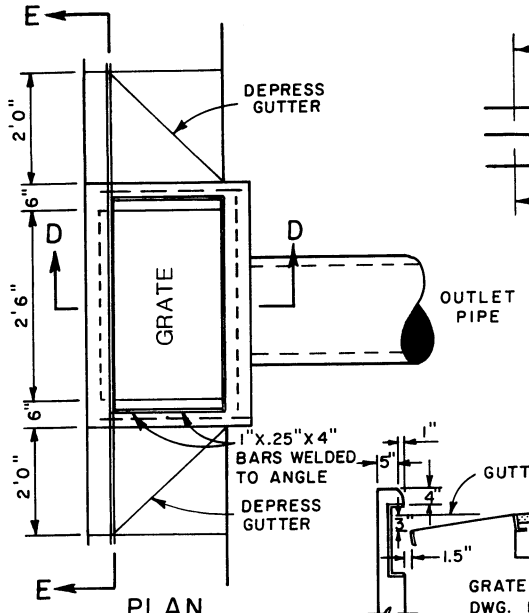
CATCH BASIN TYPE I

SECTION 2

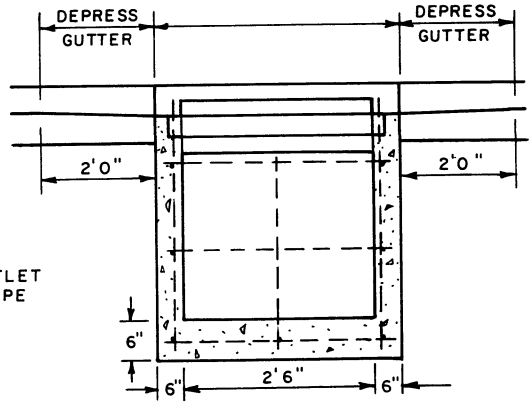
DRAWING NO. 2-8 (306)

DATE 7-81

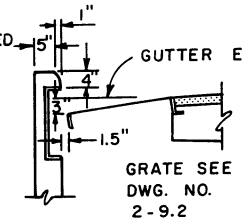
PAGE 11

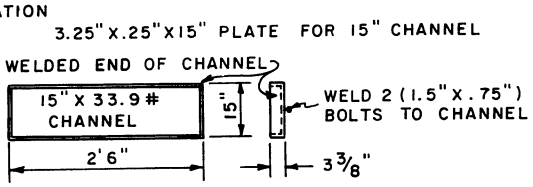


PLAN



SECTION E-E





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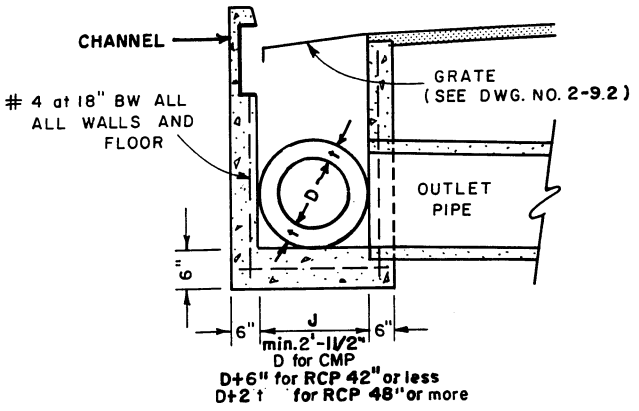
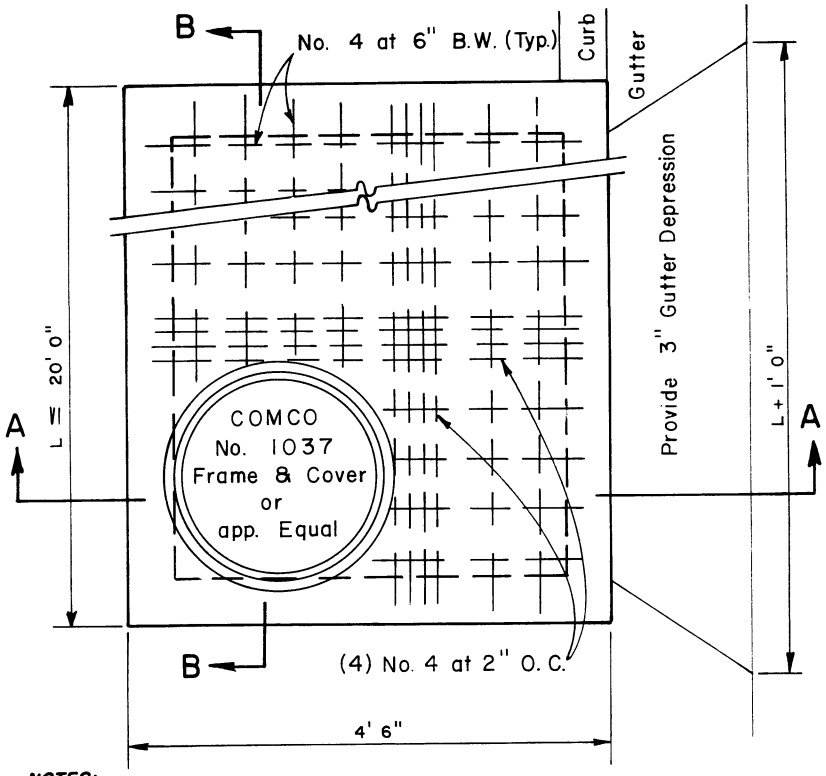


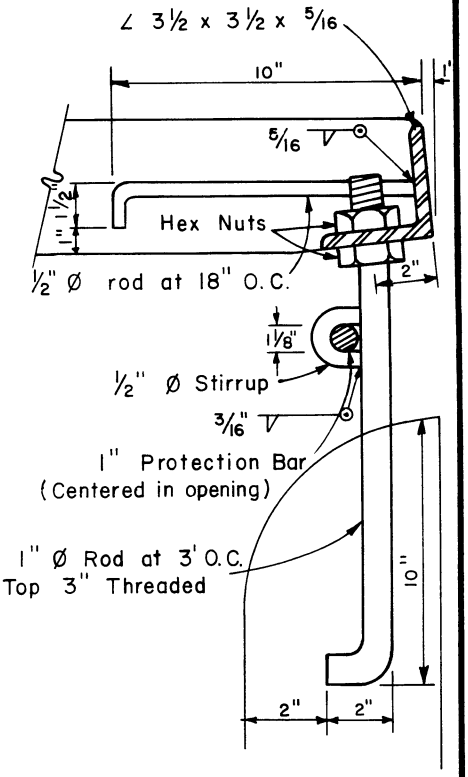
SECTION D-D

NOTES:

1. OUTLET PIPE TO BE MINIMUM SIZE AS SHOWN ON DWG. NO. 2-8.
2. ALL CONCRETE TO BE CLASS AA OR DA.
3. ALL REINFORCING STEEL TO BE NO. 4 BAR, GRADE 40 MIN. SPACE AT 18" O.C. MIN. WITH 1.5" CLEAR COVER UNLESS SHOWN OTHERWISE.
4. ALL EXPOSED CONCRETE EDGES TO BE CHAMFERED .75".
5. NOT FOR USE IN CITY OF RENO.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 2	
			CATCH BASIN TYPE IA	DRAWING NO. 2-8.1	
				DATE 1-83	PAGE 11 A



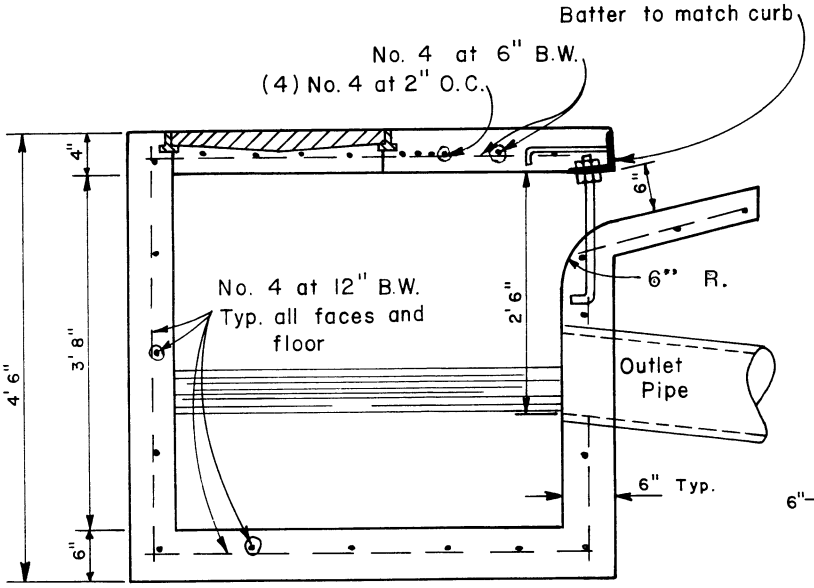


CURB SUPPORT DETAIL

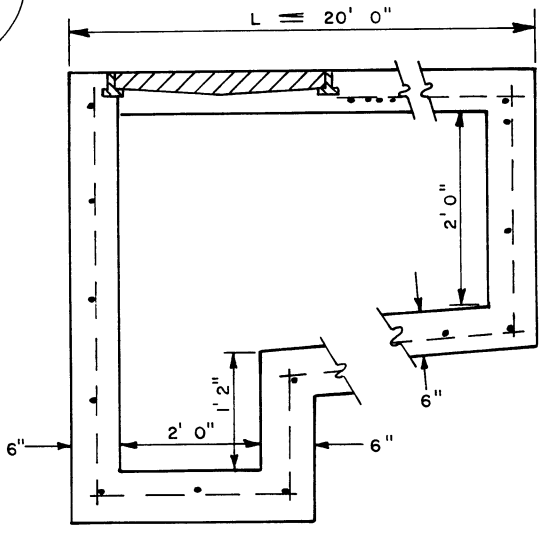
(Carson City - use curb support shown on Dwg. #2-9.3)

NOTES:

1. *ALL STEEL TO HAVE 1½" CLEAR COVER UNLESS OTHERWISE NOTED.*
2. *GENERAL NOTES FROM CATCH BASIN TYPE I SHALL ALSO APPLY.*
3. *PORTLAND CEMENT CONCRETE (PCC) SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4000 PSI MIN. COMPRESSION STRENGTH AT 28 DAYS, MIN. 6 SACKS OF CEMENT PER CU. YD. W/MAX WATER-CEMENT RATIO OF 0.45, AIR ENTRAINMENT 6.0% ± 1.5%, SLUMP AT 1-4 INCHES. ALL MATERIAL SHALL CONFORM TO SSPWC SEC. 202.*
4. *INSTALL GREASE TRAP WITH THE BOTTOM EDGE PARALLEL TO THE WATER SURFACE WITH THE RECTANGULAR OPENING FACING DOWNWARD AND THE CIRCULAR END PLACED INSIDE THE OUTLET PIPE.*



SECTION A-A

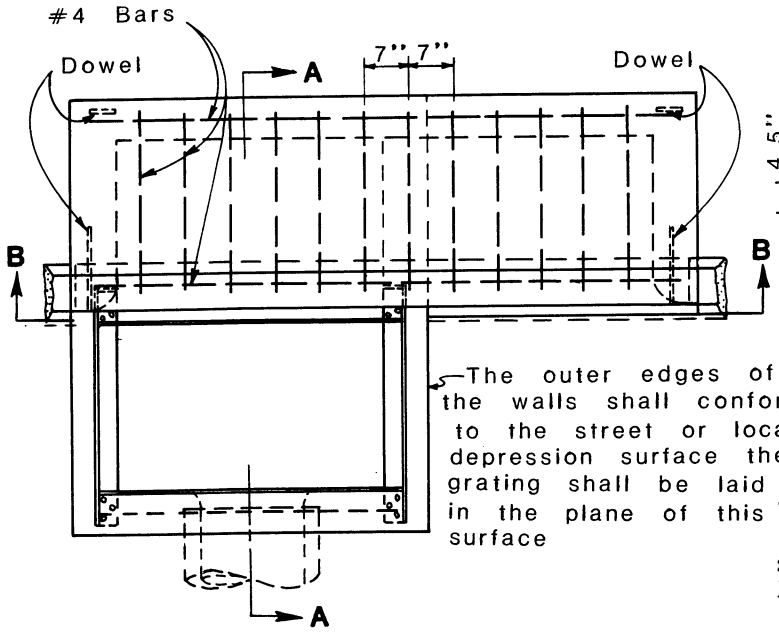


SECTION B-B

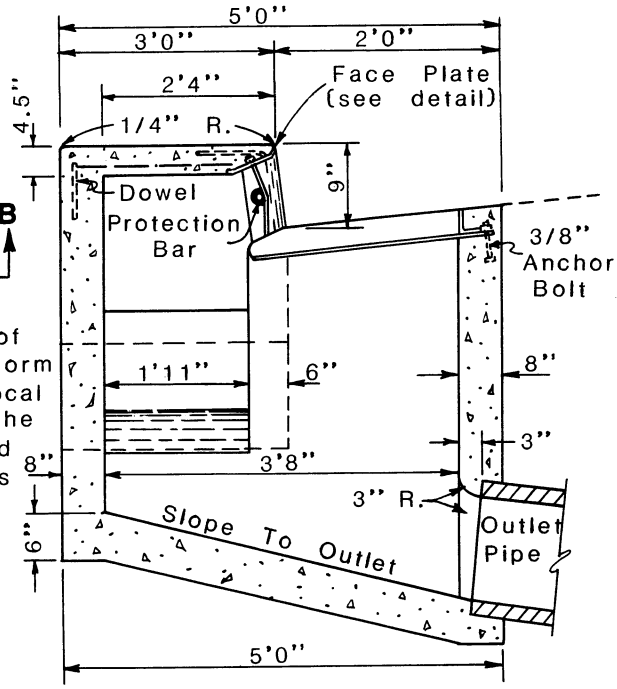
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION
1	6"Radius	3-83	
2	NOTES	6-95	

CATCH BASIN TYPE 2

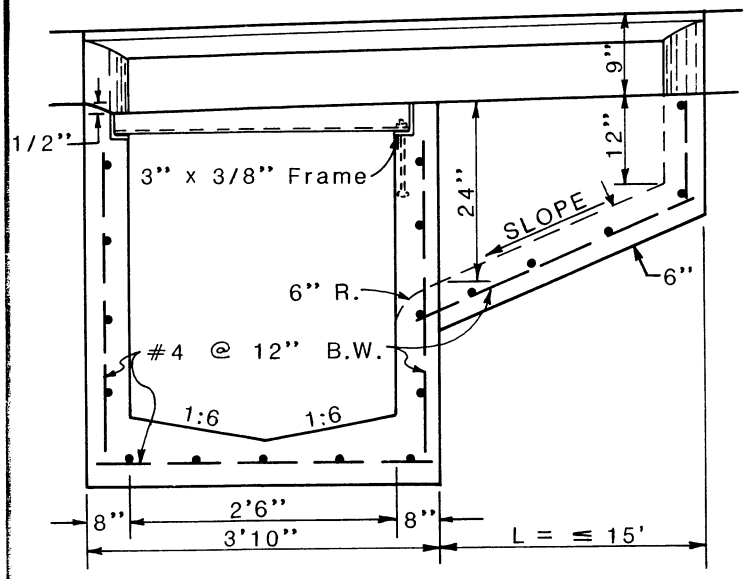
SECTION	2
DRAWING NO.	2-9 (306)
DATE	7-81
PAGE	12



PLAN



SECTION A-A

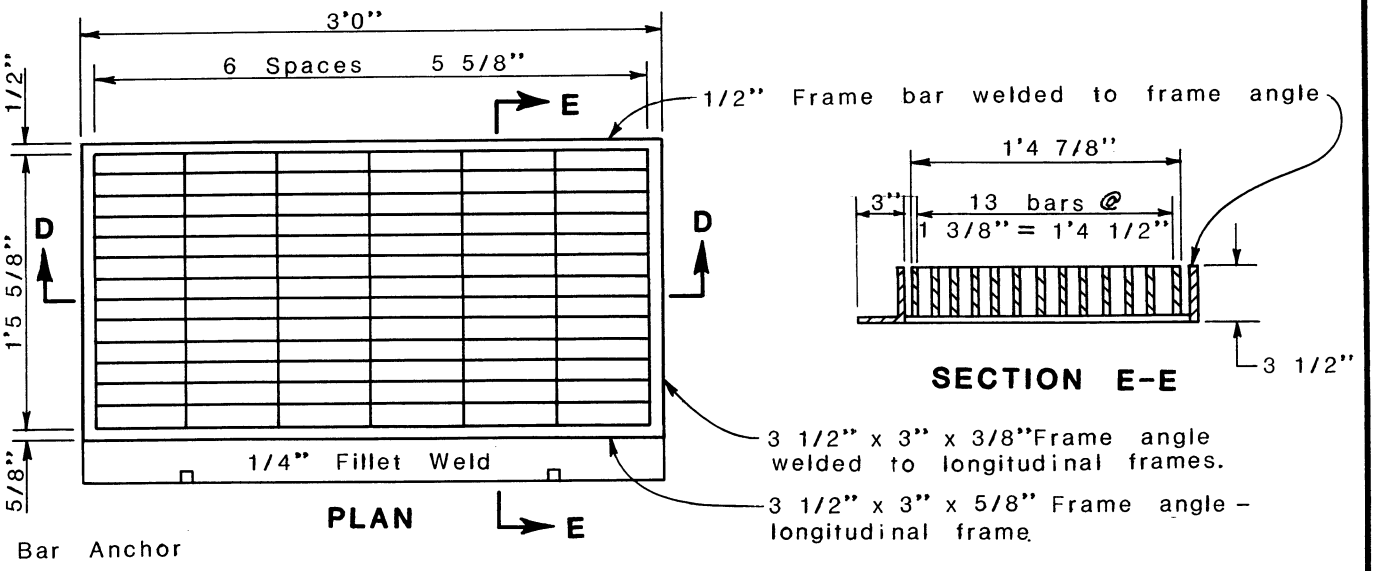


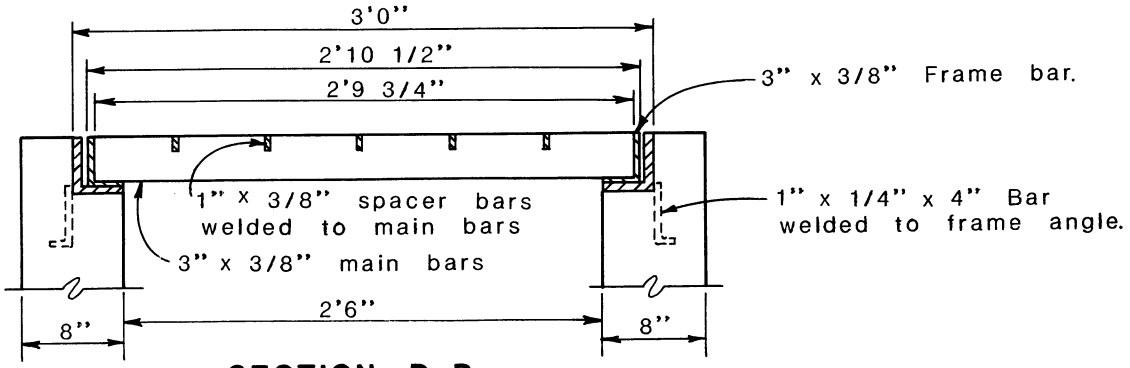
SECTION B-B

NOTES:

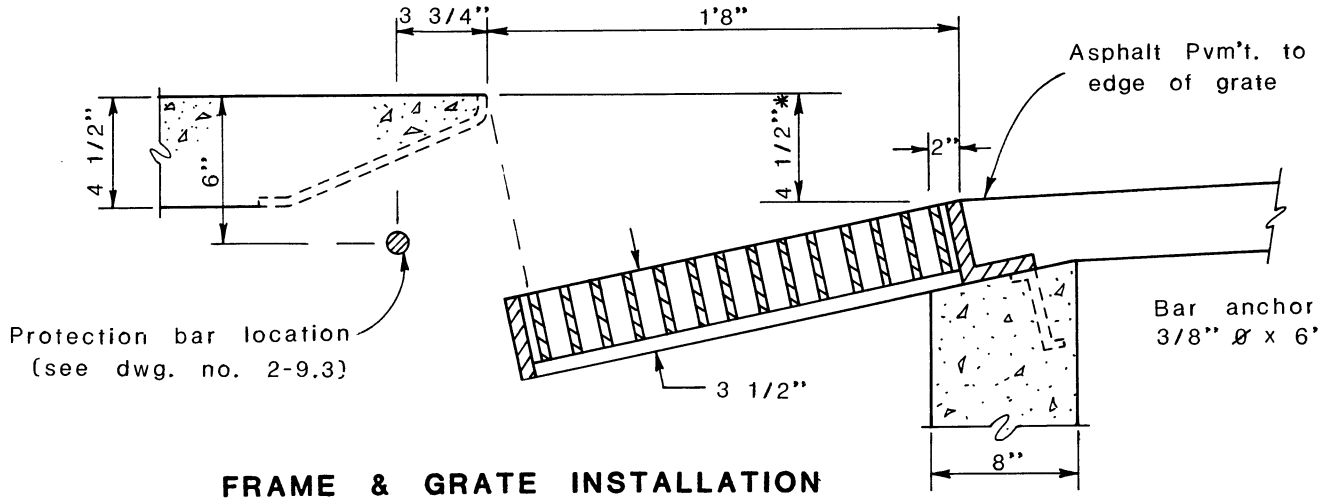
1. Outlet pipe may be placed in any wall as shown on improvement drawings. Slope floor to outlet pipe
2. All concrete shall be class AA or DA
3. All reinforcing steel shall be grade 40 (min.) and have 1.5" clear cover unless shown otherwise
4. See dwgs. no. 2-9.2 and 2-9.3 for additional details
5. **Not for use in City of Reno.**

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 2	
1	SPELLING	10-16-86	CATCH BASIN TYPE 2A	DRAWING NO. 2-9.1	
				DATE 1-83	PAGE 12 A





SECTION D-D



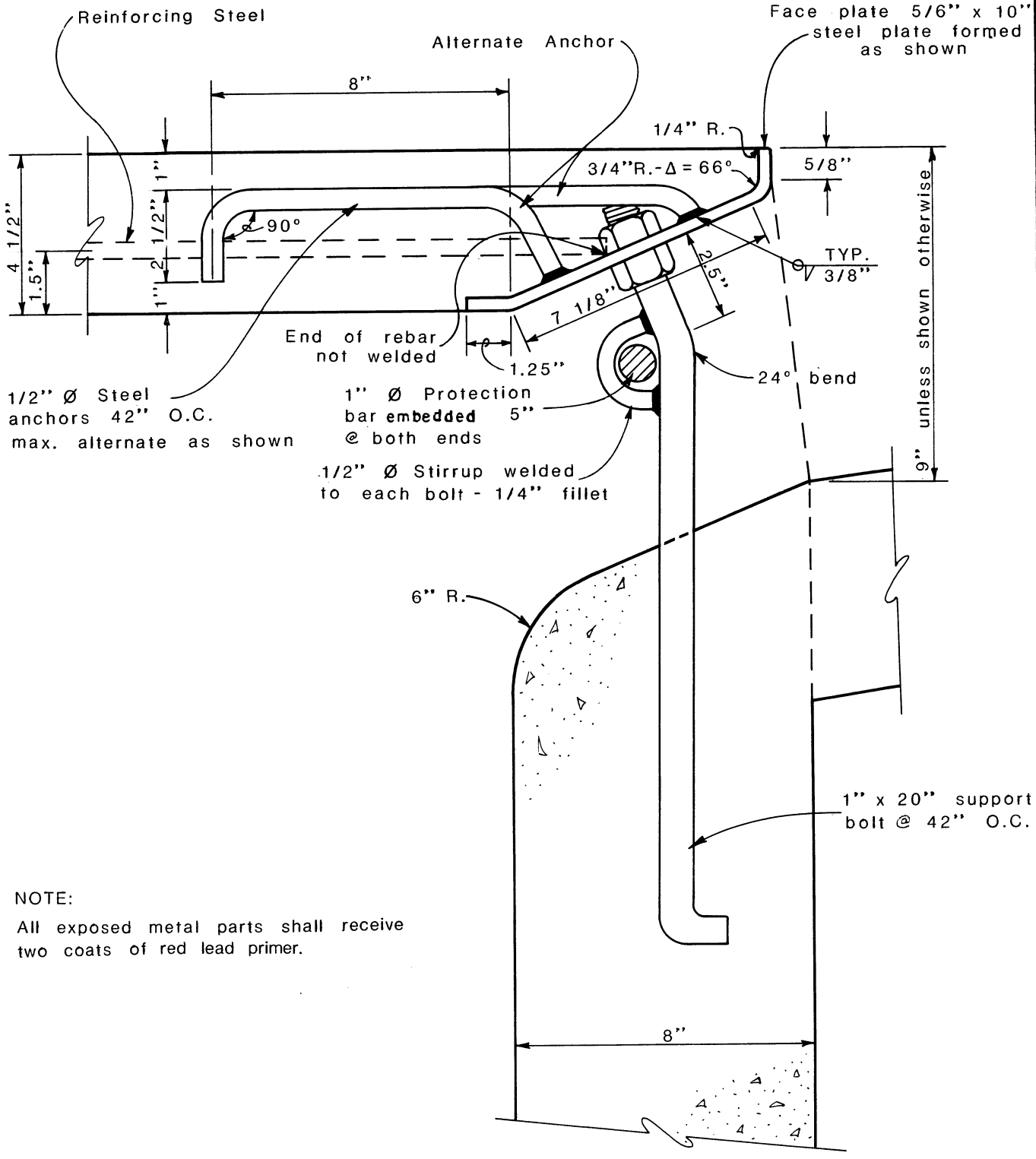
FRAME & GRATE INSTALLATION

NOTE:

All exposed metal parts shall be galvanized and all galvanizing damaged by fabrication or installation shall receive two coats of aluminum paint (Galvonox or Equal).

* 3 1/2" In Sparks and 5" in Fallon

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 2	
1	SPLLLING	10-16-86	FRAME AND GRATE DETAIL TYPE IA AND 2A C.B.	DRAWING NO. 2-9.2	
				DATE 3-83	PAGE 12 B



NOTE:

All exposed metal parts shall receive two coats of red lead primer.

NO.	REVISION	DATE
1	SPELLING	10-16-86

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

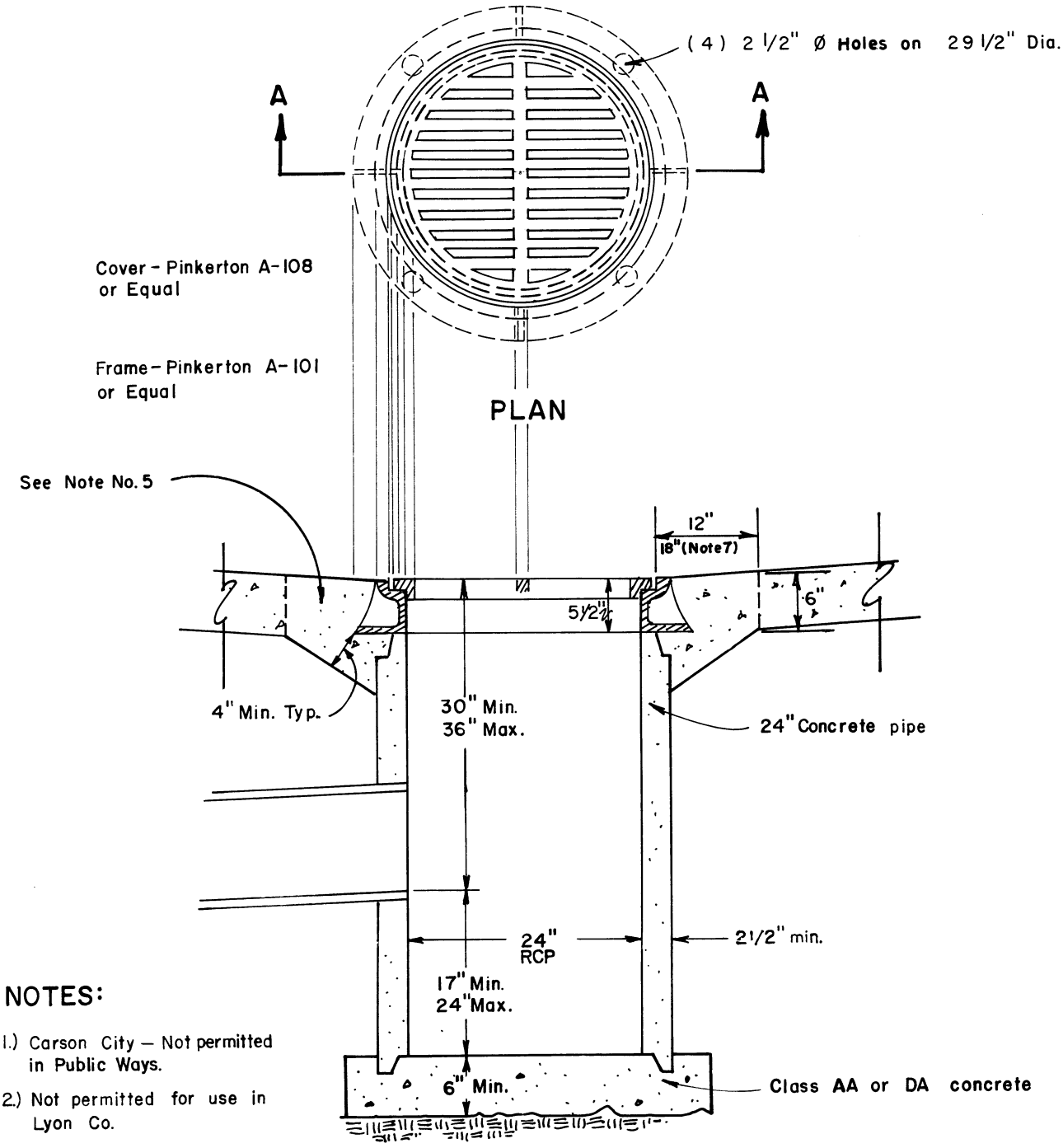
FACE PLATE DETAIL TYPE 2A C.B.

SECTION 2

DRAWING NO. 2-9.3

DATE 3-83

PAGE 12C



SECTION A-A

NOTES:

1.) Carson City – Not permitted in Public Ways.

2.) Not permitted for use in Lyon Co.

3.) Fallon – See Agency Section

4.) "Bee Hive" grate (Neenah #R-2563, R-2564 or equal) may be used in unimproved or landscaped areas as approved by the Engineer.

5.) Reno - For use only in unimproved areas. A concrete collar shall be constructed as shown.

6.) Outlet pipe to be minimum size as shown on Dwg. 2-8

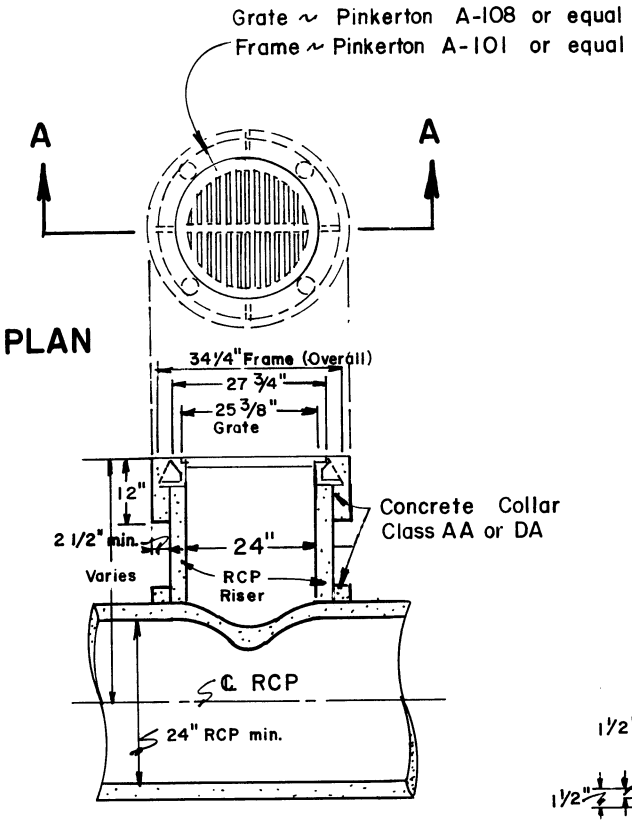
7.) In Washoe Co. conc. collar shall be 18" in width at all locations.

NO.	REVISION	DATE
1	NOTE 4	3-83
2	Conc. Collar	10/83
3	Dim's	8-85
4	NOTE 1	10-85
5	SPELLING	10-16-86
6	NOTE 7	9-90

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

CATCH BASIN TYPE 3

SECTION	2
DRAWING NO.	2-10 (306)
DATE	7-81
PAGE	13

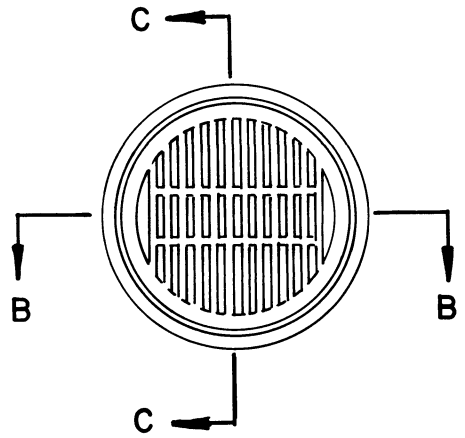


PLAN

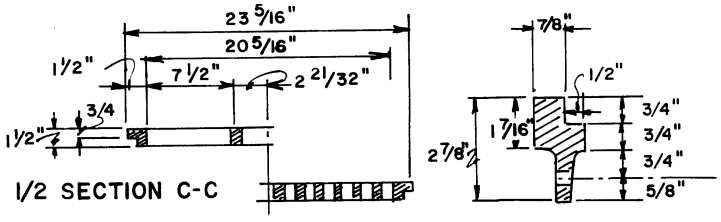
SECTION A-A

TYPE 1 RISER INLET

NOTE:
Not for use in Carson City.



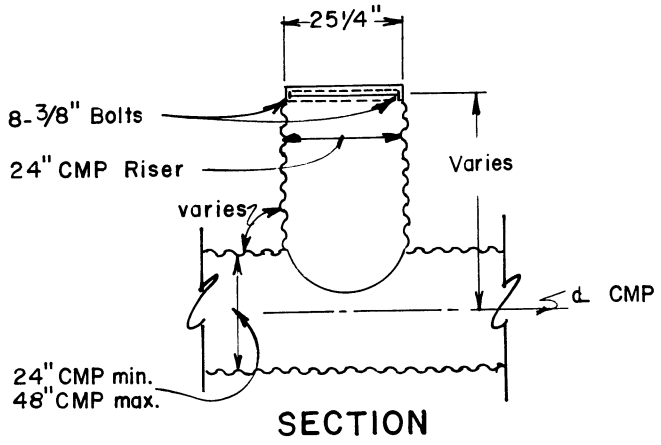
PLAN OF FRAME AND GRATE (CASTINGS)



1/2 SECTION C-C

1/2 SECTION B-B

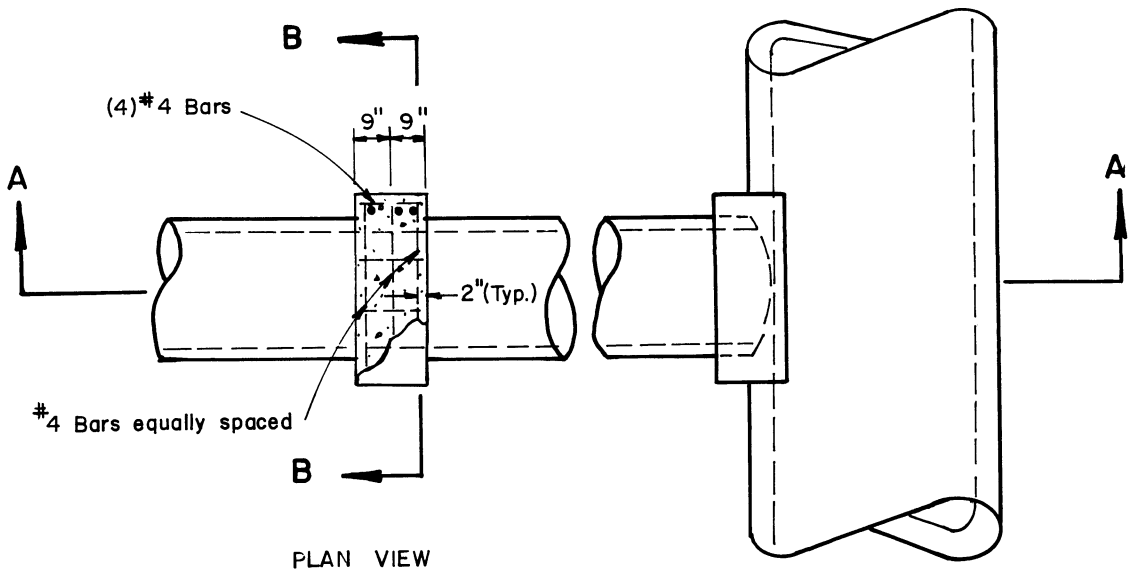
SECTION OF FRAME



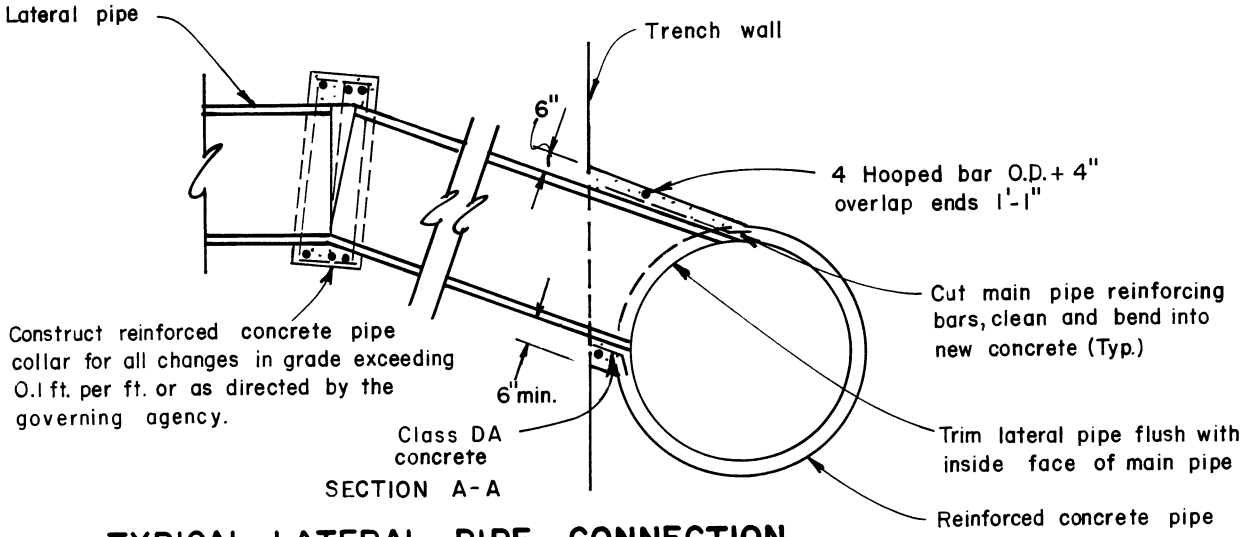
SECTION

TYPE 2 RISER INLET

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 2	
1	Dim's.	8-85	RISER TYPE DROP INLET	DRAWING NO. 2-11 (306)	
2	NOTE	10-85		DATE 7-81	PAGE 14

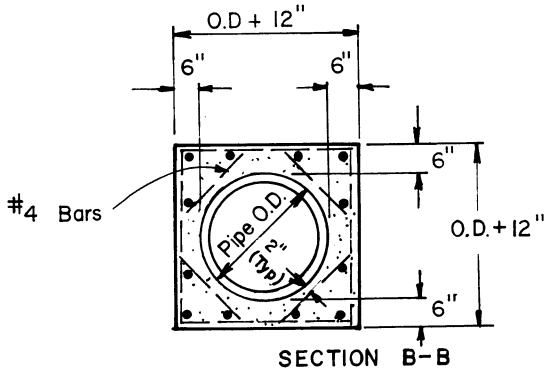


PLAN VIEW



SECTION A-A

TYPICAL LATERAL PIPE CONNECTION TO R.C.P.

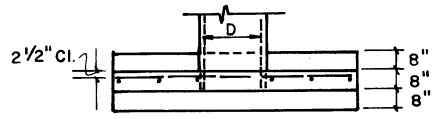


SECTION B-B

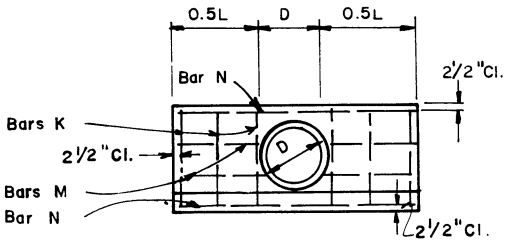
TYPICAL REINFORCED CONCRETE PIPE COLLAR

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 2	
			STORM DRAIN LATERAL	DRAWING NO. 2-12 (306)	
				DATE 7-81	PAGE 15

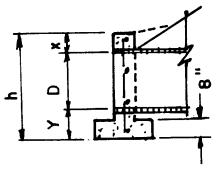
NOTE:
For Dimensions not shown, see tables on Dwg. No.s 2-13.3 and 2-13.4



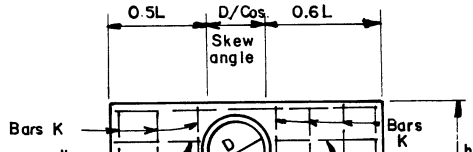
PLAN



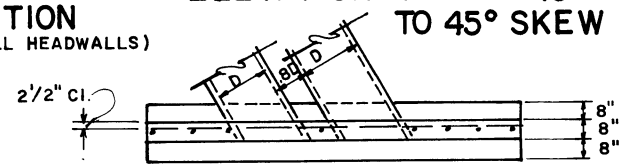
ELEVATION SINGLE 0° SKEW



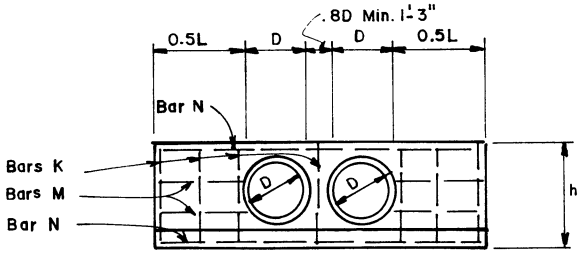
SECTION
(FOR ALL HEADWALLS)



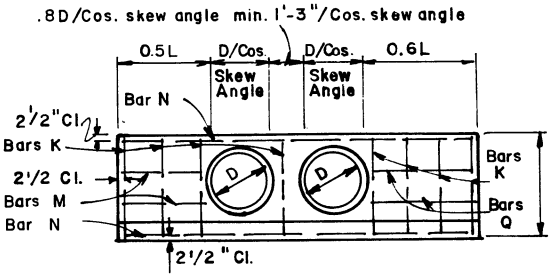
ELEVATION SINGLE 15° TO 45° SKEW



PLAN



ELEVATION DOUBLE 0° SKEW



ELEVATION DOUBLE 15° TO 45° SKEW

GENERAL NOTES:

1.) Concrete shall be Class AA or DA

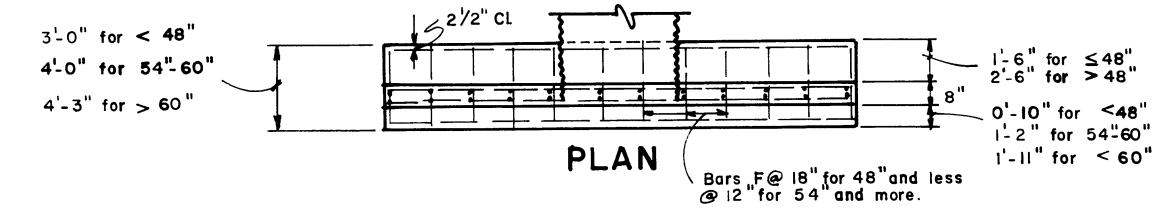
2.) Reinforcing steel shall be deformed bars with maximum spacing of 18" set 2½" clear of surface of concrete except as noted. Bar ends shall be kept 1½" clear of surface of concrete. Reinforcing bars may be cut and bent in the field.

3.) Footings shown are of minimum depth and shall be extended if soil is unsuitable or liable to scour.

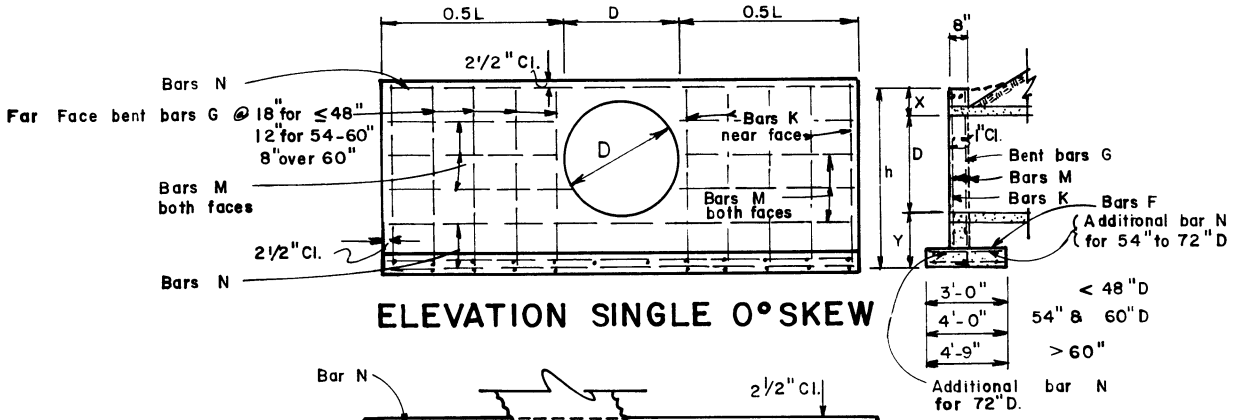
4.) Culvert pipes to be set on a skew shall be mitered when headwalls are constructed. When headwalls are not constructed the pipe shall not be mitered except in overflow section.

5.) For estimating headwall quantities on skewed culverts:
0° to 10° ~ Use quantities for 0° skew, 11° to 45° ~ Use quantities for 30° skew
Over 45° ~ Calculate quantities required.
Culverts should be installed on 0°, 30° where it is feasible.

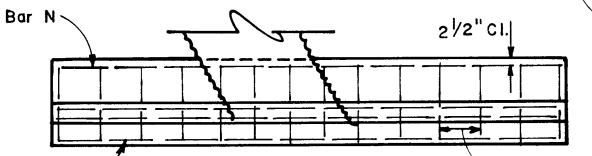
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 2
			CULVERT HEADWALLS (12"- 42" C.M.P.) (12"- 36" R.C.P.)	DRAWING NO. 2-13.1 (311)
				DATE 7-81 / PAGE 16



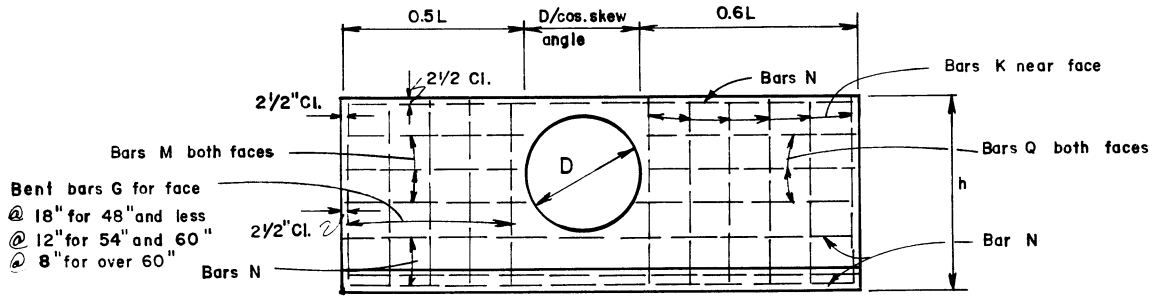
PLAN



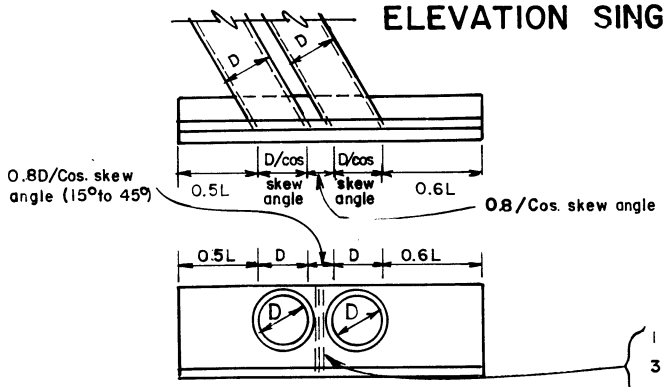
ELEVATION SINGLE 0° SKEW



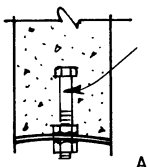
PLAN



ELEVATION SINGLE 15° TO 45° SKEW



ELEVATION DOUBLE RCP 0° TO 45° SKEW



Anchor bolts to be installed on inlet end only.

ANCHOR BOLT DETAIL

1 Bar G, 1 Bar K = 42" & 48" D
3 Bars G, 2 Bars K = 54" & 60" D
5 Bars G, 3 Bars K = 72" D

NOTE:
1.) SEE GENERAL NOTES ON DWG. NO. 2-13.1
2.) FOR DIMENSIONS SEE TABLE ON DWG. NO. 2-13.5 and 2-13.6

NO.	REVISION	DATE

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

CULVERT HEADWALLS
(42" - 72" RCP)

SECTION 2

DRAWING NO. 2-13.2 (311)

DATE 7-81

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NOTE:
Bar sizes, dimensions and quantities have been taken from the NDOT Standard Plans. Additional skew angle information may be obtained from that publication.

CMP SIZE D	CORR CMAP S X R	CMP AREA SQ FT	L	SINGLE C M P				DOUBLE C M P			
				0° SKEW		30° SKEW		0° SKEW		30° SKEW	
				CONC cu yd	STEEL lb	CONC cu yd	STEEL lb	CONC cu yd	STEEL lb	CONC cu yd	STEEL lb
12"		0.79	3'-6"	0.85	35	0.94	37	1.21	46	1.35	50
15"	18" x 11"	1.23	4'-3"	1.09	48	1.21	51	1.51	61	1.68	65
18"	22" x 13"	1.77	5'-0"	1.36	55	1.51	59	1.83	70	2.05	75
24"	29" x 18"	3.14	6'-6"	1.95	78	2.16	84	2.53	95	2.84	103
30"	36" x 22"	4.91	8'-0"	2.61	105	2.90	112	3.39	126	3.79	135
36"	43" x 27"	7.07	9'-6"	3.36	122	3.72	131	4.34	147	4.85	158
42"	50" x 31"	9.62	11'-0"	4.18	167	4.64	179	5.39	196	6.03	210

X=8" Y= 1'0" h=D+ 1'8"

LENGTH OF REINFORCING BARS									
CMP SIZE D	SINGLE C M P			SINGLE or DOUBLE CMP			DOUBLE C M P		
	0° to 45°	0°	30°	0°	30°		0° to 45°	0°	30°
	NO 4	NO 5	NO 5	NO 4	NO 4	NO 4	NO 4	NO 5	NO 5
	K	N	N	M	M	Q	K	N	N
12"	4@2'-5"	2@4'-3"	2@4'-9"	2@1'-6"	1@1'-3"	1@2'-1"	5@2'-5"	2@6'-3"	2@7'-1"
15"	6@2'-8"	2@5'-3"	2@5'-11"	2@1'-8"	1@1'-5"	1@2'-3"	7@2'-8"	2@7'-6"	2@8'-6"
18"	6@2'-11"	2@6'-3"	2@7'-0"	2@2'-3"	1@2'-0"	1@3'-0"	7@2'-11"	2@8'-9"	2@9'-10"
24"	6@3'-5"	2@8'-3"	2@9'-3"	4@3'-0"	2@2'-9"	2@3'-10"	7@3'-5"	2@11'-3"	2@12'-8"
30"	8@3'-11"	2@10'-3"	2@11'-5"	4@3'-9"	2@3'-6"	2@4'-9"	9@3'-11"	2@14'-0"	2@15'-9"
36"	8@4'-5"	2@12'-3"	2@13'-8"	4@4'-6"	2@4'-3"	2@5'-8"	9@4'-5"	2@16'-9"	2@18'-10"
42"	10@4'-11"	2@14'-3"	2@15'-11"	6@5'-3"	3@5'-0"	3@6'-7"	11@4'-11"	2@19'-6"	2@21'-11"

NO.	REVISION	DATE

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

HEADWALL DIMENSIONS
(CMP 12" - 42")

SECTION 2
DRAWING NO. 2-13.3 (311)
DATE 7-81
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RCP SIZE D	RCP AREA SQ FT	SINGLE RCP				DOUBLE RCP				X	Y	L	h
		0° SKEW		30° SKEW		0° SKEW		30° SKEW					
		CONC cu yd	STEEL lb	CONC cu yd	STEEL lb	CONC cu yd	STEEL lb	CONC cu yd	STEEL lb				
12"	0.79	1.00	46	1.10	49	1.41	59	1.58	64	10"	14"	4'0"	3'0"
15"	1.23	1.32	55	1.47	59	1.80	70	2.01	75	10.25"	14.25"	5'0"	3'3.5"
18"	1.77	1.62	69	1.80	74	2.15	85	2.40	91	10.5"	14.5"	5'9"	3'7"
21"	2.41	1.95	77	2.16	83	2.59	95	2.90	103	10.75"	14.75"	6'6"	3'10.5"
24"	3.14	2.27	96	2.52	103	3.01	116	3.37	125	11"	15"	7'3'	4'2"
27"	3.98	2.62	105	2.90	112	3.48	128	3.89	137	11"	15"	8'0"	4'5"
30"	4.91	3.08	117	3.41	124	4.07	141	4.55	152	11.5	15.5"	9'0"	4'9"
33"	5.94	3.50	125	3.87	134	4.62	153	5.17	164	11.75"	15.75'	9'9"	5'0.5"
36"	7.07	3.93	161	4.34	171	5.19	190	5.80	204	1'0"	16"	10'6"	5'4"

LENGTH OF REINFORCING BARS

RCP SIZE	SINGLE			SINGLE or DOUBLE			DOUBLE		
	0 to 45°	0°	30°	0°	30°		0 to 45°	0°	30°
	No.4	No.5	No.5	No.4	No.4	No.4	No.4	No.5	No.5
	K	N	N	M	M	Q	K	N	N
12"	6@2'-9"	2@ 4'-9"	2@5'-4"	2@1'-7"	1@1'-4"	1@2'-2"	7@2'-9"	2@7'-0"	2@7'-11"
15"	6@3'-1"	2@ 6'-0"	2@6'-8"	2@2'-1"	1@1'-10"	1@2'-9"	7@3'-1"	2@8'-6"	2@9'-7"
18"	6@3'-4"	2@ 7'-0"	2@7'-10"	4@2'-5"	2@2'-2"	2@3'-2"	7@3'-4"	2@9'-9"	2@11'-0"
21"	6@3'-8"	2@ 8'-0"	2@8'-11"	4@2'-9"	2@2'-6"	2@3'-7"	7@3'-8"	2@11'-2"	2@12'-7"
24"	8@3'-11"	2@9'-0"	2@10'-1"	4@3'-2"	2@2'-11"	2@4'-1"	9@3'-11"	2@12'-7"	2@14'-2"
27"	8@4'-2"	2@10'-0"	2@11'-2"	4@3'-6"	2@3'-3"	2@4'-5"	9@4'-2"	2@14'-1"	2@15'-10"
30"	8@4'-6"	2@11'-3"	2@12'-7"	4@4'-0"	2@3'-9"	2@5'-1"	9@4'-6"	2@15'-9"	2@17'-9"
33"	8@4'-10"	2@12'-3"	2@13'-8"	4@4'-3"	2@4'-0"	2@5'-4"	9@4'-10"	2@17'-3"	2@19'-5"
36"	10@5'-1"	2@13'-3"	2@14'-9"	6@4'-8"	3@4'-5"	3@5'-10"	11@5'-1"	2@18'-8"	2@21'-0"

NOTE:
Bar sizes, dimensions and quantities have been taken from the NDOT Standard Plans. Additional skew angle information may be obtained from that publication.

NO.	REVISION	DATE

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

HEADWALL DIMENSIONS
(RCP 12" - 36")

SECTION 2

DRAWING NO. 2-13.4 (311)

DATE 7-81

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CMP SIZE D	CORR CMAP S X R	CMP AREA SQ FT	L	SINGLE CMP				DOUBLE CMP			
				0° SKEW		30° SKEW		0° SKEW		30° SKEW	
				CONC. CU YD	STEEL LB	CONC. CU YD	STEEL LB	CONC. CU YD	STEEL LB	CONC. CU.YD	STEEL LB
48"	58"x36"	12.57	12'6"	6.72	597	7.45	656	8.76	715	9.82	815
54"	65"x40"	15.90	14'0"	7.90	706	8.76	802	10.28	841	11.51	950
60"	72"x44"	19.64	15'6"	10.17	993	11.28	1095	13.28	1229	14.87	1381
72"		28.27	18'6"	13.13	1265	14.56	1424	17.07	1538	19.11	1753

X=8" Y=2'0" h=D+2'8"

LENGTH OF REINFORCING BARS

CMP SIZE D	SINGLE CMP											
	0° SKEW					30° SKEW						
	NO 5	NO 5	NO 4	NO 4	NO 4	NO 5	NO 5	NO 4	NO 4	NO 4	NO 4	NO 4
	F	G	M	N	K	F	G	M	Q	N	K	
48"	12@ 2'-9"	10@ 7'-7"	12@6'-0"	9@16'-3"	10@5'-10"	13@2'-9"	11@7'-7"	6@5'-8"	6@7'-3"	9@18'-2"	11@5'-10"	
54"	13@ 2'-9"	12@ 8'-1"	12@6'-9"	9@18'-3"	12@6' - 4"	15@2'-9"	14@8'-1"	6@6'-5"	6@8'-1"	9@20'-4"	14@6'-4"	
60"	21@ 3'-9"	18@ 8'-9"	12@7'-6"	10@20'-3"	12@6'-10"	23@3'-9"	20@8'-9"	6@7'-2"	6@9'-0"	10@22'-7"	13@6'-10"	
72"	25@ 3'-9"	20@ 9'-9"	16@9'-0"	10@24'-3"	14@7'-10"	28@3'-9"	23@9'-9"	8@8'-8"	8@10'-10"	10@27'-0"	16@7'-10"	
DOUBLE CMP												
48"	16@ 2'-9"	11@ 7'-7"	12@6'-0"	9@22'-3"	11@5'-10"	18@2'-9"	13@ 7'-7"	6@5'-8"	6@7'-3"	9@25'-1"	13@5'-10"	
54"	18@ 2'-9"	13@ 8'-1"	12@6'-9"	9@25'-0"	13@6' - 4"	20@2'-9"	15@ 8'-1"	6@6'-5"	6@8'-1"	9@28'-2"	15@6' - 4"	
60"	29@ 3'-9"	21@ 8'-9"	12@7'-6"	10@27'-9"	14@6'-10"	32@3'-9"	24@ 8'-9"	6@7'-2"	6@9'-0"	10@31'-3"	16@6'-10"	
72"	34@ 3'-9"	23@ 9'-9"	16@9'-0"	10@33'-3"	16@7'-10"	38@3'-9"	27@ 9'-9"	8@8'-8"	8@10'-10"	10@37'-5"	19@7'-10"	

NOTE:
Bar sizes, dimensions and quantities have been taken from the NDOT Standard Plans. Additional skew angle information may be obtained from that publication.

NO.	REVISION	DATE
1	SPELLING	10-16-86

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

HEADWALL DIMENSIONS
(CMP 48"- 72")

SECTION 2

DRAWING NO. 2-13.5 (311)

DATE 7-81

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NO.	REVISION	DATE

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

HEADWALL DIMENSIONS

(RCP 42" - 72")

SECTION 2

DRAWING NO. 2-13.6 (311)

DATE 7-81

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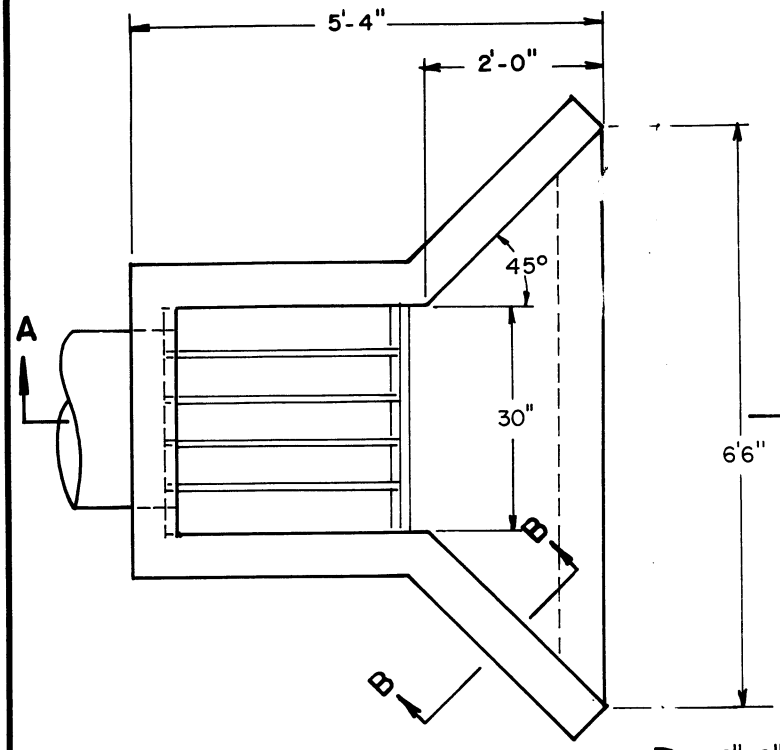
RCP SIZE D	RCP AREA SQ FT.	SINGLE RCP 0° SKEW CONC cu yd	SINGLE RCP 0° SKEW STEEL lb	SINGLE RCP 30° SKEW CONC cu yd	SINGLE RCP 30° SKEW STEEL lb	DOUBLE RCP 0° SKEW CONC cu yd	DOUBLE RCP 0° SKEW STEEL lb	DOUBLE RCP 30° SKEW CONC cu yd	DOUBLE RCP 30° SKEW STEEL lb	X	Y	L	h	RCP SIZE D
42"	9 62	6.10	571	6.76	627	8.18	692	9.15	790	1-0¼	2-0¼	12-0	6-6½	42
48"	12 57	7.41	688	8.21	781	9.88	829	11.07	935	1-1	2-1	13-9	7-2	48
54"	15 90	9.81	990	10.87	1096	13.11	1236	14.68	1395	1-1½	2-1½	15-6	7-9	54
60"	19 64	11.29	1137	12.50	1250	15.08	1407	16.88	1596	1-2	2-2	17-0	8-4	60
72"	28 27	15.62	1825	17.30	2045	20.87	2247	23.36	2596	1-3	2-3	20-3	9-6	72

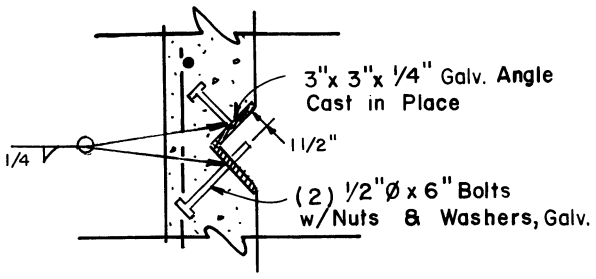
NOTE:
Bar sizes, dimensions and quantities have been taken from the NDOT Standard Plans. Additional skew angle information may be obtained from that publication.

LENGTH OF REINFORCING BARS

R C P SIZE	SINGLE R C P 0° SKEW NO. 5 F	NO. 5 G	NO. 4 M	NO. 4 N	NO. 4 K	30° SKEW NO. 5 F	NO. 5 G	NO. 4 M	NO. 4 Q	NO. 4 N	NO. 4 K
42"	12@2'-9"	10@7'-6"	12@5'-5"	9@15'-3"	10@5'-8"	13@2'-9"	11@7'-6"	6@5'-1"	6@6'-6"	9@17'-0"	11@5'-8"
48"	13@2'-9"	12@8'-1"	12@6'-3"	9@17'-6"	12@6'-3"	15@2'-9"	14@8'-1"	6@5'-11"	6@7'-5"	9@19'-6"	14@6'-3"
54"	21@3'-9"	16@9'-1"	16@7'-1"	10@19'-9"	12@6'-10"	23@3'-9"	18@9'-1"	8@6'-9"	8@8'-5"	10@22'-0"	13@6'-10"
60"	23@3'-9"	18@9'-8"	16@7'-9"	10@21'-9"	14@7'-5"	25@3'-9"	20@9'-8"	8@7'-5"	8@9'-4"	10@24'-3	15@7'-5"
72"	27@4'-6"	30@11'-7"	20@9'-11"	12@26'-0"	16@8'-7"	30@4'-6"	34@11'-7"	10@9'-0"	10@11'-3"	12@29'-0"	18@8'-7"
	DOUBLE R C P										
42"	16@2'-9"	11@7'-6"	12@5'-5"	9@21'-6"	11@5'-8"	18@2'-9"	13@7'-6"	6@5'-1"	6@6'-6"	9@24'-3	13@5'-8"
48"	18@2'-9"	13@8'-1"	12@6'-3"	9@24'-9"	13@6'-3"	20@2'-9"	15@8'-1"	6@5'-11"	6@7'-5"	9@27'-10"	15@6'-3"
54"	29@3'-9"	19@9'-1"	16@7'-0"	10@27'-10"	14@6'-10"	32@3'-9"	22@9'-1"	8@6'-9"	8@8'-5"	10@31'-4"	16@6'-10"
60"	32@3'-9"	21@9'-8"	16@7'-9"	10@30'-9"	14@7'-5"	36@3'-9"	25@9'-8"	8@7'-5"	8@9'-4"	10@34'-8"	17@7'-5"
72"	37@4'-6"	35@11'-7"	20@9'-11"	12@36'-10"	19@8'-7"	42@4'-6"	42@11'-7"	10@9'-0"	10@11'-3"	12@41'-5"	22@8'-7"



PLAN



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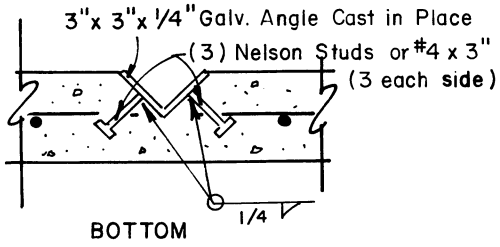
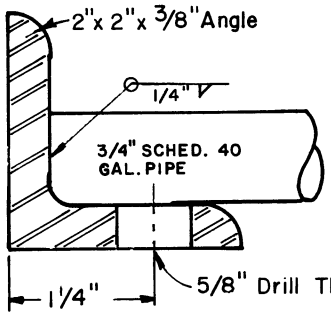
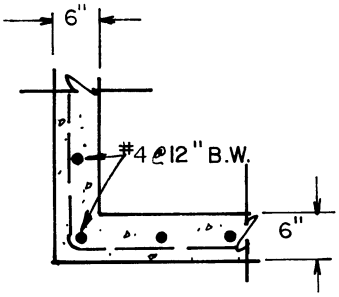


BOTTOM

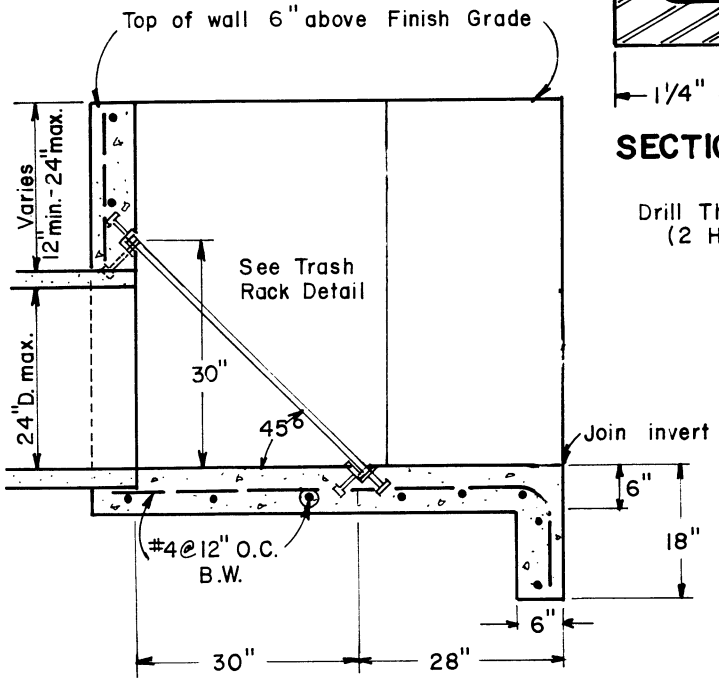
CAST ANGLE DETAILS



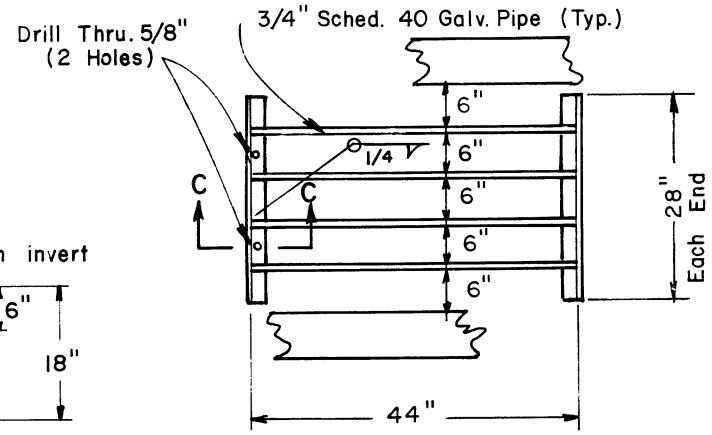
SECTION C-C



SECTION B-B



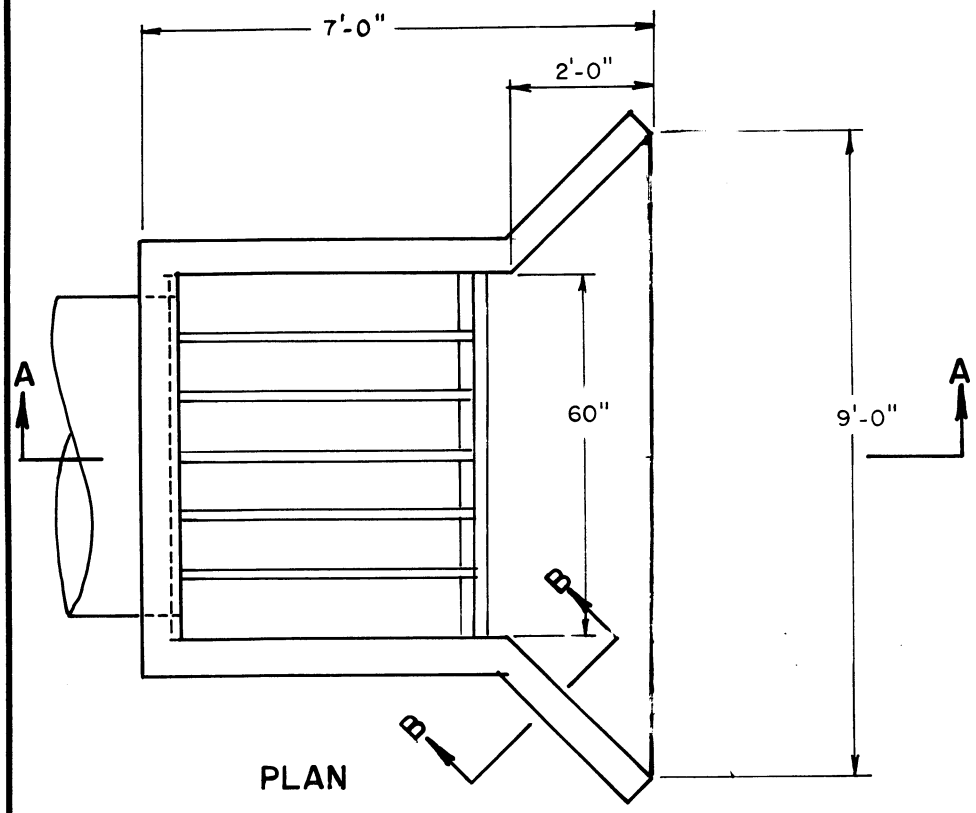
SECTION A-A



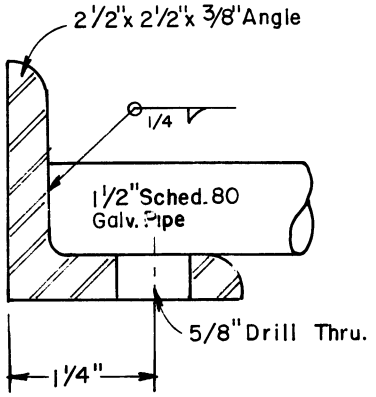
TRASH RACK DETAIL

Note: Not for use in City of Reno. (See Reno Section)

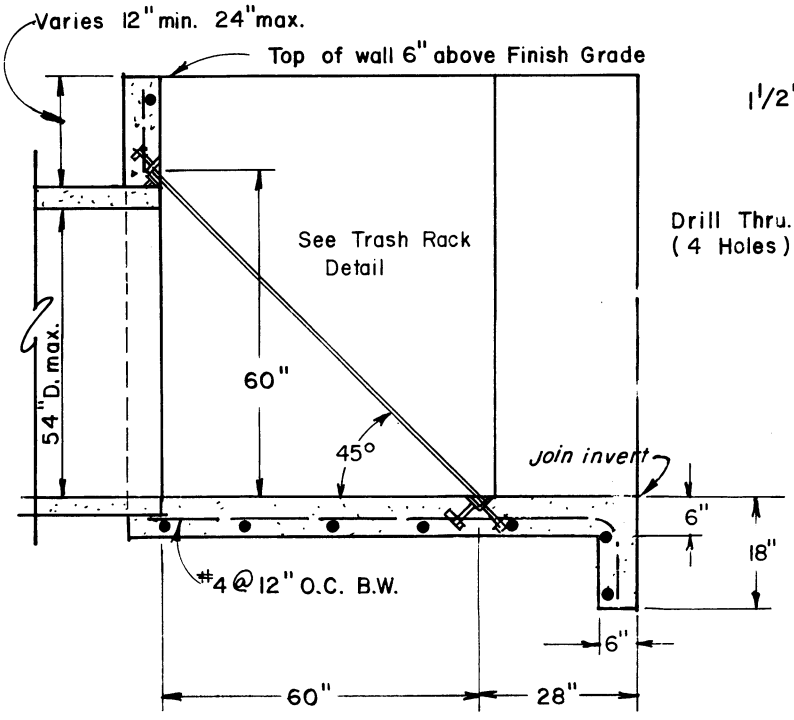
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 2	
			TRASH RACK (24" PIPE AND SMALLER)	DRAWING NO 2 - 14.1 (311, 324)	
				DATE 7 - 81	PAGE 22



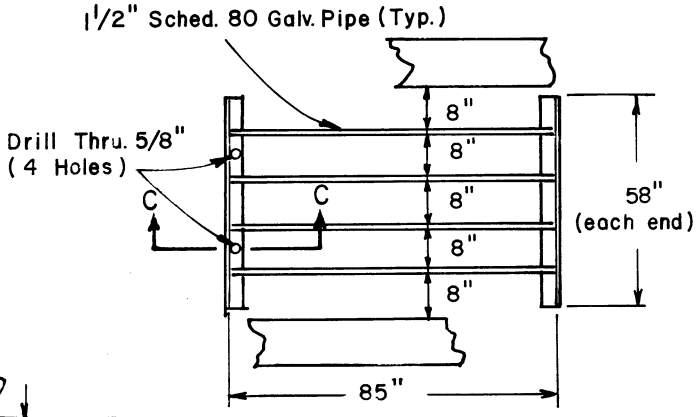
PLAN



SECTION C-C



SECTION A-A



TRASH RACK DETAIL

NOTE: 1. For Details not shown see Trash Rack -24" Pipe and smaller

2. Not for use in City of Reno (see Reno Section)

NO.	REVISION	DATE
1	SEC. C-C	10-16-86

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

TRASH RACK
(27" THRU 54" PIPE)

SECTION 2

DRAWING NO. 2-14.2 (311, 324)

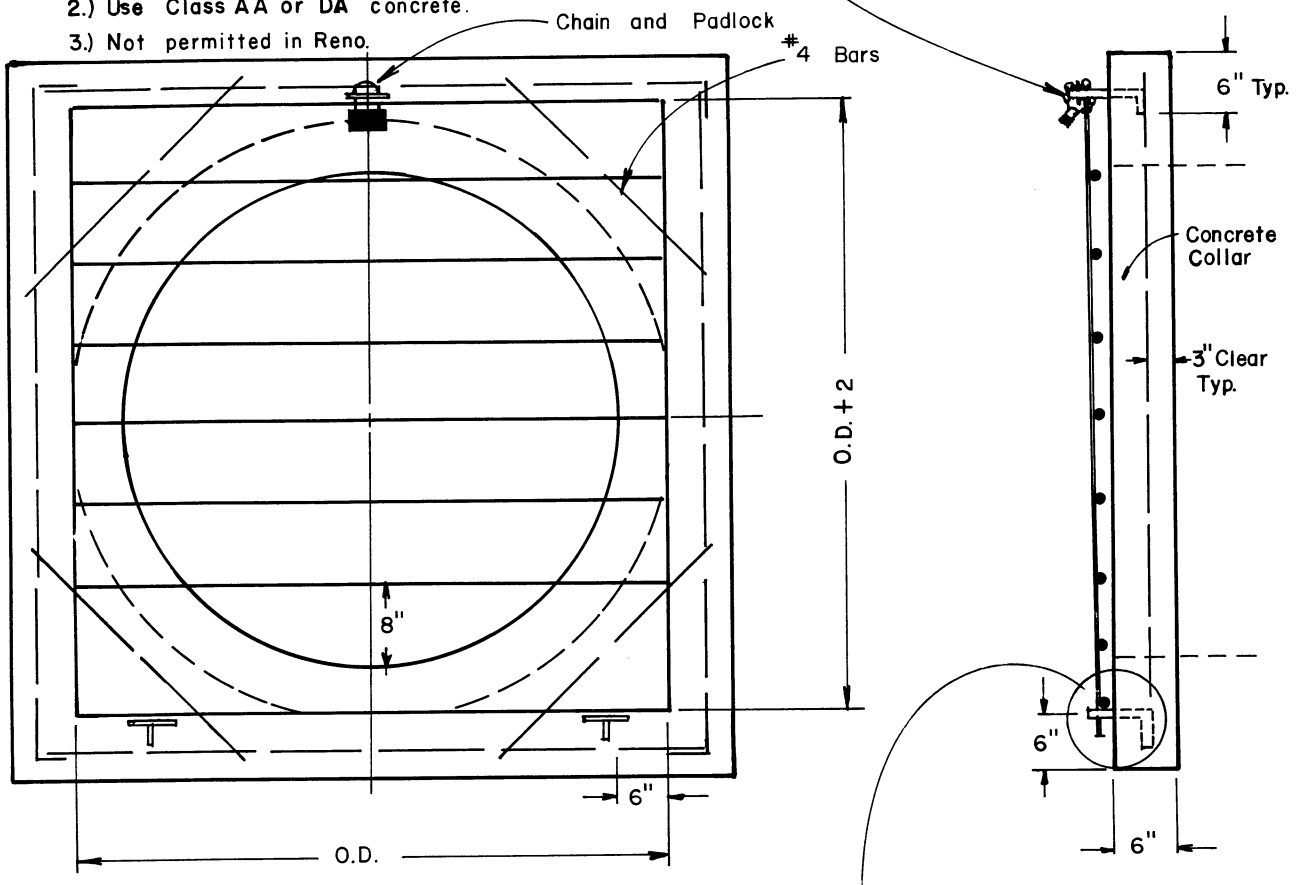
DATE 7-81

PAGE 23

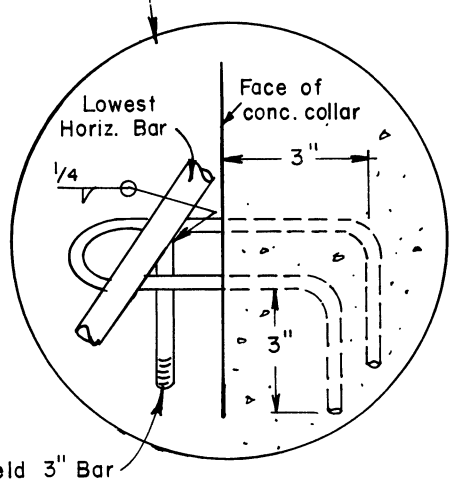
1.) Rack to be welded reinforcing steel or round bars of equal diameter with horizontal bars being 8" center to center (See table).

2.) Use Class AA or DA concrete.

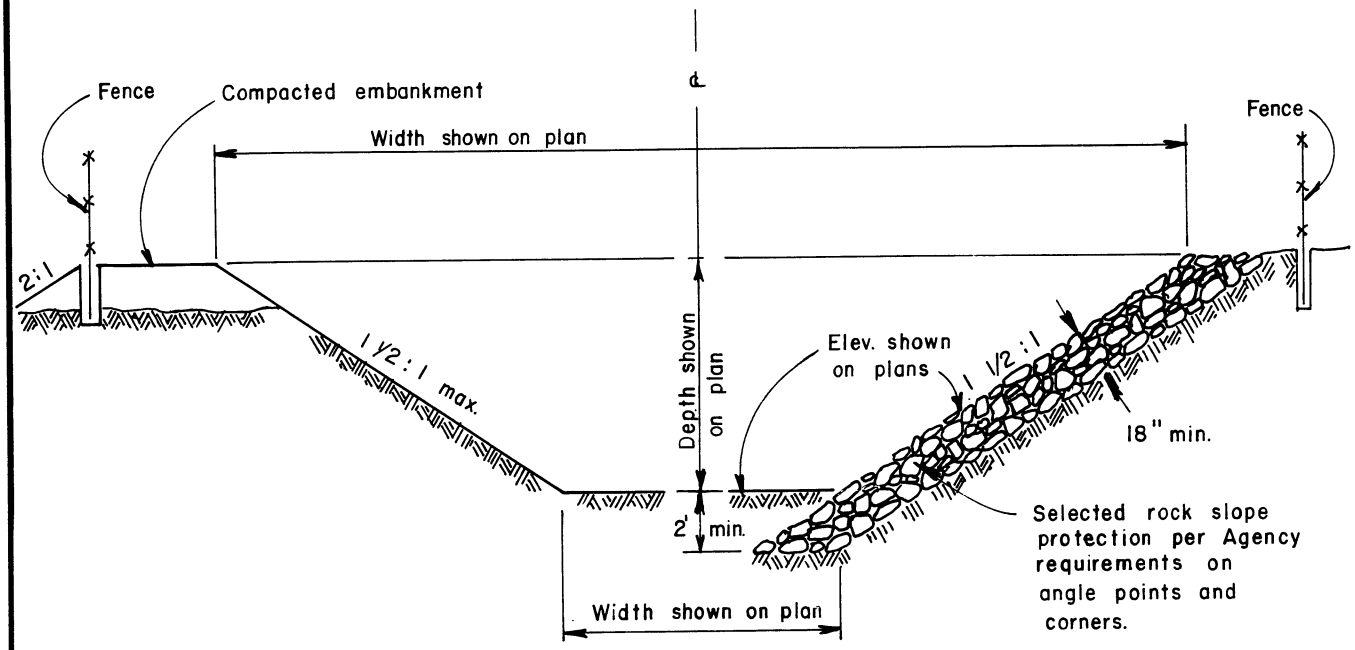
3.) Not permitted in Reno.



PIPE SIZE	BAR SIZE
21"	4
24"	4
27"	5
30"	5
33"	6
36"	6
42"	7
48"	7
54"	7
60"	8
66"	8
72"	8
84"	8



NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 2	
			ACCESS CONTROL RACK	DRAWING NO. 2-15 (324)	
				DATE 7-81	PAGE 24

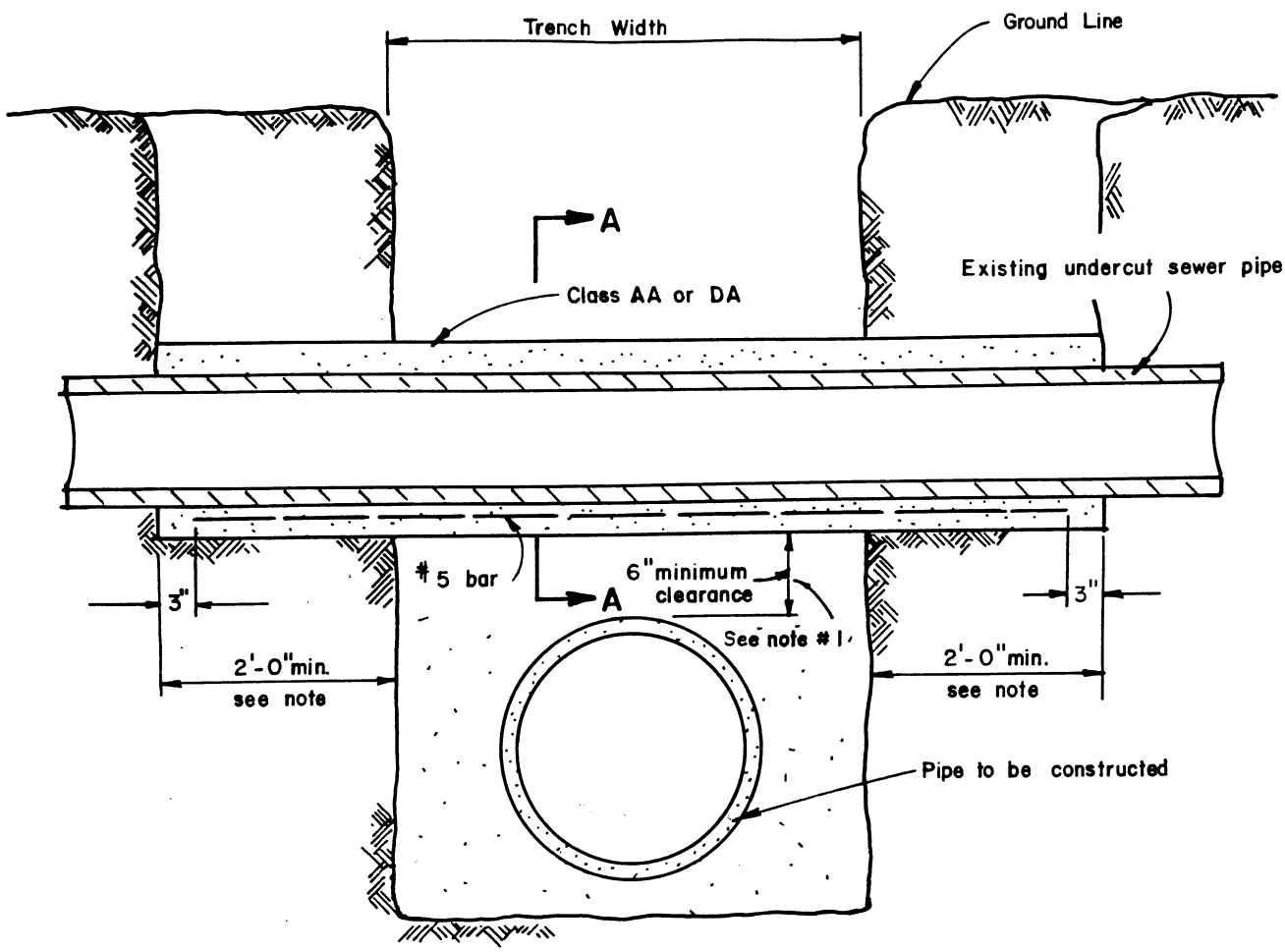


TYPICAL SECTION

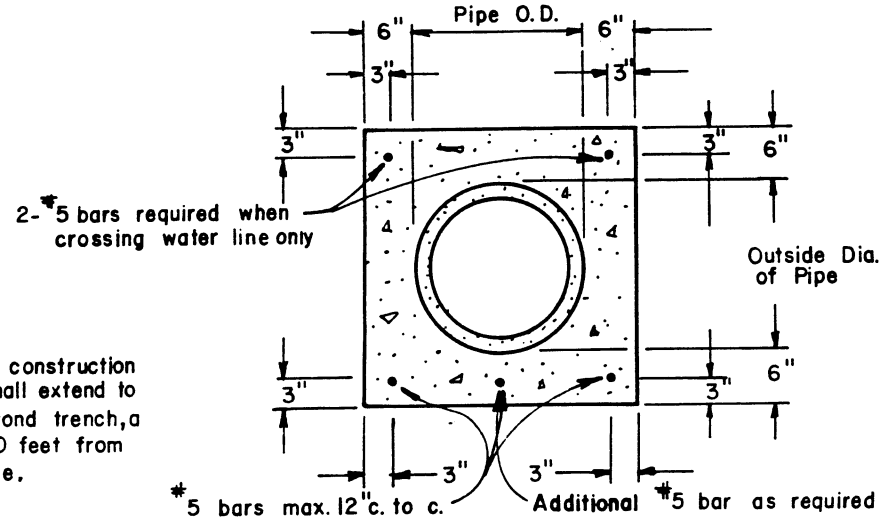
NOTES:

1. The following shall be as required by Agency:
   a.) Low flow channel
   b.) Filter blanket
   c.) Cutoff wall
   d.) Fence
2. Not for use in Reno.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 2	
			DRAINAGE CHANNEL (EARTH / ROCK LINED)	DRAWING NO. 2-16 (303)	
				DATE 7-81	PAGE 25



TYPICAL SECTION



SECTION A-A

NOTE:

For water line construction encasement shall extend to first joint beyond trench, a minimum of 10 feet from the water line.

1. IN CARSON CITY, THE MINIMUM CLEARANCE BETWEEN PIPES SHALL BE 18".

NO.	REVISION	DATE
1	NOTE # 1	2/92

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

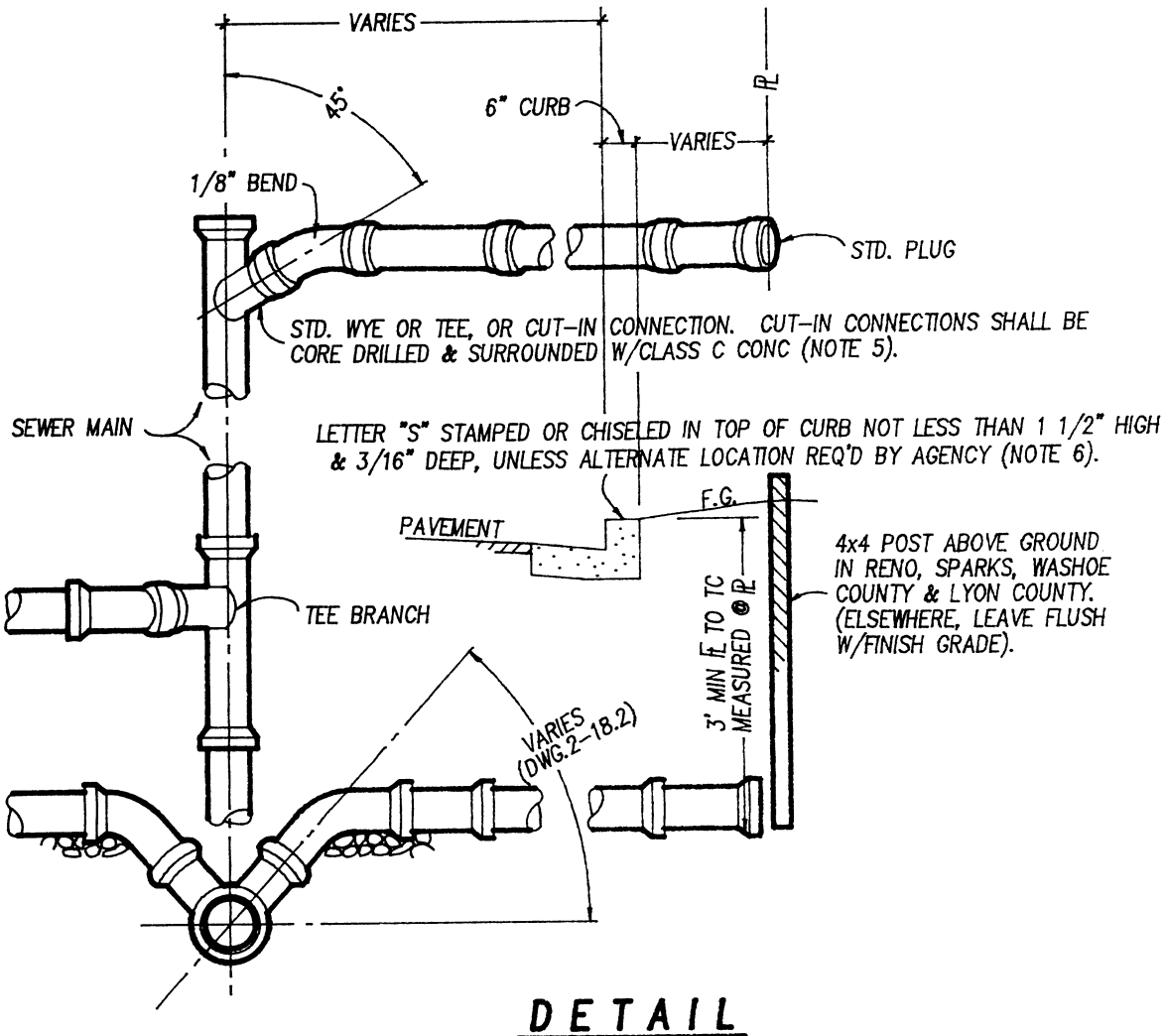
CONCRETE SUPPORT for UNDERCUT SEWER PIPE

SECTION 2

DRAWING NO. 2-17 (311)

DATE 7-81

PAGE 26



DETAIL

N.T.S.

NOTES

1. IN NO CASE SHALL A LATERAL CONNECT TO THE SEWER MAIN DIRECTLY ON TOP OF THE PIPE.
2. SEWER LATERALS SHALL HAVE A MIN SLOPE OF 2%.
3. ALL JOINTS ON SEWER LATERAL PIPE SHALL BE COMPRESSION TYPE OR APPROVED SOLVENT WELD.
4. LATERAL SHALL EXTEND TO PROPERTY LINE UNLESS OTHERWISE SHOWN ON PLANS.
5. CITY OF RENO: SEWER LATERAL "CUT-IN" CONNECTION WILL BE SHOWN ON DWG.2-20.
6. THE LETTER "S" SHALL BE RESTAMPED INTO THE CURB WHEN CURB REMOVAL IS REQ'D.

NO.	REVISION	DATE
1	REDRAWN	1/95vp

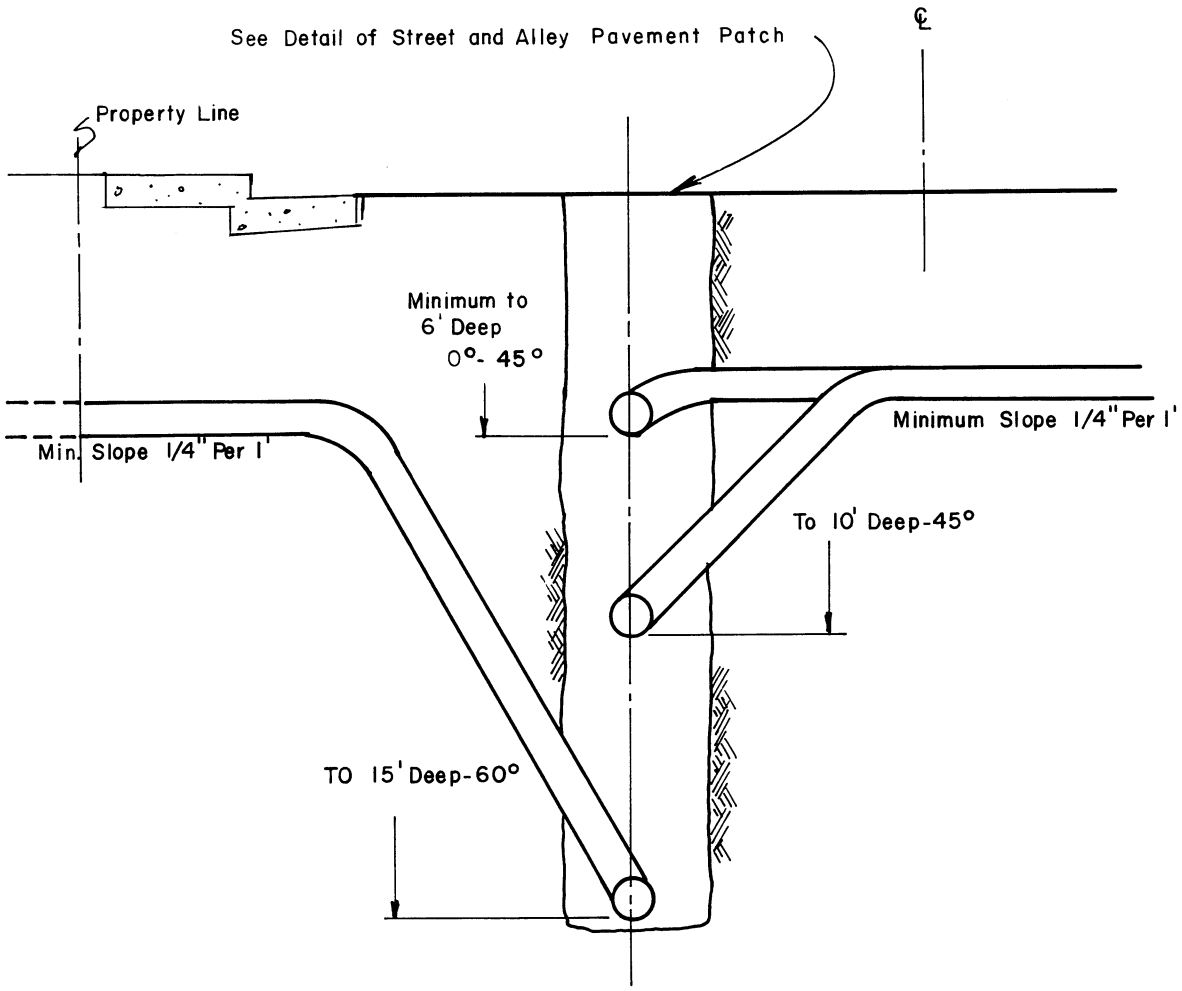
STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

SEWER LATERAL CONNECTION

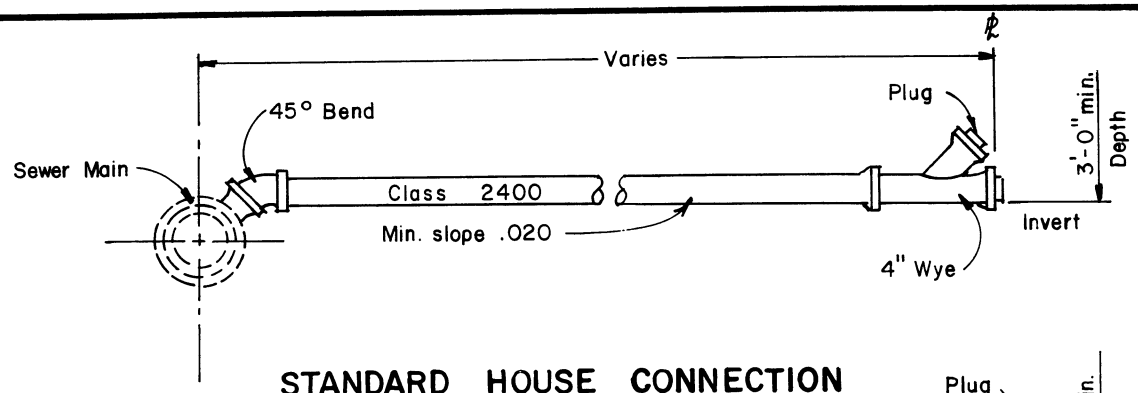
SECTIONS 2

DRAWING NO. 2-18.1 (306)

DATE 1/95vp | PAGE 27

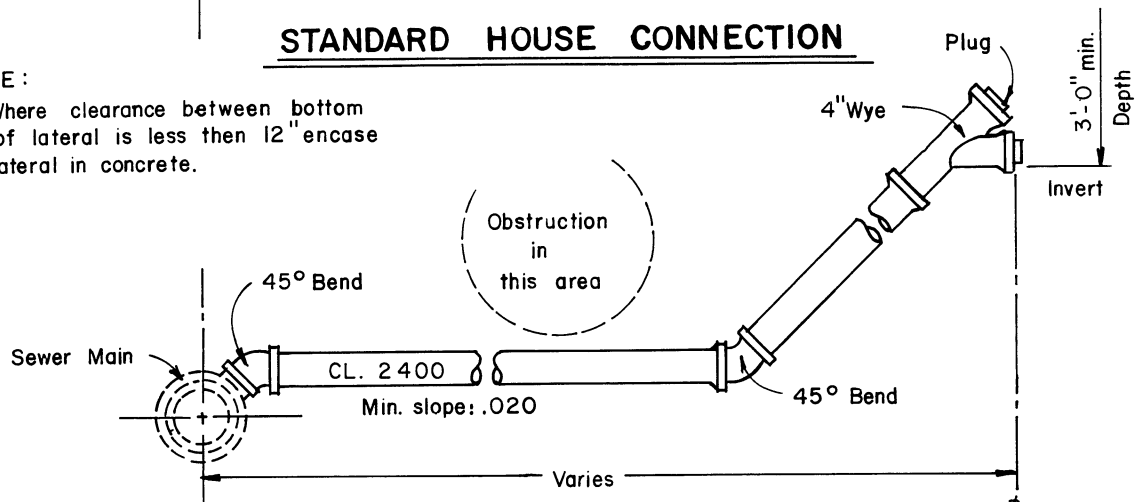


NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 2	
			SEWER LATERAL CONNECTION	DRAWING NO. 2-18.2 (306)	
				DATE 7-81	PAGE 28



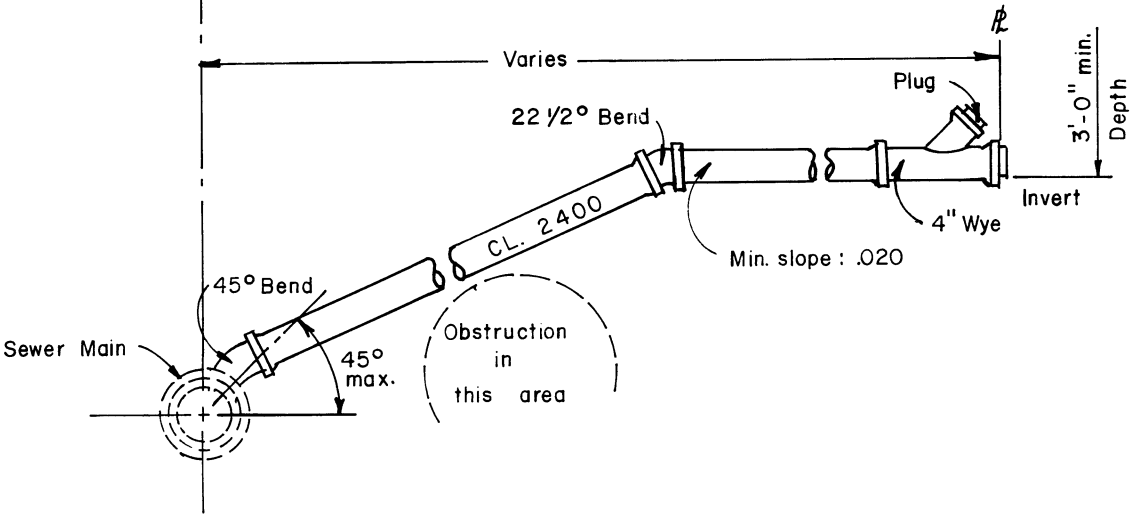
STANDARD HOUSE CONNECTION

NOTE :
Where clearance between bottom of lateral is less then 12" encase lateral in concrete.



HOUSE CONNECTION UNDER OBSTRUCTION

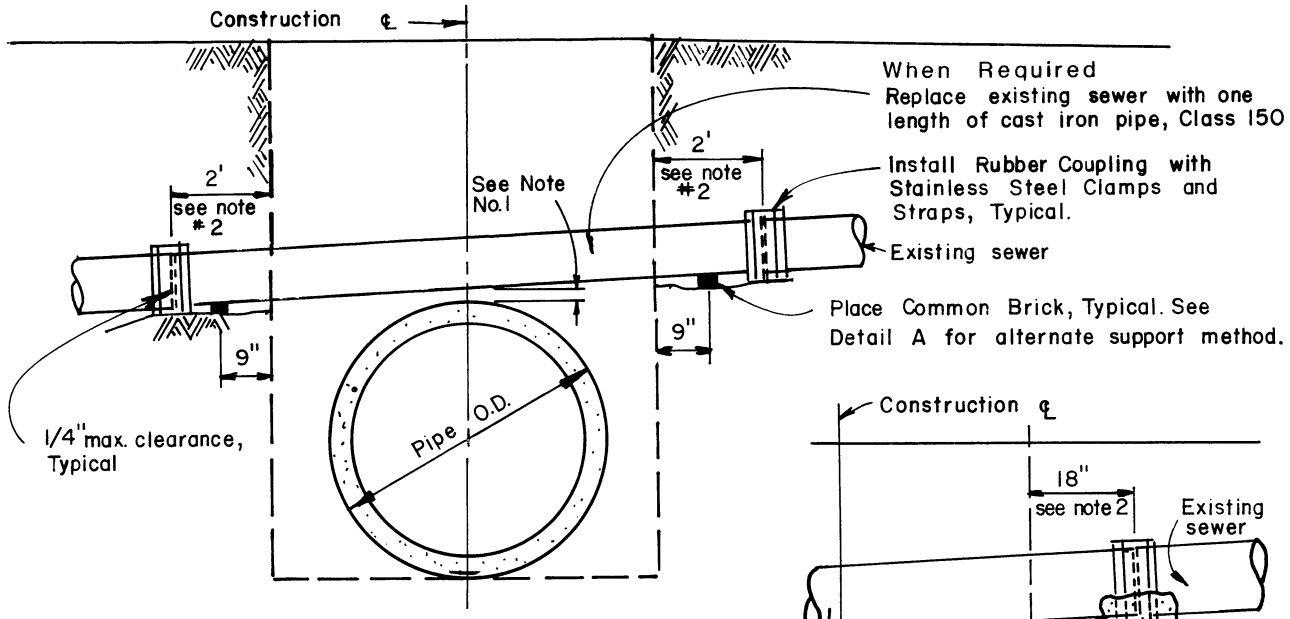
(UPON APPROVAL ONLY)



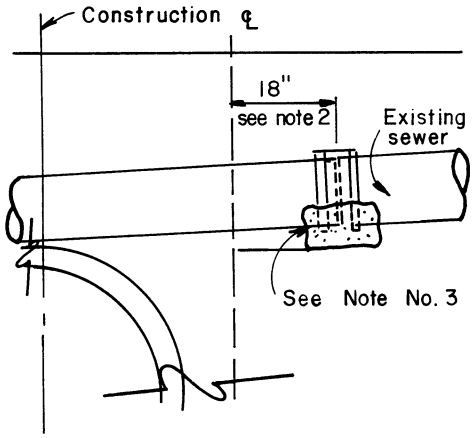
HOUSE CONNECTION OVER OBSTRUCTION

(UPON APPROVAL ONLY)

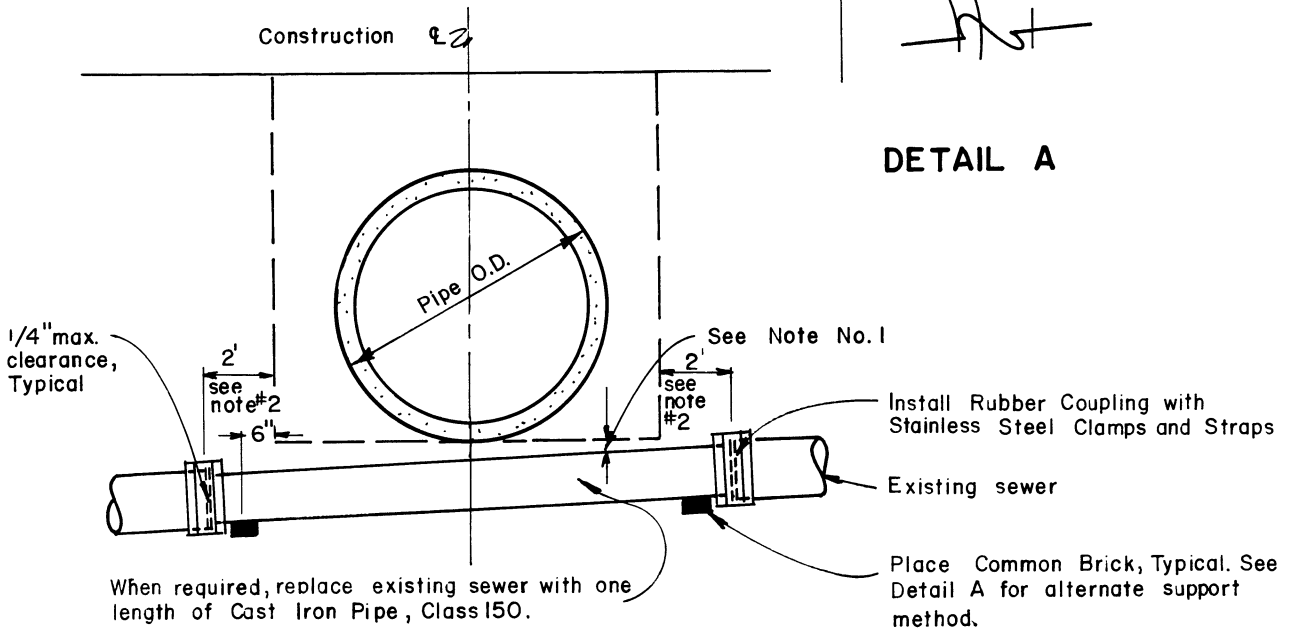
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 2	
			SEWER LATERAL WITH CLEANOUT WYE	DRAWING NO. 2 - 18.3 (306)	
				DATE 7 - 81	PAGE 29



CROSSING UNDER SANITARY SEWER



DETAIL A



CROSSING OVER SANITARY SEWER

GENERAL NOTES:

1.) Provide minimum clearance as required by the appropriate governing agency.

2.) For waterline construction, Cast Iron Sewer Pipe shall extend to a minimum of 10 feet from the waterline.

3.) Place Class "A" Concrete Support under Couplings.

4.) Lander Co.- Replaced sewer shall be PVC pressure pipe, Cl. 150.

NO.	REVISION	DATE
1	When Req'd.	3-83

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

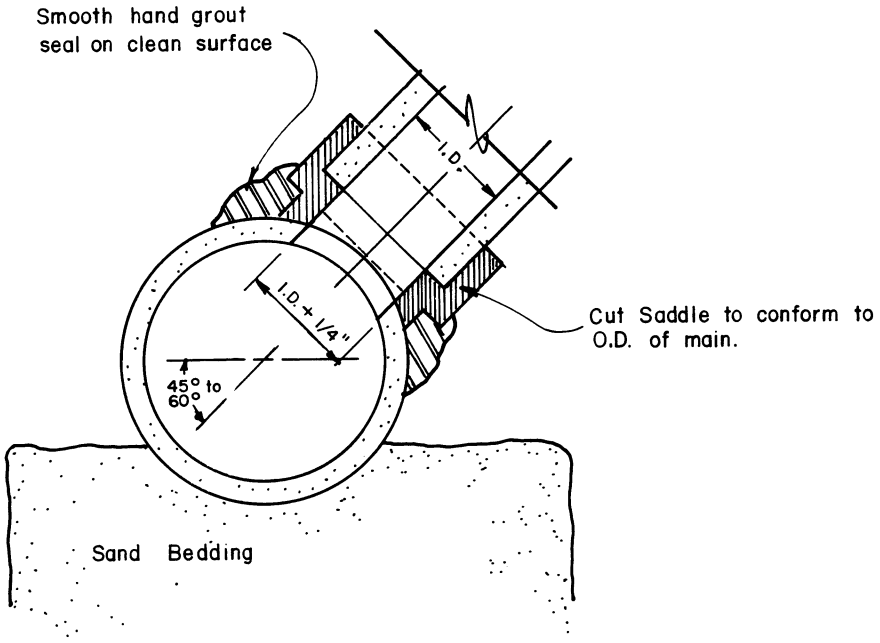
SANITARY SEWER CROSSING

SECTION 2

DRAWING NO. 2-19 (306)

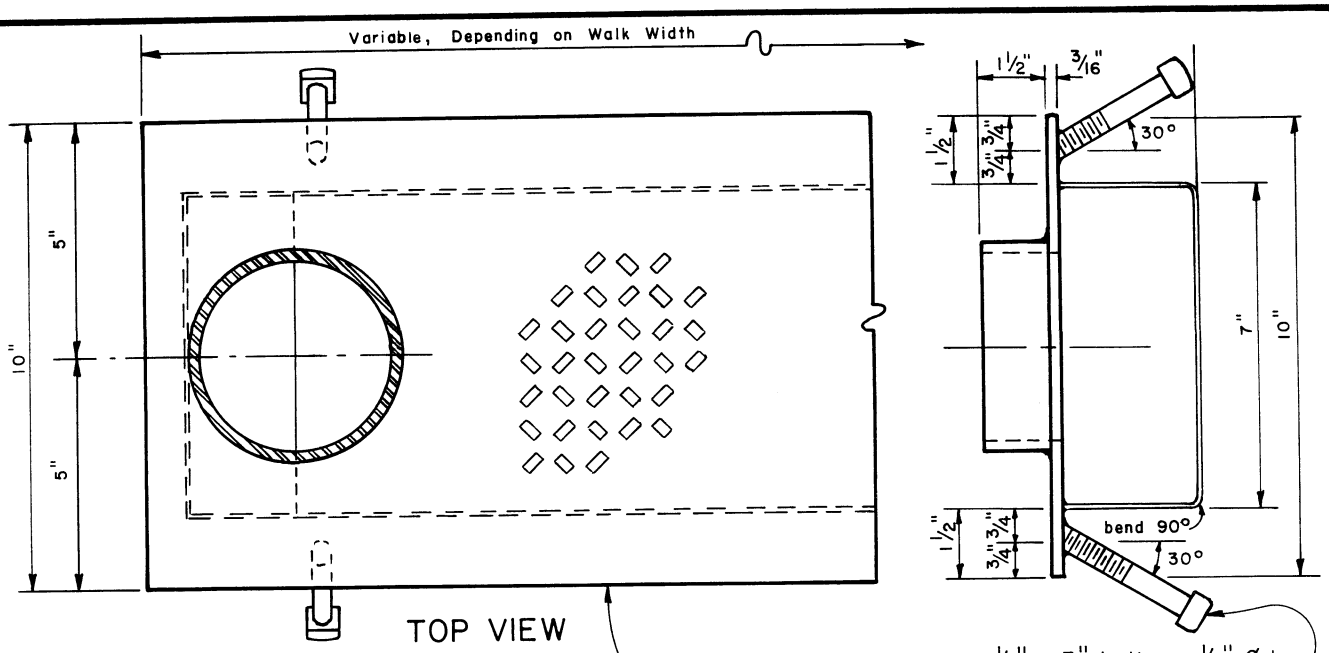
DATE 7 - 81

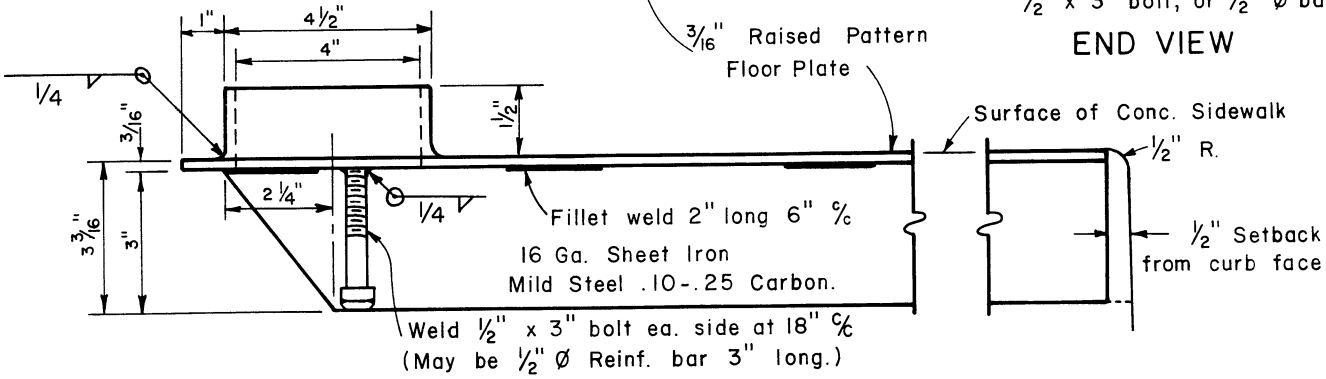
PAGE 30

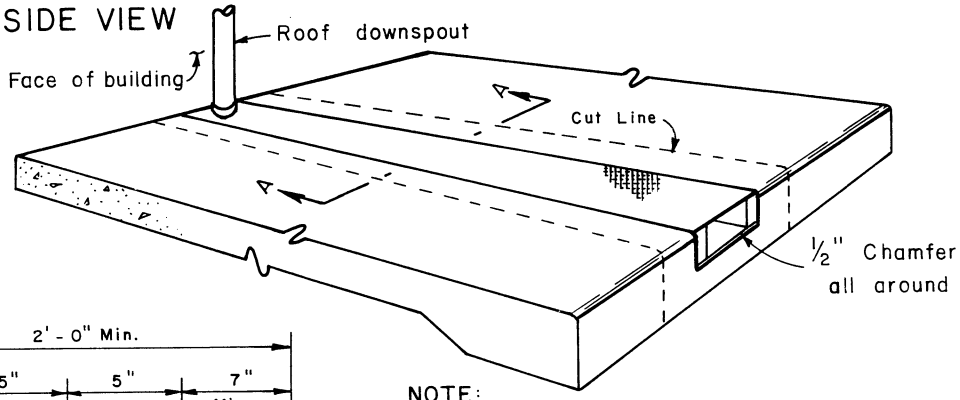


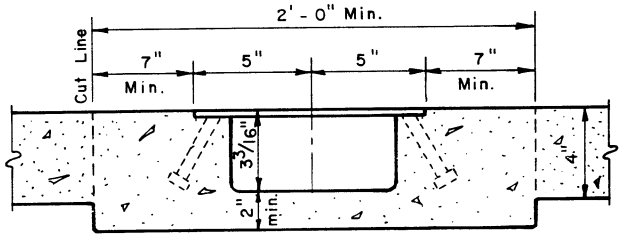
SADDLE DETAIL

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 2	
			SEWER LATERAL "CUT-IN"	DRAWING NO. 2-20 (306)	
				DATE 7-81	PAGE 31







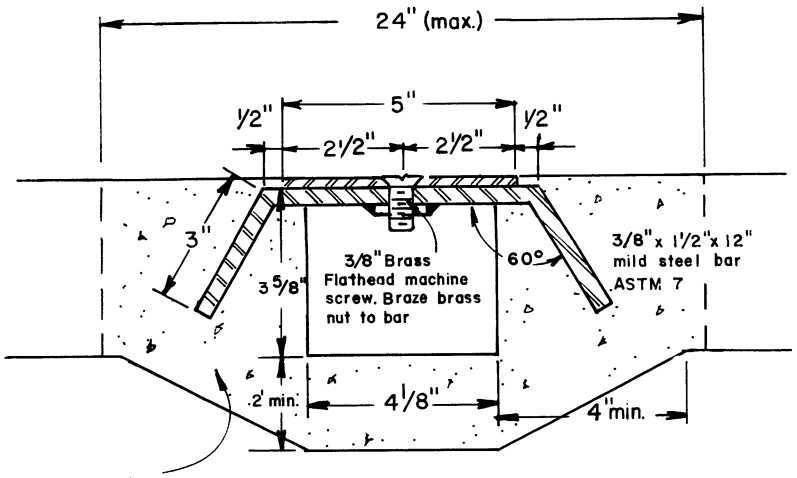


SECTION A-A

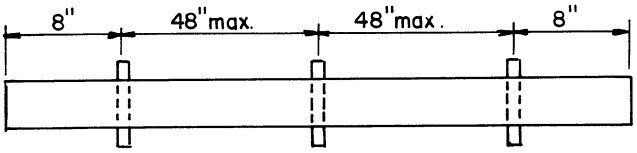
NOTE:

1. Steel drain to end ½" from face of curb.
2. Concrete shall be class DA.
3. When drain is placed in existing sidewalk the sidewalk shall be saw cut at cut line.
4. Payment based on saw cut width.
5. Sidewalk drain in place per lin. ft.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 2
			SIDEWALK CROSS-DRAIN TYPE I	DRAWING NO. 2-21.1 (324)
				DATE 7-81 / PAGE 32



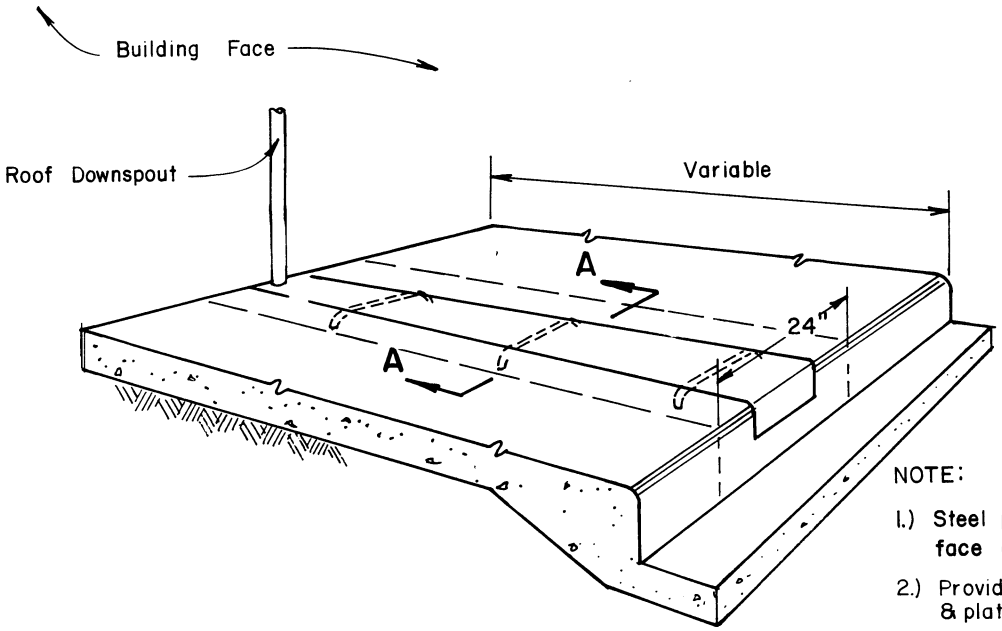
SECTION A-A



NOTE

For walks 6' and less use 2 bars
For walks 6' to 10' use 3 bars
For walks over 10' use 4 bars

BAR SPACING



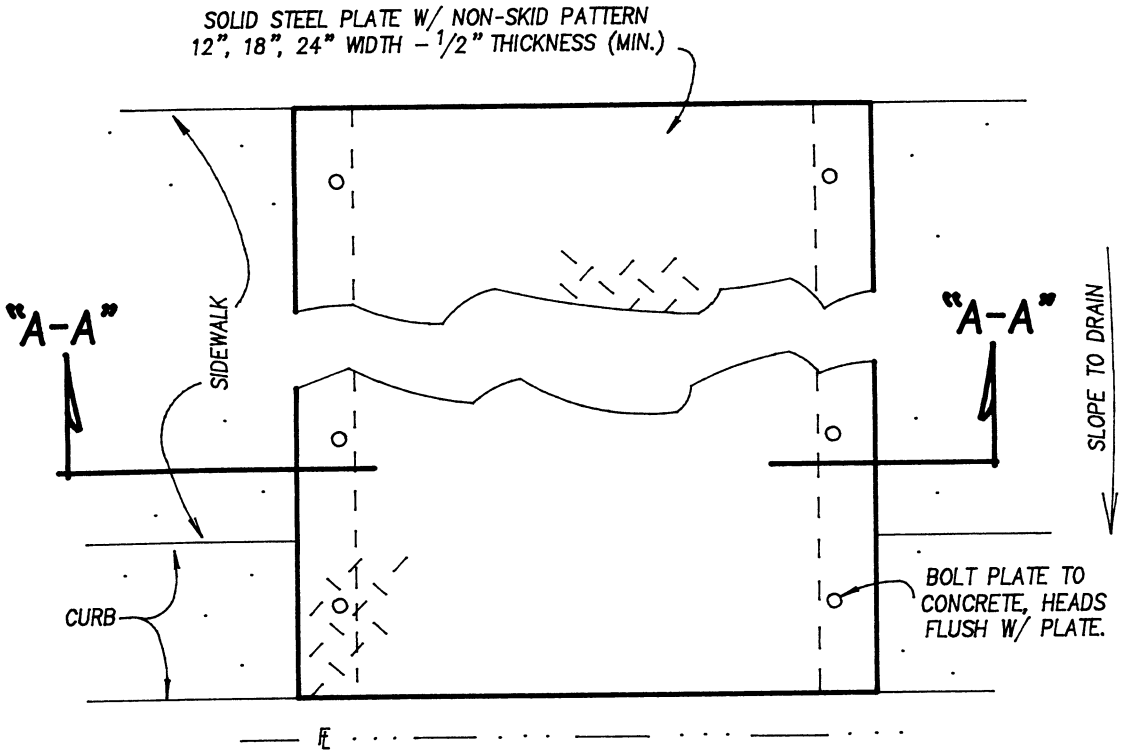
NOTE:

1.) Steel plate to end 1/2" from face of curb.

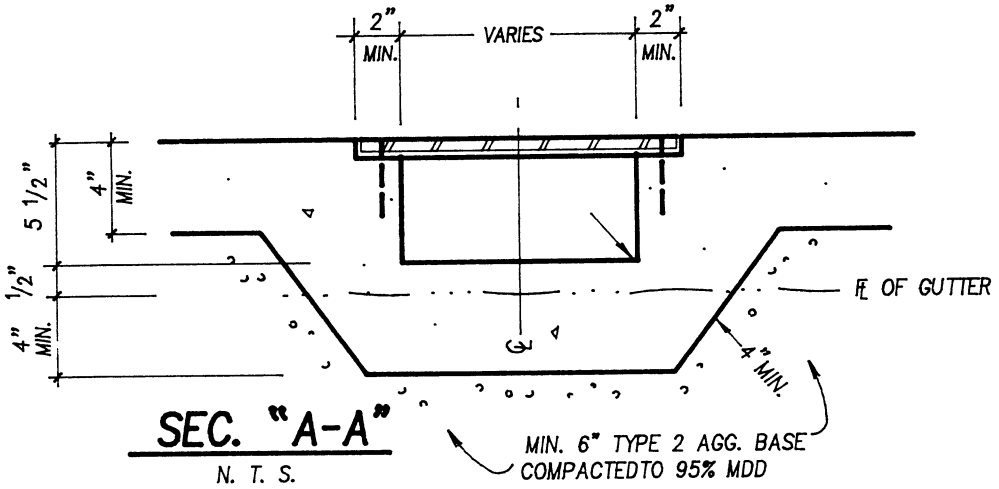
2.) Provide space between bldg. & plate for downspout.

3.) When drain is placed in existing sidewalk, the sidewalk shall be sawcut (not to exceed 24" wide)

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 2	
			SIDEWALK CROSS-DRAIN TYPE II	DRAWING NO. 2-21.2 (324)	
				DATE 7-81	PAGE 33



PLAN N. T. S.



SEC. "A-A"
N. T. S.

NO.	REVISION	DATE
1	REDRAW	8/93 vp

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

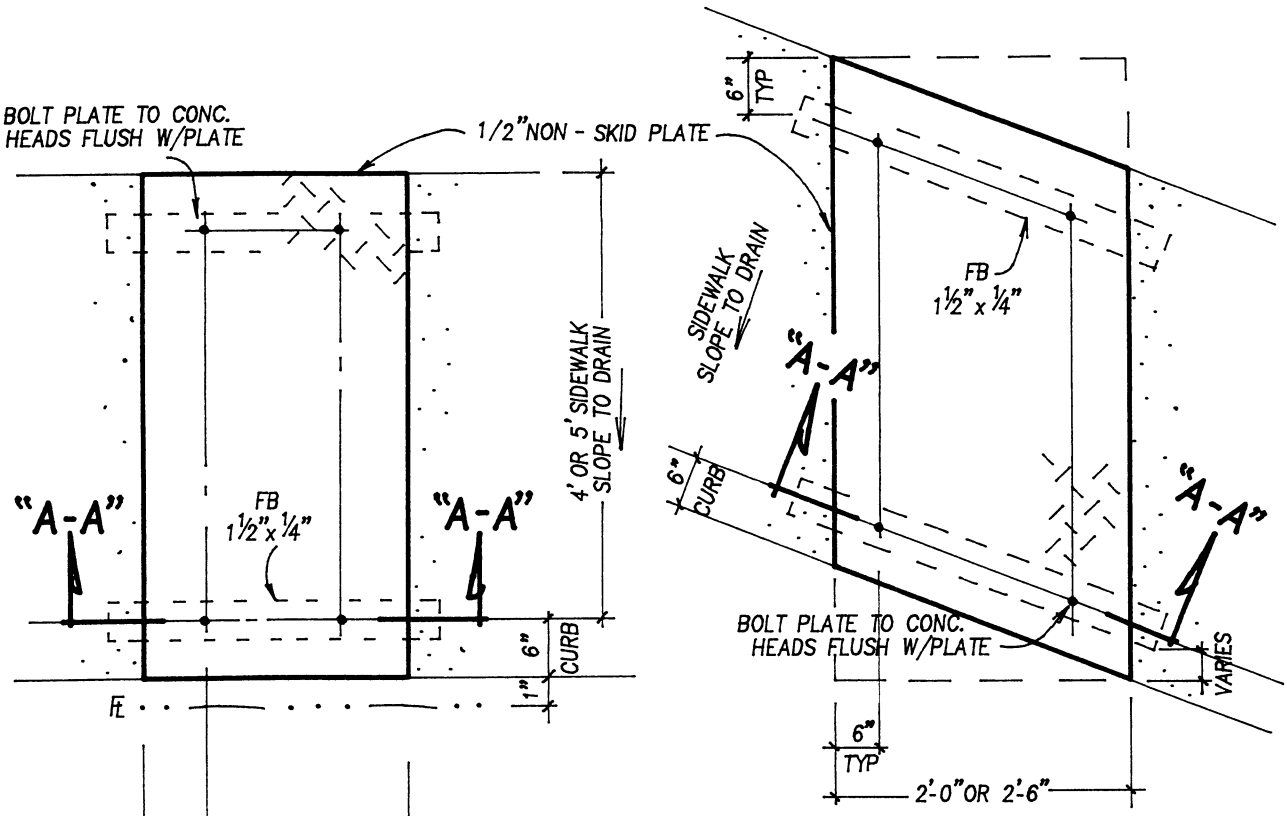
SIDEWALK CROSS-DRAIN TYPE III

SECTIONS 2

DRAWING NO. 2-21.3 (324)

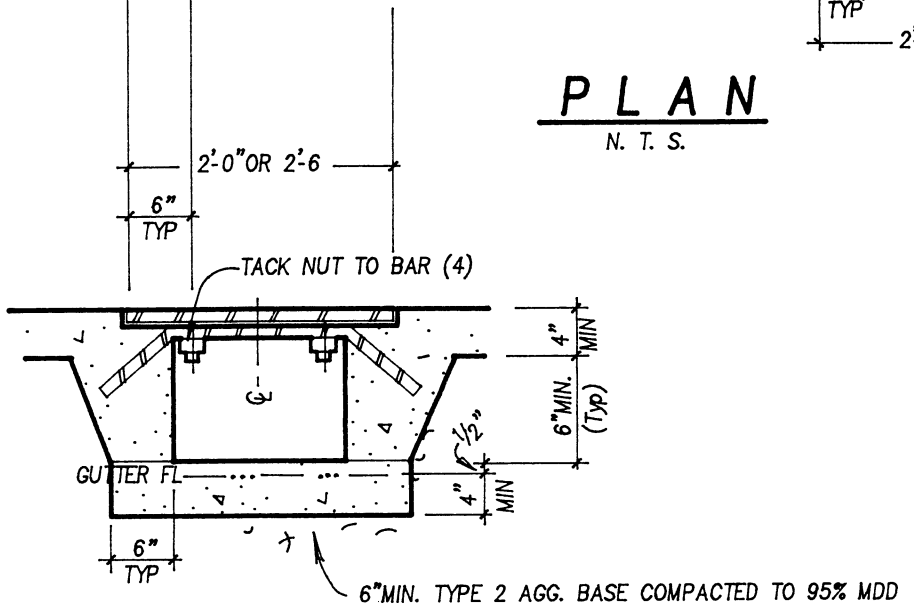
DATE 2/93 PAGE 34

walk



PLAN

N. T. S.



SEC. "A-A"

N. T. S.

NO.	REVISION	DATE
1	REDRAW	8/93 vp

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

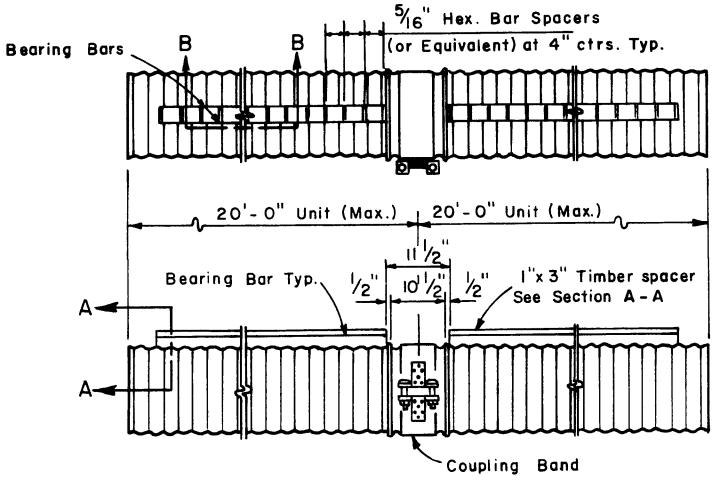
SIDEWALK CROSS-DRAIN TYPE III (MODIFIED)

SECTIONS 2

DRAWING NO. 2-21.4 (324)

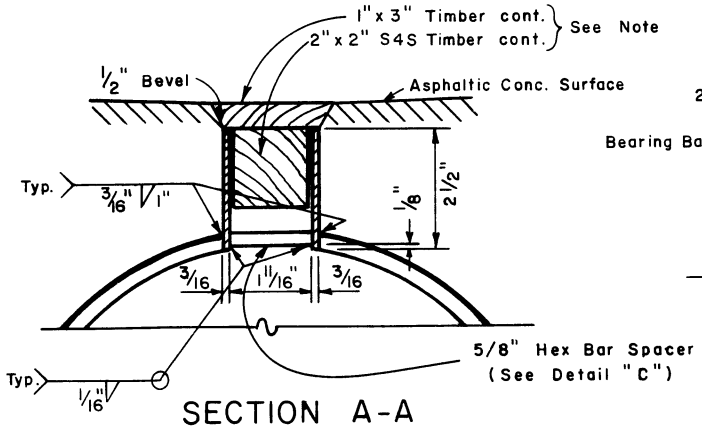
DATE 2/93 | PAGE 34-A

walkmo

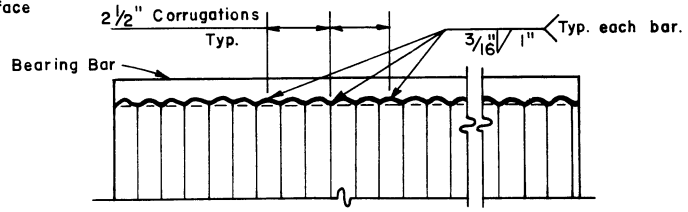


PLAN VIEW WITH TIMBER SPACERS REMOVED

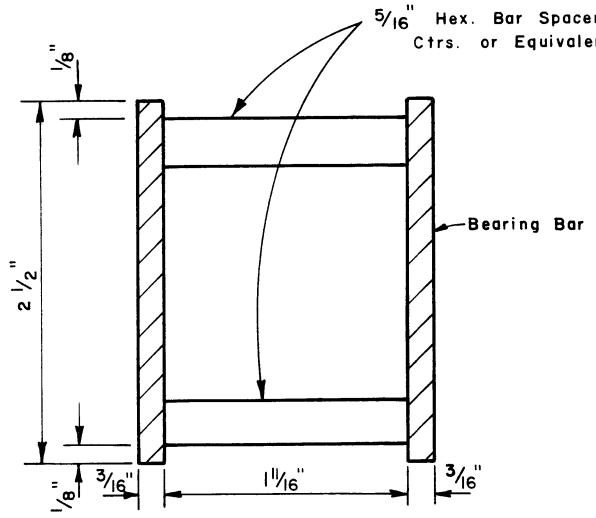
SLOTTED DRAIN DETAIL



SECTION A-A



SECTION B-B



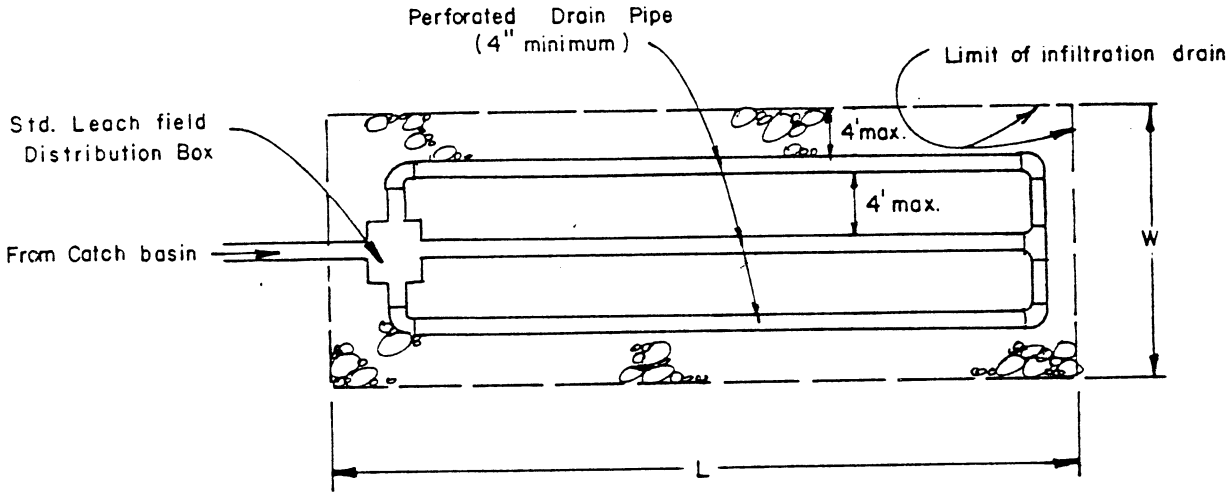
DETAIL "C"

DOUBLE BAR SPACERS TO BE USED IN URBAN AREAS

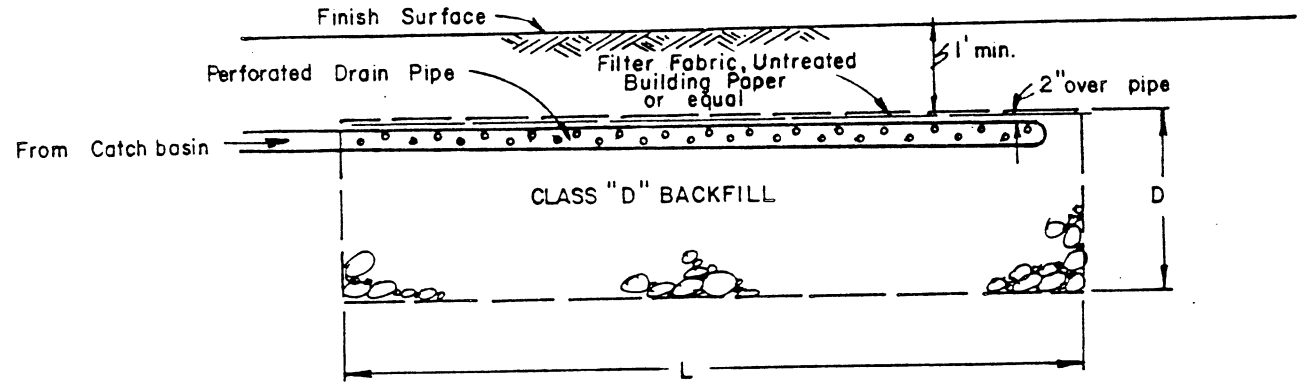
NOTE:

Continuous timbers shall be nailed together and left in place during paving operations. Remove when paving is completed.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 2	
1	PAGE	3-83	SLOTTED C.M.P. DRAIN	DRAWING NO. 2-22 (306)	
				DATE 7-81	PAGE 35



PLAN VIEW



PROFILE

NOTES:

1) Not for use in the City of Reno.
2) Design size to be based on percolation tests.
3) Design storm shall be the 5-Year, 10 minute duration (minimum)
4) Volume of voids shall be considered to be 35% maximum.
5) Catch basin will provide silting protection to the infiltration pit and will have a greasetrap. See Carson City special section for standard infiltration pit catch basin or overflow protection catch basin.
6) Not to be located in Roadway section.

NO.	REVISION	DATE
1	Building Paper	1/83

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

INFILTRATION DRAIN

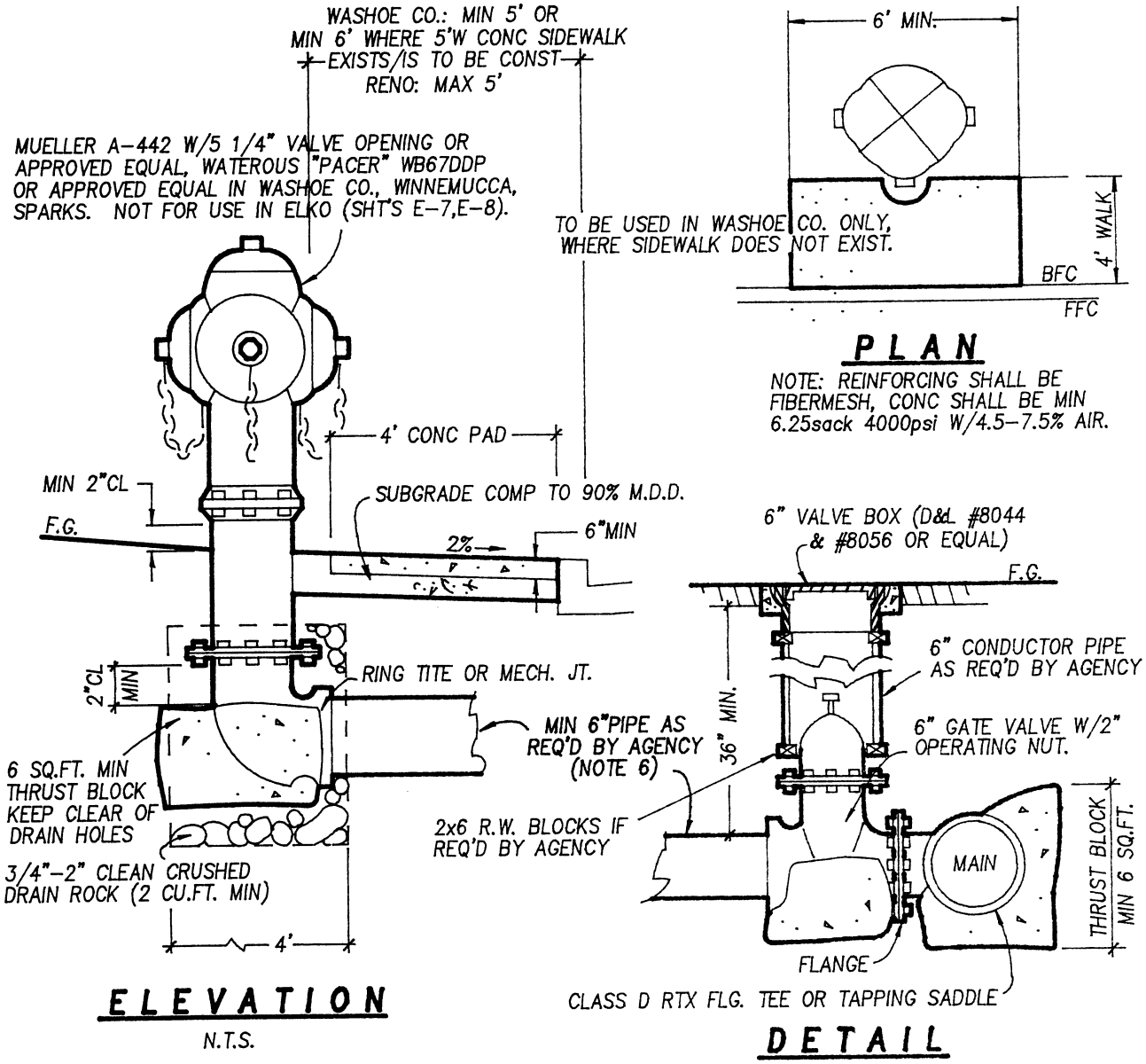
SECTION 2

DRAWING NO. 2-23 (306)

DATE 7-81

PAGE 36

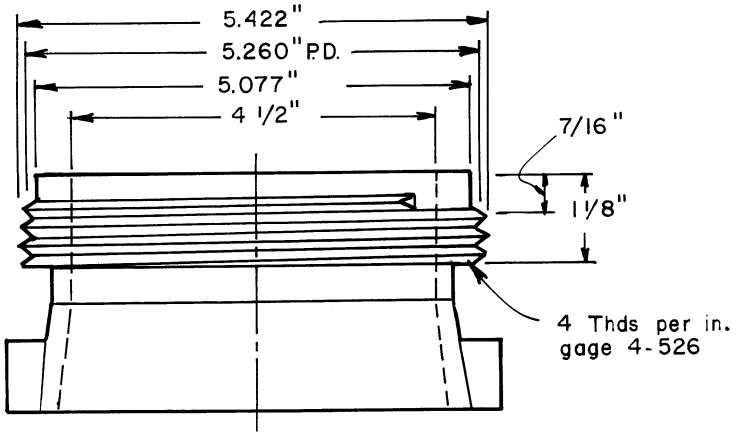
SECTION 3
WATER SYSTEMS



NOTES

1. HYDRANT SHALL BE ENAMELED RED EXCEPT IN SPARKS, WASHOE CO., WINNEMCCA, YERINGTON & DOUGLAS CO. WHERE IT SHALL BE YELLOW.
2. ALL HYDRANTS SHALL HAVE (2) 2 1/2" HOSE NOZZLES & (1) 4 1/2" STEAMER NOZZLE. ALL THREADS SHALL BE AS SPECIFIED FOR AMERICAN NATIONAL HOSE COUPLING EXCEPT RENO, SPARKS & WASHOE CO. (DET."A")
3. OPERATING NUT SHALL BE 1 1/2" PENTAGON EXCEPT: RENO, SPARKS AND WASHOE CO. (DET."B")
4. INSPECTION BY APPROPRIATE AGENCY SHALL BE REQUIRED PRIOR TO BACKFILLING.
5. YERINGTON MIN. DEPTH OF MAIN SHALL BE 42".
6. LANDER CO. - BUTTERFLY VALVE SHALL BE USED IN LIEU OF GATE VALVE IN STREET. WATER PIPE SHALL BE PVC CLASS 150. NO A.C. IN WASHOE CO.
7. NO FENCES SHALL BE ALLOWED WITHIN 3' OF ANY PORTION OF A FIRE HYDRANT.
8. IN CARSON CITY, SEE DET. "C-10.3"

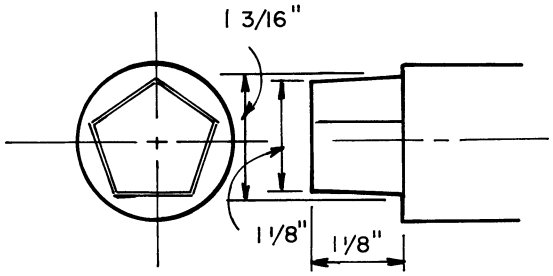
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTIONS 3
	REDRAWN	11/94vp	FIRE HYDRANT	DRAWING NO. 3-1.1 (307)
				DATE 11/94 vp PAGE 1



4 1/2" Steamer Nozzle

DETAIL "A"

(Reno, Sparks, and Washoe Co. only)

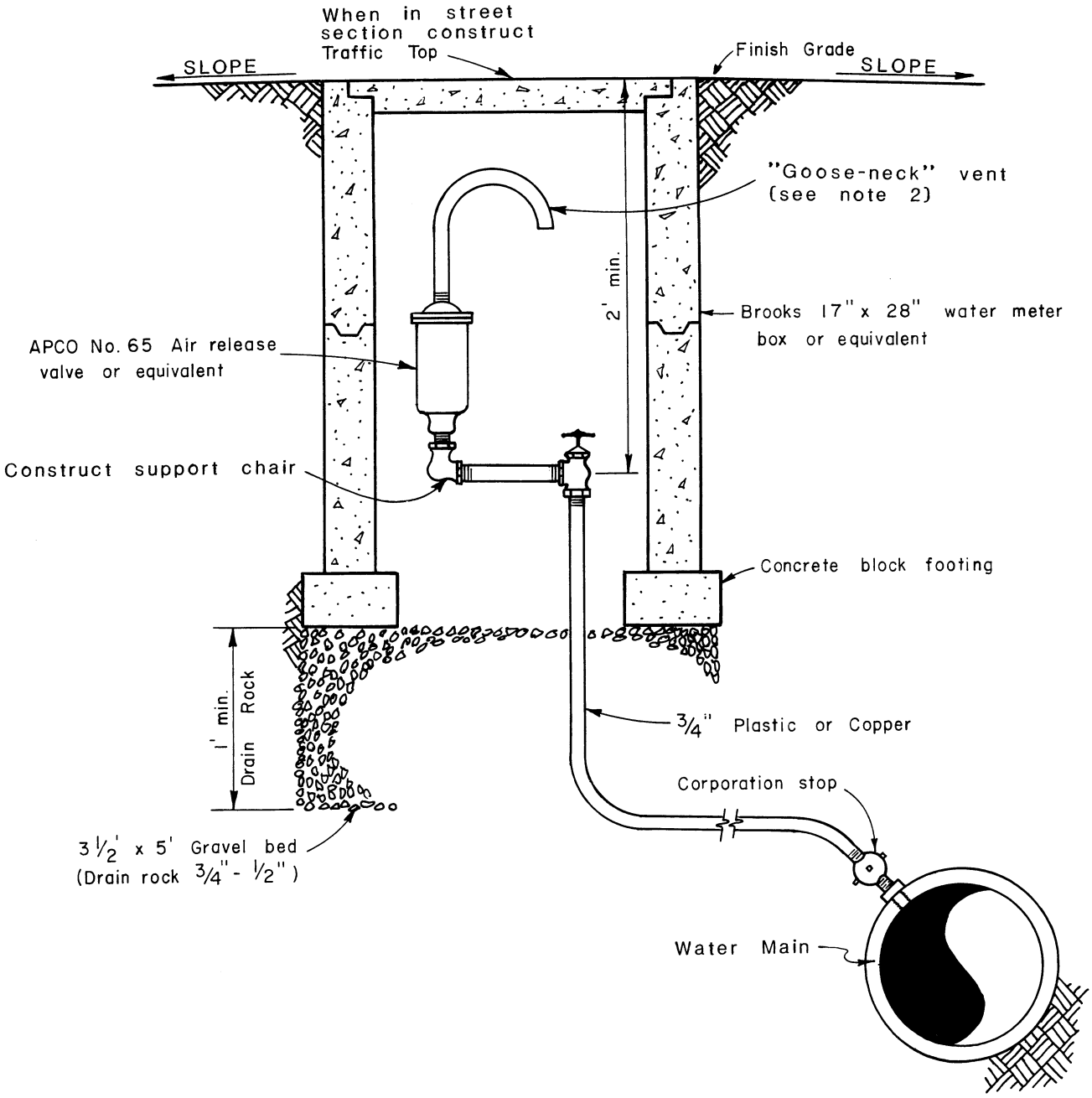


Operating Nut – Pentagon

DETAIL "B"

(Reno, Sparks, and Washoe Co. only)

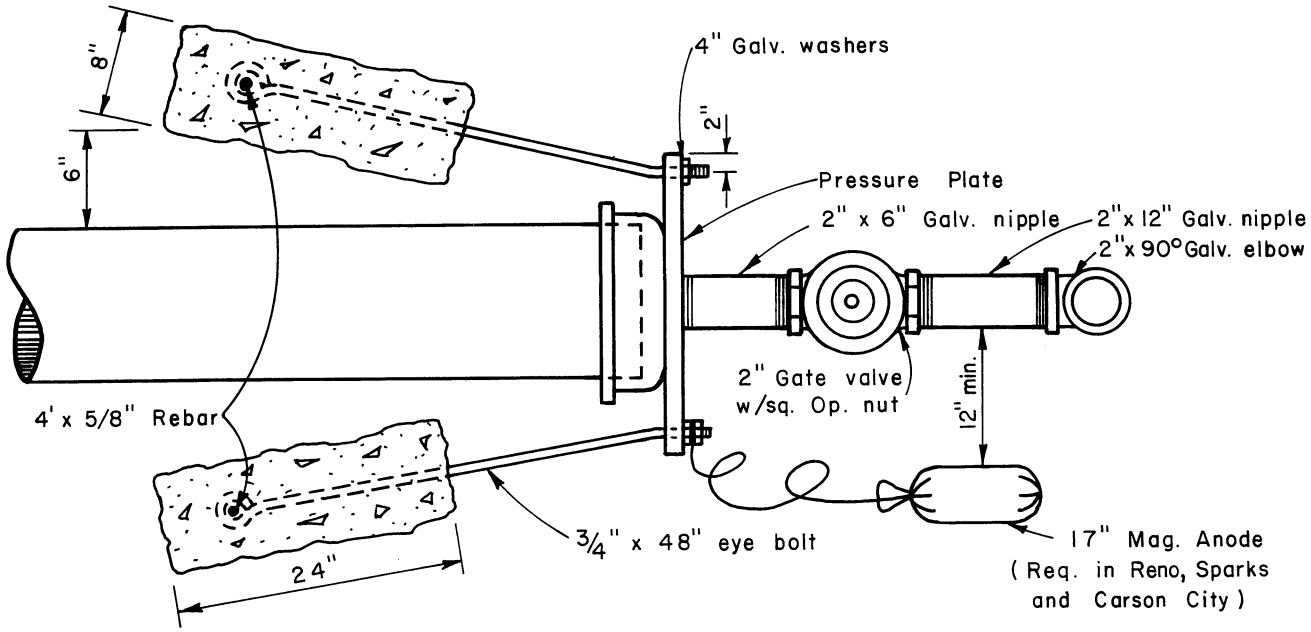
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 3	
			FIRE HYDRANT SPECIAL DETAILS	DRAWING NO. 3 - 1.2 (216)	
				DATE 7 - 81	PAGE 2

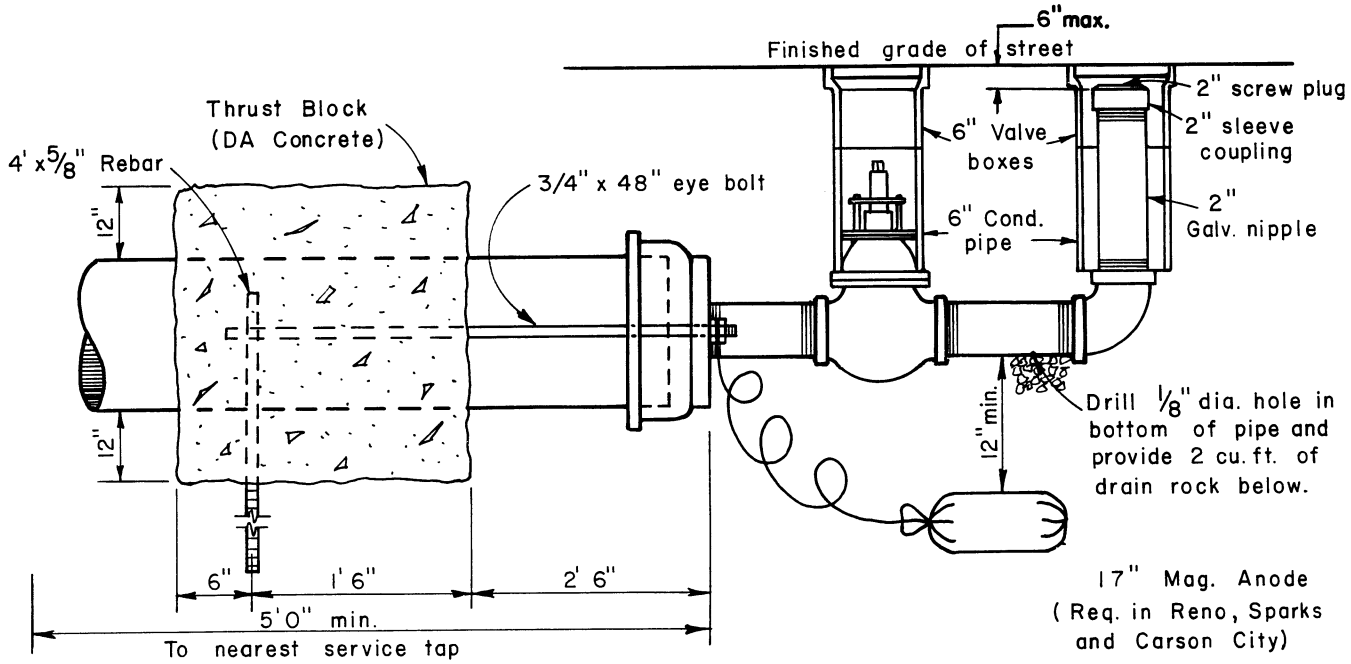


NOTES:

1. Air release valves shall be installed outside pavement section whenever possible. Slope ground away from valve box or construct curbing to protect from flooding by surface waters.
2. When constructed in street section construct air release tube to side of roadway and construct "Goose-neck" above surrounding grade as directed by the agency Engineer.
3. All pipes will be sloped up to air release valve.

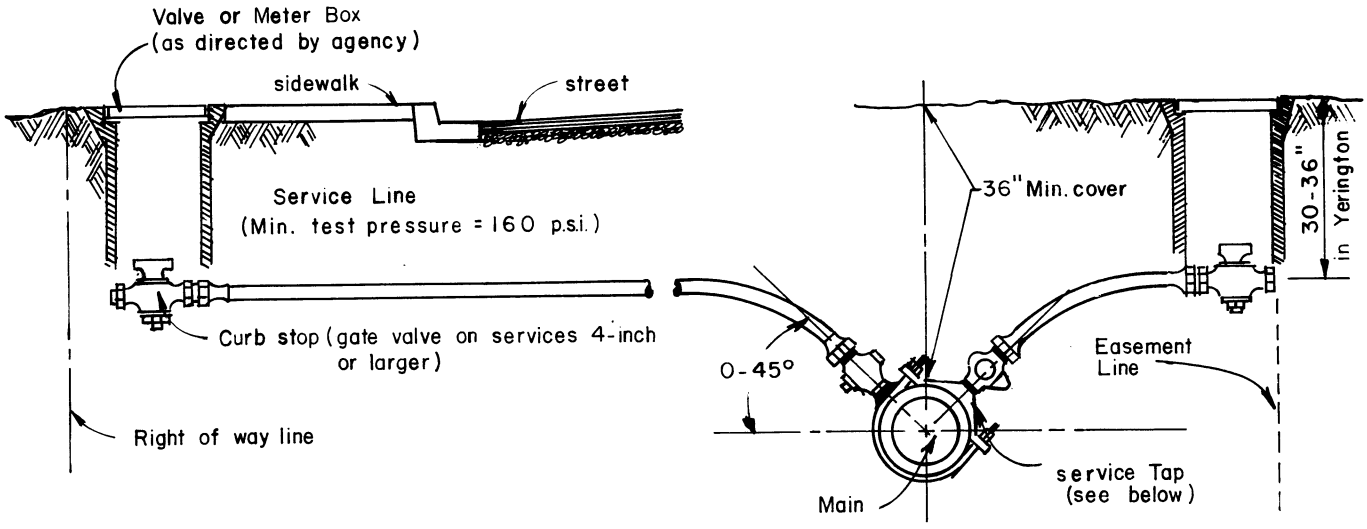
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 3	
1	Vent	3/83	AIR-RELEASE VALVE	DRAWING NO. 3-2 (307)	
				DATE 7 - 81	PAGE 3



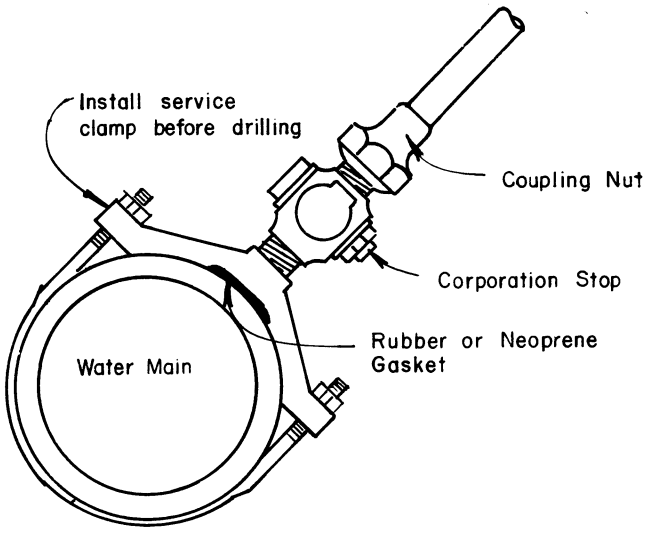


NOTE:
All 2" dia. materials shall be increased to 4" dia. when constructed in the Reno - Sparks - Carson area.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 3	
			FLUSH VALVE ASSEMBLY	DRAWING NO. 3-3 (307)	
				DATE 7-81	PAGE 4



TYPICAL WATER SERVICES



SERVICE TAP

NOTES:

1.) Not for use in Carson City (See Carson City section).

2.) Corporation stop, curb stop, (gate valve 4" or larger) and service line to be same size.

3.) Service clamps shall be single strap (double strap in Yerington) for up to 1" services. and double strap for larger sizes, except where size of tap exceeds manufacturers recommended limit for size of main. For this situation, a special fitting will be specified.

4.) Yerington and Lyon Co. maximum 2 houses per. service tap.

5.) Lyon Co., and Yerington - All transite water mains shall be min. class 150.

6.) Fallon and Lander Co. - Water main shall conform to the requirements for plastic pipe as specified in AWWA standard C900 Metallic location tape shall be installed 12" min. above water main in Fallon only, In Lander County PVC shall be class 150.

NO.	REVISION	DATE
1	NOTE 1-6	10-85

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

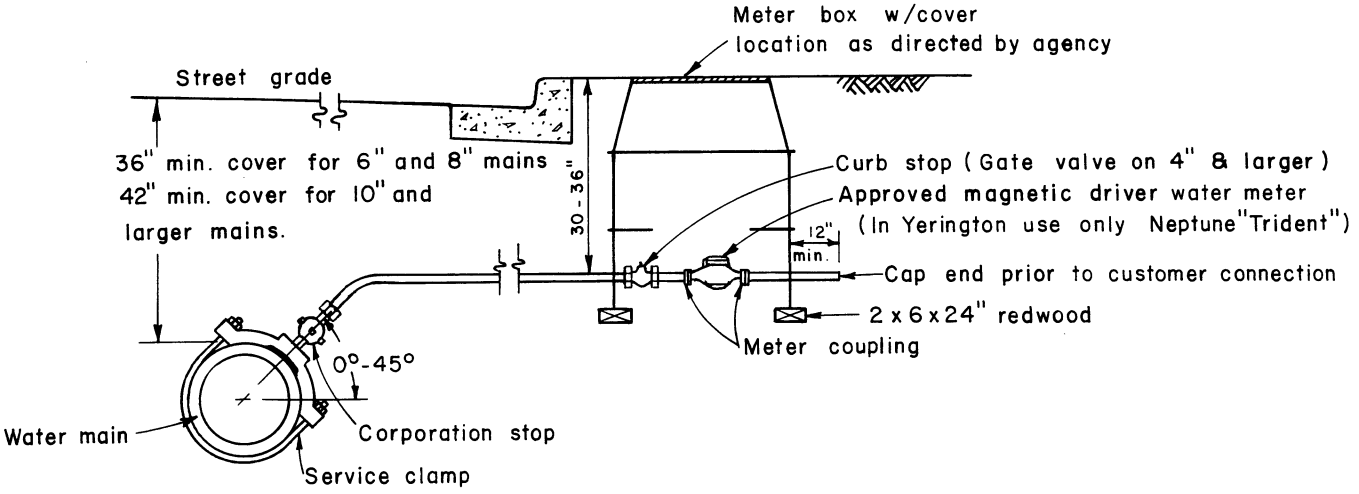
WATER SERVICE CONNECTION

SECTION 3

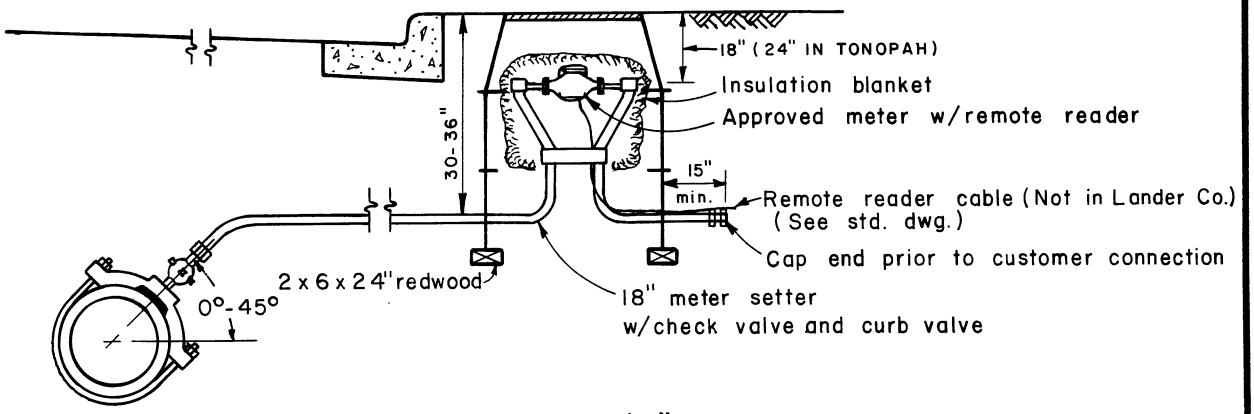
DRAWING NO. 3-4.1 (307)

DATE 7-81

PAGE 5



ALTERNATE "A"



ALTERNATE "B"

NOTE:

1. Not for use in Carson City.
2. Water meters shall be installed where required. Where meters are to be installed by others or at later date, an idler shall be installed.
3. Water service connections shall be as shown for non-meter applications.
4. Corporation stop, curb stop and service line shall be of the same size.
5. Flared type couplings shall be used at all connections.
6. Meter assembly, consisting of curb stop, meter couplings and meters shall be centered in meter box.
7. Alternate Type "A" or "B" to be determined by governing agency.

NO.	REVISION	DATE
1	NOTE 1-7	10 - 85

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

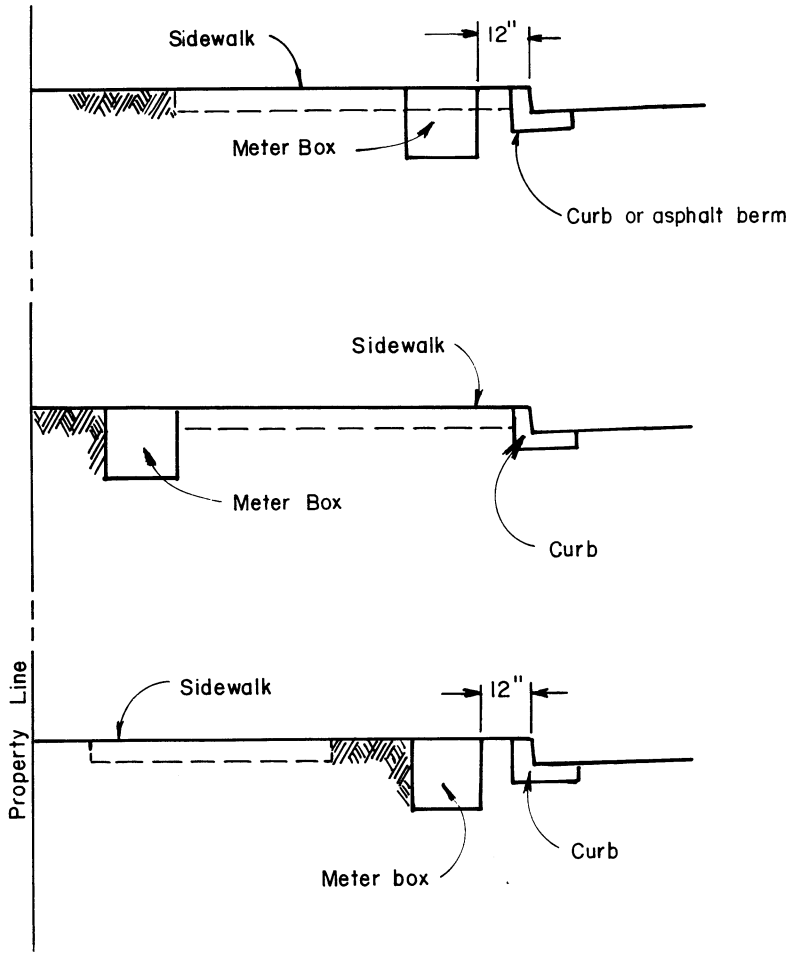
WATER SERVICE CONNECTION W/METER

SECTION 3

DRAWING NO. 3 - 4.2 (307)

DATE 7 - 81

PAGE 6



TYPE A
WITH OR WITHOUT SIDEWALK

TYPE B
CONTIGUOUS SIDEWALK

TYPE C
NON-CONTIGUOUS SIDEWALK

GENERAL NOTES:

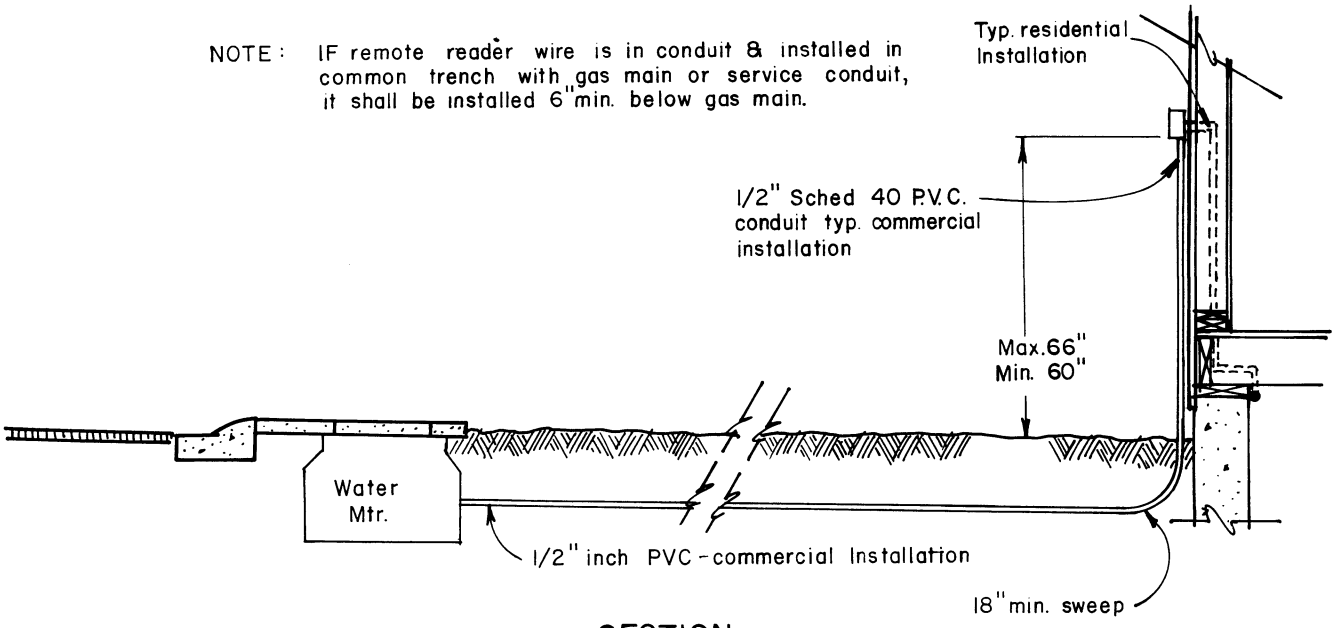
1.) Type A – Use in Fallon or Lander Co. only.

2.) Type B – Used everywhere except Lander Co.

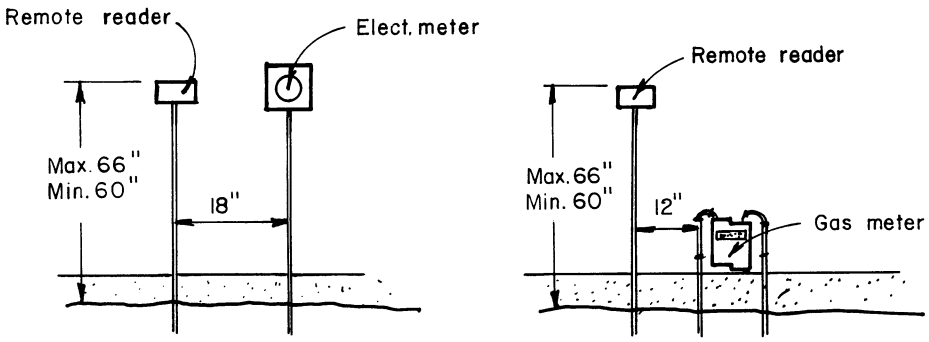
3.) Type C – Used everywhere except Yerington.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 3	
			WATER METER BOX LOCATIONS	DRAWING NO. 3-5 (307)	
				DATE 7-81	PAGE 7

NOTE: IF remote reader wire is in conduit & installed in common trench with gas main or service conduit, it shall be installed 6" min. below gas main.



SECTION



ELEVATIONS ALT.

General Notes :

1.) Customer shall furnish cable and conduit (where necessary) from meter box to reader.

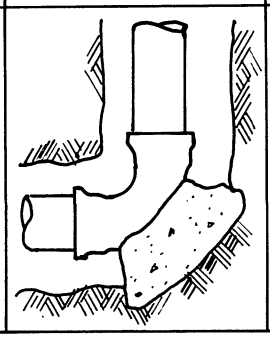
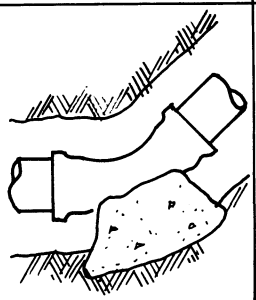
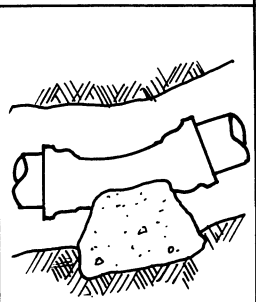
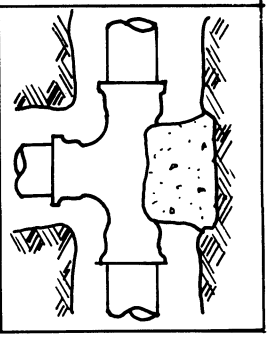
2.) Residential customer may use direct burial cable. Commercial customer shall provide 1/2" PVC (Sch. 40) conduit from box to remote reader.

3.) Residential customer may install cable along mudsill and up inside wall or may install in outside wall in 1/2" PVC Sch. 40 conduit.

4.) Remote reader cable shall be 2-conductor wire.

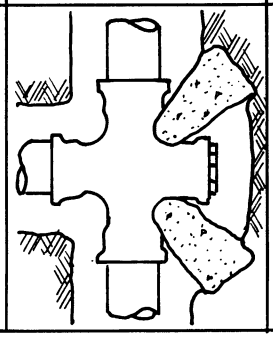
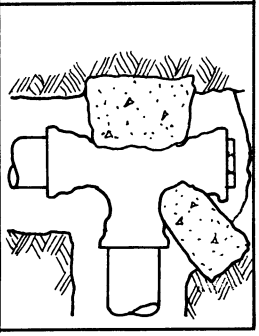
5.) All installations shall provide for 1/2" Sch. 40 conduit under concrete or asphalt.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 3	
1	NOTE 3	10-16-86	WATER METER REMOTE READER	DRAWING NO. 3-6 (307)	
				DATE 7-81	PAGE 8

Type of Fitting	90° Bend	45° Bend	11¼° or 22½° Bend	Tee or Dead End
Typical Installation				

THRUST BLOCK BEARING AREA (sq. ft.)

Type of Fitting	90° Bend	45° Bend	11¼° or 22½° Bend	Tee or Dead End	Tee w/plug	Cross w/plug
Size of pipe 4"	2	1	1	2	2	2
6"	4	4	2	4	4	4
8"	7	4	2	5	7	7
10"	12	6	3	8	12	12
12"	16	10	5	12	16	16
14"	20	12	6	14	20	20
16"	27	15	8	18	27	27
18"	45	25	13	32	45	45
24"	65	35	18	46	65	65

Type of Fitting	Cross w/plug	Tee w/plug
Typical Installation		

NOTES:

1.) Thrust blocks to be constructed of class "C" concrete.

2.) Areas given are for class 150 pipe at test pressure of 150 P.S.I., with 2000 P.S.F bearing capacity. Installations using different pipe, test pressures, and/or soil types should adjust areas accordingly, subject to approval of engineer.

3.) Blocks to be poured against undisturbed soil.

4.) Joints and face of plugs to be kept clear of concrete.

NO.	REVISION	DATE
1	NOTE 2	3/83

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

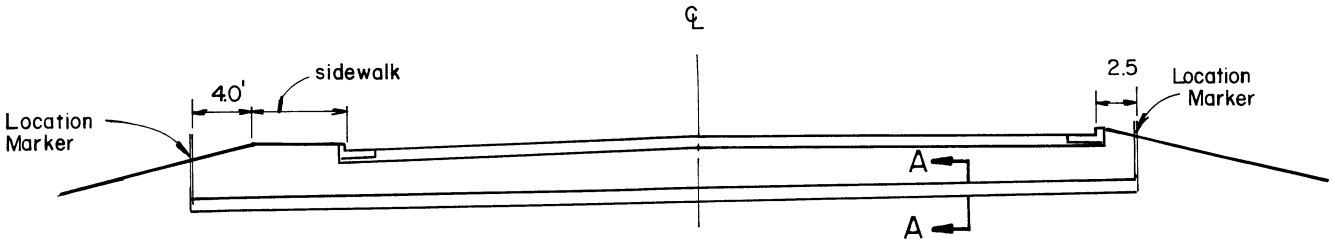
THRUST BLOCK BEARING AREAS

SECTION 3

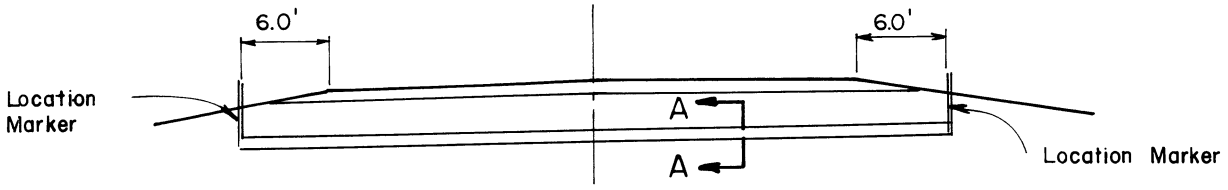
DRAWING NO. 3-7 (307)

DATE 7-81

PAGE 9

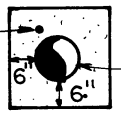


URBAN STREET



RURAL STREET

NOTE:
Locate detection wire in upper half of trench.



Conduit size varies (see plan)

SECTION A-A

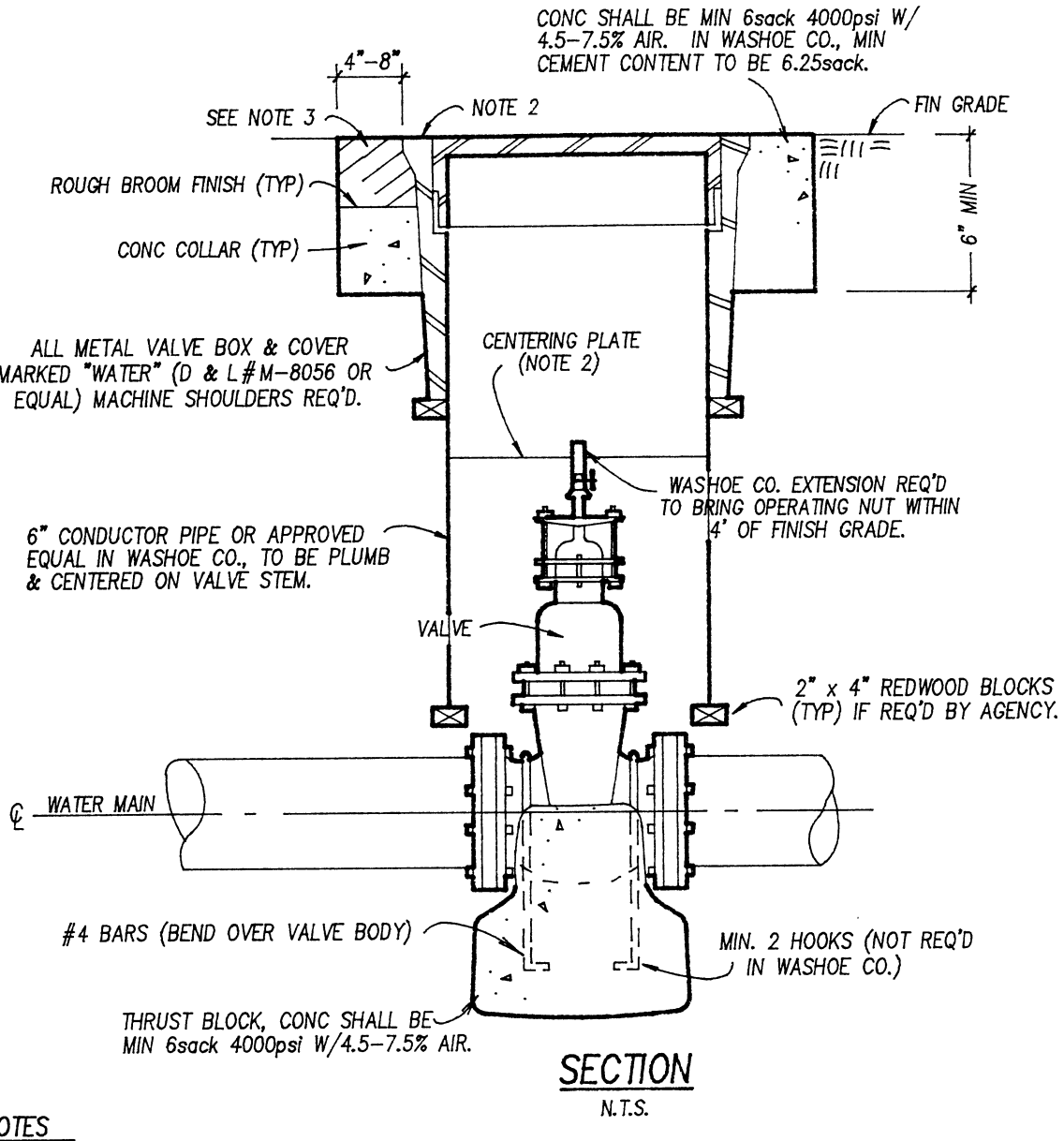
GENERAL NOTES:

1.) Minimum 3.0' cover over top of conduit at shoulder line.

2.) 12 Gauge detection wire to lay in trench adjacent to conduit and attach to location marker at each end.

3.) Location marker shall be 5.0' steel fence line post.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 3	
			CONDUIT INSTALLATION FOR FUTURE WATER LINES	DRAWING NO. 3-8 (307)	
				DATE 7-81	PAGE 10



SECTION

N.T.S.

NOTES

1. SEE DWG 3–7 FOR THRUST BLOCK SIZE.
2. IN WASHOE CO., VALVE BOXES FOR BOTH GAS & WATER TO BE SET 3/8"–5/8" BELOW FINISH ROADWAY SURFACE. INSTALL OPERATING EXTENSION W/OPERATING NUT RESTRAINING BOLT & TOP CENTERING PLATE. ANCHOR BARS & REDWOOD BLOCKS NOT REQ'D WHEN OPERATING NUT IS AT GREATER DEPTH THAN 4' FROM FIN GRADE.
3. IN WASHOE CO., CONC COLLAR TO BE LEFT 2" BELOW FINISH ASPH SURFACE. PLACE 2" OF TYPE 3 ASPH PAVING AROUND VALVE BOX. APPLY SS–1 TACK COAT BEFORE PAVING. SEAL A.C. SURFACE W/SS–1 SAND. CHIP SEAL, FOG SEAL, SAND SEAL OR SLURRY SEAL PAVED SURFACE AS REQ'D BY PLANS OR SPECS. EXTEND CONC COLLAR TO GRADE WHEN NOT LOCATED IN ASPH PAVE OR IN UNPAVED AREA.
4. IN CARSON CITY REFER TO DETAIL C–10.1
5. RENO ONLY: PLACE VALVE BOX & CONC COLLAR FLUSH W/ASPHALT.

NO.	REVISION	DATE
1	REDRAW	3/94vp
2	NOTES 2,3,4	1/95vp
3	NOTE 5	4/95vp

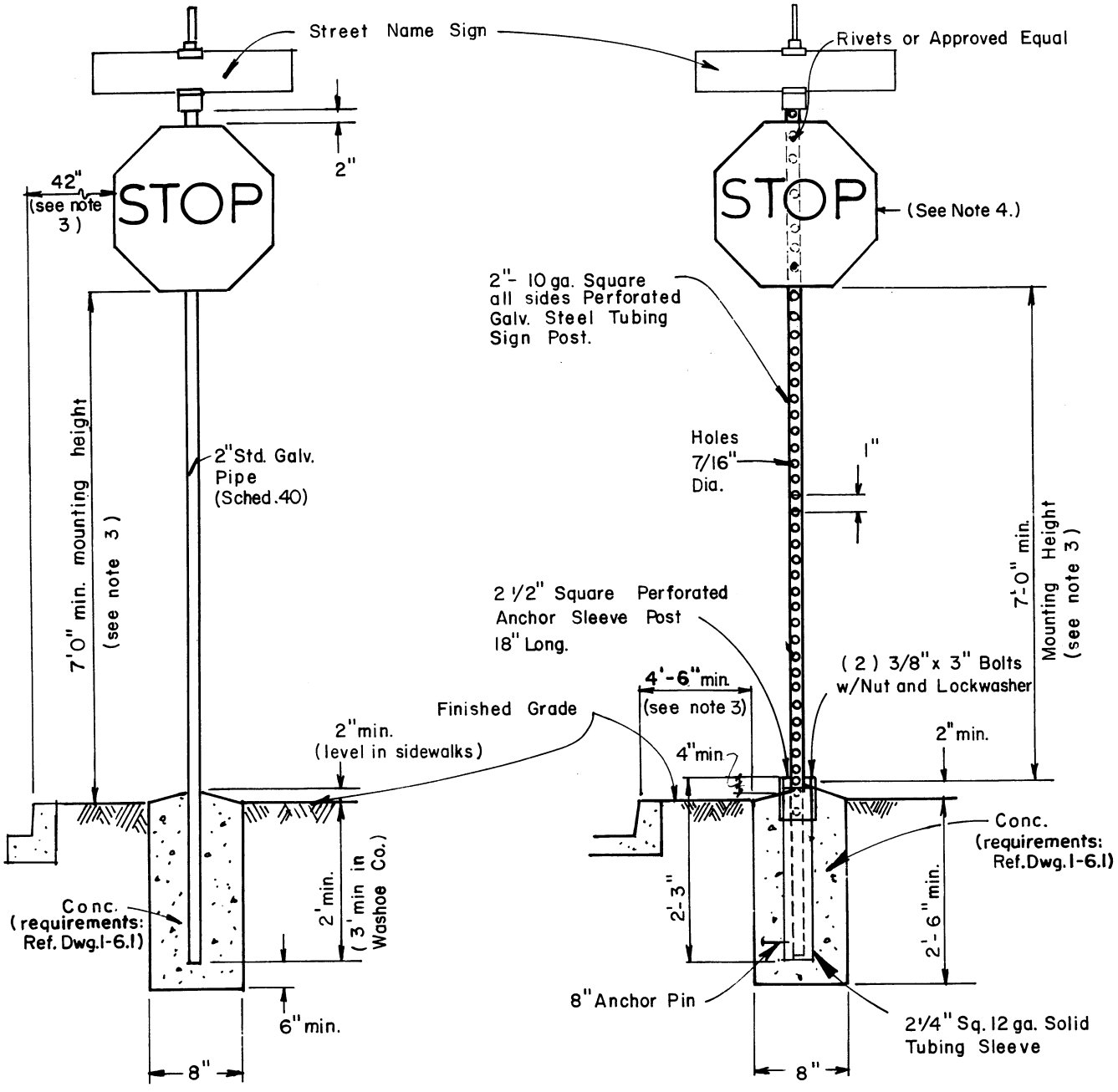
STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

VALVE, BOX & COVER

SECTIONS 3

DRAWING NO. 3-9 (307)

DATE 7/90 PAGE 11



TYPE 1

(Not permitted in Sparks)
(Not permitted in Carson City)

TYPE 2

NOT FOR USE IN CITY OF RENO

NOTES

1.) Sign materials, construction and placement shall bein conformance w/the latest edition of the Manual on Uniform Traffic Control Devices.

2.) Street name sign shall be as specified by the governing agency and mounted with vandal-proof hardware. (See Agency Section).

3.) On streets where curbing does not exist, set sign 6' minimum from pavement edge. In Yerington and Fallon min. mounting height = 6'-6".

4.) Carson City stop sign 30"

5.) Sign post shall not be anchored in sidewalk.

NO.	REVISION	DATE
1	NOTES	3-83
2	NOTE 4	3-88
3	Notes 1,5 & misc.	5-95vp

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

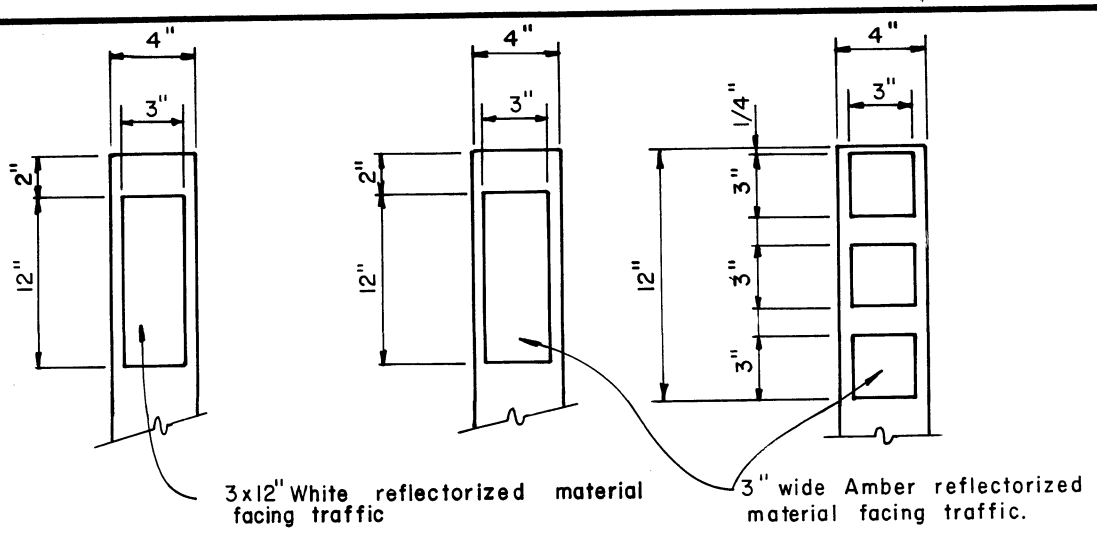
STANDARD STREET SIGN

SECTION 4

DRAWING NO. 4-1 (330)

DATE 7-81

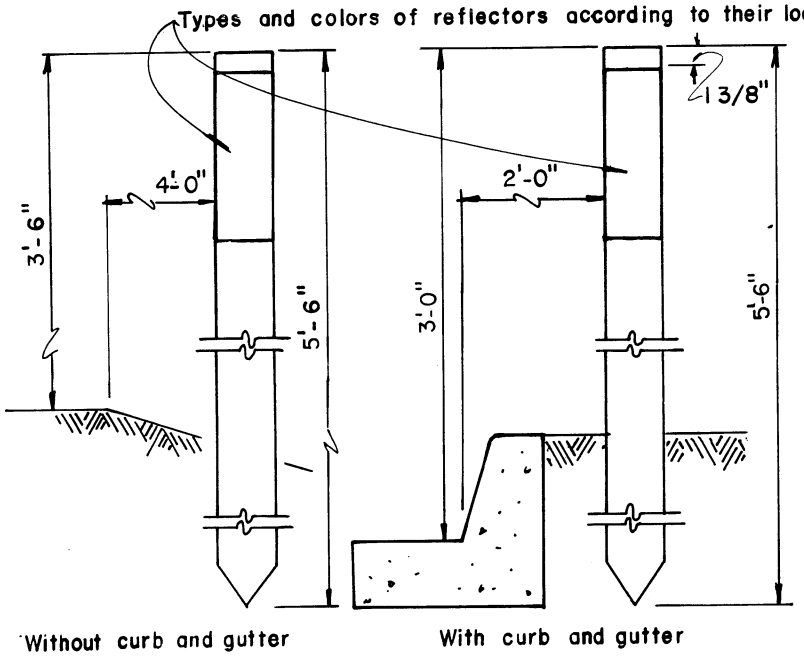
PAGE 1



TYPE 1 (Roadway)

TYPE 2 (Driveways / Approaches)

TYPE 3 (Islands, Curbs, Shouder Dikes)

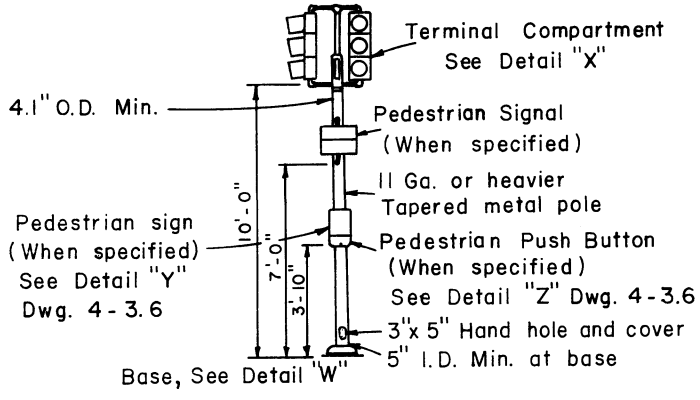


TYPICAL INSTALLATION

NOTES:

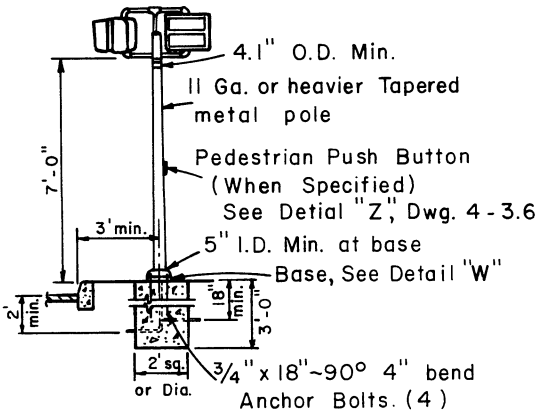
1. Posts shall be of synthetic flexible material (Carsonite CRM - 375 or approved equal) Metal post may be permitted as approved by the governing agency
2. Where guardrail is to be installed, post shall be omitted and reflector plates shall be installed on guardrail posts.
3. Delineator spacing shall be as shown in the current edition of the MUTCD.
4. Delineator shall be installed at the beginning and ending of each curve.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 4	
			ROADWAY DELINEATORS	DRAWING NO. 4-2 (326)	
				DATE 7-81	PAGE 2



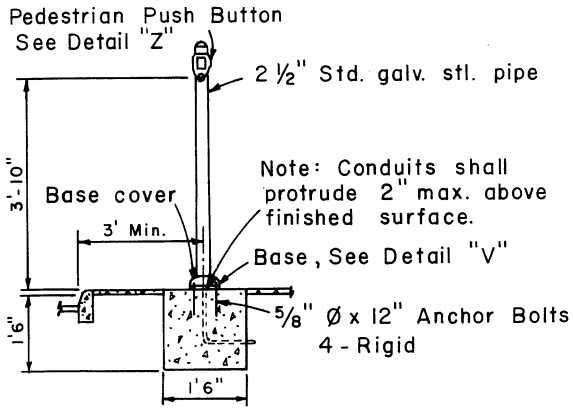
Foundation same as Type 1-B

TYPE 1-A

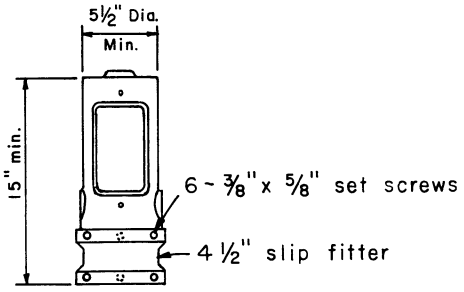


TYPE 1-B

SIGNAL STANDARDS

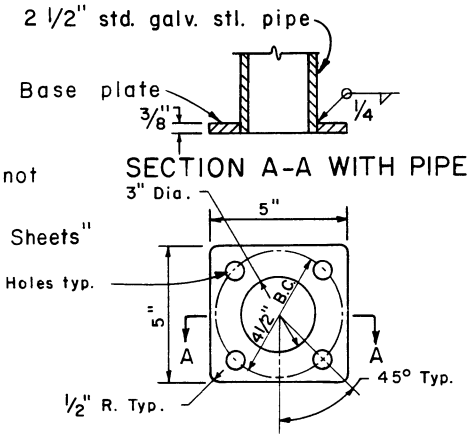


PEDESTRIAN PUSH BUTTON POST

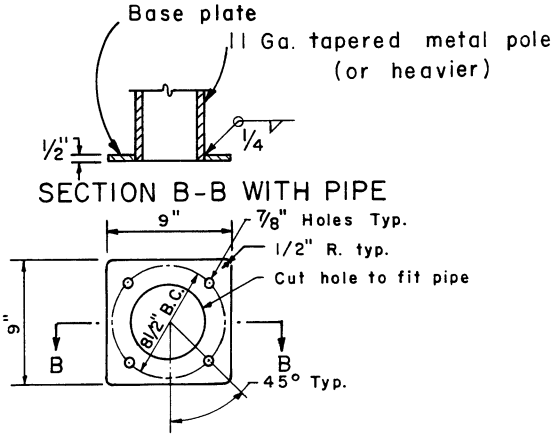


DETAIL "X"

NOTE:
For Details not shown, see "Traffic Detail Sheets"

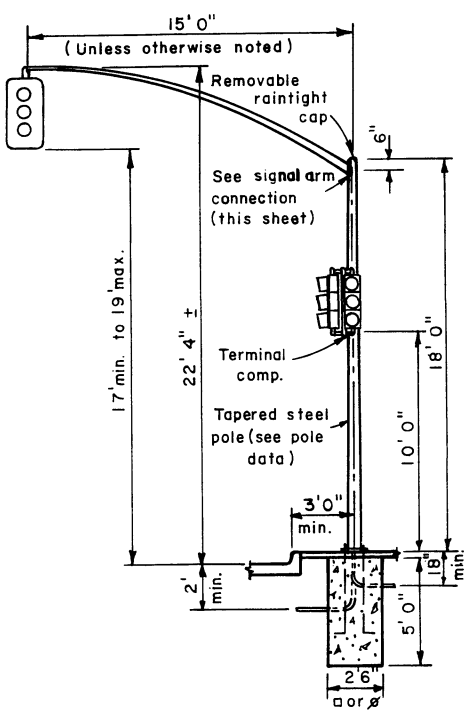


DETAIL "V"

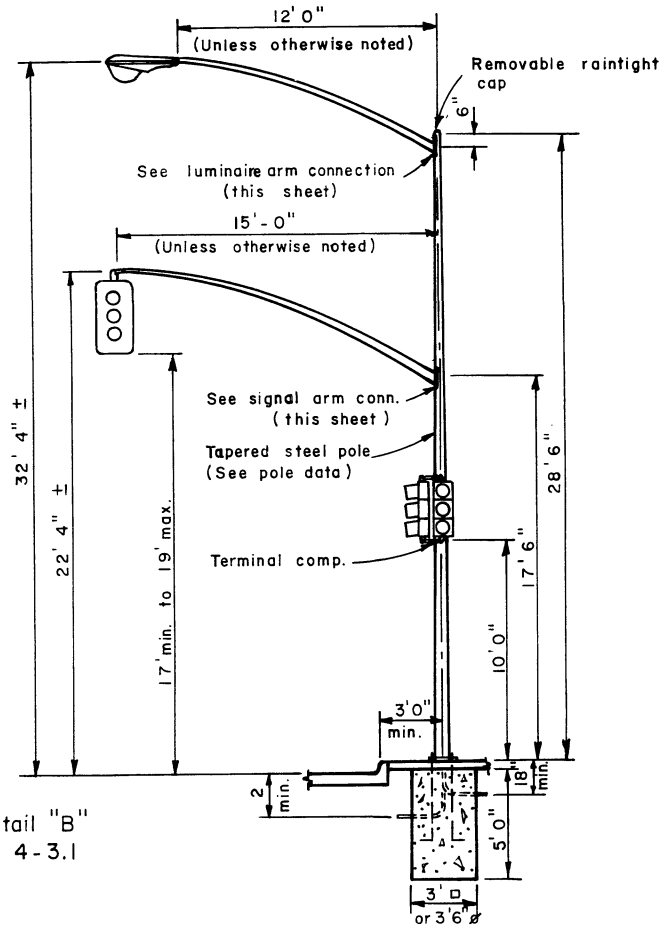


DETAIL "W"

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 4	
			TRAFFIC POLES TYPE 1-A AND 1-B	DRAWING NO. 4-3.1 (323)	
				DATE 7-81	PAGE 3



POLE TYPE 5

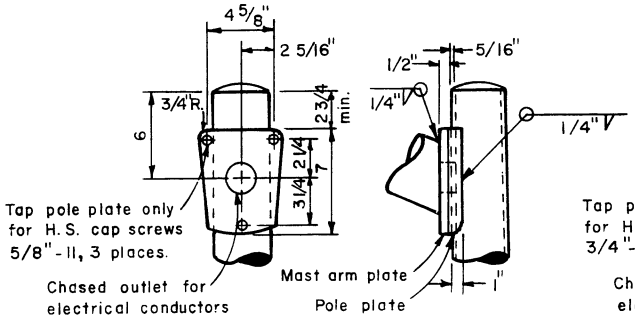


POLE TYPE 6

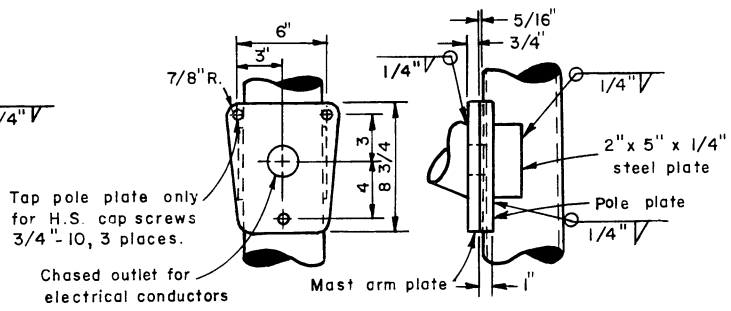
NOTE:
For base plate detail see detail "B" on traffic detail sheet, Dwg. 4-3.1

POLE DATA

Pole type	Pole Height & gage	Pole O.D.		Signal arm data		Luminaire arm data	
		Base	Top	Gage	Min. O.D. at pole	Gage	Min. O.D. at pole
5	18' x 10 gage	7 3/4"	5 1/4"	10 gage	4 5/8"	No Luminaire arm	
6	28'6" x 7 gage	7 3/4"	3 7/8"	10 gage	4 5/8"	10 gage	3 3/4"



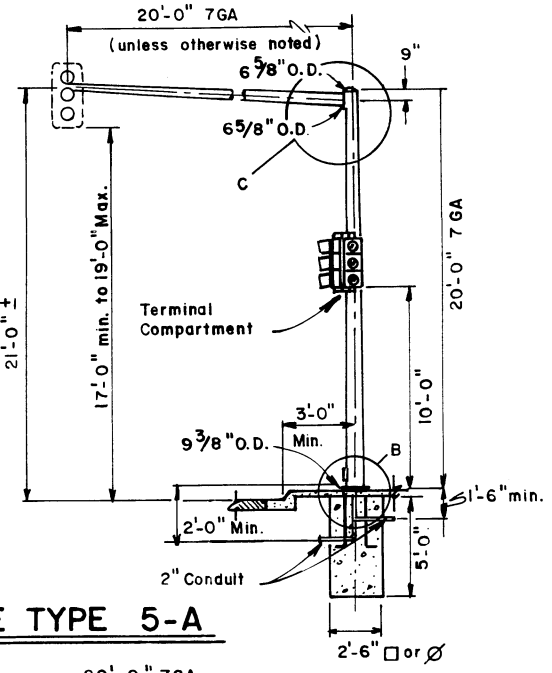
LUMINAIRE ARM CONNECTION



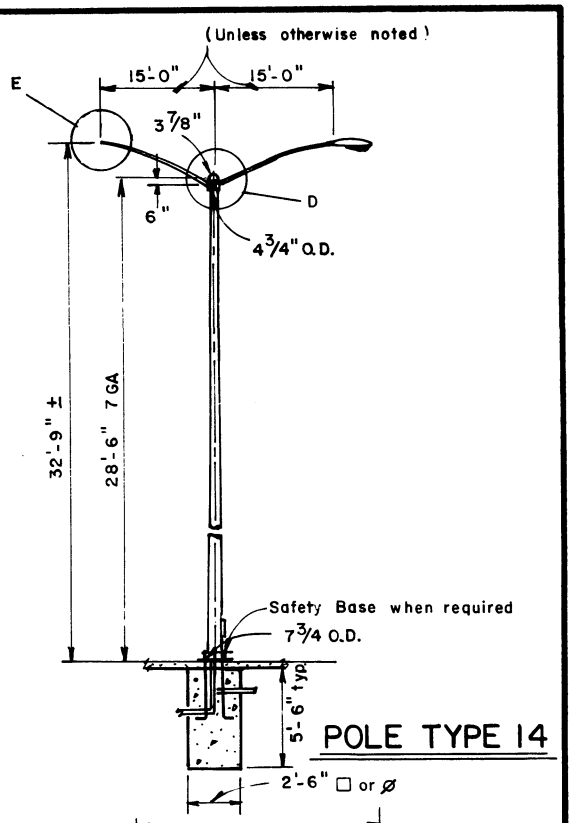
SIGNAL ARM CONNECTION

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 4	
			TRAFFIC POLES TYPE 5 AND 6	DRAWING NO. 4-3.2 (323)	
				DATE 7-81	PAGE 4

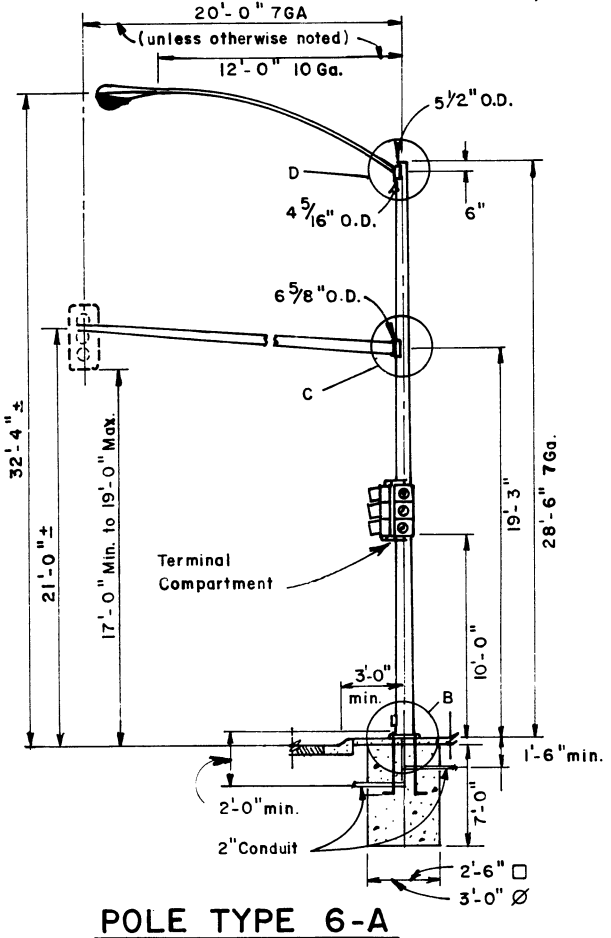
NOTE:
For Details not shown, see "Traffic Detail Sheets"



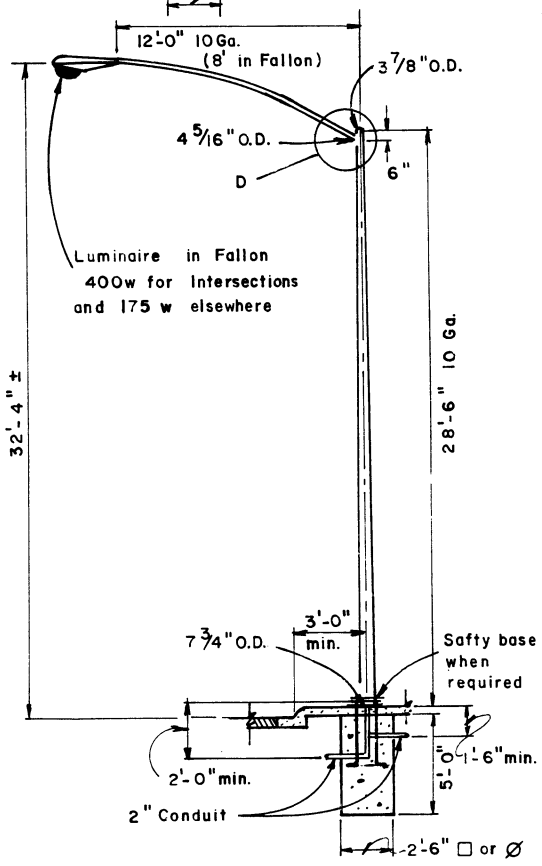
POLE TYPE 5-A



POLE TYPE 14

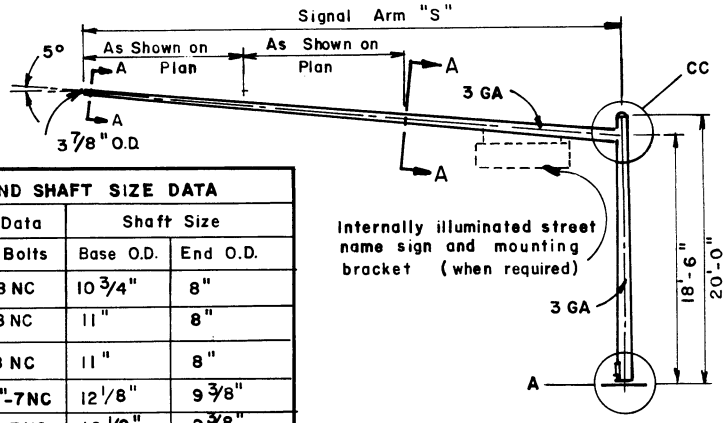


POLE TYPE 6-A



POLE TYPE 7

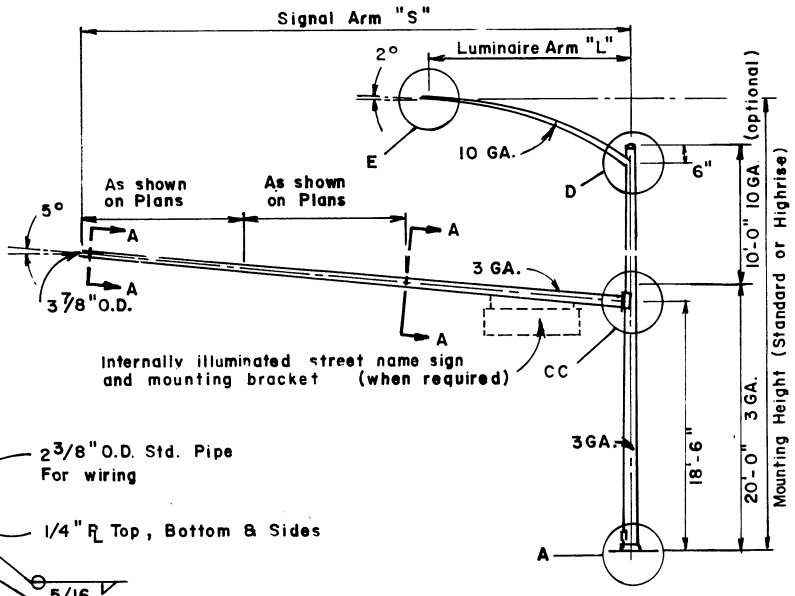
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 4	
			TRAFFIC POLES TYPE 5-A, 6-A, 7 AND 14	DRAWING NO. 4-3.3 (323)	
				DATE 7-81	PAGE 5



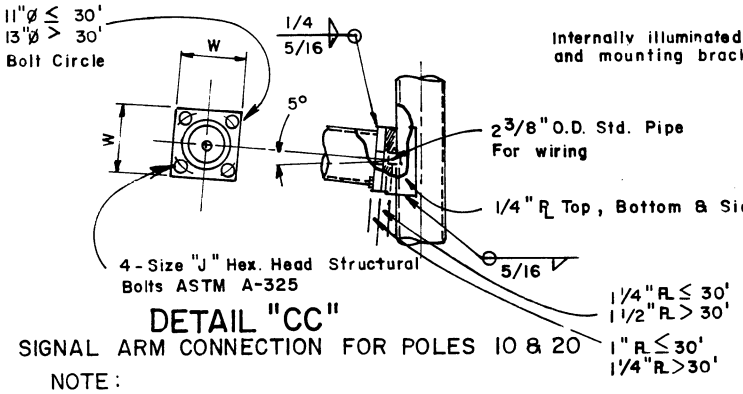
POLE TYPE 10

SIGNAL ARM AND SHAFT SIZE DATA						
Pole Type	Signal Arm Data				Shaft Size	
	"S"	Base O.D.	"W"	"J" Bolts	Base O.D.	End O.D.
10	20'-0"	6 5/8"	10 1/2"	1"-8 NC	10 3/4"	8"
	25'-0"	7 3/8"	10 1/2"	1"-8 NC	11"	8"
	30'-0"	8"	10 1/2"	1"-8 NC	11"	8"
	35'-0"	8 3/4"	13"	1 1/4"-7NC	12 1/8"	9 3/8"
	40'-0"	9 1/2"	13"	1 1/4"-7 NC	12 1/8"	9 3/8"
20	20'-0"	6 5/8"	10 1/2"	1"-8NC	10 3/4"	6 5/8"
	25'-0"	7 3/8"	10 1/2"	1"-8 NC	11"	6 5/8"
	30'-0"	8"	10 1/2"	1"-8NC	11"	6 5/8"
	35'-0"	8 3/4"	13"	1 1/4"-7NC	12 1/8"	8"
	40'-0"	9 1/2"	13"	1 1/4"-7NC	12 1/8"	8"

Pole Type 20 Luminaire Data			
"L"	Min. O.D. @ Pole	Mtg. Height	
		Highrise	Standard
6'-0"	3 3/8"	32'-9"	31'-9"
8'-0"	3 7/8"	34'-0"	32'-3"
10'-0"	4 3/16"	35'-9"	32'-6"
12'-0"	4 1/2"	37'-3"	33'-9"
15'-0"	4 3/4"	37'-9"	34'-3"



POLE TYPE 20



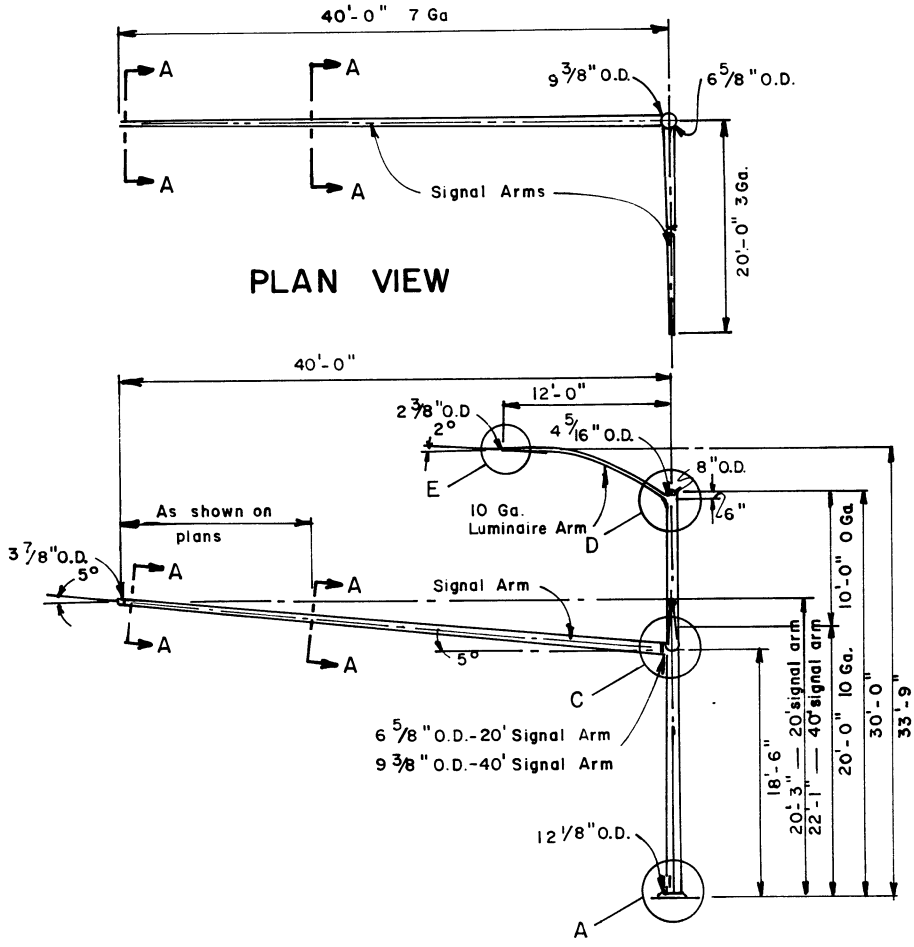
DETAIL "CC"

SIGNAL ARM CONNECTION FOR POLES 10 & 20

NOTE:

For Details and Sections not shown on this Sheet, see "Traffic Detail Sheets"

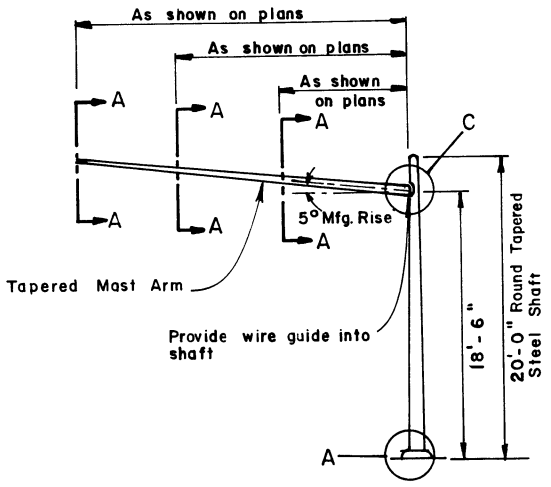
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 4	
			TRAFFIC POLES TYPES 10 AND 20	DRAWING NO. 4-3.4 (323)	
				DATE 7 - 81	PAGE 6



NOTE:
For Details not shown, see "Traffic Detail Sheets"

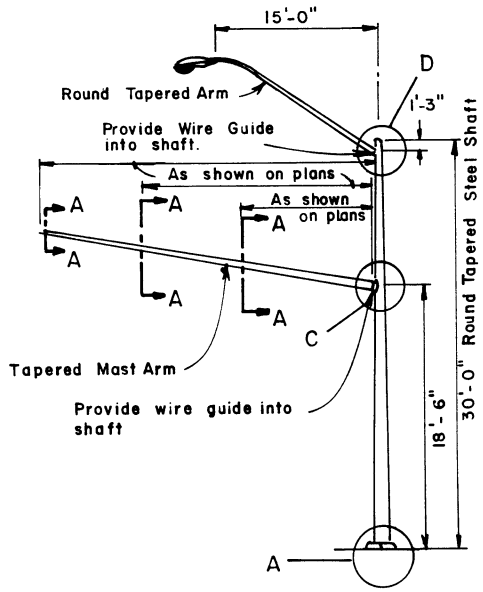
POLE TYPE 28

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 4	
			TRAFFIC POLE TYPE 28	DRAWING NO. 4-3.5 (323)	
				DATE 7-81	PAGE 7



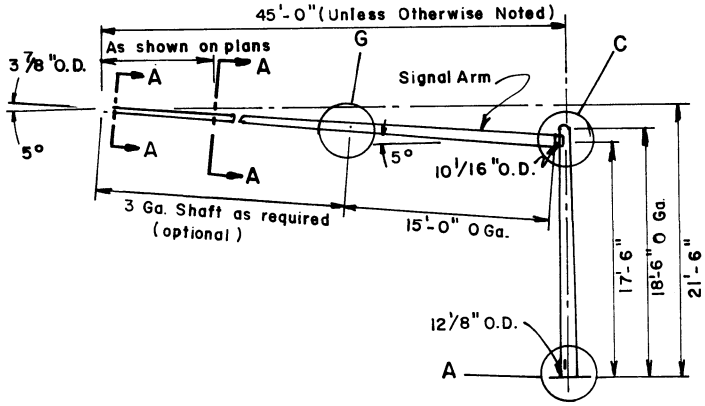
POLE TYPE 30

NOTE:
For Details not shown, see "Traffic Detail Sheets"



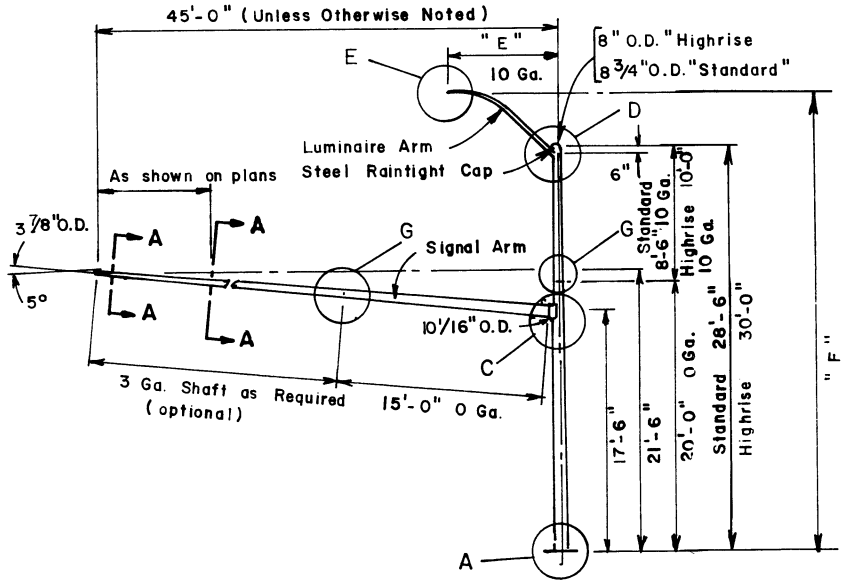
POLE TYPE 35

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 4	
			TRAFFIC POLE TYPES 30 AND 35	DRAWING NO. 4-3.6 (323)	
				DATE 7-81	PAGE 8



POLE TYPE 40

(USE SAME FOUNDATION AS POLE TYPE 45)



NOTE:
For Details not shown, see
"Traffic Detail Sheets"

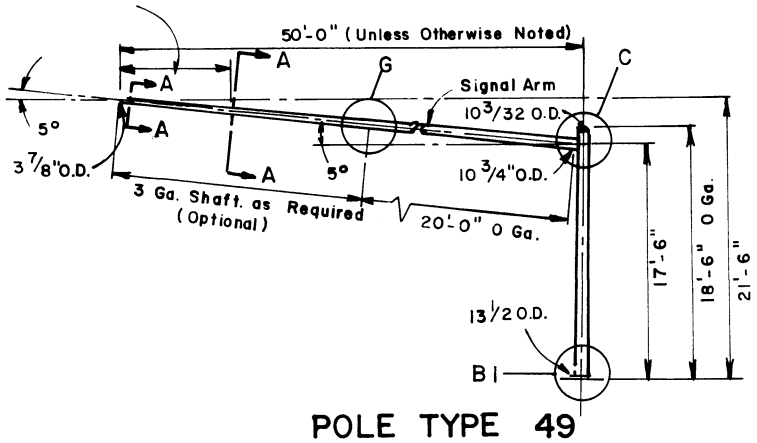
POLE TYPE 45

(FOR FOUNDATION SEE DWG. No. 4-3.4)

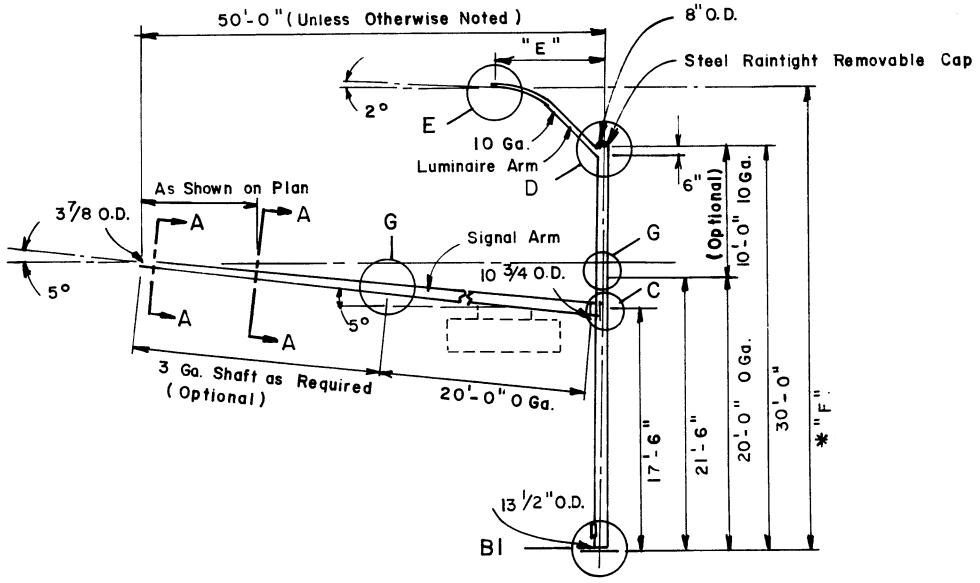
LUMINAIRE ARM DATA				
	STANDARD		HIGH RISE	
"E" PROJECTED ARM LENGTH	*F	MIN. O.D. @ POLE	*F	MIN. O.D. @ POLE
6'-0"	30'-0"	3 3/8"	32'-9"	3 3/8"
8'-0"	30'-9"	3 5/8"	34'-0"	3 7/8"
10'-0"	31'-0"	3 7/8"	35'-9"	4 3/16"
12'-0"	32'-3"	4 5/16"	37'-3"	4 1/2"
15'-0"	32'-9"	4 3/4"	37'-9"	4 3/4"

* MOUNTING HEIGHTS ARE NOMINAL (± 6" FROM BASE PLATE TO ℄ OF LUMINAIRE ARM)

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 4	
			TRAFFIC POLES TYPE 40 AND 45	DRAWING NO. 4-3.7 (323)	
				DATE 7-81	PAGE 9



POLE TYPE 49



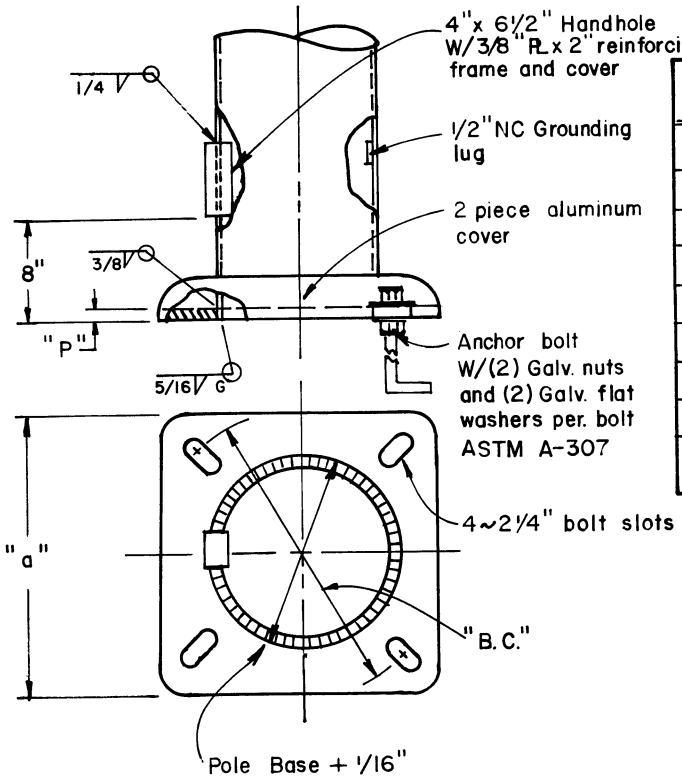
POLE TYPE 50

POLE TYPE 50		
"E"	"F" *	BASE O.D.
6'-0"	32'-9"	3 3/8"
8'-0"	34'-0"	3 7/8"
10'-0"	35'-9"	4 3/16"
12'-0"	37'-3"	4 1/2"
15'-0"	37'-9"	4 3/4"

* Mounting heights are nominal (± 6")

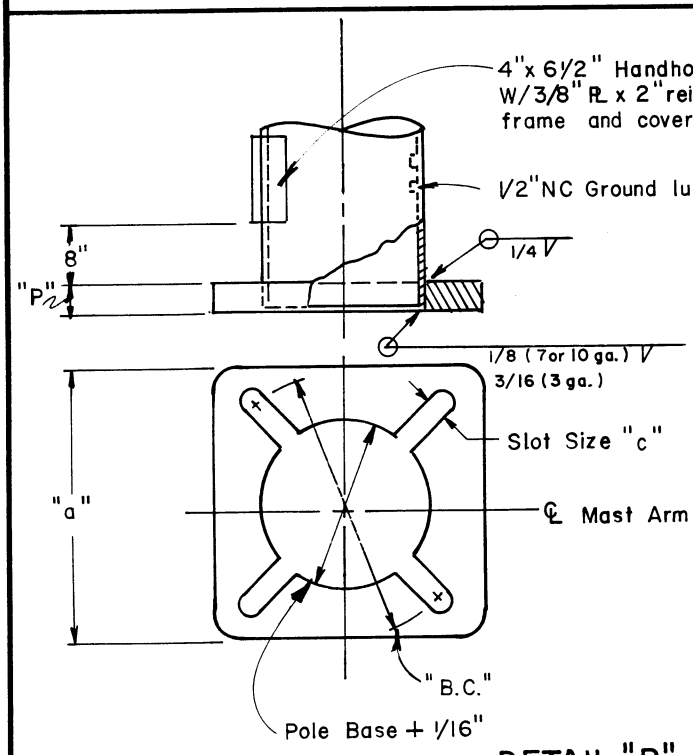
NOTE:
For Details not shown, see
"Traffic Detail Sheets"

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 4
			TRAFFIC POLES TYPE 49 & 50	DRAWING NO. 4-3.8 (323)
				DATE 7-81 / PAGE 10



Pole Type	Base Plate "a"	B.C.	P	Anchor Bolt Size
10	18	17½	1¾	2 x 66 x 6
20	18	17½	1¾	2 x 66 x 6
28	18	17½	2	2 x 66 x 6
30	17	16½	2	1¾ x 60 x 6
35	17	16½	2	1¾ x 60 x 6
40	18	17½	2	2 x 66 x 6
45	18	17½	2	2 x 66 x 6
49	20	19	2	2 x 66 x 6
50	20	19	2	2 x 66 x 6

DETAIL "A"



Pole Type	Base Plate "a"	"c"	"B. C."	Anchor Bolt Size	P
5	11½	1¼	11	1 x 36 x 4	1
6	11½	1½	11	1¼ x 44 x 4	1
5A	13½	1½	12½	1¼ x 44 x 4	1¼
6A	13½	1½	12½	1¼ x 44 x 4	1¼
7	13½	1¼	11	1 x 36 x 4	1¼

DETAIL "B"

NO.	REVISION	DATE

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

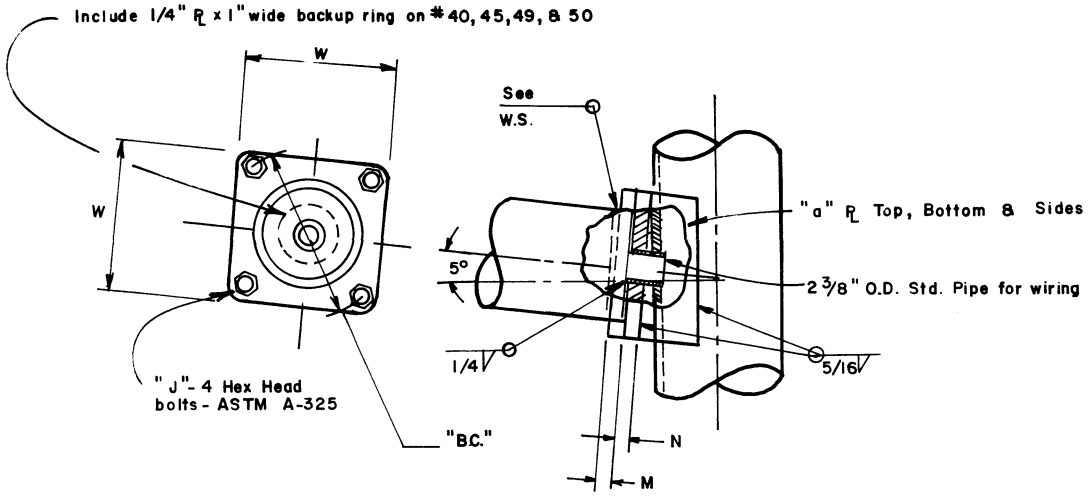
TRAFFIC DETAIL SHEET
BASE DETAILS

SECTION 4

DRAWING NO. 4 - 4.1 (323)

DATE 7 - 81

PAGE 11



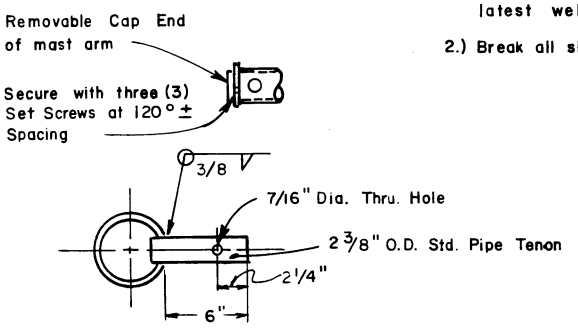
STANDARD SIGNAL ARM CONNECTION DETAIL "C"

Pole Type	a	J	W	M	N	B. C.	W. S.
5-A, 6-A and 7	1/4	1"x 8NC x 2 1/2"	8 1/2"	1"	1"	9"	1/4
10 and 20	1/4	SEE TABLE ON TRAFFIC POLE SHEET					1/4 5/16
28	1/4	"L" 1 1/4"x7NC x 3"	12"	1" for 20' 1 1/4 for 40'	1 1/2"	12"	Typ. 5/16 1/4 G 1/4 and Typ. 5/16
30 and 35	5/16	1 1/2" x 4"	15"	2 1/2"	1 1/2"	15"	1/4 5/16
40 and 45	5/16	1 1/4" x 7NC x 3"	13"	1 1/2"	1 3/4"	13"	3/16 G (on B.U.℄) & 3/8
49 and 50	5/16	1 1/2" x 6NC x 4"	15"	1 3/4"	2"	15"	5/16 G (on B.U.℄) & 3/8

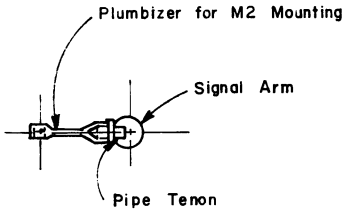
GENERAL NOTES:

1.) For weld sizes not shown, use minimum size weld as specified by the latest welding code.

2.) Break all sharp edges for wire protection.



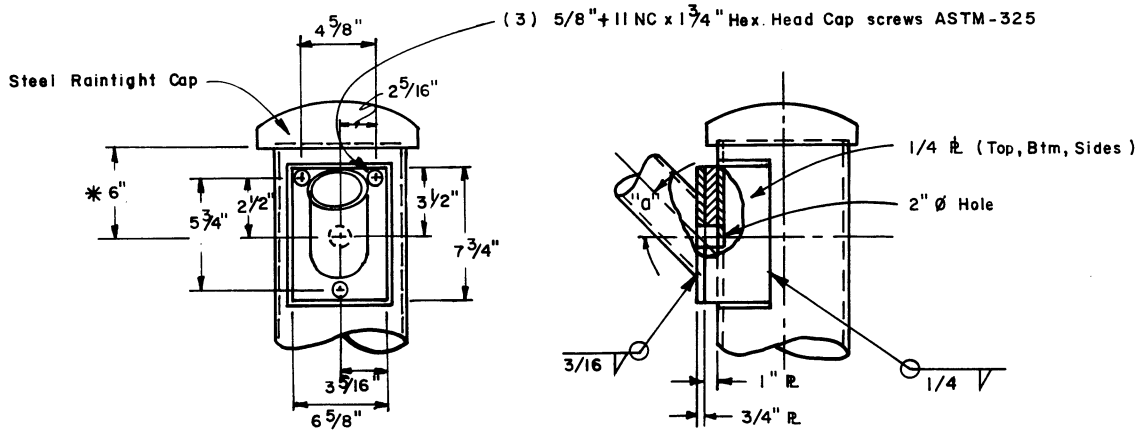
SECTION A-A
SIGNAL TENON ATTACHMENT



SPECIAL DETAIL
FOR MOUNTING SIGNAL HEAD

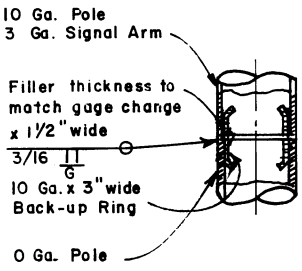
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 4	
			TRAFFIC DETAIL SHEET SIGNAL ARM DETAILS	DRAWING NO. 4 - 4.2 (323)	
				DATE 7 - 81	PAGE 12

POLE TYPE	a
49 and 50	45°
40 and 45	28°- Std. 45°-"Highrise
30 and 35	45°
28	45°
10 and 20	28°-, Std. 45°-"Highrise
5-A, 6-A, 7 and 14	———

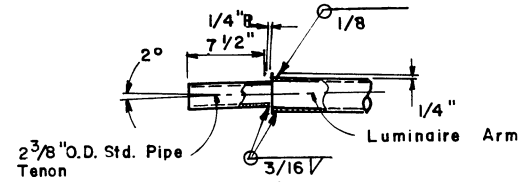


* POLE 30 and 35 = 15"

STANDARD LUMINAIRE ARM CONNECTION
DETAIL "D"

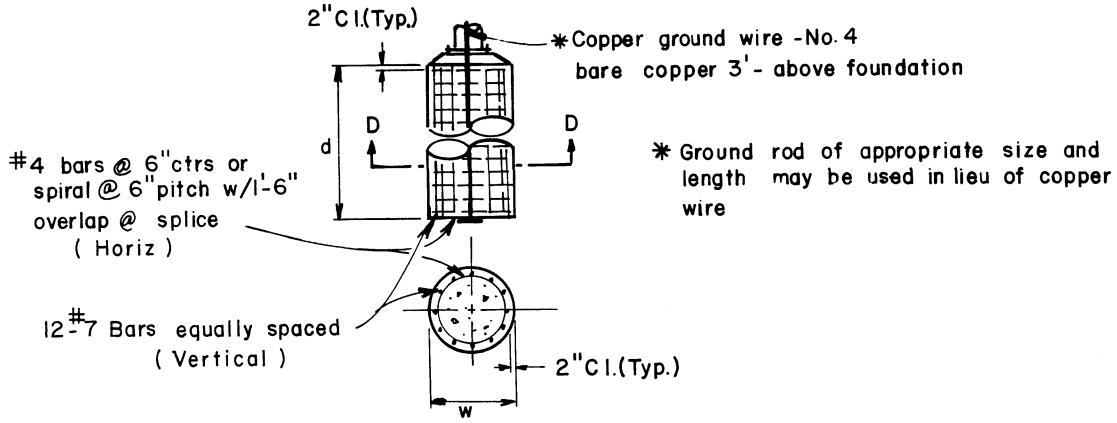


DETAIL "G"
SPLICE DETAIL



DETAIL "E"
LUMINAIRE TENON DETAIL

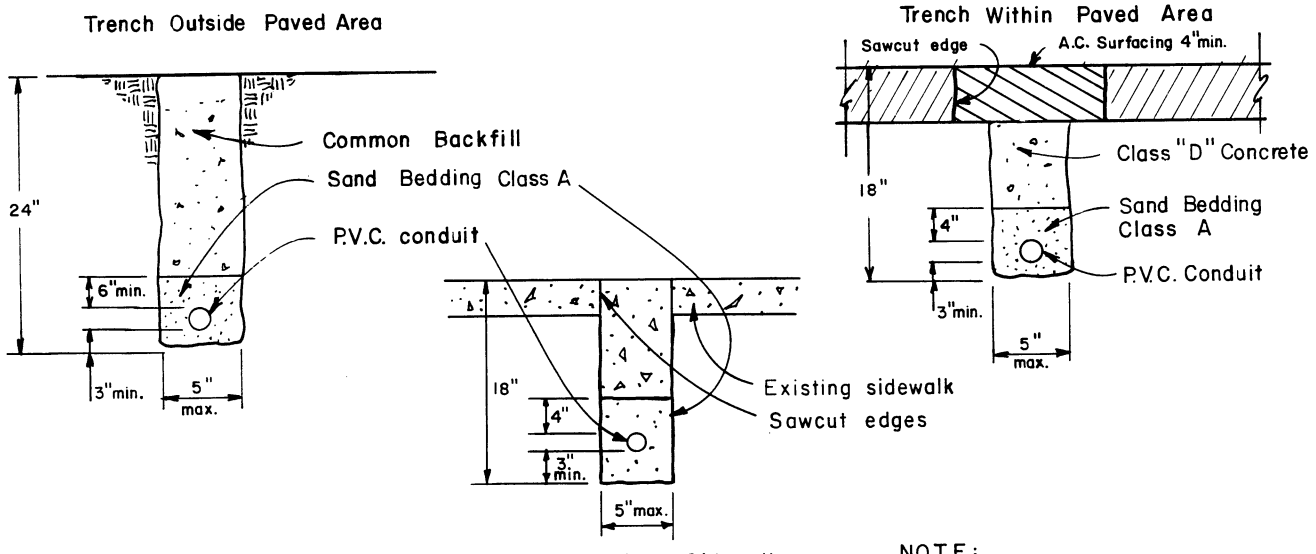
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 4	
			TRAFFIC DETAIL SHEET LUMINAIRE ARM DETAILS	DRAWING NO. 4-4.3 (323)	
				DATE 7-81	PAGE 13



SECTION D-D
PILE FOUNDATION

Pole Type	Signal arm length	" d "	" w "
10 and 20	≤ 30'	8'-6"	30"
10 and 20	> 30'	10'-6"	36"
28,30,35,40,45	all	12'-0"	36"
49,50	all	13'-0"	36"

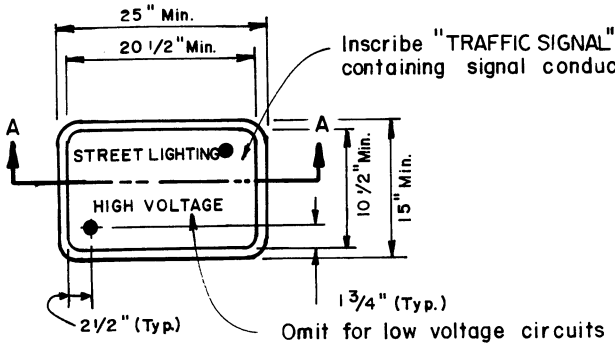
DETAIL "I"



NOTE:
See standard trench patch section.

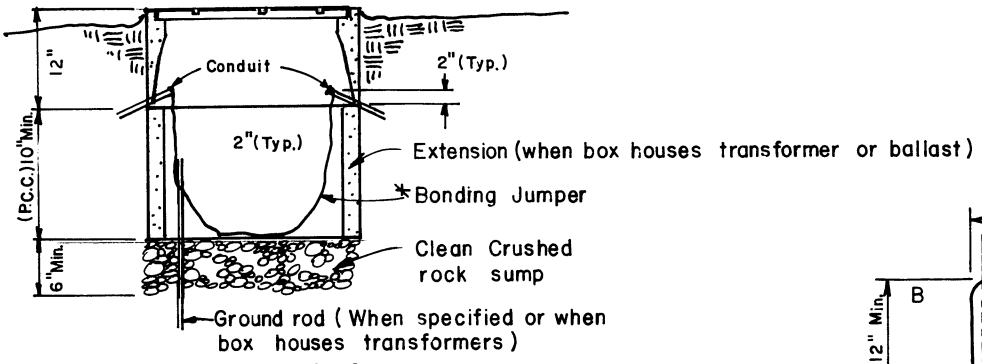
TRENCH DETAILS

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 4	
			TRAFFIC DETAIL SHEET TRENCH AND FOUNDATION	DRAWING NO. 4-4.4 (323)	
				DATE 7-81	PAGE 14

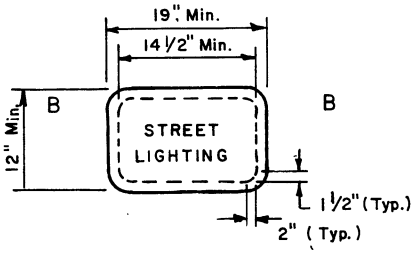


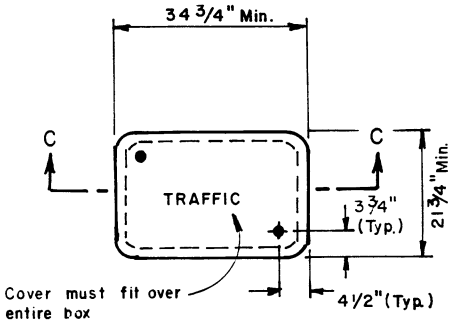
Note:

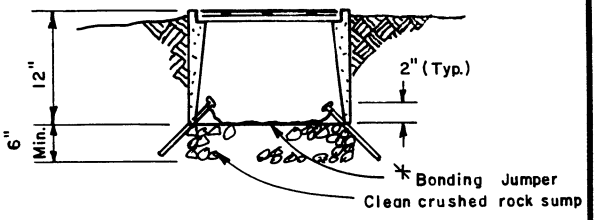
All boxes to be reinforced concrete in Sparks and fiberglass elsewhere



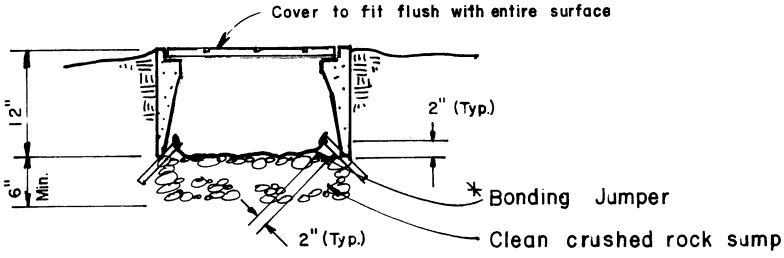
SECTION A-A
PULL BOX NO. 5







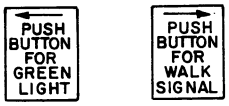
SECTION B-B
PULL BOX NO. 3 1/2



SECTION C-C
PULL BOX NO. 7

* Applicable only when metal conduit is used.

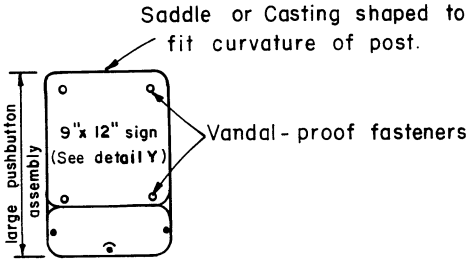
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 4	
1	SPELLING	10-16-86	TRAFFIC DETAIL SHEET PULL BOXES	DRAWING NO. 4-4.5 (323)	
				DATE 7-81	PAGE 15



(For 3 light signal) (For walk signal)

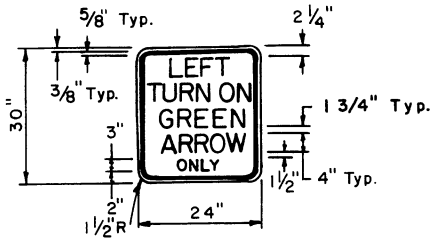
NOTE:
1. Arrow to be left or right or both as required
2. Porcelain enameled 9"x12" sign, black letters on white background.

DETAIL "Y"



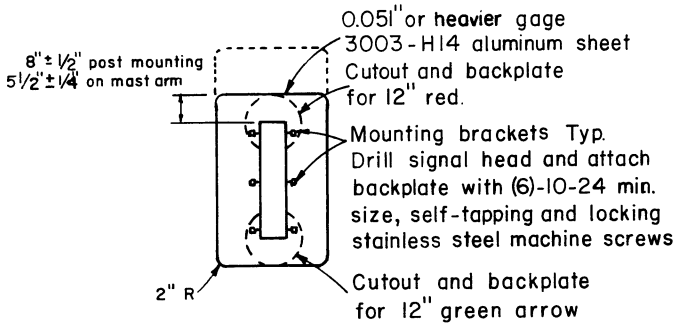
DETAIL "Z"

PEDESTRIAN PUSH BUTTON DETAILS



NOTE:
Sign to be black on reflectorized white

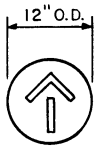
TYPICAL LEFT TURN SIGN



REAR VIEW

NOTE:
No background light to show between plate and head. Mast arm backplate shall be louvered

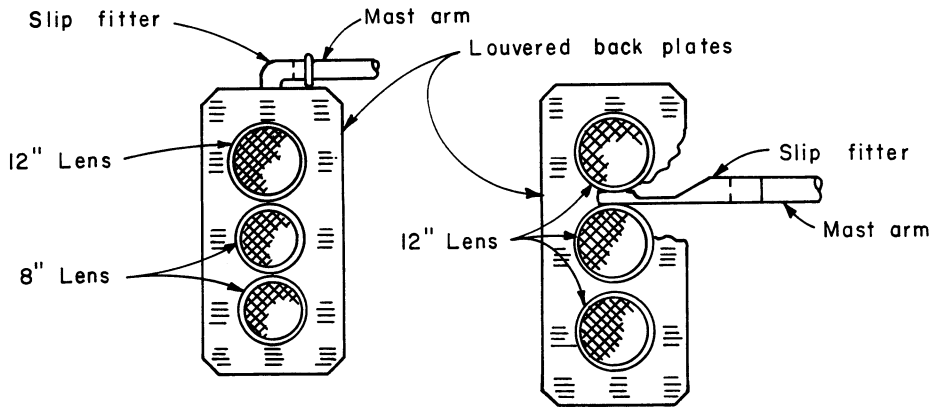
TYPICAL BACKPLATE



TYPICAL ARROW LENS

TYPICAL DIRECTIONAL LOUVER

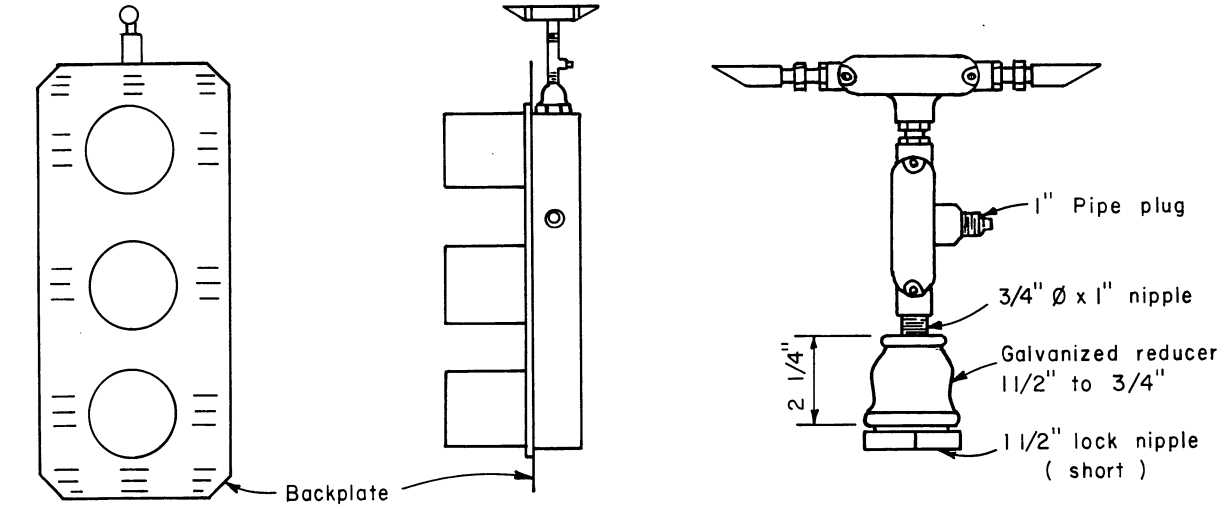
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 4	
1	SPELLING	10-16-86	TRAFFIC DETAILS	DRAWING NO. 4-4.6 (323)	
				DATE 7-81	PAGE 16



M-1
TOP MOUNTED

M-2
SIDE MOUNTED SLIP FITTER
(Use only when noted on plans)

MAST ARM SIGNAL MOUNT



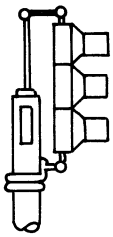
FRONT VIEW

SIDE VIEW

OPTICOM UNIT

OPTICOM 105 DETECTOR UNIT

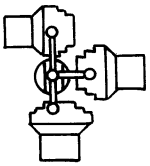
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 4	
			TRAFFIC DETAIL SHEET SIGNAL MOUNTS	DRAWING NO. 4-4.7 (323)	
				DATE 7-81	PAGE 17



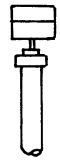
A-2

A-3

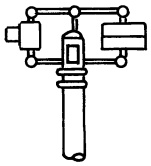
A-4



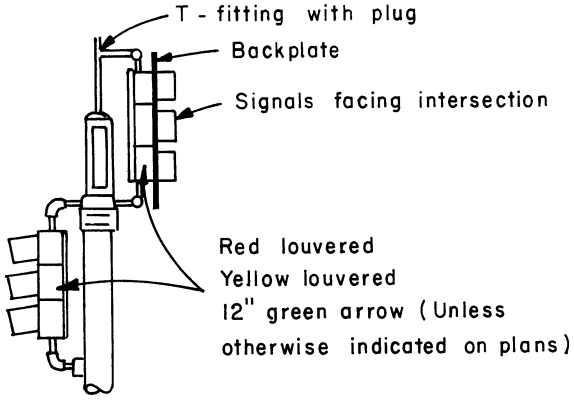
A-5



W-1

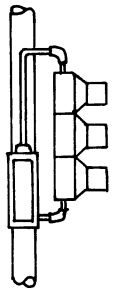


W-2

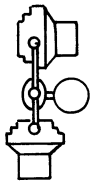


A-6

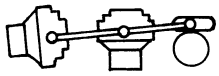
POST TOP MOUNTING



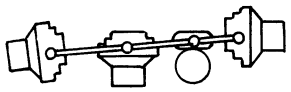
B-1



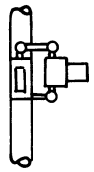
B-2



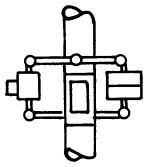
B-3



B-4



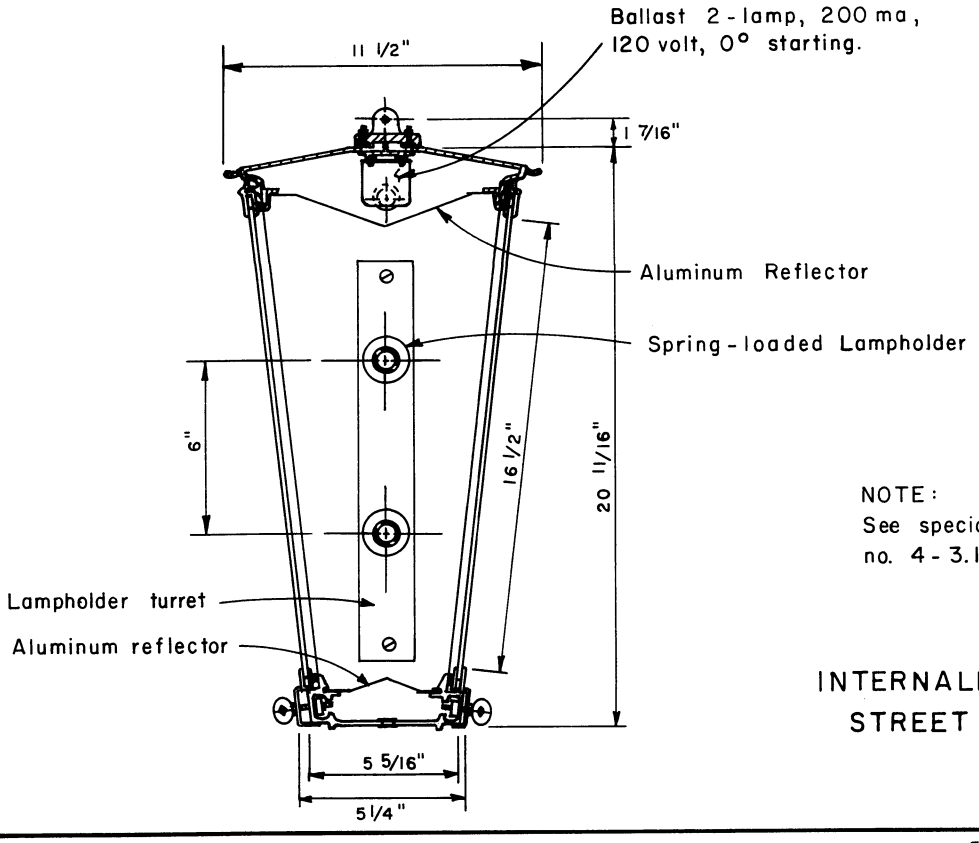
W-0



W-3

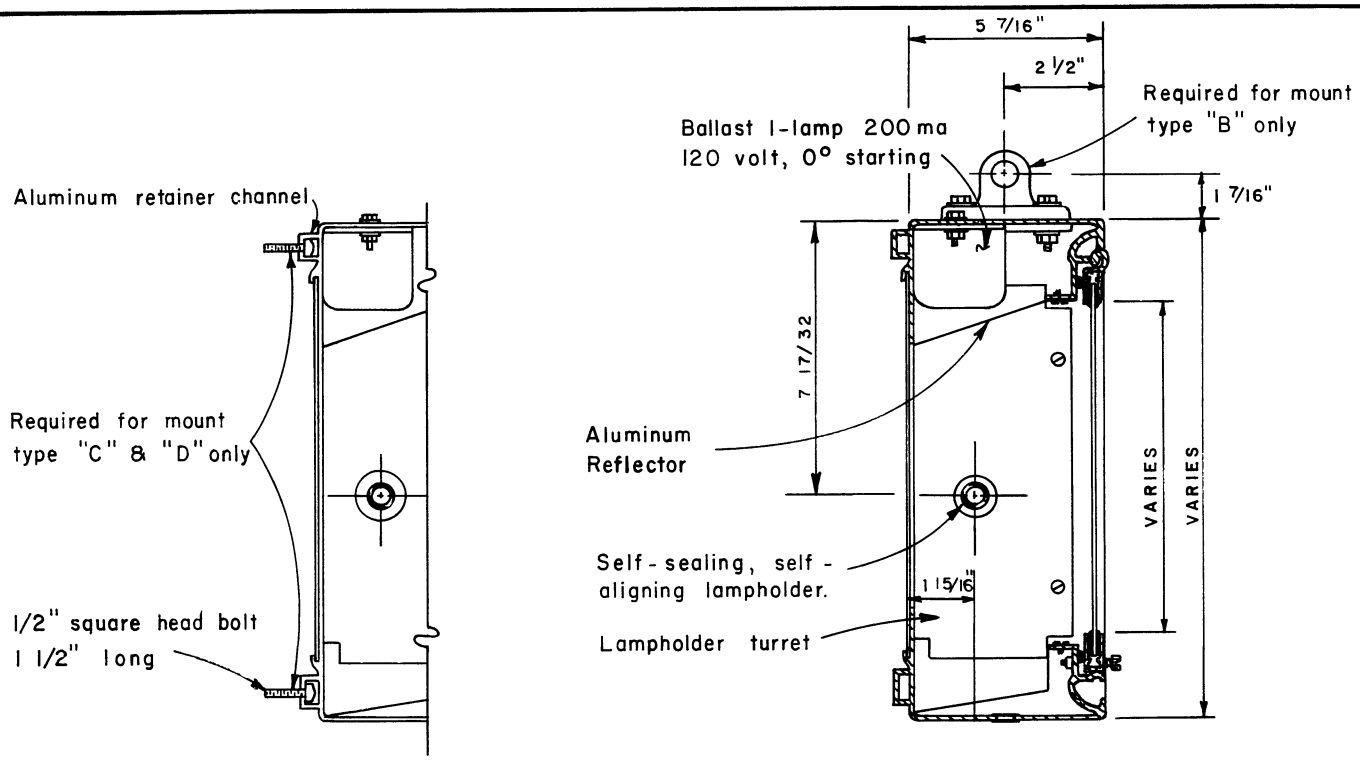
BRACKET MOUNTING

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 4	
			TRAFFIC DETAIL SHEET SIGNAL MOUNTINGS	DRAWING NO. 4-4.8 (323)	
				DATE 7-81	PAGE 18



NOTE:
See special notes on Dwg. no. 4-3.10.

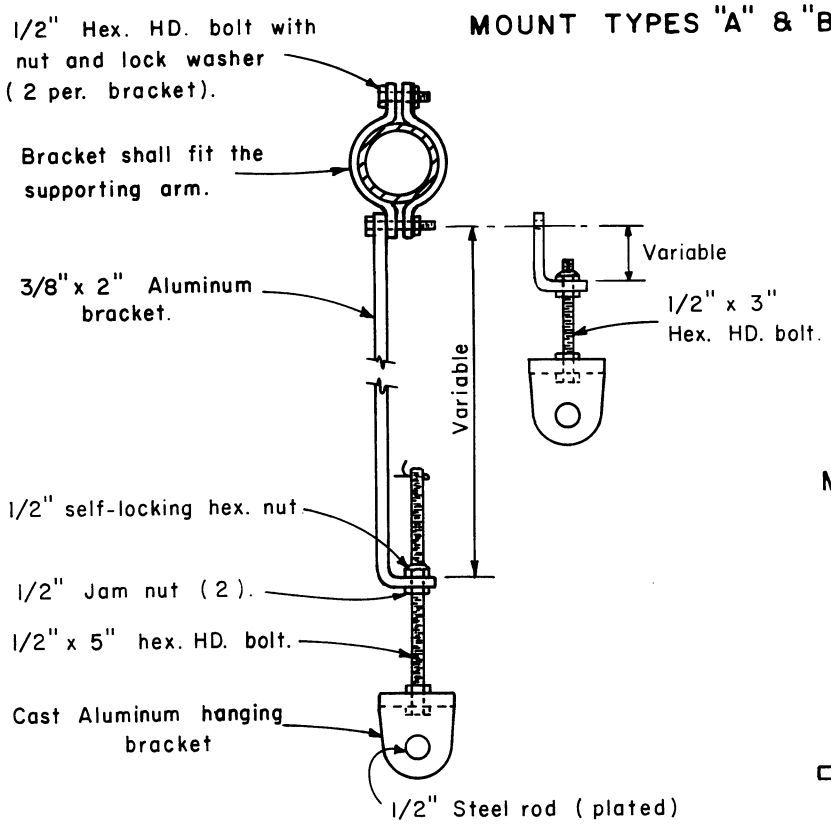
INTERNALLY ILLUMINATED STREET NAME SIGN



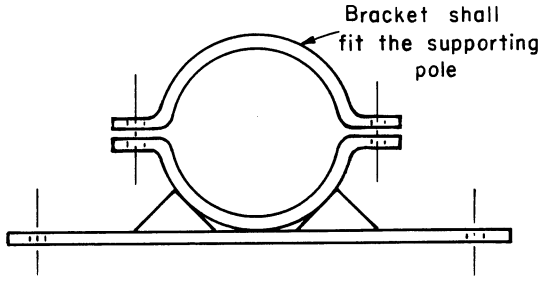
INTERNALLY ILLUMINATED REGULATORY SIGN

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 4	
			TRAFFIC DETAIL SHEET ILLUMINATED SIGNS	DRAWING NO. 4-4.9 (323)	
				DATE 7-81	PAGE 19

MOUNT TYPES "A" & "B"



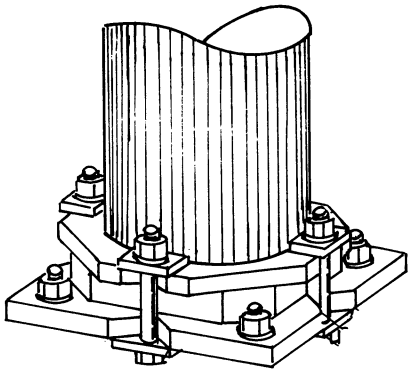
MOUNT TYPES "C" & "D"



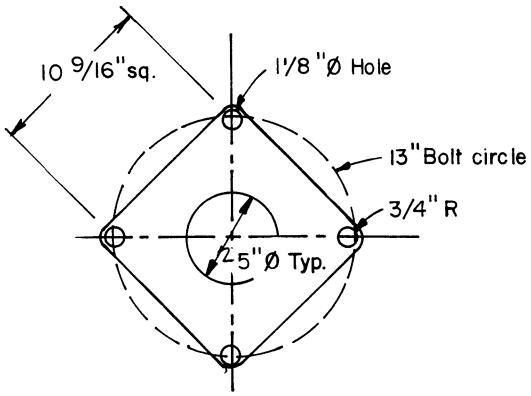
SPECIAL NOTES

1. Legend on street name sign shall be series "E", 8" caps and 6" lower case.
2. Panel material shall be fiberglass (Tuflite), or similar approved material.
3. All fasteners and associated hardware shall be stainless steel or aluminum Type 302 or 316
4. Lamp load shall be fused inside unit.
5. Type "D" mounting brackets same as Type "C" mounted vertically and adjustable to fit taper of arm.
6. Sign clamps shall be sized to fit respective signal arms.
7. Regulatory sign sizes and legends shall conform to Part II of the Manual on Uniform Traffic Control Devices.
8. 14-3 SJ cable to be installed in 1/2" liquid tight flexible steel conduit with liquid tight connectors.
9. The 14-3 SJ cable used to provide service to the illuminated signs shall be run continuously from each sign to the nearest pull box without splices.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 4	
			TRAFFIC DETAIL SHEET SIGN MOUNTING & NOTES	DRAWING NO. 4 - 4.10 (323)	
				DATE 7 - 81	PAGE 20



SAFETY BASE



SLIP BOLT GASKET
22 Gage Galvanized sheet metal

SAFETY BASE NOTES FOR POLE TYPES 7 & 14

1.) Place bottom plate with spacer plate on leveling nuts on anchor bolts and fasten in place.

2.) Top plate shall be furnished by light pole fabricator as light pole base plate with dimensions as shown in plan view.

3.) Erect light pole and secure with 1"Ø high strength bolts. Bolts shall be installed in the slots so that the bolt shanks are in contact with the plates.

4.) All steel plate assemblies shall be hot-dip galvanized after fabrication.

5.) All nuts, bolts and washers shall be electro-plated cadmium in accordance with ASTM A-165, Type TS.

6.) All contact areas of plates shall be free of galvanizing beads or runs.

7.) Safety bases shall be utilized on all steel light poles only when specified.

8.) Slip bolts shall be torqued to 150 foot-pounds

9.) Grouting shall be done after light pole has been located in final position.

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STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

SAFETY BASE DETAIL A

SECTION 4

DRAWING NO. 4 - 5.1 (323)

DATE 7-81

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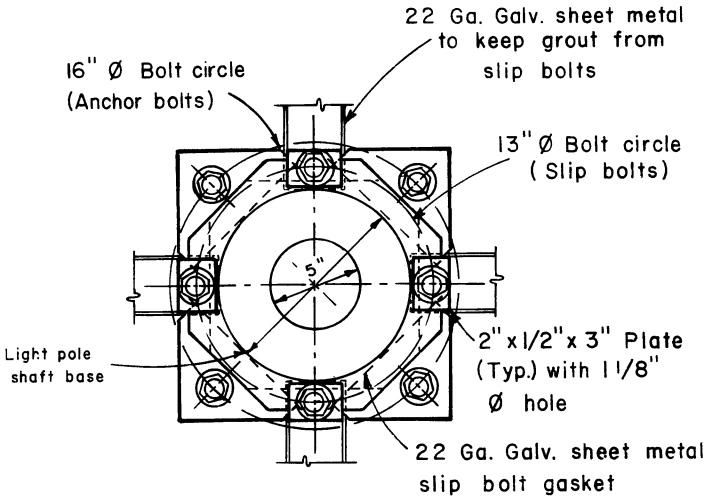
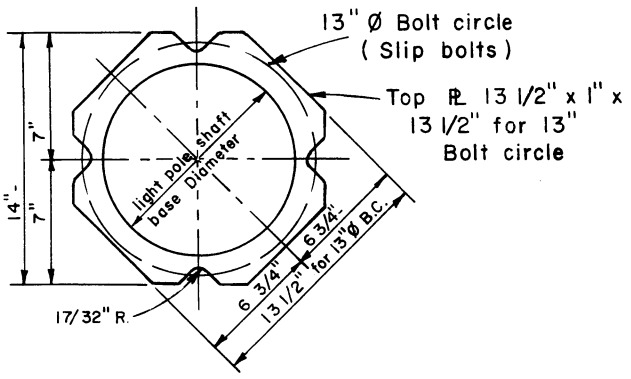
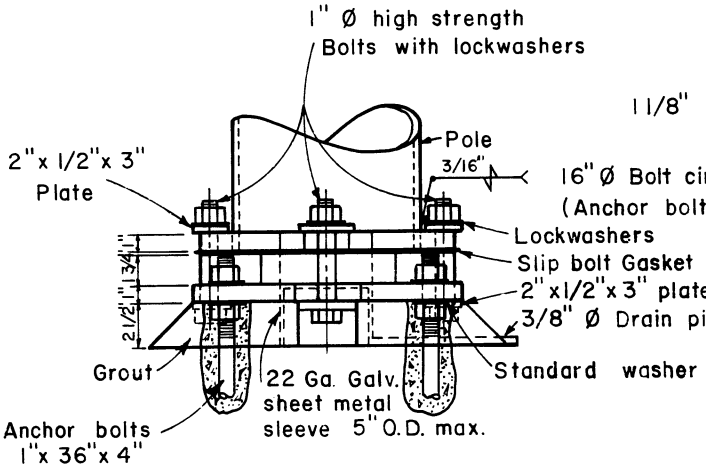


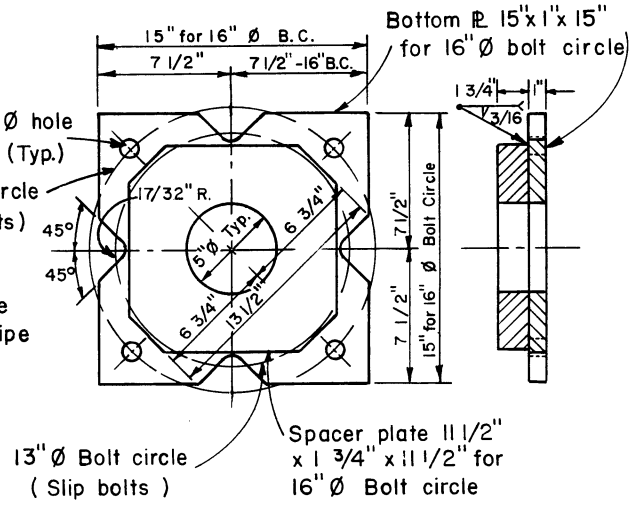
PLAN



PLAN OF TOP PLATE

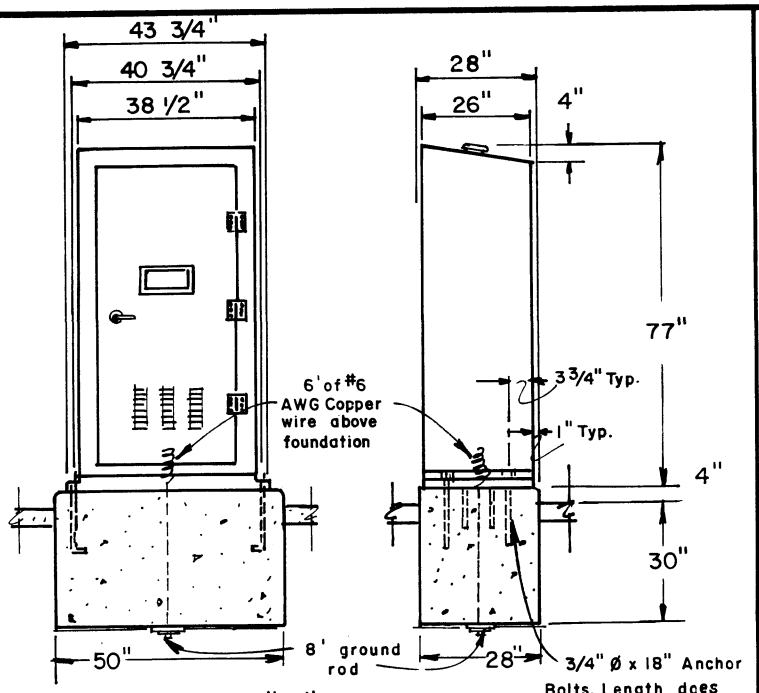


LIGHT POLE BASE

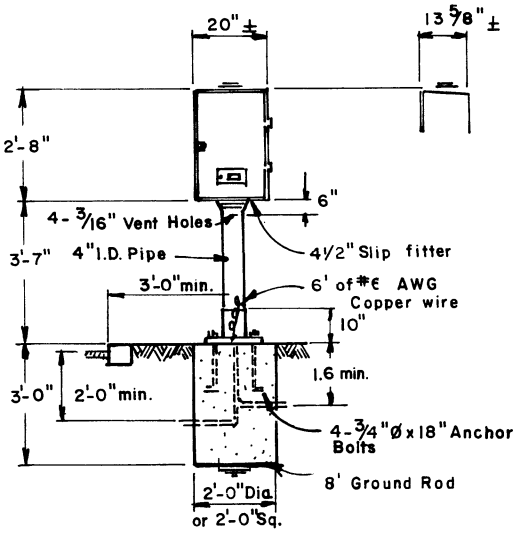


PLAN OF BOTTOM AND SPACER PLATE

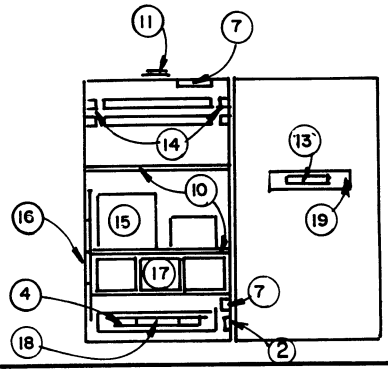
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 4	
			SAFETY BASE DETAIL B	DRAWING NO. 4 - 5.2 (323)	
				DATE 7 - 81	PAGE 22



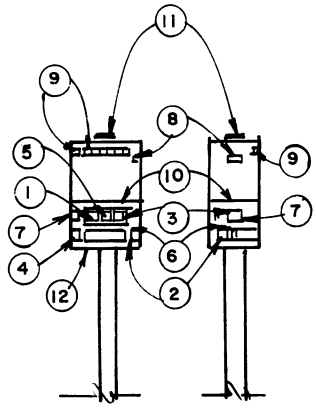
TYPE "R" CABINET

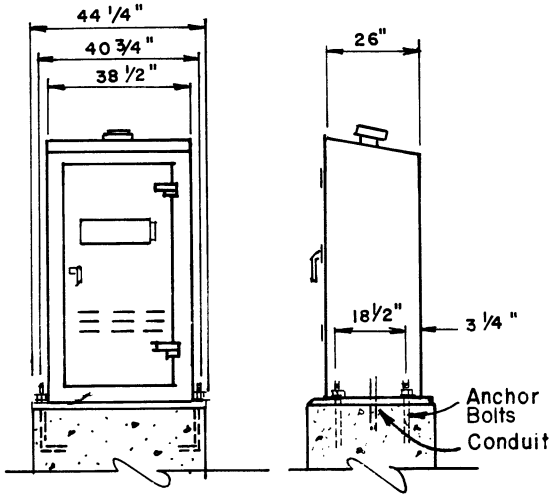


TYPE "G" CABINET



NOTE:
Cabinet to be installed minimum 6' from T. W. or curb line.





TYPE "P" CABINET

CABINET LEGEND

1. Main Switch
2. Plug Fuse
3. Signal Flash Switch inside cabinet
4. Field Wire Terminal Blocks.
5. Auxiliary Door Flash Switch
6. N.E.M.A Standard Plug Receptacle with Grounding Contact
7. Radio Interference Suppressor
8. Solid State Signal Flasher (Cabinet Mfr. To Determine Poles & Capacity, unless otherwise Specified)
9. External light Relays
10. Shelf
11. Thermostat-Controlled Fan with T Vent
12. Eight 1/2" Screened Vent Holes
13. Internal Power Panel and Recall Switches
14. Control Relays
15. Dispatcher Unit
16. Internal Interconnect Terminal Strips
17. Minor Movement Units
18. Slant Panel
19. Police Panel
20. Instrument Terminal Strips

NO.	REVISION	DATE
1	SPELLING	10-16-86

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

CONTROLLER CABINET DETAILS

SECTION 4

DRAWING NO. 4 - 6.1 (323)

DATE 7-81

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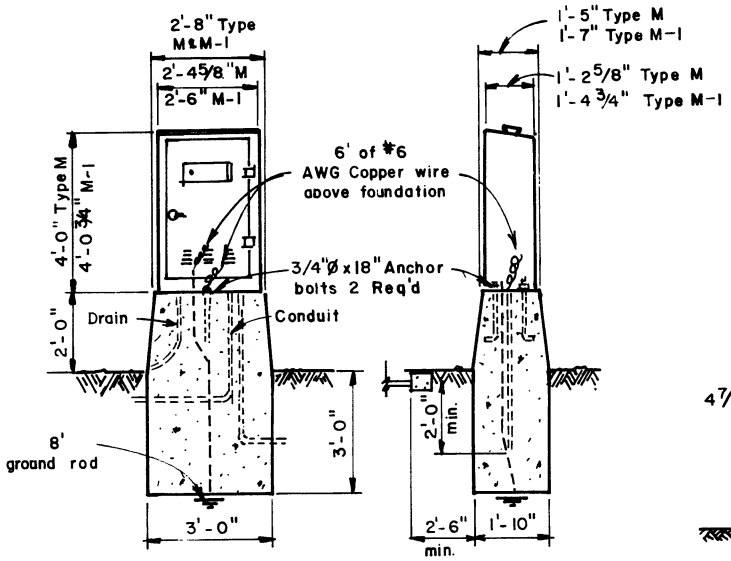
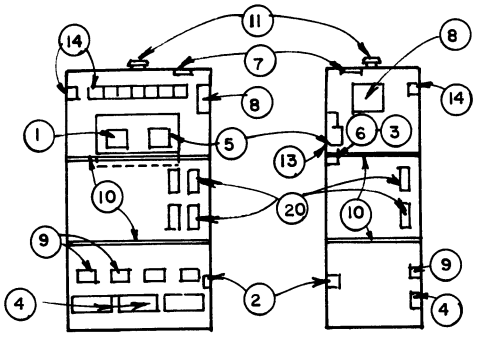
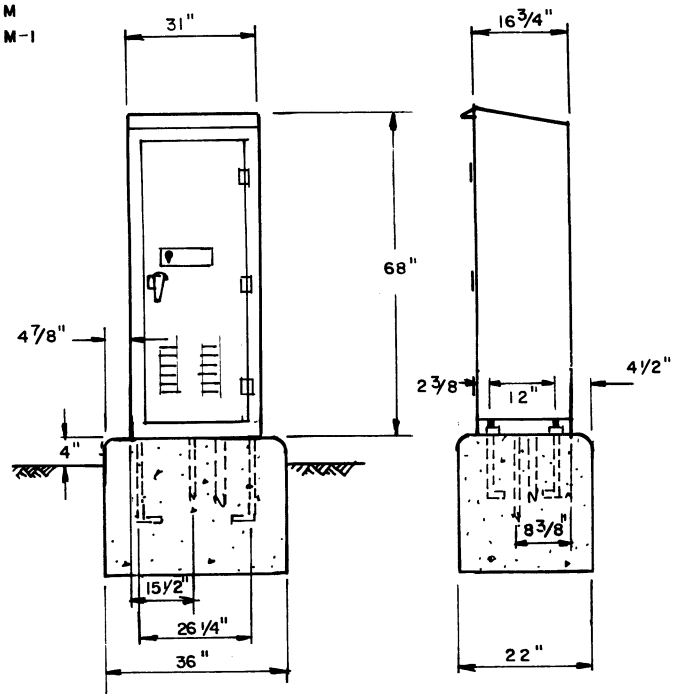


TYPE M & M-I CABINET

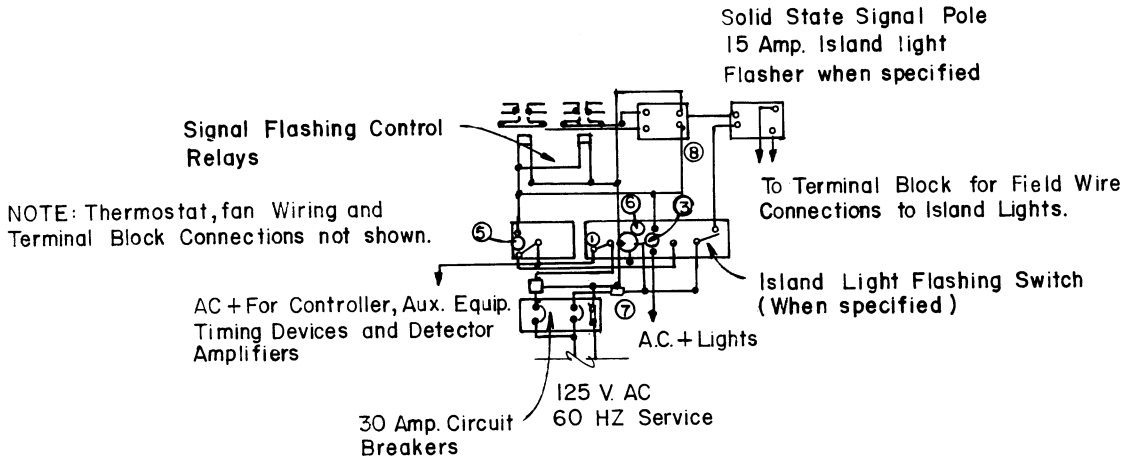




EXTENDED TYPE M CABINET

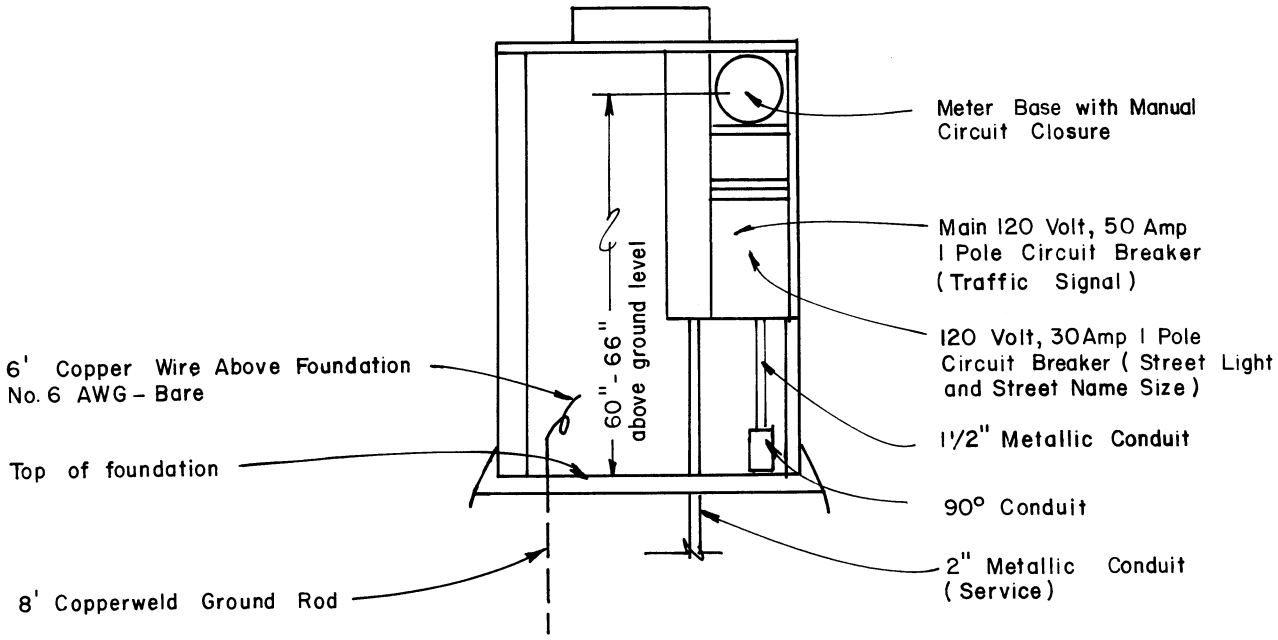
(Ground as shown on Type M)

NOTE:
Description of cabinet reference numbers "②" may be found on Dwg. No. 4-5.1



CABINET WIRING

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 4	
			CONTROLLER CABINET DETAILS	DRAWING NO. 4-6.2 (323)	
				DATE 7-81	PAGE 24



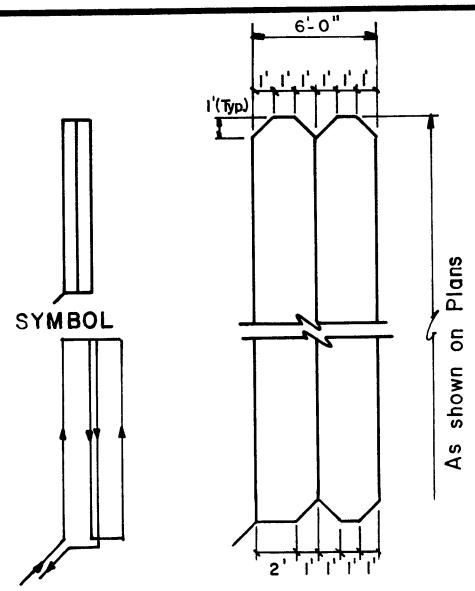
ELECTRIC SERVICE NOTES :

1.) The 20/240 V.A.C. service shall be completed as shown. The traffic signal, street lighting, and street name sign service shall be metered 120 Volt A.C. power.

2.) Enclosures for circuit breakers and disconnect switches shall have hasps and locks (Master#761 or Approved equal)

3.) Street light and street name sign shall be inside cabinet.

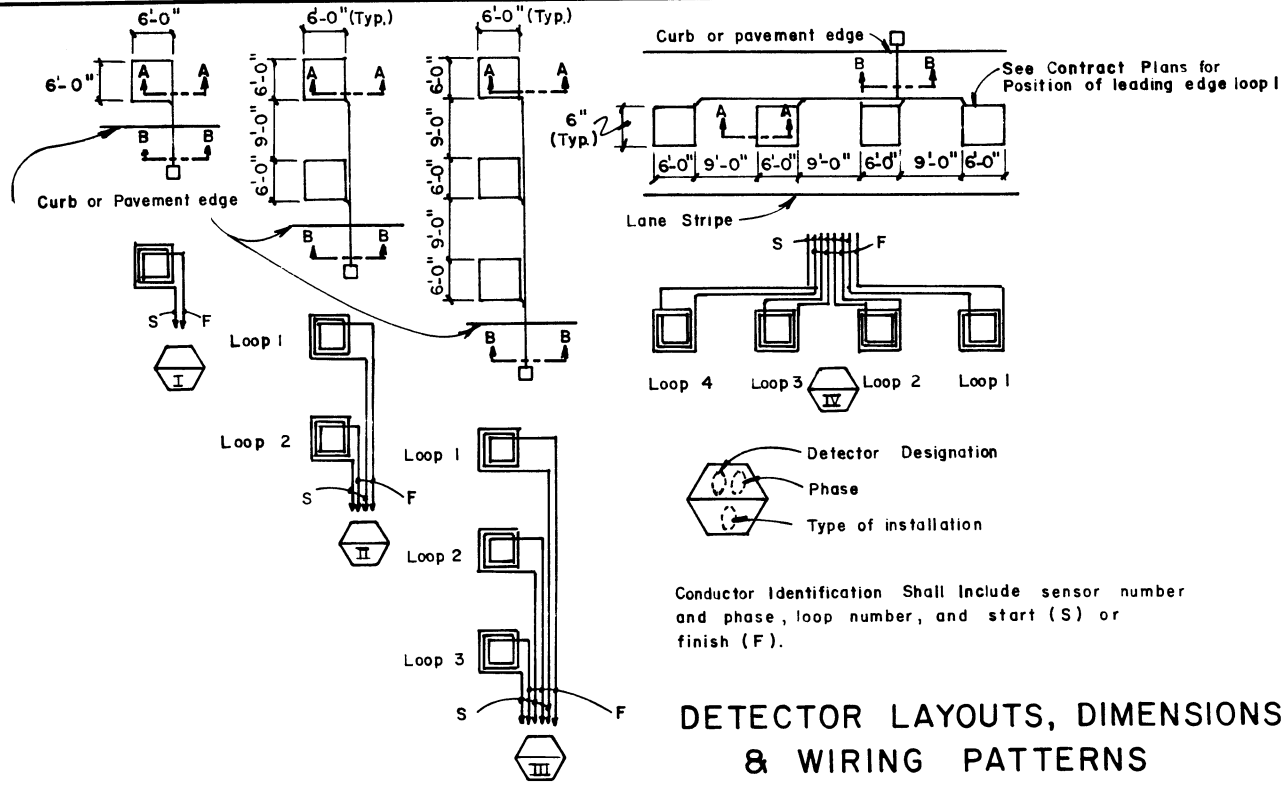
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 4
			CONTROLLER CABINET SERVICE INSTALLATION	DRAWING NO. 4-7 (323)
				DATE 7-81 / PAGE 25



Loop Installation Procedure

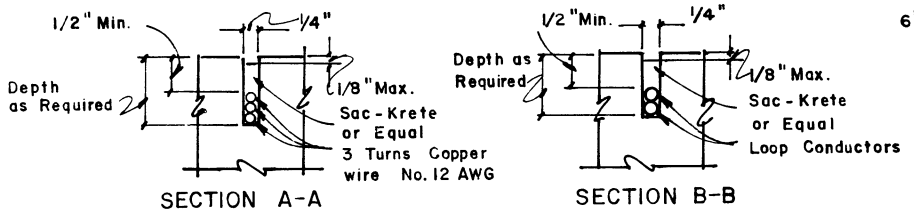
1.) Saw Slots in Pavement for Loop Conductors
2.) Install Termination Pull Box
3.) Install #12 AWG Loop Conductor in Slots. Allow additional length for the run to Termination Pull Box plus 5 feet of slack in pull box.
4.) Identify loop circuit pairs. Identify start of conductor
5.) Splice loop conductors to lead-in cable. All Splices shall be soldered using rosin core solder.
6.) Fill slots as shown in Details.
7.) No more than four loop detector conductors shall be installed in one sawed slot.
8.) Lead-in cable shall not be spliced between the termination pull box and the controller cabinet.
9.) Distance between side of loop and lead-in saw cut shall be 2'-0" minimum. Distance between lead-in saw cuts shall be 6" minimum.

QUADRAPOLE DETECTOR LOOP



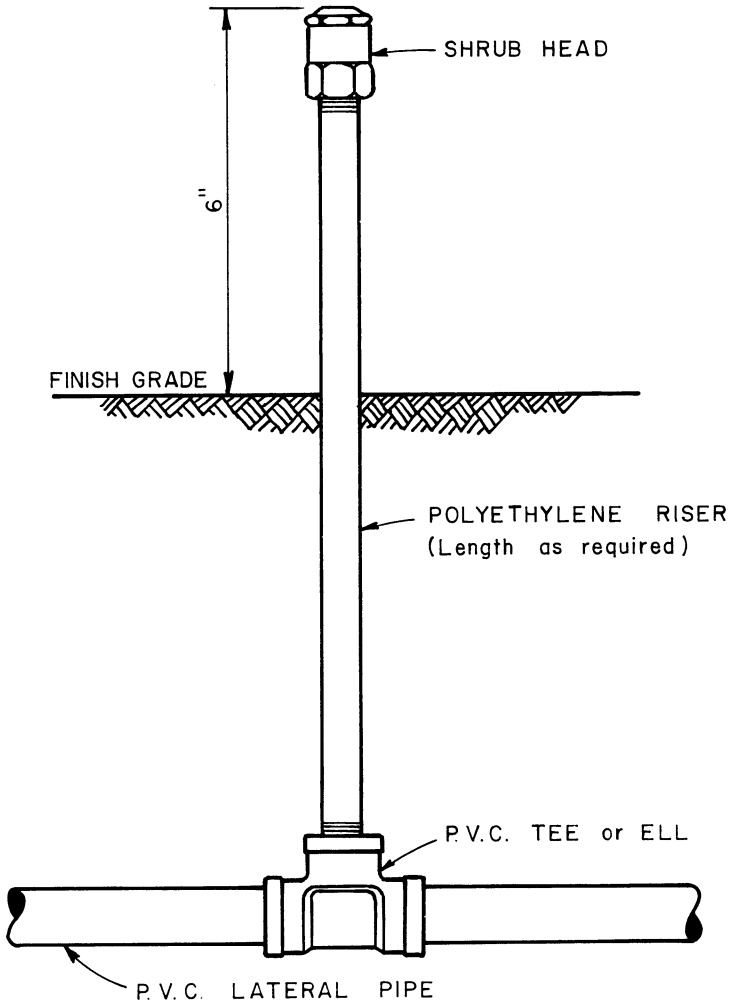
Conductor Identification Shall Include sensor number and phase, loop number, and start (S) or finish (F).

DETECTOR LAYOUTS, DIMENSIONS & WIRING PATTERNS



NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 4
			LOOP DETECTORS	DRAWING NO. 4 - 8 (323)
				DATE 7-81 / PAGE 26

SECTION 5
LANDSCAPE



TYPICAL SHRUB HEAD DETAIL

(FIXED JOINT)

(NOT PERMITTED IN SPARKS)

NO.	REVISION	DATE
1	SPELLING	10-16-86

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

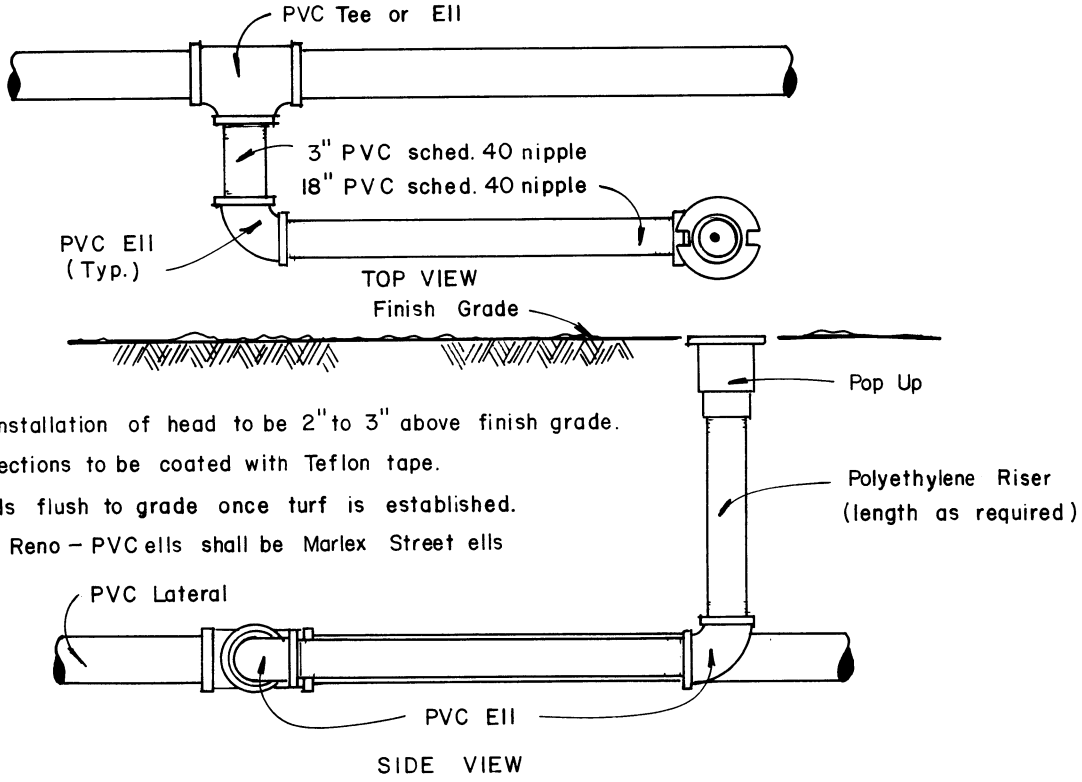
SPRINKLER HEADS FIXED JOINTS

SECTION 5

DRAWING NO. 5-1.1 (307)

DATE 7-81

PAGE 1



NOTE:

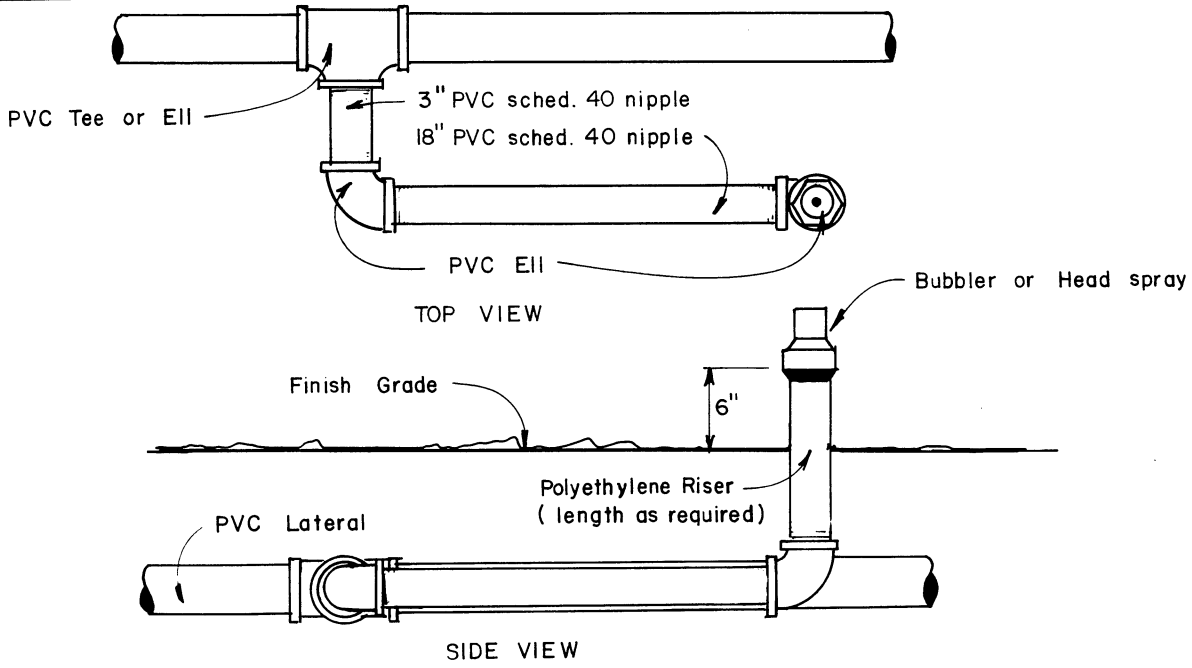
1.) Initial installation of head to be 2" to 3" above finish grade.

2.) All connections to be coated with Teflon tape.

3.) All heads flush to grade once turf is established.

4.) City of Reno – PVC ells shall be Marlex Street ells

TYPICAL POP UP DETAIL



TYPICAL SHRUB HEAD DETAIL

NO.	REVISION	DATE
1	SPELLING	10-16-86

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

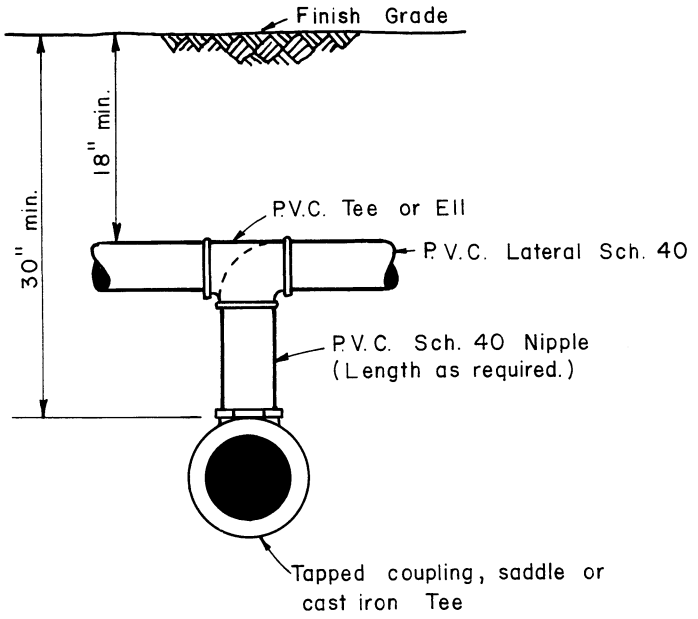
SPRINKLER HEADS SWING JOINT

SECTION 5

DRAWING NO. 5-1.2 (307)

DATE 7-81

PAGE 2

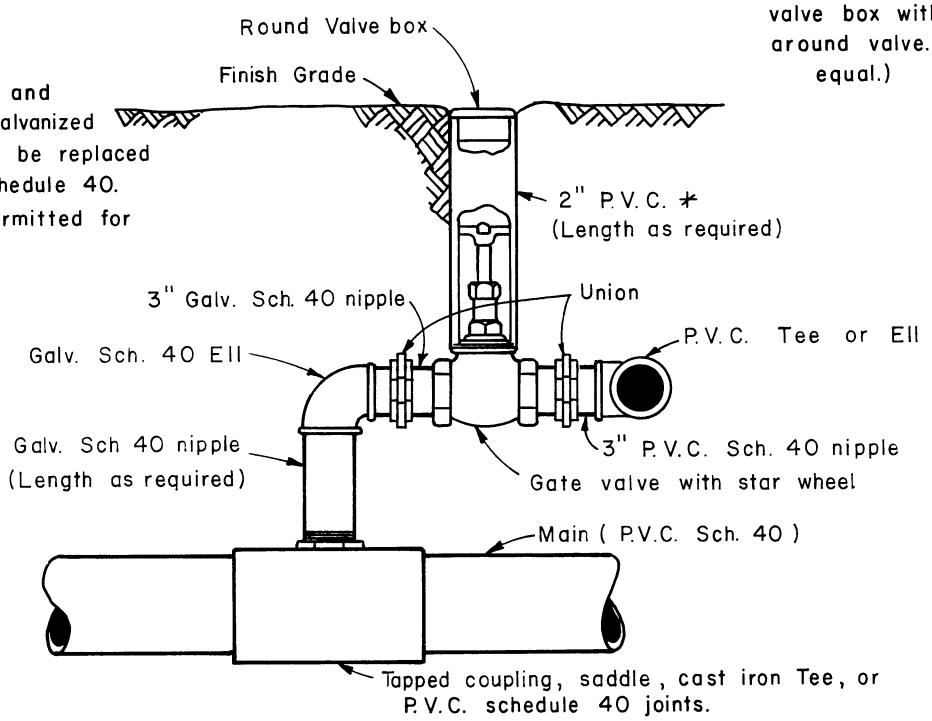


NOTE:
Sparks - Not permitted for city use.

MAIN TO LATERAL DETAIL

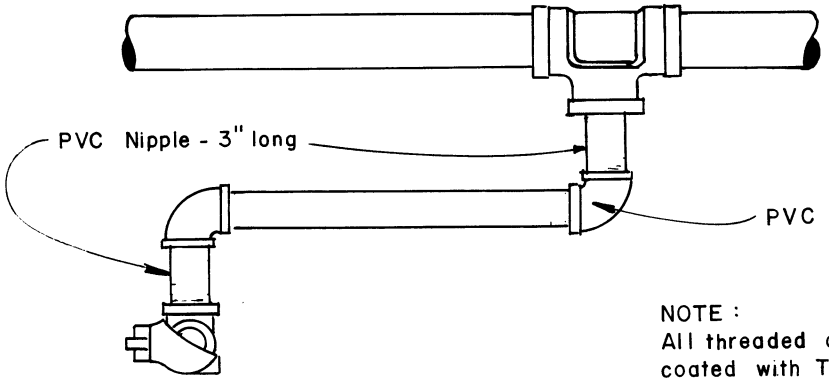
*In Reno and Lander County use "Brooks" plastic valve box with 6" clearance around valve. (or approved equal.)

NOTE:
Lander County and Yerington - All galvanized materials shall be replaced with P.V.C. schedule 40.
Sparks - Not permitted for city use.

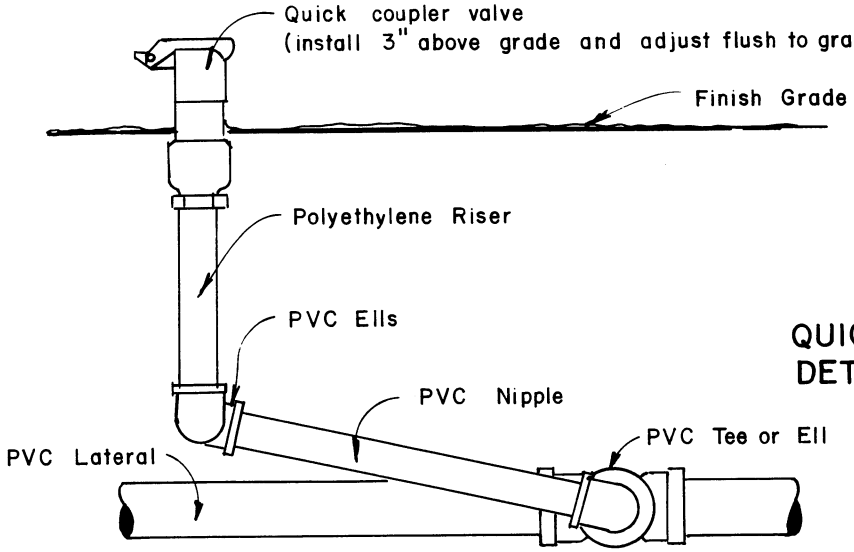


MAIN TO LATERAL DETAIL WITH GATE VALVE

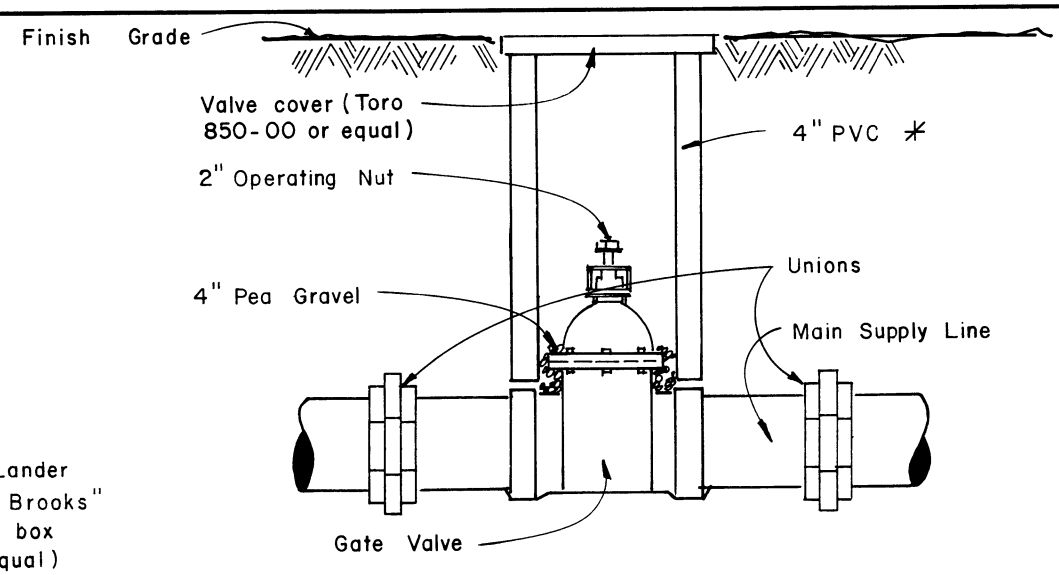
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 5	
			MAIN TO LATERAL DETAILS	DRAWING NO. 5-2 (307)	
				DATE 7-81	PAGE 3



NOTE :
All threaded connections to be coated with Teflon tape or pipe joint compound. City of Reno- all P.V.C. ells to be Marlex street ells



QUICK COUPLING VALVE DETAIL



In Reno and Lander County use "Brooks" plastic valve box (or approved equal) 6" clearance around valve.

GATE VALVE ASSEMBLY DETAIL

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 5	
1	SPELLING	10-16-86	VALVES	DRAWING NO 5-3 (307)	
				DATE 7-81	PAGE 4

NO.	REVISION	DATE
1	SPELLING	10-16-86

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

CONTROLLER & VALVE ASSEMBLY

SECTION 5

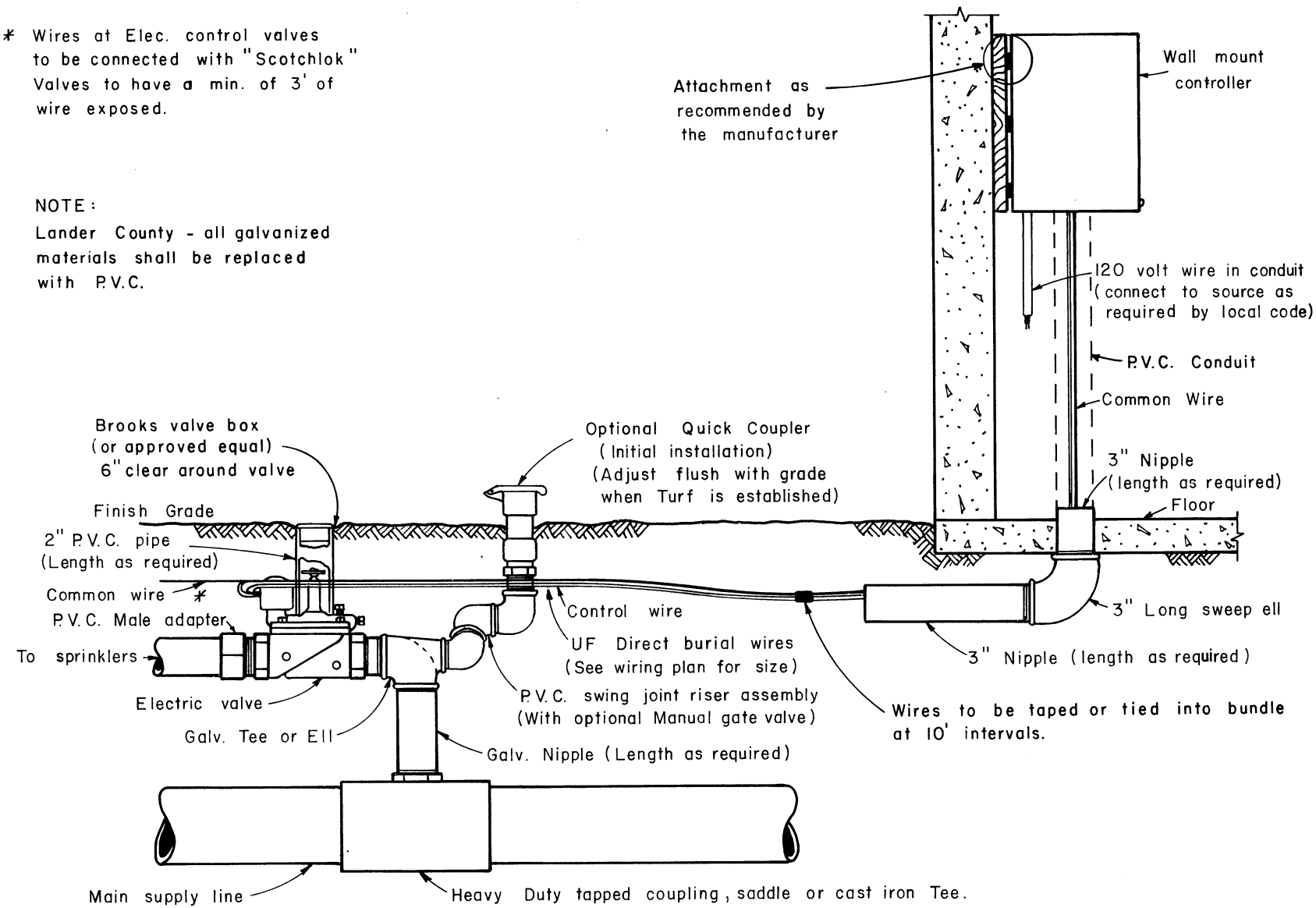
DRAWING NO. 5 - 4 (307)

DATE 7-81

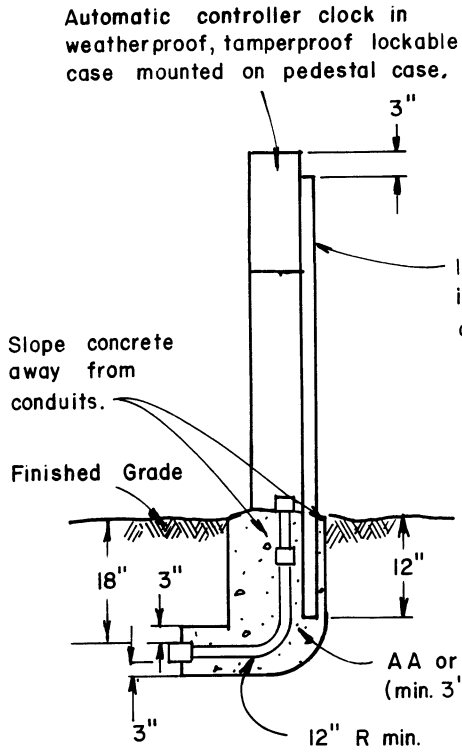
PAGE 5

* Wires at Elec. control valves to be connected with "Scotchlok" Valves to have a min. of 3' of wire exposed.

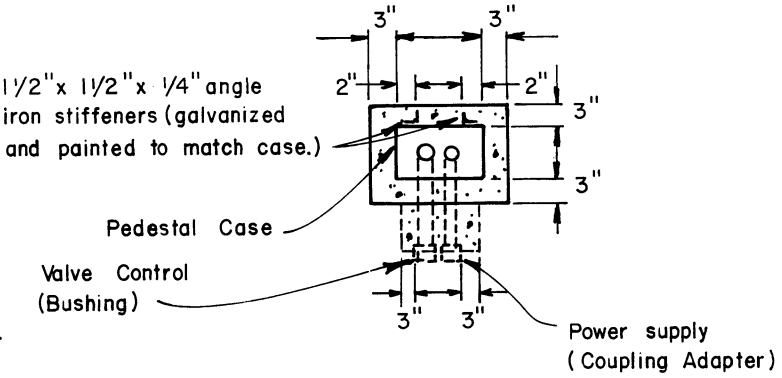
NOTE:
Lander County - all galvanized materials shall be replaced with P.V.C.



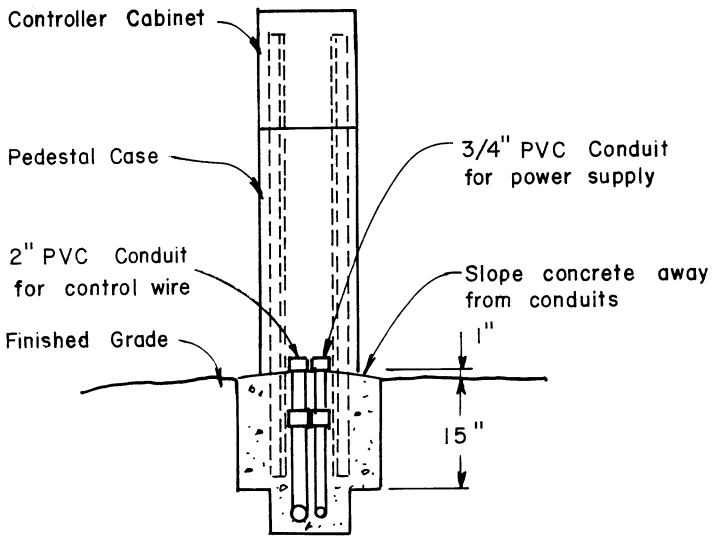
TYPICAL ELECTRIC CONTROLLER & VALVE ASSEMBLY DETAIL
(Not Permitted for City of Sparks)



SIDE VIEW



PLAN VIEW



ELEVATION

NOTES:

1.) Where two or more controllers are mounted on a common concrete base, a minimum of three inches shall be left between controller cabinets.

2.) Anchor controller pedestal to base as required by manufacturer.

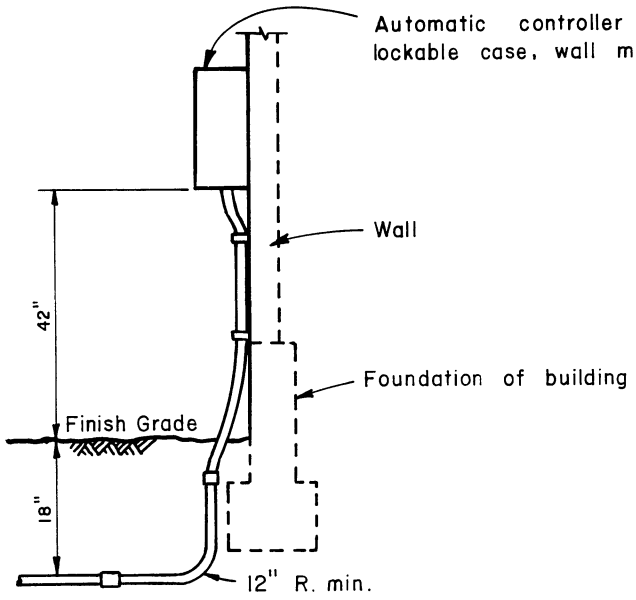
3.) Make all electrical connections inside controller cabinet.

4.) For location of supply conduit and conductors, see electrical plans.

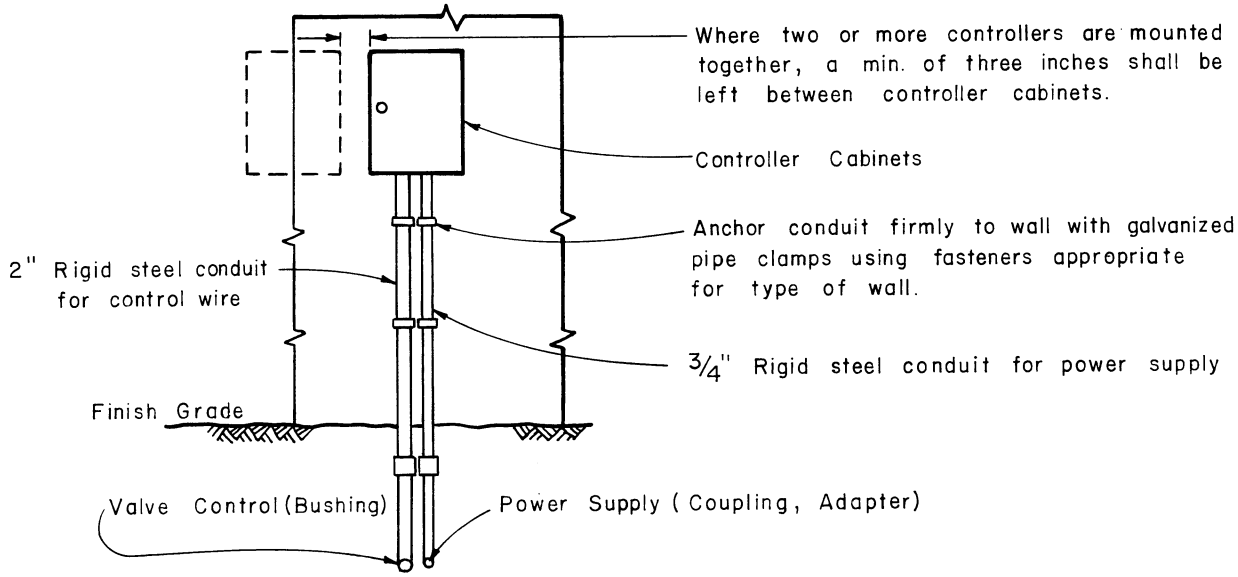
5.) Stiffeners shall be fastened to controller and pedestal cases by 3/16" x 3/4" cadmium plated stove bolts not more than 12" on center (min. 6 bolts per stiffener).

6.) Controller shall be grounded at power supply by ground wire.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 5	
			CONTROLLER PEDESTAL MOUNT	DRAWING NO. 5-5.1 (307)	
				DATE 7-81	PAGE 6



SIDE VIEW



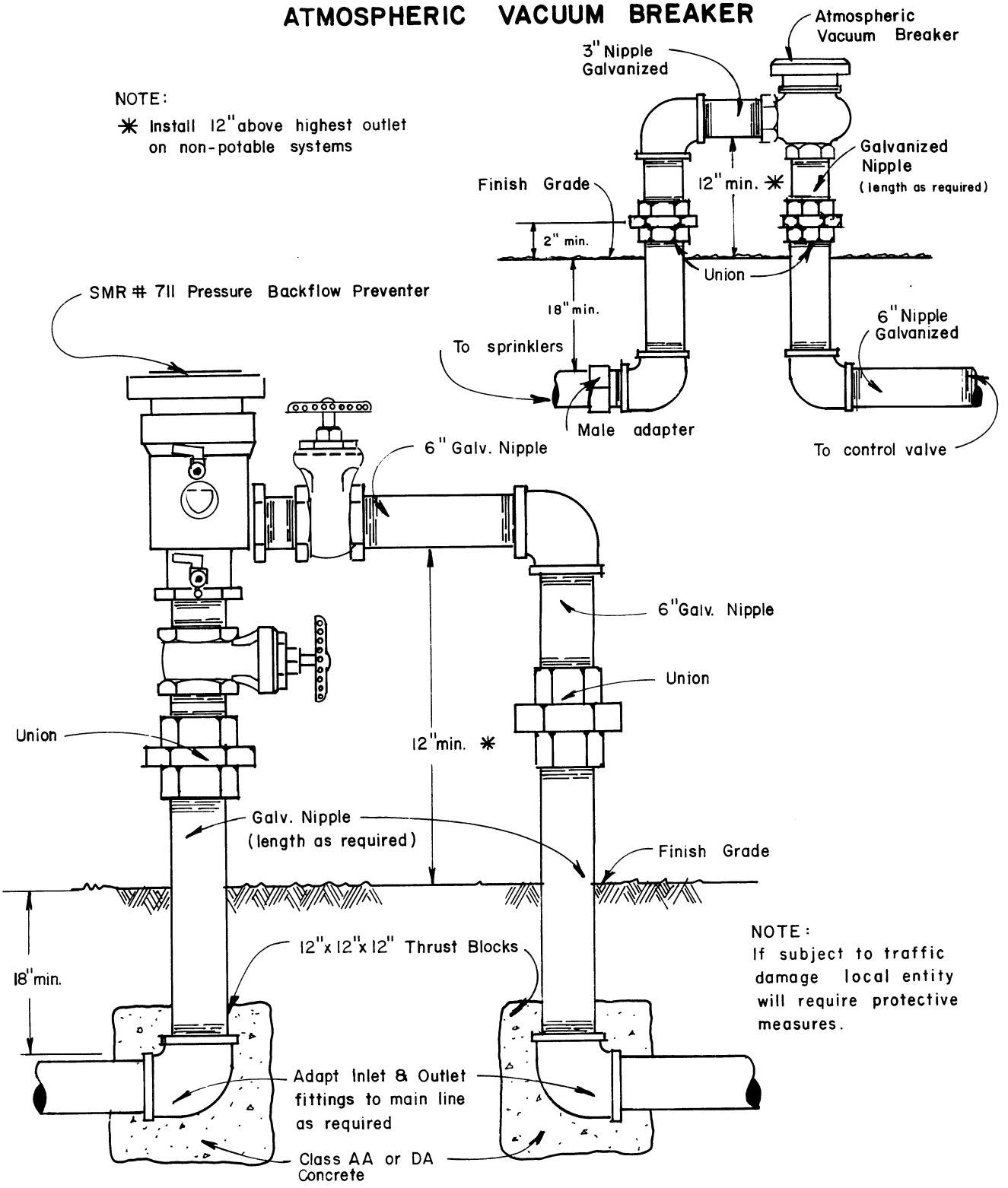
ELEVATION

NOTE:

1. For location of supply conduit and conductor, refer to the plans.
2. Controller shall be grounded at power supply by ground wire.
3. Make all electrical connections inside controller cabinet.
4. Controller shall be inside building whenever possible.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 5	
			CONTROLLER WALL MOUNT	DRAWING NO. 5 - 5.2 (307)	
				DATE 7 - 81	PAGE 7

ATMOSPHERIC VACUUM BREAKER



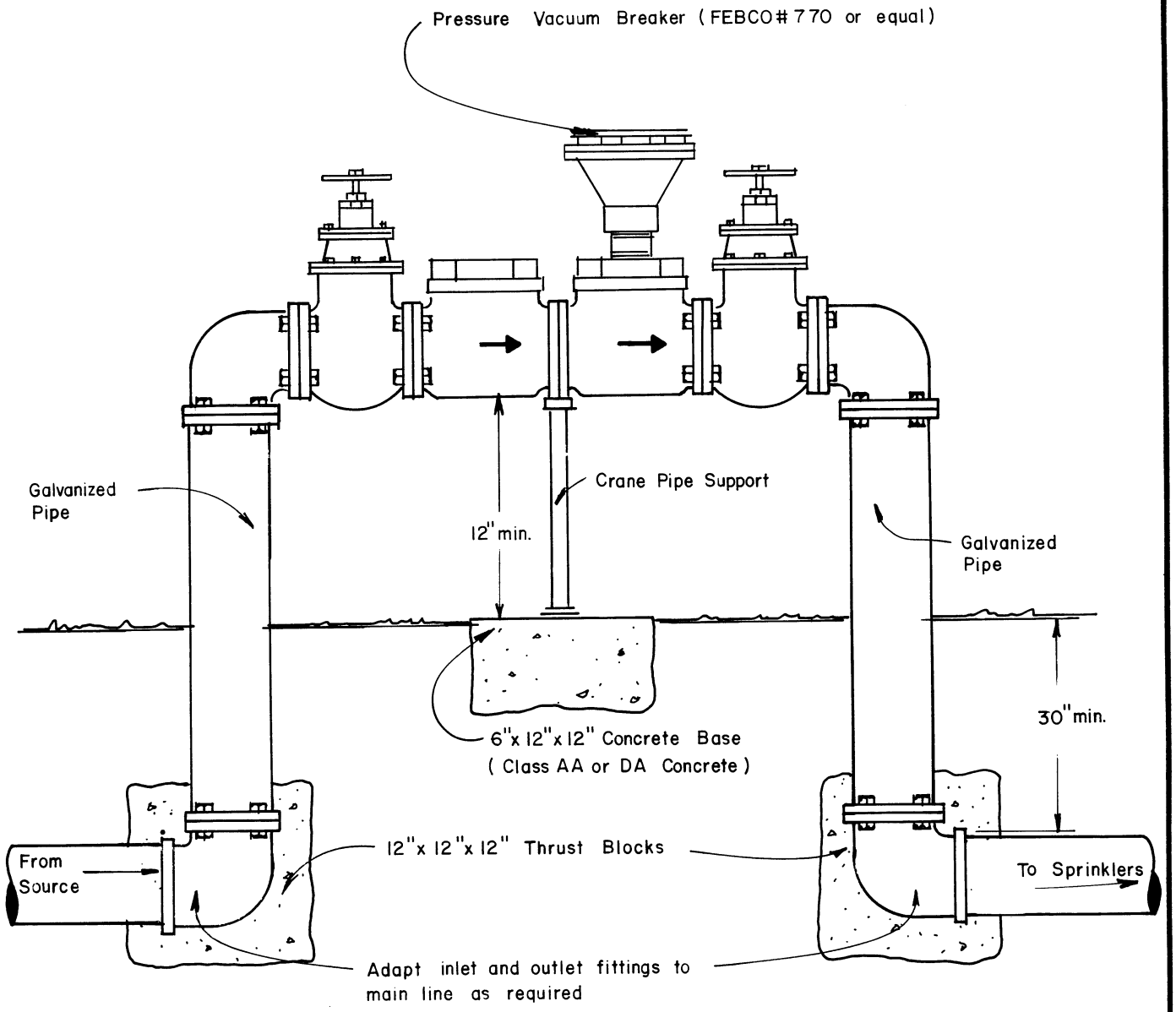
TYPICAL BACKFLOW PREVENTER ASSEMBLY DETAIL

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 5	
			BACKFLOW PREVENTER AND VACUUM BREAKER	DRAWING NO. 5-6.1 (307)	
				DATE 7-81	PAGE 8

NOTE:

1.) All connections on assembly to be flanged.

2.) Install 12" above highest outlet on non-potable system.



TYPICAL BACKFLOW PREVENTER ASSEMBLY DETAIL

(Not permitted for City of Sparks)

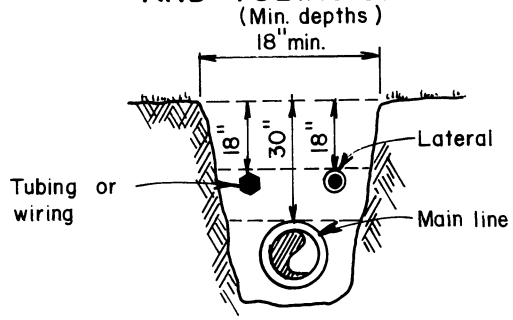
NOTE:

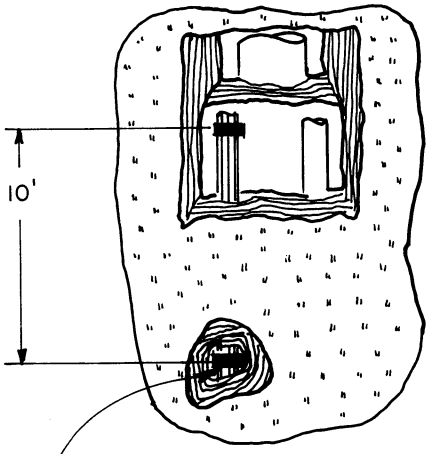
If subject to traffic damage local entity will require protective measures.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 5	
			BACKFLOW PREVENTER	DRAWING NO. 5-6.2 (307)	
				DATE 7-81	PAGE 9

MAIN SUPPLY, LATERAL AND TUBING OR WIRING

(Min. depths)

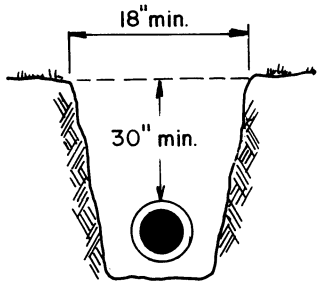


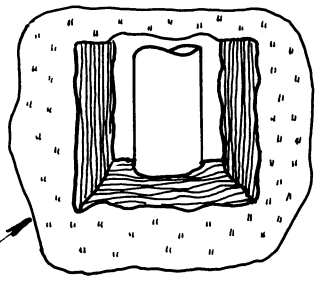


Tape and bundle tubing or wiring at 10 ft. intervals

MAIN SUPPLY

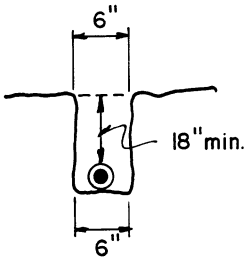
(Bed in compacted sand)

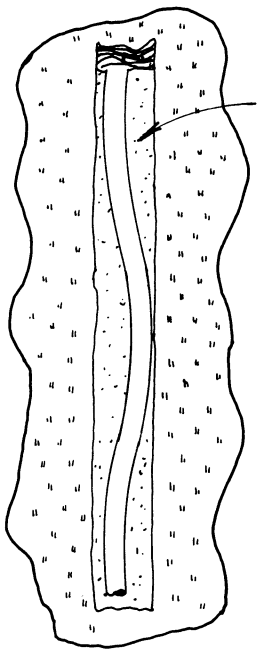




All main supply lines to be installed in accordance with manufacturers installation specifications

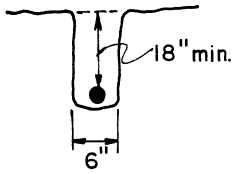
PLASTIC LATERAL



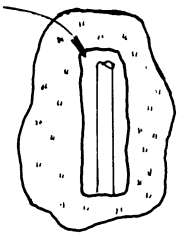


All plastic piping to be snaked in trenches as shown

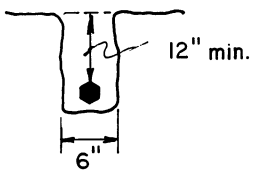
120 VOLT IN CONDUIT

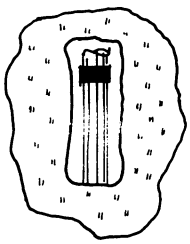


All 120 volt wiring in conduit to be installed in accordance with local code, or UF direct burial wire-size as noted on plans.



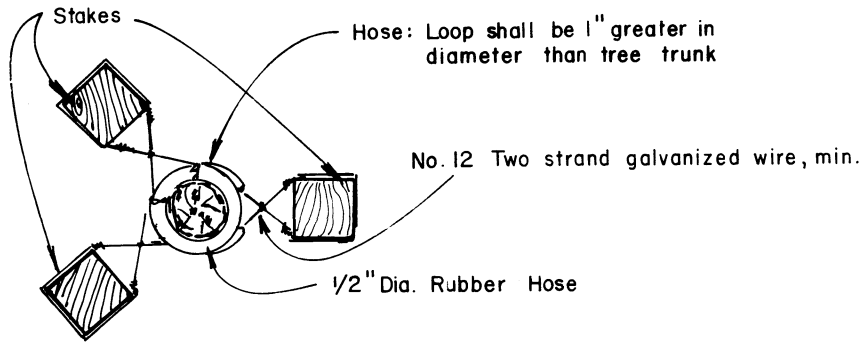
TUBING OR WIRING



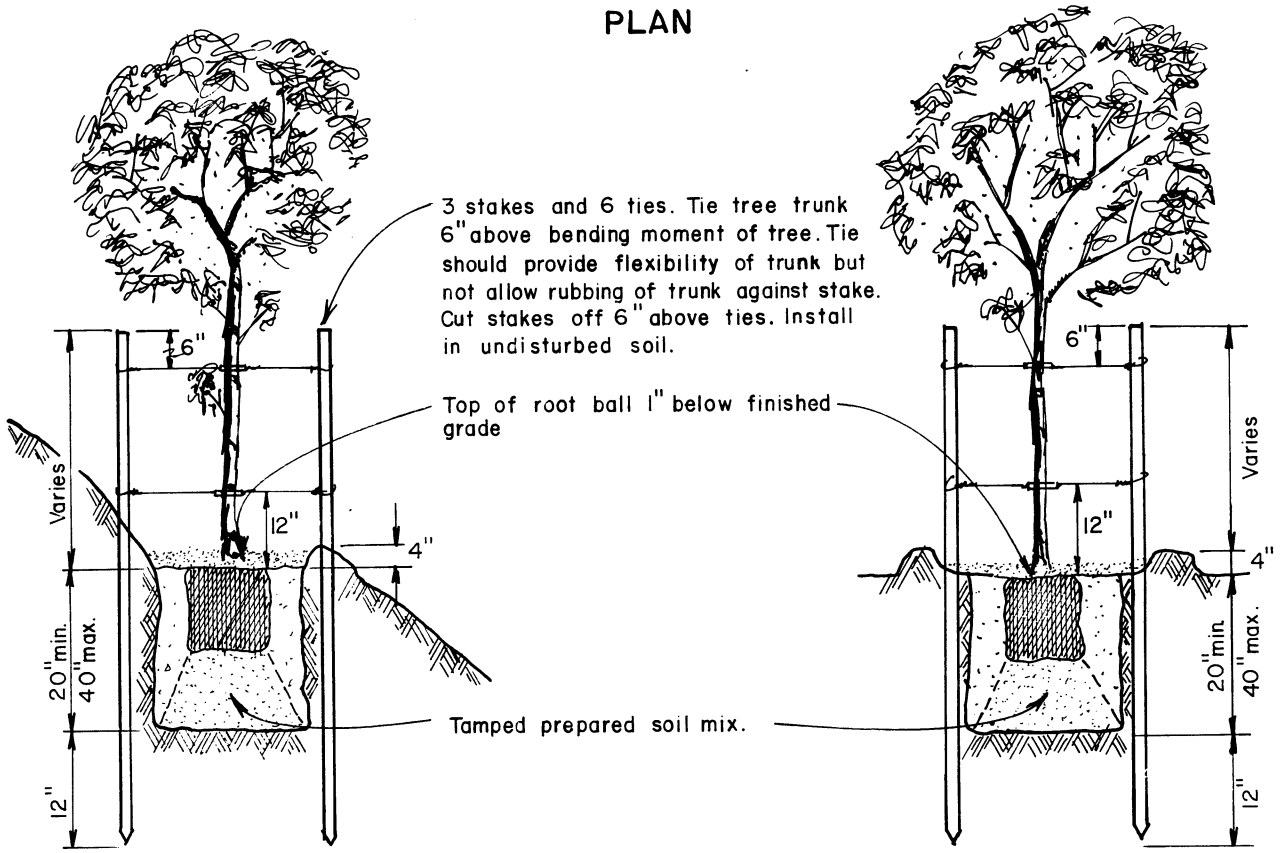


NOTE: All PVC pipe to be schedule 40 in City of Reno

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 5	
			IRRIGATION TRENCH SECTIONS	DRAWING NO. 5-7 (307)	
				DATE 7-81	PAGE 10



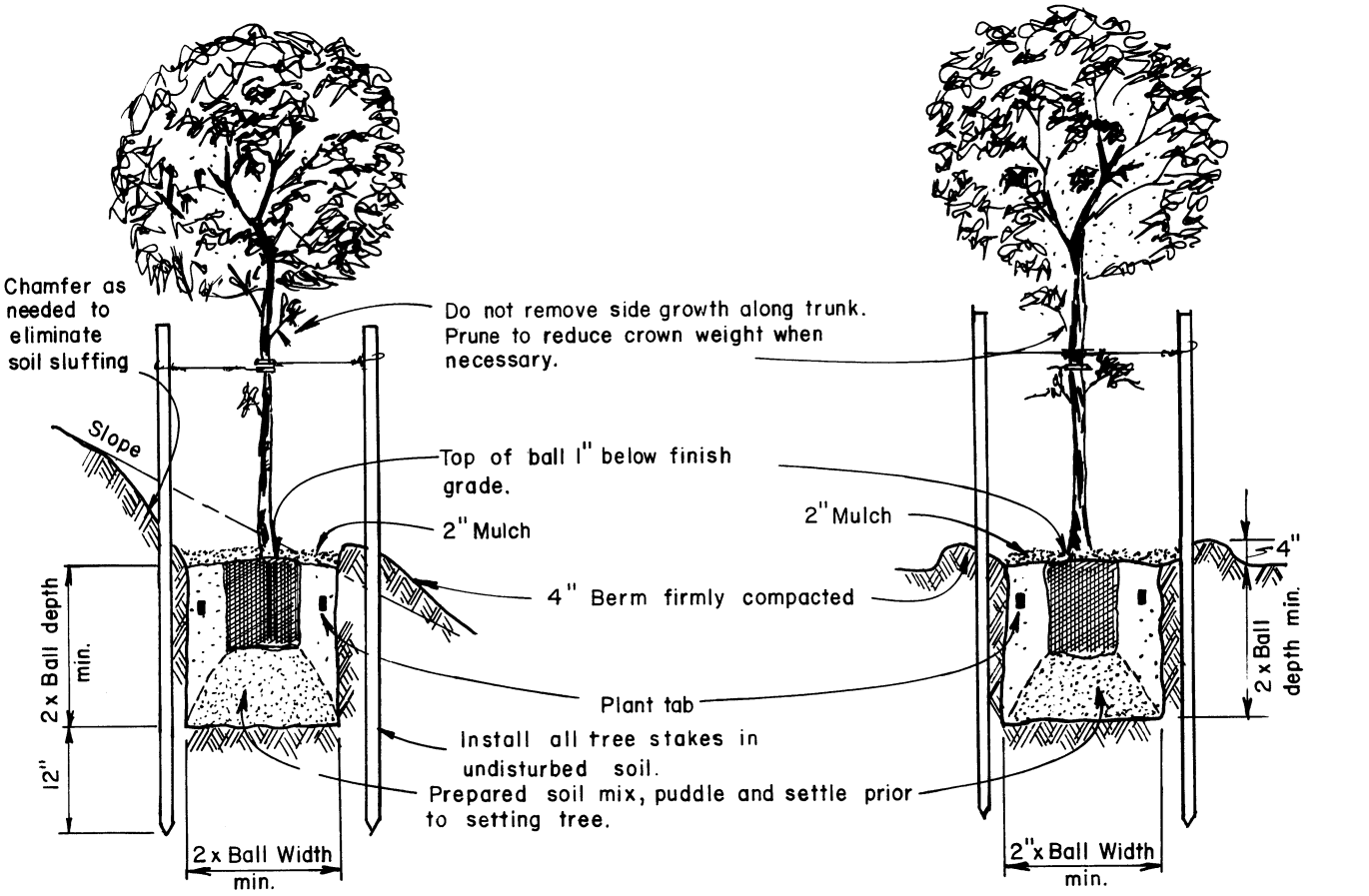
PLAN



TREE STAKING - SLOPES

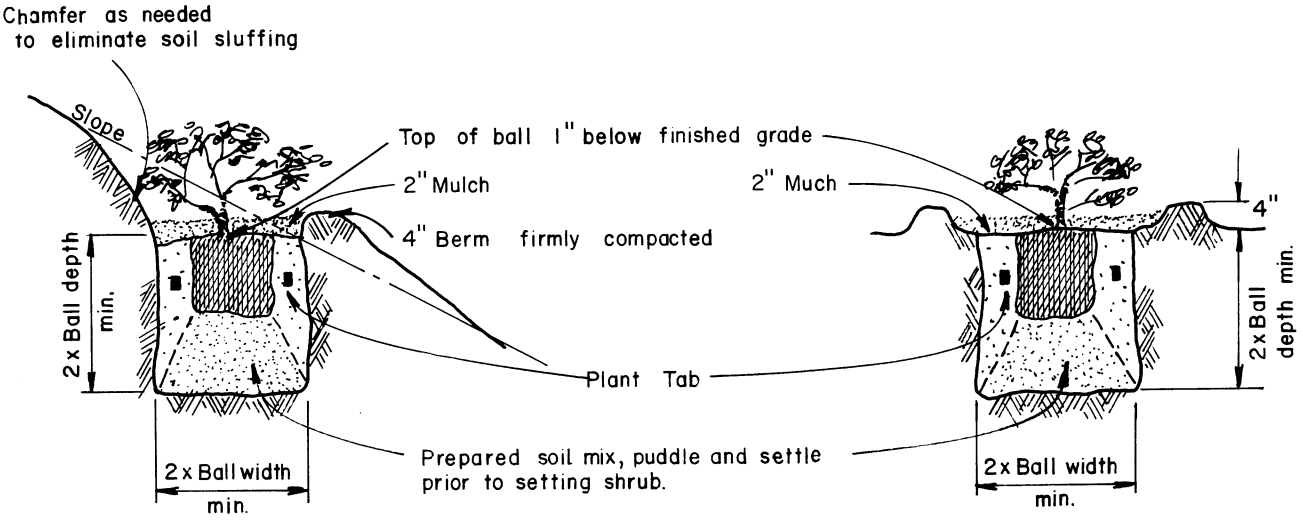
TREE STAKING - LEVEL GROUND

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 5	
1	SPELLING	10-16-86	TREE STAKING	DRAWING NO. 5-8.1 (331)	
				DATE 7-81	PAGE 11



TREE PLANTING - SLOPES

TREE PLANTING - LEVEL GROUND

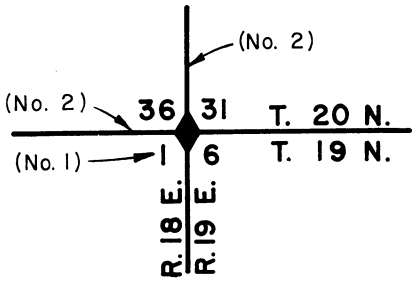


SHRUB PLANTING - SLOPES

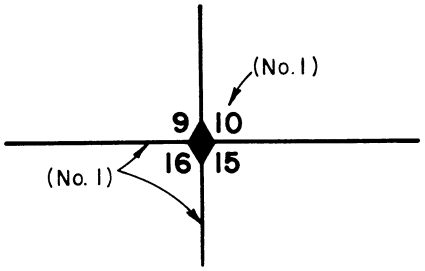
SHRUB PLANTING - LEVEL GROUND

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 5	
			TREE AND SHRUB PLANTING	DRAWING NO. 5-8.2 (331)	
				DATE 7-81	PAGE 12

SECTION 6
DRAFTING SYMBOLS



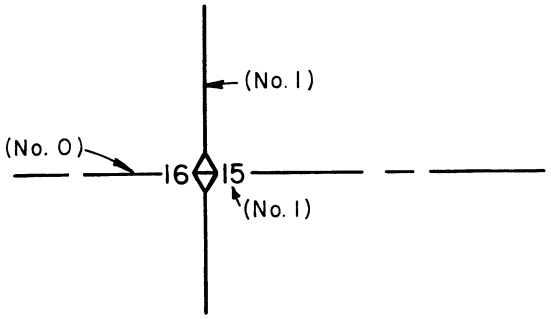
TOWNSHIP & RANGE AT CORNER



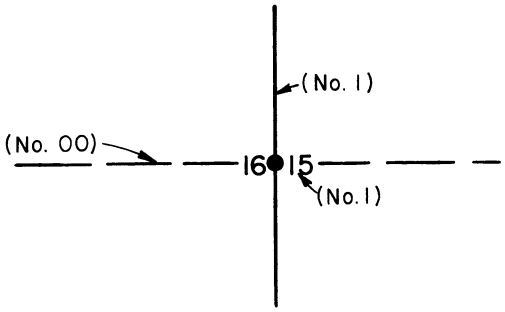
SECTION LINES AT CORNER

Found Corner ♦ (Description by note)

Corner not Found ◇ (Description by note)



1/4 SECTION LINE AT 1/4 CORNER



1/16 SECTION LINE AT 1/16 CORNER

COUNTY LINE

CITY LIMITS

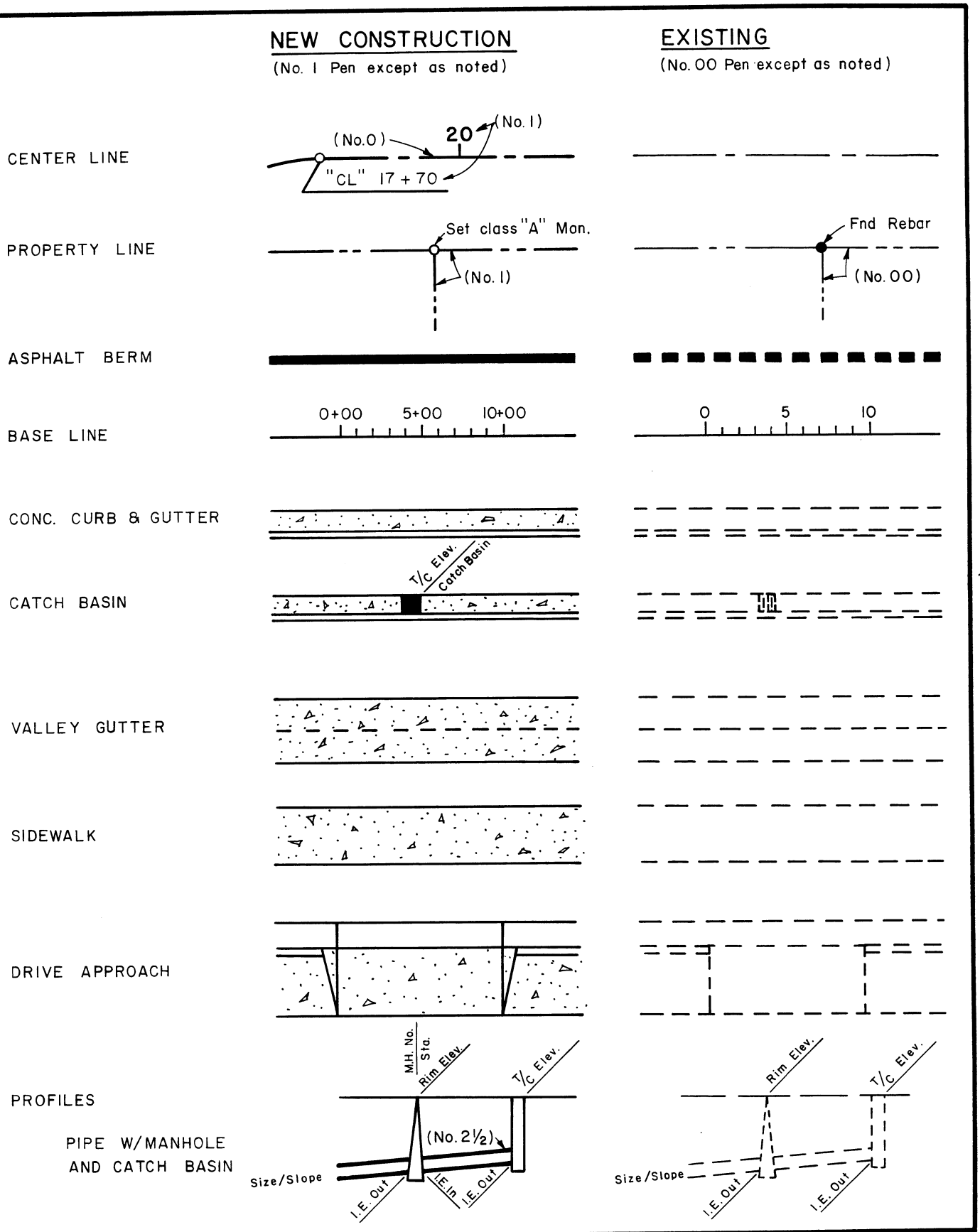
Set Monument ⊙ (Class by note)

Found Monument ● (Class by note)

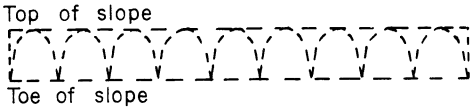
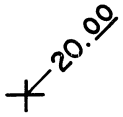
NOTE:

1. (No. 1) Indicates Rapidograph pen size.
2. Pen and lettering size shown shall be used as a guide only. Size should vary according to the scale of the drawing.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 6	
			MONUMENTS	DRAWING NO. 6-1	
				DATE 7-81	PAGE 1



NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 6	
			SYMBOLS	DRAWING NO. 6-2	
				DATE 7-81	PAGE 2

	NEW CONSTRUCTION (No. 1 Pen except as noted)	EXISTING (No. 00 Pen except as noted)
CUT OR FILL SLOPE		
SPOT ELEVATIONS		(20.00)
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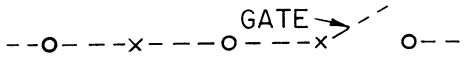
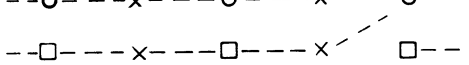
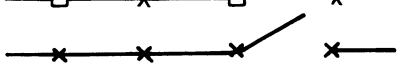
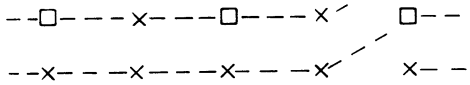
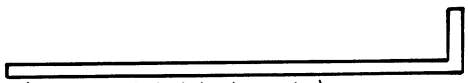
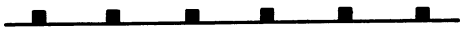
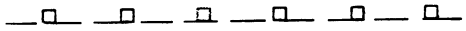
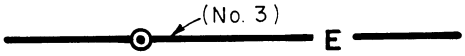
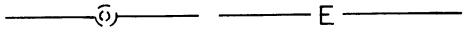
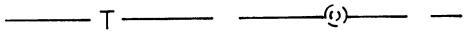
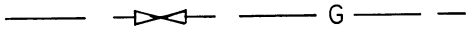
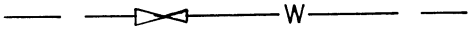
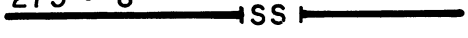
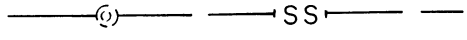
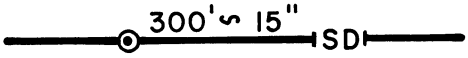
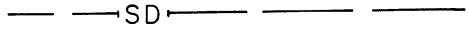
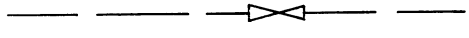
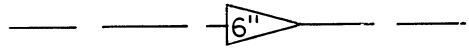
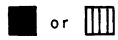
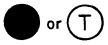
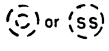
FENCE (1) Chain Link		
(2) Wood		
(3) Wire		
RETAINING WALL	 (Type and height by note)	
GUARDRAIL		
ELECTRIC		
TELEPHONE		
GAS		
WATER		
SANITARY		
STORM		
VALVE		
DIRECTION OF FLOW & PIPE SIZE		
CATCH BASIN - CURB INLET		
CATCH BASIN - DROP INLET		
MANHOLE		

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HOSE BIB H/B

PARKING METER P/M

FILLER CAP F/C

SPRINKLER HEAD S/H

WATER FAUCET W/F

FIRE HYDRANT

FIRE ALARM ON PEDESTAL F/A

STREET/TRAFFIC SIGNS

STREET LIGHTS

TRAFFIC SIGNALS

PULL BOX P/B

TEL. BOOTH

DROP MAIL BOX M

RURAL MAIL BOX M/Bx

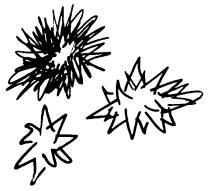
GAS METERS G/M

WATER METERS W/M

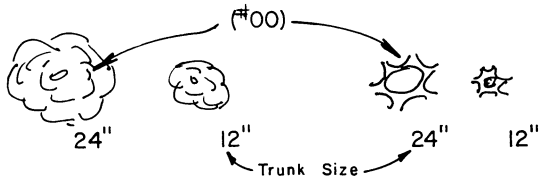
CULVERT W/FLOW

GUY POLES

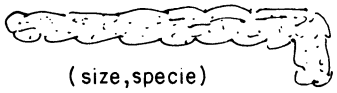
OVERHEAD UTILITY LINE



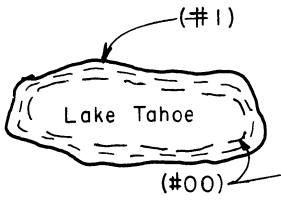
BUSHES & SHRUBS



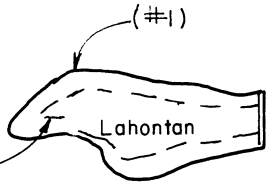
TREES STUMPS



HEDGE



LAKE



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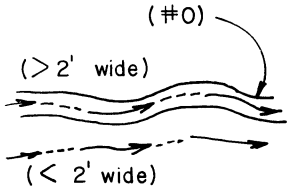
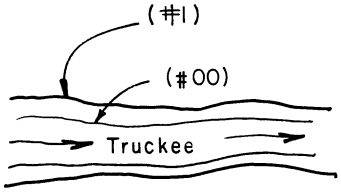
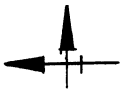
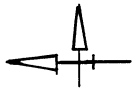
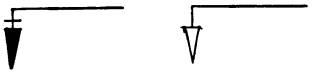
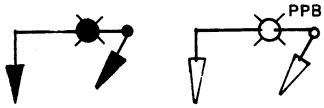
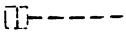
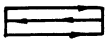
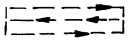


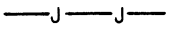
DITCH



RIVER

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 6	
			# SYMBOLS	DRAWING NO. 6 - 4	
				DATE 7 - 81	PAGE 4

NEW	EXISTING	DESCRIPTION
		Luminaire
		Electrolier
		Underpass Luminaire
		Traffic Signal Head, 3 Section, 12" Red Yellow and Green Section
		Traffic Signal Head with All Sections Louvered
		Traffic Signal Head with Back Plate
		Traffic Signal Head, Programmed Visibility, 12" Green Arrow, 12" Solid Yellow and Red Sections, with Back Plate
		Traffic Signal Head with 12" Green, Yellow and Red Arrow Sections, with Back Plate.
		Mast Arm Signal with Back Plate
		Combination Traffic Signal Standard with Luminaire and Signal Mast Arms and Attached Heads (all 12"), with Back Plate. PPB= Pedestrian Push Button and Sign
		Pedestrian Signal (Walk-Don't Walk)
		Vehicle Detector - Inductive Loop Unless Otherwise Indicated (See Dwg. 4-7 for Information on Identification and Configuration)
		Quadrapole Detector Loop

NEW	EXISTING	DESCRIPTION
		Pull Box
		Controller Cabinet
		Service (120-240 V.A.C. Unless Otherwise Specified)
		Transformer Pad
		Power Source
		Conduit
		Conduit (Jacked)
		Pole Designation
		Conduit Run
		Junction Box
		Wood Power Pole

NO.	REVISION	DATE
1	SPELLING	10-16-86

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

TRAFFIC DRAFTING SYMBOLS

SECTION 6

DRAWING NO. 6-5

DATE 7-81

PAGE 5

Standard Details for Public Works Construction

STANDARD DETAILS
FOR
PUBLIC WORKS
CONSTRUCTION

SPONSORED AND DISTRIBUTED BY

CARSON CITY

DOUGLAS COUNTY

CITY OF ELKO

EUREKA COUNTY

CITY OF FALLON

HUMBOLDT COUNTY

LANDER COUNTY

CITY OF LOVELOCK

LYON COUNTY

NYE COUNTY

CITY OF RENO

CITY OF SPARKS

WASHOE COUNTY

CITY OF WINNEMUCCA

CITY OF YERINGTON

PREPARED BY:

LUMOS & ASSOCIATES, INC
625 FAIRVIEW DR., SUITE 102
CARSON CITY, NEVADA 89701
(702) 883-7077

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October 24, 2003

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FOREWORD

Publication of these "Standard Details for Public Works Construction" in conjunction with the "Standard Specifications for Public Works Construction" (Orange Book) is the culmination of the efforts of all the sponsoring agencies and Lumos and Associates Inc. to promote the area-wide acceptance and use of Standard Construction Details. The drawings will encourage a uniformity for the construction trades which will reduce conflicts and confusion while permitting more competitive bidding by private contractors.

The Standard Details in this publication have been formally approved by the sponsoring governmental agencies for the purpose of providing minimum standards to be applied to improvements and private works to be dedicated to the public and accepted by the governmental agency for maintenance or operation, as well as improvements to be installed within existing rights of way and easements within their jurisdiction, except where noted otherwise. Although published in the interest of uniformity, it is recognized that every agency has specific requirements necessitating their own special details which are itemized in the specific agency sections. It is also recognized that it is not humanly possible to anticipate all situations that may arise or to publish standards applicable to every situation, therefore, any items or situations not included in these Standard Details shall be designed in accordance with accepted engineering practice, and the "Standard Specifications for Public Works Construction" and shall be subject to the approval of the local governing authority. Use of these details shall be as noted on the Construction Plans or in the Special Provisions of the specific improvement contract.

Questions concerning specific changes in these Standard Drawings or for situations not applicable to these minimum standards shall be directed to the appropriate agency as shown on the following sheet.

FOREWORD (Cont.)

	TYPE OF IMPROVEMENT				
	General Surface	**Sanitary Sewer**	**Storm Drainage**	**Water Supply**	**Traffic Control**
Carson City	Carson City Department of Public Works (All)				
Douglas Co.	Douglas Co. Department of Public Works (All)				
Fallon	Fallon City Engineer (All)				
Lander Co.	Lander Co. Department of Public Works (All)				
Lyon Co.	Lyon Co. Department of Public Works (All)				
Nye Co.	Nye Co. Building Department (All)				
Reno	City Engineer	Sanitary Engineer	City Engineer	S.P.P.Co.	Traffic Engineer
Sparks	Dept. of Public Wks.	Sanitary Engineer	Dept. of Public Wks.	S.P.P.Co.	Traffic Engineer
Washoe Co.	County Engineer	County Engineer	County Engineer	S.P.P.Co.	County Engineer
Yerington	Yerington Department of Public Works (All)				
City of Elko	Elko Department of Public Works (All)				
Eureka Co.	Eureka Department of Public Works (All)				
Humboldt Co.	Humboldt Co. Dept. of Public Works (All)				
Lovelock	Lovelock Department of Public works			Pe. Co.	L.P.W.D
Winnemucca	Winnemucca Dept. of Public Works (All)				

INSTRUCTIONS FOR USE OF MANUAL

OF

STANDARD CONSTRUCTION DRAWINGS

1. Determine the governing agency for the area where improvement is proposed.

2. Refer to the agency's specific section and review that section index for the appropriate Standard Drawing.

3. If the appropriate Standard Drawing does not appear in the agency section, then the agency has adopted a Standard Drawing which will be found in the general section. Refer to the appropriate section index for the desired drawing.

4. If the desired drawing is not in the general section, contact the appropriate governing agency.

5. The drawing number consists of two sets of numbers. The first references the section by letter or number, (i.e., W-Washoe County, 4-traffic, etc.), a drawing number follows the letter. The numbers in parenthesis, (i.e., 314, 319), refer to the sections within the "Standard Specifications for Public Works Construction", "Orange Book", which relates to the drawing.

AREA	SEWER	STORM DRAIN
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DOUGLAS	A-1024-07 FOLLOW MGSD SPECS	A-1032-02
GARDNERVILLE RANCHOS	A-1024-07 FOLLOW MGSD SPECS	A-1032-02
INCLINE	A-1024-07	A-1032-02
INDIAN HILLS	A-1024-07	A-1032-02
INDIAN HEALTH SERVICE	A-1055 WITH FLANGE ON BOTTOM LIKE A 1032-ALSO CALLED PINKERTON A573	A-1032-02
LYON COUNTY *DAYTON - *FERNLEY *YERINGTON	FOLLOW ORANGE BOOK VENTED A-1032-01 NON-VENT A-1024-07	A-1032-02
MINDEN/GARDNERVILLE SANITATION DISTRICT (M.G.S.D.)	A-1024-07	A-1032-02
NORTH TAHOE PUD		A-1032-02
RENO	A-1032-01 WANT 1" VENT-PICK HOLE	A-1032-02
SOUTH TAHOE PUD		A-1032-02
SUN VALLEY PUD	A-1024-07	A-1032-02
SPARKS	A-1032-01 WANT 1" PICK HOLE	A-1032-02
TAHOE CITY PUD		A-1032-02
TRUCKEE S.D.		A-1032-02
WASHOE COUNTY	A-1024-07 (MODIFIED) MUST BE MARKED "WASHOE COUNTY"	A-1032-02

NOTES:

1. A-1024-07 = (NON-VENTED) CPH, NO EP, NO GSKT, MARKED "SANITARY SEWER"
2. A-1032-01 = (VENTED) 4 - 1" VENT/PICK HOLE WITH EP MARKED "SEWER"
3. A-1032-02 = (VENTED) 4 - 1" HOLES, WITH EP MARKED "STORM"
4. A-1024-05 = (NON VENTED) GASKETED, CPH, NO EP, MARKED "SANITARY SEWER"

LEGEND: CPH = CLOSED PICK HOLE (NON-VENTED)
BP = BLIND PICK HOLE (VENTED)
EP = EDGE PRY

CARSON CITY

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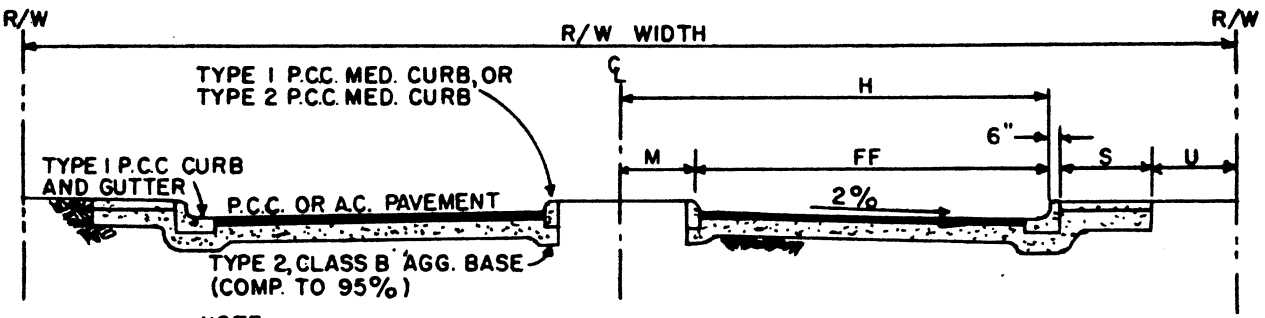
Parking Lot Requirements	C - 3.0	7/16/2001	5	C030
Parking Lot Requirements	C - 3.1	7/16/2001	6	C031
Infiltration Pit Catch Basin	C - 4.0	7/16/2001	7	C040
Catch Basin Modified Type 3	C - 4.1	7/16/2001	8	C041
Infiltration Drain	C - 4.2	7/16/2001	9	C042
Typical Utility Main Locations	C - 5.0	7/16/2001	10	C050

Carson City Detail Name	Detail No.	Effective Date	Page No.	Acad 14 Drawing Name
Typical Utility Lateral Locations	C - 5.1	7/16/2001	11	C051
Special Drop Manhole	C - 6.0	7/16/2001	12	C060
Sewer Line Transitional Detail	C - 6.1	7/16/2001	13	C061
Sewer Lateral Connection Detail	C - 6.2	7/16/2001	14	C062
Sewer Service Saddle	C - 6.3	7/16/2001	15	C063
Manhole Collar And Temporary Cover Detail	C - 6.4	7/16/2001	16	C064
Water Stop Detail	C - 6.5	7/16/2001	17	C065
Manhole Type 1	C - 6.6	7/16/2001	18	C066
Water Service Tap	C - 7.0	7/16/2001	19	C070
3/4" Double and Single Pit Setter, 1" Single Pit Setter	C - 7.1	7/16/2001	20	C071
1 ½" - 2" Pit Setter	C - 7.2	7/16/2001	21	C072
3" - 8" Meter Set	C - 7.3	7/16/2001	22	C073
1" Dual Meter Set	C - 7.4	7/16/2001	23	C074
Service Saddle Detail (3/4" to 2")	C - 7.5	7/16/2001	24	C075
Backflow Preventer Assembly (Double Check Type)	C - 8.0	7/16/2001	25	C080
Backflow Preventer Assembly (Reduced Pressure Type)	C - 8.1	7/16/2001	26	C081

Carson City Detail Name	Detail No.	Effective Date	Page No.	Acad 14 Drawing Name
Below Grade Double Check w/ Post Indicator Valve and Fire Dept. Connection	C - 8.2	7/16/2001	27	C082
Interior Double Check w/ Post Indicator Valve and Fire Dept. Connection	C - 8.3	7/16/2001	28	C083
Installation for Air-Gap Separation	C - 8.4	7/16/2001	29	C084
Trench Excavation and Backfill	C - 9.0	7/16/2001	30	C090
Sanitary Sewer and Storm Drain	C - 9.1	7/16/2001	31	C091
Lowering Water Mains	C - 9.2	7/16/2001	32	C092
Raising Water Mains	C - 9.3	7/16/2001	33	C093
Tapping Sleeve Detail	C - 10.0	7/16/2001	34	C100
Valve Detail	C - 10.1	7/16/2001	35	C101
Cut in Valve Detail	C - 10.2	7/16/2001	36	C102
Valve Box Detail	C - 10.3	7/16/2001	37	C103
Fire Hydrant Assembly Detail	C - 10.4	7/16/2001	38	C104
Potable Water Air-Release Valve Detail	C - 10.5	7/16/2001	39	C105
Reclaimed Water Air/Vacuum Detail	C - 10.6	7/16/2001	40	C106
Check Valve Detail	C - 10.7	7/16/2001	41	C107
Permanent Flush Assembly	C -10.8	7/16/2001	42	C108

Carson City Detail Name	Detail No.	Effective Date	Page No.	Acad 14 Drawing Name
Temporary Flush Assembly	C - 10.9	7/16/2001	43	C109
Utilities Department General Notes	C - 11.0	7/16/2001	44	C110
Sewer General Notes	C - 11.1	7/16/2001	45	C111
Water General Notes	C - 11.2	7/16/2001	46	C112

END OF LISTING



NOTE:

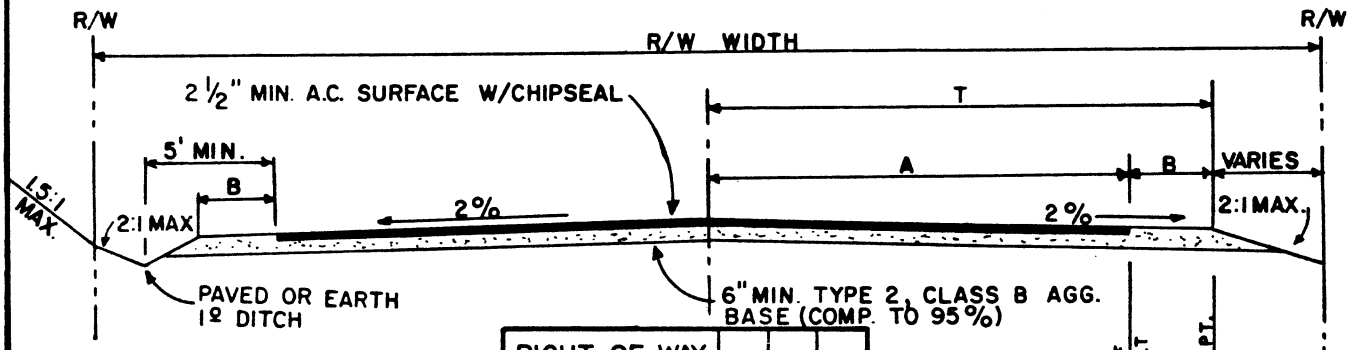
1. FF IS MEASURED TO FRONT FACE FOR "L" CURB AND ASPHALT CURBS.
2. STRUCTURAL SECTION BY ENGINEERING DESIGN, BUT NOT LESS THAN THE MIN. SHOWN.
3. ALL A.C. SURFACES SHALL BE COMPACTED TO AT LEAST 95% MAX. DRY DENSITY AND RECIEVE A CHIPSEAL.

R/W WIDTH	H	FF	M	S	U	NOTES OR REMARKS
120	52	43.5	8.5	4	3.5	PARKWAY (MIN. 4" A.C. W/MIN. 9" AGG. BASE)
80	32	-	-	4	3.5	MAJOR ARTERIAL (MIN. 4" A.C. W/MIN. 9" AGG. BASE)
60	22	-	-	4	3.5	COLLECTOR ST. (MIN. 2 ½" A.C. W/6" AGG. BASE)
50	20	-	-	4	0.5	MINOR RESIDENTIAL (MIN. 2 ½" A.C. W/6" AGG. BASE)

URBAN STREET

R/W WIDTH	H	FF	M	S	U	NOTES OR REMARKS
80	33	-	-	-	7	MIN. 4" A.C. W/MIN. 12" AGG. BASE
60	24.5	-	-	-	5.5	MIN. 4" A.C. W/MIN. 12" AGG. BASE

INDUSTRIAL STREET



RIGHT-OF-WAY WIDTH	A	B	T
50	13	4	17

RURAL ROAD

NO.	REVISION	DATE
1	ARROW	3/83
2	DWG NO.	11/94

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

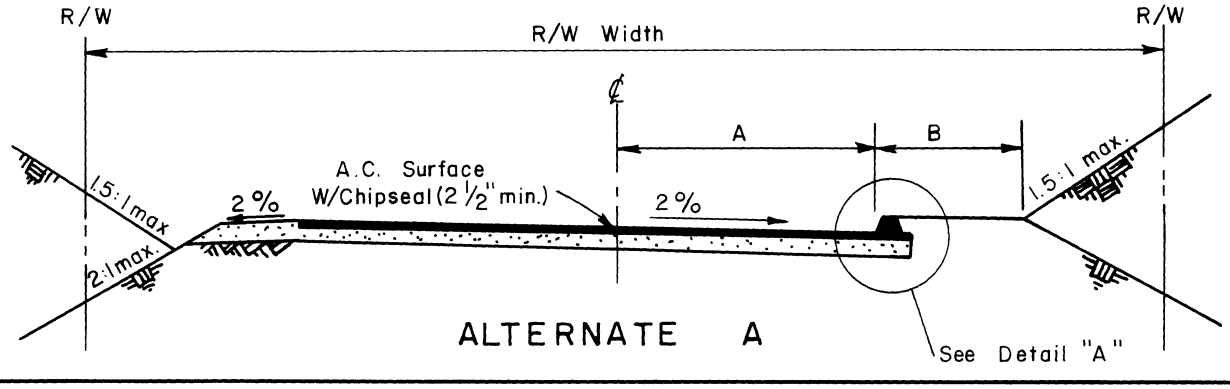
ROADWAY SECTIONS

SECTION
CARSON CITY

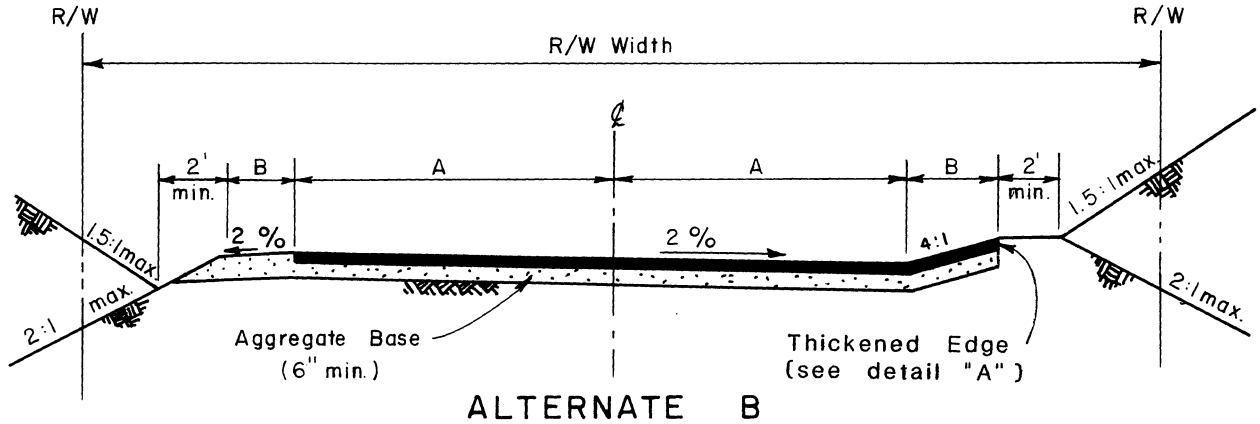
DRAWING NO.
C-1.0

DATE
7-81

PAGE
1

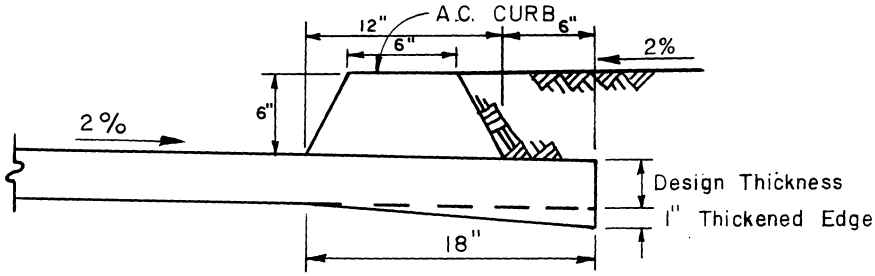


ALTERNATE A



ALTERNATE B

RURAL HILLSIDE ROAD



DETAIL "A"

A	B	RIGHT - OF - WAY WIDTH
14	4 (min)	60
13	4 (min)	50

NOTE: On streets with A.C. curb having a slope greater than 4% and where in cut section, construct redwood or concrete header (6" high x 4' long) at 45% angle to roadway to divert surface waters back onto roadway.

NO.	REVISION	DATE
1	A.C. CURB	1/83
2	SPELLING	10-14-86
3	DWG NO.	11/94

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

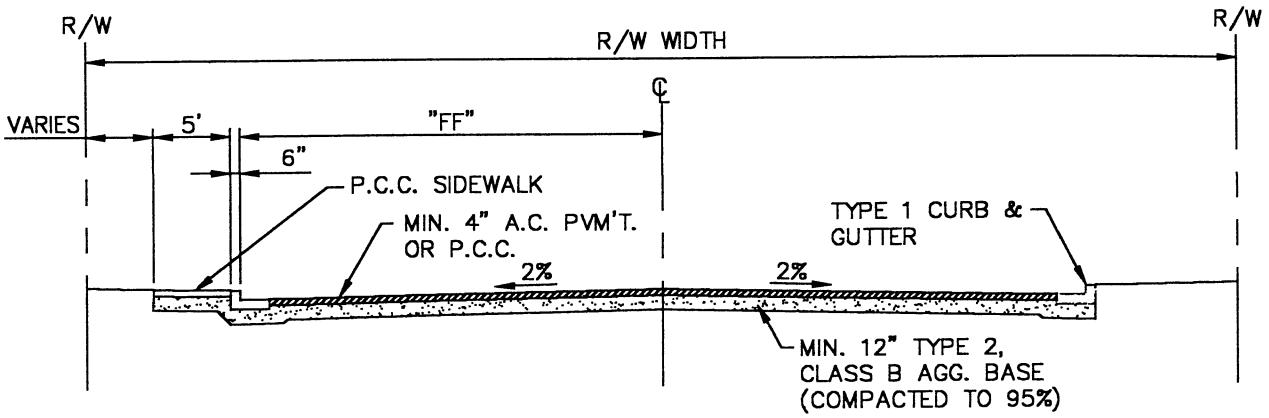
HILLSIDE ROADWAY SECTIONS

SECTION
CARSON CITY

DRAWING NO
C-1.1

DATE
7-81

PAGE
2



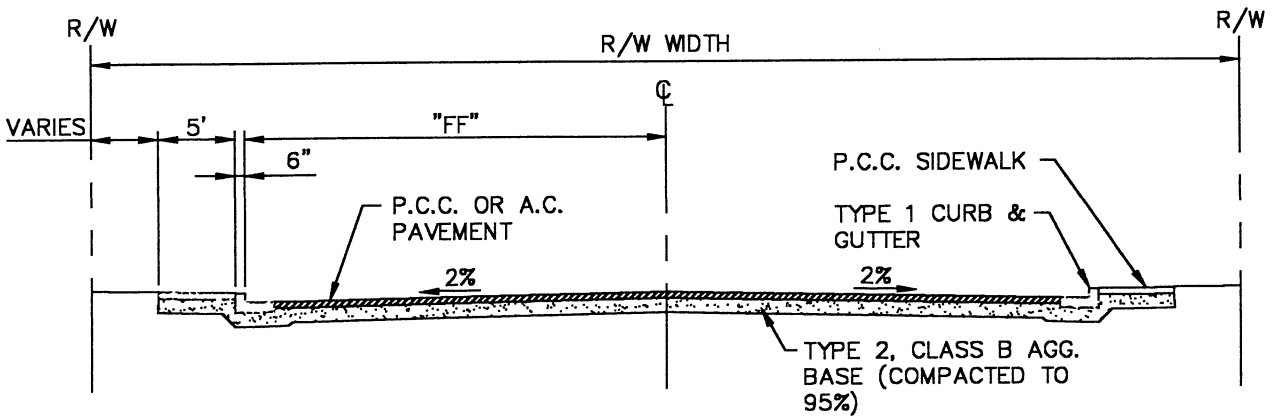
NOTES:

1. DISTANCE "FF" IS MEASURED TO FRONT FACE FOR "L" CURB AND ASPHALT CURBS.
2. STRUCTURAL SECTION BY ENGINEERING DESIGN, BUT NOT LESS THAN THE MINIMUM SHOWN.
3. ALL A.C. SURFACES SHALL BE COMPACTED TO 92–97% RICE THEORETICAL METHOD AND RECEIVE A CHIPSEAL.
4. COLLECTOR STREETS SHALL INCLUDE CENTER STRIPING AND FOG LINES
5. COLLECTOR STREETS WITH BIKE LANES SHALL INCLUDE BICYCLE PAVEMENT LEGENDS PER M.U.T.C.D.

FUNCTIONAL CLASSIFICATION **INDUSTRIAL**	R.O.W. WIDTH	NUMBER OF LANES	WITHOUT BIKE LANES	
			NO PARKING	SIDEWALK
			MINIMUM "FF"	MINIMUM
COLLECTOR	80 60	3 3	20' 20'	5' 5'
LOCAL	60	2	N/A	5'

FUNCTIONAL CLASSIFICATION **INDUSTRIAL**	R.O.W. WIDTH	NUMBER OF LANES	WITH BIKE LANES	
			NO PARKING	SIDEWALK
			MINIMUM "FF"	MINIMUM
COLLECTOR	80 60	3 3	24.5' 24.5'	5' 5'
LOCAL	60	2	20'	5'

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY	
			ROADWAY SECTION INDUSTRIAL STREETS	DRAWING NO. C–1.10	
				DATE 7/2001	PAGE 1.1



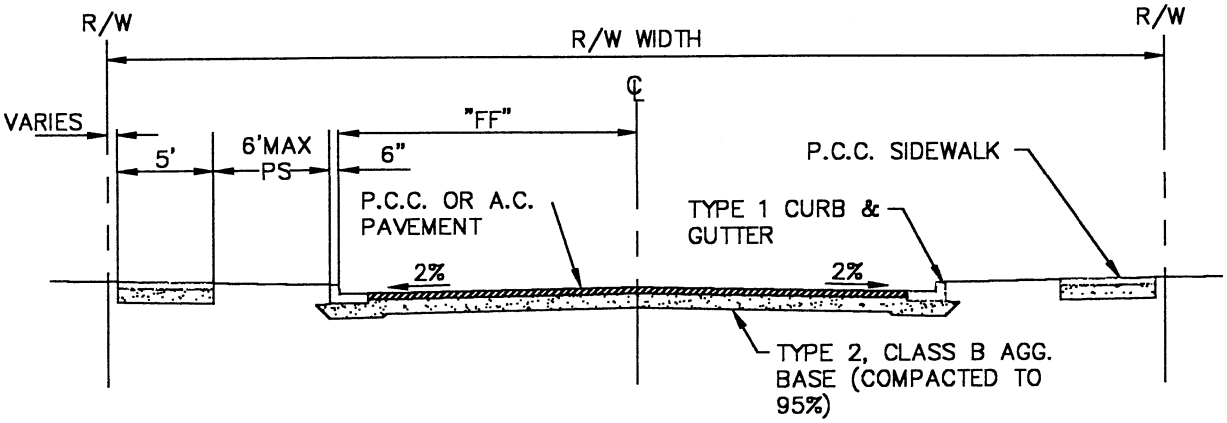
NOTES:

1. DISTANCE "FF" IS MEASURED TO FRONT FACE FOR "L" CURB AND ASPHALT CURBS.
2. STRUCTURAL SECTION BY ENGINEERING DESIGN, BUT NOT LESS THAN THE MINIMUM SHOWN.
3. ALL A.C. SURFACES SHALL BE COMPACTED TO 92–97% RICE THEORETICAL METHOD AND RECEIVE A SLURRY SEAL.
4. COLLECTOR STREETS SHALL INCLUDE CENTER STRIPING AND FOG LINES
5. COLLECTOR STREETS WITH BIKE LANES SHALL INCLUDE BICYCLE PAVEMENT LEGENDS PER M.U.T.C.D.

R/W WIDTH	NOTES OR REMARKS
80/100	ARTERIAL (MIN. 6" A.C. W/ MIN. 12" AGG. BASE)
60	COLLECTOR ST. (MIN. 4" A.C. W/ 9" AGG. BASE)
50	MINOR RESIDENTIAL (MIN. 3" A.C. W/6" AGG. BASE)

FUNCTIONAL CLASSIFICATION **URBAN**	R.O.W. WIDTH	NUMBER OF LANES	WITHOUT BIKE LANES			
			NO PARKING	PARKING ONE SIDE	PARKING BOTH SIDES	SIDEWALK
			MINIMUM "FF"	MINIMUM "FF"	MINIMUM "FF"	MINIMUM
ARTERIAL	100 80	5 4	32' 27.5'	N/A	N/A	5' 5'
COLLECTOR	80 60	3 2	18.5' 15.5'	23' 19.5'	30.5' 23.5'	5' 5'
LOCAL	60	2	15.5'	19.5'	23.5'	5'
FUNCTIONAL CLASSIFICATION **URBAN**	R.O.W. WIDTH	NUMBER OF LANES	WITH BIKE LANES			
			NO PARKING	PARKING ONE SIDE	PARKING BOTH SIDES	SIDEWALK
			MINIMUM "FF"	MINIMUM "FF"	MINIMUM "FF"	MINIMUM
ARTERIAL	100 80	5 4	36' 29'	N/A	N/A	5' 5'
COLLECTOR	80 60	3 2	23' 17'	27.5' 21.5'	32' 25'	5' 5'
LOCAL	50	2	17'	N/A	N/A	5'

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY	
			ROADWAY SECTION URBAN STREETS	DRAWING NO. C-1.11	
				DATE 7/2001	PAGE 1.2

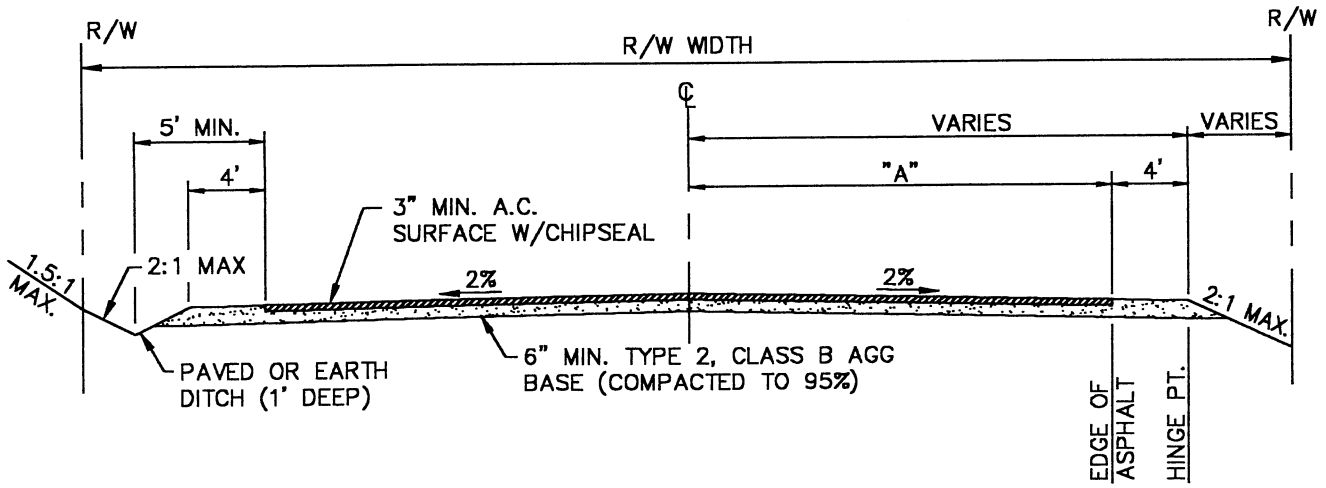


NOTES:

1. DISTANCE "FF" IS MEASURED TO FRONT FACE FOR "L" CURB AND ASPHALT CURBS.
2. STRUCTURAL SECTION BY ENGINEERING DESIGN, BUT NOT LESS THAN THE MINIMUM 3" A.C. W/6" AGG. BASE.
3. ALL A.C. SURFACES SHALL BE COMPACTED TO 92–97% RICE THEORETICAL METHOD AND RECEIVE A SLURRY SEAL.
4. STREET LENGTH CENTERLINE TO CENTERLINE IS 440 FEET TO 600 FEET.
5. MINIMUM STREET CONNECTIONS TO OTHER STREETS IS 4.

FUNCTIONAL CLASSIFICATION **SPECIAL URBAN**	R.O.W. WIDTH	MEDIAN "PS"	VEHICLE SPEEDS 10 TO 25 MPH			
			NO PARKING	PARKING ONE SIDE	PARKING BOTH SIDES	SIDEWALK
			"FF"	"FF"	"FF"	MIN.
LOCAL – 25 MPH	55 50	6 6	12' 11'	15' 14'	17' 16'	5' 5'
LOCAL – 15–20 MPH	50 50	6 6	10' 9'	13' 12'	15' 14'	5' 5'
LOCAL – 10 MPH	50	6	8'	11'	13'	5'

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY	
			SPECIAL SECTION URBAN STREETS	DRAWING NO. C–1.11A	
				DATE 7/2001	PAGE 1.21

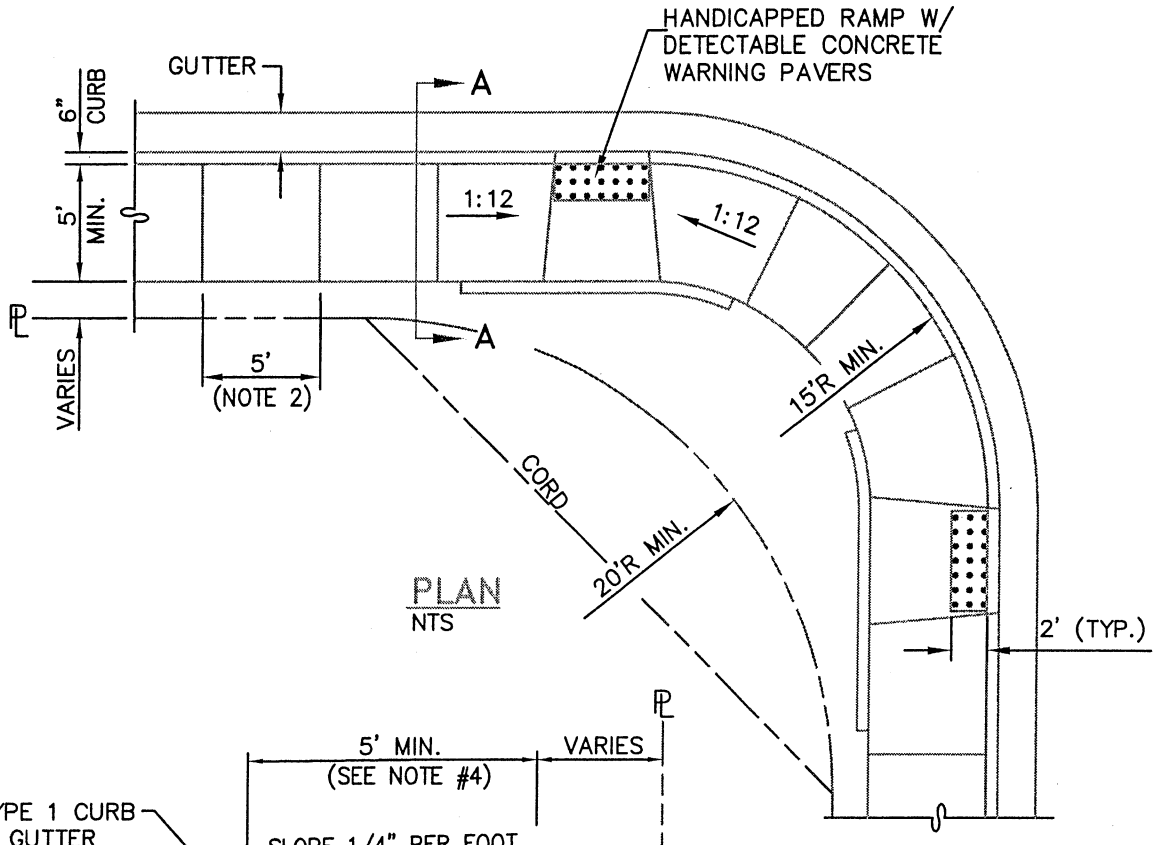


NOTES:

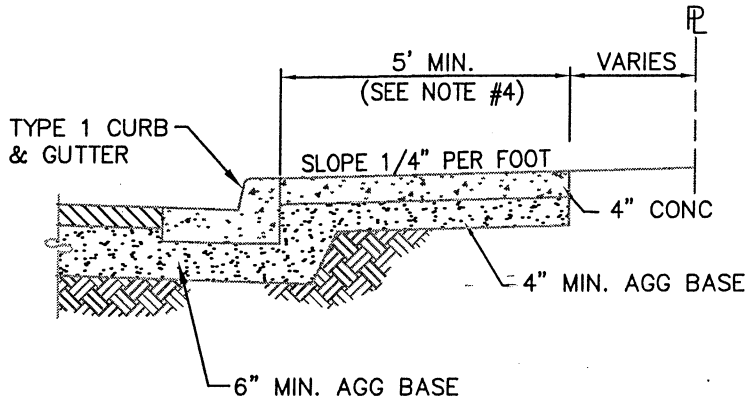
1. DISTANCE "A" IS MEASURED TO OUTSIDE EDGE OF ASPHALT.
2. STRUCTURAL SECTION BY ENGINEERING DESIGN, BUT NOT LESS THAN THE MINIMUM SHOWN.
3. ALL A.C. SURFACES SHALL BE COMPACTED TO 92–97% RICE THEORETICAL METHOD AND RECEIVE A CHIPSEAL.
4. COLLECTOR ROADWAYS SHALL INCLUDE CENTER STRIPING AND FOG LINES
5. COLLECTOR ROADWAYS WITH BIKE LANES SHALL INCLUDE BICYCLE PAVEMENT LEGENDS PER M.U.T.C.D.

FUNCTIONAL CLASSIFICATION **RURAL**	R.O.W. WIDTH	NUMBER OF LANES	WITHOUT BIKE LANES			
			NO PARKING	PARKING ONE SIDE	PARKING BOTH SIDES	SIDEWALK
			MIN. DESIRABLE "A"	MIN. DESIRABLE "A"	MIN. DESIRABLE "A"	MIN. DESIRABLE "A"
COLLECTOR	60	2	15'	N/A	N/A	N/A
LOCAL	50	2	14'	N/A	N/A	N/A
FUNCTIONAL CLASSIFICATION **RURAL**	R.O.W. WIDTH	NUMBER OF LANES	WITH BIKE LANES			
			NO PARKING	PARKING ONE SIDE	PARKING BOTH SIDES	SIDEWALK
			MIN. DESIRABLE "A"	MIN. DESIRABLE "A"	MIN. DESIRABLE "A"	MIN. DESIRABLE "A"
COLLECTOR	60	2	18'	N/A	N/A	N/A
LOCAL	50	2	17'	N/A	N/A	N/A

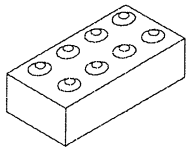
NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY	
			ROADWAY SECTION RURAL ROADS	DRAWING NO. C–1.12	
				DATE 7/2001	PAGE 1.3



PLAN
NTS



SECTION "A"
NTS



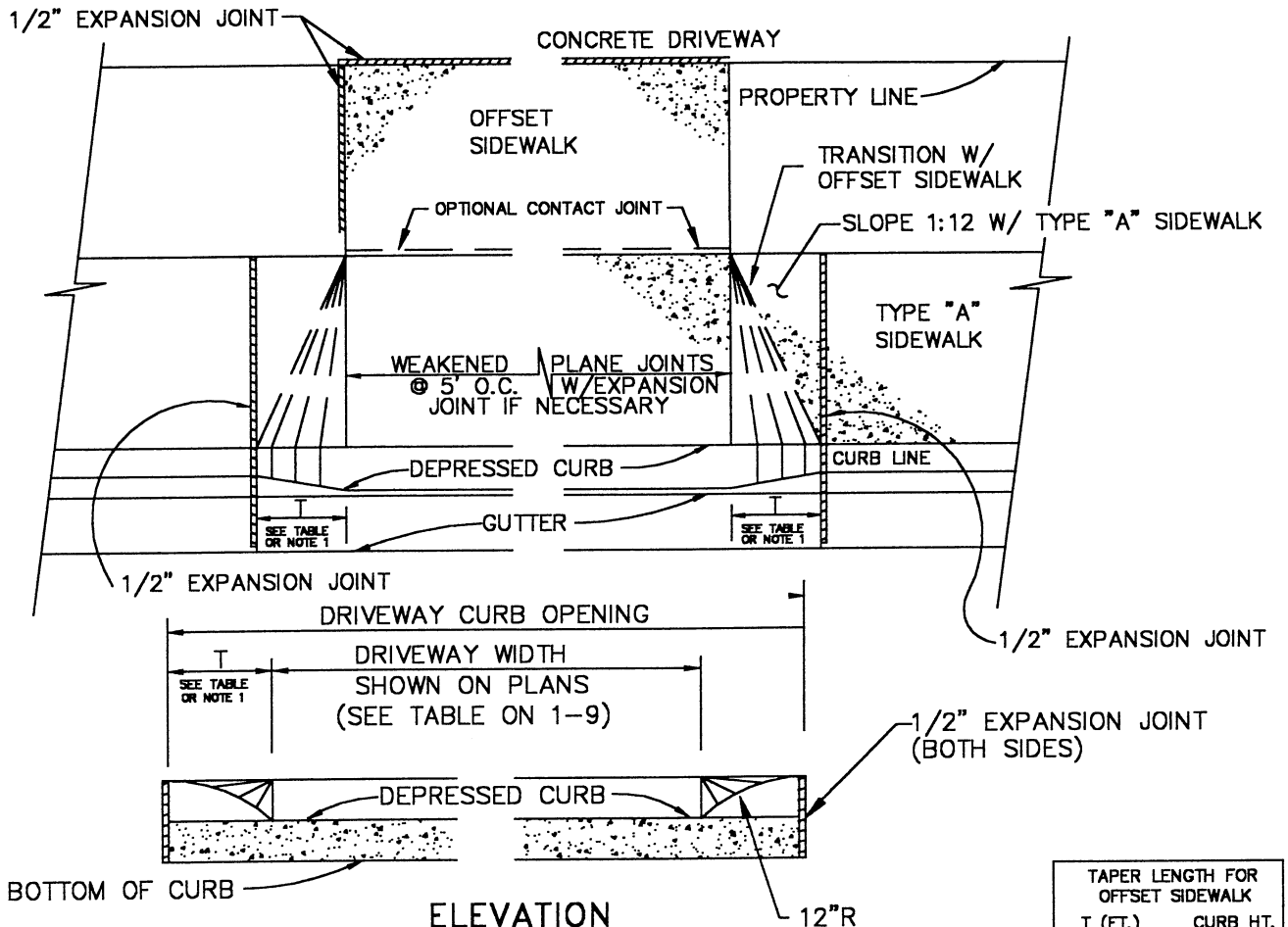
DETECTABLE WARNING PAVER
(Nominal 8" x 4")
NOTE: SEE CC STD. DETAIL #C-1.15 (PEDESTRIAN RAMP FOR THE DISABLED)

NOTE:

1. MINIMUM CURB RETURN RADIUS SHALL BE 15 FEET.
2. ALL CONCRETE EDGING AND JOINTING SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD. DETAIL I-14.1 AND CONFORM TO SEC. 312.09 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (SSPWC).
3. ALL AGGREGATE BASE SHALL BE TYPE 2, CLASS B AND SHALL CONFORM TO SEC.200.01. OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (SSPWC).
4. SOME STREETS MAY REQUIRE WIDER SIDEWALKS.
5. PORTLAND CEMENT CONC. (PCC) SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4000 psi MIN COMP STRENGTH AT 28 DAYS, MIN 6 SACKS OF CEMENT PER CU.YD. W/MAX WATER-CEMENT RATIO OF 0.45, AIR ENTRAINMENT 6%±1.5%, SLUMP 1 TO 4 INCHES. ALL MATERIALS SHALL CONFORM TO SEC. 202. OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (SSPWC).

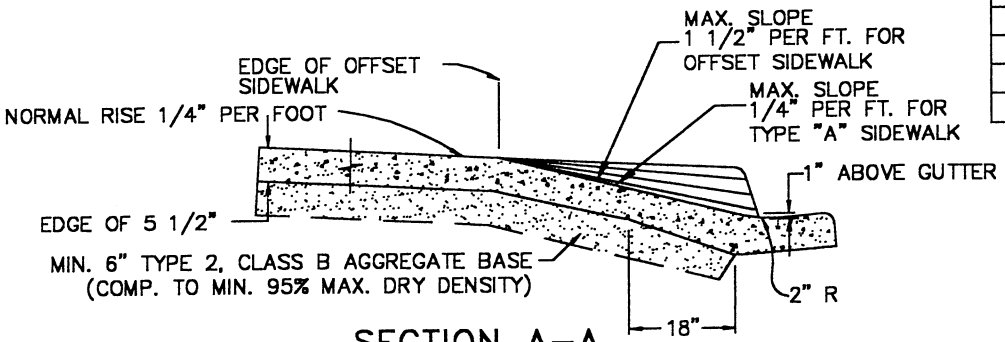
NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY	
	REVISED NOTES	12/01	TYPICAL TYPE "A" SIDEWALK	DRAWING NO. C- 1.13	
	DETECT. PAVERS	12/03		DATE 7/2001	PAGE 2

C:\TEMP\C0113R.dwg, Model, 12/18/03 08:45:18 AM, RoryH



ELEVATION
NTS

TAPER LENGTH FOR OFFSET SIDEWALK	
T (FT.)	CURB HT.
2.5'	≤5"
3.0'	6"
3.5'	7"
4.0'	8"
4.5'	≥9"

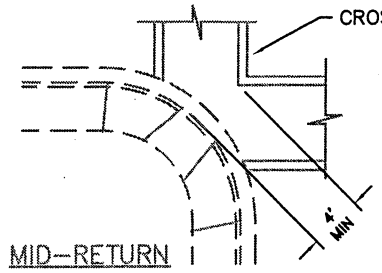


SECTION A-A
NTS

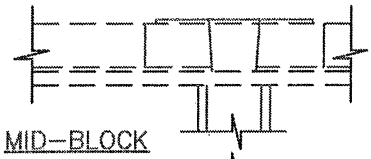
GENERAL NOTES:

1. APRON SLOPE 1:50 AND TAPER LENGTH 5 FEET WITH TYPE "A" SIDEWALK.
2. NO CONCRETE SHALL BE PLACED UNTIL FORMS AND SUBGRADE ARE INSPECTED BY THE AGENCY.
3. CONCRETE SHALL BE CLASS AA OR DA.
4. COMMERCIAL DRIVEWAYS TO HAVE 6" X 6" 10/10 WIRE MESH EXTENDED INTO GUTTER PAN.
5. IF EXPANSION JOINTS EXIST WITHIN 4 FEET OF DRIVEWAY, REMOVE SIDEWALK AND CURB AND GUTTER TO THAT JOINT.
6. CONCRETE REMOVAL SHALL BE TO NEAT SAWCUT LINES.
7. REMOVE CONCRETE WHEN CONSTRUCTING DRIVEWAY WHERE CURB AND GUTTER EXIST. DRIVEWAY TO BE MONOLITHIC TO A.C. LINE.

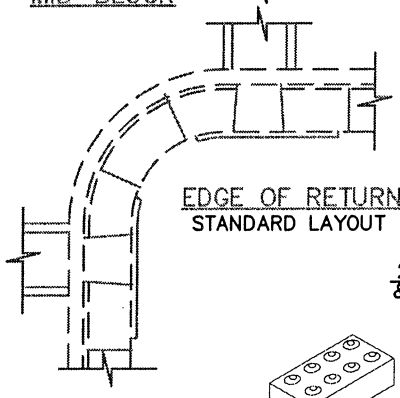
NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY	
			P.C.C. DRIVEWAY APRON	DRAWING NO. C-1.14	
				DATE 7/2001	PAGE 2.12



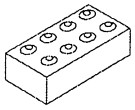
MID-RETURN



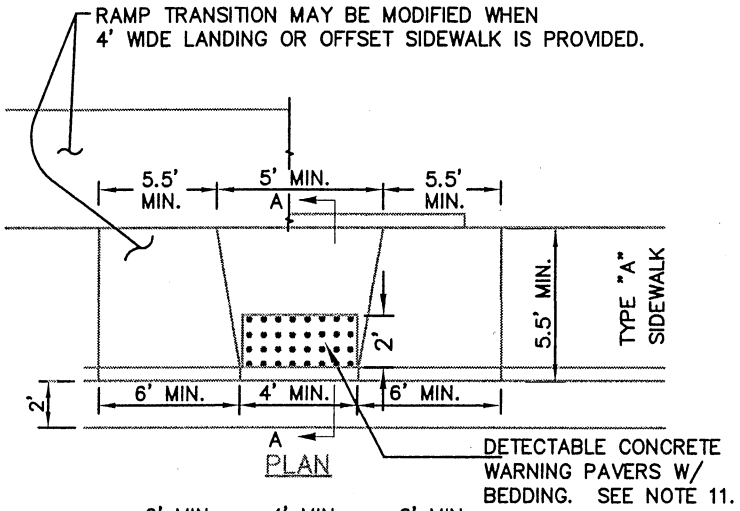
MID-BLOCK

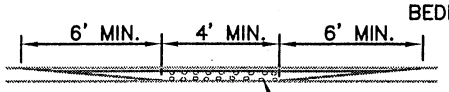


EDGE OF RETURN
STANDARD LAYOUT

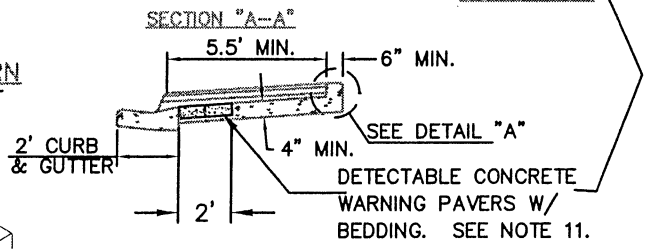


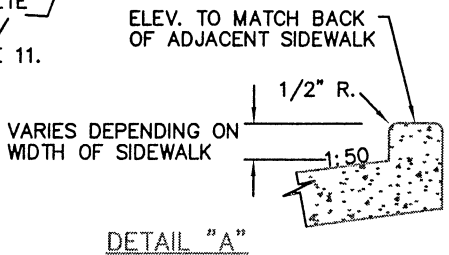
DETECTABLE WARNING PAVER
(Nominal 8" x 4")
COLOR: RED BRICK UNLESS
OTHERWISE APPROVED OR
DIRECTED BY CITY ENGINEER.





ELEVATION





DETAIL "A"

NOTES:

1. IF OBSTRUCTIONS SUCH AS INLETS, UTILITY POLES, FIRE HYDRANTS, ETC. ARE ENCOUNTERED, THE LOCATION AND DIMENSIONS MAY BE ADJUSTED UPON APPROVAL OF THE GOVERNING AGENCY.
2. TEXTURE TO BE HEAVY BROOM FINISH TRANSVERSE TO AXIS OF RAMP.
3. THE MID-BLOCK RAMP SHOWN IN DETAIL SHALL BE CENTERED IN THE CROSSWALK, AND HAVE A A MINIMUM CURB OPENING OF 6 FEET.
4. SLOPE TO MEET EXISTING CONDITIONS.
5. ALL RAMPS SHALL BE LOCATED WITHIN CROSSWALKS AREA.
6. ALL CONCRETE TO BE REMOVED TO SAWCUT NEAT LINES OR EXPANSION JOINTS.
7. THE GUTTER PAN – SIDEWALK TRANSITION (SECTION A-A) SHALL BE SMOOTH WITH NO LIP AT GUTTER FLOWLINE. THIS TRANSITION SECTION MAY BE A MONOLITHIC POUR.
8. SLOPE ON WINGS AT 1:12, SLOPE ON RAMP FROM FLOWLINE TO BACK OF WALK 1:50 WITH CURB ON BACKSIDE.
9. CURB DETAIL "A" USED ONLY WHERE AN ELEVATION DIFFERENCE IS PRESENT BETWEEN REAR EDGE OF WALK AND ADJACENT BACK EDGE OF WALK.
10. PORTLAND CEMENT CONCRETE (P.C.C.) SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4000 PSI MIN COMPRESSIVE STRENGTH @ 28 DAYS, MIN 6 SACKS OF CEMENT PER CUBIC YARDS WITH A MAX. WATER/CEMENT RATIO OF 0.45, AIR ENTRAINMENT 6% ±1.5%, SLUMP AT 1 TO 4 INCHES ALL MATERIALS SHALL CONFORM TO SSPW SECTION 202.
11. DETECTABLE WARNING SHALL BE CONSTRUCTED WITH CONCRETE PAVERS AND BEDDING PER MANUFACTURERS INSTALLATION GUIDELINES AND CONFORM TO ADAAG (4.29.2) "CONTRAST". ADDITIONAL DEPTH MAY BE REQUIRED UNDER DETECTABLE WARNING PAVERS FOR BEDDING PER MANUFACTURERS INSTALLATION GUIDELINES.

NO.	REVISION	DATE
	DETECT. PAVERS	12/03

STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION

PEDESTRIAN RAMP FOR THE DISABLED

SECTION
CARSON CITY

DRAWING NO.
C-1.15

DATE
7/2001

PAGE
2.13

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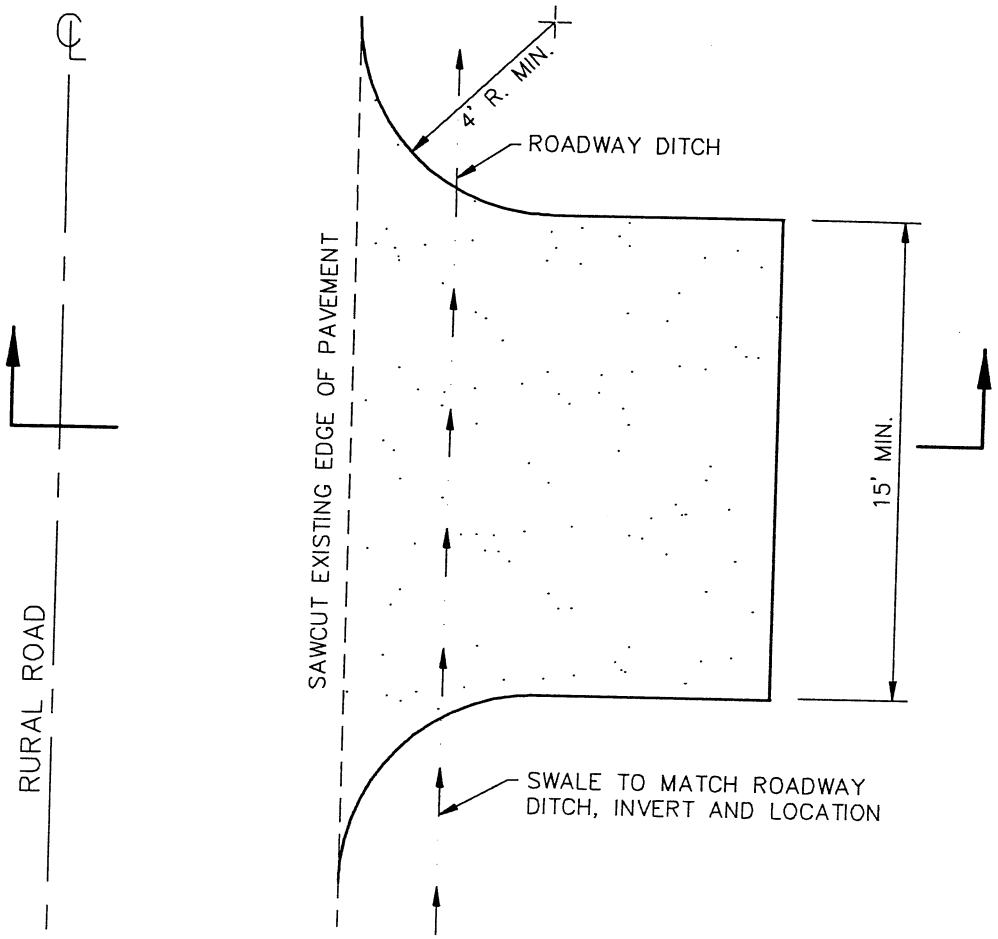
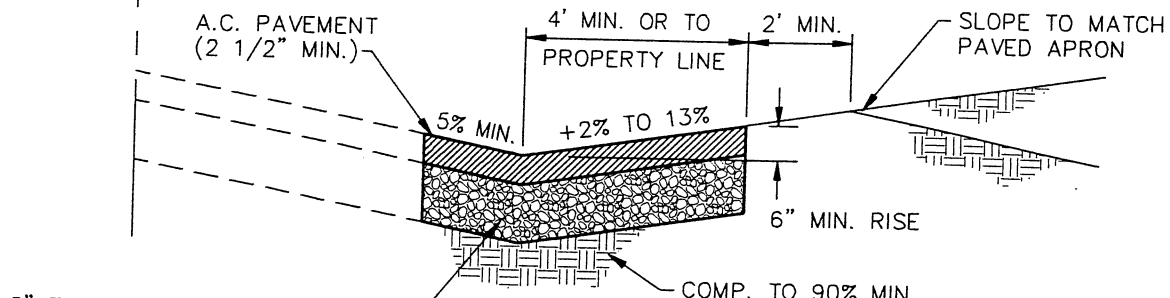


PLAN
NTS

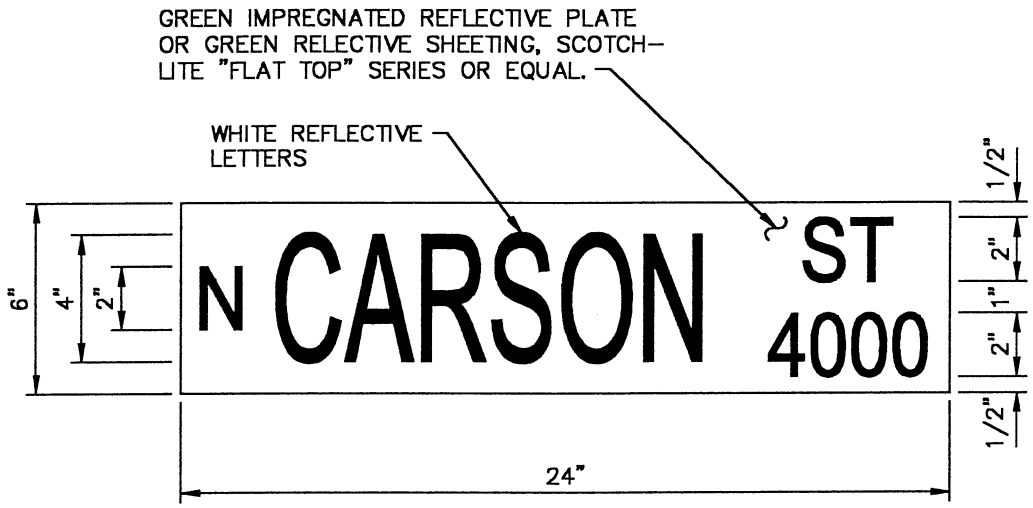


SECTION A-A
NTS

GENERAL NOTES:

1. IN LIEU OF A.C. SURFACING AND BASE A 6" THICK P.C.C. SLAB WITH 6"x6" WWF AND 6" OF SELECT GRANULAR BASE (COMP. TO 95% MIN.) MAY BE USED.

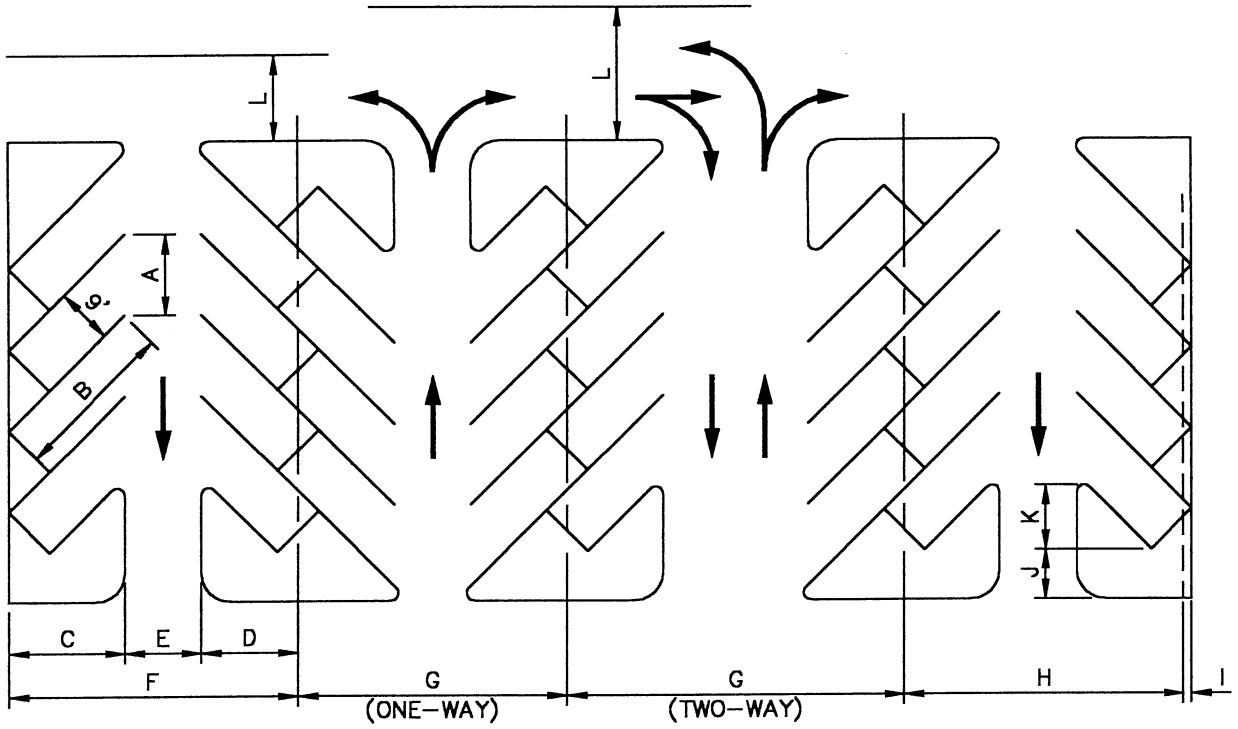
NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY
			A.C. DRIVEWAY APRON RURAL ROADS	DRAWING NO. C-1.2
				DATE 7/2001 / PAGE 3



GENERAL NOTES

1. STREET NAME SIGN SHALL BE IN CONFORMANCE WITH THE LATEST EDITION OF THE M.U.T.C.D.
2. REFLECTIVE MATERIALS SHALL BE MOUNTED ON:
   A. FIBERGLASS PLATE AS MANUFACTURED BY CARSONITE INTERNATIONAL OR OR APPROVED EQUAL,,OR
   B. FLAT PLATE ALUMINUM NO. 6061-T6, .080 GAUGE.
   C. EXTRUDED AL. - SEE "SPARKS" SPECIAL SECTION DRAWING NO. S-4 (330).

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY	
			STREET NAME SIGN	DRAWING NO. C-2.0	
				DATE 7/2001	PAGE 4



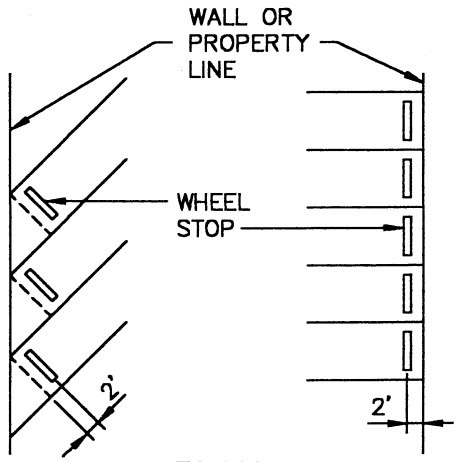
	DIMENSION ITEM	SYMBOL	PARKING ANGLE 45°	60°	75°	90°
	STALL WIDTH, PARALLEL	A	12.7	10.4	9.3	9.0
	STALL LENGTH, OF LINE	B	25.0	22.0	20.0	18.5
	STALL DEPTH TO WALL	C	17.5	19.0	19.5	18.5
	STALL DEPTH TO INTERLOCK	D	15.3	17.5	18.8	18.5
ONE-WAY TRAFFIC	AISLE WIDTH BETWEEN STALLS	E	12.0	16.0	23.0	26.0
	MODULE, WALL TO INTERLOCK	F	44.8	52.5	61.3	63.0
	MODULE, INTERLOCKING	G	42.6	51.0	61.0	63.0
	MODULE, CURB TO INTERLOCK	H	42.8	50.2	58.8	60.5
TWO-WAY TRAFFIC	AISLE WIDTH BETWEEN STALLS	E	20.0	20.0	23.0	26.0
	MODULE, WALL TO INTERLOCK	F	52.8	56.5	61.3	63.0
	MODULE, INTERLOCKING	G	50.6	55.0	61.0	63.0
	MODULE, CURB TO INTERLOCK	H	50.8	54.2	58.8	60.5
	BUMPER OVERHANG (TYPICAL)	I	2.0	2.3	2.5	2.5
	OFFSET	J	6.3*	2.7	0.5	0.0
	SETBACK	K	11.0	8.3	5.0	0.0
	CROSS-AISLE, ONE WAY	L	14.0*	14.0	14.0	14.0
	CROSS AISLE, TWO WAY	L	24.0*	24.0	24.0	24.0

GENERAL NOTES

1. PARKING LOTS OF MORE THAN 20 SPACES MAY DESIGNATE UP TO 15% OF THE TOTAL REQUIRED OFF-STREET PARKING AS COMPACT CAR SPACES, EACH HAVING A MINIMUM LENGTH OF 16' AND MINIMUM WIDTH OF 7' AND CLEARLY MARKED "COMPACT PARKING ONLY".
2. PARALLEL PARKING STALLS SHALL BE 9' WIDE x 22' LONG (MINIMUM).

* MINIMUM - ANY PARKING CONFIGURATION (0-45°).

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY	
			PARKING LOT REQUIREMENTS	DRAWING NO. C-3.0	
				DATE 7/2001	PAGE 5



PLAN
NTS

TYPICAL PAVEMENT SECTION

1. PARKING LOTS WILL BE CONSTRUCTED WITH A MINIMUM OF 2.5" A.C. SURFACE ON 6" TYPE 2 AGGREGATE BASE (BOTH COMPACTED TO 95% MIN.)

WHEEL STOPS

1. WHEEL STOPS WILL BE TWO FEET (MIN.) FROM PROPERTY LINE OR APPURTENANCES.
2. WHEEL STOP WILL BE SECURED WITH 0.5" REBAR DRIVEN 12" (MIN.) INTO SURFACE OR WITH AN APPROVED EPOXY HAVING A SETTING TIME OF 4-HOUR (MAX.) AT 77°F.
3. WHEEL STOPS WILL BE WHITE OR SAFETY YELLOW WITH 0.25 CANDLE POWER REFLECTIVITY.
4. WHEEL STOP DIMENSIONS WILL BE 4"-7" HIGH, 4' (MIN.) LONG, 6" (MIN.) WIDE.
5. MINIMUM WALL THICKNESS FOR METAL STOPS WILL BE 0.250", FOR POLYETHYLENE OR FIBERGLASS WHEEL STOPS - 0.750".
6. WOOD WHEEL STOPS WILL BE REDWOOD #2 OR BETTER.
7. CONCRETE WHEEL STOPS WILL HAVE A MINIMUM TENSILE STRENGTH OF 2000 P.S.I. (ASTM D-746).
8. IMPACT BRITTLE TEMPERATURE SHALL BE -75°C. (ASTM D-746).
9. ELONGATION SHALL BE LIMITED TO 35% AT 73°F (ASTM D638).

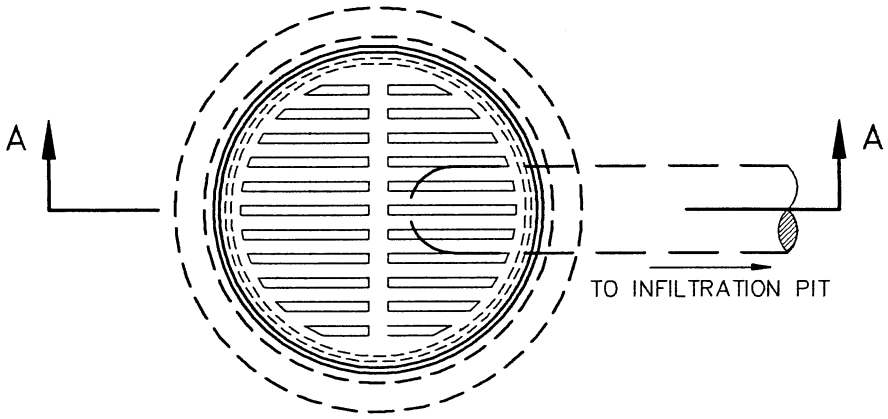
STRIPING

1. PARKING LOT SRTIPING SHALL BE WHITE WITH A MINIMUM WIDTH OF 4". PAINT SHALL BE SPECIFIED "TRAFFIC STRIPING PAINT" OR HAVE MANUFACTURER'S CERTIFICATION OF SUITABLE APPLICATION ON ASPHALTIC OR CONCRETE SURFACES.

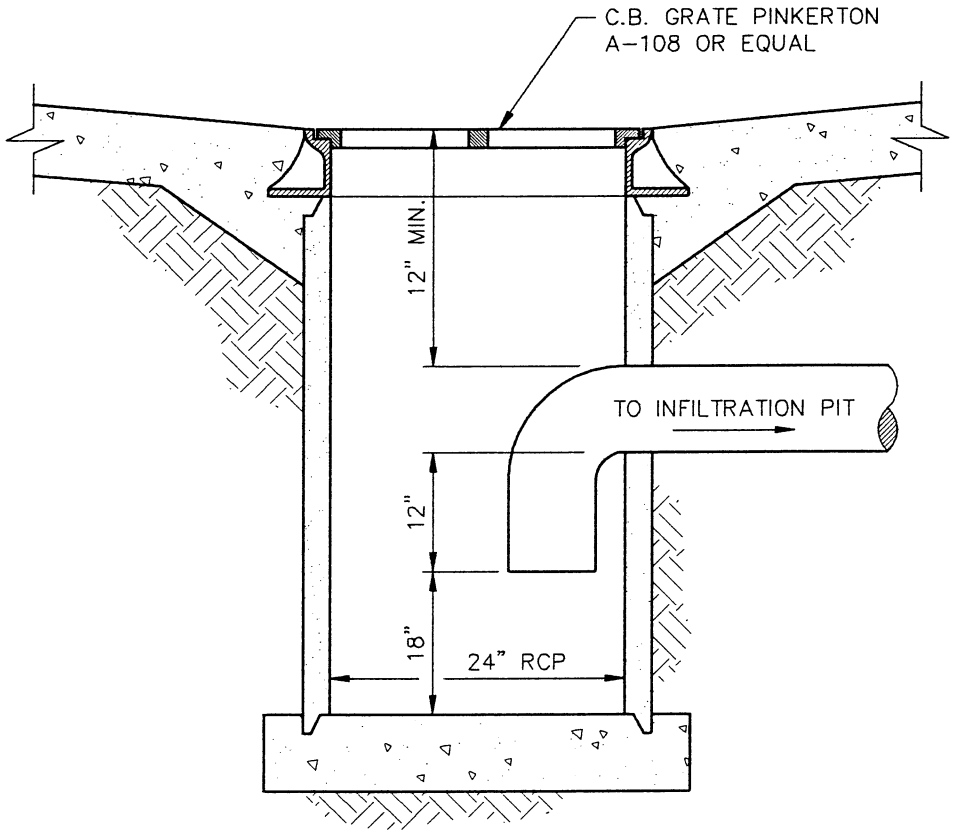
LIGHTING

1. APPLICATION LEVEL WILL BE 1.0 FOOT CANDLES (MIN.) WITH A UNIFORMITY RATION (AVERAGE ILLUMINATION) NOT EXCEEDING 6:1 AND AS APPROVED BY THE PUBLIC WORKS DEPARTMENT DEPENDING ON PEDESTRIAN VOLUMES.
2. LIGHTING WILL BE OF HIGH PRESSURE SODIUM (BASED ON HIGH ILLUMINATION LOW GLARE AND REDUCED ENERGY) WITH A MAXIMUM 50% LUMINOUS FLUX EMITTED UPWARD, AND BE MOUNTED BETWEEN 10 AND 35 FEET ABOVE LOT SURFACE AS APPROVED BY THE PUBLIC WORKS DEPT.
3. LIGHT POLES SHALL BE LOCATED TO ELIMINATE INTERFERANCE WITH VEHICULAR OR PEDESTRIAN TRAFFIC (AT THE END OF PARKING ROWS WHEN PRACTICAL) AND AS APPROVED BY THE PUBLIC WORKS DEPARTMENT.
4. MOUNTING POLES WILL COMPLY WITH THE SAME SPECIFICATIONS PRESCRIBED FOR URBAN COLLECTOR STREET USE.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY	
			PARKING LOT REQUIREMENTS	DRAWING NO. C-3.1	
				DATE 7/2001	PAGE 6



PLAN VIEW
NTS

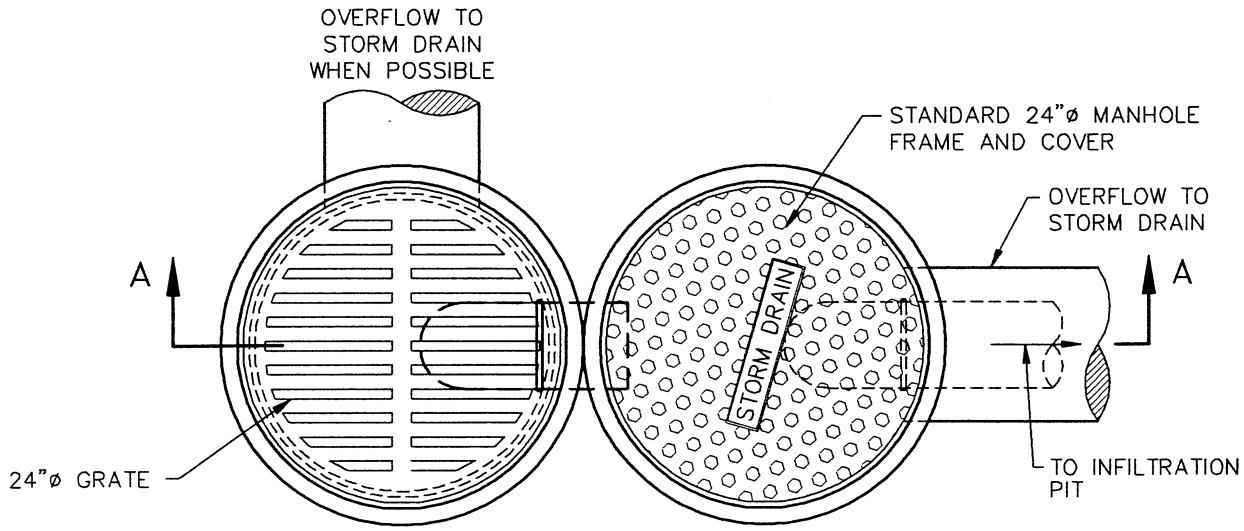


SECTION A-A
NTS

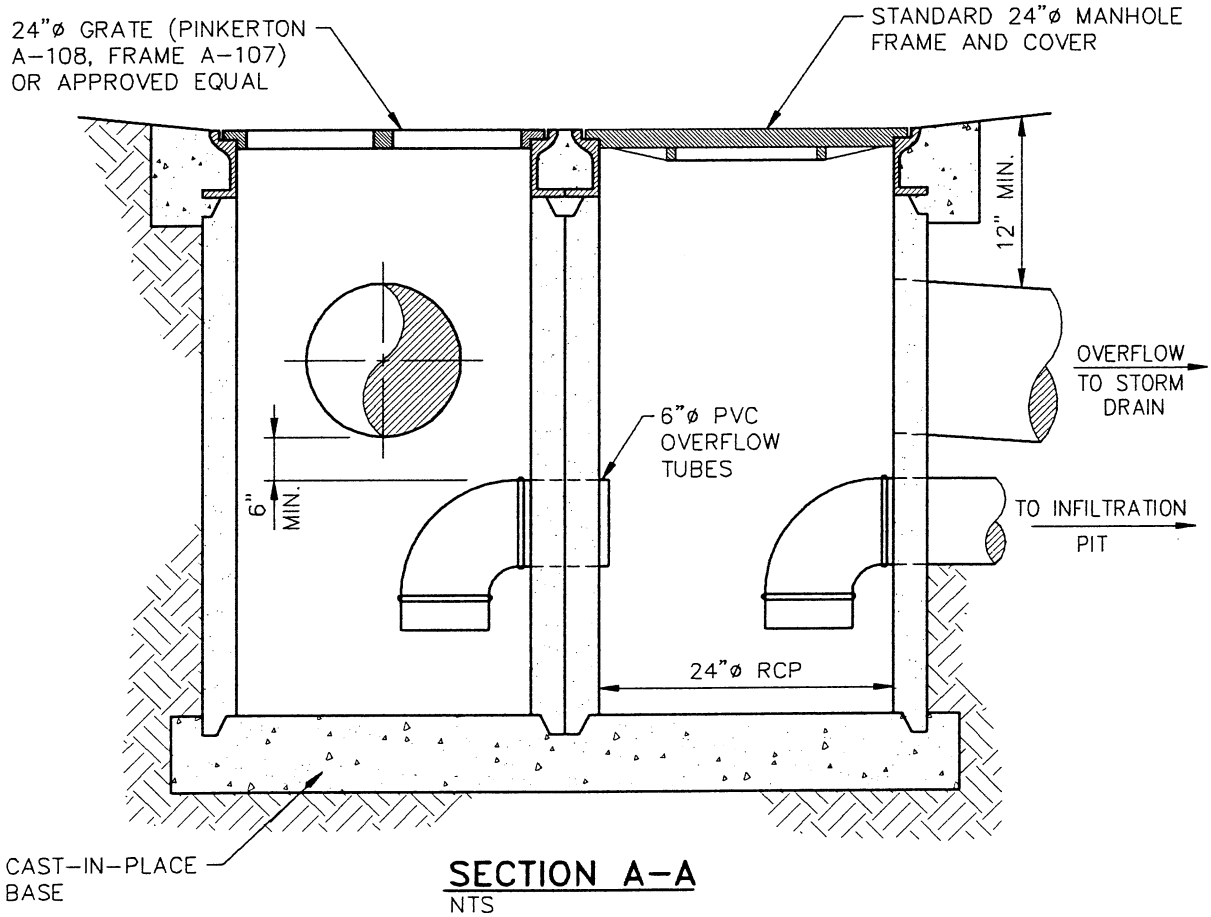
GENERAL NOTES

1. FOR DIMENSIONS AND DETAILS NOT SHOWN, SEE CATCH BASIN TYPE 3.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY	
			INFILTRATION PIT CATCH BASIN	DRAWING NO. C-4.0	
				DATE 7/2001	PAGE 7



PLAN VIEW
NTS

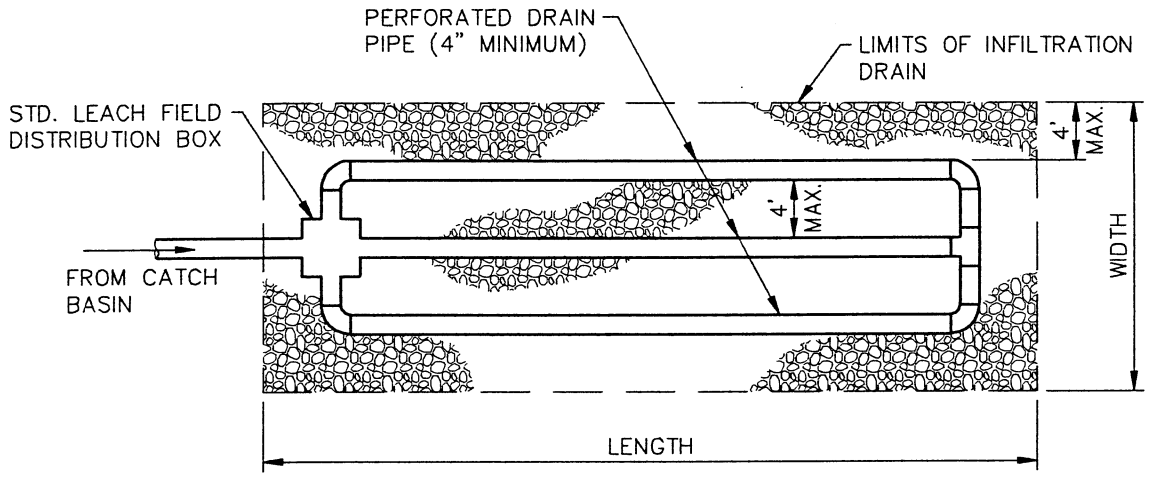


SECTION A-A
NTS

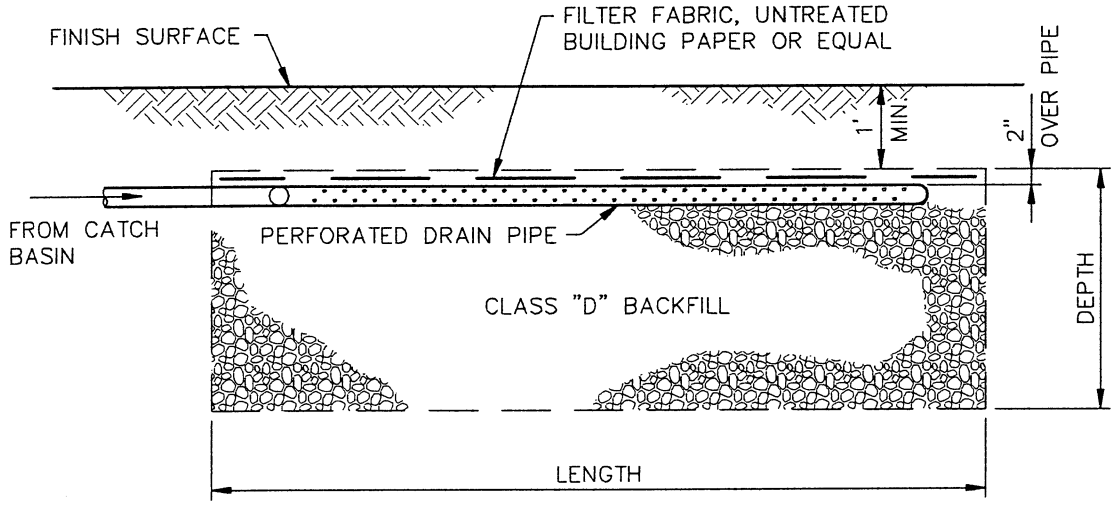
GENERAL NOTES

1. FOR DIMENSIONS AND DETAILS NOT SHOWN, SEE CATCH BASIN TYPE 3.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY	
			CATCH BASIN MODIFIED TYPE 3	DRAWING NO. C-4.1	
				DATE 7/2001	PAGE 8



PLAN VIEW
NTS

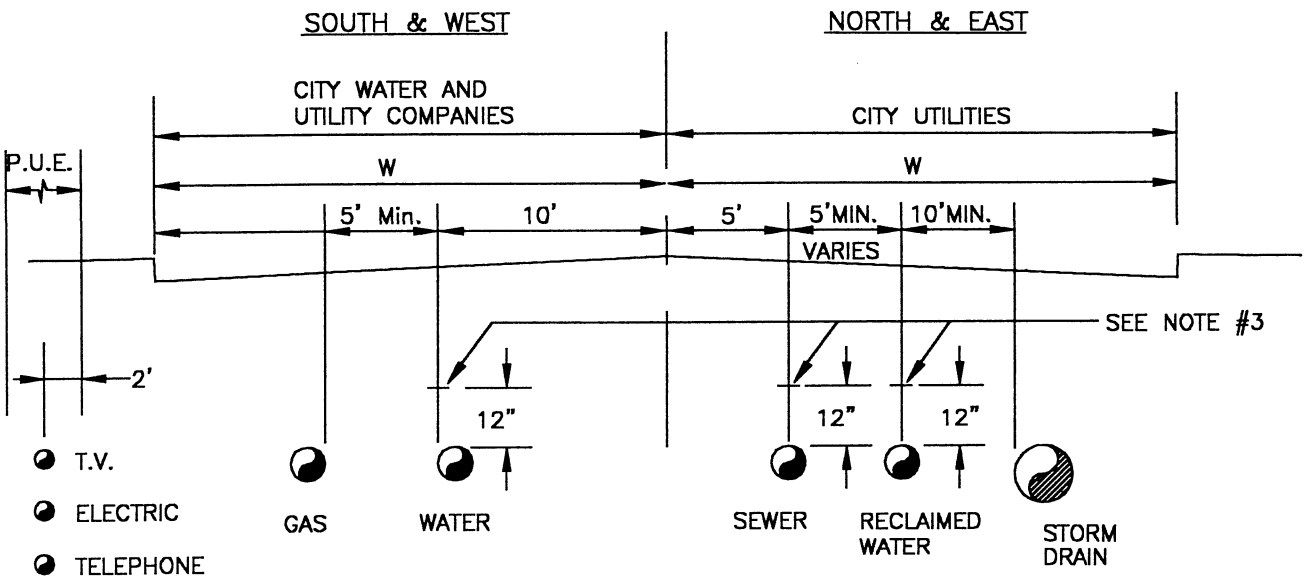


PROFILE
NTS

GENERAL NOTES

1. NOT FOR USE IN THE CITY OF RENO.
2. DESIGN SIZE TO BE BASED ON PERCOLATION TESTS.
3. DESIGN STORM SHALL BE THE 5-YEAR, 10 MINUTE DURATION (MINIMUM).
4. VOLUME OF VOIDS SHALL BE CONSIDERED TO BE 35% MAXIMUM.
5. CATCH BASIN WILL PROVIDE SILTING PROTECTION TO THE INFILTRATION PIT AND WILL HAVE A GREASE TRAP. SEE CARSON CITY SPECIAL SECTION FOR STANDARD INFILTRATION PIT CATCH BASIN OR OVERFLOW PROTECTION CATCH BASIN.
6. NOT TO BE LOCATED IN ROADWAY SECTION.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY	
			INFILTRATION DRAIN	DRAWING NO. C-4.2	
				DATE 7/2001	PAGE 9



TYPICAL SECTION

NTS

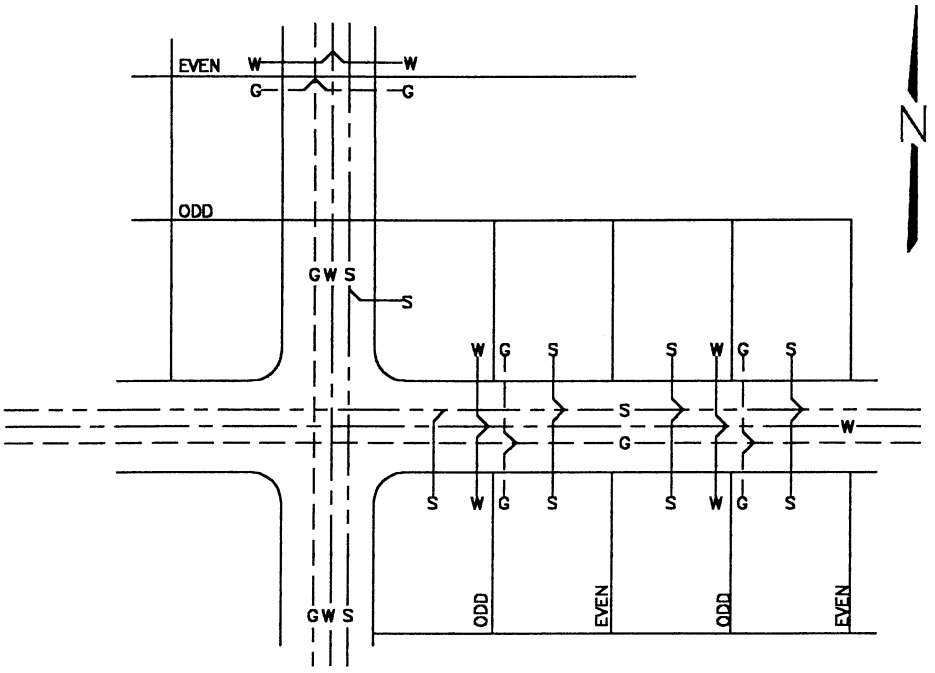
APPROX. DEPTH OF COVER	
STORM DRAIN	24"
SANITARY SEWER	84"*
WATER MAIN	42"
GAS MAIN	30"**
T.V.	48"**
ELECTRICITY	72"**
RECLAIMED WATER	60"

* SEE NOTE 5
** OR LOCAL UTILITY STANDARDS

GENERAL NOTES

1. FOR COMMON TRENCH SECTION, SEE DETAIL, DWG. No. 1–3. COMMON TRENCH WITH OTHER UTILITIES IS NOT ALLOWED FOR WATER, SEWER OR RECLAIMED WATER.
2. P.U.E. INDICATES PUBLIC UTILITY EASEMENT.
3. PLACE WARNING TAPE 1' ABOVE WATER, RECLAIMED WATER & SEWER PIPE (SEE DETAIL C–9.0).IN ADDITION TO WARNING TAPE, PLACE LOCATOR WIRE ON WATER, RECLAIMED WATER & SANITARY SEWER FORCE MAINS.
4. DEPTHS OF COVER AND LOCATION OTHER THAN THOSE SHOWN ABOVE ARE SUBJECT TO CARSON CITY DEVELOPMENT ENGINEERING & UTILITIES APPROVAL.
5. DEPTH SHALL BE AS REQUIRED TO PROVIDE ADEQUATE CLEARANCE FROM OTHER UTILITIES AND TO SERVE UPSTREAM TRIBUTARY AREAS, AND TO MEET PROPER DESIGN SPECIFICATIONS FOR DOWNSTREAM CONNECTIONS.
6. RCW PIPE SHALL BE PURPLE IN COLOR.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY	
			TYPICAL UTILITY MAIN LOCATIONS	DRAWING NO. C–5.0	
				DATE 7/2001	PAGE 10



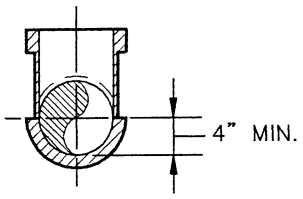
UTILITY LOCATION

NTS

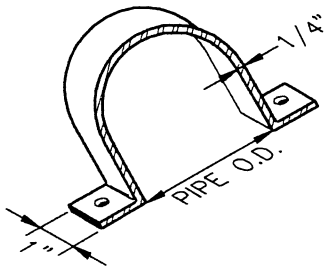
GENERAL NOTES

1. SANITARY SEWER LATERAL TO BE CENTERED ON LOT (CHANGES MAY BE PERMITTED UPON APPROVAL OF THE SEWER UTILITY). EACH LOT TO BE SERVED BY A SEWER MAIN IN AN ADJACENT STREET OR EASEMENT.
2. COMMON LOT CORNERS ARE DEFINED AS OF ODD OR EVEN AS COUNTED NORTH OR EAST FROM THE PRECEDING STREET INTERSECTION.
3. WATER SERVICES SHALL BE PLACED ON ODD LOT CORNERS ON EAST–WEST STREETS AND ON EVEN LOT CORNERS ON NORTH–SOUTH STREETS. ADDITIONALLY, WATER SERVICES SHALL BE ONE FOOT WEST OR NORTH OF THE RESPECTIVE LOT LINE (SEE DRAWING BELOW).
4. GAS SERVICES SHALL BE PLACED ON THE SAME LOT CORNERS AS FOR THE WATER DESCRIBED ABOVE–EXCEPT THAT IT SHALL BE FOUR FEET EAST OR SOUTH OF THE RESPECTIVE LOT LINE (OPPOSITE SIDE OF WATER) (SEE DRAWING BELOW).
5. ELECTRICITY, TELEPHONE, AND CABLE T.V. SHALL BE PLACED ON EVEN LOT CORNERS ON EAST–WEST STREET AND ON ODD LOT CORNERS ON NORTH–SOUTH STREETS. MAINTAIN 5' CLEARANCE FROM WATER OR SEWER LATERALS.
6. FOR MAIN LOCATION SEE DETAIL C–5.0.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY	
			TYPICAL UTILITY LATERAL LOCATIONS	DRAWING NO. C–5.1	
				DATE 7/2001	PAGE 11

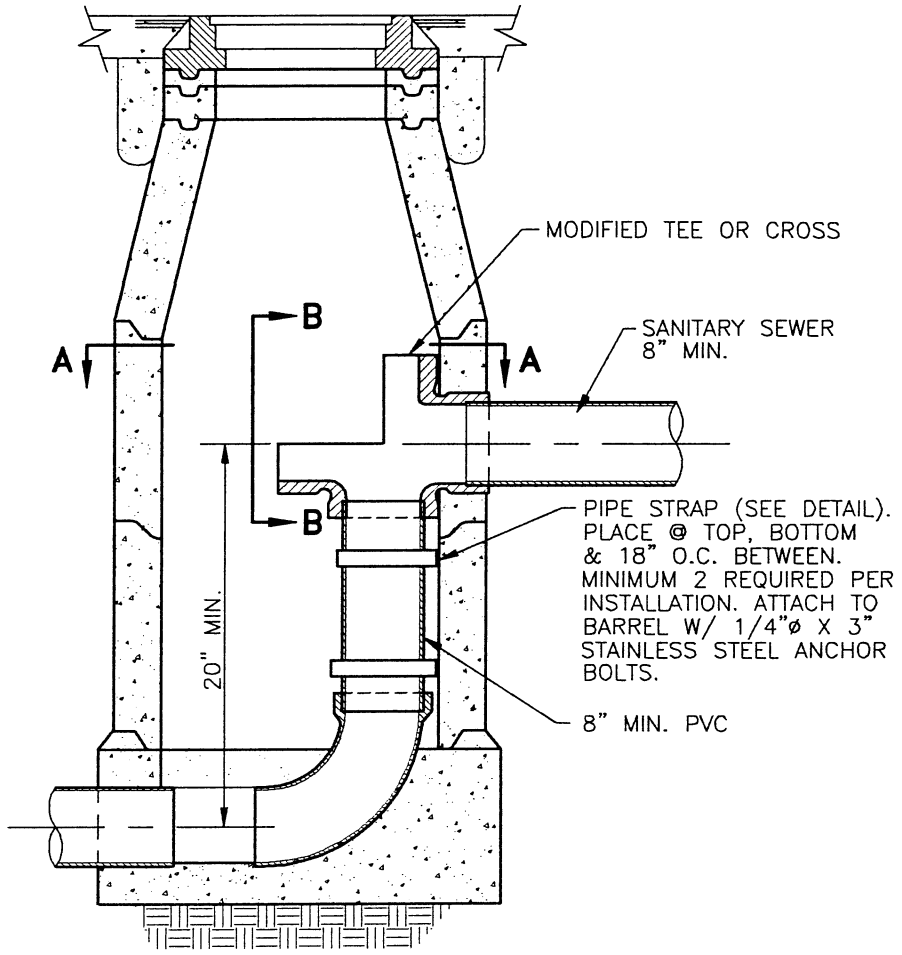


SECTION B–B
NTS

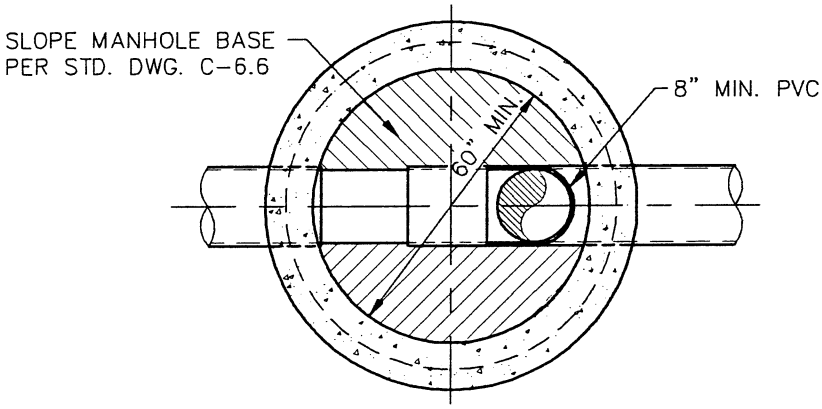


STRAP MATERIAL SHALL BE STAINLESS STEEL OR HIGH GRADE ALUMINUM

PIPE STRAP DETAIL
NTS



TYPICAL SECTION
NTS

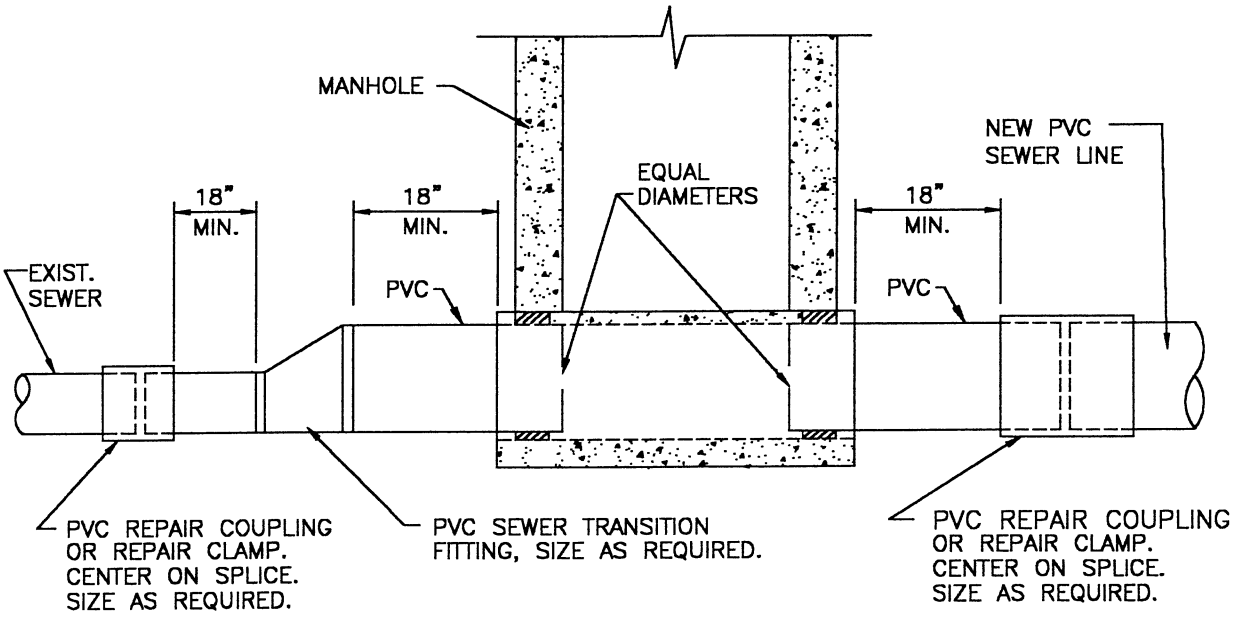


SECTION A–A
NTS

GENERAL NOTES

1. USE OF A DROP MANHOLE REQUIRES APPROVAL FROM CARSON CITY UTILITIES.
2. REFERENCE STANDARD DRAWING C–6.6 "MANHOLE TYPE 1" FOR ADDITIONAL NOTES, DIMENSIONS AND DETAILS.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY	
			SPECIAL DROP MANHOLE	DRAWING NO. C–6.0	
				DATE 7/2001	PAGE 12



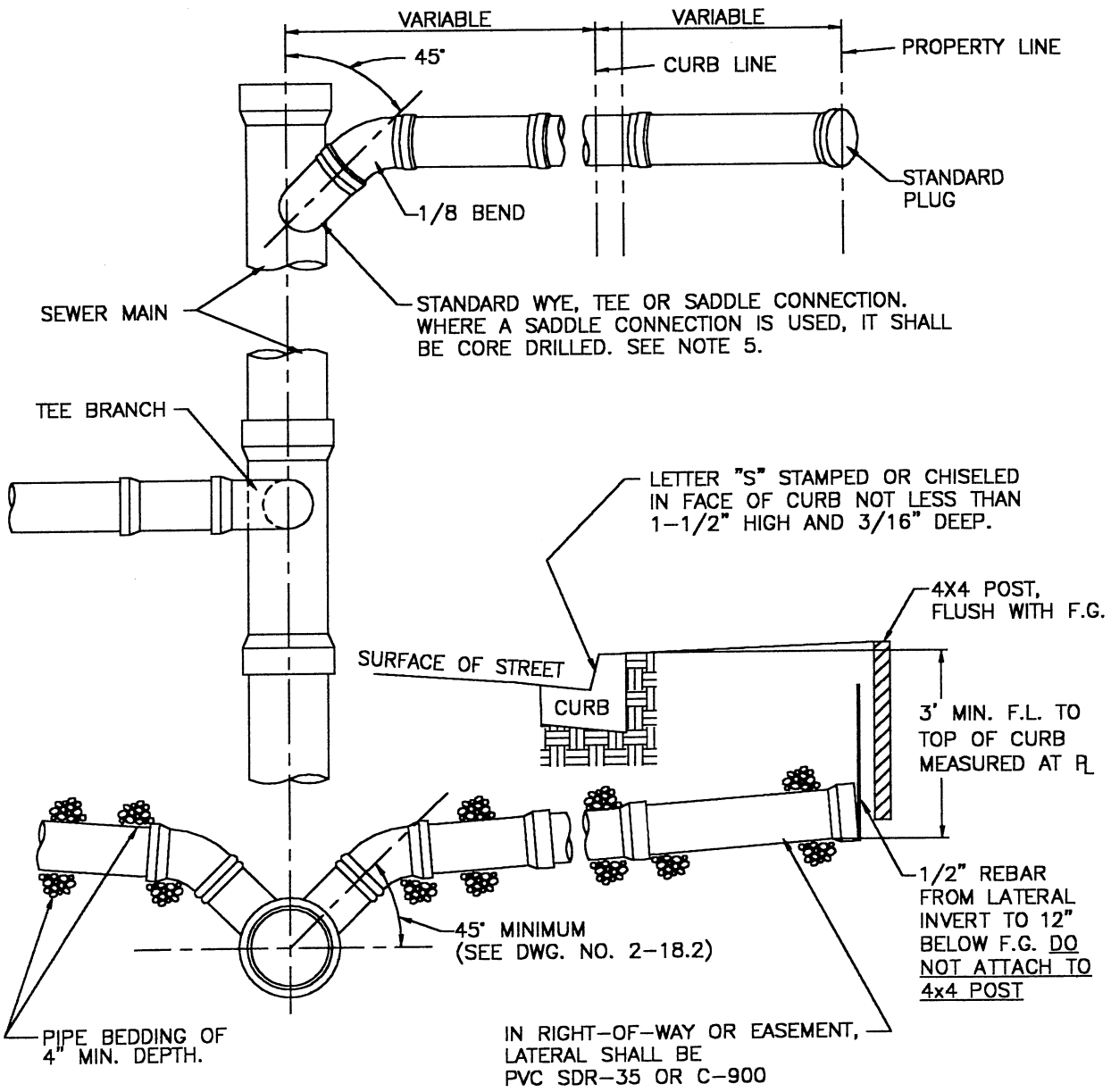
TYPICAL SEWER LINE & MANHOLE TRANSITIONAL DETAIL

NTS

GENERAL NOTES

1. CLAMP STYLE SHALL BE ROMAC SSI, SS2, OR SS3, OR EQUAL. STYLE AS REQUIRED.
2. CLAMP LENGTH SHALL EQUAL PIPE DIAMETER.
3. CLAMPS SHALL BE USED AT ALL LOCATIONS WHERE TWO PIPES OF EQUAL DIAMETER ARE BEING JOINED.
4. PVC SEWER TRANSITIONS SHALL BE USED AT ALL LOCATIONS WHERE TWO PIPES OF UNEQUAL DIAMETER ARE TO BE JOINED.

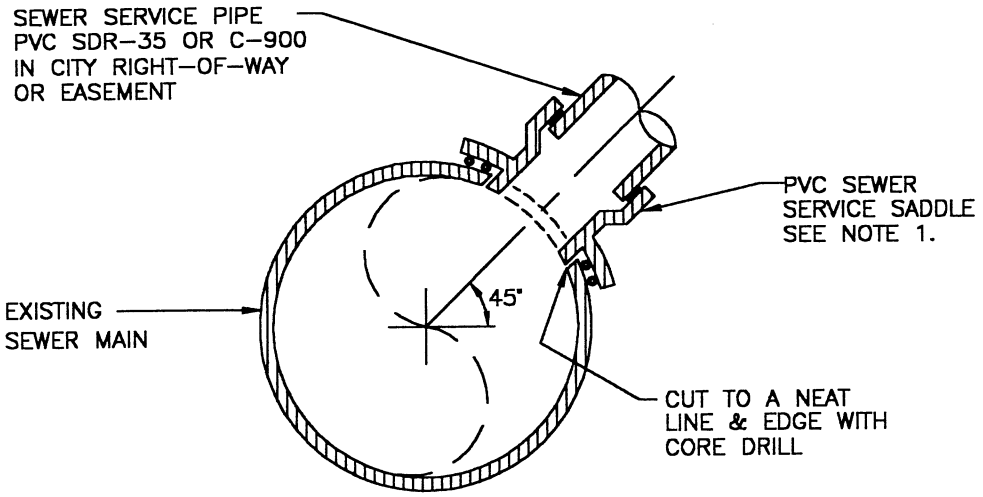
NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY	
			SEWER LINE TRANSITIONAL DETAIL	DRAWING NO. C-6.1	
				DATE 7/2001	PAGE 13



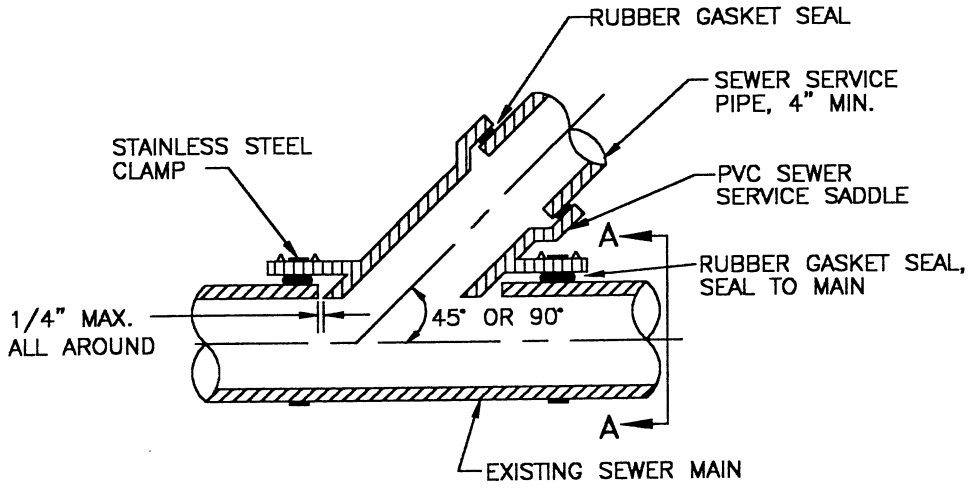
GENERAL NOTES

1. IN NO CASE SHALL A LATERAL CONNECT TO THE SEWER MAIN DIRECTLY ON TOP OR MATCH THE FLOWLINE OF THE PIPE.
2. SEWER LATERALS SHALL HAVE A MINIMUM SLOPE OF 2%.
3. ALL JOINTS ON SEWER LATERAL PIPE WITHIN THE RIGHT-OF-WAY SHALL BE COMPRESSION TYPE.
4. LATERAL SHALL EXTEND TO PROPERTY LINE UNLESS OTHERWISE SHOWN ON PLANS.
5. SADDLE CONNECTION SHALL BE PVC SADDLE WITH STAINLESS STEEL STRAPS. SEE DETAIL C-6.3.
6. ENTITY REQUESTING SEWER LATERAL ABANDONMENT SHALL CUT AND CAP THE EXISTING SEWER LATERAL TO BE ABANDONED WITHIN 6 INCHES OF THE SEWER MAIN. INSPECTION BY CARSON CITY UTILITIES IS REQUIRED PRIOR TO BACKFILL.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY	
			SEWER LATERAL CONNECTION DETAIL	DRAWING NO. C-6.2	
				DATE 7/2001	PAGE 14



SECTION A-A
NTS

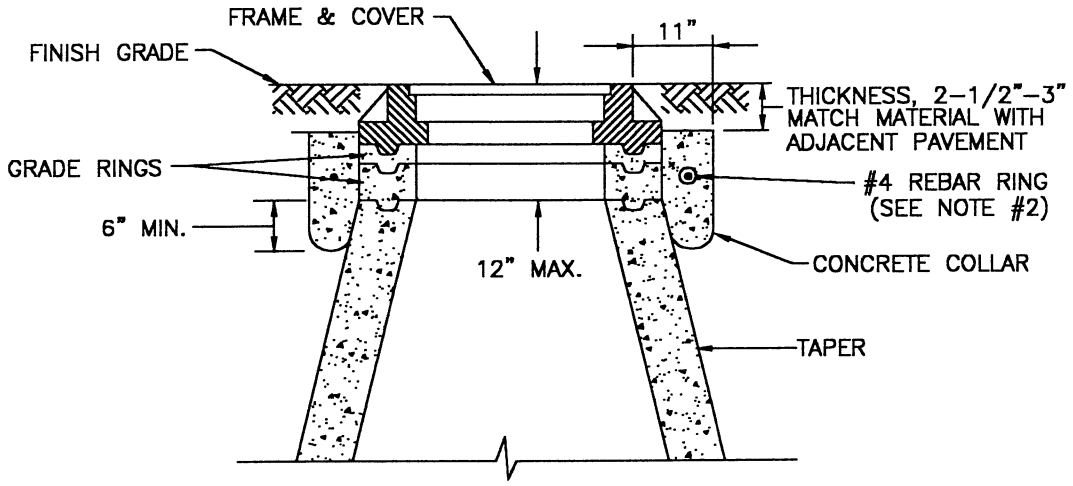


SIDE VIEW
NTS

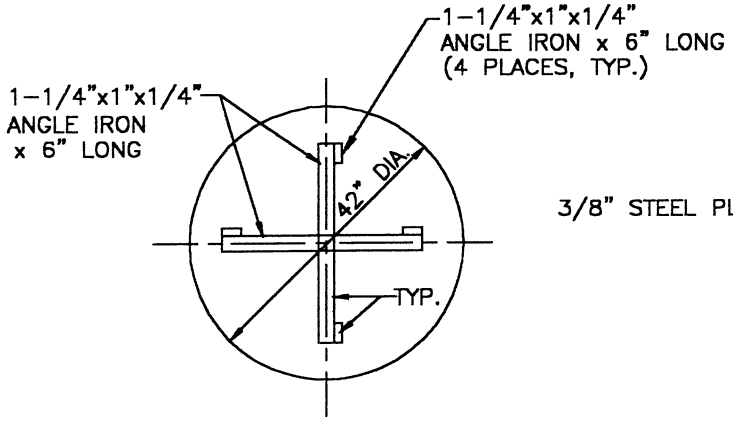
GENERAL NOTES:

1. ROMAC "CB" SEWER SADDLES OR EQUAL MAY BE USED ON SEWER MAINS OTHER THAN PVC.
2. IN NO CASE SHALL A LATERAL CONNECT TO THE SEWER MAIN DIRECTLY ON TOP OR MATCH THE FLOWLINE OF THE PIPE.

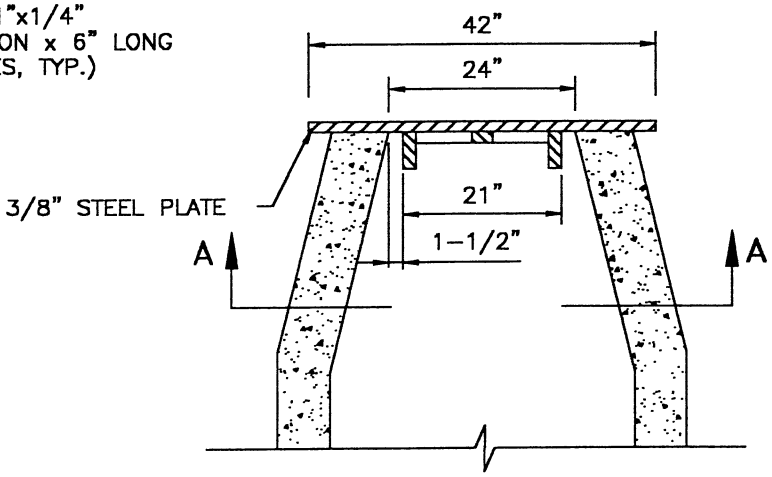
NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY	
			SEWER SERVICE SADDLE	DRAWING NO. C-6.3	
				DATE 7/2001	PAGE 15



MANHOLE COLLAR DETAIL
NTS



SECTION A-A
NTS

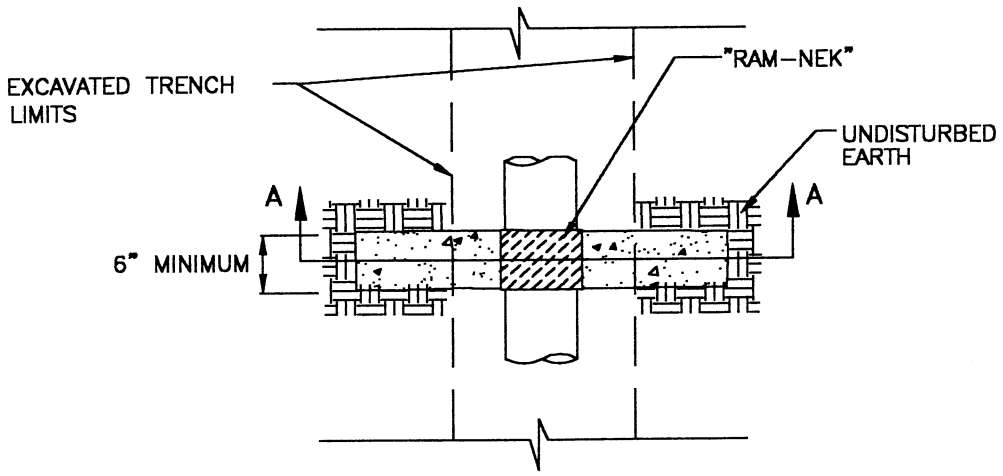


TEMPORARY COVER DETAIL
NTS

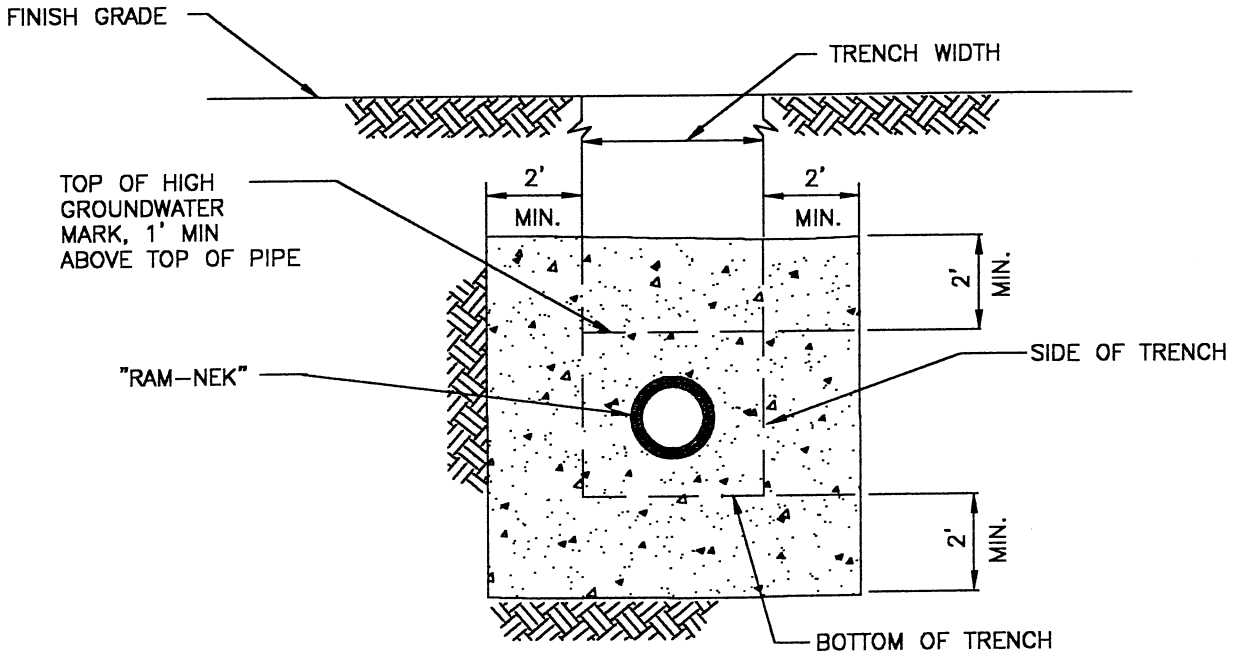
GENERAL NOTES

1. EXISTING PAVEMENT TO BE MATCHED SHALL BE NEATLY CUT.
2. CONCRETE SHALL MEET THE REQUIREMENTS OF SECTION 202.12 OF THE STANDARD SPECIFICATIONS. REBAR SHALL ONLY BE INSTALLED WHEN THE MANHOLE IS LOCATED OUTSIDE PAVED AREAS.
3. IN ALL AREAS, COVERS SHALL BE SET FLUSH WITH FINISH GRADE UNLESS OTHERWISE NOTED.
4. THE CONCRETE COLLAR SHALL BE LEFT 2-1/2" – 3" BELOW FINISHED ASPHALT SURFACE. APPLY AN APPROVED TACK COAT AND FILL VOID BETWEEN ADJACENT PAVEMENT AND FRAME WITH TYPE 3 A.C. PAVING. CHIP OR FOG SEAL PAVED SURFACE. EXCEPTION: WHEN STRUCTURE NOT LOCATED IN ASPHALT PAVEMENT OR IN AN UNPAVED AREA, EXTEND CONCRETE TO FINISH GRADE.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY	
			MANHOLE COLLAR AND TEMPORARY COVER DETAIL	DRAWING NO. C-6.4	
				DATE 7/2001	PAGE 16



PLAN
NTS



SECTION A-A
NTS

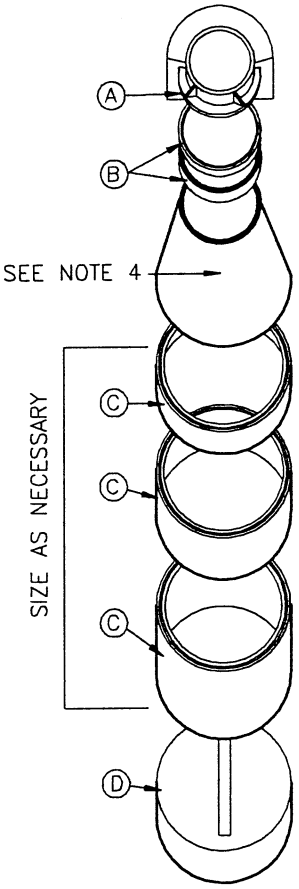
GENERAL NOTES

1. WATER STOPS TO BE CONSTRUCTED AT 200' MAXIMUM SPACING IN GROUNDWATER CONDITIONS AND WHERE TYPE "C" BEDDING IS USED, AS DIRECTED BY THE UTILITY ENGINEER.
2. WRAP PIPE WITH "RAM-NEK" OR EQUIVALENT WHERE PIPE IS EXPOSED TO CONCRETE PRIOR TO POURING.
3. USE LIGHT CONCRETE, TWO SACK SLURRY. IF DRYWALL IS USED FOR CONCRETE FORMS, IT MAY BE LEFT IN PLACE.
4. WATER STOPS TO BE USED ON SEWER MAINS ONLY, USE ON WATER LINES IS SUBJECT TO APPROVAL OF CARSON CITY UTILITIES DEPARTMENT.

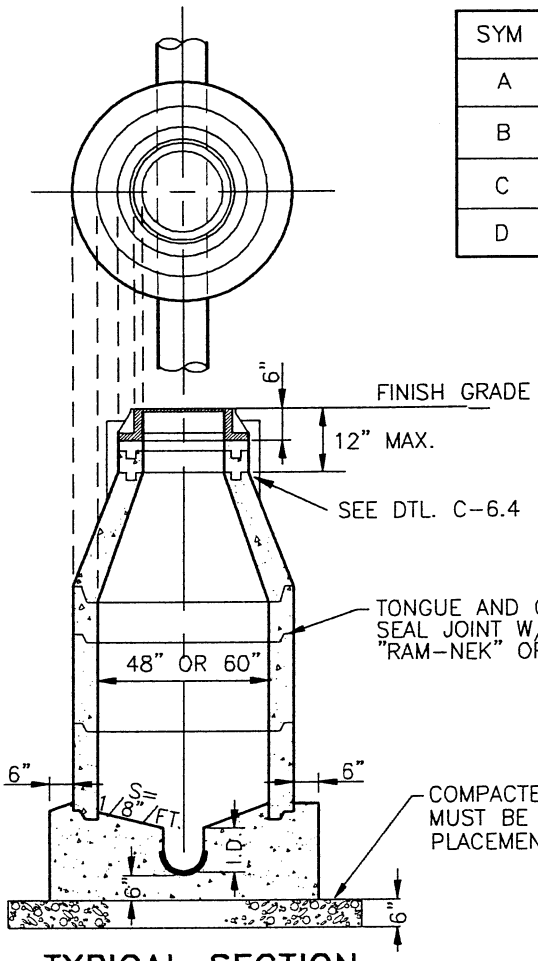
NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY	
			WATER STOP DETAIL	DRAWING NO. C-6.5	
				DATE 7/2001	PAGE 17

SYM	ITEM
A	RING & COVER (SEE NOTE 4)
B	GRADE ADJUSTING
C	PRECAST MANHOLE SECTION
D	PRE-CAST BASE

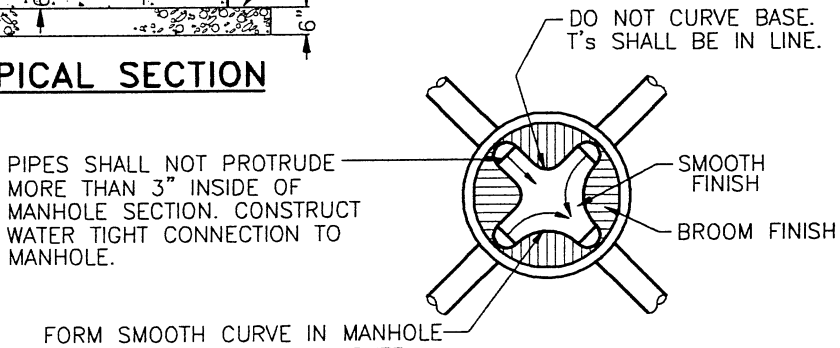
TAPER DIA.	HEIGHT H
48"	24"MIN.
60"	48"MIN.



EXPLODED VIEW
NTS



TYPICAL SECTION
NTS

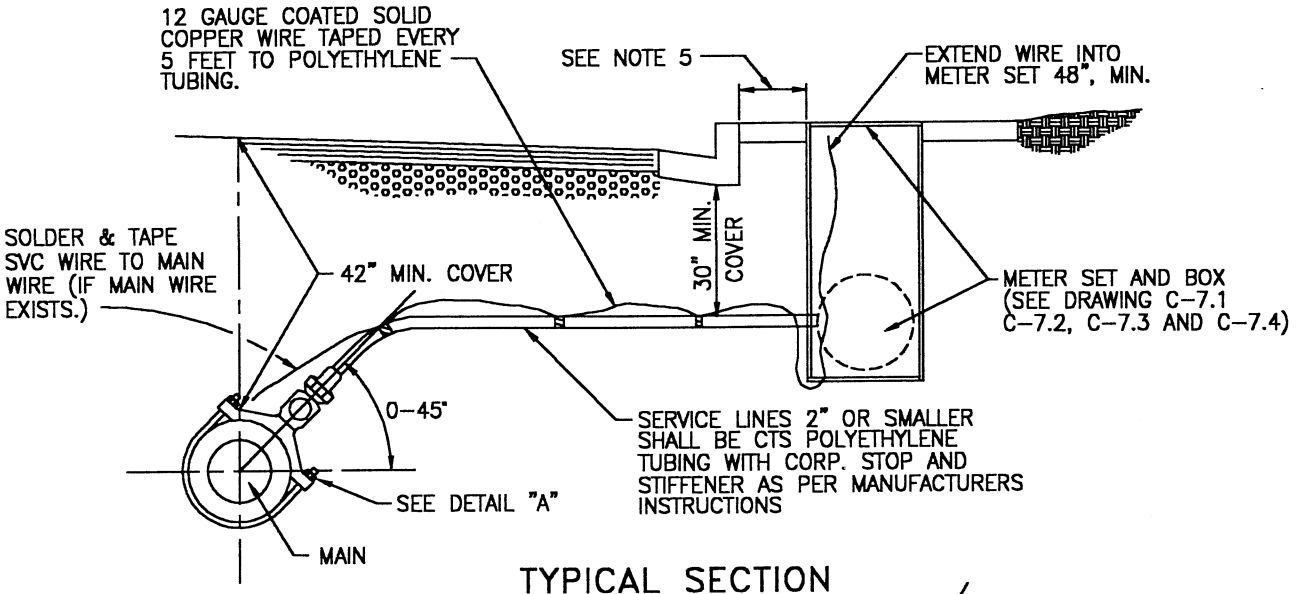


PLAN VIEW-BASE
NTS

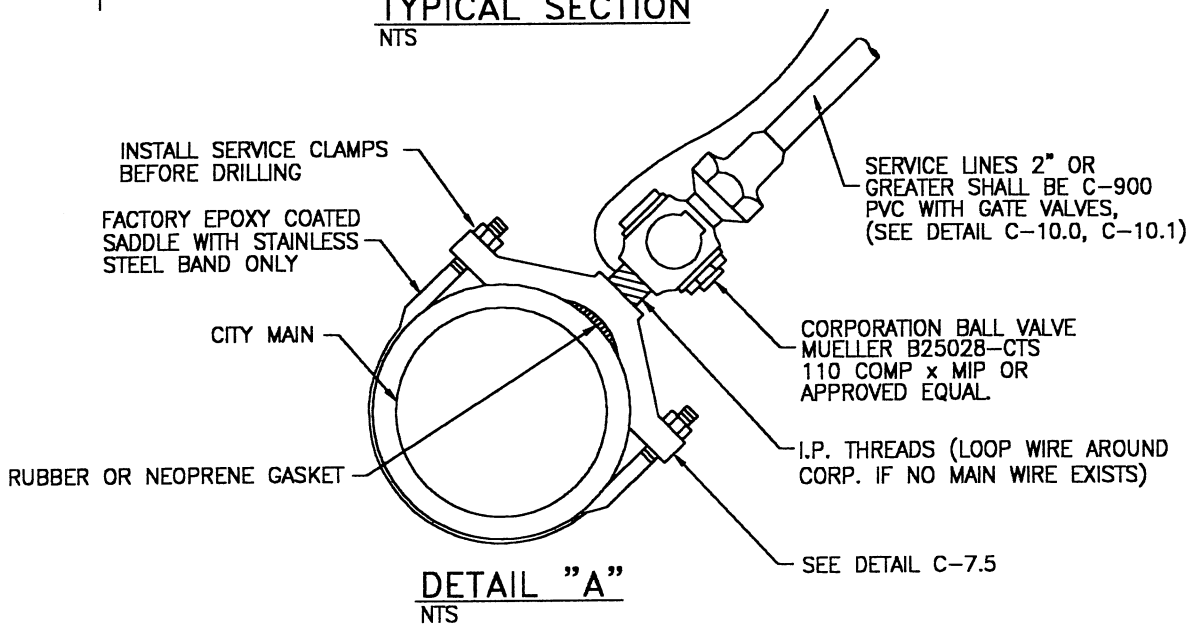
GENERAL NOTES:

1. MANHOLE SECTION LENGTHS ARRANGED TO FIT DEPTH. ALL SHIMS TO BE REMOVED AND VOIDS GROUTED.
2. POURED BASE MAY BE USED IF APPROVED BY THE UTILITY DEPARTMENT PRIOR TO CONSTRUCTION.
3. PRECAST MANHOLE COMPONENTS SHALL CONFORM TO ASTM C-478 MANHOLES TO BE SEALED WATER TIGHT.
4. NO "THRU" HOLES. CLOSED PICK HOLES ONLY: SBF 1900 CPH OR APPROVED EQUAL. NO LADDER RUNGS OR STEPS. CONCENTRIC CONES ONLY UNLESS APPROVED BY UTILITY DEPARTMENT.
5. MANHOLE MATERIALS AND CONSTRUCTION SHALL CONFORM TO REQUIREMENTS OF SECTION 204 "MANHOLES AND CATCH BASINS" OF THE "STANDARD SPECIFICATIONS"
6. COAT OUTSIDE OF MANHOLE WITH FLEXIBLE RUBBERIZED COATING IN HIGH GROUNDWATER AREAS.
7. BASE CONFIGURATION TO BE INSTALLED AS SHOWN ON THE APPROVED PLANS. NO PLUGGING OR MODIFYING ALLOWED.
8. MANHOLES LOCATED OUTSIDE PAVED AREAS SHALL REQUIRE ALL WEATHER ACCESS ROADWAY CONSISTING OF 6" TYPE II BASE.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY	
			MANHOLE TYPE 1	DRAWING NO. C-6.6	
				DATE 7/2001	PAGE 18



TYPICAL SECTION
NTS



DETAIL "A"
NTS

GENERAL NOTES

1. ALL SERVICE LINE COUPLING FITTINGS SHALL BE MUELLER CTS 110 COMP. x MIP OR APPROVED EQUAL.
2. ALL SERVICE VALVES SHALL BE SAME SIZE AS SERVICE LINES (ON 3" SERVICE, USE 4" GATE VALVE AND PIPE.)
3. SERVICE CLAMPS SHALL BE FACTORY COATED EPOXY WITH STAINLESS STEEL BAND.
4. MINIMUM DISTANCE BETWEEN TAPS AND MAINLINE FITTINGS, INCLUDING BELLS SHALL BE 18".
5. ALL METER SETS TO BE PLACED 4'-4" FROM BACK FACE OF CURB. IN AREAS WHERE NO CURB IS PRESENT. THE FRONT OF THE METER IS TO BE SET AS DIRECTED BY C.C.W.U.
6. TAPPING SADDLES 4" OR LARGER SHALL BE STAINLESS STEEL, HAVE A FULL CIRCUMFERENTIAL SEAL AND HAVE EITHER A STAINLESS STEEL OR DUCTILE IRON FLANGE. (SEE DETAIL C-10.0)
7. UPON ABANDONING OF SERVICE TAP, WATER UTILITY SHALL BE NOTIFIED SO THAT METER CAN BE REMOVED.
8. ENTITY REQUESTING ABANDONMENT SHALL REMOVE EXISTING METER BOX AND EXPOSE CORP STOP FOR SHUT-OFF. ALL PLUMBING SHALL BE DISCONNECTED FROM CORP AND PLUGGED AT BOTH ENDS. WATER UTILITY SHALL BE NOTIFIED FOR INSPECTION OF CORP ASSEMBLY PRIOR TO BACKFILLING.
9. TAPPING SADDLE MUST BE AT 45° ANGLE, EXCEPTIONS MUST BE APPROVED BY C.C.W.U.

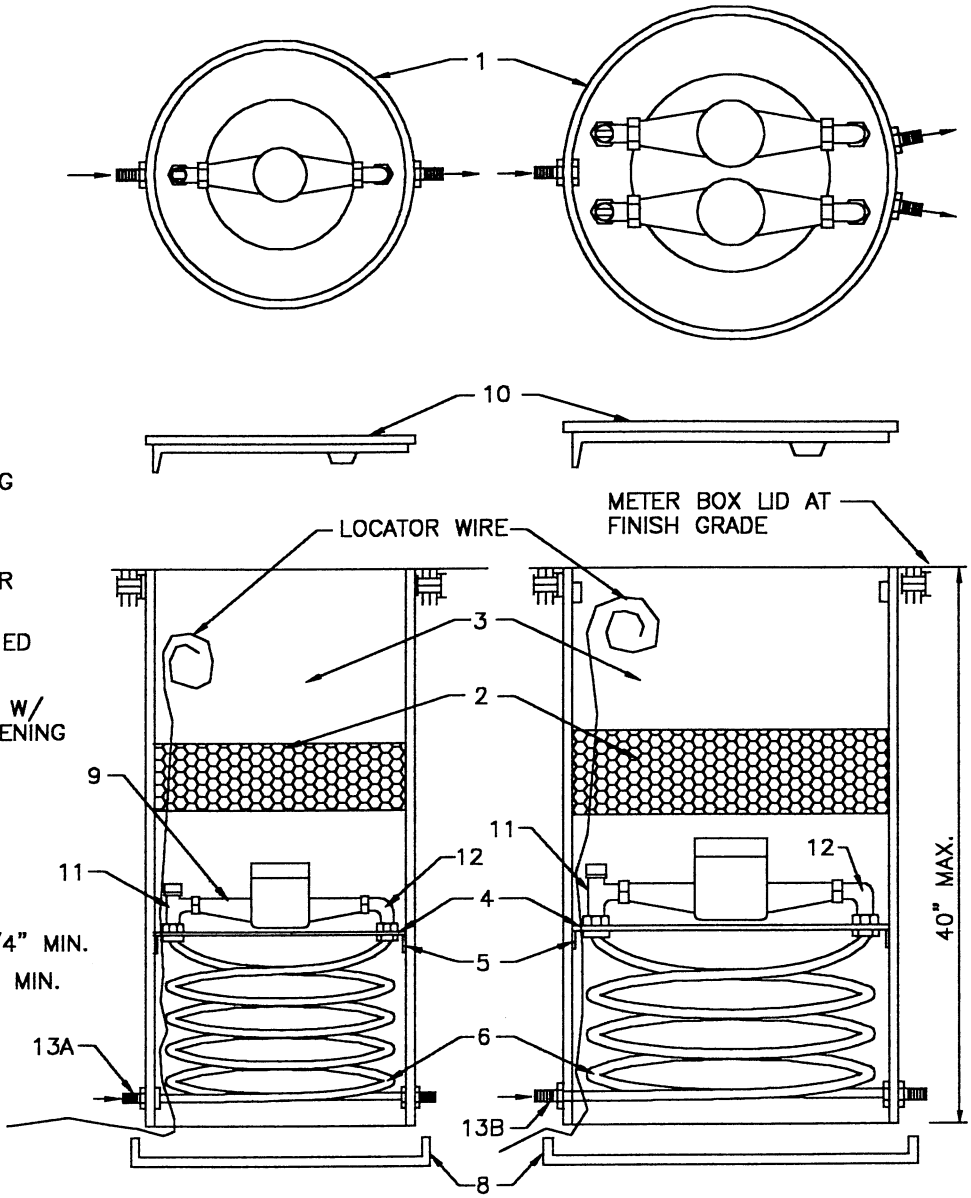
NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY	
			WATER SERVICE TAP	DRAWING NO. C-7.0	
				DATE 7/2001	PAGE 19

LEGEND

1. PVC BOX MIN. WALL THICKNESS 0.300"
2. INSULATION BLANKET
3. AIR SPACE
4. PLATFORM
5. PLATFORM SUPPORT
6. POLYBUTYLENE TUBING CLASS 250
7. I.P. THREADS
8. ALUMINUM BOTTOM OR APPROVED EQUAL
9. WATER METER SUPPLIED BY AGENCY
10. CAST IRON FLAT TOP W/ 2" TRANSPONDER OPENING
11. MUELLER VALVE OR APPROVED EQUAL (NO. 14265)
12. MUELLER ANGLE CHECK VALVE OR EQUAL

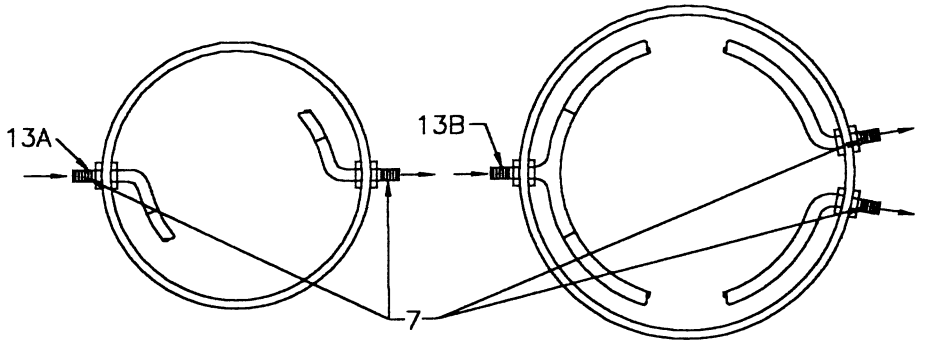
13A. INLET LINE TO BE 3/4" MIN.

13B. INLET LINE TO BE 1" MIN.



GENERAL NOTES

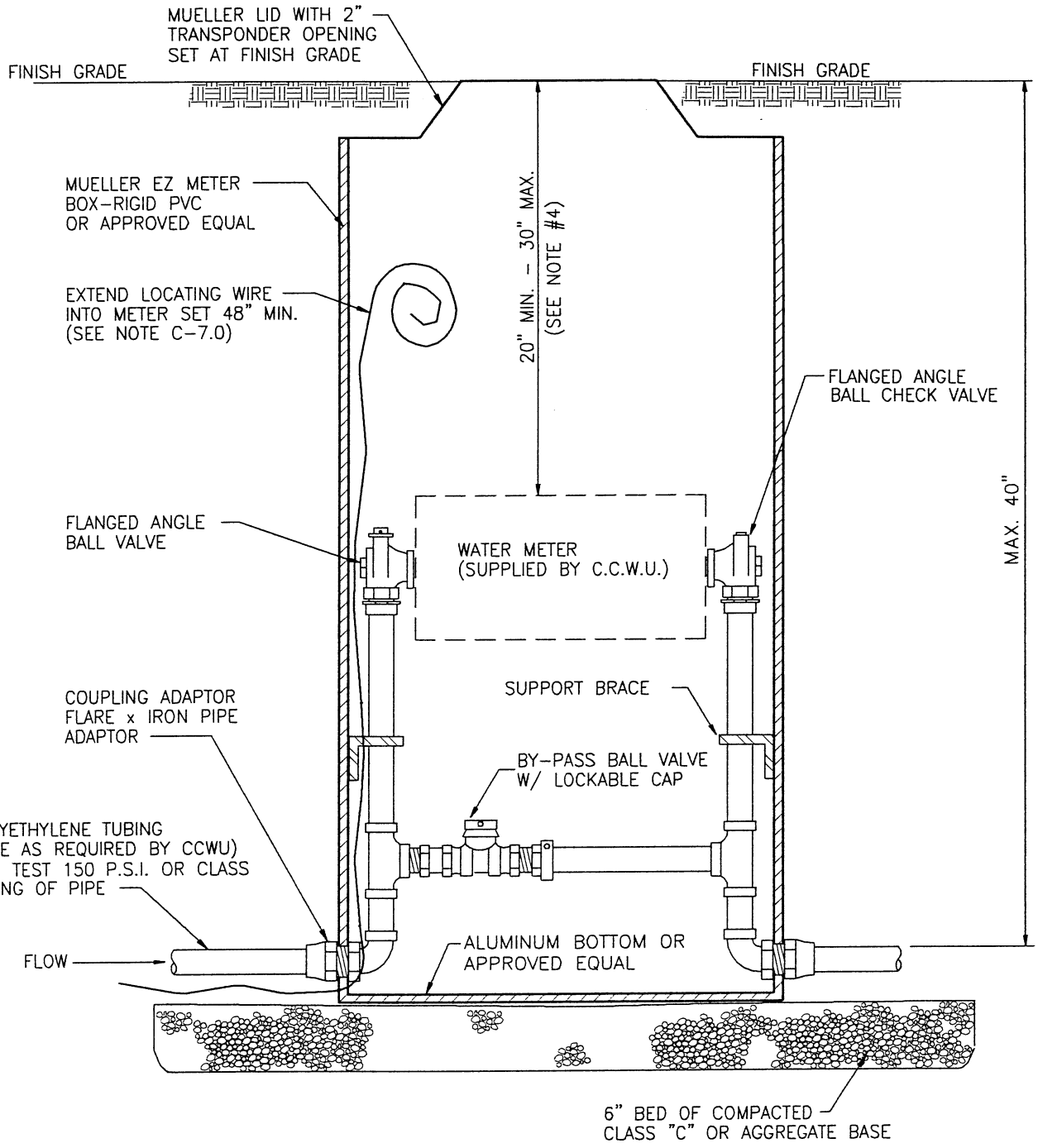
1) SERVICE LINE–SIZE AS SHOWN HEREON (3/4–1") WITH COUPLING ADAPTOR.
2) PIT SETTER EXTENSION SHALL ONLY BE USED UPON APPROVAL BY C.C.W.U.
3) RIGHT HAND SERVICE PIPE TO BE COLOR CODED OR STRIPED.



15" DIAMETER THERMAL–COIL METER BOX FOR 3/4" SINGLE PIT SETTER

18" DIAMETER THERMAL–COIL METER BOX FOR 3/4" DOUBLE, 1" SINGLE PIT SETTER

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY	
			3/4" DOUBLE AND SINGLE PIT SETTER, 1" SINGLE PIT SETTER	DRAWING NO. C–7.1	
				DATE 7/2001	PAGE 20



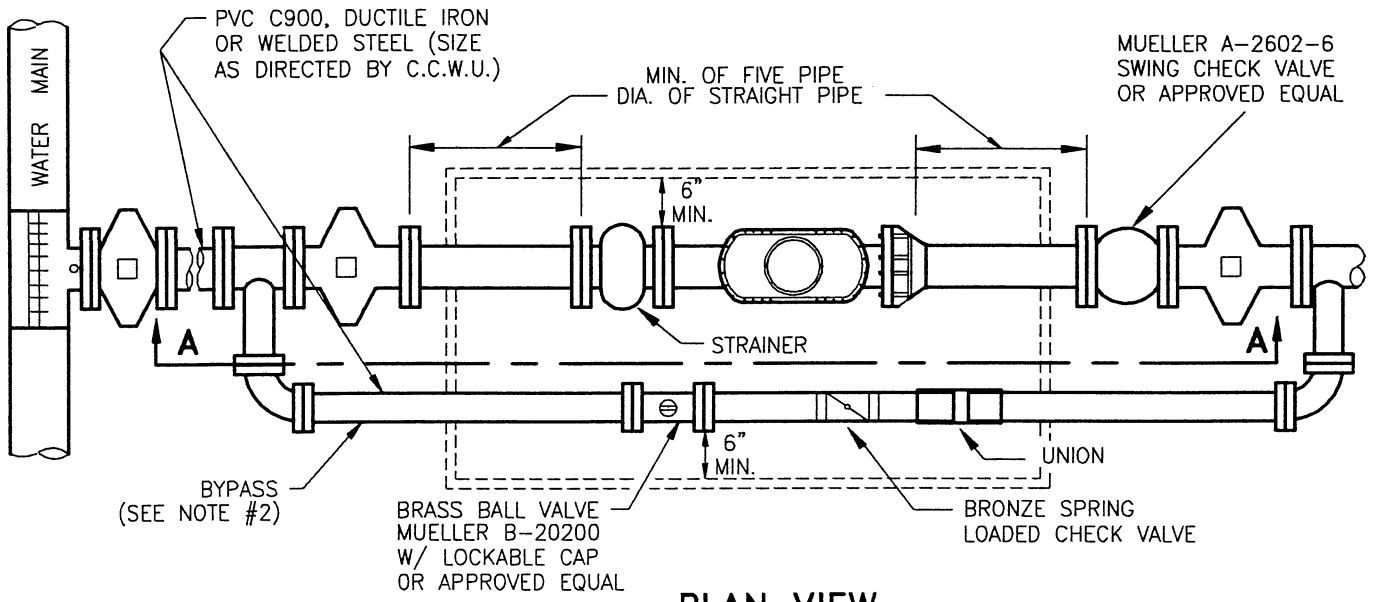
TYPICAL SECTION

NTS

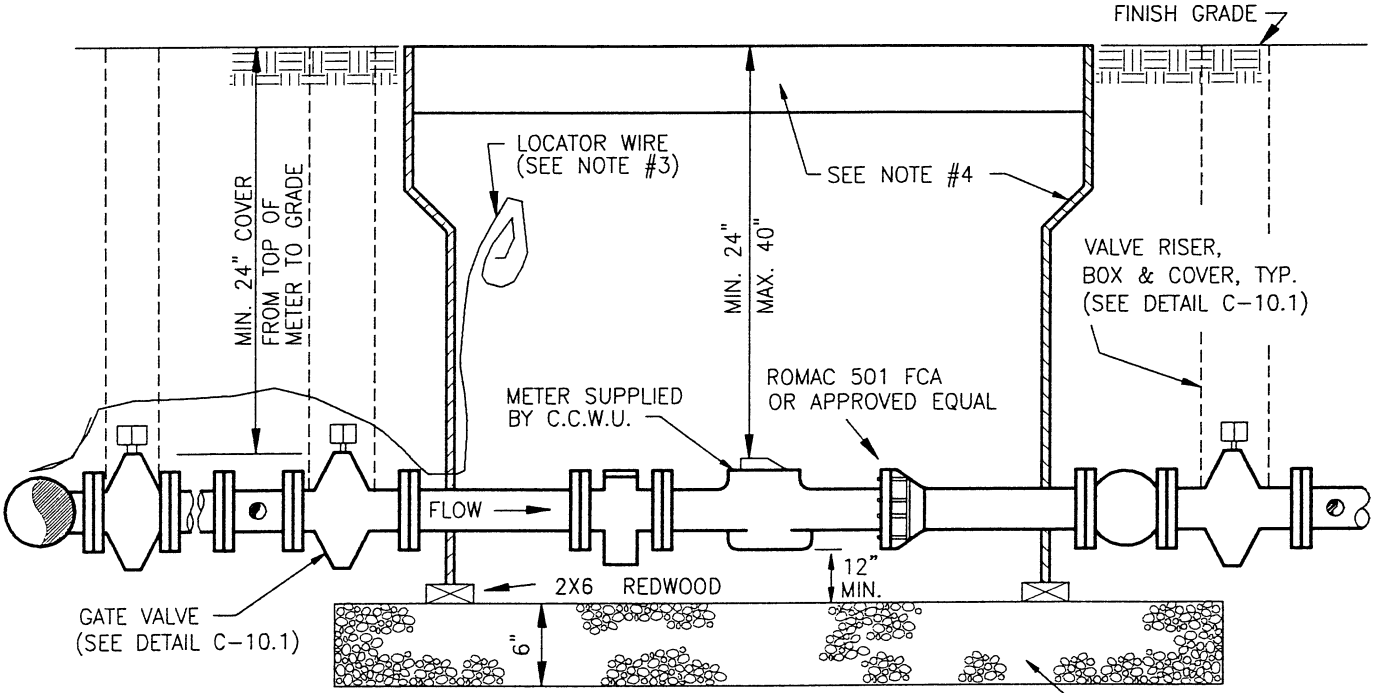
GENERAL NOTES

1. USE MUELLER 18" LOCKING LID WITH TRPL AND 27"x18" FRAME (OR APPROVED EQUAL).
2. USE MEULLER EZ METER BOX–RIGID PVC (OR APPROVED EQUAL).
3. USE 2" SPACER FLANGE KIT (USE WITH COMPOUND METER ONLY).
4. WATER METER WILL BE NO MORE THAN 30" FROM TOP OF LID AND NOT LESS THAN 24" FROM TOP OF LID.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY	
			1 ½"–2" PIT SETTER	DRAWING NO. C–7.2	
				DATE 7/2001	PAGE 21



PLAN VIEW
NTS

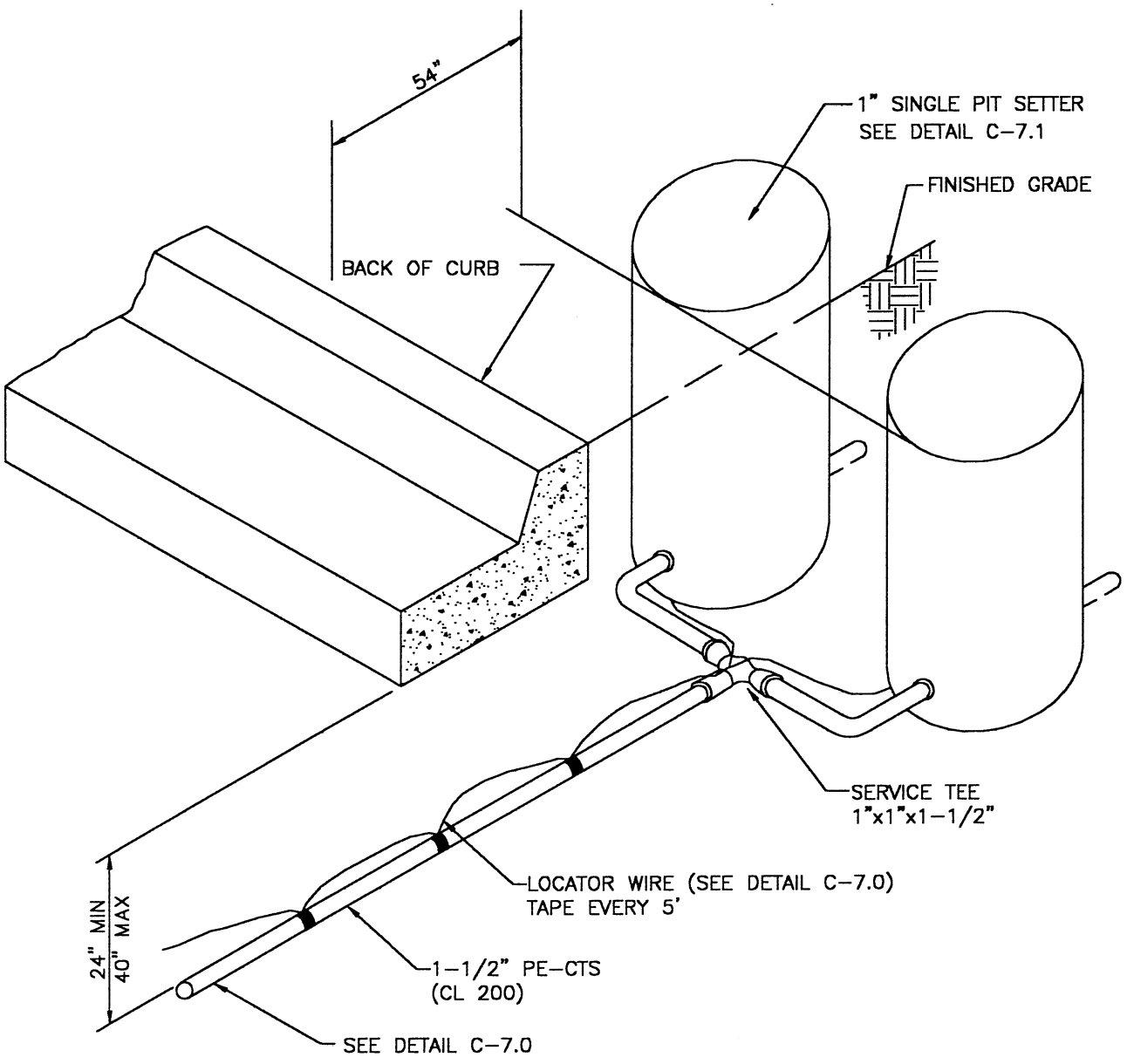


SECTION A-A
NTS

GENERAL NOTES

1. A 3" METER SET REQUIRES A 4" GATE VALVE.
2. 3" TO 4" METER SETS; USE 1-1/2" BY-PASS. 6" TO 8" METER SETS; USE 2" BY- PASS.
3. LOCATOR WIRE SHALL BE 12 GAUGE COATED SOLID COPPER WIRE, TAPED EVERY 5' TO PIPE; EXTEND FROM MAIN TO A MIN. OF 48" INTO BOX.
4. USE CHRISTY B52 BOX WITH M3 LID; USE A TRAFFIC RATED BOX WITH READING LID IN ALL TRAFFIC AREAS.
5. ALL STEEL SHALL BE PRIMED AND WRAPPED (MIN. 10 MILS.)

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY	
			3" TO 8" METER SET	DRAWING NO. C-7.3	
				DATE 7/2001	PAGE 22



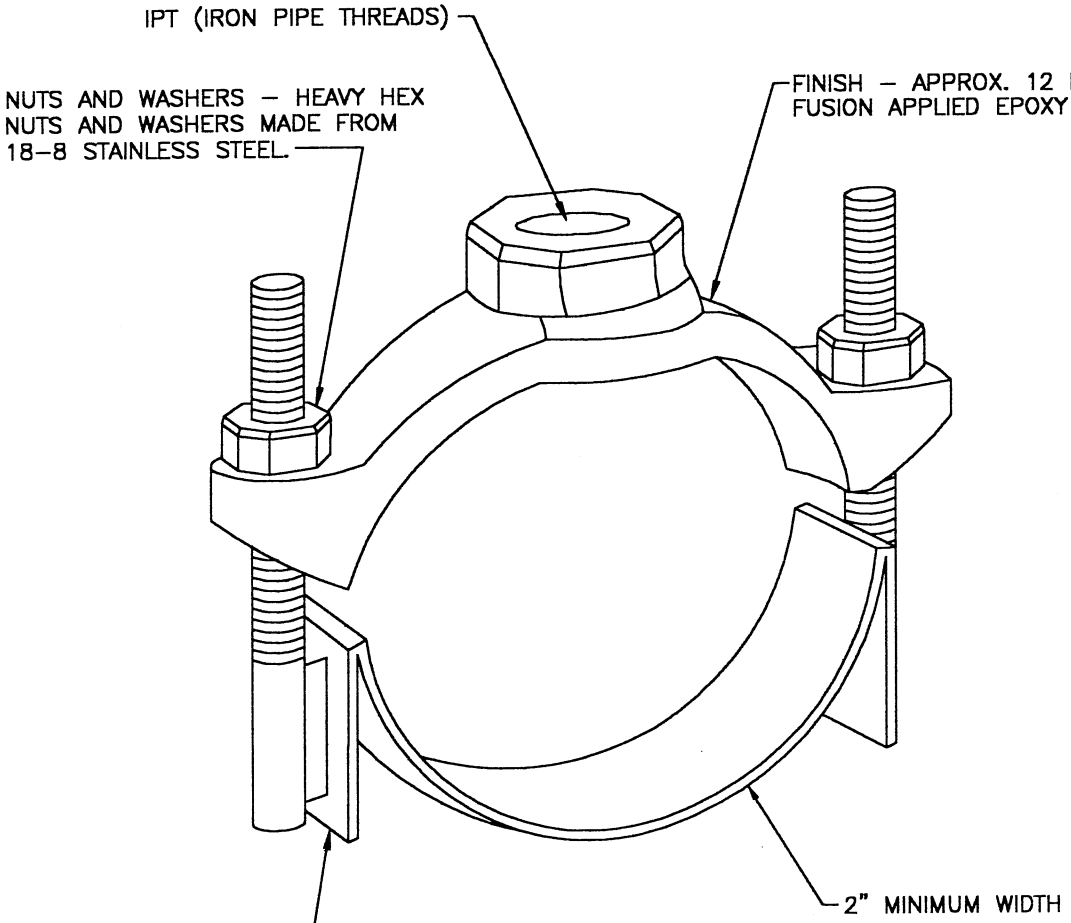
1" DUAL METER SET DETAIL

NTS

GENERAL NOTES

1. ALL SERVICE LINE COUPLING FITTINGS SHALL BE MUELLER CTS 110 COUP. X MIP OR APPROVED EQUAL.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY	
			1" DUAL METER SET	DRAWING NO. C-7.4	
				DATE 7/2001	PAGE 23

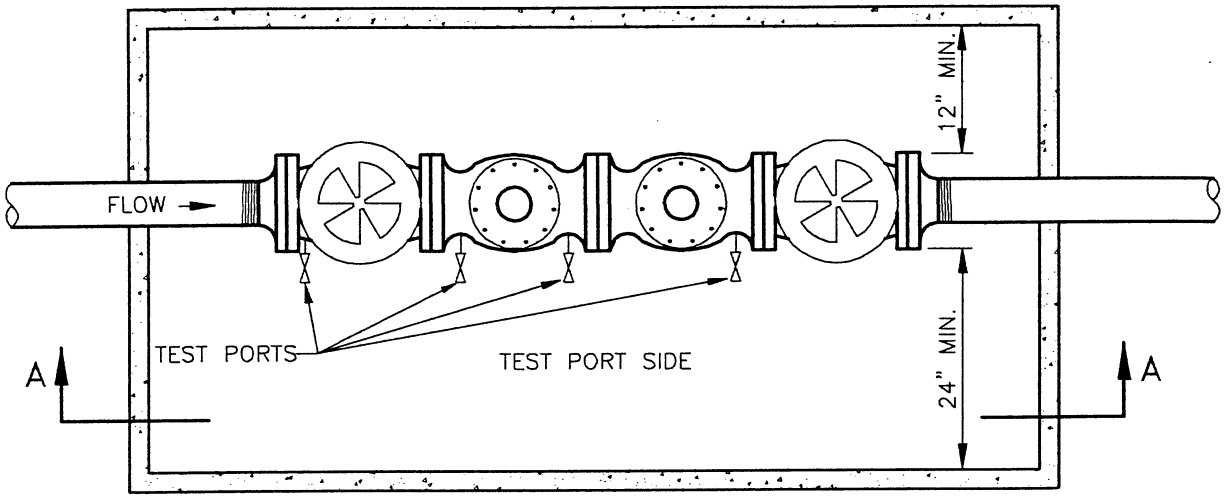


SERVICE SADDLE DETAIL
NTS

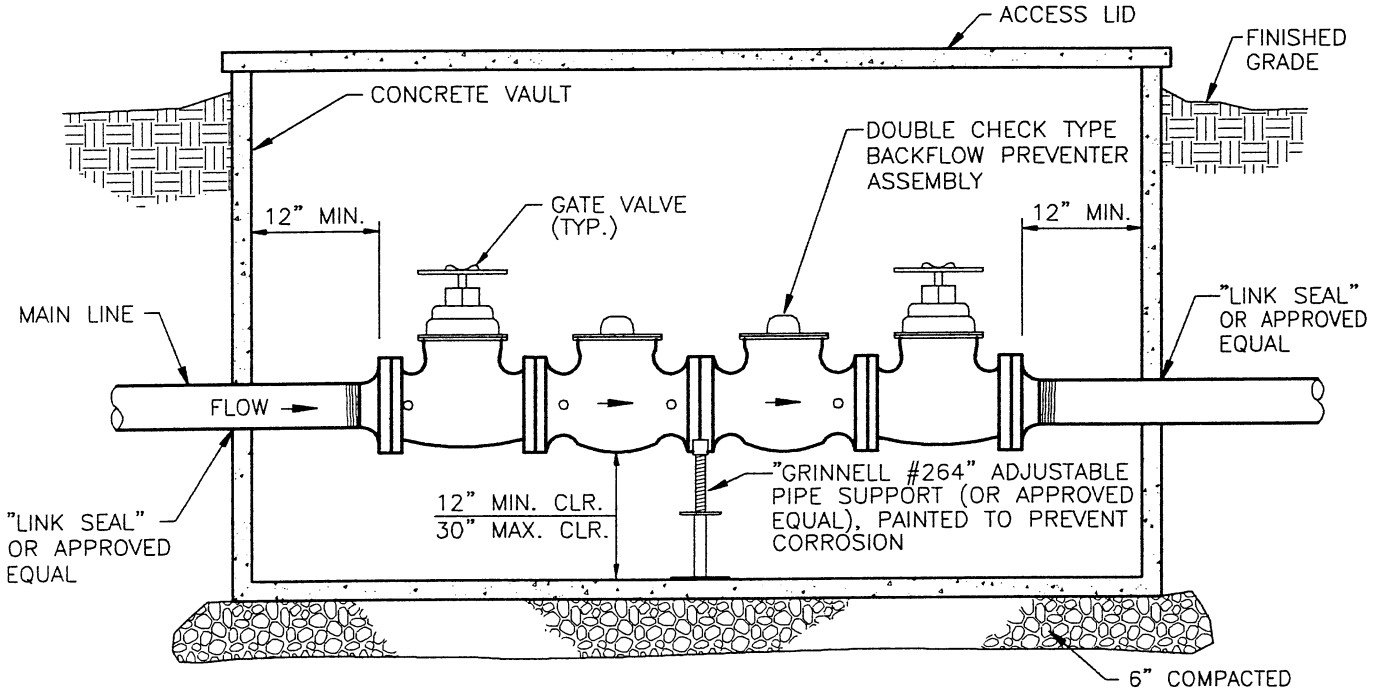
GENERAL NOTES

1. REFERENCE DETAIL C–7.0 FOR ADDITIONAL NOTES AND DETAILS.
2. SERVICE CLAMPS SHALL BE FACTORY COATED EPOXY WITH STAINLESS STEEL BAND.
3. TAPPING SADDLES 4" OR LARGER SHALL BE STAINLESS STEEL, HAVE A FULL CIRCUMFERENTIAL SEAL AND HAVE EITHER A STAINLESS STEEL OR DUCTILE IRON FLANGE. (SEE DETAIL C–10.0)
4. TAPPING SADDLE MUST BE AT 45° ANGLE, EXCEPTIONS MUST BE APPROVED BY CARSON CITY WATER UTILITIES.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY	
			SERVICE SADDLE DETAIL (3/4" TO 2")	DRAWING NO. C–7.5	
				DATE 7/2001	PAGE 24



PLAN
NTS

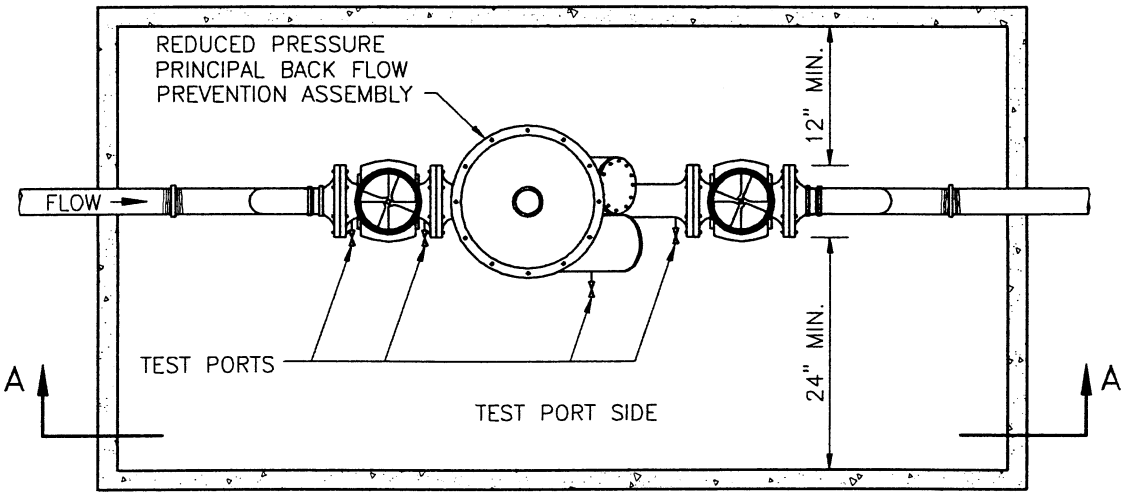


SECTION A–A
NTS

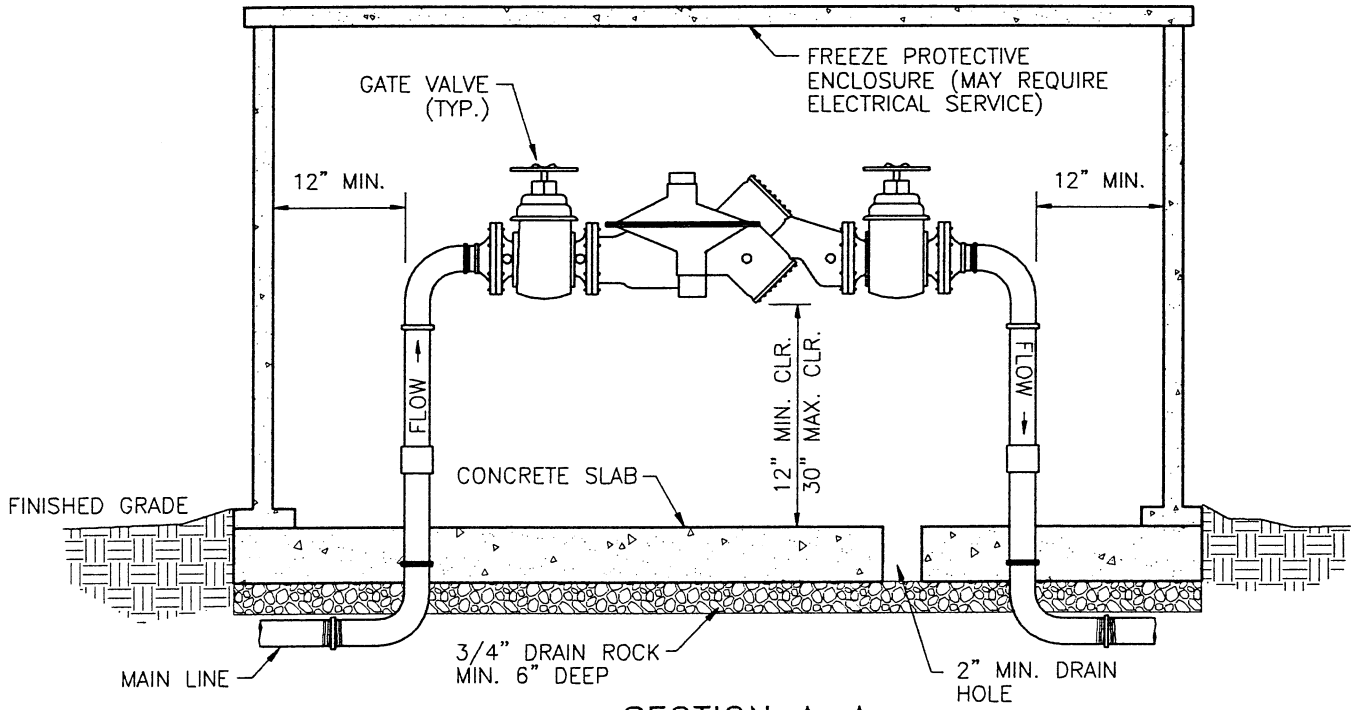
GENERAL NOTES

1. DOUBLE CHECK VALVE BACKFLOW ASSEMBLY SHALL BE APPROVED BY CARSON CITY UTILITIES AND TESTED BY AN APPROVED CERTIFIED BACKFLOW ASSEMBLY TESTER PRIOR TO APPROVAL OF ANY CERTIFICATE OF OCCUPANCY OR FINAL INSPECTION.
2. NO OUTLET TEE, TAP OR CONNECTION BETWEEN SERVICE CONNECTION AND BACKFLOW PREVENTION ASSEMBLY.
3. SUPPORTS REQUIRED FOR ASSEMBLIES 2-1/2" AND LARGER.
4. ELECTRICAL CONDUIT TO BE MOUNTED AND FASTENED ON THE SIDE WALLS OF THE VAULT AND SHALL NOT BE MOUNTED SO AS TO OBSTRUCT ACCESS TO MAINTAIN AND TEST ASSEMBLY.
5. VAULT MUST BE WATER TIGHT.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY	
			BACKFLOW PREVENTER ASSEMBLY (DOUBLE CHECK TYPE)	DRAWING NO. C-8.0	
				DATE 7/2001	PAGE 25



PLAN
NTS

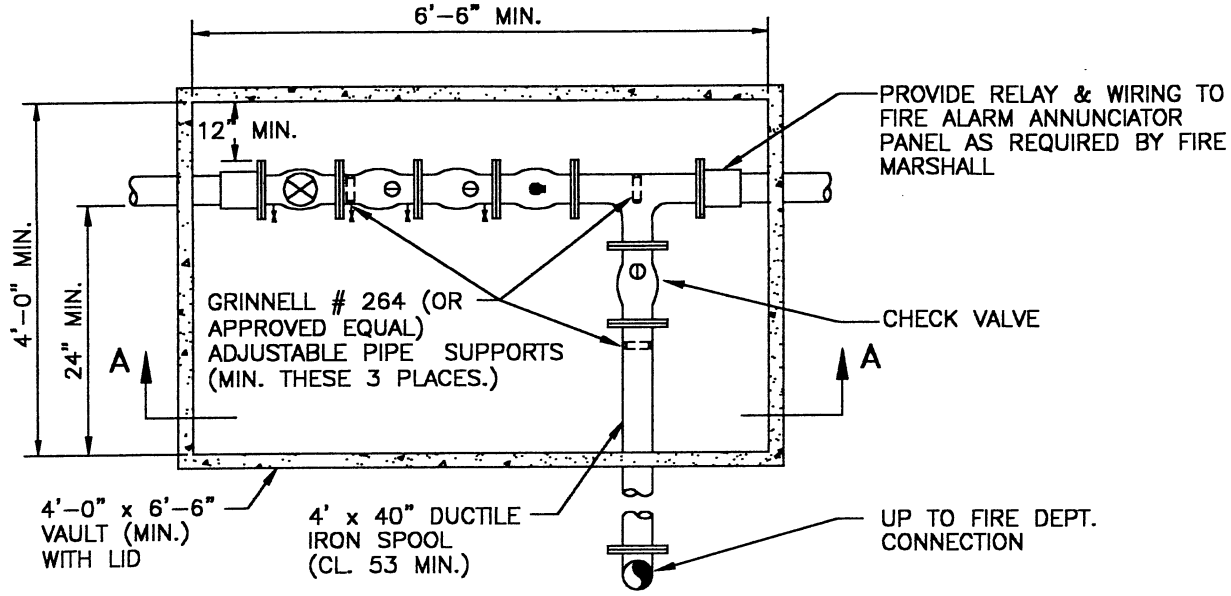


SECTION A–A
NTS

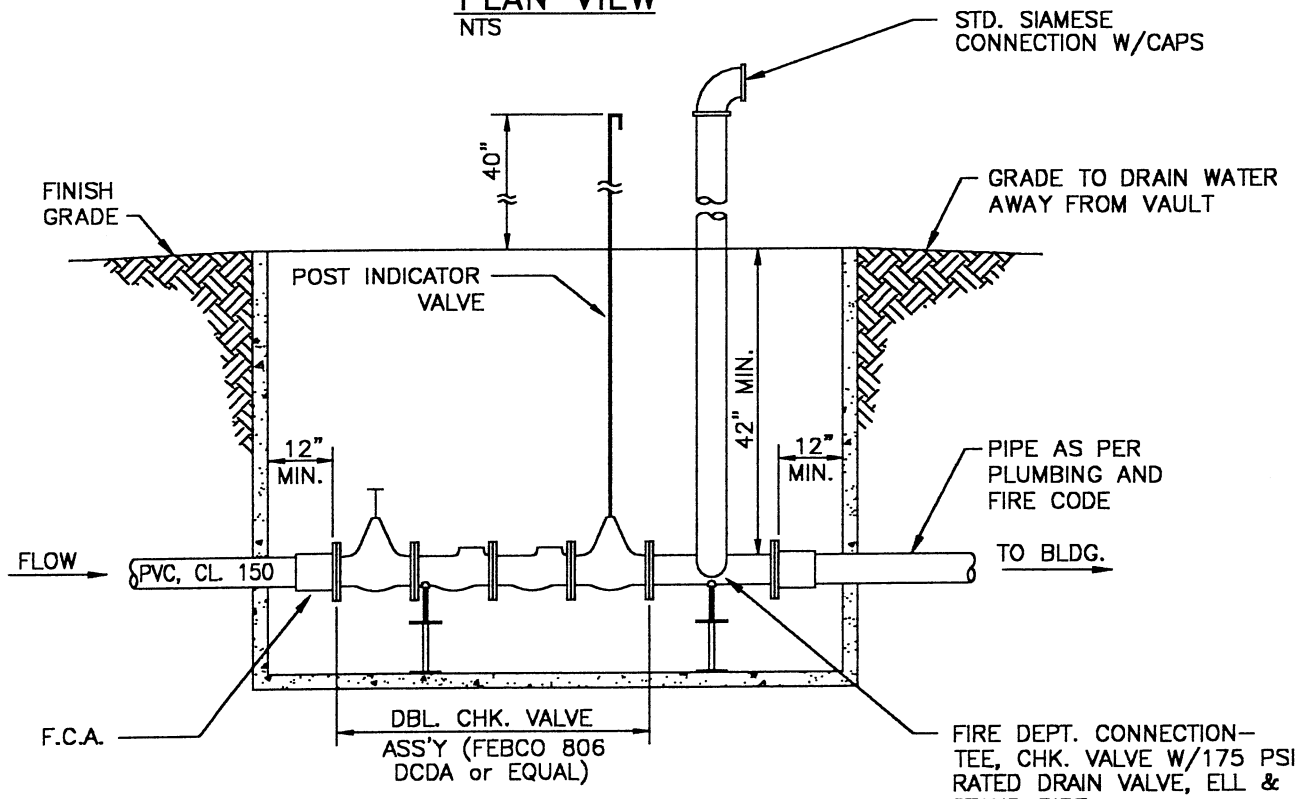
GENERAL NOTES

1. REDUCED PRESSURE PRINCIPLE BACKFLOW ASSEMBLY SHALL BE APPROVED BY CARSON CITY UTILITIES AND TESTED BY AN APPROVED CERTIFIED BACKFLOW ASSEMBLY TESTER PRIOR TO APPROVAL OF ANY CERTIFICATE OF OCCUPANCY OR FINAL INSPECTION.
2. NO OUTLET TEE, TAP OR CONNECTION BETWEEN SERVICE CONNECTION AND BACKFLOW PREVENTION ASSEMBLY.
3. INSTALL ADEQUATE DRAINAGE, REFER TO RELIEF VALVE DISCHARGE RATE FOR SIZING.
4. SUPPORTS REQUIRED FOR ASSEMBLIES 2–1/2" AND LARGER.
5. LOCATE DIRECTLY BEHIND WATER METER, ALL OTHER LOCATIONS REQUIRE PRIOR APPROVAL BY THE UTILITIES DEPARTMENT.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY	
			BACKFLOW PREVENTER ASSEMBLY (REDUCED PRESSURE TYPE)	DRAWING NO. C–8.1	
				DATE 7/2001	PAGE 26



PLAN VIEW
NTS

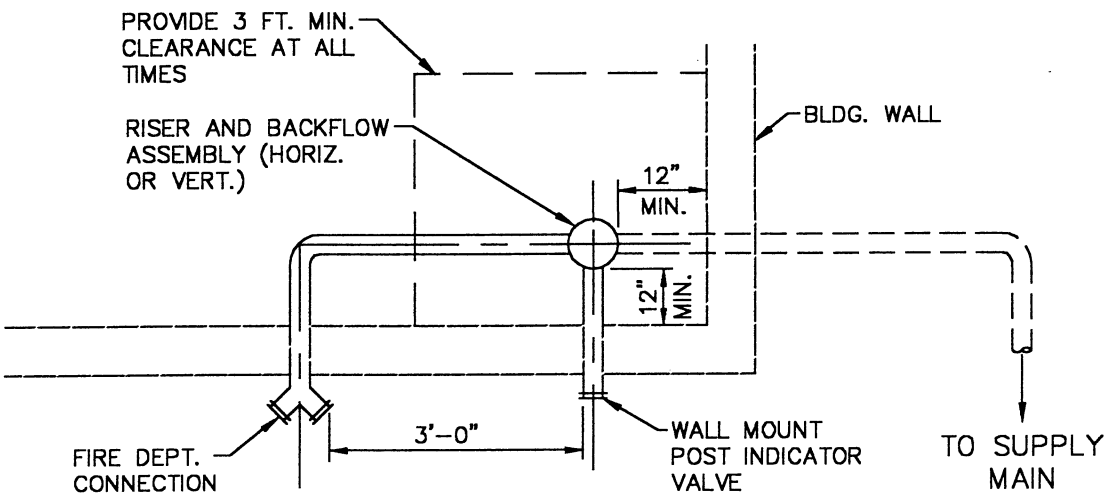


SECTION A-A
NTS

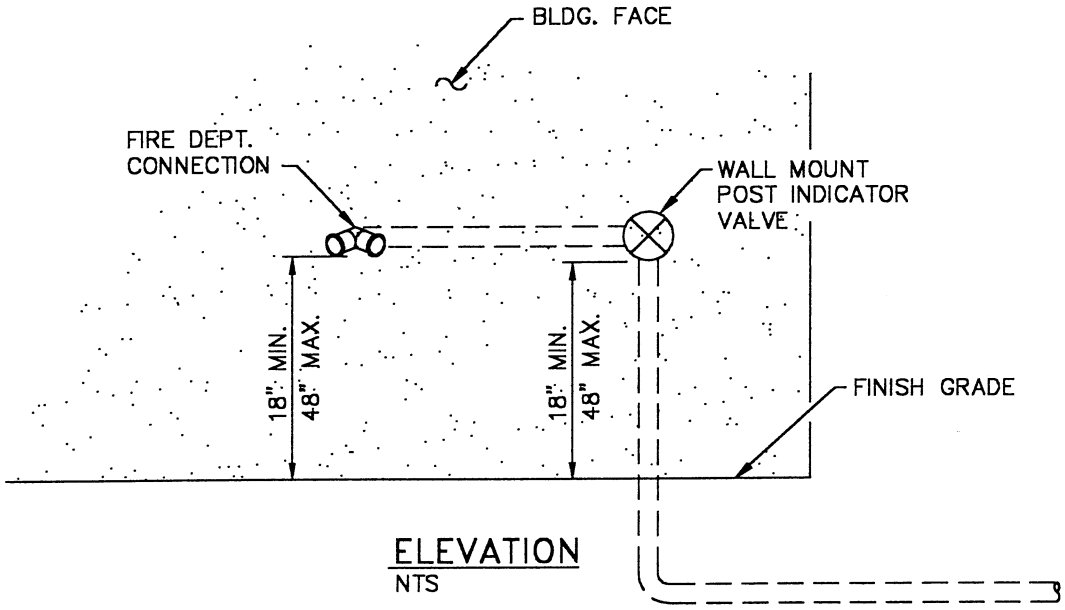
GENERAL NOTES

1. POST INDICATOR VALVE ASSEMBLY IS SCHEMATIC. FIRE SPRINKLER CONTRACTOR TO VERIFY LOCAL FIRE AGENCY REQUIREMENTS AND MODIFY IF NECESSARY. WITH APPROVAL OF FIRE MARSHALL.
2. VAULT MUST BE WATER TIGHT.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY	
			BELOW GRADE DOUBLE CHECK W/ POST INDICATOR VALVE AND FIRE DEPT. CONNECTION	DRAWING NO. C-8.2	
				DATE 7/2001	PAGE 27



PLAN
NTS

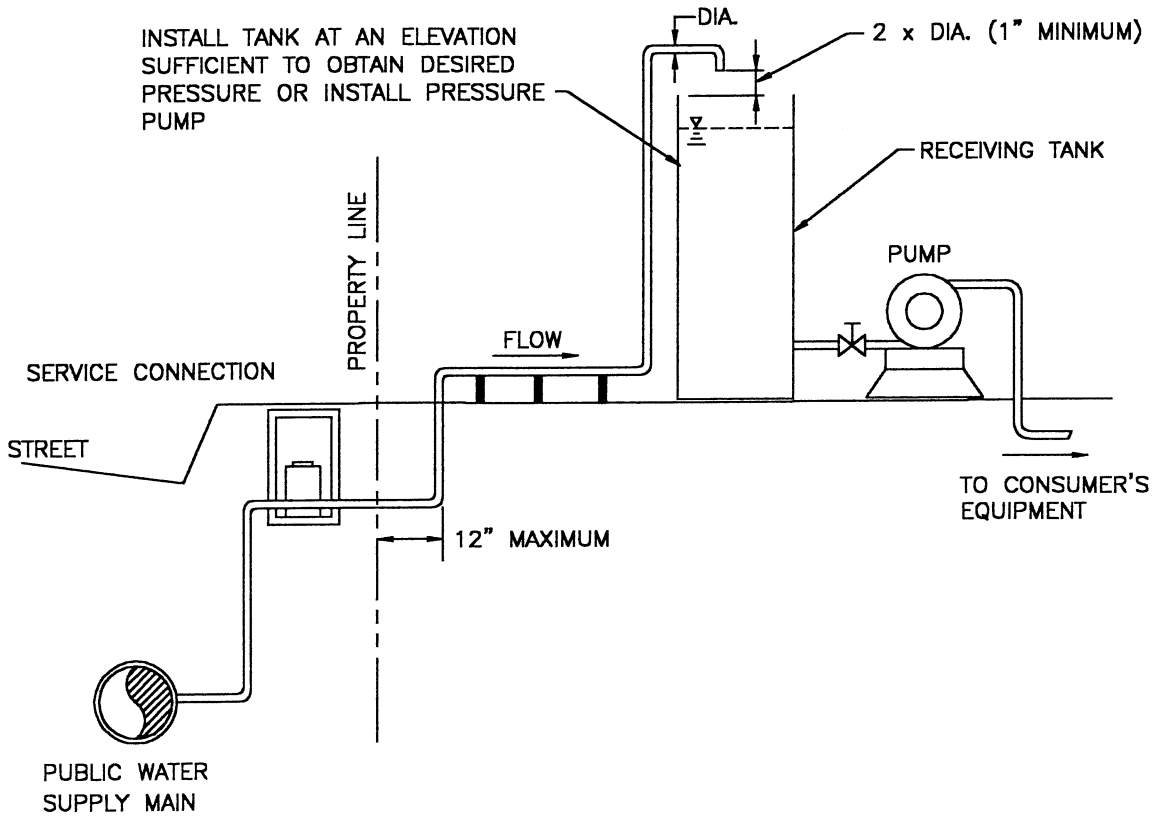


ELEVATION
NTS

GENERAL NOTES

1. BACKFLOW ASSEMBLY SHALL BE APPROVED BY CARSON CITY UTILITIES AND TESTED BY AN APPROVED CERTIFIED BACKFLOW ASSEMBLY TESTER PRIOR TO APPROVAL OF ANY CERTIFICATE OF OCCUPANCY.
2. NO OUTLET TEE, TAP OR CONNECTION BETWEEN MAIN CONNECTION AND BACKFLOW PREVENTION ASSEMBLY.
3. BACKFLOW ASSEMBLY VALVES AND TEST COCKS MUST BE ACCESSIBLE FOR TESTING/MAINTENANCE.
4. INSTALL ADEQUATE DRAINAGE, REFER TO VALVE DISCHARGE RATE FOR SIZING.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY	
			INTERIOR DOUBLE CHECK W/POST INDICATOR VALVE AND FIRE DEPT. CONNECTION	DRAWING NO. C-8.3	
				DATE 7/2001	PAGE 28



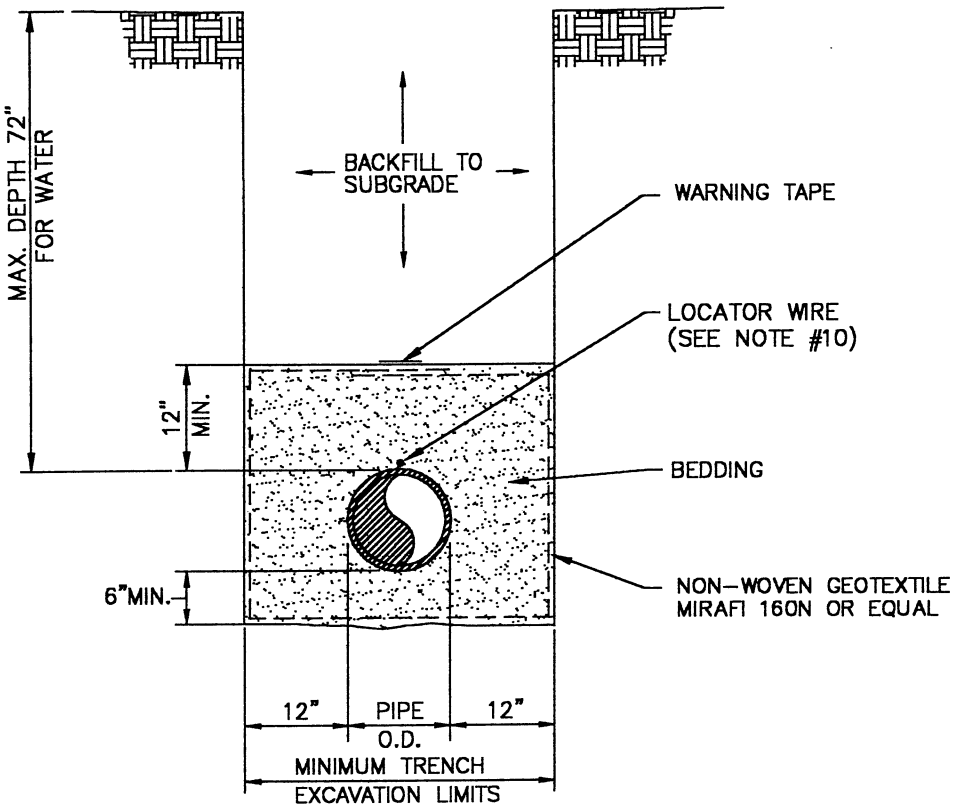
TYPICAL AIR GAP SECTION

NTS

GENERAL NOTES

1. COORDINATE INSTALLATION WITH CARSON CITY WATER UTILITIES FOR APPROVAL.
2. NO OUTLET, TEE, TAP OR CONNECTION BETWEEN SERVICE CONNECTION AND RECEIVING TANK.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY	
			INSTALLATION FOR AIR-GAP SEPARATION	DRAWING NO. C-8.4	
				DATE 7/2001	PAGE 29



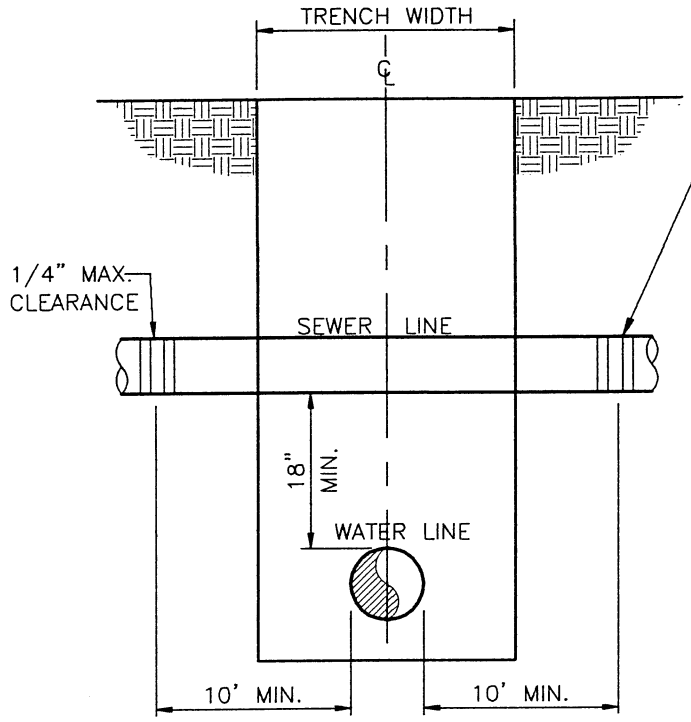
TYPICAL TRENCH SECTION

NTS

GENERAL NOTES

1. WATER DENSIFIED BACKFILL AND TUNNELING SHALL BE BY SPECIAL PROVISION ONLY.
2. BACKFILL SHALL MEET THE REQUIREMENTS FOR CLASS "E" BACKFILL AS SHOWN IN SUBSECTION 200.03.06 OF THE STANDARD SPECIFICATIONS OR AS SPECIFIED BY THE UTILITY DEPARTMENT MATERIAL SHALL BE PLACED IN LIFT THICKNESS SPECIFIED IN SUBSECTION 305.10 OF THE STANDARD SPECIFICATIONS AND DENSIFIED TO 90% RELATIVE COMPACTION.
3. BEDDING SHALL MEET THE REQUIREMENTS FOR CLASS "A" BACKFILL AS SHOWN IN SUB-SECTION 200.03.02 OF THE STANDARD SPECIFICATIONS OR AS SPECIFIED BY THE UTILITY DEPARTMENT. MATERIAL SHALL BE DENSIFIED TO 90% RELATIVE COMPACTION.
4. BEDDING FOR GRAVITY SEWER LINES MAY BE CLASS "C" BACKFILL. CLASS "C" BACKFILL NOT TO BE USED FOR PRESSURE PIPE APPLICATIONS. BEDDING SHALL EXTEND NO HIGHER THAN A POINT 6" ABOVE FREE GROUNDWATER.
5. CLASS "C" BACKFILL WITH FILTER FABRIC MAY BE USED TO SUPPORT BEDDING IN HIGH GROUNDWATER OR UNSTABLE SOIL CONDITIONS WITH THE APPROVAL OF THE UTILITY DEPARTMENT.
6. FOR TRENCHES IN ROADWAY SECTION, SEE TRENCH PATCH DETAILS (SEE DWG. No. 1-16).
7. FOR THE PURPOSE OF PAYMENT; EXCAVATION AND BACKFILL QUANTITIES ARE BASED ON THESE STANDARD DRAWINGS, AND NO ADDITIONAL COMPENSATION WILL BE MADE. SHORING OR SLOPED CUT SLOPES MAY BE NECESSARY, BUT THERE WILL BE NO ADDITIONAL PAYMENT ALL EXCAVATIONS SHALL CONFORM TO THE LATEST O.S.H.A. REQUIREMENTS.
8. PLACE WARNING TAPE 1 FT. ABOVE WATER, RECLAIMED WATER AND SEWER PIPE.
9. WATER STOPS SHALL BE USED IN HIGH GROUNDWATER CONDITIONS PER DETAIL C-6.5.
10. LOCATOR WIRE SHALL BE 12 GAUGE COATED SOLID COPPER WIRE. SPLICES SHALL BE SOLDERED OR CONNECTED BY WIRE NUTS AND DOUBLE WRAPPED WITH U/L LISTING ELECTRICAL TAPE. FOR WATER, SEWER FORCE MAINS AND RECLAIMED WATER INSTALLATIONS ONLY.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY	
			WATER, RCW & SEWER LINE	DRAWING NO. C-9.0	
			TRENCH EXCAVATION AND BACKFILL	DATE 7/2001	PAGE 30



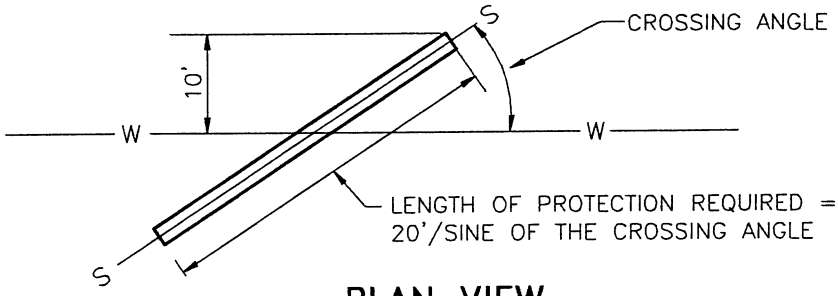
CROSSING SANITARY SEWER
NTS

FOR NEW WATER LINE CONSTRUCTION

WHEN SEWER OR STORM DRAIN LINE IS ABOVE THE WATER LINE, INSTALL MECHANICAL JOINTS ON THE WATER LINE AT ALL CONNECTIONS WITHIN 10 FT. EACH SIDE OF THE SEWER OR STORM DRAIN LINE OR ENCASE WATER LINE WITH 4" OF LIGHT-WEIGHT CONCRETE 10' EACH SIDE OF THE SEWER LINE.

FOR NEW SEWER LINE CONSTRUCTION

WHEN SEWER OR STORM DRAIN LINE IS ABOVE THE WATER LINE, REPLACE 20 FT. OF THE SEWER LINE (10 FT. EA. SIDE OF THE WATER LINE) WITH ONE OF THE FOLLOWING; DUCTILE IRON PIPE, PVC, C900 (SEE NOTE #2) OR ENCASE THE SEWER LINE WITH 4" OF LIGHT-WEIGHT CONCRETE.

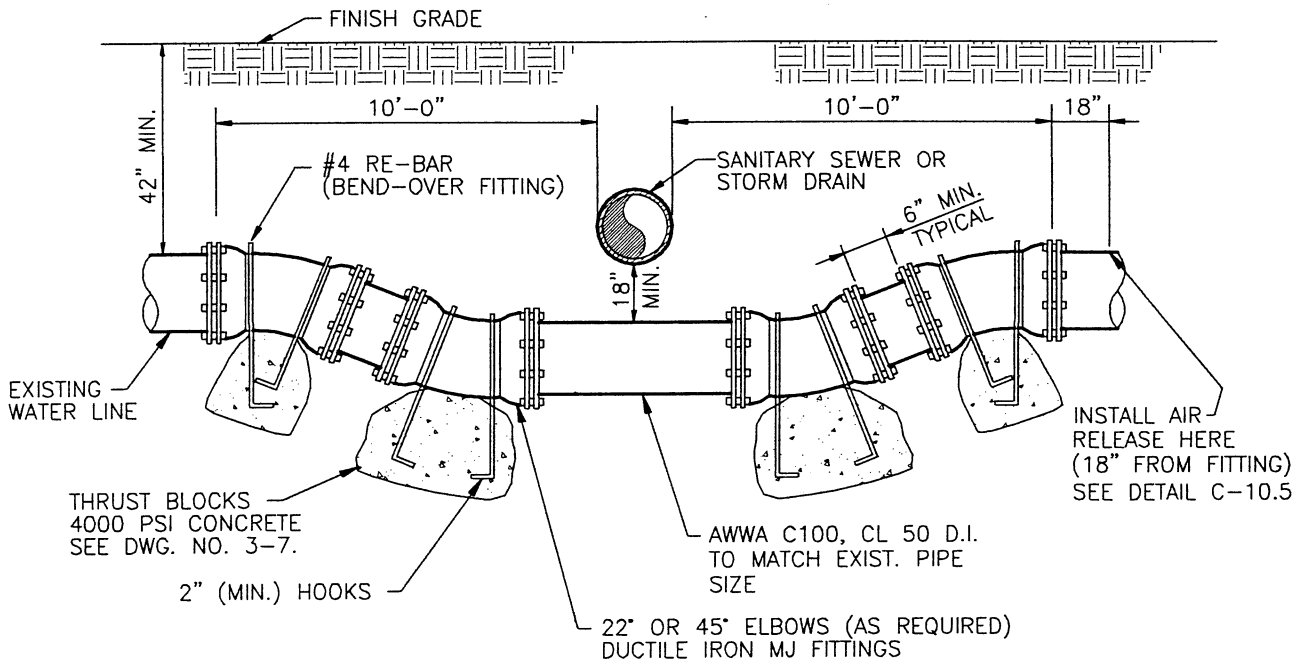


PLAN VIEW
NTS

GENERAL NOTES

1. IN ALL CASES, PROVIDE 18" MIN. OF VERTICAL SEPARATION BETWEEN WATER, SEWER AND STORM DRAIN LINES. WHEN SEPARATION CAN NOT BE OBTAINED, CONTACT CARSON CITY UTILITIES INSPECTOR FOR DIRECTION. IN CASES WHERE WATER LINES MUST BE ROUTED UNDER SEWER OR STORM DRAIN LINES, FOLLOW STANDARD DETAIL NO. C-92. IF TRENCH WIDTH EXCEEDS 36", THEN DETAIL DRAWING NO. 2-17 (311) SEC. 2 SHALL APPLY.
2. PVC TO BE USED ONLY WHEN EXIST. LINE IS PVC.
3. IF WATER LINE IS 18" OR GREATER ABOVE THE SEWER LINE OR STORM DRAIN LINE, NO SPECIAL CONSTRUCTION IS REQUIRED.
4. ALL PROVISIONS ABOVE SHALL APPLY FOR CROSSINGS OTHER THAN 90° TO THE POINT AT WHICH THE 10" SEPARATION BETWEEN THE WATER AND SEWER OR STORM DRAIN LINE IS ACHIEVED (10°/SINE OF CROSSING ANGLE).
5. FOR PURPOSES OF SEPARATIONS AND PROTECTION OF THE WATER SUPPLY, A RECLAIMED WATER LINE SHALL BE CONSIDERED A SEWER LINE.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY	
1	NOTE 1	7/99	SANITARY SEWER AND STORM DRAIN CROSSINGS	DRAWING NO. C-9.1	
				DATE 7/2001	PAGE 31



TYPICAL CROSSING DETAIL

NTS

GENERAL NOTES

1. WATER LINES 12" AND LARGER SHALL REQUIRE SPECIAL DESIGN, AND APPROVAL BY CARSON CITY UTILITIES DEPARTMENT.
2. THE ASSEMBLY ABOVE WILL BE INSTALLED USING DUCTILE IRON MECHANICAL JOINT FITTINGS WITH RESTRAINING GLANDS.
3. ALL BOLTS TO BE TAR COATED.
4. UPON APPROVAL OF C.C.W.U., THE ABOVE ASSEMBLY MAY BE REPLACED WITH A WELDED STEEL "SPOOL" OF EQUIVALENT DIAMETER, PRIMED AND WRAPPED (10 MILS MIN.). CONNECT TO EXISTING LINES USING MECHANICAL JOINTS. STEEL SPOOL SHALL BE CONSTRUCTED BY A CERTIFIED WELDER AND PRESSURE CHECKED IN ACCORDANCE WITH SPECIFICATIONS. ALL BOLTS TO BE TAR COATED.
5. CONCRETE FOR THRUST BLOCKS SHALL NOT INTERFERE WITH THE REMOVAL OF BOLTED ASSEMBLIES.
6. AIR-RELEASE TO BE INSTALLED ON BOTH SIDES OF CROSSING. (18" MIN. FROM ANY FITTING). ONE AIR RELEASE MAY BE USED WITH ONE LINE TO EACH SIDE OF CROSSING. SEE DETAIL C-10.5.
7. ROUTING WATER LINE OVER SEWER LINE OR "ROPING" UNDER SEWER LINE REQUIRES APPROVAL BY CARSON CITY UTILITIES DEPARTMENT.
8. FOR PURPOSES OF SEPARATION AND PROTECTION OF THE WATER SUPPLY, RECLAIMED WATER SHALL BE CONSIDERED A SEWER LINE.

NO.	REVISION	DATE
1	REV. NOTES	9/00

STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION

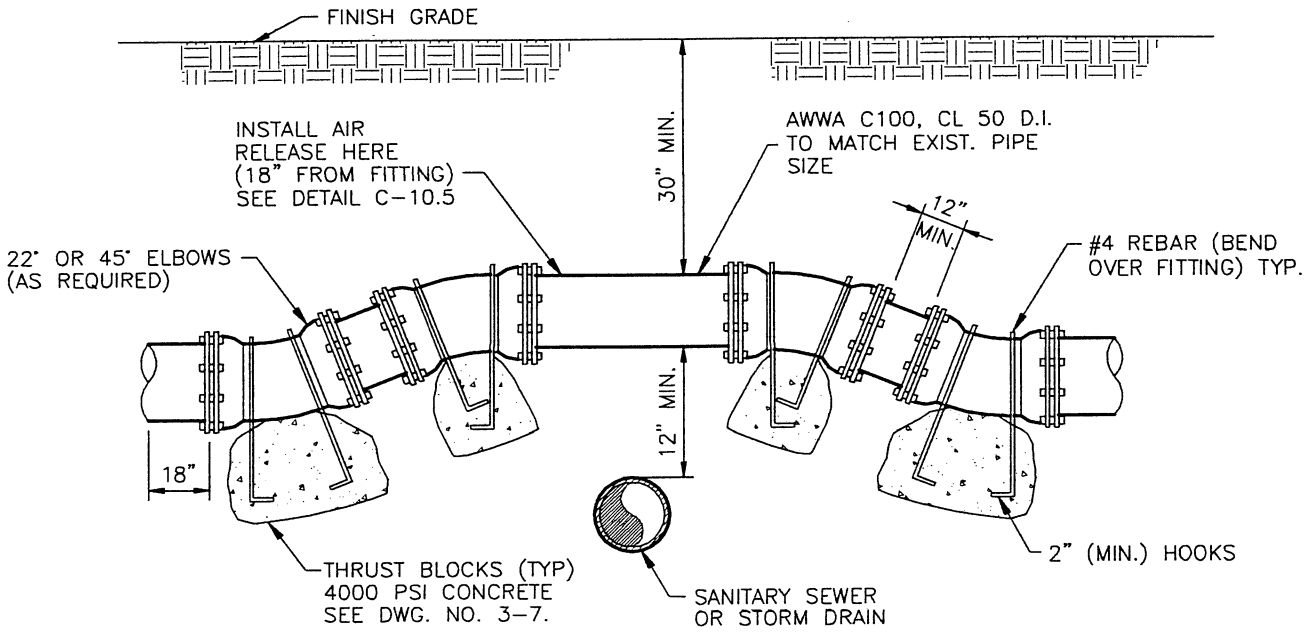
LOWERING WATER MAINS

SECTION
CARSON CITY

DRAWING NO.
C-9.2

DATE
7/2001

PAGE
32



TYPICAL CROSSING DETAIL

NTS

GENERAL NOTES

1. WATER LINES 12" AND LARGER SHALL REQUIRE SPECIAL DESIGN, AND APPROVAL BY CARSON CITY UTILITIES DEPARTMENT.
2. THE ASSEMBLY ABOVE WILL BE INSTALLED USING DUCTILE IRON MECHANICAL JOINT FITTINGS WITH RESTRAINING GLANDS.
3. ALL BOLTS TO BE TAR COATED.
4. UPON APPROVAL OF C.C.W.U., THE ABOVE ASSEMBLY MAY BE REPLACED WITH A WELDED STEEL "SPOOL" OF EQUIVALENT DIAMETER, PRIMED AND WRAPPED (10 MILS MIN.). CONNECT TO EXISTING LINES USING MECHANICAL JOINTS. STEEL SPOOL SHALL BE CONSTRUCTED BY A CERTIFIED WELDER AND PRESSURE CHECKED IN ACCORDANCE WITH SPECIFICATIONS. ALL BOLTS TO BE TAR COATED.
5. CONCRETE FOR THRUST BLOCKS SHALL NOT INTERFERE WITH THE REMOVAL OF BOLTED ASSEMBLIES.
6. AIR-RELEASE TO BE INSTALLED ON BOTH SIDES OF CROSSING. (18" MIN. FROM ANY FITTING). ONE AIR RELEASE MAY BE USED WITH ONE LINE TO EACH SIDE OF CROSSING. SEE DETAIL C-10.5.
7. ROUTING WATER LINE OVER SEWER LINE OR "ROPING" UNDER SEWER LINE REQUIRES APPROVAL BY CARSON CITY UTILITIES DEPARTMENT.
8. FOR PURPOSES OF SEPARATION AND PROTECTION OF THE WATER SUPPLY, RECLAIMED WATER SHALL BE CONSIDERED A SEWER LINE.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY	
			RAISING WATER MAINS	DRAWING NO. C-9.3	
				DATE 7/2001	PAGE 33

MATERIAL SPECIFICATIONS

SHELL: 304 STAINLESS STEEL

LUGS: 304 STAINLESS STEEL

BOLTS, WASHERS AND NUTS: NC ROLLED THREAD 304 STAINLESS STEEL, 5/8" DIAMETER.

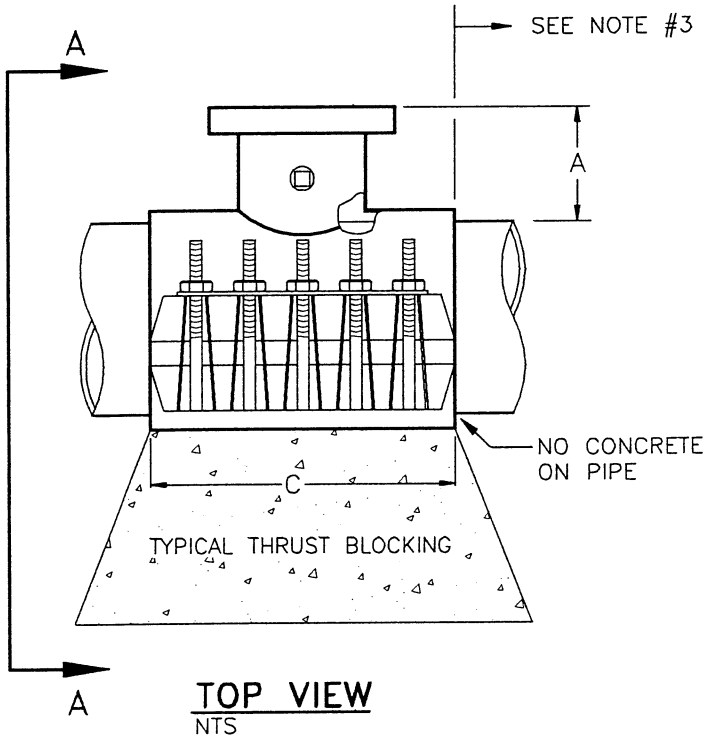
GASKETS: VIRGIN SBR COMPOUNDED FOR WATER SERVICE. ASTM D2000-80MA 4AA607 FULL GASKET. 360° PIPE COVERAGE 150 PSI WORKING PRESSURE.

FLANGE: 304 STAINLESS STEEL OR HIGH TENSILE DUCTILE (NODULAR) IRON, ASTM A536-80, GRADE 65-45-12.

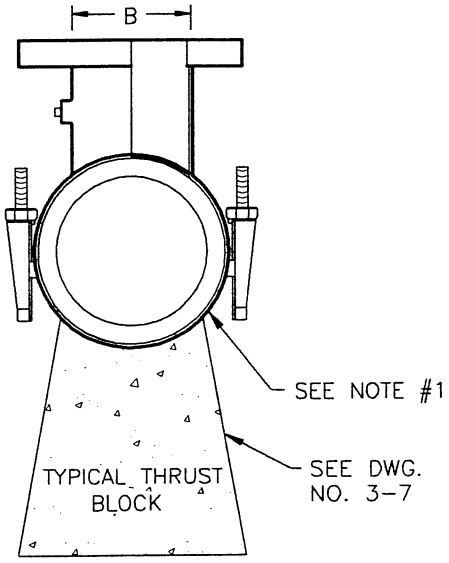
NOM. FLANGE	A	B	C	NO. BOLTS
4	4	5-1/32	16	10
6*	4-1/2	7-1/32	16	10
8*	4	9-1/32	20	14
10	5-1/2	11-1/32	24	16
12**	6-1/2	13-1/32	30	30

*TAPPING SLEEVES IN THE 24" NOMINAL PIPE SIZE RANGE WITH 6" OR 8" FLANGES ARE 24" LONG (C-DIMENSION) AND HAVE 24" BOLTS.

**TAPPING SLEEVES IN THE 12" & 14" NOMINAL PIPE SIZE RANGE W/ 12" FLANGE ARE 24" LONG AND HAVE 24 BOLTS.



TOP VIEW
NTS

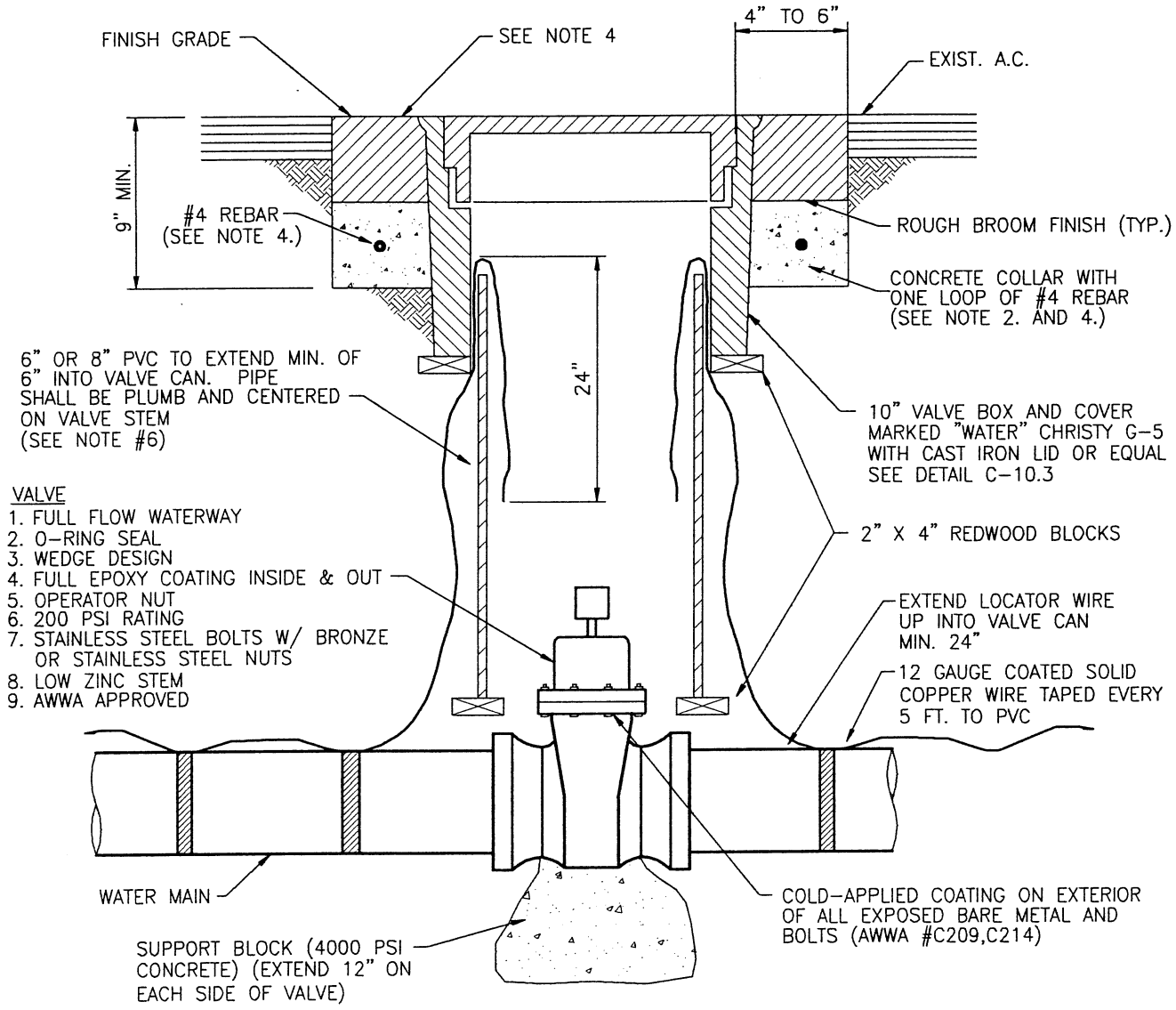


SECTION A-A
NTS

GENERAL NOTES

1. MATERIAL USED FOR THRUST BLOCKING SHOULD NOT PREVENT ACCESS TO THE BOLT ASSEMBLY.
2. HOT TAPS GREATER THAN 2 IN. ARE TO BE PERFORMED BY CARSON CITY WATER UTILITY DIVISION.
3. MINIMUM DISTANCE BETWEEN TAP SADDLE, COLLARS, JOINTS, SERVICE TAPS, ETC. WILL BE 18" CLEAR.
4. SADDLE TO BE HYDROSTATICALLY PRESSURE TESTED TO CLASS RATING OF THE PIPE PRIOR TO TAP.
5. SEE "WATER GENERAL NOTES" FOR HOT-TAP SCHEDULING INFORMATION.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY	
			TAPPING SLEEVE DETAIL	DRAWING NO. C-10.0	
				DATE 7/2001	PAGE 34

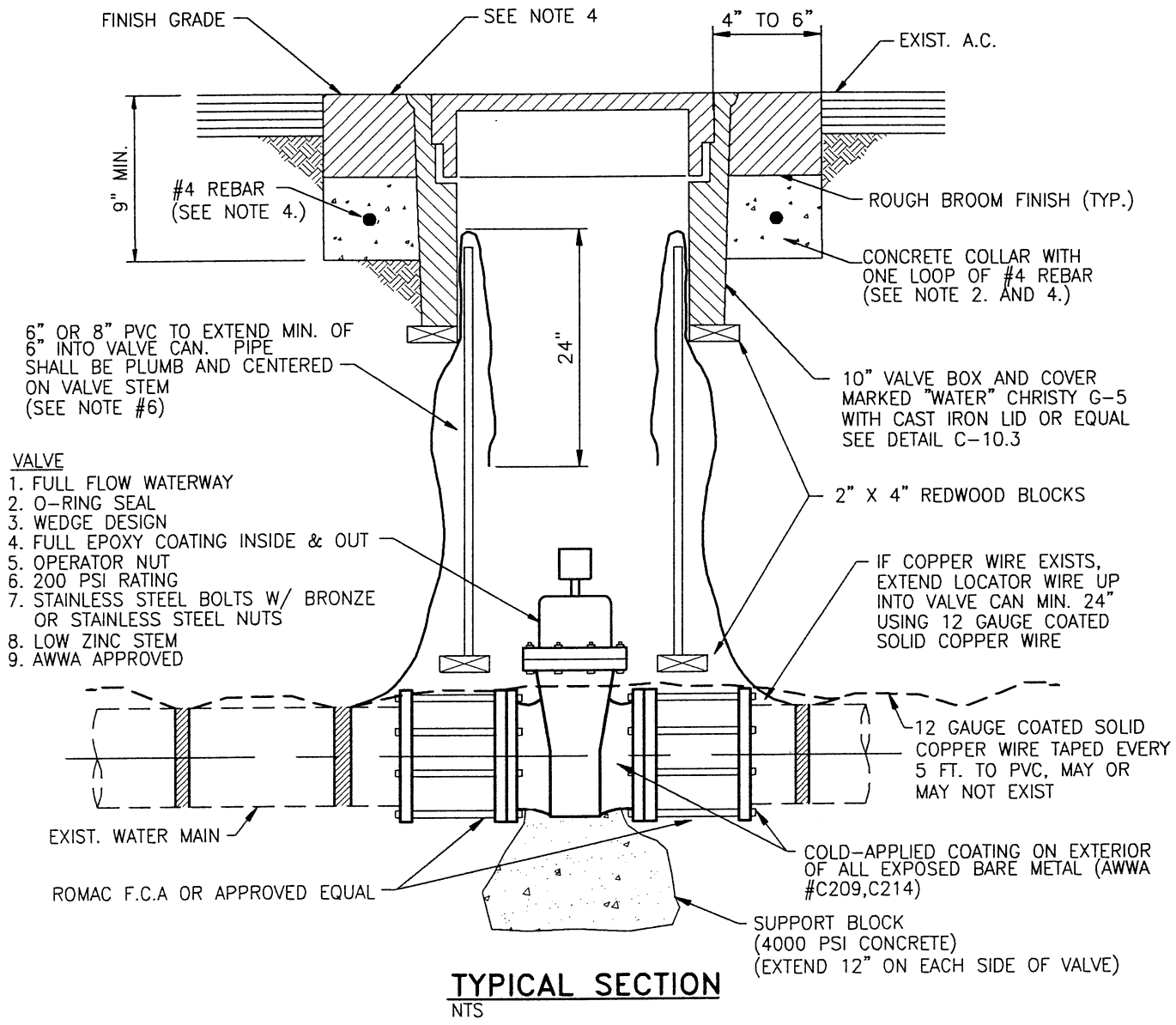


TYPICAL SECTION
NTS

GENERAL NOTES

1. SEE DRAWING 3-7 FOR SUPPORT BLOCK SIZE. (MATERIAL USED FOR SUPPORT BLOCKING SHOULD NOT PREVENT ACCESS TO THE BOLT ASSEMBLY).
2. CONCRETE SHALL MEET THE REQUIREMENTS OF SECTION 202.12 OF THE STANDARD SPECIFICATIONS. REBAR SHALL ONLY BE USED WHEN THE VALVE BOX IS LOCATED OUTSIDE PAVED AREAS.
3. IN ALL AREAS, LIDS SHALL BE SET FLUSH WITH FINISH GRADE UNLESS OTHERWISE NOTED.
4. THE CONCRETE COLLAR SHALL BE LEFT 2-1/2" - 3" BELOW FINISHED ASPHALT SURFACE. APPLY AN APPROVED TACK COAT AND FILL VOID BETWEEN ADJACENT PAVEMENT AND FRAME WITH TYPE 3 A.C. PAVING. CHIP OR FOG SEAL PAVED SURFACE. EXCEPTION: WHEN STRUCTURE NOT LOCATED IN ASPHALT PAVEMENT OR IN AN UNPAVED AREA, EXTEND CONCRETE TO FINISH GRADE. ALL CUTS IN A.C. SHALL BE STRAIGHT & EVEN.
5. SPLICES IN WIRE SHALL BE CONNECTED BY SOLDER OR WIRE NUTS AND WRAPPED WITH UL LISTED ELECTRICAL TAPE.
6. VALVE RISER ON RECLAIMED WATER VALVES SHALL BE PURPLE PIPE TO HELP IDENTIFY AS RECLAIMED.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY	
1	REV NOTE	9/00	VALVE DETAIL	DRAWING NO. C-10.1	
				DATE 7/2001	PAGE 35



TYPICAL SECTION
NTS

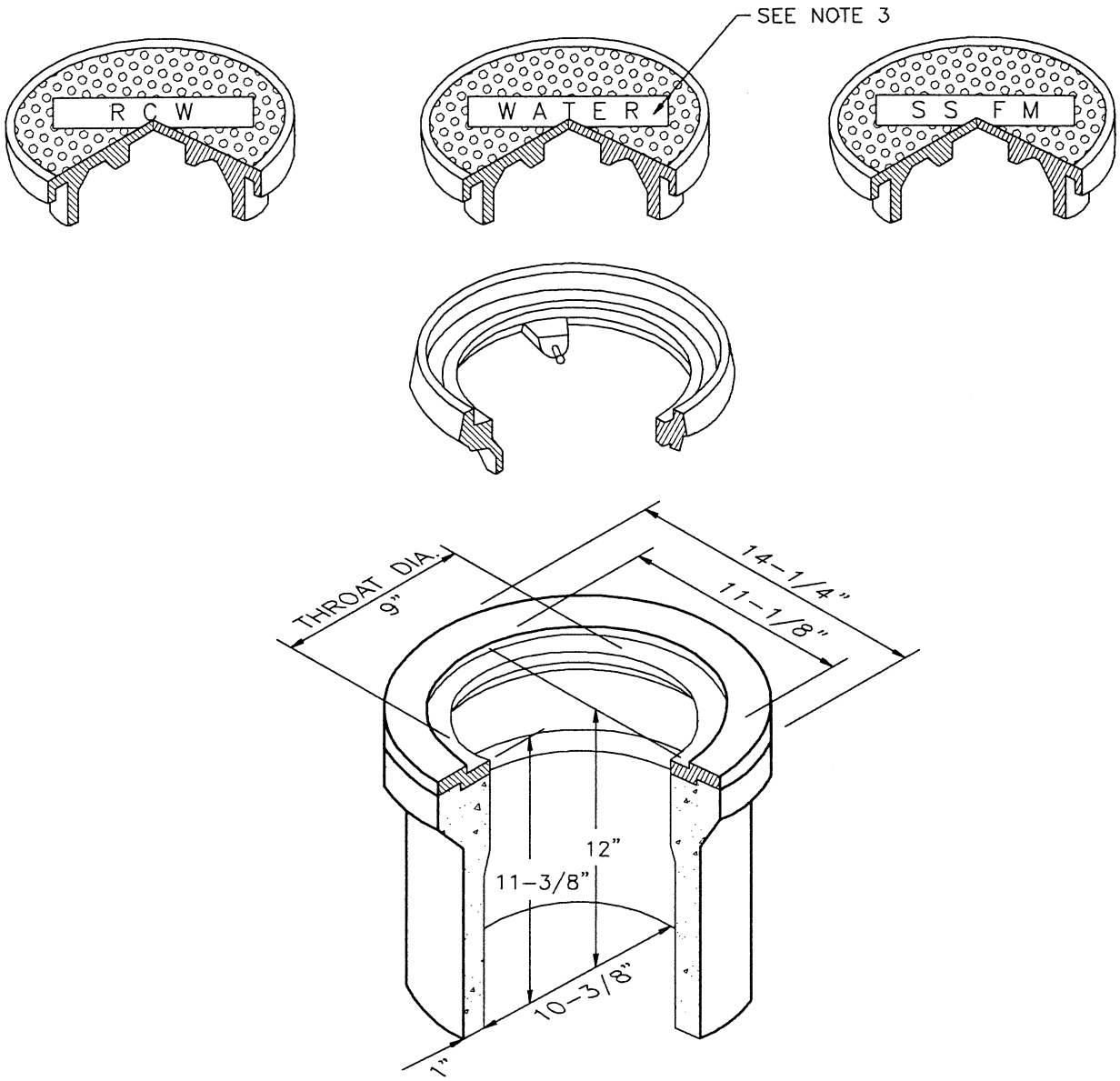
IMPORTANT NOTE:

VALVE'S MUST BE CUT IN A MINUMUM OF 40 FEET UP AND/OR DOWNSTREAM OF NEW CONNECTION POINTS.

GENERAL NOTES

1. SEE DRAWING 3-7 FOR SUPPORT BLOCK SIZE. (MATERIAL USED FOR SUPPORT BLOCKING SHOULD NOT PREVENT ACCESS TO THE BOLT ASSEMBLY).
2. CONCRETE SHALL MEET THE REQUIREMENTS OF SECTION 202.12 OF THE STANDARD SPECIFICATIONS. REBAR SHALL ONLY BE USED WHEN THE VALVE BOX IS LOCATED OUTSIDE PAVED AREAS.
3. IN ALL AREAS, LIDS SHALL BE SET FLUSH WITH FINISH GRADE UNLESS OTHERWISE NOTED.
4. THE CONCRETE COLLAR SHALL BE LEFT 2-1/2" - 3" BELOW FINISHED ASPHALT SURFACE. APPLY AN APPROVED TACK COAT AND FILL VOID BETWEEN ADJACENT PAVEMENT AND FRAME WITH TYPE 3 A.C. PAVING. CHIP OR FOG SEAL PAVED SURFACE. EXCEPTION: WHEN STRUCTURE NOT LOCATED IN ASPHALT PAVEMENT OR IN AN UNPAVED AREA, EXTEND CONCRETE TO FINISH GRADE. ALL CUTS IN A.C. SHALL BE STRAIGHT & EVEN.
5. SPLICES IN WIRE SHALL BE CONNECTED BY SOLDER OR WIRE NUTS AND WRAPPED WITH UL LISTED ELECTRICAL TAPE.
6. VALVE RISER ON RECLAIMED WATER VALVES SHALL BE PURPLE PIPE TO HELP IDENTIFY AS RECLAIMED.
7. CUT OPENING IN PIPE 1/2" LONGER THAN TOTAL LENGTH OF VALVE, INSERT FLG x FLG VALVE USING F.C.A.

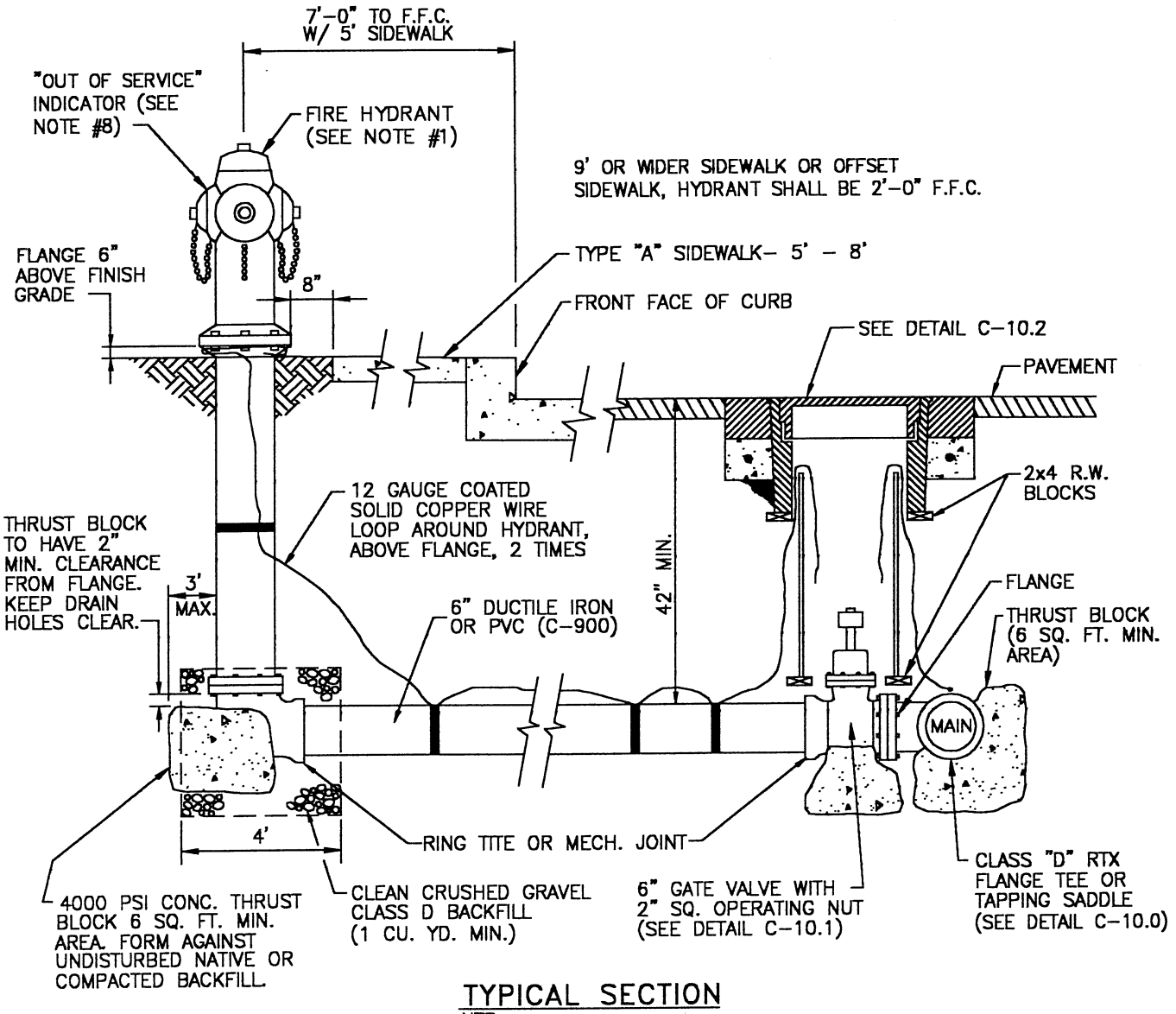
NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY	
			CUT IN VALVE DETAIL	DRAWING NO. C-10.2	
				DATE 7/2001	PAGE 36



GENERAL NOTES

1. VALVE BOX MUST BE TRAFFIC RATED. (CHRISTY G-5 BOX OR EQUAL)
2. MIN. OF 10" INSIDE DIAMETER.
3. CAST IRON LID MARKED "WATER" FOR WATER LINE APPLICATIONS. CAST IRON LID MARKED "RECLAIMED WATER" OR "RCW" WHEN INSTALLED ON A RECLAIMED WATER MAIN. LID SHALL BE MARKED "SS FORCE MAIN" OR "SS FM" WHEN INSTALLED ON A SANITARY SEWER FORCE MAIN.
4. RISER OF 6" OR 8" PVC EXTENDED IN VALVE CAN MIN. OF 6". USE SAME MATERIAL AS NEW MAIN LINE.
5. TORQUE BOLTS TO MANUFACTURER'S RECOMMENDATIONS.
6. ALL NEW VALVE BOXES TO BE SET TO GRADE PER DETAIL C-10.1. ONLY ONE GRADE RING PER VALVE BOX.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY	
			VALVE BOX DETAIL	DRAWING NO. C-10.3	
				DATE 7/2001	PAGE 37

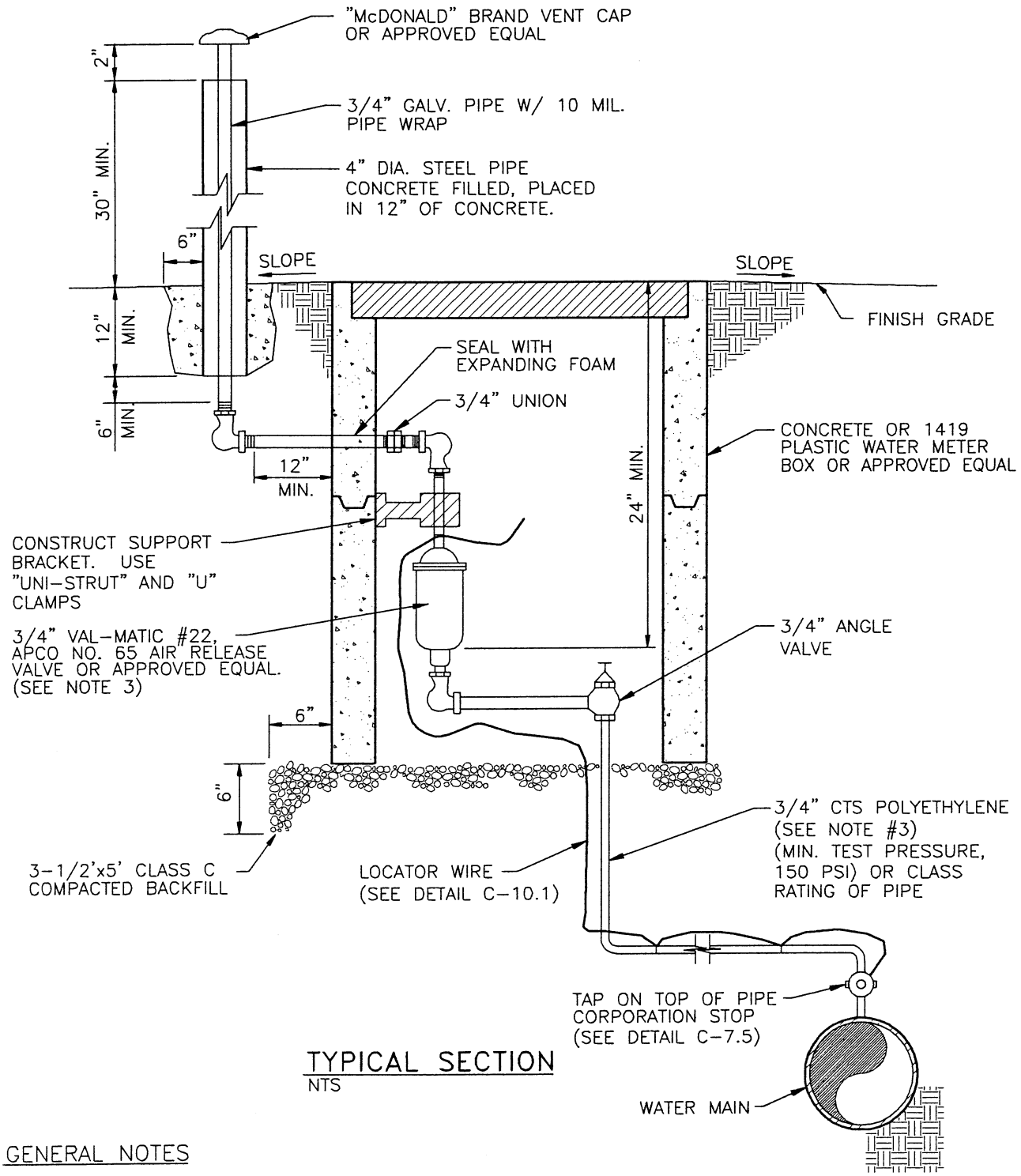


TYPICAL SECTION
NTS

GENERAL NOTES

1. ALL FIRE HYDRANTS SHALL BE MUELLER SUPER CENTURION 200 WITH 5-1/4" VALVE OPENING OR WATEROUS "PACER" WB76DDP, OR APPROVED EQUAL. HYDRANT WILL BE INSTALLED SO AS TO PROVIDE A MIN. OF 3 FT. CLEARANCE IN ALL DIRECTIONS FROM OPERATING NUT.
2. ALL HYDRANTS SHALL BE PAINTED CARSON CITY ORANGE. RECLAIMED WATER HYDRANTS SHALL BE PAINTED PURPLE.
3. ALL HYDRANTS SHALL HAVE (2) 2-1/2" HOSE NOZZLES AND (1) 4-1/2" STEAMER NOZZLE. ALL THREADS SHALL BE AS SPECIFIED FOR AMERICAN NATIONAL HOSE COUPLING.
4. OPERATING NUT SHALL BE 1-1/2" PENTAGON.
5. INSPECTION BY CARSON CITY UTILITIES SHALL BE REQUIRED PRIOR TO BACKFILLING.
6. IF SIDEWALK NOT PRESENT, SET HYDRANT SO THAT OPERATING NUT IS 6'-0" BEHIND FRONT FACE OF CURB.
7. SET HYDRANT PLUMB.
8. INSTALL "OUT OF SERVICE" INDICATOR COLLAR ON 2-1/2" NOZZLE. INDICATOR SHALL BE HIGHLY VISIBLE, YELLOW WITH BLACK LETTERS, 2-1/2" MIN. WIDTH WITH 1" LETTERS STATING "OUT OF SERVICE". "CALPICO" OR EQUAL.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY	
			FIRE HYDRANT ASSEMBLY DETAIL	DRAWING NO. C-10.4	
				DATE 7/2001	PAGE 38

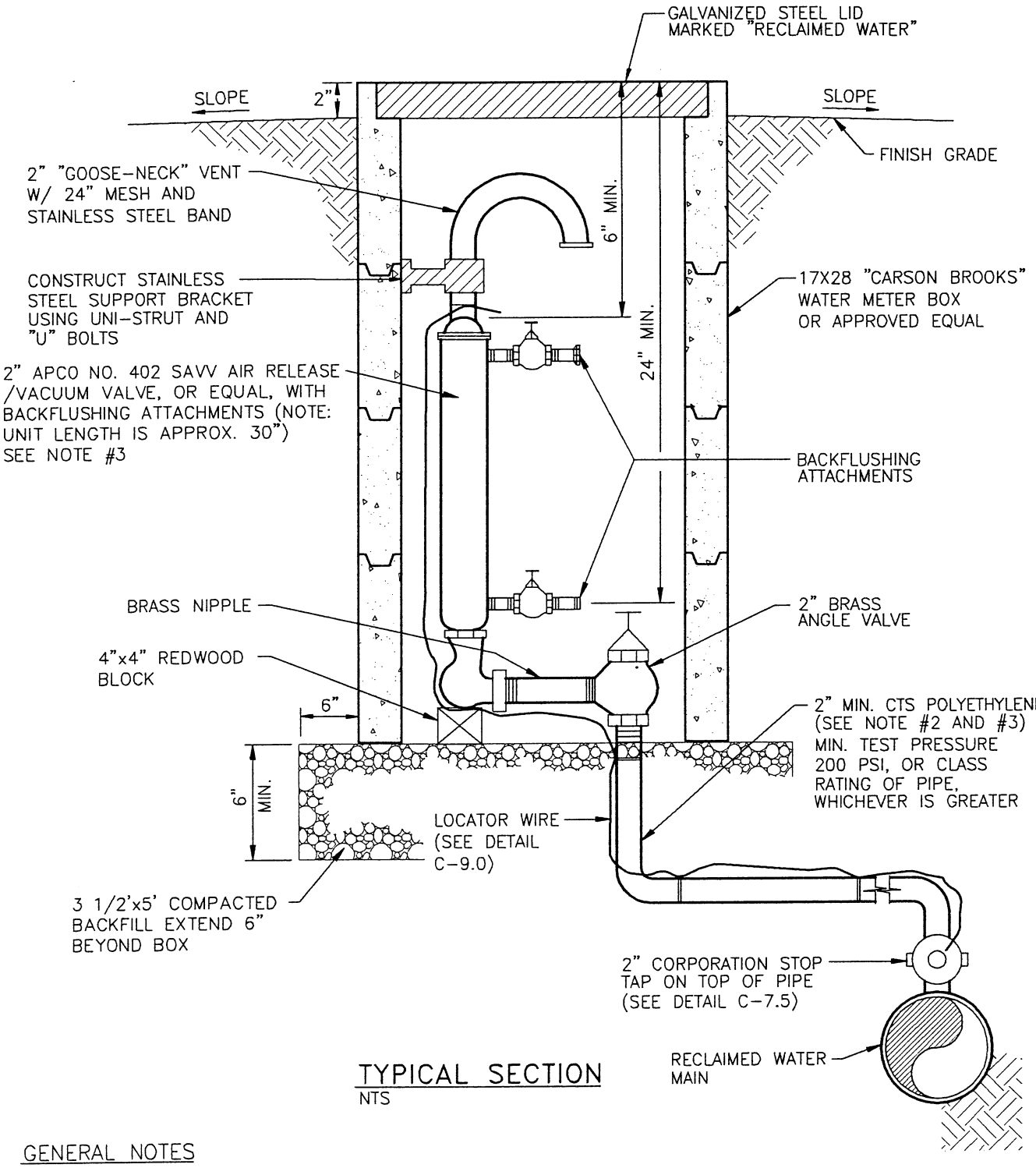


TYPICAL SECTION
NTS

GENERAL NOTES

1. AIR RELEASE VALVES SHALL BE INSTALLED OUTSIDE PAVEMENT SECTION. SLOPE GROUND AWAY FROM VALVE BOX OR CONSTRUCT CURBING TO PROTECT FROM FLOODING BY SURFACE WATERS.
2. ALL PIPES SHALL HAVE POSITIVE SLOPE FROM MAIN LINE TO AIR RELEASE VALVE.
3. RCW TRANSMISSION MAINS REQUIRE SPECIAL DESIGN. (SEE DETAIL C-10.6)

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY	
			POTABLE WATER AIR-RELEASE DETAIL	DRAWING NO. C-10.5	
				DATE 7/2001	PAGE 39

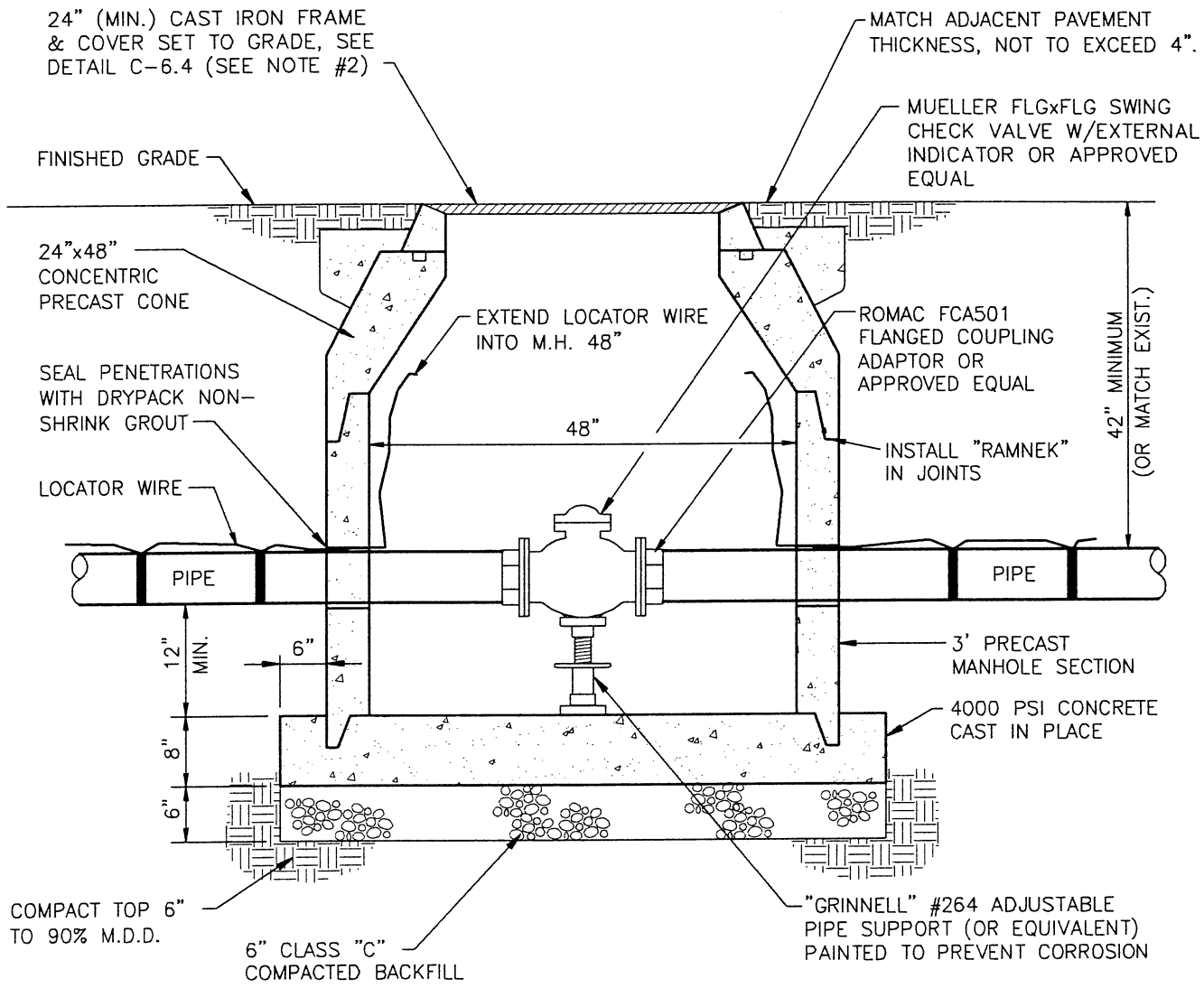


TYPICAL SECTION
NTS

GENERAL NOTES

1. AIR RELEASE/VACUUM VALVES SHALL BE INSTALLED OUTSIDE PAVEMENT SECTION. SLOPE GROUND AWAY FROM VALVE BOX OR CONSTRUCT CURBING TO PROTECT FROM FLOODING BY SURFACE WATERS.
2. ALL PIPES SHALL HAVE POSITIVE SLOPE FROM MAIN LINE TO AIR/VACUUM VALVE.
3. SIZE AS DIRECTED BY THE ENGINEER.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY	
			RECLAIMED WATER AIR/VACUUM DETAIL	DRAWING NO. C-10.6	
				DATE 7/2001	PAGE 40



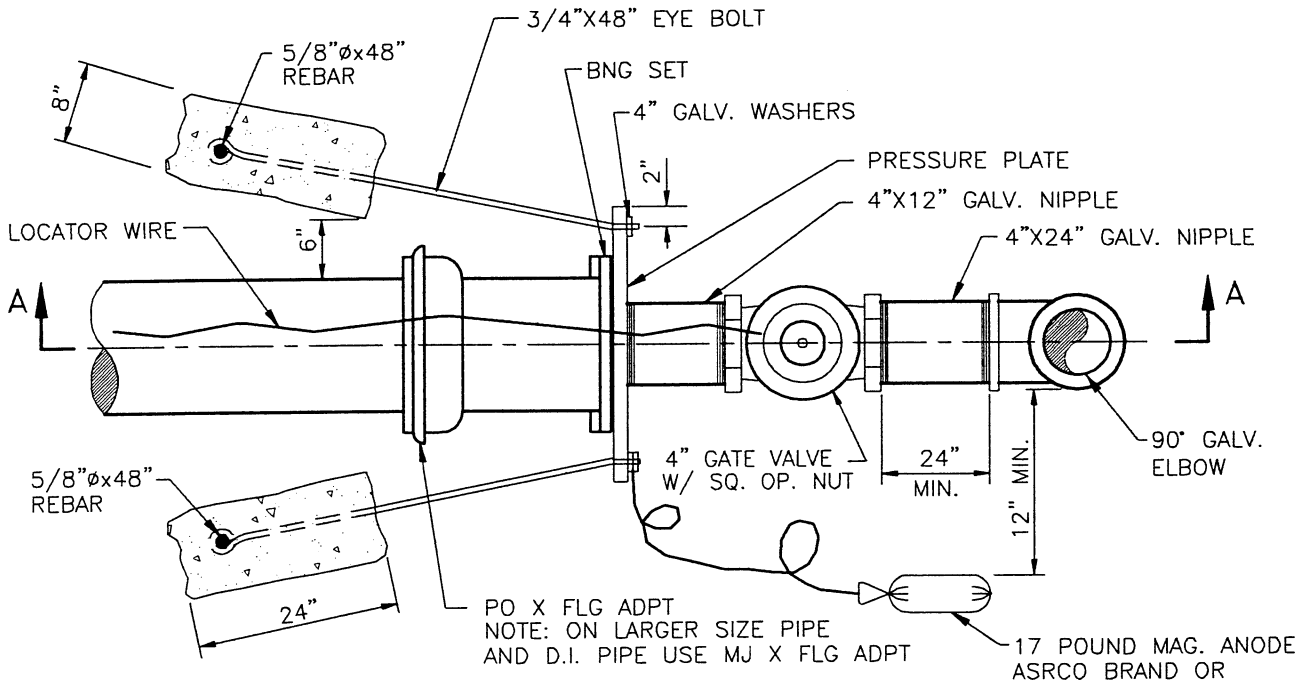
TYPICAL SECTION

NTS

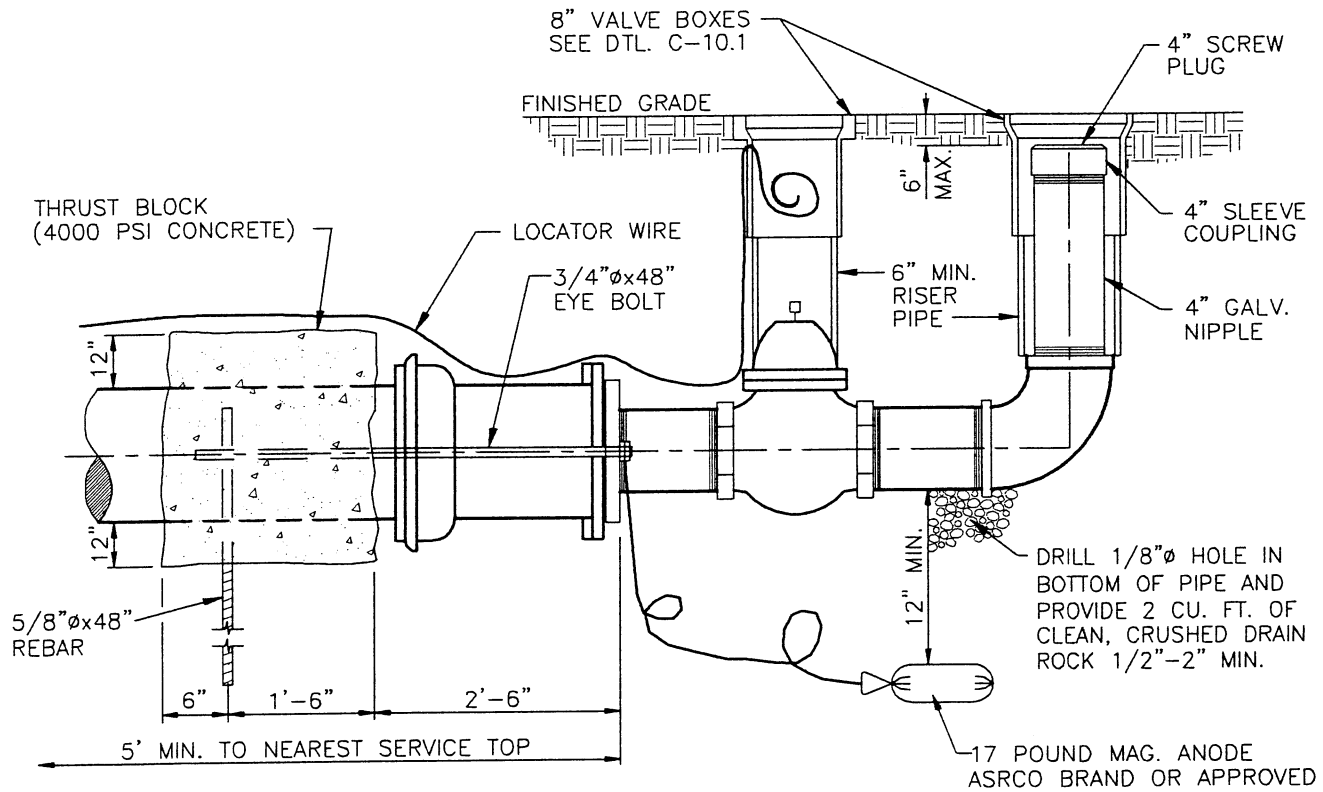
GENERAL NOTES

1. CENTER CHECK VALVE IN VAULT.
2. MANHOLE FRAME AND COVER TO BE SOUTH BAY FOUNDRY "SBF 1900 CPH" (CLOSED PICK HOLE) OR EQUAL AND TO BE MARKED "WATER".
3. COMPACT TOP 6" SUBGRADE TO 90% M.D.D. PRIOR TO PLACING CLASS "C" BACKFILL.
4. CHECK VALVES 12" OR LARGER REQUIRE SPECIAL DESIGN AND APPROVAL OF CARSON CITY WATER UTILITY.
5. MANHOLES SHALL BE WATER-TIGHT.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY	
			CHECK-VALVE DETAIL	DRAWING NO. C-10.7	
				DATE 7/2001	PAGE 41

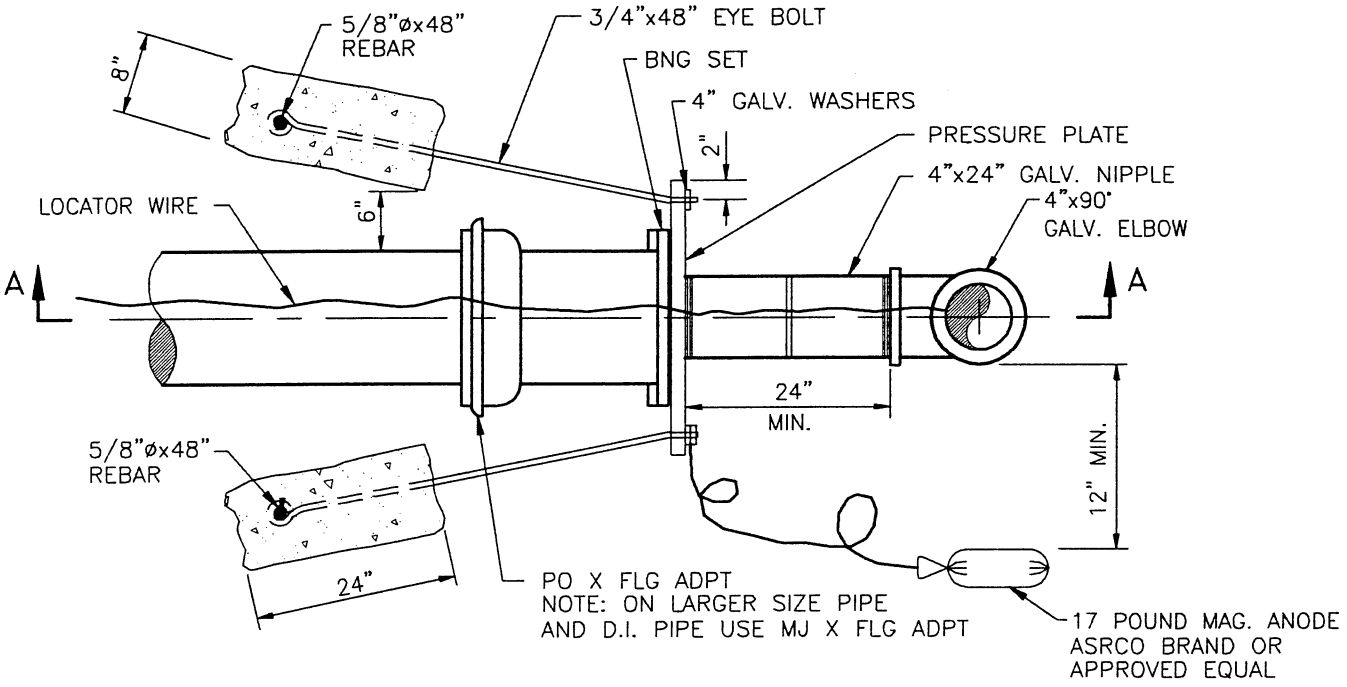


PLAN VIEW
NTS

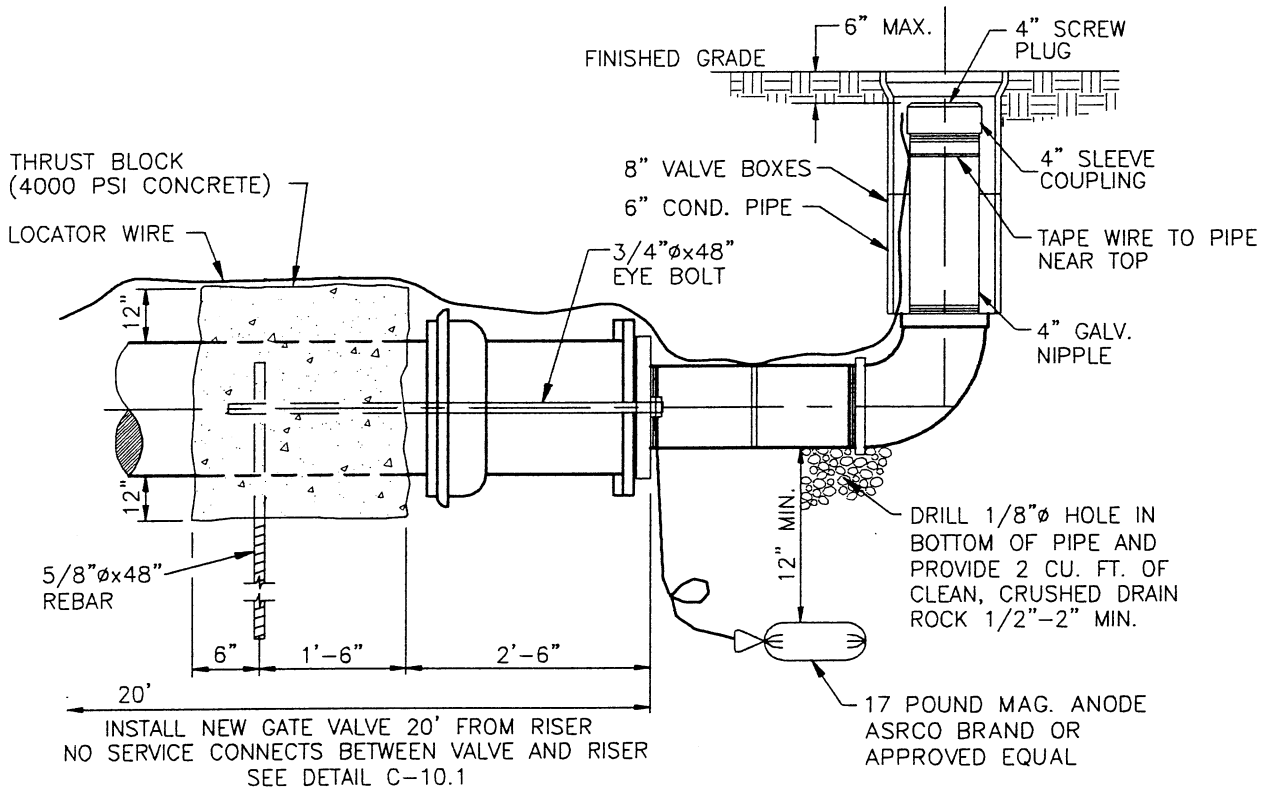


SECTION A-A
NTS

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY
			PERMANENT FLUSH ASSEMBLY	DRAWING NO. C-10.8
				DATE 7/2001 / PAGE 42



PLAN VIEW
NTS



SECTION A–A
NTS

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY	
			TEMPORARY FLUSH ASSEMBLY	DRAWING NO. C–10.9	
				DATE 7/2001	PAGE 43

CARSON CITY UTILITIES DEPARTMENT
GENERAL NOTES

1. ALL WORK SHALL CONFORM TO THE STANDARD SPECIFICATIONS AND DETAILS FOR PUBLIC WORKS CONSTRUCTION AS ADOPTED BY CARSON CITY. THE OWNER/CONTRACTOR SHALL OBTAIN A PERMIT FOR PUBLIC WORKS CONSTRUCTION FROM THE CARSON CITY PUBLIC WORKS DEPARTMENT PRIOR TO THE START OF CONSTRUCTION.

2. ALL TRAFFIC CONTROL AND BARRICADING WITHIN THE CARSON CITY RIGHT-OF-WAY SHALL CONFORM TO SECTION 130 OF THE STANDARD SPECIFICATIONS, PART VI OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION, AND THE NEVADA WORK ZONE TRAFFIC CONTROL HANDBOOK, 1986 EDITION. NO STREET CLOSURES WILL BE ALLOWED WITHOUT PRIOR APPROVAL OF A TRAFFIC CONTROL PLAN BY THE CARSON CITY ENGINEER.

3. THE OWNER/CONTRACTOR SHALL CALL UNDERGROUND SERVICE ALERT "CALL BEFORE YOU DIG" (1-800-227-2600) FORTY-EIGHT (48) HOURS PRIOR TO START OF CONSTRUCTION.

4. THE OWNER/CONTRACTOR SHALL CALL THE CARSON CITY PUBLIC WORKS ENGINEERING DIVISION (887-2300) FORTY-EIGHT (48) HOURS PRIOR TO THE START OF CONSTRUCTION. THE OWNER/CONTRACTOR SHALL CALL TWENTY-FOUR (24) HOURS PRIOR TO REQUIRED INSPECTIONS AND TESTING. THE REQUIRED INSPECTIONS AND TESTING ARE LISTED ON THE INSPECTION RECORD ISSUED WITH EACH PERMIT. THE OWNER/CONTRACTOR MUST HAVE THE PERMIT NUMBER AND THE DESCRIPTION LISTED ON THE INSPECTION RECORD TO SCHEDULE REQUIRED INSPECTIONS AND TESTING.

5. FINAL INSPECTIONS WILL BE PERFORMED BY THE UTILITIES DEPARTMENT ACCORDING TO THE CARSON CITY INSPECTIONS AND TESTING PROCEDURES. NOTE: THESE PROCEDURES REQUIRE SUBMITTAL OF RECORD DRAWING PRINTS BY THE OWNER/CONTRACTOR AND 10 WORKING DAYS FOR THE UTILITIES DEPARTMENT TO PREPARE A FINAL PUNCH LIST. ALL CONDITIONS OF THE FINAL INSPECTION MUST BE COMPLETED PRIOR TO FINAL ACCEPTANCE OR APPROVAL OF A CERTIFICATE OF OCCUPANCY BY THE UTILITIES DEPARTMENT.

6. MODIFICATIONS TO THE APPROVED PLANS REQUIRES REVIEW AND APPROVAL BY CARSON CITY DEVELOPMENT ENGINEERING. WORK PERFORMED WITHOUT WRITTEN APPROVAL BY THE DEPARTMENT WILL REQUIRE REMOVAL AT THE OWNERS/CONTRACTORS EXPENSE.

7. THE APPROVED PLAN, PERMIT AND INSPECTION RECORD MUST BE ON THE JOB SITE AT ALL TIMES.

8. PLAN APPROVAL SHALL EXPIRE ONE YEAR FROM DATE OF APPROVAL UNLESS CONSTRUCTION HAS BEEN INITIATED. (CCMC 12.06.180F,12.01.140D)

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY	
			CARSON CITY UTILITIES DEPARTMENT	DRAWING NO. C-11.0	
			GENERAL NOTES	DATE 7/2001	PAGE 44

CARSON CITY UTILITIES DEPARTMENT
SEWER GENERAL NOTES

1. ALL SEWER MAINS AND LATERALS IN THE RIGHT-OF-WAY/EASEMENT SHALL BE PVC SDR35 UNLESS OTHERWISE NOTED.

2. MANHOLE BASE(S) SHALL BE PRECAST UNLESS OTHERWISE APPROVED BY THE UTILITIES DEPARTMENT. NO FIELD MODIFICATIONS TO PRECAST BASES SHALL BE ALLOWED.

3. NON-FLEXIBLE TRANSITION COUPLINGS ARE REQUIRED WHEN CONNECTING SEWER LINES TO EXISTING LINES. COUPLINGS SHALL BE ROMAC INDUSTRIES, INC., STYLE 501 STRAIGHT AND TRANSITION COUPLINGS FOR SEWER OR APPROVED EQUAL WHEN CONNECTING PVC TO NON-PVC LINES.

4. THE CONTRACTOR SHALL INSTALL A PLUG AT THE POINT OF EXTENSION OF A SEWER MAIN PRIOR TO THE START OF CONSTRUCTION. THE PLUG SHALL REMAIN IN PLACE UNTIL ALL LINES HAVE BEEN INSPECTED, TESTED, CLEANED, AND FLUSHED. REMOVAL OF THE PLUG BY THE CONTRACTOR PRIOR TO APPROVAL IS A VIOLATION OF THE CARSON CITY MUNICIPAL CODE AND MAY RESULT IN FINES UP TO $1,000 A DAY.

5. SEWERLINES SHALL BE TESTED PER SECTION 336.03.07 OF THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1996 EDITION". AN AIR PRESSURE TEST PER SECTION 336.03.07.04 AND A DEFLECTION TEST PER SECTION 336.03.09 OF THE STANDARD SPECIFICATIONS AND CARSON CITY UTILITIES DEPARTMENT AMENDMENT TO THE STANDARD SPECIFICATIONS SHALL BE PERFORMED ON ALL SEWERLINES. A VACUUM TEST PER SECTION 336.03.07.05 OF THE CARSON CITY UTILITY DEPARTMENT AMENDMENTS TO THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION", LATEST EDITION, SHALL BE PERFORMED ON ALL SEWER MANHOLES.

6. MARKING TAPE SHALL BE INSTALLED 12" ABOVE ALL SEWER MAINS AND LATERALS. TAPE WIDTH SHALL BE THREE (3) INCHES; THICKNESS SHALL BE FOUR (4) MIL OR GREATER AND SHALL BE GREEN AND BEAR LARGE PRINTING DENOTING "CAUTION BURIED SEWER LINE BELOW" OR EQUIVALENT WORDING.

7. SEWER MANHOLE MARKERS SHALL BE INSTALLED WHEN MANHOLES ARE LOCATED OFF THE PAVED SURFACE. SEWER MANHOLE MARKERS SHALL BE GREEN CARSONITE UTILITY MARKER (CUM 375), 5'2" WITH MANHOLE DECAL (668-MH) OR APPROVED EQUAL. PLACE PLACE MARKERS ON EASEMENT LINE NEAREST TO MANHOLE OR AS DIRECTED BY THE UTILITIES DEPARTMENT.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY	
			CARSON CITY UTILITIES DEPARTMENT SEWER GENERAL NOTES	DRAWING NO. C-11.1	
				DATE 7/2001	PAGE 45

CARSON CITY UTILITIES DEPARTMENT
WATER GENERAL NOTES

1. WATER MAIN SHUTDOWNS/INTERRUPTION OF SERVICE; UTILITIES DEPT. APPROVAL IS REQUIRED 24 HOURS PRIOR TO NOTIFICATION OF CUSTOMERS. COMMERCIAL CUSTOMERS SHALL RECEIVE 48 HOURS WRITTEN AND VERBAL NOTICE OF A SHUTDOWN, SPECIAL ARRANGEMENTS MAY HAVE TO BE MADE TO ACCOMMODATE CUSTOMERS OPERATION. RESIDENTIAL CUSTOMERS SHALL RECEIVE 24 HOURS WRITTEN NOTICE. THE UTILITIES DEPT. IS RESPONSIBLE FOR THE NOTIFICATION WHEN WORK IS PERFORMED BY CITY STAFF; THE CONTRACTOR IS RESPONSIBLE IN ALL OTHER CASES. A LIST SHALL BE KEPT BY THE RESPONSIBLE PARTY LISTING THE DATE, TIME, AND ADDRESS OF ALL PERSONS NOTIFIED. THE PERSON NOTIFIED SHALL BE INCLUDED ON THE LIST FOR ALL COMMERCIAL CUSTOMERS. CONTACT THE UTILITIES DEPT. FOR PHONE NUMBERS WHEN COMMERCIAL CUSTOMERS CANNOT BE LOCATED. THE CONTRACTOR WILL BE SUBJECT TO DAMAGE CLAIMS SHOULD THEY FAIL TO NOTIFY CUSTOMERS OR MAINTAIN DOCUMENTATION OF NOTIFICATION OF CUSTOMERS. THE TOTAL TIME OF ANY WATER SERVICE INTERRUPTION IS 4 HOURS MAX. THE CONTRACTOR SHALL NOT OPERATE ANY EXISTING WATER VALVES.

2. ALL WATER MAINS SHALL BE CLASS 150, C900 PVC OR AS SPECIFIED ON THE PLANS. ALL WATER SERVICES 2" OR LESS SHALL BE CTS, PE PIPE; SERVICES 3" OR GREATER SHALL BE CLASS 150, C900 PVC OR AS SPECIFIED ON THE PLANS.

3. MAINTAIN 18" VERTICAL AND 5' HORIZONTAL SEPARATION BETWEEN ALL UNDERGROUND UTILITY LINES AND WATER LINES. IF WATER LINE IS BELOW POWER LINE OR IS WITHIN 18" (VERTICAL SEPARATION) OF POWER LINE, POWER/TELEPHONE LINE SHALL BE ENCASED WITH 4" OF CONCRETE 5' EACH SIDE OF CROSSING. (SEE SPPCO SPECS.)

4. ALL HOT TAPS GREATER THAN 2" ARE TO BE PERFORMED BY CARSON CITY WATER UTILITY DIVISION. THE CONTRACTOR SHALL CONTACT THE DISTRIBUTION SUPERVISOR AT LEAST 48 HOURS PRIOR TO SCHEDULING HOT TAP DATE AND TIME. PRIOR TO HOT TAPPING, THE SADDLE SHALL BE HYDROSTATICALLY PRESSURE TESTED TO THE CLASS RATING OF PIPE FOR A MINIMUM OF 5 MINUTES. TEST SHALL BE PERFORMED IN THE PRESENCE OF THE UTILITIES DEPT. PERSONNEL PRIOR TO PERFORMING THE TAP.

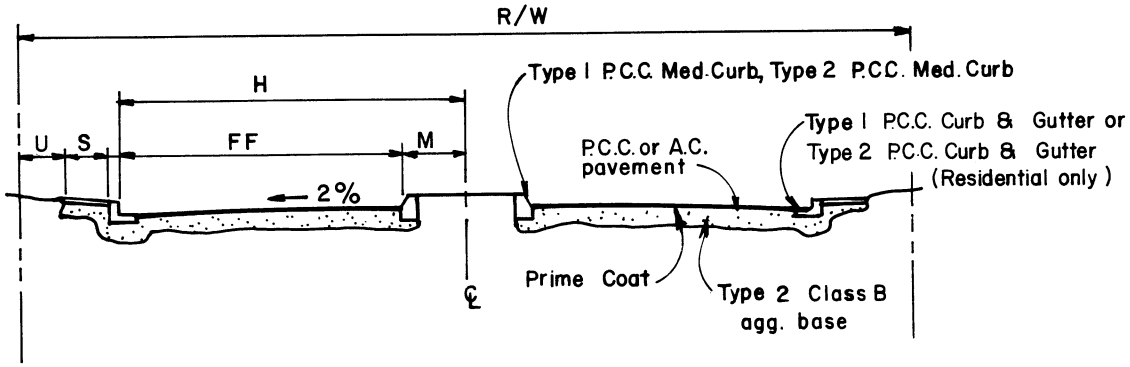
5. WATER VALVE MARKERS SHALL BE BLUE CARSONITE UTILITY MARKER (CUM-375), 5'2" WITH CARSON WATER VALVE DECAL (CWV-116) OR APPROVED EQUAL. PLACE MARKER NO MORE THAN FIVE (5) FEET FROM THE VALVE OR AS DIRECTED BY THE WATER UTILITY DIVISION.

6. REDUCED PRESSURE PRINCIPLE AND DOUBLE CHECK VALVE BACKFLOW ASSEMBLIES SHALL BE APPROVED BY CARSON CITY UTILITIES AND TESTED BY AN APPROVED CERTIFIED BACKFLOW ASSEMBLY TESTER PRIOR TO APPROVAL, ANY CERTIFICATE OF OCCUPANCY, OR FINAL INSPECTION. FOR NEW WATER METER SETS, THE REQUIRED BACKFLOW PREVENTION ASSEMBLY SHALL BE INSTALLED, INSPECTED, APPROVED AND CERTIFIED TEST RESULTS PROVIDED TO THE UTILITIES DEPT. WITHIN FIVE (5) DAYS OF METER SET, UNLESS THE UTILITIES DIRECTOR OR DESIGNEE APPROVES OTHERWISE. THE SERVICE WILL BE LOCKED OFF IF INSPECTIONS AND CERTIFICATIONS ARE NOT COMPLETED AS SPECIFIED ABOVE. A TWENTY-FIVE DOLLAR ($25) FEE WILL BE ASSESSED AT TIME OF TURN-ON WHEN LOCK IS REMOVED DURING NORMAL WORKING HOURS. THE FEE WILL BE ASSESSED ON THE BUILDING PERMIT FOR THE INSTALLATION OF THE BACKFLOW DEVICE.

7. ALL WATER MAIN AND WATER SERVICE INSPECTIONS MUST BE APPROVED PRIOR TO APPROVAL OF ANY CERTIFICATE OF OCCUPANCY.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION CARSON CITY	
			CARSON CITY UTILITIES DEPARTMENT WATER GENERAL NOTES	DRAWING NO. C-11.2	
				DATE 7/2001	PAGE 46

URBAN STREET

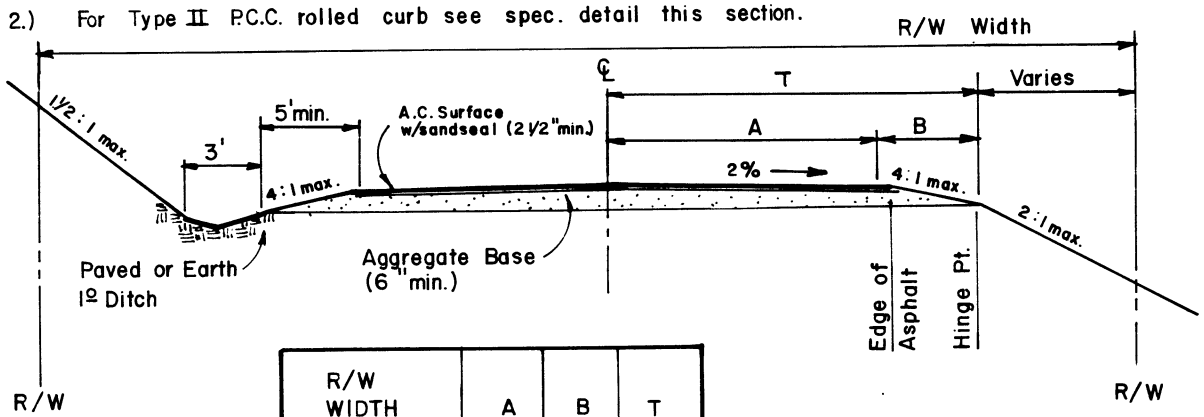


R/W WIDTH	H	FF	M	S	U	NOTES OR REMARKS	
100	41.5	34	7.5	5	3	Commercial	Structural section by Engineer Design, but min. A.C. is 2 1/2" over min. 6" agg. base. A.C. surface will receive "Sandseal."
85	37.5	30	7.5	4	0.5	Residential	
70	29.5	22	7.5	5	0	Basic Commercial	
70	30.0	—	—	4	0.5	Residential with bike lane	
60	22.0	—	—	4	3.5	Residential	
50	20.0	—	—	4	0.5	Residential (<80 units)	

NOTES:

1.) FF and H are measured
   a. To front face for "L" curb and asphalt curbs
   b. To flowline for rolled curbs, reducing the value of U.

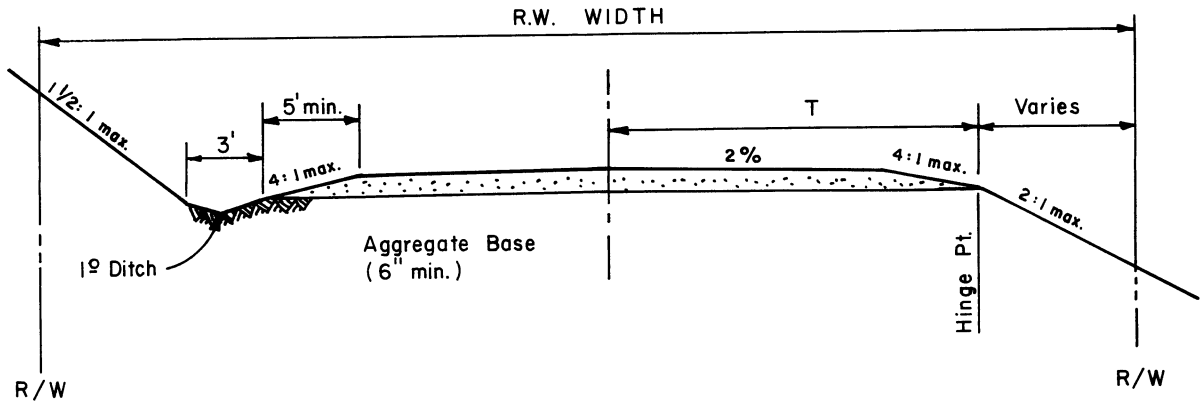
2.) For Type II P.C.C. rolled curb see spec. detail this section.



R/W WIDTH	A	B	T
60	14	4	18
50	12	4	16

RURAL ROAD

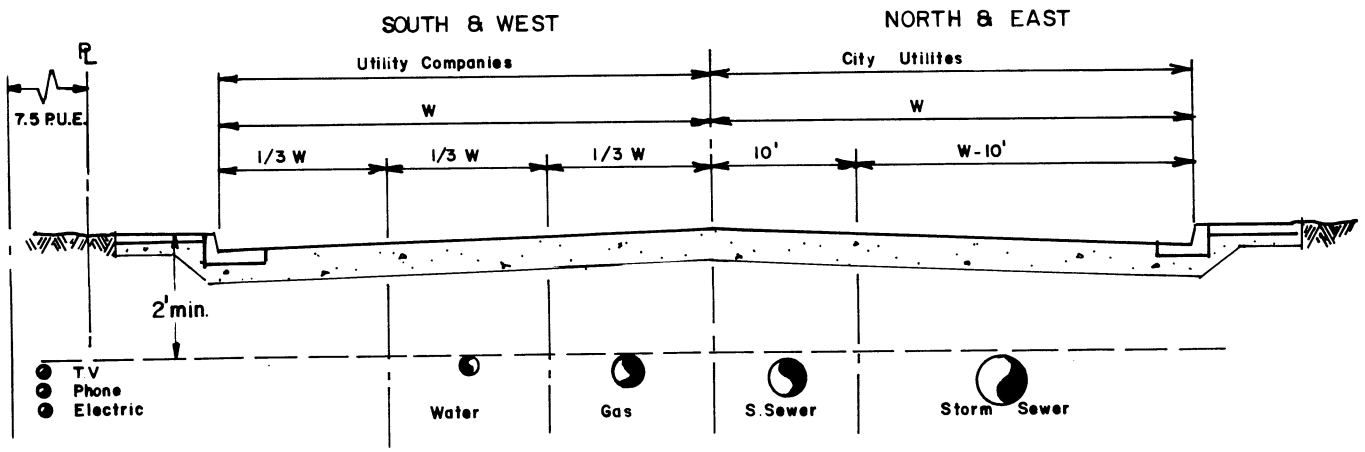
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION DOUGLAS CO.	
			ROADWAY SECTIONS	DRAWING NO. D-1.1 (314,319)	
				DATE 7-81	PAGE 1



RURAL ROAD
GRAVEL SECTION

R/W WIDTH	T
60	18
50	16

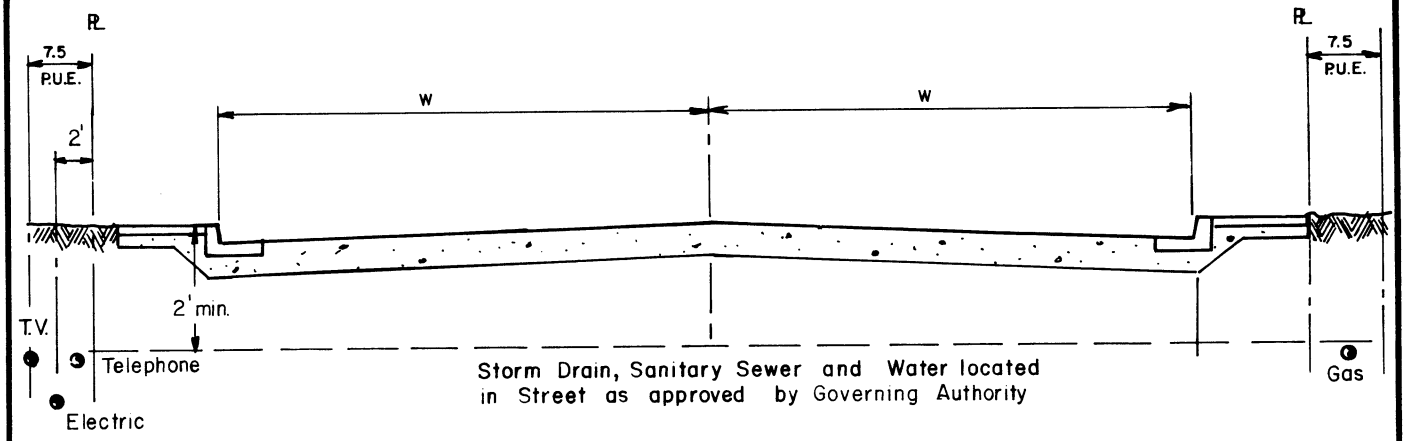
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION DOUGLAS CO.	
			ROADWAY SECTIONS	DRAWING NO. D-1.2 (314, 319)	
				DATE 7-81	PAGE 2



TYPICAL SECTION "A"

(USE IN LAKE TAHOE BASIN)

Approximate Depth of Cover	
Storm Drain	24" min.
Sanitary Sewer	24" min.
Water	24" min.
Gas	36" min.
Electricity	36" min.
Telephone	24" min.
T.V.	24" min.

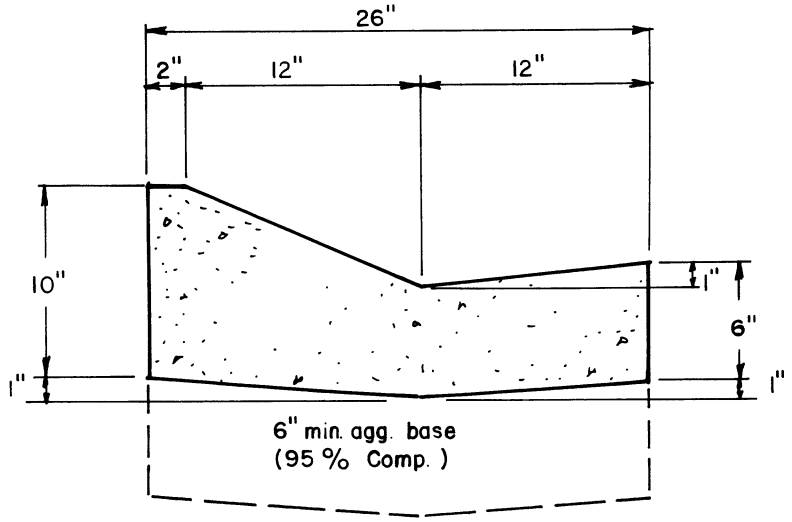


Storm Drain, Sanitary Sewer and Water located in Street as approved by Governing Authority

TYPICAL SECTION "C"

(FOR USE EVERYWHERE EXCEPT LAKE TAHOE BASIN)

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION DOUGLAS CO.	
			TYPICAL UTILITY MAIN LOCATIONS	DRAWING NO. D-2	
				DATE 7-81	PAGE 3



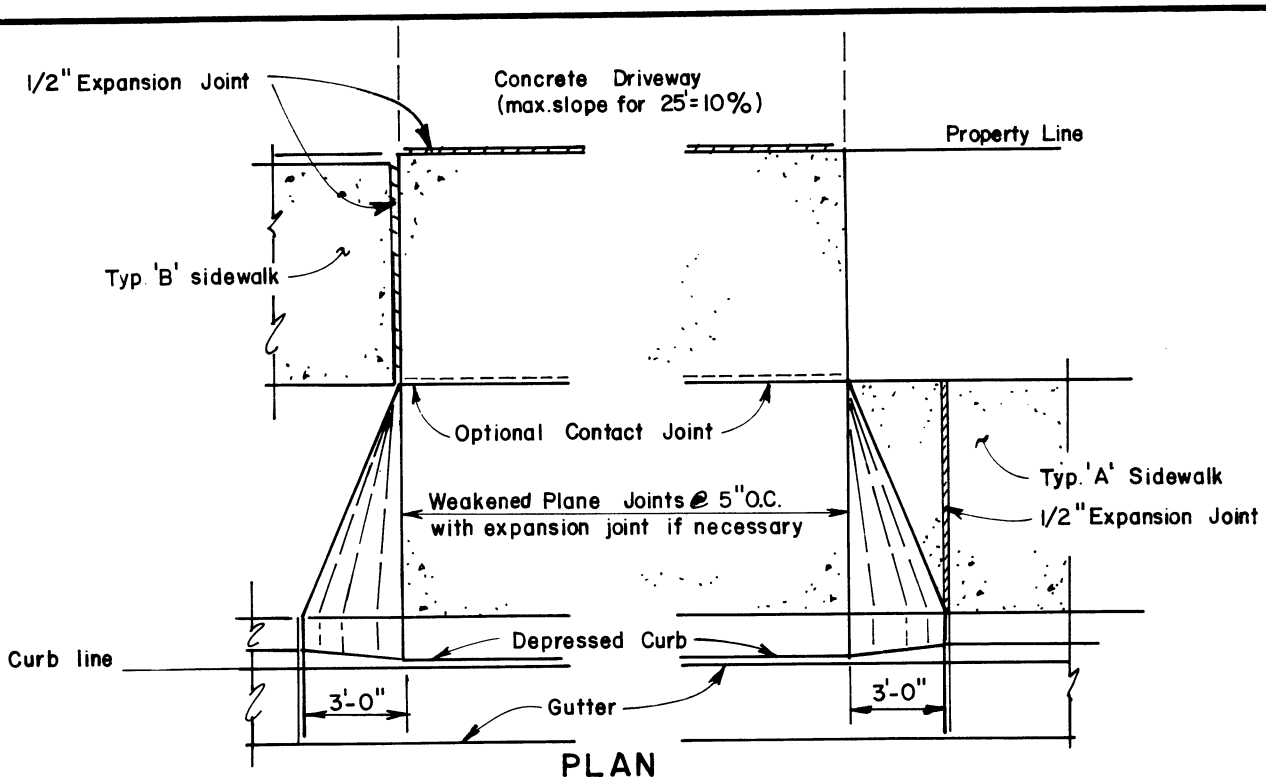
TYPE 2 CURB & GUTTER

(Douglas County only)

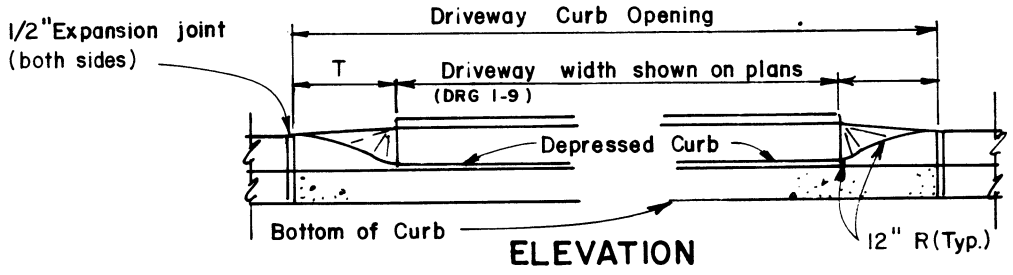
NOTE:

See general notes for all curb and gutter on standard Drawing # 1-6.1

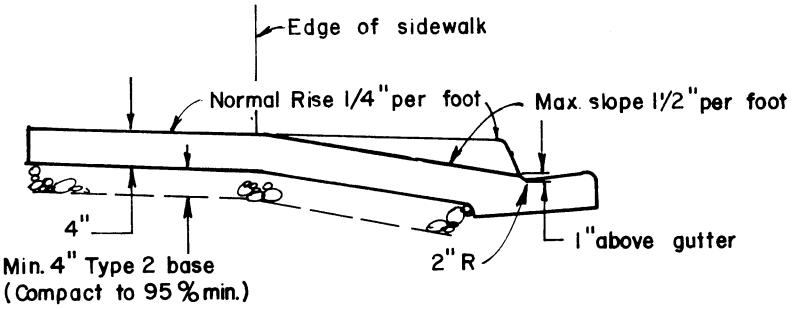
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION DOUGLAS CO.	
			DOUGLAS COUNTY TYPE 2 P.C.C. CURB/GUTTER	DRAWING NO. D-3 (312)	
				DATE 7-81	PAGE 4



PLAN



ELEVATION



SECTION

NOTES:

1.) No concrete shall be placed until forms and subgrade are inspected by the Agency.
2.) Concrete shall be Class AA or DA
3.) See standard drawings (1-9) for width and location requirements.
4.) Commercial driveways to have 6"x 6" 10/40 wire mesh extending into gutter pan.
5.) If construction joint exists within 4 feet of driveway, remove sidewalk and curb and gutter to that joint.
6.) Concrete removal shall be to neat sawcut lines
7.) Remove concrete when constructing driveway where C & G exist. Driveway to be monolithic to A.C. line
8.) Base material shall be Aggregate, Type 2 Class B.

NO.	REVISION	DATE
1	SPELLING	10-14-86

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

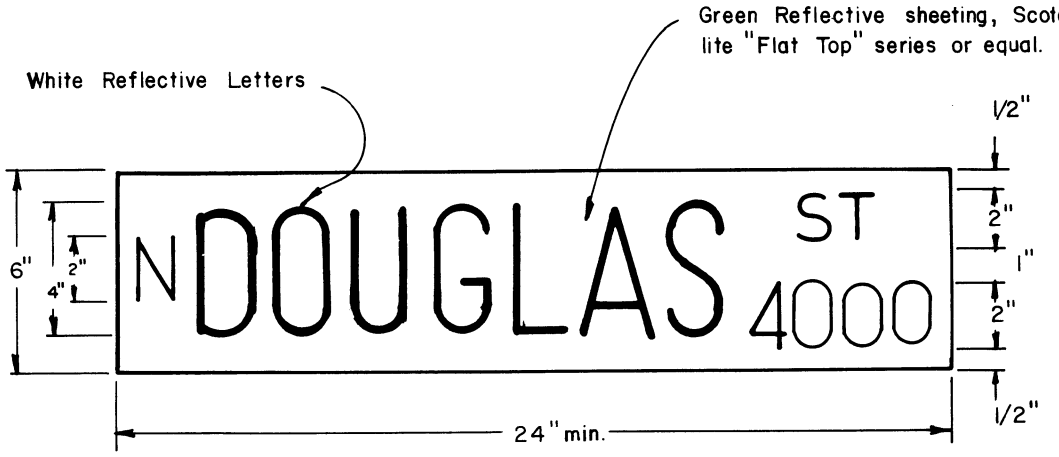
P.C.C. DRIVEWAY APRON

SECTION
DOUGLAS CO.

DRAWING NO.
D-4 (312)

DATE
7-81

PAGE
5

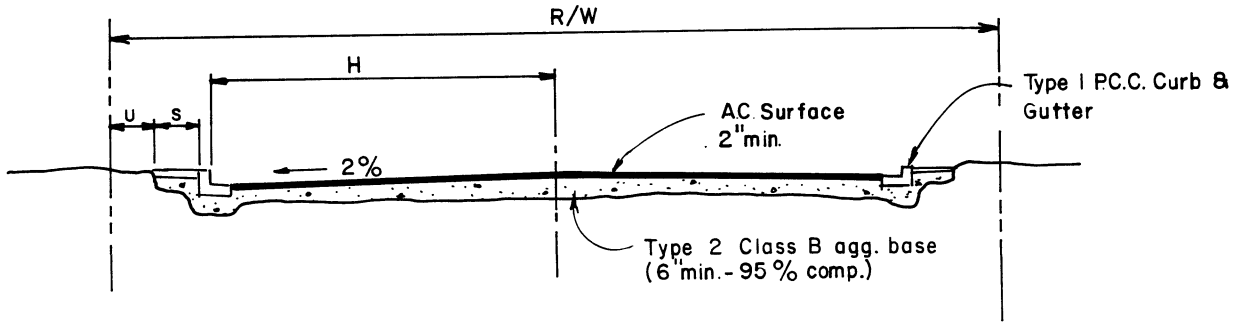


NOTES:

1.) Steet name sign shall be in conformance with the latest edition of the M.U.T.C.D.

2.) Reflective materials shall be mounted on flat plate aluminum 6061-T6, .080 gage.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION DOUGLAS CO.	
			STREET NAME SIGN	DRAWING NO. D-5 (330)	
				DATE 7-81	PAGE 6



R/W Width	H	S (Note 5)	U	Notes or Remarks
80	27.5	4	8	Major Arterial (see note 4 & 5)
60	21.5	4	4	Collector and Minor Residential (See notes 4 & 5)

Structural section shall be determined by Engineering Design based on R-Value or CBR testing, but in no case shall it be less then the minimums specified above.

NOTE:

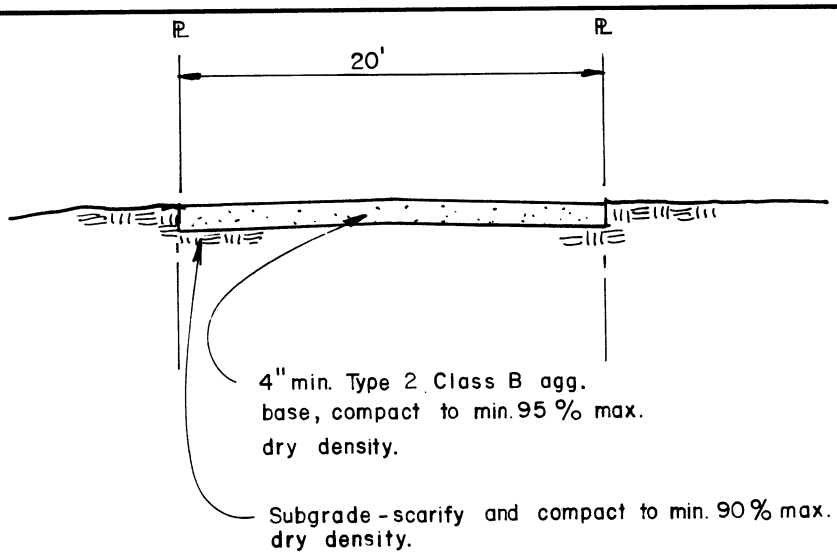
1.) "H" is measured from "front face" of curb to centerline.

2.) Prime coat shall be required on all subgrade prior to paving.

3.) Asphalt concrete surfaces shall be finished with a "fog seal" of ss-1h or equiv.

4.) Roadway dimensions may vary according to administrative authority determination.

5.) Sidewalks in commercial areas shall be a minimum of 5 feet wide, and therefore "U" shall be reduced by one foot.



TYPICAL RESIDENTIAL ALLEY SECTION

NO.	REVISION	DATE
1	SPELLING	10-14-86

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

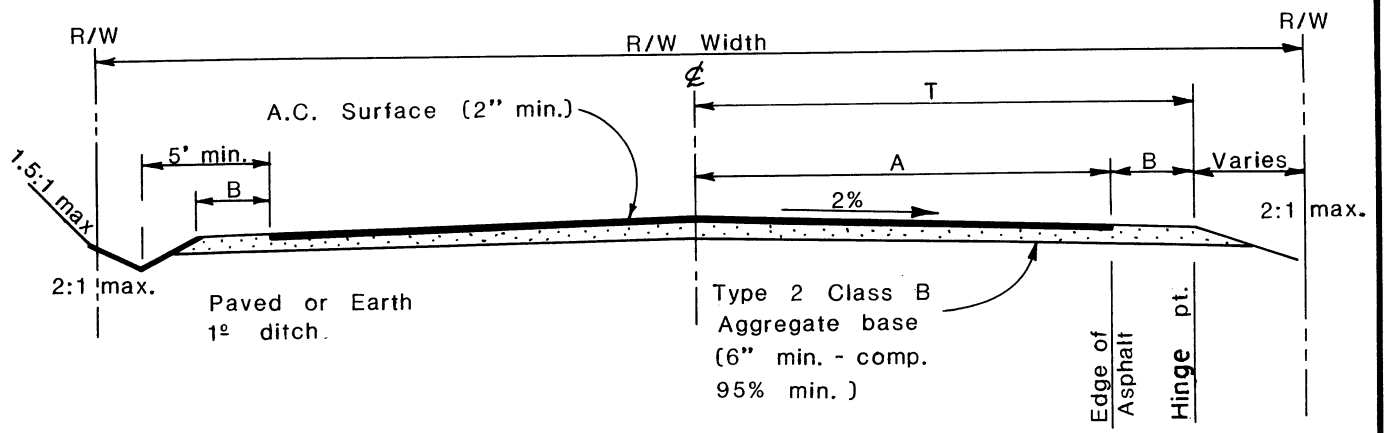
ROADWAY SECTIONS

SECTION FALLON

DRAWING NO. F-1.1 (319)

DATE 7-81

PAGE 1



RIGHT-OF-WAY WIDTH	A	B	T
50	14	4	18
60	18	4	22

RURAL ROAD

NOTES:

1. Roadway dimensions may vary according to administrative authority determination.
2. Prime shall be required prior to paving.
3. Asphalt surfaces shall be finished with a 'Fog-Seal' of ss-lh or equiv.

NO.	REVISION	DATE
1	SPELLING	10-14-86

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

ROADWAY SECTIONS

SECTION
FALLON

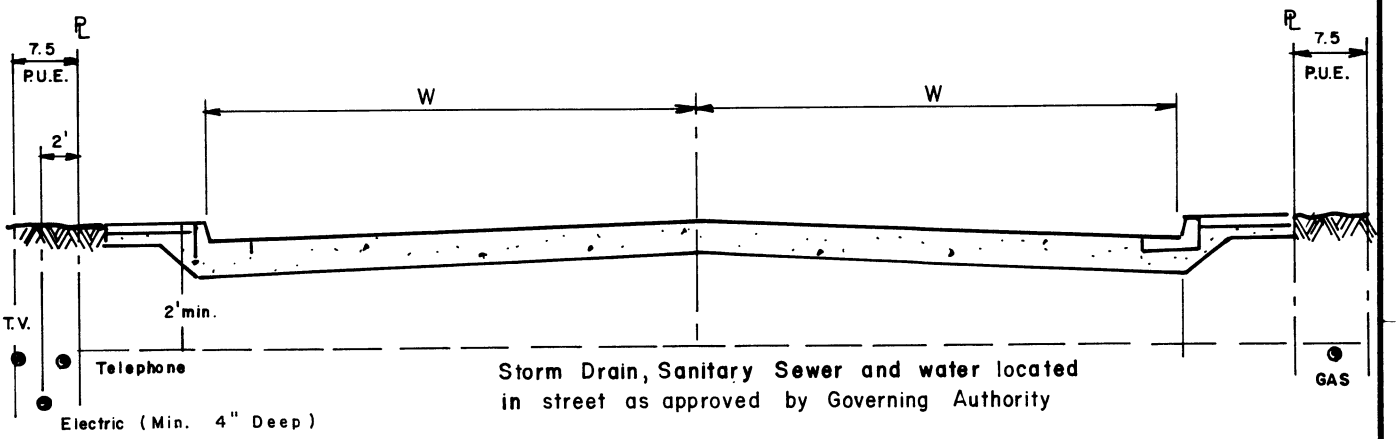
DRAWING NO.
F-1.2 (314,319)

DATE
3-83

PAGE
1. A

SOUTH & WEST

NORTH & EAST



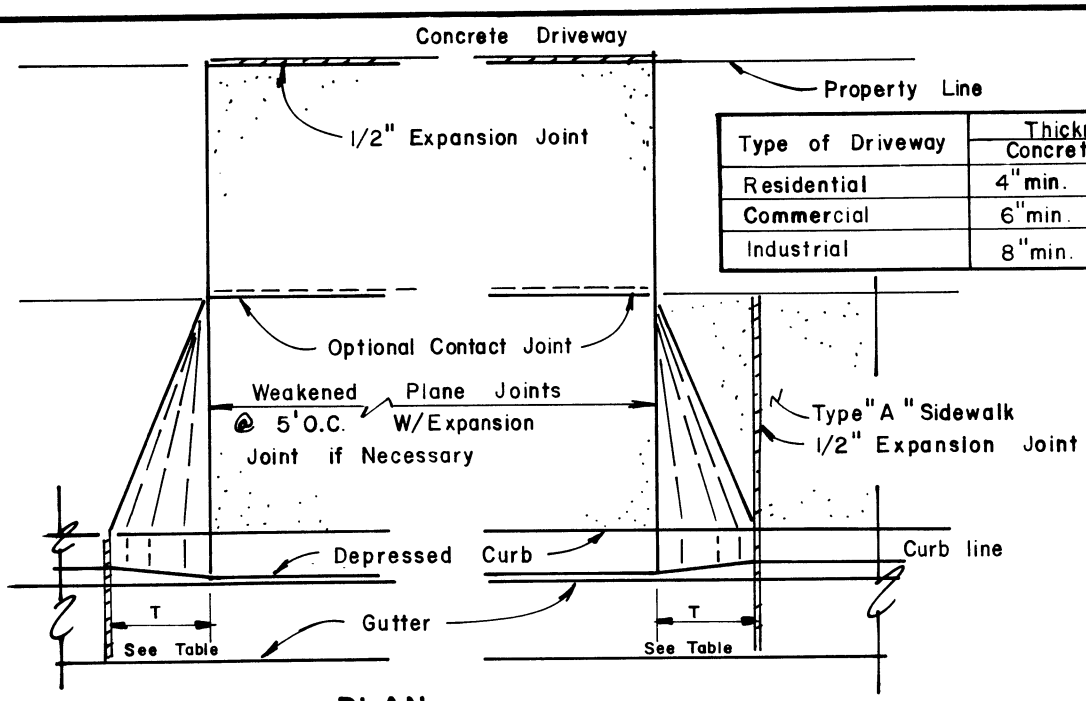
Storm Drain, Sanitary Sewer and water located in street as approved by Governing Authority

NOTE:

1. Where development includes alley construction on rear lot line, utility location will be as directed by the City Engineer.
2. Telephone, T.V., and gas locations will be coordinated with the corresponding agency.
3. Metallic location tape shall be installed 12" (min.) above water mains.

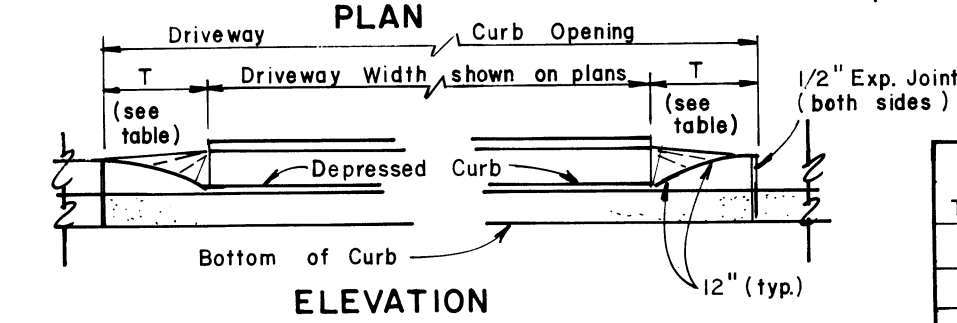
TYPICAL SECTION "C"

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION FALLON	
			TYPICAL UTILITY MAIN LOCATIONS	DRAWING NO. F-2	
				DATE 7-81	PAGE 2



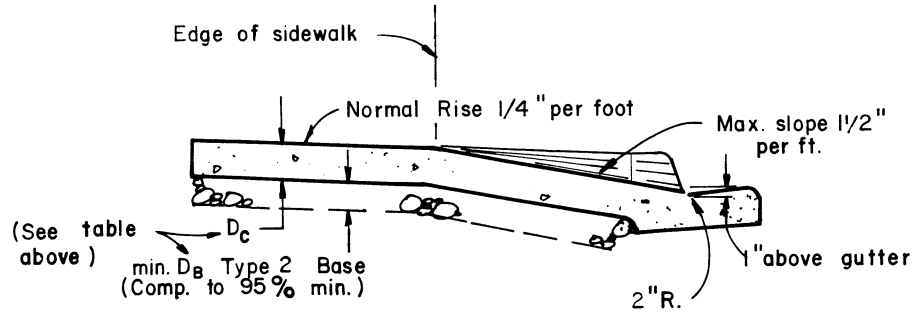
PLAN

Type of Driveway	Thickness (inches) Concrete	Base
Residential	4" min.	4" min.
Commercial	6" min.	6" min.
Industrial	8" min.	6" min.



ELEVATION

Taper Length T (ft.)	Curb Ht.
2.5'	5"
3.0'	6"
3.5'	7"
4.0'	8"
4.5'	9"



SECTION

NOTES:

1.) No concrete shall be placed until forms and subgrade are inspected by the agency.

2.) Concrete shall be Class AA or DA

3.) See Standard drawing (1-9) for width and location requirments.

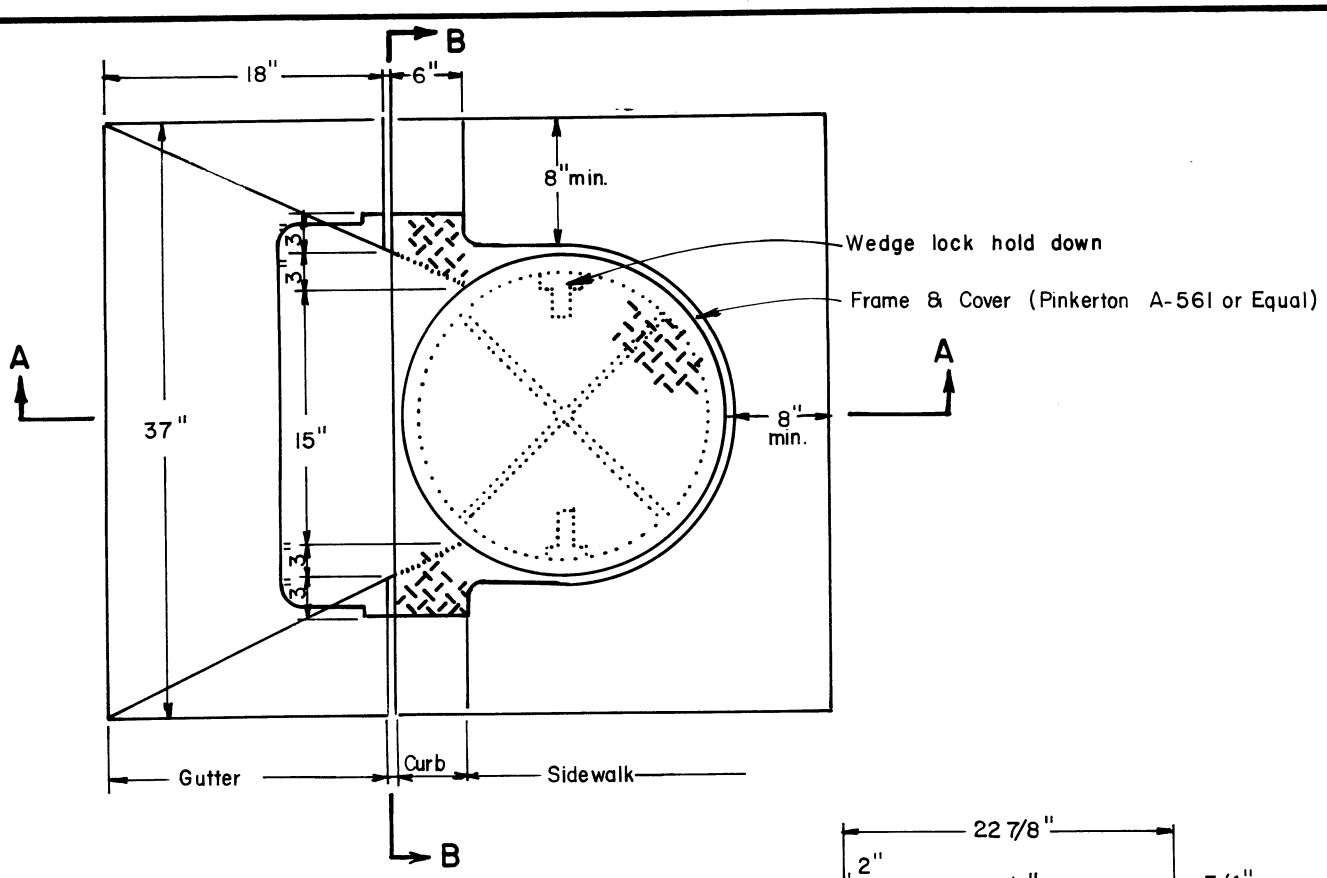
4.) Industrial driveways to have 6"x6" 10/10 wire mesh extended into gutter pan.

5.) If construction joint exists within 4 feet of driveway, remove sidewalk and curb and gutter to that joint.

6.) Concrete removal shall be to neat sawcut lines.

7.) Base materials shall be Aggregate, Type 2 Class B.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION FALLON
			P.C.C. DRIVEWAY APRON	DRAWING NO. F-3
				DATE 7-81 / PAGE 3

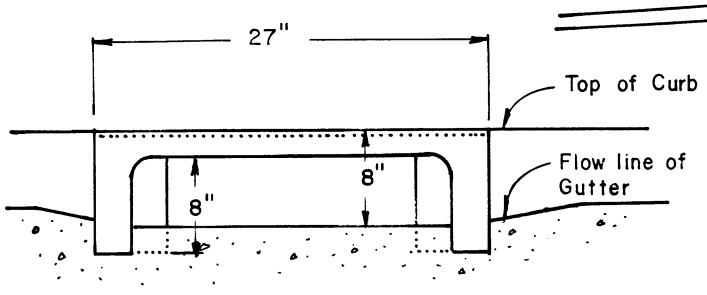


NOTES:

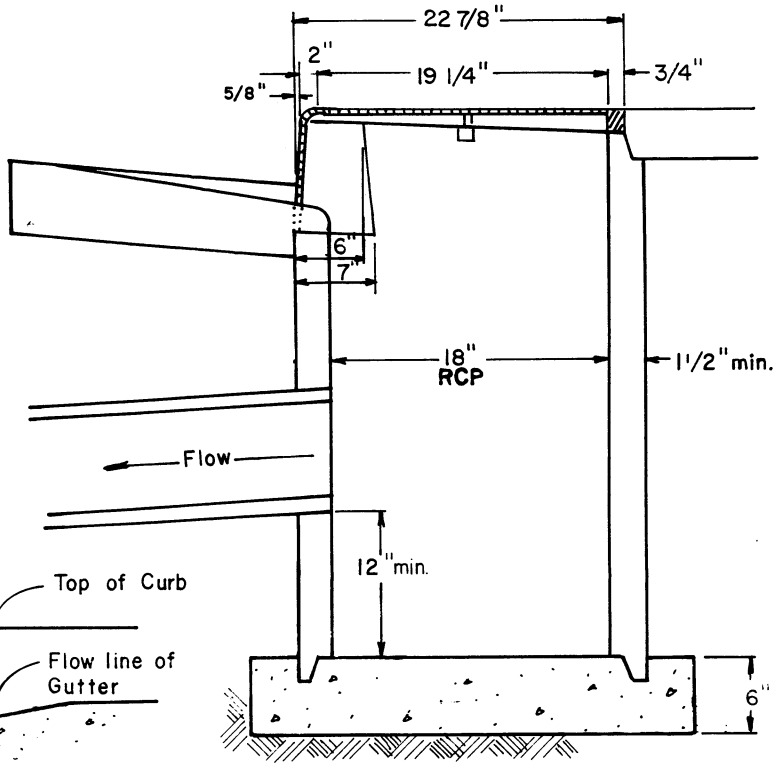
1.) For outflow pipe in excess of 10" diameter, larger barrel and corresponding large frame and cover shall be used. (see "Catch Basin, Type 1)

2.) Depth to outflow pipe shall be as necessary and as approved by the City Engineer.

3) For dimensions and details not shown see "Catch Basin, Type 1"

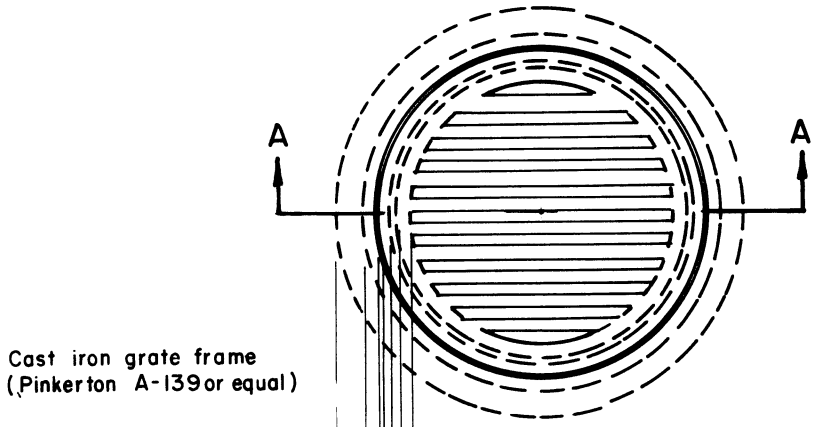


SECTION B-B



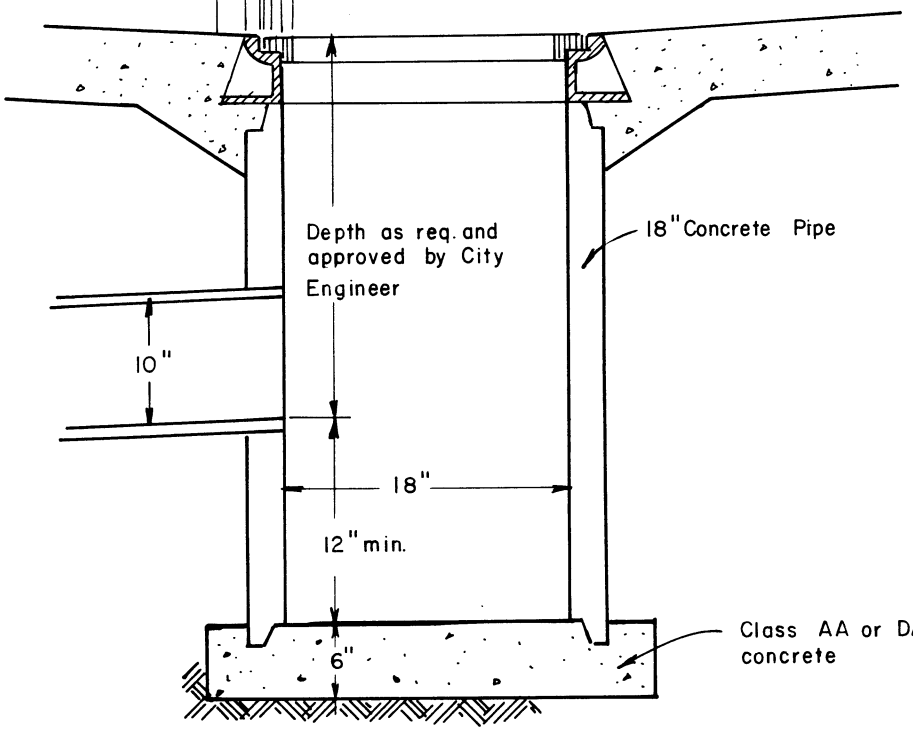
SECTION A-A

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION FALLON
1	Dim's	8-85	CATCH BASIN TYPE 1	DRAWING NO. F-4 (306)
				DATE 7-81 / PAGE 4



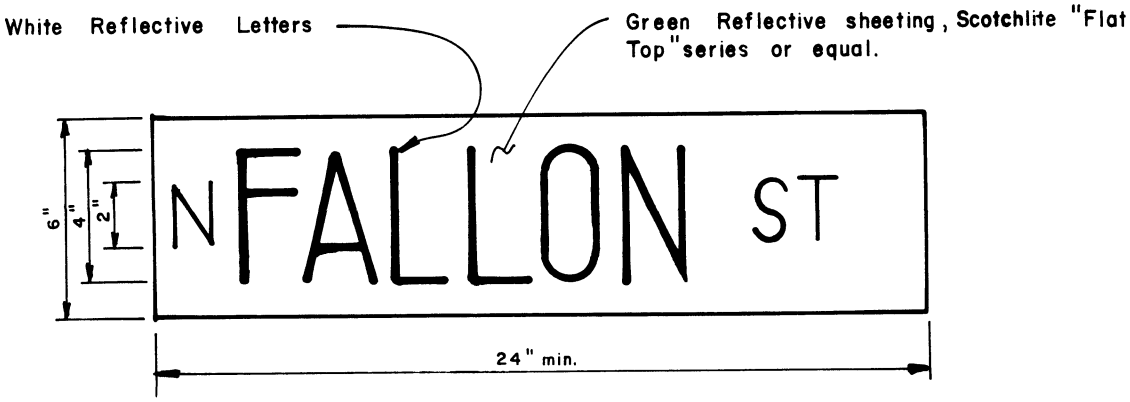
Cast iron grate frame
(Pinkerton A-139 or equal)

PLAN



SECTION A-A

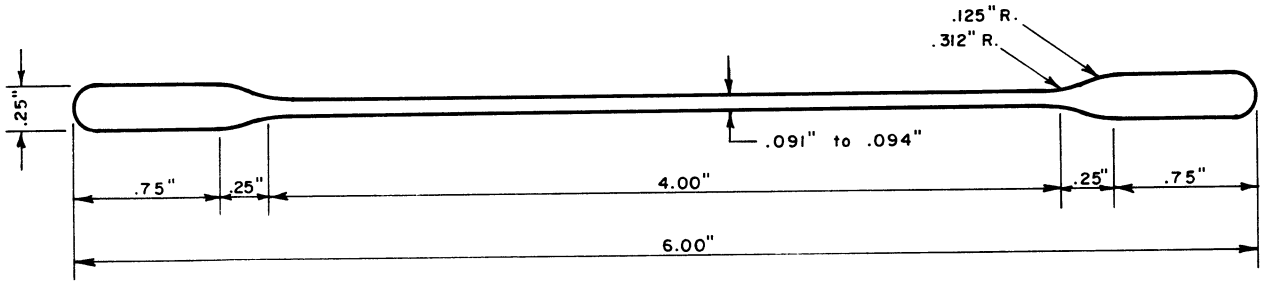
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION FALLON	
			CATCH BASIN MODIFIED TYPE 3	DRAWING NO. F-5 (306)	
				DATE 7-81	PAGE 5



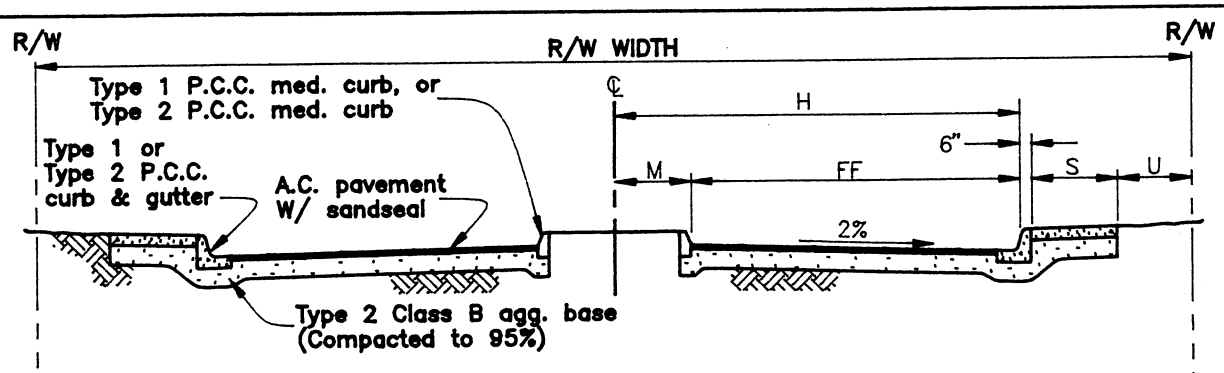
NOTES:

1.) Street name sign shall be in conformance with the latest edition of the M.U.T.C.D.

2.) Reflective materials shall be mounted on extruded aluminum No. 6063-T6 (See detail below)



NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION FALLON	
1	Note 2	3-83	STREET NAME SIGN	DRAWING NO. F-6 (330)	
				DATE 7-81	PAGE 6

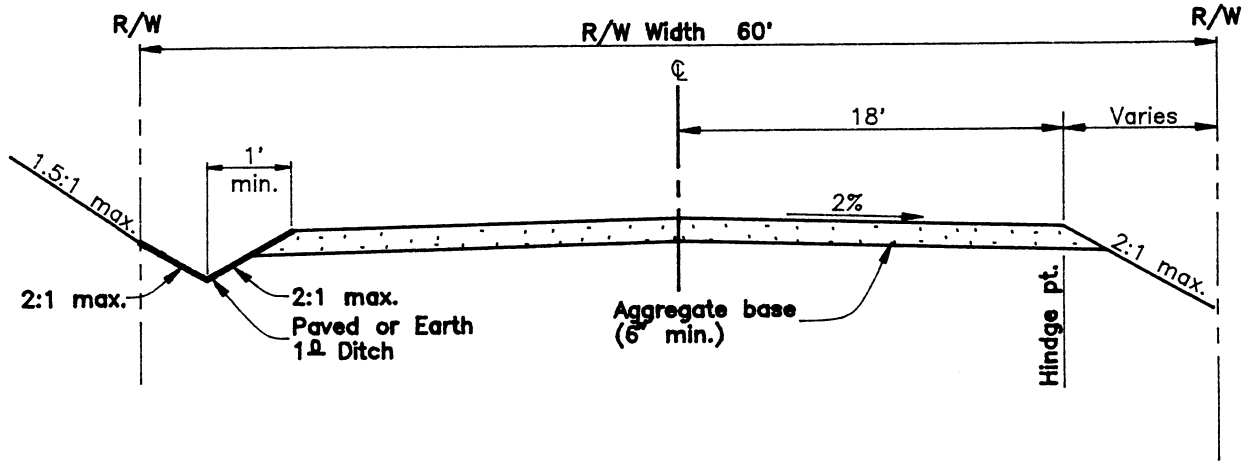


NOTE:

1. FF is measured to front face for "L" curb and asphalt curbs and to flow line for Type 2 curbs decreasing "U" by 0.5 feet.
2. Structural section by Engineering Design, but not less than the min. shown.
3. For 100' R/W, median as specified by county engineer.

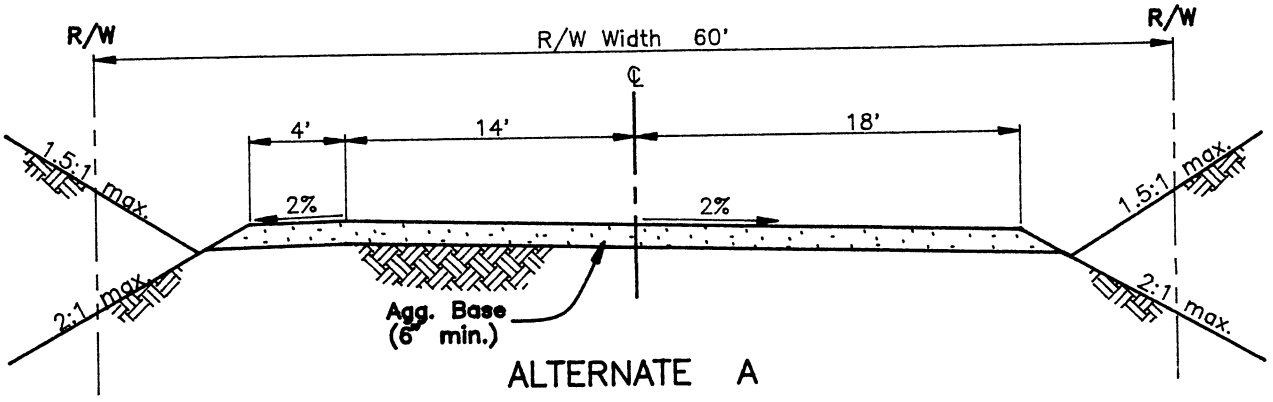
R/W WIDTH	H	FF	M	S	U	NOTES OR REMARKS
100	34	25.5	8.5	4	11.5	Primary Road (Min. 4" A.C. W/ Min. 9" agg. base)
80	28	–	–	4	7.5	Secondary Road (Min. 4" A.C. W/ Min. 9" agg. base)
60	15.5	–	–	4	10	Collector Street (Min. 3" A.C. W/ Min. 6" agg. base)
60	13.5	–	–	4	12	Local Street (Min. 3" A.C. W/ Min. 6" agg. base)

URBAN STREET

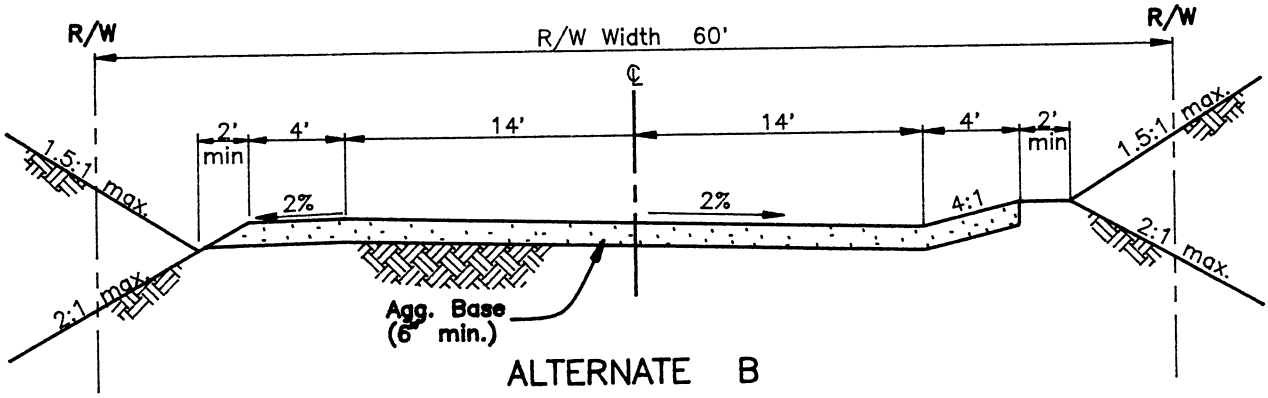


RURAL ROAD

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION LANDER COUNTY	
1	Thicknesses	3-83	ROADWAY SECTIONS	DRAWING NO. LA-1.1(314,319)	
2	R/O/W Width	3-89		DATE 9-81	PAGE 1
3	RURAL PVM'T	3-89			



ALTERNATE A



ALTERNATE B

RURAL HILLSIDE ROAD

NOTE:

DITCH FLOWLINE TO ONE FOOT
BELOW EDGE OF PAVEMENT MINIMUM.

NO.	REVISION	DATE
1	Ditch	3-83
2	R/O/W Width	3-89
3	Pavement	3-89

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

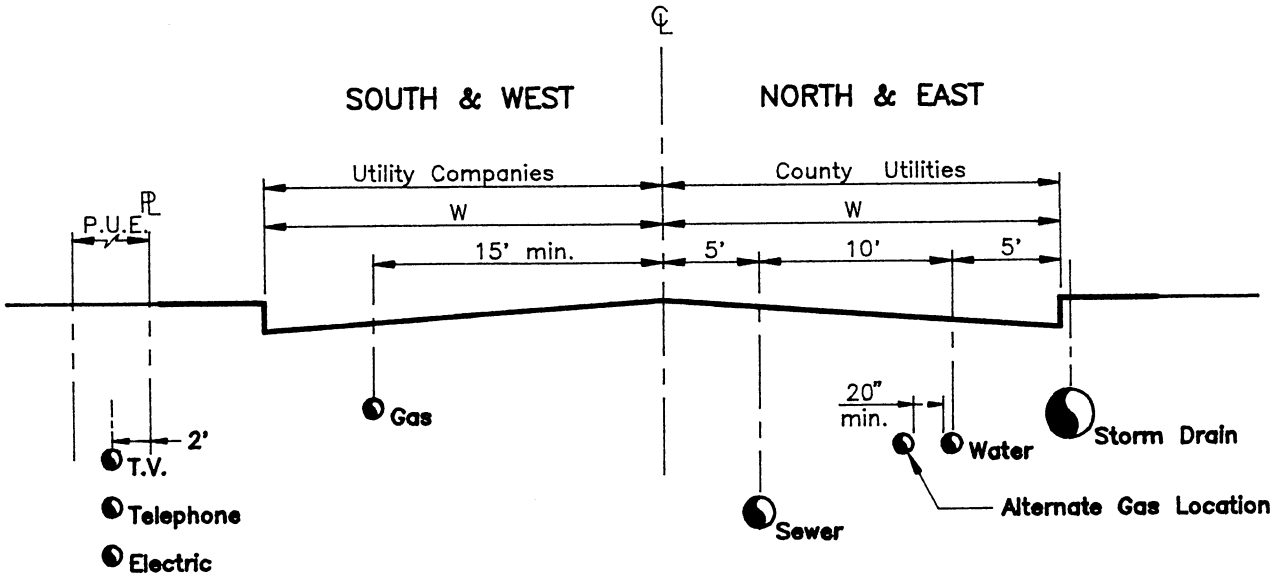
ROADWAY SECTIONS

SECTION
LANDER COUNTY

DRAWING NO.
LA-1.2 (319)

DATE
9-81

PAGE
2



TYPICAL SECTION "B"

NOTES:

1. USE OF ALTERNATE GAS LOCATION REQUIRES ENGINEER TO CERTIFY "AS BUILT" DRAWINGS INDICATING STRICT COMPLIANCE WITH SPACING REQUIREMENTS.
2. GAS & WATER TO BE PLACED AT SAME TRENCH ELEVATION.
3. 20" MIN. DISTANCE IS MEASURED FROM EDGE OF WATER TO EDGE OF GAS LINE.

MIN. DEPTH OF COVER	
Storm Drain	24"
Sanitary Sewer	60"
Water Main	42"
Gas Main	30"
T.V.	36"
Telephone	36"
Electricity	36"

NO.	REVISION	DATE
1	Wording	4-89
2	ALT. Gas	6-89

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

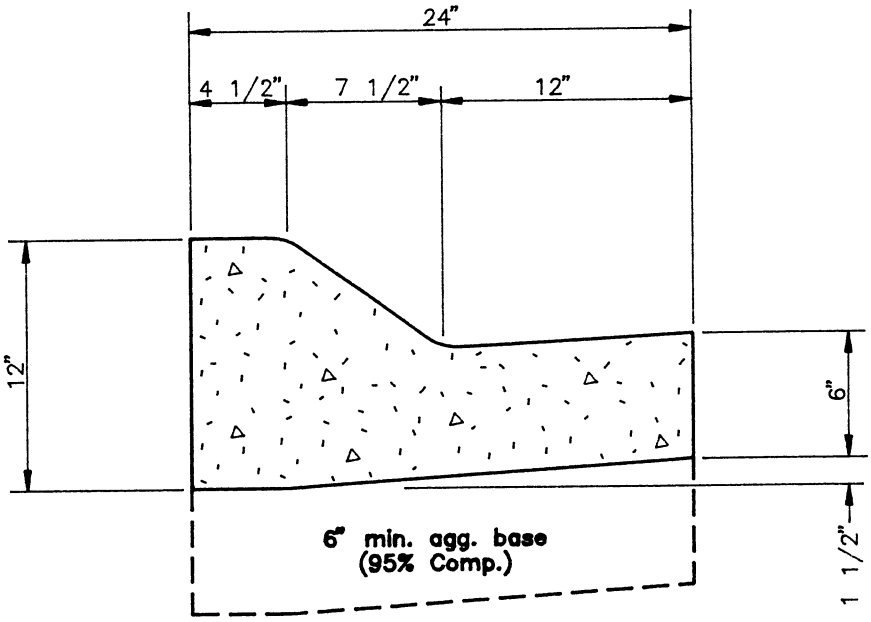
TYPICAL UTILITY MAIN LOCATIONS

SECTION LANDER COUNTY

DRAWING NO. LA-2

DATE 9-81

PAGE 3

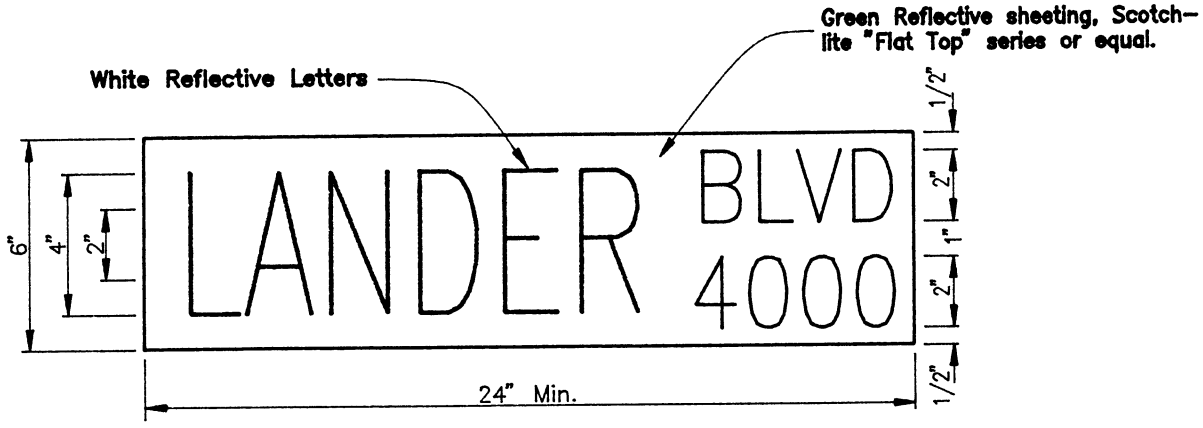


TYPE 2 CURB & GUTTER

(Lander County only)

NOTE:
See general notes for all curb and gutter on standard Drawing 1–6.1

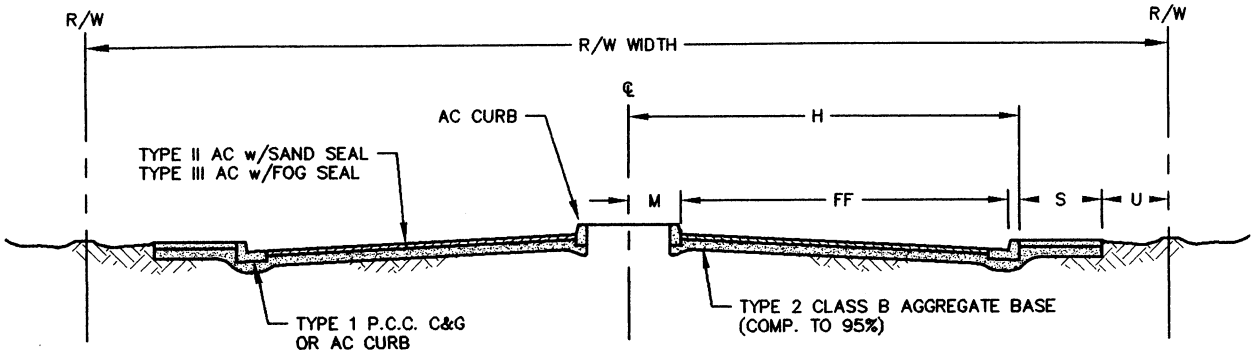
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION LANDER COUNTY	
			LANDER COUNTY TYPE 2 P.C.C. CURB/GUTTER	DRAWING NO. LA–3 (312)	
				DATE 9–81	PAGE 4



NOTES:

1. Street name sign shall be in conformance with the latest edition of the M.U.T.C.D.
2. Reflective materials shall be mounted on:
    1. Fiberglass plate as manufactured by the Carsonite Co. or approved equal, or
    2. Flat plate aluminum No. 6061–T6, .080 gauge.

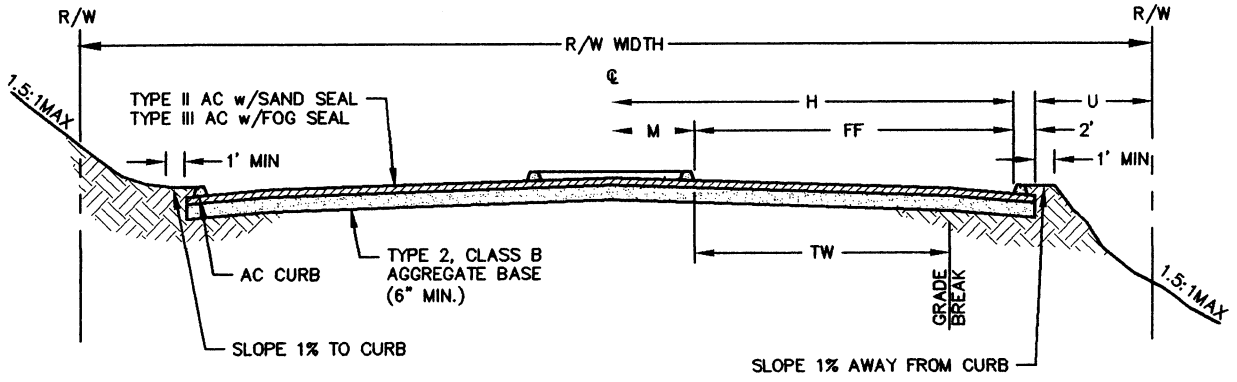
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION LANDER COUNTY	
1	Sign	3–83	STREET NAME SIGN	DRAWING NO. LA–4 (330)	
				DATE 10–81	PAGE 5



NOTE:

1. FF AND H ARE MEASURED TO TBC FOR TYPE 1 AND TYPE 2 CURB.
2. STRUCTURAL SECTION SHALL BE DETERMINED BY ENGINEERING DESIGN BASED ON R-VALUE OR CBR TESTING, BUT IN NO CASE LESS THAN THE MINIMUM SHOWN.

R/W WIDTH	H	FF	M	S	U	NOTES OR REMARKS
125	56.5	49.5	7	5	1	EXPRESSWAY (MIN. 4" AC w/6" AGG. BASE)
100	43.5	36.5	7	4	2.5	MAJOR ARTERIAL (MIN. 4" AC w/6" AGG. BASE)
80	34.5	–	–	4	1.5	MINOR ARTERIAL (MIN. 2-1/2" AC w/6" AGG. BASE)
60	21.5	–	–	4	4.5	COLLECTOR (MIN. 2-1/2" AC w/6" AGG. BASE)
50	18.5	–	–	4	2.5	LOCAL (MIN. 2-1/2" AC w/6" AGG. BASE)



R/W WIDTH	H	FF	M	TW	U	NOTES OR REMARKS
125	56	49	7	38	4.5	EXPRESSWAY (MIN. 4" AC w/6" AGG. BASE)
100	43	36	7	24	5.0	MAJOR ARTERIAL (MIN. 4" AC w/6" AGG. BASE)
80	34	–	–	24	4.0	MINOR ARTERIAL (MIN. 2-1/2" AC w/6" AGG. BASE)
60	21	–	–	12	7.0	COLLECTOR – NO CURB (MIN. 2-1/2" AC w/6" AGG. BASE)
50	18	–	–	12	5.0	LOCAL – NO CURB (MIN. 2-1/2" AC w/6" AGG. BASE)

NO.	REVISION	DATE
1	SPELLING	10-14-86
2	SEAL COATING DIMENSIONS	8-3-98

STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION

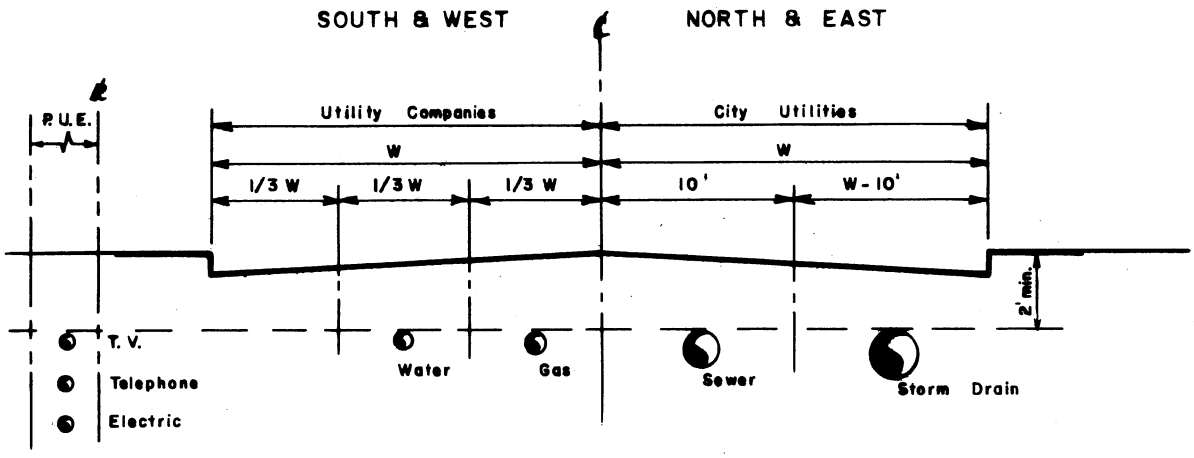
ROADWAY SECTIONS

SECTION
LYON COUNTY

DRAWING NO.
L-1 (314, 319)

DATE
7-81

PAGE
1



TYPICAL SECTION "A"

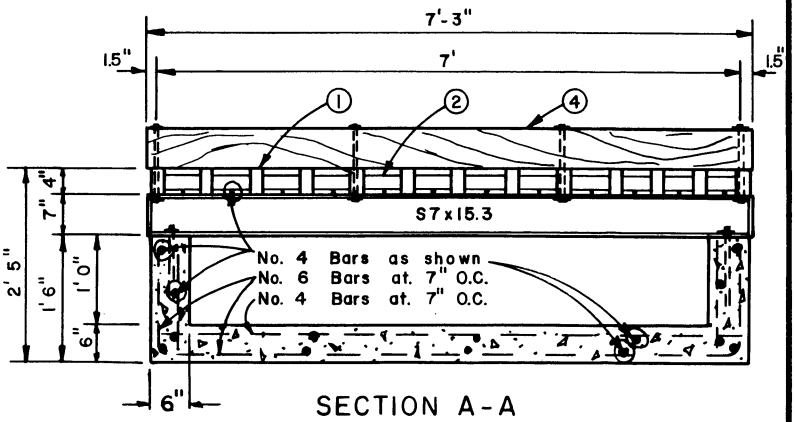
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION LYON CO.	
			TYPICAL UTILITY MAIN LOCATIONS	DRAWING NO. L-2	
				DATE 7-81	PAGE 2

GENERAL NOTES

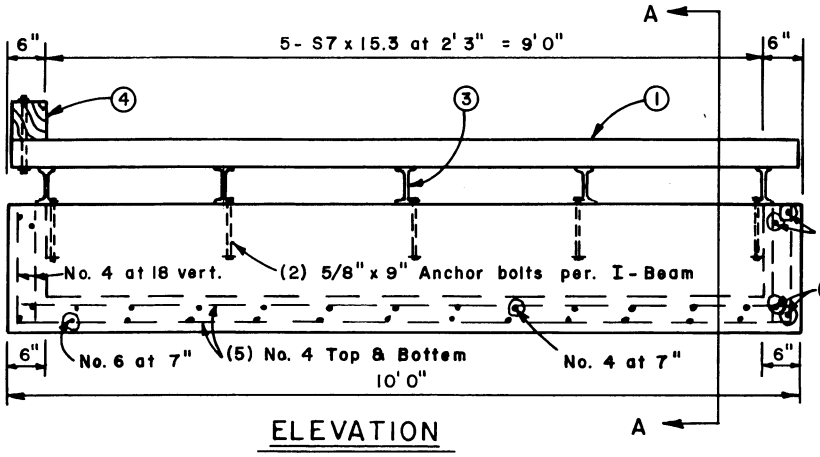
1. All conc. shall be class DA
2. All steel connections shall be welded - 1/4" fillet unless otherwise shown.
3. Provide 8" dia. hole at ends for drainage of conc. box.
4. All nailing to be with 20d nails.
5. Structure width can be made in any multiple of the grate width.
6. Manufactured approved equal Cattle Guard by.

   a) Heaton Steel Supply Co. Klamath Falls, Ore.

   b) Sixth St. Steel and Oxygen Co. Salt Lake City, Utah



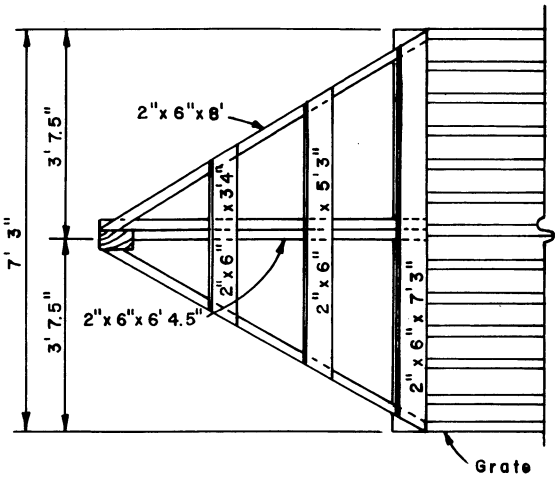
SECTION A-A



ELEVATION

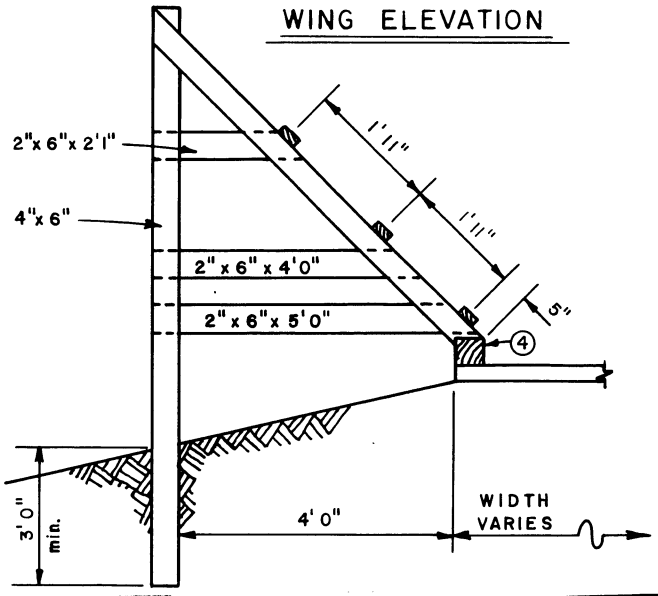
MATERIALS LEGEND

① 4"x 2"x 1/4" struc. tubing at 7" O.C.
② 5"x 2 1/2"x 5/16" PL
③ S7x 15.3 at 2'3" O.C.
④ 6"x 6"x 7'3" Timber

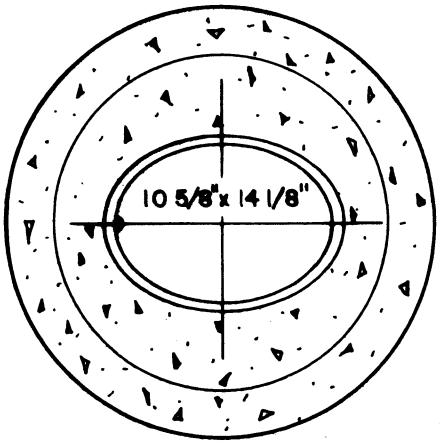


WING PLAN

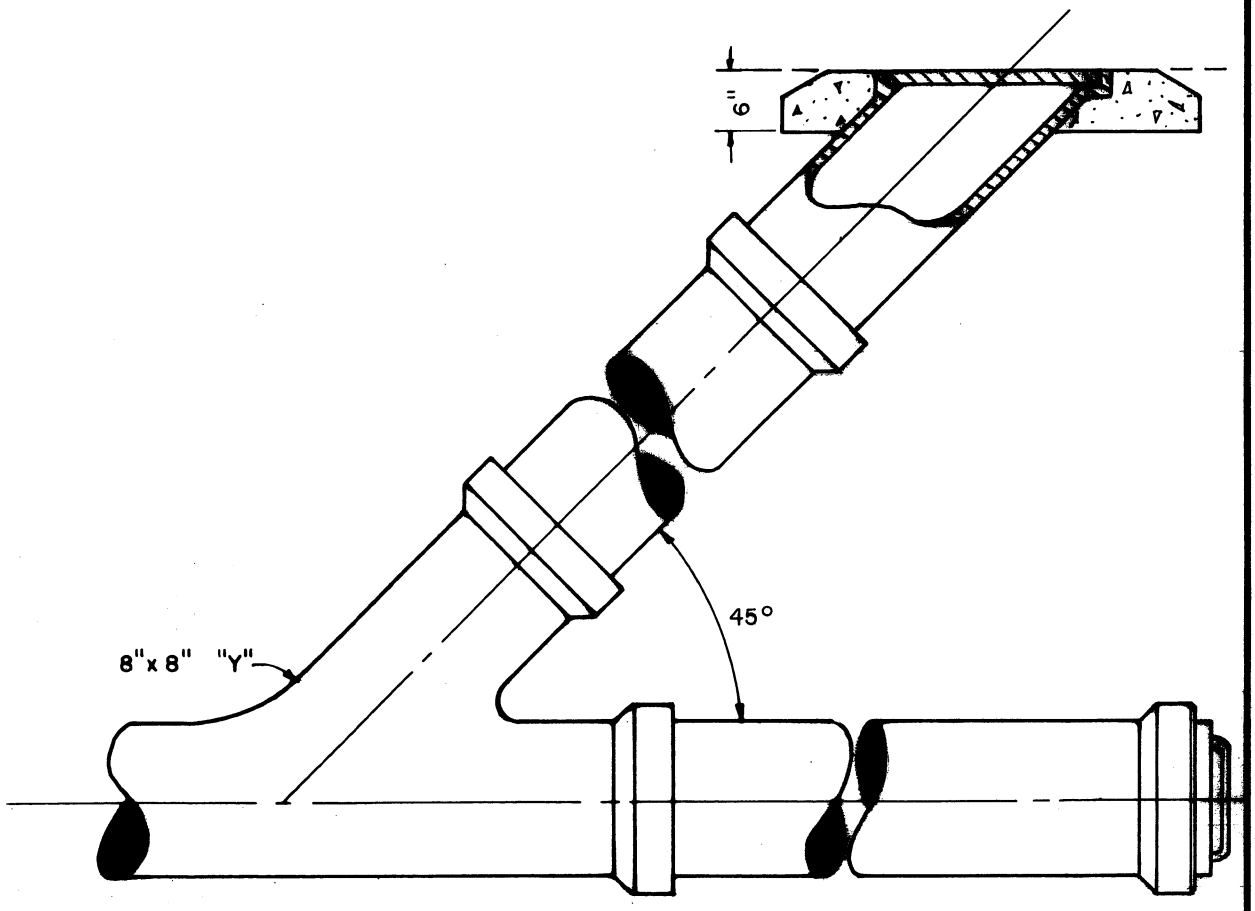
WING ELEVATION



NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION LYON CO.
			CATTLE GUARD	DRAWING NO. L-3 (324,328)
				DATE 7-81 / PAGE 3

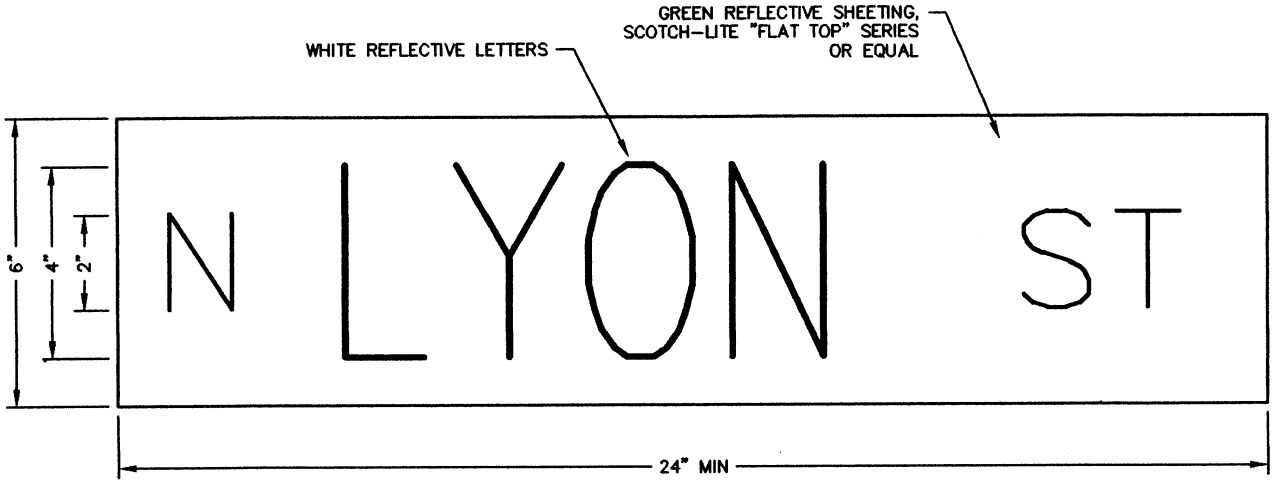


PINKERTON FOUNDRY
CASTING No. A-490
OR EQUAL



NOTE:
Cleanouts permitted only on dead-end lines serving 4 or less lots or buildings

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION LYON CO.	
			SEWER MAIN CLEANOUT	DRAWING NO. L-4	
				DATE 7-81	PAGE 4

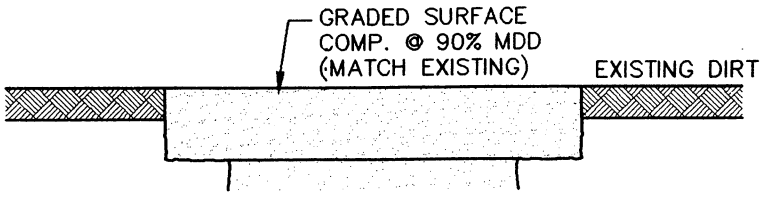


NOTES:

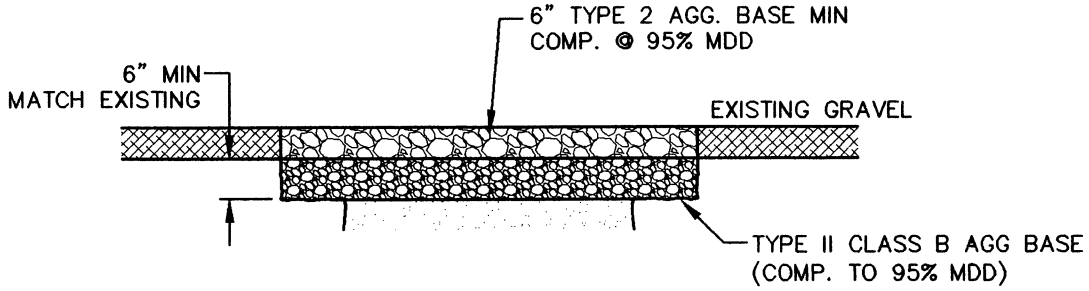
1. STREET NAME SIGN SHALL BE IN CONFORMANCE WITH THE LATEST EDITION OF THE M.U.T.C.D.
2. REFLECTIVE MATERIALS SHALL BE MOUNTED ON 0.080 GAUGE FLAT PLATE ALUMINUM No. 6061-T6.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION LYON Co.	
1	REMOVE BLOCK	8/98	STREET NAME SIGN	DRAWING NO. L-5	
				DATE 7/81	PAGE 5

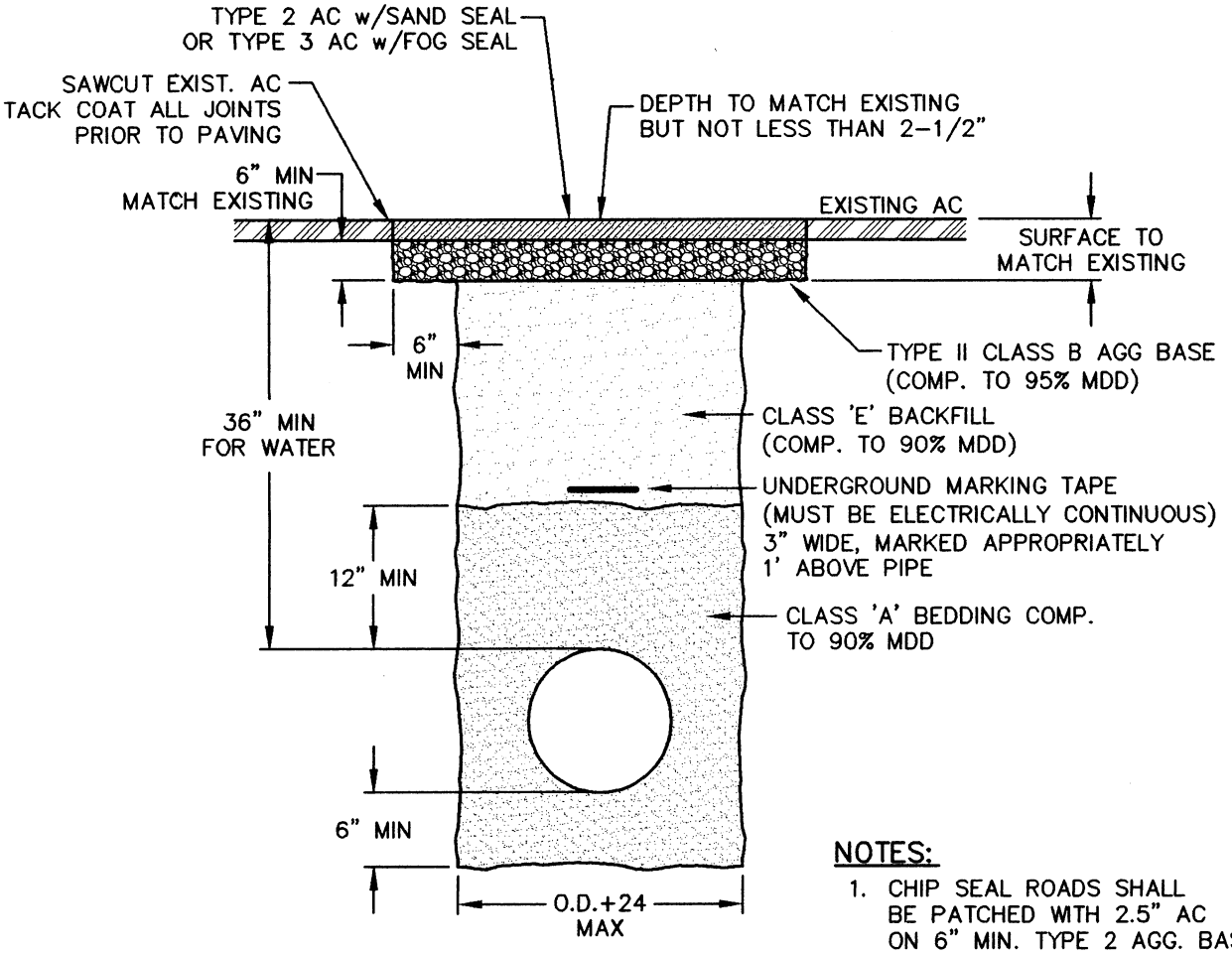
339658LI



DIRT SURFACE REPLACEMENT



GRAVEL SURFACE REPLACEMENT



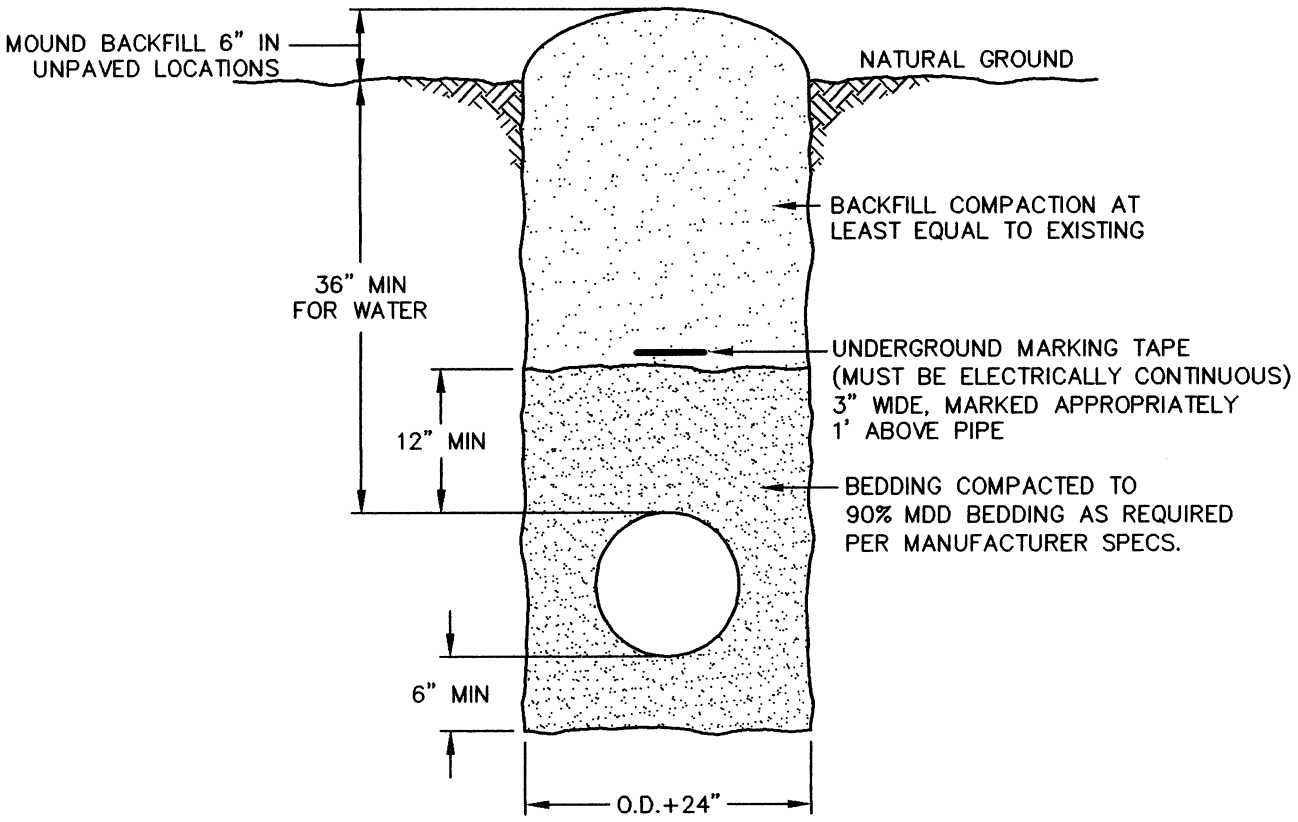
NOTES:

1. CHIP SEAL ROADS SHALL BE PATCHED WITH 2.5" AC ON 6" MIN. TYPE 2 AGG. BASE.

ASPHALT SURFACE REPLACEMENT

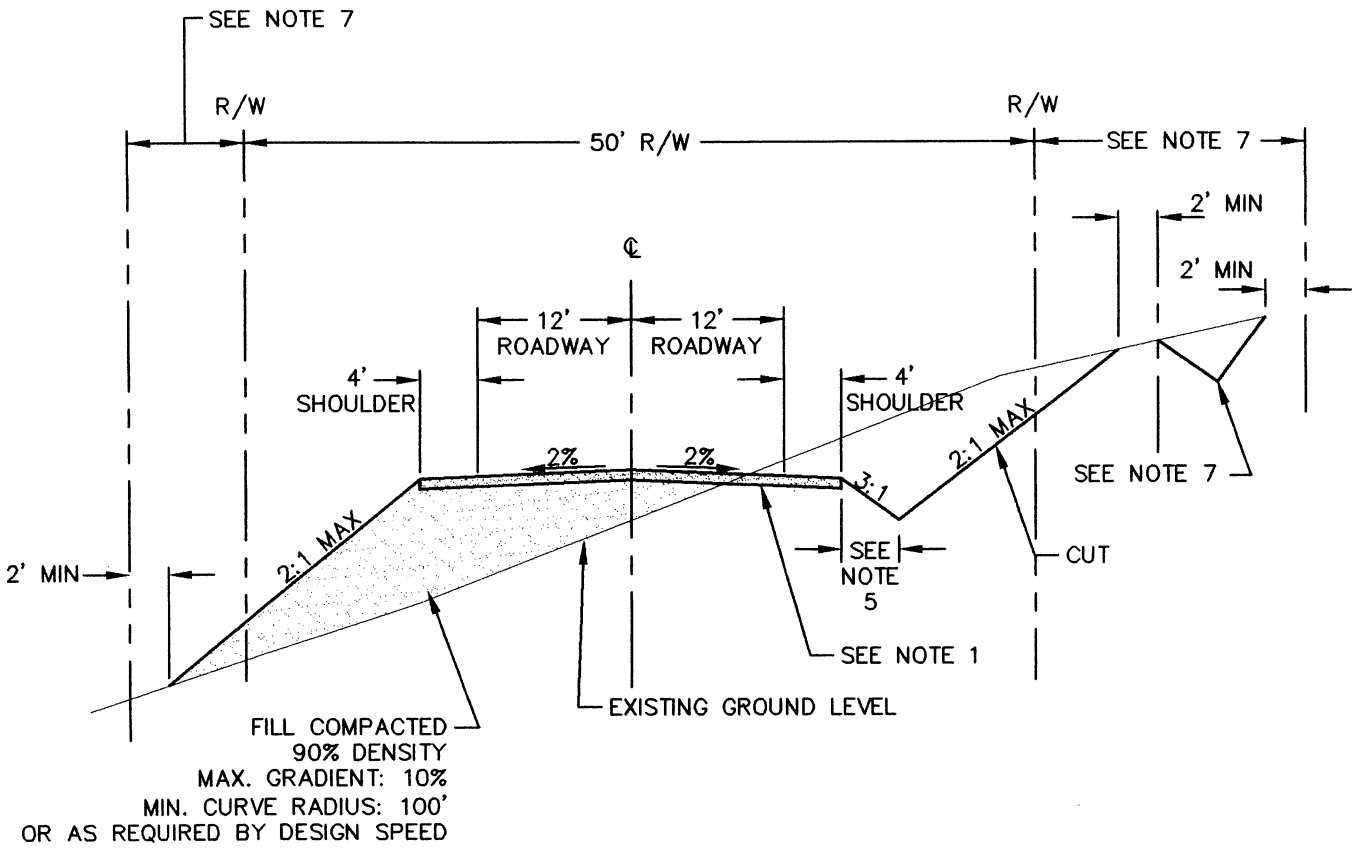
NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION LYON COUNTY	
1	REPLACE 2/87	8/97	TYPICAL IMPROVED ROAD TRENCH SECTION	DRAWING NO. L-6	
				DATE 8/97	PAGE 6

339658LA



NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION LYON COUNTY	
			TYPICAL UNTRAVELED TRENCH SECTION	DRAWING NO. L-6.1	
				DATE 8/97	PAGE 6.1

339658L9



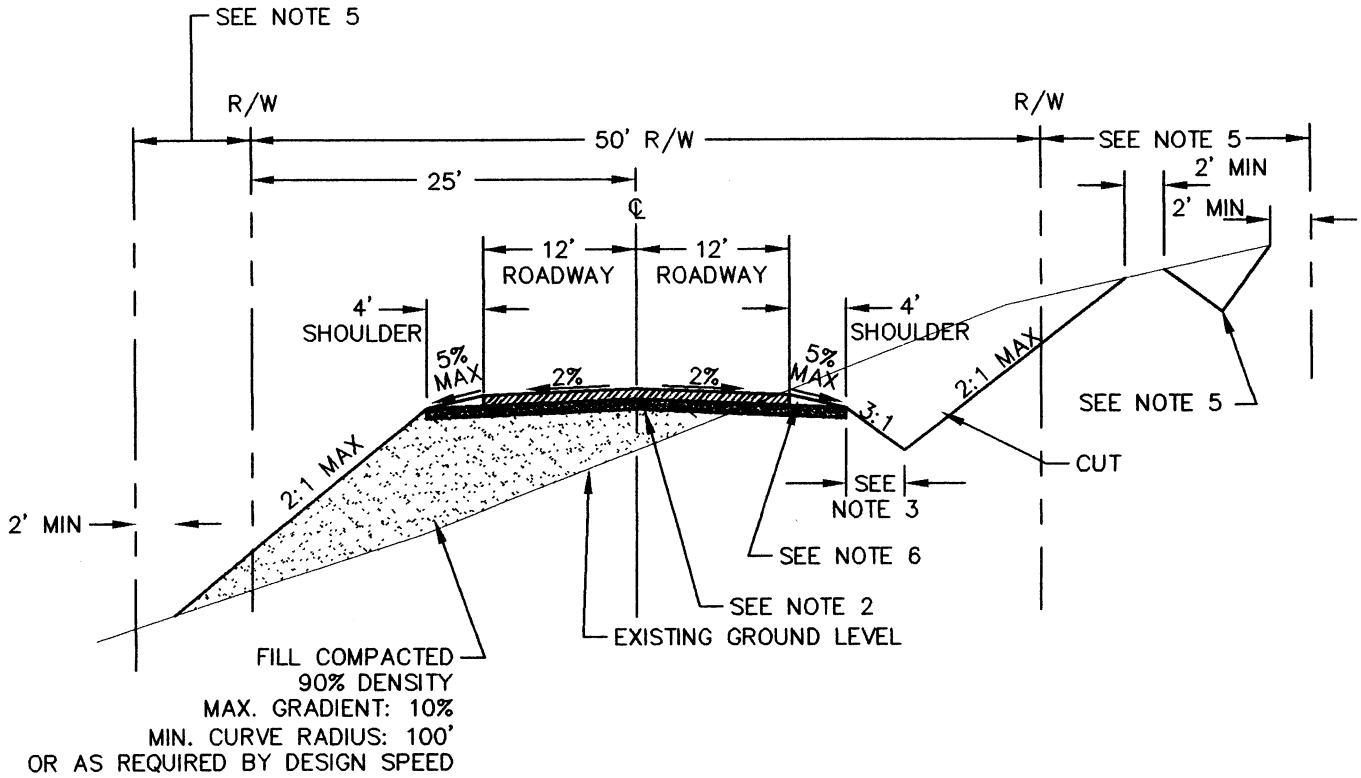
LOCAL STREETS WITH NO ON-STREET PARKING

GENERAL NOTES:

1. FIFTY (50) FOOT RIGHT-OF-WAY IS ACCEPTABLE FOR LOCAL STREET WITH NO FUTURE POSSIBILITY OF SERVING MORE THAN FORTY (40) LOTS.
2. USE 6" TYPE 2 AGGREGATE BASE COMPACTED TO A MINIMUM OF 90% RELATIVE DENSITY.
3. SUB-GRADE TO BE COMPACTED TO A RELATIVE DESTINY OF 90% OR BETTER.
4. GRAVEL ROADS AND ASSOCIATED DRAINAGE FACILITIES WILL NOT BE MAINTAINED BY LYON COUNTY.
5. DITCH DEPTH SHALL BE 6" MIN OR AS REQUIRED.
6. IF ON-STREET PARKING IS TO BE PROVIDED THE SHOULDERS SHALL INCREASE FROM 4 FEET TO 8 FEET AND THE RIGHT-OF-WAY MAY BE INCREASED AS NEEDED.
7. ADDITIONAL R/W OR SLOPE EASEMENT SHALL BE PROVIDED AS NEEDED TO AT LEAST 2' OUTSIDE HIGH POINT. TOP OF CUT DITCH MAY ALSO BE REQUIRED (CHPT 33 UBC).
8. TO BE USED PER LCC SECTION 11.07.15.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION LYON COUNTY	
			GRAVEL ROADWAY TYPE 3G	DRAWING NO. L-7	
				DATE 8/97	PAGE 7

339658L2



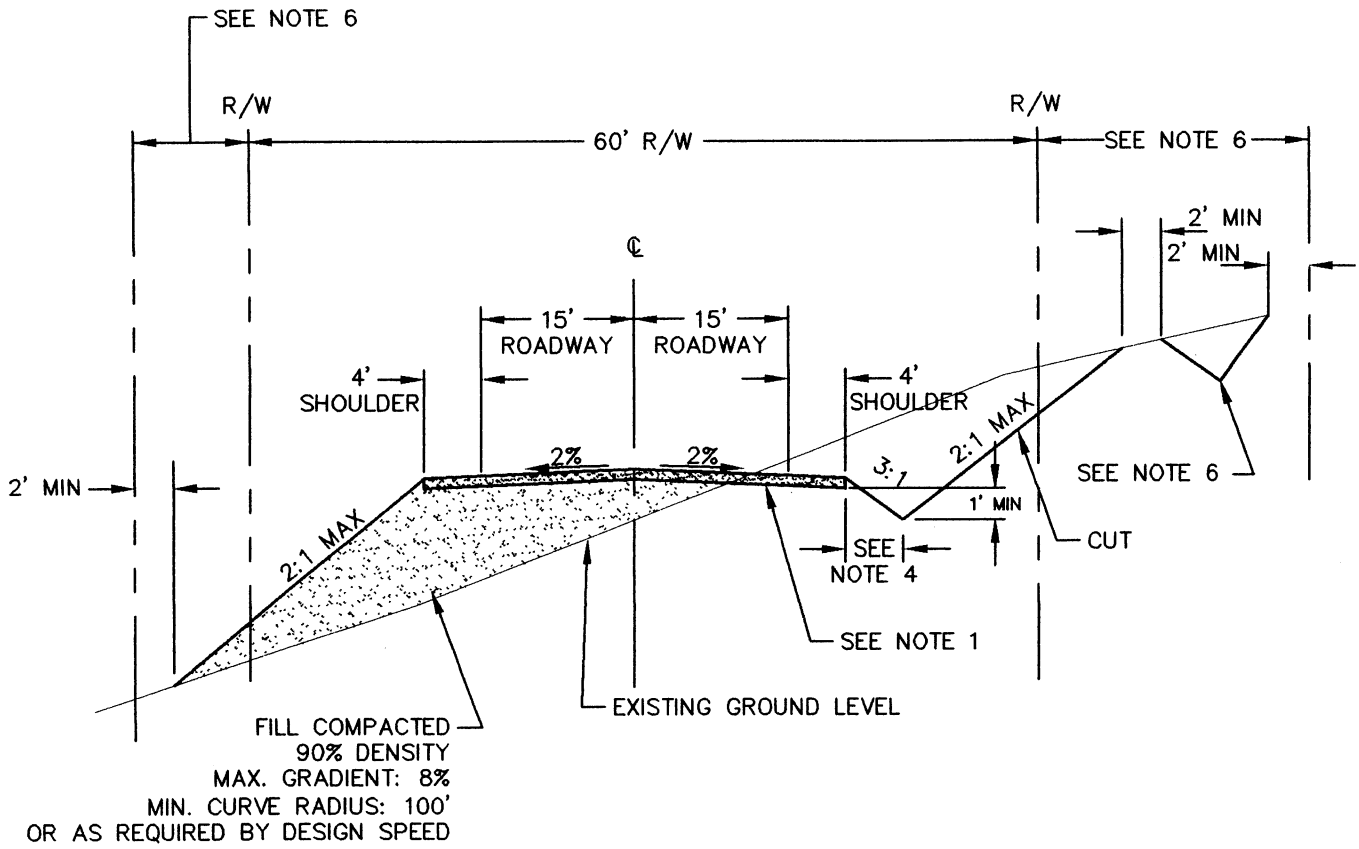
LOCAL STREETS WITH NO ON-STREET PARKING

GENERAL NOTES:

1. FIFTY (50) FOOT RIGHT-OF-WAY IS ACCEPTABLE FOR LOCAL STREETS WITH NO FUTURE POSSIBILITY OF SERVING MORE THAN FORTY (40) LOTS.
2. MINIMUM SECTION TO BE 2-1/2" TYPE 2 AC WITH SAND SEAL OR TYPE 3 WITH FOG SEAL TO BE COMPACTED TO 96% MARSHALL DENSITY WITH 6" TYPE 2 AGGREGATE BASE COMPACTED TO A MINIMUM OF 95% MDD. ACTUAL SECTION TO BE VERIFIED BY A SOILS REPORT. SUB-GRADE TO BE COMPACTED TO A RELATIVE DENSITY OF 90% OR BETTER.
3. DITCH DEPTH SHALL BE 6" MIN OR AS REQUIRED.
4. STEEPER SLOPES TO BE PERMITTED IF PROPERLY SUPPORTED BY A SOILS REPORT INCLUDING A SLOPE STABILITY ANALYSIS.
5. ADDITIONAL R/W OR SLOPE EASEMENT SHALL BE PROVIDED AS NEEDED TO AT LEAST 2' OUTSIDE HIGH POINT. TOP OF CUT DITCH MAY ALSO BE REQUIRED (CHPT 33 UBC)
6. AFTER PAVING IS COMPLETE ROAD SHALL BE SHOULDERED WITH BASE TO EDGE OF PAVEMENT.
7. LYON COUNTY MAY MAINTAIN PAVING AND DITCHES.
8. IF ON-STREET PARKING IS TO BE PROVIDED THE SHOULDERS SHALL INCREASE FROM 4 FEET TO 8 FEET AND THE RIGHT-OF-WAY MAY BE INCREASED AS NEEDED.
9. TO BE USED PER LCC SECTION 11.07.15.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION LYON COUNTY	
			RURAL ROADWAY TYPE 3P	DRAWING NO. L-8	
				DATE 8/97	PAGE 8

339658L4



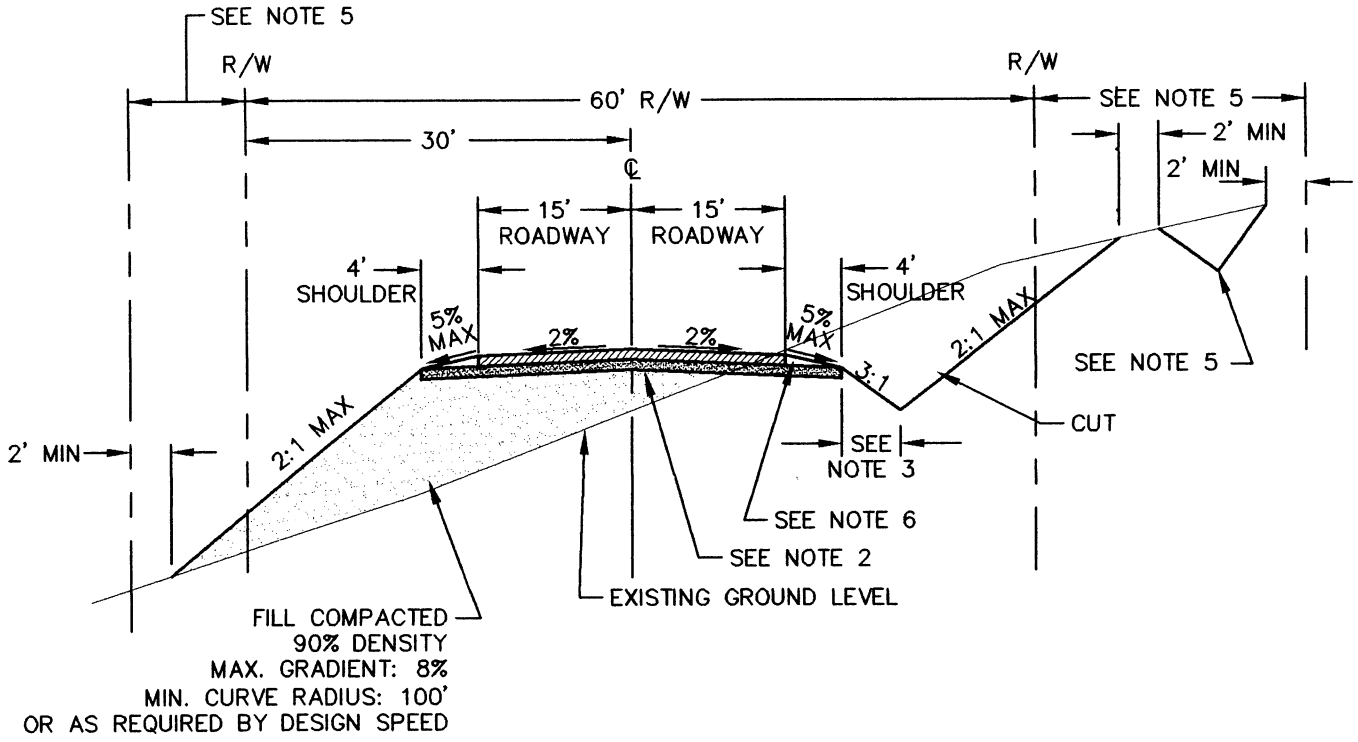
COLLECTOR ROADS AND RESIDENTIAL STREETS WITH NO ON-STREET PARKING

GENERAL NOTES:

1. USE 6" TYPE 2 AGGREGATE BASE COMPACTED TO A MINIMUM OF 90% RELATIVE DENSITY.
2. SUB-GRADE TO BE COMPACTED TO A RELATIVE DENSITY OF 90% OR BETTER.
3. GRAVEL ROADS AND ASSOCIATED DRAINAGE FACILITIES WILL NOT BE MAINTAINED BY LYON COUNTY.
4. DITCH DEPTH SHALL BE 6" MIN OR AS REQUIRED.
5. IF ON-STREET PARKING IS TO BE PROVIDED THE SHOULDERS SHALL INCREASE FROM 4 FEET TO 8 FEET AND THE RIGHT-OF-WAY MAY BE INCREASED AS NEEDED.
6. ADDITIONAL R/W OR SLOPE EASEMENT SHALL BE PROVIDED AS NEEDED TO AT LEAST 2' OUTSIDE HIGH POINT. TOP OF CUT DITCH MAY ALSO BE REQUIRED (CHPT 33 UBC)
7. TO BE USED PER LCC SECTION 11.07.15.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION LYON COUNTY	
			GRAVEL ROADWAY TYPE 1G	DRAWING NO. L-9	
				DATE 8/97	PAGE 9

339658L5



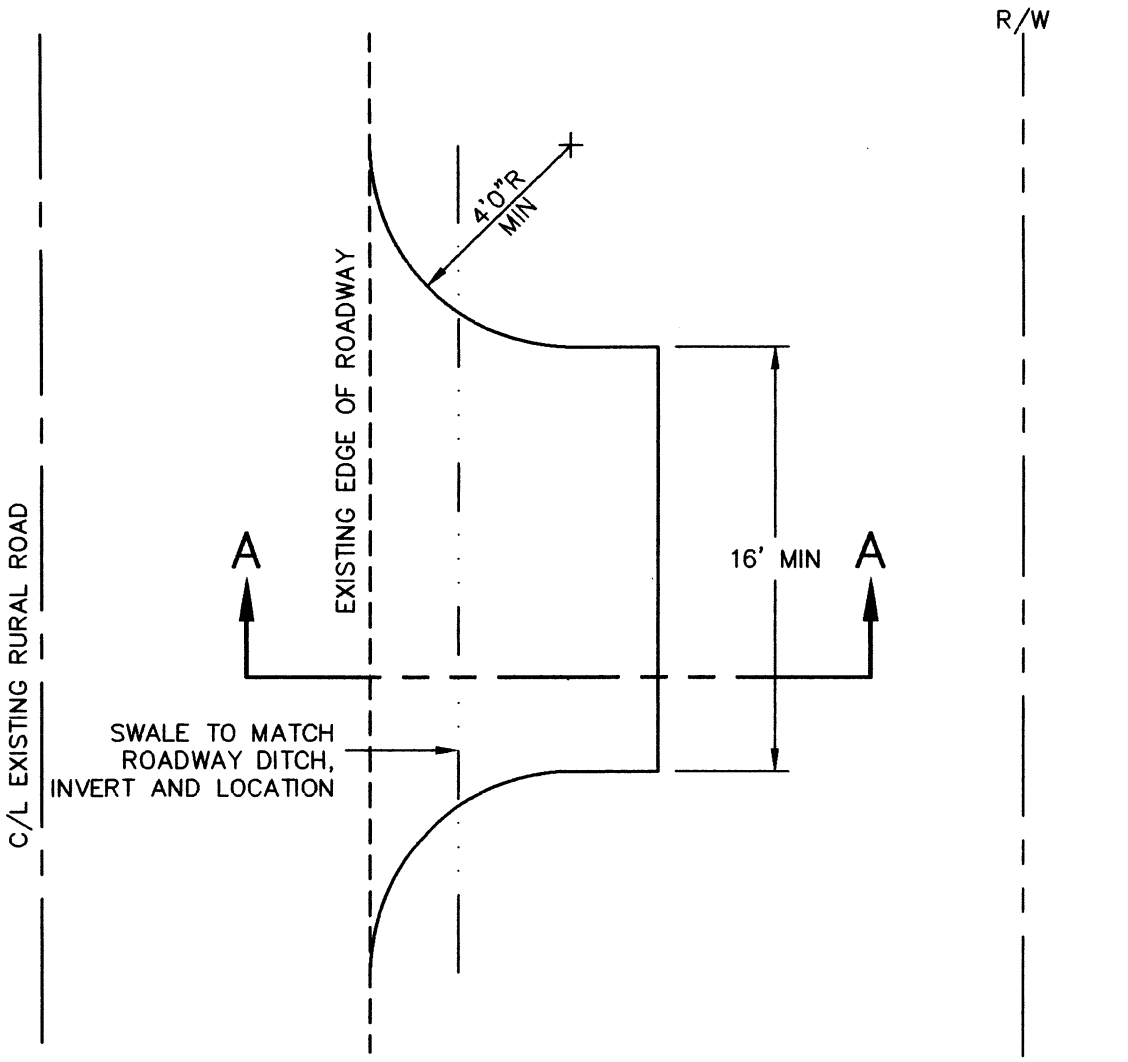
COLLECTOR ROADS AND RESIDENTIAL STREETS WITH NO ON-STREET PARKING

GENERAL NOTES:

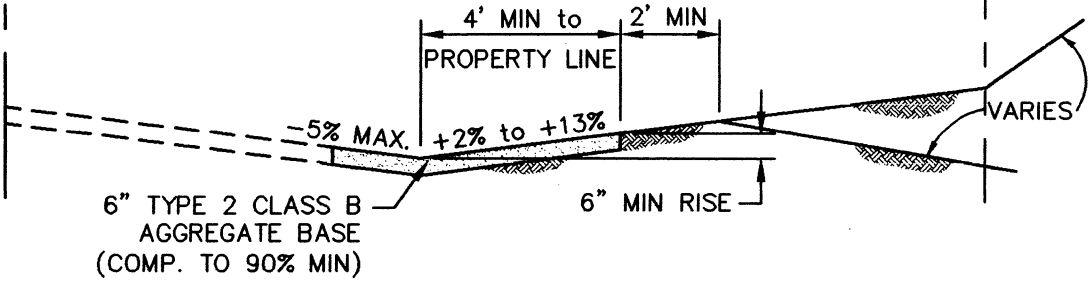
1. SIXTY (60) FOOT RIGHT-OF-WAY IS REQUIRED FOR ENTRANCE AND COLLECTOR STREETS, LOCAL STREETS SERVING NONRESIDENTIAL USES, AND LOCAL STREETS SERVING OR WITH THE POTENTIAL TO SERVE MORE THAN FORTY (40) LOTS.
2. MINIMUM SECTION TO BE 2-1/2" TYPE 2 AC WITH SAND SEAL OR TYPE 3 WITH FOG SEAL TO BE COMPACTED TO 96% MARSHALL DENSITY WITH 6" TYPE 2 AGGREGATE BASE COMPACTED TO A MINIMUM OF 95% MDD. ACTUAL SECTION TO BE VERIFIED BY A SOILS REPORT. SUB-GRADE TO BE COMPACTED TO A RELATIVE DENSITY OF 90% OR BETTER.
3. DITCH DEPTH SHALL BE 6" MIN OR AS REQUIRED.
4. STEEPER SLOPES TO BE PERMITTED IF PROPERLY SUPPORTED BY A SOILS REPORT INCLUDING A SLOPE STABILITY ANALYSIS.
5. ADDITIONAL R/W OR SLOPE EASEMENT SHALL BE PROVIDED AS NEEDED TO AT LEAST 2' OUTSIDE HIGH POINT. TOP OF CUT DITCH MAY ALSO BE REQUIRED (CHPT 33 UBC)
6. AFTER PAVING IS COMPLETE ROAD SHALL BE SHOULDERED WITH BASE TO EDGE OF PAVEMENT.
7. LYON COUNTY MAY MAINTAIN PAVING AND DITCHES.
8. IF ON-STREET PARKING IS TO BE PROVIDED THE SHOULDERS SHALL INCREASE FROM 4 FEET TO 8 FEET AND THE RIGHT-OF-WAY MAY BE INCREASED AS NEEDED.
9. TO BE USED PER LCC SECTION 11.07.15.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION LYON COUNTY	
			GRAVEL ROADWAY TYPE 1P	DRAWING NO. L-10	
				DATE 8/97	PAGE 10

339658L3



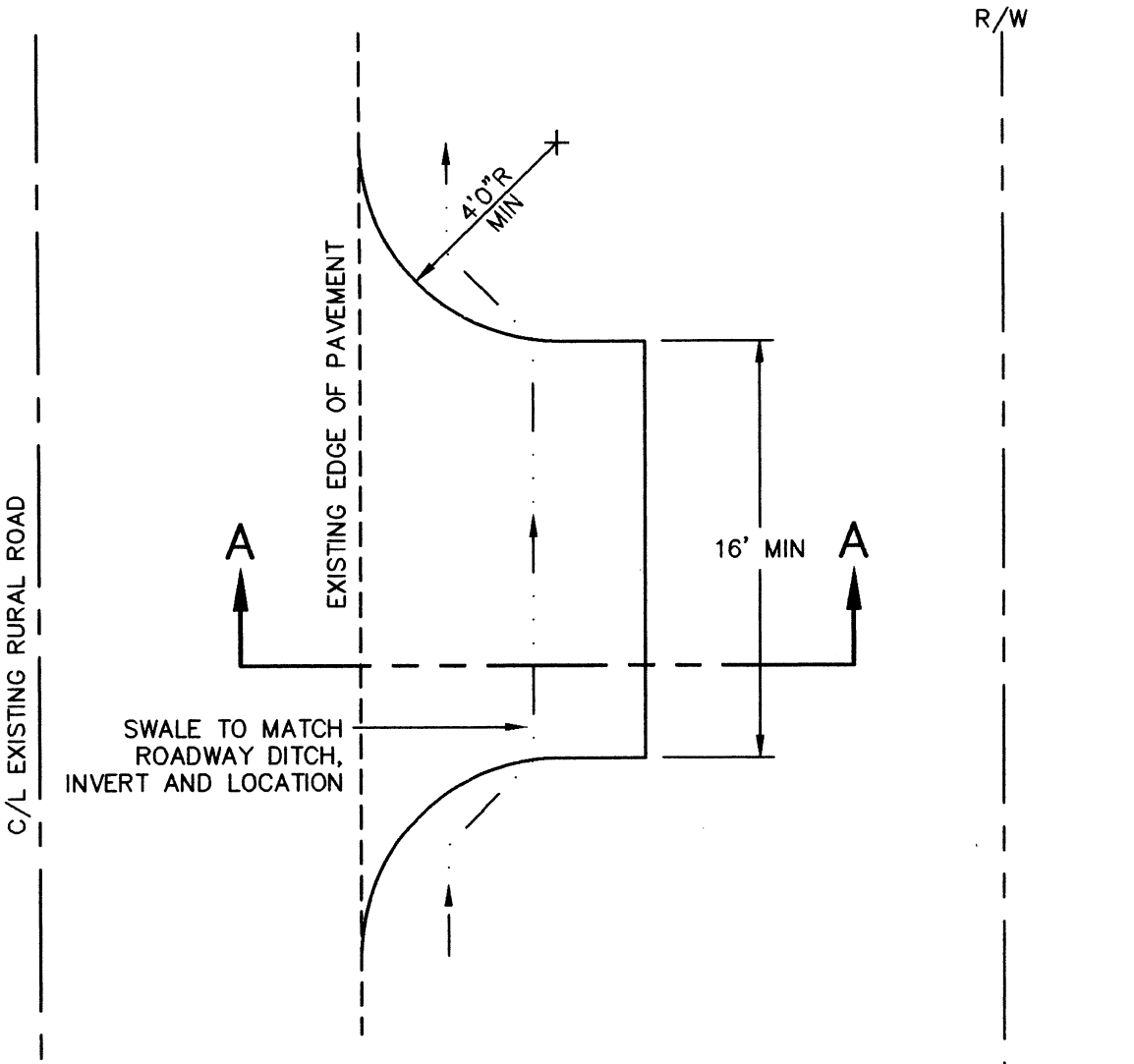
PLAN



SECTION 'A'

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION LYON Co.	
			RURAL ROADS DRIVEWAY APRON	DRAWING NO. L-11	
				DATE 8/97	PAGE 11

339658LE



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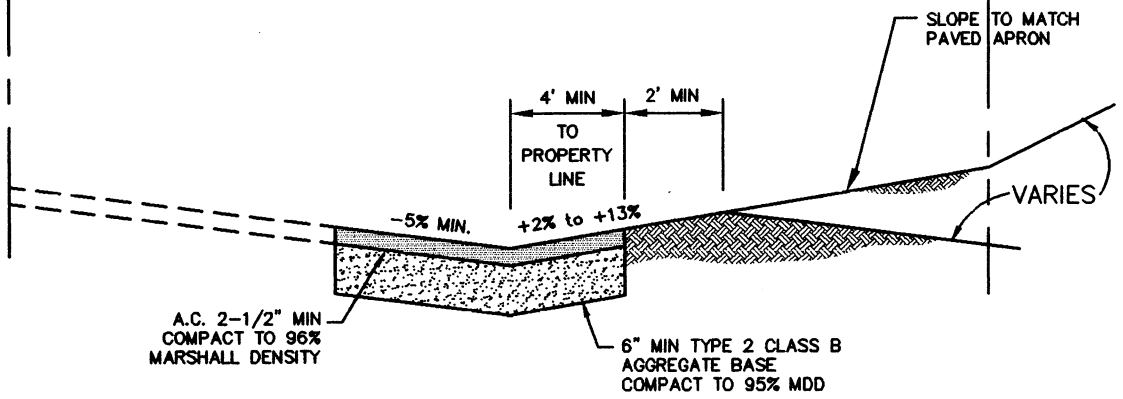
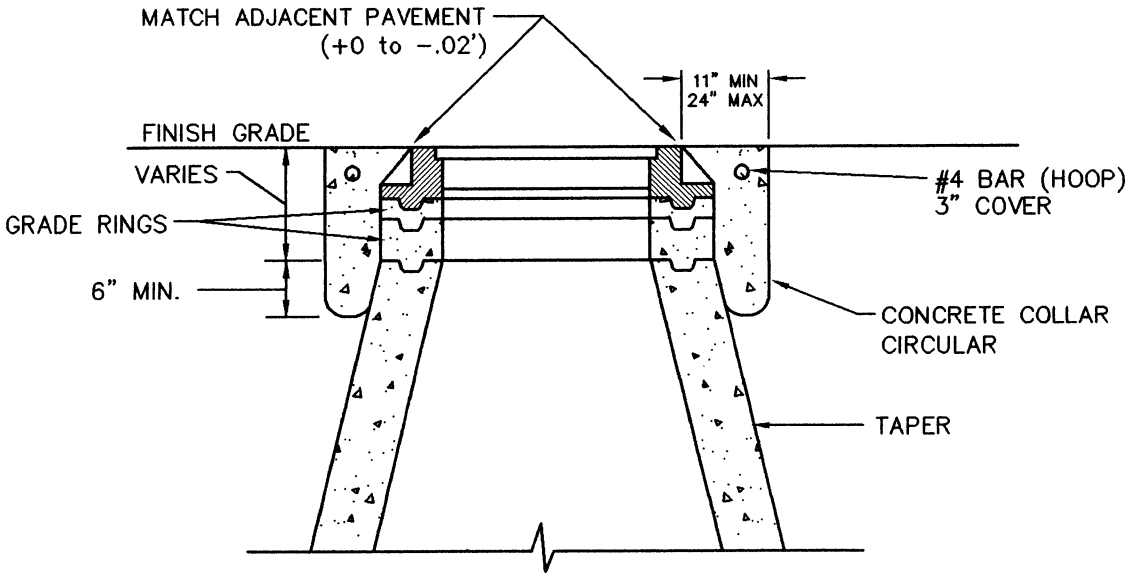


SECTION 'A'

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION LYON Co.	
			RURAL ROADS A.C. DRIVEWAY APRON	DRAWING NO. L-12	
				DATE 8/97	PAGE 12

339658LF

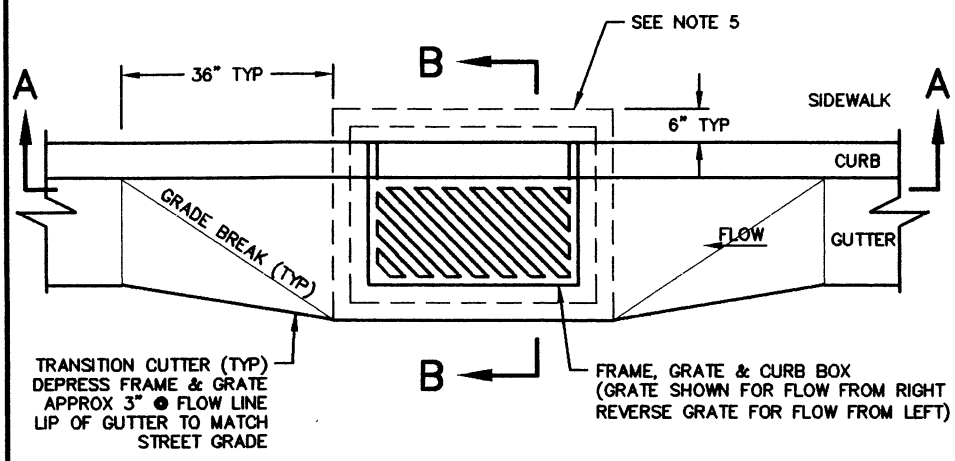


GENERAL NOTES

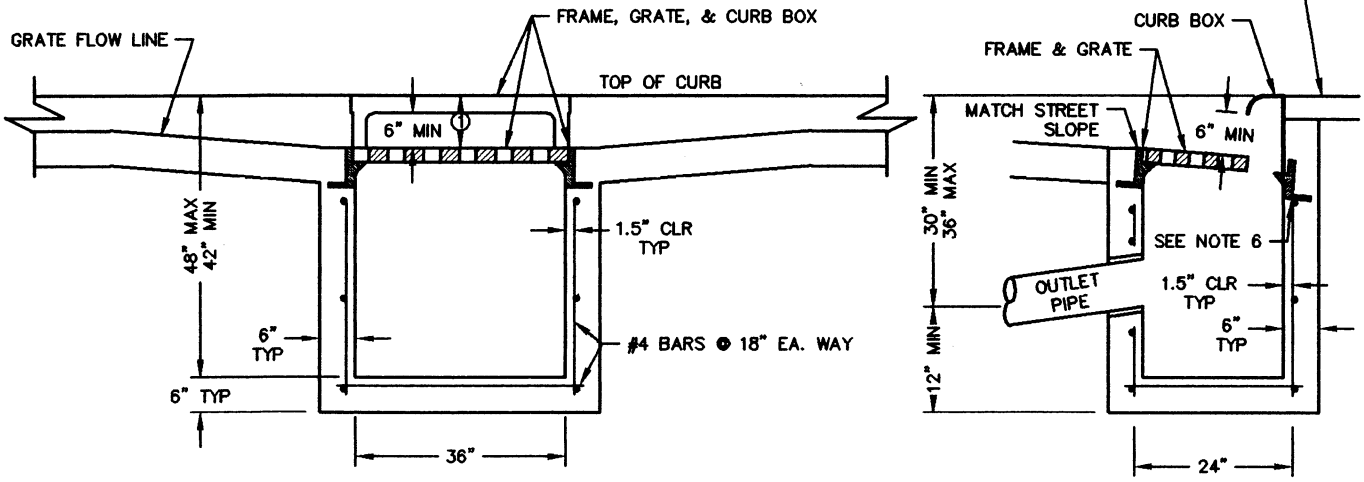
1. CONCRETE SHALL BE 4,000 PSI PORTLAND CEMENT CONCRETE.
2. CONCRETE COLLAR SHALL BE FLUSH WITH ADJACENT PAVEMENT (+0' to −0.2')
3. CONSTRUCT AFTER PAVING IS COMPLETED.
4. ALL CONCRETE SHALL MEET ORANGE BOOK REQUIREMENTS FOR FREEZE & THAW ENVIRONMENTS.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION LYON COUNTY	
			MANHOLE COLLAR	DRAWING NO. L-13	
				DATE 8/97	PAGE 13

339658L1



PLAN



① 9" TOP OF CURB TO TOP OF GRATE @ FFLLOW LINE. DEPRESS FRAME & GRATE APPROX. 3" TO PROVIDE 6" MIN FLOW OPENING. SEE NOTE 6

SECTION A–A

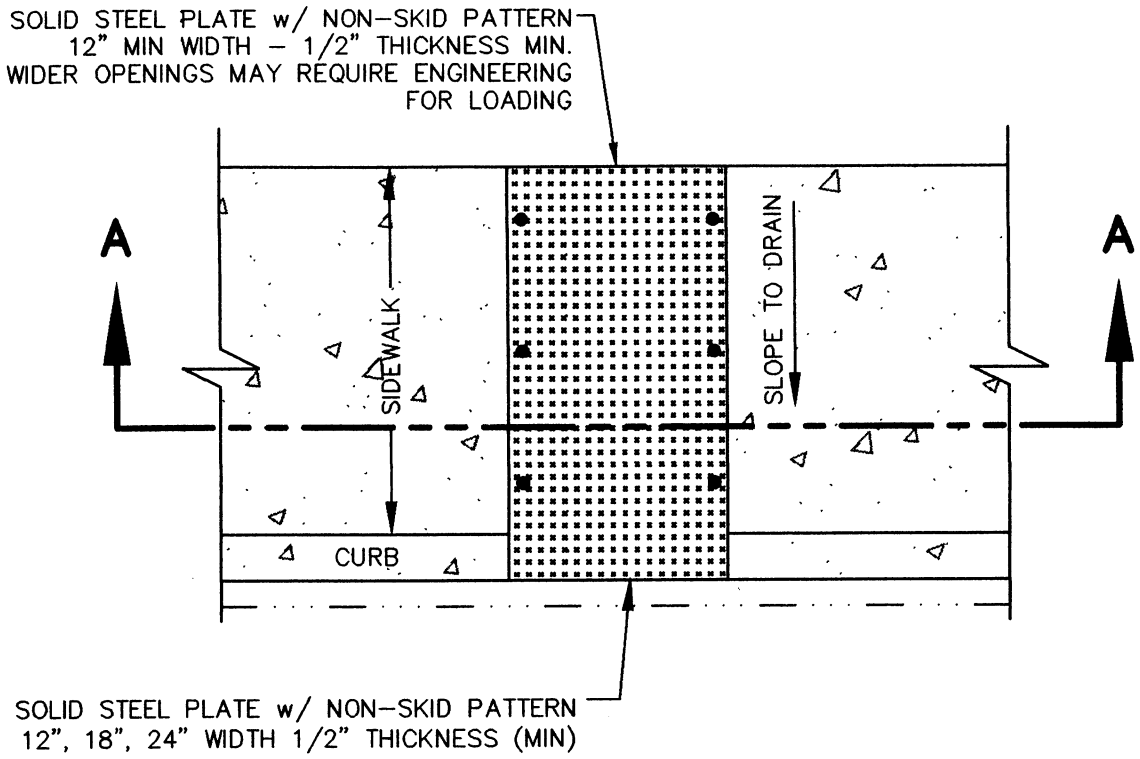
SECTION B–B

NOTES:

1. PORTLAND CEMENT CONCRETE (PCC) SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4,000 PSI MIN COMPRESSIVE STRENGTH @ 28 DAYS, MINIMUM 6 SACKS OF CEMENT PER CUBIC YARD WITH A MAX. WATER/CEMENT RATIO OF 0.45 AIR ENTRAINMENT 6% ±1.5% SLUMP AT 1–4 INCHES. ALL MATERIALS SHALL CONFORM TO SSPWC SECTION 202.
2. REINFORCED STEEL SHALL BE GRADE 40 AND HAVE 1.5" MINIMUM CLEAR COVER
3. CONCRETE STRUCTURE MAY BE A PRE–CAST CONCRETE UNIT UPON APPROVAL OF THE COUNTY ENGINEER. BASE OF PRE–CAST CONCRETE UNIT SHALL BE PLACED ON 6" COMPACTED DRAIN ROCK.
4. FRAME, GRATE & CURB BOX SHALL BE NEENAH R–3067 OR APPROVED EQUAL (w/ EQUAL FLOW CAPACITY AND WEIGHT.)
5. CONCRETE SHALL BE PLACED AS SHOWN WHEN NOT LOCATED IN A SIDEWALK.
6. TILT FRAME & GRATE AS REQUIRED TO ATTAIN 6" MIN FLOW OPENING & SHIM BETWEEN CURB BOX & FRAME AS REQUIRED TO MATCH CURB BOX TO TOP OFF CURB AND FACE OF CURB (SEE SECTION B–B.)

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION LYON Co.	
			CATCH BASIN TYPE 4–R	DRAWING NO. L–14	
				DATE 8/97	PAGE 14

339658LJ



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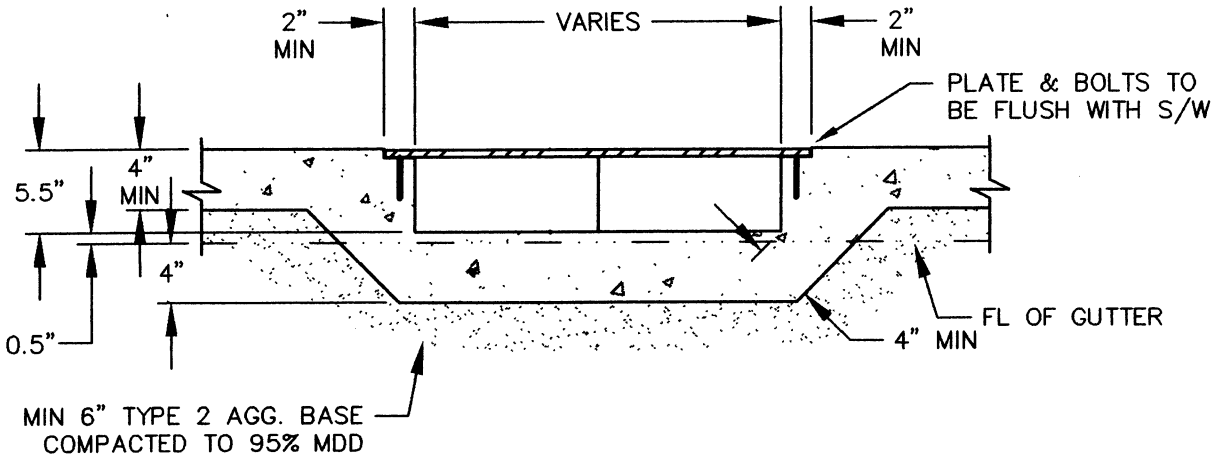
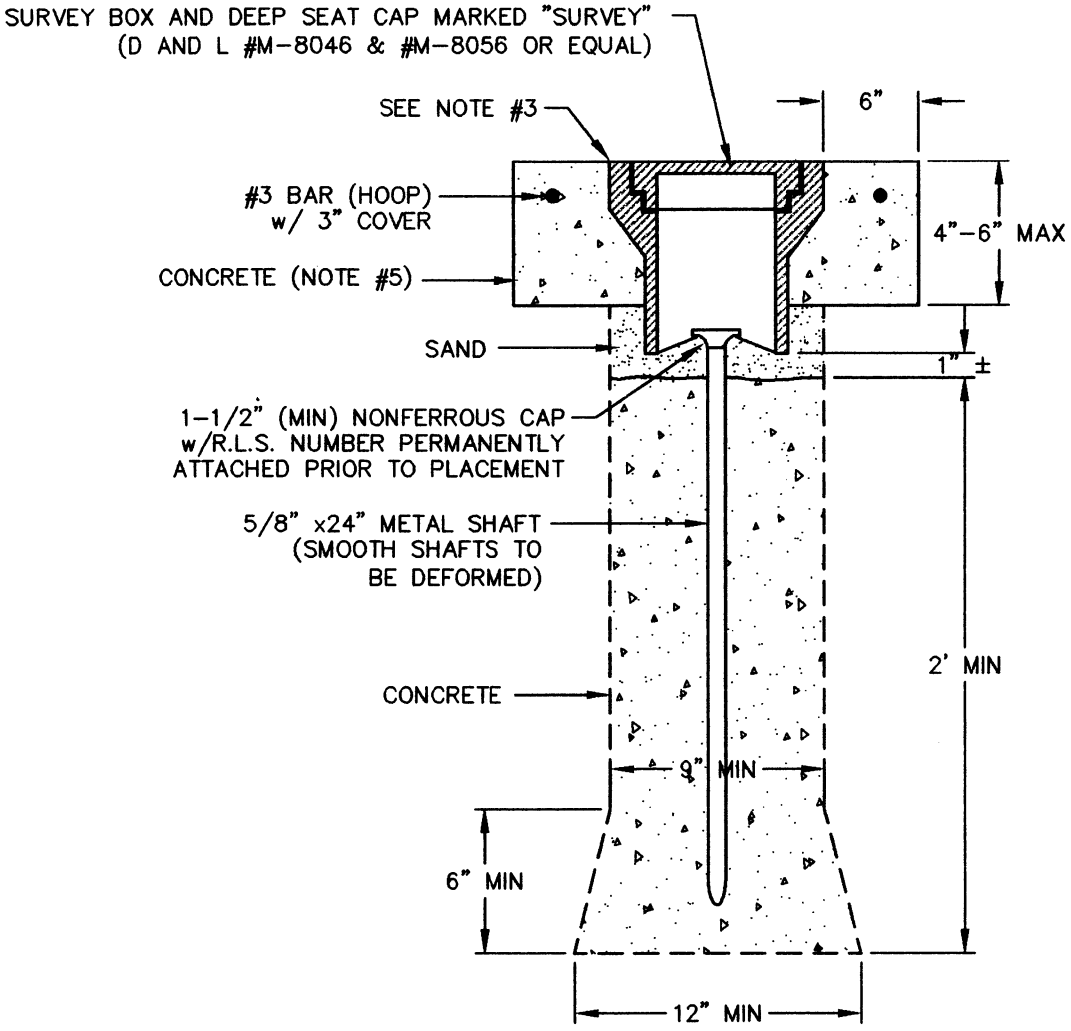


SECTION A–A

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION LYON Co.	
			SIDEWALK CROSS–DRAIN	DRAWING NO. L–15	
				DATE 8/97	PAGE 15

339658LH

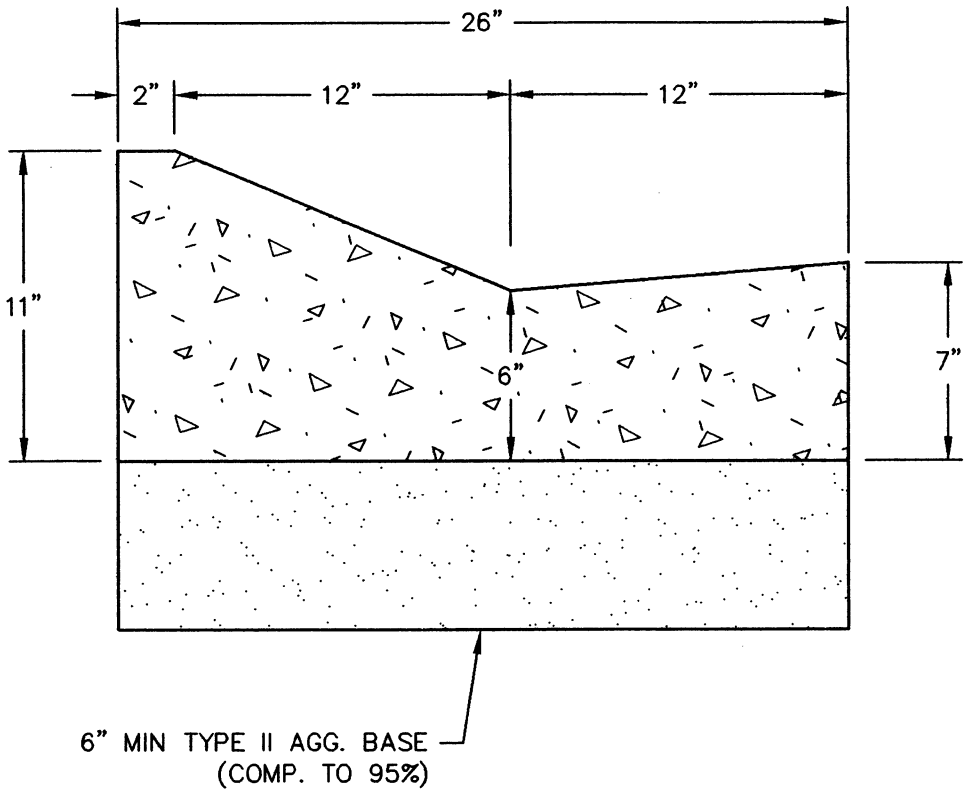


NOTES:

1. PLACE MONUMENTS AT ALL BC's, EC's, PRC's, PCC's, AND INTERSECTIONS ON STREET CENTERLINES.
2. BRONZE SURVEY MARKER (SERVCO #286 OR EQUAL) MAY BE SUBSTITUTED FOR THE 5/8" SHAFT AND CAP.
3. CONCRETE COLLAR SHALL BE FLUSH WITH ADJACENT PAVEMENT (+0' to -0.2')
4. CONSTRUCT AFTER PAVING IS COMPLETED.
5. CONCRETE SHALL MEET ORANGE BOOK REQUIREMENTS FOR FREEZE & THAW ENVIRONMENTS.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION LYON COUNTY	
			CLASS "A" MONUMENT	DRAWING NO. LYON Co.	
				DATE 8/97	PAGE 16

339658L8

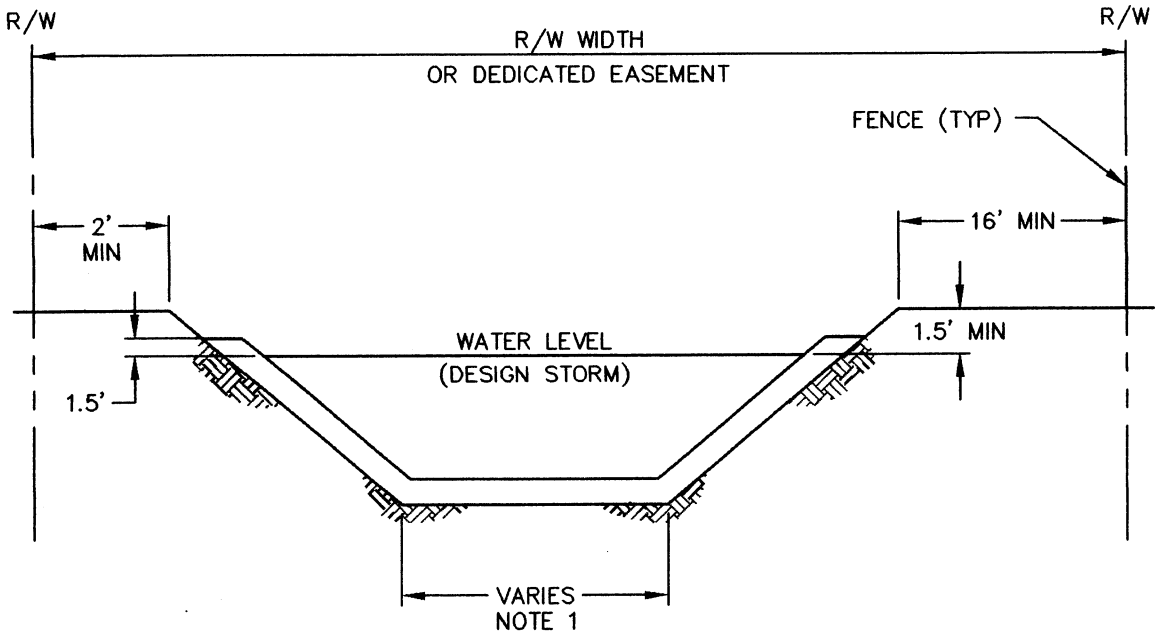


NOTE:

1. ALL P.C.C. CURB, GUTTER AND SIDEWALK SHALL BE MIN 6sack OF CEMENT PER CU.YD. OF CONC UNLESS OTHERWISE SPECIFIED (4000psi) W/4.5–7.5% AIR. MAX SLUMP SHALL BE 4." MAX WATER/CEMENT RATIO SHALL BE .45.
2. (a) ALL CONC CURB, GUTTER, AND SIDEWALK SHALL HAVE WEAKENED PLANE JOINTS EVERY 10 FEET.
   (b) EXPANSION JOINTS 1/2" WIDE SHALL BE LOCATED IN CURBS & GUTTERS @ EA. SIDE OF STRUCTURES @ ENDS OF ALL CURB RETURNS, & ABUTTING HARDENED IN–PLACE CURB & GUTTER, EXCEPT THAT EXPANSION JTS. SHALL NOT BE INSTALLED WITHIN 20' OF AN ISLAND NOSE. EXPANSION JOINTS SHALL BE 1/2" THICK, SHAPED TO THE CROSS–SECTION OF THE CURB & GUTTER, & SHALL BE CONSTRUCTED @ RIGHT ANGLES TO THE CURB & GUTTER. JOINT FILLER MATERIAL SHALL CONFORM TO SECTION 202.10.
3. THIS TYPE OF CURB AND GUTTER IS ALLOWED ONLY IN RESIDENTIAL AREAS AND ONLY ON LOCAL AND COLLECTOR SECTIONS.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION LYON Co.	
			TYPE 2 P.C.C. CURB & GUTTER	DRAWING NO. L–17	
				DATE 8/97	PAGE 17

339658LG

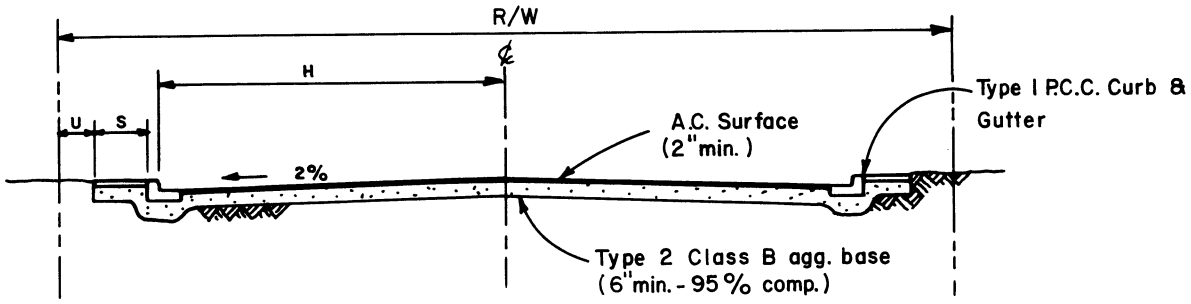


NOTES:

1. THE DESIGN ENGINEER SHALL SUBMIT CALCULATIONS SUPPORTING: STABILITY AT DESIGN VELOCITY, SLOPE STABILITY, PROPOSED LINING SECTION, SEDIMENT TRANSPORT, UPLIFT, SUBDRAINS, APPROPRIATE FREEBOARD, AND ANY OTHER PERTINENT DESIGN CONSIDERATIONS.
2. EARTHEN CHANNELS WITH BOTTOM WIDTHS LESS THAN 10 FEET SHALL HAVE SIDE SLOPES OF 3:1 OR FLATTER UNLESS OTHERWISE APPROVED. MINIMUM BOTTOM WIDTH 6 FEET.
3. FOR UNLINED CHANNELS, A "V" CHANNEL IS PREFERRED TO A TRAPEZOIDAL CHANNEL WITH A NARROW BOTTOM WIDTH TO FACILITATE MAINTENANCE.
4. ACCESS ROAD SHALL BE CONSTRUCTED AS REQUIRED PER ORDINANCE (16 FOOT MINIMUM WIDTH REQUIRED ON BOTH SIDES UNLESS OTHERWISE APPROVED.) TURN AROUNDS SHALL BE PROVIDED FOR NON-CONTINUOUS ACCESS ROAD (30 FOOT MIN. RADIUS).
5. A MINIMUM 4 FOOT SETBACK SHALL BE PROVIDED AT GRADE ALONG THE TOP OF THE CHANNEL WHERE ACCESS ROADS ARE NOT REQUIRED.
6. THE DEVELOPER SHALL PROVIDE EASEMENTS COVERING THE CHANNEL, ACCESS ROADS, AND SETBACK AREAS PRIOR TO COUNTY APPROVAL OF IMPROVEMENT PLANS.
7. FENCING, GUARD RAILS, DELINEATORS, ETC. SHALL BE PROVIDED AS APPROPRIATE FOR PUBLIC SAFETY.
8. ACCESS ROADS SHALL SUPPORT ALL WEATHER ACCESS. ROAD BASE WILL BE REQUIRED WHERE COMPACTED NATIVE SOILS ARE NOT DEMONSTRATED TO BE ADEQUATE.
9. UNCONTROLLED INFLOWS DOWN THE CHANNEL BANKS SHALL NOT BE PERMITTED.
10. CHANNEL ACCESS SHALL BE PROVIDED AS NECESSARY FOR MAINTENANCE, RAMPS SHALL BE ACCESSIBLE FROM PUBLIC RIGHT-OF-WAY.

NO.	REVISION	DATE	STANDARD DETAIL FOR PUBLIC WORKS CONSTRUCTION	SECTION LYON COUNTY	
			DRAINAGE CHANNEL (BOTTOM WIDTH GREATER THAN 6 FEET)	DRAWING NO. L-18	
				DATE 8/97	PAGE 18

339658LB



R/W Width	H	S (Note 5)	U	NOTES OR REMARKS
100	27.5	4	18.5	Major Arterial
80	21.5	4	14.5	Collector (see note 4 & 5)
60	13	0	17	Minor Residential

Structural section shall be determined by Engineering Design based on R-Value or CBR testing, but in no case shall it be less then the minimums specified above.

SECTION 'A'

NOTES:

1.) "H" is measured from "front face" of curb to centerline.

2.) Prime coat shall be required on all subgrade prior to paving.

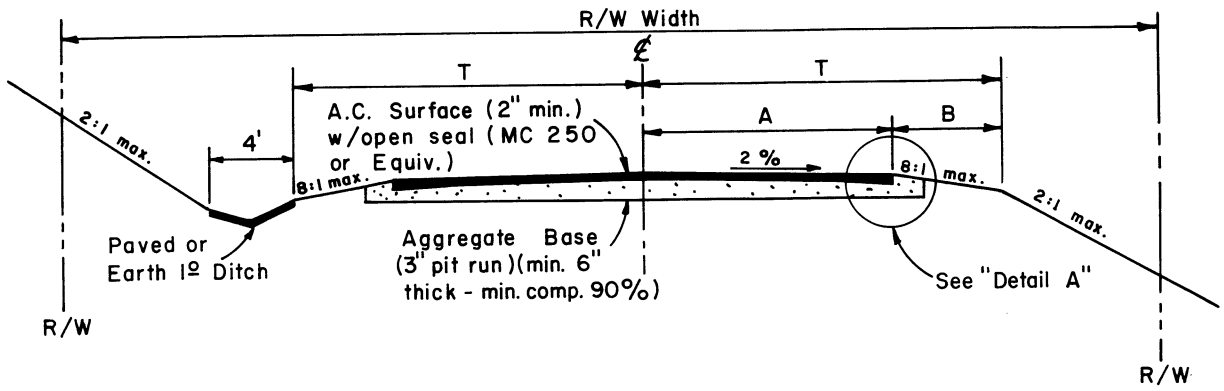
3.) Asphalt concrete surfaces shall be finished with an "open seal" of MC 250 or equiv.

4.) Roadway sections / dimensions may vary according to administrative authority determination.

5.) Sidewalks in commercial areas shall be a minimum of 5 feet wide, and therefore "U" shall be reduced by one foot.

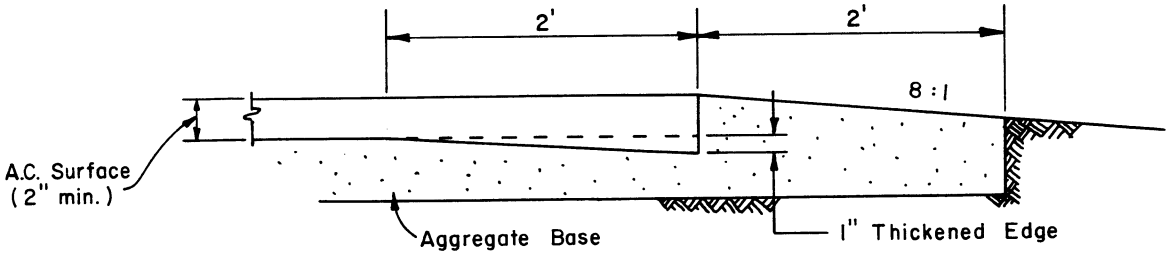
6.) Subgrade - scarify and compact to min. 90% max. dry density. ('Sheeps-foot' roller recommended)

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION NYE CO.	
1	SPELLING	10-14-86	ROADWAY SECTIONS	DRAWING NO. N-1.1 (314,319)	
				DATE 12-81	PAGE 1



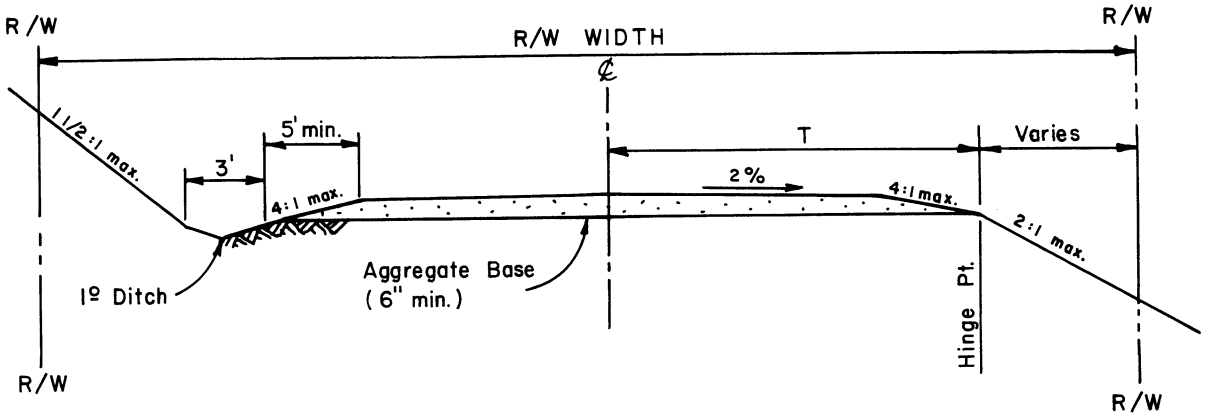
SECTION 'B'

R/W WIDTH	A	B	T
≥ 60	13	8	21
50	12	8	20



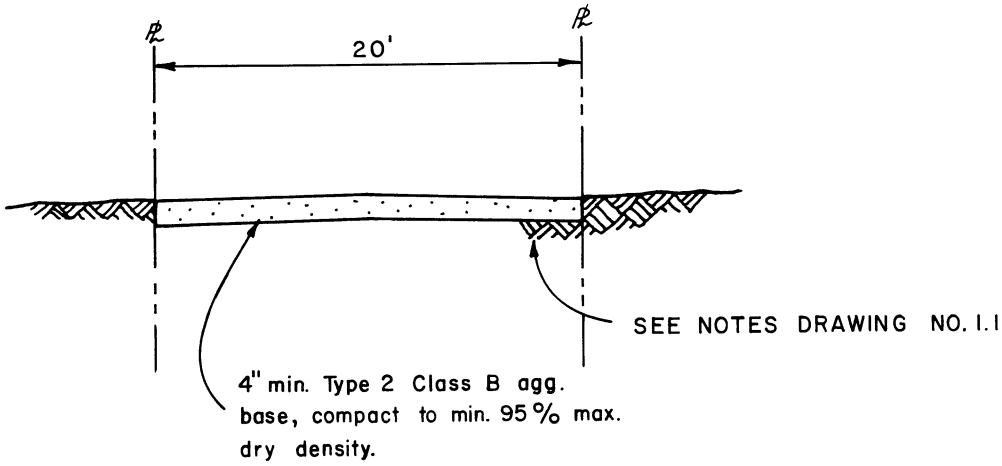
DETAIL 'A'

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION NYE CO.	
			ROADWAY SECTIONS	DRAWING NO. N-1.2 (314, 319)	
				DATE 1-82	PAGE 2



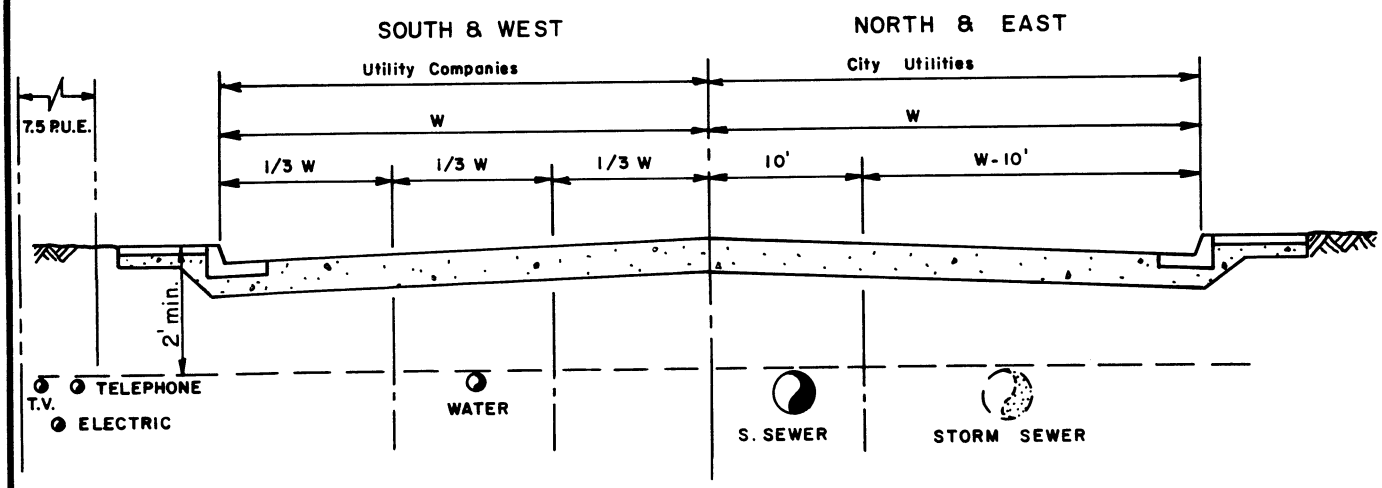
R/W WIDTH	T
60	15
50	14

SECTION 'C'

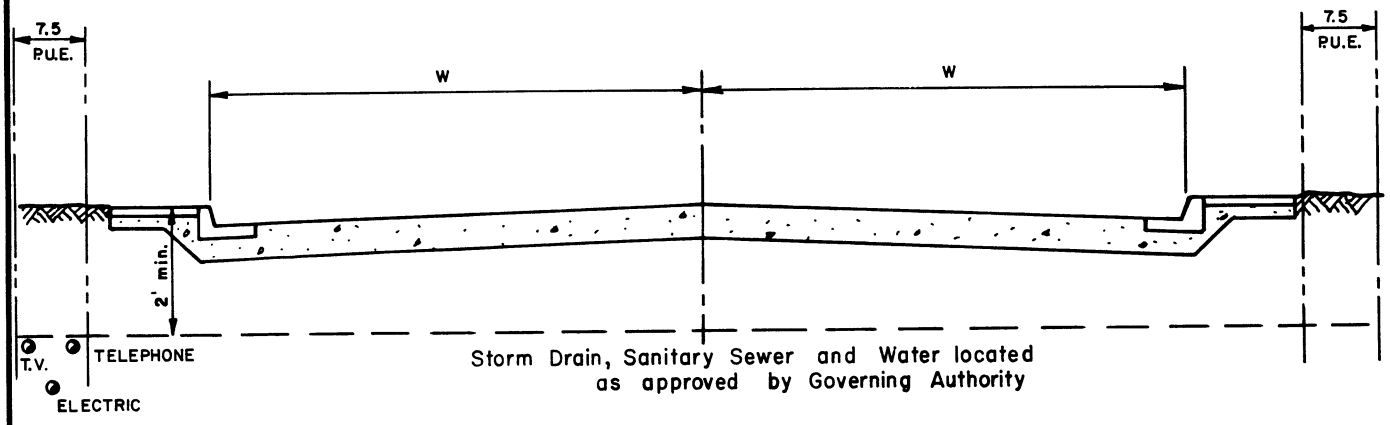


TYPICAL RESIDENTIAL ALLEY SECTION

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION NYE CO.	
			ROADWAY SECTIONS	DRAWING NO. N-1.3 (314, 319)	
				DATE 12-81	PAGE 3



TYPICAL SECTION "A"



Storm Drain, Sanitary Sewer and Water located as approved by Governing Authority

TYPICAL SECTION "C"

NOTE:
UTILITY SECTION SHALL BE AS DETERMINED BY THE APPROPRIATE ADMINISTRATIVE AUTHORITY.

NO.	REVISION	DATE

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

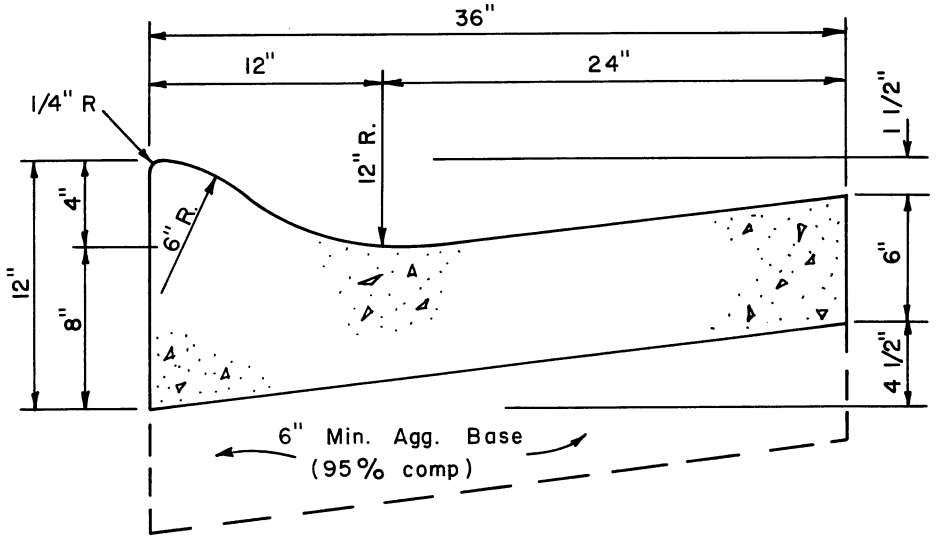
TYPICAL UTILITY MAIN LOCATIONS

SECTION NYE CO.

DRAWING NO. N-2

DATE 12-81

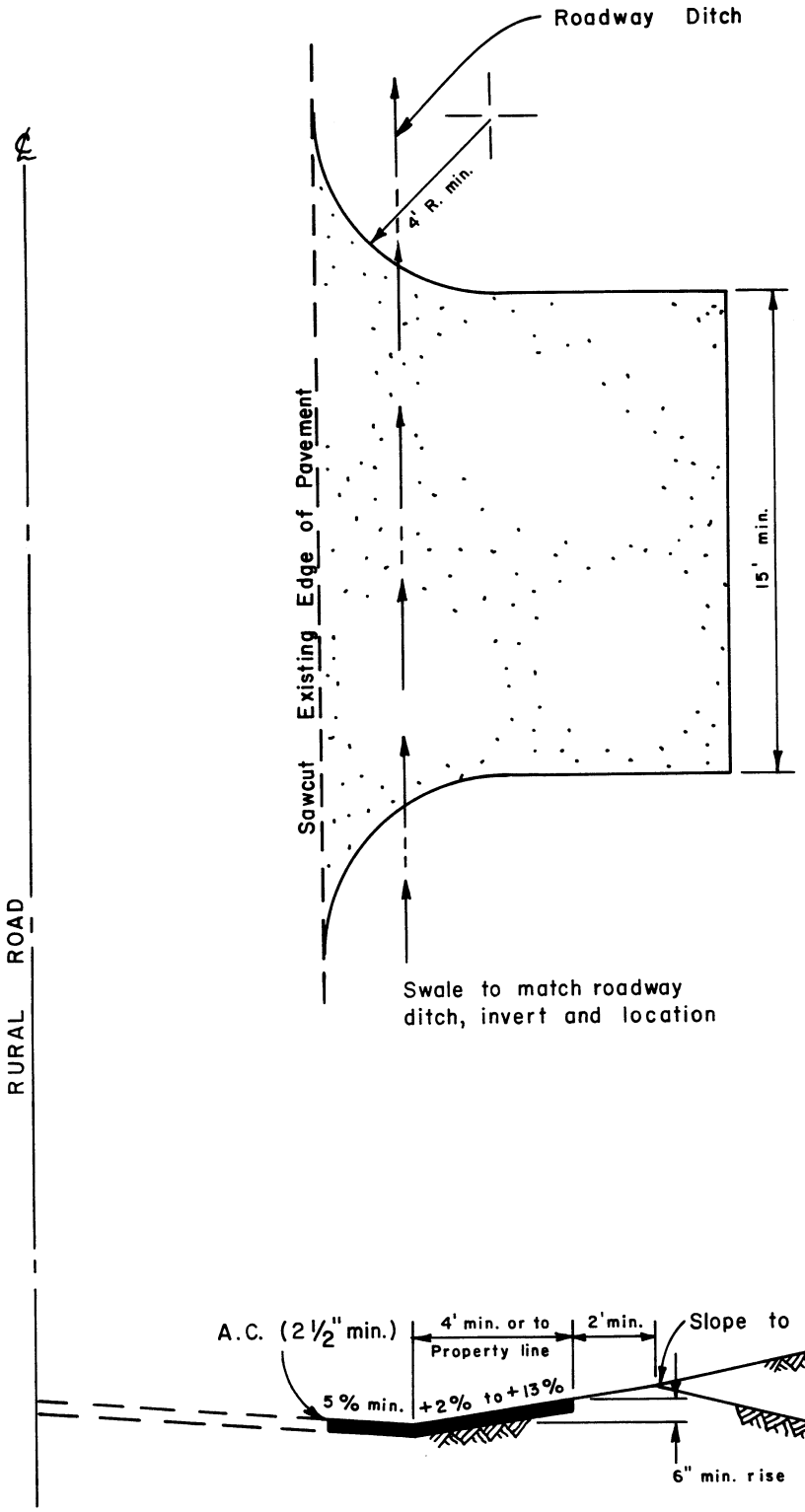
PAGE 4



TYPE 3 CURB & GUTTER

NOTE :
General notes for all curb and gutter as shown on Dwg. No. 1-6.1 will apply

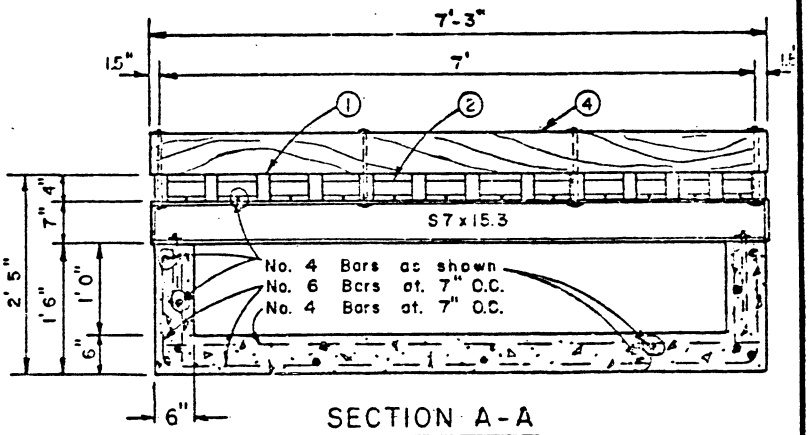
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION NYE CO.	
			NYE COUNTY TYPE 3 P.C.C. CURB / GUTTER	DRAWING NO. N-3 (312)	
				DATE 12-81	PAGE 5



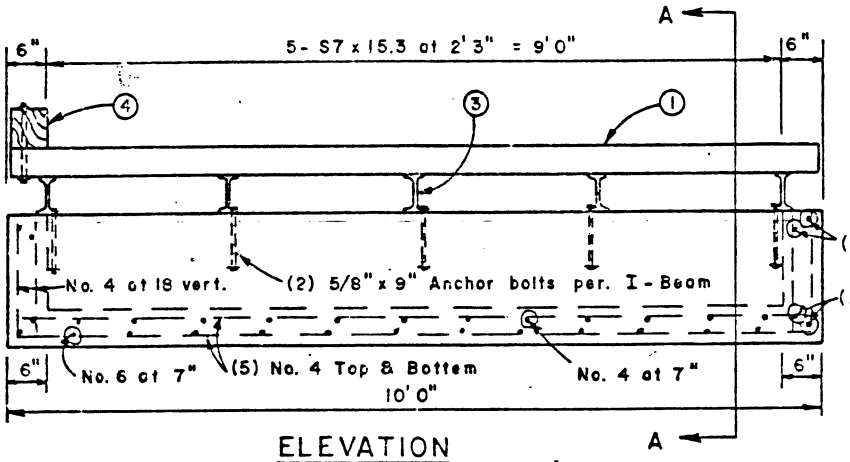
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION NYE CO.	
			A.C. DRIVEWAY APRON RURAL ROADS	DRAWING NO. N-4 (319)	
				DATE 12-81	PAGE 6

GENERAL NOTES

1. All conc. shall be class DA
2. All steel connections shall be welded - 1/4" fillet unless otherwise shown.
3. Provide 8" dia. hole at ends for drainage of conc. box.
4. All nailing to be with 20d nails.
5. Structure width can be made in any multiple of the grate width.
6. Manufactured approved equal Cattle Guard by.
   a) Heaton Steel Supply Co. Klamath Falls, Ore.
   b) Sixth St. Steel and Oxygen Co. Salt Lake City, Utah



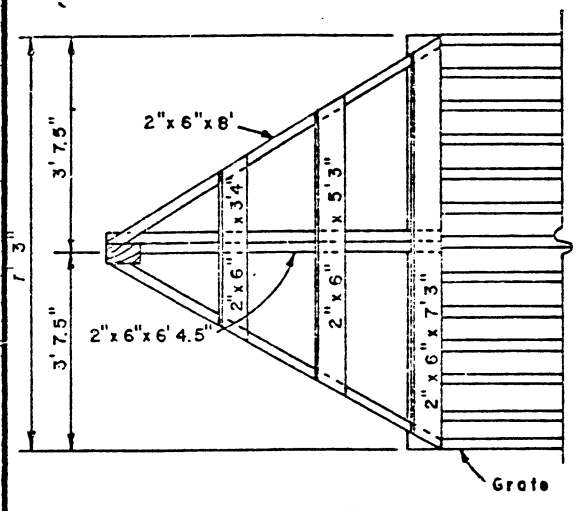
SECTION A-A



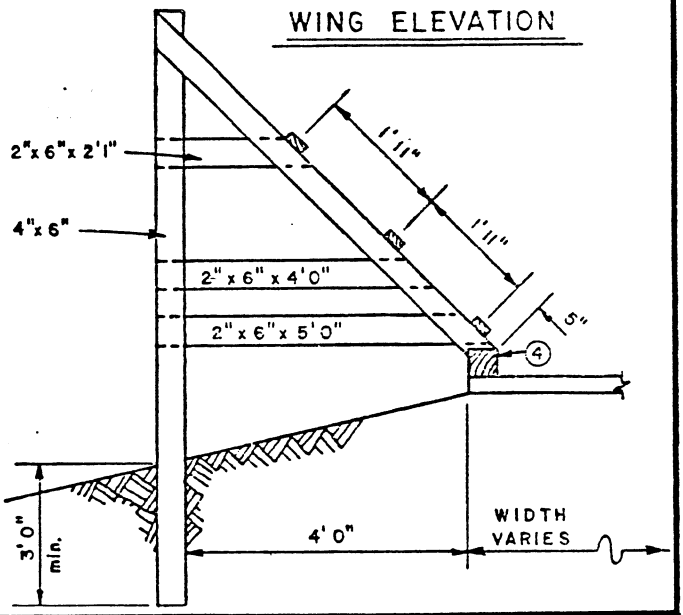
ELEVATION

MATERIALS LEGEND

① 4"x 2"x 1/4" struc. tubing at 7" O.C.
② 5"x 2 1/2"x 5/16" PL
③ S7 x 15.3 at 2'3" O.C.
④ 6"x 6"x 7'3" Timber

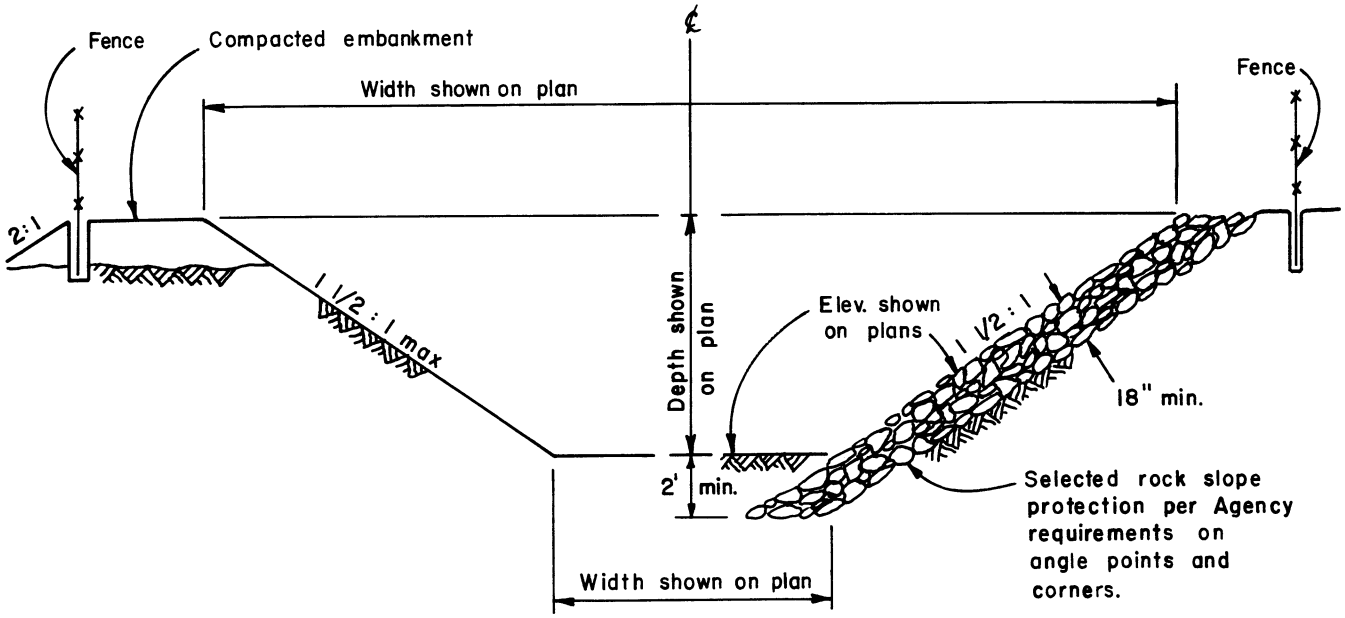


WING PLAN



NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION NYE CO.	
				DRAWING NO. N-5	
				DATE 12-81	PAGE 7

STEEL CATTLE GUARD

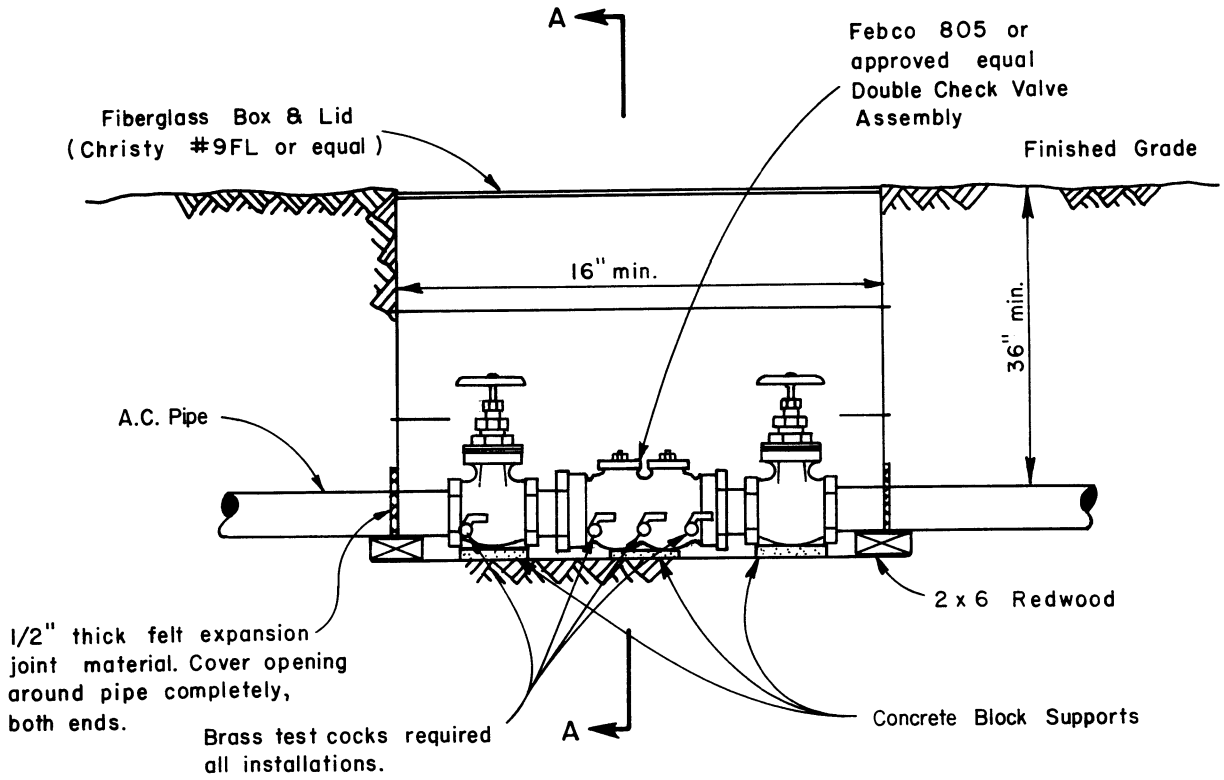


TYPICAL SECTION

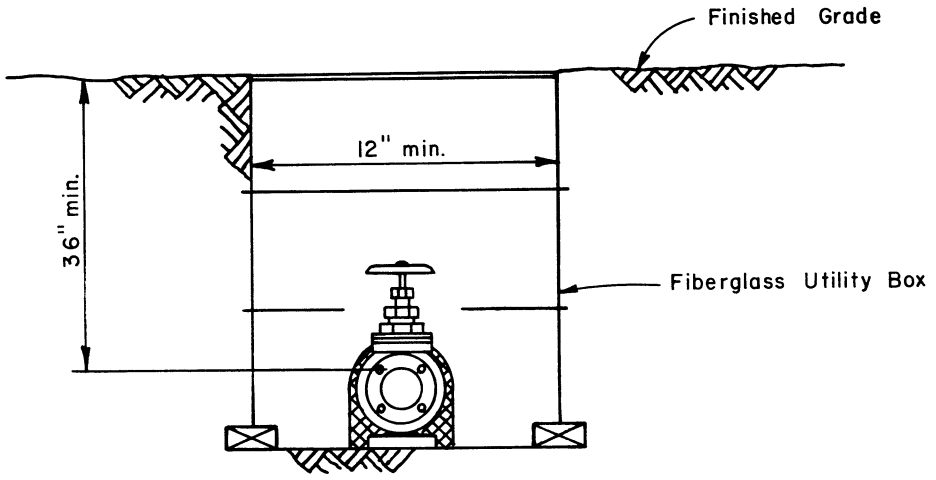
NOTES:

1. The following shall be as required by Agency:
   - a.) Low flow channel
   - b.) Filter blanket
   - c.) Cutoff wall
   - d.) Fence

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION NYE CO.
			DRAINAGE CHANNEL (EARTH / ROCK LINED)	DRAWING NO. N-6 (303)
				DATE 12-81 / PAGE 8

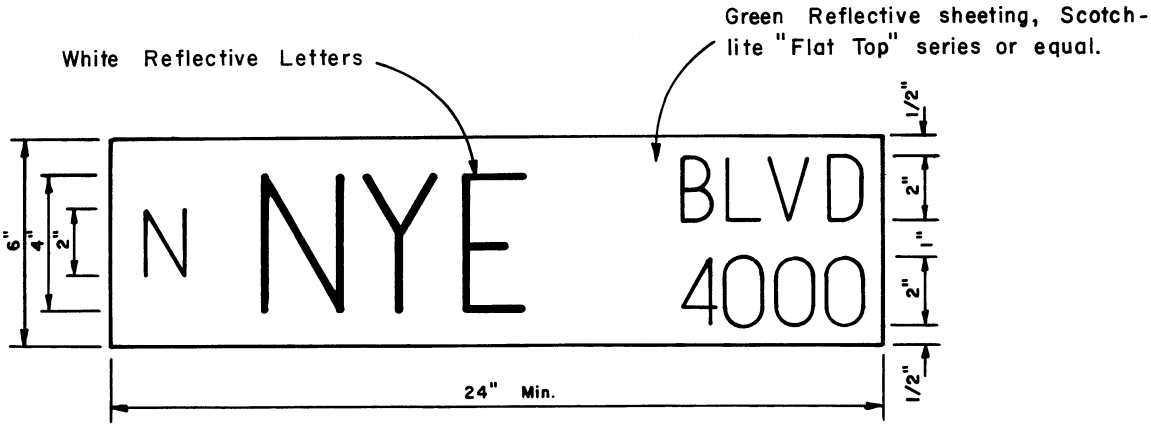


ELEVATION



SECTION A-A

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION NYE CO.	
			DOUBLE CHECK VALVE ASSEMBLY	DRAWING NO. N-7 (307)	
				DATE 12-81	PAGE 9

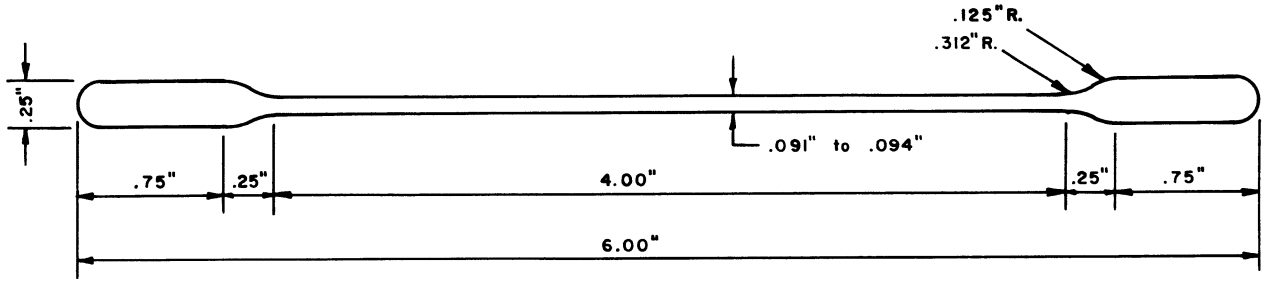


RECOMMENDED GUIDELINE

1. Street name sign shall be in conformance with the latest edition of the M.U.T.C.D.

2. Reflective materials shall be mounted on:
   1. Fiberglass plate as manufactured by the Carsonite Co. or approved equal, or
   2. Flat plate aluminum No. 6061-T6, .080 gauge, or
   3. Extruded aluminum No. 6063-T6, with a min. thickness of 0.091" (See Detail Below)

3. Sign shall be mounted on 2½" "Uni-strut Post" similar to Drawing No. 4-1



NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION NYE CO.	
1	Fiberglass	3-83	STREET NAME SIGN	DRAWING NO. N-8 (330)	
				DATE 12-81	PAGE 10

INSTRUCTIONS FOR USE OF THE CITY OF RENOíS SUPPLEMENTAL STANDARD DRAWING DETAILS MANUAL

1. Refer to this City of Renoís ìSupplemental Standard Drawing Detailsî manual for the appropriate Standard Drawing.

2. If the appropriate Standard Drawing does not appear in the City of Renoís ìSupplemental Standard Drawing Detailsî manual, then the City of Reno has adopted a Standard Drawing which may be found in the general section of the ìStandard Details for Public Works Constructionî (SDPWC), commonly referred to as the large ìOrange Bookî. Refer to the appropriate section index in that book for the desired drawing.

3. If the desired drawing can not be found in this manual or the general section of the SDPWC, then contact the City of Renoís Public Works Department at (775) 334-2350 for assistance.

4. The numbering system in the City of Renoís ìSupplemental Standard Drawing Detailsî manual consists of three (3) sets of identifiers. The first references the responsible agency, i.e., City of Reno, identified by the letter ìRî. The second identifier is a three digit drawing number which also categorizes the drawings into sections consistent with the general section of the SDPWC. For instance, the one hundred drawing number series (i.e. 1XX) contains all the Standard Drawings pertaining to ìStreet Improvementsî, which corresponds directly with Section 1 in the general section of the SDPWC. Following is a table identifying the corresponding drawing section numbering systems between this document and the general section of the SDPWC:

	SDPWC	Reno Supplement	Improvement Categories
Section	1	1XX	General Surface
Section	2	2XX	Sewer/Storm Drain
Section	3	3XX	Water Systems
Section	4	4XX	Traffic Control
Section	5	5XX	Landscape
Section	6	6XX	Drafting Symbols

Finally, the numbers in parenthesis (i.e. 314, 319, etc.) refer to the sections within the ìStandard Specifications for Public Works Constructionî(SSPWC, small ìOrange Bookî), which relate to the drawing.

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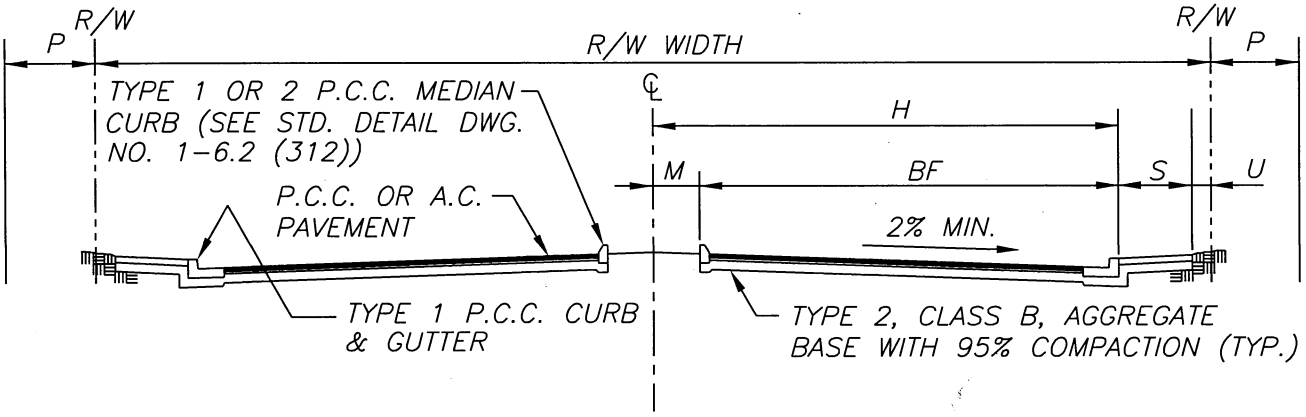
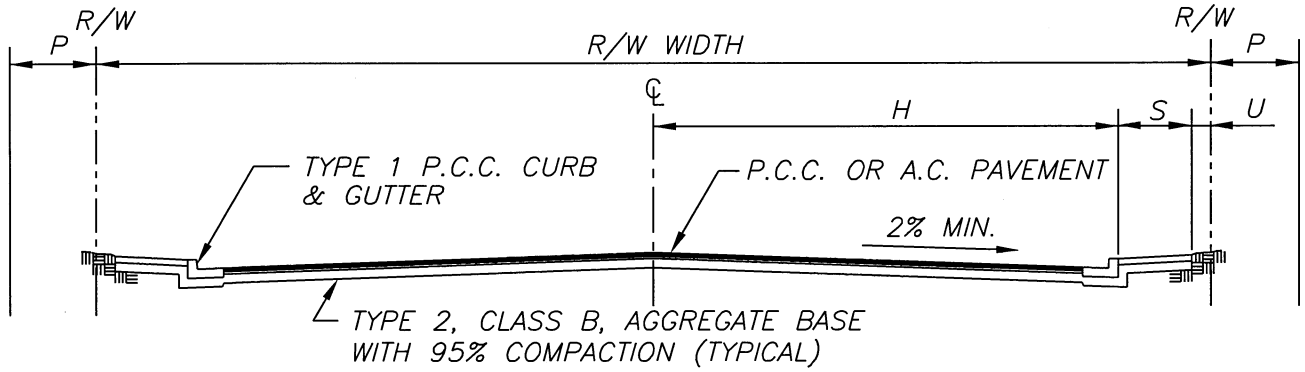
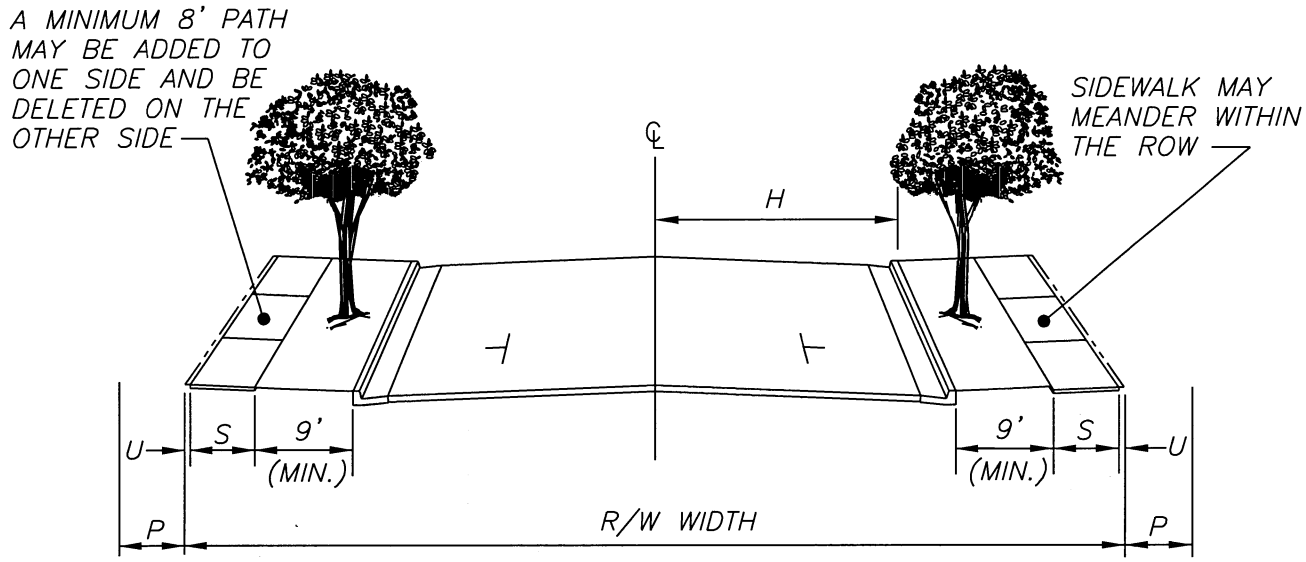






WITH PARKWAY

(RESIDENTIAL COLLECTOR AND LOCAL STREETS ONLY)

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO	
			ROADWAY SECTIONS	DRAWING NO. R-101A (314,320)	
				DATE 08/00	PAGE 100
APPROVED BY: S.V.		08/00			

TYPE	R/W WIDTH	P	H	BF	M	S	U	A.D.T. (MAX.)
ARTERIAL–MAJOR	102 (4.)	7.5	44.5	37	7.5	6	0.5	----
ARTERIAL–MINOR	82 (4.)	7.5	34.5	--	--	6	0.5	30,000
COLLECTOR–COMMERCIAL	64	7.5	25.5	--	--	6	0.5	15,000
COLLECTOR–RESIDENTIAL (WITHOUT PARKWAY)	50	7.5	20.5	--	--	4	0.5	8,000 (6.)
COLLECTOR–RESIDENTIAL (WITH PARKWAY)	68	7.5	19.5	--	--	4	0.5	8,000 (6.)
LOCAL (WITHOUT PARKWAY)	46	7.5	17.5	--	--	4	0.5	1,000
LOCAL (WITH PARKWAY)	64	7.5	17.5	--	--	4	0.5	1,000

NOTES:

1. BF AND H ARE MEASURED TO THE BACK FACE OF CURB.
2. CURB & GUTTER SECTIONS SHALL BE POURED SEPARATELY FROM SIDEWALK SECTIONS.
3. STRUCTURAL SECTION TO BE DETERMINED BY ENGINEERING DESIGN BASED ON RESILIENT MODULUS TESTING, BUT IN NO CASE SHALL THE A.C. BE LESS THAN 4" OVER 6" BASE.

(4.) ADDITIONAL R/W MAY BE REQUIRED ON ARTERIAL STREETS AND AT INTERSECTIONS.

5. WIDER SIDEWALKS ARE TO BE PROVIDED WHEN REQUIRED BY THE CITY ENGINEER.

(6.) RESIDENTIAL DRIVEWAY ACCESS SHALL NOT BE ALLOWED ON RESIDENTIAL COLLECTORS WHERE THE A.D.T. IS GREATER THAN 4,000.

7. REFER TO ADDITIONAL INFORMATION ON WIDTHS AND REQUIREMENTS FOR RESIDENTIAL COLLECTORS, LOCAL STREETS, ALLEYS, PERMANENT EMERGENCY ACCESS AND SHARED DRIVEWAYS AS CONTAINED IN THE CITY OF RENO'S DESIGN MANUAL.

NO.	REVISION	DATE
APPROVED BY: S.V.		08/00

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

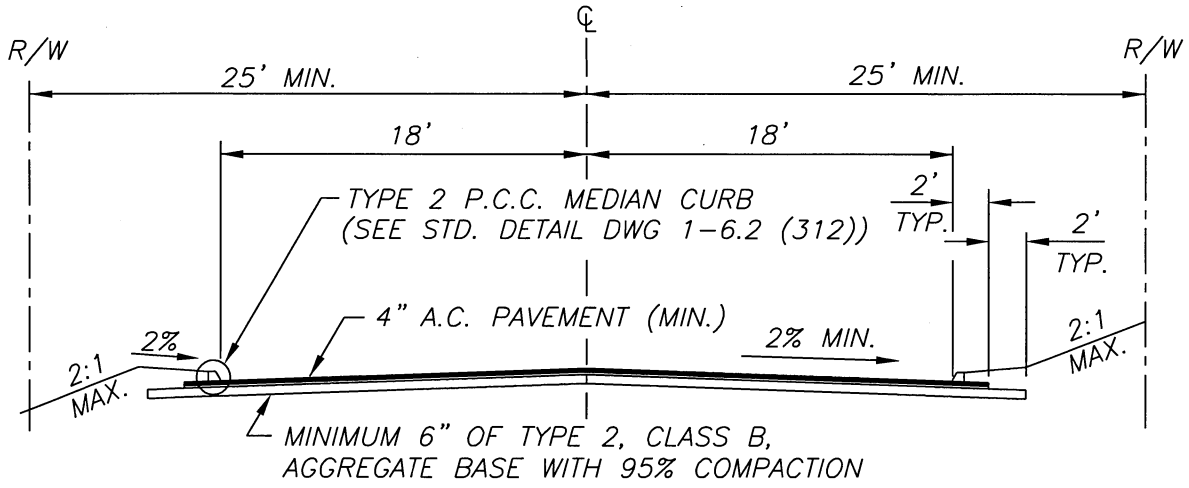
ROADWAY SECTIONS

SECTION **RENO**

DRAWING NO. R-101B (314,320)

DATE 08/00

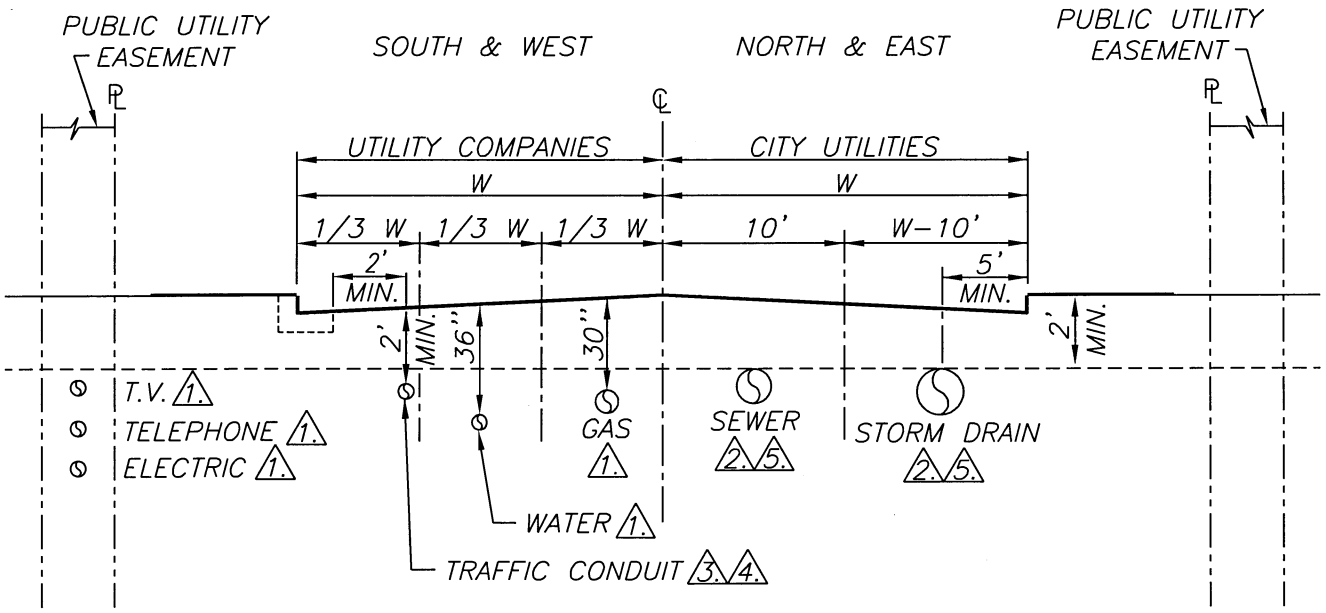
PAGE 101



NOTES:

1. TO BE USED ONLY WITH THE APPROVAL OF THE CITY ENGINEER.
2. THIS IS A TEMPORARY FACILITY AND IS ONLY ALLOWED FOR ROADWAYS DESIGNATED AS COLLECTORS OR ARTERIALS. THIS SECTION MAY BE USED THROUGH COMMERCIAL OR RESIDENTIALLY ZONED PROPERTIES TO CONNECT REMOTE DEVELOPMENTS TO EXISTING CITY STREETS (ALSO REFER TO STANDARD DETAIL DRAWING NOS. R-101A (314, 320) AND R-101B (314, 320) FOR R/W WIDTHS).
4. ADDITIONAL R/W MAY BE REQUIRED AT INTERSECTIONS.
5. SIDEWALKS MAY BE REQUIRED IN CERTAIN LOCATIONS AND CONDITIONS.
6. PROVISIONS FOR ADEQUATE DRAINAGE FACILITES REQUIRED.

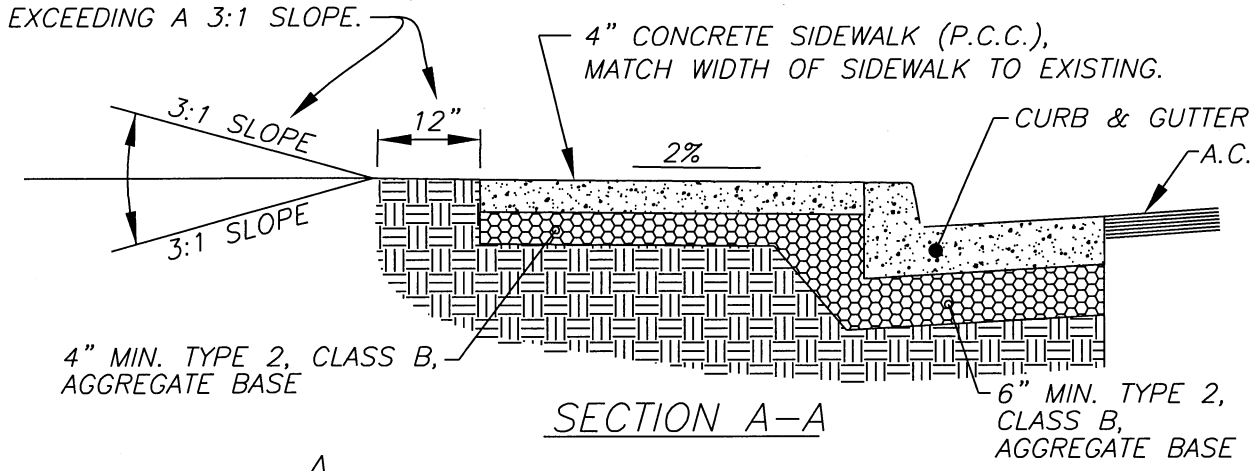
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO
			TEMPORARY ACCESS FACILITY	DRAWING NO. R-102 (314,320)
				DATE 08/00 / PAGE 102
APPROVED BY: S.V.		08/00		



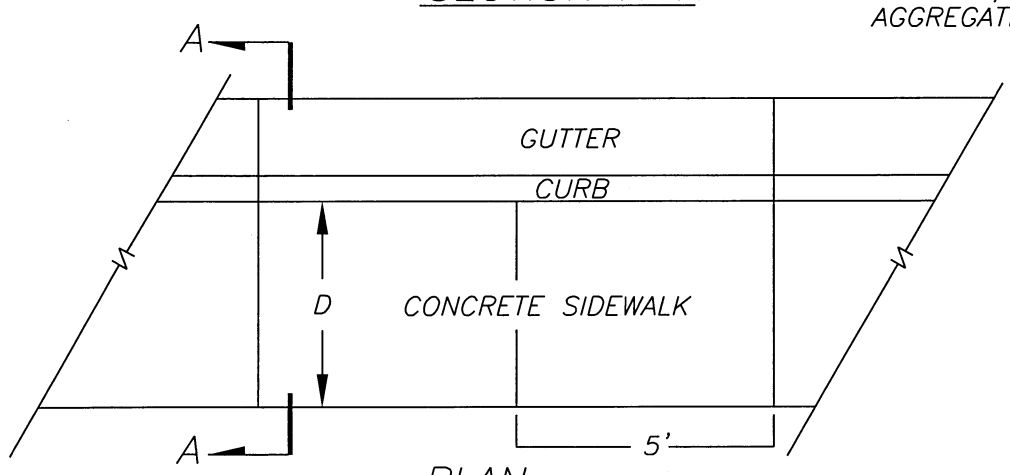
NOTES:

1. FOR COMMON TRENCH SECTION, SEE STANDARD DETAIL DRAWING NO. 1–3 (142).
2. SEWER AND STORM DRAIN DEPTH TO BE ADJUSTED FOR LOCAL CONDITIONS AND AS APPROVED BY THE CITY ENGINEER (REFER TO STANDARD DETAIL DRAWING NO. R–204 (306)).
3. REFER TO STANDARD DETAIL DRAWING NOS. R–404 (305) AND R–405 (305).
4. TRAFFIC CONDUITS ARE ALLOWED TO BE PLACED ON EITHER SIDE OF THE ROADWAY PER THE DIMENSION LIMITATIONS SHOWN.
5. MINIMUM DISTANCE FROM CENTERLINES OF EITHER STORM DRAIN OR SEWER LINES TO THE FACE OF CURB IS 5 FEET.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO
			TYPICAL UTILITY MAIN LOCATIONS	DRAWING NO. R–103 (141)
				DATE 08/00 / PAGE 103
APPROVED BY S.V.		08/00		



SECTION A–A

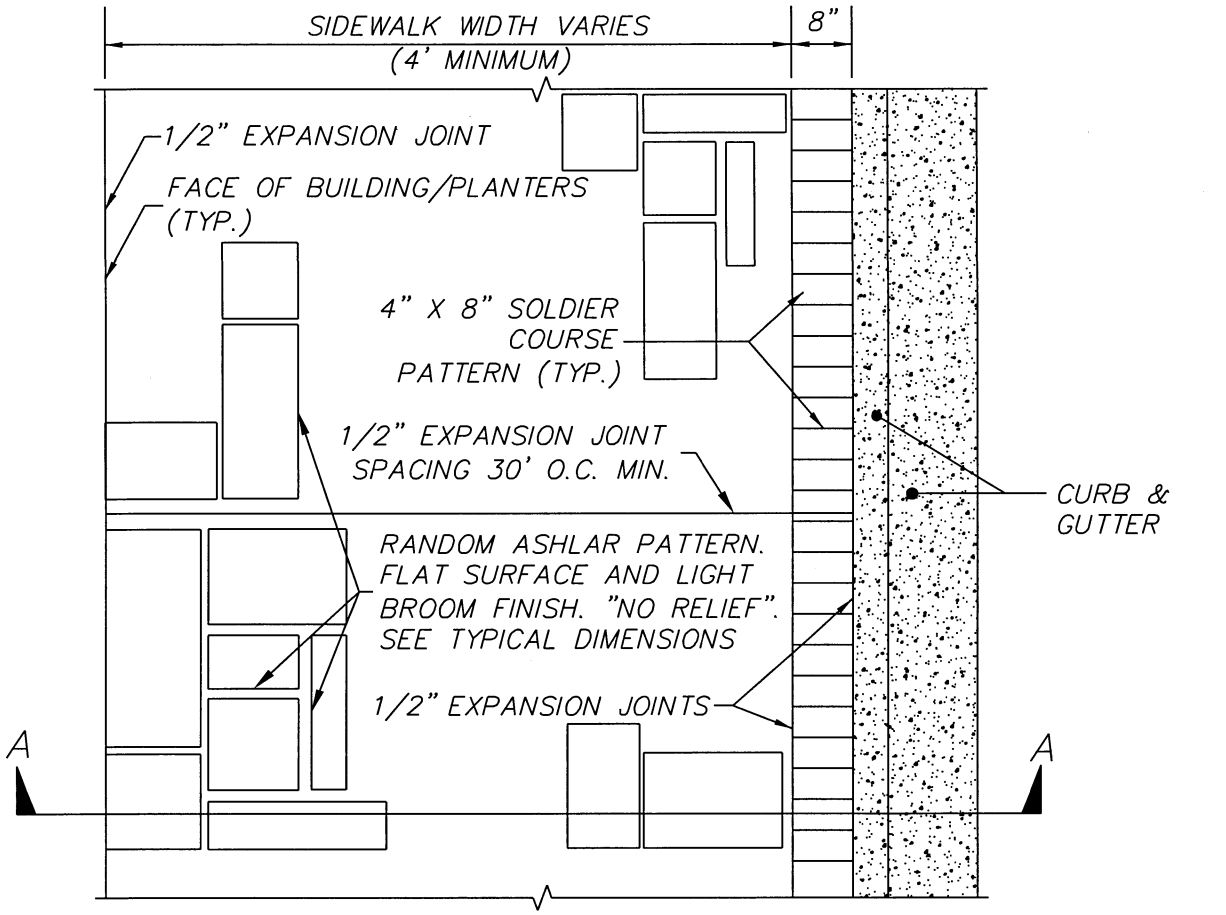


PLAN

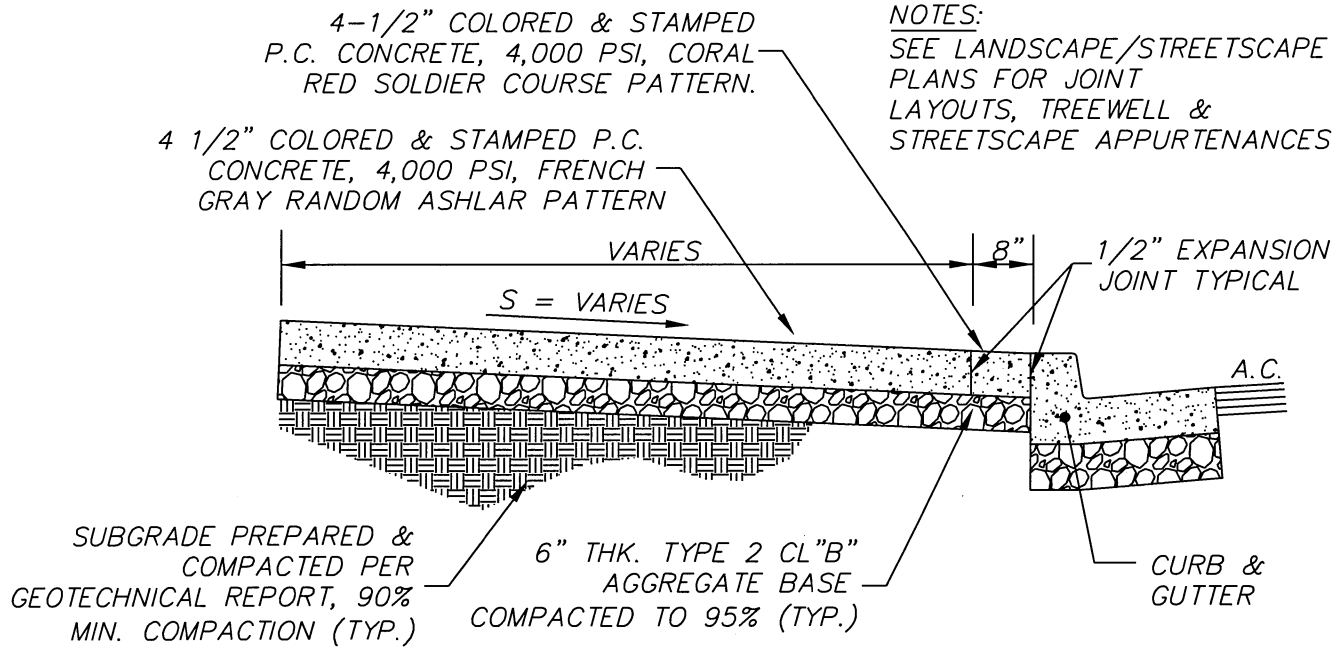
NOTES:

1. MIN. CURB RADIUS SHALL BE 20 FEET, UNLESS OTHERWISE SPECIFIED.
2. WEAKENED PLANE JOINTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PLAN VIEW AND SECTION 312.09.02 OF THE SSPWC.
3. TRAVERSE EXPANSION JOINTS 1/2" WIDE SHALL BE CONSTRUCTED AT ALL SIDEWALK RETURNS, OPPOSITE EXPANSION JOINTS IN ADJACENT CURB, AT REGULAR INTERVALS NOT EXCEEDING 30'. ISOLATION JOINTS SHALL BE INSTALLED AROUND ALL STRUCTURES. EXPANSION AND ISOLATION JOINTS SHALL BE FILLED WITH JOINT FILLER STRIPS 1/2" THICK. JOINT MATERIAL SHALL CONFORM TO SSPWC SECTION 202.10.
4. COLORED CONCRETE IS NOT ALLOWED, UNLESS APPROVED BY THE CITY ENGINEER.
5. ON SIDEWALKS WIDER THAN 5', JOINTING PATTERN SHALL BE .8 TO 1.2 TIMES THE WIDTH OF THE SIDEWALK.
6. SIDEWALK WIDTH "D" SHALL BE 4' MIN. ON RESIDENTIAL STREETS AND 6' MIN. ON COLLECTOR AND ARTERIAL STREETS.
7. FIBER–REINFORCED PORTLAND CEMENT CONCRETE (P.C.C.) SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4000 PSI MIN. COMPRESSIVE STRENGTH AT 28 DAYS, MIN. 6 SACKS OF CEMENT PER CUBIC YARD WITH MAX. WATER–CEMENT RATIO OF 0.45, AIR ENTRAINMENT 6% ±1.5%, SLUMP AT 1 TO 4 INCHES. ALL MATERIALS SHALL CONFORM TO SSPWC SECTION 202. POLYPROPYLENE FIBERS SHALL BE ADDED TO THE P.C.C. PER THE MANUFACTURER'S RECOMMENDATIONS.
8. NO CONCRETE SHALL BE PLACED UNTIL FORMS AND SUBGRADE ARE INSPECTED BY THE CITY EXCAVATION PERMIT INSPECTOR OR APPLICABLE ENGINEER OF RECORD.
9. CONCRETE REMOVAL SHALL BE TO NEAT SAW CUT LINES.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO	
1	DIFF. DETAIL	01/04	SIDEWALK DETAIL	DRAWING NO. R-104A (312)	
				DATE 08/00	PAGE 104
APPROVED BY : G.S.		01/04			

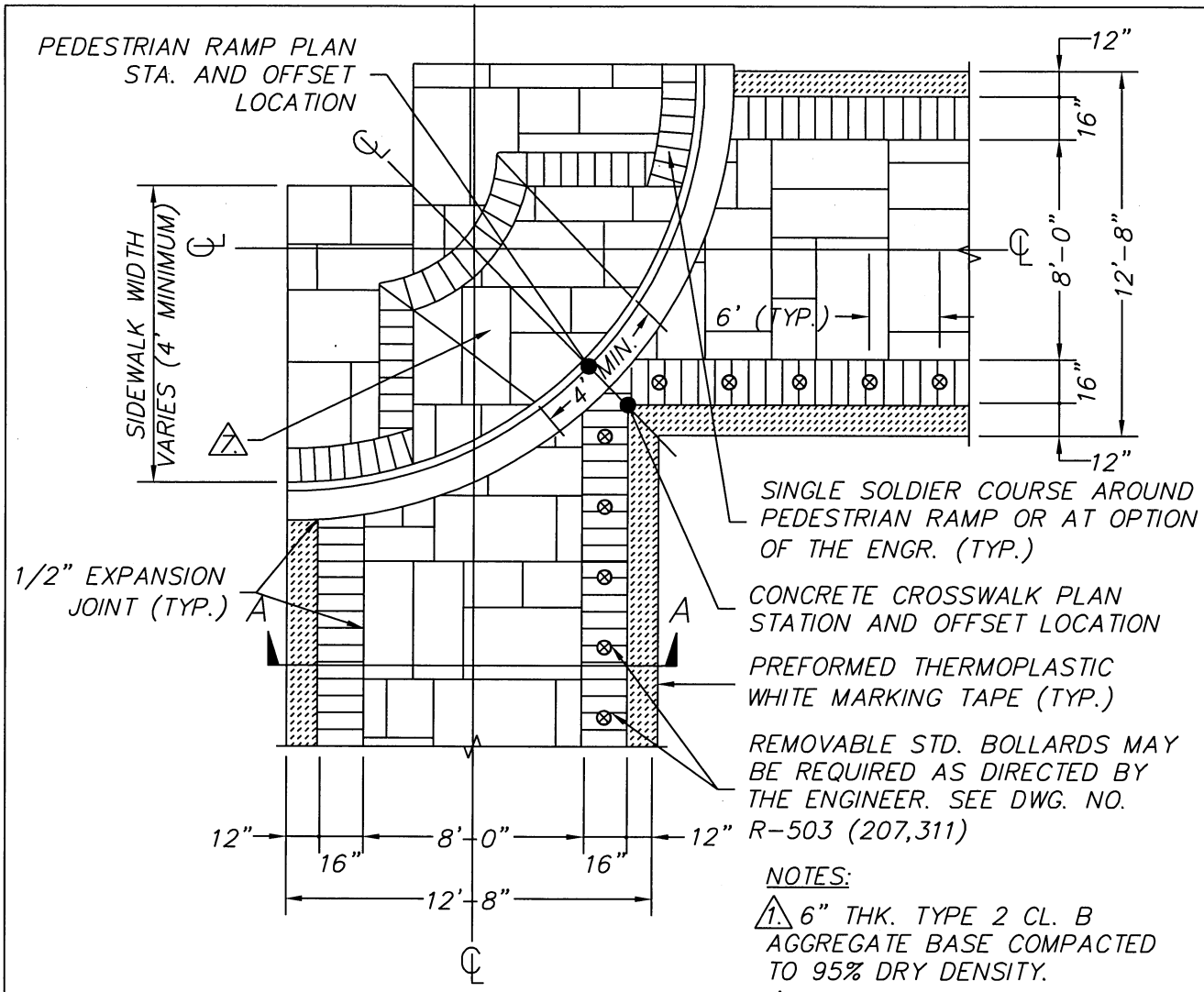


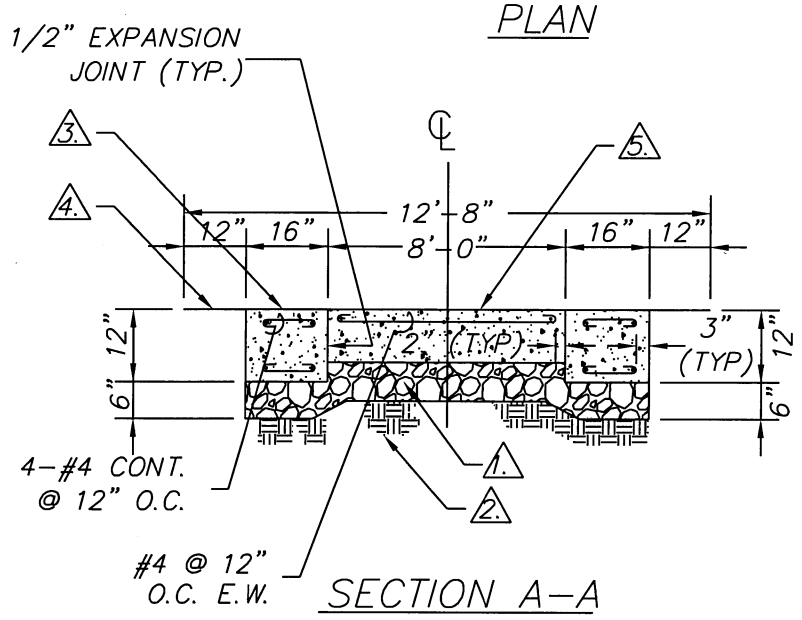
PLAN



SECTION A-A

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO
1	DIFF. DRAWING	01/04	COLORED AND STAMPED P.C. CONCRETE SIDEWALK	DRAWING NO. R-104B (312)
				DATE 08-01 / PAGE 105
APPROVED BY: G.S.		01/04		





NOTES:

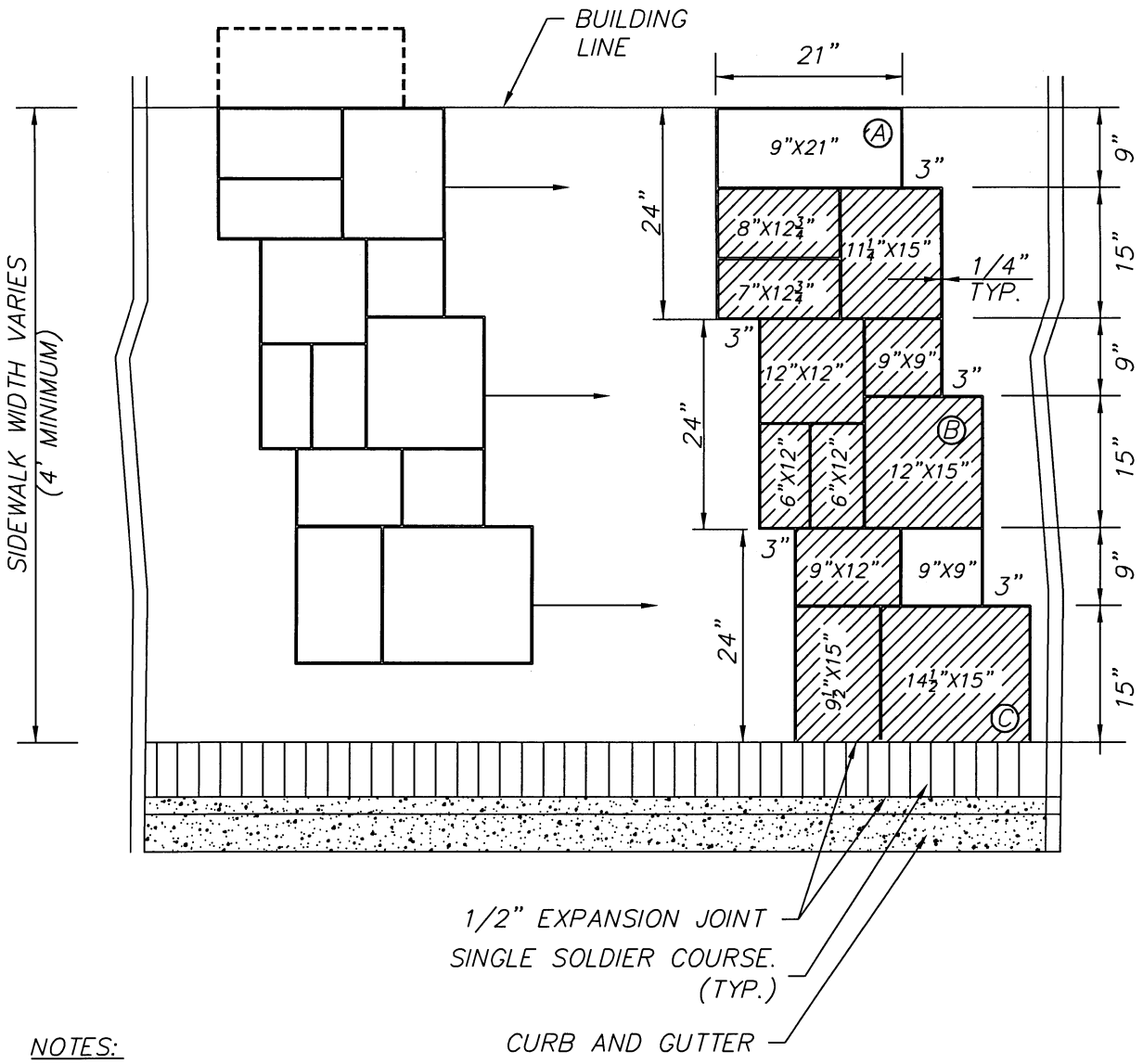
1. 6" THK. TYPE 2 CL. B AGGREGATE BASE COMPACTED TO 95% DRY DENSITY.
2. SUBGRADE PREPARED AND COMPACTED PER GEOTECHNICAL REPORT, 90% MIN. COMPACTION
3. STAMPED P.C. CONC. 4000 PSI, DOUBLE SOLDIER COURSE. COLORED CORAL RED
4. PREFORMED THERMOPLASTIC WHITE MARKING TAPE (TYP.)
5. 8" THK. STAMPED P.C. CONCRETE, COLORED FRENCH GRAY, 4000 P.S.I., ASHLAR STONE RANDOM PATTERN
6. CURB SHALL BE DEPRESSED AT FULL WIDTH OF PEDESTRIAN RAMP
7. REFER TO DRAWING NO. R-106D FOR PEDESTRIAN RAMP DETAILS

NO.	REVISION	DATE
1	DIFF. DRAWING	01/04
APPROVED BY: G.S.		01/04

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

COLORED AND STAMPED P.C. CONCRETE CROSSWALK AND PEDESTRIAN RAMP

SECTION	RENO
DRAWING NO.	R-104C (312)
DATE	08-01
PAGE	106



NOTES:

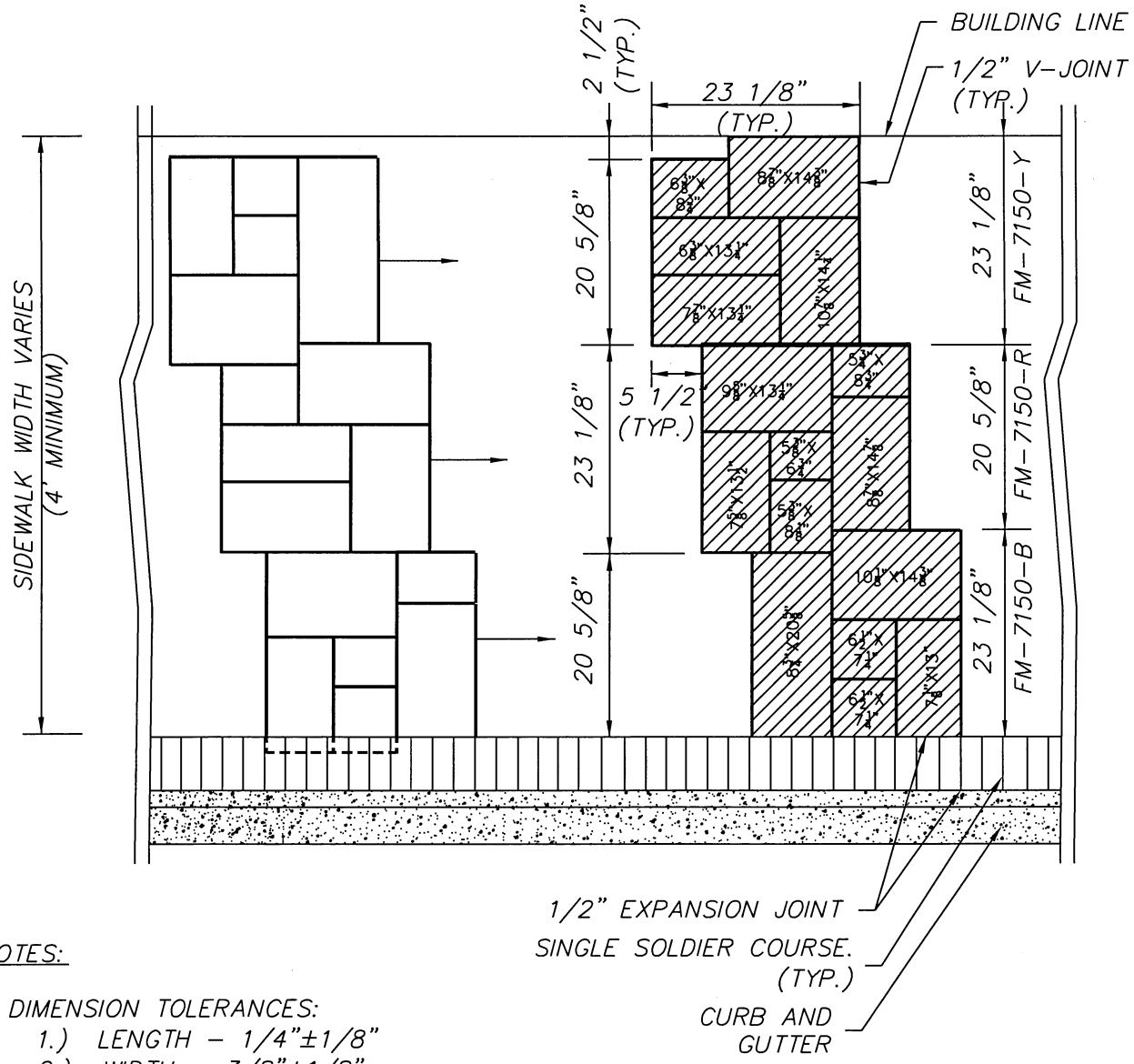
1. DIMENSION TOLERANCES:
   1.) LENGTH – 1/4"±1/8"
   2.) WIDTH – 3/8"±1/8"
   3.) DEPTH – 1/4"±1/8"

2. SIZES OF DESIGN AT END/EDGE VARY AND/OR ADJUSTED TO FIT THE LENGTH AND WIDTH OF SIDEWALK AND WILL REQUIRE SEPARATE "A", "B" AND "C" STAMPS, AND WILL REQUIRE HAND TOOLING.

3. STAMPS MAY VARY FROM THREE 2' X 2' COMPONENTS (A, B AND C) TO ONE 2' X 6' COMPONENT.

4. FINAL ALIGNMENT OF THE PATTERNS WILL BE REVIEWED AND APPROVED BY THE CITY DURING TEST POUR.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO
			"BOMANITE" TYPICAL ASHLAR SLATE STAMP PATTERN DIMENSIONS	DRAWING NO. R-104D (312)
				DATE 01/04 / PAGE 107
APPROVED BY: G.S.		01/04		



NOTES:

1. DIMENSION TOLERANCES:
   1.) LENGTH – 1/4"±1/8"
   2.) WIDTH – 3/8"±1/8"
   3.) DEPTH – 1/4"±1/8"

2. SIZES OF DESIGN AT END/EDGE VARY AND/OR ADJUSTED TO FIT THE LENGTH AND WIDTH OF SIDEWALK, AND WILL REQUIRE HAND TOOLING.

3. FINAL ALIGNMENT OF THE PATTERNS WILL BE REVIEWED AND APPROVED BY THE CITY DURING TEST POUR.

4. PATTERN DESCRIPTION: PATTERN IS FORM OF RECTANGULAR STONES IN VARIOUS SIZES LAID IN A RANDOM MANNER. THE SIDES OF THE STONES VARY FROM 5 1/4" TO 20 5/8". EDGES ARE BEVELED FORMING A V-SHAPE GROOVE WITH THE APPEARANCE OF UNGROUTED JOINT, 1/2" WIDE AND 1/4" DEEP. OUTER BEVELED EDGES ARE 1/4" WIDE WHICH MATCH THE INSIDE JOINTS WHEN TOOLS ARE JOINED. THE COMPLETED PATTERN IS FORMED BY THE USE OF 3 TOOLS, B, R AND Y, EACH WITH DIFFERENT RANDOM ARRANGEMENT OF STONES.

NO.	REVISION	DATE
APPROVED BY: G.S.		01/04

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

"BRICKFORM RAFCO" TYPICAL ASHLAR SLATE STAMP PATTERN DIMENSIONS

SECTION	RENO
DRAWING NO.	R-104E (312)
DATE	01/04
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GENERAL NOTES–STAMPED CONCRETE

1. THIS WORK SHALL CONSIST OF THE INSTALLATION OR REMOVAL AND REPLACEMENT OF THE EXISTING SIDEWALK, PEDESTRIAN RAMPS, AND/OR ALLEY APPROACHES WITH STAMPED CONCRETE. ALL OF THE SAID ITEMS SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE STANDARD DETAILS. THE PEDESTRIAN RAMPS AND SIDEWALK FOR INDIVIDUAL LOCATIONS SHALL BE BID AND SUBSEQUENTLY CONSTRUCTED TOGETHER. IN ALL INSTANCES, THE CONTRACTOR SHALL MATCH THE EXISTING TOP OF CURB AND THE EXISTING TILE SIDEWALK, WHEN APPLICABLE. ALL WORK SHALL CONFORM TO SECTION 312 OF THE STANDARD SPECIFICATIONS AND AS SPECIFIED IN THESE SPECIAL PROVISIONS.

2. ALL STAMPED CONCRETE SHALL BE CLASS DA, WHICH SHALL HAVE A COARSE AGGREGATE GRADATION CONFORMING TO SIZE NO. 67 IN SUBSECTION 200.05.03 OF THE STANDARD SPECIFICATIONS. IT SHALL ALSO HAVE BETWEEN 6 AND 8 SACKS OF CEMENT PER CUBIC YARD, A MAXIMUM OF 5 GALLONS OF WATER ADDED PER SACK OF CEMENT, A 1 TO 4 INCH SLUMP, 4.5 TO 7.5 PERCENT ENTRAINED AIR, POLYPROPYLENE FIBERS ADDED PER MANUFACTURER'S RECOMMENDATIONS, AND HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4,000 PSI. NO WATER SHALL BE ADDED TO THE CONCRETE AFTER LEAVING THE PLANT. NO WATER SHALL BE ADDED IN THE TRUCK OR TO THE SURFACE OF POURED CONCRETE OTHER THAN IS NORMALLY INCIDENTAL TO MAINTAINING THE CLEANLINESS OF TOOLS UTILIZED IN THE ACHIEVEMENT OF A SMOOTH AND EVEN FINISH. SUPER PLASTICIZER ADDITIVES MAY BE ALLOWED IF APPROVED AS PART OF THE SUBMITTED DESIGN.

3. BASE MATERIAL SHALL CONFORM TO SUBSECTION 308.02 OF THE STANDARD SPECIFICATIONS OR AS SPECIFIED IN THE SPECIAL PROVISIONS.

4. TO ENSURE INTEGRAL COLOR SCHEMES IN THE AREAS DESIGNATED FOR COLORED, STAMPED CONCRETE IN THE PLANS OR SPECIFICATIONS, THE CONCRETE SHALL CONTAIN CHROMIX ADMIXTURE FOR COLOR–CONDITIONED CONCRETE (L.M. SCOFIELD COMPANY), QC INTEGRAL COLOR (QC CONSTRUCTION PRODUCTS COMPANY), OR BOMANITE (ALL BAGS TO BE PROPERLY MARKED). THE ADMIXTURE SHALL BE C–14 FRENCH GRAY FOR THOSE AREAS DESIGNATED TO BE RANDOM ASHLER STONE PATTERN "NO RELIEF" (PER CITY OF RENO STANDARD DETAIL DRAWINGS R–104B THROUGH R–104E, LATEST REVISION) AND C–22 CORAL RED

   FOR THOSE AREAS DESIGNATED AS SOLDIER COURSE PATTERN, UNLESS SPECIFIED OTHERWISE IN THE SPECIAL PROVISIONS. THE COLOR–CONDITIONING ADMIXTURE SHALL BE A SINGLE COMPONENT, PIGMENTED, WATER–REDUCING CONCRETE ADMIXTURE, FACTORY FORMULATED, PACKAGED IN CUBIC YARD DOSAGE INCREMENTS, NOT MULTIPLE ADDITIVES AND PIGMENTS TO BE DOSED SEPARATELY INTO MIX. IT SHALL COMPLY WITH ASTM C979 AND ASTM C494.

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5. ALL CONCRETE DESIGNATED AS STAMPED (EITHER RANDOM ASHLAR STONE RANDOM PATTERN OR SOLDIER COURSE PATTERN) AND LOCATED IN NON-VEHICLE AREAS SHALL BE COLOR HARDENED WITH QC COLOR HARDENER (QC CONSTRUCTION PRODUCTS COMPANY), OR BOMANITE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. THE RANDOM ASHLAR STONE RANDOM PATTERN "NO RELIEF" (PER BOMANITE SPECIFICATIONS AND SIZES) WILL USE CLASSIC GRAY "L.M. SCOFIELD MATCH" AT A MINIMUM OF 60 POUNDS PER 100 SQUARE FEET. THE SOLDIER COURSE PATTERN WILL USE TILE RED AT A MINIMUM OF 60 POUNDS PER 100 SQUARE FEET. THE COLOR HARDENER SHALL BE FORMULATED FOR OPTIMUM SURFACE HARDENING, WITH AGGREGATES GRADED THROUGH A WIDE PARTICLE SIZE RANGE AND SELECTED FOR HARDNESS AND PURITY.

6. ALL CONCRETE DESIGNATED AS STAMPED (EITHER RANDOM ASHLAR STONE PATTERN OR SOLDIER COURSE PATTERN) AND LOCATED IN VEHICLE TRAFFIC AREAS SHALL BE COLOR HARDENED WITH EMERCHROME FLOOR HARDENER (L.M. SCOFIELD COMPANY), QC HEAVY DUTY HARDENER (QC CONSTRUCTION PRODUCTS COMPANY), OR BOMANITE. THE COLORS SHALL CORRESPOND TO THOSE LISTED IN THE PREVIOUS NOTE ON NON-TRAFFIC AREAS. THE HARDENER SHALL BE APPLIED AT A MINIMUM OF 120 POUNDS PER 100 SQUARE FEET. THE HARDENER SHALL BE FORMULATED WITH GRADED, NON-SLIP, NON-RUSTING, EMERY AGGREGATE.

7. EUCOBOND (EUCLID CHEMICAL COMPANY), OR AN APPROVED EQUAL, SHALL BE USED AS A CONCRETE BONDING AGENT BETWEEN ALL NEW CONCRETE AND EXISTING CONCRETE SURFACES.

8. THE AREA REPRESENTATIVE OF THE L.M. SCOFIELD COMPANY IS ROBERT TORRES, (1-916-715-2717). THE MAIN L.M. SCOFIELD OFFICE IS LOCATED AT 6533 BANDINI BOULEVARD, LOS ANGELES, CA 90040. THE AREA REPRESENTATIVE FOR QC CONSTRUCTION PRODUCTS COMPANY IS GEORGE LEE, PO BOX 599, MADERA, CA 93939, (1-925-439-0879). THE AREA REPRESENTATIVE FOR BOMANITE IS ANCHOR CONCRETE, 1750 MARIETTA WAY, SPARKS, NV 89431 (775-359-4969). THE AREA REPRESENTATIVE FOR BRICKFORM RAFCO PRODUCTS IS NEVADA CONCRETE SUPPLY, 1609 FREEPORT BLVD., SPARKS, NEVADA 89431 (775-331-5335).

9. ALL CONCRETE DESIGNATED AS EITHER RANDOM ASHLER STONE PATTERN OR SOLDIER COURSE PATTERN AND UTILIZING COLOR HARDENER, WHETHER LOCATED IN THE VEHICLE OR NON-VEHICLE AREA, SHALL RECEIVE A CLEAR LIQUID ANTIQUING RELEASE AGENT FROM EITHER L.M. SCOFIELD COMPANY, QC CONSTRUCTION PRODUCTS COMPANY, OR BOMANITE.

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10. THE COLOR AND HARDENING ADMIXTURES, BONDING, ANTIQUING AND SEALING AGENTS SHALL BE COMPATIBLE AND DESIGNED TO FORM ONE COMPLETE SYSTEM. ALL STAMPED CONCRETE SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PRODUCTS/PROCEDURES LISTED HEREIN OR AN APPROVED EQUAL. A CONTRACTOR DESIRING TO USE "AN APPROVED EQUAL" MUST SUBMIT THE NECESSARY INFORMATION TO THE ENGINEER A MINIMUM OF 15 WORKING DAYS PRIOR TO ITS PROPOSED USE. ANY "EQUAL" PRODUCT WILL NEED TO PROVIDE A 5 YEARS DOCUMENTED PERFORMANCE RECORD FOR EACH SPECIFIC PRODUCT. IN PARTICULAR, SAID PRODUCT MUST HAVE PERFORMED IN A CLIMATE SIMILAR TO THE CITY OF RENO. THE ENGINEER WILL BE THE FINAL JUDGE AS TO WHETHER THE PROPOSED PRODUCT AND/OR METHOD WILL BE ACCEPTED.

11. DURING THE DEMOLITION OF EXISTING DESIGNATED AREAS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OR REPLACEMENT OF ANY LOOSE OR DAMAGED TILES. THE MATERIALS FOR THE REPAIR WILL BE PROVIDED BY THE REDEVELOPMENT AGENCY. THE CONTRACTOR SHALL SALVAGE ALL 8 INCH BY 8 INCH WHITE AND RED MAUVE TILES. THE TYPE II BASE MATERIAL SHALL BE WELL-DRAINED AND BE UNIFORMLY GRADED BELOW FINISH GRADE. IT MUST BE MOISTENED TO A NOMINAL DEPTH, COMPACTED TO 95% RELATIVE DENSITY, AND BE FREE OF FROST AT THE TIME OF CONCRETE PLACEMENT. IF NECESSARY, IT SHOULD BE DAMPENED WITH WATER JUST PRIOR TO CONCRETE PLACEMENT, BUT SHALL BE FREE OF STANDING WATER.

12. THE CONCRETE SHALL BE PLACED AND CONSOLIDATED SO AS TO COMPLETELY FILL SPACES IN THE FORMS AND TO PROVIDE SUITABLE SURFACE FOR FINISHING. THE CONCRETE ADJACENT TO THE FORMS SHALL BE SPADED. ALL SURROUNDING SURFACES OR WALLS SHALL BE PROTECTED TO PREVENT DISCOLORATION. WATER MUST NOT BE SPRAYED ON THE SURFACE TO RETEMPER THE PLASTIC CONCRETE FOR ADDITIONAL TROWELLING. HARD STEEL TROWELLING SHALL BE MINIMIZED TO AVOID TROWEL BURNS. THERE WILL BE "NO RELIEF" IN THE SURFACE OF THE CONCRETE FOR THE ASHLER STONE RANDOM PATTERN AREAS. INFORMATION REGARDING THE APPROPRIATE STAMPS FOR THE "NO RELIEF" ASHLER STONE RANDOM PATTERN CAN BE OBTAINED FROM THE LOCAL BOMANITE REPRESENTATIVE (775-359-4969), OR BRICKFORM RAFCO PRODUCTS REPRESENTATIVE (775-331-5335) WHICH RANGES IN SIZE FROM 16 INCHES BY 4 INCHES RECTANGULAR AND SQUARE. THE SOLDIER COURSE SHALL BE 4 INCHES BY 8 INCHES IN SIZE AND MAY BE EITHER A SINGLE OR DOUBLE ROW AS SPECIFIED ON THE PLANS (PER BOMANITE SPECIFICATIONS AND SIZES OR BRICKFORM RAFCO SPECIFICATIONS AND SIZES). ALL STAMPS SHALL BE APPROVED BY THE CITY OF RENO. THE SURFACE SHALL BE BROOM FINISHED (LIGHT) AND HAVE A FLAT SURFACE FINISH AS DESCRIBED IN A LATER NOTE, UNLESS SPECIFIED OTHERWISE BY THE ENGINEER AND/OR SPECIAL PROVISIONS.

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13. WHEN CONCRETE IS PLACED IN HOT/COLD AND WINDY SITUATIONS, PRECAUTIONS MUST BE TAKEN TO PREVENT PLASTIC CRACKING, WHICH WOULD RESULT FROM EXCESSIVE RAPID DRYING OR FREEZING AT THE SURFACE. REJECTION AND/OR MITIGATION OF CONCRETE THAT SHOWS EVIDENCE OF PLASTIC CRACKING WILL BE AT THE SOLE DISCRETION OF THE CITY OF RENO. FURTHERMORE, THE SOLDIER COURSE WILL NOT BE PLACED BEHIND THE CURB RAMP ASSOCIATED WITH PEDESTRIAN RAMPS. THE SOLDIER COURSE WILL BE PLACED ALONG THE OUTSIDE EDGES (TRANSVERSE TO SIDEWALK) OF THE PEDESTRIAN RAMP AND ALONG THE TOP EDGE OF THE PEDESTRIAN RAMP (OPPOSITE CURB RAMP AREA) AS DEPICTED IN THE APPLICABLE STANDARD DETAIL.

14. THE CONTRACTOR WILL BE REQUIRED TO CONSTRUCT A TEST SECTION FOR THE STAMPED CONCRETE SIDEWALK. ONCE THE MIX DESIGN FOR THE STAMPED CONCRETE SIDEWALK HAS BEEN APPROVED, THE CONTRACTOR WILL CONSTRUCT SAID TEST SECTION. THE TEST WILL CONSIST OF A PORTION OF THE FINAL SIDEWALK WORK, FULL WIDTH AND A MINIMUM LENGTH OF 10 FEET. THE ENGINEER RESERVES THE RIGHT TO INCREASE THE LENGTH OF THE TEST SECTION TO 20 FEET IF THE SITUATION WARRANTS SUCH. THE CONTRACTOR MAY CONSTRUCT THE TEST SECTION BETWEEN EXPANSION JOINTS TO BECOME A PORTION TO THE FINAL SIDEWALK WORK. ACCEPTANCE OF THE STAMPED CONCRETE TEST SECTION SHALL BE IN ACCORDANCE WITH THESE SPECIAL PROVISIONS AND THE STANDARD SPECIFICATIONS.

15. THE CONTRACTOR SHALL CONSTRUCT THE TEST SECTION TO DEMONSTRATE HIS ABILITY TO SUPPLY, PLACE, CONSOLIDATE, FINISH, CURE, TEXTURE, AND SEAL STAMPED CONCRETE. THE COLOR SHALL BE UNIFORM AND CONFORM TO THE MANUFACTURER'S COLOR CHIPS. THE STAMPED LINES SHALL NOT BE SKEWED AND SHALL HAVE LINES THAT ARE CONTINUOUS ACROSS CONTRACTION AND EXPANSION JOINTS. ONCE ACCEPTED BY THE ENGINEER, THIS TEST SECTION WILL BE THE STANDARD USED FOR JUDGING THE REMAINDER TO THE WORK. THE CONTRACTOR SHALL NOT COMMENCE WORK ON THE REMAINDER OF ANY OF THE STAMPED CONCRETE UNTIL THE TEST SECTION HAS BEEN COMPLETED AND ACCEPTED BY THE ENGINEER. IF DEEMED NECESSARY BY THE ENGINEER, THE CONTRACTOR MAY BE REQUIRED TO CONSTRUCT ADDITIONAL STAMPED CONCRETE TEST SECTIONS, IF THE INITIAL TEST SECTION IS NOT ACCEPTABLE. ALL STAMPED CONCRETE PLACED IN THE FINAL WORK SHALL BE ACCEPTED BASED ON THE CONTRACTOR'S ABILITY TO PRODUCE THE SAME QUALITY AS THAT SHOWN IN THE TEST SECTION AND IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS AND THESE SPECIAL PROVISIONS. AREAS NOT HAVING UNIFORM COLOR, STAMPING, OR OTHER SPECIFIED REQUIREMENTS SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.

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16. EXPANSION JOINTS AS SHOWN ON THE PLANS SHALL CONSIST OF A 1/2 INCH PREMOLDED EXPANSION JOINT WITH WHITE CAP OR BACKER ROD AND CAULK. THE PREMOLDED EXPANSION JOINT MATERIAL IS AN ASPHALT COATED FIBER EXPANSION JOINT, THE WHITE CAP/BACKER IS A CLOSED BACKER ROD AND THE CAULK SHALL BE LITHOSEAL TRAFFICALK-3G (L.M. SCOFIELD COMPANY), OR SIKAFLEX 2C SL (D.M. FIGLEY COMPANY) IN DEEP CHARCOAL, OR AN APPROVED EQUAL. EXPANSION JOINTS (TRANSVERSE TO THE STREET CENTERLINE) SHALL BE CONSTRUCTED IN THE STAMPED CONCRETE SIDEWALKS AND DRIVEWAY APPROACHES AT INTERVALS NOT EXCEEDING THIRTY (30) FEET. THE CONTRACTOR SHALL ALSO PROVIDE AN EXPANSION JOINT BETWEEN THE CONCRETE AND ANY EXISTING BUILDINGS ENCOUNTERED AS PART OF THE PRESCRIBED WORK. SUCH JOINTS SHALL BE FILLED WITH PREMOLDED JOINT FILLER AS DESCRIBED ABOVE. EXPANSION JOINTS 1/2 INCH IN WIDTH SHALL BE LOCATED IN CURB AND GUTTERS AT EACH SIDE OF STRUCTURES, AT THE END OF ALL CURB RETURNS AND ABUTTING HARDENED IN-PLACE CURB AND GUTTER. HOWEVER, EXPANSION JOINTS SHALL NOT BE INSTALLED WITHIN 20 FEET OF AN ISLAND NOSE. EXPANSION JOINTS SHALL BE 1/2 INCH THICK SHAPED TO THE CROSS SECTION OF THE CURB AND GUTTER AND SHALL BE CONSTRUCTED AT RIGHT ANGLES TO THE CURB AND GUTTER.

17. TRANSVERSE EXPANSION JOINTS 1/2 INCH WIDE SHALL BE CONSTRUCTED AT ALL SIDEWALK RETURNS OPPOSITE EXPANSION JOINTS IN ADJACENT CURB AND AT REGULAR INTERVALS NOT TO EXCEED 30 FEET. TRANSVERSE EXPANSION JOINTS SHALL ALSO BE CONSTRUCTED AT TRANSITION POINTS THAT WOULD NORMALLY CRACK DUE TO ANGLE POINTS OR SIMILAR OCCURRENCES. ISOLATION JOINTS SHALL BE INSTALLED AROUND ALL STRUCTURES.

18. SAW CUTS WILL BE REQUIRED BETWEEN EXPANSION JOINTS AS SPECIFIED HEREINAFTER:

a. FROM ALL ANGLE POINTS INCLUDING, BUT NOT LIMITED TO PULL BOXES, VAULTS, MANHOLES, PILLARS, DROP INLETS, STEEL INSERTS, STAIR WELLS, ETC., OR ANY ANGLE POINT FROM AN ADJOINING STRUCTURE.

b. THE AREA BETWEEN SAW CUTS AND AN EXPANSION JOINT SHALL NOT EXCEED 100 SQUARE FEET.

c. SAW CUTS SHALL BE 1-1/4 INCH DEEP AND 1/8 INCH WIDE. TOOL JOINTS SHALL BE 1-1/4 INCH DEEP AND 1/4 INCH WIDE. ANY DEVIATIONS TO THESE REQUIREMENTS MUST BE APPROVED BY THE ENGINEER.

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19. UNDER NO CIRCUMSTANCES WILL THE CONTRACTOR APPLY A CURING COMPOUND TO STAMPED CONCRETE UNLESS AUTHORIZED BY THE ENGINEER. THE USE OF CURING BLANKETS OR OTHER ACCEPTABLE MEASURES WILL BE REQUIRED. UNDER NO CIRCUMSTANCES WILL VEHICULAR TRAFFIC BE PERMITTED ON STAMPED CONCRETE SURFACE UNTIL THE CONCRETE HAS CURED FOR A MINIMUM OF 72 HOURS, OR LONGER AS DIRECTED BY THE ENGINEER. THE CONTRACTOR WILL BE REQUIRED TO RAMP AND PLATE THE SECTIONS OF STAMPED CONCRETE IN VEHICULAR AREAS AS NECESSARY TO PROTECT THE CONCRETE DURING CURE TIME.

20. THE CONTRACTOR SHALL HAVE THE OPTION OF USING THE FOLLOWING PRODUCTS FOR SEALING THE STAMPED CONCRETE DEPENDING UPON WHETHER A GLOSSY OR FLAT SURFACE APPEARANCE IS SPECIFIED OR DIRECTED BY THE ENGINEER:

a. FOR A GLOSSY SURFACE APPEARANCE, CEMETONE CLEAR SEALER (L.M. SCOFIELD COMPANY), QC SOLVENT SEAL (QC CONSTRUCTION PRODUCTS COMPANY), OR I-18 BOMASEAL OR APPROVED EQUAL SHALL BE APPLIED AT A MAXIMUM RATE OF ONE GALLON PER 125 SQUARE FEET OF SURFACE. IT MAY BE NECESSARY TO APPLY 2 OR 3 APPLICATIONS OF SAID SEALER IF DEEMED APPROPRIATE BY THE ENGINEER. THE CONCRETE SHALL NOT BE COVERED WITH PLASTIC SHEETING OR BURLAP.

b. FOR A FLAT SURFACE APPEARANCE, EUCOGUARD VOX OR EUCOGUARD 100, QC SOLVENT SEAL (QC CONSTRUCTION PRODUCTS COMPANY), OR BOMANITE SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

21. THE CURING COMPOUNDS AND SEALER COMPOUNDS LISTED ABOVE ARE AVAILABLE FROM THE FOLLOWING LOCAL SUPPLIERS FOR THE RESPECTIVE PRODUCTS:

SCOFIELD OR EUCOGUARD	SIERRA SUPPLY 1830 E. LINCOLN WAY SPARKS, NV 89431 PHONE: (775) 353-3333	QC LAFORGE CONSTRUCTION SUPPLY 1007 GREG STREET SPARKS, NV 89431 PHONE: (775) 331-7876

HYDROZA COATINGS - THE SEALER AVAILABLE THROUGH THIS COMPANY SHALL BE HYDROZO ENVIROSEAL 20. IT SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. FURTHERMORE, THE APPLICATOR SHALL BE CERTIFIED BY HYDROZA COATINGS COMPANY. THE APPLICATOR SHALL SUBMIT WITH THEIR QUOTATION, A COPY OF THE APPLICATOR'S CERTIFICATIONS BY HYDROZA COATINGS COMPANY.

THE SEALER AS MANUFACTURED BY HYDROZA COATINGS IS AVAILABLE FROM THE FOLLOWING SUPPLIER:

CONSTRUCTION SEALANTS AND SUPPLY
7 GLEN CARRAN CIRCLE
SPARKS, NV 89431
PHONE: (775) 331-3144

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22. SEALING OF STAMPED CONCRETE SHALL BE PERFORMED IN ACCORDANCE WITH THE FOLLOWING REQUIRMENTS:

a. ALL STAMPED CONCRETE TO BE SEALED SHALL BE SUFFICIENTLY CURED PRIOR TO APPLICATION OF SAID SEALANT. ALSO, ALL CAULKING AND EXPANSION JOINT WORK SHALL BE FULLY CURED PRIOR TO APPLICATION OF THE SEALANT. THE COVERAGE RATE SHALL BE 100 TO 125 SQUARE FEET PER GALLON, UNLESS OTHERWISE SPECIFIED BY THE MANUFACTURER AND APPROVED BY THE ENGINEER.

b. THE MATERIAL INVOLVED IN THIS APPLICATION SHALL BE GUARANTEED BY THE MANUFACTURER. THE GUARANTEE SHALL ENSURE THE MOISTURE PERFORMANCE OF THE SYSTEM FOR A PERIOD OF FIVE YEARS FROM THE DATE OF APPLICATION. PROVISIONS OF THE GUARANTEE SHALL INCLUDE RESPONSIBILITY FOR WATER PENETRATIONS, CHLORIDE (SALT), AND FREEZE–THAW DAMAGE THROUGH STRUCTURALLY SOUND AREAS, OTHERWISE NO LIABILITY IS TO BE REQUIRED FOR DEFECTS IN THE SUBSTRATE. LIABILITY FOR DAMAGE, IN ANY RESPECT, TO THE ADJACENT BUILDINGS OR CONTENTS THEREOF IS SPECIFICALLY FROM THESE REQUIREMENTS.

c. THE CONTRACTOR WILL BE REQUIRED TO APPLY SEALER TO THE TEST AS PREVIOUSLY STATED. APPLICATION OF THE SEALER WILL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. APPLICATION METHODS MAY RANGE FROM BRUSH/PUSH BROOM TO AIRLESS SPRAY. IT SHOULD BE NOTED, THAT THERE MAY BE A NEED TO BROOM THE SEALING COMPOUND INTO THE SURFACE EVEN WITH AN AIRLESS APPLICATION. THE ENGINEER WILL DETERMINE THE NEED FOR BROOMING AN AIRLESS APPLICATION.

d. THE CONTRACTOR WILL BE REQUIRED TO SUBMIT A QUART SAMPLE OF THE PROPOSED SEALING COMPOUND TO THE ENGINEER A MINIMUM OF TWO WEEKS PRIOR TO ITS PROPOSED APPLICATION TO THE TEST SECTION. THE ENGINEER SHALL HAVE THE SAMPLE EVALUATED BY AN APPROVED INDEPENDENT LABORATORY TO ENSURE THE MATERIAL CONFORMS WITH THE SPECIFIED PERFORMANCE CRITERIA.

e. ALL MATERIALS SHALL BE DELIVERED IN THE ORIGINAL MANUFACTURER'S SEALED CONTAINERS. MATERIALS SHALL BE STORED TO PREVENT DAMAGE TO THE CONTAINERS. THE SEALER SHALL BE THOROUGHLY STIRRED BEFORE AND DURING USE. SURFACE, AIR AND MATERIAL TEMPERATURES SHALL NOT BE LESS THAN 50 DEGREES FAHRENHEIT DURING APPLICATION OR WITHIN 4 HOURS AFTER SAID APPLICATION. AREAS NOT SUBJECT TO NATURAL VENTILATION SHALL HAVE POSITIVE VENTILATION PROVIDED THROUGHOUT THE APPLICATION. PERSONNEL SHALL BE WARNED AGAINST PROLONGED BREATHING OF VAPORS AND CONTACT OF MATERIALS WITH THE SKIN OF EYES. PROTECT OTHER SURFACES NOT BEING SEALED AS NECESSARY DURING THE APPLICATION PROCESS.

f. THE CONTRACTOR SHALL NOT ALLOW FOOT OR VEHICULAR TRAFFIC ON SURFACES WHICH HAVE BEEN SEALED UNTIL SUCH TIME AS THEY ARE THOROUGHLY DRY, AS DETERMINED BY THE ENGINEER.

23. THE ACCEPTED QUANTITY OF "CONCRETE SIDEWALK WITH PEDESTRIAN RAMP (STAMPED)" OR "CONCRETE ALLEY (STAMPED)", MEASURED AS PROVIDED ABOVE, SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE BID PER SQUARE FOOT. THE PRICE SHALL BE CONSIDERED FULL COMPENSATION FOR FURNISHING ALL LABOR, MATERIALS, SUPPLIES AND ANY INCIDENTALS NECESSARY TO COMPLETE THE WORK, AS DIRECTED BY THE ENGINEER.

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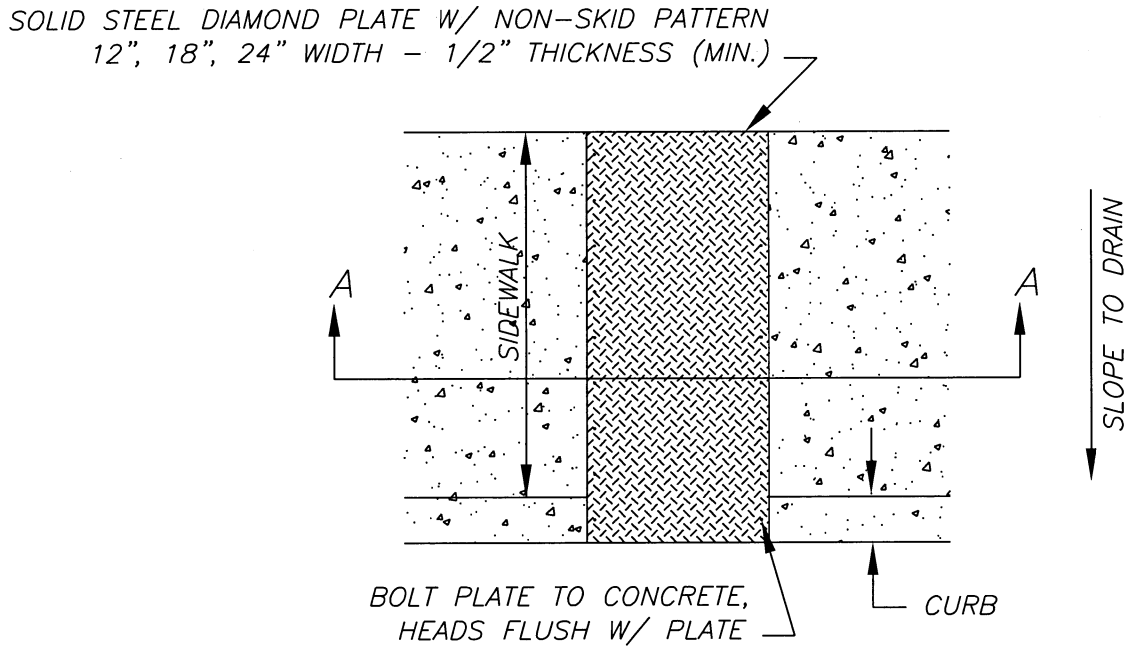

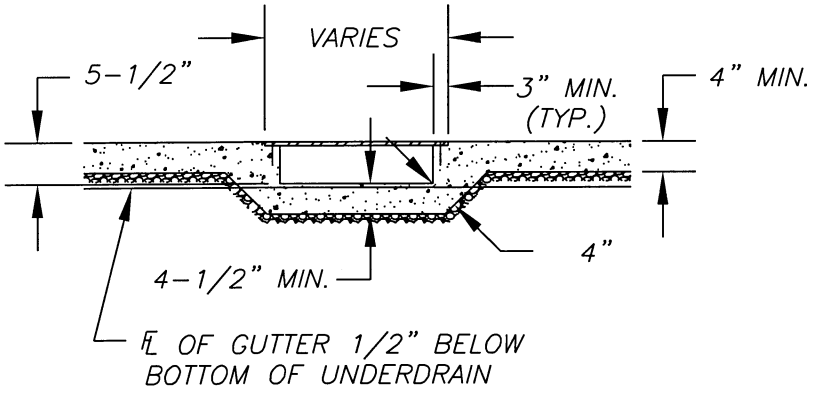

SECTION A-A

NOTES:

1. FIBER-REINFORCED PORTLAND CEMENT CONCRETE (P.C.C.) SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4000 PSI MIN. COMPRESSIVE STRENGTH @ 28 DAYS, MIN. 6 SACKS OF CEMENT PER CUBIC YARD WITH A MAX. WATER/CEMENT RATIO OF 0.45, AIR ENTRAINMENT 6% ±1.5%, SLUMP AT 1 TO 4 INCHES. ALL MATERIALS SHALL CONFORM TO SSPWC SECTION 202. POLYPROPYLENE FIBERS SHALL BE ADDED TO THE P.C.C. PER THE MANUFACTURER'S RECOMMENDATIONS.
2. BASE BENEATH CONCRETE DRAIN SUPPORT STRUCTURE SHALL BE 6" MIN. TYPE 2 , CLASS B AGGREGATE, COMPACTED TO A MINIMUM 95% OF MAXIMUM DRY DENSITY.

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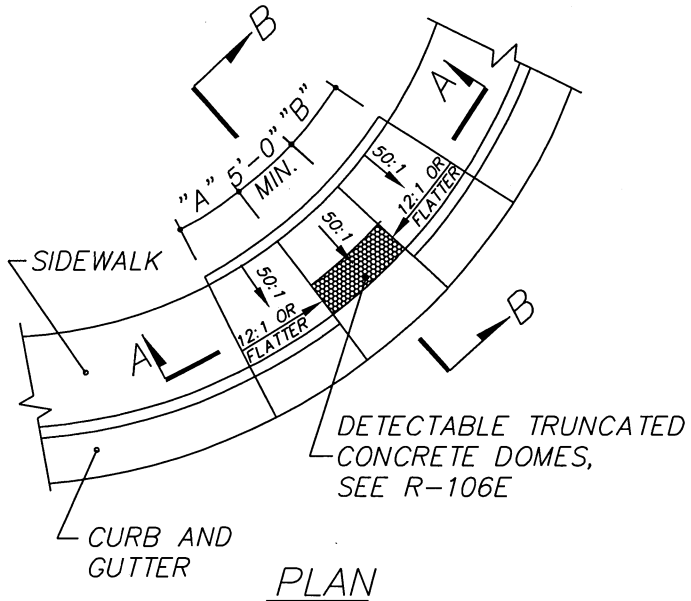
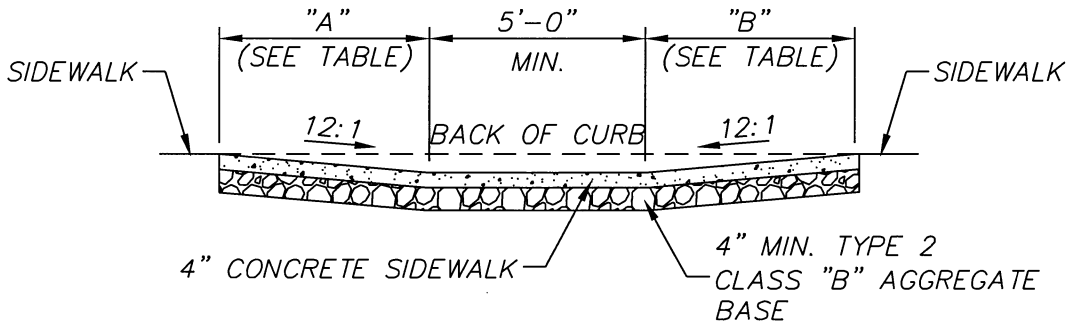


PLAN

GRADE % "B" TO "A"	"A" MINIMUM	"B" MINIMUM
-6 TO -5.01	4'-0"	12'-6"
-5 TO -4.01	4'-0"	10'-0"
-4 TO -3.01	4'-0"	8'-6"
-3 TO -2.01	4'-0"	7'-6"
-2 TO -1.01	4'-6"	6'-6"
-1 TO 1	5'-6"	5'-6"
1.01 TO 2	6'-6"	4'-6"
2.01 TO 3	7'-6"	4'-0"
3.01 TO 4	8'-6"	4'-0"
4.01 TO 5	10'-0"	4'-0"
5.01 TO 6	12'-6"	4'-0"

TRANSITION LENGTH TABLE FOR 12:1 SIDE SLOPE



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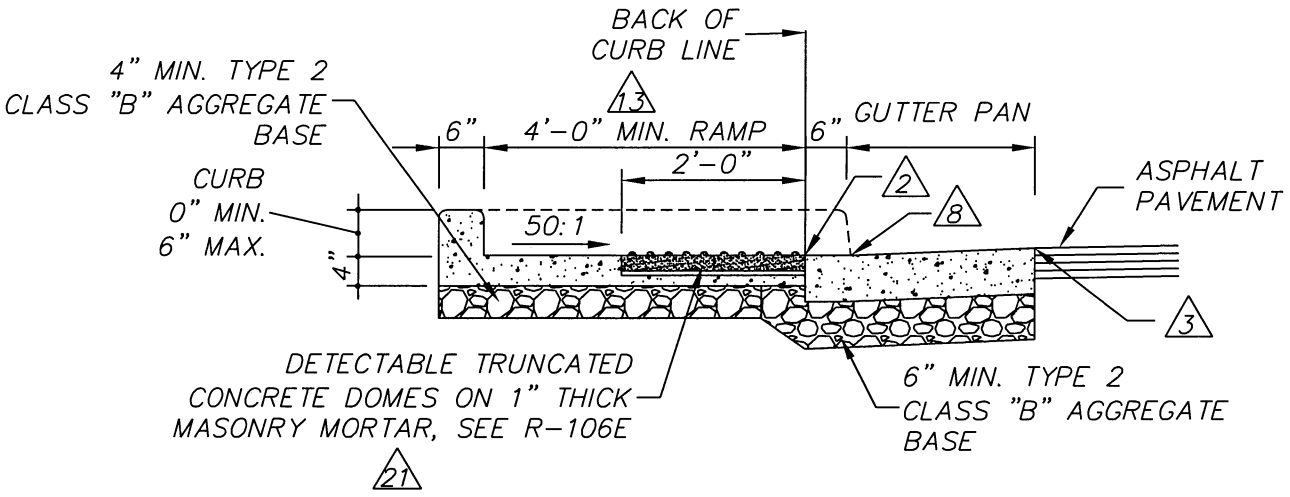

SECTION B-B

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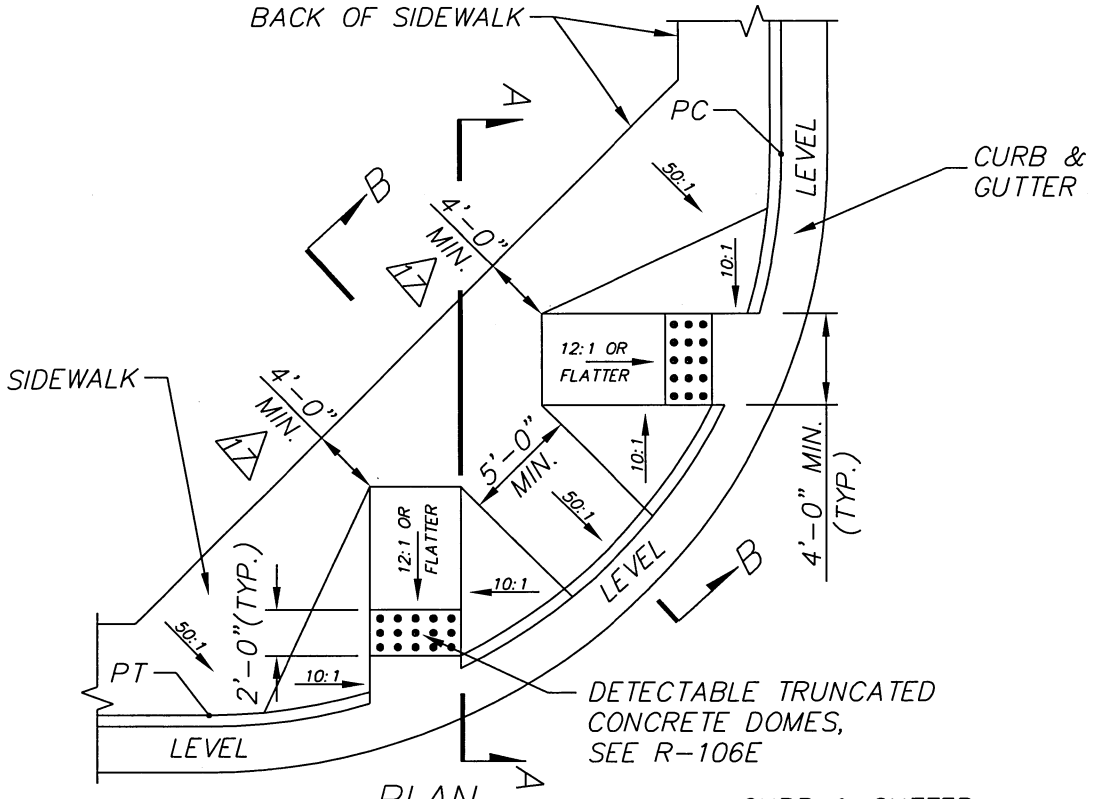
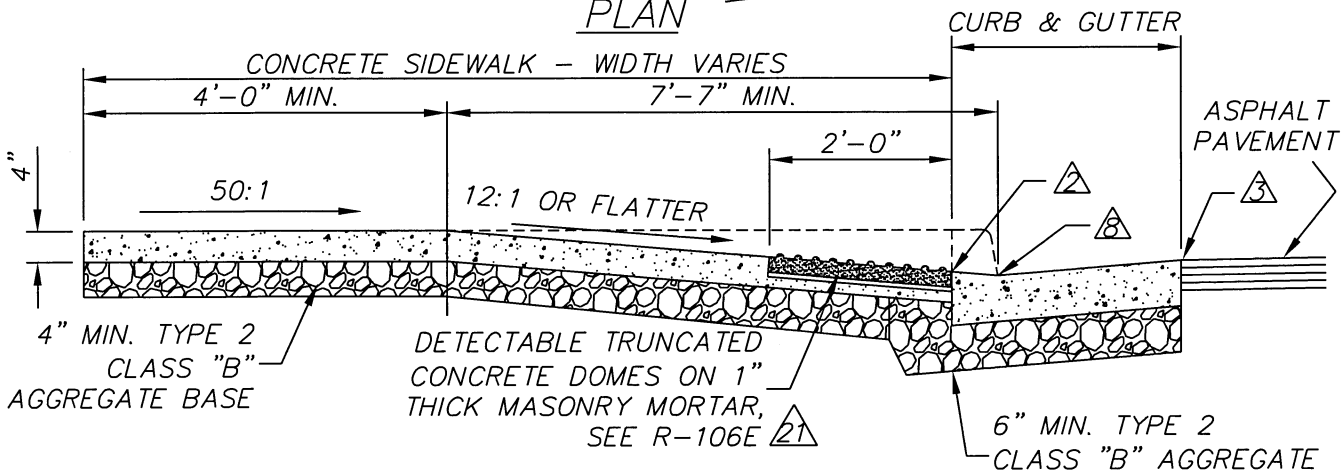
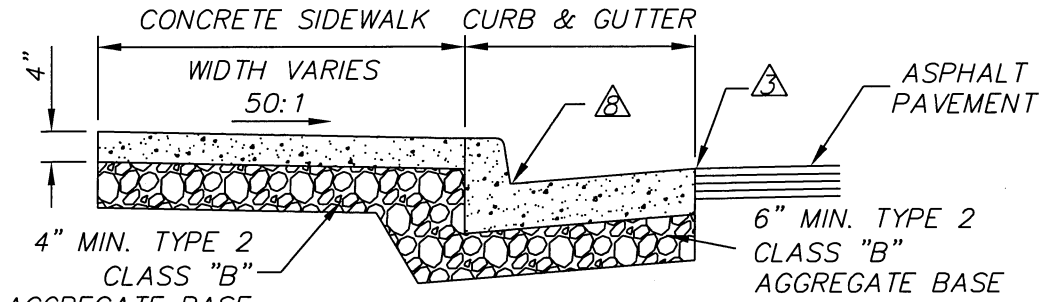


PLAN

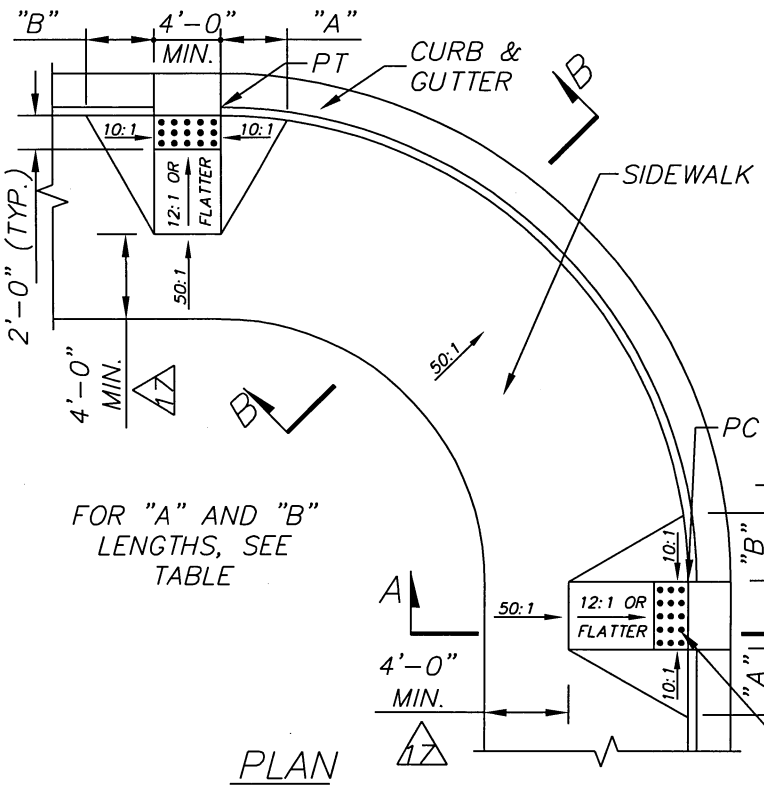


SECTION A–A



SECTION B–B

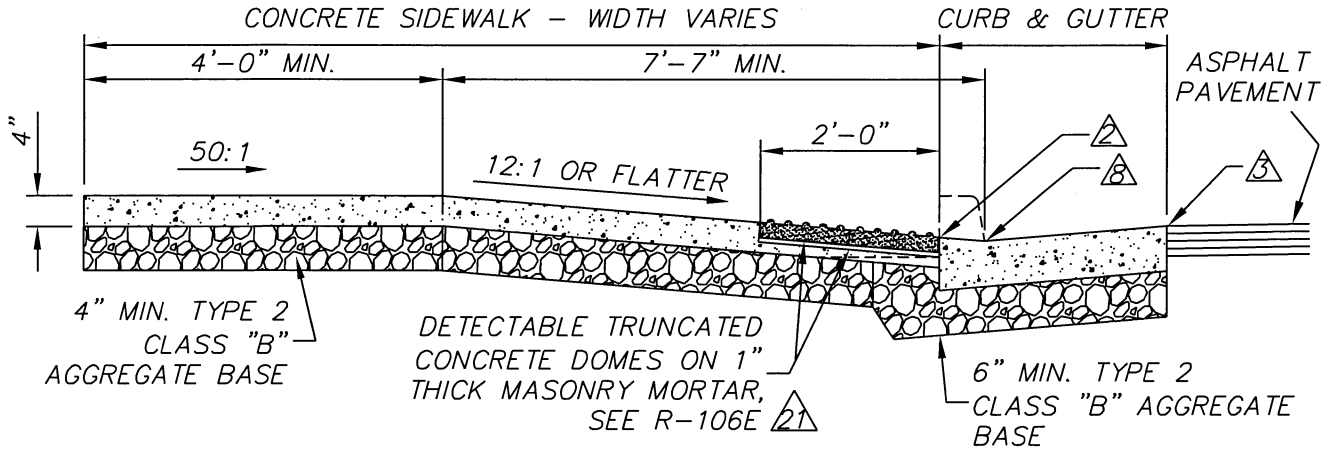
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO	
1	DIFF. DWG.	01/04	PEDESTRIAN RAMP NARROW SIDEWALKS	DRAWING NO. R-106B (312)	
				DATE 08/00	PAGE 119
APPROVED BY: G.S.		01/04			



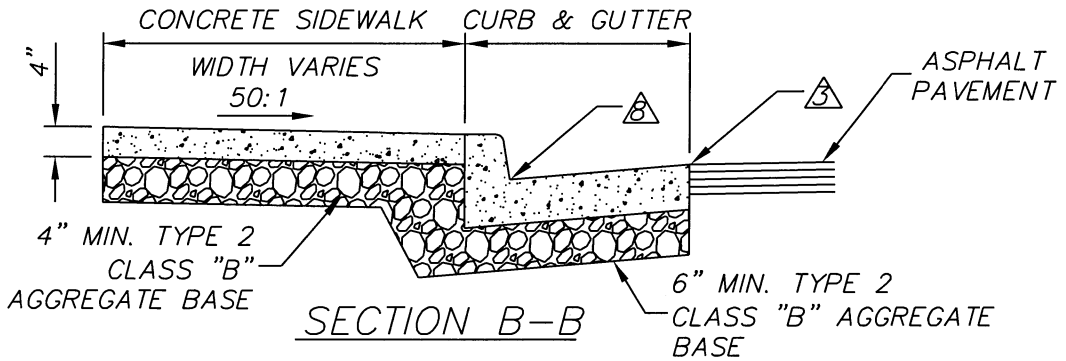
PLAN

GRADE % "B" TO "A"	"A" MINIMUM	"B" MINIMUM
-6 TO -5.01	4'-0"	12'-6"
-5 TO -4.01	4'-0"	10'-0"
-4 TO -3.01	4'-0"	8'-6"
-3 TO -2.01	4'-0"	7-6"
-2 TO -1.01	4'-6"	6'-6"
-1 TO 1	5'-6"	5'-6"
1.01 TO 2	6'-6"	4'-6"
2.01 TO 3	7'-6"	4'-0"
3.01 TO 4	8'-6"	4'-0"
4.01 TO 5	10'-0"	4'-0"
5.01 TO 6	12'-6"	4'-0"

TRANSITION LENGTH TABLE FOR 12:1 SIDE SLOPE



SECTION A-A

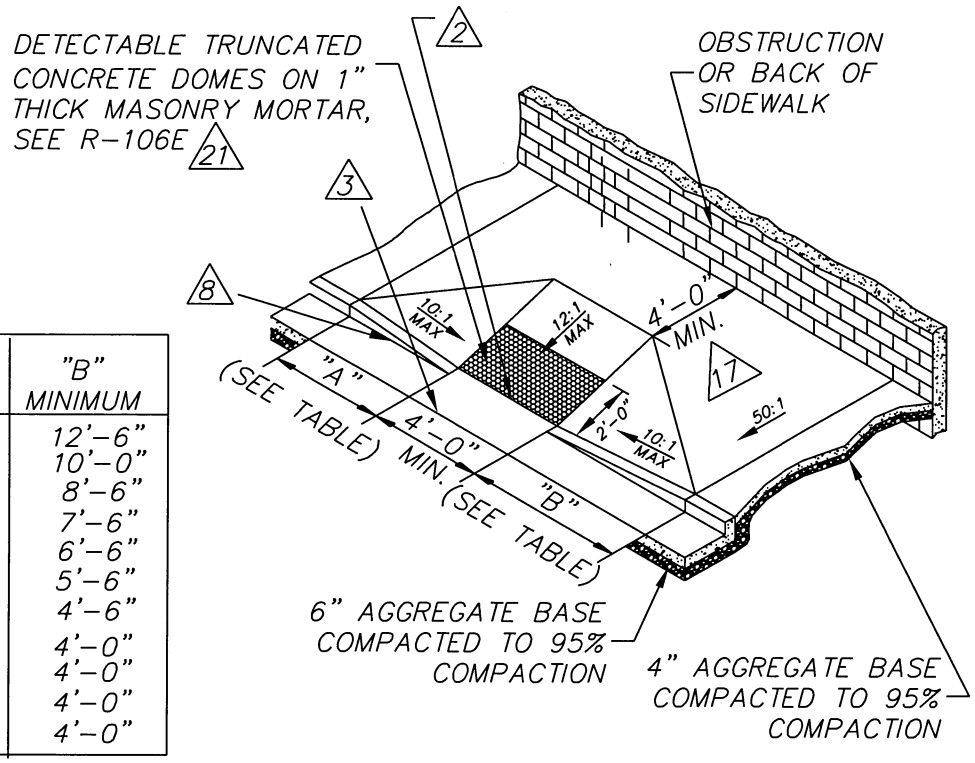


SECTION B-B

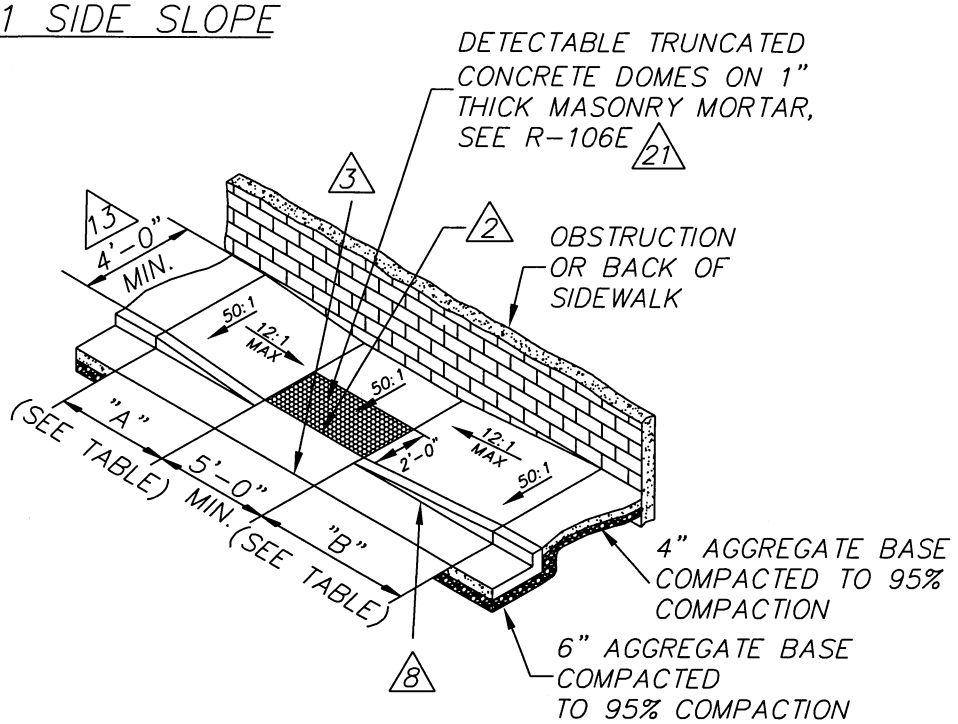
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO	
			PEDESTRIAN RAMP WIDE SIDEWALKS	DRAWING NO. R-106C (312)	
APPROVED BY: G.S.		01/04		DATE 01/04	PAGE 120

GRADE % "B" TO "A"	"A" MINIMUM	"B" MINIMUM
-6 TO -5.01	4'-0"	12'-6"
-5 TO -4.01	4'-0"	10'-0"
-4 TO -3.01	4'-0"	8'-6"
-3 TO -2.01	4'-0"	7'-6"
-2 TO -1.01	4'-6"	6'-6"
-1 TO 1	5'-6"	5'-6"
1.01 TO 2	6'-6"	4'-6"
2.01 TO 3	7'-6"	4'-0"
3.01 TO 4	8'-6"	4'-0"
4.01 TO 5	10'-0"	4'-0"
5.01 TO 6	12'-6"	4'-0"

TRANSITION LENGTH TABLE FOR 12:1 SIDE SLOPE

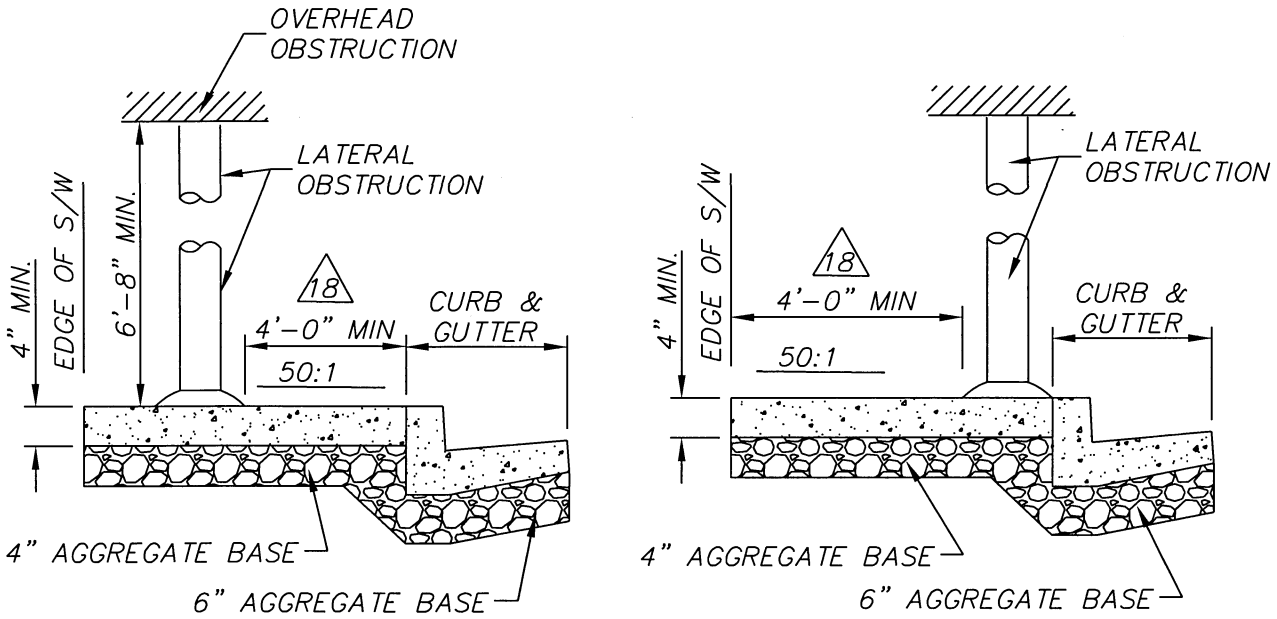


WIDE SIDEWALK

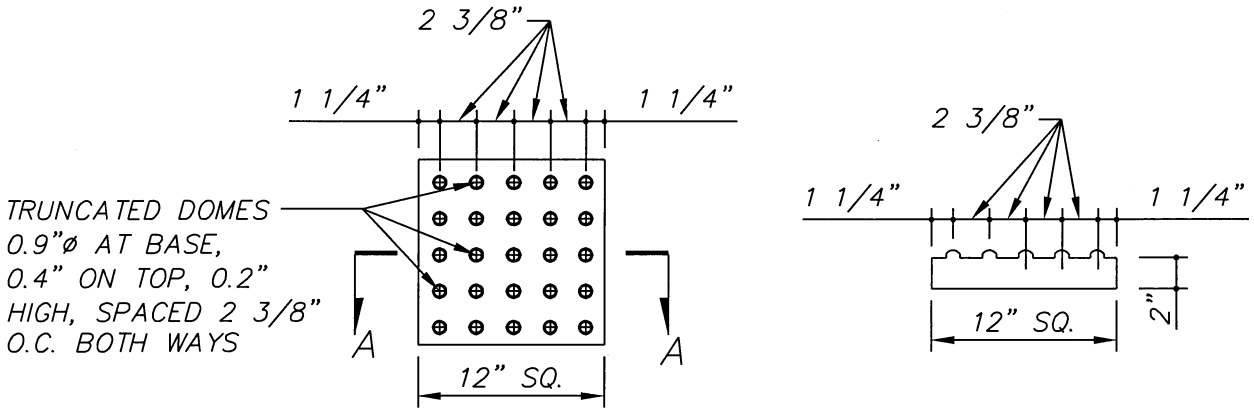


NARROW SIDEWALK

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO	
			PEDESTRIAN RAMP MIDBLOCK	DRAWING NO. R-106D (312)	
APPROVED BY: G.S.		01/04		DATE 01/04	PAGE 121



TYPICAL SIDEWALK vs OBSTRUCTION CLEARANCE DETAIL



PLAN

SECTION A–A

TRUNCATED DOMES DETAIL

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO	
			PEDESTRIAN RAMP DETAILS	DRAWING NO. R-106E (312)	
				DATE 01/04	PAGE 122
APPROVED BY: G.S.		01/04			

1. GRATINGS OR SIMILAR ACCESSES SHALL NOT BE LOCATED IN THE AREA AT THE BASE OF THE CURB RAMP OR LANDING AREA. IF OBSTRUCTIONS SUCH AS GRATINGS, INLETS, UTILITY POLES, PULL BOXES, FIRE HYDRANTS, ETC. ARE ENCOUNTERED, THE LOCATION AND DIMENSIONS MAY BE ADJUSTED UPON APPROVAL OF THE CITY ENGINEER.

2. NO LIP SHALL BE PERMITTED AT THE CURB RAMP SLOPE TO GUTTER PAN.

3. PLANTMIX BITUMINOUS SURFACE SHALL BE FLUSH WITH THE EDGE OF THE GUTTER PAN IN THE AREA OF THE CURB RAMP.

4. ROUGH BROOM TEXTURE ON CURB RAMPS AND WINGS, TRANSVERSE TO AXIS OF RAMP. TEXTURE SHALL PROVIDE A VISUAL CONTRAST TO THE SIDEWALK.

5. CURB RAMP WINGS DO NOT HAVE TO BE WITHIN CROSSWALK. HOWEVER, THE RAMP ITSELF HAS TO BE INSIDE CROSSWALK, UNLESS OTHERWISE DIRECTED BY THE CITY ENGINEER.

6. ALL RAMPS SHALL BE 12:1 OR FLATTER.

7. ALL SLOPE RATES ARE RELATIVE TO LEVEL.

8. RAISE GUTTER FLOW LINE 2" MAX WHEN REQUIRED TO PREVENT PONDING AT THE RAMP AND MAINTAIN POSITIVE DRAINAGE.

9. DETECTABLE WARNING SHALL BE CONSTRUCTED WITH CONCRETE PAVERS AND BEDDING PER MANUFACTURER'S INSTALLATION GUIDELINES AND CONFORM TO ADAAG (4.29.2). "CONTRAST" DETECTABLE WARNING PAVERS AND REQUIRED BEDDING WILL BE PAID FOR AS APPROPRIATE SIDEWALK AND CURB RAMP BID ITEM.

10. ALL CONCRETE TO BE REMOVED TO SAW CUT OR EXPANSION JOINTS.

11. THE GUTTER PAN – SIDEWALK TRANSITION SECTION WILL BE SMOOTH WITH NO LIP AT GUTTER FLOWLINE. THIS TRANSITION SECTION SHALL BE A MONOLITHIC POUR.

12. FIBER–REINFORCED PORTLAND CEMENT CONCRETE (P.C.C.) SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4000 PSI MIN. COMPRESSIVE STRENGTH @ 28 DAYS, MIN. OF 6 SACKS OF CEMENT PER CUBIC YARD WITH A MAXIMUM WATER/CEMENT RATIO OF 0.45, AIR ENTRAINMENT 6% ±1.5%, SLUMP AT 1 TO 4 INCHES. ALL MATERIALS SHALL CONFORM TO SSPWC SECTION 202. POLYPROYLENE FIBERS SHALL BE ADDED TO THE P.C.C. PER THE MANUFACTURER'S RECOMMENDATIONS.

13. WHERE PHYSICAL LIMITATIONS EXIST TO PRECLUDE FULL DEPTH PEDESTRIAN RAMP CONSTRUCTION, A MINIMUM CLEARANCE OF 36" IS REQUIRED PER A.D.A. STANDARDS. ANY DEVIATION FROM MINIMUM A.D.A. STANDARDS MUST BE APPROVED BY THE CITY ENGINEER AND THE NEVADA UNIVERSITY CENTER FOR EXCELLENCE IN DEVELOPMENTAL DISABILITIES PRIOR TO CONSTRUCTION.

14. CONTRACTORS SHALL MAKE EVERY EFFORT TO CORRECT ANY CONFLICT WITH EXISTING PULL BOXES AND INSTALLATION OF NEW PEDESTRIAN RAMPS. THE CITY ENGINEER SHALL MAKE THE FINAL DETERMINATION REGARDING THE DEGREE OF MODIFICATIONS REQUIRED BY THE CONTRACTOR FOR CONFLICTS BETWEEN EXISTING PULL BOXES AND NEW PEDESTRIAN RAMPS.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO	
			NOTES–PEDESTRIAN RAMP	DRAWING NO. R-106F (312)	
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15. SLOPES TO MEET CITY STANDARDS.

16. SIDEWALK AT BOTH SIDES OF RAMP MAY BE DROPPED TO MINIMIZE THE GRADE AT A HORIZONTAL DISTANCE TO BE DETERMINED IN THE FIELD, UPON APPROVAL OF THE CITY ENGINEER, SUBJECT TO ADAAG REQUIREMENTS. CURB AT THE BACK OF WALK MAY BE NEEDED.

△17. ALL PERPENDICULAR PEDESTRIAN RAMPS SHALL BE PROVIDED WITH 4 FOOT SQUARE CONCRETE LANDING ON THE TOP OF RAMP, AS DIRECTED BY THE CITY ENGINEER. ACQUISITION OF RIGHT OF WAY MAY BE NEEDED.

△18. LATERAL OBSTRUCTION MAY REQUIRE ADDITIONAL RIGHT OF WAY AS DIRECTED BY THE ENGINEER.

19. WHERE PARKWAYS EXIST THAT ARE LESS THAN FOUR FEET (4') IN WIDTH, THE PEDESTRIAN RAMP CONFIGURATION IDENTIFIED IN DRAWING NO. R-106A SHALL BE UTILIZED AT EITHER CORNER OR MIDBLOCK LOCATIONS, WITH THE RAMP DEPTH EXTENDING TO THE BACK OF THE SIDEWALK.

20. WHERE PARKWAYS EXIST THAT ARE GREATER THAN FOUR FEET (4') IN WIDTH, THE PEDESTRIAN RAMP CONFIGURATION IDENTIFIED IN DRAWING NO. R-106D, "WIDE SIDEWALK" SHALL BE UTILIZED AT EITHER CORNER OR MIDBLOCK LOCATIONS, WITH A MINIMUM SIDEWALK WIDTH OF FOUR FEET (4') AT THE TOP OF THE RAMP.

△21. MASONRY MORTAR SHALL BE BASALITE TYPE "S" OF AN APPROVED EQUAL. ALL EDGES OF TRUNCATED CONCRETE DOME BLOCKS SHALL ALSO BE GROUTED.

NO.	REVISION	DATE
APPROVED BY: G.S.		01/04

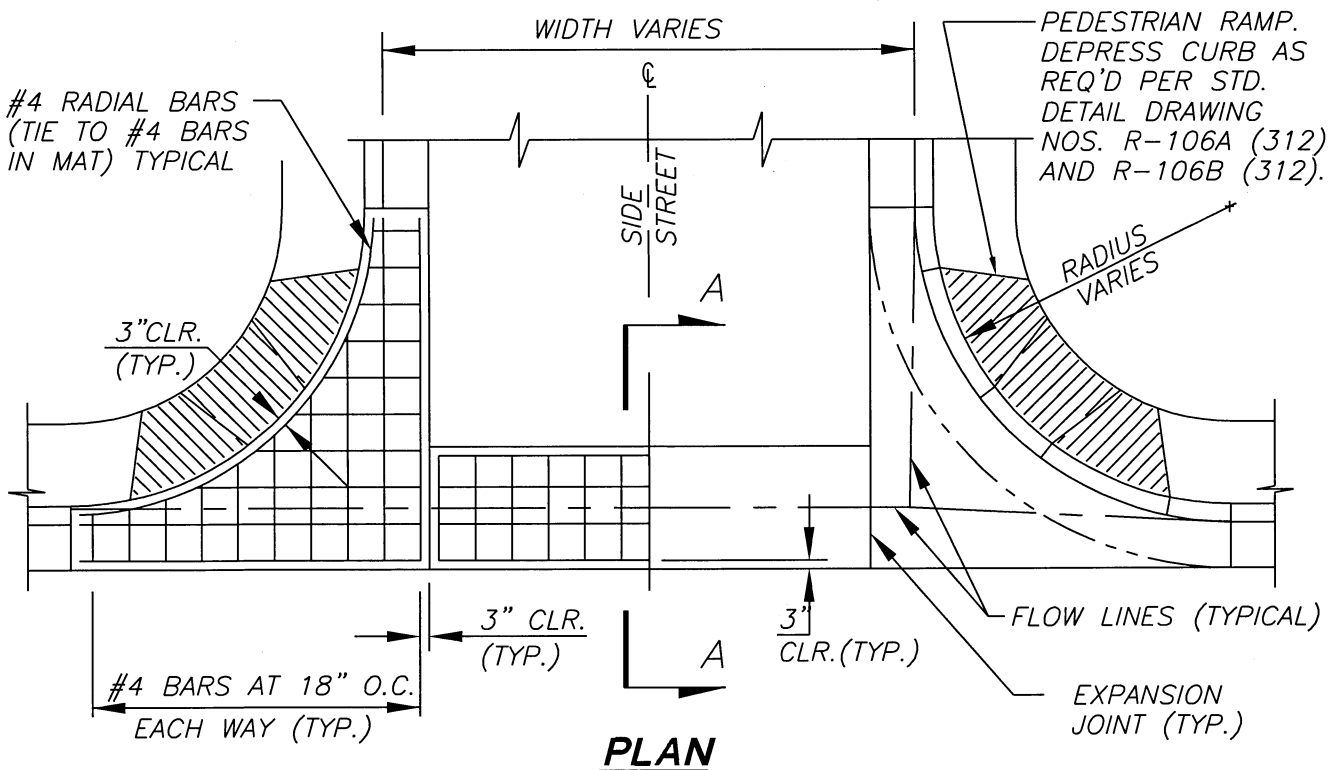
STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

NOTES-PEDESTRIAN RAMP

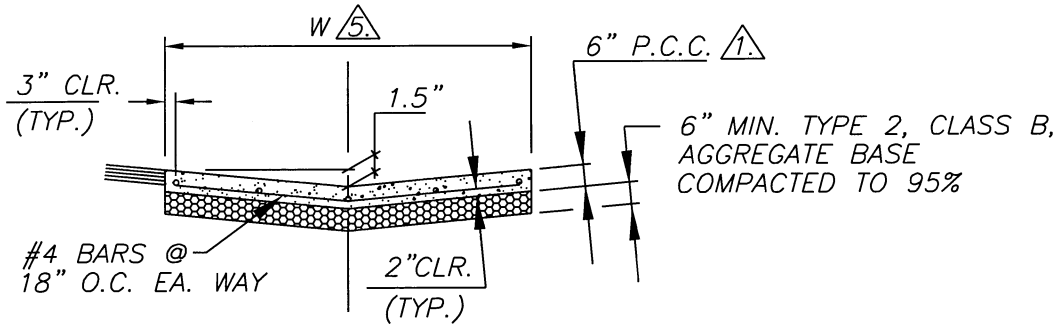
SECTION RENO

DRAWING NO. R-106G (312)

DATE 01/04



PLAN

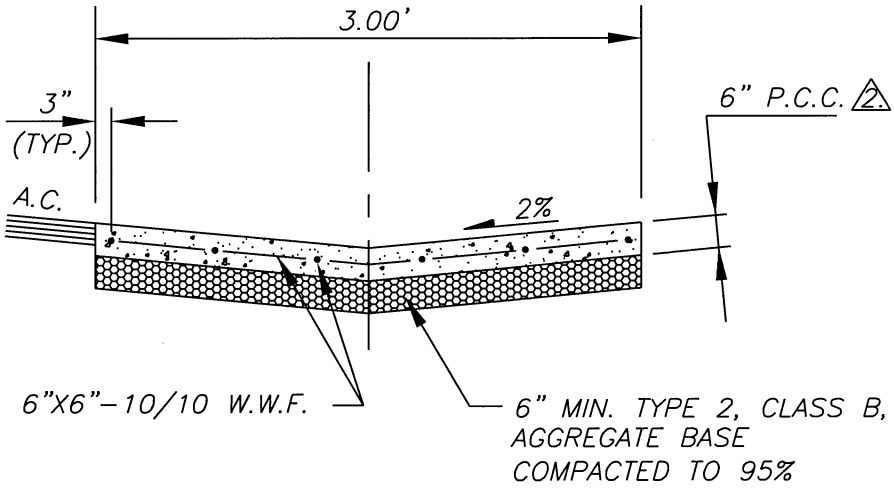


SECTION A-A

NOTES:

1. FIBER-REINFORCED PORTLAND CEMENT CONCRETE (P.C.C.) SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4000 PSI MIN. COMPRESSIVE STRENGTH @ 28 DAYS, MIN. 6 SACKS OF CEMENT PER CUBIC YARD WITH A MAX. WATER/CEMENT RATIO OF 0.45, AIR ENTRAINMENT 6% ±1.5%, SLUMP AT 1 TO 4 INCHES. ALL MATERIALS SHALL CONFORM TO SSPWC SECTION 202. POLYPROPYLENE FIBERS SHALL BE ADDED TO THE P.C.C. PER THE MANUFACTURER'S RECOMMENDATIONS.
2. FOR INDUSTRIAL AREAS, AN ENGINEERED DESIGN IS REQUIRED.
3. AGGREGATE BASE SHALL BE ENGINEERED TYPE 2, CLASS B WITH 95% COMPACTION.
4. VALLEY GUTTER SHALL HAVE WEAKENED PLANE JOINTS EVERY 10 FEET.
5. LOCAL AND COLLECTOR STREETS, W = 6 FEET.
   ARTERIAL STREETS (DRIVEWAYS ONLY), W = 10 FEET.
6. VALLEY GUTTER SECTIONS (SPANDRELS) ALONG CURB & GUTTER MAY BE A MONOLITHIC POUR AS SHOWN.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO
			P.C.C. VALLEY GUTTER	DRAWING NO. R-107 (312)
				DATE 08/00 / PAGE 125
APPROVED BY: S.V.		08/00		



NOTES:

1. THIS GUTTER DESIGN IS NOT FOR USE ON CITY STREETS, FOR PRIVATE USE ONLY.

2. FIBER-REINFORCED PORTLAND CEMENT CONCRETE (P.C.C.) SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4000 PSI MIN. COMPRESSIVE STRENGTH @ 28 DAYS, MIN. 6 SACKS OF CEMENT PER CUBIC YARD WITH A MAX. WATER/CEMENT RATIO OF 0.45, AIR ENTRAINMENT 6% ±1.5%, SLUMP AT 1 TO 4 INCHES. ALL MATERIALS SHALL CONFORM TO SSPWC SECTION 202. POLYPROPYLENE FIBERS SHALL BE ADDED TO THE P.C.C. PER THE MANUFACTURER'S RECOMMENDATIONS.

3. LONGITUDINAL VALLEY GUTTER SHALL HAVE EXPANSION JOINTS EVERY 30 FEET AND WEAKENED PLANE JOINTS EVERY 10 FEET.

4. FOR INDUSTRIAL AREAS, AN ENGINEERED DESIGN IS REQUIRED.

5. AGGREGATE BASE SHALL BE ENGINEERED TYPE 2, CLASS B, COMPACTED TO A MINIMUM OF 95%.

NO.	REVISION	DATE
APPROVED BY: S.V.		08/00

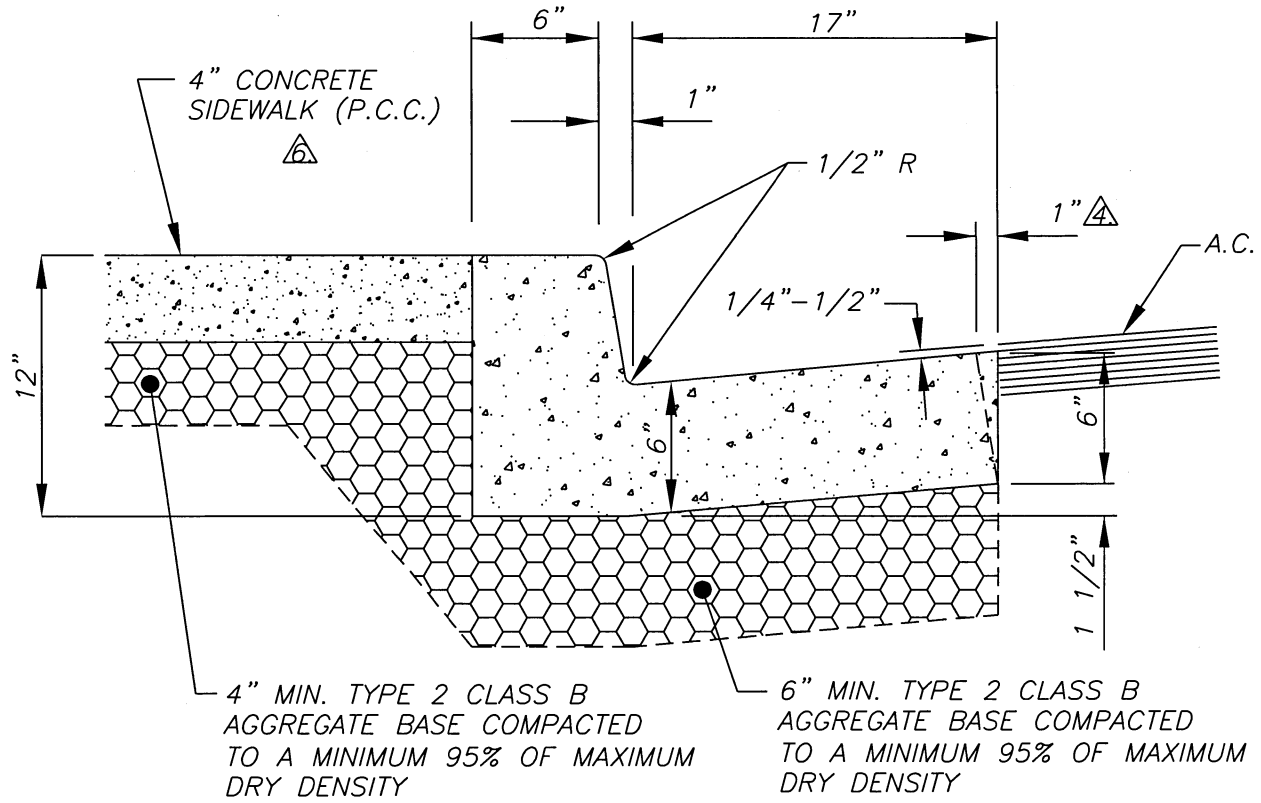
STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

LONGITUDINAL P.C.C. VALLEY GUTTER

SECTION **RENO**

DRAWING NO. R-108 (312)

DATE 08/00



NOTES:

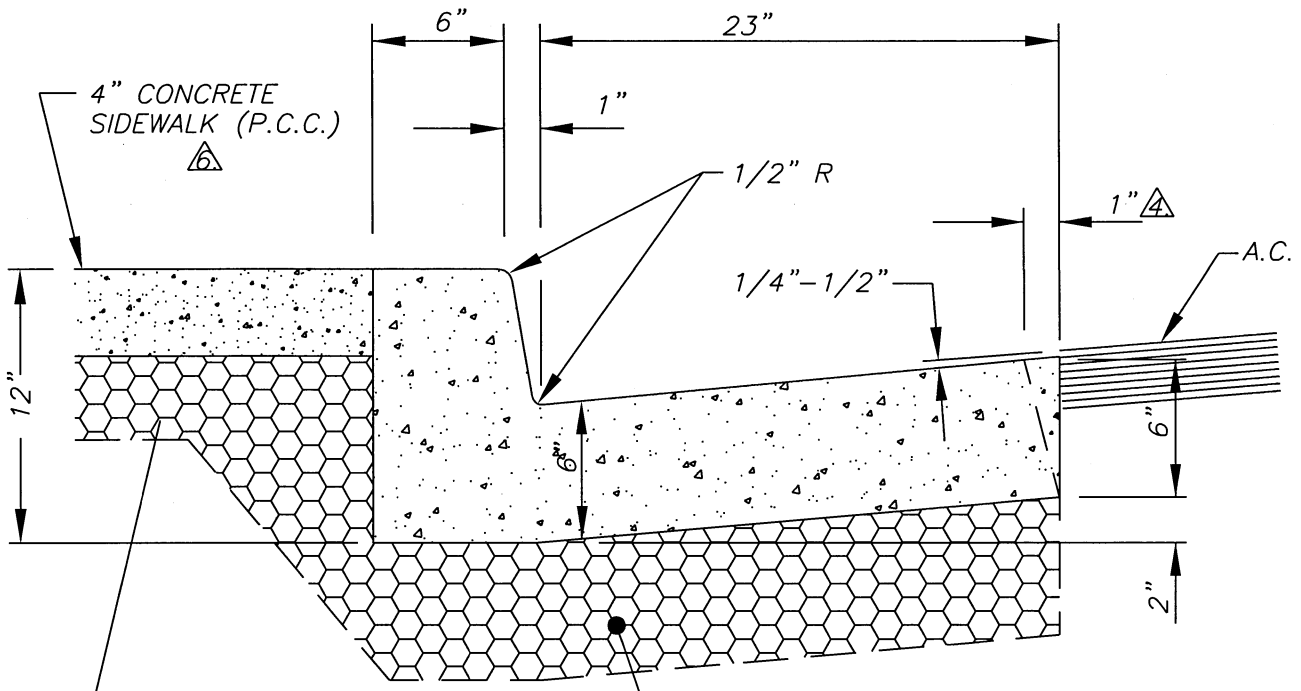
1. FIBER-REINFORCED PORTLAND CEMENT CONCRETE (P.C.C.) SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4000 PSI MIN. COMPRESSIVE STRENGTH @ 28 DAYS, MIN. 6 SACKS OF CEMENT PER CUBIC YARD WITH A MAX. WATER/CEMENT RATIO OF 0.45, AIR ENTRAINMENT 6% ±1.5%, SLUMP AT 1 TO 4 INCHES. ALL MATERIALS SHALL CONFORM TO SSPWC SECTION 202. POLYPROPYLENE FIBERS SHALL BE ADDED TO THE P.C.C. PER THE MANUFACTURER'S RECOMMENDATIONS.
2. EXPANSION JOINTS 1/2-INCH WIDE SHALL BE LOCATED IN CURBS AND GUTTERS AT EACH SIDE OF STRUCTURES, AT THE ENDS OF ALL CURB RETURNS, AND ABUTTING HARDENED IN-PLACE CURB AND GUTTER, EXCEPT THAT EXPANSION JOINTS SHALL NOT BE INSTALLED WITHIN 20 FEET OF AN ISLAND NOSE. EXPANSION JOINTS SHALL BE 1/2-INCH THICK, SHAPED TO THE CROSS SECTION OF THE CURB AND GUTTER, AND CONSTRUCTED AT RIGHT ANGLES TO THE CURB AND GUTTER. JOINT FILLER MATERIAL SHALL CONFORM TO SSPWC SECTION 202.10. WEAKENED PLANE JOINTS SHALL BE EVERY 10 FEET AND LOCATED ON THE BACK, TOP AND FACE OF THE CURB AND THE TOP OF THE GUTTER PAN.
3. CURB & GUTTER SECTIONS SHALL BE PLACED SEPARATELY FROM SIDEWALK SECTIONS.

4 "BATTERED" CONSTRUCTION ALLOWED FOR NEW CONSTRUCTION, WHILE "VERTICAL" CONSTRUCTION PERMITTED FOR RECONSTRUCTION.

5. WHERE ALTERNATE STANDARDS OF CURB AND GUTTER EXIST, AND THE REPLACEMENT CURB AND GUTTER IS GREATER THAN 20 CONTINUOUS FEET IN LENGTH, TYPE 1 CURB AND GUTTER SHALL BE INSTALLED WITH THE APPROPRIATE TRANSITIONS TO MATCH INTO THE EXISTING CURB AND GUTTER, IF DIRECTED BY THE CITY ENGINEER.

6 WHEN SIDEWALK IS NOT REQUIRED, BACKFILL BEHIND THE CURB TO THE TOP FOR A HORIZONTAL DISTANCE OF 12" FROM BACK FACE OF CURB, WITH A MATCH TO EXISTING GRADE OF NOT EXCEEDING A 3:1 SLOPE.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO
1	ADD AC LIP	06/01	TYPE 1 P.C.C. CURB & GUTTER	DRAWING NO. R-109 (312)
				DATE 08/00 / PAGE 127
APPROVED BY : S.V.		06/01		



NOTES:

1. FIBER-REINFORCED PORTLAND CEMENT CONCRETE (P.C.C.) SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4000 PSI MIN. COMPRESSIVE STRENGTH @ 28 DAYS, MIN. 6 SACKS OF CEMENT PER CUBIC YARD WITH A MAX. WATER/CEMENT RATIO OF 0.45, AIR ENTRAINMENT 6% ±1.5%, SLUMP AT 1 TO 4 INCHES. ALL MATERIALS SHALL CONFORM TO SSPWC SECTION 202. POLYPROPYLENE FIBERS SHALL BE ADDED TO THE P.C.C. PER THE MANUFACTURER'S RECOMMENDATIONS.
2. EXPANSION JOINTS 1/2-INCH WIDE SHALL BE LOCATED IN CURBS AND GUTTERS AT EACH SIDE OF STRUCTURES, AT THE ENDS OF ALL CURB RETURNS, AND ABUTTING HARDENED IN-PLACE CURB AND GUTTER, EXCEPT THAT EXPANSION JOINTS SHALL NOT BE INSTALLED WITHIN 20 FEET OF AN ISLAND NOSE. EXPANSION JOINTS SHALL BE 1/2-INCH THICK, SHAPED TO THE CROSS SECTION OF THE CURB AND GUTTER, AND CONSTRUCTED AT RIGHT ANGLES TO THE CURB AND GUTTER. JOINT FILLER MATERIAL SHALL CONFORM TO SSPWC SECTION 202.10. WEAKENED PLANE JOINTS SHALL BE EVERY 10 FEET AND LOCATED ON THE BACK, TOP AND FACE OF THE CURB AND THE TOP OF THE GUTTER PAN.
3. CURB & GUTTER SECTIONS SHALL BE PLACED SEPARATELY FROM SIDEWALK SECTIONS.
4. "BATTERED" CONSTRUCTION ALLOWED FOR NEW CONSTRUCTION, WHILE "VERTICAL" CONSTRUCTION PERMITTED FOR RECONSTRUCTION.
5. WHERE ALTERNATE STANDARDS OF CURB AND GUTTER EXIST, AND THE REPLACEMENT CURB AND GUTTER IS GREATER THAN 20 CONTINUOUS FEET IN LENGTH, TYPE 1-A CURB AND GUTTER SHALL BE INSTALLED WITH THE APPROPRIATE TRANSITIONS TO MATCH INTO THE EXISTING CURB AND GUTTER, IF DIRECTED BY THE CITY ENGINEER.
6. WHEN SIDEWALK IS NOT REQUIRED, BACKFILL BEHIND THE CURB TO THE TOP FOR A HORIZONTAL DISTANCE OF 12" FROM BACK FACE OF CURB, WITH A MATCH TO EXISTING GRADE OF NOT EXCEEDING A 3:1 SLOPE.
7. NOT FOR USE ON NEW CONSTRUCTION. TO BE UTILIZED ONLY WHERE APPROVED BY THE CITY ENGINEER.

NO.	REVISION	DATE
1	ADD AC LIP	06/01
APPROVED BY: S.V.		06/01

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

TYPE 1-A P.C.C. CURB GUTTER

SECTION **RENO**

DRAWING NO. R-110 (312)

DATE 08/00

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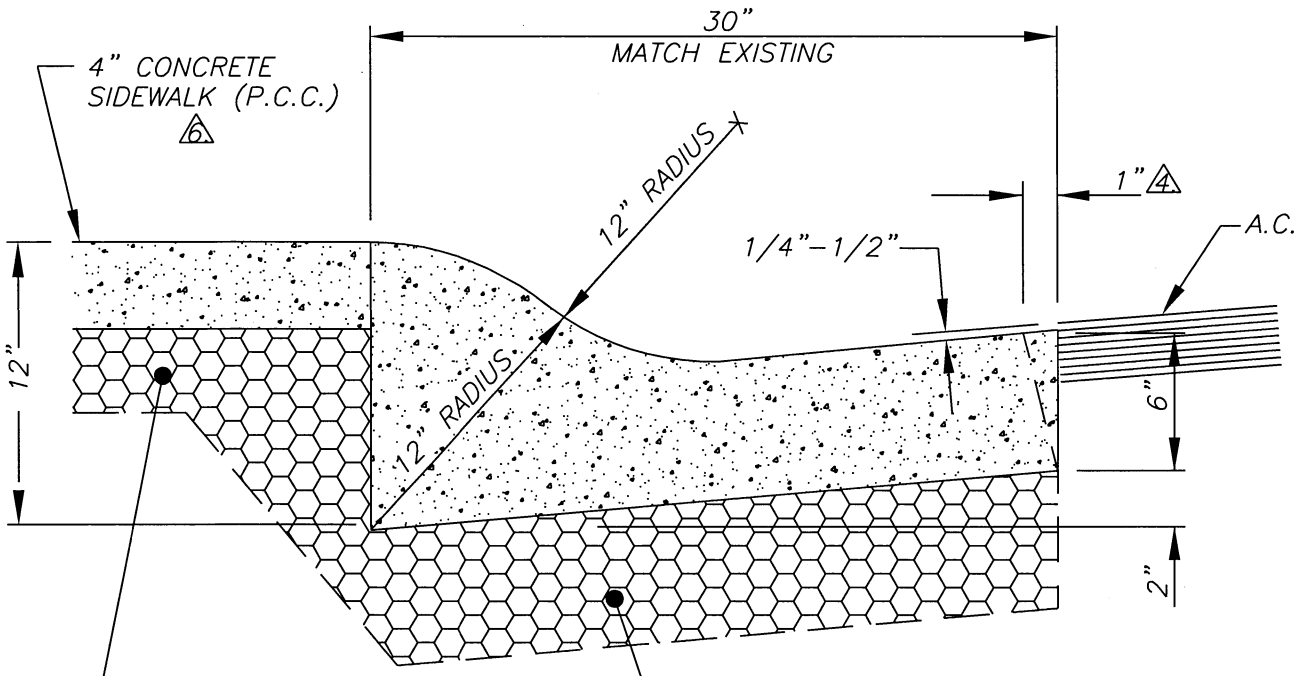

NOTES:

1. FIBER-REINFORCED PORTLAND CEMENT CONCRETE (P.C.C.) SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4000 PSI MIN. COMPRESSIVE STRENGTH @ 28 DAYS, MIN. 6 SACKS OF CEMENT PER CUBIC YARD WITH A MAX. WATER/CEMENT RATIO OF 0.45, AIR ENTRAINMENT 6% ±1.5%, SLUMP AT 1 TO 4 INCHES. ALL MATERIALS SHALL CONFORM TO SSPWC SECTION 202. POLYPROPYLENE FIBERS SHALL BE ADDED TO THE P.C.C. PER THE MANUFACTURER'S RECOMMENDATIONS.
2. EXPANSION JOINTS 1/2-INCH WIDE SHALL BE LOCATED IN CURBS AND GUTTERS AT EACH SIDE OF STRUCTURES, AT THE ENDS OF ALL CURB RETURNS, AND ABUTTING HARDENED IN-PLACE CURB AND GUTTER, EXCEPT THAT EXPANSION JOINTS SHALL NOT BE INSTALLED WITHIN 20 FEET OF AN ISLAND NOSE. EXPANSION JOINTS SHALL BE 1/2-INCH THICK, SHAPED TO THE CROSS SECTION OF THE CURB AND GUTTER, AND CONSTRUCTED AT RIGHT ANGLES TO THE CURB AND GUTTER. JOINT FILLER MATERIAL SHALL CONFORM TO SSPWC SECTION 202.10. WEAKENED PLANE JOINTS SHALL BE EVERY 10 FEET AND LOCATED ON THE BACK, TOP AND FACE OF THE CURB AND THE TOP OF THE GUTTER PAN.
3. CURB & GUTTER SECTIONS SHALL BE PLACED SEPARATELY FROM SIDEWALK SECTIONS.
4. "BATTERED" CONSTRUCTION ALLOWED FOR NEW CONSTRUCTION, WHILE "VERTICAL" CONSTRUCTION PERMITTED FOR RECONSTRUCTION.
5. WHERE ALTERNATE STANDARDS OF CURB AND GUTTER EXIST, AND THE REPLACEMENT CURB AND GUTTER IS GREATER THAN 20 CONTINUOUS FEET IN LENGTH, TYPE 1-A CURB AND GUTTER SHALL BE INSTALLED WITH THE APPROPRIATE TRANSITIONS TO MATCH INTO THE EXISTING CURB AND GUTTER, IF DIRECTED BY THE CITY ENGINEER.
6. WHEN SIDEWALK IS NOT REQUIRED, BACKFILL BEHIND THE CURB TO THE TOP FOR A HORIZONTAL DISTANCE OF 12" FROM BACK FACE OF CURB, WITH A MATCH TO EXISTING GRADE OF NOT EXCEEDING A 3:1 SLOPE.
7. NOT FOR USE ON NEW CONSTRUCTION. TO BE UTILIZED ONLY WHERE APPROVED BY THE CITY ENGINEER.

NO.	REVISION	DATE
1	ADD AC LIP	06/01
APPROVED BY : S.V.		06/01

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

ROLLED CURB GUTTER

SECTION **RENO**

DRAWING NO. R-111 (312)

DATE 08/00

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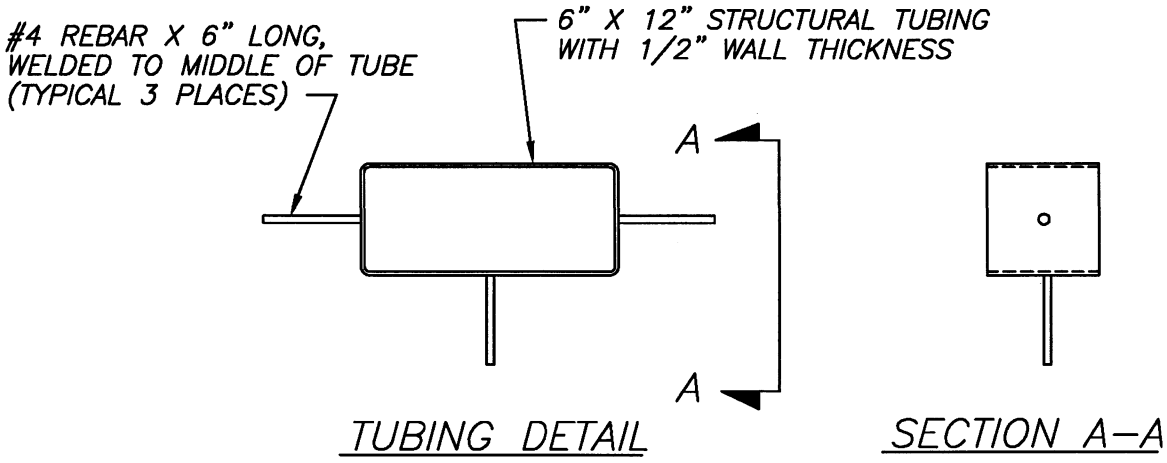
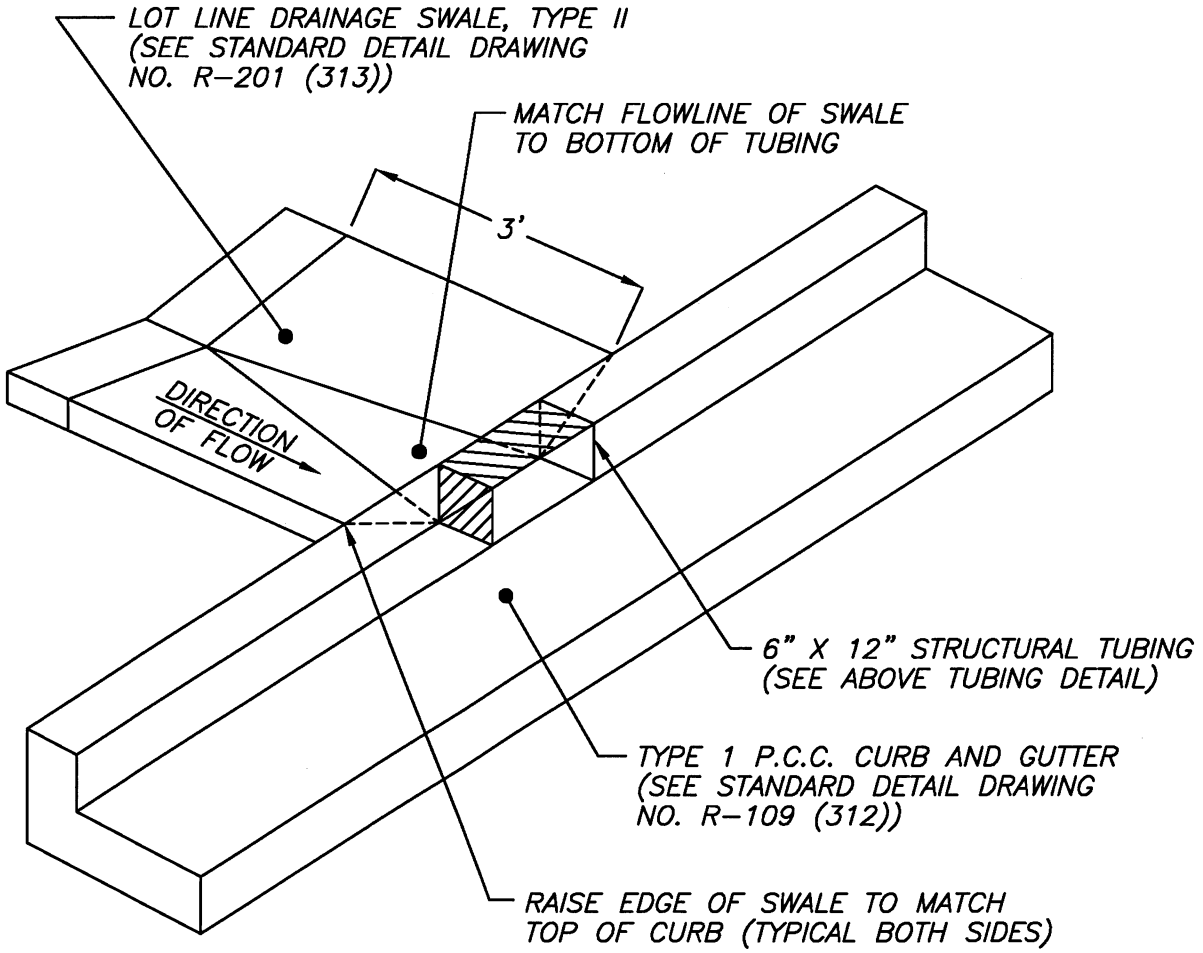
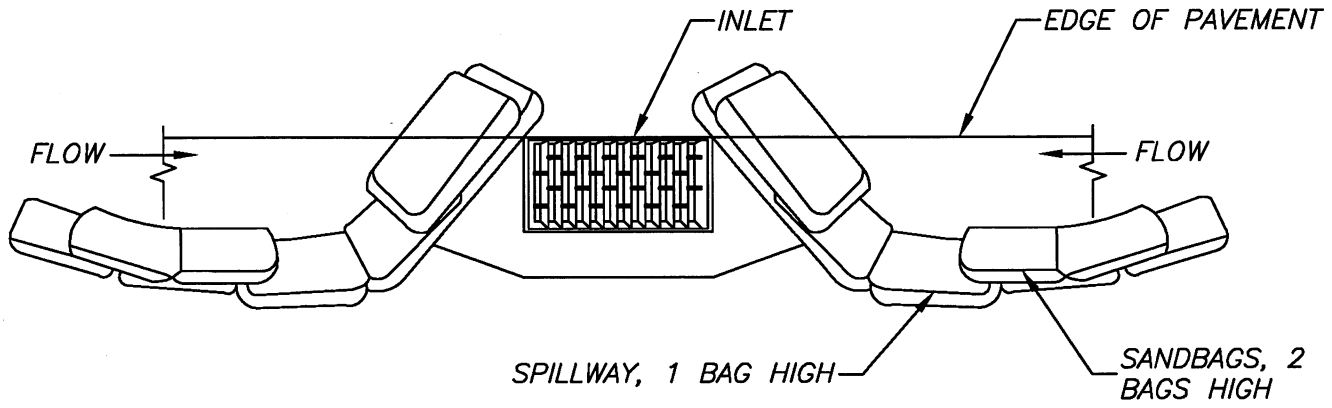
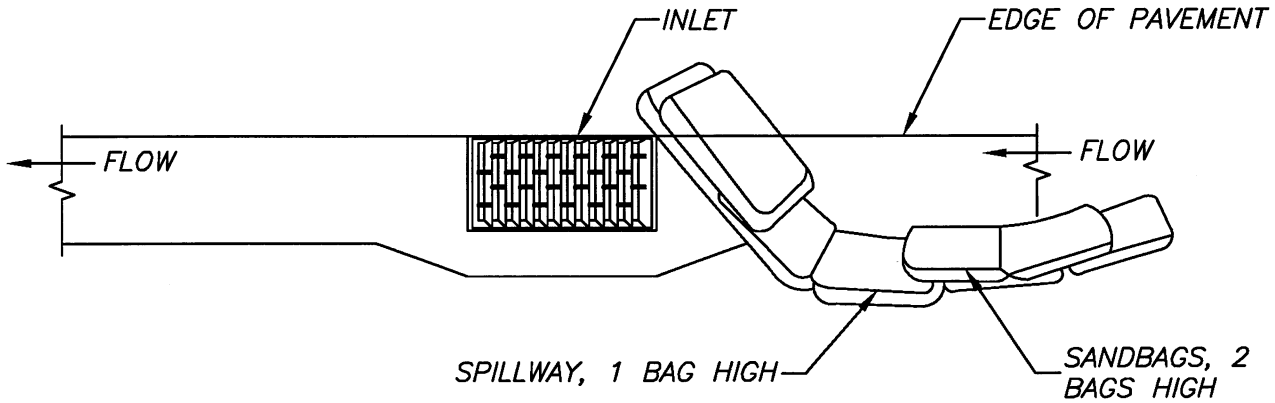




NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO	
1	ADD SWALE TYPE	01/04	CURB OPENING	DRAWING NO. R–112 (312)	
				DATE 08/00	PAGE 130
APPROVED BY : G.S.		01/04			



TYPICAL PROTECTION FOR INLET ON SUMP

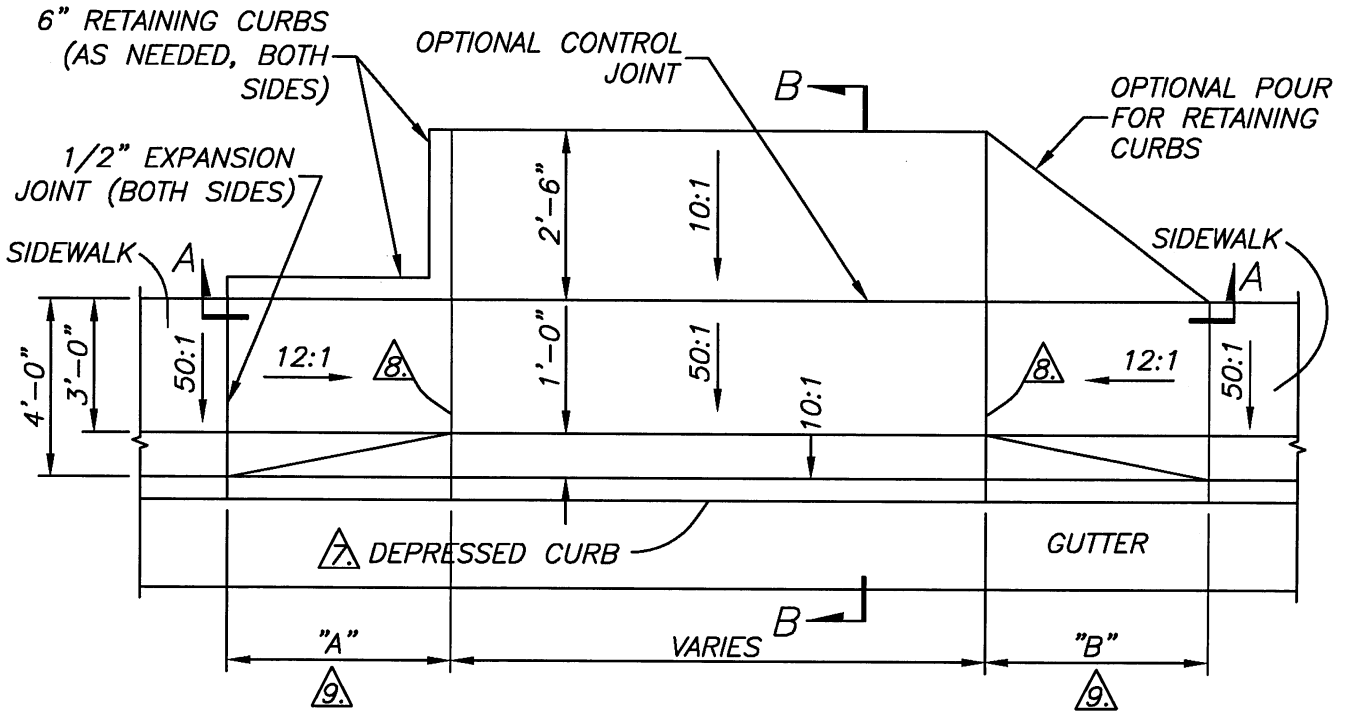


TYPICAL PROTECTION FOR INLET ON GRADE

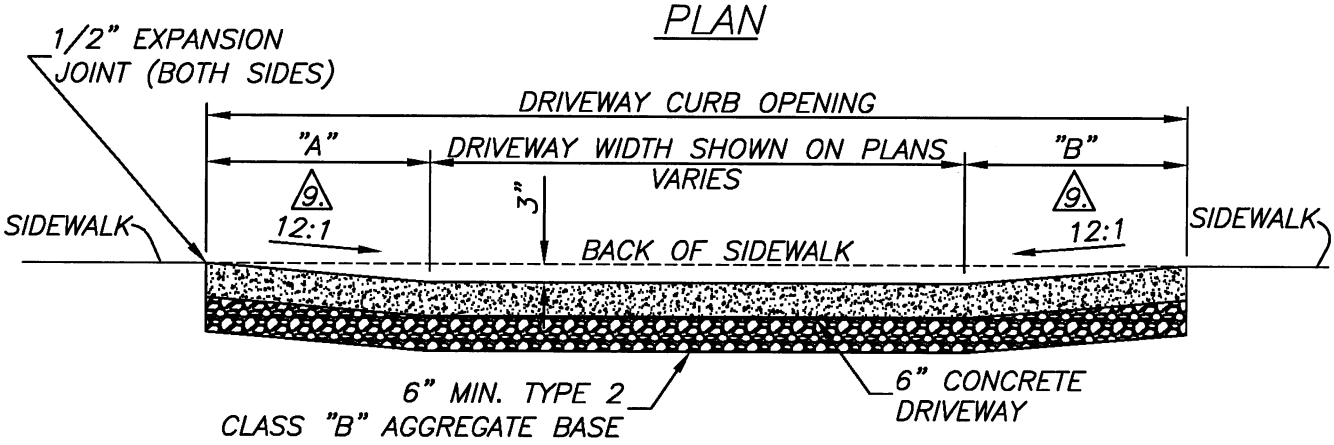
NOTES:

1. INTENDED FOR SHORT-TERM USE.
2. USE TO INHIBIT NON-STORM WATER FLOW.
3. ALLOW FOR PROPER MAINTENANCE AND CLEANUP.
4. BAGS MUST BE REMOVED AFTER ADJACENT OPERATION IS COMPLETED.
5. NOT APPLICABLE IN AREAS WITH HIGH SILTS AND CLAYS WITHOUT FILTER FABRIC.
6. FOR OTHER STORM DRAIN INLET PROTECTION APPLICATIONS, REFER TO THE "TRUCKEE MEADOWS CONSTRUCTION SITE BEST MANAGEMENT PRACTICES HANDBOOK" FOR RECOMMENDED UTILIZATION OF THE APPROPRIATE BEST MANAGEMENT PRACTICES ("BMP MANUAL").

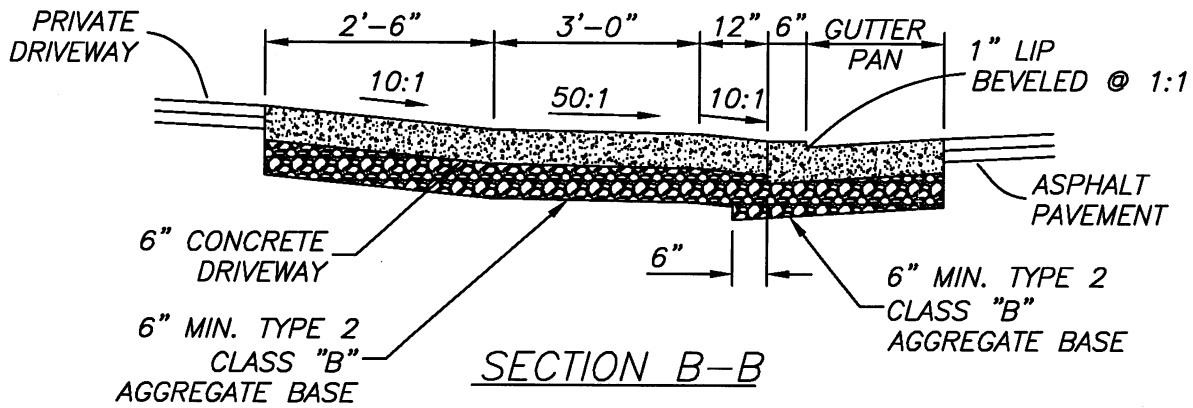
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO
1	DIFF. DRAWING	01/04	STORMDRAIN INLET PROTECTION	DRAWING NO. R-113 (306,312)
				DATE 08/00 / PAGE 131
APPROVED BY: G.S.		01/04		



PLAN

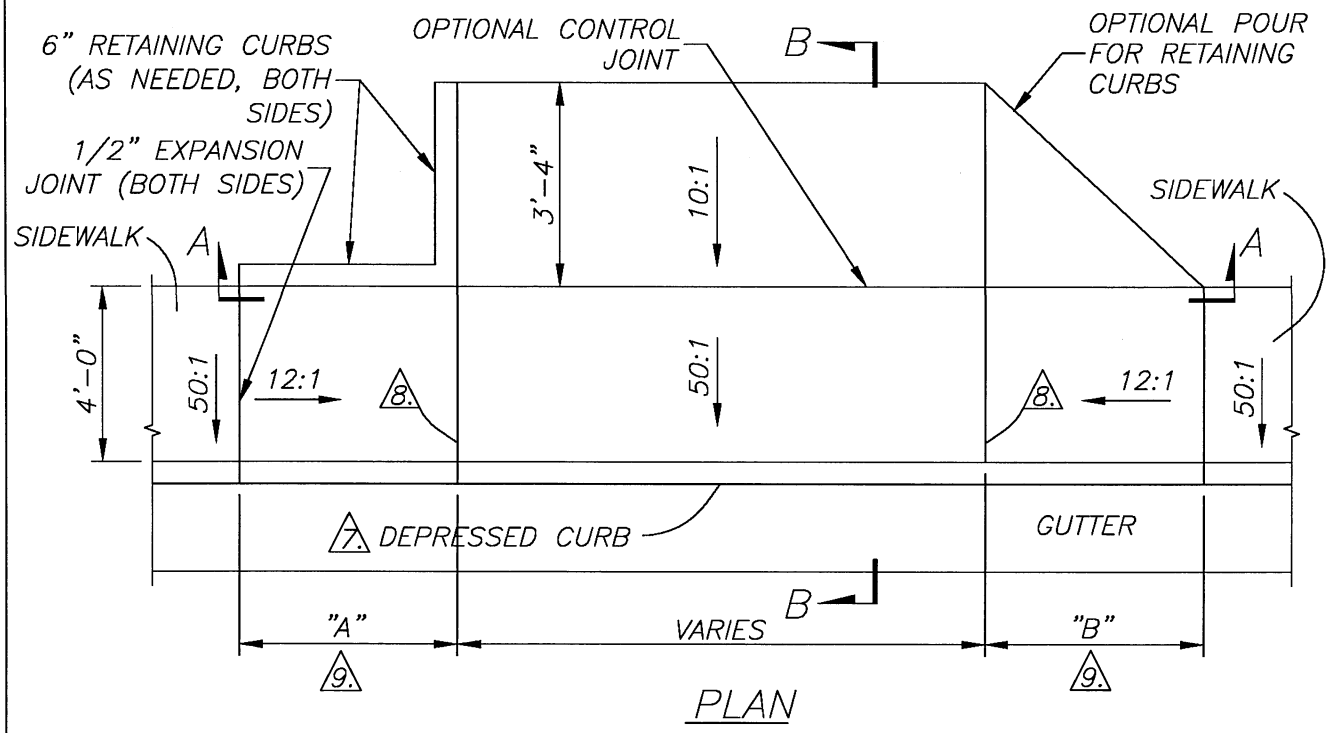


SECTION A–A

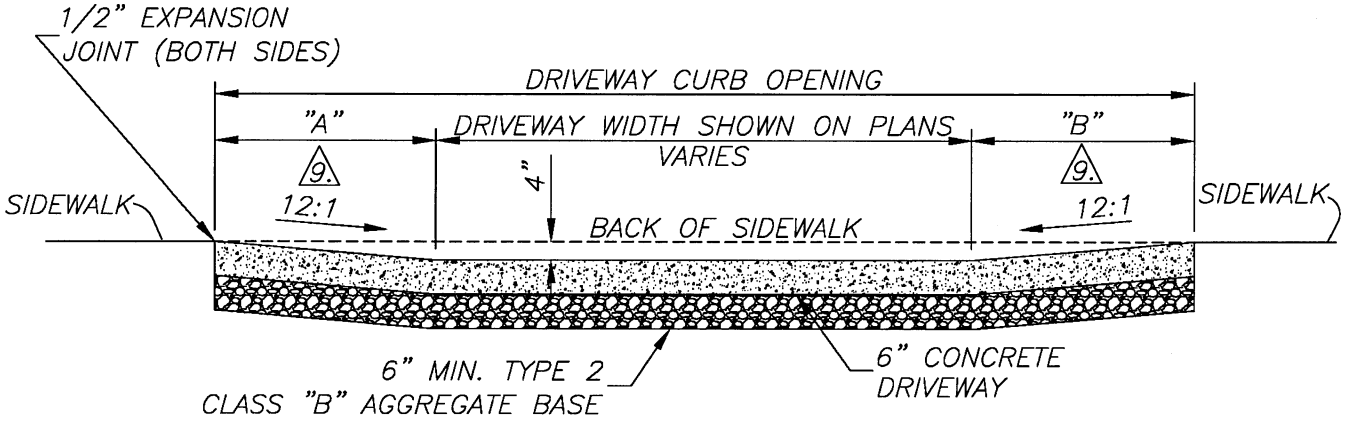


SECTION B–B

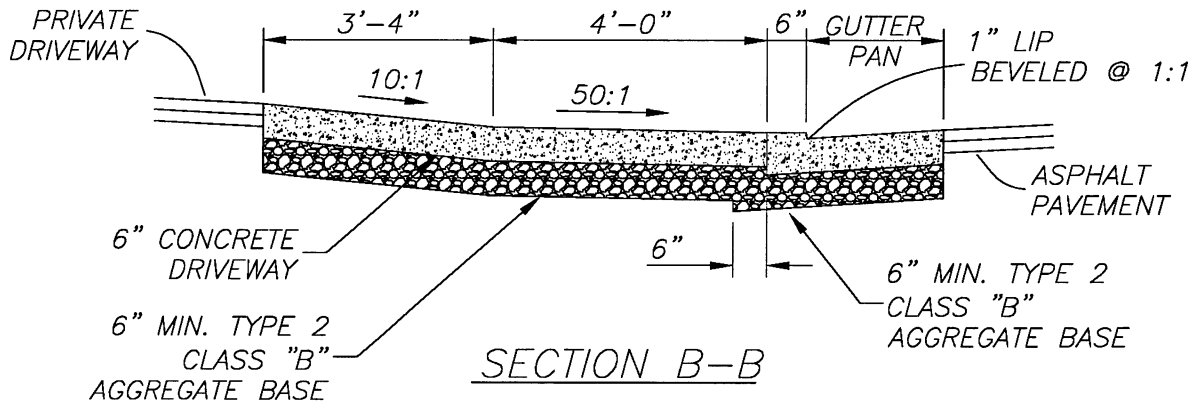
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO
			P.C.C. DRIVEWAY APRON–TYPE 1	DRAWING NO. R-114A (312)
				DATE 01/04 / PAGE 132
APPROVED BY: G.S.		01/04		



PLAN

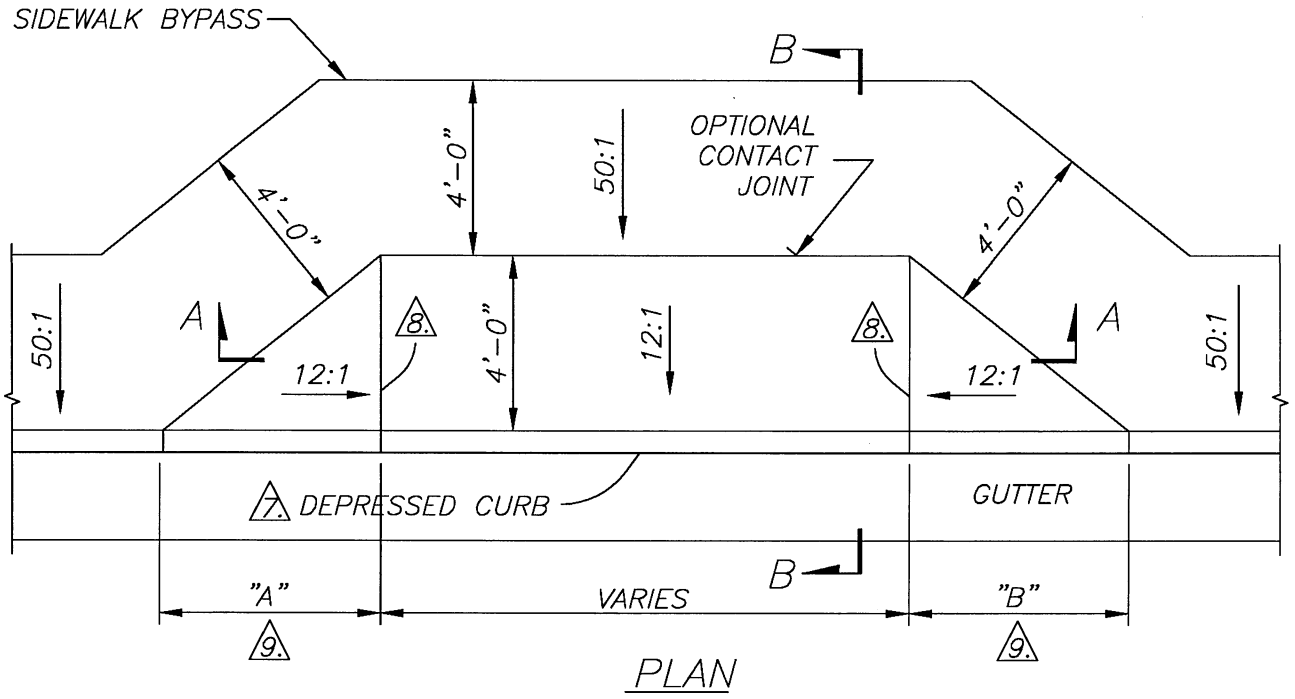


SECTION A–A

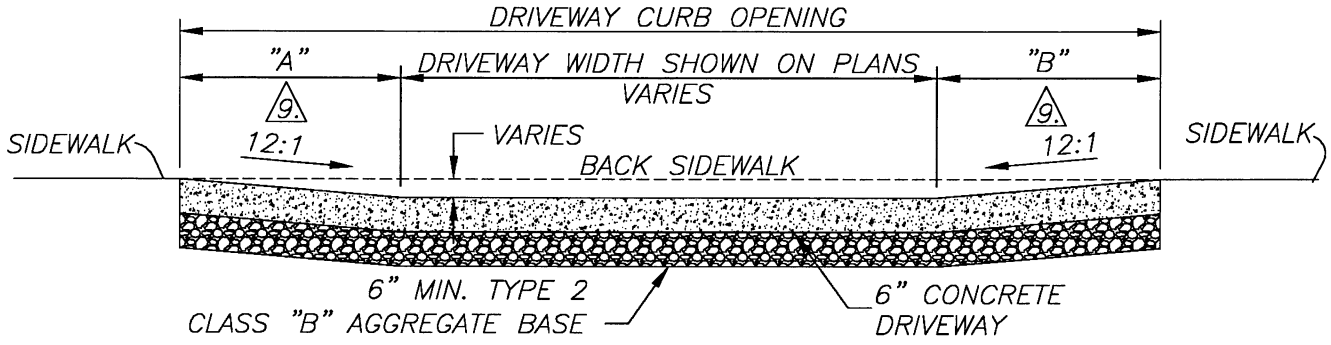


SECTION B–B

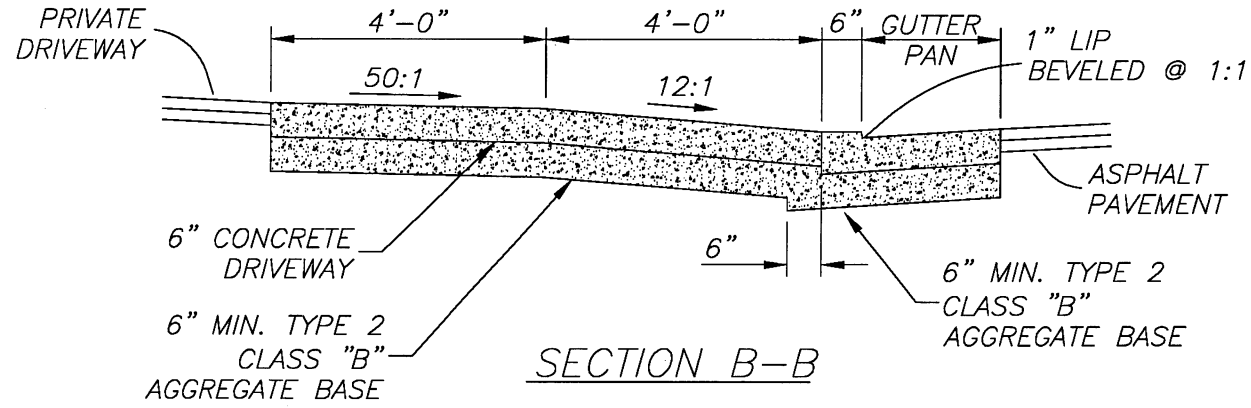
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO
			P.C.C. DRIVEWAY APRON–TYPE 2	DRAWING NO. R-114B (312)
				DATE 01/04 PAGE 133
APPROVED BY: G.S.		01/04		



PLAN



SECTION A–A



SECTION B–B

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO
			P.C.C. DRIVEWAY APRON–TYPE 3	DRAWING NO. R-114C (312)
				DATE 01/04 / PAGE 134
APPROVED BY: G.S.		01/04		

NOTES:

1. NO CONCRETE SHALL BE PLACED UNTIL FORMS AND SUBGRADE ARE INSPECTED BY THE CITY EXCAVATION PERMIT INSPECTOR OR APPLICABLE ENGINEER OF RECORD.

2. FIBER-REINFORCED PORTLAND CEMENT CONCRETE (P.C.C.) SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4000 PSI MIN. COMPRESSIVE STRENGTH @ 28 DAYS, MIN. 6 SACKS OF CEMENT PER CUBIC YARD WITH A MAX. WATER/CEMENT RATIO OF 0.45, AIR ENTRAINMENT 6% ±1.5%, SLUMP AT 1 TO 4 INCHES. ALL MATERIALS SHALL CONFORM TO SSPWC SECTION 202. POLYPROPYLENE FIBERS SHALL BE ADDED TO THE P.C.C. PER THE MANUFACTURER'S RECOMMENDATIONS.

3. COMMERCIAL DRIVEWAYS TO HAVE #4 BARS AT 18" ON CENTER LONGITUDINAL & TRANSVERSE EXTENDING INTO GUTTER PAN AND DRIVEWAY WINGS. MINIMUM 2" CONCRETE COVER FOR ALL REINFORCING BARS. SEE DETAIL DWG. NOS. R-115A AND R-115B FOR DIMENSIONING.

4. IF EXPANSION JOINT EXISTS WITHIN 4 FEET OF DRIVEWAY, REMOVE SIDEWALK AND CURB AND GUTTER TO THAT JOINT.

5. CONCRETE REMOVAL SHALL BE TO NEAT SAWCUT LINES.

6. REMOVE CONCRETE WHEN CONSTRUCTING DRIVEWAY WHERE CURB AND GUTTER EXIST.

7. DEPRESSED CURB LENGTH TO MATCH DRIVEWAY WIDTH.

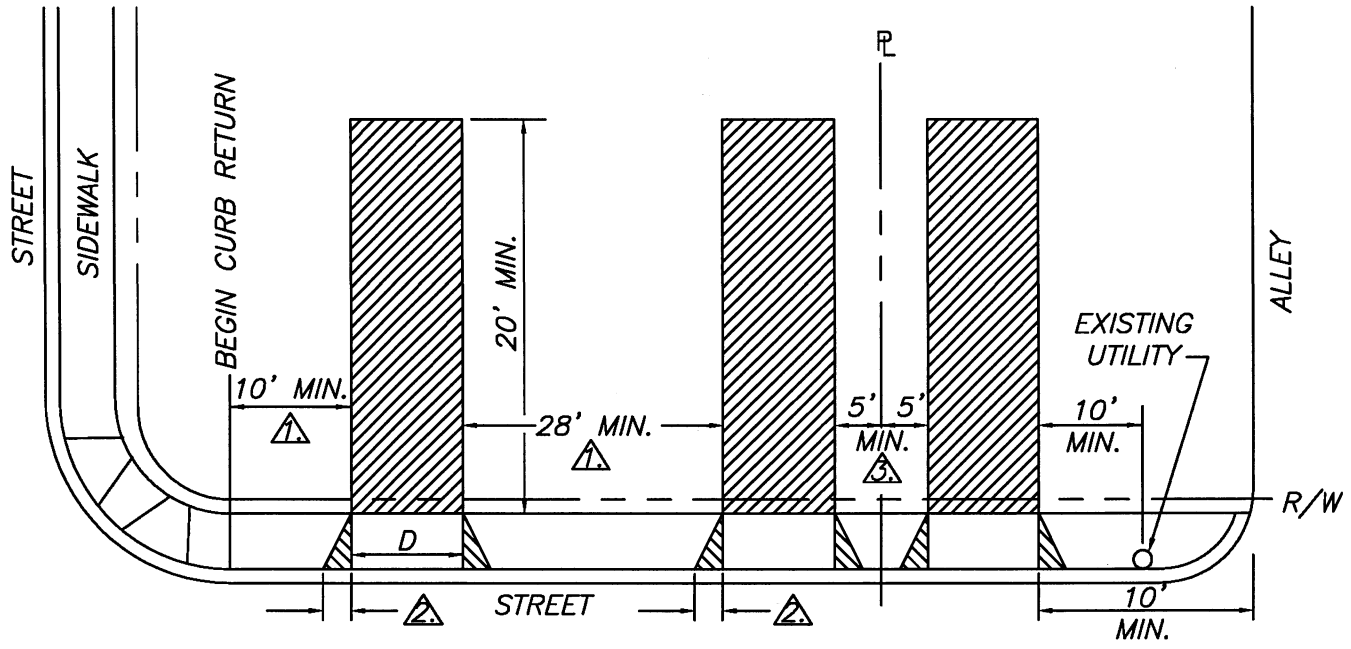
8. WEAKENED PLAIN JOINTS AT 5'-0" O.C. WITH EXPANSION JOINT IF NECESSARY.

9. WHEN EXISTING SIDEWALK IS SETBACK FROM THE DRIVEWAY APRON (i.e. PARKWAY AREA), THE TRANSITION LENGTH FOR THE DRIVEWAY APRON WINGS MAY BE HALF THE VALUES SHOWN IN THE TABLE BELOW. THE TRANSITION TABLE IS BASED UPON A 6" CURB HEIGHT. FOR DIFFERENT CURB HEIGHTS, THE TRANSITION LENGTHS SHOWN ON THE TABLE SHALL VARY BASED UPON MAINTAINING A MAXIMUM SLOPE OF 12:1.

GRADE % "B" TO "A"	"A" MINIMUM	"B" MINIMUM
-6 TO -5.01	4'-0"	12'-6"
-5 TO -4.01	4'-0"	10'-0"
-4 TO -3.01	4'-0"	8'-6"
-3 TO -2.01	4'-0"	7'-6"
-2 TO -1.01	4'-6"	6'-6"
-1 TO 1	5'-6"	5'-6"
1.01 TO 2	6'-6"	4'-6"
2.01 TO 3	7'-6"	4'-0"
3.01 TO 4	8'-6"	4'-0"
4.01 TO 5	10'-0"	4'-0"
5.01 TO 6	12'-6"	4'-0"

TRANSITION LENGTH TABLE FOR 12:1 SIDE SLOPE

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO
			NOTES-P.C.C. DRIVEWAY APRON	DRAWING NO. R-114D (312)
				DATE 01/04 PAGE 135
APPROVED BY: G.S.		01/04		



	RESIDENTIAL	MULTI–FAMILY LIGHT COMMERCIAL 4.	HEAVY COMMERCIAL AND INDUSTRIAL 5.
D (DRIVEWAY WIDTH)	12' MIN. 30' MAX. 7.	14' MIN. (ONE–WAY) 24' MIN. (TWO–WAY) 36' MAX.	16' MIN. (ONE–WAY) 30' MIN. (TWO–WAY) 54' MAX. (HEAVY TRUCK)

NOTES:

1. COMMERCIAL COLLECTOR – 50'
MINOR ARTERIAL – 150'
MAJOR ARTERIAL – 235'
REQUIRED OUTSIDE THE DOWNTOWN PARKING DISTRICT. VARIANCE REQUIRED WHEN THIS STANDARD CANNOT BE MET.
DOWNTOWN PARKING DISTRICT TO BE APPROVED BY THE CITY ENGINEER.
2. SEE STANDARD DETAIL DRAWING NO. R–114 (312) FOR TAPER LENGTH.
3. 5' MINIMUM SPACE NOT REQUIRED ON SHARED DRIVEWAYS. WHEN THIS DIMENSION BETWEEN ADJACENT DRIVEWAYS IS LESS THAN 10', SUCH AS WITH CUL–DE–SAC CONFIGURATIONS, THE CURB SHALL BE DEPRESSED BETWEEN THE DRIVEWAYS.
4. INCLUDES MULTI–RESIDENTIAL WITH 3 UNITS OR GREATER, OFFICE BUILDINGS, AND OTHER COMMERCIAL BUILDINGS.
5. INCLUDES DRIVE–IN ESTABLISHMENTS, FACTORIES, SERVICE STATIONS, WAREHOUSES AND DISTRIBUTION, MANUFACTURING AND INDUSTRIAL.
6. ANY DEVIATION FROM THESE DIMENSIONS MUST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.
7. THE WIDTH OF THE DEPRESSED CURB SECTION OF THE DRIVEWAY IS TO MATCH THE WIDTH OF THE LARGEST GARAGE OPENING OR THE OPENING THAT FACES THE STREET.
8. WHENEVER POSSIBLE, DRIVEWAYS ARE TO CONNECT PERPENDICULAR TO THE STREET CENTERLINE. ON CUL–DE–SACS, CURVED STREETS, ETC., WHERE THIS REQUIREMENT MAY NOT BE POSSIBLE, ANY DIFFERENT DRIVEWAY INTERSECTION GEOMETRY WITH THE STREET SHALL BE APPROVED BY THE CITY ENGINEER.
9. ADDITIONAL DRIVEWAY APRON WIDTH MAY BE ALLOWED TO THE PROPERTY LINE SIDE OF THE NORMAL DRIVEWAY LOCATION TO ACCOMMODATE LARGE VEHICLE ACCESS, ACCESS TO THE REAR OR SIDE YARD, ETC., BUT ONLY AS APPROVED BY THE CITY ENGINEER.

NO.	REVISION	DATE
1	NOTES 3,7,8,9	01/04
APPROVED BY : G.S.		01/04

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

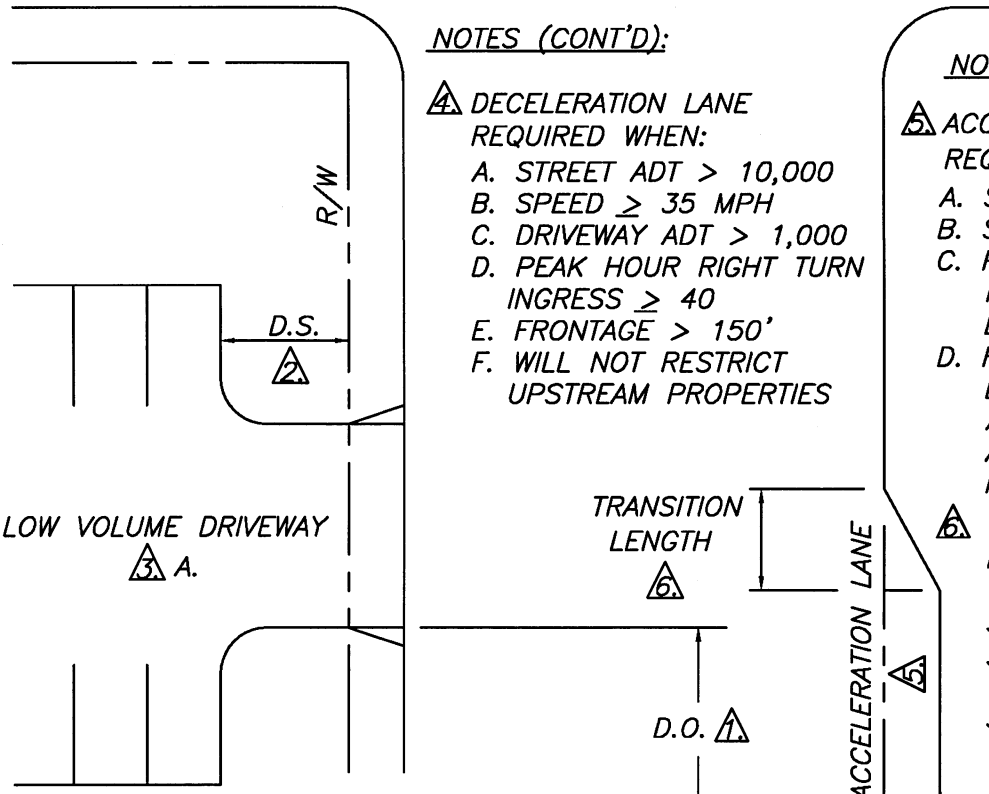
DRIVEWAY GEOMETRICS

SECTION RENO

DRAWING NO. R–115A (312)

DATE 08/00

PAGE 136



NOTES (CONT'D):

4. DECELERATION LANE REQUIRED WHEN:
   A. STREET ADT > 10,000
   B. SPEED ≥ 35 MPH
   C. DRIVEWAY ADT > 1,000
   D. PEAK HOUR RIGHT TURN INGRESS ≥ 40
   E. FRONTAGE > 150'
   F. WILL NOT RESTRICT UPSTREAM PROPERTIES

NOTES (CONT'D):

5. ACCELERATION LANE REQUIRED WHEN:
   A. STREET ADT > 10,000
   B. SPEED ≥ 45 MPH
   C. PEAK HOUR DRIVEWAY RIGHT TURN EGRESS ≥ 75
   D. FRONTAGE LONG ENOUGH TO ACCOMMODATE FULL ACCELERATION AND MERGE LENGTH

6. TRANSITION LENGTH:
   L= TRANSITION LENGTH
   W= OFFSET
   S= DESIGN SPEED
   S ≥ 45 MPH
   L= WS
   S ≤ 40 MPH
   $L = \frac{WS^2}{60}$

NOTES:

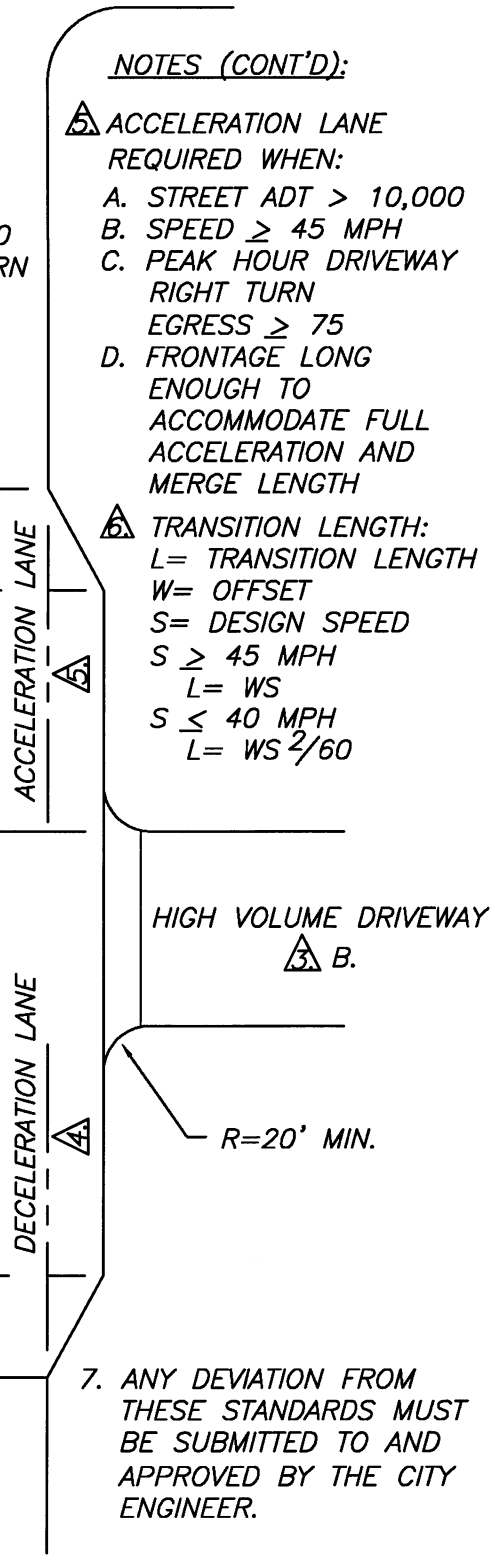
1. DRIVEWAY OFFSET (D.O.) – REQUIRED OUTSIDE THE DOWNTOWN PARKING DISTRICT. VARIANCE REQUIRED WHEN THIS STANDARD CANNOT BE MET.

FACILITY TYPES	D.O. (MIN.)
MAJOR ARTERIALS	235 FT.
MINOR ARTERIALS	150 FT.
COMMERCIAL COLLECTORS	50 FT.
DOWNTOWN PARKING DISTRICT	TO BE APPROVED BY THE CITY ENGINEER

2. DISTANCE FROM R/W TO FIRST PARKING SPACE (D.S.):

PROJECT ADT	D.S. (MIN.)
< 1,000	25 FT.
1,000 – 10,000	50 FT.
> 10,000	100 FT.

3. DRIVEWAY TYPE:
   A. PROJECT ADT < 4,000.
      USE DEPRESSED CURB SECTION
      (SEE STANDARD DETAIL DRAWING NO. R–114 (312).
   B. PROJECT ADT ≥ 4,000.
      USE VALLEY GUTTER FOR STREET TYPE ENTRANCE
      (SEE STANDARD DETAIL DRAWING NO. R–107 (312).



7. ANY DEVIATION FROM THESE STANDARDS MUST BE SUBMITTED TO AND APPROVED BY THE CITY ENGINEER.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO
			DRIVEWAY GEOMETRICS	DRAWING NO. R–115B (312)
APPROVED BY: S.V.		08/00		DATE 08/00 PAGE 137

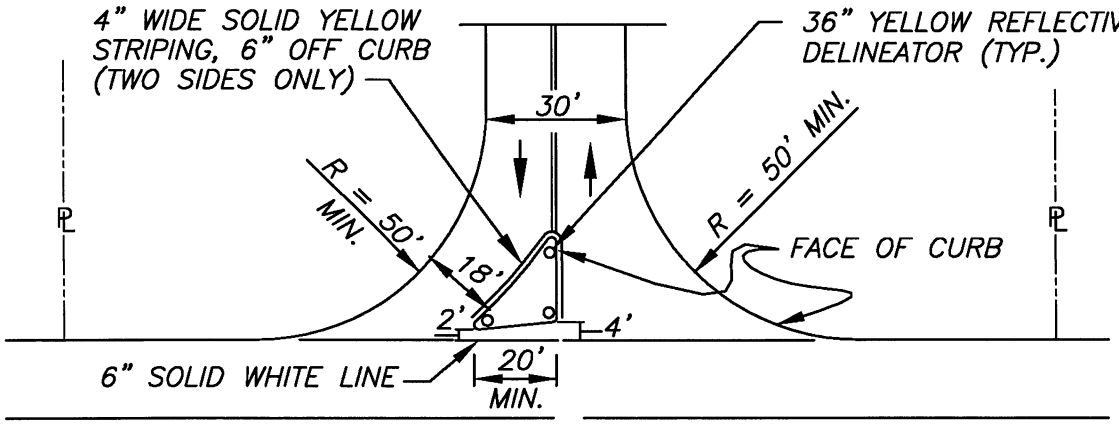


FIGURE A – DRIVEWAY CHANNELIZING ISLAND TO PREVENT LEFT–TURN EGRESS MANEUVERS

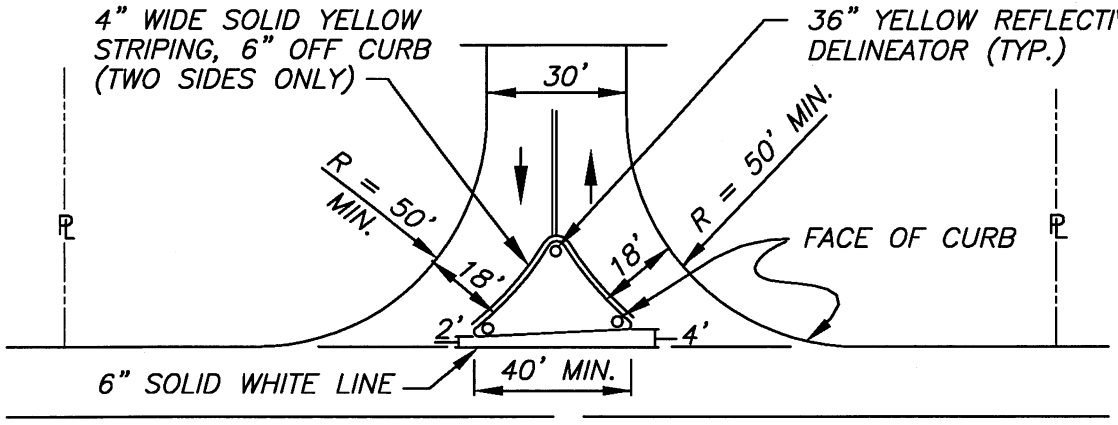


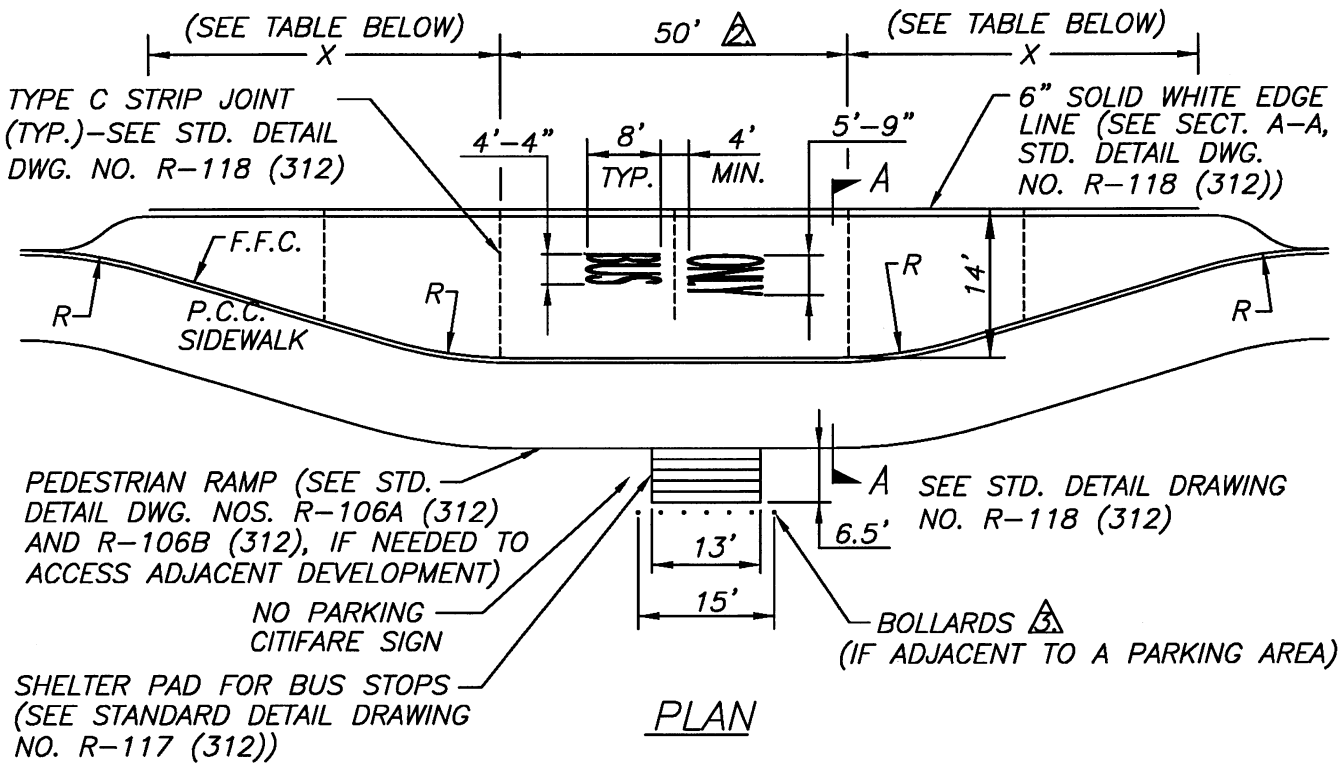
FIGURE B – DRIVEWAY CHANNELIZING ISLAND TO PREVENT LEFT–TURN EGRESS AND INGRESS MANEUVERS

NOTES:

1. PEDESTRIAN RAMPS MUST BE INSTALLED AT RETURNS AND ON ISLANDS, IF SIDEWALKS ARE PRESENT (SEE STD. DETAIL DWG. NOS. R–106A (312) AND R–106B (312)).

2. ISLANDS MUST BE RAISED AND OUTLINED BY CURBS AND FILLED WITH PAVEMENT. ISLAND NOT USED FOR PEDESTRIAN TRAFFIC MAY BE FILLED WITH LOW LEVEL, NO MAINTENANCE, DECORATIVE MATERIAL WITH THE CITY ENGINEER'S APPROVAL.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO	
			DRIVEWAY GEOMETRICS	DRAWING NO. R–115C (312)	
				DATE 08/00	PAGE 138
APPROVED BY: S.V.		08/00			



PLAN

X=LENGTH OF TRANSITION PER POSTED SPEED LIMIT FROM CHART BELOW.

X	POSTED SPEED
40'	≤ 25 MPH
60'	30 to 35 MPH
80'	40 to 45 MPH
100'	> 45 MPH

NOTES:

1. R=50' RADIUS (NOTE: A STRAIGHT LINE TAPER OF ADEQUATE LENGTH MAY BE SUBSTITUTED FOR "X" ≥ 100').

2. THIS BERTH IS FOR A SINGLE 40 FOOT VEHICLE. RTC STAFF SHALL BE CONTACTED TO DETERMINE IF MULTIPLE BERTHS WILL BE NEEDED. A MINIMUM OF 12" CLEARANCE FOR THE BUS MIRROR IS REQUIRED BEHIND THE FACE OF CURB.

3. MINIMUM REQUIRED R/W IS 6.5'X13'. IF BOLLARDS OR RETAINING WALLS ARE NEEDED, INCREASE R/W TO 7.5'X15'. SEE STD. DETAIL DWG. NO. R–117 (312).

NO.	REVISION	DATE
APPROVED BY: S.V.		08/00

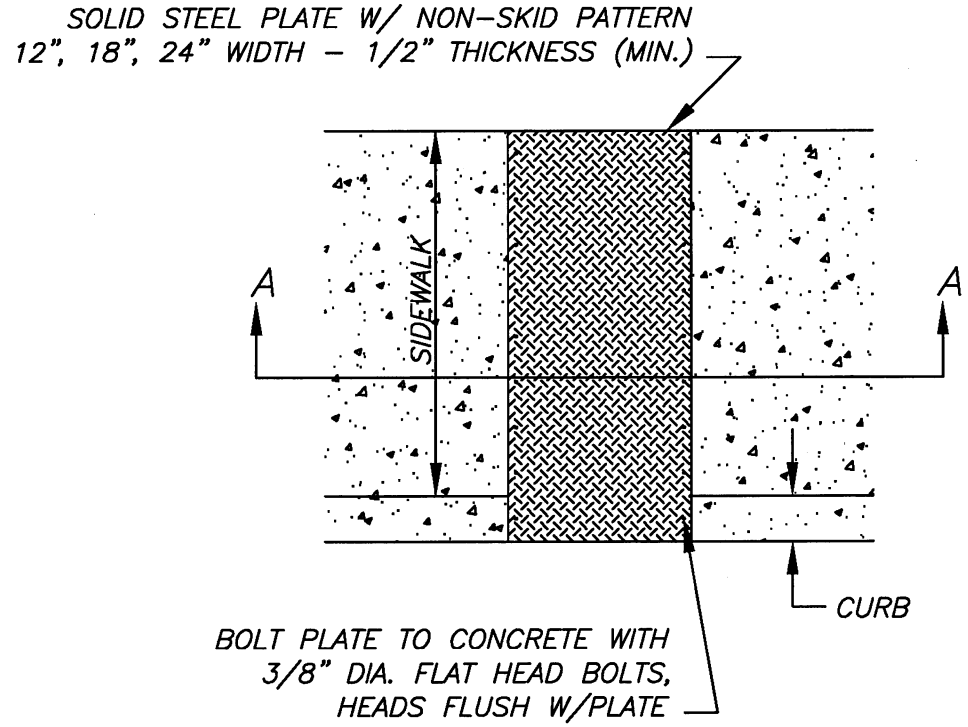
STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

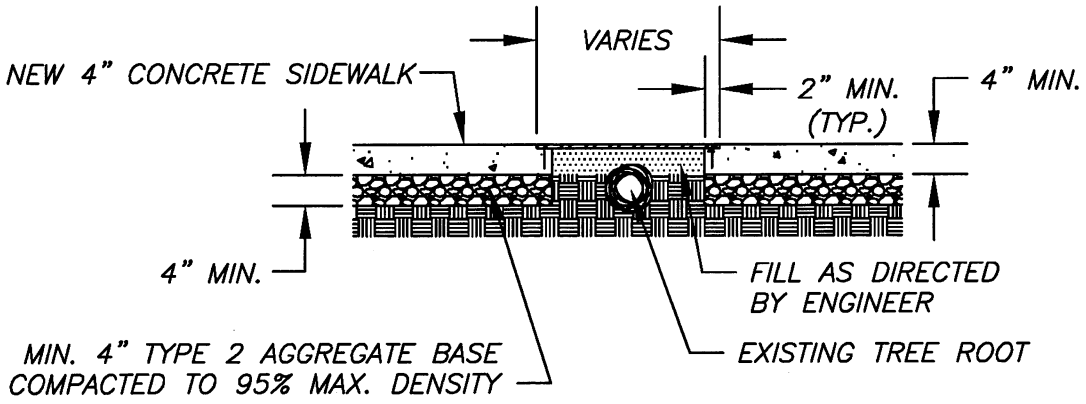
MID–BLOCK BUS TURNOUT

SECTION **RENO**

DRAWING NO. R–116 (312)

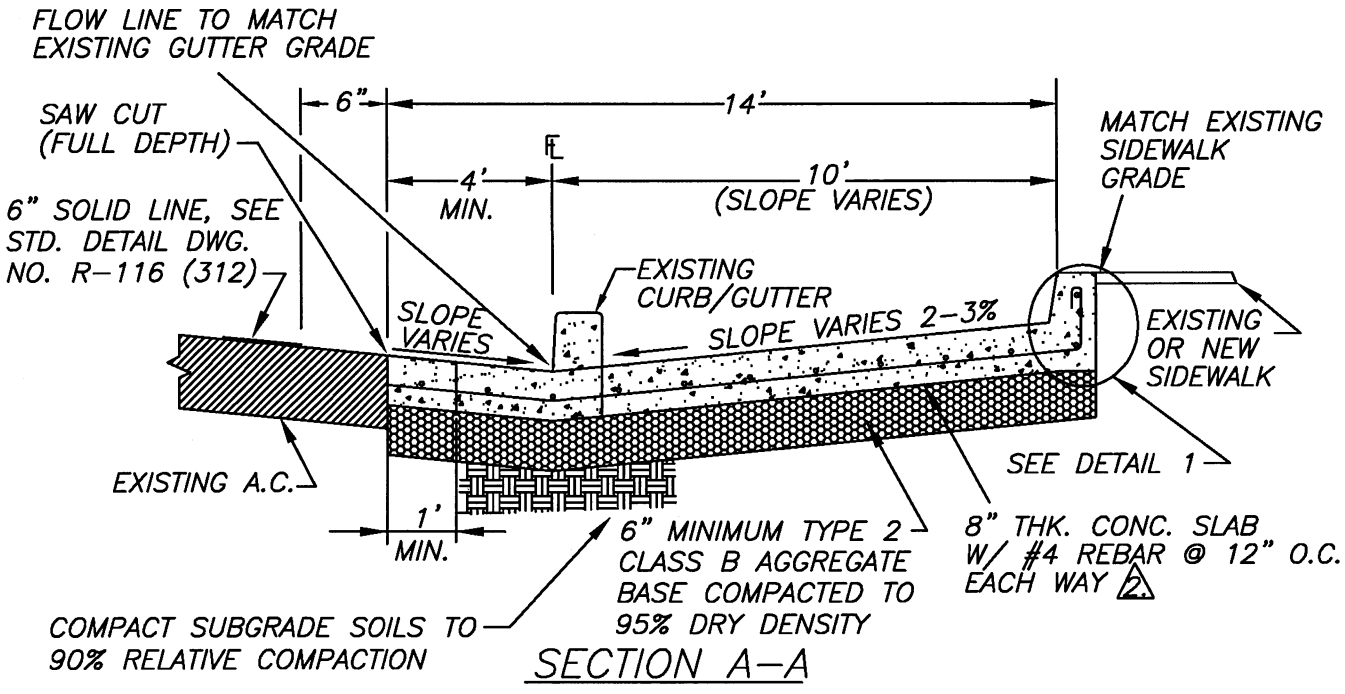
DATE 08/00



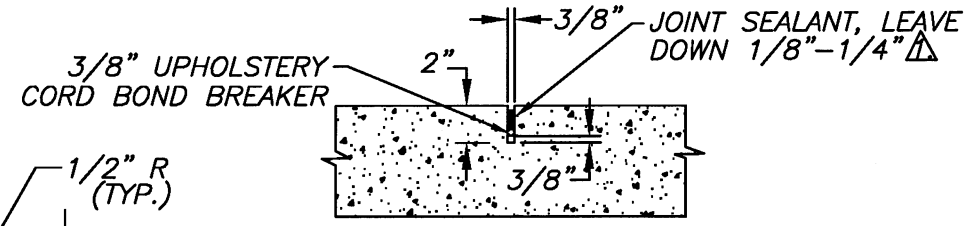


SECTION A–A

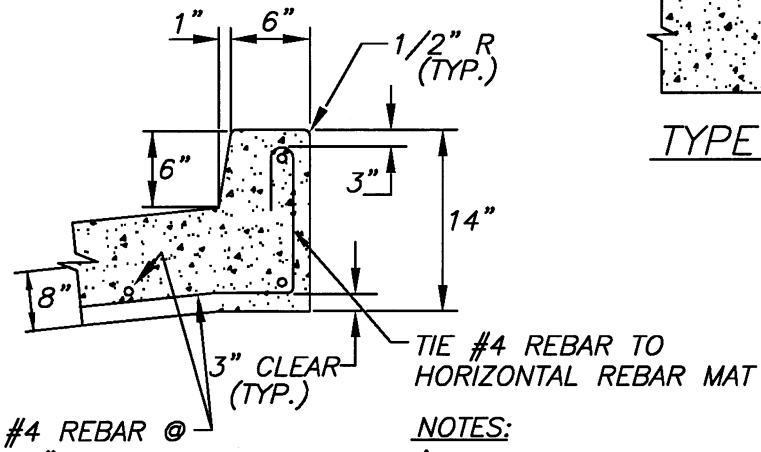
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO	
			SIDEWALK PLATE FOR TREE ROOT CLEARANCE	DRAWING NO. R-117 (312)	
APPROVED BY : G.S.		01/04		DATE 01/04	PAGE 140



SECTION A-A



TYPE C-STRIP JOINT

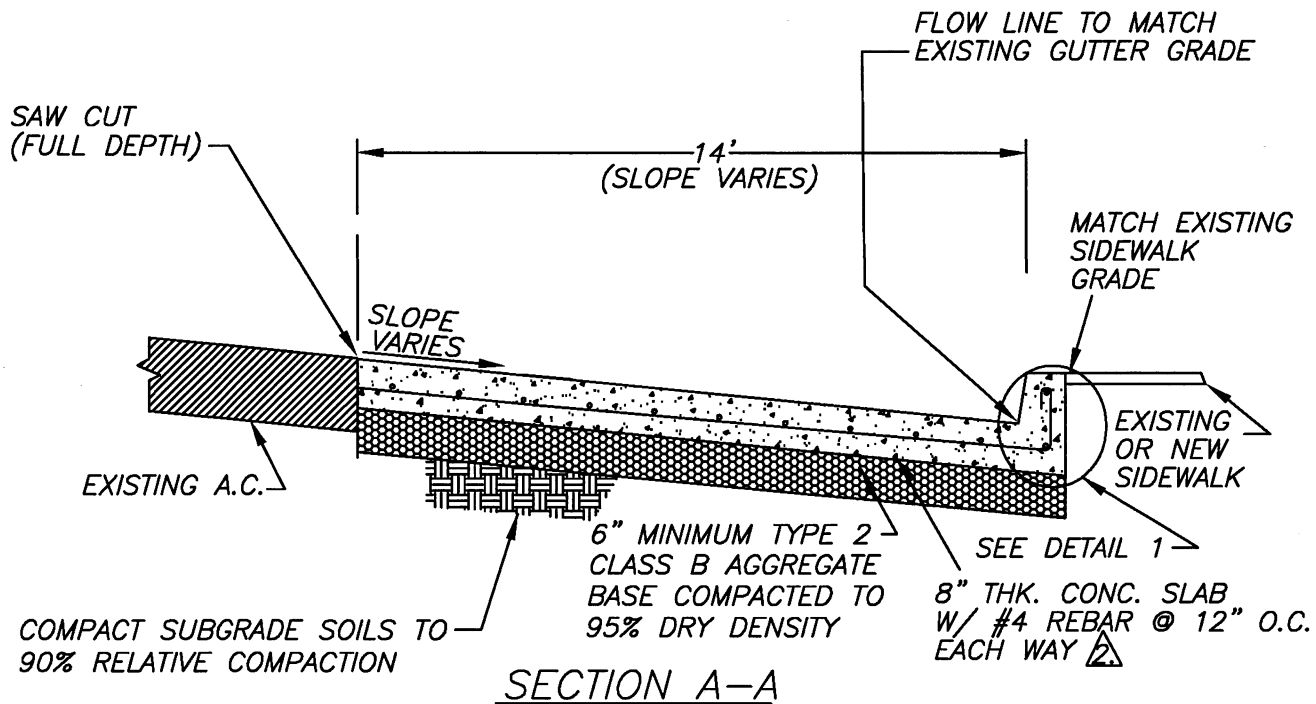


DETAIL 1

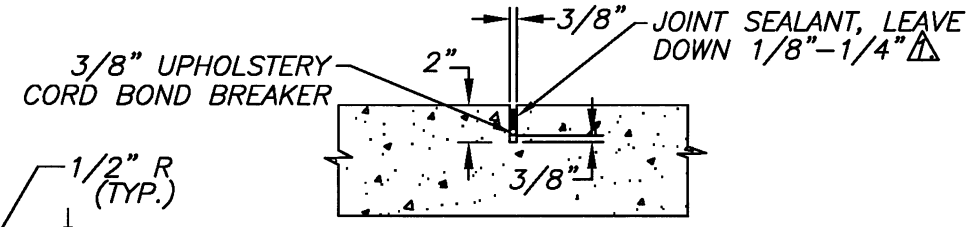
NOTES:

1. TYPE C JOINT SEALERS SHALL BE HOT POURED SUPER SEAL 444 OR EQUAL.
2. FIBER-REINFORCED PORTLAND CEMENT CONCRETE (P.C.C.) SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4000 PSI MIN. COMPRESSIVE STRENGTH @ 28 DAYS, MIN. 6 SACKS OF CEMENT PER CUBIC YARD WITH A MAX. WATER/CEMENT RATIO OF 0.45, AIR ENTRAINMENT 6% ±1.5%, SLUMP AT 1 TO 4 INCHES. ALL MATERIALS SHALL CONFORM TO SSPWC SECTION 202. POLYPROPYLENE FIBERS SHALL BE ADDED TO THE P.C.C. PER THE MANUFACTURER'S RECOMMENDATIONS.

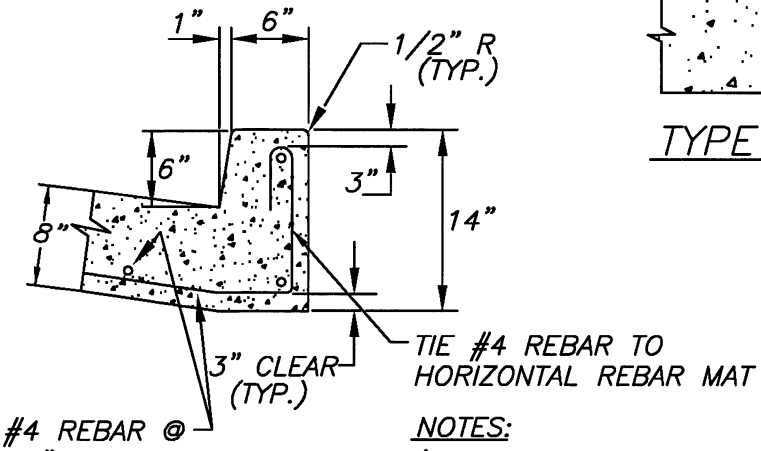
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO
			BUS TURNOUT STRUCTURAL SECTION	DRAWING NO. R-118A (312)
				DATE 01/04 / PAGE 141
APPROVED BY : G.S.		01/04		



SECTION A–A



TYPE C–STRIP JOINT

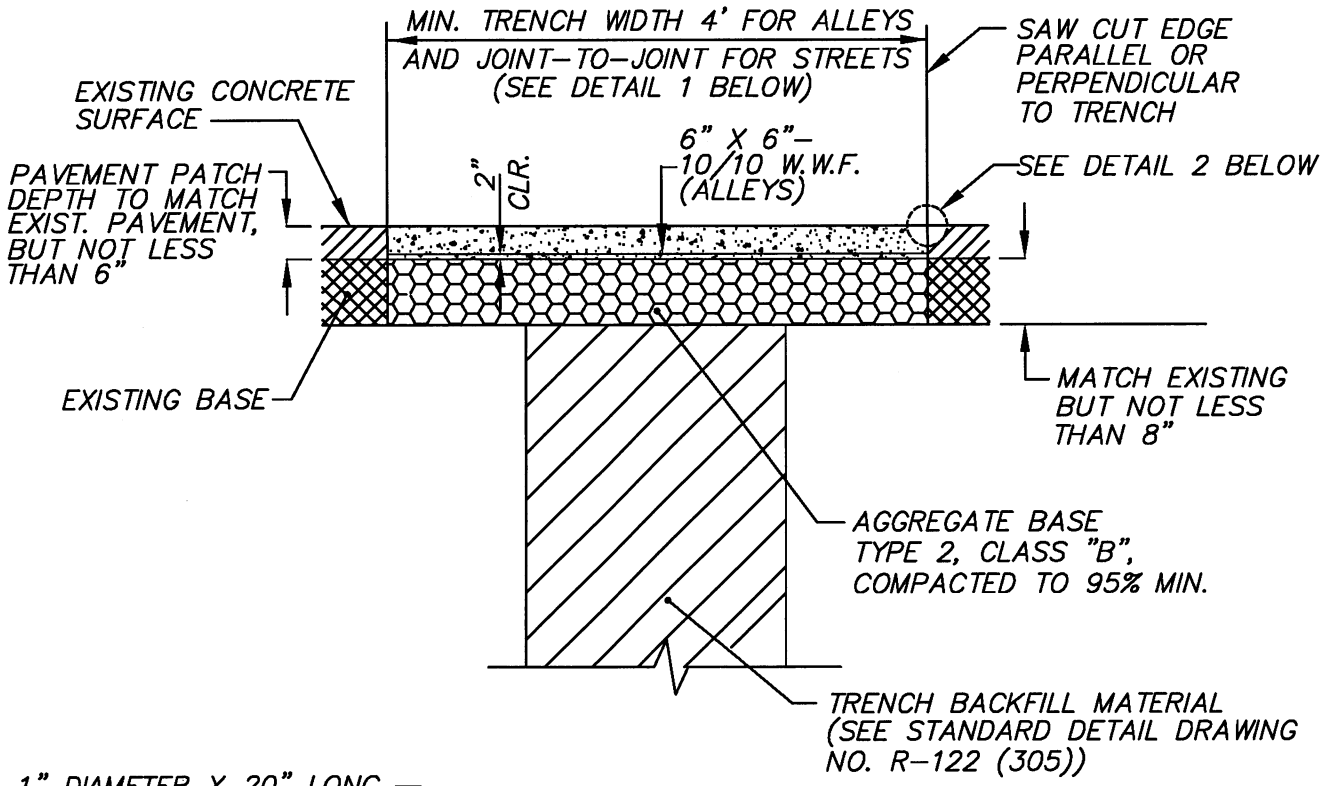


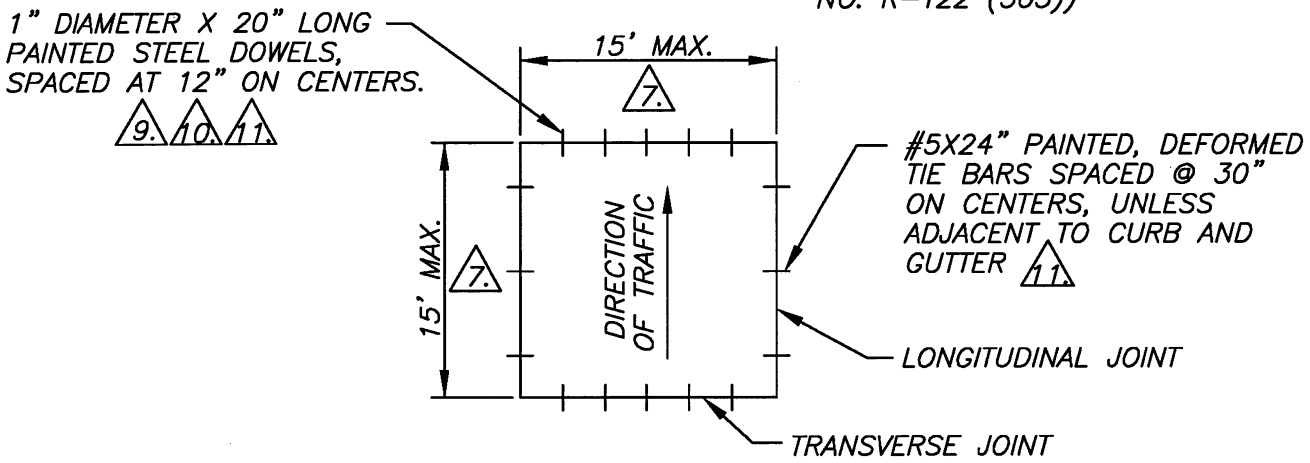
DETAIL 1

NOTES:

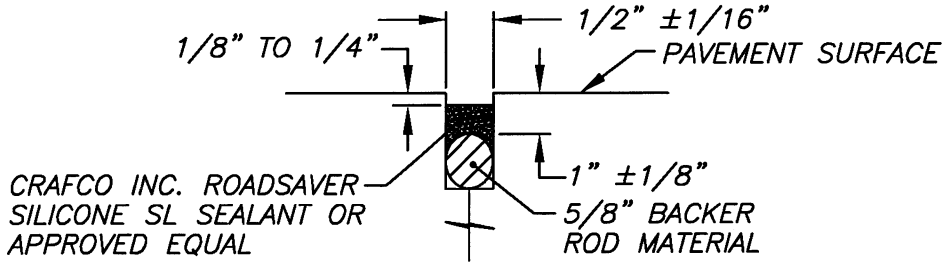
1. TYPE C JOINT SEALERS SHALL BE HOT POURED SUPER SEAL 444 OR EQUAL.
2. FIBER–REINFORCED PORTLAND CEMENT CONCRETE (P.C.C.) SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4000 PSI MIN. COMPRESSIVE STRENGTH @ 28 DAYS, MIN. 6 SACKS OF CEMENT PER CUBIC YARD WITH A MAX. WATER/CEMENT RATIO OF 0.45, AIR ENTRAINMENT 6% ±1.5%, SLUMP AT 1 TO 4 INCHES. ALL MATERIALS SHALL CONFORM TO SSPWC SECTION 202. POLYPROPYLENE FIBERS SHALL BE ADDED TO THE P.C.C. PER THE MANUFACTURER'S RECOMMENDATIONS.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO
			BUS PARKING PAD STRUCTURAL SECTION	DRAWING NO. R–118B (312)
				DATE 01/04 / PAGE 142
APPROVED BY : G.S.		01/04		





DETAIL 1



DETAIL 2

NO.	REVISION	DATE
1	REP. DWG. R-119	02/01
APPROVED BY : S.V.		02/01

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

CONCRETE STREET PATCH

SECTION **RENO**

DRAWING NO. R-119A (305,312)

DATE 08/00

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NOTES:

1. A PERMIT MUST BE OBTAINED FROM THE CITY ENGINEER PRIOR TO CUTTING ANY PUBLIC RIGHT-OF-WAY. 24 HOURS PRIOR TO TRENCH EXCAVATION, THE PERMITTEE MUST NOTIFY THE CITY EXCAVATION PERMIT INSPECTOR OR APPLICABLE ENGINEER OF RECORD.

2. ALL MATERIALS AND INSTALLATION PROCEDURES SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, LATEST REVISION. TRENCH WIDTH & PIPE ZONE SHALL CONFORM TO UTILITY COMPANY REQUIREMENTS AND STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, LATEST REVISION.

3. NO CONCRETE SHALL BE PLACED UNTIL FORMS AND SUBGRADE ARE INSPECTED BY THE CITY EXCAVATION PERMIT INSPECTOR OR APPLICABLE ENGINEER OF RECORD.

4. PORTLAND CEMENT CONCRETE (P.C.C.) SHALL HAVE THE FOLLOWING CHARACTERISTICS: 6500 PSI MIN. COMPRESSIVE STRENGTH PRIOR TO OPENING TO TRAFFIC, MAX. WATER/CEMENT RATIO OF 0.45, AIR ENTRAINMENT OF 5-1/2% ±1.5%, SLUMP @ 2 INCHES MAX. UNPLASTICIZED. ALL MATERIALS SHALL CONFORM TO SSPWC SECTION 202.

5. CONCRETE REMOVAL SHALL BE TO EVEN PANELS. PANELS SHALL BE FULL DEPTH SAWCUT TO PROVIDE A CLEAN EDGE PRIOR TO PLACING P.C.C. PAVEMENT PATCH.

6. TUNNELING UNDER CURB, GUTTER OR SIDEWALK IS NOT PERMITTED. COMPLETE REMOVAL IS REQUIRED TO THE NEAREST CONSTRUCTION OR EXPANSION JOINT OUTSIDE THE TRENCH WIDTH, UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.

7. JOINT SPACING SHALL MATCH EXISTING JOINT SPACING, EXCEPT THAT MAXIMUM SPACING SHALL NOT BE MORE THAN 15' IN ANY DIRECTION, UNLESS APPROVED BY THE CITY ENGINEER.

8. CONTRACTOR SHALL BE RESPONSIBLE FOR PLACEMENT OF LOOP DETECTORS, ADJUSTMENT OF UTILITIES AND SURVEY MONUMENTS TO GRADE AND INSTALLATION OF PAVEMENT MARKINGS.

9. DOWEL BARS AND TIE BARS SHALL NOT BE PLACED WITHIN 18" OF OPPOSING JOINT.

10. THE ALIGNMENT AND ELEVATION OF DOWELS IS EXTREMELY IMPORTANT. DOWELS SHALL BE CENTERED IN THE P.C.C. SECTION AND SHALL BE PLACED PARALLEL TO THE TOP OF THE PAVEMENT SURFACE WITHIN A TOLERANCE OF ±1/16" IN ONE FOOT.

11. DOWELS AND TIE BARS SHALL BE DRILLED AND EPOXIED INTO ADJACENT SLAB. EXPOSED END OF DOWEL SHALL BE GREASED PRIOR TO POURING P.C.C. PAVEMENT. THE LENGTH OF THE DOWELS AND TIE BARS TO BE EMBEDDED INTO THE SLAB SHALL BE HALF THE TOTAL LENGTH OF DOWELS AND TIE BARS.

12. P.C.C. PAVEMENT SLABS WITH A LENGTH TO WIDTH RATIO GREATER THAN 1.25:1 SHALL BE REINFORCED WITH 6"X6" W2XW2 WELDED WIRE FABRIC OR NO. 3 BARS SPACED @ 12" O.C. EACH WAY.

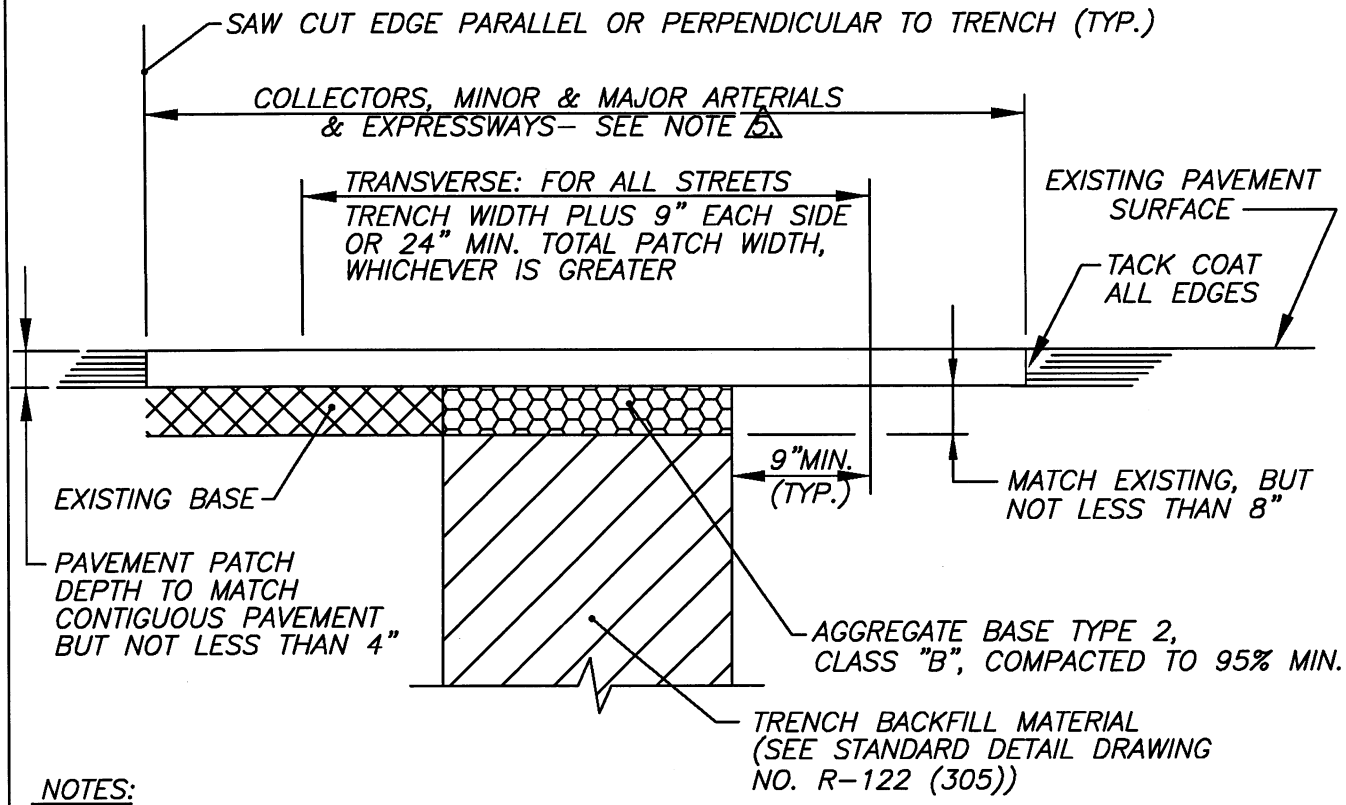
13. 3/8" EXPANSION JOINT MATERIAL SHALL BE PLACED ADJACENT TO CURB AND GUTTER SECTIONS.

14. ALL SPALLS TO EXISTING ADJACENT PAVEMENT SHALL BE REPAIRED WITH D.S. BROWN'S DELCRETE OR APPROVED EQUAL PRIOR TO PLACING P.C.C. PAVEMENT.

15. P.C.C. PAVEMENT AND CURB AND GUTTER SHALL NOT BE MONOLITHIC.

16. ASPHALT BASED HOT POUR SEALANTS SHALL NOT BE USED, UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO
1	REP. DWG. R-119	02/01	NOTES-CONCRETE STREET PATCH	DRAWING NO. R-119B (305,312)
				DATE 08/00 / PAGE 144
APPROVED BY: S.V.		02/01		



NOTES:

1. A PERMIT MUST BE OBTAINED FROM THE CITY ENGINEER PRIOR TO CUTTING ANY PUBLIC RIGHT–OF–WAY. 24 HOURS PRIOR TO TRENCH EXCAVATION, THE PERMITTEE MUST NOTIFY THE CITY EXCAVATION PERMIT INSPECTOR OR APPLICABLE ENGINEER OF RECORD.
2. ALL PERMANENT PATCH WORK SHALL BE THE RESPONSIBILITY OF THE CITY OF RENO, UNLESS OTHERWISE AUTHORIZED BY THE CITY.
3. IF SAW CUT IS WITHIN 2 FEET OF AN EXISTING PAVEMENT EDGE OR EXISTING PAVEMENT PATCH, REMOVE EXISTING PAVEMENT TO THAT EDGE AND REPLACE ENTIRE SECTION.
4. ALL A.C. REPLACEMENT REQUIREMENTS ARE MINIMUM WIDTHS ONLY. THE CITY ENGINEER MAY REQUIRE WIDER PATCH SECTIONS OR OTHERWISE ALTER THESE REQUIREMENTS.
5. LONGITUDINAL TRENCH PATCH WIDTH:
   FOR COLLECTORS, MINOR AND MAJOR ARTERIALS AND EXPRESSWAYS: IF SAW CUT EDGES FOR LONGITUDINAL OR TRANSVERSE EXCAVATIONS FALL WITHIN A TRAVEL LANE, SAW CUT SHALL BE EXTENDED TO, AND REMOVAL MADE TO EDGE OF THE TRAVEL LANE, OR THE FULL DEPTH PATCH SHALL BE MADE PER THE SPECIFICATIONS FOR TRANSVERSE PATCHES AND THE ENTIRE TRAVEL LANE ROTOMILLED TO A DEPTH OF TWO INCHES AND OVERLAYED WITH TWO INCHES OF BITUMINOUS PLANTMIX AS DIRECTED BY THE ENGINEER.
6. EDGE OF 4" ROCK WHEEL TRENCHES FOR CONDUIT SHALL BE LOCATED A MINIMUM OF 9" FROM GUTTER LIP AND SHALL BE PATCHED AS PER THE ABOVE DETAIL.
7. AGGREGATE BASE AND BITUMINOUS PAVEMENT SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, LATEST REVISION.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACEMENT OF LOOP DETECTORS, ADJUSTMENT OF UTILITIES AND SURVEY MONUMENTS TO GRADE AND INSTALLATION OF TEMPORARY PAVEMENT MARKERS.
9. FOR P.C.C. CURB REPLACEMENT, SAW CUT EXISTING PAVEMENT 18 INCHES MIN. FROM GUTTER LIP LINE, REMOVE AND REPLACE PAVEMENT TO SAW CUT EDGES. CONCRETE MAY BE POURED NEAT AGAINST EXISTING EDGE OF ASPHALT IF APPROVED BY CITY ENGINEER.

NO.	REVISION	DATE
APPROVED BY: S.V.		08/00

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

PERMANENT BITUMINOUS PAVEMENT PATCH

SECTION **RENO**

DRAWING NO. R–120 (305,320)

DATE 08/00

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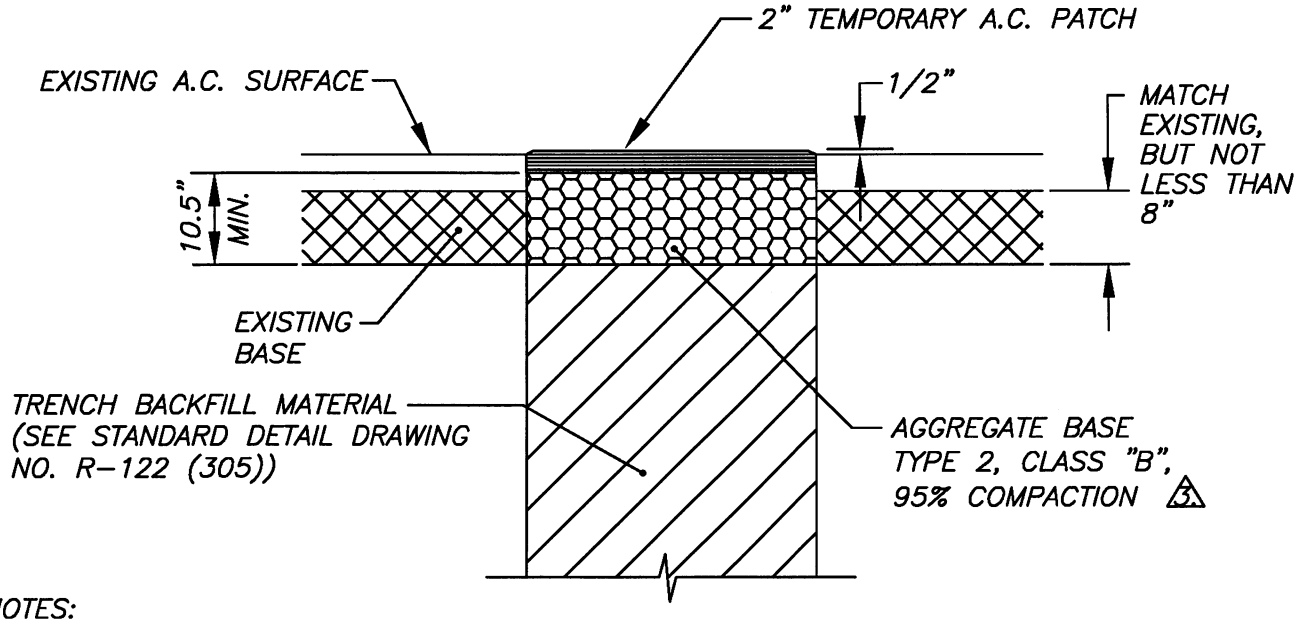
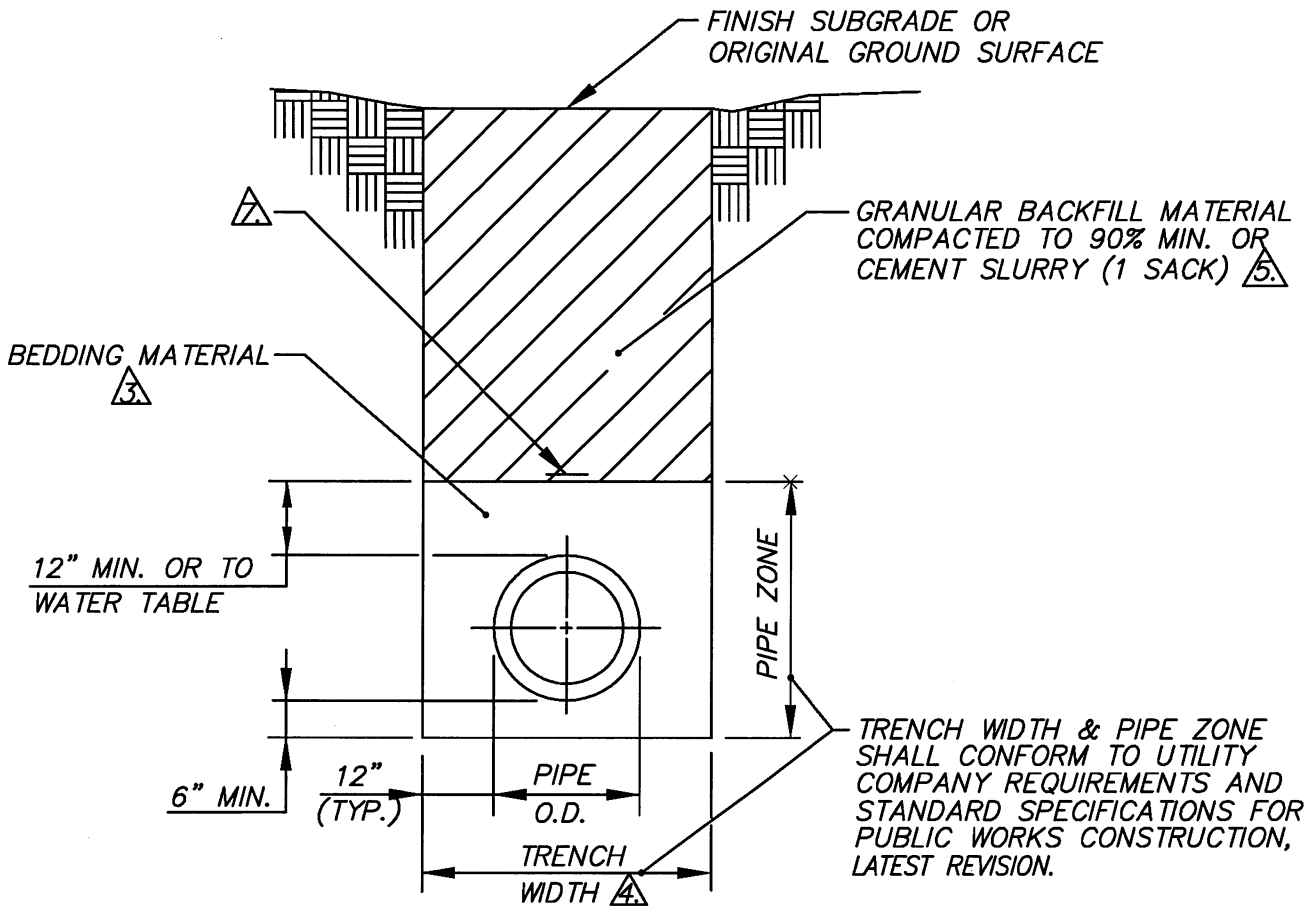


NOTES:

1. PRIOR TO EXCAVATION, THE OUTLINE OF THE TRENCH SHALL BE VERTICALLY CUT FULL DEPTH THROUGH THE EXISTING ASPHALT SURFACE WITH A SAW, OR AN ASPHALT SPADE OR EQUIPMENT APPROVED BY THE CITY ENGINEER.
2. CARE SHALL BE EXERCISED TO PREVENT SLOUGHING AND OVERBREAK. IF THE TRENCH SLOUGHS, THE SURFACE SHALL BE WIDENED TO ELIMINATE THE UNDERMINED SECTION OF ASPHALT.
3. TYPE 2, CLASS "B", AGGREGATE BASE SHALL BE COMPACTED TO A THICKNESS OF AT LEAST 10 1/2" OR A DEPTH OF 8" BELOW THE BOTTOM OF THE EXISTING PAVEMENT, WHICHEVER IS GREATER.
4. A TEMPORARY PATCH OF COLD MIX ASPHALT CONCRETE SHALL BE PLACED AND COMPACTED. THE COMPACTED PATCH SHALL BE APPROXIMATELY 1/8" TO 1/4" ABOVE THE LEVEL OF THE ADJACENT PAVEMENT. IF NOT PATCHED WITHIN 24 HOURS AFTER BACKFILLING, THE CITY MAY PATCH AND BACK-CHARGE THE PERMITTEE FOR ALL COSTS.
5. COMPACTION OF BACKFILL, BASE AND A.C. TEMPORARY PATCH SHALL BE PERFORMED WITH APPROVED MECHANICAL TAMPERS. EQUIPMENT WHEEL ROLLING IS NOT PERMITTED.
6. ENTIRE AREA SHALL BE CLEANED OF ALL DIRT, DUST, DEBRIS, ETC. BEFORE LEAVING SITE. ANY SITE LEFT UNCLEANED WILL BE CLEANED BY THE CITY AND ALL COSTS BACK-CHARGED TO THE PERMITTEE.
7. A PERMIT MUST BE OBTAINED FROM THE CITY ENGINEER PRIOR TO CUTTING ANY PUBLIC RIGHT-OF-WAY. 24 HOURS PRIOR TO TRENCH EXCAVATION, THE PERMITTEE MUST NOTIFY THE CITY EXCAVATION PERMIT INSPECTOR OR APPLICABLE ENGINEER OF RECORD.
8. ALL EXCAVATIONS SHALL BE COMPLETE OR BACKFILLED AT THE END OF THE DAY OR COVERED WITH PLATING AS APPROVED BY THE EXCAVATION PERMIT INSPECTOR OR APPLICABLE ENGINEER OF RECORD.
9. TEMPORARY PATCH WORK AND PATCH MAINTENACE SHALL BE THE RESPONSIBILITY OF THE PERMITTEE.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO
			TEMPORARY A.C. TRENCH PATCH	DRAWING NO. R-121 (305,320)
				DATE 08/00 / PAGE 146
APPROVED BY: S.V.		08/00		



NOTES:

1. A PERMIT MUST BE OBTAINED FROM THE CITY ENGINEER PRIOR TO CUTTING ANY PUBLIC RIGHT-OF-WAY. 24 HOURS PRIOR TO TRENCH EXCAVATION, THE PERMITTEE MUST NOTIFY THE CITY EXCAVATION PERMIT INSPECTOR OR APPLICABLE ENGINEER OF RECORD. SEE RELATED STANDARD DETAIL DRAWING NOS. R-103 (141), R-204 (306), R-119 (312), R-120 (305,320) AND R-121 (305,320).
2. ALL MATERIALS AND INSTALLATION PROCEDURES SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, LATEST REVISION.

3. BEDDING MATERIAL SHALL CONFORM TO OWNING-UTILITY COMPANY REQUIREMENTS AS APPROVED BY THE CITY OF RENO. FOR CITY-OWNED UTILITIES, BEDDING MATERIAL SHALL BE CLASS "A", "B", OR "C", COMPACTED TO 90% MINIMUM. FOR TRAFFIC/ELECTRICAL CONDUIT TRENCHES LESS THAN 12" IN WIDTH, INCLUDING VERMIER TRENCHES, BEDDING SHALL BE CLASS "A" MATERIAL. BACKFILL SHALL BE CEMENT SLURRY (ONE SACK). CEMENT SLURRY BEDDING/BACKFILL MAY BE USED AS AN ALTERNATE TO CLASS "A", "B" OR "C" MATERIAL WITH WRITTEN APPROVAL FROM THE CITY ENGINEER FOR EACH SPECIFIC APPLICATION.

4. ALL EXCAVATIONS SHALL CONFORM TO THE LATEST O.S.H.A. REQUIREMENTS. SHORING OR SLOPED CUT MAY BE NECESSARY, BUT THERE WILL BE NO PAYMENT FOR ADDITIONAL EXCAVATION, BEDDING, BACKFILL, OR SHORING.

5. SEE STANDARD DETAIL DRAWING NOS. R-123A (305), R-123B (305) AND R-123C (305) FOR TRENCH SLURRY BACKFILL SPECIFICATIONS.

6. EDGE OF 4" ROCK WHEEL TRENCHES FOR CONDUIT SHALL BE LOCATED A MINIMUM OF 9" FROM GUTTER LIP.

7. PIPE TAPE IDENTIFICATION OF UTILITY SHALL BE INSTALLED.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO	
			TRENCH EXCAVATION/BACKFILL	DRAWING NO. R-122 (305)	
				DATE 08/00	PAGE 147
APPROVED BY : S.V.		08/00			

CITY OF RENO SPECIFICATIONS FOR TRENCH SLURRY BACKFILL

TRENCH SLURRY BACKFILL SHALL CONSIST OF A FLUID, WORKABLE MIXTURE OF AGGREGATE, CEMENT AND WATER.

AT THE OPTION OF THE CONTRACTOR, TRENCH SLURRY BACKFILL MAY BE USED AS STRUCTURAL BACKFILL FOR PIPE, EXCEPT THAT TRENCH SLURRY BACKFILL SHALL NOT BE USED AS STRUCTURAL BACKFILL FOR ALUMINUM OR ALUMINUM–COATED PIPE.

WHEN TRENCH SLURRY BACKFILL IS USED FOR STRUCTURAL BACKFILL, THE WIDTH OF THE EXCAVATION SHOWN ON THE PLANS MAY BE REDUCED SO THAT THE SIDE CLEAR DISTANCE BETWEEN THE OUTSIDE OF THE PIPE AND THE SIDE OF THE EXCAVATION, ON EACH SIDE OF THE PIPE, IS A MINUMUM OF 6 INCHES FOR PIPES UP TO AND INCLUDING 42 INCHES IN DIAMETER OR SPAN, ONE FOOT FOR PIPES OVER 42 INCHES IN DIAMETER OR SPAN.

TRENCH SLURRY BACKFILL SHALL BE PLACED ONLY FOR THE PORTION OF THE STRUCTURAL BACKFILL BELOW THE ORIGINAL GROUND OR THE GRADING PLANE OR THE TOP OF EMBANKMENT PLACED PRIOR TO EXCAVATING FOR THE PIPE. WHERE NECESSARY, EARTH PLUGS SHALL BE COMPACTED AS REQUIRED AT EACH END OF THE PIPE PRIOR TO PLACING BACKFILL IN A MANNER THAT WILL COMPLETELY CONTAIN THE SLURRY IN THE TRENCH.

TRENCH SLURRY BACKFILL SHALL BE PLACED IN A UNIFORM MANNER THAT WILL PREVENT VOIDS IN, OR SEGREGATION OF, THE BACKFILL, AND WILL NOT FLOAT OR SHIFT THE PIPE. FOREIGN MATERIAL WHICH FALLS INTO THE TRENCH PRIOR TO OR DURING PLACING OF THE TRENCH SLURRY BACKFILL SHALL BE IMMEDIATELY REMOVED.

BACKFILLING OR PLACING ANY MATERIAL OVER TRENCH SLURRY BACKFILL SHALL NOT COMMENCE UNTIL AT LEAST FOUR HOURS AFTER THE TRENCH SLURRY BACKFILL HAS BEEN PLACED, EXCEPT THAT WHEN CONCRETE SAND IS USED FOR THE AGGREGATE AND THE IN–PLACE MATERIAL IS FREE DRAINING, BACKFILLING MAY COMMENCE AS SOON AS THE SURFACE WATER IS GONE. TRENCH SLURRY BACKFILL MAY BE USED AS A SUBSTITUTE FOR AGGREGATE BASE WHEN INSTALLED PROPERLY.

THE TOP ELEVATION OF THE TRENCH SLURRY BACKFILL MUST NOT EXCEED THE ELEVATION AT THE BOTTOM OF THE EXISTING ASPHALT CEMENT (A.C.) SUBGRADE BASE.

TRENCH SLURRY BACKFILL FOR PIPE WILL BE CONSIDERED STRUCTURAL BACKFILL FOR COMPENSATION PURPOSES.

PORTLAND CEMENT SHALL MEET THE FOLLOWING REQUIREMENTS:

CEMENT SHALL BE PORTLAND CEMENT CONFORMING TO THE PROVISIONS IN STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION SECTION 202.03 "PORTLAND CEMENT".

TYPE II CEMENT SHALL MEET THE REQUIREMENTS OF ASTM C150. ALL OTHER CEMENTS SHALL MEET THE REQUIREMENTS OF AASHTO M35.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO
			TRENCH SLURRY BACKFILL	DRAWING NO. R–123A (305)
				DATE 08/00 | PAGE 148
APPROVED BY S.V.		08/00		

MIXING WATER SHALL MEET THE FOLLOWING REQUIREMENTS:

WATER USED FOR TRENCH SLURRY BACKFILL SHALL BE FREE FROM OIL, SALTS AND OTHER IMPURITIES WHICH COULD HAVE AN ADVERSE EFFECT ON THE QUALITY OF THE BACKFILL MATERIAL.

CONCRETE SAND SHALL MEET THE FOLLOWING REQUIREMENTS:

AT THE OPTION OF THE CONTRACTOR, AGGREGATE SHALL BE EITHER:

1. MATERIAL SELECTED FROM EXCAVATION, IMPORTED MATERIAL, OR A COMBINATION THEREOF, WHICH IS FREE OF ORGANIC MATERIAL AND OTHER DELETERIOUS SUBSTANCES AND CONFORMS TO THE FOLLOWING GRADING REQUIREMENTS:

SIEVE SIZES	PERCENTAGE BY WEIGHT PASSING SIEVE
1-1/2 INCH	100
1 INCH	80 – 100
3/4 INCH	60 – 100
3/8 INCH	50 – 100
NO. 4	40 – 100
NO. 100	2 – 40
NO. 200	2 – 10

2. COMMERCIAL QUALITY CONCRETE SAND WHICH CONFORMS TO THE FOLLOWING GRADE REQUIREMENTS:

SIEVE SIZES	PERCENTAGE BY WEIGHT PASSING SIEVE
3/8 INCH	100
NO. 4	95 – 100
NO. 8	80 – 100
NO. 16	50 – 85
NO, 30	25 – 60
NO. 50	10 – 30
NO. 100	2 – 10

MIXING:

THE AGGREGATE, CEMENT AND WATER SHALL BE PROPORTIONED BY WEIGHT. 94 POUNDS OF CEMENT (1 SACK) SHALL BE USED FOR EACH CUBIC YARD OF MATERIAL PRODUCED. THE WATER CONTENT SHALL BE SUFFICIENT TO PRODUCE A FLUID, WORKABLE MIX THAT WILL FLOW AND CAN BE PUMPED WITHOUT SEGREGATION OF THE AGGREGATE WHILE BEING PLACED.

MATERIALS FOR TRENCH SLURRY BACKFILL SHALL BE THOROUGHLY MACHINE MIXED IN A PUGMILL, ROTARY DRUM, OR OTHER APPROVED MIXER. MIXING SHALL CONTINUE UNTIL THE CEMENT AND WATER ARE THOROUGHLY DISPERSED THROUGHOUT THE MATERIAL. TRENCH SLURRY BACKFILL SHALL BE PLACED IN THE WORK WITHIN ONE HOUR AFTER MIXING OR IT SHALL BE REJECTED.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO
			TRENCH SLURRY BACKFILL	DRAWING NO. R-123B (305)
				DATE 08/00 / PAGE 149
APPROVED BY S.V.		08/00		

COMPRESSIVE STRENGTH:

100 PSI IN 28 DAYS.

NOTES:

1. *ONE SACK MIX MAY USED AS A SUBSTITUTE FOR TYPE 2 BASE.*

2. *NO LABORTORY TESTS ARE REQUIRED IF THE CONTRACTOR USES CONCRETE SAND AS AGGREGATE. CONTRACTOR WILL BE REQUIRED TO SUBMIT MIX DESIGN PRIOR TO PLACEMENT. THE INSPECTOR WILL USE THE BATCH TICKET AS PROOF OF THE ONE SACK MIX. IF REQUIRED, OCCASIONAL COMPRESSIVE STRENGTH TESTS AND AGGREGATE GRADATIONS MAY BE PERFORMED.*

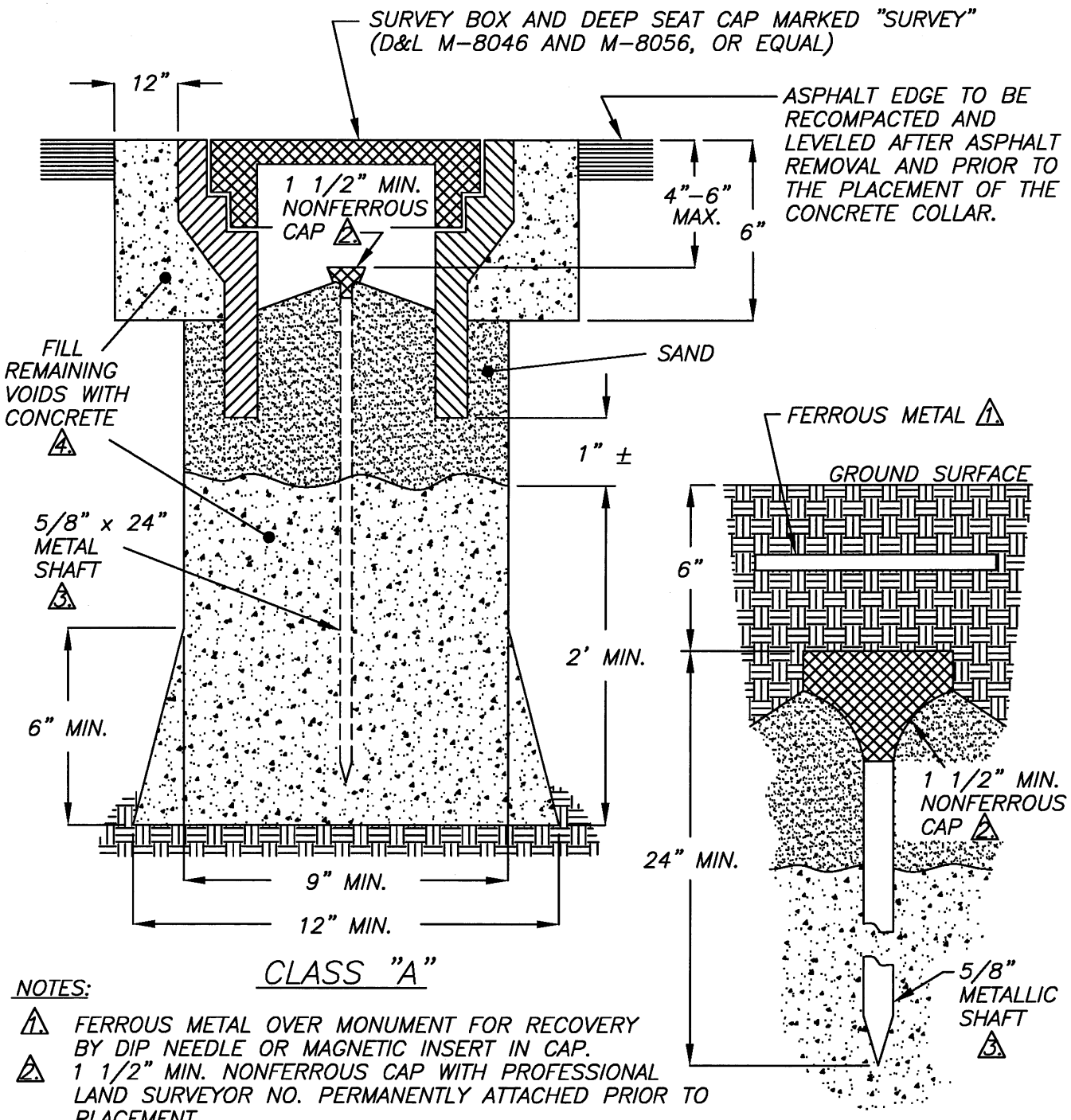
3. *ONE SACK MIX MAY BE USED AS BEDDING, IF APPROVED BY THE APPROPRIATE AGENCY.*

NO.	REVISION	DATE
APPROVED BY S.V.		08/00

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

TRENCH SLURRY BACKFILL

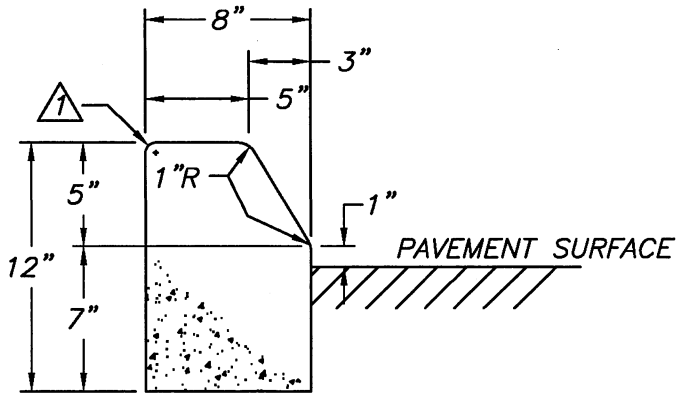
SECTION	**RENO**
DRAWING NO.	R-123C (305)
DATE 08/00	PAGE 150



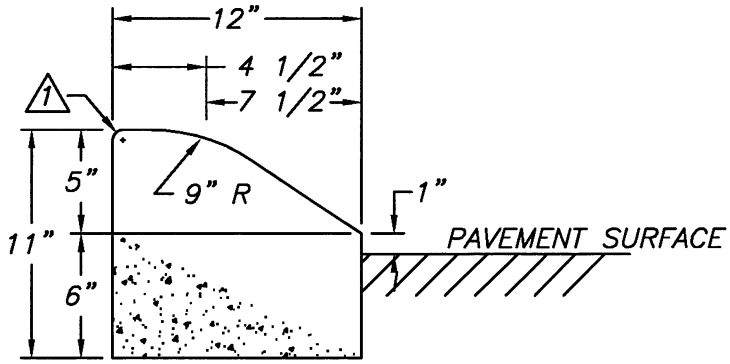
NOTES:

1. FERROUS METAL OVER MONUMENT FOR RECOVERY BY DIP NEEDLE OR MAGNETIC INSERT IN CAP.
2. 1 1/2" MIN. NONFERROUS CAP WITH PROFESSIONAL LAND SURVEYOR NO. PERMANENTLY ATTACHED PRIOR TO PLACEMENT.
3. 5/8" METALLIC SHAFT (SMOOTH SHAFTS TO BE DEFORMED).
4. PORTLAND CEMENT CONCRETE (P.C.C.) SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4000 PSI MIN. COMPRESSIVE STRENGTH AT 28 DAYS, MIN. 6 SACKS OF CEMENT PER CUBIC YARD WITH A MAX. WATER/CEMENT RATIO OF 0.45, AIR ENTRAINMENT 6% ±1.5%, SLUMP AT 1 TO 4 INCHES. ALL MATERIALS SHALL CONFORM TO SSPWC SECTION 202.
5. PRE-PUNCHED CAPS SHALL NOT BE PERMITTED.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO
			MONUMENTS	DRAWING NO. R-124 (332)
				DATE 08/00 / PAGE 151
APPROVED BY: S.V.		08/00		



TYPE 1 P.C.C. MEDIAN CURB

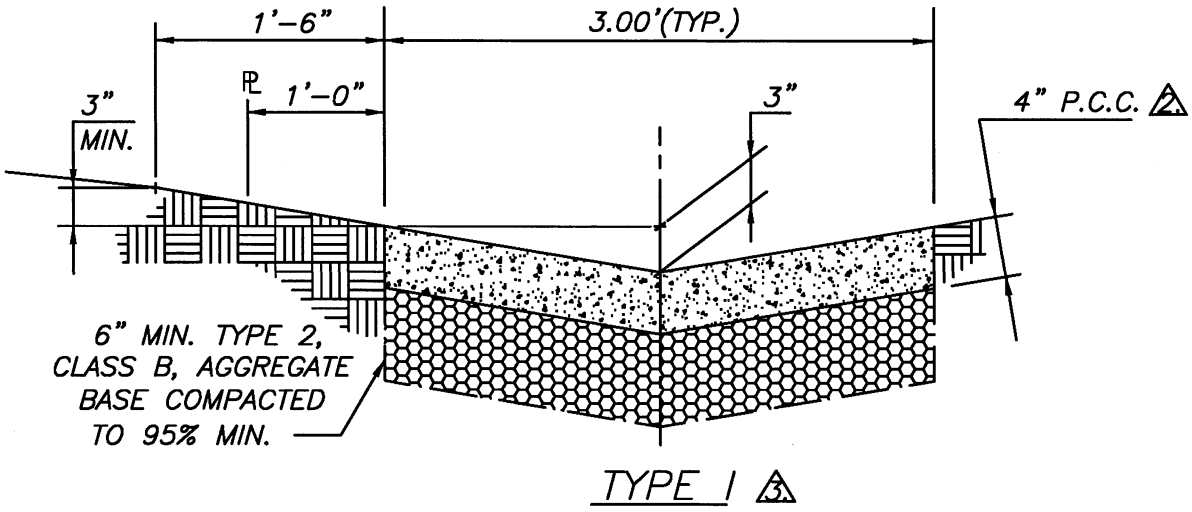


TYPE 3 P.C.C. MEDIAN CURB

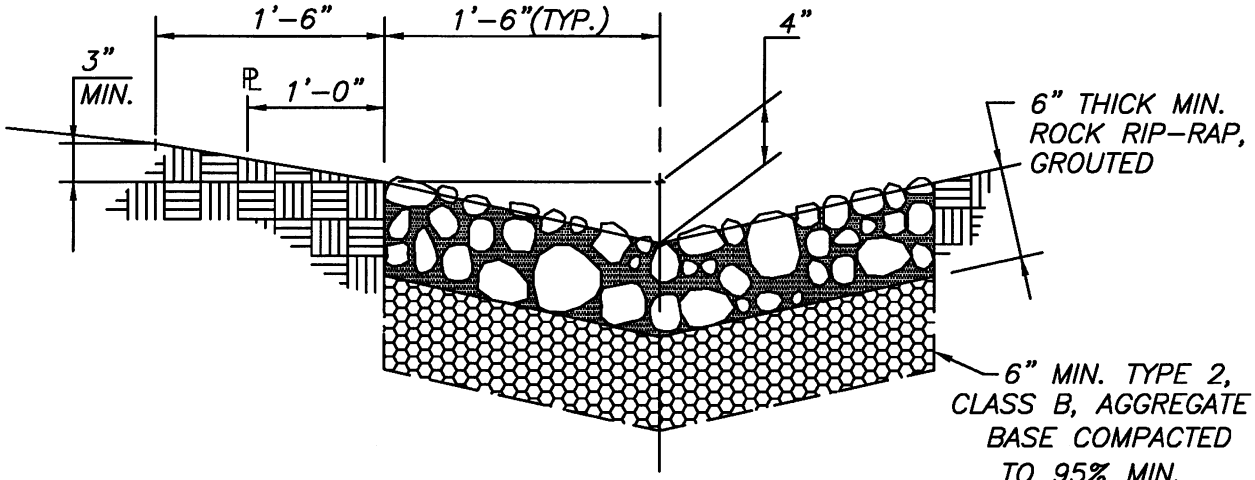
NOTES:

1. RADIUS TO BE 1/2 INCH, OMIT ROUNDING IF CURBS ARE BACK TO BACK.
2. FIBER-REINFORCED PORTLAND CEMENT CONCRETE (P.C.C.) SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4000 PSI MIN. COMPRESSIVE STRENGTH @ 28 DAYS, MIN. 6 SACKS OF CEMENT PER CUBIC YARD WITH A MAX. WATER/CEMENT RATIO OF 0.45, AIR ENTRAINMENT 6% ±1.5%, SLUMP AT 1 TO 4 INCHES. ALL MATERIALS SHALL CONFORM TO SSPWC SECTION 202. POLYPROPYLENE FIBERS SHALL BE ADDED TO THE P.C.C. PER THE MANUFACTURER'S RECOMMENDATIONS.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO	
			P.C.C. MEDIAN CURBS	DRAWING NO. R-125 (312)	
				DATE 01/04	PAGE 152
APPROVED BY : G.S.		01/04			



TYPE I 3



TYPE II

NOTES:

1. MAXIMUM DRAINAGE AREA SHALL BE 6 LOTS.

2. FIBER-REINFORCED PORTLAND CEMENT CONCRETE (P.C.C.) SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4000 PSI MIN. COMPRESSIVE STRENGTH AT 28 DAYS, MIN. 6 SACKS OF CEMENT PER CUBIC YARD WITH A MAX. WATER/CEMENT RATIO OF 0.45, AIR ENTRAINMENT 6% ±1.5%, SLUMP AT 1 TO 4 INCHES. ALL MATERIALS SHALL CONFORM TO SSPWC SECTION 202. POLYPROPYLENE FIBERS SHALL BE ADDED TO THE P.C.C. PER THE MANUFACTURER'S RECOMMENDATIONS.

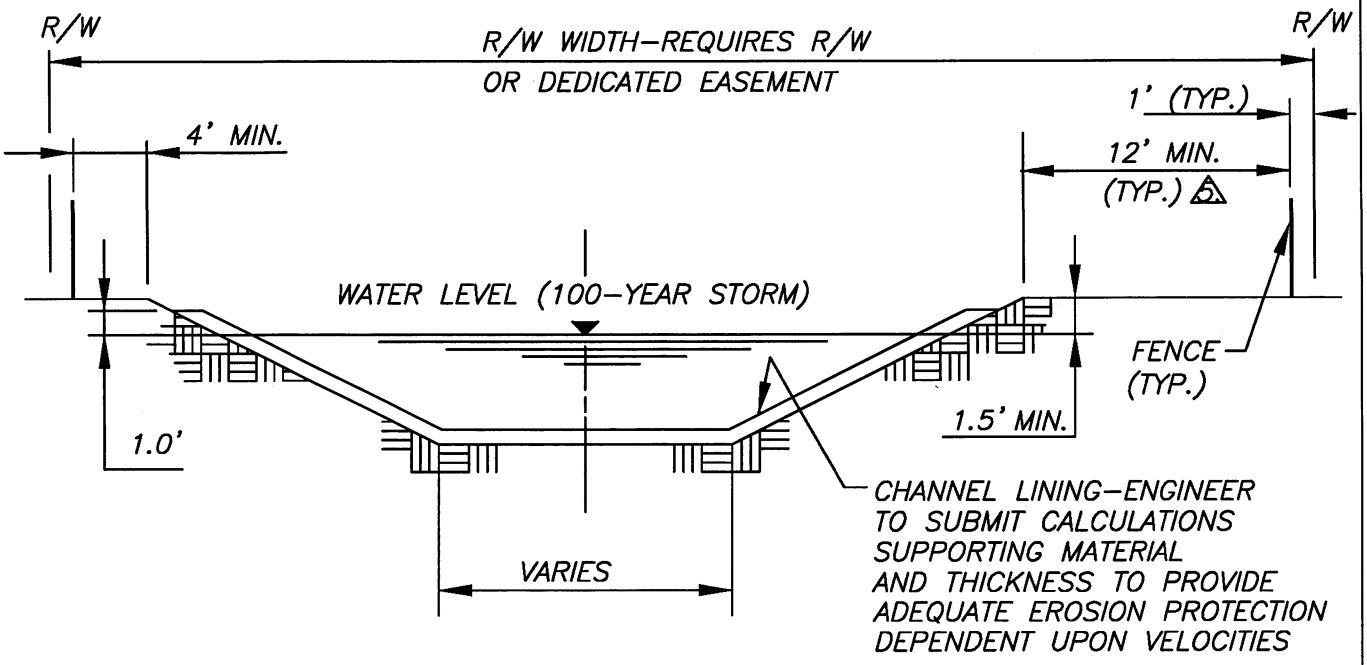
3. MAXIMUM FLOWLINE GRADE FOR A TYPE I SHALL BE 6%.

4. MAXIMUM CHANGE IN HORIZONTAL ALIGNMENT SHALL BE 10 DEGREES.

5. PCC DRAINAGE SWALES SHALL HAVE EXPANSION JOINTS EVERY 30 FEET AND WEAKENED PLANE JOINTS EVERY 10 FEET.

6. ACCESS SHALL BE PROVIDED TO THE POINT OF DISCHARGE IN ACCORDANCE WITH CITY STANDARDS.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO
			LOT LINE DRAINAGE SWALE	DRAWING NO. R-201 (313)
				DATE 08/00 / PAGE 200
APPROVED BY: S.V.		08/00		



TYPICAL SECTION

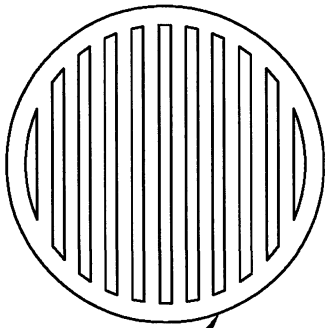
NOTES:

1. REFER TO THE CITY OF RENO'S "PUBLIC WORKS DESIGN MANUAL" FOR MORE DETAILED DESIGN CRITERIA PERTAINING TO THIS DRAINAGE CHANNEL.
2. DESIGN VELOCITIES LESS THAN 6 FPS: CHANNEL LINING OF NON–ERODING, LONG LIFE, LOW MAINTENANCE MATERIAL AS APPROVED BY THE CITY ENGINEER. SIDE SLOPES 3:1 MAXIMUM UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
3. DESIGN VELOCITIES 6 TO 10 FPS: CHANNEL LINING OF LOOSE ROCK RIP–RAP SIZED FOR VELOCITY. SIDE SLOPES 2:1 MAXIMUM.
4. DESIGN VELOCITIES GREATER THAN 10 FPS: CHANNEL LINING OF CONCRETE OR AN ENGINEERED EQUIVALENT. SIDE SLOPES 1:1 MAXIMUM.

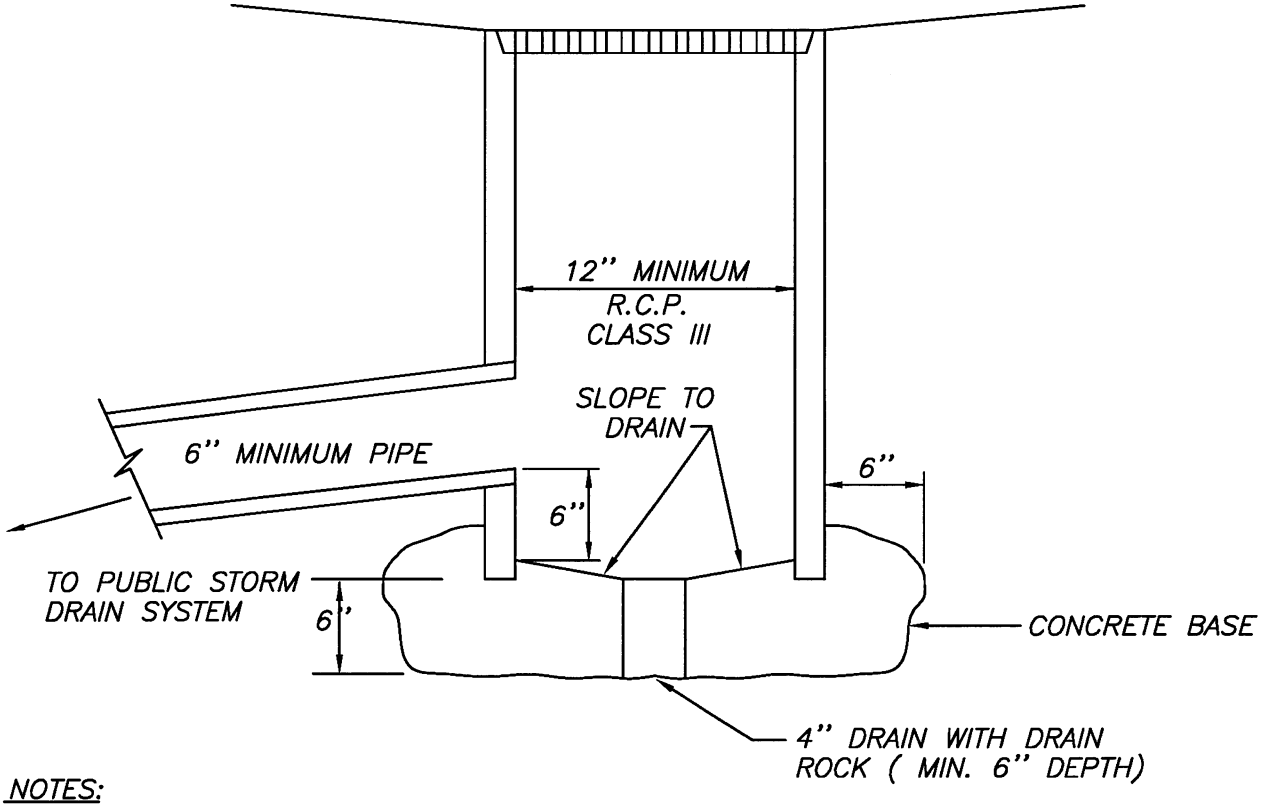
6 PAVED ACCESS ROAD(S) SHALL BE CONSTRUCTED TO CITY STANDARDS WHEN DETERMINED NECESSARY BY THE CITY ENGINEER.

6. VEHICULAR ACCESS TO THE CHANNEL FLOOR FOR MAINTENANCE SHALL BE PROVIDED.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO
			MAJOR DRAINAGE CHANNEL CONVEYING 100-YEAR STORM	DRAWING NO. R–202 (313)
				DATE 08/00 / PAGE 201
APPROVED BY: S.V.		08/00		



NEENAH DRAINAGE GRATE R-4380
OR R-4385, D&L C-1012, OR
APPROVED EQUIVALENT



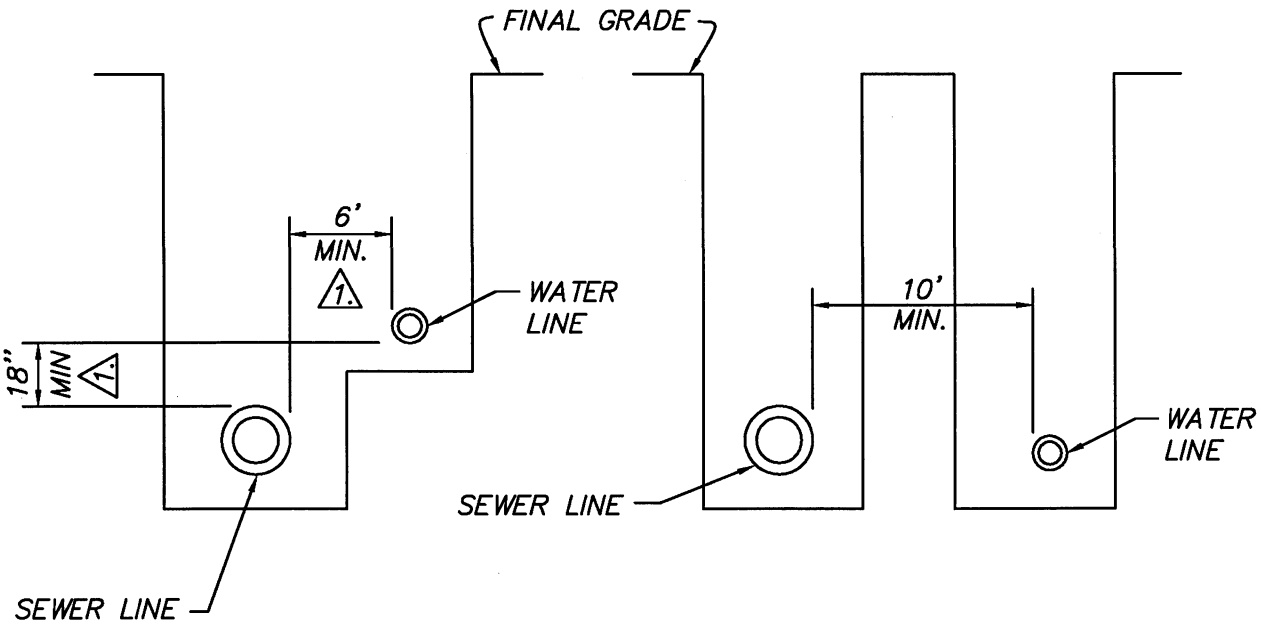
NOTES:

1. PORTLAND CEMENT CONCRETE (P.C.C.) SHALL HAVE THE FOLLOWING CHARACTERISTICS: 3000 PSI MIN. COMPRESSIVE STRENGTH AT 28 DAYS, MIN. 6 SACKS OF CEMENT PER CUBIC YARD WITH SLUMP AT 1 TO 4 INCHES. ALL MATERIAL SHALL CONFORM TO SSPWC, SECTION 202.

2. TO BE OWNED AND MAINTAINED BY PRIVATE DEVELOPMENTS ONLY. NOT TO BE USED IN DRIVEWAYS OR WHERE DRAINAGE ORIGINATES FROM AREAS USED FOR VEHICULAR TRAFFIC.

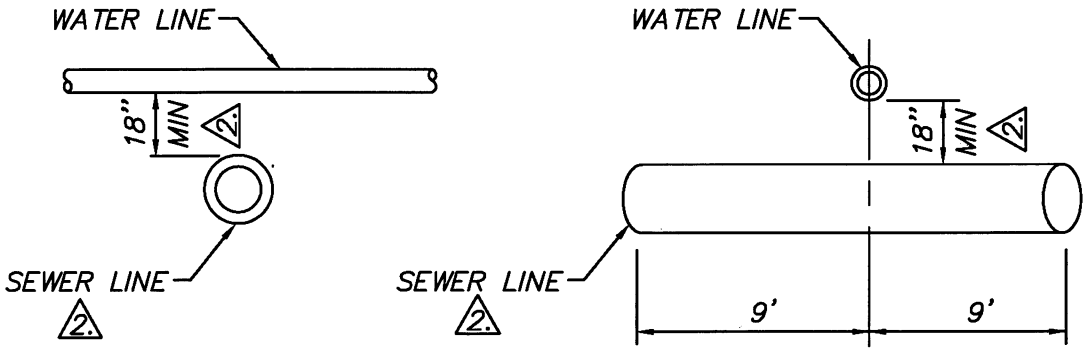
3. INSTALL GREASE TRAP PER STANDARD DETAIL DRAWING NO. R-213 (311).

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO
			YARD DRAIN	DRAWING NO. R-203 (311)
				DATE 08/00 / PAGE 202
APPROVED BY S.V.		08/00		



COMMON TRENCH SECTION

SEPARATE TRENCH SECTION



CROSSING DETAILS 3.

NOTES:

1. IF WATER LINE IS LOCATED 18" OR MORE ABOVE THE SEWER, THE DISTANCE BETWEEN LINES CAN BE REDUCED TO A MIN. OF 6 FEET.

2. LESS THAN 18" CLEARANCE REQUIRES THE SEWER LINE TO BE SLEEVED WITH DUCTILE IRON PIPE OR BE ENCASED IN REINFORCED CONCRETE TO A LENGTH OF 9 FEET IN EITHER DIRECTION FROM THE WATER MAIN.

3. REFER TO STANDARD DETAIL DRAWING NO. 2-19 (306) FOR MORE SANITARY SEWER CROSSING CRITERIA.

NO.	REVISION	DATE
1	REVISE NOTE 2	01/04
APPROVED BY G.S.		01/04

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

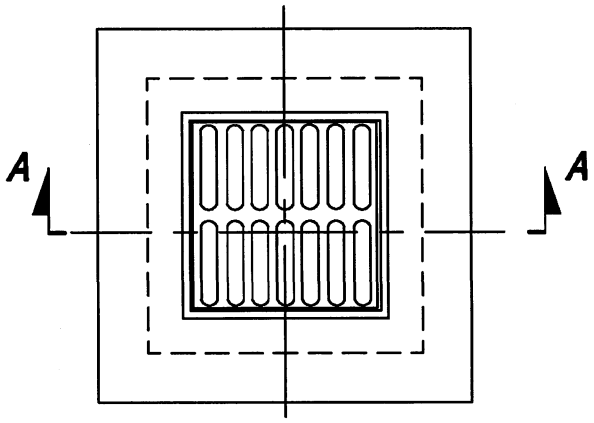
TYPICAL SEWER UTILITY TRENCH

SECTION **RENO**

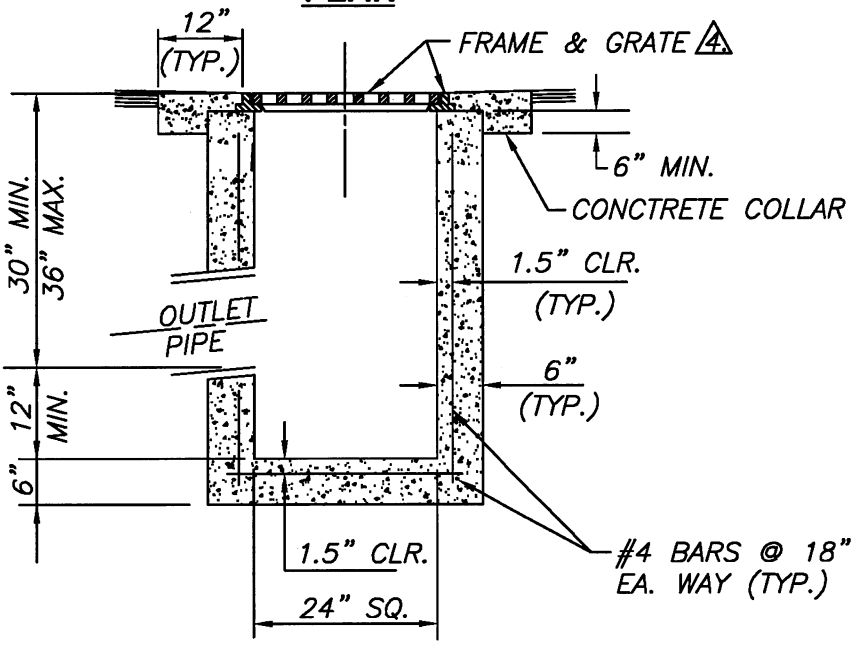
DRAWING NO. R-204 (306)

DATE 08/00

PAGE 203



PLAN



SECTION A-A

NOTES:

1. PORTLAND CEMENT CONCRETE (P.C.C.) SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4000 PSI MIN. COMPRESSIVE STRENGTH @ 28 DAYS, (FOR COLLAR ONLY, ALL UNEXPOSED CONCRETE MAY BE 3000 PSI) MIN. 6 SACKS OF CEMENT PER CUBIC YARD WITH A MAX. WATER/CEMENT RATIO OF 0.45, AIR ENTRAINMENT 6% ±1.5%, SLUMP AT 1 TO 4 INCHES. ALL MATERIALS SHALL CONFORM TO SSPWC SECTION 202.
2. REINFORCING STEEL SHALL BE GRADE 40 AND HAVE 1.5" CLEAR COVER.
3. CONCRETE STRUCTURE MAY BE A PRE-CAST CONCRETE UNIT. BASE OF PRE-CAST CONCRETE UNIT SHALL BE PLACED ON 6" COMPACTED DRAIN ROCK.
4. FRAME & GRATE SHALL BE D&L I-9226 OR APPROVED EQUAL.
5. CATCH BASIN SHALL BE TRAFFIC-RATED AND USED ONLY AT LOW POINTS IN ALLEYS OR PARKING AREAS.
6. INSTALL GREASE TRAP PER STANDARD DETAIL DRAWING NO. R-213 (311).

NO.	REVISION	DATE
APPROVED BY: S.V.		08/00

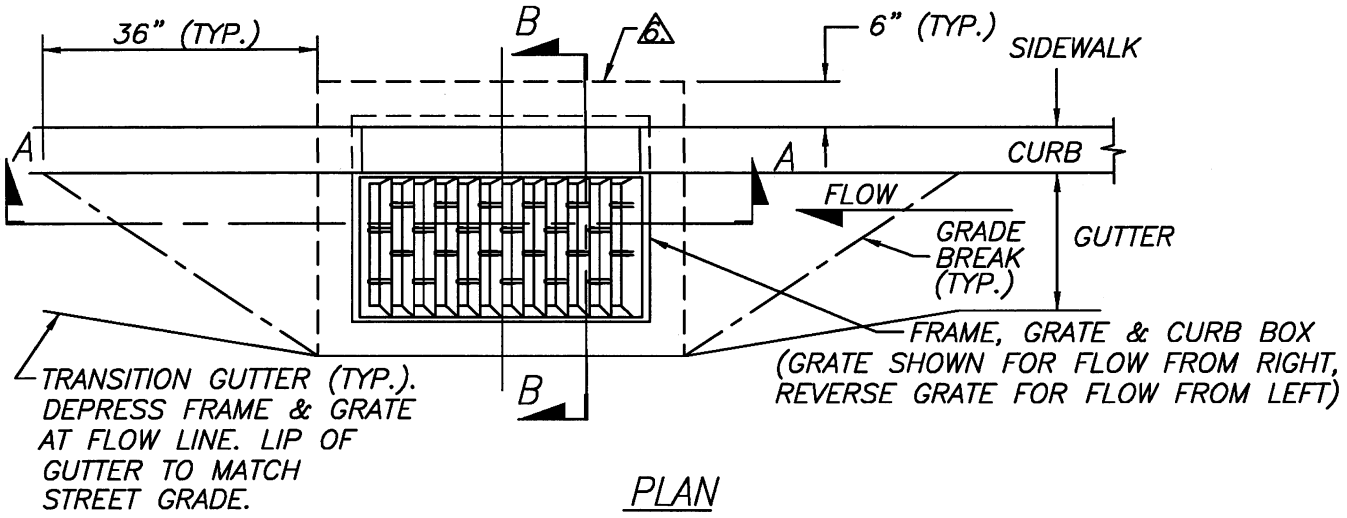
STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

CATCH BASIN TYPE 3-R

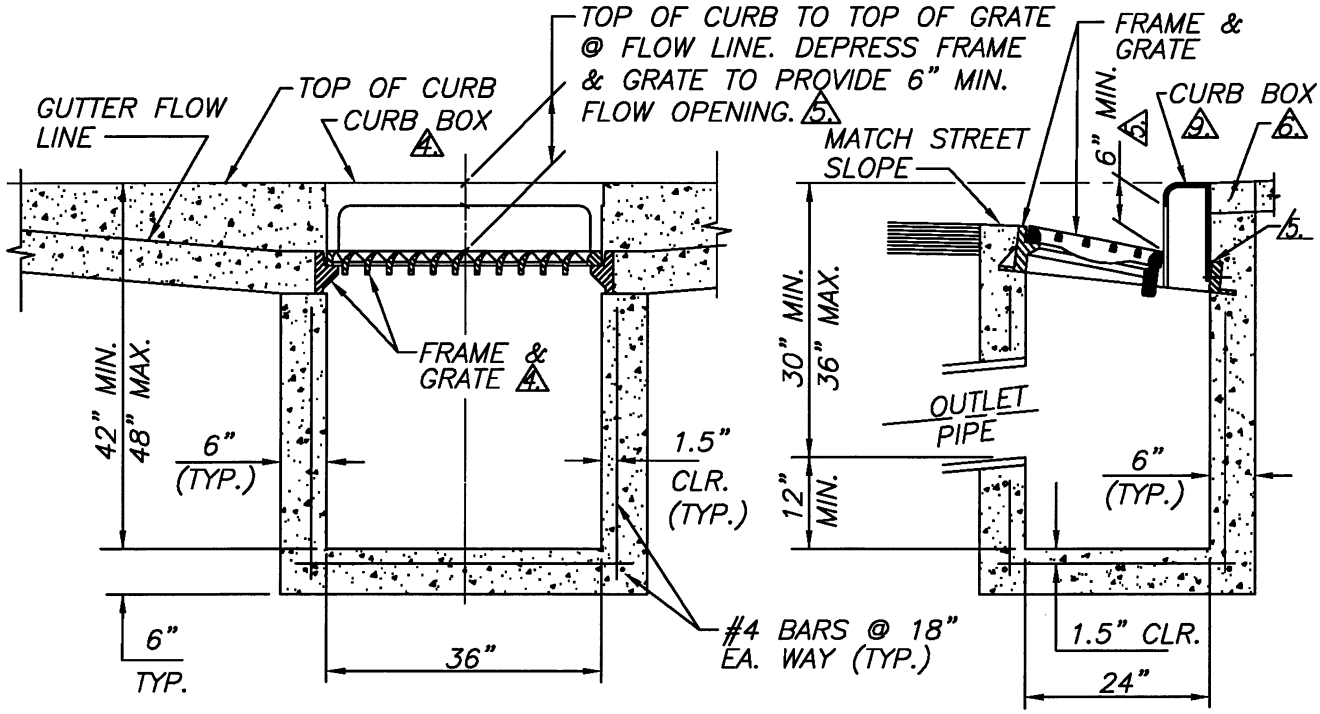
SECTION **RENO**

DRAWING NO. R-205 (311)

DATE 08/00



PLAN



SECTION A–A

SECTION B–B

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO
			CATCH BASIN TYPE 4–R	DRAWING NO. R-206A (311)
				DATE 01/04 / PAGE 205
APPROVED BY: G.S.		01/04		

NOTES:

1. PORTLAND CEMENT CONCRETE (P.C.C.) SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4000 PSI MIN. COMPRESSIVE STRENGTH @ 28 DAYS, (CURB AND GUTTER TRANSITION ONLY, ALL UNEXPOSED CONCRETE MAY BE 3000 PSI) MIN. 6 SACKS OF CEMENT PER CUBIC YARD WITH A MAX. WATER/CEMENT RATIO OF 0.45, AIR ENTRAINMENT 6% ±1.5%, SLUMP AT 1 TO 4 INCHES. ALL MATERIALS SHALL CONFORM TO SSPWC SECTION 202.

2. REINFORCING STEEL SHALL BE GRADE 40 AND HAVE 1.5" MINIMUM CLEAR COVER.

3. CONCRETE STRUCTURE MAY BE A PRE-CAST CONCRETE UNIT UPON APPROVAL OF THE CITY ENGINEER. BASE OF PRE-CAST CONCRETE UNIT SHALL BE PLACED ON 6" COMPACTED DRAIN ROCK.

4. FRAME SHALL BE NEENAH R-3294, R-3295 OR R-3067 SINGLE CURB UNIT WITH A TYPE L "VANE GRATE" AND CURB BOX, SOUTH BAY FOUNDRY VANE GRATE SBF 1947 OR APPROVED EQUAL, INSTALLED WITH PROPER FLOW DIRECTION.

5. TILT FRAME & GRATE AS REQUIRED TO ATTAIN 6" MIN. FLOW OPENING & INSTALL DURABLE SHIMS BETWEEN THE CURB BOX & FRAME AS REQUIRED TO MATCH CURB BOX TO TOP OF CURB AND FACE OF CURB (SEE SECTION B-B).

6. IF NO SIDEWALK IS PRESENT, POUR 6" CONCRETE CURB STRUCTURE BEHIND GRATE AND TIE BEAM INTO BOX.

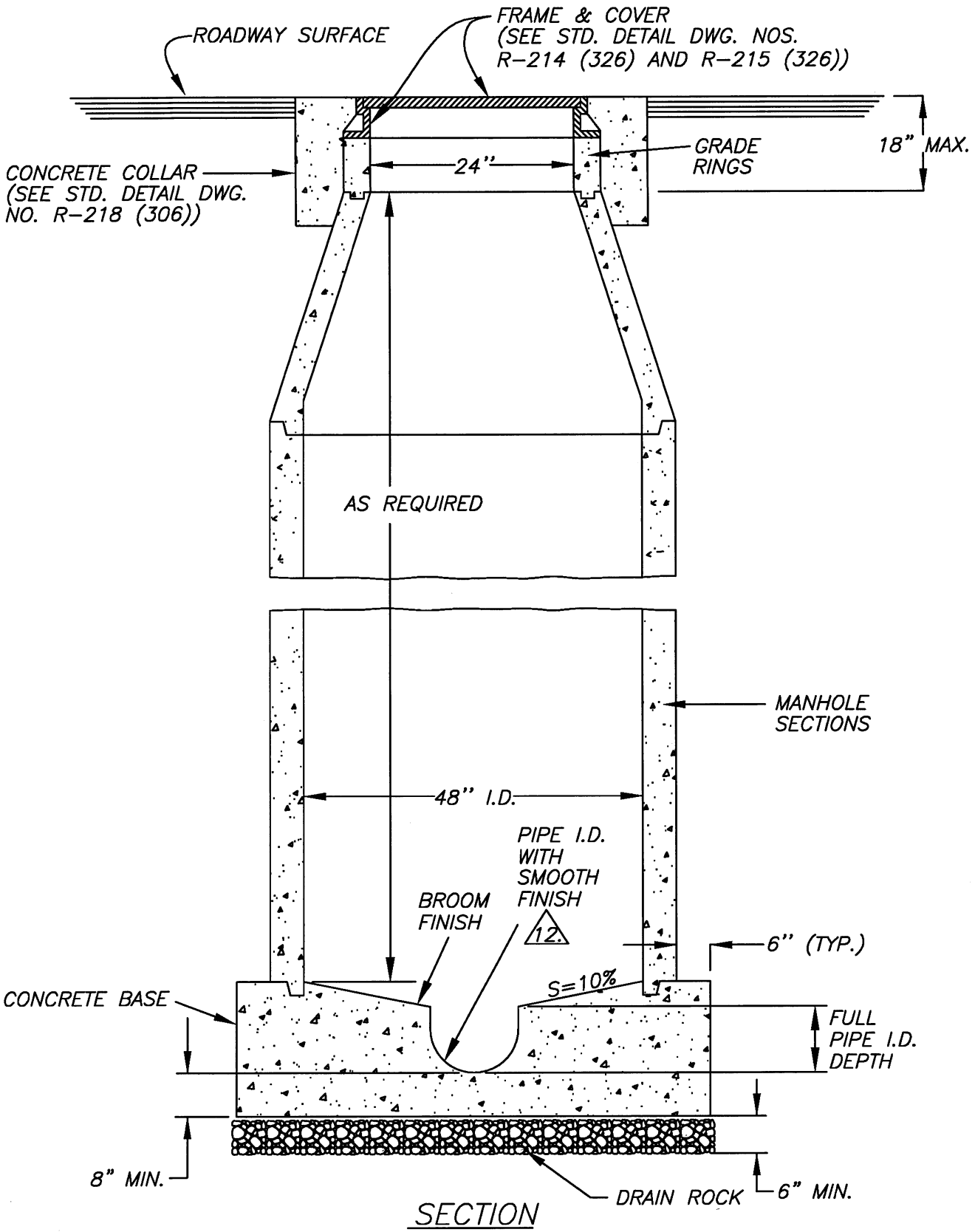
7. INSTALL GREASE TRAP PER STANDARD DETAIL DRAWING NO. R-213 (311).

8. DUAL CATCH BASINS ARE TO BE WET SET IN 6" OF CONCRETE IN LIEU OF DRAIN ROCK AND TIED TOGETHER WITH A MINIMUM OF 3 ONE INCH STAINLESS STEEL STRAPS. CONNECTION PIPE MUST BE GROUTED IN PLACE AND ALSO MECHANICALLY RESTRAINED.

9. EACH CATCH BASIN SHALL BE CAST WITH A FISH IMAGE AND THE WORDS "NO DUMPING! DRAINS TO WATERWAYS" IN THE TOP OF THE CURB BOX.

10. FRAMES AND GRATES SHALL BE MATCHED TO ACHIEVE A CLOSE TOLERANCE FIT, WITH MINIMAL GAPS, AS APPROVED BY THE CITY ENGINEER.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO	
			NOTES - CATCH BASIN TYPE 4-R	DRAWING NO. R-206B (311)	
				DATE 01/04	PAGE 206
APPROVED BY: G.S.		01/04			



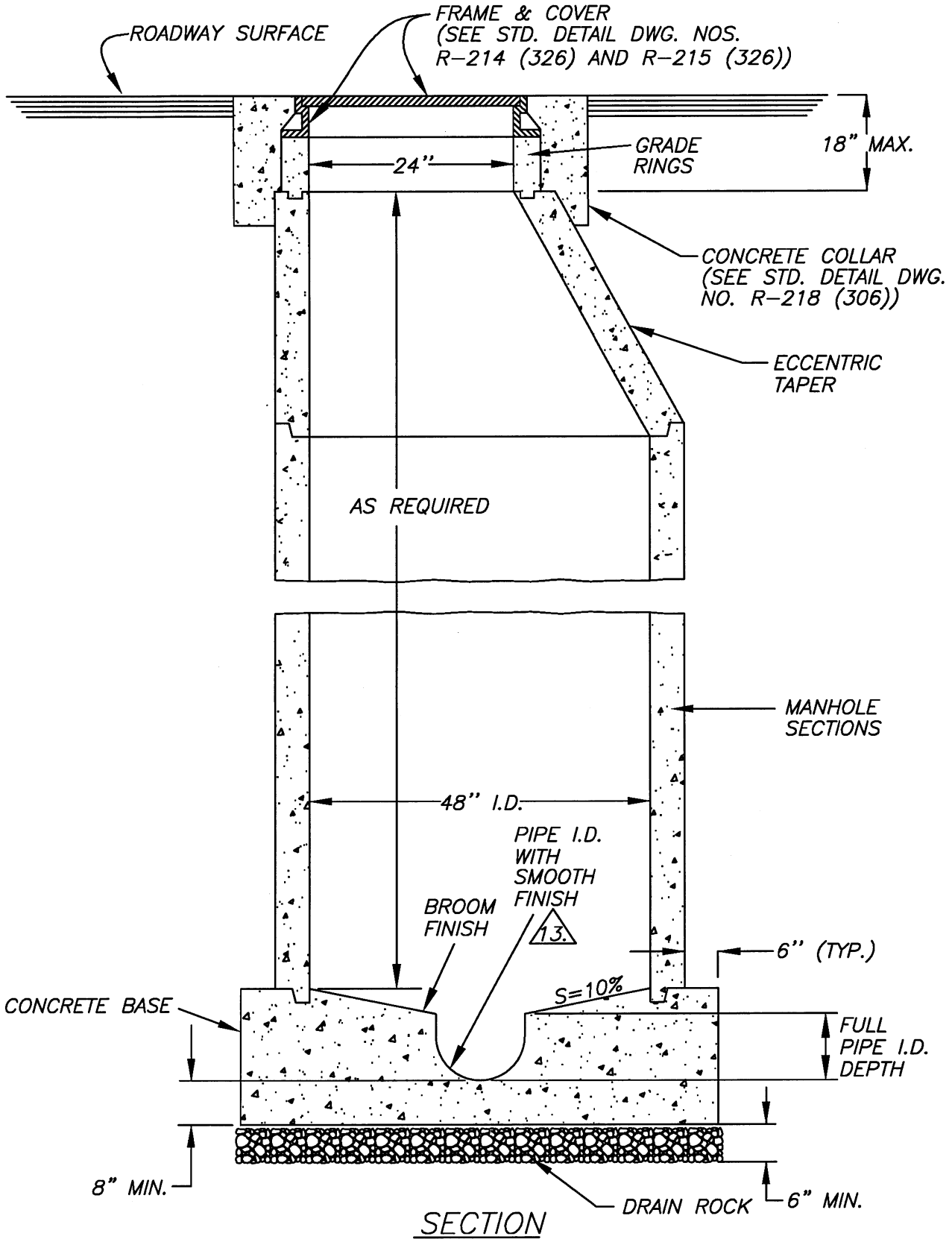
SECTION

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO
			MANHOLE TYPE I	DRAWING NO. R-207A (306,311)
				DATE 08/00 / PAGE 207
APPROVED BY: S.V.		08/00		

NOTES:

1. PRECAST MANHOLE COMPONENTS SHALL CONFORM TO ASTM C-478.
2. PIPES SHALL NOT PROTRUDE MORE THAN 3" INSIDE MANHOLE SECTION AS MEASURED AT THE OUTSIDE EDGES OF THE PIPE, VERTICALLY ALIGNED WITH THE SPRINGLINE. CONSTRUCT WATERTIGHT CONNECTION TO MANHOLE. REFER TO STANDARD DETAIL DRAWING NOS. R-219 (311), R-220 (311) AND R-221 (311) FOR PIPE CONNECTION REQUIREMENTS.
3. MANHOLE BASE SHALL BE PORTLAND CEMENT CONCRETE (P.C.C.) AND SHALL HAVE THE FOLLOWING CHARACTERISTICS: 3000 PSI MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS, MINIMUM 6 SACKS OF CEMENT PER CUBIC YARD WITH SLUMP AT 1 TO 4 INCHES. ALL MATERIAL SHALL CONFORM TO SSPWC, SECTION 202.
4. TYPE I MANHOLE TO BE UTILIZED FOR PIPE DIAMETERS OF 12" OR SMALLER AND DEPTHS NOT EXCEEDING 18 FEET.
5. MANHOLE MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF SECTION 204 "MANHOLES AND CATCH BASINS" OF THE STANDARD SPECIFICATIONS.
6. PRECAST MANHOLE SECTIONS, OTHER THAN GRADE RINGS, SHALL BE JOINED WITH FLEXIBLE PLASTIC GASKET MATERIAL SUCH AS "RAM-NEK" OR EQUAL AS PER MANUFACTURER'S RECOMMENDATIONS.
7. EXCAVATION AND BACKFILL SHALL BE AS SPECIFIED FOR "TRENCH EXCAVATION AND BACKFILL" IN SECTION 305 OF THE STANDARD SPECIFICATIONS.
8. EXCAVATION SHALL BE AS NEARLY VERTICAL AS POSSIBLE (SHEET AND SHORE IF SOIL CONDITIONS REQUIRE), IN EXISTING STREET SECTIONS, ALLEY SECTIONS AND CONFINED AREAS, SUCH AS LIMITED EASEMENTS OR ADJACENT STRUCTURES. NATURAL ANGLE OF REPOSE WILL BE ALLOWED IN ALL OTHER AREAS.
9. MANHOLE PRECAST SECTION LENGTHS SHALL BE ARRANGED TO FIT THE REQUIRED DEPTH.
10. NO SEWER LINE PIPE DIAMETERS OF LESS THAN 8" IN DIAMETER SHALL BE CONNECTED TO THE MANHOLE.
11. PRECAST CONCRETE BASE MAY BE USED IN LIEU OF CAST-IN-PLACE BASE.
12. MATCH PIPE INVERTS TO MANHOLE INVERTS WHERE PIPES CONNECT TO MANHOLE BASE.
13. ALL MANHOLES SHALL BE WATERTIGHT.
14. THE USE OF "INSIDE DROP" MANHOLES IS NOT PERMITTED BY THE CITY OF RENO.
15. PRIOR TO BACKFILLING, ALL MANHOLES SHALL BE VACUUM TESTED PER THE REQUIREMENTS OF ASTM C-1244.
16. NO STEPS, LADDERS OR OTHER CLIMBING DEVICES SHALL BE INSTALLED IN THE MANHOLE.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO	
1	NOTES 2 10 16	01/04	NOTES- MANHOLE TYPE I	DRAWING NO. R-207B (306,311)	
				DATE 08/00	PAGE 208
APPROVED BY G.S.		01/04			



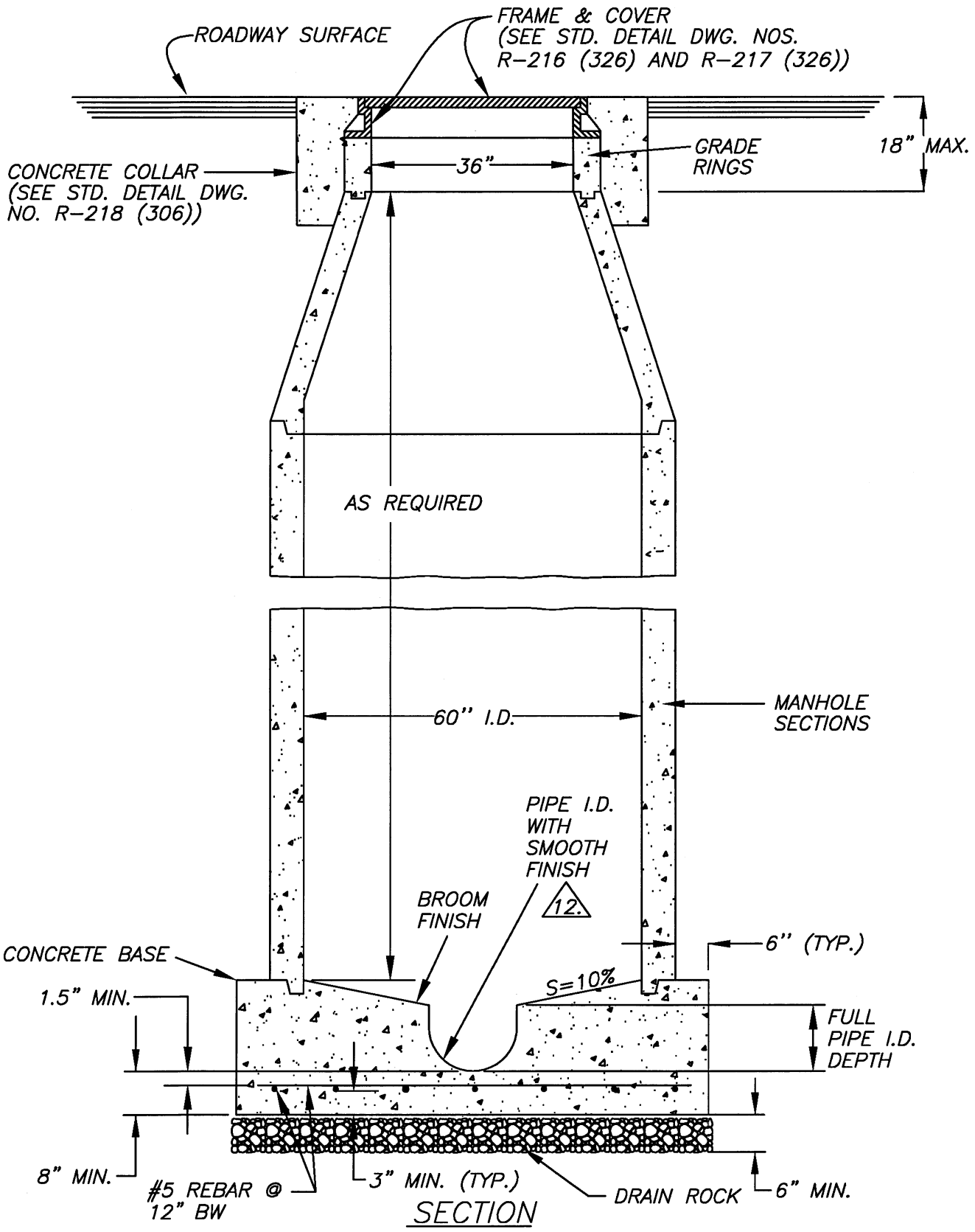
SECTION

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO
			MANHOLE TYPE I-A	DRAWING NO. R-208A (306,311)
				DATE 08/00 / PAGE 209
APPROVED BY : S.V.		08/00		

NOTES:

1. PRECAST MANHOLE COMPONENTS SHALL CONFORM TO ASTM C-478.
2. PIPES SHALL NOT PROTRUDE MORE THAN 3" INSIDE MANHOLE SECTION AS MEASURED AT THE OUTSIDE EDGES OF THE PIPE, VERTICALLY ALIGNED WITH THE SPRINGLINE. CONSTRUCT WATERTIGHT CONNECTION TO MANHOLE. REFER TO STANDARD DETAIL DRAWING NOS. R-219 (311), R-220 (311) AND R-221 (311) FOR PIPE CONNECTION REQUIREMENTS.
3. MANHOLE BASE SHALL BE PORTLAND CEMENT CONCRETE (P.C.C.) AND SHALL HAVE THE FOLLOWING CHARACTERISTICS: 3000 PSI MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS, MINIMUM 6 SACKS OF CEMENT PER CUBIC YARD WITH SLUMP AT 1 TO 4 INCHES. ALL MATERIAL SHALL CONFORM TO SSPWC, SECTION 202.
4. TYPE I-A MANHOLE TO BE UTILIZED FOR PIPE DIAMETERS OF 12" OR SMALLER AND DEPTHS NOT EXCEEDING 18 FEET.
5. MANHOLE MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF SECTION 204 "MANHOLES AND CATCH BASINS" OF THE STANDARD SPECIFICATIONS.
6. PRECAST MANHOLE SECTIONS, OTHER THAN GRADE RINGS, SHALL BE JOINED WITH FLEXIBLE PLASTIC GASKET MATERIAL SUCH AS "RAM-NEK" OR EQUAL AS PER MANUFACTURER'S RECOMMENDATIONS.
7. EXCAVATION AND BACKFILL SHALL BE AS SPECIFIED FOR "TRENCH EXCAVATION AND BACKFILL" IN SECTION 305 OF THE STANDARD SPECIFICATIONS.
8. EXCAVATION SHALL BE AS NEARLY VERTICAL AS POSSIBLE (SHEET AND SHORE IF SOIL CONDITIONS REQUIRE), IN EXISTING STREET SECTIONS, ALLEY SECTIONS AND CONFINED AREAS, SUCH AS LIMITED EASEMENTS OR ADJACENT STRUCTURES. NATURAL ANGLE OF REPOSE WILL BE ALLOWED IN ALL OTHER AREAS.
9. MANHOLE PRECAST SECTION LENGTHS SHALL BE ARRANGED TO FIT THE REQUIRED DEPTH.
10. NO SEWER LINE PIPE DIAMETERS OF LESS THAN 8" IN DIAMETER SHALL BE CONNECTED TO THE MANHOLE.
11. PRECAST CONCRETE BASE MAY BE USED IN LIEU OF CAST-IN-PLACE BASE.
12. THE USE OF A TYPE I-A MANHOLE REQUIRES APPROVAL FROM THE CITY ENGINEER PRIOR TO CONSTRUCTION.
13. MATCH PIPE INVERTS TO MANHOLE INVERTS WHERE PIPES CONNECT TO MANHOLE BASE.
14. ALL MANHOLES SHALL BE WATERTIGHT.
15. THE USE OF "INSIDE DROP" MANHOLES IS NOT PERMITTED BY THE CITY OF RENO.
16. PRIOR TO BACKFILLING, ALL MANHOLES SHALL BE VACUUM TESTED PER THE REQUIREMENTS OF ASTM C-1244.
17. NO STEPS, LADDERS OR OTHER CLIMBING DEVICES SHALL BE INSTALLED IN THE MANHOLE.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO
1	NOTE 2 10 12 17	01/04	NOTES- MANHOLE TYPE I-A	DRAWING NO. R-208B (306,311)
				DATE 08/00 / PAGE 210
APPROVED BY: G.S.		01/04		



NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO
			MANHOLE TYPE V	DRAWING NO. R-209A (306,311)
APPROVED BY : S.V.		08/00		DATE 08/00 PAGE 211

NOTES:

1. PRECAST MANHOLE COMPONENTS SHALL CONFORM TO ASTM C-478.
2. PIPES SHALL NOT PROTRUDE MORE THAN 3" INSIDE MANHOLE SECTION AS MEASURED AT THE OUTSIDE EDGES OF THE PIPE, VERTICALLY ALIGNED WITH THE SPRINGLINE. CONSTRUCT WATERTIGHT CONNECTION TO MANHOLE. REFER TO STANDARD DETAIL DRAWING NOS. R-219 (311), R-220 (311) AND R-221 (311) FOR PIPE CONNECTION REQUIREMENTS.
3. MANHOLE BASE SHALL BE PORTLAND CEMENT CONCRETE (P.C.C.) AND SHALL HAVE THE FOLLOWING CHARACTERISTICS: 3000 PSI MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS, MINIMUM 6 SACKS OF CEMENT PER CUBIC YARD WITH SLUMP AT 1 TO 4 INCHES. ALL MATERIAL SHALL CONFORM TO SSPWC, SECTION 202.
4. TYPE V MANHOLE TO BE UTILIZED FOR PIPE DIAMETERS OF 15" THROUGH 27" OR DEPTHS EXCEEDING 18 FEET.
5. MANHOLE MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF SECTION 204 "MANHOLES AND CATCH BASINS" OF THE STANDARD SPECIFICATIONS.
6. PRECAST MANHOLE SECTIONS, OTHER THAN GRADE RINGS, SHALL BE JOINED WITH FLEXIBLE PLASTIC GASKET MATERIAL SUCH AS "RAM-NEK" OR EQUAL AS PER MANUFACTURER'S RECOMMENDATIONS.
7. EXCAVATION AND BACKFILL SHALL BE AS SPECIFIED FOR "TRENCH EXCAVATION AND BACKFILL" IN SECTION 305 OF THE STANDARD SPECIFICATIONS.
8. EXCAVATION SHALL BE AS NEARLY VERTICAL AS POSSIBLE (SHEET AND SHORE IF SOIL CONDITIONS REQUIRE), IN EXISTING STREET SECTIONS, ALLEY SECTIONS AND CONFINED AREAS, SUCH AS LIMITED EASEMENTS OR ADJACENT STRUCTURES. NATURAL ANGLE OF REPOSE WILL BE ALLOWED IN ALL OTHER AREAS.
9. MANHOLE PRECAST SECTION LENGTHS SHALL BE ARRANGED TO FIT THE REQUIRED DEPTH.
10. NO SEWER LINE PIPE DIAMETERS OF LESS THAN 8" IN DIAMETER SHALL BE CONNECTED TO THE MANHOLE.
11. PRECAST CONCRETE BASE MAY BE USED IN LIEU OF CAST-IN-PLACE BASE.
12. MATCH PIPE INVERTS TO MANHOLE INVERTS WHERE PIPES CONNECT TO MANHOLE BASE.
13. ALL MANHOLES SHALL BE WATERTIGHT.
14. THE USE OF "INSIDE DROP" MANHOLES IS NOT PERMITTED BY THE CITY OF RENO.
15. REINFORCING STEEL SHALL BE AS SHOWN, WIRED TIGHTLY AT ALL INTERSECTIONS AND EMBEDDED AT LEAST ONE INCH CLEAR, UNLESS OTHERWISE NOTED.
16. PRIOR TO BACKFILLING, ALL MANHOLES SHALL BE VACUUM TESTED PER THE REQUIREMENTS OF ASTM C-1244.
17. NO STEPS, LADDERS OR OTHER CLIMBING DEVICES SHALL BE INSTALLED IN THE MANHOLE.

NO.	REVISION	DATE
1	NOTES 2 10 17	01/04
APPROVED BY G.S.		01/04

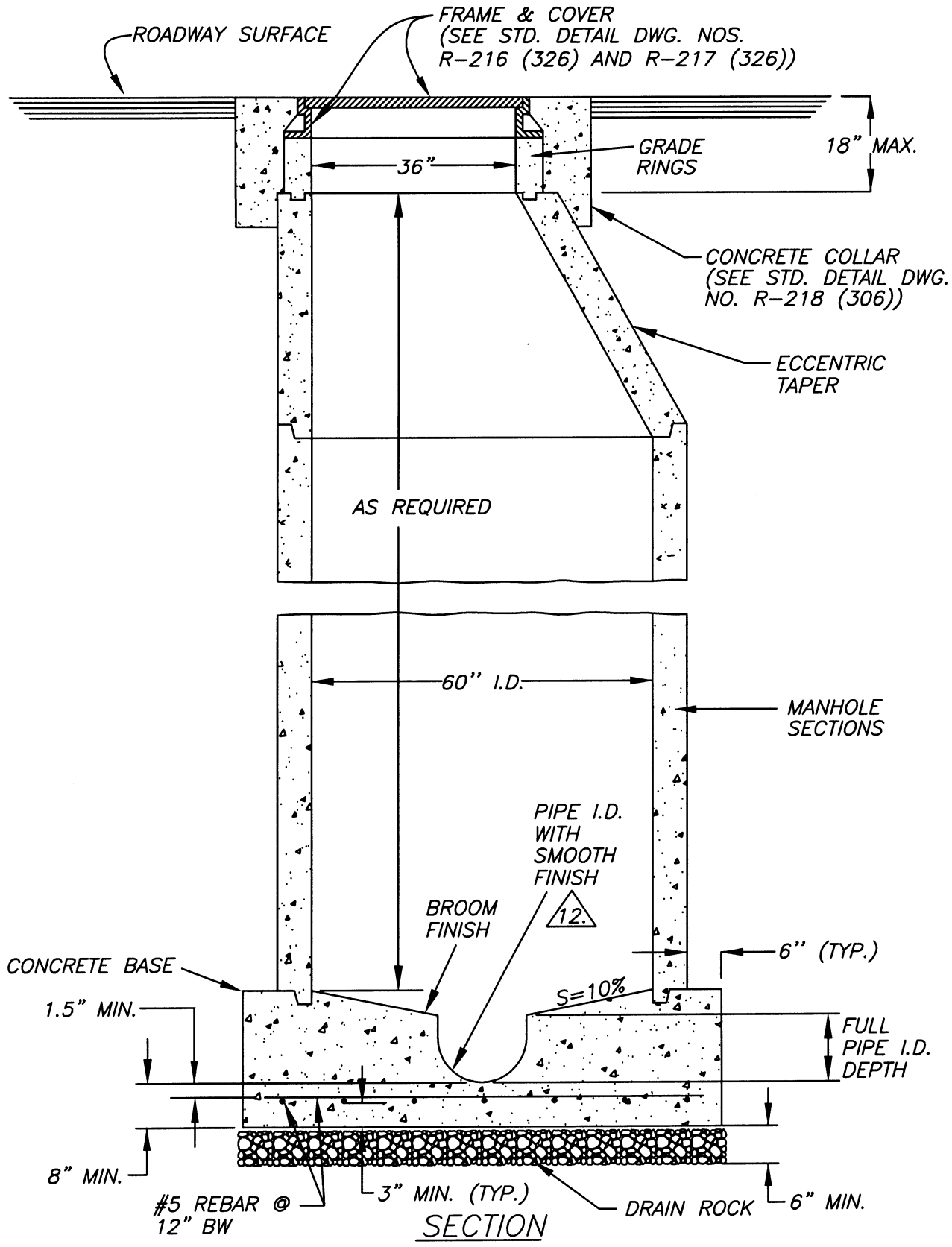
STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

NOTES- MANHOLE TYPE V

SECTION **RENO**

DRAWING NO. R-209B (306,311)

DATE 08/00



NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO
			MANHOLE TYPE V-A	DRAWING NO. R-210A (306,311)
				DATE 08/00 / PAGE 213
APPROVED BY : S.V.		08/00		

NOTES:

1. PRECAST MANHOLE COMPONENTS SHALL CONFORM TO ASTM C-478.
2. PIPES SHALL NOT PROTRUDE MORE THAN 3" INSIDE MANHOLE SECTION AS MEASURED AT THE OUTSIDE EDGES OF THE PIPE, VERTICALLY ALIGNED WITH THE SPRINGLINE. CONSTRUCT WATERTIGHT CONNECTION TO MANHOLE. REFER TO STANDARD DETAIL DRAWING NOS. R-219 (311), R-220 (311) AND R-221 (311) FOR PIPE CONNECTION REQUIREMENTS.
3. MANHOLE BASE SHALL BE PORTLAND CEMENT CONCRETE (P.C.C.) AND SHALL HAVE THE FOLLOWING CHARACTERISTICS: 3000 PSI MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS, MINIMUM 6 SACKS OF CEMENT PER CUBIC YARD WITH SLUMP AT 1 TO 4 INCHES. ALL MATERIAL SHALL CONFORM TO SSPWC, SECTION 202.
4. TYPE V-A MANHOLE TO BE UTILIZED FOR PIPE DIAMETERS OF 15" THROUGH 27" OR DEPTHS EXCEEDING 18 FEET.
5. MANHOLE MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF SECTION 204 "MANHOLES AND CATCH BASINS" OF THE STANDARD SPECIFICATIONS.
6. PRECAST MANHOLE SECTIONS, OTHER THAN GRADE RINGS, SHALL BE JOINED WITH FLEXIBLE PLASTIC GASKET MATERIAL SUCH AS "RAM-NEK" OR EQUAL AS PER MANUFACTURER'S RECOMMENDATIONS.
7. EXCAVATION AND BACKFILL SHALL BE AS SPECIFIED FOR "TRENCH EXCAVATION AND BACKFILL" IN SECTION 305 OF THE STANDARD SPECIFICATIONS.
8. EXCAVATION SHALL BE AS NEARLY VERTICAL AS POSSIBLE (SHEET AND SHORE IF SOIL CONDITIONS REQUIRE), IN EXISTING STREET SECTIONS, ALLEY SECTIONS AND CONFINED AREAS, SUCH AS LIMITED EASEMENTS OR ADJACENT STRUCTURES. NATURAL ANGLE OF REPOSE WILL BE ALLOWED IN ALL OTHER AREAS.
9. MANHOLE PRECAST SECTION LENGTHS SHALL BE ARRANGED TO FIT THE REQUIRED DEPTH.
10. NO SEWER LINE PIPE DIAMETERS OF LESS THAN 8" IN DIAMETER SHALL BE CONNECTED TO THE MANHOLE.
11. PRECAST CONCRETE BASE MAY BE USED IN LIEU OF CAST-IN-PLACE BASE.
12. MATCH PIPE INVERTS TO MANHOLE INVERTS WHERE PIPES CONNECT TO MANHOLE BASE.
13. ALL MANHOLES SHALL BE WATERTIGHT.
14. THE USE OF "INSIDE DROP" MANHOLES IS NOT PERMITTED BY THE CITY OF RENO.
15. REINFORCING STEEL SHALL BE AS SHOWN, WIRED TIGHTLY AT ALL INTERSECTIONS AND EMBEDDED AT LEAST ONE INCH CLEAR, UNLESS OTHERWISE NOTED.
16. PRIOR TO BACKFILLING, ALL MANHOLES SHALL BE VACUUM TESTED PER THE REQUIREMENTS OF ASTM C-1244.
17. THE USE OF A TYPE V-A MANHOLE REQUIRES APPROVAL FROM THE CITY ENGINEER PRIOR TO CONSTRUCTION.
18. NO STEPS, LADDERS OR OTHER CLIMBING DEVICES SHALL BE INSTALLED IN THE MANHOLE.

NO.	REVISION	DATE
1	NOTE 2 10 17 18	01/04
APPROVED BY G.S.		01/04

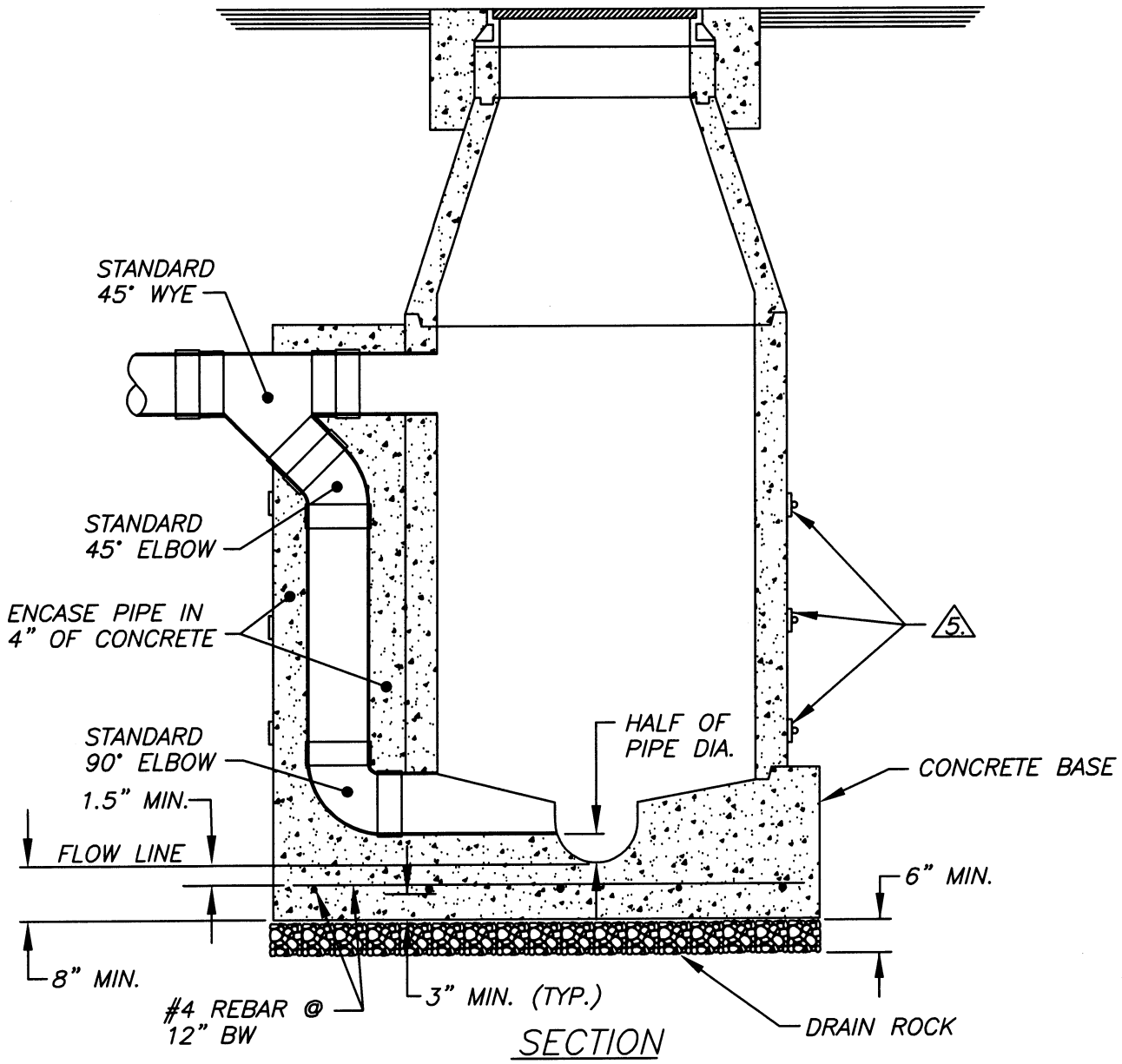
STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

NOTES- MANHOLE TYPE V-A

SECTION **RENO**

DRAWING NO. R-210B (306,311)

DATE 08/00



SECTION

NOTES:

1. FOR DIMENSIONS, NOTES AND DETAILS NOT SHOWN, REFER TO THE APPLICABLE STANDARD DETAIL DRAWING NOS. R-207A THROUGH R-210B.
2. CONSTRUCTION OF AN OUTSIDE DROP MANHOLE MUST BE APPROVED IN WRITING BY THE CITY ENGINEER IN ADVANCE OF ANY CONSTRUCTION.
3. OUTSIDE DROP MANHOLES ARE TO BE USED ON SANITARY SEWERS WITH MORE THAN 2 FEET VERTICAL DROP AT THE MANHOLE, NOT TO EXCEED 8 FEET, UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
4. SANITARY SEWER PIPE COMPONENTS OF THE OUTSIDE DROP CONFIGURATION SHALL BE SDR35 PVC PIPE PER ASTM D-3034 OR F-679.

5. INSTALL A MINIMUM OF THREE (3) ONE INCH STAINLESS STEEL STRAPS AROUND MANHOLE AND OUTSIDE DROP SECTION TO SECURE DROP SECTION IN PLACE.

NO.	REVISION	DATE
1	ADD NOTE 5	01/04
APPROVED BY: G.S.		01/04

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

OUTSIDE DROP MANHOLE

SECTION **RENO**

DRAWING NO. R-211 (306,311)

DATE 08/00

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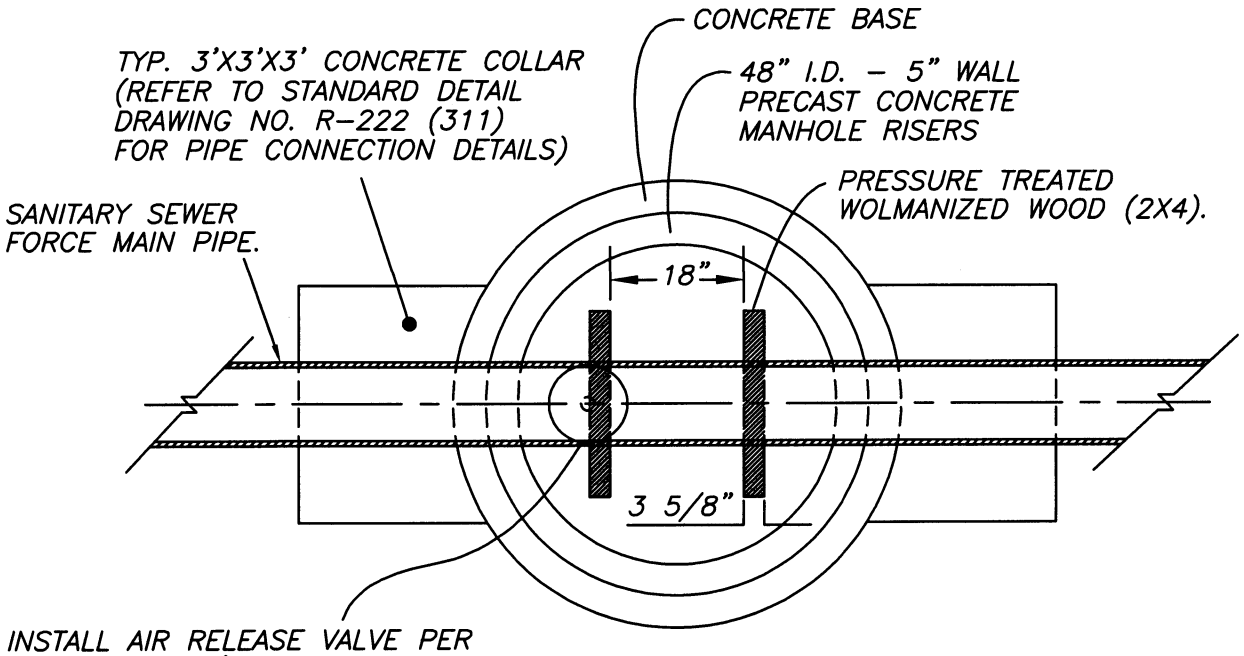

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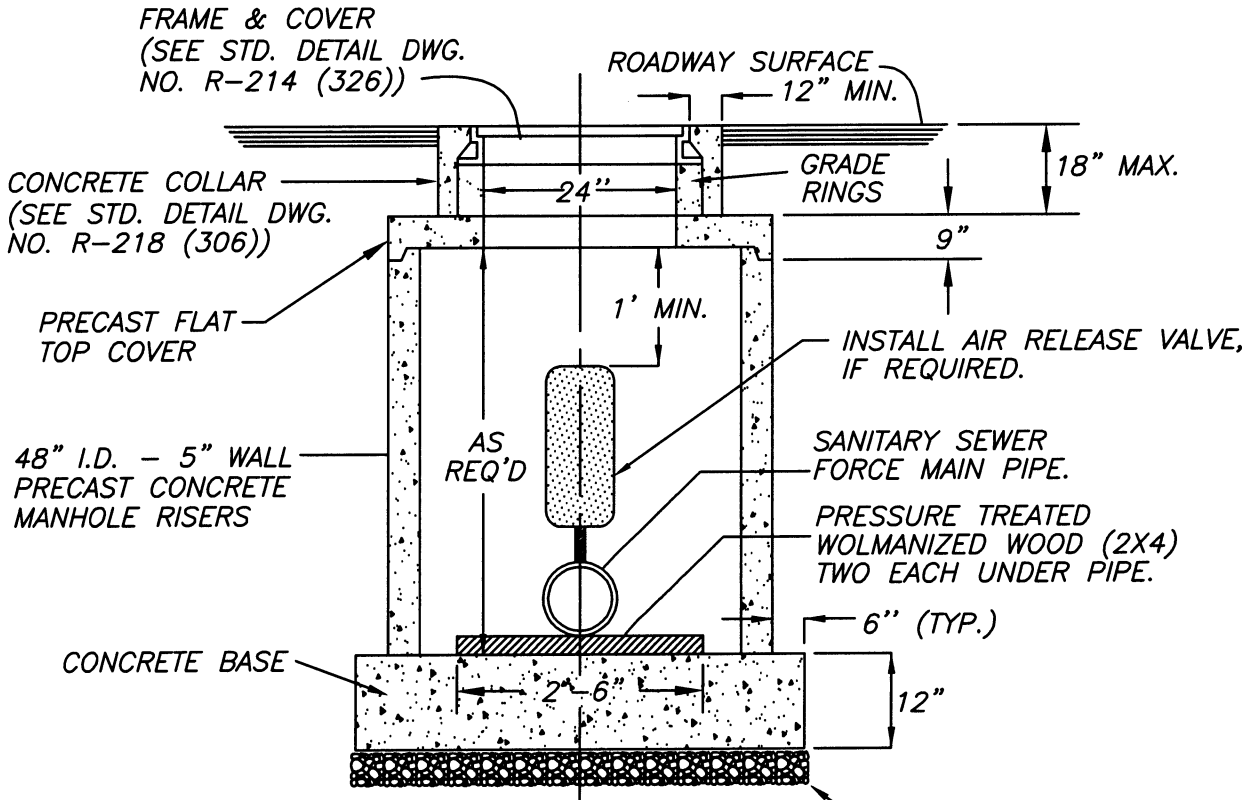

SECTION
(ROTATED 90°)

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO
1	RISER CALLOUT	02/01	FORCE MAIN PASS-THROUGH MANHOLE	DRAWING NO. R-212A (306,311)
				DATE 08/00 / PAGE 216
APPROVED BY: S.V.		02/01		

NOTES:

1. PRECAST MANHOLE COMPONENTS SHALL CONFORM TO ASTM C-478.
2. PIPE JOINT CONNECTIONS WILL NOT BE ALLOWED INSIDE THE MANHOLE OR WITHIN 5 FEET OF THE CONCRETE COLLARS FOR ALL NON-HDPE PIPE INSTALLATIONS.
3. MANHOLE BASE SHALL BE PORTLAND CEMENT CONCRETE (P.C.C.) AND SHALL HAVE THE FOLLOWING CHARACTERISTICS: 3000 PSI MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS, MINIMUM 6 SACKS OF CEMENT PER CUBIC YARD WITH SLUMP AT 1 TO 4 INCHES. ALL MATERIAL SHALL CONFORM TO SSPWC, SECTION 202.
4. MANHOLE MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF SECTION 204 "MANHOLES AND CATCH BASINS" OF THE STANDARD SPECIFICATIONS.
5. PRECAST MANHOLE SECTIONS, OTHER THAN GRADE RINGS, SHALL BE JOINED WITH FLEXIBLE PLASTIC GASKET MATERIAL SUCH AS "RAM-NEK" OR EQUAL AS PER MANUFACTURER'S RECOMMENDATIONS.
6. EXCAVATION AND BACKFILL SHALL BE AS SPECIFIED FOR "TRENCH EXCAVATION AND BACKFILL" IN SECTION 305 OF THE STANDARD SPECIFICATIONS.
7. EXCAVATION SHALL BE AS NEARLY VERTICAL AS POSSIBLE (SHEET AND SHORE IF SOIL CONDITIONS REQUIRE), IN EXISTING STREET SECTIONS, ALLEY SECTIONS AND CONFINED AREAS, SUCH AS LIMITED EASEMENTS OR ADJACENT STRUCTURES. NATURAL ANGLE OF REPOSE WILL BE ALLOWED IN ALL OTHER AREAS.
8. PRECAST CONCRETE BASE MAY BE USED IN LIEU OF CAST-IN-PLACE BASE.
9. REFER TO STANDARD DETAIL DRAWING NO. R-222 (311) FOR PIPE CONNECTION REQUIREMENTS.
10. ALL MANHOLES SHALL BE WATERTIGHT.
11. PRIOR TO BACKFILLING, ALL MANHOLES SHALL BE VACUUM TESTED PER THE REQUIREMENTS OF ASTM C-1244.
12. NO STEPS, LADDERS OR OTHER CLIMBING DEVICES SHALL BE INSTALLED IN THE MANHOLE.

NO.	REVISION	DATE
1	ADD NOTE 12	01/04
APPROVED BY G.S.		01/04

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

NOTES-FORCE MAIN PASS-THROUGH MANHOLE

SECTION **RENO**

DRAWING NO. R-212B (306,311)

DATE 08/00

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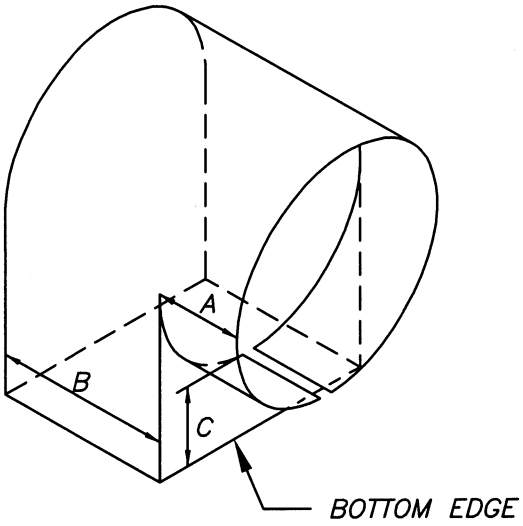


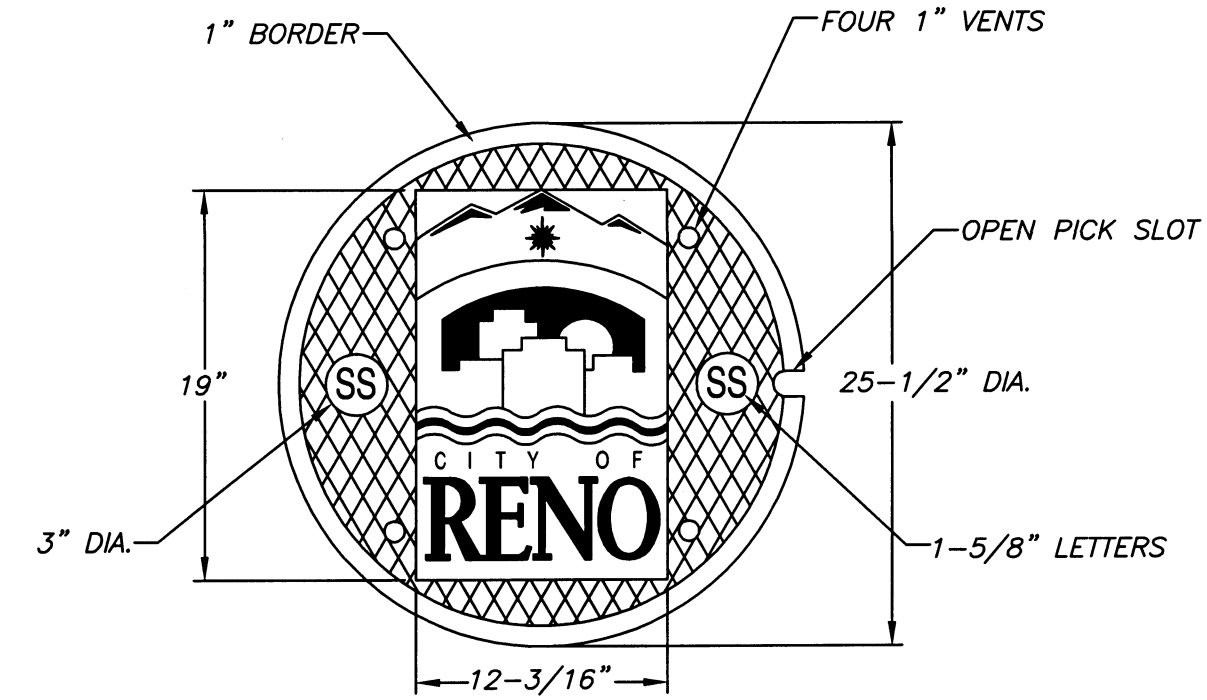
DIMENSIONS			
SIZE	A	B	C
4"	3"	3"	3"
6"	4"	5"	4"
8"	4"	6.5"	4"
10"	4"	8"	4"
12"	5"	10"	4"
15"	6"	10.5"	6.5"

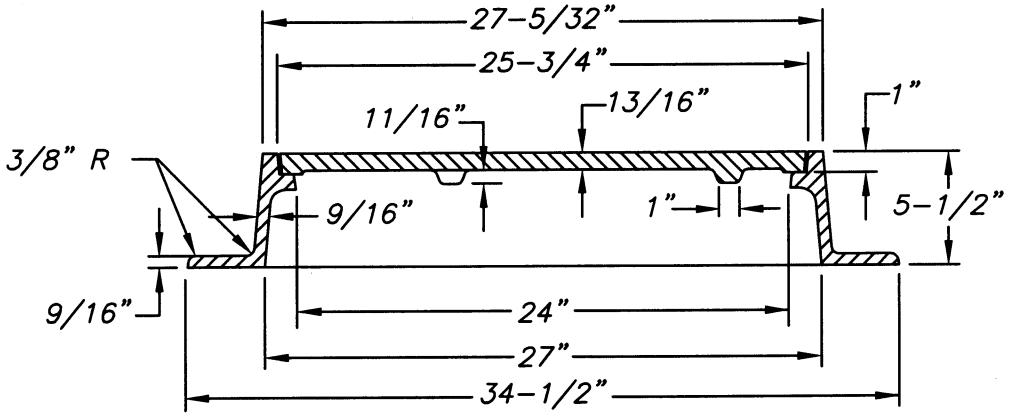
NOTES:

1. ALL CATCH BASINS SHALL BE PROVIDED WITH A "SUR-TRAP" GREASE TRAP OR APPROVED EQUAL.

2. INSTALL GREASE TRAP WITH THE BOTTOM EDGE PARALLEL TO THE WATER SURFACE AND THE RECTANGULAR OPENING FACING DOWNWARD AND THE CIRCULAR END PLACED INSIDE THE OUTLET PIPE.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO	
			"SUR-TRAP" GREASE TRAP	DRAWING NO. R-213 (311)	
				DATE 08/00	PAGE 218
APPROVED BY: S.V.		08/00			





NOTES:

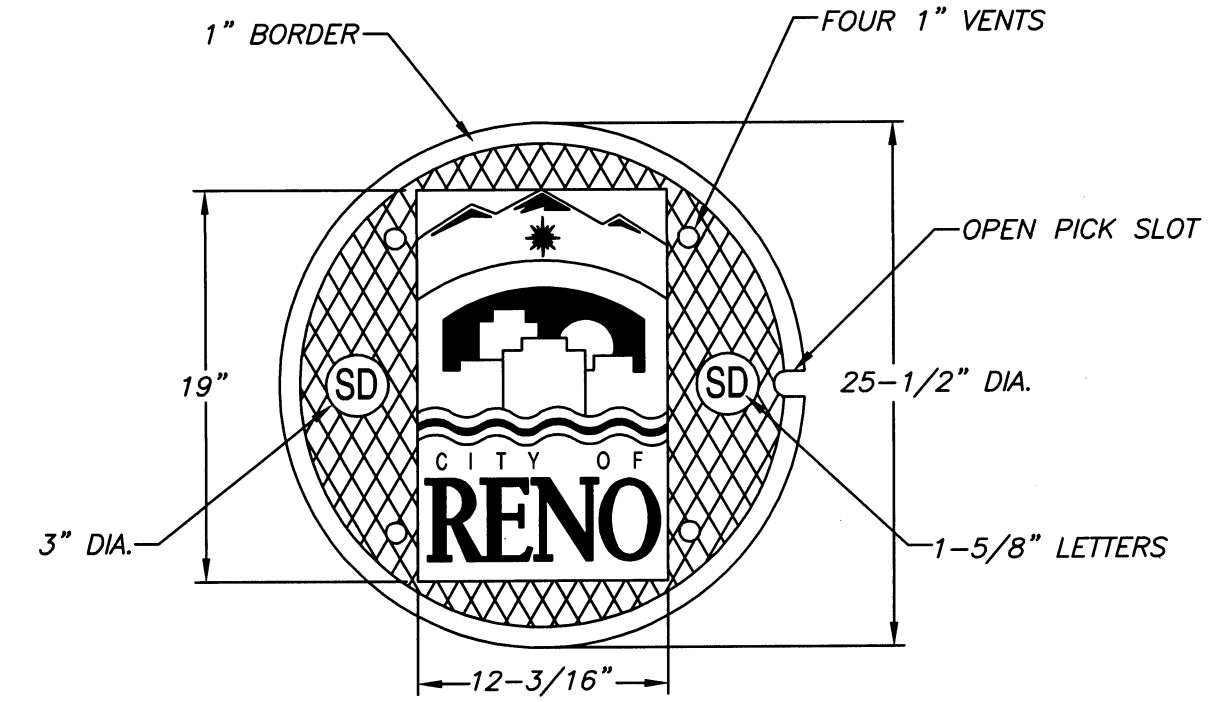
1. SPECIAL CIRCUMSTANCES MAY REQUIRE THE NEED FOR WATERTIGHT FRAMES, GASKETED OR BOLTED LIDS, ETC. AS DIRECTED BY THE CITY OF RENO. DETAILED PLANS OF ANY SPECIAL MANHOLE FRAMES AND/OR COVERS MUST BE APPROVED BY THE CITY ENGINEER.
2. DEETER FOUNDRY COVER AND FRAME #9020 OR APPROVED EQUAL.
3. THE UTILIZATION OF THIS FRAME AND COVER IN FLOOD SUSCEPTIBLE AREAS SHALL BE DETERMINED BY THE CITY ENGINEER.
4. FURNISHED WITH MACHINED HORIZONTAL BEARING SURFACE.
5. CAST GRAY IRON, ASTM A-48, CLASS 35B, NO PAINT.

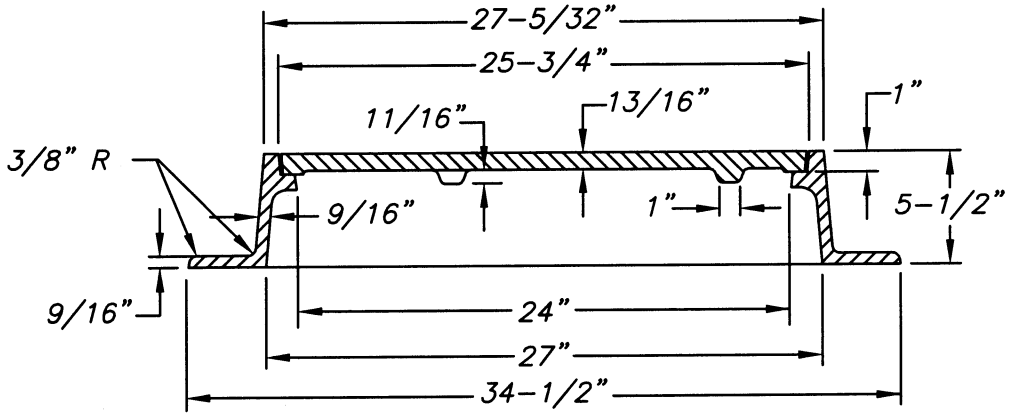
NO.	REVISION	DATE
1	LOGO MANHOLE	01/04
APPROVED BY: G.S.		01/04

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

24" SANITARY SEWER MANHOLE FRAME & COVER

SECTION	RENO
DRAWING NO.	R-214 (326)
DATE	08/00
PAGE	219





NOTES:

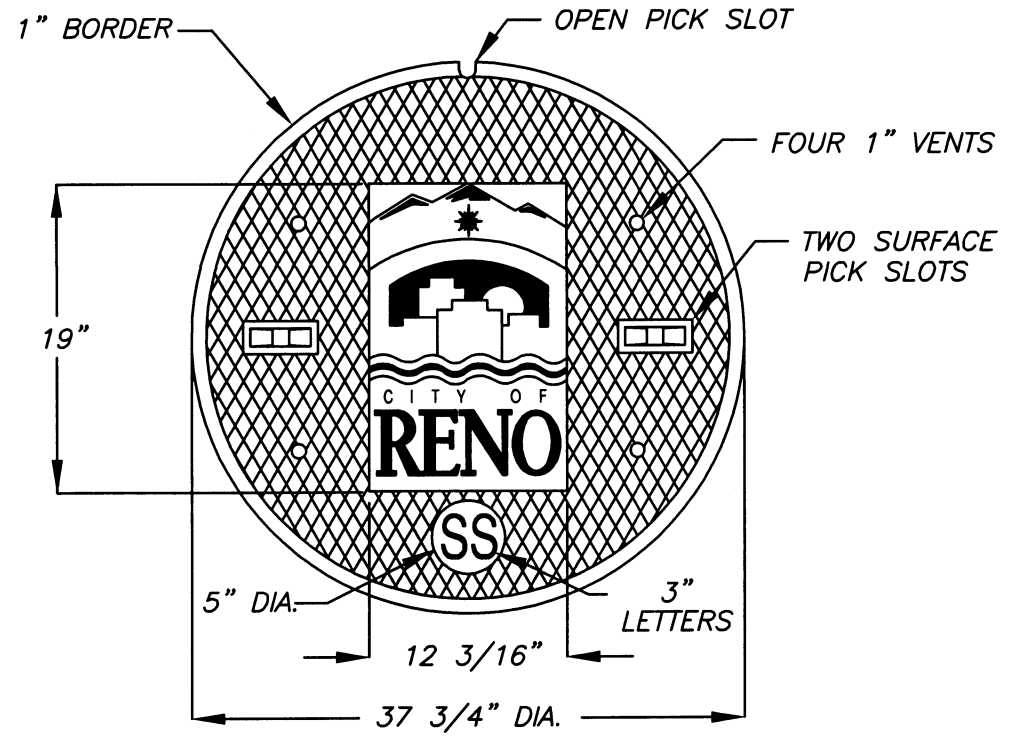
1. SPECIAL CIRCUMSTANCES MAY REQUIRE THE NEED FOR WATERTIGHT FRAMES, GASKETED OR BOLTED LIDS, ETC. AS DIRECTED BY THE CITY OF RENO. DETAILED PLANS OF ANY SPECIAL MANHOLE FRAMES AND/OR COVERS MUST BE APPROVED BY THE CITY ENGINEER.
2. DEETER FOUNDRY COVER AND FRAME #9020 OR APPROVED EQUAL.
3. FURNISHED WITH MACHINED HORIZONTAL BEARING SURFACE.
4. CAST GRAY IRON, ASTM A-48, CLASS 35B, NO PAINT.

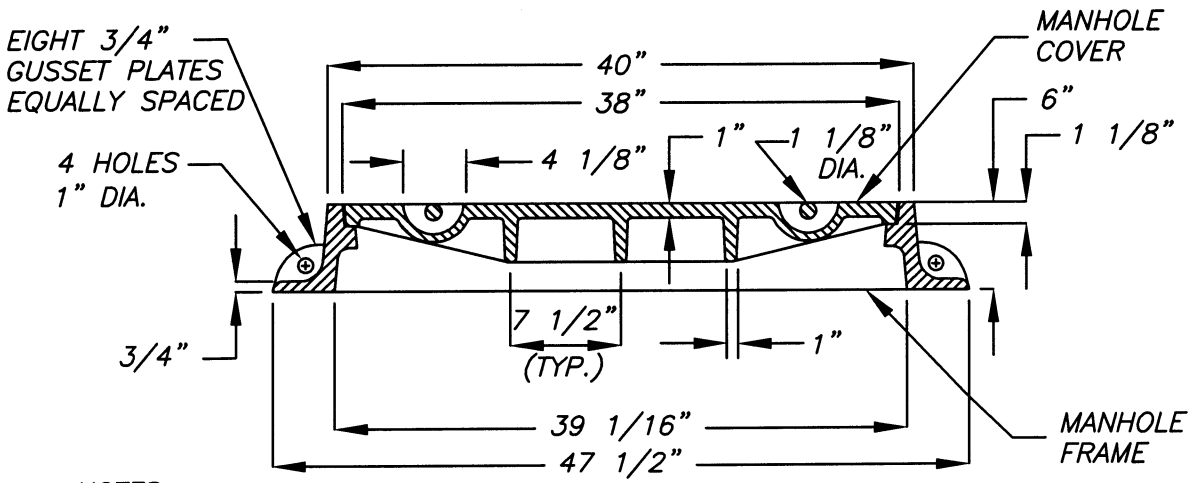
NO.	REVISION	DATE
1	LOGO MANHOLE	01/04
APPROVED BY: G.S.		01/04

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

24" STORM DRAIN MANHOLE FRAME & COVER

SECTION	RENO
DRAWING NO.	R-215 (326)
DATE	08/00
PAGE	220





NOTES:

1. SPECIAL CIRCUMSTANCES MAY REQUIRE THE NEED FOR WATERTIGHT FRAMES, GASKETED OR BOLTED LIDS, ETC. AS DIRECTED BY THE CITY OF RENO. DETAILED PLANS OF ANY SPECIAL MANHOLE FRAMES AND/OR COVERS MUST BE APPROVED BY THE CITY ENGINEER.
2. THE UTILIZATION OF THIS FRAME AND COVER IN FLOOD SUSCEPTIBLE AREAS SHALL BE DETERMINED BY THE CITY ENGINEER.
3. DEETER FOUNDRY COVER AND FRAME #9022 OR APPROVED EQUAL.
4. FURNISHED WITH MACHINED HORIZONTAL BEARING SURFACE.
5. CAST GRAY IRON, ASTM-A-48, CLASS 35B, NO PAINT.

NO.	REVISION	DATE
1	LOGO MANHOLE	01/04
APPROVED BY: G.S.		01/04

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

36" SANITARY SEWER MANHOLE FRAME & COVER

SECTION RENO

DRAWING NO. R-216 (326)

DATE 08/00

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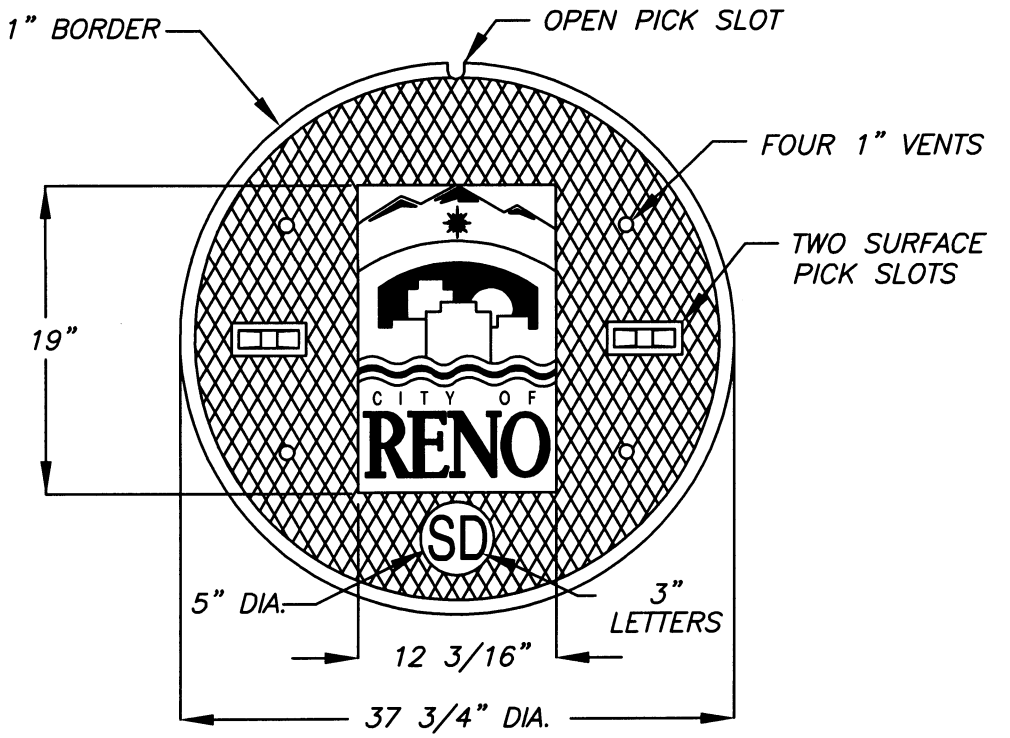
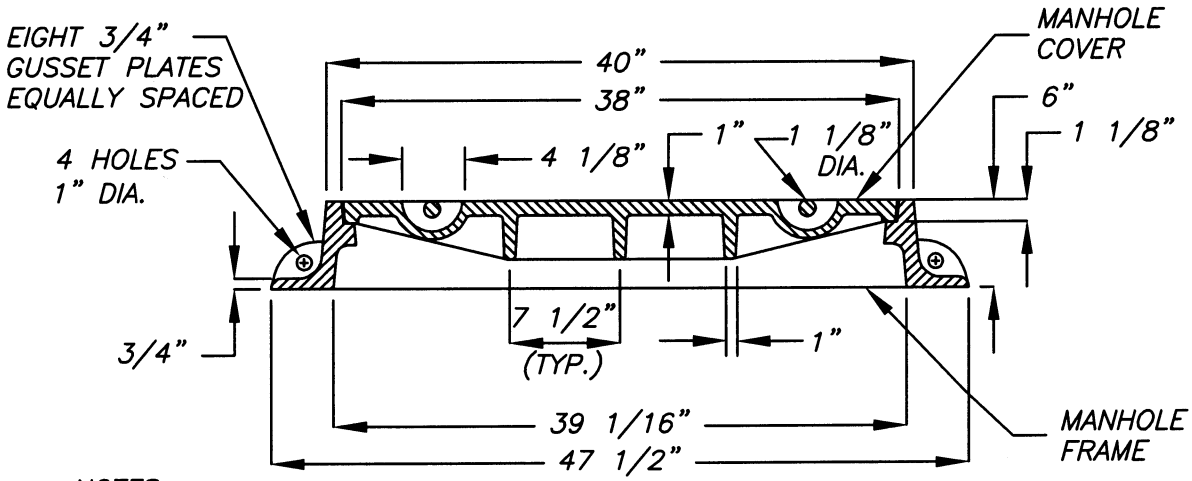
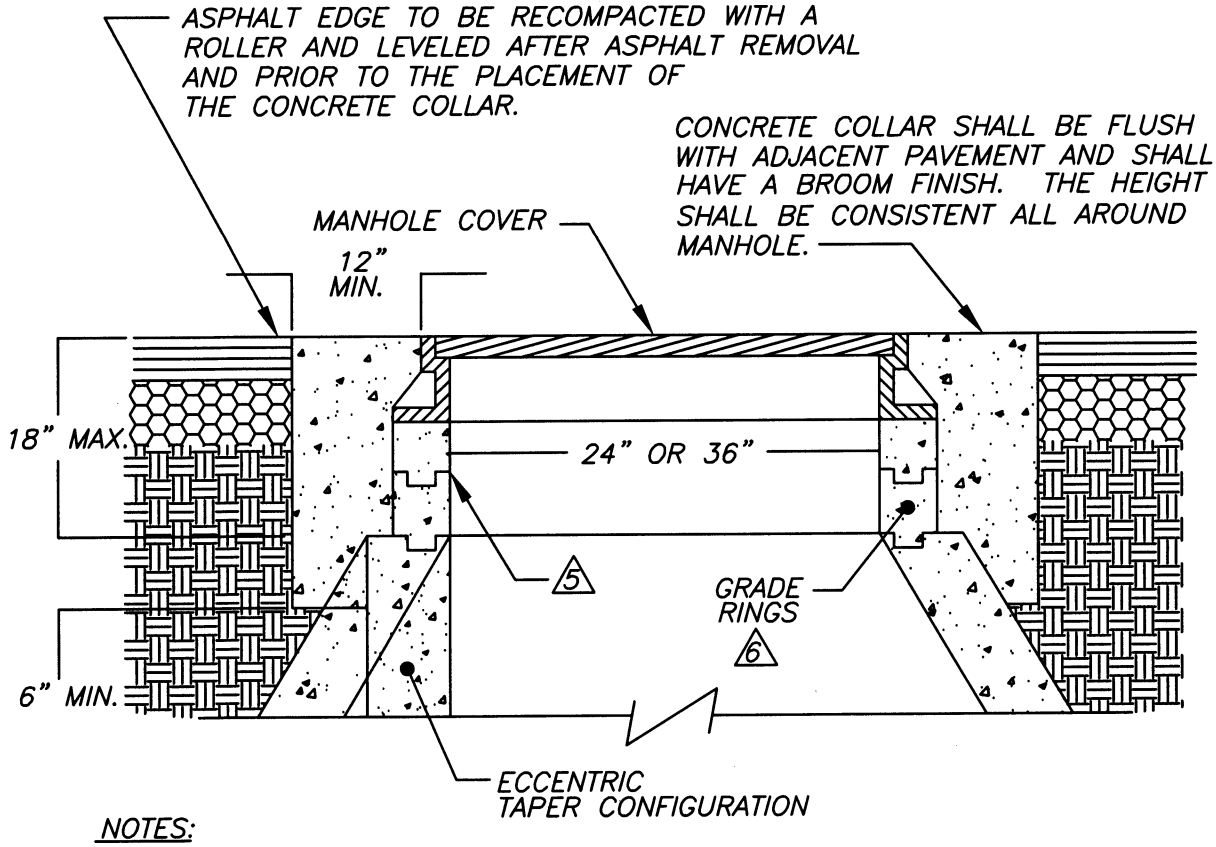




NOTES:

1. SPECIAL CIRCUMSTANCES MAY REQUIRE THE NEED FOR WATERTIGHT FRAMES, GASKETED OR BOLTED LIDS, ETC. AS DIRECTED BY THE CITY OF RENO. DETAILED PLANS OF ANY SPECIAL MANHOLE FRAMES AND/OR COVERS MUST BE APPROVED BY THE CITY ENGINEER.
2. DEETER FOUNDRY COVER AND FRAME #9022 OR APPROVED EQUAL.
3. FURNISHED WITH MACHINED HORIZONTAL BEARING SURFACE.
4. CAST GRAY IRON, ASTM-A-48, CLASS 35B, NO PAINT.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO	
1	LOGO MANHOLE	01/04	36" STORM DRAIN MANHOLE FRAME & COVER	DRAWING NO. R-217 (326)	
				DATE 08/00	PAGE 222
APPROVED BY: G.S.		01/04			



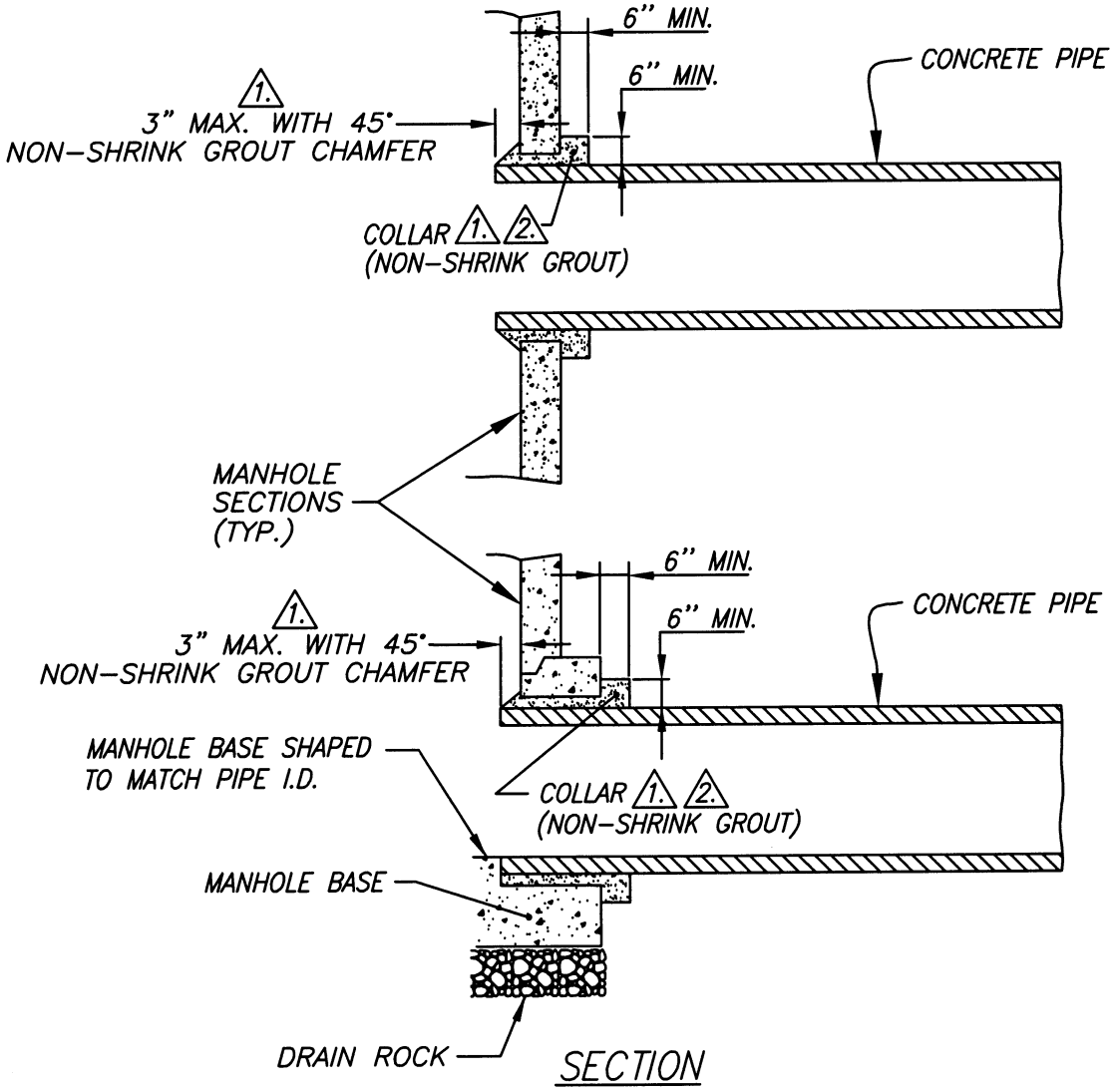
NOTES:

1. CONCRETE COLLAR TO BE PORTLAND CEMENT CONCTRETE (P.C.C.) WITH THE FOLLOWING CHARACTERISTICS: 4000 PSI MIN. COMPRESSIVE STRENGTH AT 28 DAYS, MIN. 6 SACKS OF CEMENT PER CUBIC YARD WITH A MAX. WATER/CEMENT RATIO OF 0.45, AIR ENTRAINMENT 6% ±1.5% AND SLUMP AT 1 TO 4 INCHES. ALL MATERIAL SHALL CONFORM TO SSPWC SECTION 202.
2. CIRCUMSTANCES MAY REQUIRE THE NEED FOR SPECIAL TYPES OF TOP OF MANHOLE CONFIGURATIONS SUCH AS FLAT TOP, ABOVE GROUND, ETC. AS DIRECTED BY THE CITY OF RENO. DETAILED PLANS OF ANY SPECIAL TOP OF MANHOLE CONFIGURATIONS AND ASSOCIATED COLLARS MUST BE APPROVED BY THE ENGINEER.
3. IN UNPAVED AREAS, IT SHALL BE NECESSARY TO SET THE MANHOLE RIM APPROXIMATELY 6 INCHES ABOVE THE SURROUNDING AREA. INSTALL A 6 INCH THICK RING OF CONCRETE, TAPERED AT A 3:1 SLOPE, FROM THE TOP, OUTSIDE EDGE OF THE COLLAR TO THE EXISTING GROUND SURFACE.
4. MANHOLE LIDS SHALL NOT BE LOCATED IN GUTTER PANS, UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.

5. ALL GRADE RING JOINTS ARE TO BE GROUTED WITH NON-SHRINK GROUT HAVING THE FOLLOWING CHARACTERISTICS: 3000 PSI MIN. COMPRESSIVE STRENTH AT 28 DAYS, MIN. 6 SACKS OF CEMENT PER CUBIC YARD AND SLUMP AT 1 TO 4 INCHES. ALL MATERIAL SHALL CONFORM TO SSPWC SECTION 202.

6. ALL GRADE RINGS SHALL BE PORTLAND CEMENT CONCRETE. PVC GRADE RINGS ARE NOT ALLOWED.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO	
1	NOTES 5 & 6	01/04	MANHOLE COLLAR	DRAWING NO. R-218 (306)	
				DATE 08/00	PAGE 223
APPROVED BY: G.S.		01/04			



SECTION

NOTES:

1. NON-SHRINK GROUT SHALL HAVE THE FOLLOWING CHARACTERISTICS: 3000 PSI MIN. COMPRESSIVE STRENGTH AT 28 DAYS, MIN. 6 SACKS OF CEMENT PER CUBIC YARD AND SLUMP AT 1 TO 4 INCHES. ALL MATERIAL SHALL CONFORM TO SSPWC SECTION 202.

2. AN AGENCY-APPROVED FORM OF SEAL OR WATER STOP IS REQUIRED ON ALL SANITARY SEWER INSTALLATIONS AND IN OTHER APPLICATIONS AS REQUIRED BY THE CITY TO PROVIDE A WATERTIGHT CONNECTION.

3. A RESILIENT FLEXIBLE CONNECTOR INSTALLED IN ACCORDANCE WITH STD. CONNECTION DETAIL A OF STD. DETAIL R-223 (311) MAY BE USED TO SATISFY THE REQUIREMENTS OF NOTE 2 ABOVE.

4. ALL PIPE OPENINGS TO NEW MANHOLES MUST BE EITHER CAST-IN-PLACE OR PRE-FORMED AND PIPE OPENINGS TO EXISTING MANHOLES MUST BE CORE DRILLED.

NO.	REVISION	DATE
1	ELIM. COUPLING	06/01
APPROVED BY: S.V.		06/01

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

CONCRETE SANITARY SEWER PIPE TO MANHOLE

SECTION RENO

DRAWING NO. R-219 311

DATE 08/00

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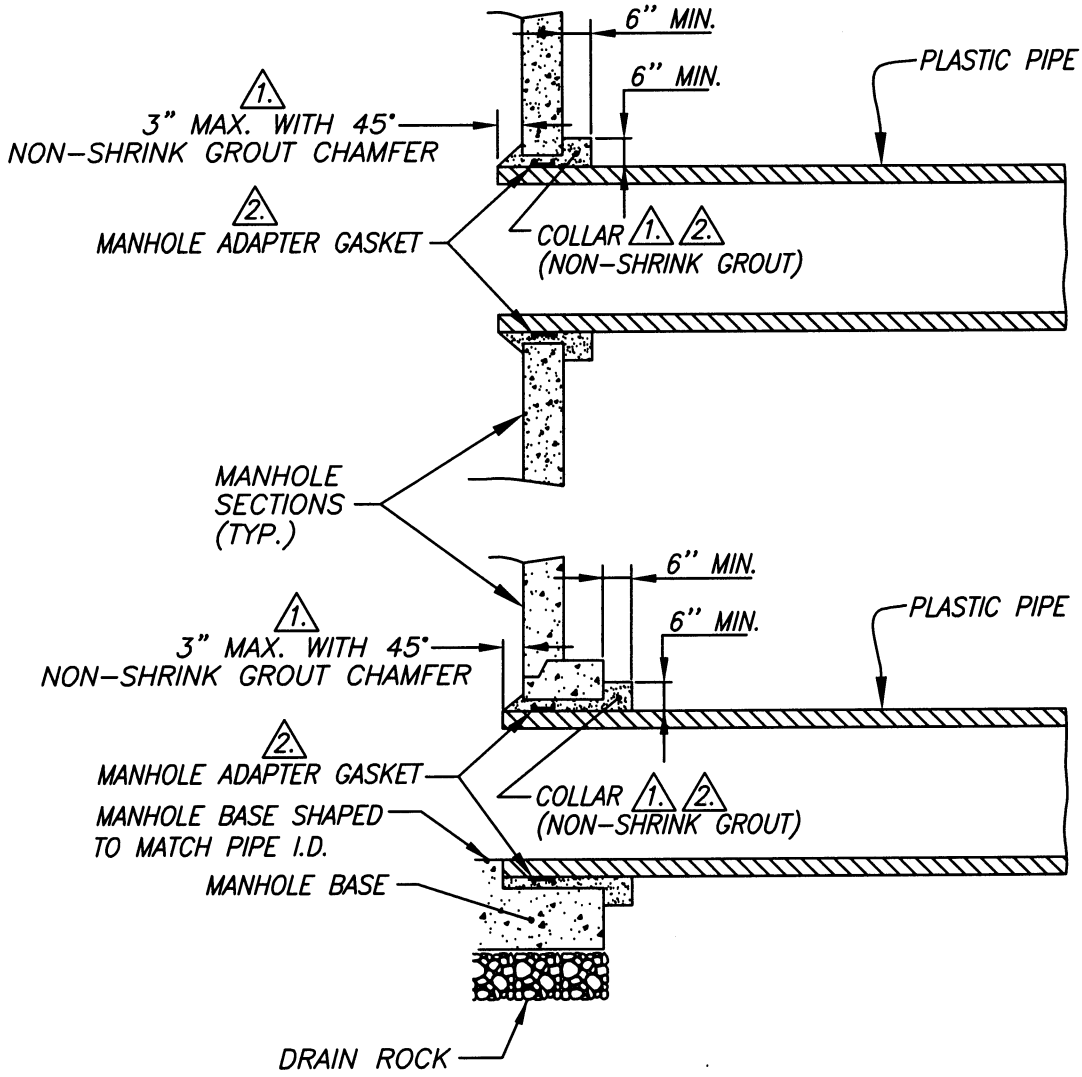


SECTION

NOTES:

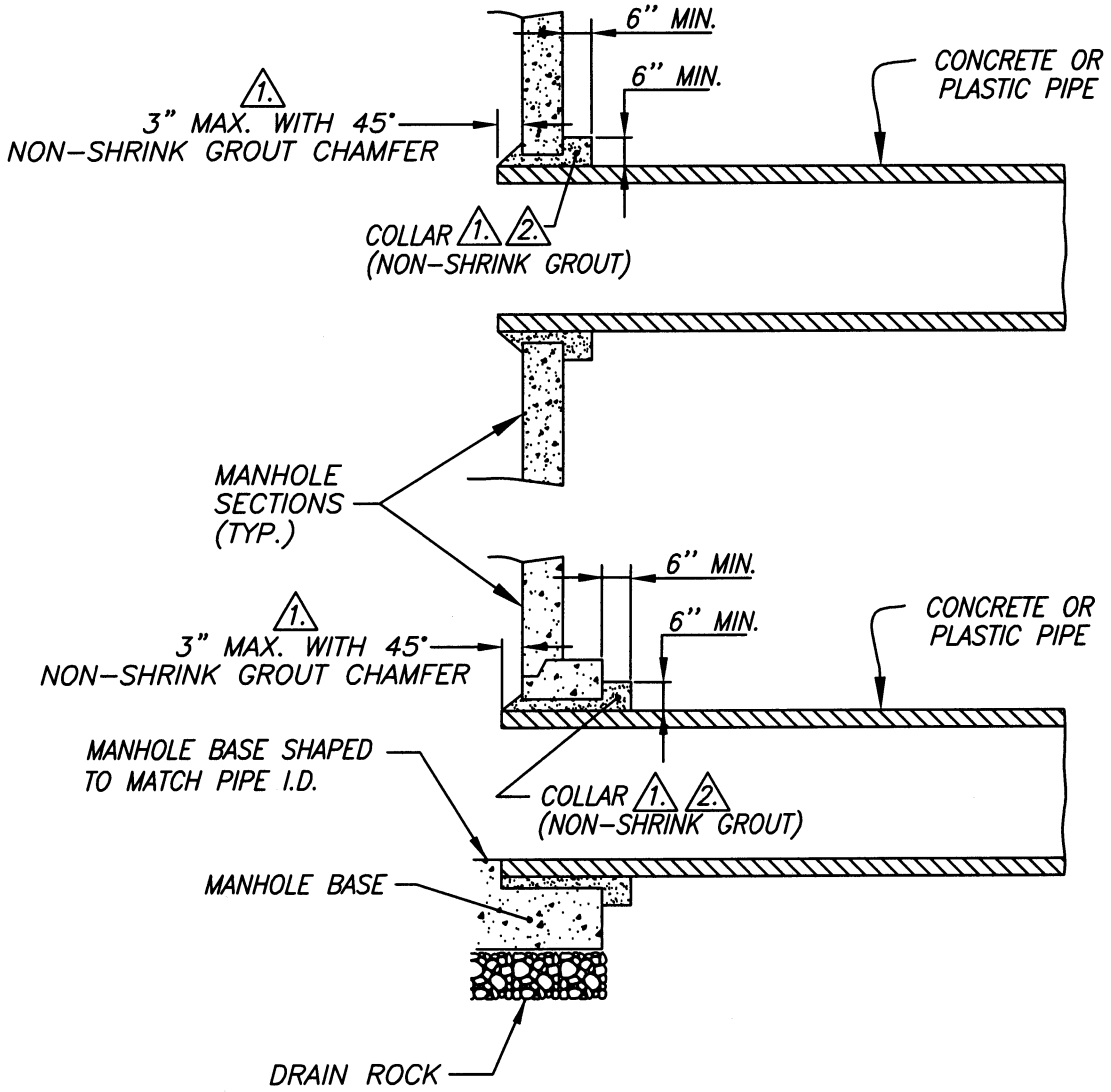
1. NON-SHRINK GROUT SHALL HAVE THE FOLLOWING CHARACTERISTICS: 3000 PSI MIN. COMPRESSIVE STRENGTH AT 28 DAYS, MIN. 6 SACKS OF CEMENT PER CUBIC YARD AND SLUMP AT 1 TO 4 INCHES. ALL MATERIAL SHALL CONFORM TO SSPWC SECTION 202.

2. AN AGENCY-APPROVED FORM OF SEAL OR WATER STOP IS REQUIRED ON ALL SANITARY SEWER INSTALLATIONS AND IN OTHER APPLICATIONS AS REQUIRED BY THE CITY TO PROVIDE A WATERTIGHT CONNECTION. UTILIZE A ROMAC STYLE "LCT" MANHOLE ADAPTER GASKET OR APPROVED EQUAL IN CONJUNCTION WITH THE NON-SHRINK GROUT.

3. A RESILIENT FLEXIBLE CONNECTOR INSTALLED IN ACCORDANCE WITH STD. CONNECTION DETAIL A OF STD. DETAIL R-223 (311) MAY BE USED TO SATISFY THE REQUIREMENTS OF NOTE 2 ABOVE.

4. ALL PIPE OPENINGS TO NEW MANHOLES MUST BE EITHER CAST-IN-PLACE OR PRE-FORMED AND PIPE OPENINGS TO EXISTING MANHOLES MUST BE CORE DRILLED.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO
			PLASTIC SANITARY SEWER PIPE TO MANHOLE	DRAWING NO. R-220 311
				DATE 08/00 / PAGE 225
APPROVED BY: S.V.		08/00		



SECTION

NOTES:

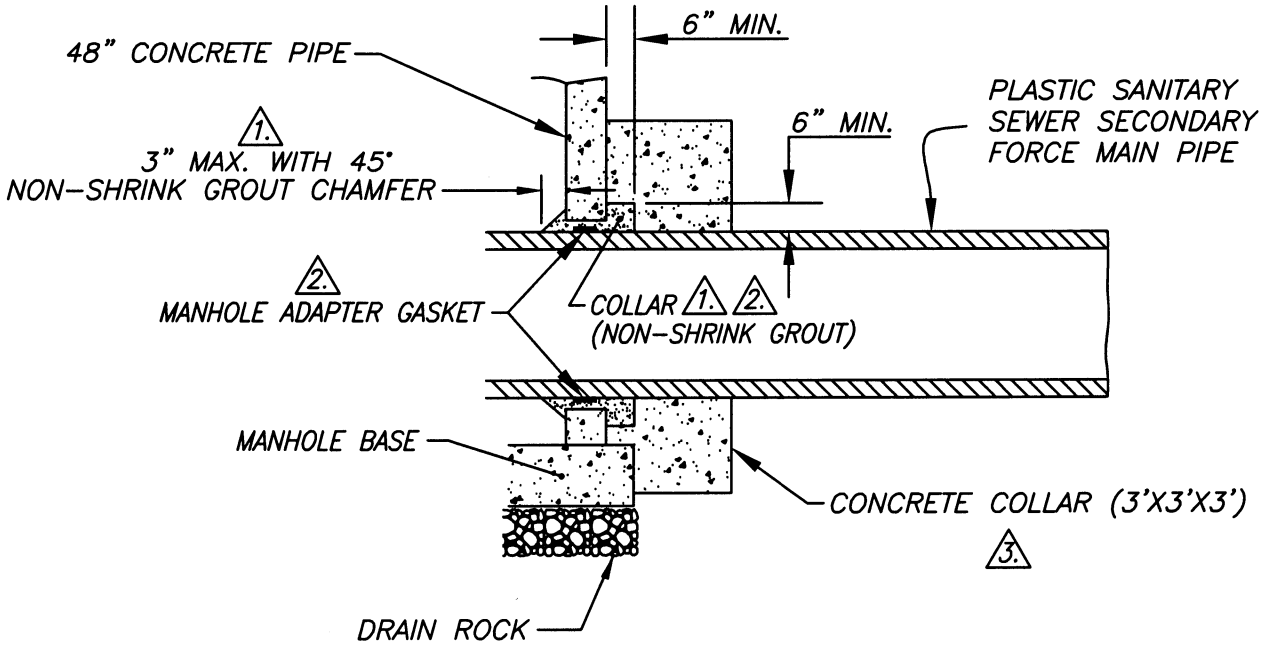
1. NON-SHRINK GROUT SHALL HAVE THE FOLLOWING CHARACTERISTICS: 3000 PSI MIN. COMPRESSIVE STRENGTH AT 28 DAYS, MIN. 6 SACKS OF CEMENT PER CUBIC YARD AND SLUMP AT 1 TO 4 INCHES. ALL MATERIAL SHALL CONFORM TO SSPWC SECTION 202.

2. AN AGENCY-APPROVED FORM OF SEAL OR WATER STOP IS REQUIRED ON ALL STORM DRAIN INSTALLATIONS.

3. A RESILIENT FLEXIBLE CONNECTOR INSTALLED IN ACCORDANCE WITH STD. CONNECTION DETAIL A OF STD. DETAIL R-223 (311) MAY BE USED TO SATISFY THE REQUIREMENTS OF NOTE 2 ABOVE.

4. ALL PIPE OPENINGS TO NEW MANHOLES MUST BE EITHER CAST-IN-PLACE OR PRE-FORMED AND PIPE OPENINGS TO EXISTING MANHOLES MUST BE CORE DRILLED.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO
			CONCRETE/PLASTIC STORM DRAIN PIPE TO MANHOLE	DRAWING NO. R-221 311
				DATE 08/00 PAGE 226
APPROVED BY: S.V.		08/00		



NOTES:

1. NON-SHRINK GROUT SHALL HAVE THE FOLLOWING CHARACTERISTICS: 3000 PSI MIN. COMPRESSIVE STRENGTH AT 28 DAYS, MIN. 6 SACKS OF CEMENT PER CUBIC YARD AND SLUMP AT 1 TO 4 INCHES. ALL MATERIAL SHALL CONFORM TO SSPWC SECTION 202.

2. AN AGENCY-APPROVED FORM OF SEAL OR WATER STOP IS REQUIRED ON ALL SANITARY SEWER INSTALLATIONS AND IN OTHER APPLICATIONS AS REQUIRED BY THE CITY TO PROVIDE A WATERTIGHT CONNECTION. UTILIZE A ROMAC STYLE "LCT" MANHOLE ADAPTER GASKET OR APPROVED EQUAL IN CONJUNCTION WITH THE NON-SHRINK GROUT.

3. CONCRETE COLLAR SHALL BE PORTLAND CEMENT CONCRETE (P.C.C.) AND SHALL HAVE THE FOLLOWING CHARACTERISTICS: 3000 PSI MIN. COMPRESSIVE STRENGTH AT 28 DAYS, MIN. 6 SACKS OF CEMENT PER CUBIC YARD WITH SLUMP AT 1 TO 4 INCHES. ALL MATERIAL SHALL CONFORM TO SSPWC, SECTION 202.

4. ALL PIPE OPENINGS TO NEW MANHOLES MUST BE EITHER CAST-IN-PLACE OR PRE-FORMED AND PIPE OPENINGS TO EXISTING MANHOLES MUST BE CORE DRILLED.

NO.	REVISION	DATE
APPROVED BY: S.V.		08/00

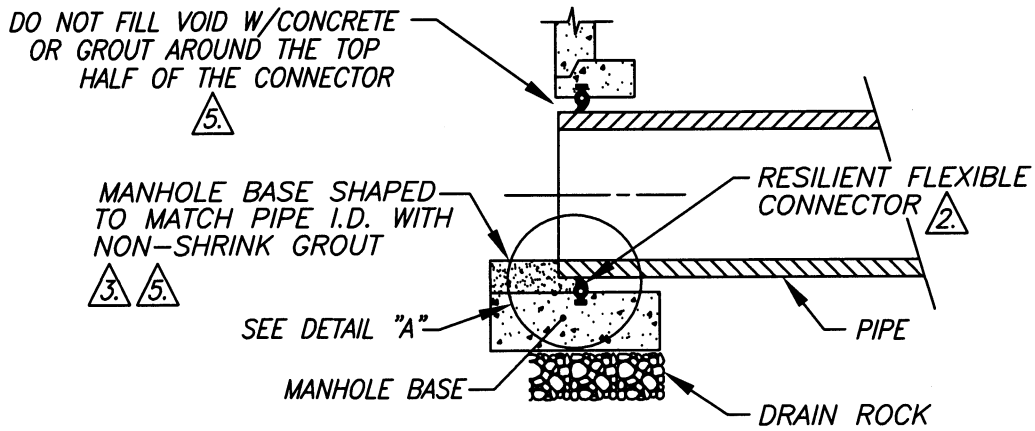
STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

FORCE MAIN SANITARY SEWER PIPE TO PASS-THROUGH MANHOLE

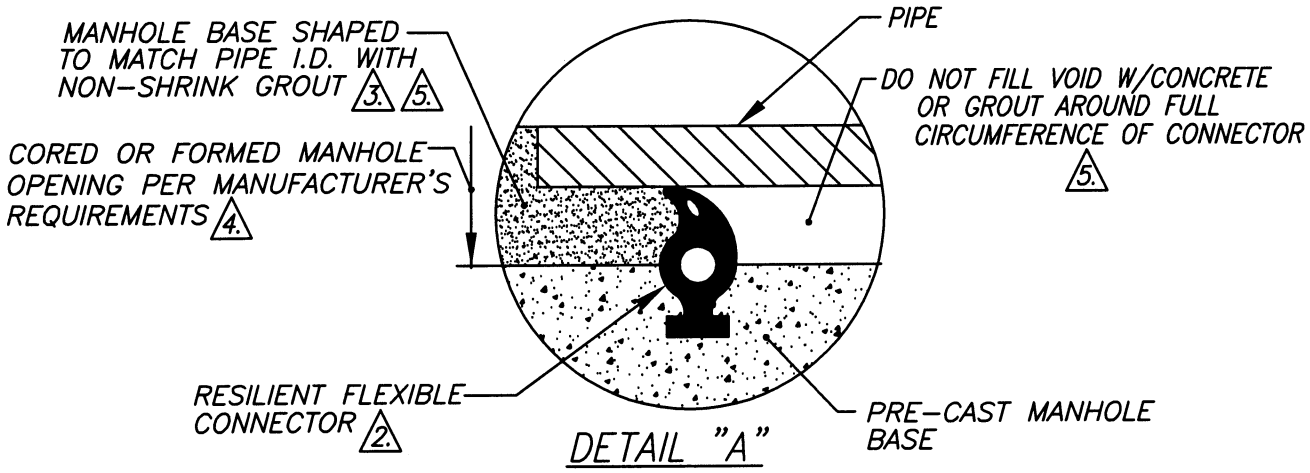
SECTION **RENO**

DRAWING NO. R-222 (311)

DATE 08/00



SECTION - PIPE CONNECTION



DETAIL "A"

NOTES:

1. AN AGENCY-APPROVED FORM OF SEAL OR WATER STOP IS REQUIRED ON ALL SANITARY SEWER AND STORM DRAIN INSTALLATIONS AND IN OTHER APPLICATIONS AS REQUIRED BY THE CITY TO PROVIDE A WATERTIGHT CONNECTION.

2. A RESILIENT FLEXIBLE CONNECTOR PER ASTM C 923-89 MAY BE USED AT THE MANHOLE/PIPE CONNECTION TO SATISFY THE REQUIREMENTS OF NOTE 1. FOR PRE-CAST CONCRETE STRUCTURES, THE RESILIENT FLEXIBLE CONNECTOR SHALL BE AN "A-LOK" TYPE PIPE-TO-MANHOLE CONNECTOR OR APPROVED EQUAL. FOR CAST-IN-PLACE STRUCTURES, THE RESILIENT FLEXIBLE CONNECTOR SHALL BE A "KOR-N-SEAL I - TOGGLE KORBAND" TYPE PIPE-TO-MANHOLE CONNECTOR OR APPROVED EQUAL.

3. NON-SHRINK GROUT SHALL HAVE THE FOLLOWING CHARACTERISTICS: 3000 PSI MIN. COMPRESSIVE STRENGTH AT 28 DAYS, MIN. 6 SACKS OF CEMENT PER CUBIC YARD AND SLUMP AT 1 TO 4 INCHES. ALL MATERIAL SHALL CONFORM TO SSPWC SECTION 202.

4. RESILENT FLEXIBLE CONNECTOR MAY BE USED IN A PRE-CAST OR CAST-IN-PLACE MANHOLE AND INSTALLED IN A FORMED OR CORED MANHOLE OPENING. IN EACH CASE, THE INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

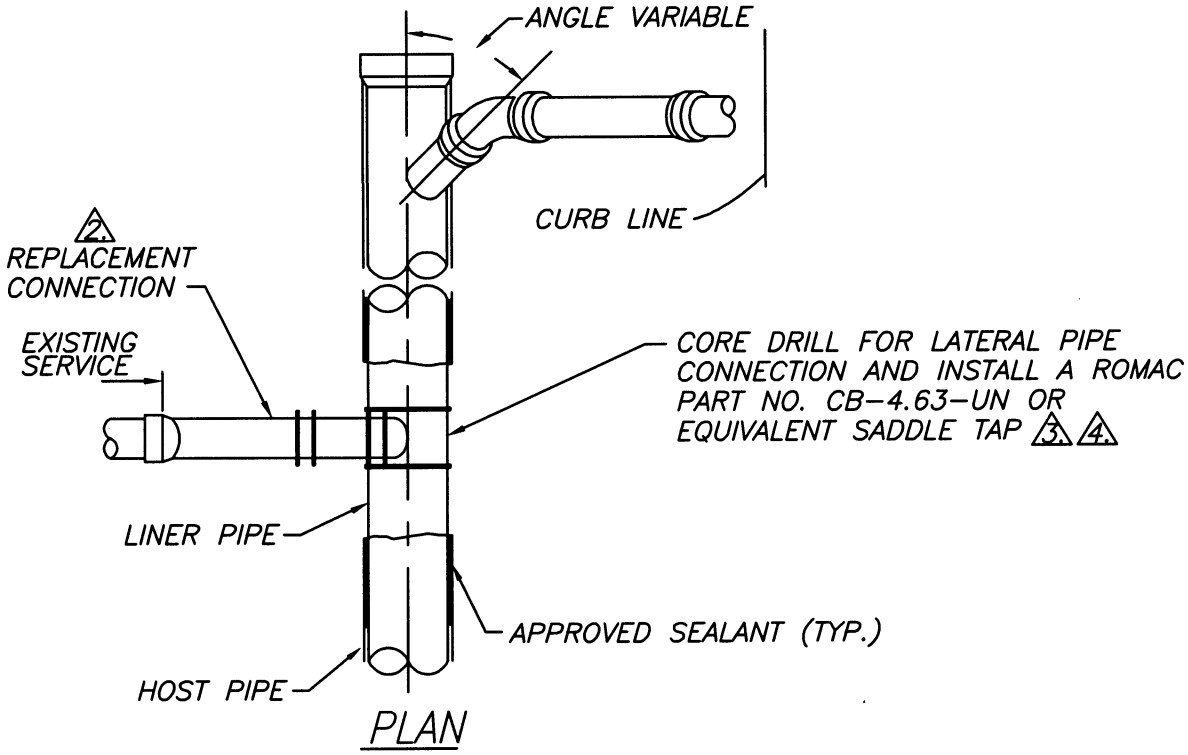
5. NO GROUT OR CONCRETE SHALL BE PLACED AROUND THE CONNECTOR ON THE OUTSIDE OF THE MANHOLE, NOR AROUND THE TOP HALF OF THE CONNECTOR ON THE INSIDE OF THE MANHOLE, WHERE THE PIPE CONNECTS TO THE MANHOLE BASE. FOR PIPE CONNECTIONS ABOVE THE MANHOLE BASE, NO GROUT OR CONCRETE SHALL BE PLACED AROUND NEITHER THE INSIDE NOR THE OUTSIDE OF THE ENTIRE CIRCUMFERENCE OF THE CONNECTOR.

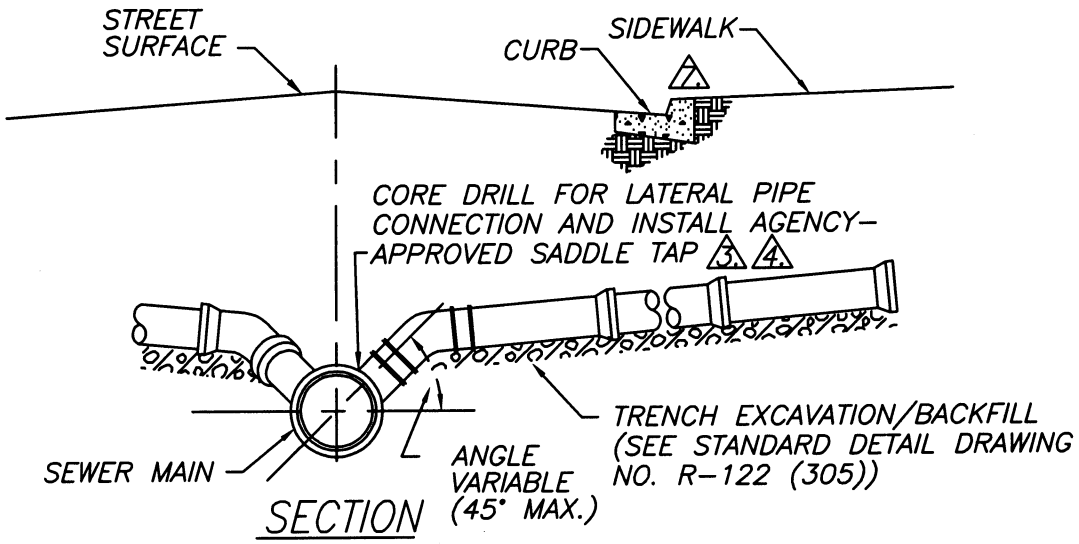
NO.	REVISION	DATE
APPROVED BY S.V.		08/00

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

RESILIENT FLEXIBLE PIPE CONNECTOR TO MANHOLE

SECTION	RENO
DRAWING NO.	R-223 (311)
DATE	08/00
PAGE	228





NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO	
			LATERAL DETAIL	DRAWING NO. R-224A (306)	
				DATE 01/04	PAGE 229
APPROVED BY: G.S.		01/04			

NOTES:

1. SEWER LATERALS SHALL HAVE A MINIMUM SLOPE OF 2%, UNLESS APPROVED OTHERWISE BY THE CITY ENGINEER.

2. LATERAL SHALL BE CUT BACK TO SOUND MATERIAL FOR COUPLING.

3. ALL CONNECTIONS TO THE CITY SEWER MAINS MUST BE CORE DRILLED.

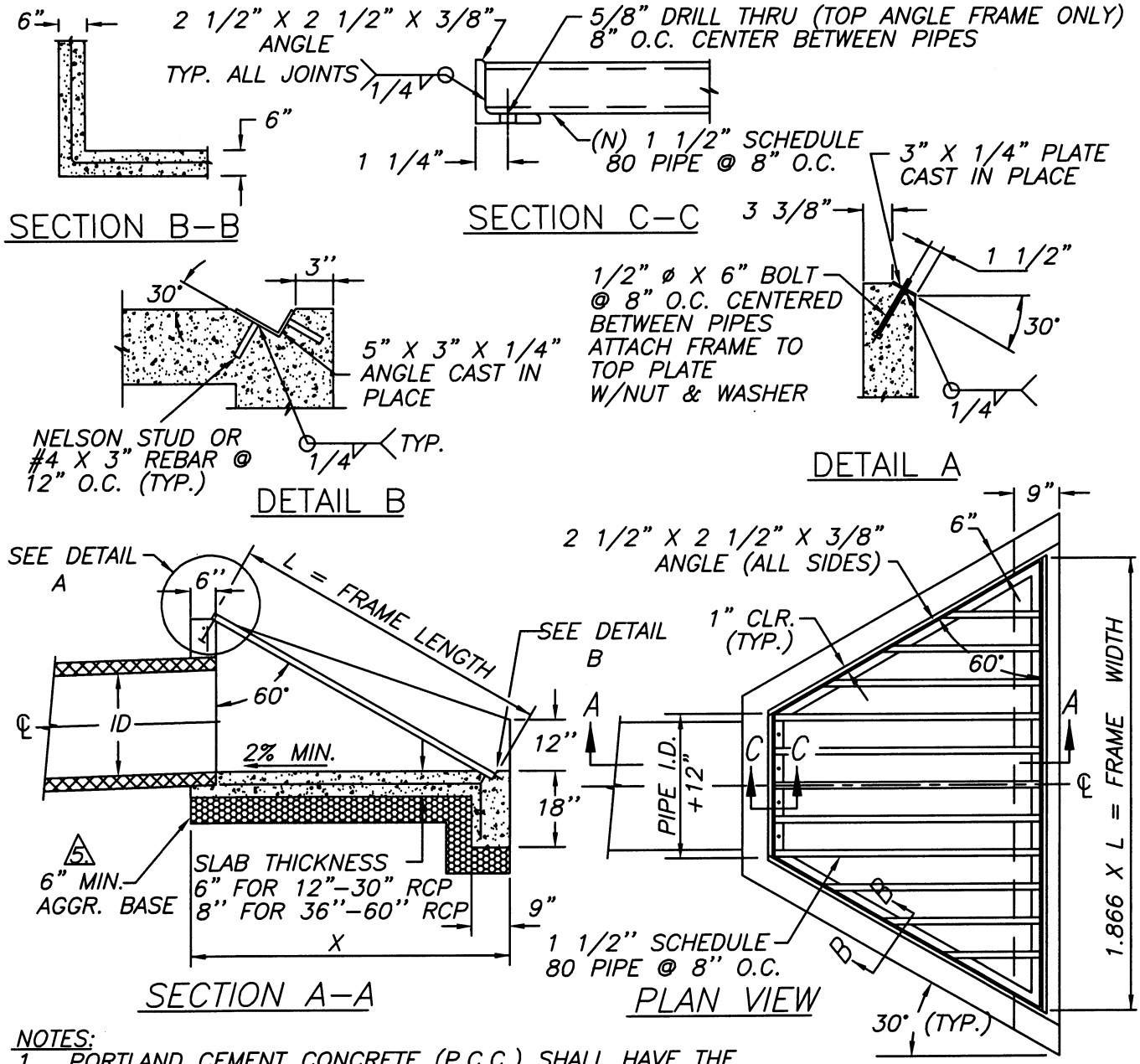
4. ENCASE LATERAL CONNECTION IN CEMENT, STABILIZED SAND OR 2000 PSI CONCRETE FOLLOWING INSTALLATION. CONNECTION MUST BE INSPECTED BY CITY PRIOR TO BACKFILL.

5. NO LATERAL CONNECTIONS SHALL BE MADE TO SANITARY SEWER "INTERCEPTOR" LINES WITHOUT THE APPROVAL OF THE CITY ENGINEER.

6. ALL APPLICABLE SANITARY SEWER PIPE INSTALLATION WORK SHALL BE IN ACCORDANCE WITH THE UNIFORM PLUMBING CODE.

7. THE LOCATION OF EACH LATERAL SHALL BE PERMANENTLY IDENTIFIED BY STAMPING AN "S" IN THE TOP OF THE CURB AT THE LOCATION WHERE THE LATERAL CROSSES THE CURB LINE.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO	
			NOTES–LATERAL DETAIL	DRAWING NO. R-224B (306)	
				DATE 01/04	PAGE 230
APPROVED BY: G.S.		01/04			



NOTES:

1. PORTLAND CEMENT CONCRETE (P.C.C.) SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4000 PSI MIN. COMPRESSIVE STRENGTH AT 28 DAYS, MIN. 6 SACKS OF CEMENT PER CUBIC YARD WITH A MAX. WATER/CEMENT RATIO OF 0.45, AIR ENTRAINMENT 6% ±1.5%, SLUMP AT 1 TO 4 INCHES. ALL MATERIALS SHALL CONFORM TO SSPWC SECTION 202.
2. REINFORCING STEEL SHALL BE NO. 5 @ 12" BW, SET 2" CLEAR OF CONCRETE BOTTOM SURFACE.
3. ALL METAL PARTS SHALL BE GALVANIZED AFTER WELDING.
4. ALL EXPOSED CONCRETE EDGES SHALL BE CHAMFERED 3/4".

△5. PLACE A MIN. OF 6" OF TYPE 2, CLASS B AGGREGATE BASE COMPACTED TO A MIN. OF 95% UNDER ALL CONCRETE. 6" OF DRAIN ROCK MAY BE USED FOR BASE MATERIAL.

TABLE

SIZE DIA	X	L	N (EA.)
12"	4'-5"	4'-3"	7
15"	4'-10"	4'-9"	9
18"	5'-3"	5'-3"	9
24"	6'-1.5"	6'-3"	11
30"	7'-0"	7'-3"	15
36"	7'-10.5"	8'-3"	17
42"	8'-9"	9'-3"	19
48"	9'-7"	10'-3"	21
54"	10'-5.5"	11'-3"	23
60"	11'-4"	12'-3"	25

NO.	REVISION	DATE
APPROVED BY: S.V.		08/00

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

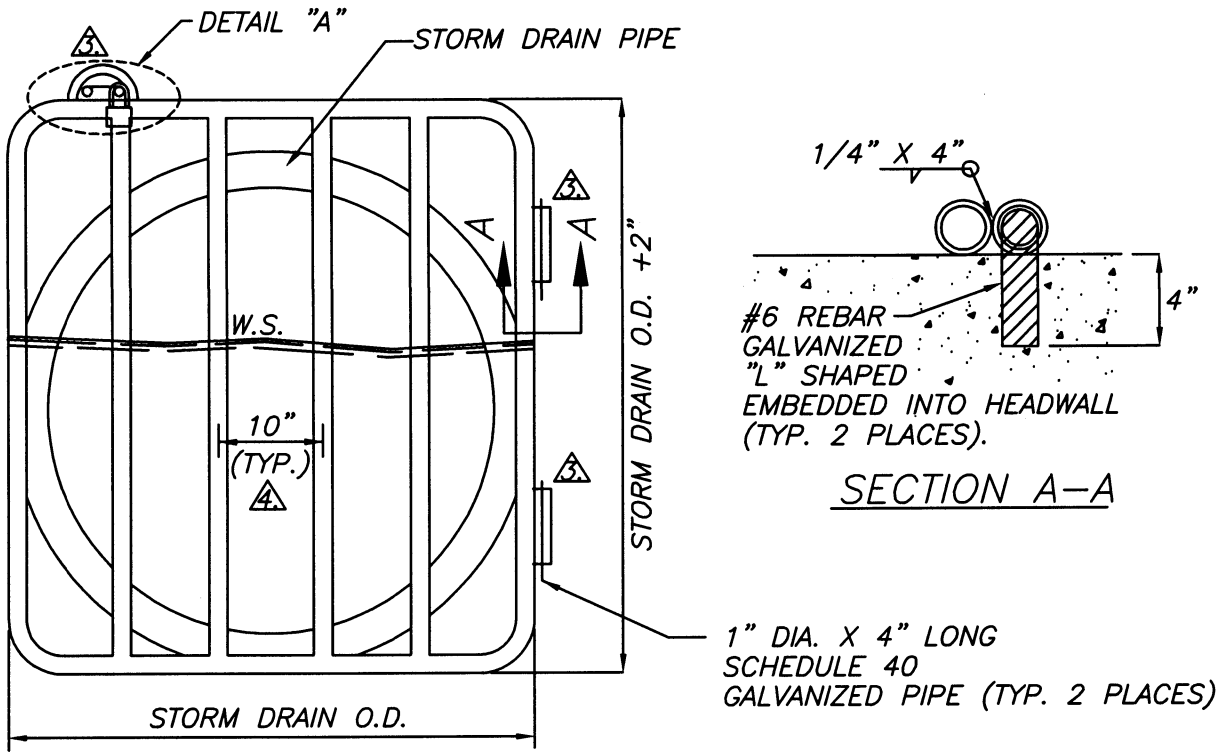
TRASH RACK FOR 12 TO 60 RCP

SECTION RENO

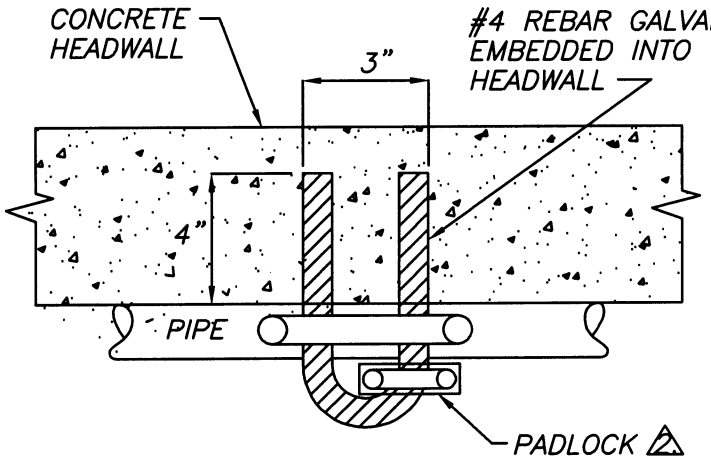
DRAWING NO. R-225 (311,326)

DATE 08/00

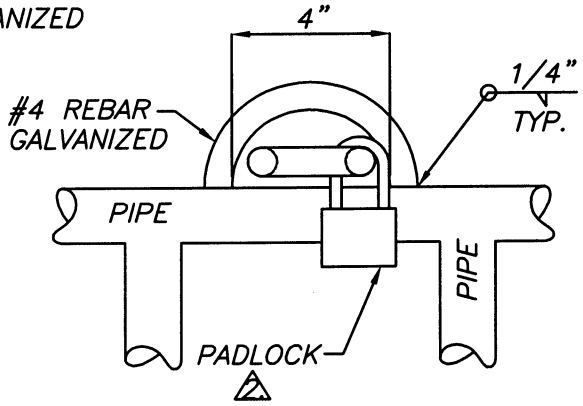
PAGE 231



SECTION A–A



LOCK DETAIL–TOP VIEW



DETAIL "A"

NOTES:

1. ACCESS PREVENTION GRATES ARE TO BE INSTALLED ON ALL EXPOSED STORM DRAIN OR CULVERT PIPES 24" TO 48" IN DIAMETER. DIAMETERS IN ACCESS OF 48" SHALL REQUIRE AN ENGINEERED DESIGN.

2. THE CITY OF RENO IS TO PROVIDE THE PADLOCK AND MAINTAIN THE KEYS.

3. THE ENGINEER WILL DETERMINE WHICH SIDE OF THE STRUCTURE THE HINGES AND PADLOCK WILL BE LOCATED ON.

4. NOMINAL PIPE SPACING OF 10" MAY VARY DEPENDING UPON STORM DRAIN PIPE DIAMETER. FINAL PIPE SPACING TO BE DETERMINED BY THE CITY ENGINEER.

NO.	REVISION	DATE
1	PADLOCK LOC.	08/01
2	NOTES 1 4	01/04
APPROVED BY	G.S.	01/04

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

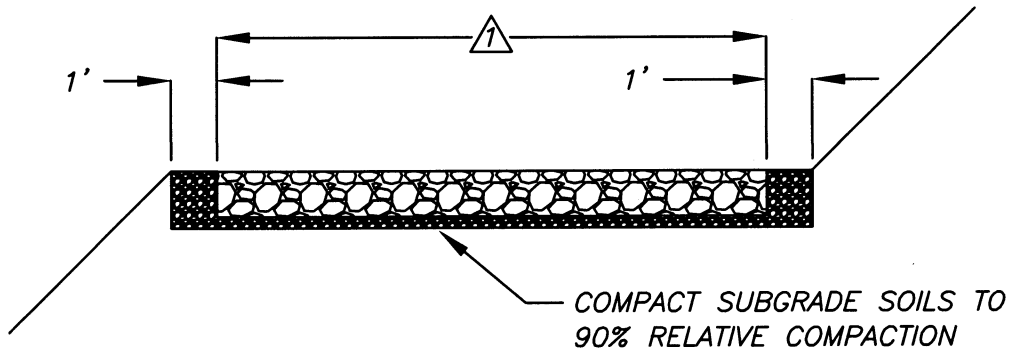
ACCESS PREVENTION GRATE FOR STORM DRAIN OUTFALLS

SECTION RENO

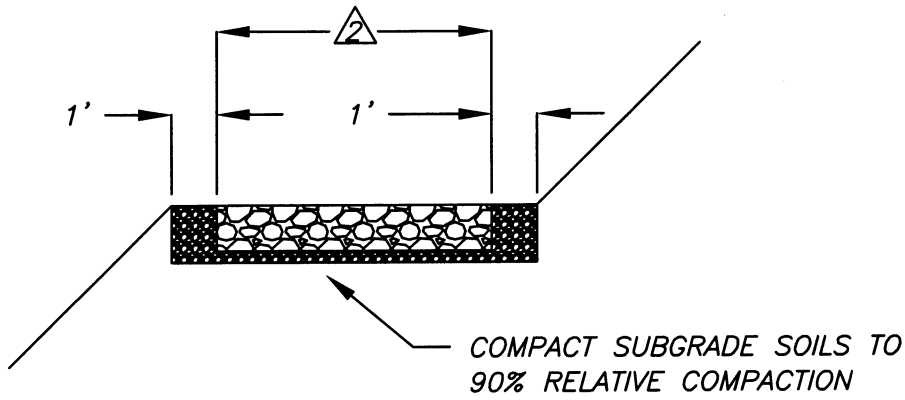
DRAWING NO. R-226 (311,326)

DATE 08/00

PAGE 232



ACCESS TO SD INLETS 24"Ø & LARGER

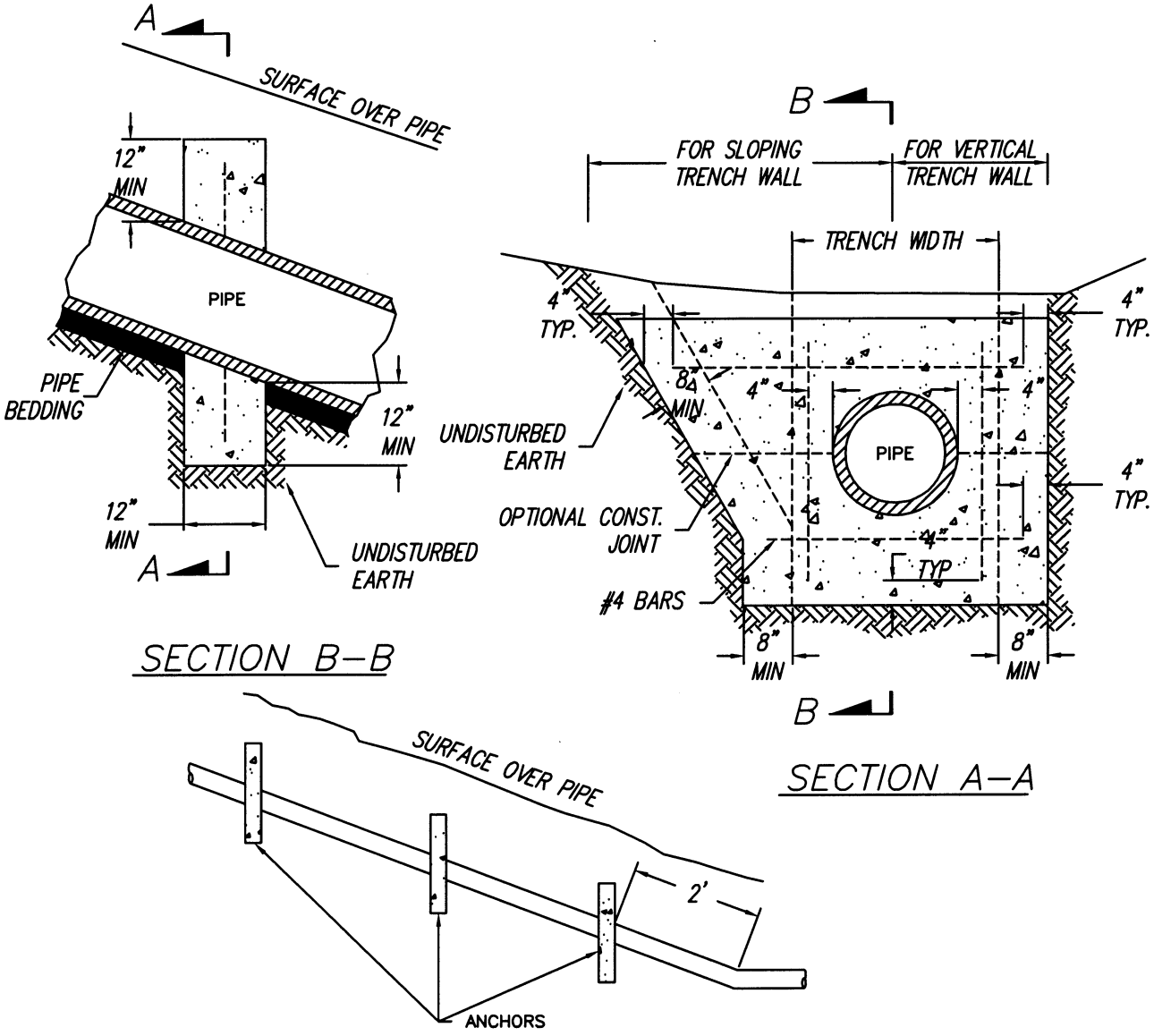


ACCESS TO SD INLETS SMALLER THAN 24"Ø & ALL OUTLETS

NOTES:

1. 12' WIDE 6"–8" Ø COBBLE STONE LAID TO BE A "DRIVEABLE" SURFACE TO THE SATISFACTION OF THE CITY WITH HAMMERHEAD VEHICLE TURNAROUNDS.
2. 6' WIDE 6"–8" Ø COBBLE STONE LAID TO BE A "DRIVEABLE" SURFACE TO THE SATISFACTION OF THE CITY.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO	
			STORM DRAIN ACCESS ROADS (FOR HILLSIDE DEVELOPMENT)	DRAWING NO. R-227 (308)	
				DATE 01/04	PAGE 233
APPROVED BY : G.S.		01/04			



SECTION B–B

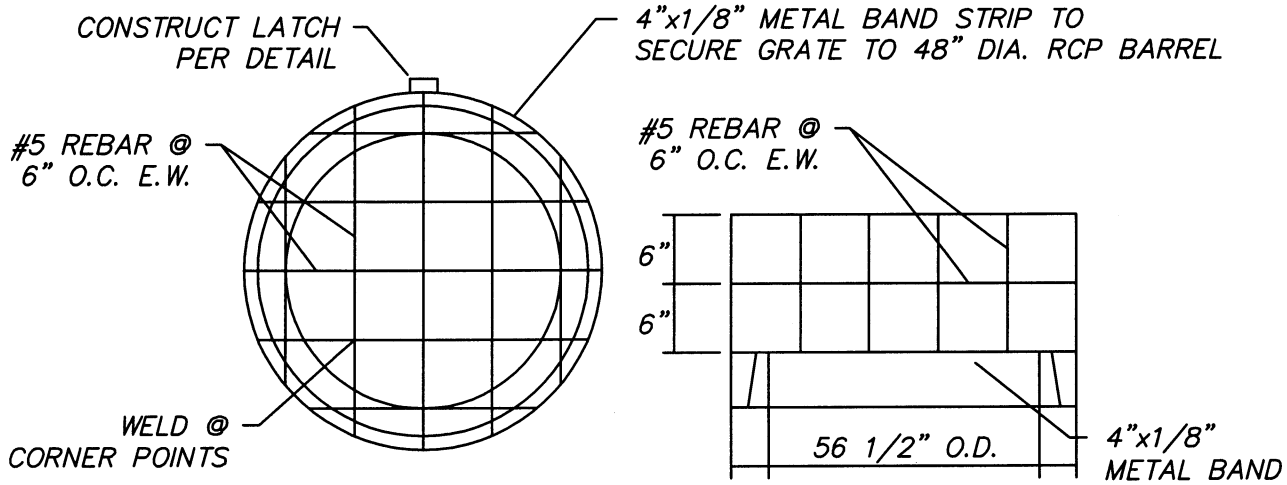
SECTION A–A

ELEVATION PIPE ANCHORS

NOTES:

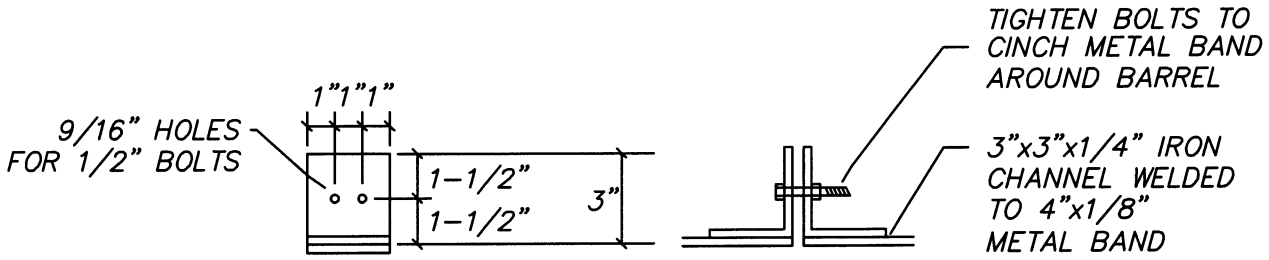
1. ANCHORS SHALL BE CONSTRUCTED AT 7' VERTICAL INTERVAL.
2. ANCHOR SHALL BE 4000 PSI CONCRETE
3. FOR CLAY PIPE, ANCHORS SHALL NOT BE PLACED WITHIN 6 INCHES OF PIPE JOINT.
4. TRENCH SHALL BE BACKFILLED PER CITY OF RENO STANDARDS.
5. SEWERS ON 20 PERCENT SLOPES OR GREATER SHALL BE ANCHORED SECURELY WITH CONCRETE ANCHORS, SPACED AS FOLLOWS:
   A. NOT OVER 36 FEET CENTER TO CENTER ON GRADES 20 PERCENT AND UP TO 35 PERCENT.
   B. NOT OVER 24 FEET CENTER TO CENTER ON GRADES 35 PERCENT AND UP TO 50 PERCENT.
   C. NOT OVER 16 FEET CENTER TO CENTER ON GRADES 50 PERCENT AND OVER.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO	
			PIPE ANCHORS AND BACKFILL STABILIZERS	DRAWING NO. R-228 (305,306,311)	
				DATE 01/04	PAGE 234
APPROVED BY: G.S.		01/04			



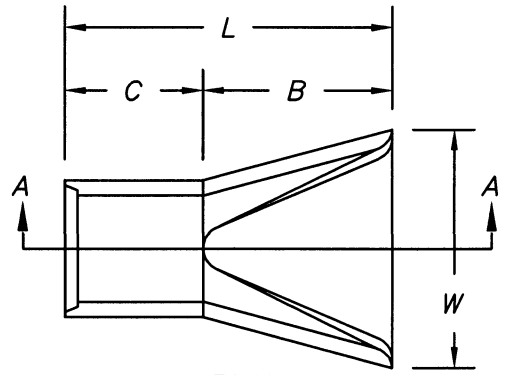
TOP GRATE DETAIL

SECTION VIEW

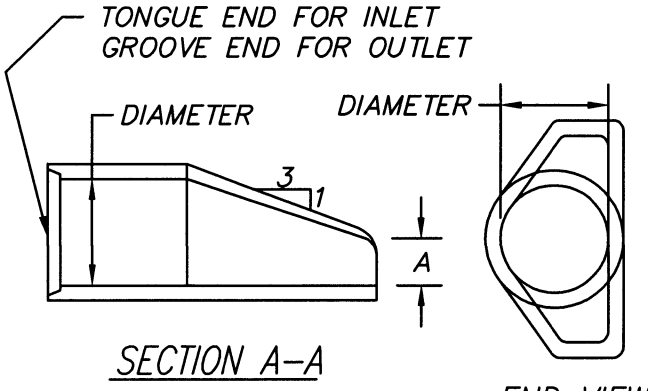


LATCH DETAIL

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO	
			SECONDARY INLET CAGE	DRAWING NO. R-229 (306,326)	
				DATE 01/04	PAGE 235
APPROVED BY: G.S.		01/04			

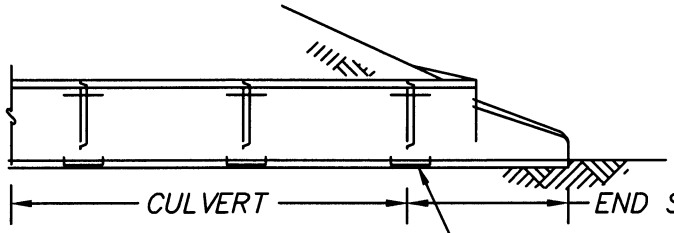


PLAN



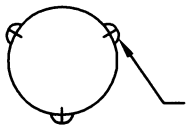
SECTION A–A

END VIEW



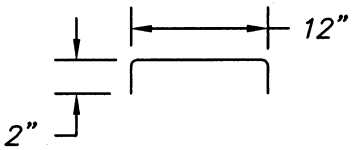
CROSS SECTION VIEW

(3) TIE BACKS AT EACH JOINT 3 TOTAL JOINTS



TIE BACK WITH CONCRETE COVERING

TIE BACKS SHALL CONSIST OF #4 REBAR WITH EPOXY COATING (40 KSI MIN.) BENT TO SHAPE BELOW. PIPE SHALL BE DRILLED WITH 9/16" BIT TO A DEPTH OF 1 1/2"

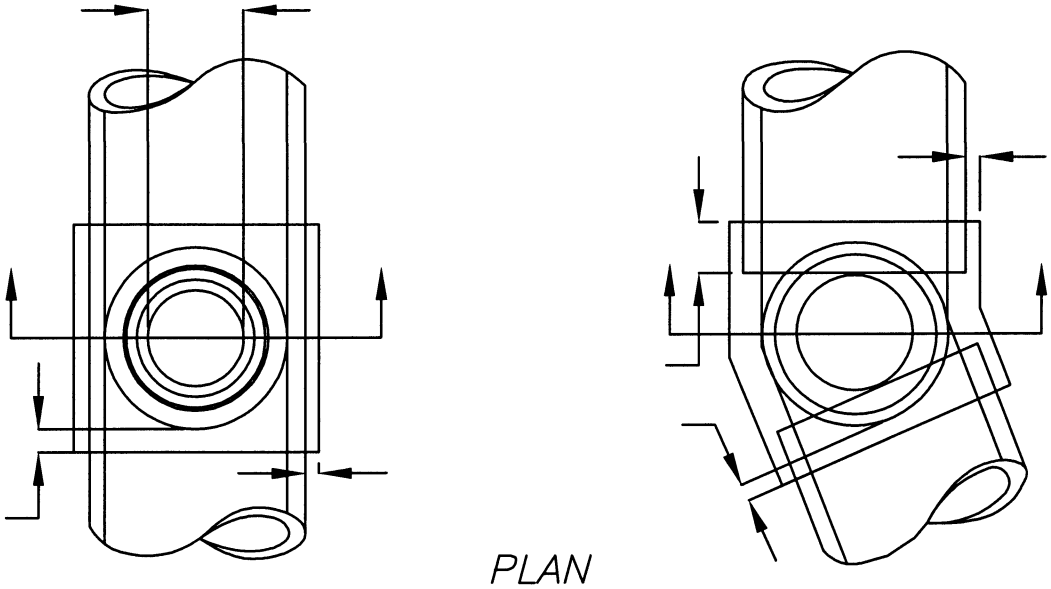


DIAMETER	WEIGHT	A	B	C	L	W
12"	340	4"	1'– 10"	2'– 0"	3'– 10"	2'– 0"
18"	670	9"	2'– 1"	2'– 1"	4'– 2"	3'– 0"
21"	1300	9 1/2"	3'– 6"	2'– 6"	6'– 0"	4'– 0"
24"	1300	9 1/2"	3'– 6"	2'– 6"	6'– 0"	4'– 0"
30"	1850	1'– 0"	4'– 5"	1'– 8"	6'– 1"	5'– 0"
36"	3500	1'– 3"	5'– 2"	2'– 11"	8'– 1"	6'– 0"
42"	4930	1'– 9"	5'– 3"	2'– 11"	8'– 2"	6'– 6"
48"	6700	2'– 0"	6'– 0"	2'– 2"	8'– 2"	7'– 0"
54"	7150	2'– 3"	5'– 6"	2'– 9"	8'– 3"	6'– 10"

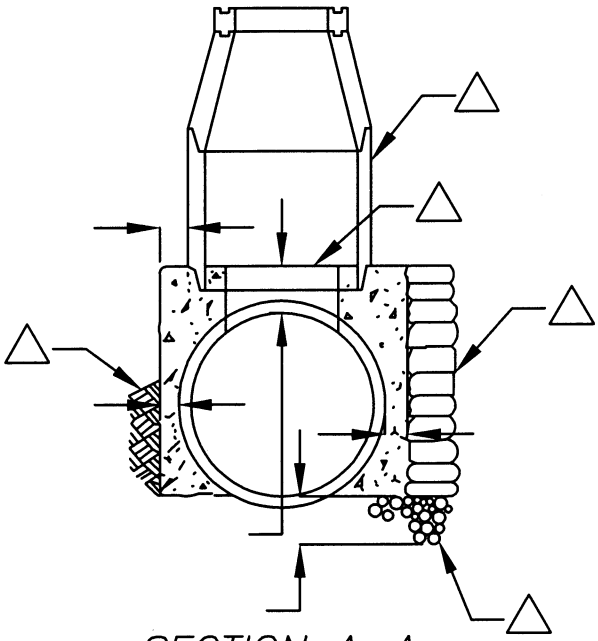
NOTES:

1. CLASS AND TYPE OF CONCRETE SHALL BE AS SPECIFIED FOR REINFORCED CONCRETE PIPE.
2. STRUCTURAL DESIGN OF END SECTION SHALL CONFORM TO THAT OF STANDARD REINFORCED CONCRETE CULVERT PIPE.
3. LENGTH OF PIPE SHOWN ON THE PLANS DOES NOT INCLUDE CONNECTOR SECTION (LENGTH C).

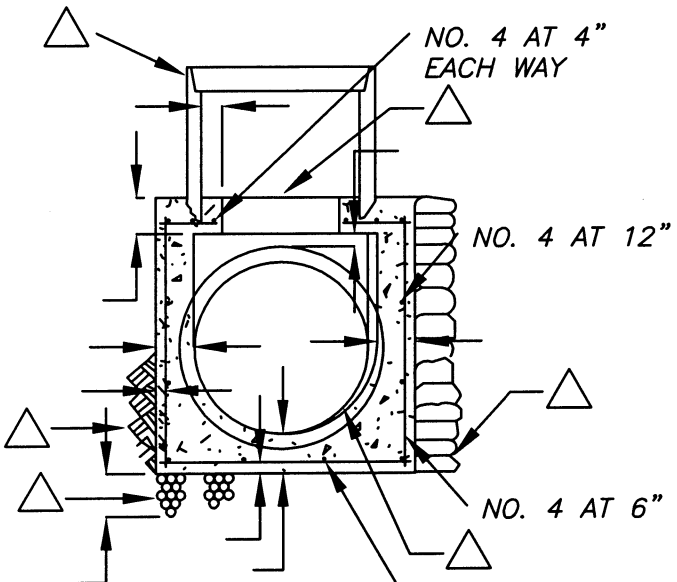
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO	
			RCP FLARED END SECTION	DRAWING NO. R-230 (306,311,326)	
				DATE 01/04	PAGE 236
APPROVED BY: G.S.		01/04			



PLAN



SECTION A–A
(TANGENT)



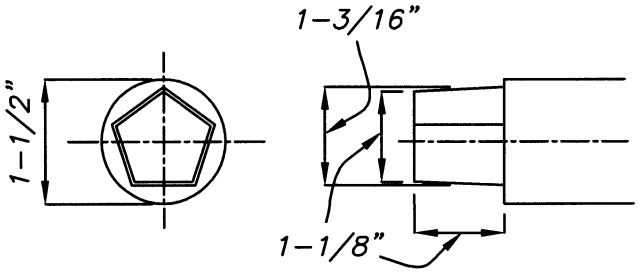
SECTION B–B
(ANGLE POINT)

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO	
			MANHOLE TYPE IV	DRAWING NO. R-231A (306,311)	
				DATE 01/04	PAGE 237
APPROVED BY: G.S.		01/04			

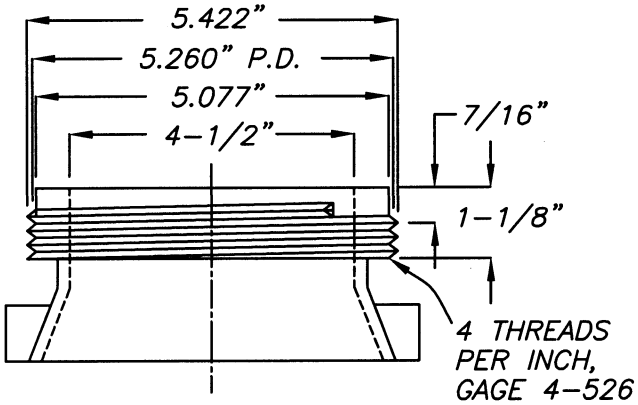
NOTES:

1. FOR DETAIL REQUIREMENTS OF THE TYPE I AND IA MANHOLE COMPONENTS, REFER TO STANDARD DETAIL DRAWING NOS. R-207A, R-207B, R-208A AND R-208B.
2. EARTH IN PLACE CAN BE USED AS FORM.
3. FORM CIRCULAR OR ELLIPTICAL MANHOLE.
4. SANDBAGS MAY BE USED TO FORM.
5. 6" DRAIN ROCK.
6. SLOPE TO CONFORM WITH PIPE BELOW SPRING LINE. PROVIDE SMOOTH FINISH.
7. PRECAST MANHOLE COMPONENTS SHALL CONFORM TO ASTM C-478.
8. TYPE IV MANHOLE TO BE UTILIZED FOR PIPE DIAMETERS OF 30" AND GREATER.
9. MANHOLE MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF SECTION 204 "MANHOLES AND CATCH BASINS" OF THE STANDARD SPECIFICATIONS.
10. EXCAVATION AND BACKFILL SHALL BE AS SPECIFIED FOR "TRENCH EXCAVATION AND BACKFILL" IN SECTION 305 OF THE STANDARD SPECIFICATIONS.
11. EXCAVATION SHALL BE AS NEARLY VERTICAL AS POSSIBLE (SHEET AND SHORE IF SOIL CONDITIONS REQUIRE), IN EXISTING STREET SECTIONS, ALLEY SECTIONS AND CONFINED AREAS, SUCH AS LIMITED EASEMENTS OR ADJACENT STRUCTURES. NATURAL ANGLE OF REPOSE WILL BE ALLOWED IN ALL OTHER AREAS.
12. ALL MANHOLES SHALL BE WATERTIGHT.
13. REINFORCING STEEL SHALL BE AS SHOWN, WIRED TIGHTLY AT ALL INTERSECTIONS AND EMBEDDED AT LEAST ONE INCH CLEAR, UNLESS OTHERWISE NOTED.
14. PRIOR TO BACKFILLING, ALL MANHOLES SHALL BE VACUUM TESTED PER THE REQUIREMENTS OF ASTM C-1244.

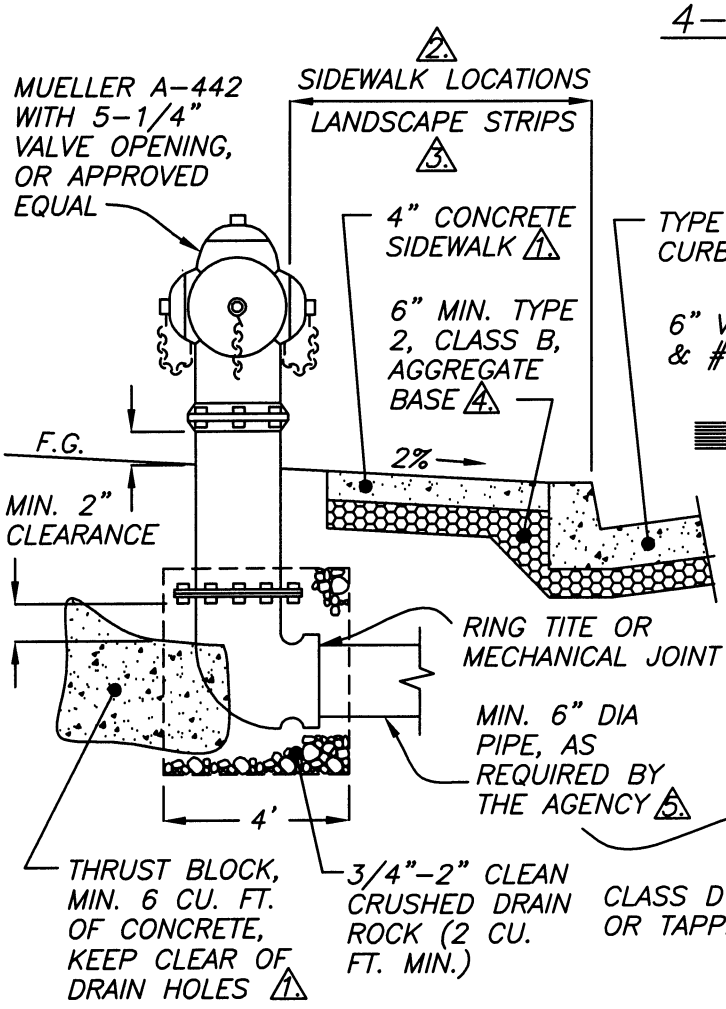
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO	
			NOTES- MANHOLE TYPE IV	DRAWING NO. R-231B (306,311)	
				DATE 01/04	PAGE 238
APPROVED BY G.S.		01/04			



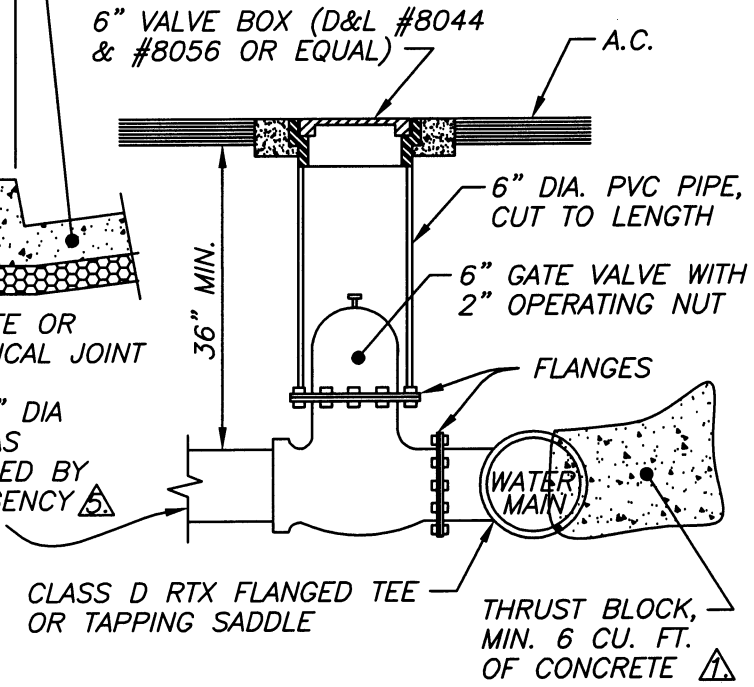
OPERATING NUT – PENTAGON



4-1/2" STREAMER NOZZLE



ELEVATION



OPERATING VALVE

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO
			FIRE HYDRANT	DRAWING NO. R-301A (217,307)
				DATE 08/00 / PAGE 300
APPROVED BY: S.V.		08/00		

NOTES:

1. FIBER–REINFORCED PORTLAND CEMENT CONCRETE (P.C.C.) SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4000 PSI MIN. COMPRESSIVE STRENGTH @ 28 DAYS, MIN. 6 SACKS OF CEMENT PER CUBIC YARD WITH A MAX. WATER/CEMENT RATIO OF 0.45, AIR ENTRAINMENT 6% ±1.5%, SLUMP AT 1 TO 4 INCHES. ALL MATERIALS SHALL CONFORM TO SSPWC SECTION 202. POLYPROPYLENE FIBERS SHALL BE ADDED TO THE P.C.C. PER THE MANUFACTURER'S RECOMMENDATIONS.

2. FIRE HYDRANTS SHALL BE WITHIN 6 INCHES OF THE BACK EDGE OF THE SIDEWALK WHEN THE SIDEWALK IS 5 FEET OR LESS IN WIDTH. CONTACT THE FIRE DEPARTMENT FOR PROPER HYDRANT LOCATION IF THE SIDEWALKS ARE WIDER THAN 5 FEET.

3. WHEN A LANDSCAPE STRIP IS BETWEEN THE CURB AND THE SIDEWALK, OR FOR CURBS ONLY, FIRE HYDRANTS SHALL BE 2 FEET FROM THE FACE OF THE CURB.

4. BASE SHALL BE 6" MIN. TYPE 2, CLASS B AGGREGATE, COMPACTED TO A MINIMUM 95% OF MAXIMUM DRY DENSITY.

5. WATER PIPE SHALL BE PVC CLASS 150.

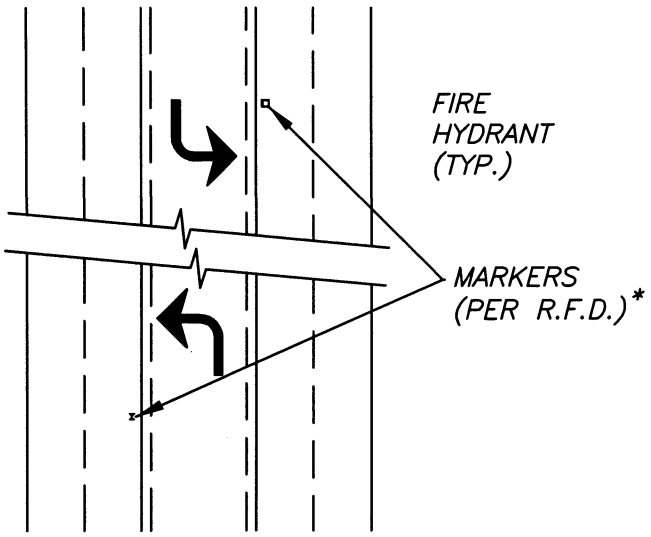
6. HYDRANT SHALL BE ENAMELED RED.

7. ALL HYDRANTS SHALL HAVE TWO 2–1/2" HOSE NOZZLES AND ONE 4–1/2" STREAMER NOZZLE

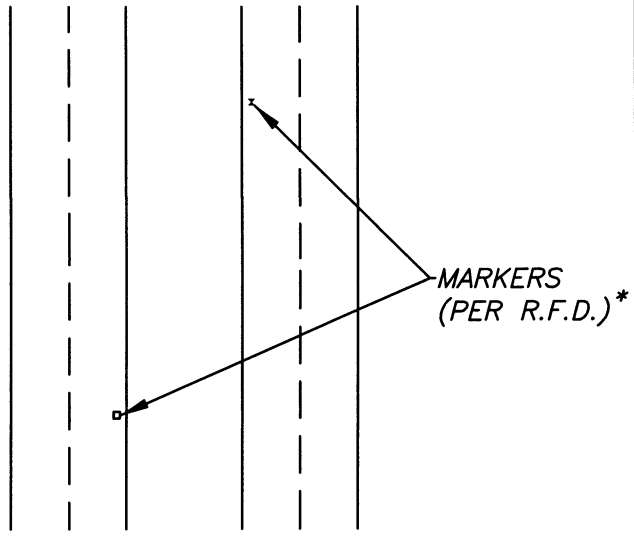
8. INSPECTION BY THE CITY EXCAVATION PERMIT INSPECTOR OR APPLICABLE ENGINEER OF RECORD SHALL BE REQUIRED PRIOR TO BACKFILLING.

9. NO FENCES SHALL BE ALLOWED WITHIN 3 FEET OF ANY PORTION OF A FIRE HYDRANT.

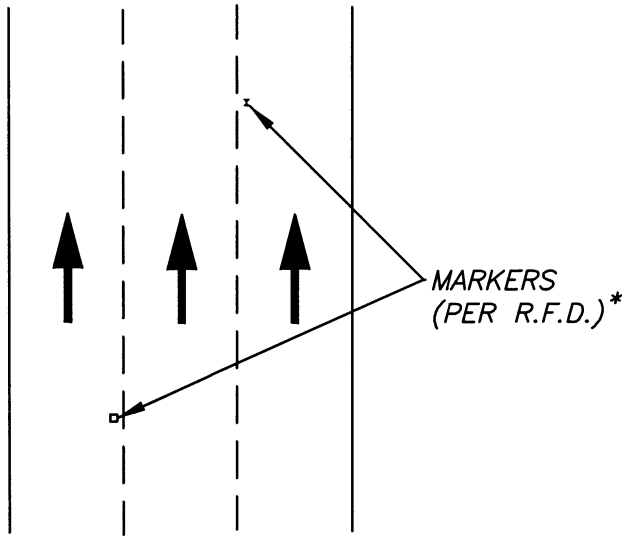
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO
			NOTES– FIRE HYDRANT	DRAWING NO. R-301B (217,307)
				DATE 08/00 / PAGE 301
APPROVED BY: S.V.		08/00		



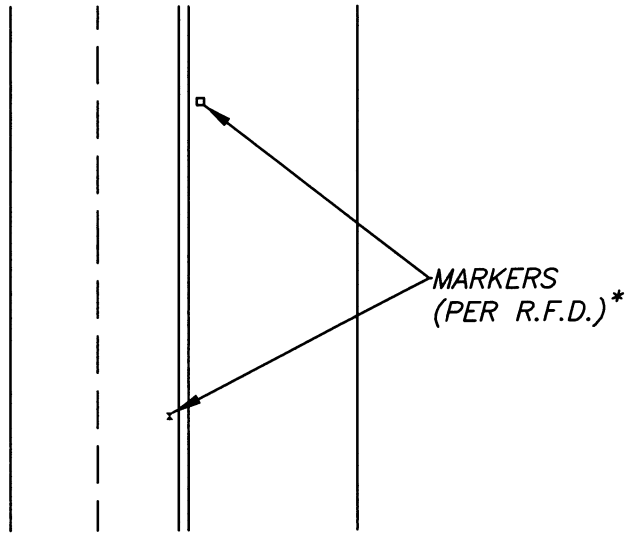
STREETS WITH CENTER TURN LANE, MARKER IS PLACED 8" TO 12" OFF YELLOW SOLID LINE, TO THE SIDE OF THE HYDRANT.



STREETS WITH CENTER PLANTER OR CONCRETE ISLAND, MARKER IS PLACED 8" TO 12" OFF CENTER ISLAND, OUT FROM HYDRANT.



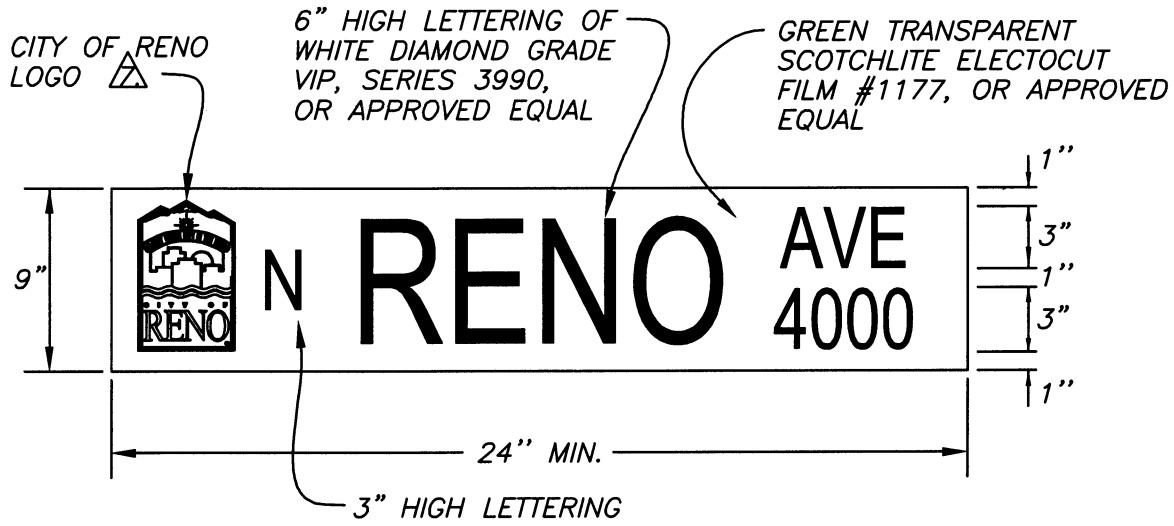
ONE WAY STREETS: MARKER IS PLACED 8" TO 12" OFF LINE IN FIRST LANE, OUT FROM HYDRANT.



2 LANE OR 4 LANE STREETS WITH CENTERLINE, MARKER IS PLACED 8" TO 12" OFF CENTERLINE. RESIDENTIAL STREETS WITH NO LINES, PLACE MARKER 8" TO 12" OFF VISUAL CENTER, TO THE SIDE OF THE HYDRANT.

* R.F.D. – RENO FIRE DEPARTMENT

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO
			FIRE HYDRANT MARKER LOCATIONS	DRAWING NO. R-302 (217,307)
				DATE 08/00 / PAGE 302
APPROVED BY : S.V.		08/00		

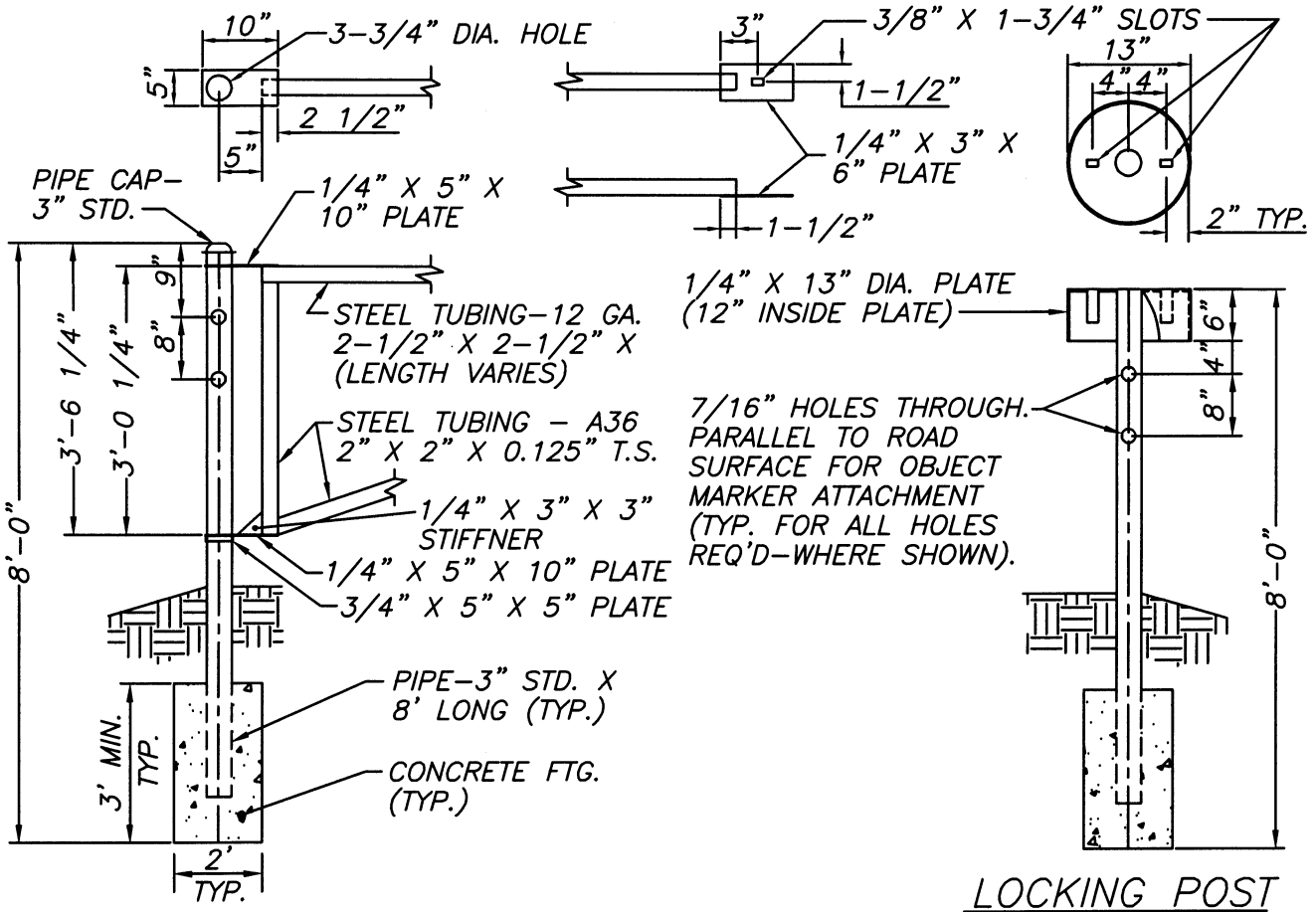


NOTES:

1. STREET NAME SIGN SHALL BE IN CONFORMANCE WITH THE LATEST EDITION OF THE M.U.T.C.D.
2. ALL SIGN LETTERING SHALL BE IN UPPERCASE LETTERS AS PROVIDED IN THE STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS.
3. REFLECTIVE MATERIALS SHALL BE MOUNTED ON .080 GAUGE FLAT PLATE ALUMINUM NO. 6061–T6.
4. REFER TO STANDARD DETAIL DRAWING NO. R–415 (332) FOR MOUNTING AND POLE REQUIREMENTS, UNLESS OTHERWISE SPECIFIED.
5. A MINIMUM OF FOUR(4) SIGNS, PLACED BACK–TO–BACK PER STANDARD DETAIL DRAWING NO. R–415 (332), FOR EACH STREET IS REQUIRED. TWO(2) INSTALLATIONS ARE REQUIRED AT A FOUR–LEG INTERSECTION AND ONE(1) INSTALLATION IS REQUIRED AT A THREE–LEG OR LESS INTERSECTION.
6. THE SIGN IS TO INCLUDE THE "BLOCK" NUMBER, ROUNDED TO THE NEAREST HUNDREDTH, OF THE CLOSEST ADDRESS TO THE SIGN ON THE STREET.

⚠ CONTACT THE CITY OF RENO'S CORPORATION YARD AT 334–2246 FOR INFORMATION ON THE CITY OF RENO LOGO.

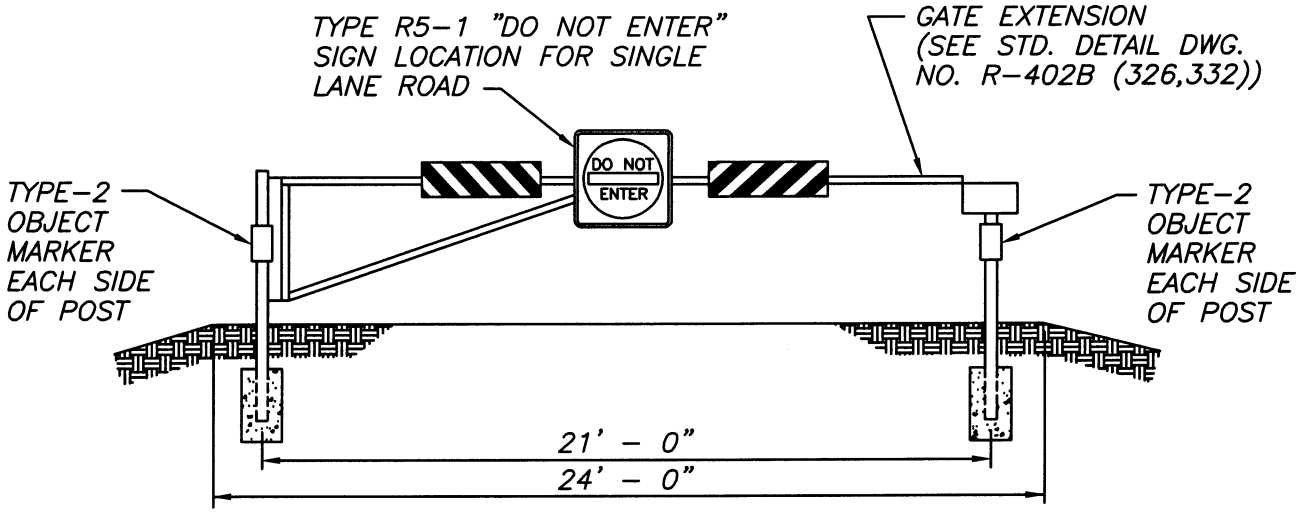
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO	
1	REV. NOTE 5	02/01	STREET NAME SIGN	DRAWING NO. R-401 332	
				DATE 08/00	PAGE 400
APPROVED BY: S.V.		02/01			



HINGE POST DETAIL

LOCKING POST

PLAN VIEW



ELEVATION VIEW

NO.	REVISION	DATE
1	ADD ROAD WIDTH	01/04
APPROVED BY	G.S.	01/04

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

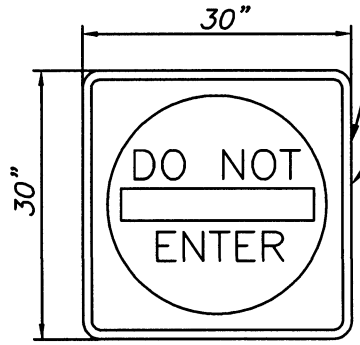
EMERGENCY ACCESS CONTROL GATE

SECTION **RENO**

DRAWING NO. R-402A (326,332)

DATE 08/00

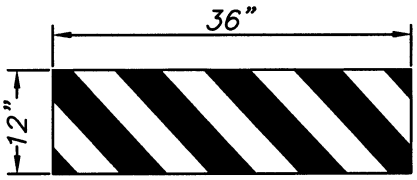
PAGE 401



ASTM TYPE 3 HIGH INTENSITY SHEETING SHALL BE USED

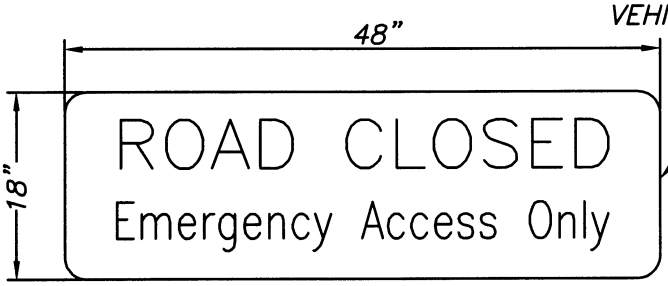
RED ON WHITE

DO NOT ENTER SIGN
TYPE R5-1



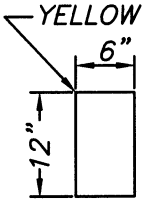
BARRICADE MARKER*
TYPE-1

* A 3"X36" HORIZONTAL STRIP OF SILVER REFLECTIVE SHEETING SHALL BE FASTENED TO THE BACK OF THESE BARRICADE MARKERS AS A SAFETY MEASURE SHOULD VEHICLES APPROACH THE GATE FROM BEHIND.



BLACK ON WHITE

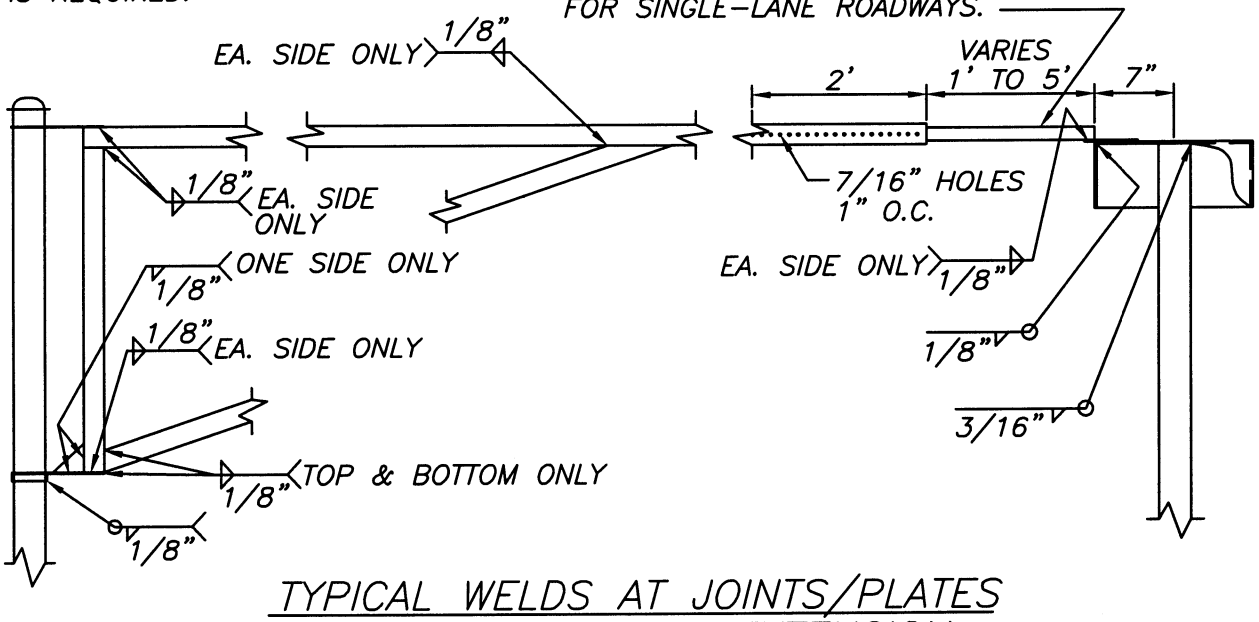
EMERGENCY ACCESS
ROAD CLOSED SIGN**



OBJECT MARKER
TYPE-2

** UTILIZE THIS SIGN IN LIEU OF THE "DO NOT ENTER" SIGN WHEN ACCESS BY THE FIRE DEPARTMENT IS REQUIRED.

GATE EXTENSION-STEEL PERFORATED TUBING 2-3/16" X 2-3/16" X 12 GA. X 7'-0" LONG.
NOTE: GATE EXTENSION SHOWN USED PRIMARILY FOR SINGLE-LANE ROADWAYS.



TYPICAL WELDS AT JOINTS/PLATES
AND TYPICAL GATE EXTENSION

NO.	REVISION	DATE
1	ASTM SHEETING	01/04
APPROVED BY: G.S.		01/04

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

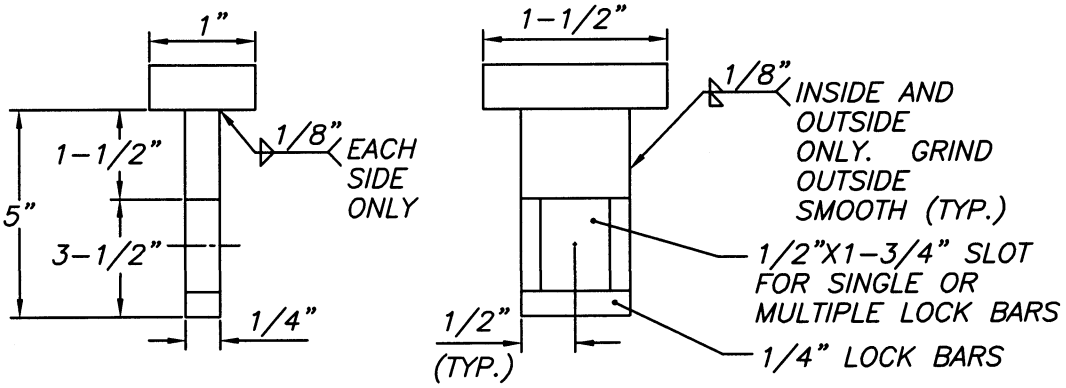
EMERGENCY ACCESS CONTROL GATE

SECTION RENO

DRAWING NO. R-402B (326,332)

DATE 08/00

PAGE 402



MASTER LOCKING PIN

NOTES: (APPLY TO STD. DETAIL DWG. NOS. R-402A, R-402B AND R-402C)

1. ALL HOLES DRILLED THROUGH TO BE 7/16" DIAMETER. HOLES TYPICALLY DRILLED VERTICAL OR HORIZONTAL TO TRAVELED WAY SURFACE.
2. ALL THREADS OF ALL BOLTS USED TO BE PEENED AFTER INSTALLATION/USAGE TO PREVENT BOLT REMOVAL.
3. ALL MEMBERS OF THE GATE ASSEMBLY SHALL BE FABRICATED FROM THE STANDARD STEEL SECTIONS. FABRICATED MEMBERS SHALL RECEIVE ONE SHOP COAT OF ALUMINUM PAINT AFTER FABRICATION. ALUMINUM PAINT SHALL CONFORM TO A.A.S.H.T.O. SPECIFICATION M69-70. HARDWARE SHALL BE CADMIUM PLATED.

4. SUBSTITUTE ITEM NO. 11 SIGN FOR ITEM NO. 6 SIGN WHEN ACCESS BY THE FIRE DEPARTMENT IS REQUIRED.

MATERIALS LIST

ITEM NO.	NO. REQ'D	DESCRIPTION
1	1	GATES AND GATE EXTENSIONS
2	1	HINGE POST, WITH PIPE CAPS
3	1	MASTER LOCKING PINS
4	1	LOCKING POST
5	2	12"X36" TYPE-1 BARRICADE MARKER
6	1	18"X30" ROAD CLOSED SIGN 4
7	4	6"X12" TYPE-2 OBJECT MARKERS
8	2	3/8"X3" MACHINE BOLT FOR GATE EXTENSIONS
9	6	3/8"X4" CARRIAGE BOLT WITH 1 CUT AND 1 LOCK WASHER FOR
		SIGNS ON GATES
10	6	3/8"X6" CARRIAGE BOLT WITH 1 CUT AND 1 LOCK WASHER FOR
		OBJECT MARKERS
11	1	18"X48" ROAD CLOSED, EMERGENCY ACCESS ONLY SIGN 4

NO.	REVISION	DATE
APPROVED BY: S.V.		08/00

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

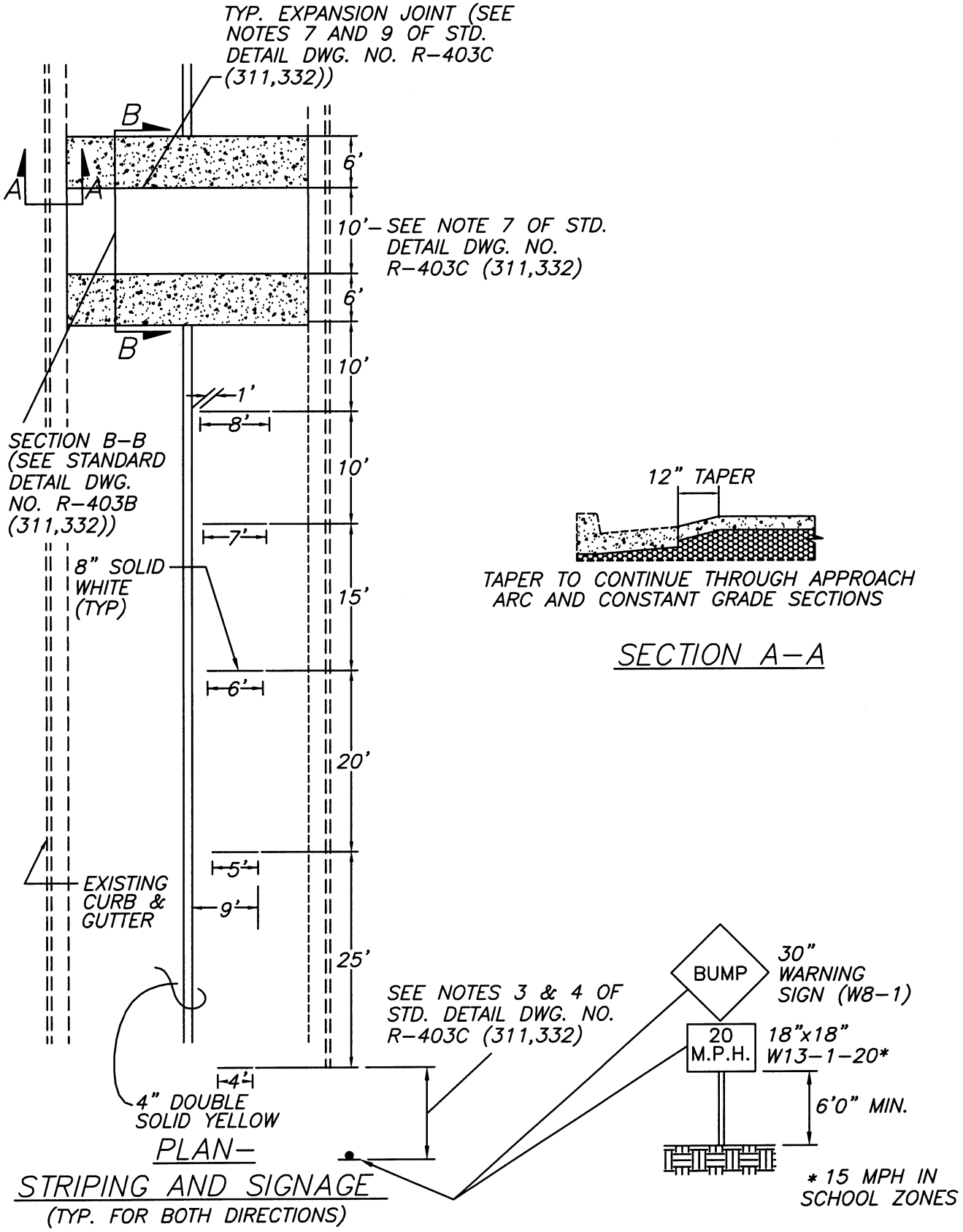
EMERGENCY ACCESS CONTROL GATE

SECTION **RENO**

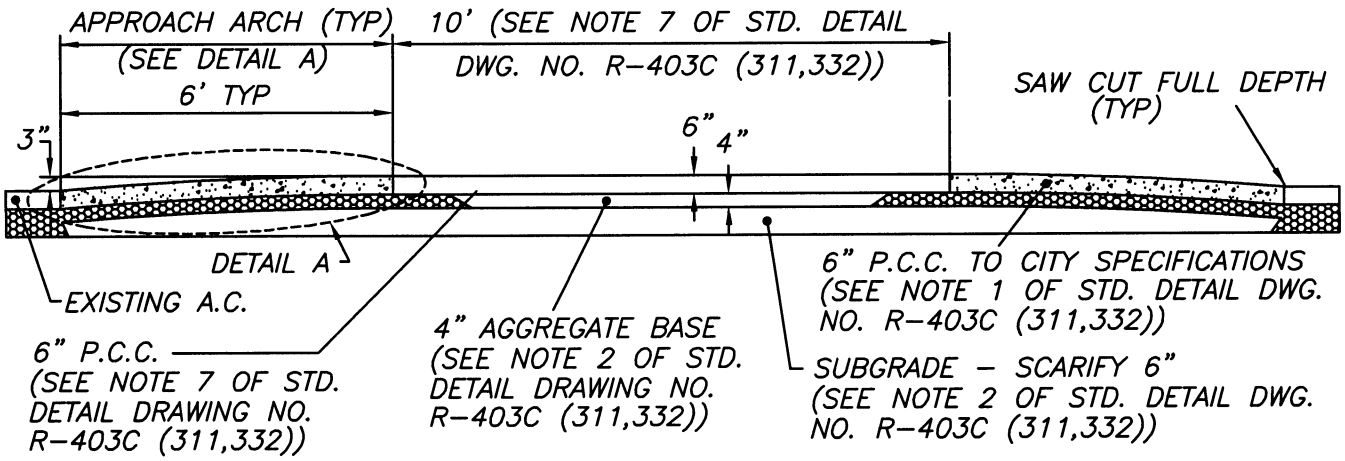
DRAWING NO. R-402C (326,332)

DATE 08/00

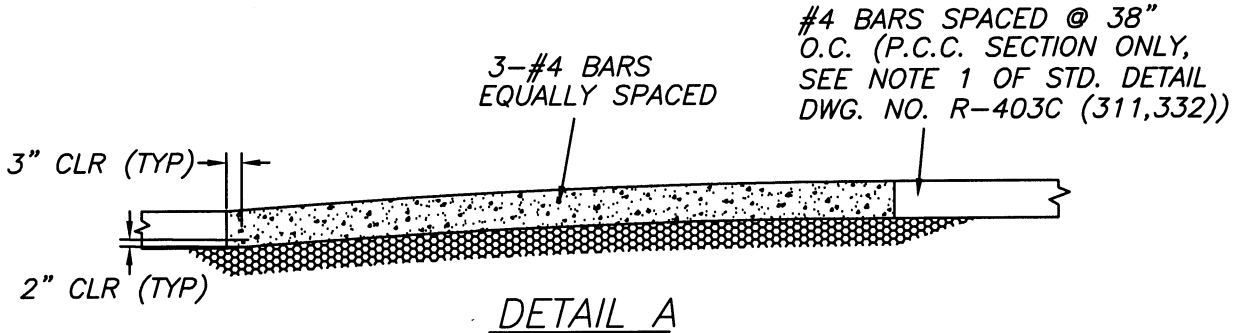
PAGE 403



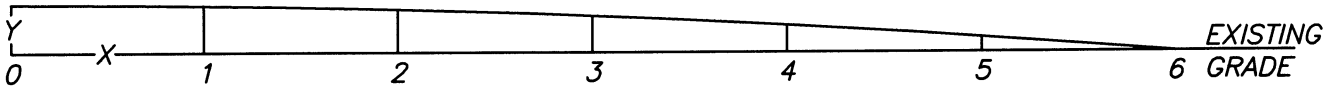
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO
			SPEED HUMP	DRAWING NO. R-403A (311,332)
				DATE 08/00 PAGE 404
APPROVED BY: S.V.		08/00		



SECTION B-B SPEED HUMP PROFILE



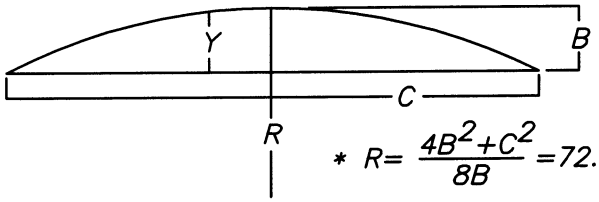
DETAIL A



SEE VERTICAL DIMENSIONS CHART

VERTICAL DIMENSIONS CHART *

X(FT.)	Y(FT.)=INCHES
0	0.250=3.00
1	0.243=2.92
2	0.222=2.67
3	0.188=2.25
4	0.139=1.67
5	0.077=0.92
6	0.000=0.00



* $R=\frac{4B^2+C^2}{8B}=72.125'$

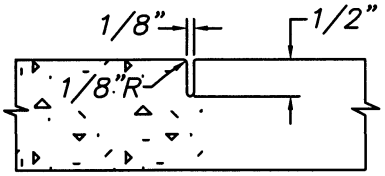
B=HEIGHT=(0.25')

C=CHORD DISTANCE=(12')

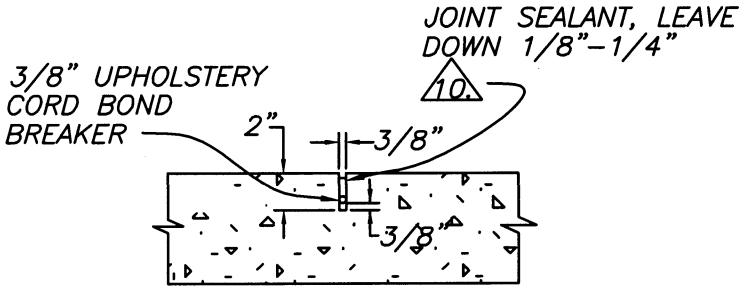
$Y=(B-R)+\sqrt{R^2-X^2}$

APPROACH ARC DETAIL

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO
			SPEED HUMP	DRAWING NO. R-403B (311,332)
				DATE 08/00 / PAGE 405
APPROVED BY: S.V.		08/00		



DETAIL B



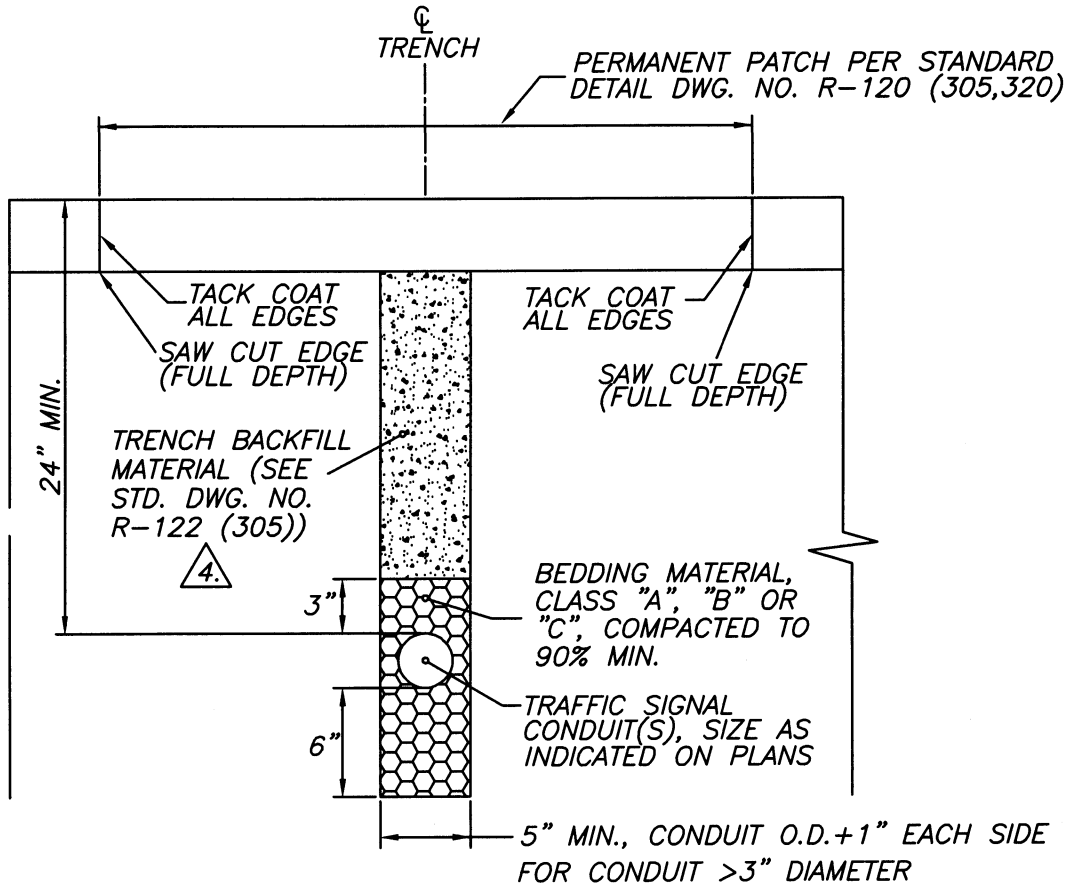
DETAIL C

NOTES:

1. PORTLAND CEMENT CONCRETE (P.C.C.) SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4000 PSI MIN. COMPRESSIVE STRENGTH @ 28 DAYS, MIN. 6 SACKS OF CEMENT PER CUBIC YARD WITH A MAX. WATER/CEMENT RATIO OF 0.45, AIR ENTRAINMENT 6.0% ± 1.5% SLUMP AT 1 TO 4 INCHES. ALL MATERIALS SHALL CONFORM TO SSPWC SECTION 202.
2. BASE SHALL BE ENGINEERED TYPE 2, CLASS B AGGREGATE, COMPACTED TO 95%, WITH 6" SUBGRADE, COMPACTED TO 90%.
3. SIGN TO BE INSTALLED PER STANDARD DETAIL DRAWING NO. R-415 (332), UNLESS OTHERWISE SPECIFIED.
4. EXACT LOCATION OF SPEED HUMPS AND SIGNS TO BE APPROVED BY THE CITY ENGINEER.
5. HEIGHT OF SPEED HUMP TO BE 0.25 FEET FROM EXISTING GRADE, UNLESS SPECIFIED OTHERWISE IN WRITING BY THE CITY ENGINEER.
6. MAXIMUM TOLERANCE ON SPEED HUMP TO BE ±1/4 INCH. SPEED HUMPS OUT OF TOLERANCE MUST BE REMOVED AND REPLACED AS REQUIRED BY THE CITY ENGINEER.
7. CENTER 10 FOOT SECTION (CONSTANT GRADE) SHALL ONLY BE INSTALLED ON THROUGH STREETS THAT SERVE AS PRIMARY VEHICLE ACCESS ROUTES AS REQUIRED BY THE CITY ENGINEER.
8. TOOLED LONGITUDINAL WEAKENED PLANE JOINTS TO BE PLACED 10 FEET ON CENTER IN P.C.C. SECTIONS BEGINNING AT CENTERLINE (SEE DETAIL B).
9. SAWED OR PREMOLDED STRIP JOINTS (TYPE C) TO BE PLACED IN TRANSVERSE DIRECTION BETWEEN APPROACH ARC SECTIONS AND CONSTANT GRADE SECTIONS WHEN P.C.C. IS USED IN CENTER SECTION (SEE DETAIL C).

10. TYPE C JOINT SEALERS WILL BE HOT POURED SUPER SEAL 444 OR EQUAL.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO	
			SPEED HUMP	DRAWING NO. R-403C (311,332)	
				DATE 08/00	PAGE 406
APPROVED BY: S.V.		08/00			

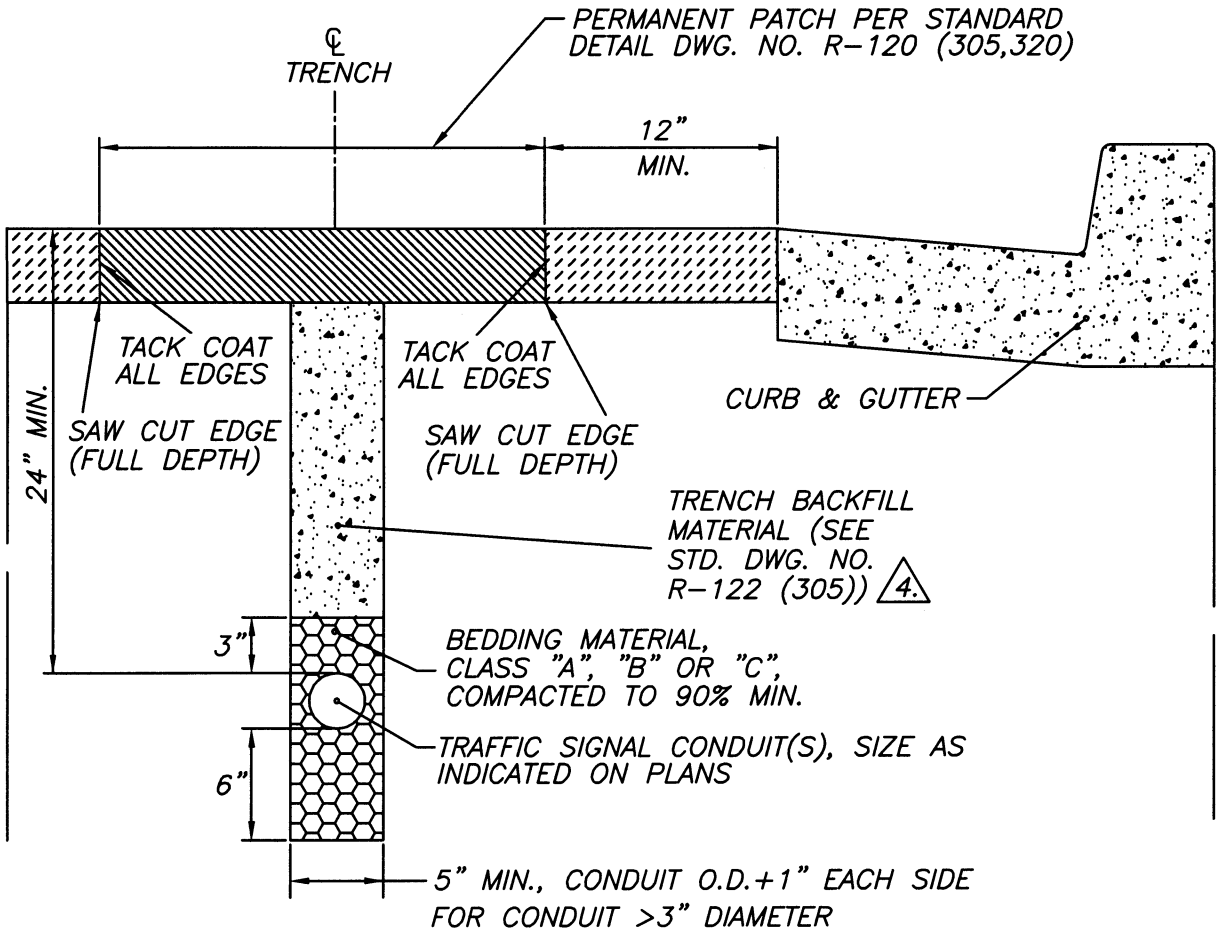


NOTES:

1. EXCAVATION AND ENCROACHMENT PERMITS MUST BE OBTAINED FROM THE CITY ENGINEER PRIOR TO CUTTING ANY PUBLIC STREET.
2. CITY ENGINEER MAY REQUIRE WIDER PATCH SECTIONS OR OTHERWISE ALTER THE REQUIREMENTS.
3. BEDDING AND BITUMINOUS PAVEMENT SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, LATEST REVISION.

4. FOR TRENCH WIDTH OF 12" OR LESS, TRENCH SLURRY BACKFILL IS REQUIRED.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO
			TRANSVERSE TRAFFIC CONDUIT TRENCH DETAIL	DRAWING NO. R-404 (305)
				DATE 08/00 / PAGE 407
APPROVED BY: S.V.		08/00		

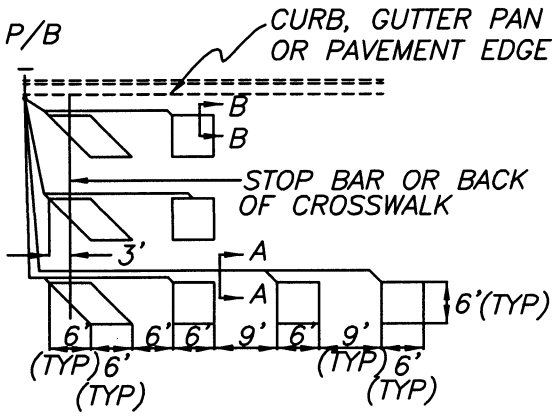


NOTES:

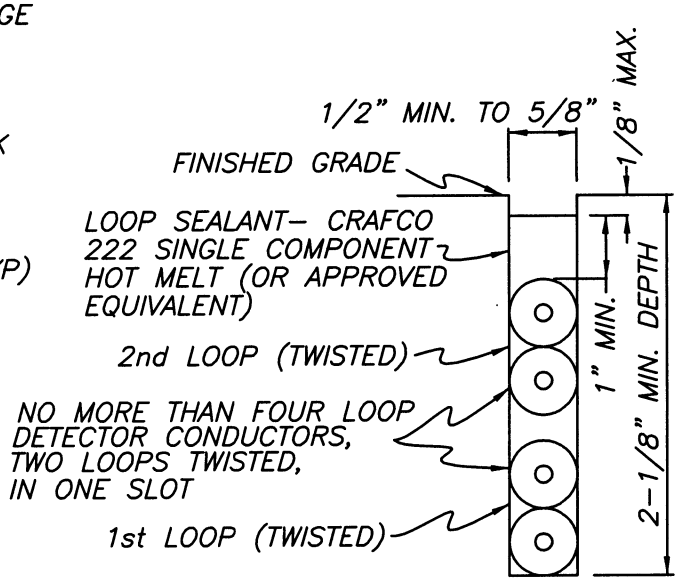
1. EXCAVATION AND ENCROACHMENT PERMITS MUST BE OBTAINED FROM THE CITY ENGINEER PRIOR TO CUTTING ANY PUBLIC STREET.
2. CITY ENGINEER MAY REQUIRE WIDER PATCH SECTIONS OR OTHERWISE ALTER THE REQUIREMENTS.
3. BEDDING AND BITUMINOUS PAVEMENT SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, LATEST REVISION.

4. FOR TRENCH WIDTH OF 12" OR LESS, TRENCH SLURRY BACKFILL IS REQUIRED.

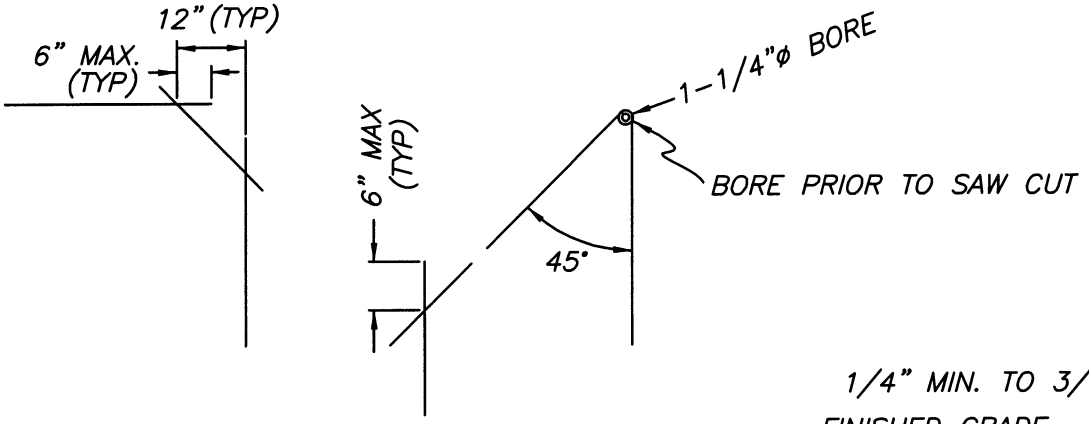
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO
			LONGITUDINAL TRAFFIC CONDUIT TRENCH DETAIL	DRAWING NO. R-405 (305)
				DATE 08/00 / PAGE 408
APPROVED BY: S.V.		08/00		



PLAN VIEW

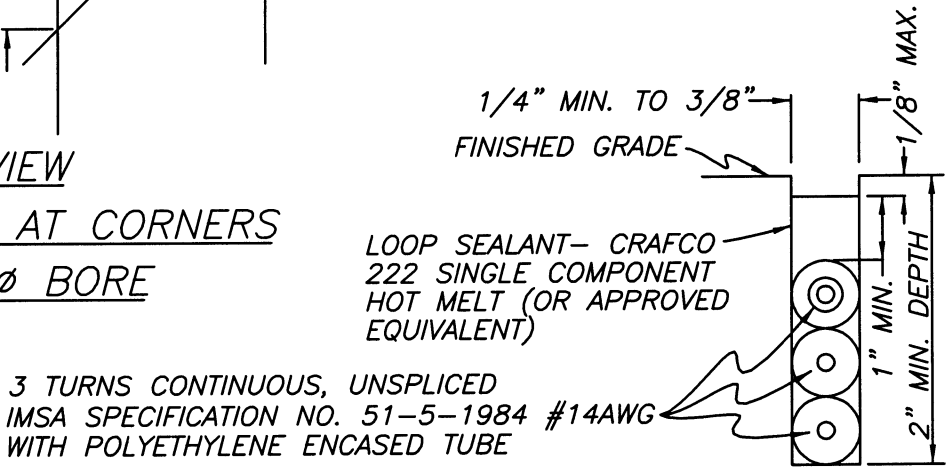


SECTION A–A



PLAN VIEW

DIAGONAL SLOT AT CORNERS
& 1–1/4"ø BORE



SECTION B–B

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO	
			LOOP DETECTOR LAYOUT AND DETAILS	DRAWING NO. R-406A (325)	
				DATE 08/00	PAGE 409
APPROVED BY: S.V.		08/00			

NOTES:

1. SLOTS SHALL BE WASHED, BLOWN OUT AND THOROUGHLY DRIED BEFORE INSTALLING LOOP CONDUCTORS.
2. THE ADDITIONAL LENGTH OF EACH CONDUCTOR FOR EACH LOOP SHALL BE TWISTED TOGETHER INTO A PAIR (AT LEAST TWO TURNS PER FOOT) BEFORE BEING PLACED IN THE SLOT AND CONDUIT TO TERMINATION PULL BOX.
3. LOOPS SHALL BE CENTERED IN LANES.
4. WHERE LOOPS ARE TO BE OVERLAID WITH ASPHALT, THE LOOP SEALANT SHALL BE SAKRETE, OR APPROVED EQUAL, AND COMPACTED.
5. DISTANCE BETWEEN SIDE OF LOOP AND A LEAD-IN SAW CUT FROM ADJACENT DETECTORS SHALL BE TWO FEET MINIMUM. DISTANCE BETWEEN LEAD-IN SAW CUTS SHALL BE SIX INCHES MINIMUM. DISTANCE BETWEEN LEAD-IN SAW CUTS SHALL BE TWELVE INCHES FROM ANY CURB, GUTTER PAN LIP OR PAVEMENT EDGE.
6. ADJACENT LOOPS ON THE SAME SENSOR UNIT CHANNEL SHALL BE WOUND IN OPPOSITE DIRECTIONS.
7. ALL WIRES SHALL BE IDENTIFIED IN PULL BOXES, WITH LOOP WIRES AS FOLLOWS: RED TAPE INDICATES LEFT TURN LANE LOOPS WITH ONE BAND IDENTIFYING LOOP ONE, TWO BANDS LOOP TWO, ETC. BLUE TAPE INDICATES THROUGH LANE LOOPS AND WHITE TAPE INDICATES RIGHT TURN LANES. IF THERE ARE TWO LEFT TURN LANES, YELLOW TAPE INDICATES THE LANE CLOSEST TO THE CENTER LANE OF THE STREET.
8. ALL INDUCTIVE LOOPS ON A GIVEN CHANNEL SHALL BE CONNECTED IN SERIES. NO MORE THAN ONE LEAD IN CABLE SHALL BE CONNECTED TO A CABINET CHANNEL TERMINATION. NO MORE THAN SIX INDIVIDUAL LOOPS ARE TO BE CONNECTED TO ONE CHANNEL.
9. LOOP LEAD IN CABLES GREATER THAN 500 FEET IN LENGTH SHALL BE INSTALLED WITH FOUR (4) TURNS INSTEAD OF THREE (3).
10. LOOPS CUT INTO THE STREET SURFACE SHALL BE SEALED WITH "CRAFCO" LOOP SEALANT, OR AN APPROVED EQUAL.
11. LISTED BELOW ARE THE MINIMUM DISTANCES FOR ADVANCE LOOP DETECTOR PLACEMENT AS A FUNCTION OF POSTED SPEED LIMITS, MEASURED FROM THE STOP BAR TO THE REAR OF THE LOOP.

SPEED LIMIT (MPH)	DISTANCE (FEET)
25	150
30	200
35	255
40	285
45	330
50	355
55	390

NO.	REVISION	DATE
APPROVED BY: S.V.		08/00

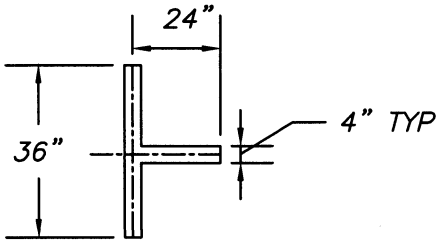
STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

NOTES-LOOP DETECTOR LAYOUT AND DETAILS

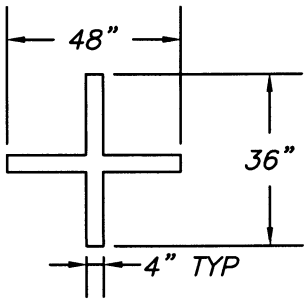
SECTION **RENO**

DRAWING NO. R-406B (325)

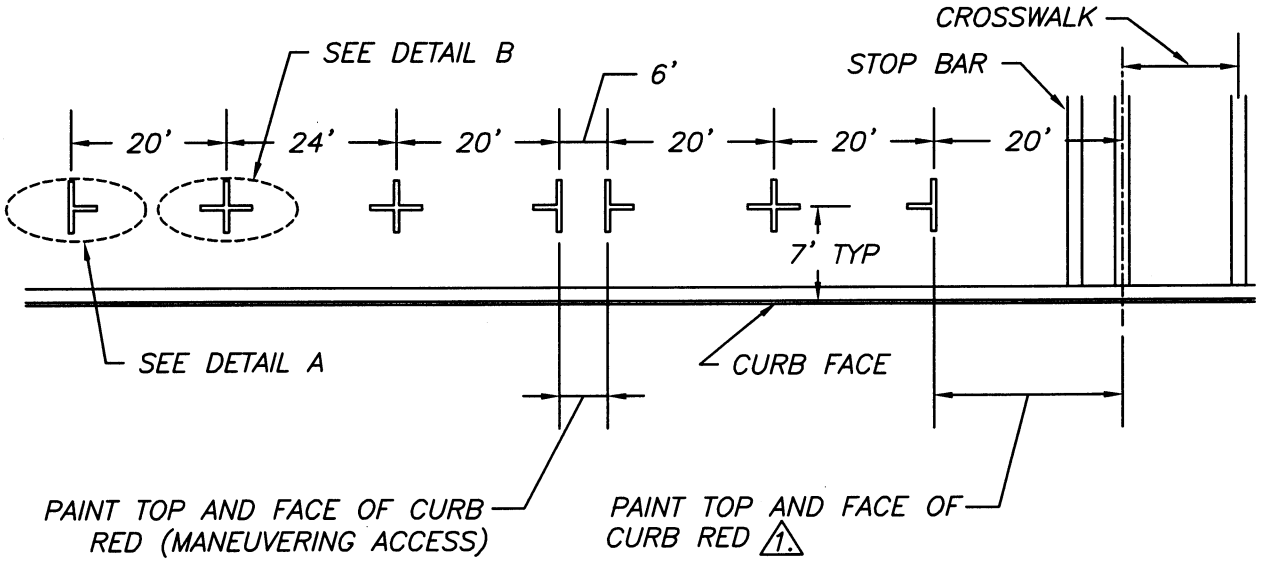
DATE 08/00



DETAIL A



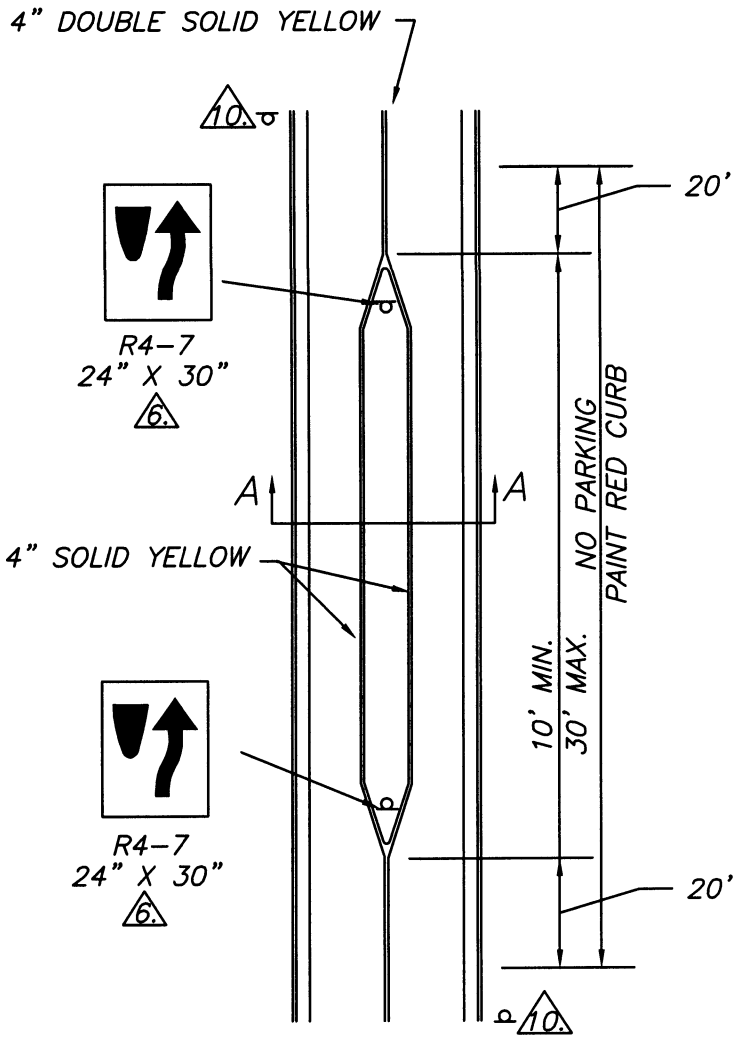
DETAIL B



NOTES:

1. NO PARKING WITHIN 20 FEET OF A CROSSWALK OR 15 FEET ON EITHER SIDE OF A FIRE HYDRANT.
2. PARKING SPACE MARKINGS SHALL BE WHITE, TRAFFIC PAINT. MATERIAL AND APPLICATION SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, LATEST EDITION.
3. PARKING SPACE MARKINGS SHALL BE SYMETRICAL ABOUT AXES.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO
			PARKING SPACE MARKINGS	DRAWING NO. R-407 (324)
				DATE 08/00 / PAGE 411
APPROVED BY: S.V.		08/00		

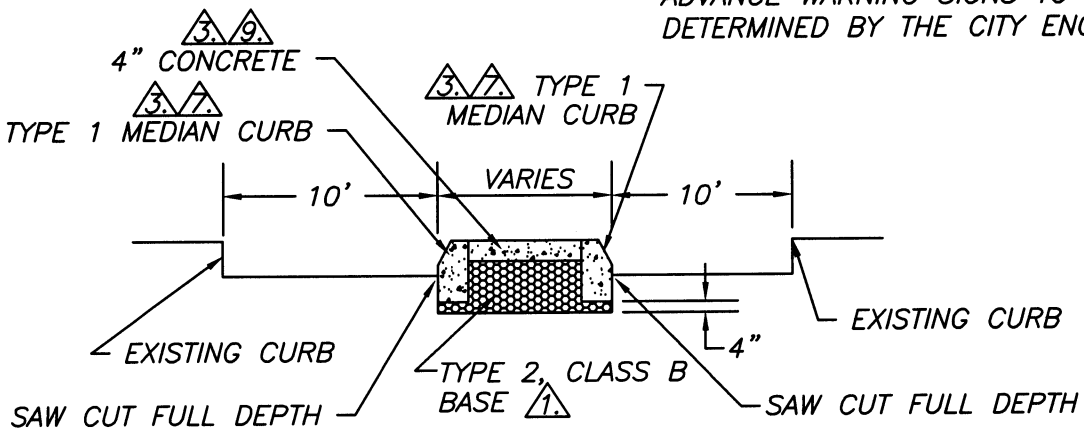


PLAN – STRIPING AND SIGNAGE

(TYP. FOR BOTH DIRECTIONS)

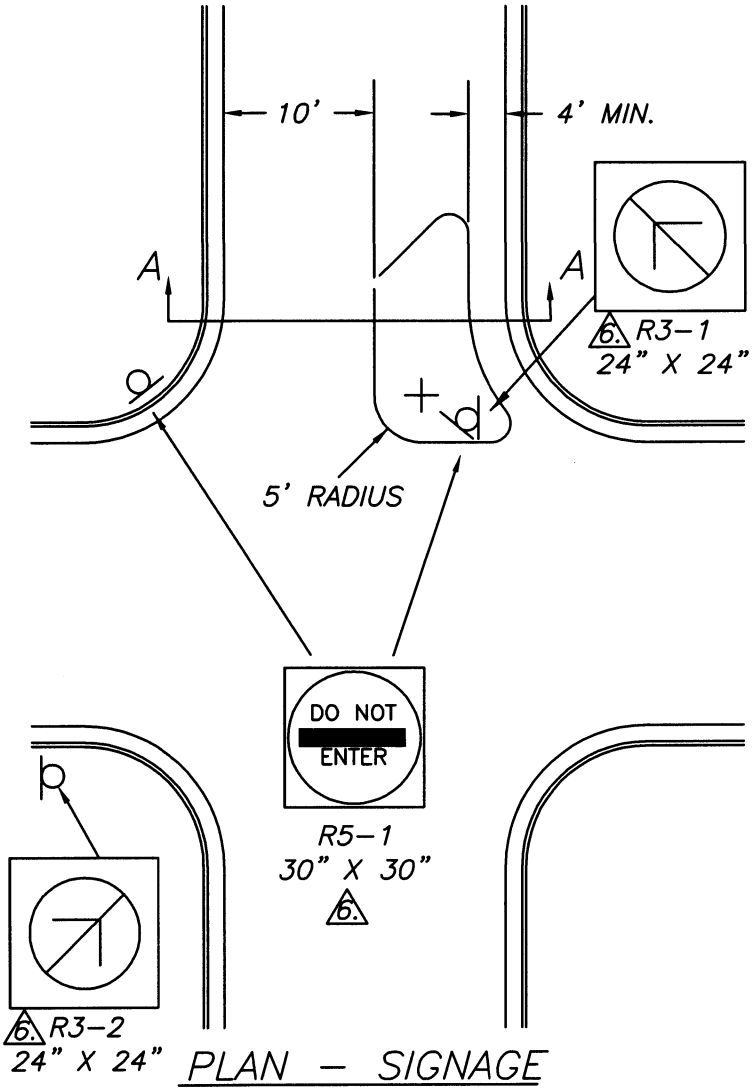
NOTES:

1. AGGREGATE BASE SHALL BE TYPE 2, CLASS B, WITH 95% COMPACTION.
2. EXACT LOCATION OF MEDIAN ISLAND TO BE DETERMINED BY THE CITY ENGINEER.
3. FIBER–REINFORCED PORTLAND CEMENT CONCRETE SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4000 PSI MIN. COMPRESSIVE STRENGTH, 6 SACKS OF CEMENT PER YARD WITH A W/C RATIO OF 0.45, AIR ENTRAINMENT OF 6.0% ±1.5%, SLUMP AT 1 TO 4 INCHES. ALL MATERIALS SHALL CONFORM TO SSPWC SECTION 202. POLYPROPYLENE FIBERS SHALL BE ADDED TO THE P.C.C. PER THE MANUFACTURER'S RECOMMENDATIONS.
4. ISLAND TAPERS SHALL BE 1:1 ON BOTH ENDS.
5. ISLAND END RADII SHALL BE 2'.
6. SIGNS SHALL BE LOCATED BY THE CITY ENGINEER.
7. REFER TO STANDARD DETAIL DRAWING NO. 1–6.2 (312).
8. MEDIAN ISLAND SHALL NOT BE LOCATED WITHIN 20' OF ANY DRIVEWAY.
9. LANDSCAPING OF MEDIAN AREAS MAY BE ALLOWED, BUT REQUIRES THE APPROVAL OF THE CITY ENGINEER.
10. LOCATIONS AND TYPES OF ADVANCE WARNING SIGNS TO BE DETERMINED BY THE CITY ENGINEER.



SECTION A–A

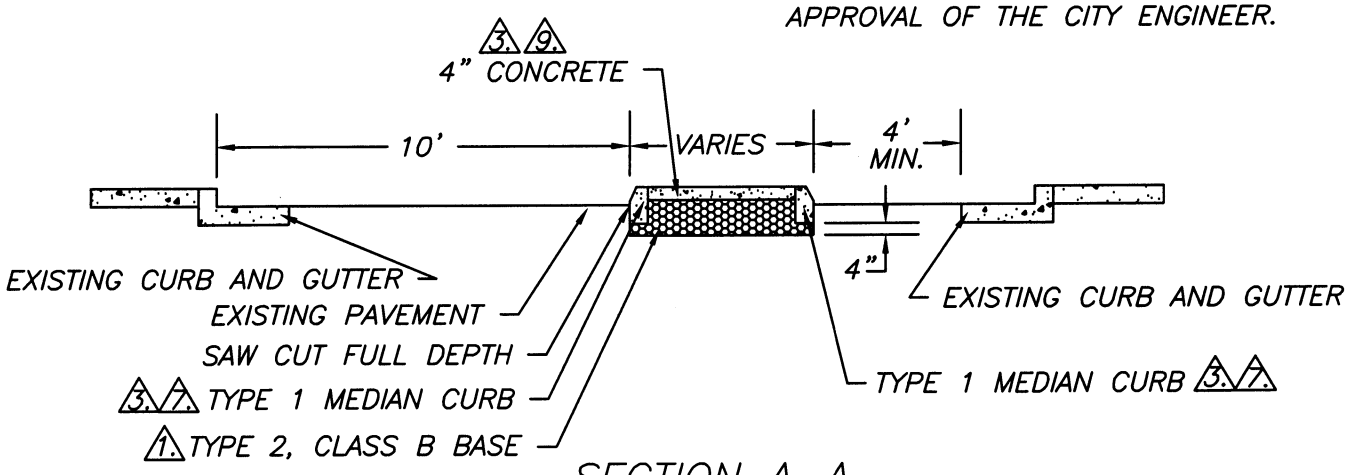
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO
			MEDIAN ISLAND	DRAWING NO. R-408 (311,324,332)
				DATE 08/00 / PAGE 412
APPROVED BY: S.V.		08/00		



PLAN – SIGNAGE

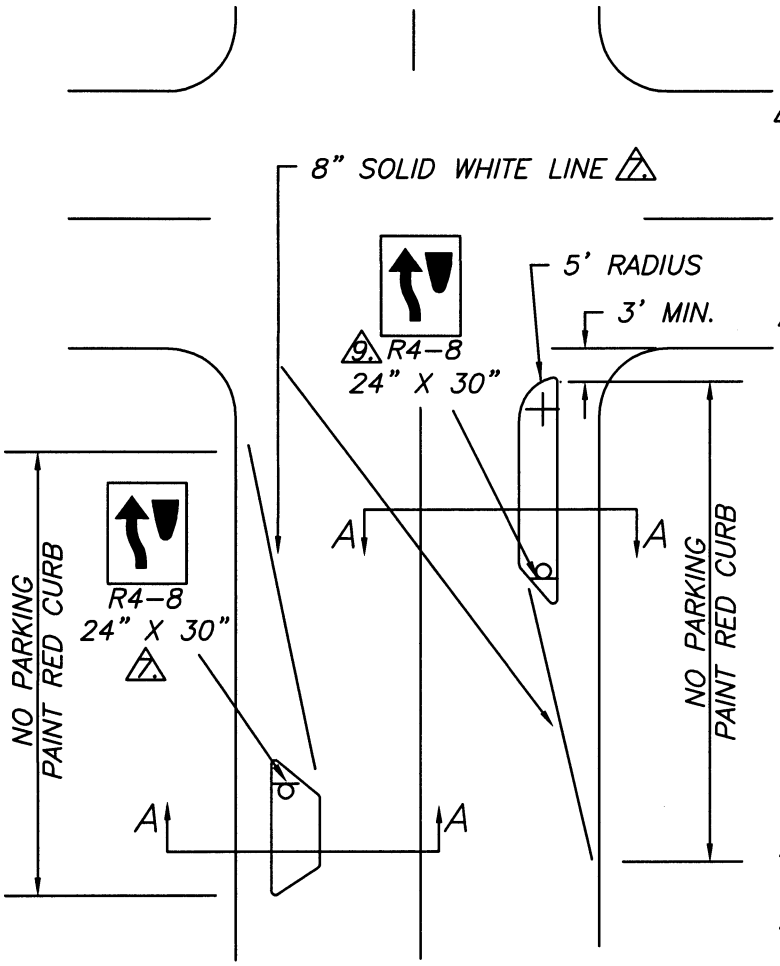
NOTES:

1. AGGREGATE BASE SHALL BE TYPE 2, CLASS B, WITH 95% COMPACTION.
2. EXACT LOCATION OF SEMI–DIVERTER TO BE DETERMINED BY THE CITY ENGINEER.
3. FIBER–REINFORCED PORTLAND CEMENT CONCRETE SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4000 PSI MIN. COMPRESSIVE STRENGTH, 6 SACKS OF CEMENT PER YARD WITH A W/C RATIO OF 0.45, AIR ENTRAINMENT OF 6.0% ±1.5%, SLUMP AT 1 TO 4 INCHES. ALL MATERIALS SHALL CONFORM TO SSPWC SECTION 202. POLYPROPYLENE FIBERS SHALL BE ADDED TO THE P.C.C. PER THE MANUFACTURER'S RECOMMENDATIONS.
4. ISLAND TAPERS SHALL BE 1:1 ON BOTH ENDS.
5. ISLAND END RADII SHALL BE 2'.
6. SIGNS SHALL BE LOCATED BY THE CITY ENGINEER.
7. REFER TO STANDARD DETAIL DRAWING NO. 1–6.2 (312).
8. SEMI–DIVERTER SHALL NOT BE LOCATED WITHIN 20' OF ANY DRIVEWAY.
9. LANDSCAPING OF MEDIAN AREAS MAY BE ALLOWED, BUT REQUIRES THE APPROVAL OF THE CITY ENGINEER.



SECTION A–A

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO	
			SEMI–DIVERTER	DRAWING NO. R-409 (311,332)	
				DATE 08/00	PAGE 413
APPROVED BY: S.V.		08/00			



PLAN – STRIPING AND SIGNAGE

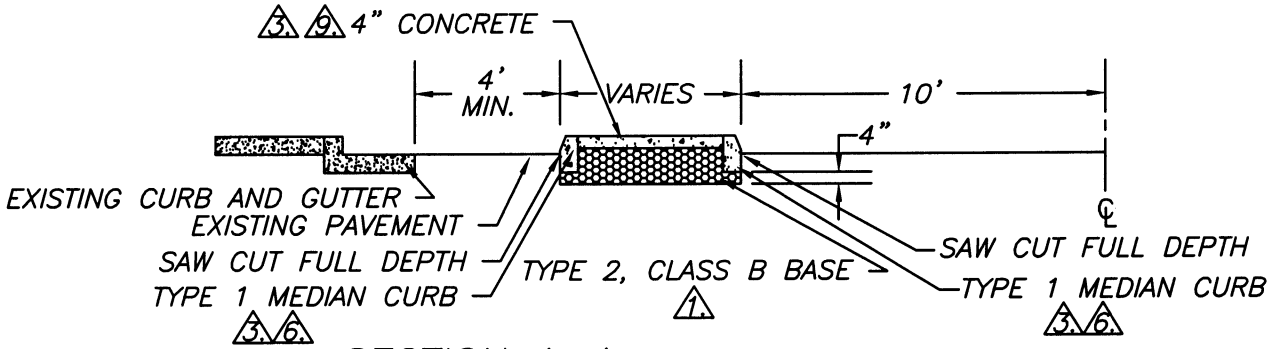
(TYP. FOR BOTH DIRECTIONS)

TABLE 1

POSTED SPEED	TAPER
25	100'
30	150'

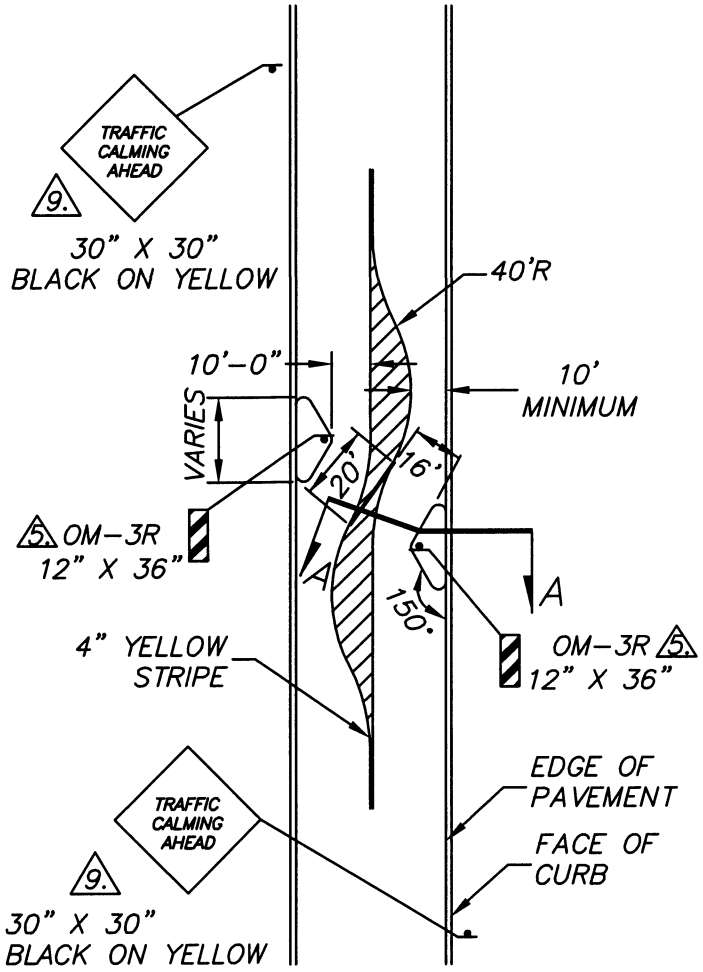
NOTES:

1. AGGREGATE BASE SHALL BE TYPE 2, CLASS B, WITH 95% COMPACTION.
2. EXACT LOCATIONS OF CURB EXTENSIONS TO BE DETERMINED BY THE CITY ENGINEER.
3. FIBER–REINFORCED PORTLAND CEMENT CONCRETE SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4000 PSI MIN. COMPRESSIVE STRENGTH, 6 SACKS OF CEMENT PER YARD WITH A W/C RATIO OF 0.45, AIR ENTRAINMENT OF 6.0% ±1.5%, SLUMP AT 1 TO 4 INCHES. ALL MATERIALS SHALL CONFORM TO SSPWC SECTION 202. POLYPROPYLENE FIBERS SHALL BE ADDED TO THE P.C.C. PER THE MANUFACTURER'S RECOMMENDATIONS.
4. ISLAND TAPERS SHALL BE 1:1 ON BOTH ENDS.
5. 8" SOLID WHITE STRIPE SHALL BE TAPERED PER TABLE 1.
6. REFER TO STANDARD DETAIL DRAWING NO. 1–6.2 (312).
7. SIGNS SHALL BE LOCATED BY THE CITY ENGINEER.
8. ISLAND END RADII SHALL BE 2'.
9. LANDSCAPING OF MEDIAN AREAS MAY BE ALLOWED, BUT REQUIRES THE APPROVAL OF THE CITY ENGINEER.
10. CURB EXTENSIONS SHALL NOT BE LOCATED WITHIN 20' OF ANY DRIVEWAY.



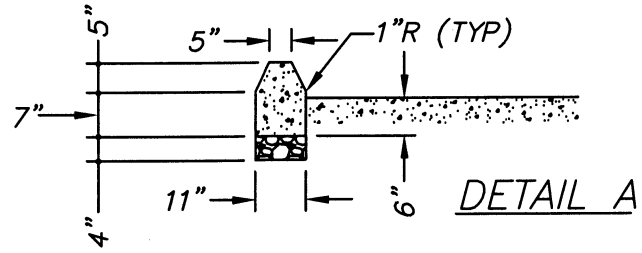
SECTION A–A

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO
			CURB EXTENSIONS	DRAWING NO. R-410 (311,324,332)
				DATE 08/00 / PAGE 414
APPROVED BY: S.V.		08/00		

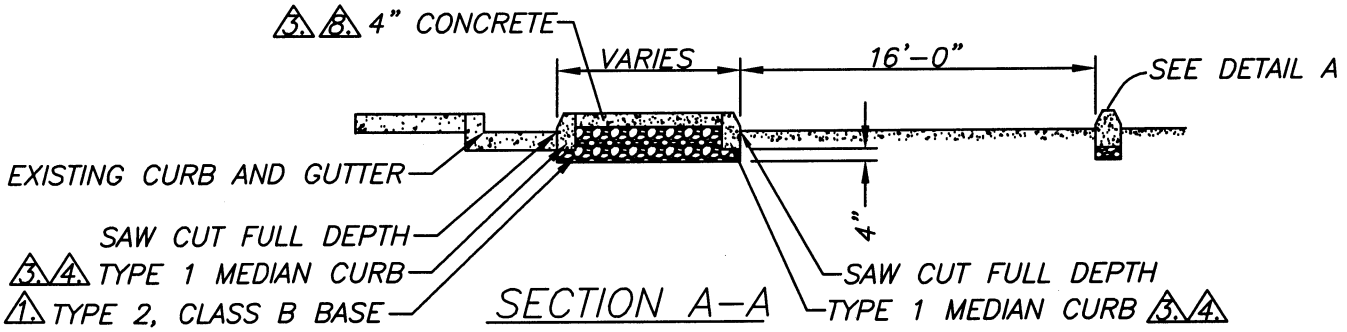


PLAN – STRIPING AND SIGNAGE

(TYP. FOR BOTH DIRECTIONS)



DETAIL A



SECTION A–A

NOTES:

1. AGGREGATE BASE SHALL BE TYPE 2, CLASS B, WITH 95% COMPACTION.

2. EXACT LOCATION OF ANGLED SLOW POINT TO BE DETERMINED BY THE CITY ENGINEER.

3. FIBER–REINFORCED PORTLAND CEMENT CONCRETE SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4000 PSI MIN. COMPRESSIVE STRENGTH, 6 SACKS OF CEMENT PER YARD WITH A W/C RATIO OF 0.45, AIR ENTRAINMENT OF 6.0% ±1.5%, SLUMP AT 1 TO 4 INCHES. ALL MATERIALS SHALL CONFORM TO SSPWC SECTION 202. POLYPROPYLENE FIBERS SHALL BE ADDED TO THE P.C.C. PER THE MANUFACTURER'S RECOMMENDATIONS.

4. REFER TO STANDARD DETAIL DRAWING NO. R–125 (312).

5. SIGNS SHALL BE LOCATED BY THE CITY ENGINEER.

6. ISLAND RADII SHALL BE 2'.

7. ANGLED SLOW POINT SHALL NOT BE LOCATED WITHIN 20' OF ANY DRIVEWAY.

8. LANDSCAPING OF MEDIAN AREAS MAY BE ALLOWED, BUT REQUIRES APPROVAL OF THE CITY ENGINEER.

9. LOCATIONS OF ADVANCE WARNING SIGNS TO BE DETERMINED BY THE CITY ENGINEER.

10. LOCATION OF RED CURB AND DELINEATORS TO BE ESTABLISHED BY THE CITY ENGINEER.

NO.	REVISION	DATE
1	REDRAW/NOTES	05/01
2	NOTE 4	01/04
APPROVED BY: G.S.		01/04

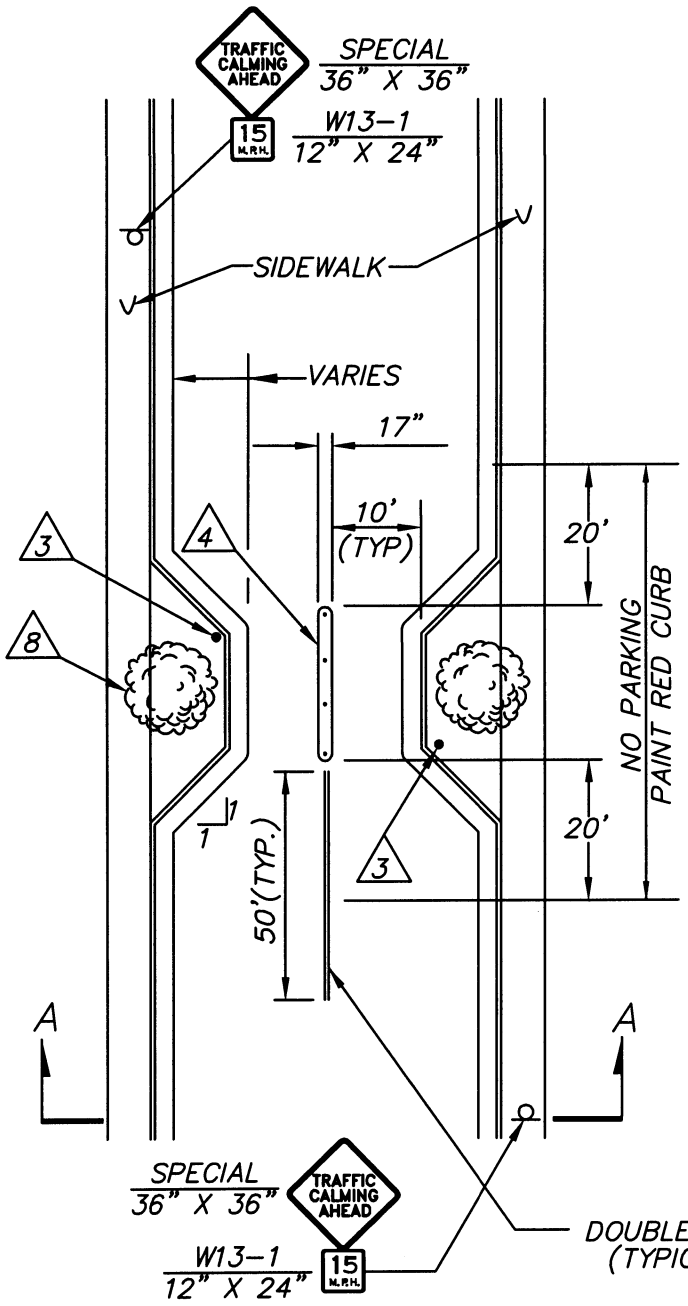
STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

ANGLED SLOW POINT

SECTION RENO

DRAWING NO. R-411 (311,324,332)

DATE 08/00



NOTES:

1. EXACT LOCATION OF PARALLEL CHOKER TO BE DETERMINED BY THE CITY ENGINEER.
2. ISLAND TAPERS SHALL BE 1:1
3. INSTALL GUIDE POST AT LEADING END OF CHOKER.
4. MEDIAN ISLAND TO BE PAINTED YELLOW W/ GLASS BEADS, AND OPTI-CURB GLASS STUD.
5. SIGNS SHALL BE LOCATED PER M.U.T.C.D.
6. PARALLEL CHOKER SHALL NOT BE LOCATED WITHIN 20' OF ANY DRIVEWAY.
7. INSTALL OPTI-CURB GLASS STUDS, REFER TO STANDARD DETAIL R-412D.
8. TREE/LANDSCAPING TO BE APPROVED BY ENGINEER
9. REFER TO STANDARD DETAIL R-412B FOR SECTION A-A

PLAN - STRIPING AND SIGNAGE

(TYP. FOR BOTH DIRECTIONS)

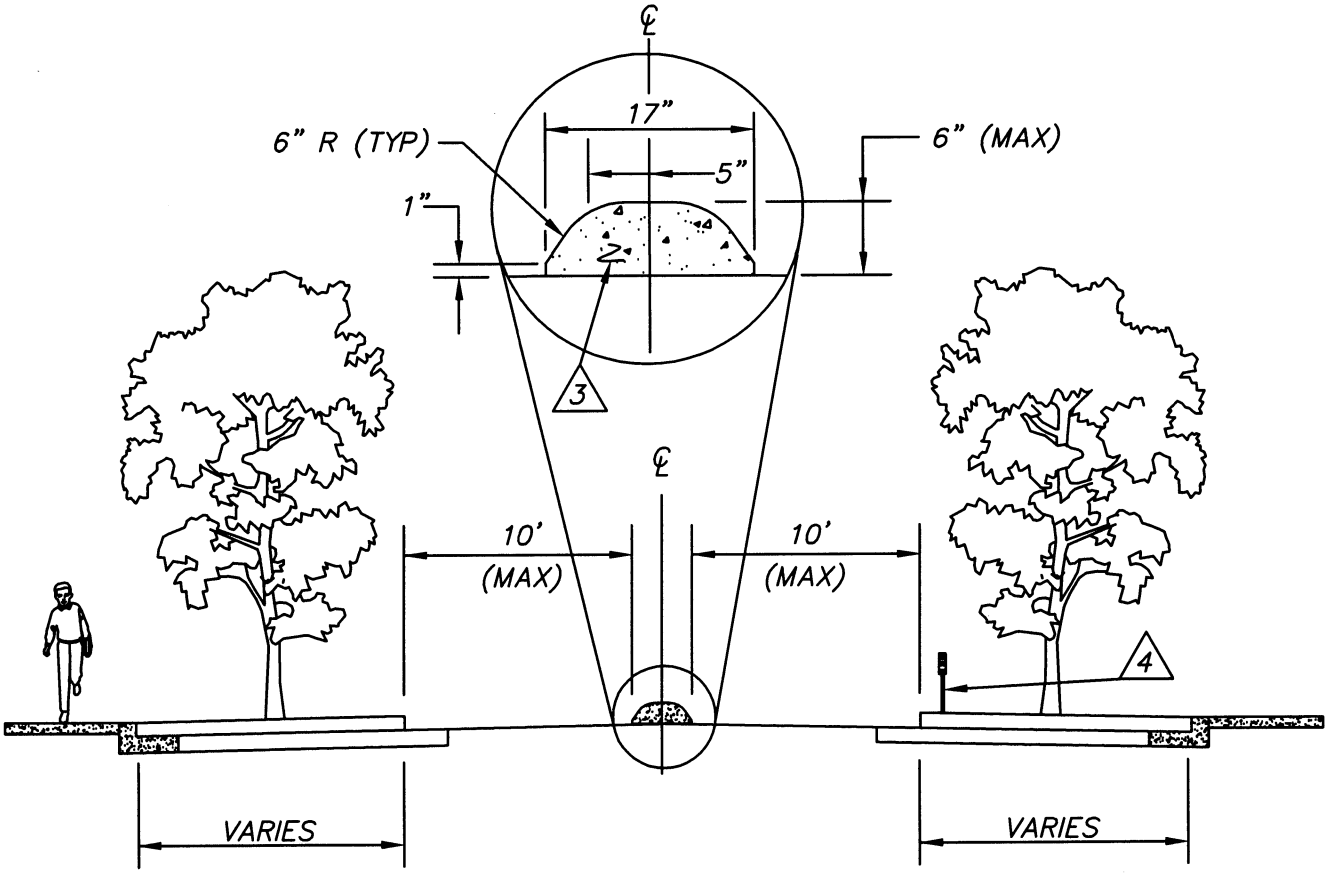
NO.	REVISION	DATE
1	DIFF. DRAWING	01/04
APPROVED BY: G.S.		01/04

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

PARALLEL CHOKER

(NEW STREET)

SECTION	RENO
DRAWING NO.	R-412A (311,324,332)
DATE	11/03
PAGE	416

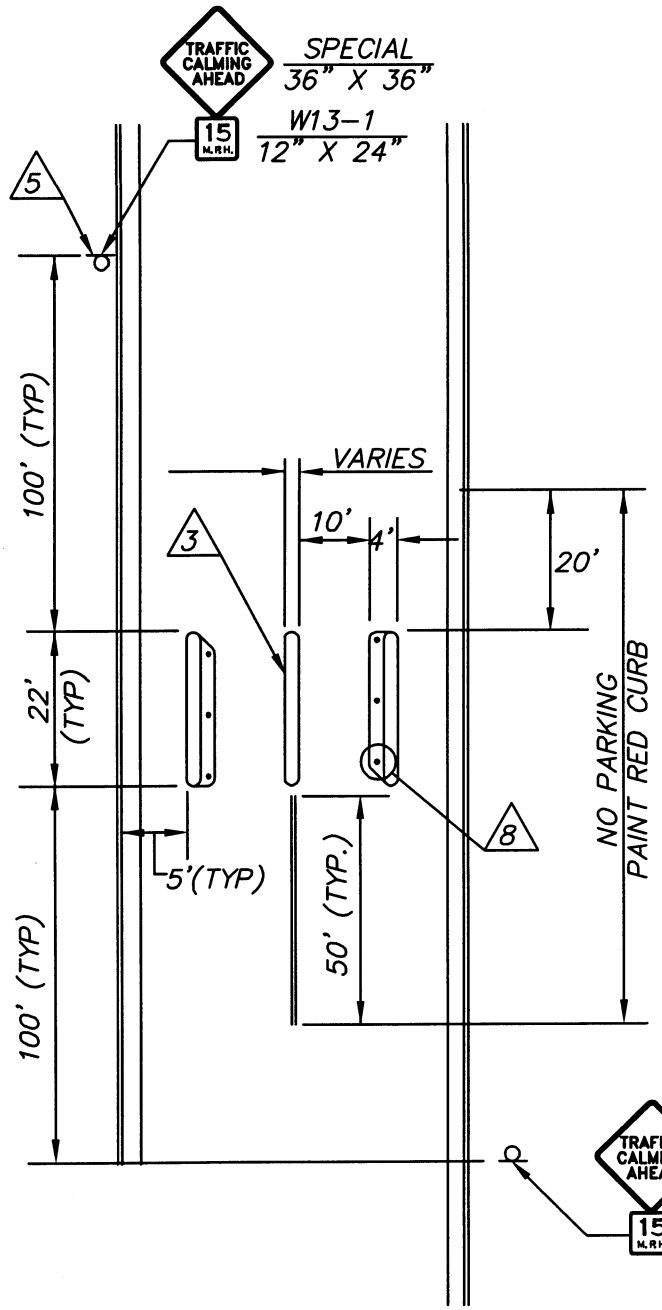


SECTION A–A

NOTES:

1. REFER TO STANDARD DETAIL DRAWING NO. R–412A FOR PLAN VIEW.
2. AGGREGATE BASE SHALL BE TYPE 2, CLASS B, WITH 95% COMPACTION.
3. FIBER–REINFORCED PORTLAND CEMENT CONCRETE SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4000 PSI MIN. COMPRESSIVE STRENGTH, 6 SACKS OF CEMENT PER YARD WITH A W/C RATIO OF 0.45, AIR ENTRAINMENT OF 6.0% ±1.5%, SLUMP AT 1 TO 4 INCHES. ALL MATERIALS SHALL CONFORM TO SSPWC SECTION 202. POLYPROPYLENE FIBERS SHALL BE ADDED TO THE P.C.C. PER THE MANUFACTURER'S RECOMMENDATIONS.
4. INSTALL GUIDE POST AT FRONT END OF CHOCKER.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO	
1	DIFF. DRAWING	01/04	PARALLEL CHOKER (NEW STREET)	DRAWING NO. R–412B (311,324,332)	
				DATE 11/03	PAGE 417
APPROVED BY: G.S.		01/04			



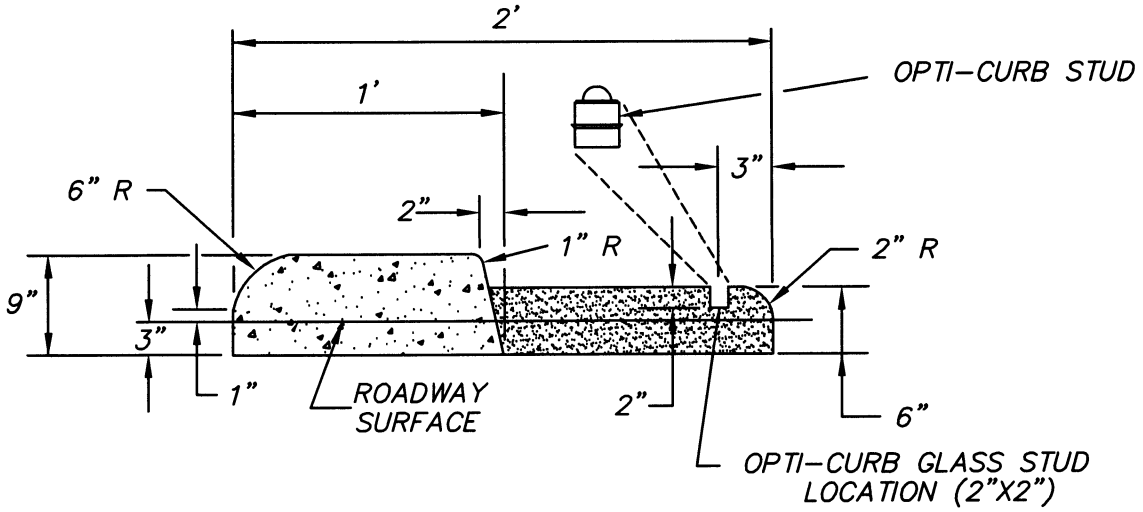
NOTES:

1. EXACT LOCATION OF PARALLEL CHOKER TO BE DETERMINED BY THE CITY ENGINEER.
2. ISLAND TAPERS SHALL BE 1:1 AT ENTRANCE.
3. MEDIAN ISLAND TO BE PAINTED YELLOW W/ GLASS BEADS, AND OPTI-CURB GLASS STUD.
4. ISLAND END RADII SHALL BE TWO-FEET.
5. SIGNS SHALL BE LOCATED PER M.U.T.C.D.
6. PARALLEL CHOKER SHALL NOT BE LOCATED WITHIN 20' OF ANY DRIVEWAY.
7. REFER TO STANDARD DETAIL DRAWING NO. R-412D FOR DETAILS.
8. INSTALL OPTI-CURB GLASS STUDS. SEE DETAIL "A" ON STANDARD DETAIL R-412D.

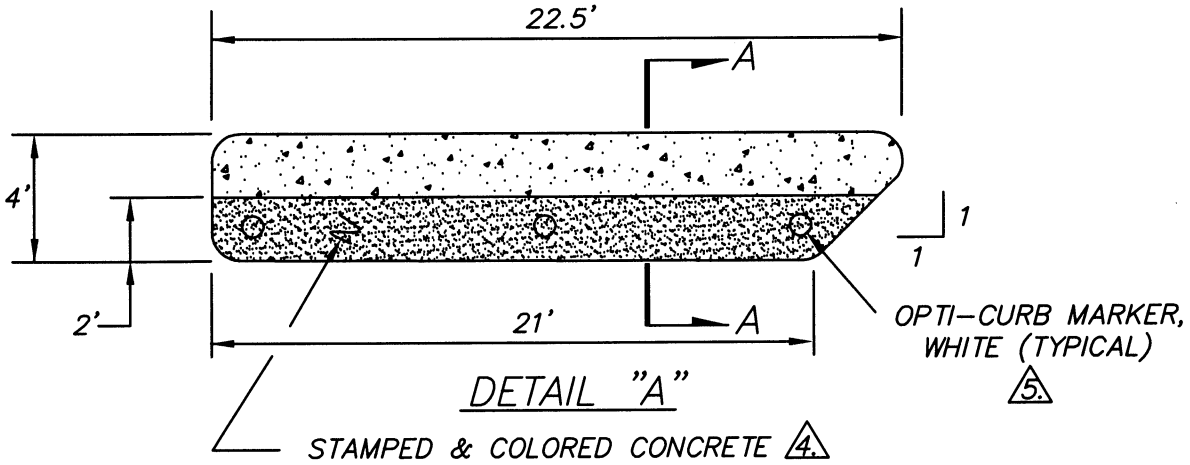
PLAN - STRIPING AND SIGNAGE

(TYP. FOR BOTH DIRECTIONS)

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO
			PARALLEL CHOKER (EXISITNG STREET)	DRAWING NO. R-412C (311,324,332)
				DATE 01/04 / PAGE 418
APPROVED BY: G.S.		01/04		



SECTION A-A



DETAIL "A"

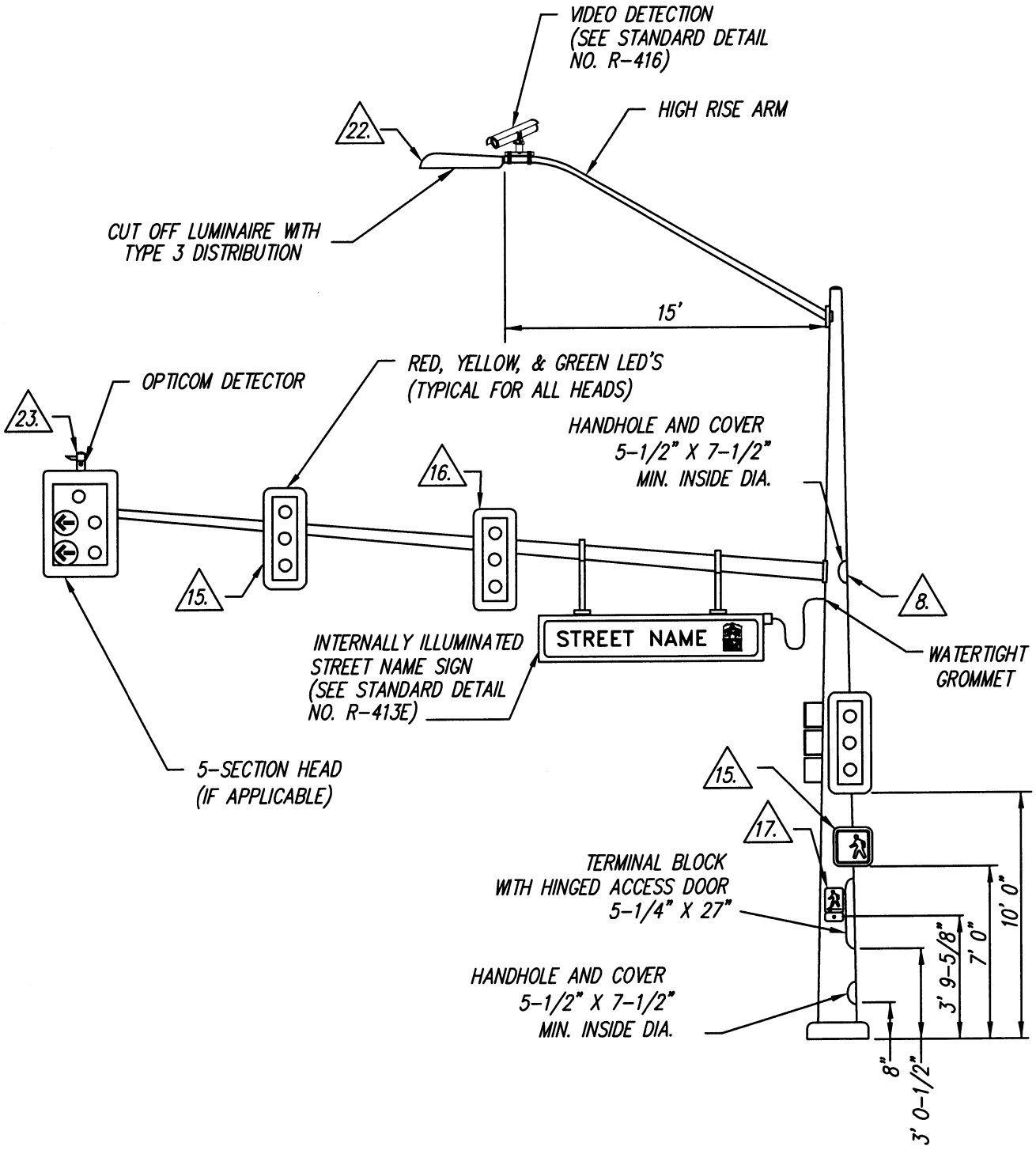
NOTES:

1. REFER TO STANDARD DETAIL DRAWING NO. R-412C FOR PLAN VIEW.
2. AGGREGATE BASE SHALL BE TYPE 2, CLASS B, WITH 95% COMPACTION.
3. FIBER-REINFORCED PORTLAND CEMENT CONCRETE SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4000 PSI MIN. COMPRESSIVE STRENGTH, 6 SACKS OF CEMENT PER YARD WITH A W/C RATIO OF 0.45, AIR ENTRAINMENT OF 6.0% ±1.5%, SLUMP AT 1 TO 4 INCHES. ALL MATERIALS SHALL CONFORM TO SSPWC SECTION 202. POLYPROPYLENE FIBERS SHALL BE ADDED TO THE P.C.C. PER THE MANUFACTURER'S RECOMMENDATIONS.

4. STAMPED & COLORED CONCRETE PATTERN TO BE APPROVED BY ENGINEER

5. INSTALL GLASS OPTI-CURB STUDS AS SHOWN. FINAL LOCATION TO BE DETERMINED BY ENGINEER.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO	
			PARALLEL CHOKER (EXISITNG STREET)	DRAWING NO. R-412D (311,324,332)	
				DATE 01/04	PAGE 419
APPROVED BY: G.S.		01/04			

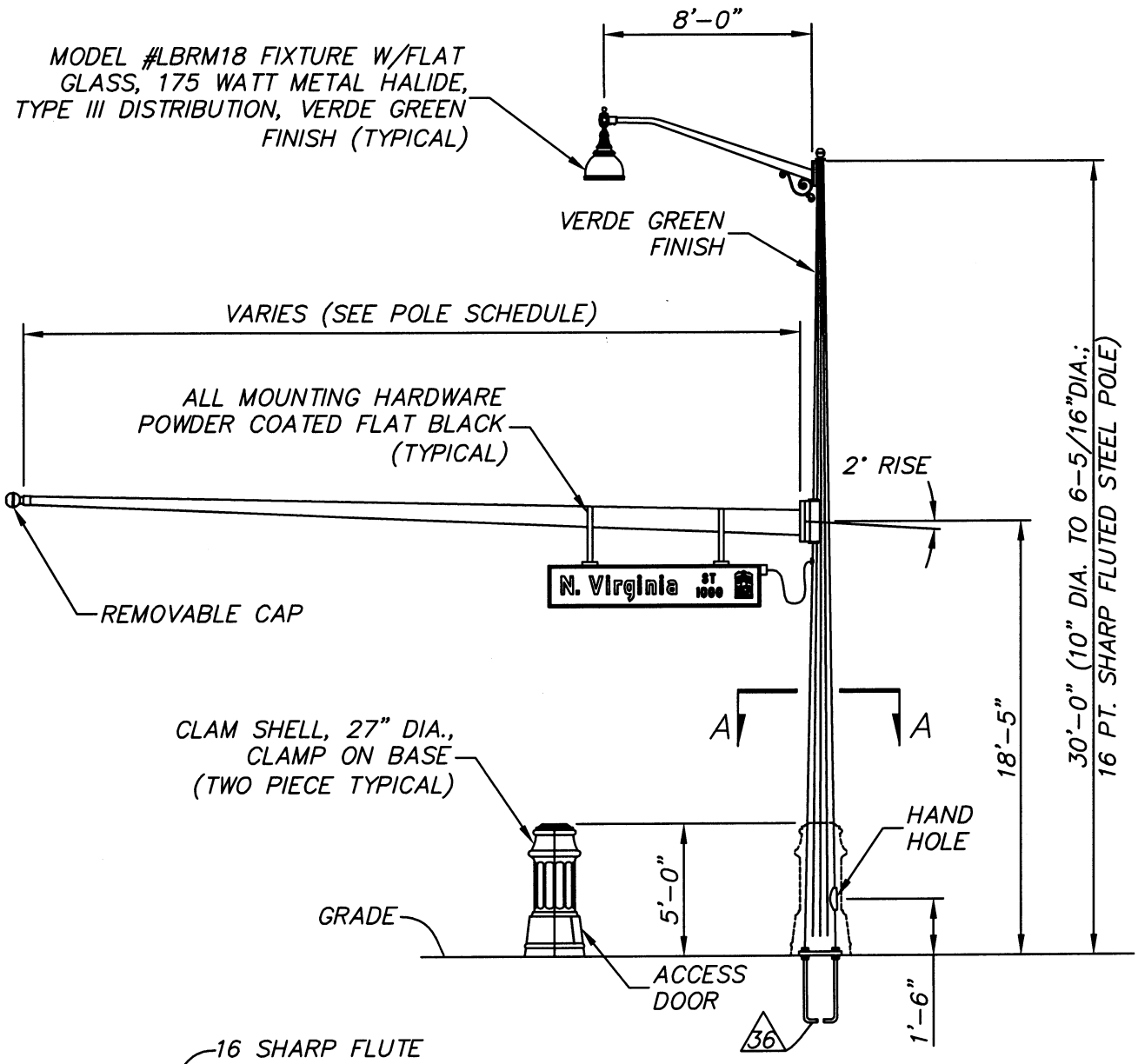


NO.	REVISION	DATE
1	DIFF. DRAWING	01/04
APPROVED BY: G.S.		01/04

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

TRAFFIC SIGNAL POLE AND EQUIPMENT

SECTION	RENO
DRAWING NO.	R-413A (325)
DATE	08/00
PAGE	420



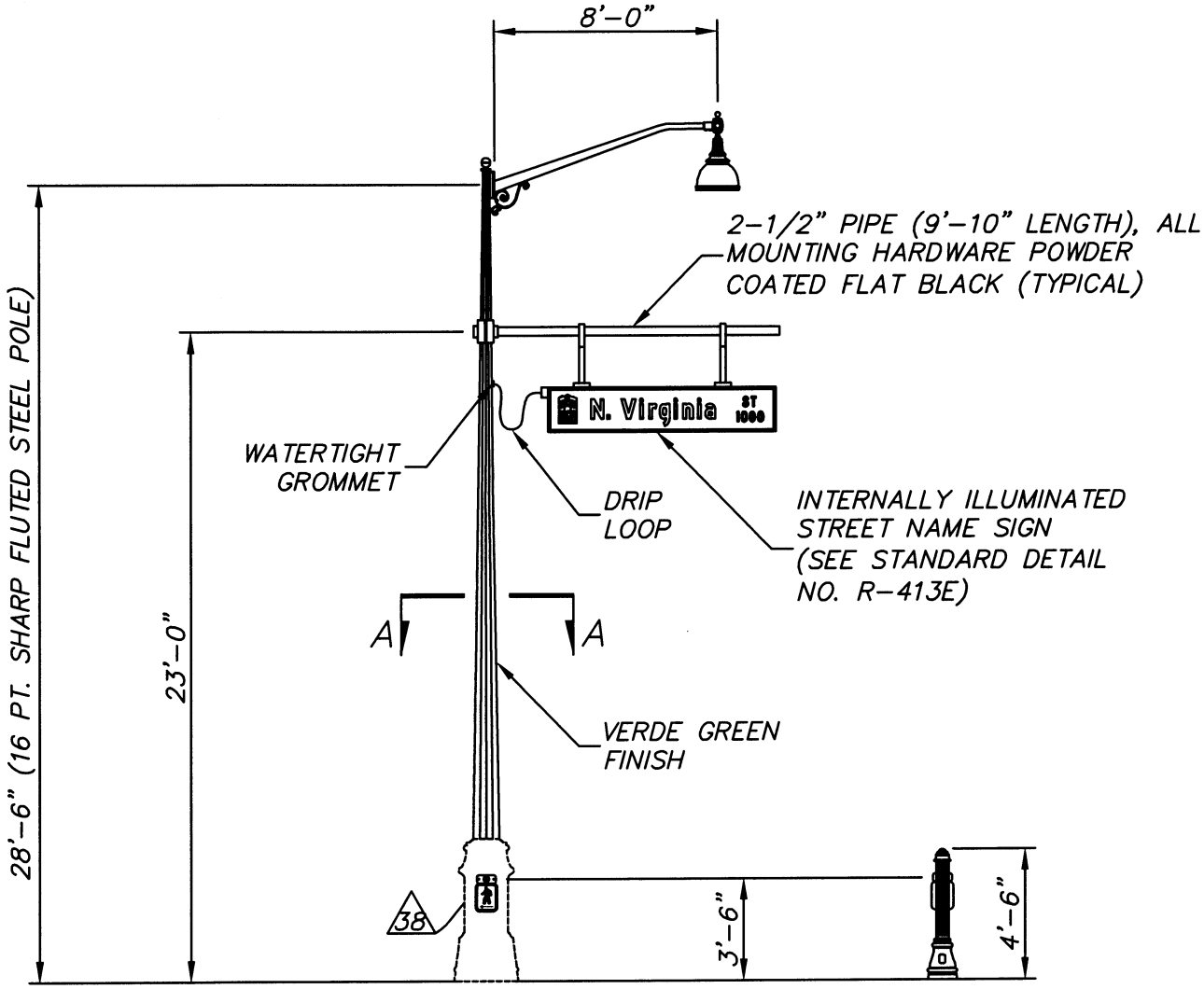
SECTION A-A

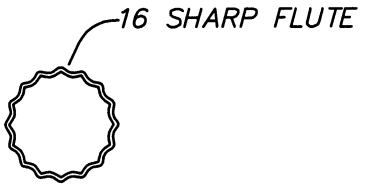
NO.	REVISION	DATE
1	DIFF. DRAWING	01/04
APPROVED BY: G.S.		01/04

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

TRAFFIC SIGNAL DECORATIVE POLE

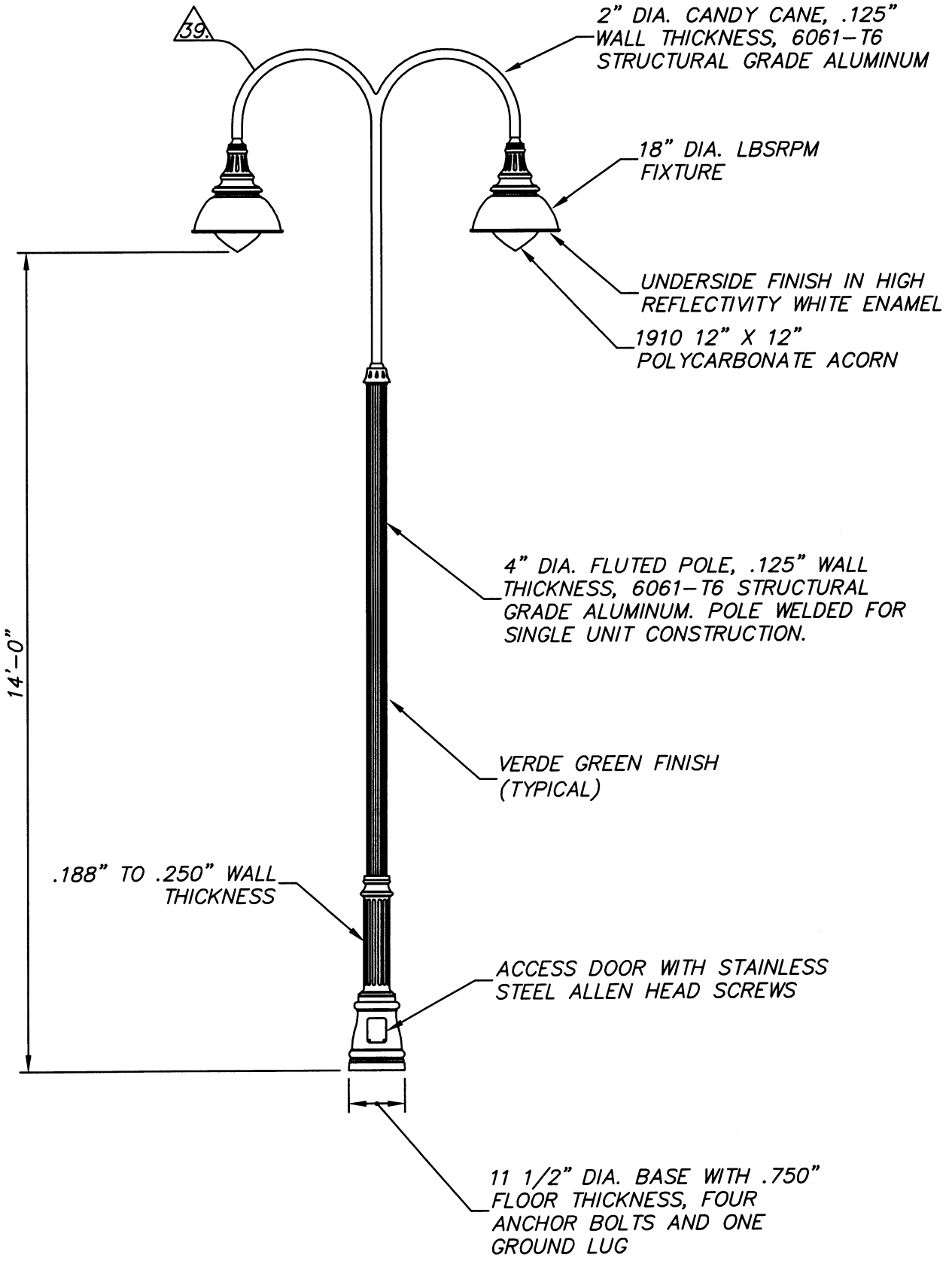
SECTION	RENO
DRAWING NO.	R-413B (325)
DATE	08/00
PAGE	421





SECTION A-A

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO	
			DECORATIVE STREET LIGHT POLE	DRAWING NO. R-413C (325)	
				DATE 01/04	PAGE 422
APPROVED BY: G.S.		01/04			

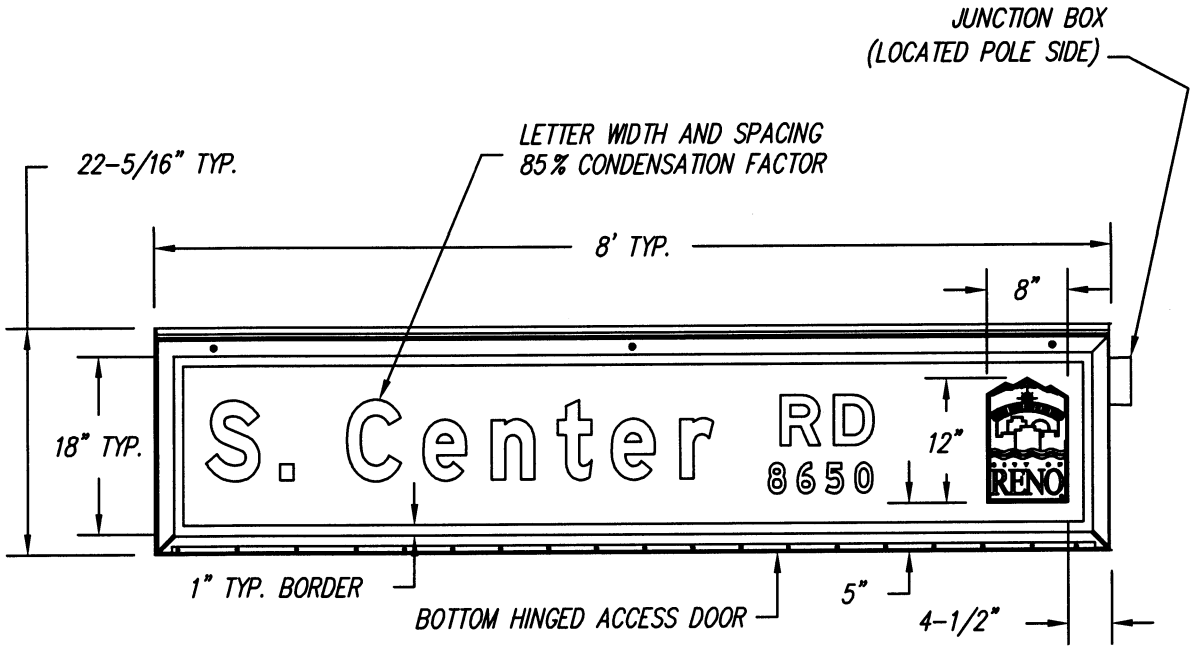


NO.	REVISION	DATE
APPROVED BY: G.S.		01/04

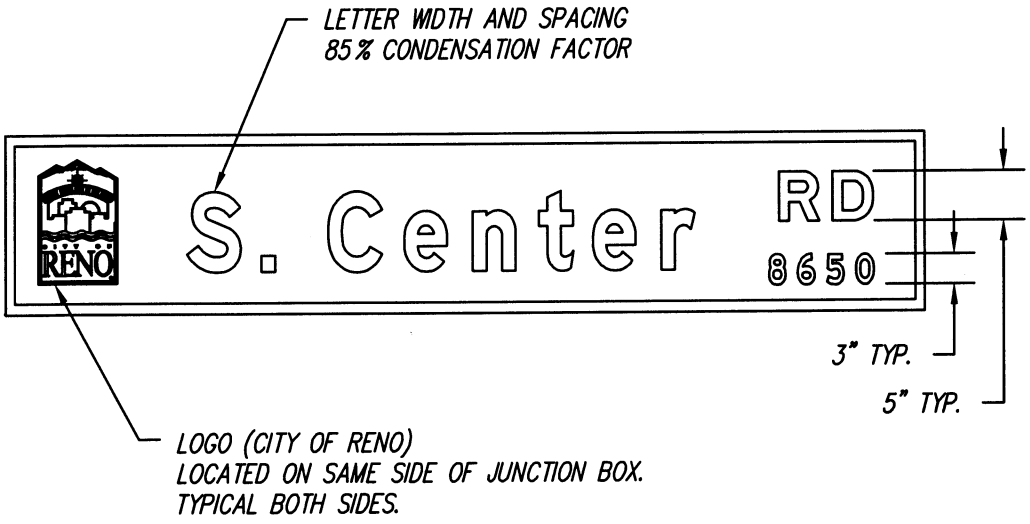
STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

DECORATIVE STREET LIGHT POLE

SECTION	RENO
DRAWING NO.	R-413D (325)
DATE	01/04
PAGE	423



LEGEND SIDE 1



LEGEND SIDE 2

NOTES:

1. THE CITY OF RENO LOGO AND BLOCK NUMBERS SHALL BE PRESENT ON ALL SIGN FACES. SEE IISNS SCHEDULES FOR LEGENDS. ALL STREET NAME SIGNS SHALL BE 8 FOOT DOUBLE FACED WITH CASE SENSITIVE LETTERING. CITY LOGO SHALL BE LOCATED AT THE POLE SIDE OF THE SIGN.
1. SIGNS SHALL BE WIRED USING 16/3 SOOW OR SJOOW CABLE.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO	
			POLE STREET NAME SIGN	DRAWING NO. R-413E (325)	
				DATE 01/04	PAGE 424
APPROVED BY: G.S.		01/04			

CITY OF RENO GENERAL TRAFFIC SIGNAL NOTES

1. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL EXISTING SUBSTRUCTURES, WHETHER SHOWN OR NOT, AND TO NOTIFY ALL UTILITY COMPANIES TO VERIFY IN THE FIELD THE LOCATION OF THEIR INSTALLATIONS AT LEAST 48 HOURS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL PROTECT ALL SUBSTRUCTURES FROM DAMAGE, AS WELL AS ANY OTHER PUBLIC INFRASTRUCTURE. THE EXPENSE TO REPAIR OR FOR REPLACEMENT SHALL BE BORNE BY THE CONTRACTOR.
2. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (LATEST EDITION) AND THE STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION (LATEST EDITION), AND SUPPLEMENTED BY THE STATE OF NEVADA STANDARD PLANS AND SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (LATEST EDITION).
3. THE LOCATION OF CONTROLLER, PULL BOXES WITH GROUND RODS, AND CONDUIT RUNS SHALL BE WITHIN THE EXISTING RIGHT-OF-WAY OR ANY EASEMENT GRANTED OUTSIDE THE RIGHT-OF-WAY.
4. PLANS SHOWING SIGNAL POLE, CONTROLLER, CONDUIT, LOOP DETECTOR, AND PULL BOX LOCATIONS ARE APPROXIMATE ONLY. ACTUAL LOCATIONS ARE TO BE DETERMINED IN THE FIELD BY THE CONTRACTOR AND VERIFIED BY THE CITY ENGINEER.
5. CONTROLLERS AND CABINETS SHALL MEET THE REQUIREMENTS OF THE NEMA STANDARD PUBLICATION (LATEST EDITION) AND THE CITY OF RENO SPECIFICATIONS FOR TRAFFIC SIGNAL CONTROLLERS AND CABINETS.
6. CONTACT THE PUBLIC WORKS TRAFFIC ENGINEERING DIVISION FOR TRAFFIC ACTUATED CONTROLLER UNIT SPECIFICATIONS.
7. UNLESS SHOWN OTHERWISE, THE CONTROLLER CABINET SHALL BE WIRED FOR EIGHT (8) PHASE OPERATION WITH TWO (2) OVERLAPS AND SHALL BE FURNISHED WITH ALL NECESSARY MODULES, LOAD SWITCHES, AND EQUIPMENT REQUIRED FOR FULL EIGHT (8) PHASE OPERATION WITH TWO (2) OVERLAPS.
8. ALL NEW SIGNAL POLES WILL HAVE TWO (2) HANDHOLES AND AN ACCESS DOOR FOR THE TERMINAL BLOCK. SEE SIGNAL TRAFFIC SIGNAL POLE DETAIL DRAWING R-413A FOR DIMENSIONS. FOR OTHER POLE DETAILS, SEE THE NEVADA DEPARTMENT OF TRANSPORTATION'S "STANDARD PLANS FOR ROAD AND BRIDGE CONSTRUCTION" (NDOT-SPRBC), 2001 EDITION.
9. UNLESS SHOWN OTHERWISE, #5 PULL BOXES SHALL BE USED AT LOCATIONS WHERE CONDUIT RUNS CONTAIN TRAFFIC SIGNAL CABLE OR CARRY POWER. #3-1/2 PULL BOXES MAY BE USED AT OTHER LOCATIONS. ALL PULL BOXES SHALL BE FIBERGLASS IN SIDEWALK AREAS AND CONCRETE WITH GROUNDED METAL LID IN NON-SIDEWALK AREAS, UNLESS OTHERWISE INDICATED. NO PULL BOXES SHALL BE PLACED IN A TRAVELED WAY.
10. ALL EXPOSED CONDUIT SHALL BE OF A RIGID PVC SCHEDULE 80, AND SHALL EXTEND TO A MINIMUM DEPTH OF 18 INCHES BEFORE CHANGING TO PVC SCHEDULE 40.
11. ALL CONDUIT RUNS FOR SIGNAL CABLE SHALL CONSIST OF TWO 3" CONDUITS BETWEEN PULL BOXES AND BETWEEN THE PULL BOXES AND POLES. THERE SHALL BE THREE 3" CONDUITS FROM THE CONTROLLER CABINET TO THE PULL BOXES.
12. ALL CONDUIT RUNS TERMINATING IN A PULL BOX SHALL HAVE A MINIMUM OF SIX INCHES OF CLEARANCE FROM THE BOTTOM OF THE LID, AND SHALL RISE A MINIMUM OF SIX INCHES ABOVE THE TOP OF THE DRAIN ROCK.
13. ALL CONDUIT TERMINATIONS SHALL HAVE A "BELL END" INSTALLATION AND BE SEALED WITH CONDUIT SEALER AFTER WIRE INSTALLATION.
14. ALL CONDUCTORS AND THEIR TERMINATION SHALL BE CLEARLY MARKED ON THE CABINET SCHEMATIC WIRING DIAGRAM.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO	
			GENERAL NOTES- TRAFFIC SIGNALS & POLES	DRAWING NO. R-413F (325)	
				DATE 01/04	PAGE 425
APPROVED BY Q.S.		01/04			

15. THE RED, YELLOW AND GREEN INDICATION FOR ALL NEW VEHICULAR SIGNAL HEADS SHALL BE 12 INCH LIGHT EMITTING DIODE (LED) AND INCLUDE "AlInGap" TECHNOLOGY. UTILIZE "GELCORE" RX11, "DIALITE" 433 SERIES OR APPROVED EQUAL. ALL PEDESTRIAN SIGNAL INDICATIONS SHALL BE "LED" WITH HAND SYMBOL (PORTLAND ORANGE) AND WALKING MAN SYMBOL (LUNAR WHITE).

16. ALL VEHICULAR HEADS SHALL HAVE "TUNNEL" VISORS WITH 4 INCH SLOT AT BOTTOM WITH LOUVERED BACK PLATES. ALL SIGNAL HEADS TO BE MANUFACTURED BY "ECONOLITE", "EAGLE" OR APPROVED EQUIVALENT.

17. ALL NEW PEDESTRIAN PUSH BUTTONS SHALL BE THE 2 INCH DIAMETER WITH INTERNATIONAL WALKING MAN SYMBOL SIGN. FOR MOUNTING HEIGHT AND ADDITIONAL DETAILS, SEE STANDARD PLAN SHEET NO. T-30.1.3.1 OF NDOT-SPRBC. UTILIZE "Palara" BULLDOG W/MOMENTARY "LED" AND YELLOW COLLAR, OR APPROVED EQUIVALENT. USE 9" X 12" STATION FOR ALL POLES LARGER IN DIAMETER THAN THE 1A POLE. USE 5" X 7-3/4" STATION FOR 1A POLES AND SMALLER.

18. ALL INTERSECTIONS SHALL HAVE A BATTERY BACK UP SYSTEM. THE SYSTEM SHALL BE MOUNTED TO THE METERED SERVICE CABINET OF THE SYSTEM AND WILL BE A 24 VOLT OR 48 SYSTEM. THE CABINET SHALL BEAR A 508 UL LABEL. THE SYSTEM SHALL SUPPLY A MINIMUM UNINTERRUPTED CONTINUOUS SERVICE FOR UP TO 2 HOURS. THE SYSTEM SHALL FEATURE AN EVENT COUNTER AND TIMER. THE SYSTEM SHALL HAVE A TWO (2) YEAR PARTS AND LABOR TRANSFERABLE WARRANTY TO THE CITY OF RENO. THE UPS SYSTEM SHALL BE PAID FOR AND INCLUDED IN THE BID ITEM PRICE FOR METERED SERVICE PEDESTAL. THE UPS SYSTEM SHALL BE A PIGGYBACK DESIGN SYSTEM AND HANG ON THE METERED SERVICE PEDESTAL.

19. WHEN CONTROLLER CABINETS ARE NOT LOCATED IN A SIDEWALK, THEY SHALL HAVE A CONCRETE SERVICE PAD INSTALLED IN FRONT OF THE CABINET, THE SAME WIDTH AS CABINET AND AT LEAST 3 FEET LONG. LANDSCAPING SHALL NOT BE PERMITTED TO BLOCK CABINET DOOR. SPRINKLER SYSTEMS SHALL BE DIRECTED AWAY FROM AND NOT ALLOWED TO SPRAY CABINET OR PULL BOXES DIRECTLY.

20. ALL NEW TRAFFIC SIGNALS SHALL BE CONNECTED INTO THE CITY OF RENO'S TRAFFIC SIGNAL CENTRAL COMPUTER SYSTEM VIA THE NEAREST RECEIVER SITE BY TWISTED-PAIR CABLE.

21. INTERCONNECT CABLE SHALL BE MINIMUM 12 PAIR COPPER AWG 22, REA SPECIFICATION PE39, AND SHALL BE PLACED IN 3" CONDUIT. A 6 PAIR COPPER WIRE MAY BE USED FOR SOME TAIL CIRCUITS WITH THE TRAFFIC ENGINEER'S APPROVAL.

22. THE LUMINAIRE FIXTURES SHALL BE 120 VOLT, 175 WATT METAL HALIDE OR 250 WATT HIGH PRESSURIZED SODIUM, 180 DEGREE CUTOFF WITH FLAT GLASS, TYPE III DISTRIBUTION WITH AUTO/REG BALLAST AND INTEGRAL CONTROLS. PHOTO CELL TO BE LOCATED IN METERED SERVICE PEDESTAL.

23. PREEMPTION OF SIGNALS BY EMERGENCY VEHICLES SHALL BE PROVIDED BY INSTALLING 3M 700 SERIES OPTICOM DETECTORS WITH THE 3M MODEL 752N PHASE SELECTOR, OR AN APPROVED EQUAL.

24. LOOP DETECTORS SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF RENO SUPPLEMENTAL STANDARD DRAWING DETAILS FOR PUBLIC WORKS CONSTRUCTION, DRAWING NUMBERS R-404, R-405, R-406A AND R-406B.

25. THE CONTRACTOR SHALL PROVIDE AN UNDERGROUND SERVICE PEDESTAL. THE MAIN BREAKER SHALL BE 100 AMP MINIMUM (120/240 VAC, 60 HZ, SINGLE PHASE, 3 WIRE) IN ACCORDANCE WITH NDOT STANDARD PLAN T-30.1.6. INDIVIDUAL CIRCUIT BREAKERS SHALL INCLUDE: 120 VOLT 60 AMP, 1 POLE CIRCUIT BREAKER FOR SIGNALS; 120 VOLT, 40 AMP, 2 POLE CIRCUIT BREAKER FOR LIGHTING; AND A 60 AMP, 120 VOLT, LIGHTING CONTACTOR. THE CONDUCTOR TO THE CABINET FROM THE BREAKER SHALL BE A MINIMUM OF 10 GAUGE WIRE.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO	
			GENERAL NOTES-	DRAWING NO. R-413G (325)	
			TRAFFIC SIGNALS & POLES	DATE 01/04	PAGE 426
APPROVED BY G.S.		01/04			

26. THE CONTRACTOR SHALL COORDINATE WITH SPPCO IN PROVIDING SERVICE FOR THE SIGNAL WITHIN SPPCO STANDARDS.

27. POWER PANEL SURGE PROTECTION SHALL BE PROVIDED AND APPROVED THROUGH THE SUBMITTAL PROCESS TO THE PUBLIC WORKS TRAFFIC ENGINEERING DIVISION.

28. EXISTING VEHICLE DETECTOR LOOPS DAMAGED BY THE CONTRACTOR SHALL BE REPAIRED AND MADE FULLY FUNCTIONAL WITHIN TWO WORKING DAYS. IF NOT MADE FUNCTIONAL WITHIN THE TWO DAYS FOLLOWING DAMAGE, THE CITY MAY REPAIR THEMSELVES AND BACK-CHARGE THE CONTRACTOR AT THE EXPENSE OF $1000 PER LOOP. SPLICING WILL NOT BE CONSIDERED AS AN ADEQUATE REPAIR.

29. THE CONTRACTOR SHALL COORDINATE TRAFFIC SIGNAL INSTALLATIONS OR MODIFICATIONS WITH THE CITY OF RENO TRAFFIC ENGINEER AT 334-2350.

30. NO SPLICES SHALL BE PERMITTED BETWEEN THE CONTROLLER CABINET AND THE TRAFFIC SIGNAL POLE. ALL CONNECTIONS SHALL BE MADE AT THE JUNCTION BOX, OR IN THE CASE OF LOOPS, AT THE LOOP STUB. ANY DEVIATION TO THIS REQUIREMENT SHALL BE APPROVED BY THE TRAFFIC ENGINEER PRIOR TO THE WORK.

31. VEHICLE DETECTOR LOOPS DAMAGED DURING CONSTRUCTION WHICH ARE PERMITTED BY THE TRAFFIC ENGINEER TO BE TEMPORARLY SPLICED, MUST BE REPLACED PRIOR TO FINAL ACCEPTANCE.

32. IF STOP BARS AND CROSSWALKS ARE TO BE RELOCATED, VEHICLE DETECTOR LOOPS SHALL BE RELOCATED ACCORDINGLY TO REMAIN CONSISTENT WITH CITY OF RENO STANDARD DETAIL NO. R-406A AND NO. R-406B.

33. AS A PART OF ANY STREET WIDENING PROJECT OR THE ADDITION OF ANY STREET TRAVEL LANES TO EXISTING LANES, SUCH AS TURN LANES, ACCELERATION OR DECELERATION LANES, ETC., THE CONTRACTOR MUST EXTEND ANY TRAFFIC CONTROL CONDUITS AND/OR WIRING AND REPLACE ALL EFFECTED VEHICLE LOOP DETECTOR WIRING (SPLICING SHALL NOT BE ALLOWED).

34. SIGNAL EQUIPMENT SHALL BE PROVIDED AND APPROVED THROUGH THE SUBMITTAL PROCESS TO THE PUBLIC WORKS TRAFFIC ENGINEERING DIVISION.

35. FOR POLE DETAILS NOT SHOWN, SEE POLE MANUFACTURERS DETAILED DRAWINGS.

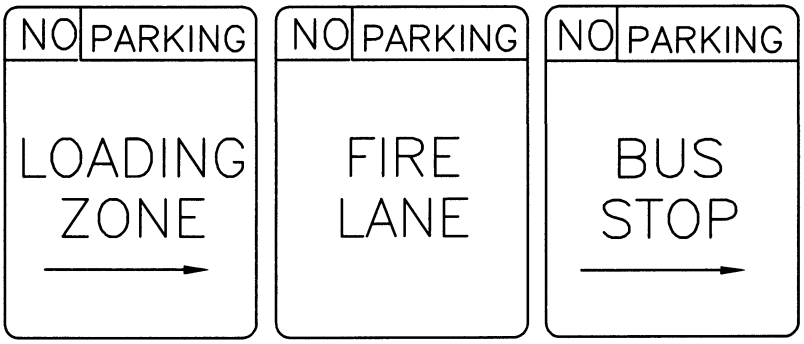
△36. ALL SIGNAL POLES SHALL CONFORM TO NDOT TYPE 35 AND 35A SPECIFICATIONS, INCLUDING BOLT CIRCLE DIMENSIONS, ANCHOR BOLTS, AND FOOTING DIMENSIONS.

37. FINAL POLE APPROVAL AND SUBMITTALS TO BE APPROVED BY THE CITY OF RENO.

△38. CLAM SHELL FOR TYPE 7D POLE TO BE USED ONLY WHEN POLE IS INCLUDED AS A SIGNAL POLE. DO NOT USE CLAM SHELL WHEN TYPE 7D POLE IS USED IN SERIES LIGHTING.

△39. POLE MAY BE MANUFACTURED AS EITHER A DOUBLE OF SINGLE CANDYCANE CONFIGURATION.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO
			GENERAL NOTES-	DRAWING NO. R-413H (325)
			TRAFFIC SIGNALS & POLES	DATE 01/04 / PAGE 427
APPROVED BY G.S.		01/04		

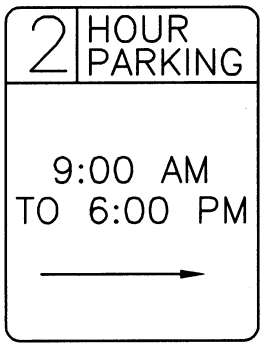


R7-107
12" X 18"

R7-107
12" X 18"

R7-107
12" X 18"

R7-8
12" X 18"



R7-108
12" X 18"
3

NOTES:

1. SIGN LETTERS, COLORS AND PLACEMENT SHALL BE IN CONFORMANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
2. SIGN R7-8 SHALL BE MOUNTED NO LESS THAN FOUR FEET ABOVE THE GROUND.
3. TIME RESTRICTED PARKING SIGNS ARE AVAILABLE IN 30 MINUTE, 1 HOUR, 2 HOUR AND 5 HOUR INCREMENTS.
4. REFER TO STANDARD DETAIL DRAWING NO. R-415 (332) FOR MOUNTING AND POLE REQUIREMENTS, UNLESS OTHERWISE SPECIFIED.

NO.	REVISION	DATE
1	ADD FIRE LANE	01/04
APPROVED BY: G.S.		01/04

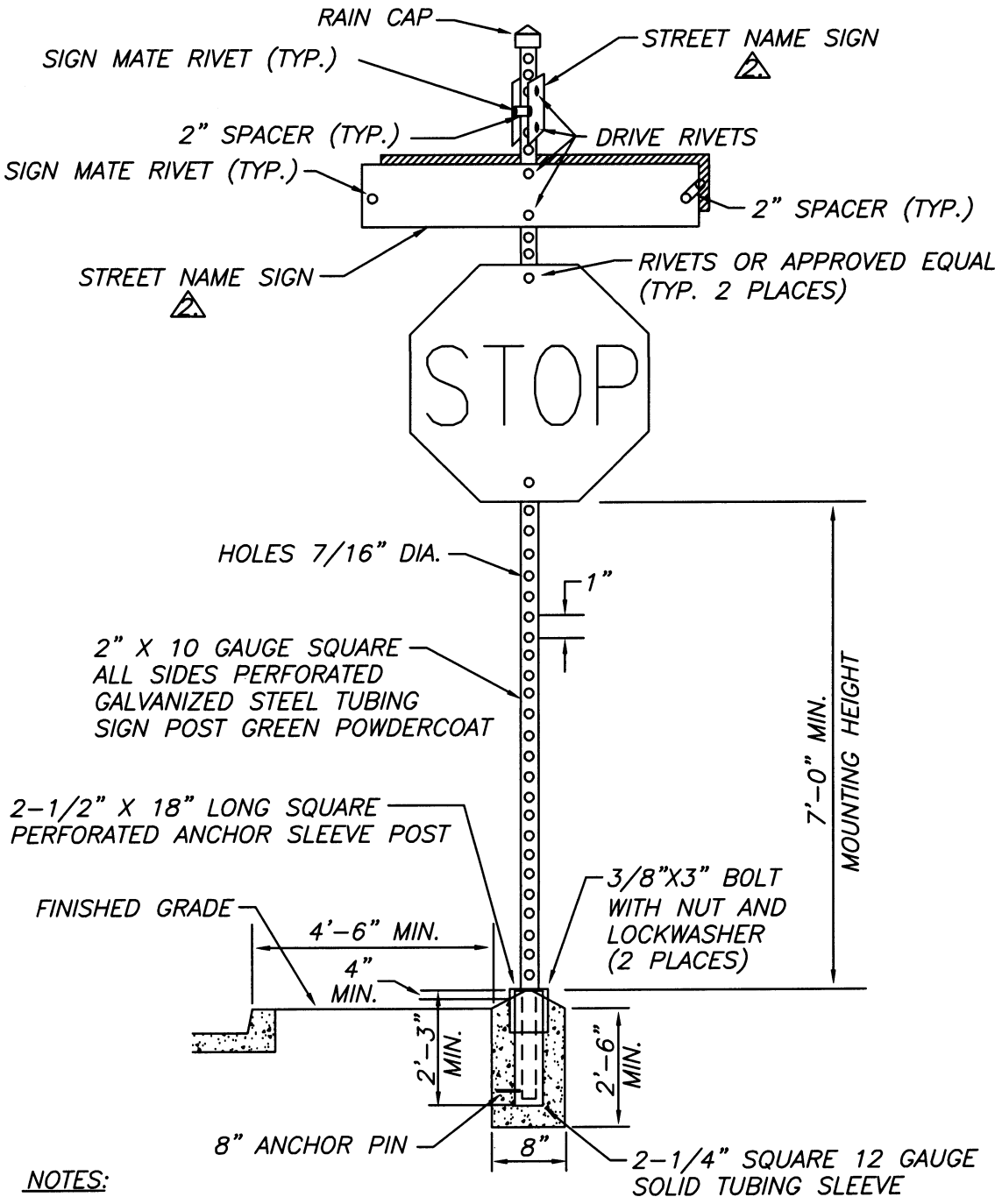
STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

TRAFFIC PARKING SIGNS

SECTION RENO

DRAWING NO. R-414 (332)

DATE 08/00



NOTES:

1. SIGN MATERIALS, CONSTRUCTION AND PLACEMENT SHALL BE IN CONFORMANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
2. STREET NAME SIGN SHALL BE AS SPECIFIED IN STANDARD DETAIL DRAWING NO. R-401 (332)
3. ON STREETS WHERE CURBING DOES NOT EXIST, SET SIGN 6' MINIMUM FROM PAVEMENT EDGE.
4. CONCRETE BASE SHALL BE LOCATED AT BACK OF SIDEWALK, UNLESS OTHERWISE DIRECTED BY THE CITY ENGINEER.
5. ALL REGULATORY SIGNS SHALL USE ASTM TYPE 3 INTENSITY SHEETING.

NO.	REVISION	DATE
1	ADDED 2 SIGNS	02/01
2	ADD NOTES 4&5	01/04
APPROVED BY: G.S.		01/04

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

TRAFFIC SIGN INSTALLATION

SECTION	RENO
DRAWING NO.	R-415 (332)
DATE	08/00
PAGE	429

CITY OF RENO GENERAL VIDEO DETECTION NOTES

1. CONTACT THE CITY OF RENO PUBLIC WORKS TRAFFIC ENGINEER FOR ACCEPTABLE VIDEO DETECTION TO BE ALLOWED IN THE CITY OF RENO.
2. SOFTWARE/FIRMWARE PROVIDED AT THE TIME OF TURN ON SHALL BE THE MOST CURRENT VERSION AVAILABLE AT THE TIME.
3. ALL POWER AND/OR SERVICE CONNECTIONS TO THE VIDEO DETECTION SYSTEM SHALL BE THROUGH SEPARATE PLUGS AND CONNECTIONS AND SHALL BE INSTALLED FOLLOWING EXISTING CABINET WIRE RUNS. USE OF THE GROUND FAULT INTERRUPTER SERVICE OUTLET FOR CONNECTION OF POWER TO VIDEO EQUIPMENT WILL NOT BE PERMITTED.
4. CAMERAS SHALL BE INSTALLED STRICTLY TO MANUFACTURERS' SPECIFICATIONS REGARDING HEIGHT, PLACEMENT, FOCUS AND FIELD OF VIEW.
5. THERE SHALL BE NO SPLICES IN VIDEO OR POWER CABLES TO CAMERA FROM THE VIDEO CONTROLLER UNIT TO THE CAMERA ITSELF, UNLESS APPROVED BY THE MANUFACTURER OR THE TRAFFIC ENGINEER, INCLUDING BARREL CONNECTORS.
6. A VIDEO MONITOR OR LAPTOP COMPUTER (2.0 GHZ, 256 RAM, 40 GB HARD DRIVE) TO PROGRAM DETECTION SHALL BE PROVIDED WITH EACH INSTALLATION. IF IT IS NOT POSSIBLE TO PUT THE MONITOR IN THE CABINET, THEN THE MONITOR SHALL BE GIVEN TO THE TRAFFIC ENGINEER OR HIS DESIGNEE AT TURN ON.
7. A 56K, 3COM EXTERNAL MODEM OR APPROVED EQUIVALENT SHALL BE PROVIDED WITH EACH VIDEO INSTALLATION. MODEM INSTALLATION WILL BE DONE BY THE CITY OF RENO STAFF.
8. A SERIAL INTERFACE CABLE, APPROPRIATE FOR COMMUNICATION BETWEEN THE MODEM AND THE VIDEO CONTROLLER UNIT, SHALL BE PROVIDED.
9. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO INSTALL DETECTION ZONES FOR VIDEO DETECTION SYSTEMS. THE DETECTION ZONES SHALL CONSIST OF PRESENCE DETECTION AT THE STOP BAR FOR THROUGH AND LEFT TURN MOVEMENTS, AND EXTENSION DETECTION PLACED IN ADVANCE OF THE STOP BAR FOR THROUGH MOVEMENTS. THE LOCATIONS OF THE ADVANCE DETECTION ZONES ARE TO BE DETERMINED BY THE ENGINEER. THE VIDEO CAMERAS SHALL BE CAPABLE OF DETECTION AT A MINIMUM DISTANCE OF 300 FEET FROM PLACEMENT.
10. ONE CAMERA AND ONE PROCESSOR (IF APPLICABLE) SHALL BE PROVIDED AS SPARES TO THE CITY OF RENO PRIOR TO SIGNAL TURN ON.

NO.	REVISION	DATE
1	NOTES 1 5 10	01/04
APPROVED BY	Q.S.	01/04

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

GENERAL NOTES– VIDEO DETECTION

SECTION **RENO**

DRAWING NO. R-416 (325)

DATE 08/00

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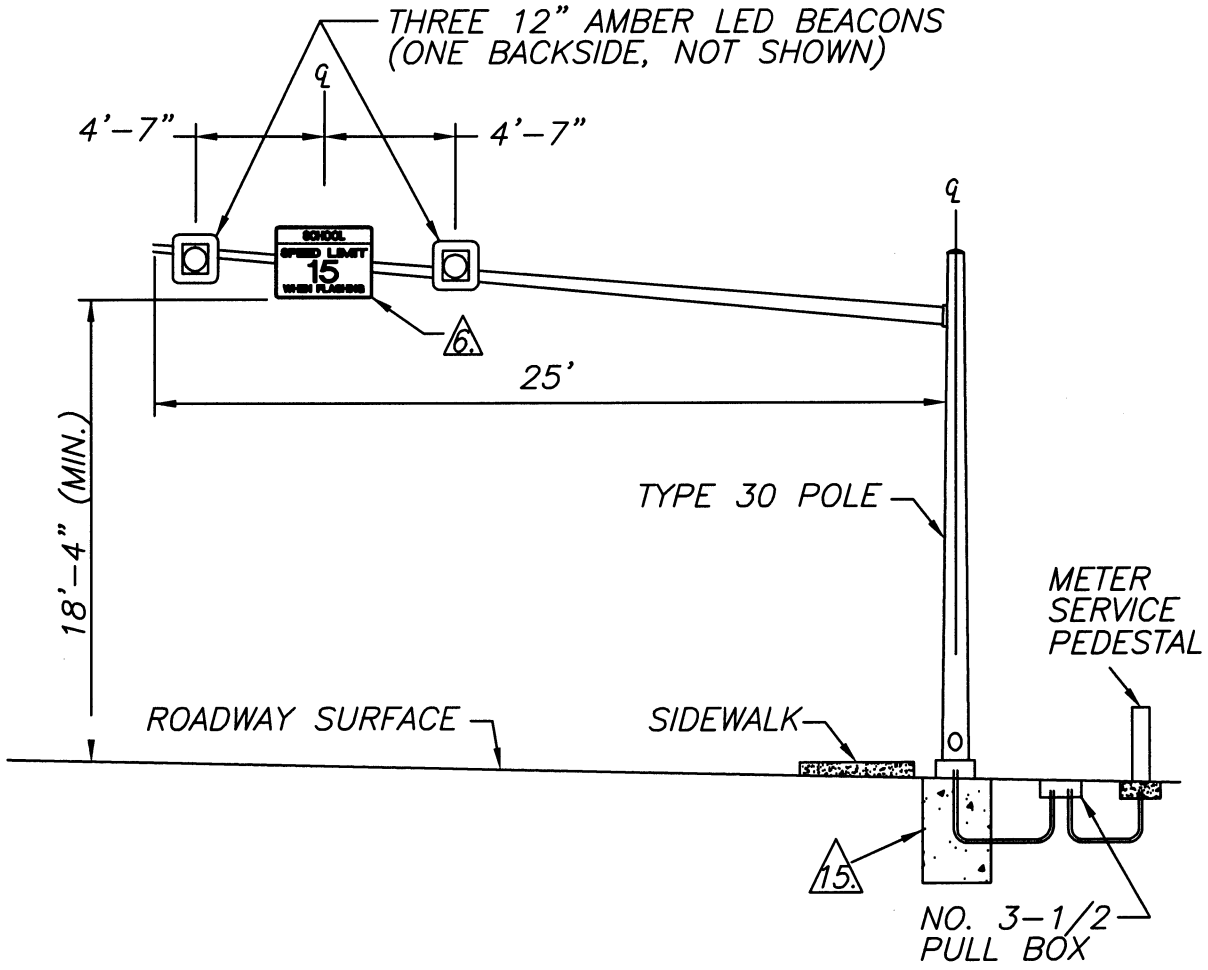


NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO	
			SCHOOL ZONE FLASHERS	DRAWING NO. R-417A (311,325,332)	
				DATE 01/04	PAGE 431
APPROVED BY: G.S.		01/04			

NOTES:

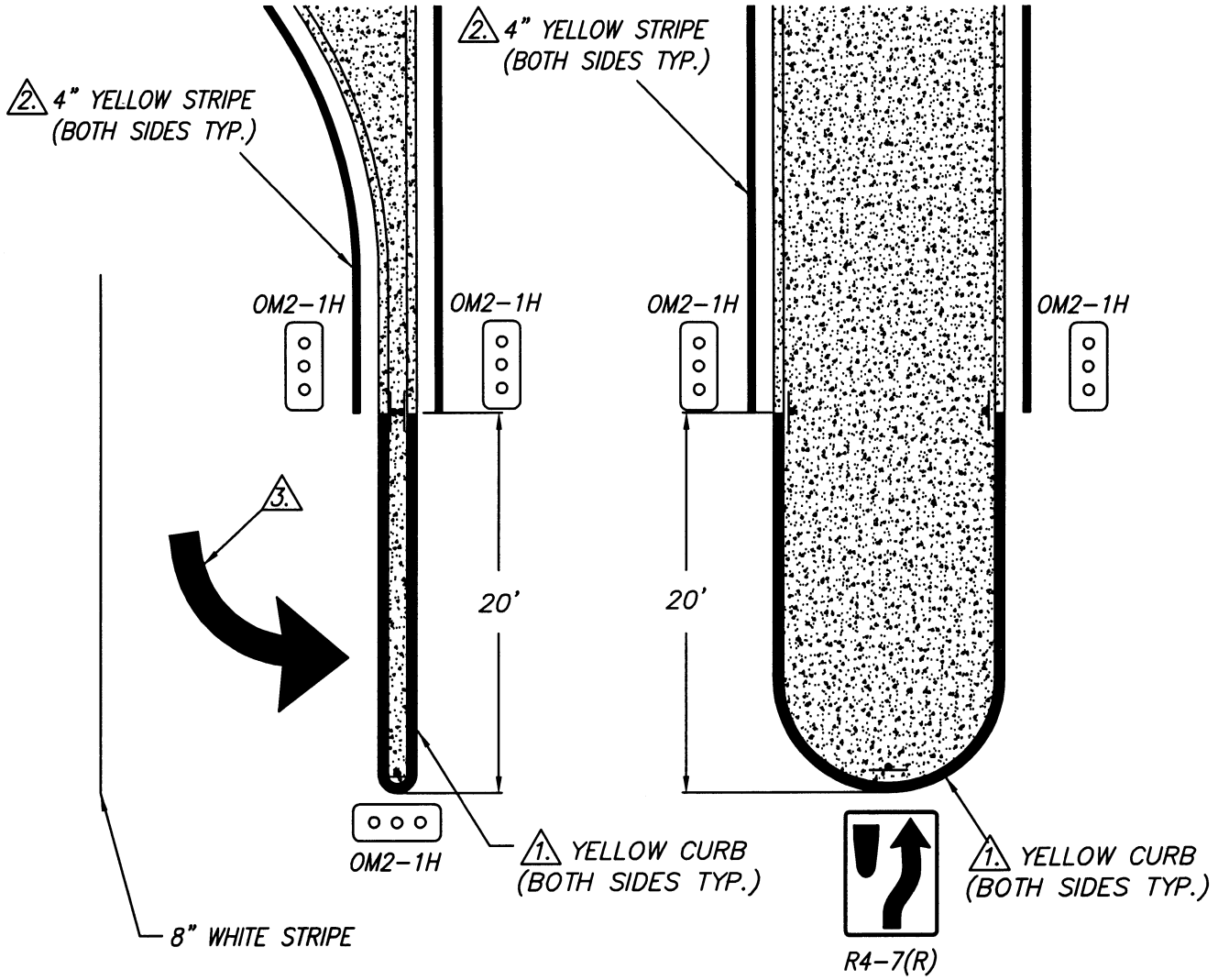
1. YELLOW POLYCARBONATE SINGLE HEADS.
2. ALL PIPING SHALL BE YELLOW IN ALUMINUM OR BRASS, INCLUDING END OF MAST RIGID FITTING.
3. YELLOW FULL CIRCLE VISORS POLYCARBONATE.
4. SINGLE HEAD BACKPLATES FOR ALL HEADS TO BE 1 PIECE, BLACK POLYCARBONATE.
5. HEADS EITHER TENON MOUNT OR END OF MAST 2 WAY CROSS TOP HUNG.
6. ALL SIGNS SHALL COMPLY WITH THE MUTCD.
7. SIGN FOR MAST ARM SHALL BE MIN. 30" X 24" ATTACHED TO ARM WITH BRACKETS.
8. SIGN FOR POLE MOUNT SHALL BE MINIMUM 48" X 24" MOUNTED DIRECTLY TO POLE USING 4 BOLTS AND 1 BRACKET.
9. SIGN FOR MAST ARM "END OF ZONE" SHALL BE 12" X 24" AND MOUNTED DIRECTLY BEHIND MAST ARM "SCHOOL ZONE" SIGN WITH BRACKET.
10. ALTERNATING FLASH CAN BE EITHER SOLID STATE #159 2 CIRCUIT, 4 PIN– 2.88"X2.75"X2.56" OR NEMA TYPE 6 PIN FLASHER SOCKET MOUNTED HORIZONTAL WITH THE FLASHER STANDING ON THE SOCKET.
11. PARAGON EC71D TIME CLOCK SHALL BE USED UNLESS OTHERWISE SPECIFIED BY THE CITY OF RENO.
12. YELLOW LED'S SHALL BE THE CURRENT CITY OF RENO SPECIFICATION.
13. SERVICE TO BE A TYPE 3R TESCO 26–100 OR BETTER WITH BRUSHED ALUMINUM FINISH, PARAGON CLOCK TO BE MOUNTED AT TOP OF THE POWER DISTRIBUTION PANEL.
14. ALL EQUIPMENT SHALL BE WITHIN THE CTY OF RENO RIGHT–OF–WAY OR EASEMENT WITH POLE LOCATED BEHIND SIDEWALK.
15. SEE STANDARD DETAILS FOR PUCLIC WORKS CONSTRUCTION (ORANGE BOOK) FOR POLE BASE AND POLE DETAILS.

NO.	REVISION	DATE
APPROVED BY: G.S.		01/04

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

NOTES – SCHOOL ZONE FLASHERS

SECTION	RENO
DRAWING NO.	R-417B (311,325,332)
DATE	01/04
PAGE	432



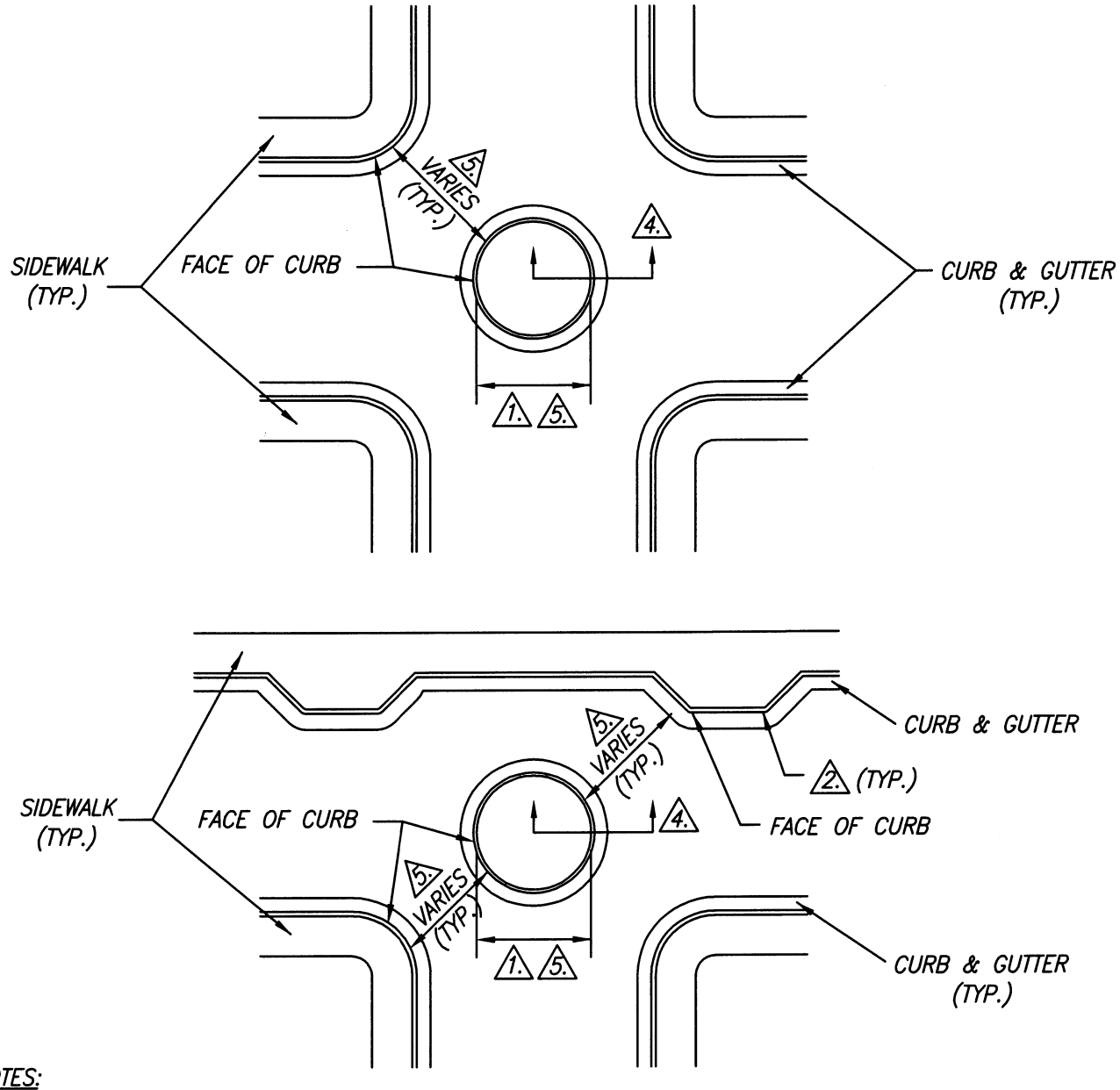
TYPICAL TURN LANE MEDIAN ISLAND

TYPICAL NO TURN LANE MEDIAN ISLAND

NOTES:

1. SHALL BE PAINTED FULL HEIGHT AND TOP OF CURB.
2. 4" YELLOW STRIPE SHALL BE 1' FROM FACE OF CURB.
3. PAVEMENT MARKING ARROW(S) AND "ONLY" AS REQUIRED.
4. ALL WORK SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.), AND A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS (GREEN BOOK).

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO
			MEDIAN ISLAND TRAFFIC CONTROL	DRAWING NO. R-418 311 324 332
				DATE 01/04 / PAGE 433
APPROVED BY: G.S.		01/04		



NOTES:

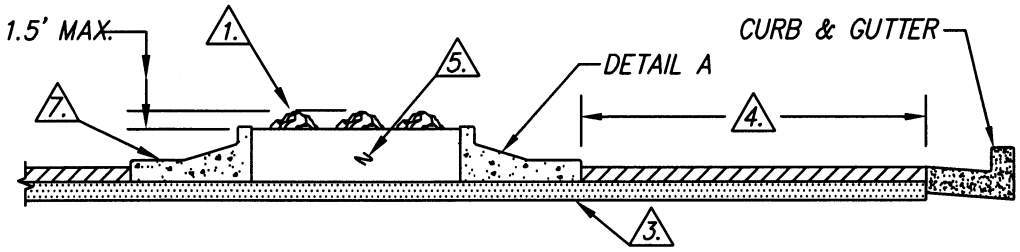
1. DIAMETER OF TRAFFIC CIRCLE VARIES.
2. USE AND LOCATION OF BUMPOUTS SHALL BE DETERMINED BY THE CITY ENGINEER. SPECIAL CONSIDERATIONS MUST BE MADE WHEN PRIVATE DRIVEWAY CONFLICTS ARE ENCOUNTERED.
3. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.), LATEST EDITION.
4. REFER TO STANDARD DETAIL DRAWING NO. R-419B (311,324,332) FOR TRAFFIC CIRCLE DETAIL.
5. FINAL LOCATIONS, SEPARATION DISTANCES AND RADII OF TRAFFIC CIRCLE AND ISLANDS (IF NEEDED) SHALL BE VERIFIED USING TURNING TEMPLATES TO ACCOMODATE A "P" VEHICLE AT 15 MPH.
6. FOLLOWING REVIEW AND APPROVAL BY THE R.F.D., ALL FINAL DESIGN PLANS SHALL BE APPROVED THROUGH SUBMITTALS TO THE PUBLIC WORKS TRAFFIC ENGINEERING DIVISION.

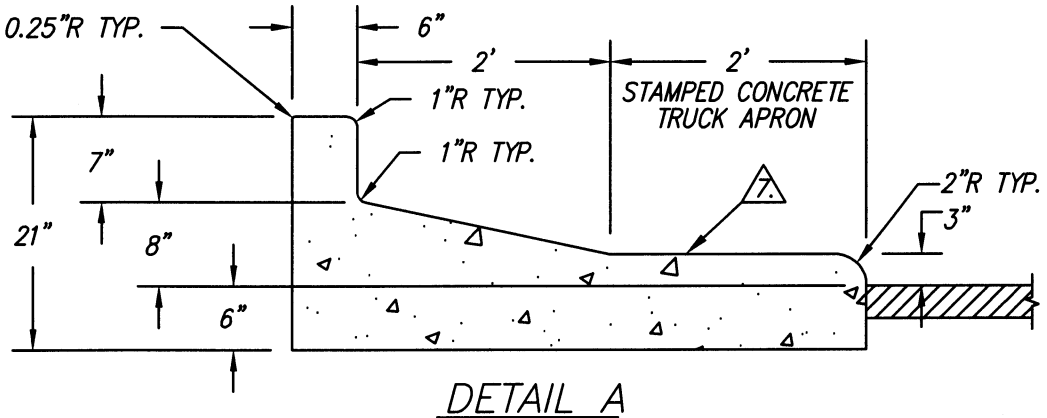
NO.	REVISION	DATE
APPROVED BY: G.S.		01/04

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

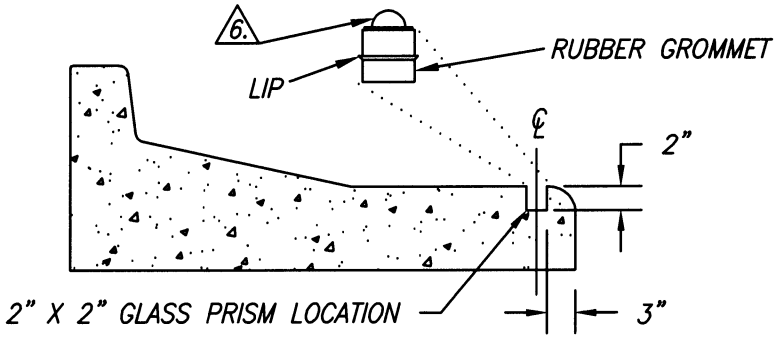
TRAFFIC CIRCLE (PLAN)

SECTION	RENO
DRAWING NO.	R-419A (311,324,332)
DATE	01/04
PAGE	434





DETAIL A

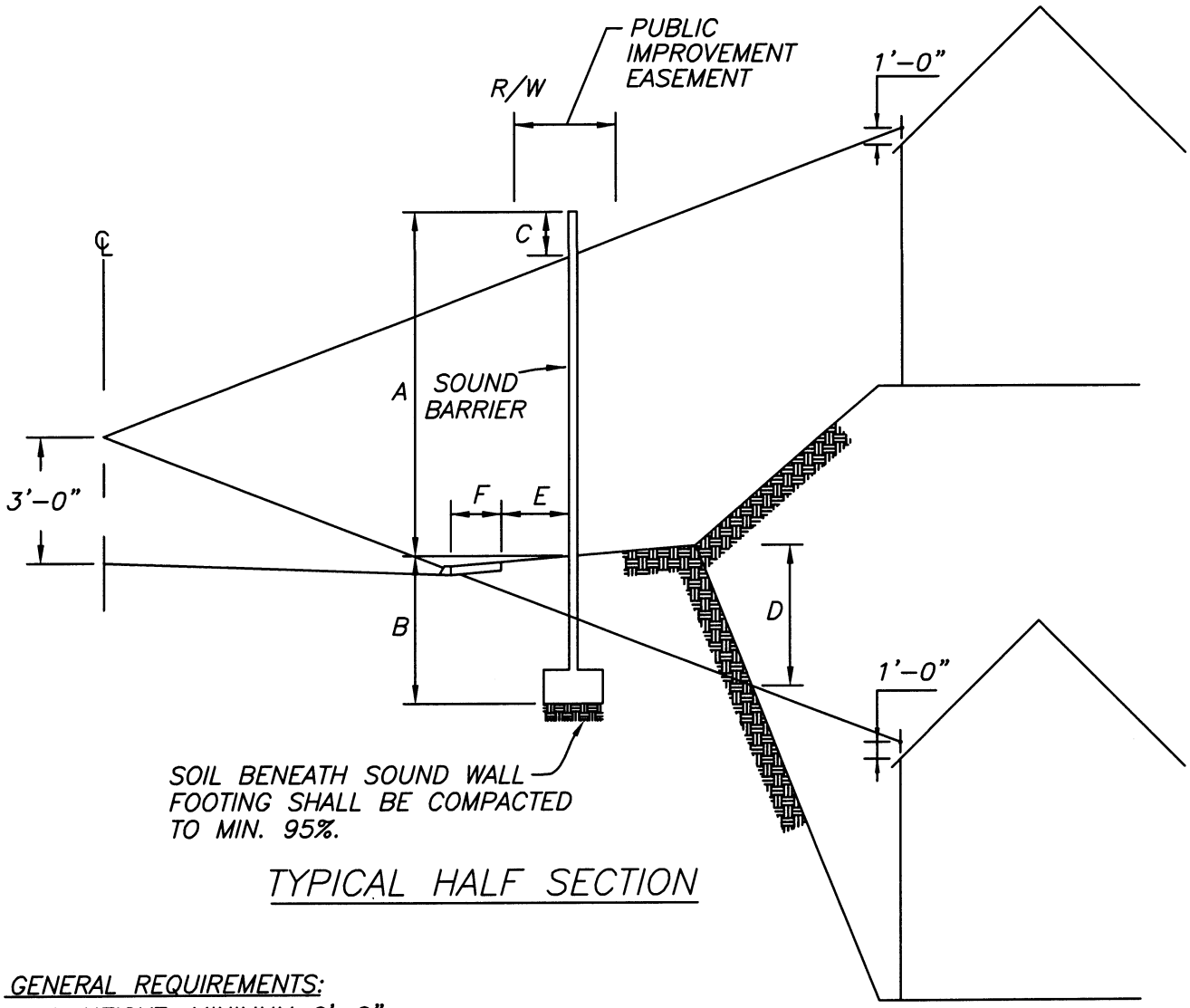


GLASS PRISM POSITIONING DETAIL

NOTES:

1. BOULDER WIDTH SHALL BE APPROXIMATELY 3' HORIZONTALLY. BOULDER HEIGHT SHALL RANGE FROM 1' TO A MAXIMUM HEIGHT OF 1.5' ABOVE TRAFFIC CIRCLE. FINAL BOULDER SPECIFICATIONS AND SELECTION TO BE APPROVED BY THE CITY ENGINEER.
2. WHERE POSSIBLE, LOCATE ALL MANHOLE COVERS AND VALVES OUTSIDE OF TRAFFIC CIRCLE LIMITS.
3. COMPACT TYPE 2 BASE TO A MIN. 95% OF MAXIMUM DRY DENSITY BEFORE PLACING ALL CONCRETE. BASE LAYER SHALL HAVE SAME DEPTH AS BASE LAYER IN PAVEMENT SECTION.
4. WIDTH OF TRAVELED WAY VARIES. AFTER R.F.D. APPROVAL, SUBMIT PLANS TO THE CITY OF RENO PUBLIC WORKS TRAFFIC ENGINEER FOR FINAL DESIGN APPROVAL.
5. PLACE DECOMPOSED GRANITE INSIDE TRAFFIC CIRCLE OVER BASE MATERIAL. IF REQUIRED, CONTACT CITY OF RENO PARKS FOR INSTALLATION SPECIFICATIONS. PLANT MATERIAL SHALL BE WARRANTED BY THE CONTRACTOR AND MAINTAINED UNTIL ACCEPTED BY THE CITY.
6. UTILIZE 360° GLASS PRISM DELINEATOR ON ALL TRAFFIC CIRCLES AND ASSOCIATED ISLANDS. SPACING SHALL BE DETERMINED BY THE ENGINEER.
7. INSTALL STAMPED & COLORED CONCRETE ON ALL TRUCK APRONS. STAMPED PATTERN TO BE APPROVED BY THE PUBLIC WORKS TRAFFIC ENGINEER.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO	
			TRAFFIC CIRCLE (PROFILE)	DRAWING NO. R-419B (311,324,332)	
				DATE 01/04	PAGE 435
APPROVED BY: G.S.		01/04			



TYPICAL HALF SECTION

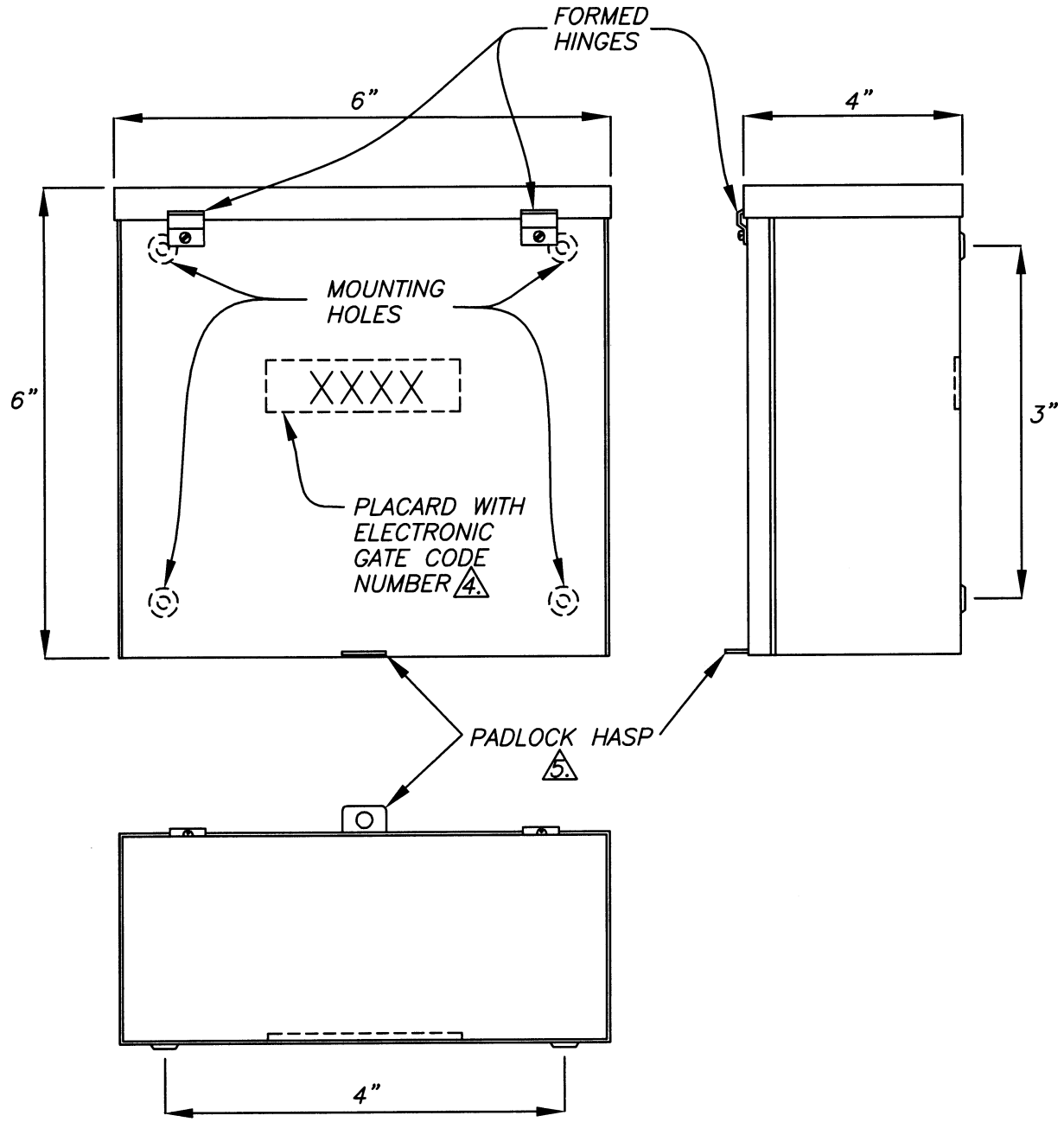
GENERAL REQUIREMENTS:

1. A=HEIGHT: MINIMUM 6'-0".
2. C=BARRIER HEIGHT ABOVE SOUND WAVE: MINIMUM 0'-6".
3. D=EARTH BERM: WHEN EARTH BERM EXCEEDS 2'-0" ABOVE SOUND WAVE, BARRIER IS NOT REQUIRED.
4. DRAINAGE COLLECTED FROM TWO OR MORE LOTS IS TO BE COLLECTED AND PIPED ALONG BACK OF BARRIER TO A STORM DRAIN SYSTEM.

ADDITIONAL REQUIREMENTS:

5. B=DEPTH OF FOOTING BELOW GROUND: MINIMUM 2'-0".
6. E=LANDSCAPING STRIP: MINIMUM 4'-6".
7. F=SIDEWALK WIDTH: CONSTRUCT SIDEWALK FULL WIDTH BETWEEN BACK FACE OF CURB AND FACE OF WALL WHEN LANDSCAPING STRIP IS NOT REQUIRED: MINIMUM 5'-0".
8. THE CITY OF RENO'S PLANNING DEPARTMENT SHALL APPROVE THE COLORS AND TEXTURES ON THE FRONT FACE OF THE SOUND BARRIER.
9. BARRIER PLANS ARE TO BE STAMPED AND SIGNED BY A NEVADA REGISTERED CIVIL ENGINEER, VERIFYING TO THE INTEGRITY OF THE STRUCTURAL DESIGN.
10. BARRIERS WILL BE OWNED AND MAINTAINED BY THE CITY WHERE A HOMEOWNER'S ASSOCIATION DOES NOT EXIST.
11. LANDSCAPING ALONG FRONT FACE OF BARRIER WILL BE MAINTAINED BY THE CITY WHERE A HOMEOWNER'S ASSOCIATION DOES NOT EXIST.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO
			SOUND BARRIER	DRAWING NO. R-501 (311)
				DATE 08/00 / PAGE 500
APPROVED BY: S.V.		08/00		



NOTES:

1. THIS BOX IS INTENDED FOR INSTALLATION AT GATED COMMUNITIES WITH ELECTRONICALLY CONTROLLED ACCESS GATES, WHERE ACCESS BY THE CITY OF RENO PERSONNEL IS REQUIRED.
2. THIS BOX IS TO BE INSTALLED ADJACENT TO THE VEHICLE ENTRANCE GATE, ACCESSIBLE BY PERSONNEL FROM THE OUTSIDE PERIMETER.
3. THE ELECTRONIC GATE ACCESS BOX IS TO BE A "B-LINE" TYPE 3R HINGE COVER ENCLOSURE, PART NO. 664 RTHC NK, OR APPROVED EQUIVALENT.

4. A PLACARD CARD WITH THE CODE FOR THE ELECTRONIC VEHICLE SECURITY GATE IS TO BE MOUNTED INSIDE THE BOX.

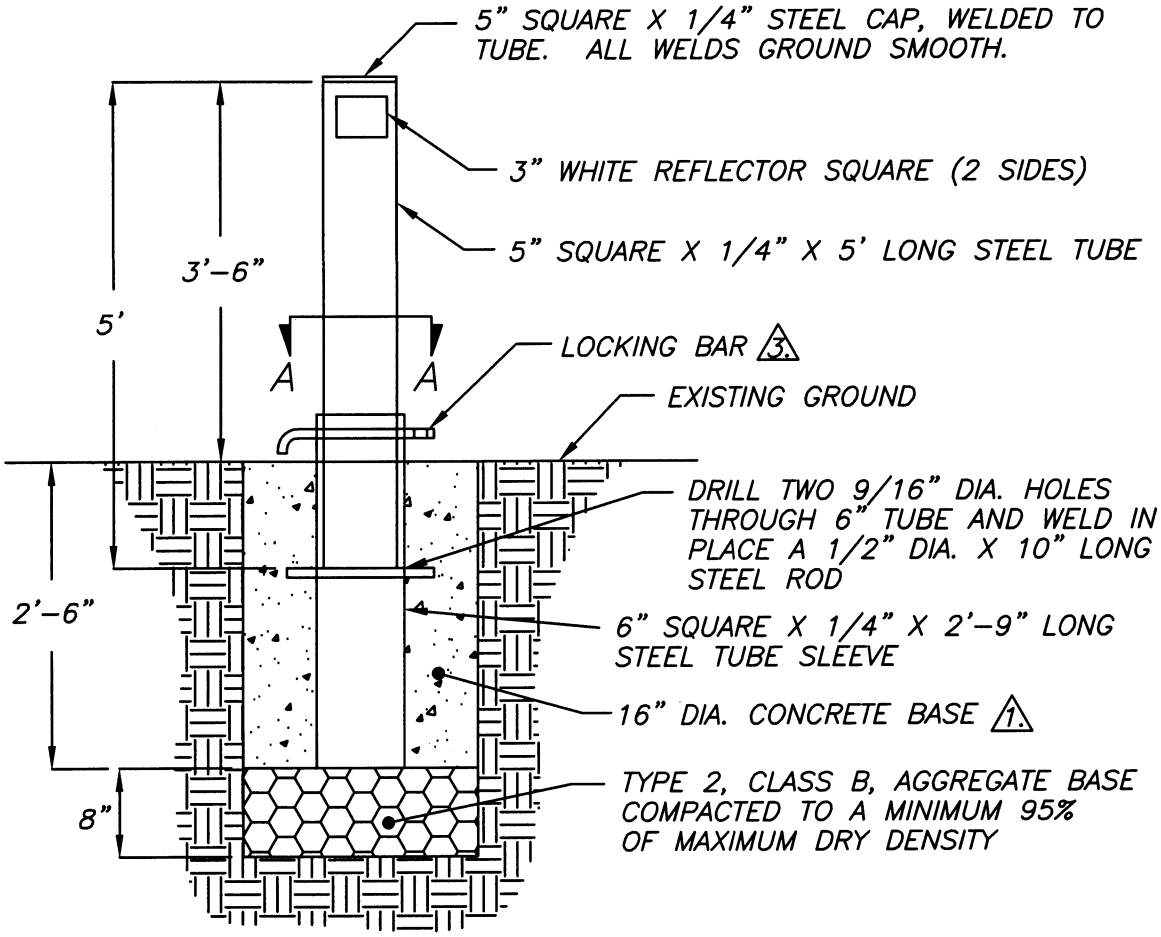
5. THE CITY OF RENO IS TO PROVIDE THE PADLOCK AND MAINTAIN THE KEYS.

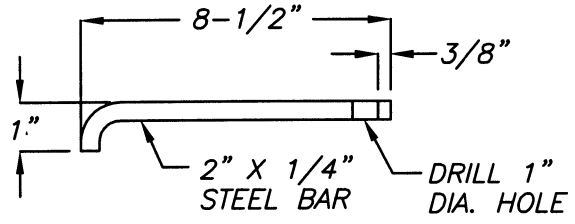
NO.	REVISION	DATE
APPROVED BY: S.V.		08/00

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

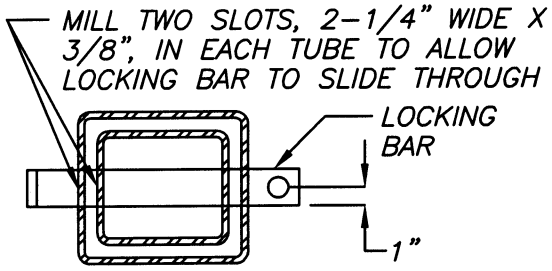
ELECTRONIC GATE ACCESS BOX

SECTION	RENO
DRAWING NO.	R-502 (209)
DATE	08/00
PAGE	501





LOCKING BAR



SECTION A-A

NOTES:

1. PORTLAND CEMENT CONCRETE (P.C.C.) SHALL HAVE THE FOLLOWING CHARACTERISTICS: 3000 PSI MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS, MINIMUM 6 SACKS OF CEMENT PER CUBIC YARD WITH SLUMP AT 1 TO 4 INCHES. ALL MATERIAL SHALL CONFORM TO SSPWC, SECTION 202.

2. ALL WELDS AND BENDS SHALL BE SMOOTH, EVEN AND PAINTED.

3. THE CITY OF RENO SHALL PROVIDE THE PADLOCK AND MAINTAIN THE KEYS.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO	
			REMOVABLE BOLLARD	DRAWING NO. R-503 (207,311)	
				DATE 08/00	PAGE 502
APPROVED BY: S.V.		08/00			

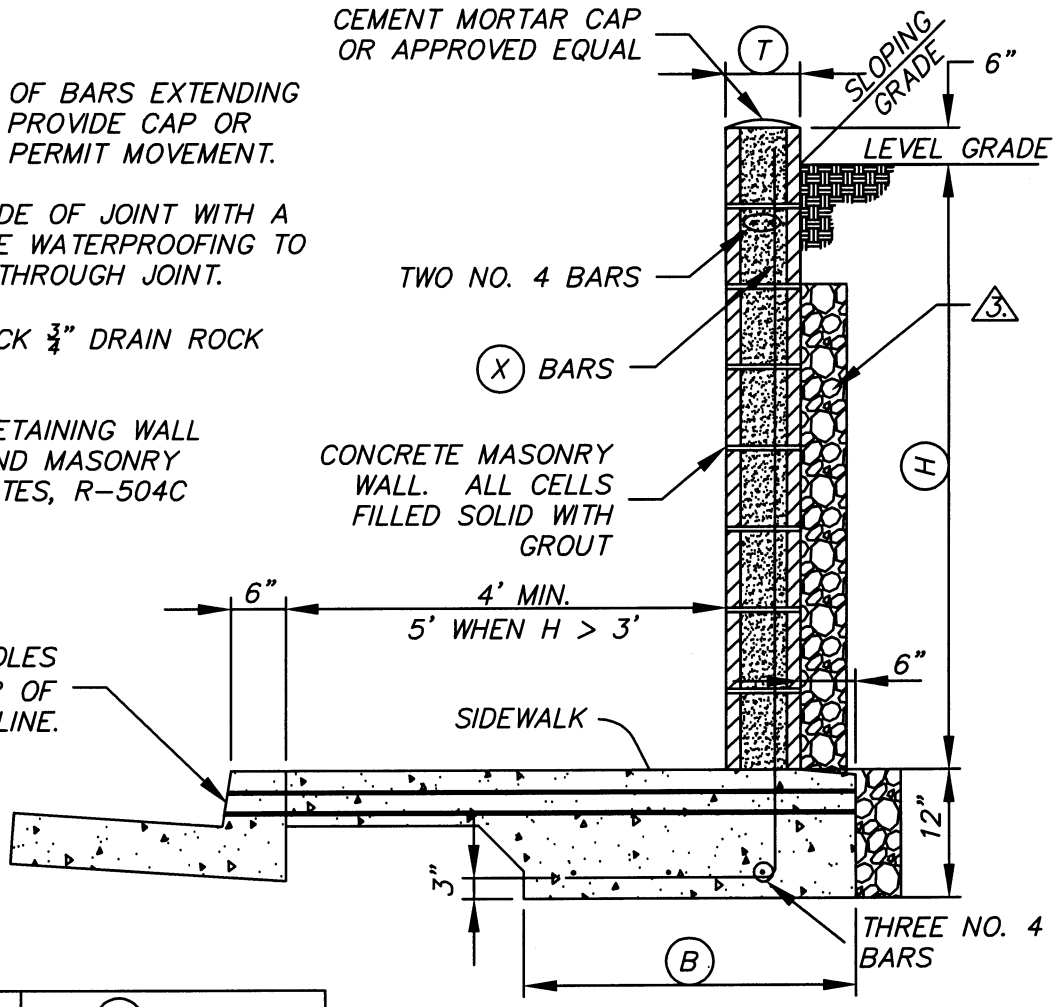
NOTES:

1. GREASE PORTION OF BARS EXTENDING ACROSS JOINT AND PROVIDE CAP OR SLEEVE ON END TO PERMIT MOVEMENT.

2. COVER EARTH SIDE OF JOINT WITH A STRIP OF MEMBRANE WATERPROOFING TO PREVENT SEEPAGE THROUGH JOINT.

3. PROVIDE 12" THICK $\frac{3}{4}$" DRAIN ROCK BEHIND WALL.

4. SEE MASONRY RETAINING WALL DETAILS R-504B AND MASONRY RETAINING WALL NOTES, R-504C AND R-504D



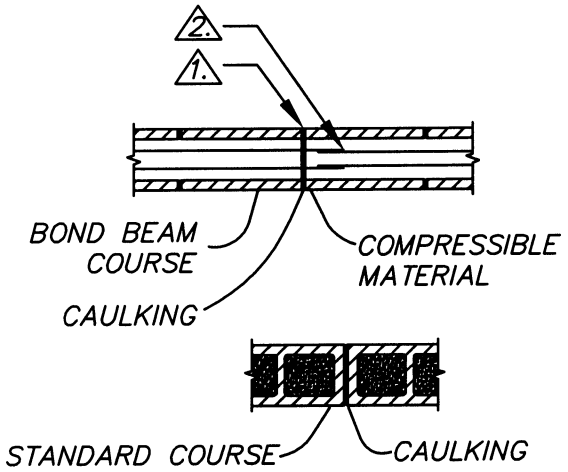
TYPICAL SECTION 5' MAX

H	T	B	X BARS
1	7 5/8"	1'-8"	No. 4 AT 24" O.C.
2	7 5/8"	1'-8"	No. 4 AT 24" O.C.
3	7 5/8"	2'-3"	No. 4 AT 24" O.C.
4	7 5/8"	3'-0"	No. 4 AT 24" O.C.
5	7 5/8"	3'-6"	No. 5 AT 16" O.C.

SLOPING GRADE

H	T	B	X BARS
1	7 5/8"	1'-2"	No. 4 AT 32" O.C.
2	7 5/8"	1'-2"	No. 4 AT 32" O.C.
3	7 5/8"	1'-9"	No. 4 AT 32" O.C.
4	7 5/8"	2'-2"	No. 4 AT 32" O.C.
5	7 5/8"	2'-9"	No. 4 AT 24" O.C.

LEVEL GRADE



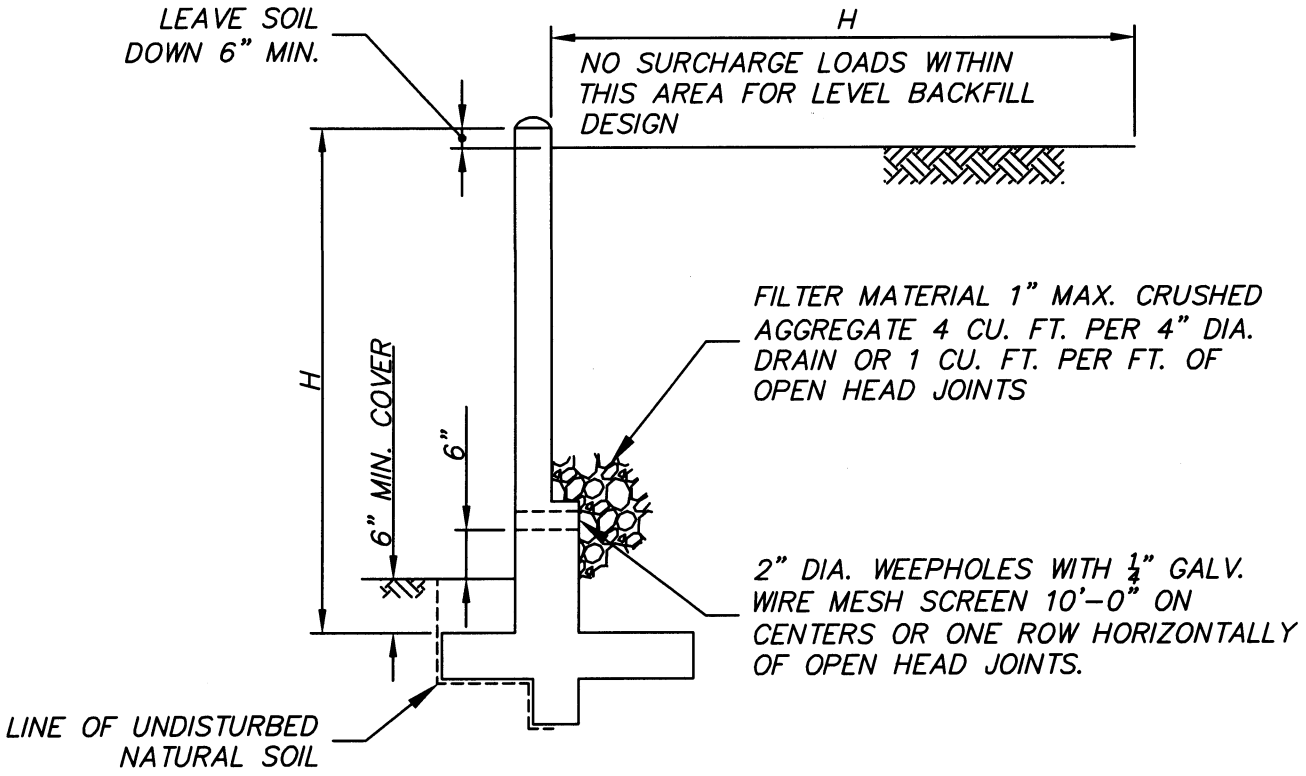
TYPICAL EXPANSION JOINT DETAIL

NO.	REVISION	DATE
APPROVED BY: G.S.		01/04

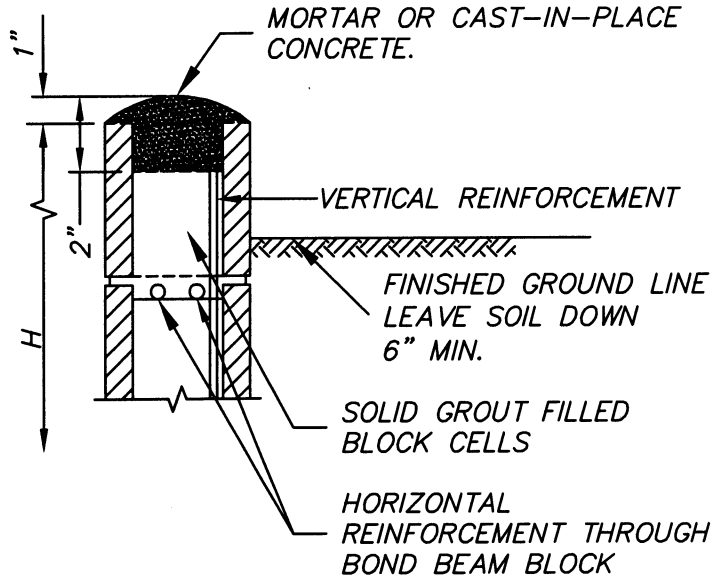
STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

MASONRY RETAINING WALL I-L & S

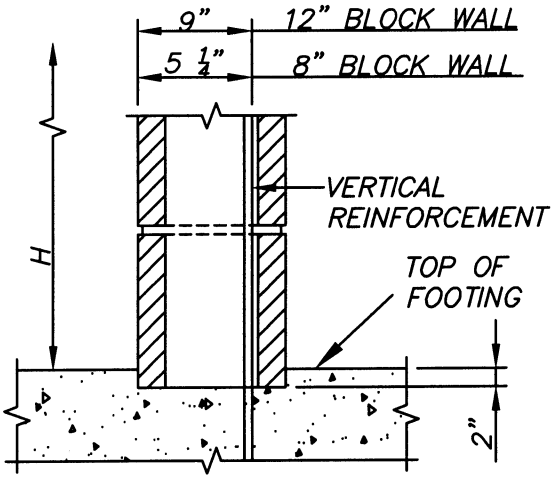
SECTION	RENO
DRAWING NO.	R-504A (311)
DATE	01/04
PAGE	503



TYPICAL SECTION



CAP DETAIL



KEY DETAIL

NOTE:
ALL MASONRY RETAINING WALLS SHALL BE CONSTRUCTED WITH CAP, KEY AND DRAINAGE DETAILS AS SHOWN HEREON.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO
			MASONRY RETAINING WALL DETAILS	DRAWING NO. R-504B (311)
				DATE 01/04 / PAGE 504
APPROVED BY: G.S.		01/04		

1. WALL TYPES:

I – TOE SUPPORT
II – HEEL SUPPORT
III – TOE AND HEEL SUPPORT
L – LEVEL BACKFILL
S – SLOPING BACKFILL

2. DESIGN CONDITIONS:

WALLS ARE TO BE USED FOR THE LOADING CONDITIONS SHOWN FOR EACH TYPE WALL. DESIGN H SHALL NOT BE EXCEEDED. FOOTING KEY IS REQUIRED EXCEPT AS SHOWN OTHERWISE. SPECIAL FOOTING DESIGN IS REQUIRED WHERE FOUNDATION MATERIAL IS INCAPABLE OF SUPPORTING TOE PRESSURE LISTED IN TABLES.

3. REINFORCEMENT:

INTERMEDIATE GRADE, HARD GRADE OR RAIL STEEL DEFORMATION SHALL CONFORM TO ASTM A615, A616, A617. BARS SHALL LAP 40 DIAMETERS, WHERE SPLICED, UNLESS OTHERWISE SHOWN ON PLANS. BENDS SHALL CONFORM TO THE MANUAL OF STANDARD PRACTICE, A.C.I. BACKING FOR HOOKS IS FOUR BAR DIAMETERS. ALL BAR EMBEDMENTS ARE CLEAR DISTANCES TO OUTSIDE OF BARS. SPACING FOR PARALLEL BARS IS CENTER TO CENTER OF BARS. ALL REINFORCING SHALL BE 3" CLEAR UNLESS OTHERWISE SHOWN.

4. MASONRY:

ALL MASONRY SHALL CONFORM TO THE REQUIREMENTS OF SUB–SECTION 311.13 "MASONRY CONSTRUCTION" OF THE "STANDARD SPECIFICATIONS FOR PUBLIC CONSTRUCTION". ALL MASONRY SHALL CONFORM TO THE REGULATIONS OF THE U.B.C.

5. FOOTINGS:

BOTTOM OF FOOTINGS WILL BE PLACED AT LEAST 24" BELOW FINISHED GROUND SURFACE. CHANGES IN FOOTING ELEVATIONS SHALL BE MADE IN EQUAL INCREMENTS OF MASON BLOCK HEIGHT.

6. TESTING:

SUFFICIENT TESTING WILL BE CONDUCTED TO VERIFY DESIGN DATA.

7. DESIGN DATA:

EARTH = 120 PCF AND EQUIVALENT FLUID PRESSURE = 36 PSF PER FOOT OF HEIGHT

REINFORCED MASONRY:
F'm = 600 PSI
Fm = 200 PSI
Fs = 20,000 PSI
n = 50

REINFORCED CONCRETE:
Fc = 1,200 PSI
F'c = 3,000 PSI
Fs = 20,000 PSI
n = 10

WALLS SHOWN FOR 1 1/2:1 UNLIMITED SLOPING SURCHARGE ARE DESIGNED IN ACCORDANCE WITH RANKINE'S FORMULA FOR UNLIMITED SLOPING SURCHARGE WITH ø = 33°42'.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO
			NOTES – MASONRY RETAINING WALL	DRAWING NO. R-504C (311)
				DATE 01/04 / PAGE 505
APPROVED BY: G.S.		01/04		

8. CONCRETE:

ALL CONCRETE SHALL BE CLASS AA OR DA.

9. MASONRY MORTAR:

THE MORTAR SHALL CONFORM TO THE REQUIREMENTS OF SUB-SECTION 311.13 "MASONRY CONSTRUCTION" OF THE "STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION". MORTAR IN HORIZONTAL JOINTS SHALL FULLY COVER ALL FACE SHELL AND WEB MEMBERS. VERTICAL JOINTS SHALL BE BUTTERED TO A DEPTH GREATER THAN THE THICKNESS OF THE FACE SHELLS OF THE BLOCK. FURROWING OF MORTAR WILL NOT BE PERMITTED.

10. GROUT:

THE GROUT SHALL CONFORM TO THE REQUIREMENTS OF SUB-SECTION 311.13 "MASONRY CONSTRUCTION" OF THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION". ALL CELLS SHALL BE POURED SOLID WITH GROUT.

11. EXCAVATION AND BACKFILL:

COMPACTION OF BACKFILL MATERIAL BY JETTING OR PONDING WITH WATER WILL NOT BE PERMITTED. EACH LAYER OF BACKFILL SHALL BE MOISTENED TO ITS OPTIMUM AND THOROUGHLY TAMPED, ROLLED OR OTHERWISE COMPACTED TO AT LEAST 90% OF ITS MAXIMUM DRY DENSITY. NO BACKFILL MATERIAL SHALL BE DEPOSITED AGAINST MASONRY RETAINING WALLS UNTIL THE GROUT HAS DEVELOPED A STRENGTH OF 2,000 POUNDS PER SQUARE INCH IN COMPRESSION AS DETERMINED BY TEST 2" CUBES, OR UNTIL THE MASONRY RETAINING WALL HAS CURED FOR A MINIMUM OF 14 DAYS.

12. OPTIONAL MORTAR KEY:

EMBEDMENT OF THE FIRST COURSE OF BLOCK IN A POURED FOOTING MAY BE OMITTED BY PROVIDING A MORTAR KEY. THE KEY IS FORMED BY EMBEDDING A FLAT 2 X 4 FLUSH WITH THE TOP OF THE FRESHLY POURED FOOTING. REMOVE THE 2 X 4 AFTER THE CONCRETE HAS STARTED TO HARDEN.

13. EXPANSION JOINTS:

WALLS OVER 50 FEET IN LENGTH SHALL HAVE EXPANSION JOINTS AT 25' INTERVALS (SEE DETAILS).

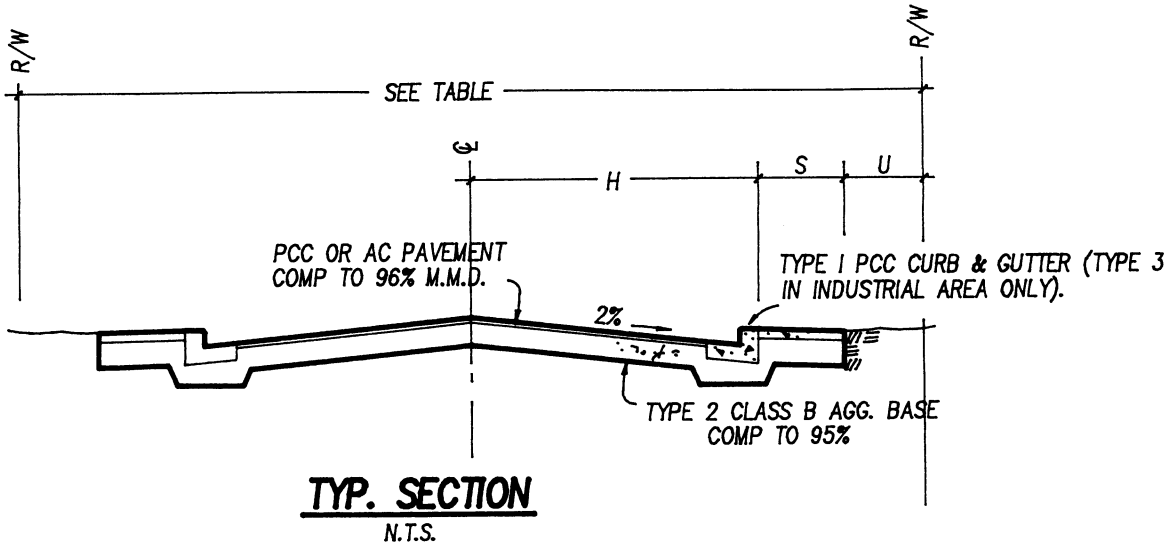
14. WEEP HOLES:

WEEP HOLES SHALL BE INSTALLED AT 10' O.C. IN THE FIRST ROW OF BLOCKS ABOVE FINISHED GROUND SURFACE. BACKFACE OF WALL WILL BE WATERPROOFED.

15. INTERCEPTOR SWALES:

INTERCEPTOR SWALE TO BE CONSTRUCTED AT BACK OF WALL WHEN DIRECTED BY THE CITY ENGINEER.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION RENO	
			NOTES - MASONRY RETAINING WALL	DRAWING NO. R-504D (311)	
				DATE 01/04	PAGE 506
APPROVED BY: G.S.		01/04			



TYP. SECTION

N.T.S.

R/W WIDTH	H	S	U	REMARKS
100'	33.5'	4'*	12.5'	MAJOR ARTERIAL (6" MIN A.C. OVER 10" MIN AGG. BASE)
80'	33.5'	4'*	2.5'	COLLECTOR (4" MIN A.C. OVER 10" MIN AGG. BASE)
55'	21.5'	4'*	2'	RESIDENTIAL (4" MIN A.C. OVER 8" MIN AGG. BASE)

* S=5' FOR COMMERCIAL AREAS

NOTES

1. STRUCTURAL SECTION SHALL BE DETERMINED BY ENGINEERING DESIGN BASED ON R-VALUE OR CBR TESTING, BUT IN NO CASE LESS THAN THE MINIMUMS SHOWN ABOVE.
2. H IS MEASURED TO BACK FACE OF CURB.
3. PRIME COAT IS NOT REQ'D.
4. A.C. PAVEMENT SHALL BE SEALED W/FORG SEAL ON RESIDENTIAL & COLLECTOR STREETS. A 3/4" THICK OPEN GRADED PAVEMENT SHALL BE USED ON ARTERIAL STREETS & MAJOR COLLECTORS.
5. TYPE 3 PCC CURB & GUTTER (ROLLED CURB) SHALL BE USED IN INDUSTRIAL AREAS (DWG.S-3).

NO.	REVISION	DATE
1	REDRAWN	1/95vp

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

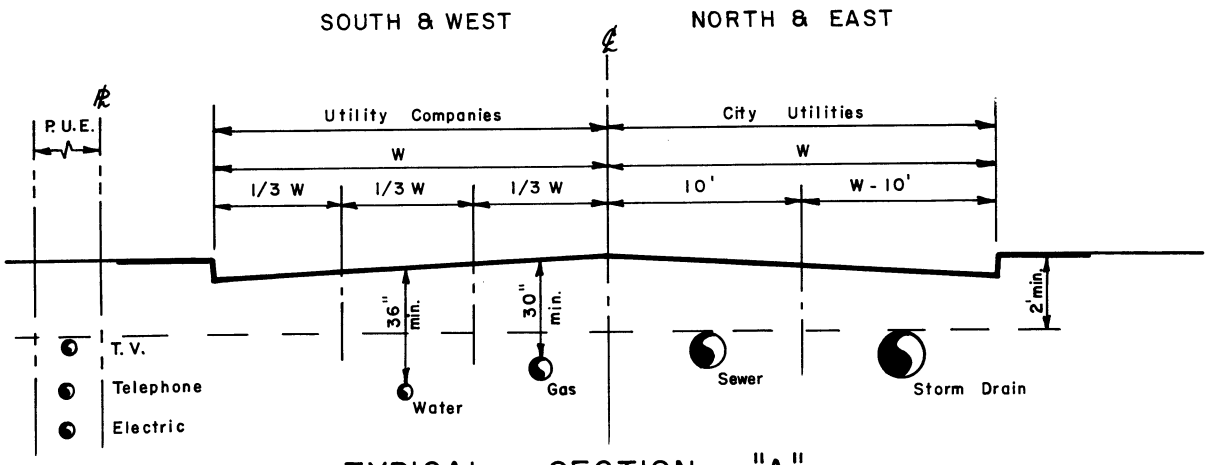
ROADWAY SECTIONS

SECTIONS SPARKS

DRAWING NO. S-1 (314,319)

DATE 1/95vp PAGE 1

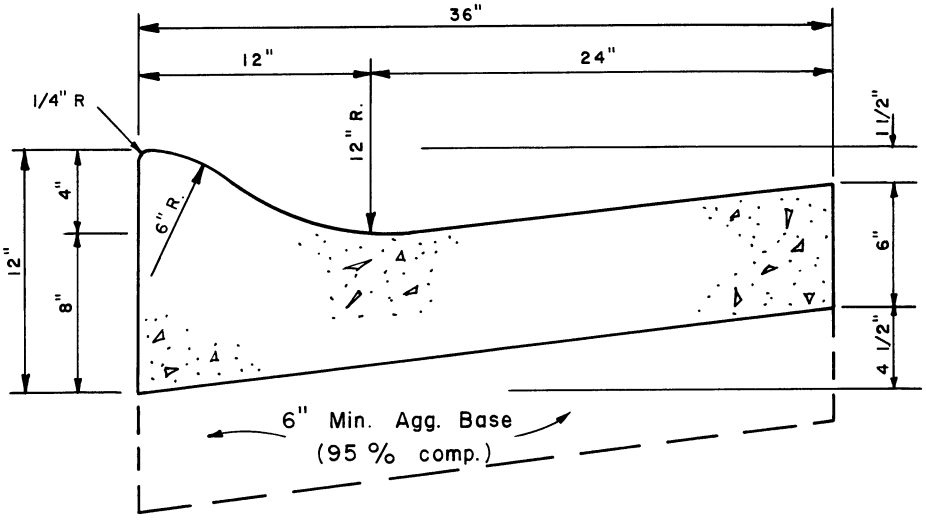
spxrd



TYPICAL SECTION "A"

NOTE:
For utilities in a common trench see Standard Detail, Dwg. No. 1-3

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION SPARKS	
			TYPICAL UTILITY MAIN LOCATIONS	DRAWING NO. S-2	
				DATE 7-81	PAGE 2

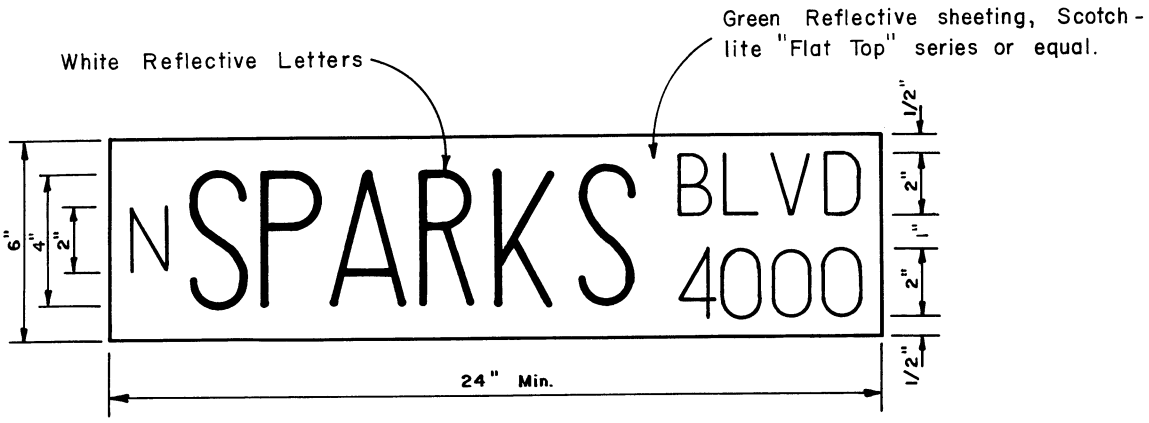


TYPE 3 CURB & GUTTER

(Industrial Area Only)

NOTE:
General notes for all curb and gutter as shown on Dwg. No. 1-6.1 will apply.

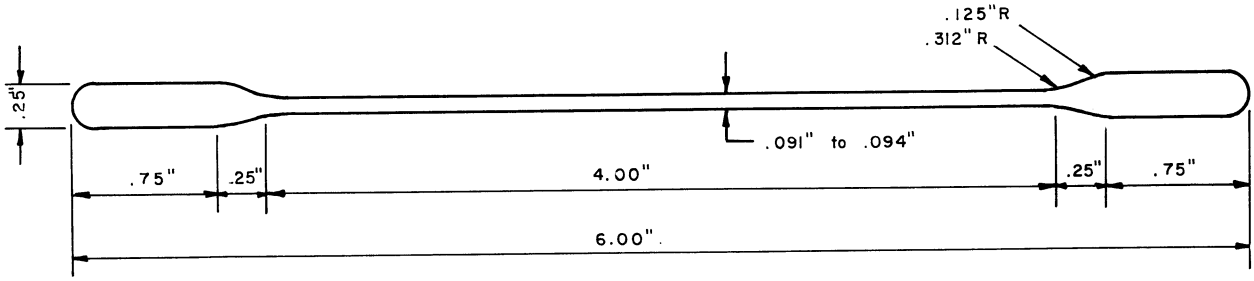
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION SPARKS	
			CITY OF SPARKS TYPE 3 P.C.C. CURB/GUTTER	DRAWING NO. S-3 (312)	
				DATE 7-81	PAGE 3



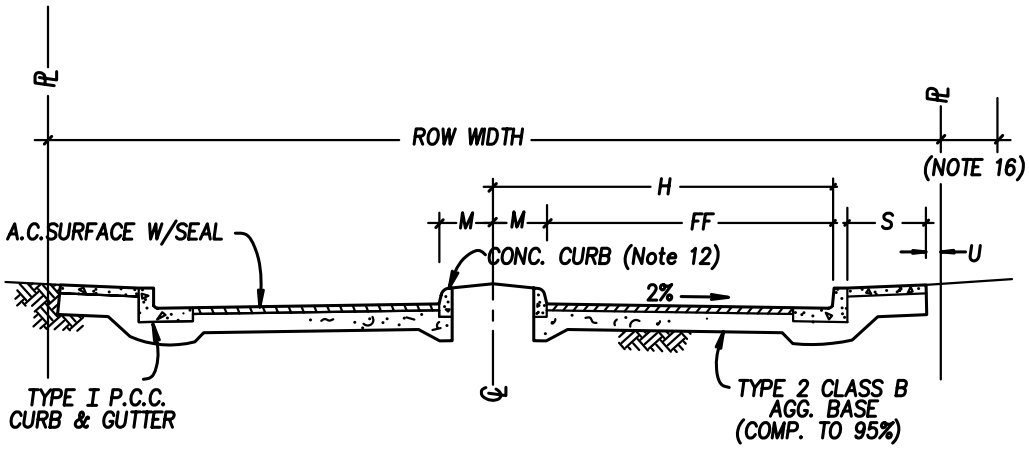
NOTES:

1. Street name sign shall be in conformance with the latest edition of the M.U.T.C.D.

2. Reflective materials shall be mounted on:
   1. Fiberglass plate as manufactured by the Carsonite Co. or approved equal, or
   2. Flat plate aluminum No. 6061-T6, .080 gauge, or
   3. Extruded aluminum No. 6063-T6, with a min. thickness of 0.091" (See Detail Below)



NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION SPARKS	
1	Fiberglass	3-83	STREET NAME SIGN	DRAWING NO. S-4 (330)	
				DATE 7-81	PAGE 4



ROW	H	FF	M	S	U	ADT	REMARKS
100	44	36	8	5	0.5	SEE NOTE 18	MAJOR ARTERIAL
80	35	29.5	–	4	0.5	SEE NOTE 18	MINOR ARTERIAL

NOTES

1. ALL WIDTHS ARE IN FEET.
2. FF, H AND M ARE MEASURED TO THE FRONT FACE OF CURB. ROW IS RIGHT OF WAY; ADT IS AVERAGE DAILY TRAFFIC.
3. ADT REPRESENTS THE DESIGN VOLUME FOR A TWO LANE FACILITY.
4. BICYCLE LANES SHALL BE PROVIDED IN ACCORDANCE W/THE BICYCLE & PEDESTRIAN ELEMENT OF THE REGIONAL TRANSPORTATION PLAN AND TO THE SATISFACTION OF THE COUNTY ENGINEER.
5. ON-STREET PARKING NOT ALLOWED ON ARTERIALS.
6. STRUCTURAL SECTIONS SHALL BE DETERMINED BY GEOTECHNICAL ENGINEERING DESIGN BUT IN NO CASE SHALL BE LESS THAN 5" A.C. OVER 6" GRAVEL BASE.
7. ALL CURB AND GUTTER IS MONOLITHIC CONC. AND L SHAPED PER STANDARD DETAIL.
8. ALL SIDEWALK IS CONCRETE. SIDEWALK BOTH SIDES FOR ARTERIALS.
9. ALL A.C. SURFACES SHALL BE SEALED IN ACCORDANCE WITH WASHOE CO. STANDARDS.
10. DESIGN OF IMPROVEMENTS TO BE DONE IN ACCORDANCE WITH ARTICLES 420 & 436 OF WASHOE COUNTY DEVELOPMENT STANDARDS AND DESIGN GUIDELINES.
11. ALL CONSTRUCTION IS TO BE DONE TO CURRENT WASHOE CO. STANDARDS & SPECIFICATIONS.
12. MEDIAN IS CONC. CURB OR OTHER MEDIAN CONSTRUCTION APPROVED BY THE COUNTY ENGINEER.
13. RESIDENTIAL DRIVEWAY ACCESS NOT ALLOWED.
14. SLOPE EASEMENTS MAY BE REQ'D. IN CERTAIN TERRAIN TO ACCOMMODATE THE ROADWAY SECTION.
15. TYPICAL STRIPPING IS FOR 12' LANES.
16. MIN 7.5' PUBLIC UTILITY/TRAFFIC CONTROL SIGNAGE/PLOWED SNOW EASEMENT IS REQ'D ON BOTH SIDES OF ROW AS PER STD DETAIL.
17. MAXIMUM ADT DEPENDENT ON RTC ACCESS CONTROL DESIGNATION
18. ADT IS DETERMINED FROM REGIONAL ROAD IMPACT FEE SYSTEM, CAPITAL IMPROVEMENT PLAN EXHIBITS A AND B.

NO.	REVISED	DATE
5	Save As W-1.dwg	10/01vp
6	Change ADT add note 17	12/05sw

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

ROADWAY SECTIONS Ⓐ

GENERAL APPLICATIONS

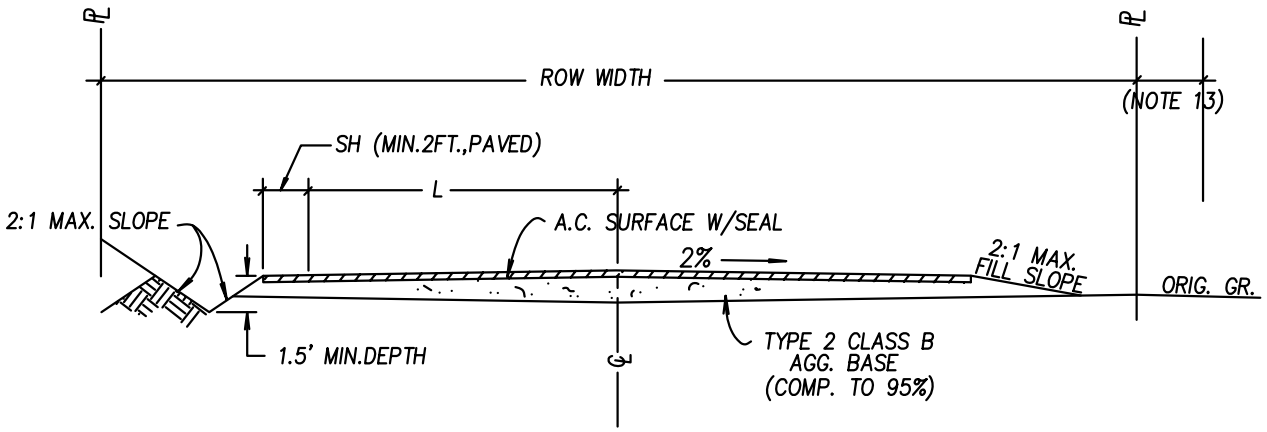
ARTERIAL HIGHWAYS

SECTION: WASHOE

DRAWING NO: W-1.1

DATE: 11/92vp

PAGE: 1



ROW	L	B	SH	ADT MAX PER 2 TRAVEL LANES	REMARKS
60	12	–	2'MIN.	7300	COLLECTOR
50	11	–	2'MIN.	1000	LOCAL

NOTES

1. ALL WIDTHS ARE IN FEET.
2. L=TRAVEL LANE; B=BICYCLE LANE; SH=SHOULDER; ROW=RIGHT OF WAY; ADT=AVERAGE DAILY TRAFFIC.
3. ADT REPRESENTS THE DESIGN VOLUME FOR A TWO LANE FACILITY.
4. BICYCLE LANE SHALL BE PROVIDED IN ACCORDANCE W/THE BICYCLE & PEDESTRIAN ELEMENT OF THE REGIONAL TRANSPORTATION PLAN AND TO THE SATISFACTION OF THE COUNTY ENGINEER.
5. STRUCTURAL SECTIONS SHALL BE DETERMINED BY GEOTECHNICAL ENGINEERING DESIGN BUT IN NO CASE SHALL BE LESS THAN 4" A.C. OVER 6" GRAVEL BASE FOR COLLECTOR STREETS AND GREATER; AND 3" A.C. OVER 6" GRAVEL BASE FOR LOCAL STREETS.
6. ALL A.C. SURFACES SHALL BE SEALED IN ACCORDANCE WITH WASHOE CO. STANDARDS.
7. RESIDENTIAL ACCESS NOT ALLOWED TO STREETS ON WHICH 10YR. DESIGN ADT EXCEEDS 2000.
8. THE MIN PAVED SHOULDER WIDTH SHALL BE 2 FEET, AS REQUIRED BY THE COUNTY ENGINEER.
9. ERROSION PROTECTION REQUIRED FOR DRAINAGE DITCHES.
10. DESIGN OF IMPROVEMENTS TO BE DONE IN ACCORDANCE WITH ARTICLES 420 & 436 OF WASHOE COUNTY DEVELOPMENT STANDARDS AND DESIGN GUIDELINES.
11. ALL CONSTRUCTION IS TO BE DONE TO CURRENT WASHOE CO. STANDARDS SPECIFICATIONS.
12. SLOPE EASEMENTS MAY BE REQUIRED IN CERTAIN TERRAIN TO ACCOMMODATE THE ROADWAY SECTION.
13. MIN 7.5' PUBLIC UTILITY/TRAFFIC CONTROL SIGNAGE/PLOWED SNOW EASEMENT IS REQ'D ON BOTH SIDES OF ROW.

NO.	REVISED	DATE
6	update adt	12/05sw
3	Add Suburban	12/93 vp
4	Notes	1/94 vp
5	Notes,SH,slope	10/02 vp

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

ROADWAY SECTIONS (D)

GENERAL APPLICATIONS

RURAL AREAS/SUBURBAN AREAS

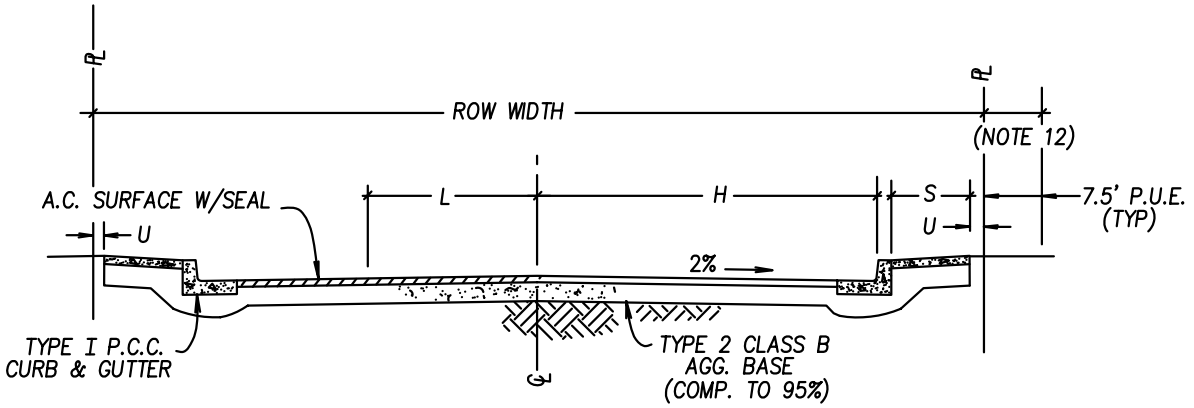
LOT SIZE: GREATER THAN 1.5 ACRES

SECTION: WASHOE

DRAWING NO: W–1.4

DATE: 2/93vp

PAGE: 4



ROW	H	S	U	L	B	PL	ADT MAX PER 2 TRAVEL LANES	REMARKS
56	22	5	0.5	12	0	2	7,300	COMMERCIAL COLLECTOR

NOTES

1. ALL WIDTHS ARE IN FEET.
2. H IS MEASURED TO THE FRONT FACE OF CURB.
3. L=TRAVEL LANE; S=SIDEWALK AREA; B=BICYCLE LANE; ROW=RIGHT OF WAY; PL=MAX. NUMBER OF PARKING LANES; ADT=AVERAGE DAILY TRAFFIC.
4. ADT REPRESENTS THE DESIGN VOLUME FOR A TWO LANE FACILITY.
5. STRUCTURAL SECTIONS SHALL BE DESIGNED BY A REGISTERED ENGINEER FOR A TWENTY(20) YEAR LIFE BASED ON SUBGRADE CHARACTERISTICS AS DETERMINED BY A GEOTECHNICAL INVESTIGATION & ANTICIPATED TRAFFIC VOLUME. REFER TO SECTION 110.436.60(d) FOR A MIN. PAVEMENT THICKNESS.
6. ALL CURB AND GUTTER IS MONOLITHIC CONCRETE AND L SHAPED PER STANDARD DETAIL.
7. SIDEWALK IS CONCRETE BOTH SIDES.
8. ALL A.C. SURFACES SHALL BE SEALED IN ACCORDANCE WITH WASHOE CO. STANDARDS.
9. DESIGN OF IMPROVEMENTS TO BE DONE IN ACCORDANCE W/ARTICLE 240, STORM DRAINAGE STANDARDS, AND ARTICLE 436, STREET DESIGN STANDARDS, OF THE WASHOE COUNTY DEVELOPMENT CODE.
10. ALL CONSTRUCTION IS TO BE DONE TO CURRENT WASHOE CO. STANDARDS & SPECIFICATIONS.
11. SLOPE EASEMENTS MAY BE REQ'D IN CERTAIN TERRAIN TO ACCOMMODATE ROADWAY SECTION.
12. A 7.5' PUBLIC UTILITY/TRAFFIC CONTROL SIGNAGE/PLOWED SNOW EASEMENT IS REQUIRED ON BOTH SIDES OF ROW.

NO.	REVISED	DATE
1	smw	12/05

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

ROADWAY SECTIONS (E)

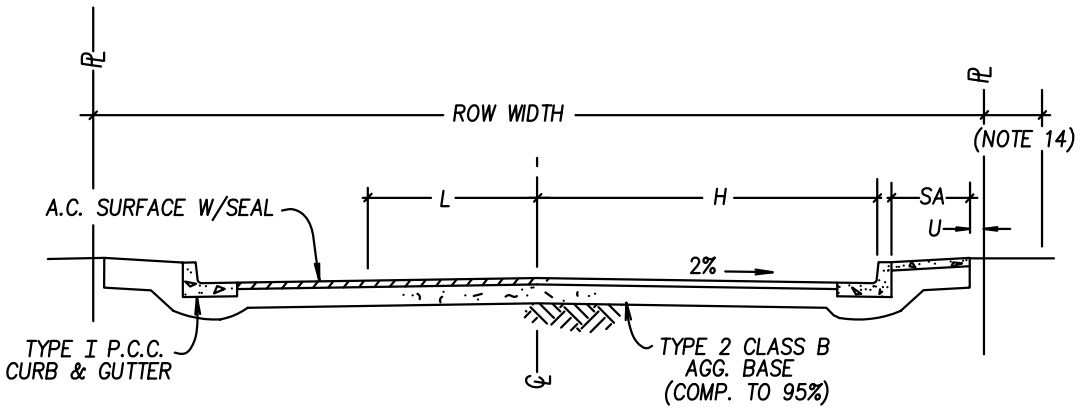
COMMERCIAL COLLECTOR
FOR ALL SIZE LOTS

SECTION: WASHOE

DRAWING NO: W–1.21

DATE: 12/98vp

PAGE: 3.1



ROW	H	SA	U	L	B	PL	ADT MAX PER 2 TRAVEL LANES	REMARKS
52	20	5	0.5	12	4	0	7300	COLLECTOR
42	16	4	0.5	11	0	2	1000	LOCAL

NOTES

1. ALL WIDTHS ARE IN FEET.
2. H IS MEASURED TO THE FRONT FACE OF CURB.
3. L IS TRAVEL LANE; SA IS SIDEWALK AREA; B IS BICYCLE LANE; ROW IS RIGHT OF WAY PL IS MAX. NUMBER OF PARKING LANES; ADT IS AVERAGE DAILY TRAFFIC.
4. ADT REPRESENTS THE DESIGN VOLUME FOR A TWO LANE FACILITY.
5. BICYCLE LANES SHALL BE PROVIDED IN ACCORDANCE W/THE BICYCLE AND PEDESTRIAN ELEMENT OF THE REGIONAL TRANSPORTATION PLAN AND TO THE SATISFACTION OF THE COUNTY ENGNINEER.
6. STRUCTURAL SECTIONS SHALL BE DETERMINED BY GEOTECHNICAL ENGINEERING DESIGN BUT IN NO CASE SHALL BE LESS THAN 4" A.C. OVER 6" GRAVEL BASE FOR COLLECTOR STREETS AND 3" A.C. OVER 6" GRAVEL BASE FOR LOCAL STREETS.
7. ALL CURB AND GUTTER IS MONOLITHIC CONCRETE AND L SHAPED PER STANDARD DETAIL.
8. SIDEWALK AREA SHALL BE @ 2% SLOPE TOWARD TOP OF CURB & COMPACTED 90% ASTM D-1557, BACKFILL SHALL BE EITHER TYPE 2 CLASS B BASE OR CLASS A BACKFILL.
9. ALL A.C. SURFACES SHALL BE SEALED IN ACCORDANCE WITH WASHOE CO. STANDARDS.
10. RESIDENTIAL ACCESS NOT ALLOWED TO STREETS ON WHICH 10YR. DESIGN ADT EXCEEDS 2000.
11. DESIGN OF IMPROVEMENTS TO BE DONE IN ACCORDANCE WITH ARTICLES 420 & 436 OF WASHOE COUNTY DEVELOPMENT STANDARDS AND DESIGN GUIDELINES.
12. ALL CONSTRUCTION IS TO BE DONE TO CURRENT WASHOE CO. STANDARDS & SPECIFICATIONS.
13. SLOPE EASEMENTS MAY BE REQ'D IN CERTAIN TERRAIN TO ACCOMMODATE ROADWAY SECTION.
14. MIN 7.5' PUBLIC UTILITY/TRAFFIC CONTROL SIGNAGE/PLOWED SNOW EASEMENT IS REQ'D ON BOTH SIDES OF ROW.

NO.	REVISED	DATE
1	Notes	1/94 vp
2	Corr "U"	2/94 vp
3	Save As W-3.dwg	10/01vp
4	updated adt	12/05sw

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

ROADWAY SECTIONS (C)

GENERAL APPLICATIONS

SUBURBAN AREAS

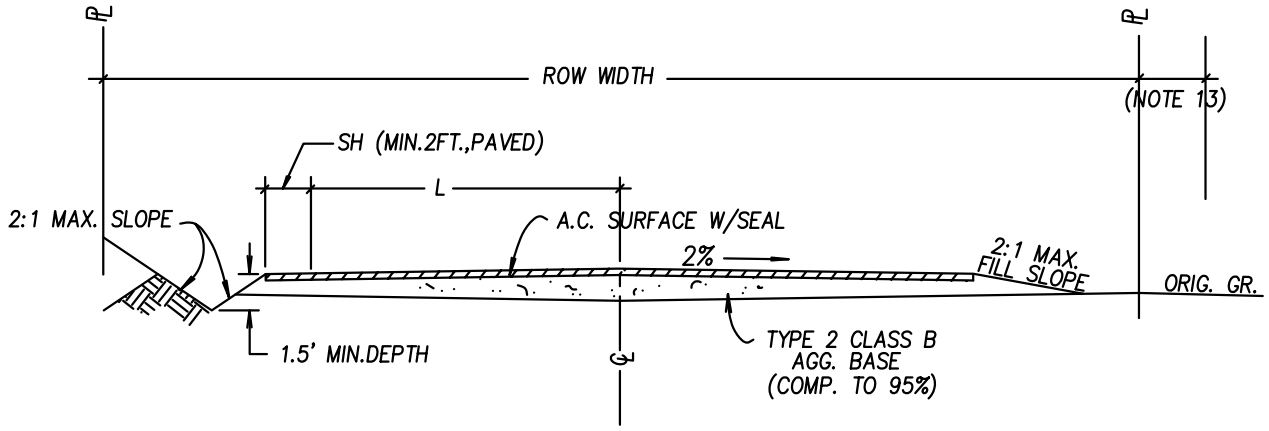
LOT SIZE: 0.5 – 1.5 ACRES

SECTION: WASHOE

DRAWING NO: W-1.3

DATE: 12/93vp

PAGE: 3



ROW	L	B	SH	ADT MAX PER 2 TRAVEL LANES	REMARKS
60	12	–	2'MIN.	9600	COLLECTOR
50	11	–	2'MIN.	1000	LOCAL

NOTES

1. ALL WIDTHS ARE IN FEET.
2. L=TRAVEL LANE; B=BICYCLE LANE; SH=SHOULDER; ROW=RIGHT OF WAY; ADT=AVERAGE DAILY TRAFFIC.
3. ADT REPRESENTS THE DESIGN VOLUME FOR A TWO LANE FACILITY.
4. BICYCLE LANE SHALL BE PROVIDED IN ACCORDANCE W/THE BICYCLE & PEDESTRIAN ELEMENT OF THE REGIONAL TRANSPORTATION PLAN AND TO THE SATISFACTION OF THE COUNTY ENGINEER.
5. STRUCTURAL SECTIONS SHALL BE DETERMINED BY GEOTECHNICAL ENGINEERING DESIGN BUT IN NO CASE SHALL BE LESS THAN 4" A.C. OVER 6" GRAVEL BASE FOR COLLECTOR STREETS AND GREATER; AND 3" A.C. OVER 6" GRAVEL BASE FOR LOCAL STREETS.
6. ALL A.C. SURFACES SHALL BE SEALED IN ACCORDANCE WITH WASHOE CO. STANDARDS.
7. RESIDENTIAL ACCESS NOT ALLOWED TO STREETS ON WHICH 10YR. DESIGN ADT EXCEEDS 2000.
8. THE MIN PAVED SHOULDER WIDTH SHALL BE 2 FEET, AS REQUIRED BY THE COUNTY ENGINEER.
9. ERROSION PROTECTION REQUIRED FOR DRAINAGE DITCHES.
10. DESIGN OF IMPROVEMENTS TO BE DONE IN ACCORDANCE WITH ARTICLES 420 & 436 OF WASHOE COUNTY DEVELOPMENT STANDARDS AND DESIGN GUIDELINES.
11. ALL CONSTRUCTION IS TO BE DONE TO CURRENT WASHOE CO. STANDARDS SPECIFICATIONS.
12. SLOPE EASEMENTS MAY BE REQUIRED IN CERTAIN TERRAIN TO ACCOMMODATE THE ROADWAY SECTION.
13. MIN 7.5' PUBLIC UTILITY/TRAFFIC CONTROL SIGNAGE/PLOWED SNOW EASEMENT IS REQ'D ON BOTH SIDES OF ROW.

NO.	REVISED	DATE
1	REDRAW	2/93 vp
3	Add Suburban	12/93 vp
4	Notes	1/94 vp
5	Notes,SH,slope	10/02 vp

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

ROADWAY SECTIONS (D)

GENERAL APPLICATIONS

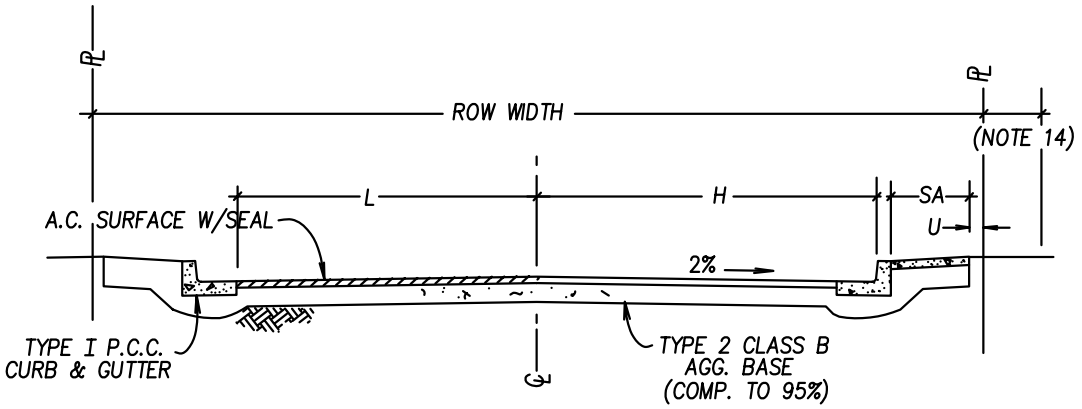
RURAL AREAS/SUBURBAN AREAS

LOT SIZE: GREATER THAN 1.5 ACRES

SECTION: WASHOE

DRAWING NO: W–1.4

DATE: 2/93vp



ROW	H	SA	U	L	B	PL	ADT MAX PER 2 TRAVEL LANES	REMARKS
38	13.5	5	0	12	4	0	7300	COLLECTOR
36	12.5	4	1.0	11	0	0	1000	LOCAL

NOTES

1. ALL WIDTHS ARE IN FEET.
2. H IS MEASURED TO THE FRONT FACE OF CURB.
3. L=TRAVEL LANE; SA=SIDEWALK AREA; B=BICYCLE LANE; ROW=RIGHT OF WAY; PL=MAX NUMBER OF PARKING LANES; ADT=AVERAGE DAILY TRAFFIC.
4. ADT REPRESENTS THE DESIGN VOLUME FOR A TWO LANE FACILITY.
5. BICYCLE LANES SHALL BE PROVIDED IN ACCORDANCE W/THE BICYCLE AND PEDESTRIAN ELEMENT OF THE REGIONAL TRANSPORTATION PLAN AND TO THE SATISFACTION OF THE COUNTY ENGNINEER.
6. STRUCTURAL SECTIONS SHALL BE DETERMINED BY GEOTECHNICAL ENGINEERING DESIGN BUT IN NO CASE SHALL BE LESS THAN 4" A.C. OVER 6" GRAVEL BASE FOR COLLECTOR STREETS AND 3" A.C. OVER 6" GRAVEL BASE FOR LOCAL STREETS.
7. ALL CURB AND GUTTER IS MONOLITHIC CONCRETE AND L SHAPED PER STANDARD DETAIL.
8. SIDEWALK AREA SHALL BE @ 2% SLOPE TOWARD TOP OF CURB & COMPACTED TO 90% ASTM D-1557, BACKFILL SHALL BE EITHER TYPE 2 CLASS B BASE OR CLASS A BACKFILL.
9. ALL A.C. SURFACES SHALL BE SEALED IN ACCORDANCE WITH WASHOE CO. STANDARDS.
10. RESIDENTIAL DRIVEWAY ACCESS NOT ALLOWED TO STREETS ON WHICH 10YR DESIGN ADT EXCEEDS 2000.
11. DESIGN OF IMPROVEMENTS TO BE DONE IN ACCORDANCE WITH ARTICLES 420 & 436 OF WASHOE COUNTY DEVELOPMENT STANDARDS AND DESIGN GUIDELINES.
12. ALL CONSTRUCTION IS TO BE DONE TO CURRENT WASHOE CO. STANDARDS & SPECIFICATIONS.
13. SLOPE EASEMENTS MAY BE REQ'D IN CERTAIN TERRAIN TO ACCOMMODATE ROADWAY SECTION.
14. MIN 7.5' PUBLIC UTILITY/TRAFFIC CONTROL SIGNAGE/PLOWED SNOW EASEMENT IS REQ'D ON BOTH SIDES OF ROW.

NO.	REVISED	DATE
1	old W-4^1 new W-6	10/01vp
2	updated adt	12/05sw

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

ROADWAY SECTIONS (G)

PRIVATE ROADWAYS

URBAN AREAS/SUBURBAN AREAS

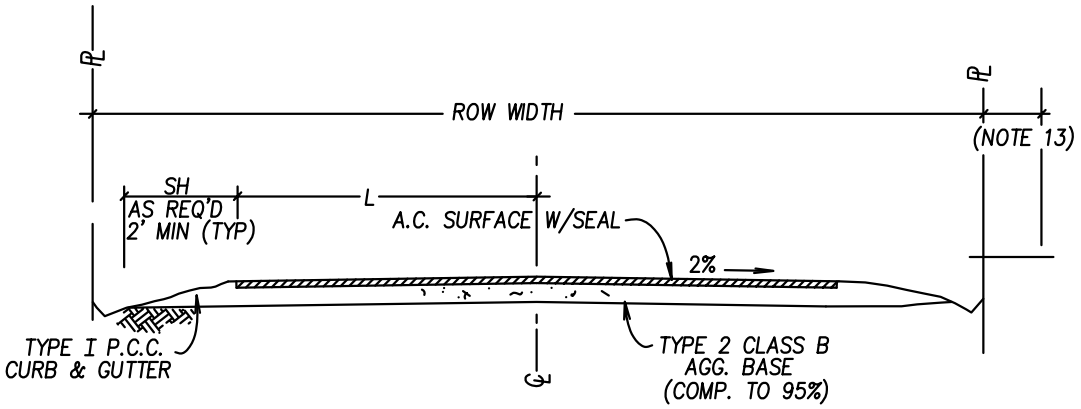
LOT SIZE: 0.5 OR LESS ACRES

SECTION: WASHOE

DRAWING NO: W-1.41

DATE: 7/99vp

PAGE: 4.1

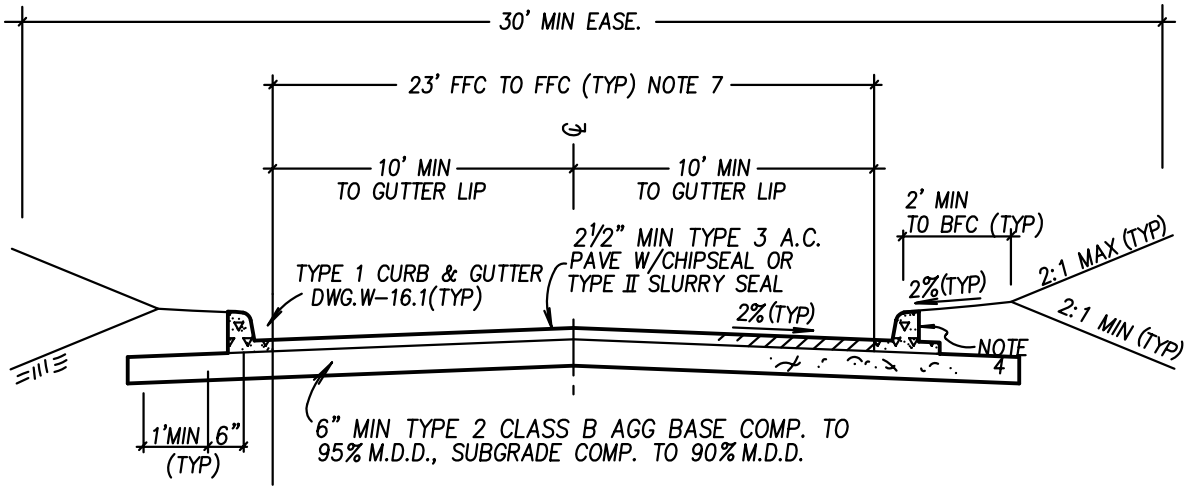


ROW	L	B	SH	ADT MAX PER 2 TRAVEL LANES	REMARKS
38	12	–	–	7300	COLLECTOR
36	11	–	–	1000	LOCAL

NOTES

1. ALL WIDTHS ARE IN FEET.
2. L=TRAVEL LANE; B=BICYCLE LANE; SH=SHOULDER; ROW=RIGHT OF WAY; ADT=AVERAGE DAILY TRAFFIC.
3. ADT REPRESENTS THE DESIGN VOLUME FOR A TWO LANE FACILITY.
4. BICYCLE LANES SHALL BE PROVIDED IN ACCORDANCE W/THE BICYCLE AND PEDESTRIAN ELEMENT OF THE REGIONAL TRANSPORTATION PLAN AND TO THE SATISFACTION OF THE COUNTY ENGNINEER.
5. STRUCTURAL SECTIONS SHALL BE DETERMINED BY GEOTECHNICAL ENGINEERING DESIGN BUT IN NO CASE SHALL BE LESS THAN 4" A.C. OVER 6" GRAVEL BASE FOR COLLECTOR STREETS AND GREATER; AND 3" A.C. OVER 6" GRAVEL BASE FOR LOCAL STREETS.
6. ALL A.C. SURFACES SHALL BE SEALED IN ACCORDANCE WITH WASHOE CO. STANDARDS.
7. RESIDENTIAL ACCESS NOT ALLOWED TO STREETS ON WHICH 10YR DESIGN ADT EXCEEDS 2000.
8. THE MINIMUM SHOULDER WIDTH SHALL BE 2 FEET, SHOULDER TO BE ENGINEERED, TYPE 2 CLASS B AGGREGATE BASE COURSE OR A.C. STRUCTURAL SECTION AS ABOVE, AS REQUIRED BY THE COUNTY ENGINEER
9. EROSION PROTECTION REQUIRED FOR DRAINAGE DITCHES
10. DESIGN OF IMPROVEMENTS TO BE DONE IN ACCORDANCE WITH ARTICLES 420 & 436 OF WASHOE COUNTY DEVELOPMENT STANDARDS AND DESIGN GUIDELINES.
11. ALL CONSTRUCTION IS TO BE DONE TO CURRENT WASHOE CO. STANDARDS & SPECIFICATIONS.
12. SLOPE EASEMENTS MAY BE REQ'D IN CERTAIN TERRAIN TO ACCOMMODATE ROADWAY SECTION.
13. MIN 7.5' PUBLIC UTILITY/TRAFFIC CONTROL SIGNAGE/PLOWED SNOW EASEMENT IS REQ'D ON BOTH SIDES OF ROW

NO.	REVISED	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION: WASHOE
1	updated adt	12/05/05sw	ROADWAY SECTIONS (F)	DRAWING NO: W–1.42
			PRIVATE ROADWAYS	
			RURAL AREAS/SUBURBAN AREAS	DATE: 7/99vp PAGE: 4.2
			LOT SIZE: GREATER THAN 0.5 ACRES	



TYP. SECTION

N.T.S.

NOTES

1. ALL CONST SHALL CONFORM TO LATEST EDITION OF STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONST., THE LATEST STANDARD DETAILS & ALL OTHER APPLICABLE CODES.
2. ONE 30"x30" SIGN SHALL BE PLACED ON EACH END OF EMERGENCY ACCESS ROAD & SHALL READ "EMERGENCY VEHICLES ONLY" – "NOT A PUBLIC STREET"
3. ADDITIONAL EASEMENT MAY BE REQ'D AT INTERSECTIONS.
4. BACKFILL FOR A MIN DIST OF 2' BEHIND CURB SHALL BE COMPACTED TO 90% M.D.D. & SHALL BE EITHER TYPE 2 CLASS B BASE OR CLASS A BACKFILL.
5. ADDITIONAL EASE & ROADWAY WIDTH MAY BE REQ'D BY COUNTY ENGINEER.
6. ALL GATES & PAVEMENT WIDTHS SHALL BE TO THE SATISFACTION OF COUNTY ENGINEER & LOCAL FIRE DEPT.

NO.	REVISION	DATE
1	REDRAWN	7/94 vp
2	TYPE 1 C&G	10/04 smw

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

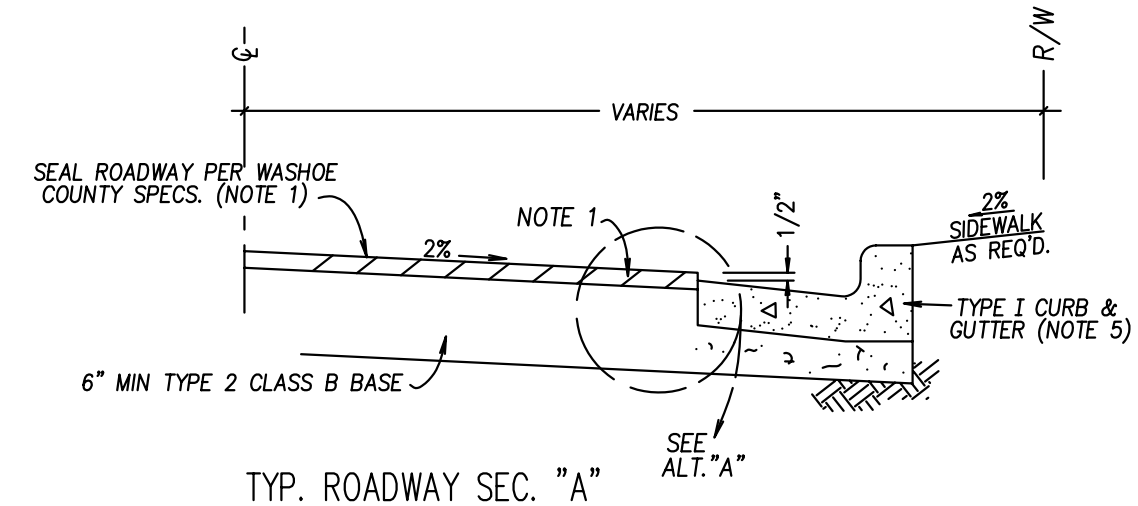
PERMANENT EMERGENCY ACCESS ROAD

TO BE USED ONLY WITH THE APPROVAL OF THE COUNTY ENGINEER

SECTIONS WASHOE

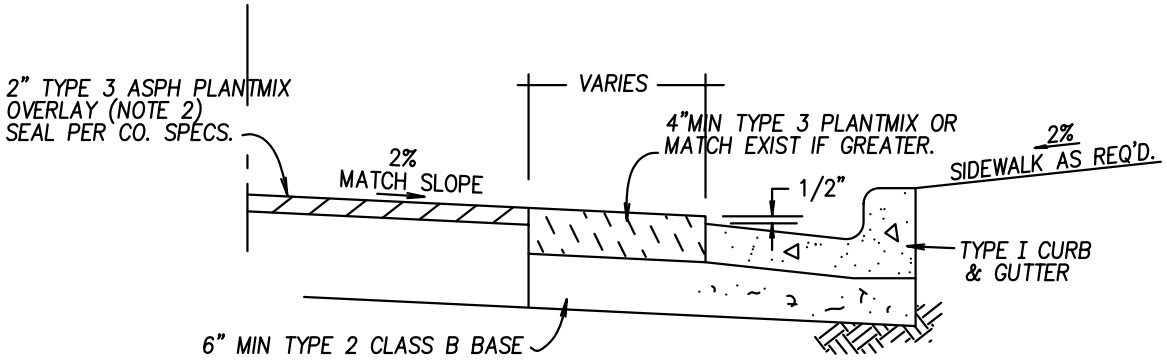
DRAWING NO. W-1.5

DATE 10/04 | PAGE 5



TYP. ROADWAY SEC. "A"

N.T.S.



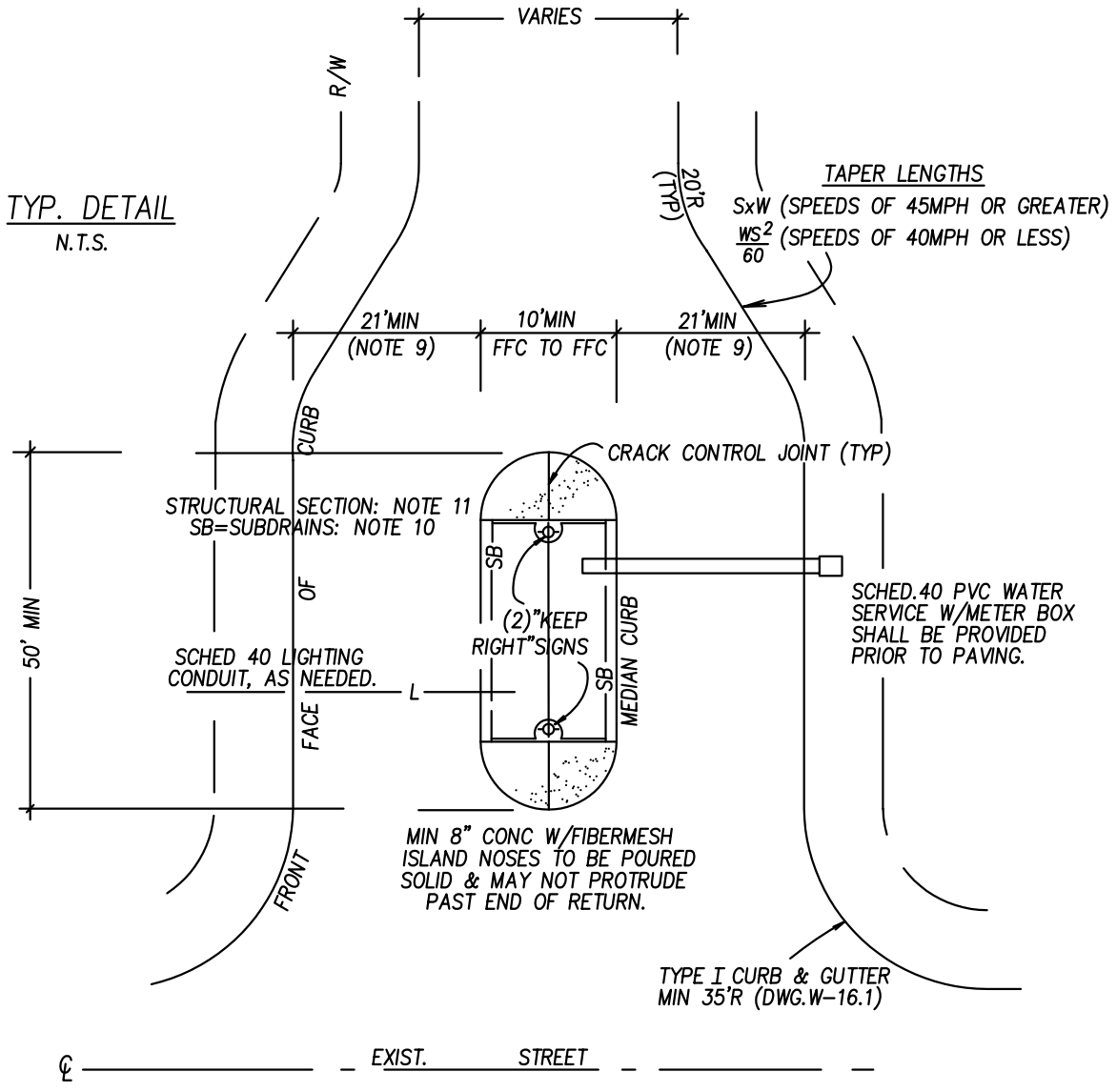
SHOULDER • ALT."A"

N.T.S.

NOTES

1. REMOVE EXIST ASPH SURFACE TO ℄ STREET OR CROWN IN ROADWAY. RECONSTRUCT ROADWAY W/4"MIN TYPE 3 ASPH PLANTMIX ON 6"TYPE 2 CLASS B AGG BASE OR MATCH EXIST STRUCTURAL SEC. IF GREATER.
2. GRINDING OF EXIST ASPH SURFACE MAY BE PERMITTED BY CO. ENGINEER IF EXIST ASPH IS MIN 4"THICK & HAS A PAVEMENT CONDITION INDEX OF 65 OR GREATER.
3. MIN PROFILE ON CURB & GUTTER SHALL BE 0.5%.
4. ALL CONST SHALL BE IN ACCORDANCE W/LATEST EDITION OF THE STD SPECIFICATIONS FOR PUBLIC WORKS & THE LATEST WASHOE COUNTY DETAILS.
5. ALL BACKFILL BEHIND CURB SHALL MEET THE LATEST WASHOE COUNTY REQUIREMENTS.
6. FOR SIDEWALK REFER TO DWG. W-16.2

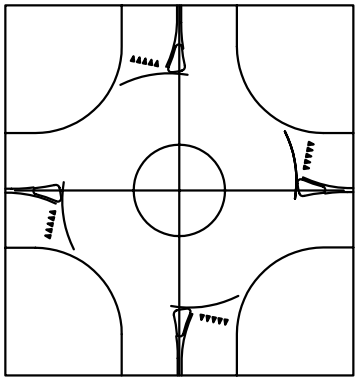
NO.	REVISED	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION: WASHOE
1	Save old W-4^1 as new W-6	10/01vp	RETROFIT CURB & GUTTER	DRAWING NO: W-1.6
2	Re-do as W-6	2/04vp		DATE: 7/99vp / PAGE: 6



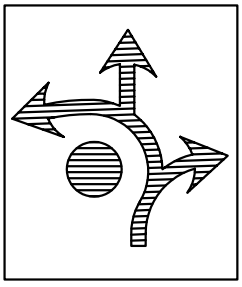
NOTES

1. MEDIAN CURB SHALL BE WASHOE CO. TYPE I (DWG.W-17). REFER TO DWG W-16.1 FOR CONC REQUIREMENTS.
2. ADDITIONAL TRAFFIC CONTROL MARKINGS FOR ISLAND MAY BE REQ'D BY COUNTY ENGINEER.
3. ALL LANDSCAPING WITHIN ISLAND SHALL BE IN ACCORDANCE W/AASHTO & APPROVED BY COUNTY ENGINEER.
4. ALL LANDSCAPING SHALL BE MAINTAINED BY HOMEOWNERS OR HOMEOWNERS ASSOC.
5. NO DRIVEWAY SHALL BE ALLOWED WITHIN 100' OF ANY PORTION OF AN ISLAND.
6. AN ENCROACHMENT PERMIT FOR THE ISLAND SHALL BE OBTAINED FROM THE CO. ENGINEERS OFFICE.
7. ALL ROADWAY STRIPING FOR ISLAND SHALL BE PERFORMED BY DEVELOPER OR BUILDER.
8. COLORED CONC MAY BE USED IF APPROVED BY CO. ENGINEER, MIN CEMENT CONTENT SHALL BE 6.75sack
9. ADDITIONAL WIDTH (FRONT FACE TO FRONT FACE) MAY BE REQ'D BY COUNTY ENGINEER.
10. MIN 4" DIA SUBDRAINS SHALL BE INSTALLED 1 FT BEHIND CURB AS SHOWN. SUBDRAIN SHALL BE INSTALLED MIN DEPTH OF 3' BELOW THE TOP OF CURB, AND TIE INTO AN EXIST DITCH OR STORM DRAIN.
11. THE MIN STRUCTURAL SECTION FOR THE PAVEMENT WITHIN 50 FT OF NOSE OF ISLAND SHALL BE 5" OF ASPHALT ON 6" OF BASE.

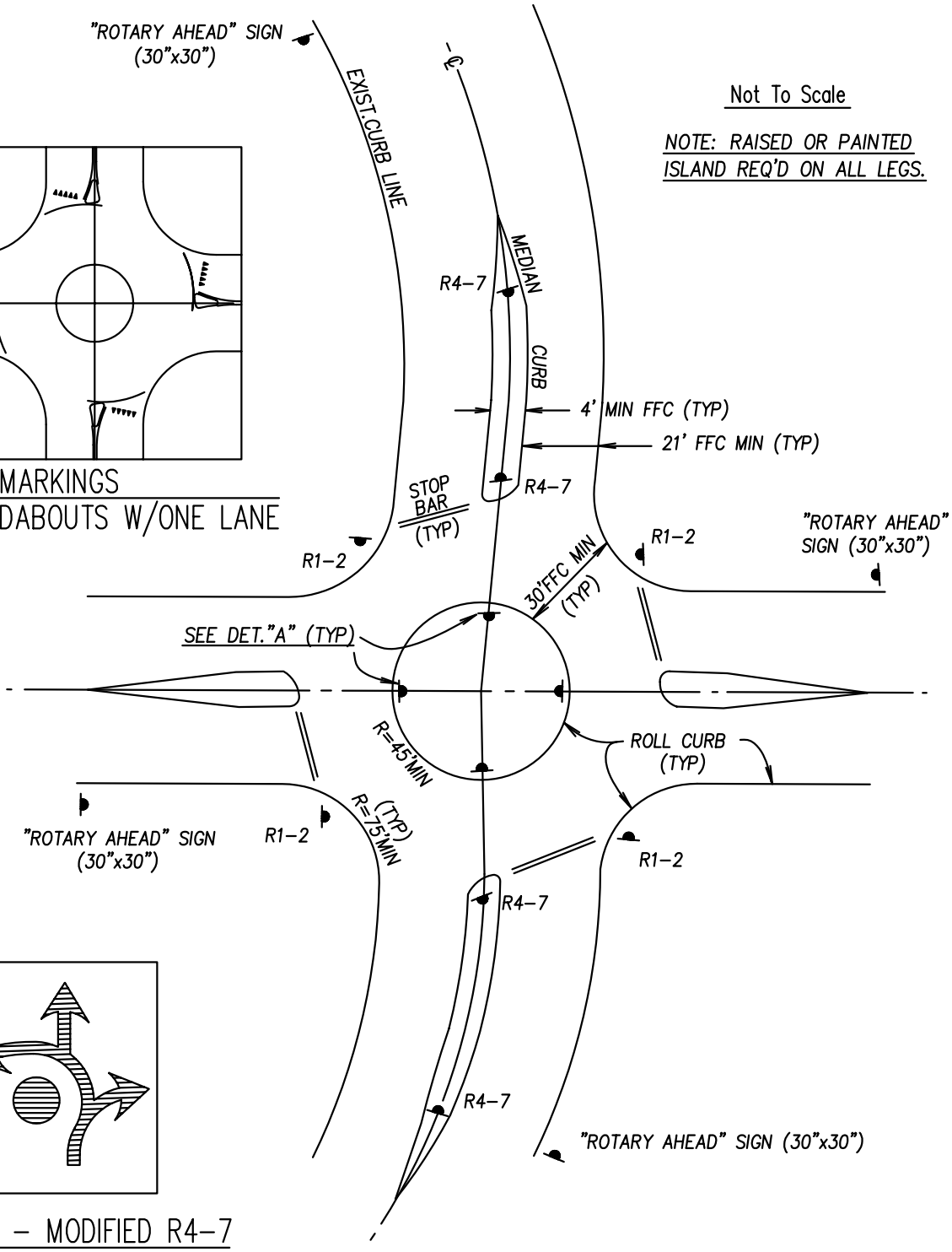
NO.	REVISED	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION: WASHOE
1	Note 10, 11	5/96 vp	LANDSCAPE ISLAND	DRAWING NO: W-1.7
				DATE: 8/94 vp / PAGE: 7



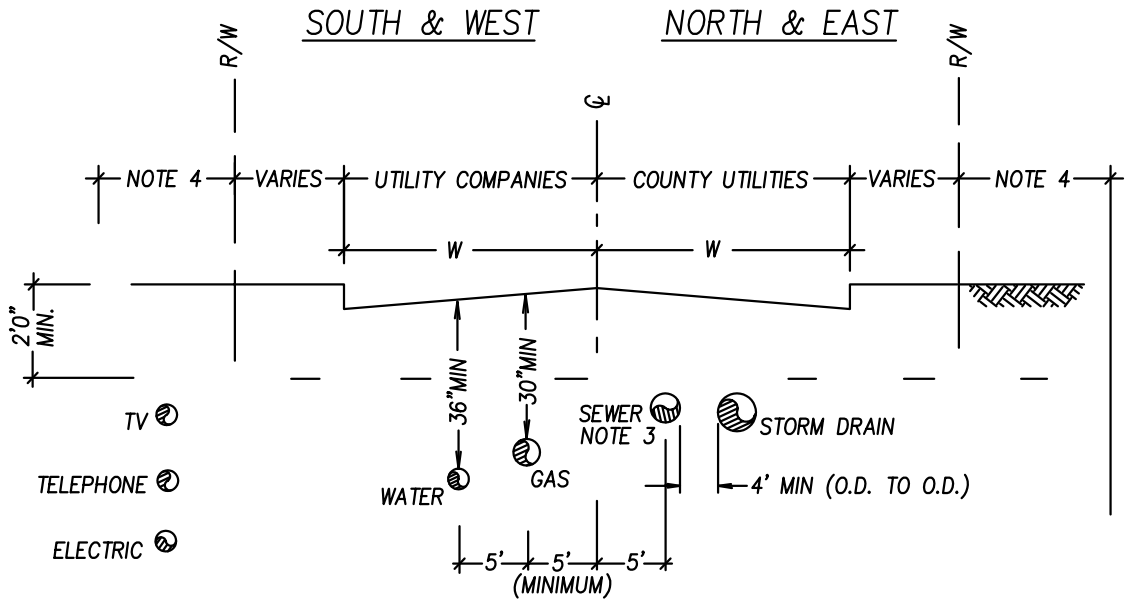
TYP. MARKINGS
ROUNDABOUTS W/ONE LANE
N.T.S.



DET."A" – MODIFIED R4-7
(24"x30") N.T.S.



NO.	REVISED	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION: WASHOE
			ROUNDABOUT	DRAWING NO: W–1.8
				DATE: 4/97vp PAGE: 7.1



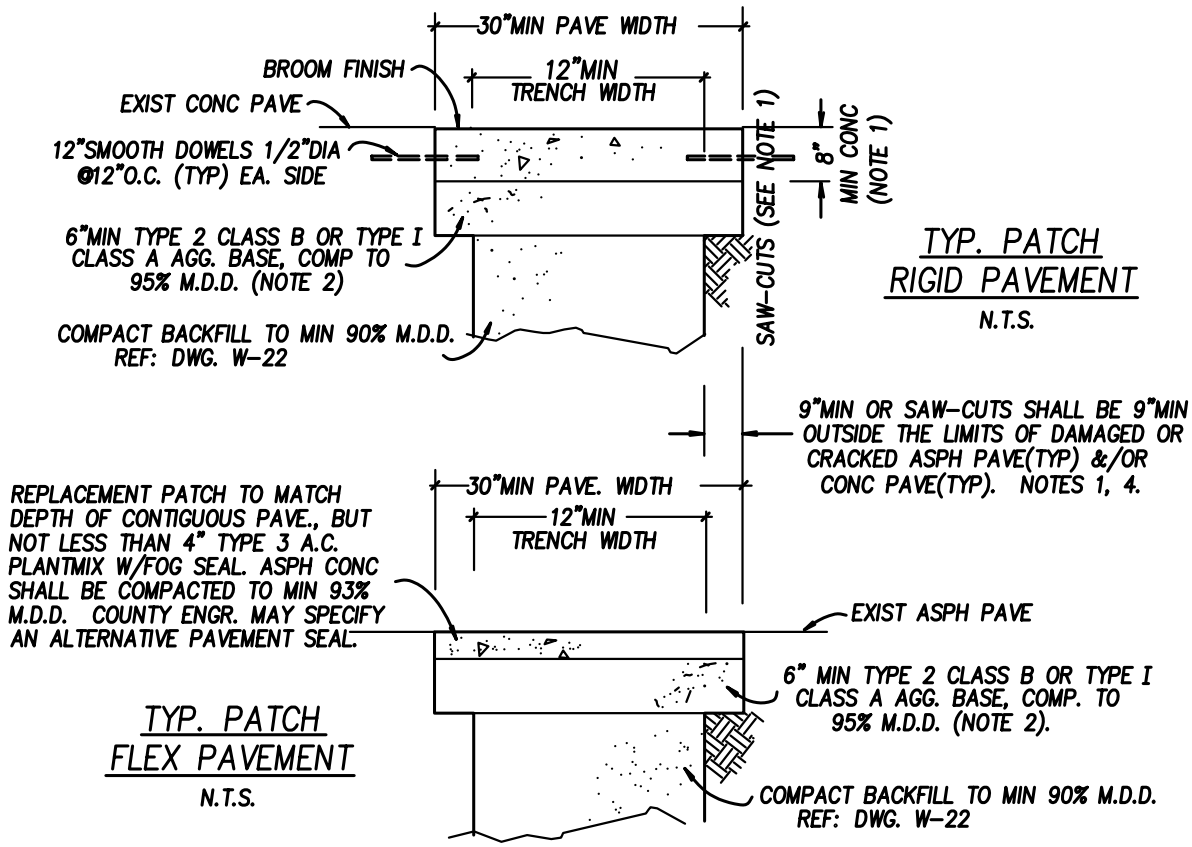
TYP. SEC.

N.T.S.

NOTES

1. FOR ALL UTILITIES IN A COMMON TRENCH, SEE STANDARD DETAIL DWG. 1–3.
2. MAINTAIN A MIN SEPARATION OF 5' BETWEEN GAS LINE & WASHOE CO. UTILITIES WATER LINE.
3. 5' MIN FROM FINISHED GRADE TO FLOWLINE OF SANITARY SEWER.
4. MIN 7.5' PUBLIC UTILITY/TRAFFIC CONTROL SIGNAGE/PLOWED SNOW EASEMENT

NO.	REVISED	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION: WASHOE
1	REDRAWAL	6/94 vp	UTILITY MAIN LOCATIONS	DRAWING NO: W–2.1
				DATE: 6/94 vp / PAGE: 8



NOTES

1. ALL CONC REMOVAL & REPLACEMENT SHALL BE TO SAW-CUT LINES & SHALL BE DONE BY EXCAVATION CONTRACTOR OR SUBCONTRACTOR. ALL SAW-CUTS SHALL BE VERT & IN STRAIGHT LINES PARALLEL OR PERPENDICULAR TO TRENCH, OR TO SATISFACTION OF THE CO. ENGINEER. CONC SHALL BE MIN 6.25sack 4000psi WITH FIBERMESH W/4.5-7.5% AIR.

   RIGID PAVEMENT: IF SAW-CUT IS WITHIN 36" OF EDGE OR JOINT ON PCC PAVE., REMOVE PCC TO EXIST EDGE & REPLACE ENTIRE SECTION. FLEX PAVEMENT: IF SAW-CUT IS WITHIN 36" OF EDGE ON A.C. PAVE., EDGE OF VALLEY GUTTER, LIP OF CURB & GUTTER, OR A PREVIOUS PATCH, REMOVE EXIST PAVE TO THAT EDGE AND REPLACE THE ENTIRE SECTION.
2. DEPTH OF BASE TO BE 6" MIN., OR MATCH EXIST BASE IF GREATER.
3. UNPAVED STREET SHALL RECEIVE 6" MIN BASE COURSE IN ACCORDANCE W/LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
4. ALL ASPH REMOVAL SHALL BE TO SAW-CUT LINES. ALL ASPH CONC SHALL BE TYPE 3 PLANTMIX. ALL SAW-CUTS FOR FLEXIBLE PAVE SHALL BE PERFORMED BY EXCAVATION CONTRACTOR OR SUBCONTRACTOR.
5. ALL CONST SHALL BE IN ACCORDANCE W/LATEST EDITION OF STD. SPECIFICATIONS FOR PUBLIC SORKS CONST.
6. USE OF ROCK WHEEL TRENCHING MACHINES OR SIMILAR EQUIP SHALL NOT BE PERMITTED WITHIN PAVED AREAS OR WITHIN 1 FT OF EDGE OF PAVING.
7. CONC SLURRY W/MIN OF 1 SACK OF CEMENT PER CU.YD. OF SLURRY OR OTHER APPROVED MIX DESIGN MAY BE USED FOR BASE COURSE, BEDDING OR BACKFILL IF APPROVED BY CO. ENGINEER & UTILITY COMPANIES.
8. PERMANENT RESURFACING SHALL NOT BE PLACED ON TRENCHES BACKFILLED W/CONC SLURRY FOR A MIN OF 7 DAYS AFTER PLACEMENT OF THE CONC SLURRY OR SIMILAR MATERIAL.
9. ALL TRENCHES SHALL BE PATCHED W/COLD PATCH WITHIN 24 HRS AFTER BACKFILLING IS COMPLETED, OR COVERED W/STEEL PLATES & BARRICADED TO SATISFACTION OF THE COUNTY ENGINEER.

NO.	REVISED	DATE
1	Widen dim's	8/03vp
2	notes	12/05sw

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

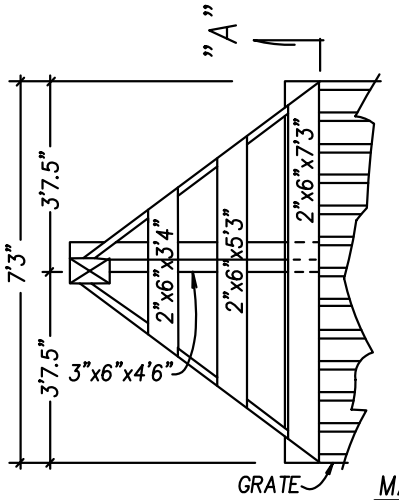
PERMANENT PAVEMENT PATCH

SECTION: WASHOE

DRAWING NO: W-2.2

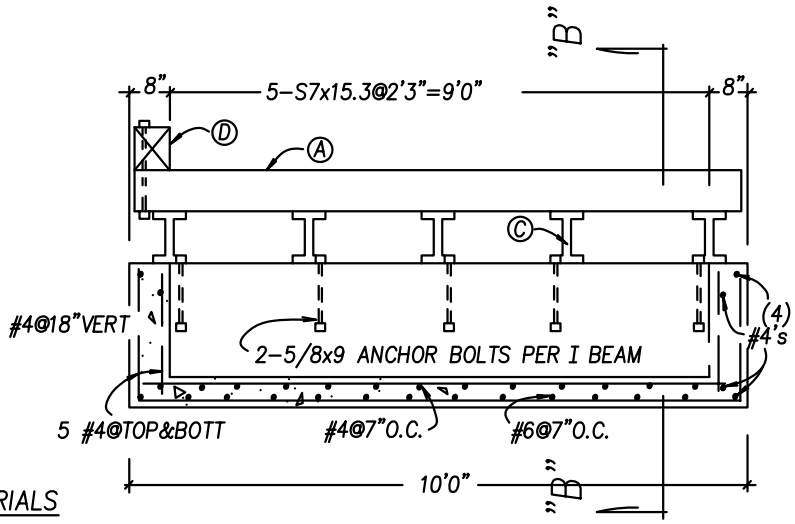
DATE: 4/94 vp

PAGE: 9



WING • PLAN

N.T.S.



ELEVATION

N.T.S.

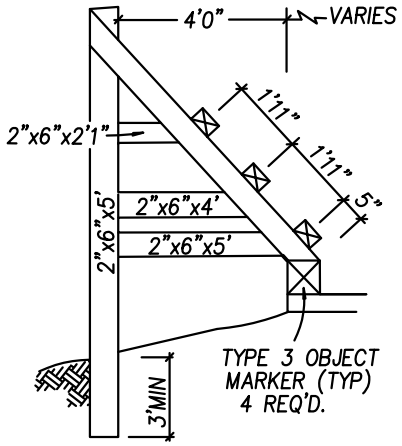
MATERIALS

Ⓐ 4"x2"x1/4"STRUC TUBING @7"O.C.

Ⓑ 5"x2-1/2"x5/16" P L

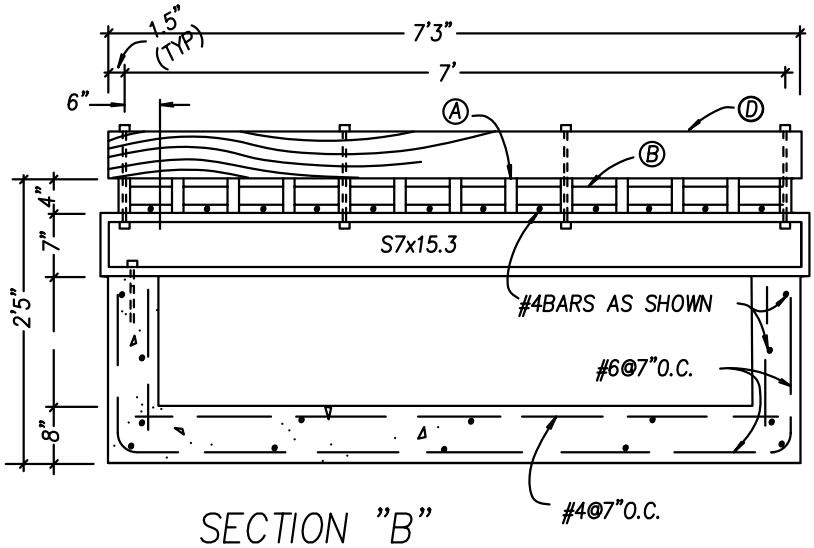
Ⓒ S7x15.3 @2'3"O.C.

Ⓓ 6"x6"x7'3"TIMBER



SECTION "A"

N.T.S.



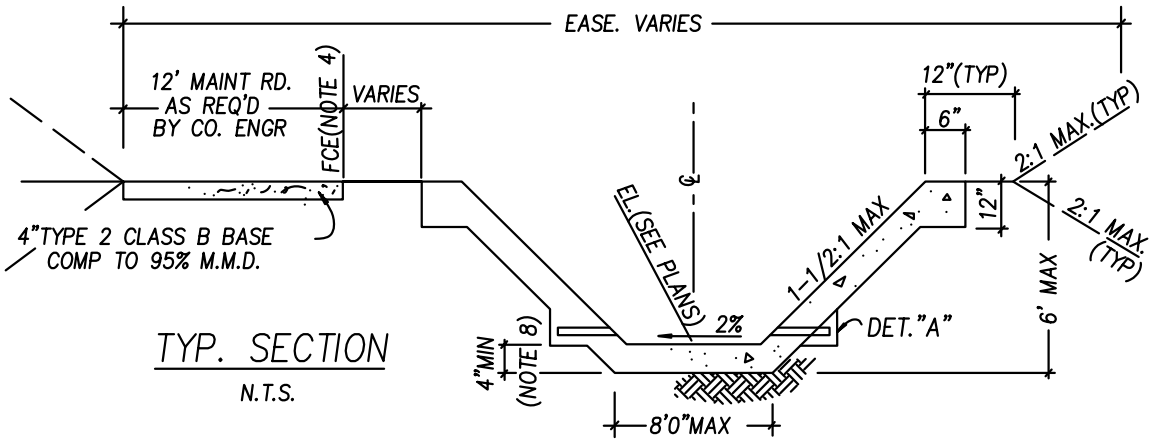
SECTION "B"

N.T.S.

NOTES

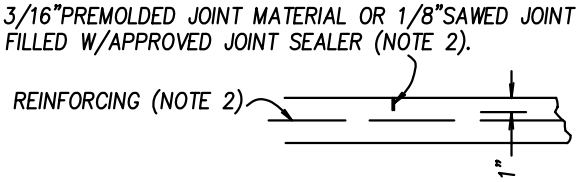
1. ALL CONC. SHALL HAVE A MIN. COMP. STRENGTH OF 4000psi @ 28 DAYS W/MIN OF 6.25sacks OF CEMENT PER CU.YD., AIR ENTRAINMENT TO BE 4.5-7.5
2. ALL STEEL CONNECTIONS SHALL BE WELDED 1/4" FILLET UNLESS OTHERWISE NOTED.
3. PROVIDE 8" DIA. HOLE AT ENDS FOR DRAINAGE OF CONC BOX.
4. ALL NAILING TO BE W/20d NAILS.
5. STRUCTURE WIDTH CAN BE MADE IN ANY MULTIPLE OF THE GRATE WIDTH.
6. MANUFACTURED, APPROVED EQUAL CATTLE GUARD BY: a) HEATON STEEL SUPPLY OF KLAMATH FALLS, OREGON OR b) SIXTH ST. STEEL & OXYGEN CO., SALT LAKE CITY, UTAH.

NO.	REVISED	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION: WASHOE
1	REDRAWN	5/94 vp	STEEL CATTLE GUARD	DRAWING NO: W-3
				DATE: 5/94 vp / PAGE: 10



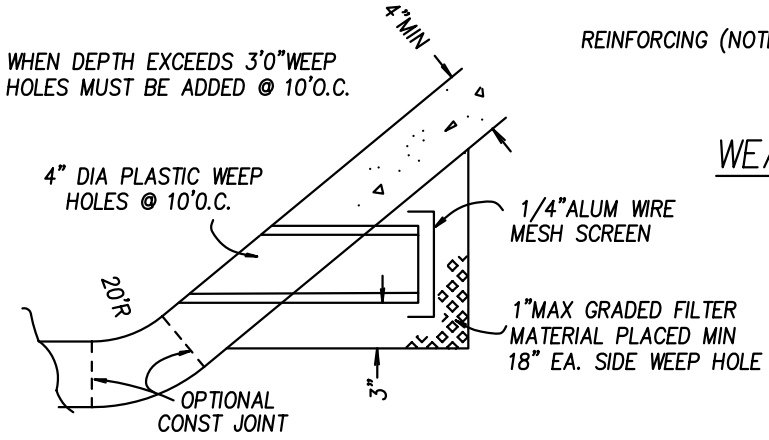
TYP. SECTION

N.T.S.



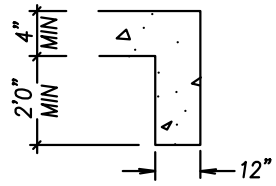
WEAKENED PLANE JOINT

N.T.S.



WEEP HOLE DET."A"

N.T.S.



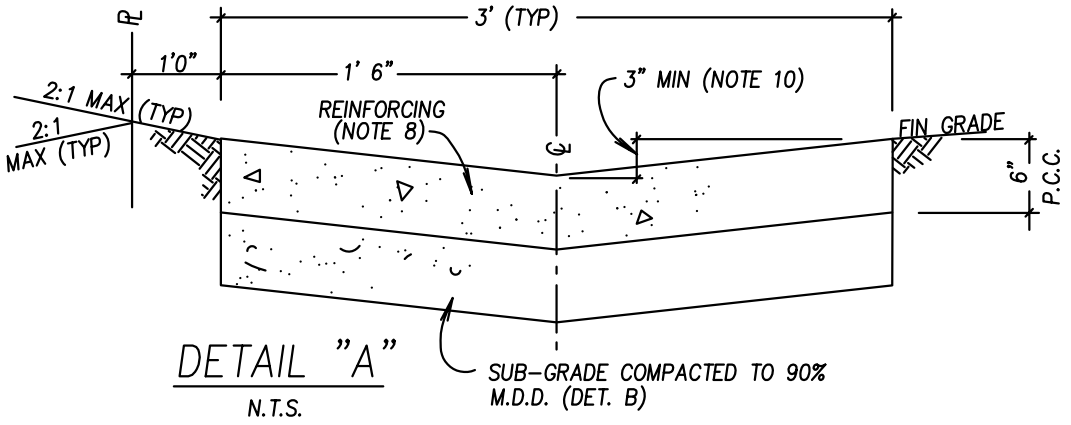
CUT-OFF WALL

N.T.S.

NOTES

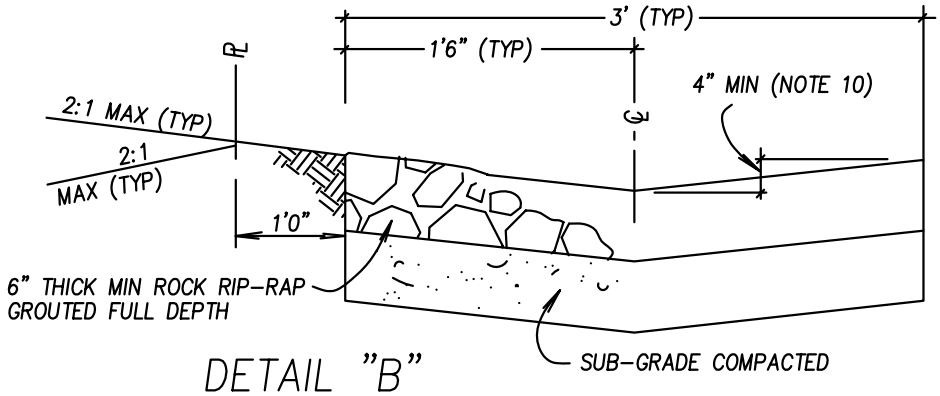
1. A.C. OR PIPE MAY BE SUBSTITUTED FOR PLASTIC PIPE AT WEEP HOLES.
2. WEAKENED PLANE JOINTS SHALL BE SEALED W/APPROVED JOINT SEALER & PLACED EVERY 10FT.
3. CUT-OFF WALLS SHALL BE CONST AT EA END OF CHANNEL ALONG THE FULL WIDTH OF SECTION.
4. CHAINLINK FENCE SHALL BE AS REQ'D BY COUNTY ENGINEER.
5. REINFORCEMENT SHALL CONSIST OF COLLATED, FIBRILLATED POLYPROPYLENE FIBERS AS MFD BY FIBERMESH OR APPROVED EQUAL. ADD 1-1/2 LBS. FIBERMESH PER CU.YD. OF CONC.
6. WEEP HOLES SHALL NOT BE USED IN IRRIGATION DITCHES.
7. DEPTH OF CONC SHALL BE 4"MIN. ENGINEER MAY INCREASE DEPTH OF CONC., AS NECESSARY.
8. CONC SHALL BE MIN 6.25sack 4000psi W/4.5-7.5% ENTRAINED AIR.

NO.	REVISED	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION: WASHOE
1	REDRAWN	5/94 vp	DRAINAGE CHANNEL	DRAWING NO: W-4.1
				DATE: 5/94 vp / PAGE: 11



DETAIL "A"

N.T.S.



DETAIL "B"

N.T.S.

NOTES

1. MAX DRAINAGE AREA SHALL BE 6 LOTS UNLESS OTHERWISE APPROVED BY CO. ENGINEER.
2. PORTLAND CEMENT CONC (P.C.C.) SHALL BE NIM 4000psi COMPRESSIVE STRENGTH @ 28 DAYS & MIN 6.25sacks OF CEMENT PER CU.YD. W/4.5-7.5% AIR ENTRAINMENT. SLUMP SHALL BE 1" TO 4". ALL MATERIALS SHALL CONFORM TO SSPWC SECTION 202
3. MAX FLOWLINE GRADE SHALL BE 10% ON DETAIL A. USE DETAIL B ON GRADES IN EXCESS OF 10%.
4. MAX CHANGE IN HORIZ ALIGNMENT SHALL BE 10 DEGREES.
5. P.C.C. DRAINAGE SWALES SHALL HAVE WEAKENED PLANE JOINTS EVERY 10 FT.
6. NOT APPROVED FOR TRAFFIC USE.
7. POINT OF DISCHARGE SHALL BE DIRECTLY INTO A CATCH BASIN OR DRAINAGE CHANNEL.
8. REINFORCING SHALL CONSIST OF COLLATED, FIBRILLATED, POLYPROPYLENE FIBERS AS MFD. BY FIBERMESH OR APPROVED EQUAL. USE 1-1/2 LBS PER CU.YD. OF CONCRETE.
9. CONC CURB SHALL BE REQ'D AT ALL LOCATIONS WHERE CHANGES IN HORIZ ALIGNMENT EXCEED 10 DEGREES.
10. ALL LOT LINE SWALES SHALL BE DESIGNED TO CARRY THE 100 YEAR STORM AND TO MEET THE REQUIREMENTS OF SECTION 110.420.30

NO.	REVISED	DATE
1	REDRAWN	6/94 vp

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

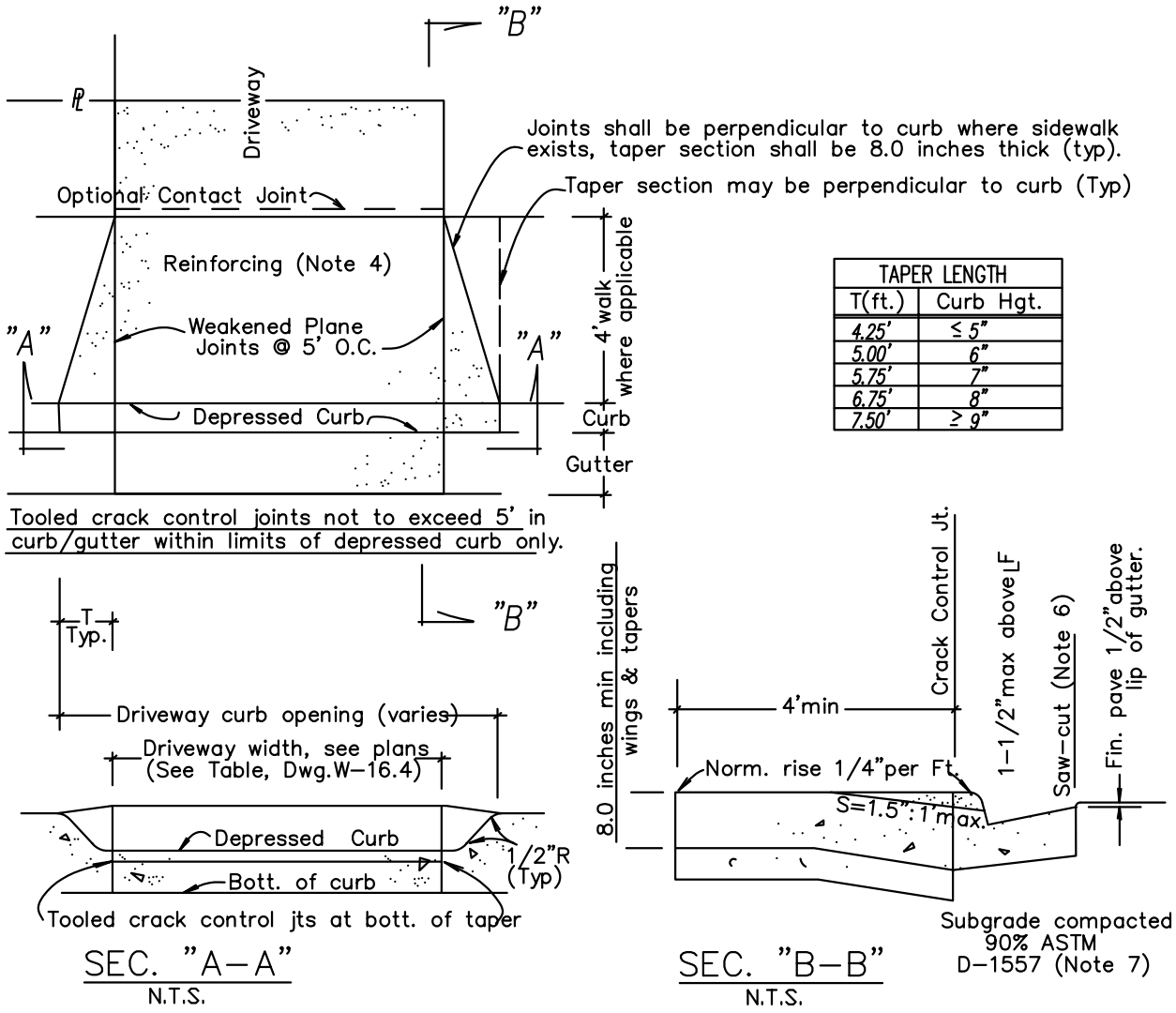
LOT LINE DRAINAGE SWALE (PRIVATE)

SECTION: WASHOE

DRAWING NO: W-4.2

DATE: 6/94 vp

PAGE: 12



TAPER LENGTH	
T(ft.)	Curb Hgt.
4.25'	≤ 5"
5.00'	6"
5.75'	7"
6.75'	8"
7.50'	≥ 9"

NOTES

1. Commercial driveways to use 10"P.C.C. valley gutter w/extended conc apron (Dwg.W-11).
2. This detail shall be used for all types of conc curb, gutter & asphalt berm.
3. Conc shall be min 6.25sack, min comp. strength of 4000psi, 4.5-7.5% air & cured in accordance w/methods found in latest edition of the standard specifications for Public Works construction.
4. Reinforcing for all driveway aprons/curb/gutters shall consist of collated, fibrillated, polypropylene fibers as mfd. by fibermesh or approved equal. Add 1/2 lbs fibermesh per cu.yd. of conc.
5. Concrete for driveway apron shall receive a medium broom finish.
6. Remove conc when constructing driveway where curb, gutter &/or sidewalk exists. Curb removal shall be to neat saw-cut lines & along lip of gutter. All unused depressed curb shall be removed & replaced w/full height curb. Curb & apron may be poured monolithic.
7. Subgrade shall be over excavated in areas of unstable or expansive soils to conform w/the soils report or Washoe County requirements.
8. Max. slope on driveways shall be 14%.
9. Washoe Co. may require three 2" dia cores to verify thickness of conc apron. The average depth of the 3 cores shall be min 8.0 inches. Aprons not meeting the min 8.0 inch depth as established by the cores shall be removed & replaced.

NO.	REVISED	DATE
1	REDRAW	11/92 vp
2	Misc notes	7/94 vp
3	Taper Note	3/03 vp
4		

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

P.C.C. DRIVEWAY APRON

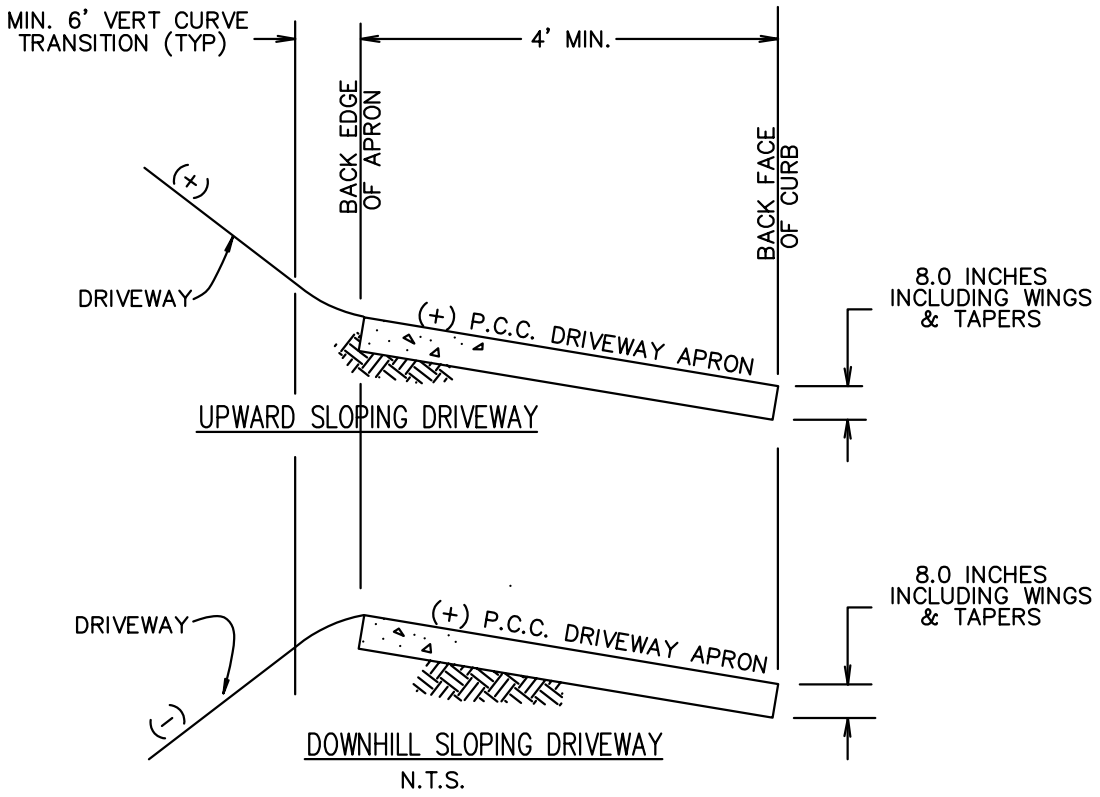
Page 1 of 2

SECTION: WASHOE

DRAWING NO: W-5.1

DATE: 11/93 vp

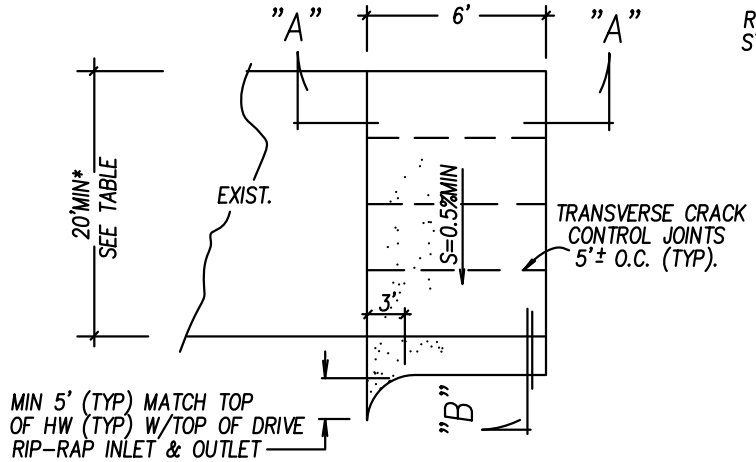
PAGE: 13



CONSTRUCTION FOR GRADE DIFFERENTIALS GREATER THAN 6%

WHEN GRADE DIFFERENTIAL BETWEEN DRIVEWAY APRON & DRIVEWAY EXCEEDS 6%, PROVIDE A MIN. OF 6 FOOT CURVE TRANSITION BETWEEN BACK EDGE OF APRON & DRIVEWAY.

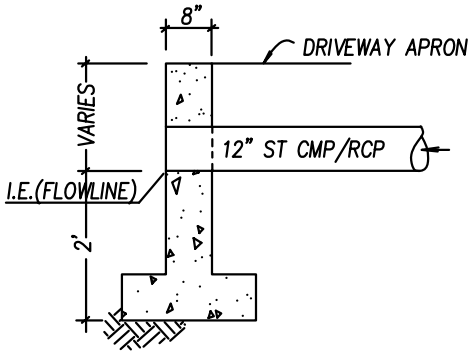
NO.	REVISED	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION: WASHOE
1			GRADE DIFFERENTIALS	DRAWING NO: W-5.11
2				
3				
4			Page 2 of 2	DATE: 3/03 vp / PAGE: W-13b



PLAN

N.T.S.

REF: STD DET'S SEC. 1 FOR REINFORCING STEEL & HDWALLS. SEE TABLE.*

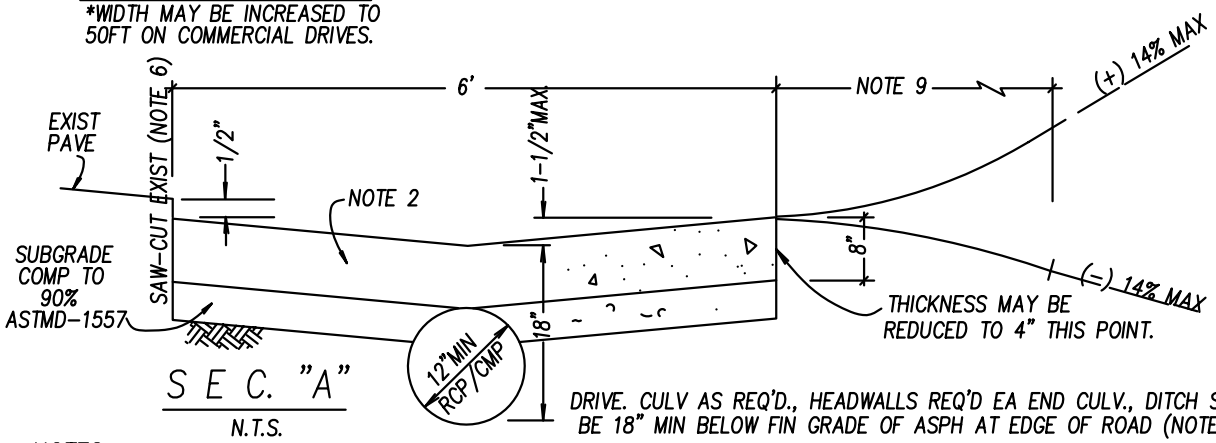


SEC. "B"

N.T.S.

WIDTH	
2 CAR GARAGE	20FT.MIN.
3 CAR GARAGE	30 FEET
MAXIMUM	40 FEET*

*WIDTH MAY BE INCREASED TO 50FT ON COMMERCIAL DRIVES.



SEC. "A"

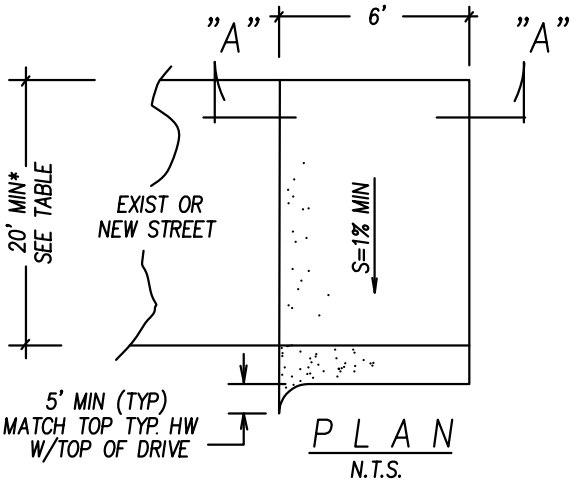
N.T.S.

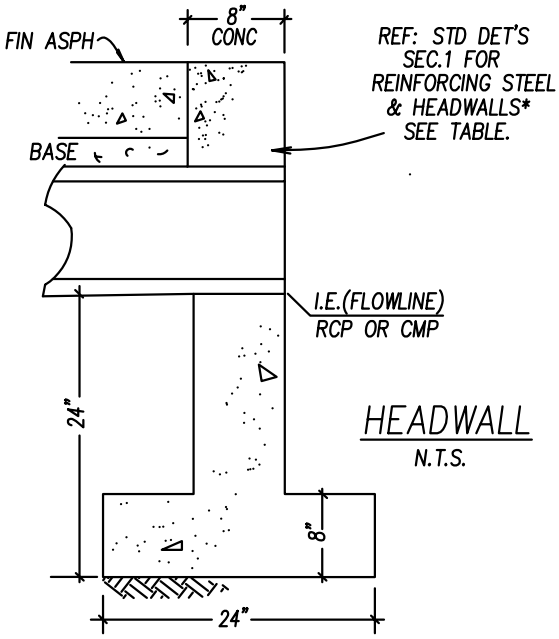
DRIVE. CULV AS REQ'D., HEADWALLS REQ'D EA END CULV., DITCH SHALL BE 18" MIN BELOW FIN GRADE OF ASPH AT EDGE OF ROAD (NOTE 4).

NOTES

1. COMMERCIAL DRIVEWAYS SHALL USE 10" PCC VALLEY GUTTER W/EXTENDED CONC APRON (DWG. W-11).
2. CONC SHALL BE MIN 6.25sack 4000psi W/4.5-7.5% AIR. MAX SLOPE ON DRIVEWAYS SHALL BE 14%.
3. CONC DRIVEWAY APRON TO RECEIVE MED BROOM FINISH, REINFORCING TO CONSIST OF COLLATED, FIBRILLATED, POLY-PROPYLENE FIBERS AS MFD BY FIBERMESH OR APPROVED EQUAL, ADD 1-1/2 LBS FIBERMESH PER CU.YD. OF CONC.
4. MIN PIPE DIA SHALL BE 12", MIN GAUGE SHALL BE 16ga.
5. AN ENCROACHMENT PERMIT SHALL BE OBTAINED FROM THE COUNTY ENGINEERS OFFICE WHEN CONC IS PLACED AGAINST ROADWAY SURFACE.
6. CONC SHALL BE CURED IN ACCORDANCE W/METHODS FOUND IN THE LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
7. SUBGRADE SHALL BE OVEREXCAVATED IN AREAS OF UNSTABLE OR EXPANSIVE SOILS TO CONFORM WITH THE SOILS REPORT OR WASHOE COUNTY REQUIREMENTS.
8. BACKFILL AROUND PIPE SHALL MEET THE REQUIREMENTS OF THE STD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (SEC. 200.03 AND 200.01 THROUGH 200.01.03).
9. WHEN GRADE DIFFERENTIAL BETWEEN DRIVE APRON & CONC/ASPH EXCEEDS 6%, PROVIDE MIN 4' CURVE TRANSITION BETWEEN BACK EDGE OF APRON & DRIVE.

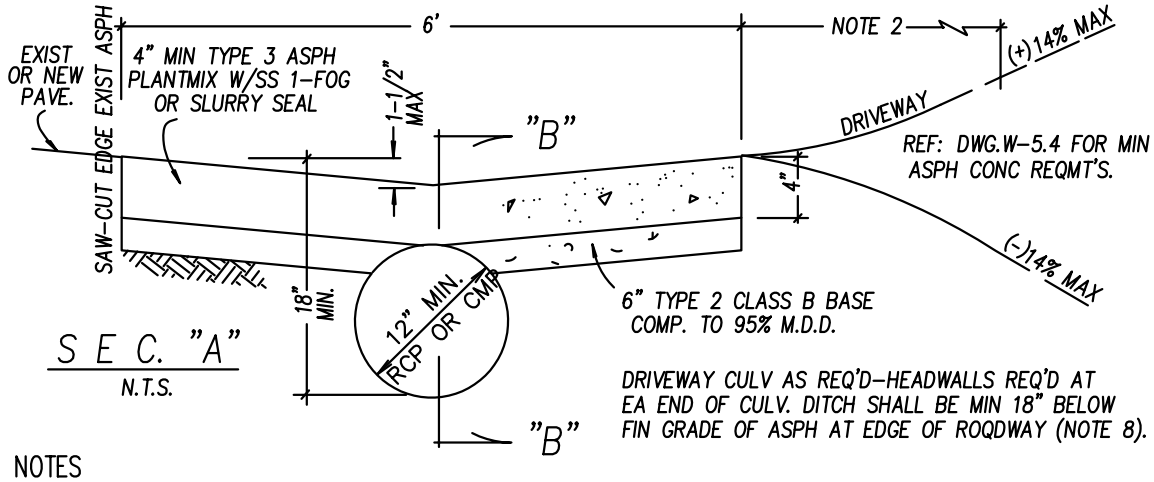
NO.	REVISED	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION: WASHOE
			P.C.C. DRIVEWAY APRON	DRAWING NO: W-5.2
			FOR USE WHERE NO CURB & GUTTER OR ASPHALT BERM EXISTS	DATE: 4/94vp PAGE: 14





W I D T H	
2 CAR GARAGE	20 FT.MIN.
3 CAR GARAGE	30 FEET
MAXIMUM	40 FEET*

*WIDTH MAY BE INCREASED TO 50FT ON COMMERCIAL DRIVES.



NOTES

1. FOR RESIDENTIAL USE ONLY.
2. IF GRADE DIFFERENTIAL BETWEEN DRIVE APRON & CONC OR ASPH DRIVE EXCEEDS 6I%, PROVIDE A MIN 4' CURVE TRANSITION BETWEEN BACK EDGE OF APRON & CONC OR ASPHALT DRIVEWAY.
3. ALL ASPHALT PLANTMIX SHALL BE TYPE 3.
4. AGG BASE SHALL BE TYPE I CLASS A, TYPE 2 CLASS B OR RECYCLED ASPH BASE
5. ALL ASPH PLANTMIX & AGG BASE SHALL MEET REQUIREMENTS OF STANDARD SPECS FOR PUBLIC WORKS CONST.
6. SUBGRADE SHALL BE OVEREXCAVATED IN AREAS OF UNSTABLE OR EXPANSIVE SOILS TO CONFORM W/SOILS REPORT OR WASHOE CO. REQUIREMENTS.
7. MAX SLOPE ON DRIVEWAYS SHALL BE 14%.
8. BACKFILL AROUND PIPE SHALL MEET REQMT'S OF STD SPECS FOR PUBLIC WORKS CONST (SEC 200.03,200.01 THRU 200.01.03).
9. SHALL BE REQ'D FOR ALL NEW DRIVEWAY INSTALLATIONS.

NO.	REVISED	DATE
1	Ref. to 5.4	5/96 vp

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

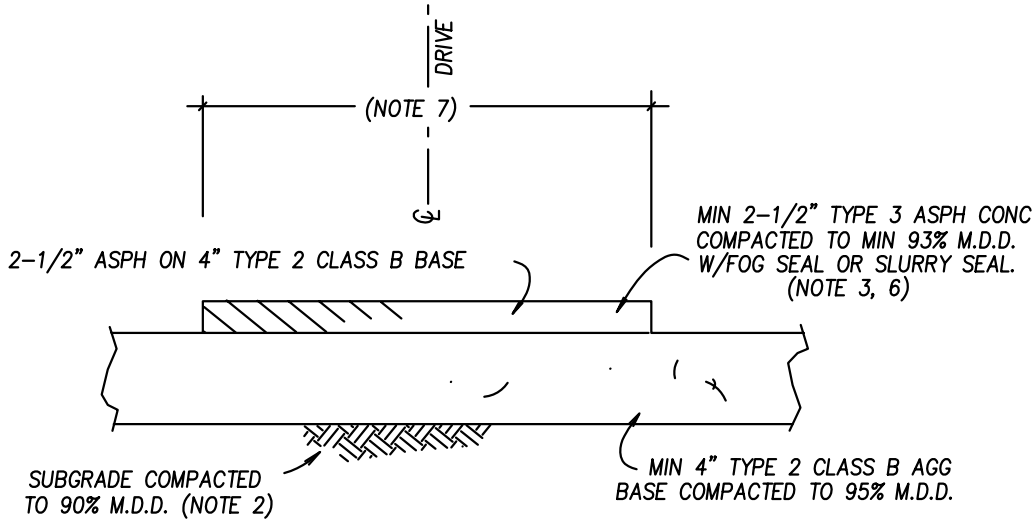
ASPHALT DRIVEWAY APRON

FOR USE WHERE NO CURB & GUTTER OR ASPHALT BERM EXISTS

SECTION: WASHOE

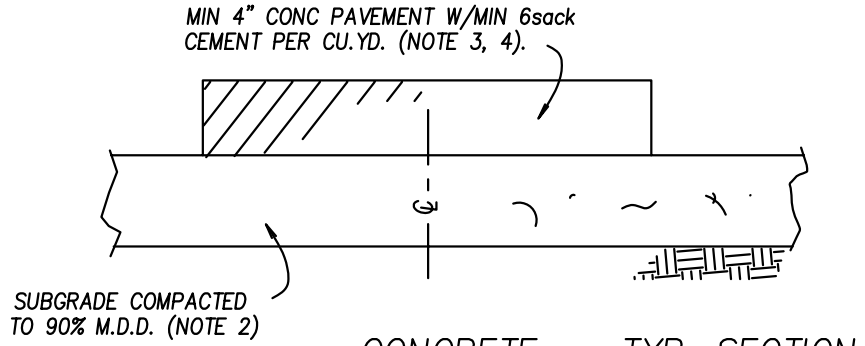
DRAWING NO: W-5.3

DATE: 4/94 vp



ASPHALT • TYP. SECTION

N.T.S.



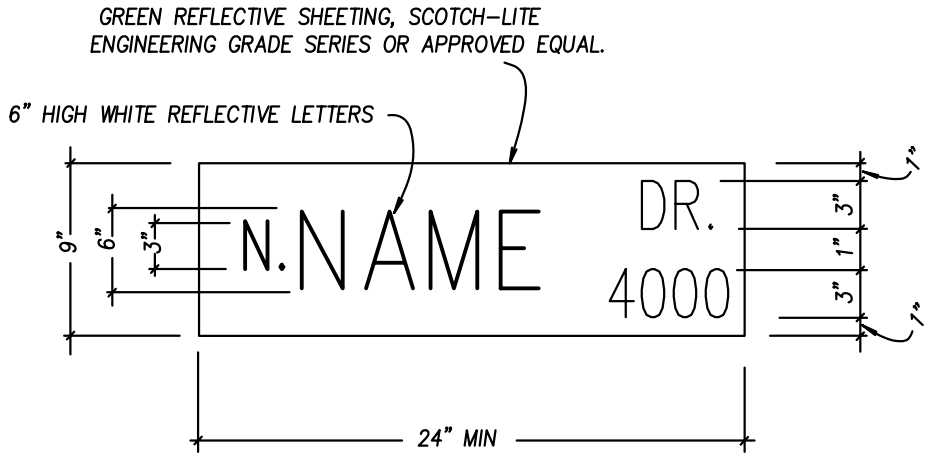
CONCRETE • TYP. SECTION

N.T.S.

NOTES

1. MIN SLOPE SHALL BE 1% ON ASPHALT AND 0.4% ON CONC.
2. SUBGRADE SHALL BE OVEREXCAVATED IN AREAS OF UNSTABLE OR EXPANSIVE SOILS.
3. STRUCTURAL SECTIONS FOR COMMERCIAL DRIVEWAYS, APRATMENTS & CONCOMINIUMS SHALL BE BASED UPON ENGINEERING DESIGN & GEOMETRICS.
4. CONC SHALL MEET REQUIREMENTS OF STD SPECS FOR PUBLIC WORKS CONSTRUCTION FOR CONC EXPOSED TO FREEZE/THAW ENVIRONMENTS.
5. THIS STANDARD APPLIES UP TO A MAX OF TWO RESIDENTIAL LOTS SERVED BY A SINGLE DRIVEWAY.
6. MIN 4" THICK FULL DEPTH ASPH SECTION W/FOG SEAL OR SLURRY SEAL MAY BE USED IN LIEU OF 2–1/2" ASPH ON 4" TYPE 2 CLASS B BASE.
7. FOR MIN WIDTHS W/IN COUNTY RIGHT–OF–WAY REF: DWG's. W–16.4, W–5.2, W–5.3

NO.	REVISED	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION: WASHOE
			PRIVATE DRIVEWAY CONCRETE OR ASPHALT	DRAWING NO: W–5.4
				DATE: 8/94 vp / PAGE: 16



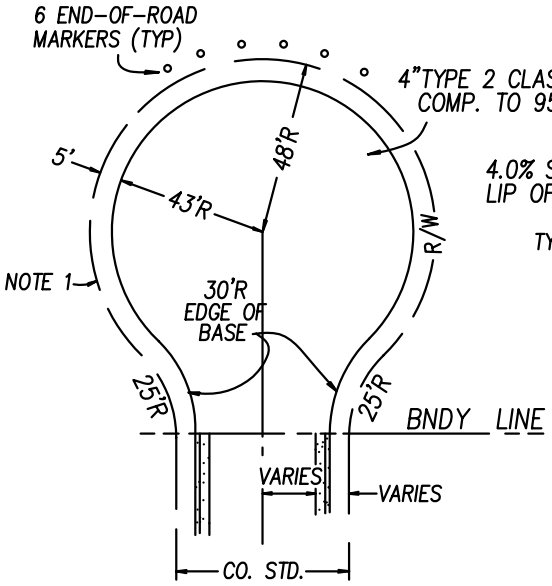
TYP. SIGN

N.T.S.

NOTES

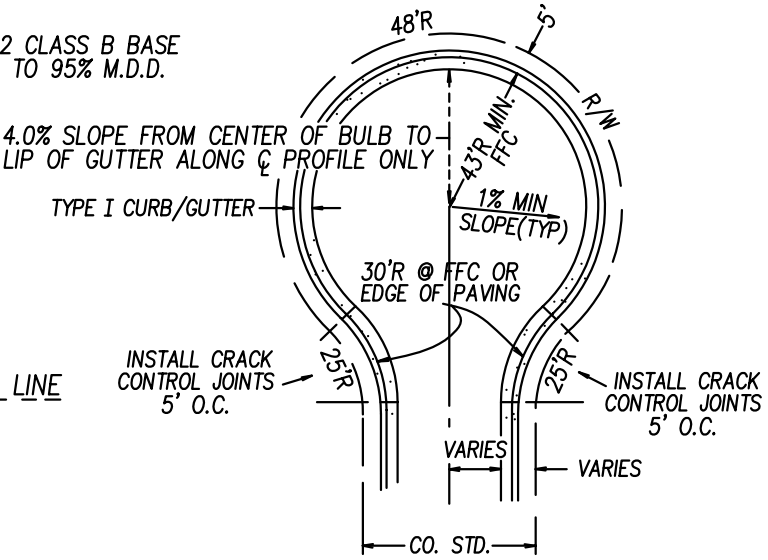
1. STREET NAME SIGN SHALL BE IN CONFORMANCE W/LATEST EDITION OF THE M.U.T.C.D.
2. ALL SIGN LETTERING SHALL BE IN UPPERCASE LETTERS AS PROVIDED IN THE STANDARD ALPHABETS FOR HIGHWAY SIGNS AND PAVEMENT MARKINGS.
3. REFLECTIVE MATERIALS SHALL BE MOUNTED ON .080 GAUGE FLAT PLATE ALUMINUM NO. 6061-T6.
4. REFER TO STANDARD DETAIL DRAWING NO. W-15 FOR MOUNTING AND POLE REQUIREMENTS, UNLESS OTHERWISE SPECIFIED.
5. A MINIMUM OF FOUR (4) SIGNS, PLACED BACK-TO-BACK PER STANDARD DETAIL DRAWING NO. W-15, FOR EACH STREET, IS REQUIRED.

NO.	REVISED	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION: WASHOE
			STREET NAME SIGN	DRAWING NO: W-6
2	Det., Notes	4/03vp		DATE: 9/94 vp
1	REDRAWN	9/94vp		PAGE: 17



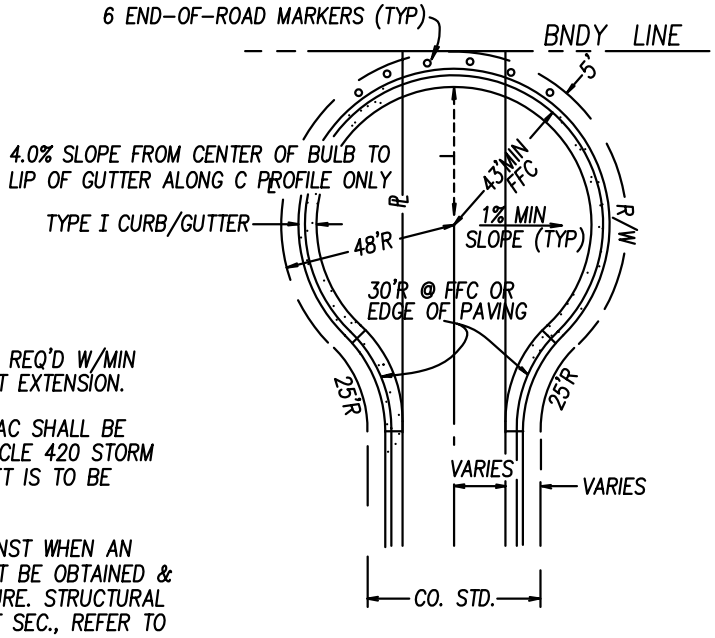
UNPAVED TEMPORARY

N.T.S.



PAVED PERMANENT

N.T.S.



PAVED TEMPORARY

N.T.S.

NOTES

1. TEMP TURNAROUND EASEMENT DOCUMENT REQ'D W/MIN 48' RADIUS TO BE ABANDONED W/STREET EXTENSION.
2. DRAINAGE OF UNPAVED TEMP CUL-DE-SAC SHALL BE CONSISTANT W/CO. STDS INCLUDING ARTICLE 420 STORM DRAINAGE & TO BE USED ONLY IF STREET IS TO BE EXTENDED WITHIN 1 YR.
3. PAVED TEMP TURNAROUND SHALL BE CONST WHEN AN OFF-SITE TEMP TURNAROUND EASE CAN'T BE OBTAINED & STREET IS TO BE EXTENDED IN THE FUTURE. STRUCTURAL SEC. OF TURNAROUND TO MATCH STREET SEC., REFER TO CODE 111.444 FOR CONSTRUCTION.
4. PAVED TEMPORARY TURNAROUND IS REQUIRED ON ALL FUTURE THROUGH-STREETS THAT FRONT LOTS, OR EXTEND MORE THAN 150 FT BEYOND THE NEAREST INTERSECTING STREET.

NO.	REVISED	DATE
1	REDRAWN	5/94 vp
2	4%-NOTE 4	10/96 vp
3	RADII	9/97 vp
4	Profile note	5/99vp

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

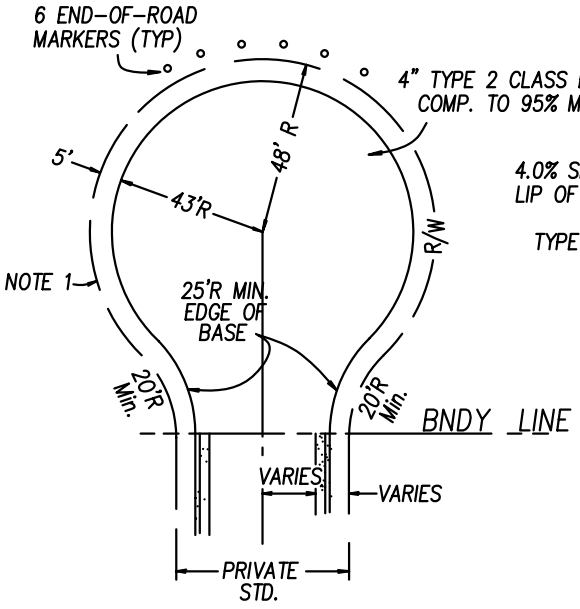
CUL-DE-SAC

SECTION: WASHOE

DRAWING NO: W-7

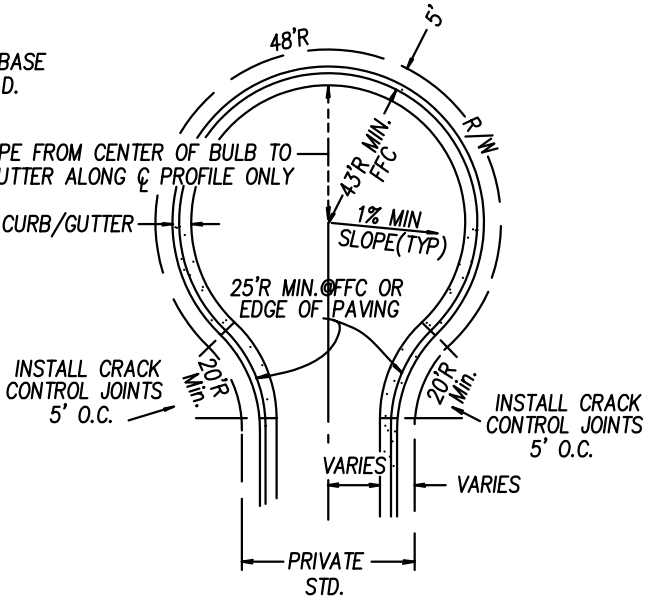
DATE: 5/94 vp

PAGE: 18



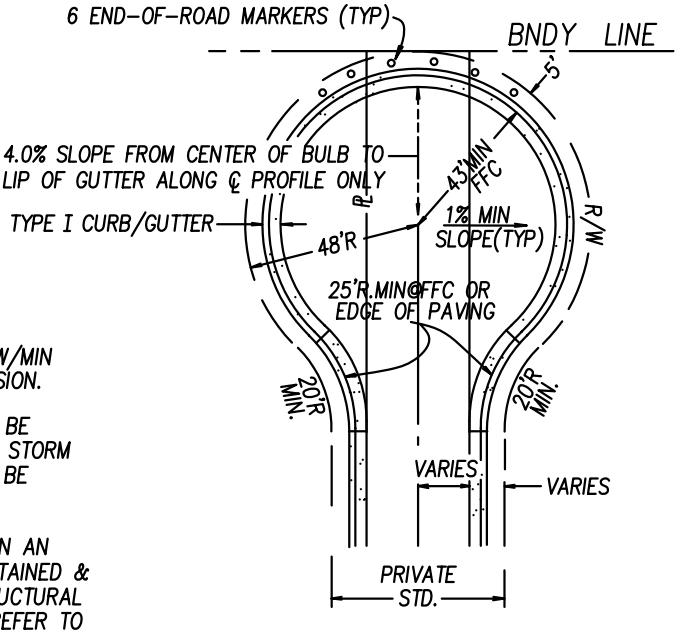
UNPAVED TEMPORARY

N.T.S.



PAVED PERMANENT

N.T.S.



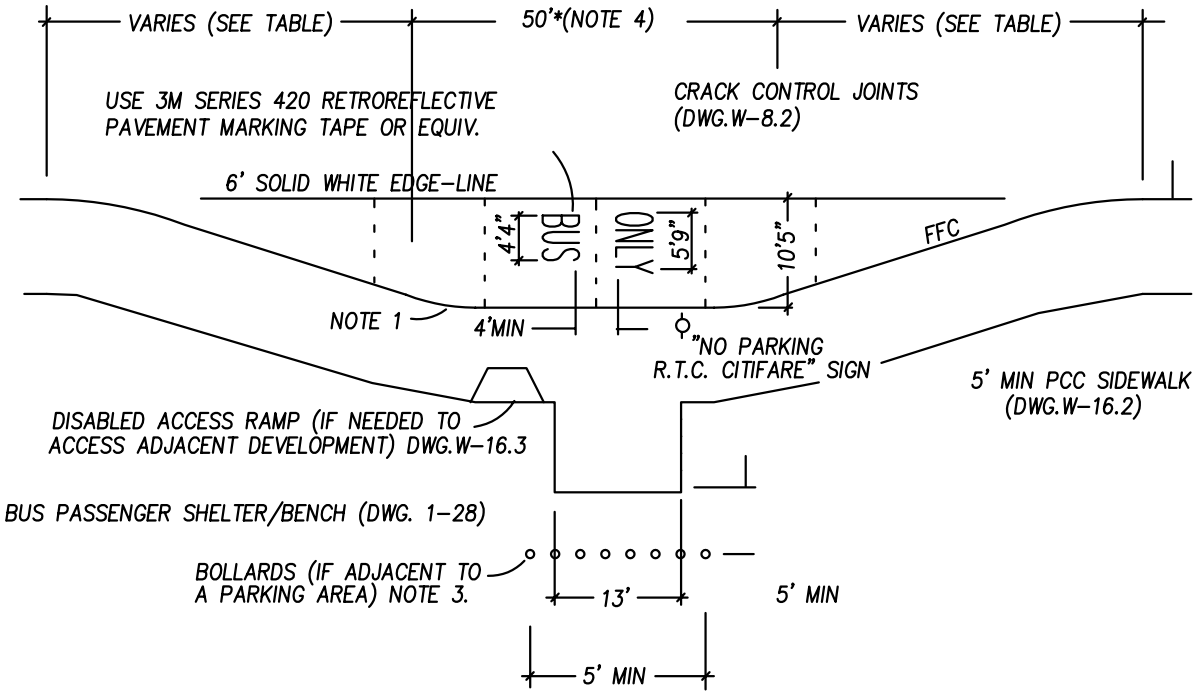
PAVED TEMPORARY

N.T.S.

NOTES

1. TEMP TURNAROUND EASEMENT DOCUMENT REQ'D W/MIN 48' RADIUS TO BE ABANDONED W/STREET EXTENSION.
2. DRAINAGE OF UNPAVED TEM CUL-DE-SAC SHALL BE CONSISTANT W/CO. STDS INCLUDING ARTICLE 420 STORM DRAINAGE & TO BE USED ONLY IF STREET IS TO BE EXTENDED WITHIN 1 YR.
3. PAVED TEMP TURNAROUND SHALL BE CONST WHEN AN OFF-SITE TEMP TURNAROUND EASE CAN'T BE OBTAINED & STREET IS TO BE EXTENDED IN THE FUTURE. STRUCTURAL SEC. OF TURNAROUND TO MATCH STREET SEC., REFER TO CODE 111.444 FOR CONSTRUCTION.
4. PAVED TEMPORARY TURNAROUND IS REQUIRED ON ALL FUTURE THROUGH-STREETS THAT FRONT LOTS, OR EXTEND MORE THAN 150 FT BEYOND THE NEAREST INTERSECTING STREET.

NO.	REVISED	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION: WASHOE
			CUL-DE-SAC (PRIVATE STREETS ONLY)	DRAWING NO: W-7.1
				DATE: 6/00 vp / PAGE: W-18.1



PLAN

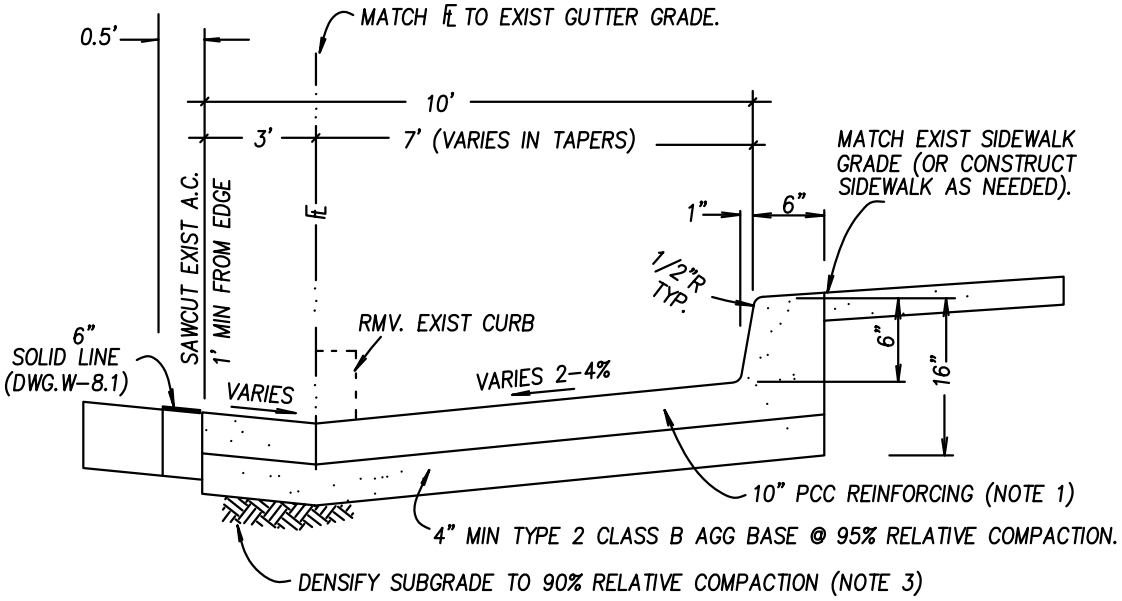
N.T.S.

LENGTH OF TRANSITION	POSTED SPEED LIMIT
40'	25 MPH OR LESS
60'	26-35 MPH
80'	36-45 MPH
100'	ABOVE 45 MPH

NOTES

1. TYP. RADIUS = 50', A STRAIGHT LINE TAPER OF ADEQUATE LENGTH MAY BE SUBSTITUTED FOR "X" ≥ 100'.
2. REF: DWG.W-8.2 FOR STRUCTURAL SECTION OF BUS TURNOUT.
3. MIN R/W REQ'D IS 6.5'x 13'. IF BOLLARDS OR RETAINING WALLS ARE NEEDED, INCREASE R/W TO 7.5'x 15'.
4. THIS BERTH IS FOR A SINGLE 40' VEHICLE. RTC STAFF (348-0400) SHALL BE CONTACTED TO DETERMINE IF MULTIPLE BERTHS WILL BE NEEDED. MIN 2' CLEARANCE FOR BUS MIRROR IS REQ'D BEHIND FRONT FACE OF CURB.

NO.	REVISED	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION: WASHOE
			TRANSIT BUS TURNOUT	DRAWING NO: W-8.1
				DATE: 8/94 vp / PAGE: 19



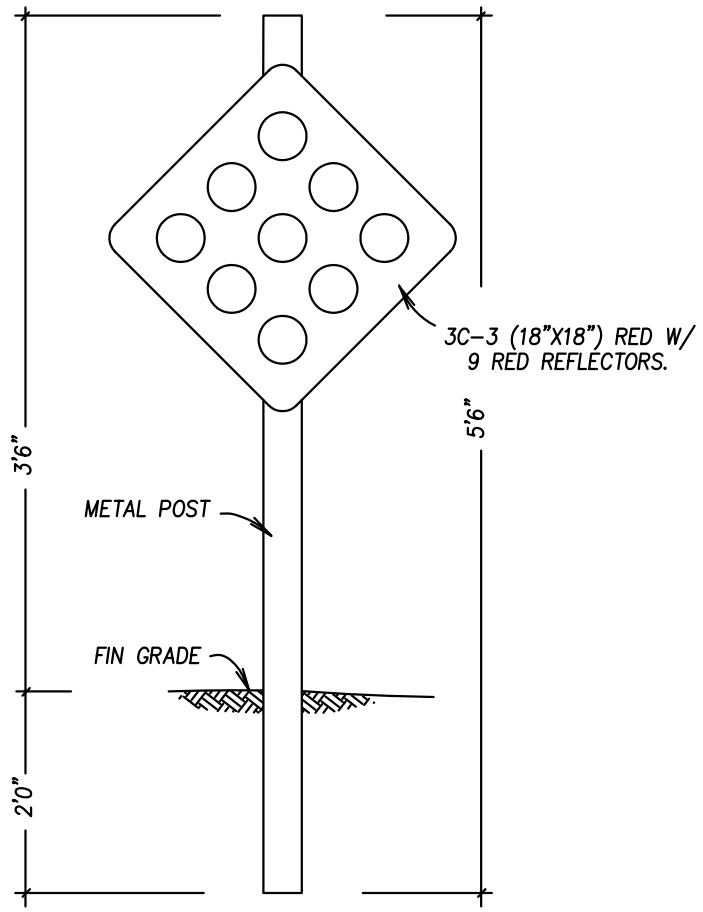
TYP. SEC.

N.T.S.

NOTES

1. PORTLAND CEMENT CONC (PCC) SHALL BE MIN 4000Opsi COMPRESSIVE STRENGTH @ 28 DAYS W/MIN 6.25sack CEMENT PER CU.YD., 4.5-7.5% AIR, MAX 4" SLUMP. REINFORCING SHALL CONSIST OF COLLATED FIBRILLATED POLYPROPYLENE FIBERS AS MFD BY FIBERMESH OR APPROVED EQUAL. ALL MATERIALS SHALL CONFORM TO SSPWC SEC.202.
2. TRANSVERSE/LONGITUDINAL CRACK CONTROL JOINTS SHALL BE PLACED ON 5 FOOT $\pm$ CENTERS.
3. SUBGRADE SOILS SHALL BE OVEREXCAVATED IN AREAS OF UNSTABLE OR EXPANSIVE SOILS TO CONFORM W/SOILS REPORT OR WASHOE COUNTY REQUIREMENTS.
4. CONC SHALL RECEIVE A MEDIUM BROOM FINISH.
5. CURING AGENTS SHALL BE APPLIED PER SEC.202.11.02 IMMEDIATELY AFTER FINAL FINISHING.

NO.	REVISED	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION: WASHOE
			BUS TURNOUT • STRUCTURAL	DRAWING NO: W-8.2
				DATE: 8/94 vp / PAGE: 20



TYP. INSTALLATION

N.T.S.

NOTES

1. ALL POSTS SHALL BE METAL.
2. WHERE GUARD RAIL IS TO BE INSTALLED, POST MAY BE OMITTED & REFLECTIOR PLATES SHALL BE INSTALLED ON GUARDRAIL POSTS.
3. WHERE CURB EXISTS, END OF ROAD MARKER SHALL BE INSTALLED 60' FROM FRONT FACE OF CURB.
4. SPACING OF MARKERS TO BE DETERMINED BY COUNTY ENGINEER.

NO.	REVISED	DATE
1	REDRAWN	6/94 vp

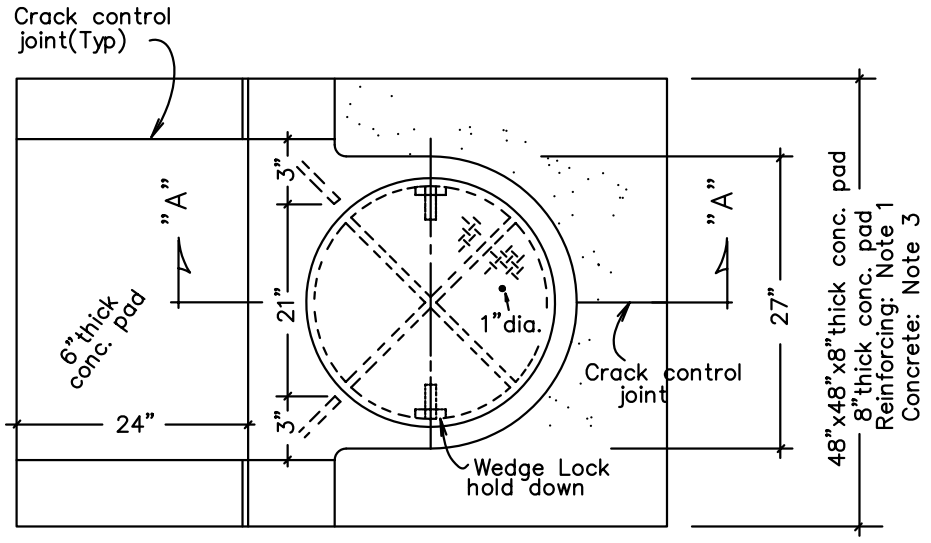
STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

END-OF-ROAD MARKER

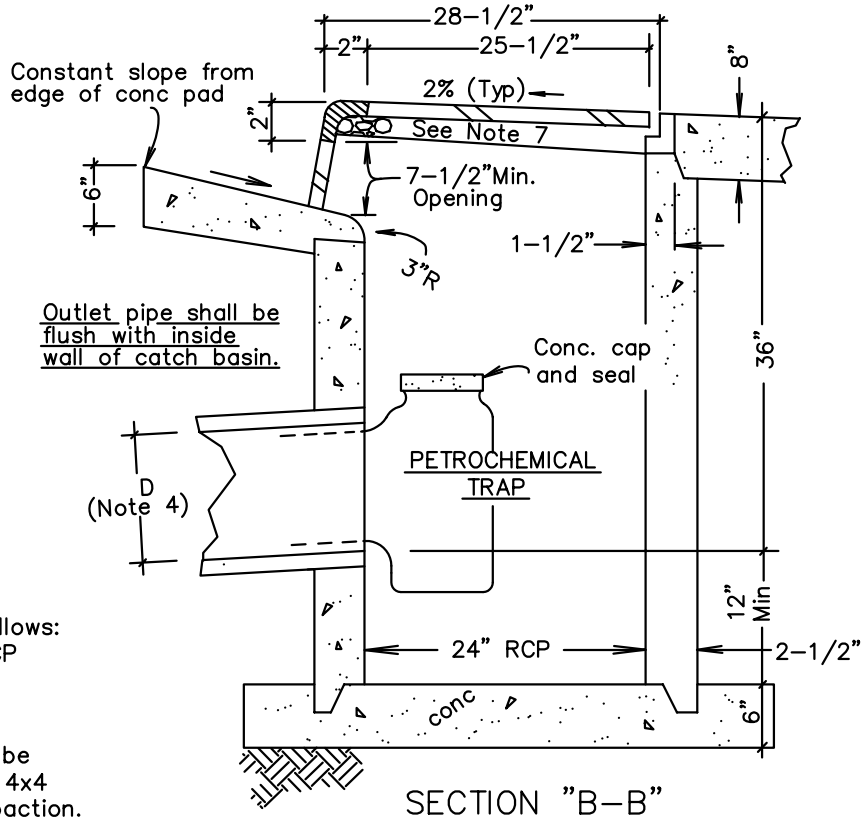
SECTION: WASHOE

DRAWING NO: W-9

DATE: 6/94 vp



PINKERTON A–434 FRAME
& COVER, OR EQUAL
N. T. S.



SECTION "B–B"
N. T. S.

NOTES

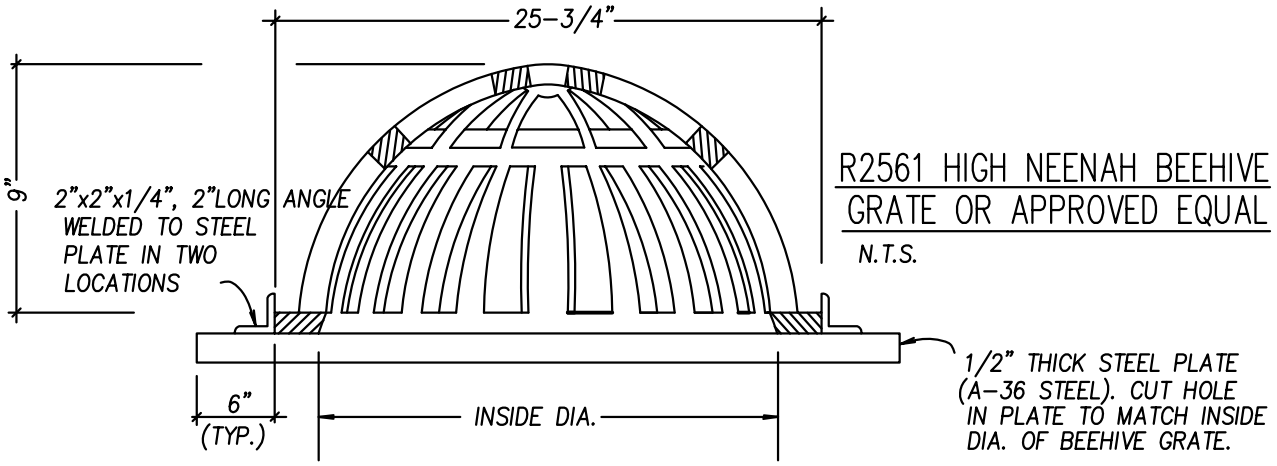
1. Reinforcing shall be fiber mesh.
2. Conc. shall be 6.25sack (min.) 4000psi w/4.5%–7.5% air.
3. An 8" thick conc pad shall be constructed as shown.
4. "D" shall have a min. dia as follows: WASHOE COUNTY: D=12"dia RCP
5. Conc. shall receive a medium broom finish.
6. 6" TYPE2 aggregate base shall be placed and compacted beneath 4x4 conc. pad to 90% relative compaction.
7. In Washoe Co. for use outside roadway section only.

NO.	REVISED	DATE
1	Redraw	2/92vp
2	Note 2	2/93vp
3	Corr's,Notes	12/93vp

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

CATCH BASIN TYPE I

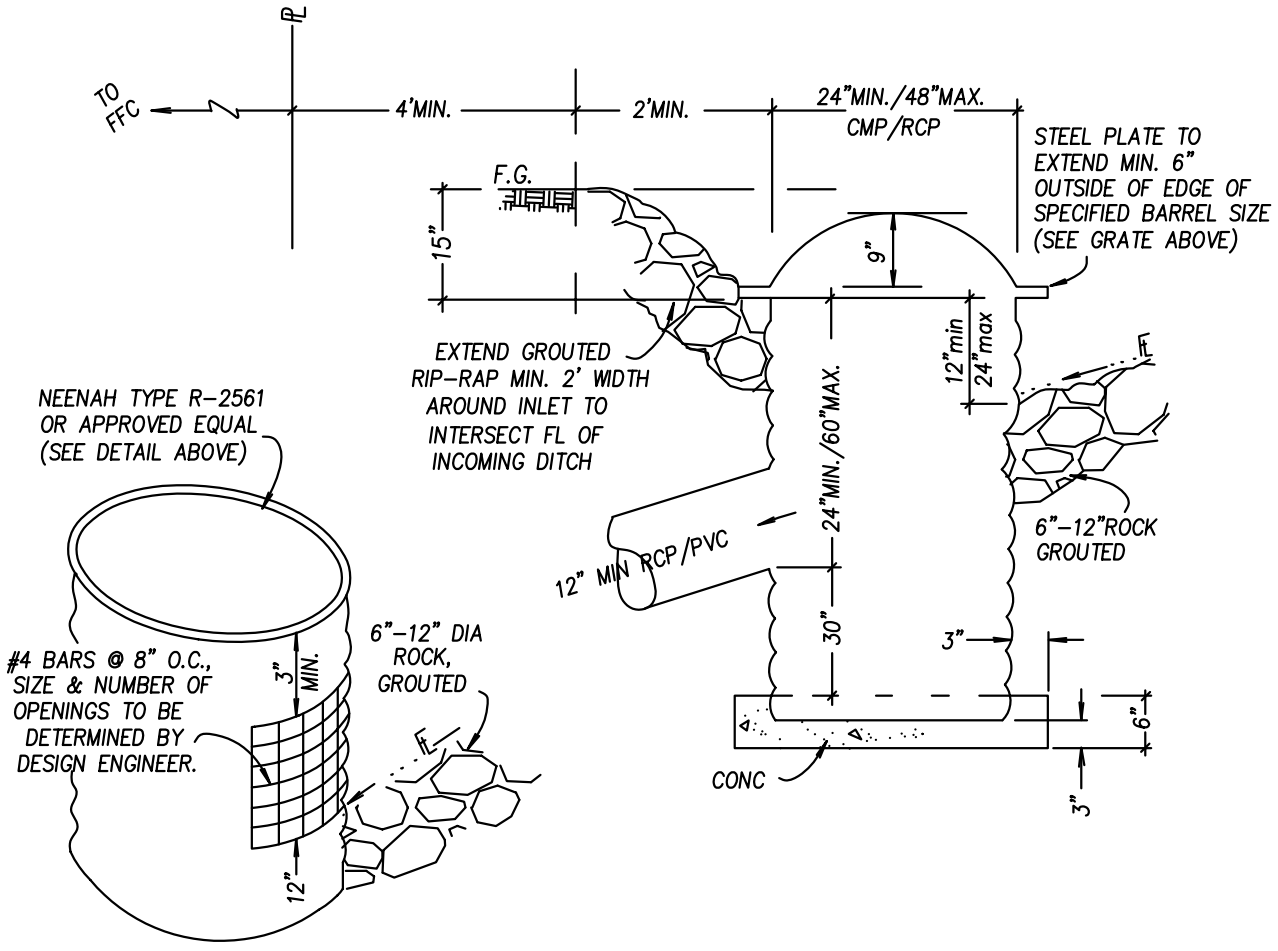
SECTION: WASHOE
DRAWING NO: W–10.1
DATE: 2–92
PAGE: 22



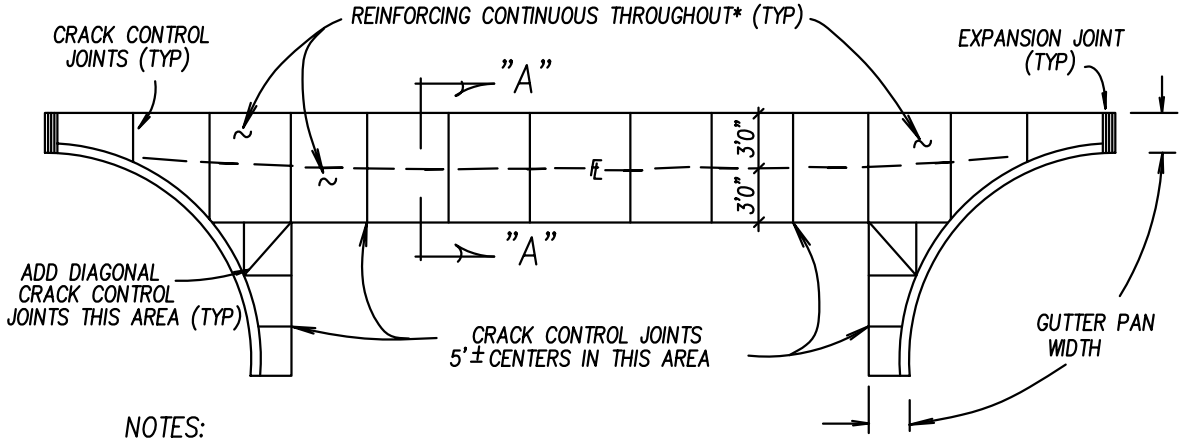
R2561 HIGH NEENAH BEEHIVE GRATE OR APPROVED EQUAL

N.T.S.

NOTE: OUTLET PIPE & BARREL SIZES TO BE DETERMINED BY ENGR. NOT FOR USE WITHIN ROADWAY SEC.



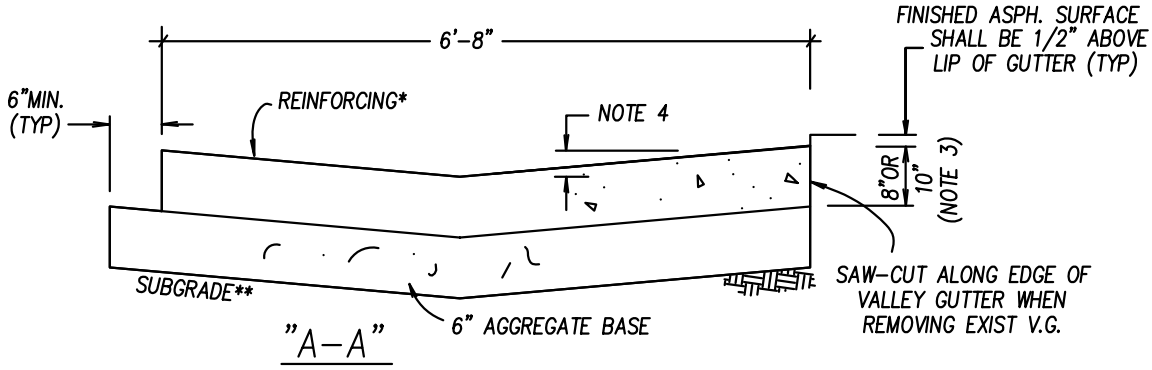
NO.	REVISED	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION: WASHOE
2	GRATE	5/96vp	DROP INLET TYPE 1A	DRAWING NO: W-10.2
3	GRATE	7/97vp		
4	4' DIM.	7/98vp		
5	Add Note	3/03vp		DATE: 5/95vp PAGE: 23



NOTES:

* REINFORCING SHALL CONSIST OF COLLATED, FIBRILLATED, POLYPROPYLENE FIBERS AS MANUFACTURED BY FIBERMESH OR APPROVED EQUAL. USE 1-1/2 LBS PER CU.YD. OF CONC.

** SUBGRADE SHALL BE OVEREXCAVATED IN AREAS OF UNSTABLE OR FINE GRAINED, EXPANSIVE SOILS. DEPTH OF OVEREXCAVATION SHALL BE DETERMINED BY SOILS ENGINEER OR AGENCY.



"A-A"

NOTES

1. AGG. BASE SHALL BE TYPE 2, CLASS B AND SHALL BE COMPACTED TO 95% OF MAX. DENSITY.
2. AN APPROVED MIX DESIGN SHALL BE SUBMITTED BEFORE PLACING CONCRETE.
3. 8" PORTLAND CEMENT CONC. TO BE USED IN RESIDENTIAL AREAS WHERE TRUCK OR BUS TRAFFIC IS LESS THAN 5% OF TOTAL TRAFFIC. 10" PORTLAND CEMENT CONC TO BE USED FOR COMMERICAL DRIVEWAYS, ROADS OR STREETS WHERE TRUCK OR BUS TRAFFIC EXCEEDS 5% OF TOTAL TRAFFIC.
4. FLOWLINE VARIES TO MATCH GUTTER.
5. PORTLAND CEMENT CONC. SHALL HAVE A MIN. COMPRESSIVE STRENGTH OF 4000psi @ 28 DAYS W/ A MIN OF 6.25 SACKS OF CEMENT PER CU.YD. OF CONC., AIR ENTRAINMENT TO BE 4.5-7.5%. MAX. SLUMP SHALL BE 4".
6. EVAPORATION REDUCERS & CURING AGENTS SHALL CONFORM TO THE REQUIREMENTS OF DWG.W-16.1)
7. ALL CONCRETE SHALL BE MECHANICALLY VIBRATED.
8. NO EQUIPMENT SHALL BE PERMITTED ADJACENT TO OR ACROSS V.G. UNTIL THE FOURTH DAY FOLLOWING PLACEMENT OF CONC OR UNTIL THE CONC HAS REACHED A MIN. COMPRESSIVE STRENGTH OF 3000psi.
9. VALLEY GUTTER NOT PERMITTED ACROSS COLLECTOR OR ARTERIAL STREETS.

NO.	REVISED	DATE
1	REDRAW	11/92 vp
2	MISC NOTES	2/94 vp

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

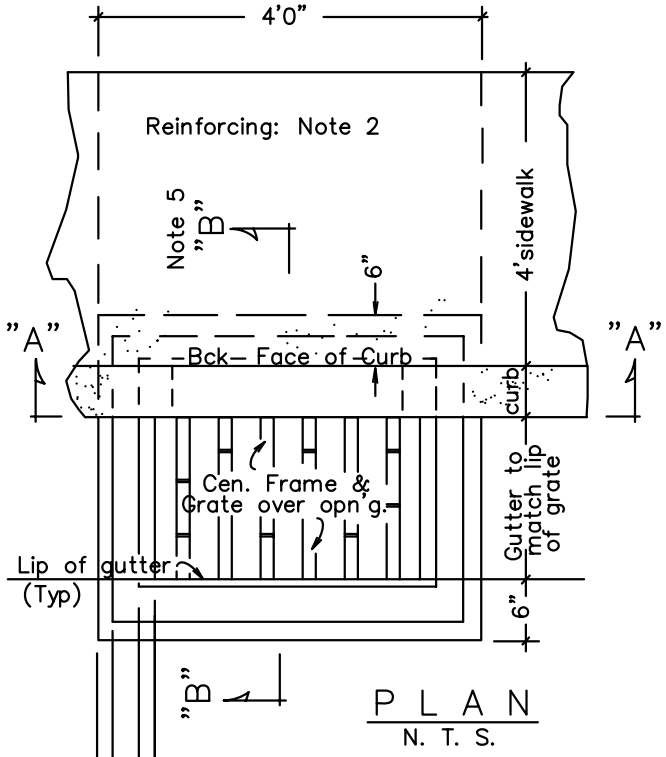
P.C.C. VALLEY GUTTER

SECTION: WASHOE

DRAWING NO: W-11

DATE: 11/92 vp

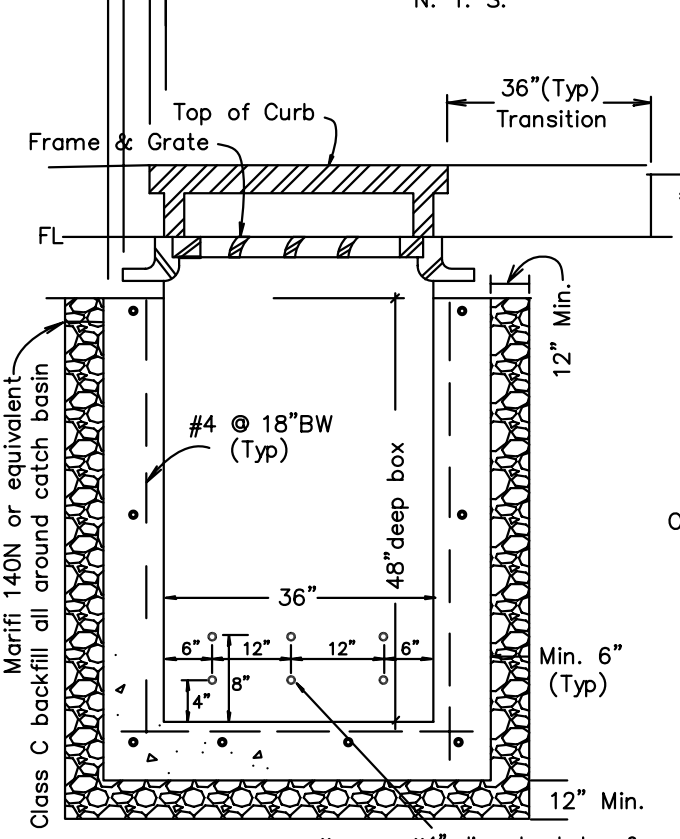
PAGE: 24



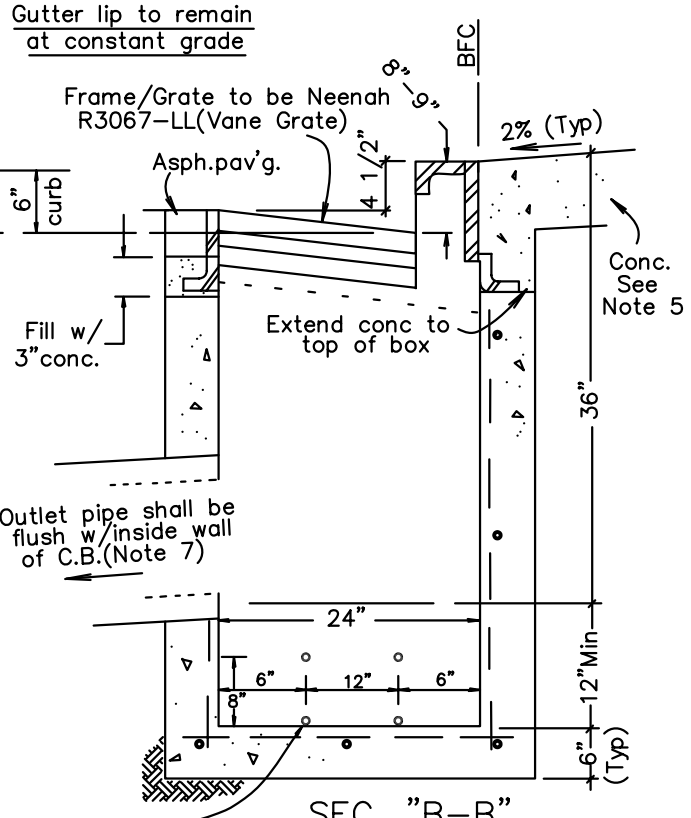
PLAN
N. T. S.

NOTES

1. Conc. for cast in place Catch Basin & 4'x4' conc pad shall be 6.25sack 4000psi w/4.5–7.5% entrained air.
2. Reinforcing shall be fibermesh.
3. Conc structure may be a pre cast conc unit upon approval of the Co. Engineer.
4. Frame and grate shall be Neenah. R3067–LL(Vane Grate), South Bay Foundry SBF1947 (Vane Grate) or approved equal.
5. 8"thick conc pad shall be constructed as shown when not located in sidewalk. 6" of Type 2 Class B agg base shall be placed & compacted beneath 4'x4' pad to 90% relative compaction. Extend conc to top of box.
6. Type 4R Catch Basins shall be used on all grades and in all sump locations within roadway section.
7. Outlet pipe shall be min 12" dia RCP or PVC.



SEC. "A–A"



SEC. "B–B"

1" diameter holes. 6 each sidewall
4 each endwall for a total of 20.

SEE DETAIL ON SHEET 25.1

NO.	REVISED	DATE
5	Fill w/conc	6–96
6	Grate type	5–99
7	Note 4	8–99
8	Note 6&7	10–99

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

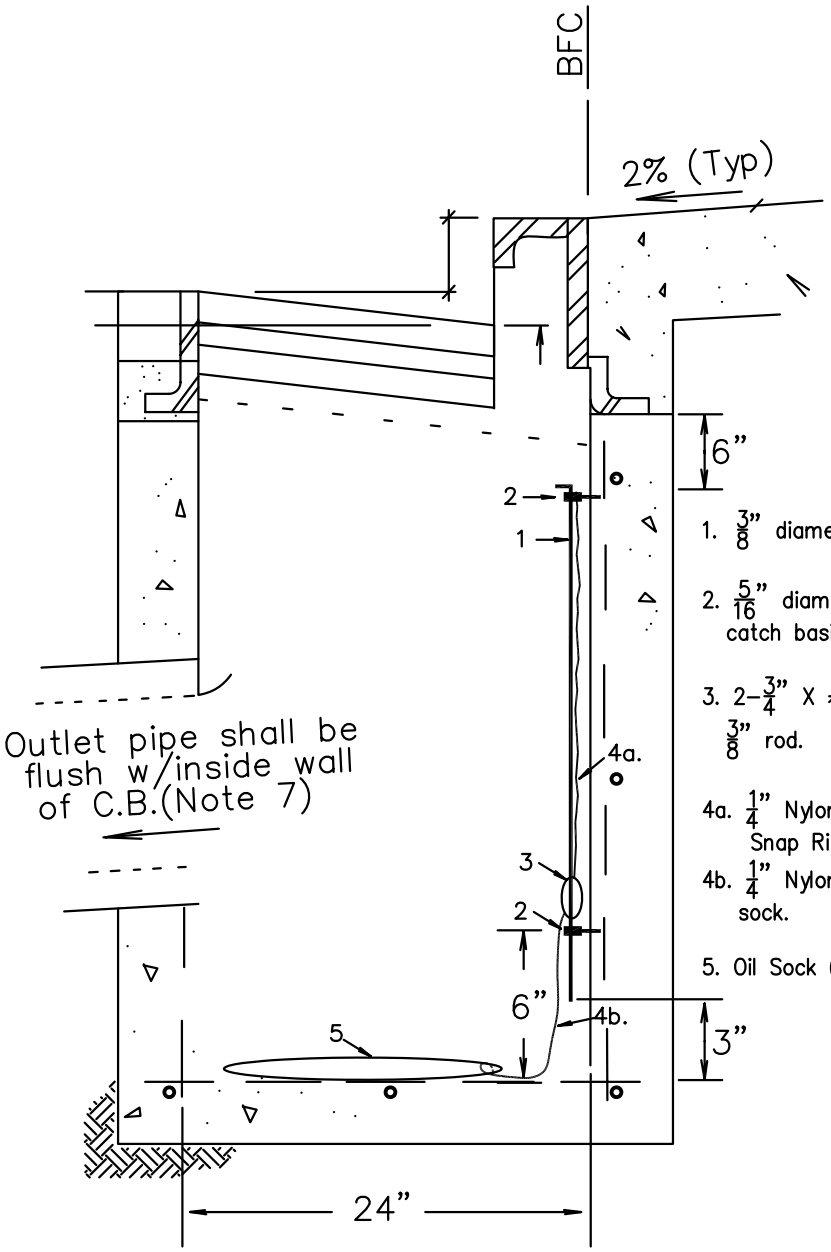
CATCH BASIN TYPE 4–R

SECTION: WASHOE

DRAWING NO: W–12

DATE: 2/92vp

DETAIL



1. $\frac{3}{8}$" diameter smooth steel rod with 90° 2" bend

2. $\frac{5}{16}$" diameter X 4" Lag Eye Bolt epoxied into catch basin wall opposite of the pipe outlet

3. 2–$\frac{3}{4}$" X $\frac{5}{16}$" Aluminum Snap Ring attached to $\frac{3}{8}$" rod.

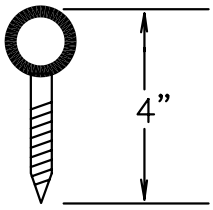
4a. $\frac{1}{4}$" Nylon Rope attached to top Log Eye Bolt and Snap Ring.

4b. $\frac{1}{4}$" Nylon Rope attached to snap ring and oil sock.

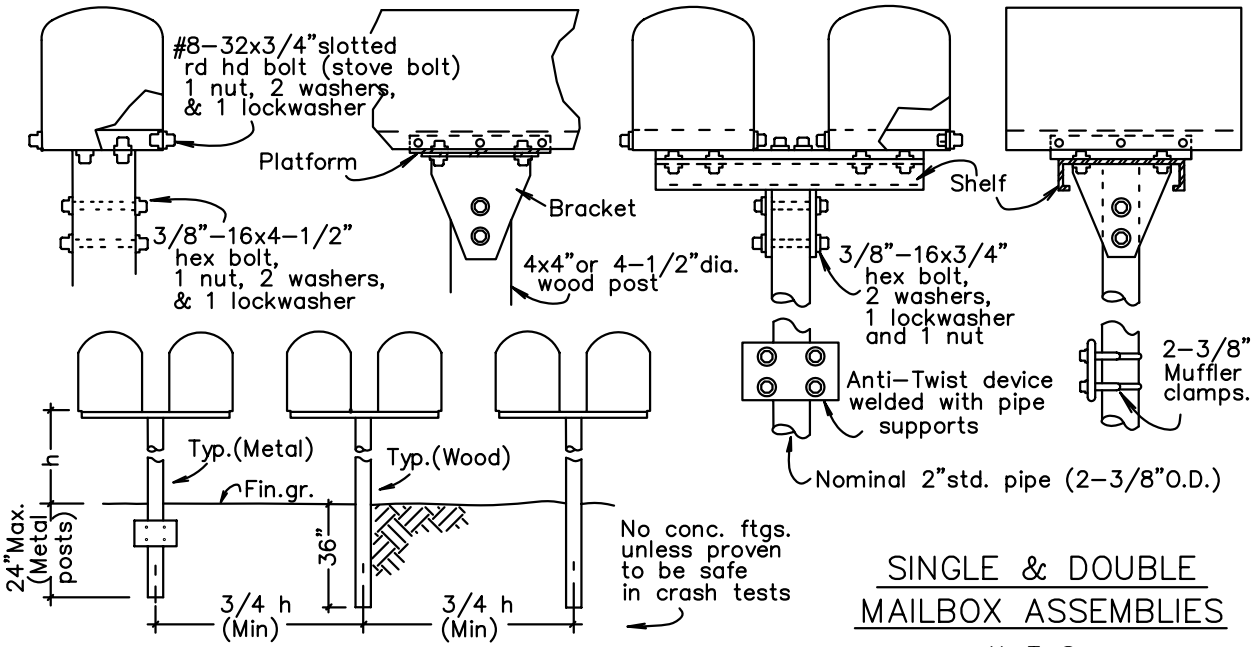
5. Oil Sock (Sorbent Model #L90895 or approved equivalent)

$\frac{5}{16}$" Aluminum Snap Ring detail

$\frac{5}{16}$" StainlessLag Eye Bolt Detail



NO.	REVISED	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION: WASHOE
			CATCH BASIN TYPE 4–R	DRAWING NO: W–12
				DATE: 03/07sw / PAGE: 25.1

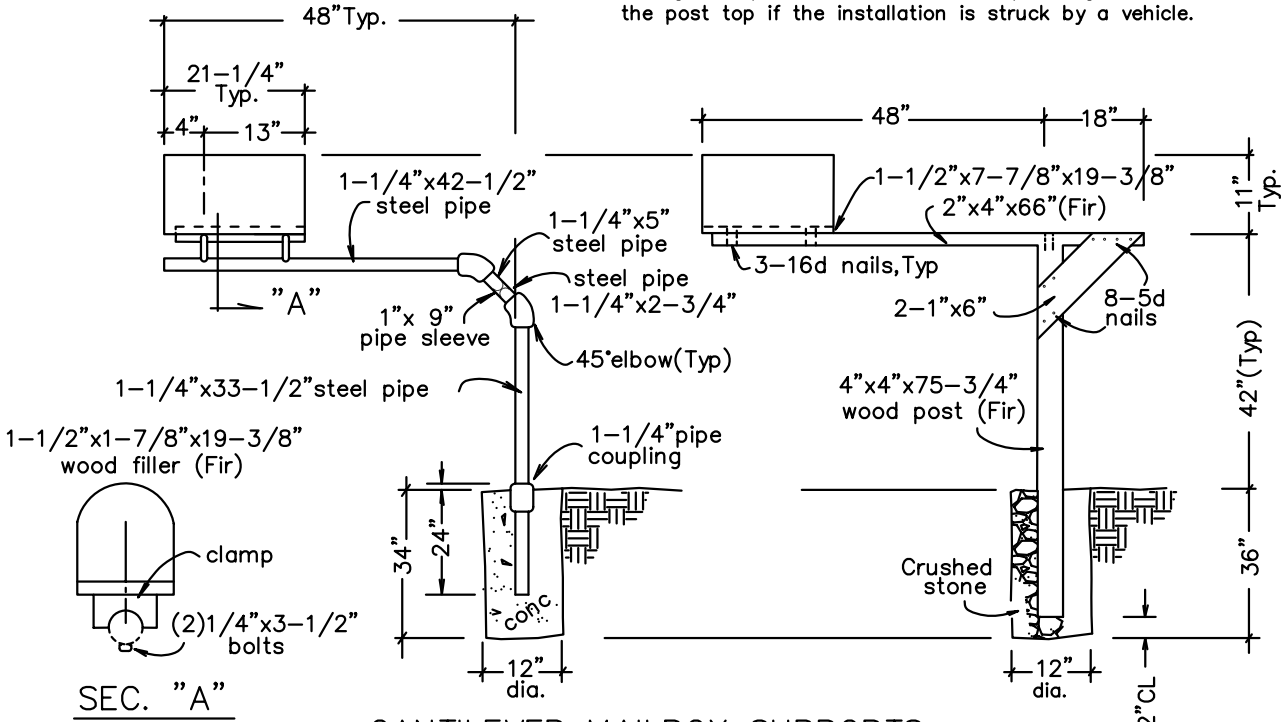


SPACING FOR MULTIPLE POST INSTALLATION

SINGLE & DOUBLE MAILBOX ASSEMBLIES

N. T. S.

NOTES:
1. Call "USA Underground Alert" prior to construction.
2. The post–to–box attachment should be of sufficient strength to prevent the box from separating from the post top if the installation is struck by a vehicle.

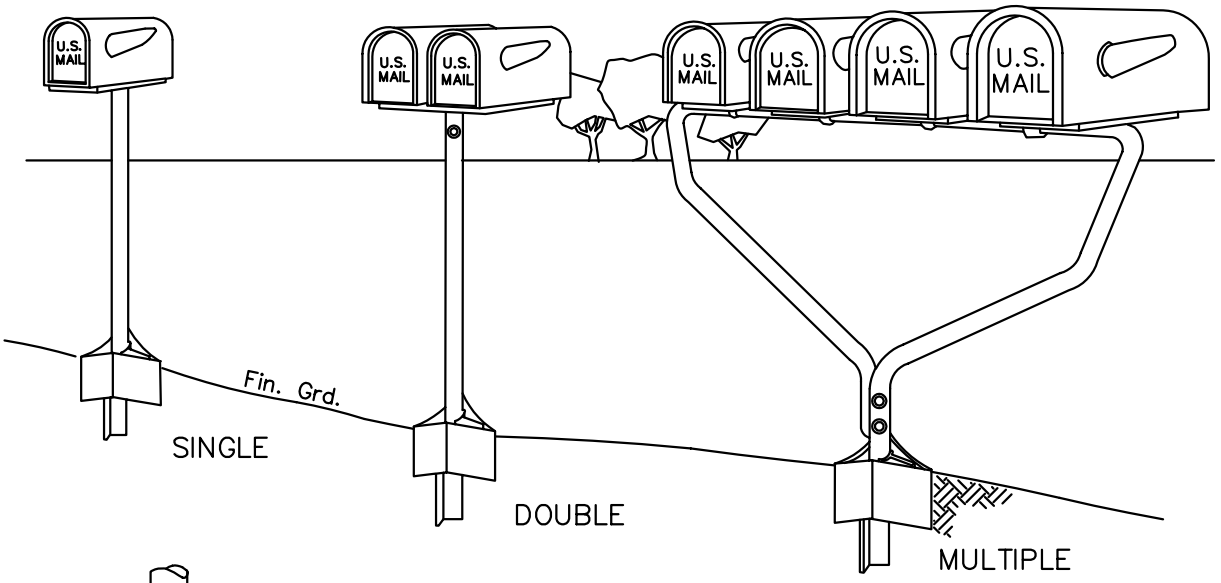


SEC. "A"

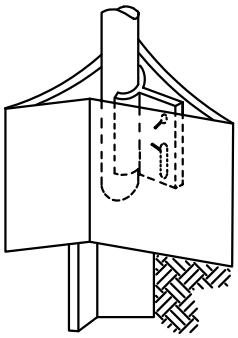
CANTILEVER MAILBOX SUPPORTS

N. T. S.

NO.	REVISED	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION: WASHOE
1	DRFTD.	1/92vp	MAILBOXES	DRAWING NO: W–13
				DATE: 1/92vp PAGE: 26

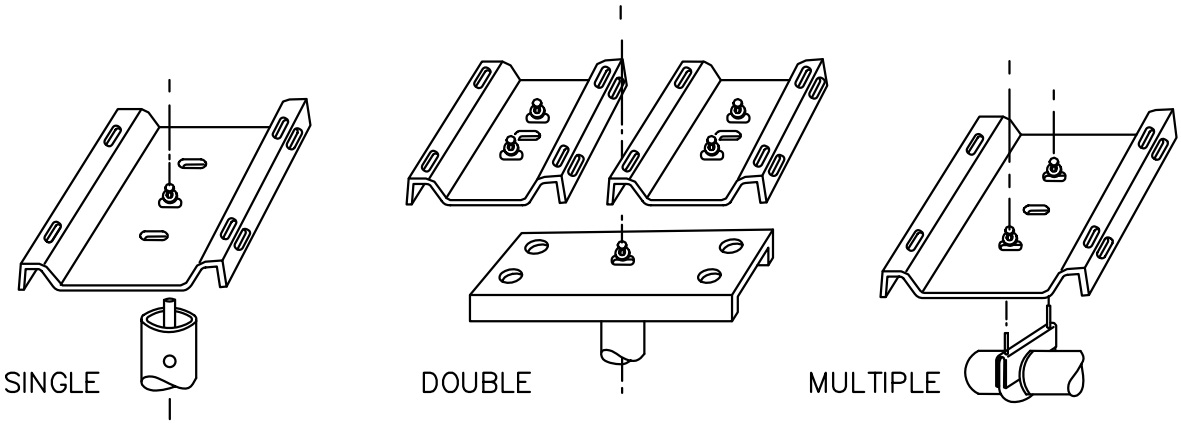


SUPPORT SYSTEMS



NOTE: Support Frame and Foundation are Proprietory Products

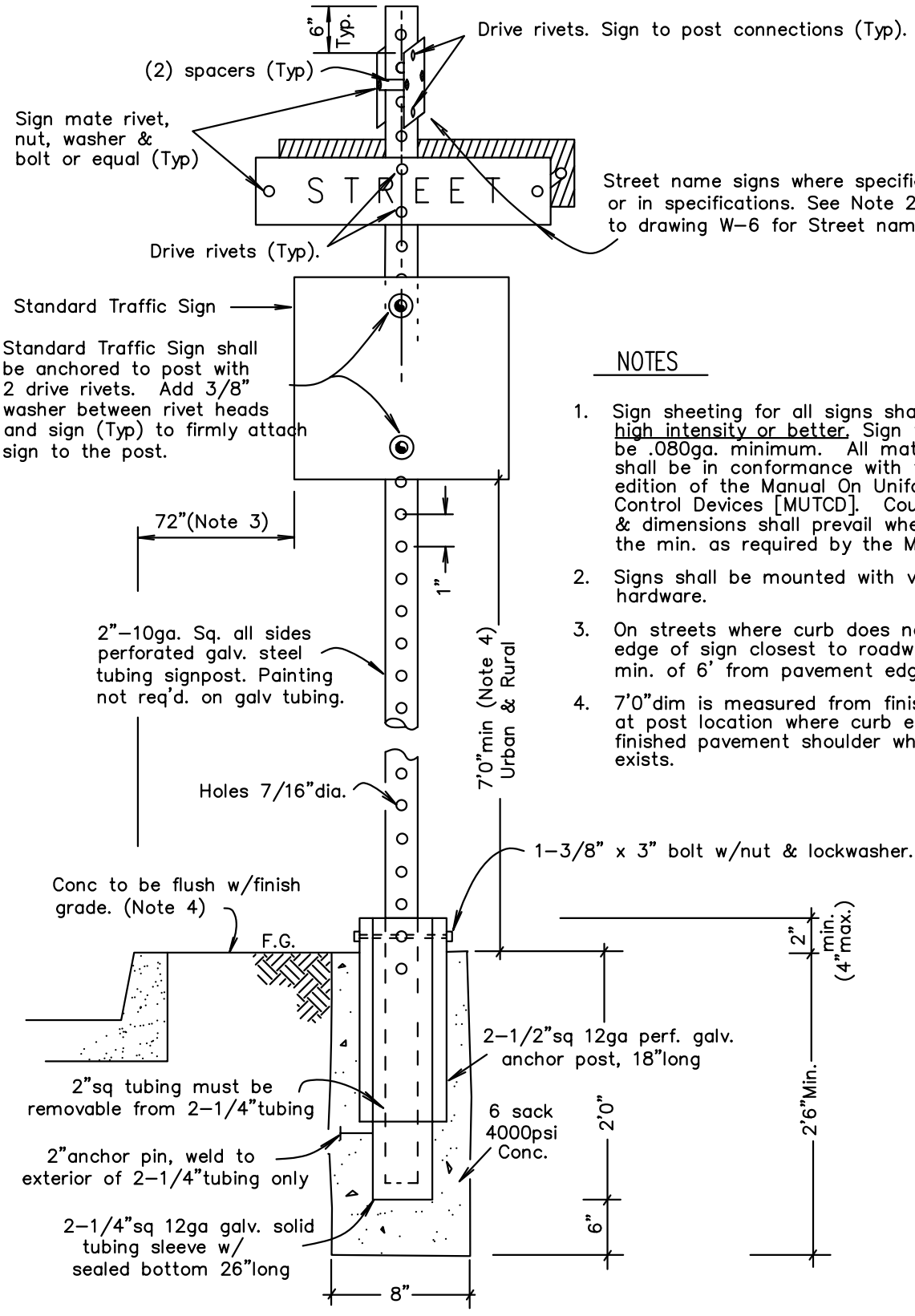
YIELDING BASE POST SUPPORT



MAILBOX MOUNTS

SINGLE & MULTIPLE MAILBOX ASSEMBLIES
APPROVED ALTERNATES N. T. S.

NO.	REVISED	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION: WASHOE
1	DRFTD.	1/92 vp	MAILBOXES	DRAWING NO: W-14
				DATE: 1/92vp PAGE: 27



NOTES

1. Sign sheeting for all signs shall be high intensity or better. Sign thickness shall be .080ga. minimum. All materials & sizes shall be in conformance with the latest edition of the Manual On Uniform Traffic Control Devices [MUTCD]. County specs & dimensions shall prevail when they exceed the min. as required by the MUTCD.
2. Signs shall be mounted with vandal-proof hardware.
3. On streets where curb does not exist: set edge of sign closest to roadway at a min. of 6' from pavement edge.
4. 7'0"dim is measured from finished grade at post location where curb exists or from finished pavement shoulder where no curb exists.

NO.	REVISION	DATE
1	REDRAW	11/92vp
4	Note 1	10/01vp
5	'Name'&Notes	4/03vp
6	Note 1	3/04vp

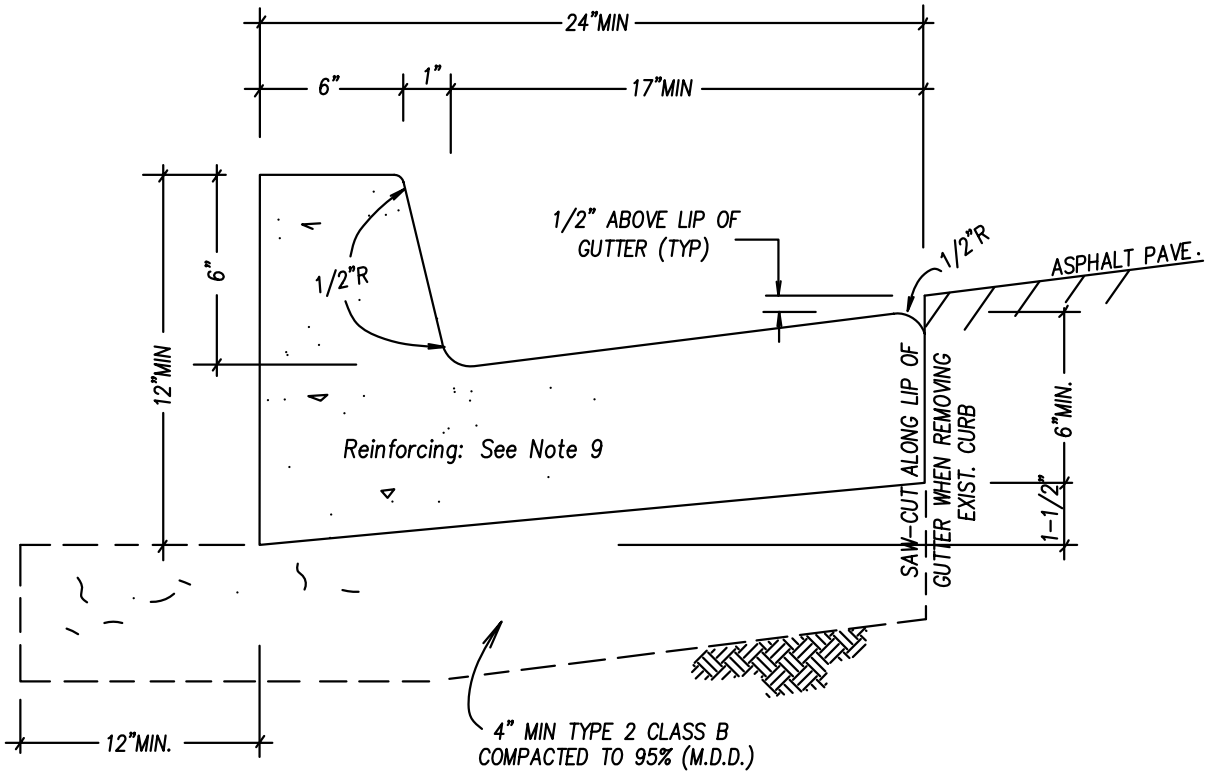
STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

STANDARD TRAFFIC SIGN

SECTION: WASHOE

DRAWING NO: W-15

DATE: 11/92vp



SECTION

NOTES

1. PORTLAND CEMENT CONC. (P.C.C.) SHALL HAVE THE FOLLOWING CHARACTERISTICS; 4000psi MIN. COMPRESSIVE STRENGTH @ 28 DAYS W/MIN. OF 6.25 SACKS OF CEMENT PER CU.YD. OF CONC.: AIR ENTRAINMENT SHALL BE 4.5 – 7.5% SLUMP SHALL RANGE FROM 1" MIN. TO 4" MAX. ALL MATERIALS SHALL CONFORM TO SSPWC SEC.202
2. CURB & GUTTER SHALL HAVE WEAKENED PLANE JOINTS ON 10' CENTERS (MAX).
3. AGGREGATE BASE SHALL BE TYPE 2 CLASS B AGGREGATE BASE COMPACTED TO A MIN. 95% MAXIMUM DRY DENSITY. .
4. EVAPORATION REDUCERS (SUCH AS CONFILM) SHALL BE APPLIED IMMEDIATELY AFTER INITIAL FINISHING.
5. CURING AGENTS SHALL BE APPLIED PER SECTION 202.11.02 IMMEDIATELY AFTER FINAL FINISHING.
6. CURB REMOVAL SHALL BE DONE TO NEAT SAW-CUT LINES.
7. ONE SET OF TEST CYLINDERS (SET OF 4 MIN.) SHALL BE TAKEN FOR EACH 50 YDS. OF CONC. PLACED INCLUDING SLUMP, AIR, AIR TEMPERATURE, AND CONC. TEMPERATURE OR A MIN. OF 1 SET OF 4 CYLINDERS FOR EACH DAY'S POUR.
8. NO EQUIPMENT SHALL BE PERMITTED ADJACENT TO OR ACROSS THE CURB UNTIL THE FOURTH DAY FOLLOWING PLACEMENT OF THE CONC. OR UNTIL THE CONCRETE HAS REACHED A MIN. COMPRESSIVE STRENGTH OF 3000psi.
9. REINFORCING SHALL CONSIST OF COLLATED, FIBRILLATED, POLYPROPYLENE FIBERS AS MANUFACTURED BY FIBERMESH OR APPROVED EQUAL. USE 1-1/2LBS. PER CU.YD. ON CONCRETE.

NO.	REVISED	DATE
1	REDRAW	11/92vp
2	NOTE 2,9	1/94vp

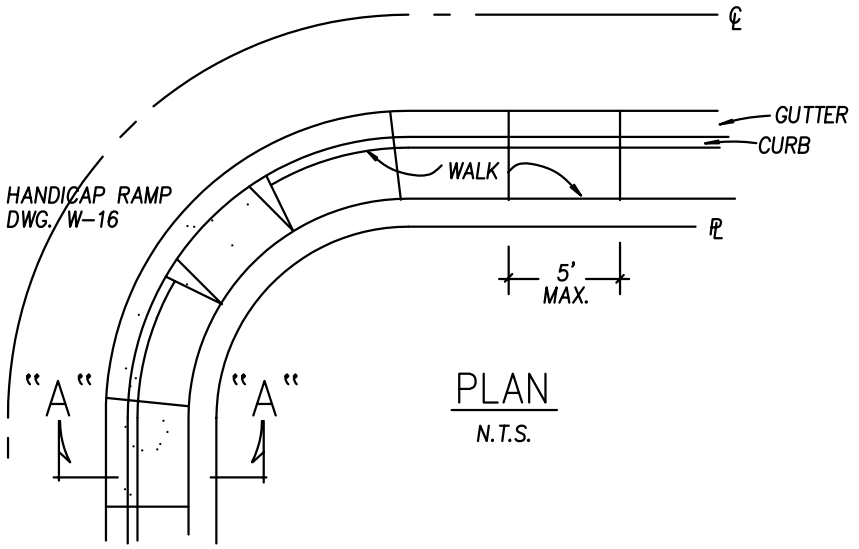
STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

TYPE I
P.C.C. CURB & GUTTER

SECTION: WASHOE

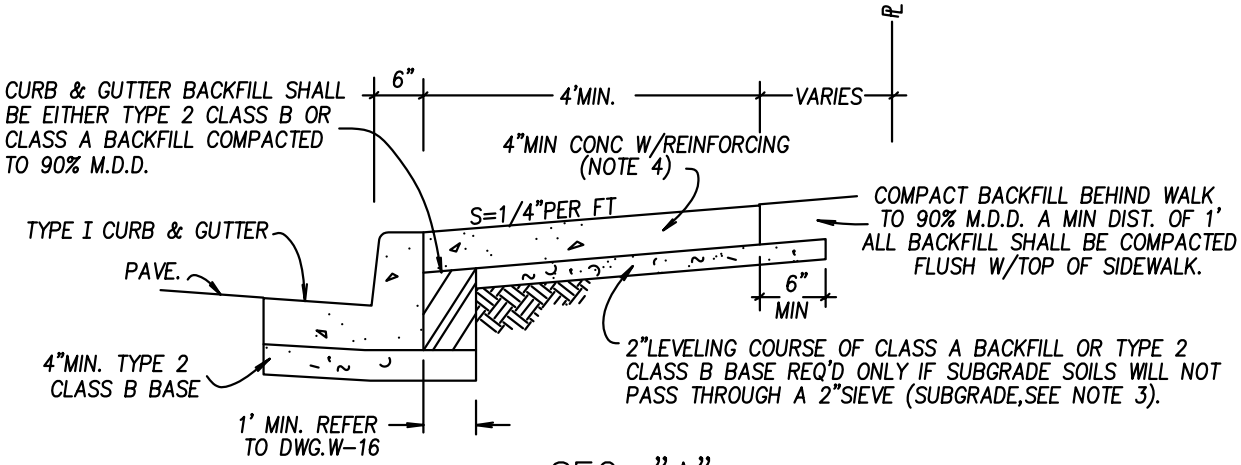
DRAWING NO: W-16.1

DATE: 11/92vp



PLAN

N.T.S.



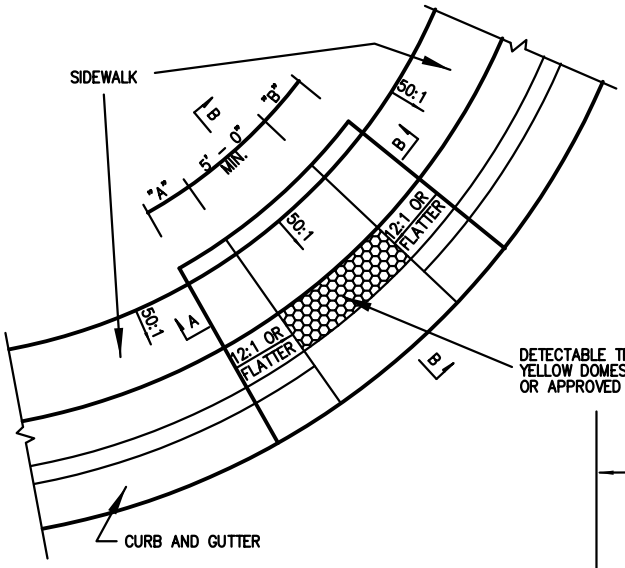
SEC. "A"

N.T.S.

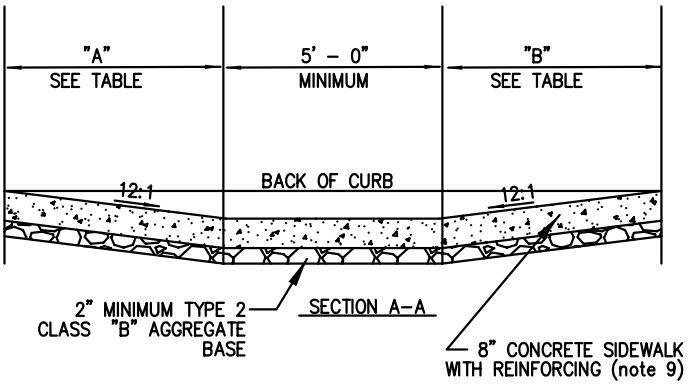
NOTES

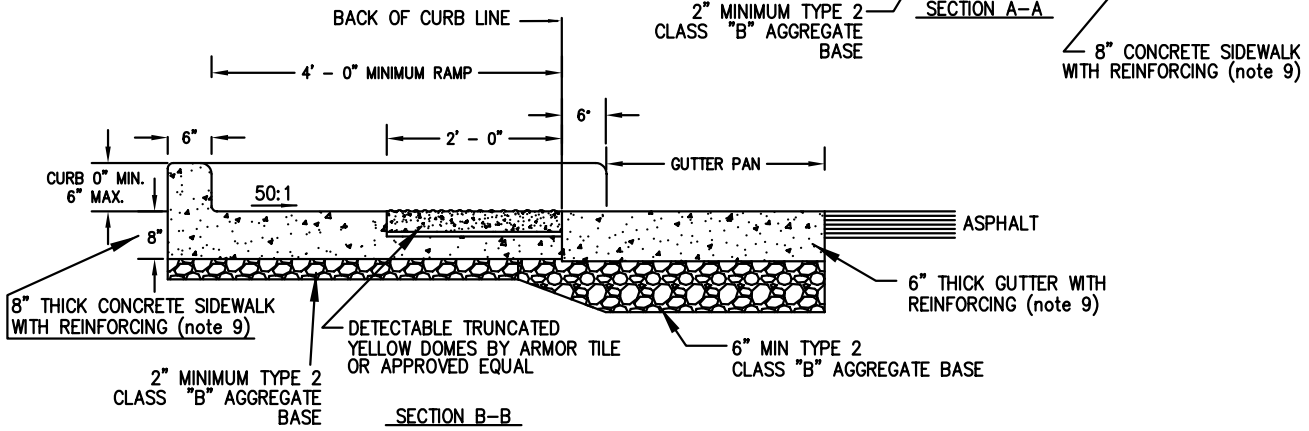
1. CONC SHALL BE MIN. 6.25sack-4000psi W/4.5-7.5% AIR & MAX. SLUMP OF 4". IF COLORED CONC IS USED, MIN CEMENT CONTENT SHALL BE 6.75 SACKS. WATER/CEMENT RATIO NOT TO EXCEED .45
2. SEE ROADWAY SECTIONS FOR SIDEWALK WIDTHS.
3. SIDEWALK SUBGRADE SHALL BE COMPACTED TO 90% M.D.D. IF EXPANSIVE OR UNSTABLE SOILS ARE ENCOUNTERED AT SIDEWALK SUBGRADE ELEV., THE SOILS SHALL BE OVEREXCAVATED TO CONFORM WITH THE SOILS REPORT OR REQUIREMENTS OF WASHOE COUNTY.
4. REINFORCING SHALL CONSIST OF COLLATED, FIBRILLATED, POLYPROPYLENE FIBER AS MFD. BY FIBERMESH OR APPROVED EQUAL. ADD 1-1/2 LBS. PER CU.YD. OF CONCRETE.
5. REFER TO DWG.W-16.1 FOR CURING AND TESTING PROCEDURES.
6. INSTALL EXPANSION JOINTS AT BEGINNINGS & ENDS OF CURVES & EVERY 200' ON TANGENT.

NO.	REVISED	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION: WASHOE
1	REDRAWN	2/94vp	P.C.C. SIDEWALK	DRAWING NO: W-16.2
				DATE: 2/94 vp / PAGE: 30



TRANSITION LENGTH TABLE FOR 12:1 SLOPE		
GRADE% "B" TO "A"	"A" MINIMUM	"B" MINIMUM
-6 TO -5.01	4' - 6"	21' - 6"
-5 TO -4.01	4' - 6"	15" - 0"
-4 TO -3.01	4' - 6"	12' - 0"
-3 TO -2.01	5' - 0"	9' - 6"
-2 TO -1.01	5' - 6"	8' - 0"
-1 TO 1	7' - 0"	7' - 0"
1.01 TO 2	8' - 0"	5' - 6"
2.01 TO 3	9' - 6"	5' - 0"
3.01 TO 4	12' - 0"	4' - 6"
4.01 TO 5	15' - 0"	4' - 6"
5.01 TO 6	12' - 6"	4' - 6"

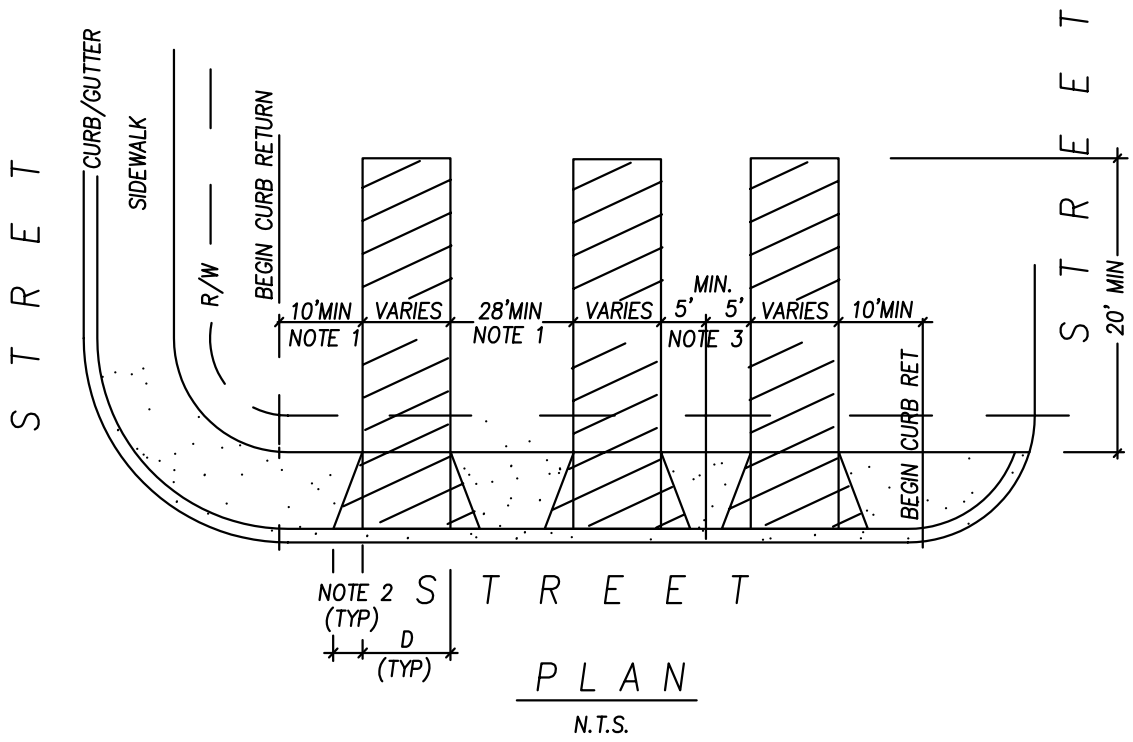




NOTES

1. *IF OBSTRUCTIONS SUCH AS INLETS, UTILITY POLES, FIRE HYDRANTS, ETC. ARE ENCOUNTERED, THE LOCATION & DIM'S MAY BE ADJUSTED UPON APPROVAL OF THE CO. ENGINEER.*
2. *TEXTURE TO BE HEAVY BROOM FINISH TRANSVERSE TO AXIS OF RAMP.*
3. *THE MID-BLOCK RAMP SHOWN IN DETAIL SHALL BE CENTERED IN CROSSWALK & HAVE A MIN CURB OPENING OF 6'.*
4. *SLOPE TO MEET EXIST CONDITIONS.*
5. *ALL RAMPS SHALL BE LOCATED WITHIN CROSSWALKS AREAS.*
6. *ALL CONC SHALL BE REMOVED TO SAW-CUT OR EXPANSION JOINTS.*
7. *GUTTER PAN/SIDEWALK TRANSITION (SEC."AA") WILL BE SMOOTH W/NO LIP AT THE GUTTER FLOWLINE. TRANSITION SECTION MAY BE A MONOLITHIC POUR.*
8. *SLOPE ON WINGS @ 1:12, SLOPE ON RAMP FROM FLOWLINE TO BACK OF WALK @ 1:12 W/CURB ON BACKSIDE IF NEEDED.*
9. *REINFORCING SHALL CONSIST OF COLLATED, FIBRILLATED POLYPROPYLENE FIBERS AS MFD BY FIBERMESH OR APPROVED EQUAL. ADD 1-1/2 LBS PER CU.YD. OF CONCRETE.*
10. *REF: DWG.W-16.1 & W-16.2 FOR ADDITIONAL NOTES.*

NO.	REVISED	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION: WASHOE
			PEDESTRIAN RAMP FOR THE DISABLED	DRAWING NO: W-16.3
				DATE: 10/05 sw / PAGE: 31



PLAN

N.T.S.

DRIVEWAY (D)	RESIDENTIAL	MULTI FAMILY & *LIGHT COMMERCIAL	**HEAVY COMMERCIAL & INDUSTRIAL
12' MIN	1-CAR GARAGE/ACCESS DR.	14'MIN (ONE-LANE)	20'MIN (ONE-LANE)
16' MIN	2-CAR GARAGE	36'MIN (TWO-LANE)	40'MIN (TWO-LANE)
24' MIN	2-CAR GARAGE W/RV PARKING OR 3 CAR GARAGE	45'MIN (3 LANES)***	54'MAX. (3 LANES)***
40' MAX	3-CAR GARAGE W/RV PARKING OR 4-CAR GARAGE		

NOTES

1. CIRCULAR DRIVEWAYS MAY BE INSTALLED W/APPROVAL OF COUNTY ENGINEER.
2. SEE DWG. W-5.1 FOR TAPER LENGTH, NOTES & CROSS SECTIONS.
3. 5' MIN. SPACE NOT REQUIRED ON SHARED DRIVEWAYS.

* = MULTI RESIDENTIAL W/3 UNITS OR GREATER, OFFICE BUILDINGS & OTHER COMMERCIAL BUILDINGS.

** = DRIVE-IN ESTABLISHMENTS, FACTORIES, SERVICE STATIONS, WAREHOUSES & DISTRIBUTION, MANUFACTURING & INDUSTRIAL. COUNTY ENGINEER MAY REQUIRE CURB RETURNS TO BE CONSTRUCTED. W/APPROPRIATE RADII.

*** = MORE THAN 3 LANES REQUIRES COUNTY ENGINEER APPROVAL.

NO.	REVISED	DATE
1	REDRAW	6/94 vp
2	3-LANES	5/01 vp
3	Lane, notes	10/01vp
4	Title	12/03vp

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

DRIVEWAY GEOMETRICS

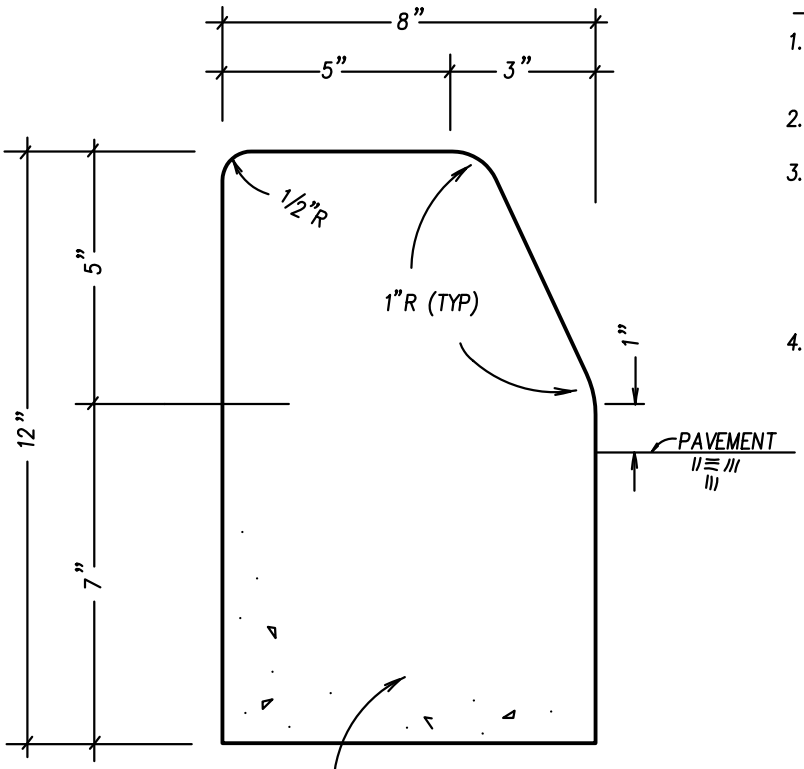
SECTION: WASHOE

DRAWING NO: W-16.4

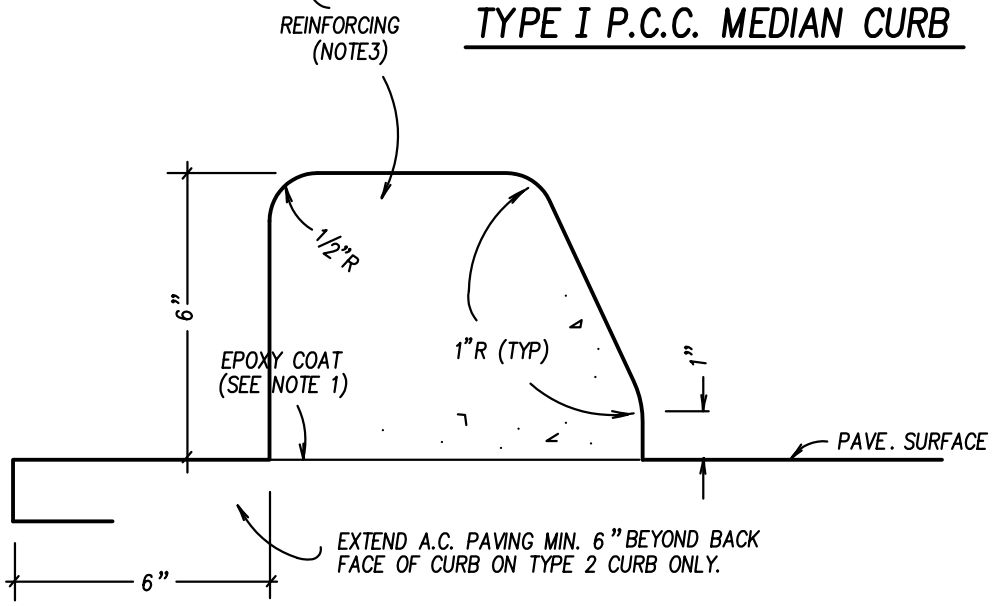
DATE: 6/94 vp

NOTES:

1. AN APPROVED EPOXY COAT BETWEEN THE CURB & PAVEMENT SURFACE SHALL BE USED.
2. SEE NOTES FOR TYPE I CURB & GUTTER, DWG.W–16.1
3. ALL CONC FOR TYPE I OR TYPE 2 P.C.C. MEDIAN CURB SHALL BE REINFORCED W/ COLLATED, FIBRILLATED POLYPROPYLENE FIBERS AS MANUFACTURED BY FIBERMESH OR APPROVED EQUAL. REINFORC'G SHALL BE 1 1/2 LBS. OF FIBERMESH PER CU.YD. OF CONCRETE.
4. ALL NOSES ON MEDIAN CURB SHALL BE POURED SOLID FOR THE FULL WIDTH OF THE MEDIAN.



TYPE I P.C.C. MEDIAN CURB



TYPE 2 P.C.C. MEDIAN CURB

NO.	REVISIONS	DATE
1	REDRAW	11/92vp
2	Add notes	2/94vp

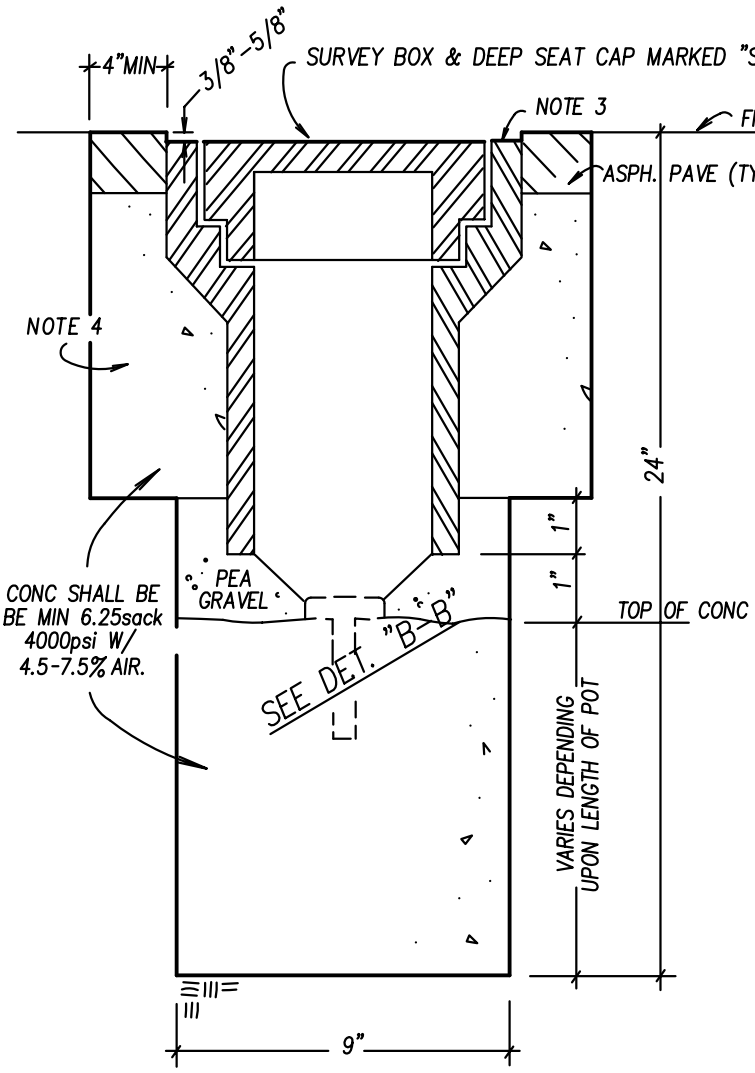
STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

P.C.C. MEDIAN CURB

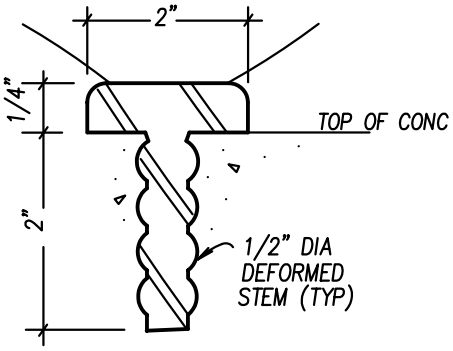
SECTION WASHOE

DRAWING NO. W–17

DATE 11/92vp



CLASS A



SURVEY MARKER
"B-B"

NOTES

1. ALL SURVEY MARKERS SHALL BE CENTER PUNCHED AFTER PLACEMENT.
2. 2" DIA ALUM. OR BRASS CAP W/PLS#PERMANENTLY ATTACHED PRIOR TO PLACEMENT.
3. MONUMENT POT SHALL BE SET 3/8"-5/8" BELOW FINISHED ROADWAY SURFACE.
4. CONC COLLAR SHALL BE LEFT 2" BELOW FINISHED ASPH SURFACE. TOP OF CONC SHALL RECEIVE A ROUGH BROOM FINISH. PLACE 2" OF TYPE 3 ASPH AROUND MONUMENT POT. APPLY SS-1 TACK COAT TO TOP OF CONC BEFORE PLACING ASPH PAVING, & SEAL ASPH SURFACE W/SS-1 TACK COAT & SAND. CHIP SEAL, SAND SEAL, SLURRY SEAL OR FOG SEAL PAVED SURFACE AS REQ'D BY PLANS OR SPECS.
5. CONC SHALL BE FLUSH W/TOP OF SURVEY POT WHEN NOT LOCATED IN ASPH PAVING.

NO.	REVISION	DATE
1	REDRAW	1/93vp
2	Notes, dim's	7/93vp
3	F.G/COLLAR	3/94vp
4	NOTE 3,4	1/95vp

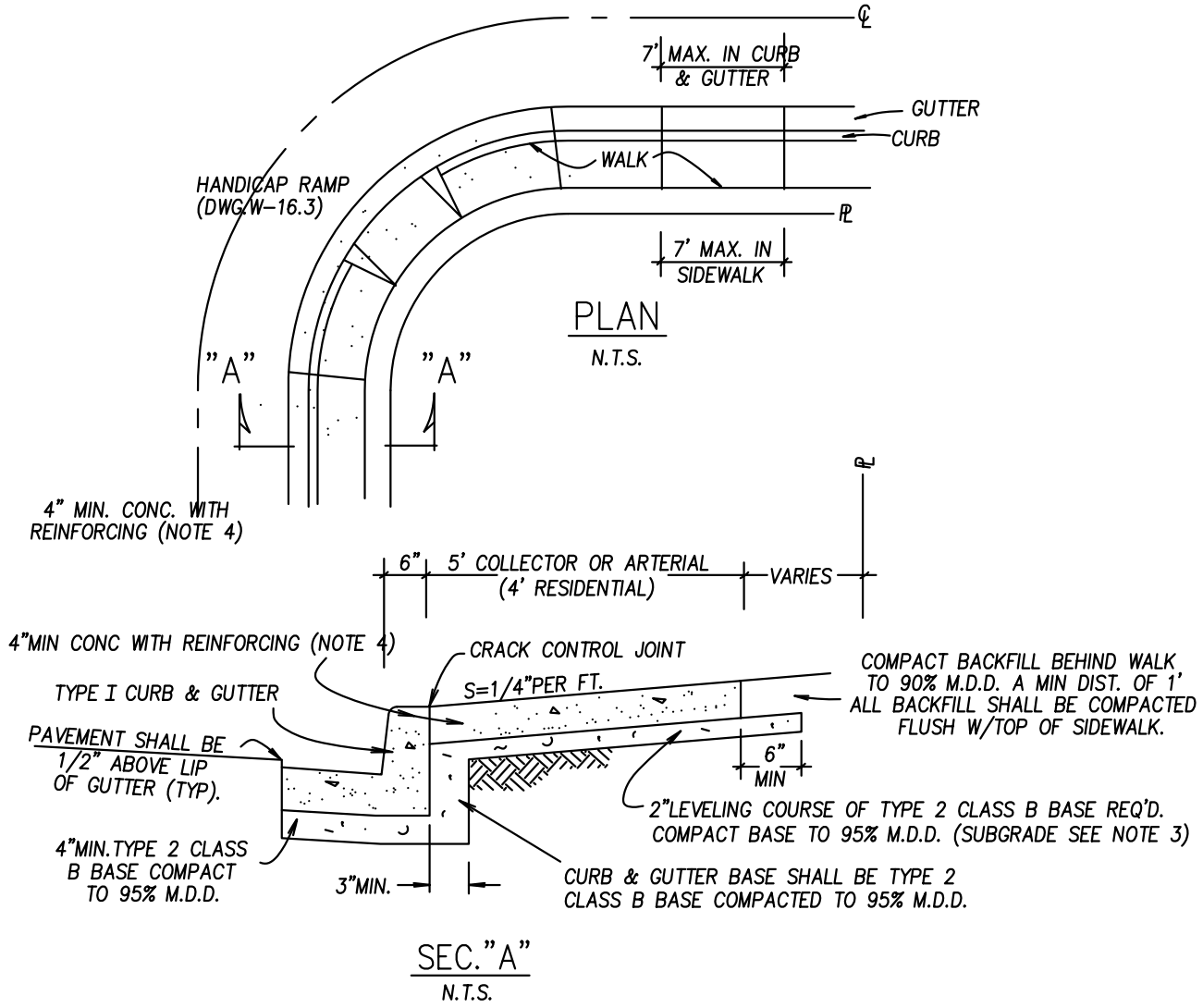
STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

MONUMENTS

SECTION WASHOE

DRAWING NO. W-18

DATE 1/93vp



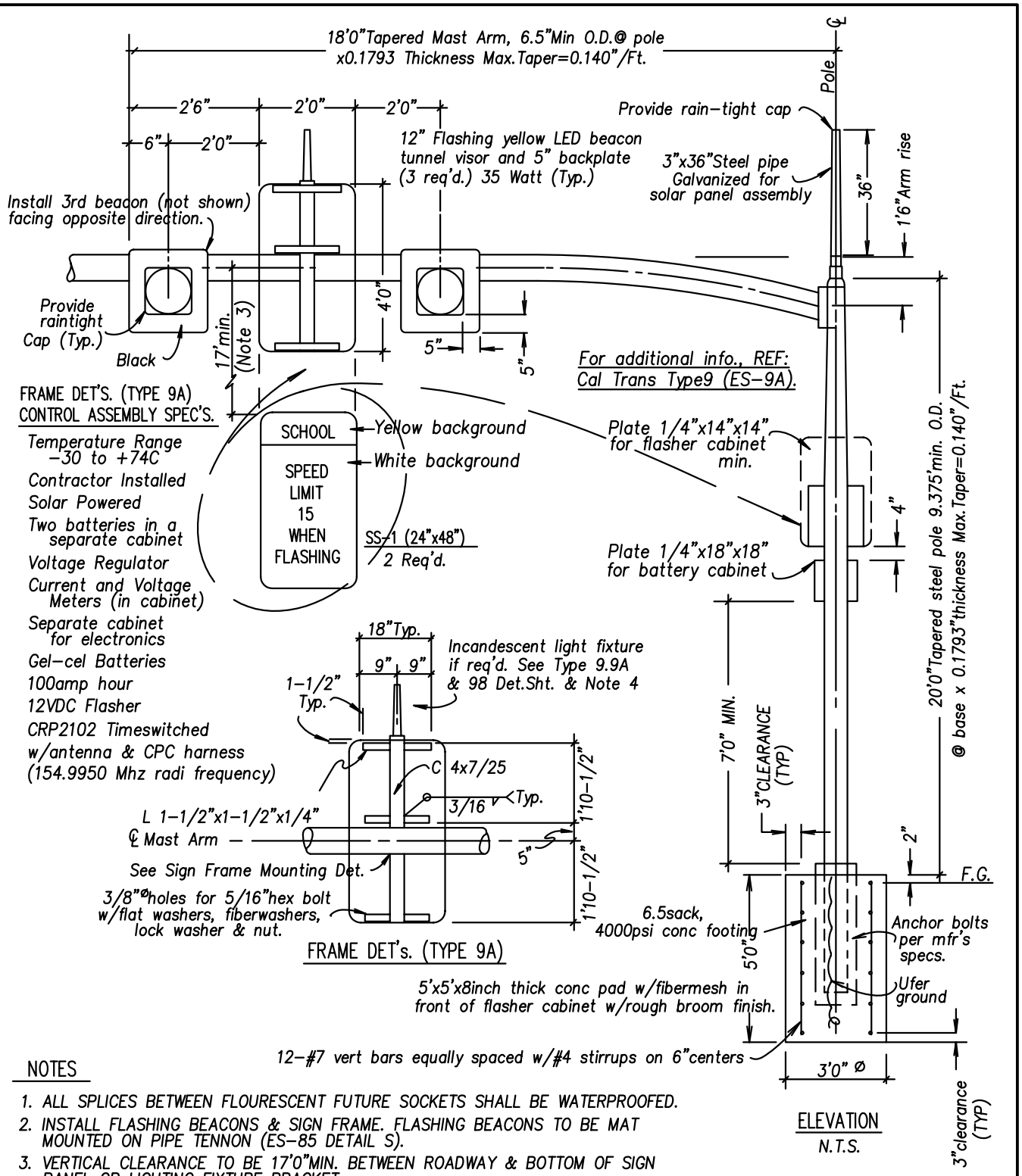
PLAN
N.T.S.

SEC."A"
N.T.S.

NOTES

1. CONC SHALL BE MIN 6.25sack–4000psi W/4.5–7% AIR & MAX SLUMP OF 2". iF COLORED CONC IS USED, MIN CEMENT CONTENT SHALL BE 6.75 SACKS. WATER/CEMENT RATIO NOT TO EXCEED .45
2. SEE ROADWAY SECTIONS FOR SIDEWALK WIDTHS.
3. SIDEWALK SUBGRADE SHALL BE COMPACTED TO 90% M.D.D. IF EXPANSIVE OR UNSTABLE SOILS ARE ENCOUNTERED AT SIDEWALK SUBGRADE ELEV., THE SOILS SHALL BE OVEREXCAVATED TO CONFORM WITH THE SOILS REPORT OR REQUIREMENTS OF WASHOE COUNTY.
4. REINFORCING SHALL CONSIST OF COLLATED, FIBRILLATED, POLYPROPYLENE FIBER AS MFD. BY FIBERMESH OR APPROVED EQUAL. ADD 1–1/2 LBS. PER CU.YD. OF CONCRETE.
5. REFER TO DWG.W–16.1 FOR CURING AND TESTING PROCEDURES.
6. ALL DRIVEWAYS SHALL CONFORM TO THE REQUIREMENTS OF DRAWINGS W–5.1 AND W–16.4
7. ALL CRACK CONTROL JOINTS SHALL BE 7 FT. MAXIMUM.

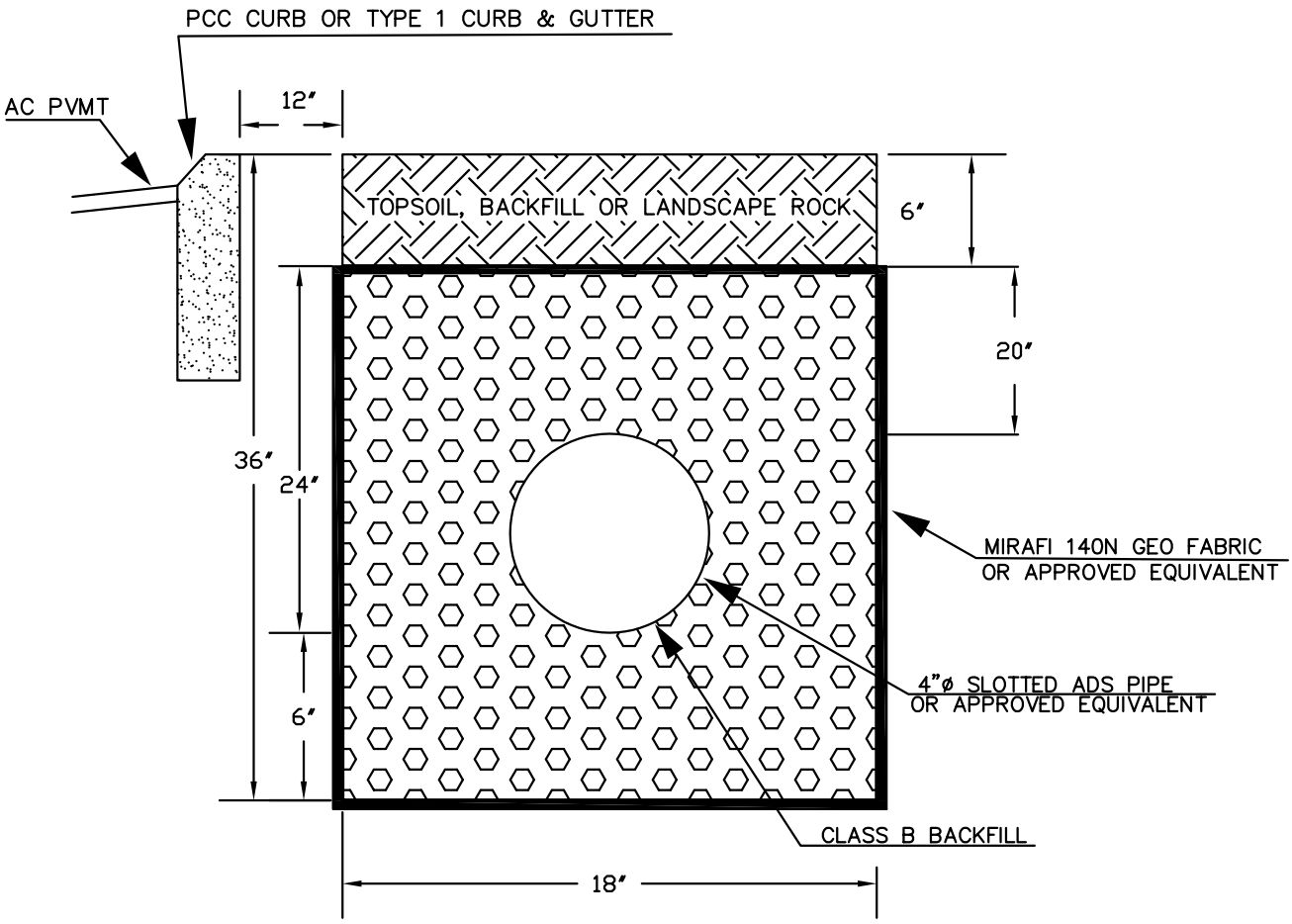
NO.	REVISED	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION: WASHOE
			MONOLITHIC CURB & GUTTER AND SIDEWALK	DRAWING NO: W–19
				DATE: 3/02 vp / PAGE: 35



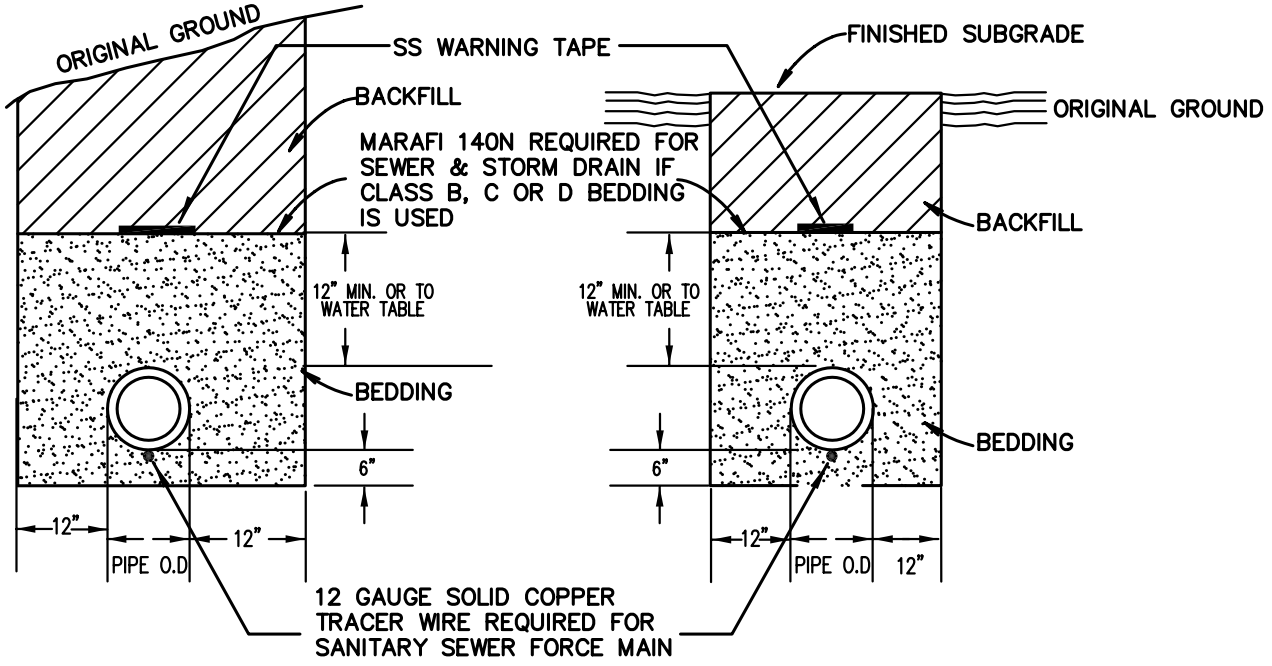
NOTES

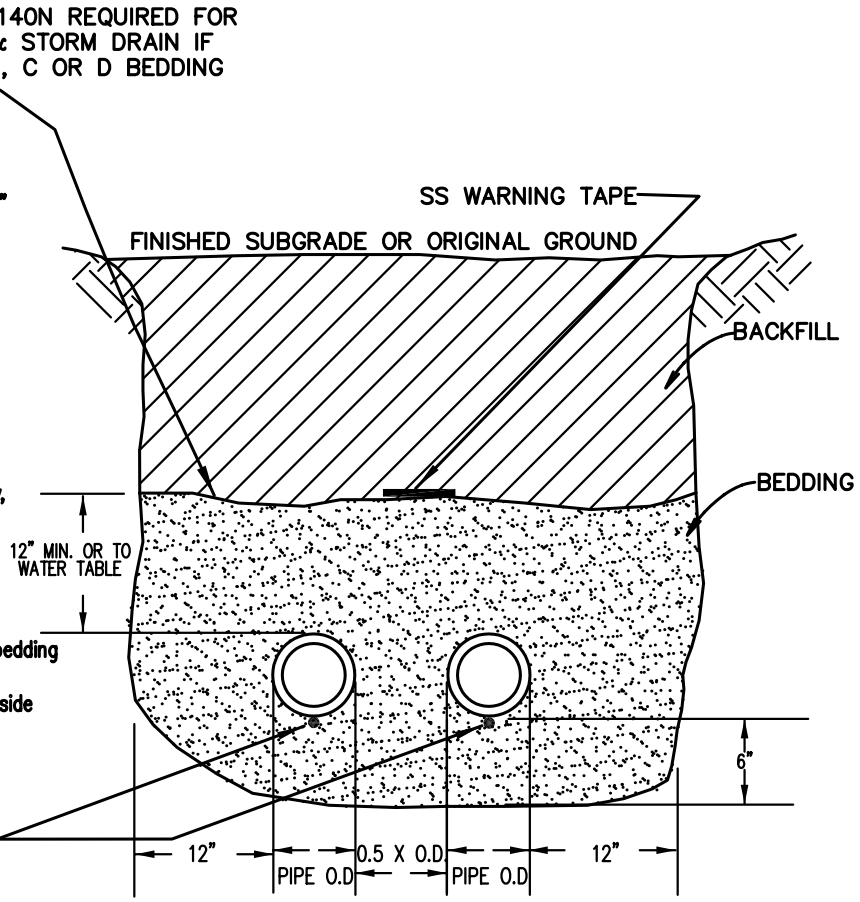
1. ALL SPLICES BETWEEN FLOURESCENT FUTURE SOCKETS SHALL BE WATERPROOFED.
2. INSTALL FLASHING BEACONS & SIGN FRAME. FLASHING BEACONS TO BE MAT MOUNTED ON PIPE TENNON (ES-85 DETAIL S).
3. VERTICAL CLEARANCE TO BE 17'0"MIN. BETWEEN ROADWAY & BOTTOM OF SIGN PANEL OR LIGHTING FIXTURE BRACKET.
4. SPECIAL PROVISIONS OR PLANS WILL INDICATE WHEN INCANDESCENT LIGHTING FIXTURE IS REQUIRED ON TYPE 9A OR 9B SIGN FRAMES.
5. ALL TYPE 9 SIGN FRAMES SHALL BE PROVIDED WITH A 36" FLOURESCENT SIGN LIGHTING EQUIPMENT.
6. ANCHOR BOLTS SHALL BE ASTM A-307.

NO.	REVISED	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION: WASHOE
1,	smw	4/4/05	SCHOOL SIGNAL	DRAWING NO: W-20
				DATE: 10/01vp / PAGE: 36



NO.	REVISED	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION: WASHOE
			SUBDRAIN	DRAWING NO: W-21
				DATE: 11/04sw / PAGE: 37

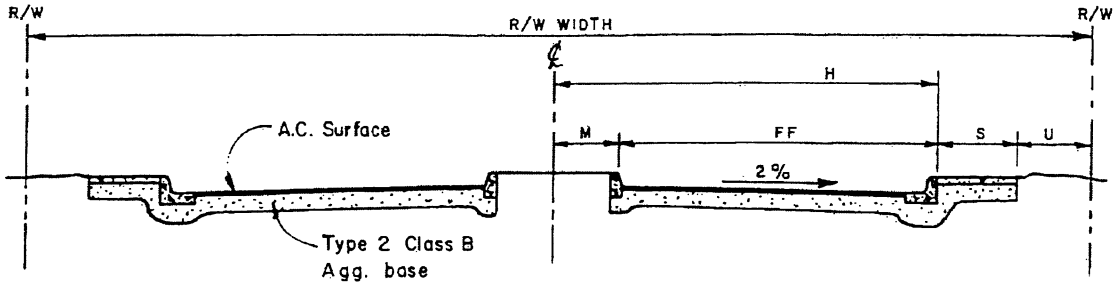




NOTES

1. Water desdified backfill and tunneling shall be by special provision only.
2. Backfill shall meet the requirements for class "E" backfill in 12"(max.) lifts to minimum 90% of maximum dry density.
3. Bedding material shall meet requirements for class "A" backfill as shown in sub-section 200.03.02 of standard specified by the agency and shall be compacted to at least 90% of maximum dry density.
4. For the purpose of payment, excavation and backfill quantities are based on these standard drawing, and no additional compensation will be made. Shoring or sloped cuts may be necessary, but there will be additional payment. All excavations shall conform to the latest O.S.H.A - requirements.
5. For trenches in roadway section, see Trench Patch Details (W2.2).
6. Clay plugs shall be installed if class B, C or D bedding is used fpr sanitary sewer.
7. For pipes 36" dia. or larger, dimension from outside edge of pipe to trench wall shall be 18".

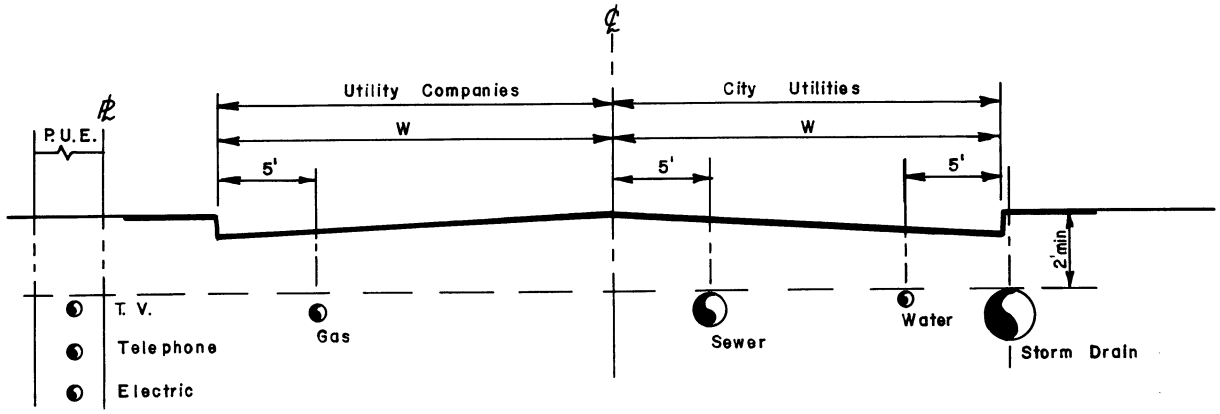
NO.	REVISED	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION: WASHOE
1			TRENCH EXCAVATION AND BACKFILL (STORM DRAIN & SANITARY SEWER)	DRAWING NO: W-22
2				
3				DATE: 12-05 PAGE: 38



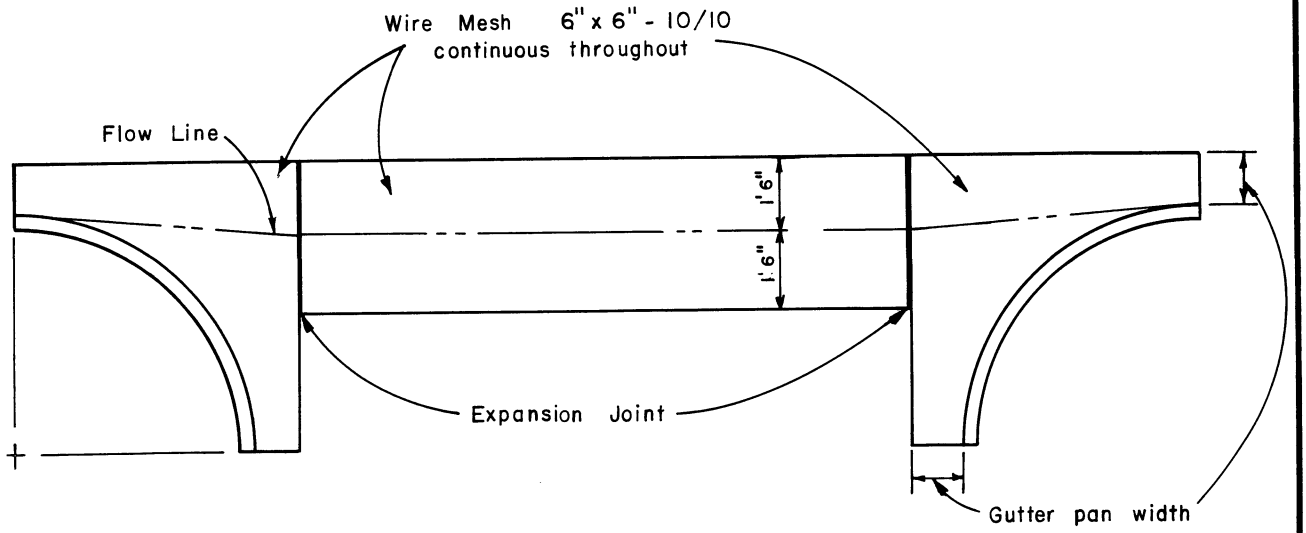
1. FF and H is measured to back face of curb.
2. Prime coat will not be required.
3. Seal coat will be sand seal.
4. Structural section by Engineering Design, but not less than the minimum shown.

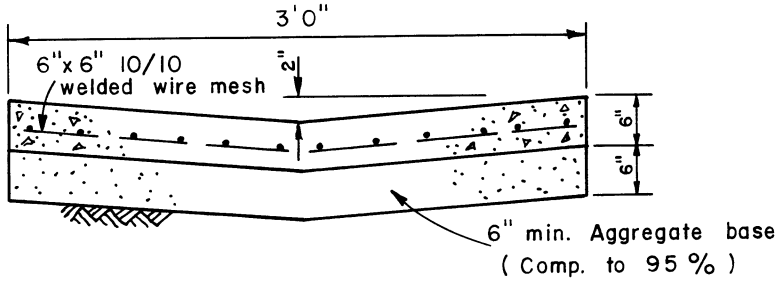
R/W Width	H	FF	M	S	U	NOTES OR REMARKS
100	40	33	7	4	6.0	(Major Arterial (Min. 2 1/2" AC W/ Min. 6" Aggregate Base)
85	34	-	-	4	4.5	(Minor Arterial (Min. 2 1/2" AC W/ Min. 6" Aggregate Base)
60	21	-	-	4	4.5	(Collector (Min. 2 1/2" AC W/ Min. 6" Aggregate Base)
50	18	-	-	4	2.5	(Local Residential (Min. 2 1/2" AC W/ Min. 6" Aggregate Base)

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION YERINGTON
			ROADWAY SECTIONS	DRAWING NO. Y-1 (319)
				DATE 9/04 / PAGE 1



NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION YERINGTON	
			TYPICAL UTILITY MAIN LOCATIONS	DRAWING NO. Y-2	
				DATE 7-81	PAGE 2

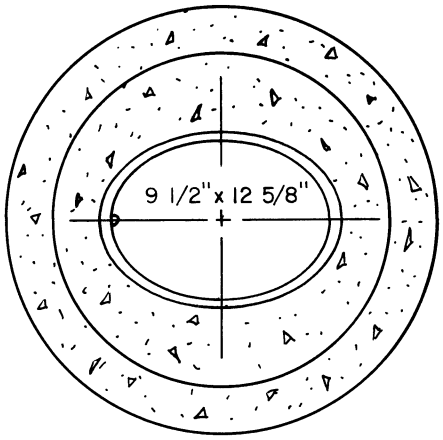




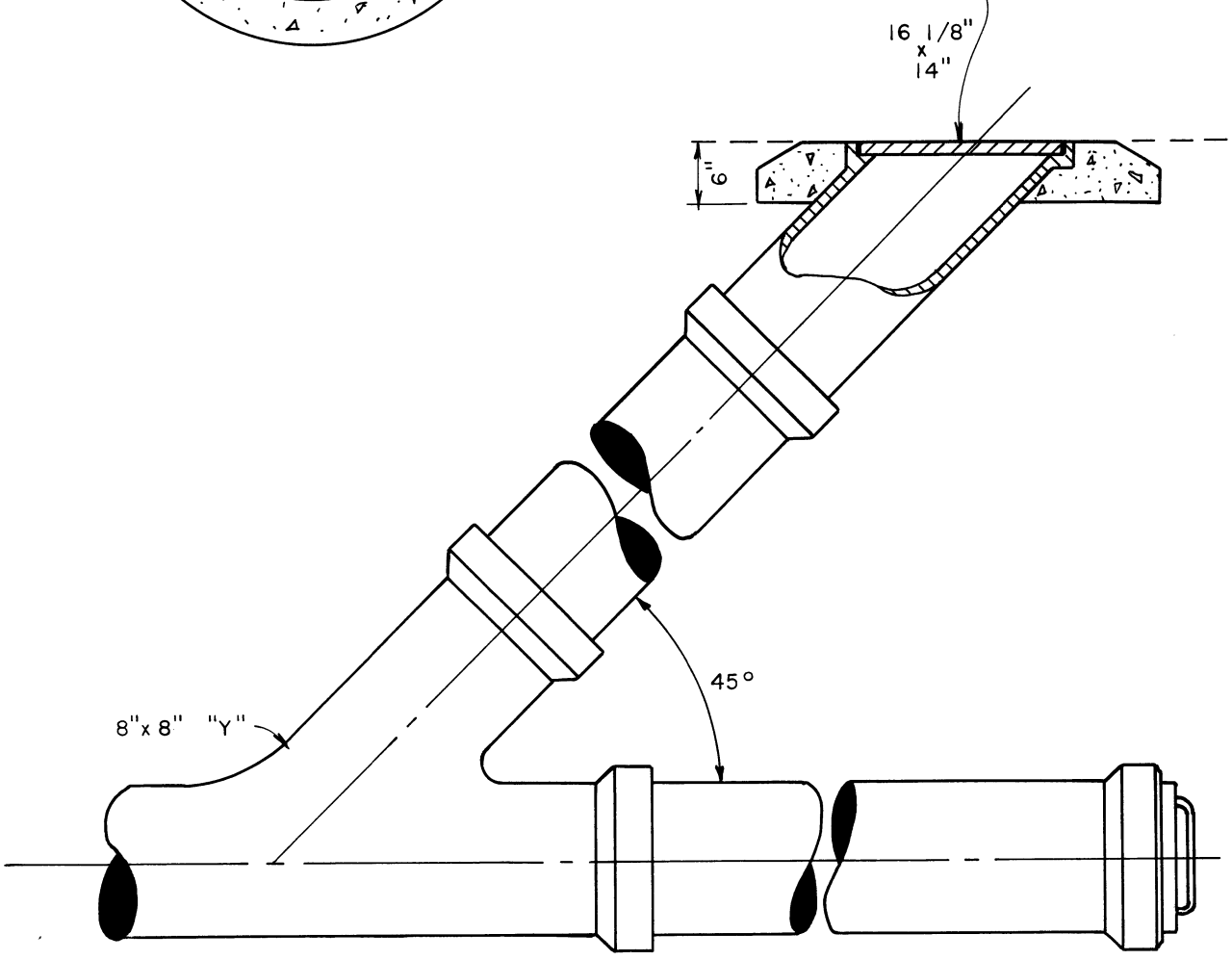
NOTES:

1. All valley gutters shall be constructed on not less than 6" of base material compacted to 95% max. density.
2. Expansion joint filler shall conform to the requirements of AASHTO designation M-153, type II.
3 Welded wire fabric shall conform to AASHTO designated M-55.
4 Portland Cement concrete shall be class AA or DA.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION YERINGTON
			P.C.C. VALLEY GUTTER	DRAWING NO. Y-3 (312)
				DATE 7-81 / PAGE 3

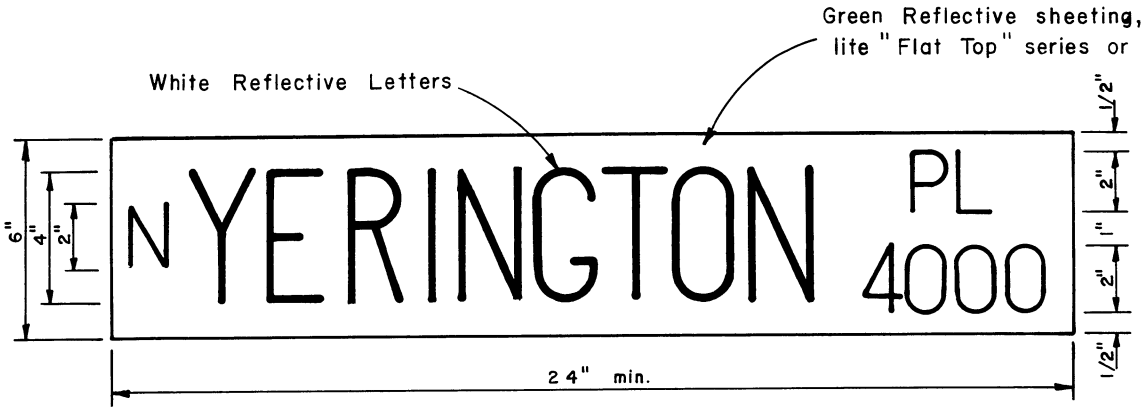


PINKERTON FOUNDRY
CASTING No. A-490
OR EQUAL.



NOTE:
Cleanouts permitted only on dead-end lines serving 4 or less lots or buildings

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION YERINGTON	
			SEWER MAIN CLEANOUT	DRAWING NO. Y-4 (306)	
				DATE 7-81	PAGE 4



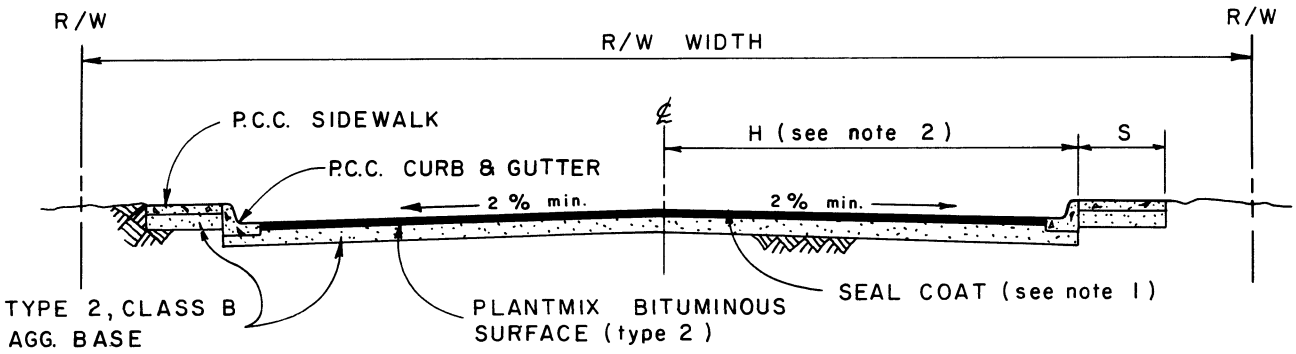
NOTE :

1. Street name sign shall be in conformance with the latest edition of the M.U.T.C.D.

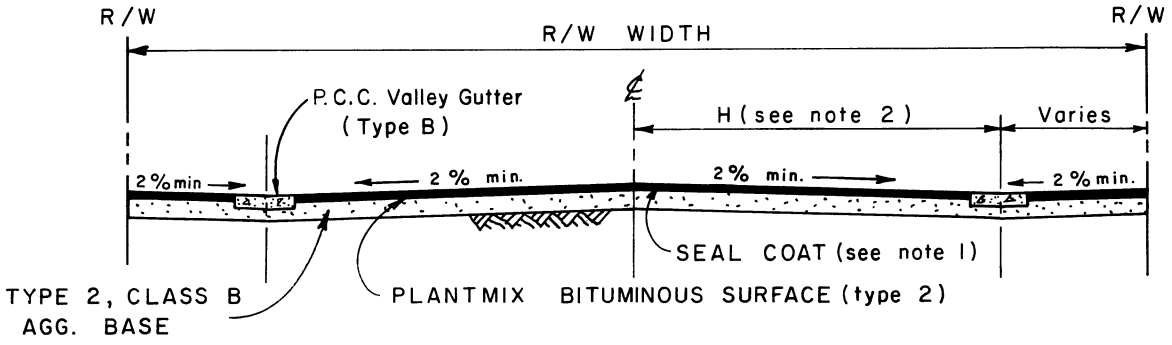
2. Reflective materials shall be mounted on .080 gauge flat plate aluminum No. 6061 - T6.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION YERINGTON
			STREET NAME SIGN	DRAWING NO. Y-5 (330)
				DATE 7-81 / PAGE 5

CITY OF ELKO



DESIGNATION	R/W WIDTH	H	S	STANDARD SECTION (SEE NOTE 3)	
				SURFACE	BASE
ARTERIAL	80'	33.5'	5'min.	4"	15"
COLLECTOR	60'	25'	4'min.	3"	12"
LOCAL	60'	25'	4'min.	2.5"	9"

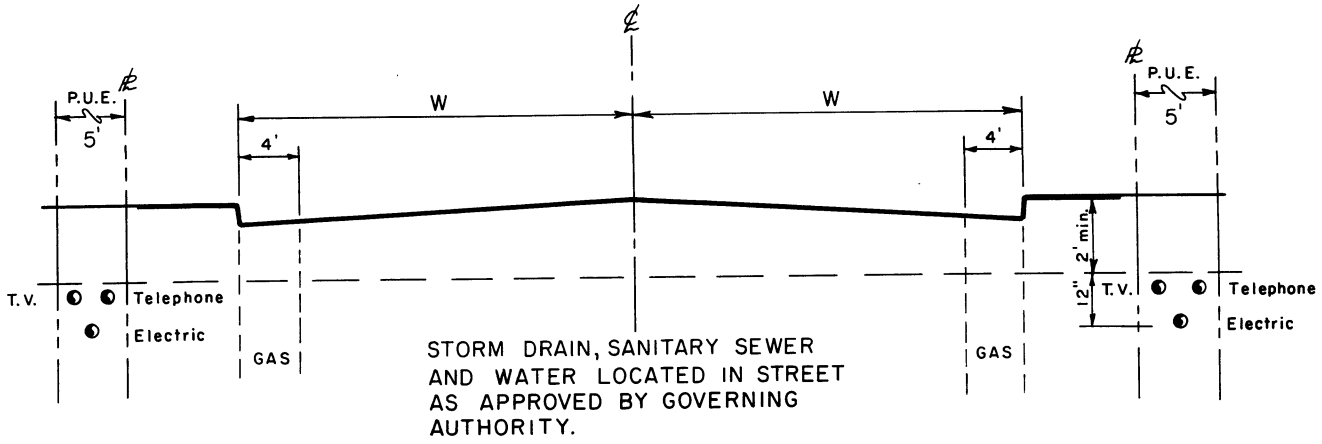


DESIGNATION	R/W WIDTH	H	STANDARD SECTION (SEE NOTE 3)	
			SURFACE	BASE
GENERAL INDUSTRIAL	80'	33'	4"	15"
LIGHT INDUSTRIAL	60'	24.5'	3"	12"

NOTES:

1. SEAL COAT TO CONSIST OF A SINGLE APPLICATION OF MC-250 LIQUID ASPHALT, APPLIED AT A RECOMMENDED RATE OF 0.10 GALLONS PER SQ. YD.. SAND BLOTTER SHALL BE APPLIED AS REQUIRED.
2. H. IS MEASURED TO BACK OF CURB FOR 'L' TYPE & 'ROLLED' TYPE CURBS & GUTTERS AND TO FLOWLINE WHEN VALLEY GUTTER IS USED.
3. STRUCTURAL SECTION TO BE DETERMINED BY ENGINEERING DESIGN BASED ON "R" VALUE OR C.B.R. TESTING, BUT IN NO CASE SHALL THE A.C. BE LESS THAN SHOWN ABOVE NOR SHALL THE BASE BE LESS THAN 6".

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION
				CITY OF ELKO
			ROADWAY SECTIONS	DRAWING NO. E-1 (314, 319)
				DATE 11-83 / PAGE 1



STORM DRAIN, SANITARY SEWER AND WATER LOCATED IN STREET AS APPROVED BY GOVERNING AUTHORITY.

TYPICAL SECTION "C"

NOTES:

1. DETERMINE EXACT FIELD LOCATIONS OF UTILITIES PRIOR TO ANY EXCAVATION.
2. IT IS RECOMMENDED THAT EACH INDIVIDUAL UTILITY COMPANY BE CONTACTED FOR LOCATION OF EXISTING FACILITIES PRIOR TO DEVELOPMENT DESIGN.
3. INSTALLATION PROCEDURES AND MATERIALS SHALL CONFORM TO EACH UTILITY COMPANY'S STANDARDS AND SPECIFICATIONS.
4. BEDDING FOR UTILITY TRENCH TO BE GRANULAR MATERIAL, 100% PASSING 1/4" SIEVE. COMPACT TO 90% RELATIVE DENSITY.

UTILITY OFFICES:

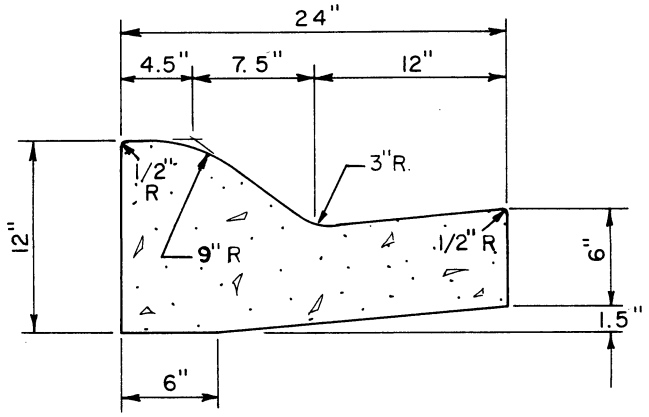
CITY OF ELKO, 1751 COLLEGE AVE. (WATER, SEWER, & STORM DRAIN)
CP NATIONAL, 111 W. FRONT ST. (TELEPHONE)
T.V. PIX INC., 376 - 5th ST. (TELEVISION)
SIERRA PACIFIC POWER CO., 542 COMMERCIAL ST. (ELECTRIC POWER)
SOUTHWEST GAS CORP., 744 COMMERCIAL ST. (NATURAL GAS)

NO.	REVISION	DATE
1	SPELLING	10-14-86

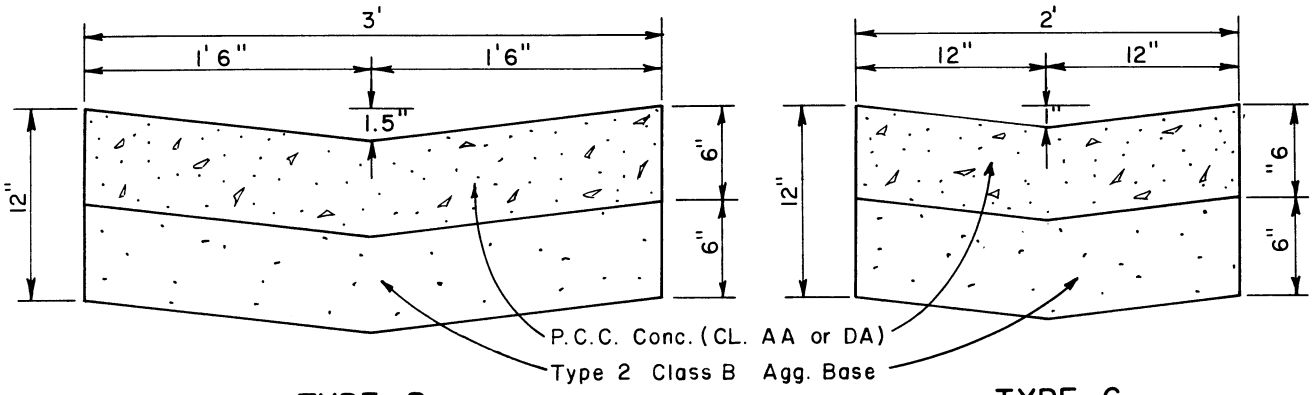
STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

TYPICAL UTILITY MAIN LOCATIONS

SECTION: CITY OF ELKO
DRAWING NO.: E-2
DATE: 11-83
PAGE: 2

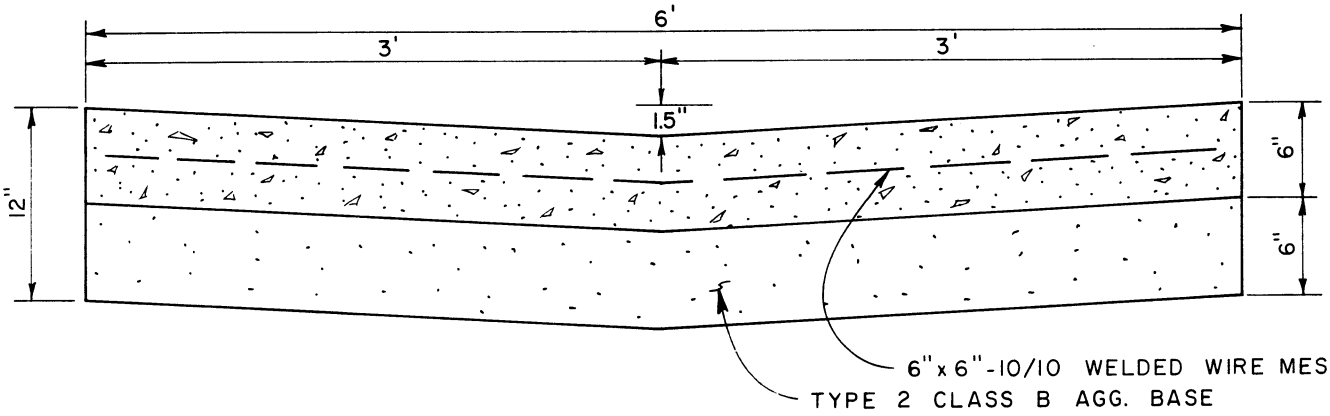


TYPE 2 CURB & GUTTER
(ELKO ONLY)



TYPE B

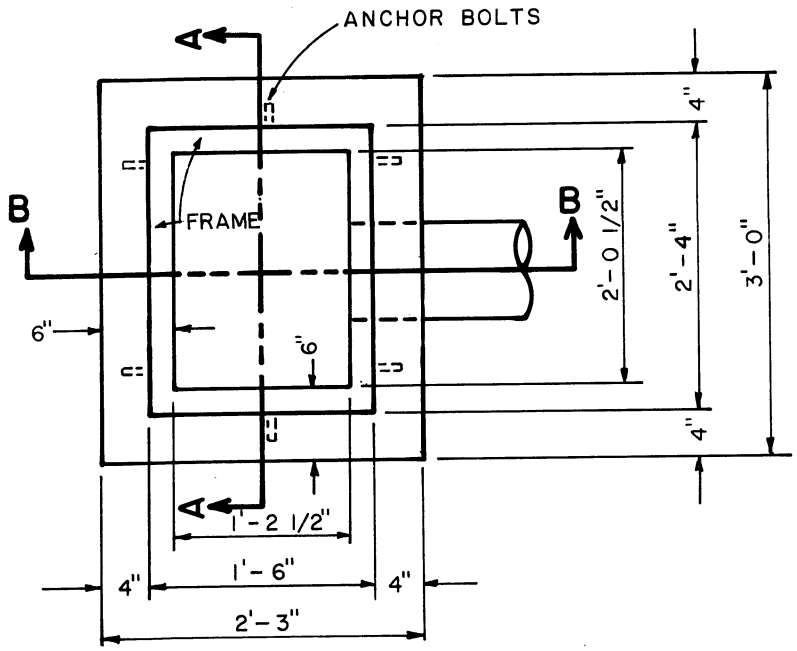
TYPE C



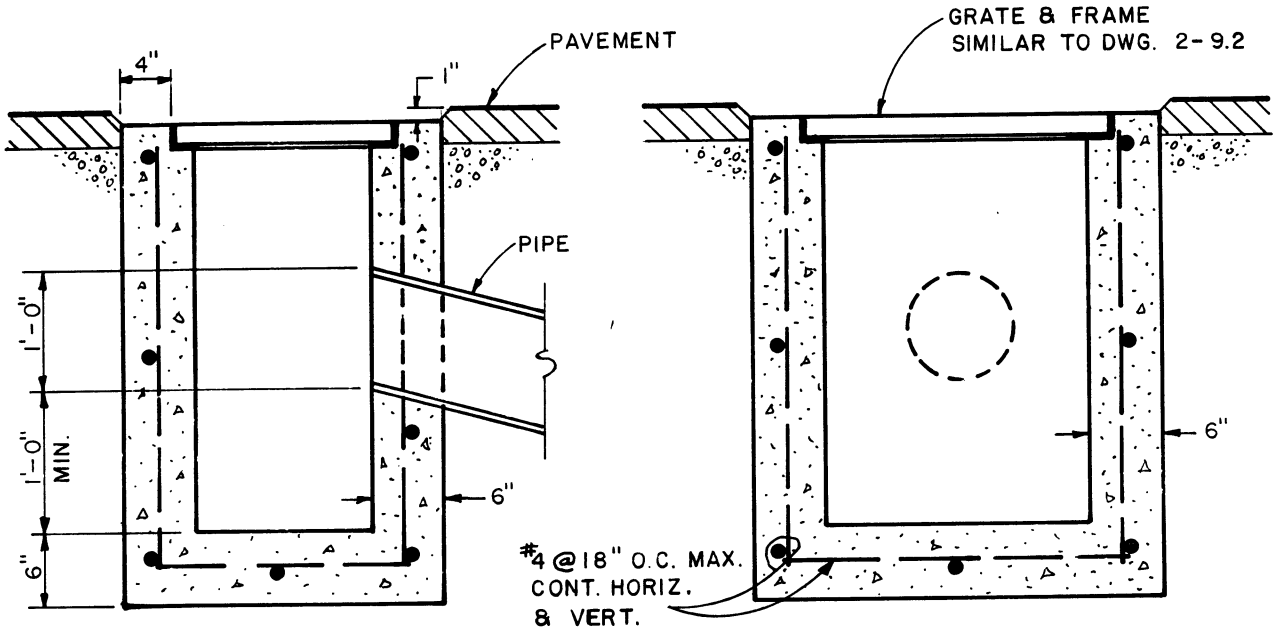
TYPE A
P.C.C. VALLEY GUTTER

NOTES:
1. PORTLAND CEMENT CONCRETE SHALL BE 3000 LBS. PER SQ. IN. MIN. (28 DAY) WITH 5% AIR ENTRAINMENT.
2. BASE MATERIAL SHALL BE COMPACTED TO AT LEAST 95% RELATIVE DENSITY.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION
			TYPE 2 P.C.C. CURB & GUTTER P.C.C. VALLEY GUTTER	CITY OF ELKO
				DRAWING NO. E-3
				DATE 11-83 / PAGE 3



PLAN



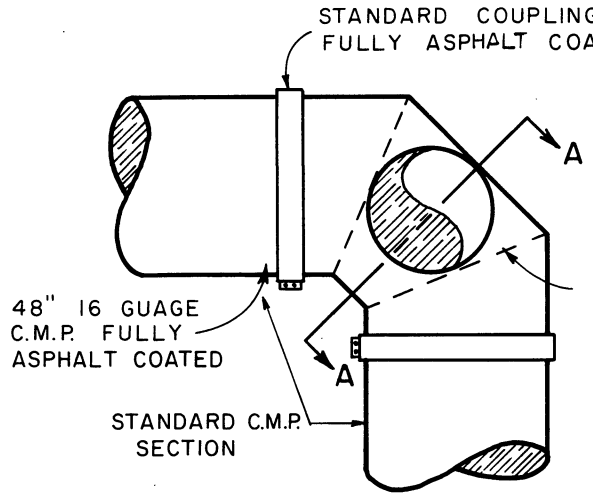
SECTION B-B

SECTION A-A

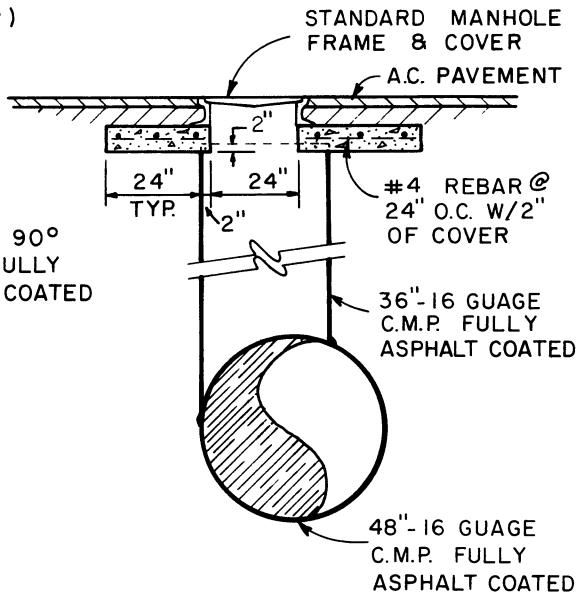
NOTES:

1. PIPE LOCATIONS AS SHOWN ON PLANS.
2. PORTLAND CEMENT CONCRETE SHALL BE 3000 P.S.I. MIN. (28 DAY), WITH 5% AIR ENTRAINMENT.

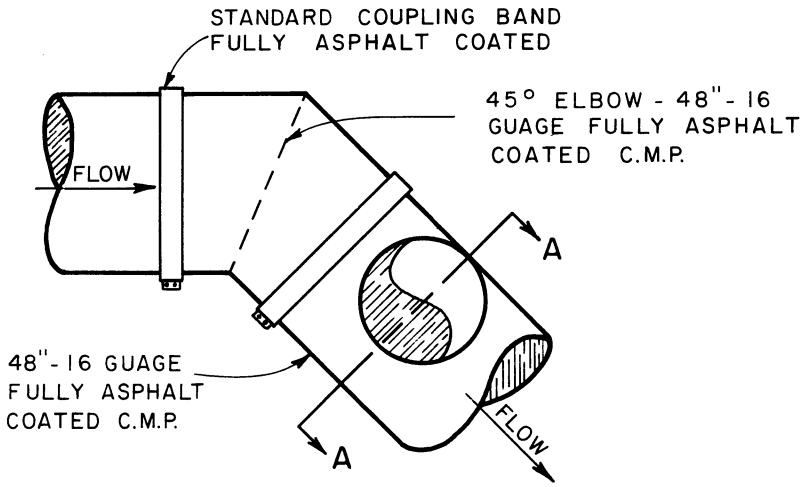
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION
			CATCH BASIN TYPE 3A	CITY OF ELKO
				DRAWING NO. E-4
				DATE 12-83 / PAGE 4



90° STORM DRAIN



SECTION A-A



45° STORM DRAIN

NOTES:

1. MANHOLE FRAME & COVER TO BE GROUTED IN PLACE.
2. CUT HOLE IN 48" C.M.P. FOR 36" C.M.P. & WELD SECTIONS TOGETHER TO FORM WATERTIGHT SEAL.
3. COAT WELDS WITH A BITUMINOUS MATERIAL AS RECOMMENDED BY PIPE MANUFACTURER.
4. MATERIALS TO BE USED MUST BE APPROVED BY CITY OF ELKO ENGINEER.

NO.	REVISION	DATE
1	SPELLING	10-14-86

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

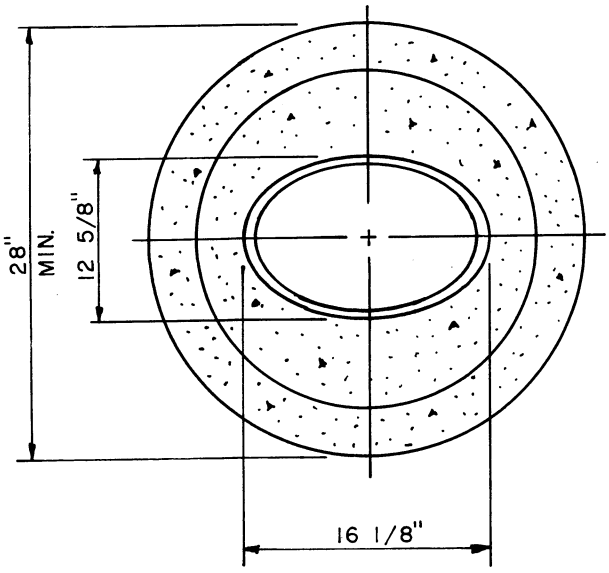
45° & 90° STORM DRAIN DETAIL

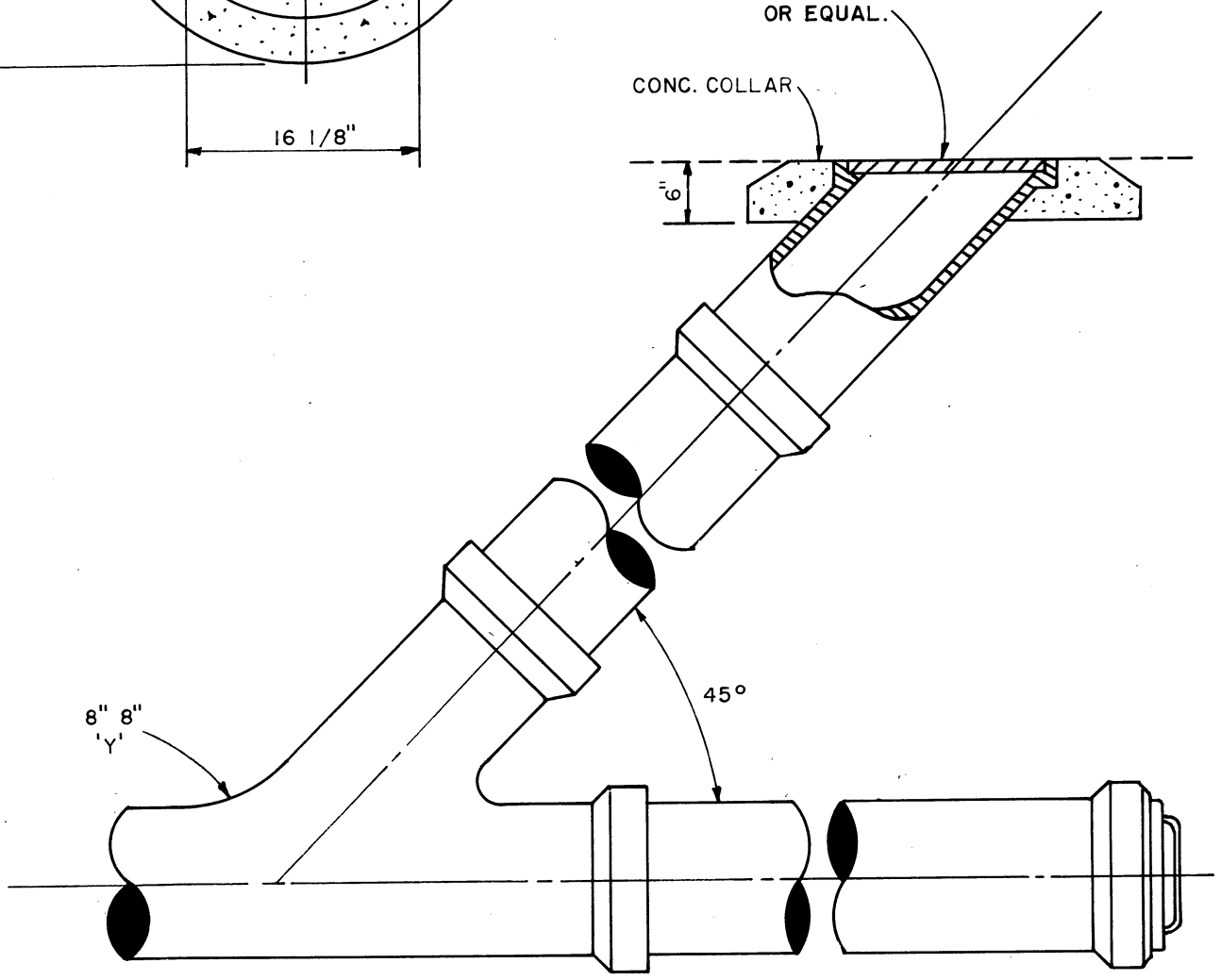
SECTION
CITY OF ELKO

DRAWING NO.
E-5

DATE
11-83

PAGE
5





NOTE:

CLEANOUTS PERMITTED ONLY ON DEAD-END LINES SERVING 4 OR LESS LOTS OR BUILDINGS, WITH PRIOR APPROVAL.

NO.	REVISION	DATE
1	NOTE	10-14-86

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

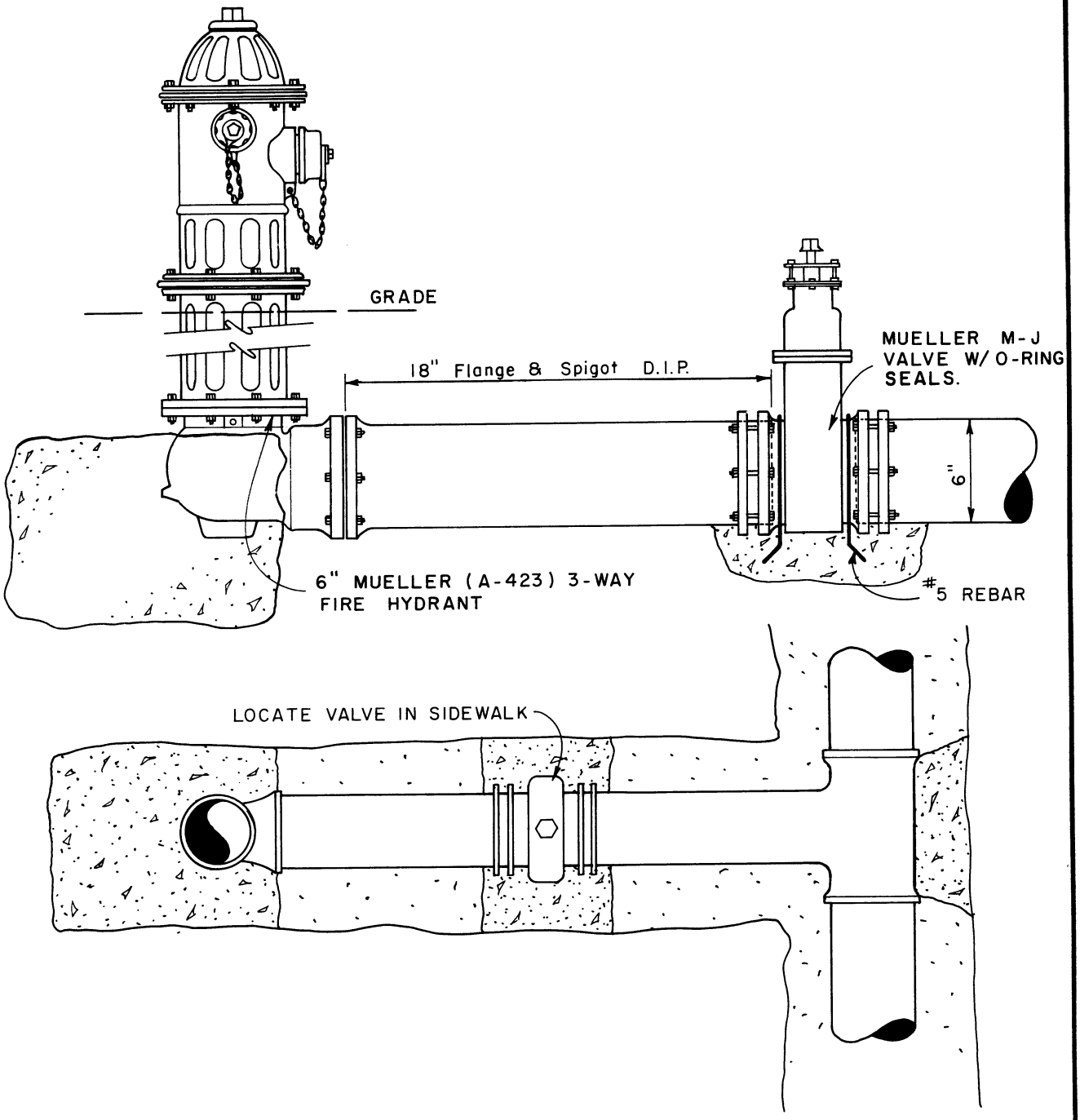
SEWER MAIN CLEANOUT

SECTION
CITY OF ELKO

DRAWING NO.
E-6

DATE
12-83

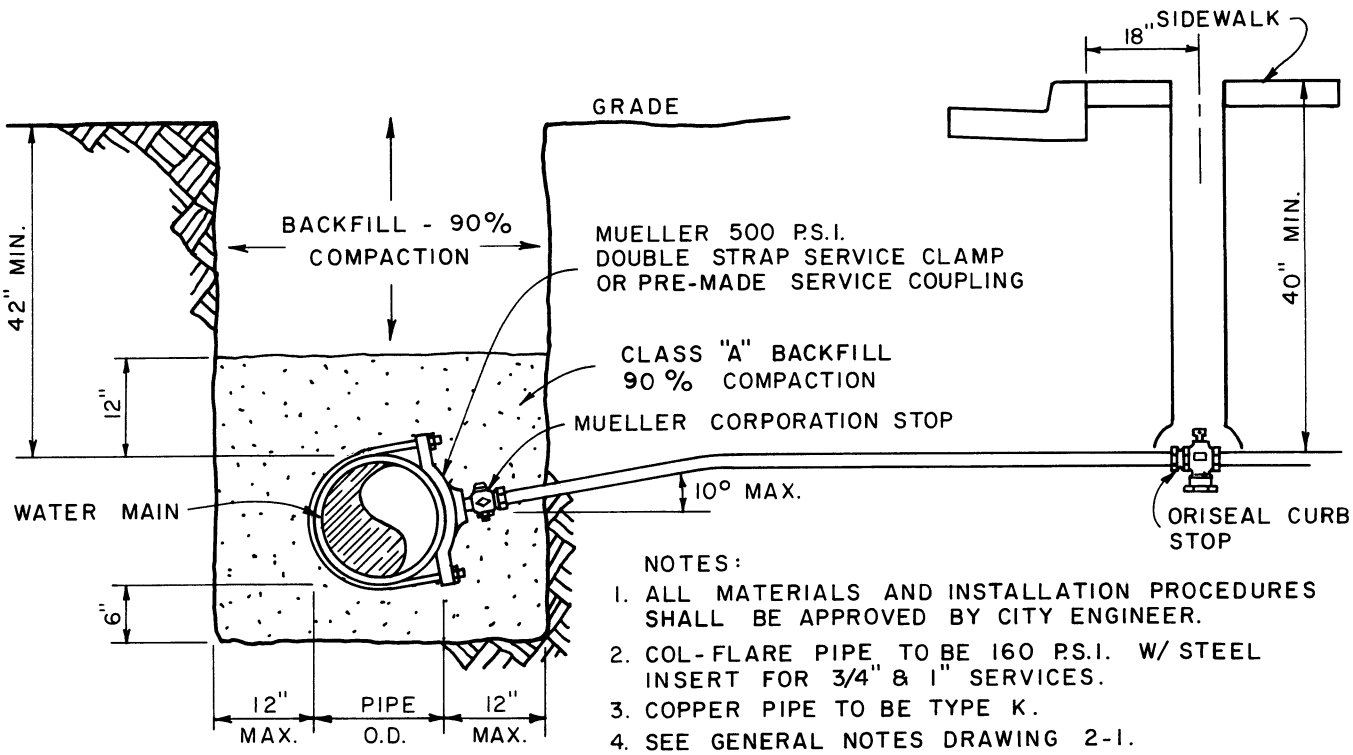
PAGE
6



NOTES:

1. FIRE HYDRANT TO HAVE TWO 2.5" HOSE NOZZLES AND ONE 4.5" PUMP NOZZLE (NATIONAL STANDARD THREADS).
2. POUR BASE AFTER HYDRANT HAS BEEN SET.
3. KEEP DRAIN HOLES CLEAR.
4. ALL MATERIALS AND INSTALLATION PROCEDURES ARE SUBJECT TO CITY ENGINEER APPROVAL.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION CITY OF ELKO
			FIRE HYDRANT	DRAWING NO. E-7
				DATE 11-83 / PAGE 7



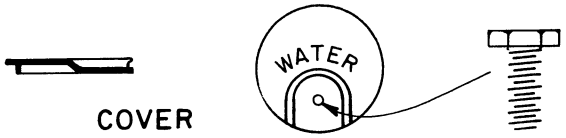
NOTES:

1. ALL MATERIALS AND INSTALLATION PROCEDURES SHALL BE APPROVED BY CITY ENGINEER.
2. COL-FLARE PIPE TO BE 160 P.S.I. W/ STEEL INSERT FOR 3/4" & 1" SERVICES.
3. COPPER PIPE TO BE TYPE K.
4. SEE GENERAL NOTES DRAWING 2-1.

WATER LINE TRENCH

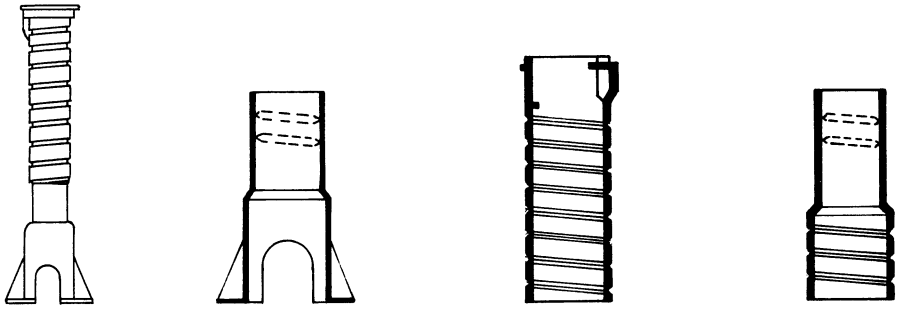
MUELLER CORPORATION STOPS			
SIZE	INLET	OUTLET	PIPE
3/4"-1"	I.P.	110 COMP.	COL-FLARE
3/4"-2"	I.P.	FLARED	COL-FLARE OR COPPER

ORISEAL CURB STOPS			
SIZE	INLET	OUTLET	PIPE
3/4"-1"	110 COMP.	I.P.	COL-FLARE
3/4"	110 COMP.	I.P.	COL-FLARE OR COPPER
1"-2"	FLARED	I.P.	COL-FLARE OR COPPER



COVER

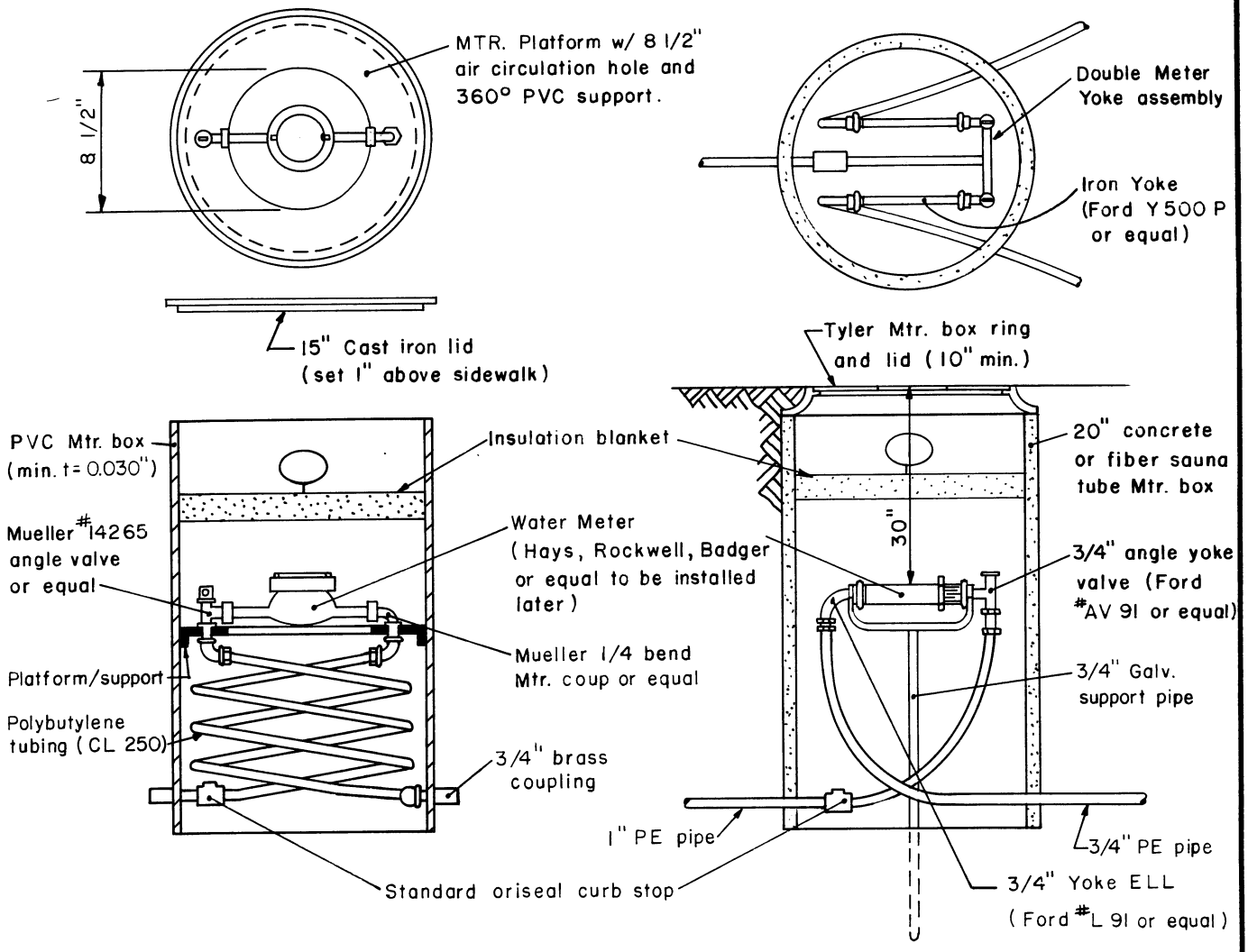
BRASS SCREW



SERVICE BOX ASSEMBLED | BASE | TOP | EXTENSION PIECE

TYLER CURB OR SERVICE BOX 93-D

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION CITY OF ELKO	
			WATER SERVICE TAP & DETAILS	DRAWING NO. E-8	
				DATE 11 83	PAGE 8



TYPE 1

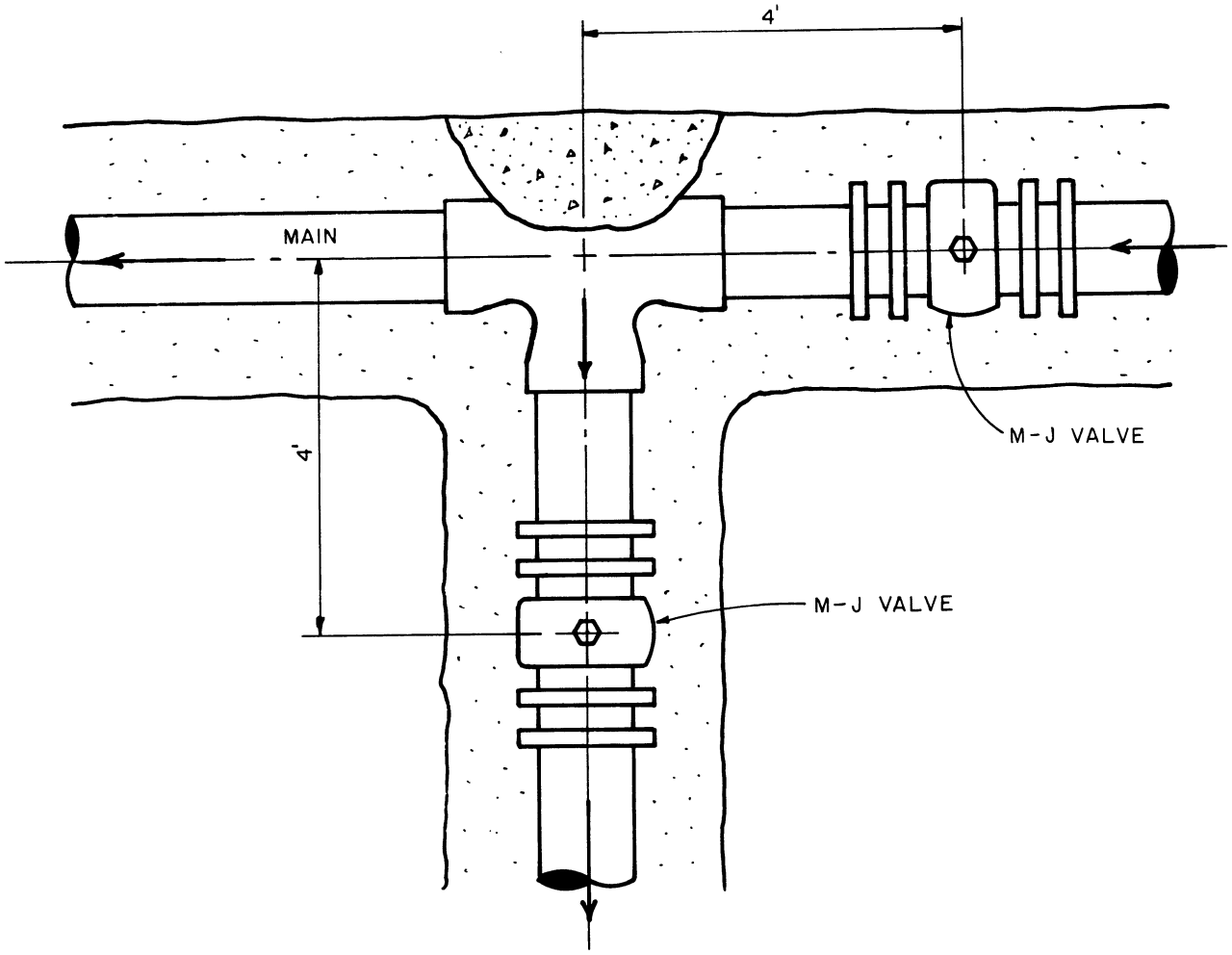
TYPE 2

(PRIOR APPROVAL REQUIRED)

NOTES:

1. WITH DUAL SERVICE, INSTALL LOCKING ANGLE VALVE. NO ANGLE VALVE REQUIRED ON SINGLE SERVICE – TYPE 2 ONLY.
2. USE PVC OR GALV. PIPE IDLER W/ FORD EXPANSION CONNECTION WHEN METER NOT INSTALLED ON TYPE 2 METER ASSEMBLY.
3. ALL FITTINGS TO BE I.P. THREAD ON TYPE 2 METER ASSEMBLY.
4. ALL HOSE CONNECTIONS TO BE TROJAN 3/4" BRASS BARB ON TYPE 1 ASSEMBLY.
5. ALL INSTALLATION PROCEDURES AND MATERIALS SHALL BE ONLY AS APPROVED BY THE CITY ENGINEER.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION CITY OF ELKO
			WATER METER	DRAWING NO. E-9
				DATE 12-83 / PAGE 9



NOTES:

1. PVC PIPE TO BE MINIMUM CLASS 150 WITH CAST IRON O.D.'S AND SHALL CONFORM TO AWWA 900 STANDARDS.
2. DUCTILE IRON PIPE TO BE MINIMUM CLASS 50 AND SHALL CONFORM TO ANSI 21.50.
3. ALL MATERIALS AND INSTALLATION PROCEDURES SHALL BE APPROVED BY THE CITY OF ELKO ENGINEER.
4. MUELLER AWWA MECHANICAL-JOINT GATE VALVES TO BE USED WITH PIPE SIZES 2"-12" AND SHALL CONFORM TO ANSI A21.11.
5. MUELLER AWWA MECHANICAL-JOINT BUTTERFLY VALVES TO BE USED WITH PIPE SIZES 14" OR MORE AND SHALL CONFORM TO ANSI A21.11.
6. PROVIDE BUILDING PAPER BETWEEN THRUST BLOCK AND VALVE/TEE BODY.

NO.	REVISION	DATE
1	NOTE 6	10-16-86

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

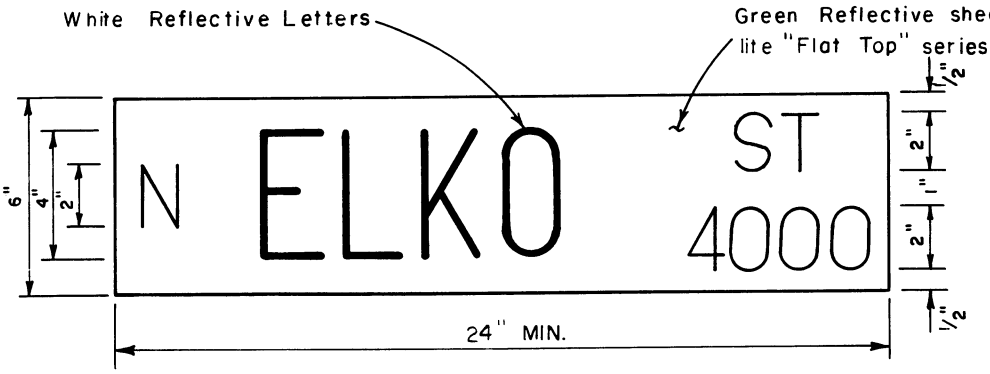
WATER VALVE DETAILS

SECTION: CITY OF ELKO

DRAWING NO.: E-10

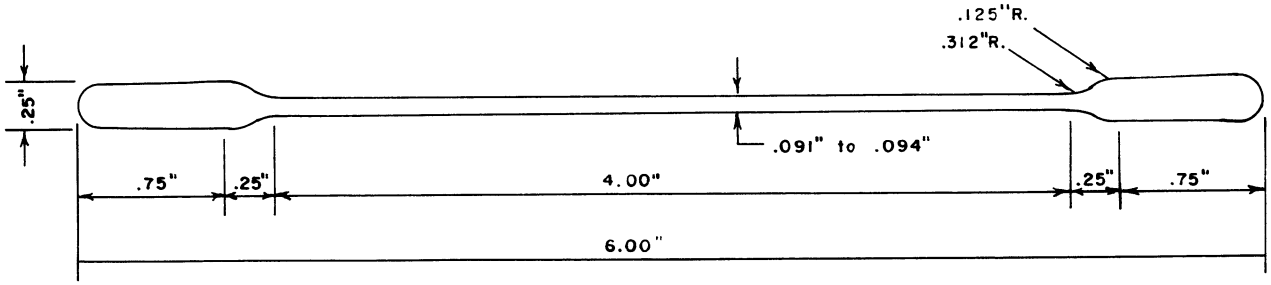
DATE: 12-83

PAGE: 10

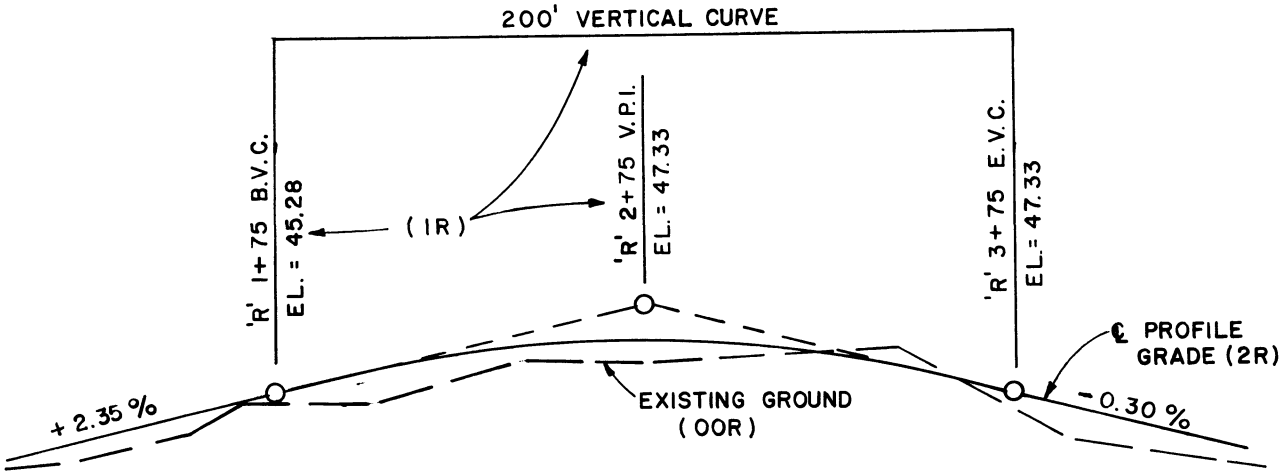


1. Street name sign shall be in conformance with the latest edition of the M.U.T.C.D.

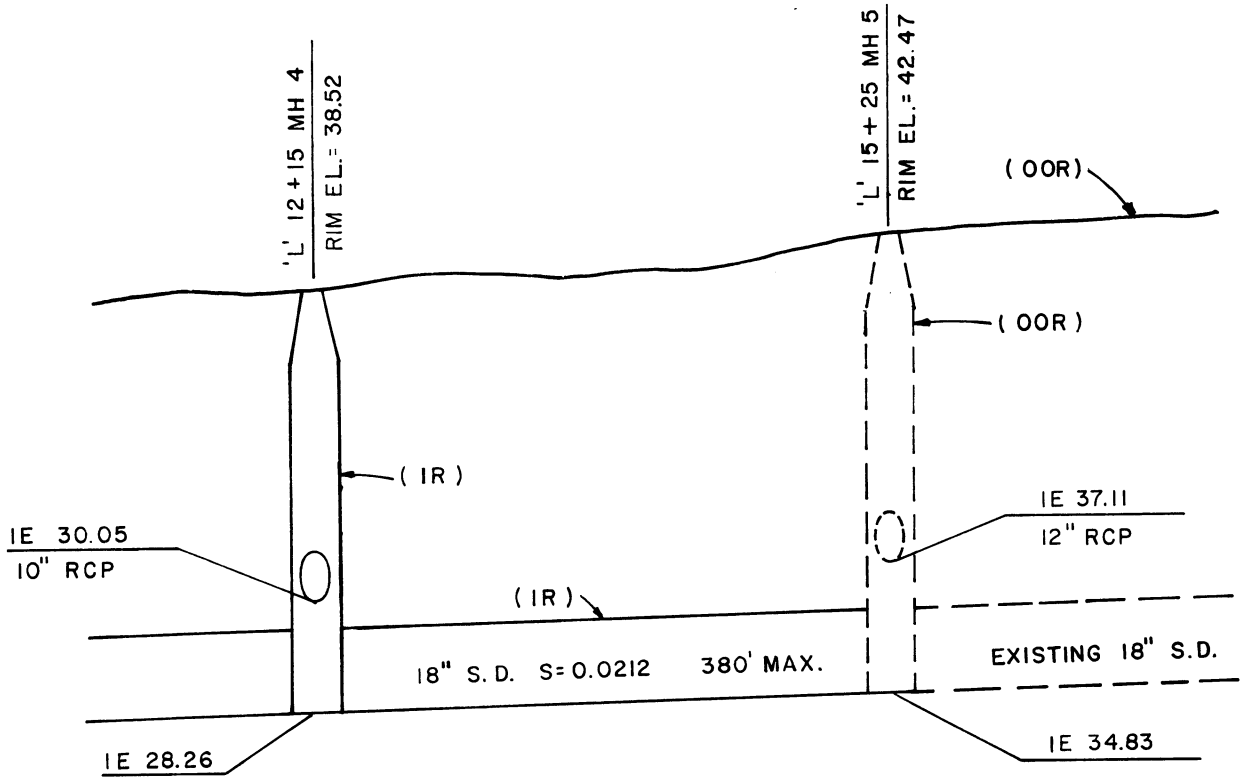
2. Reflective materials shall be mounted on extruded aluminum No. 6063-T6, with a min. thickness of 0.091" (See Detail Below)



NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION CITY OF ELKO	
			STREET NAME SIGN	DRAWING NO. E-11	
				DATE 12-83	PAGE 11



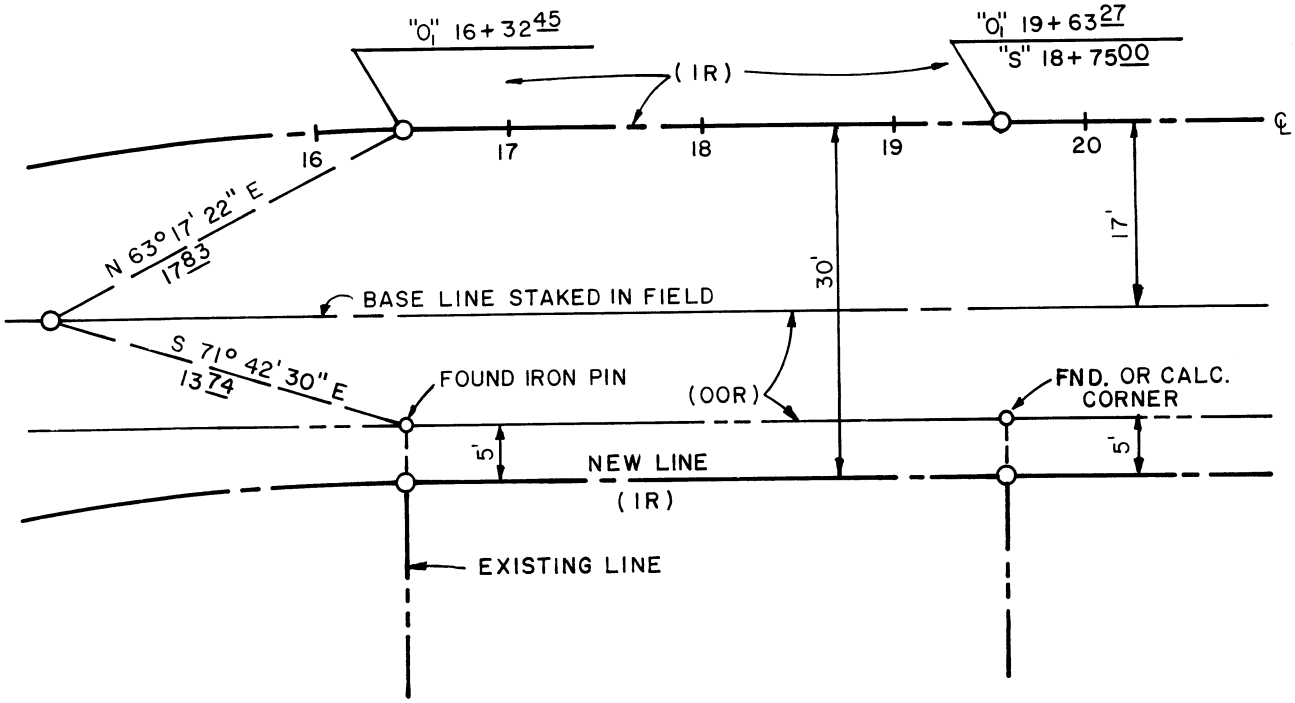
STREET PROFILE GRADE

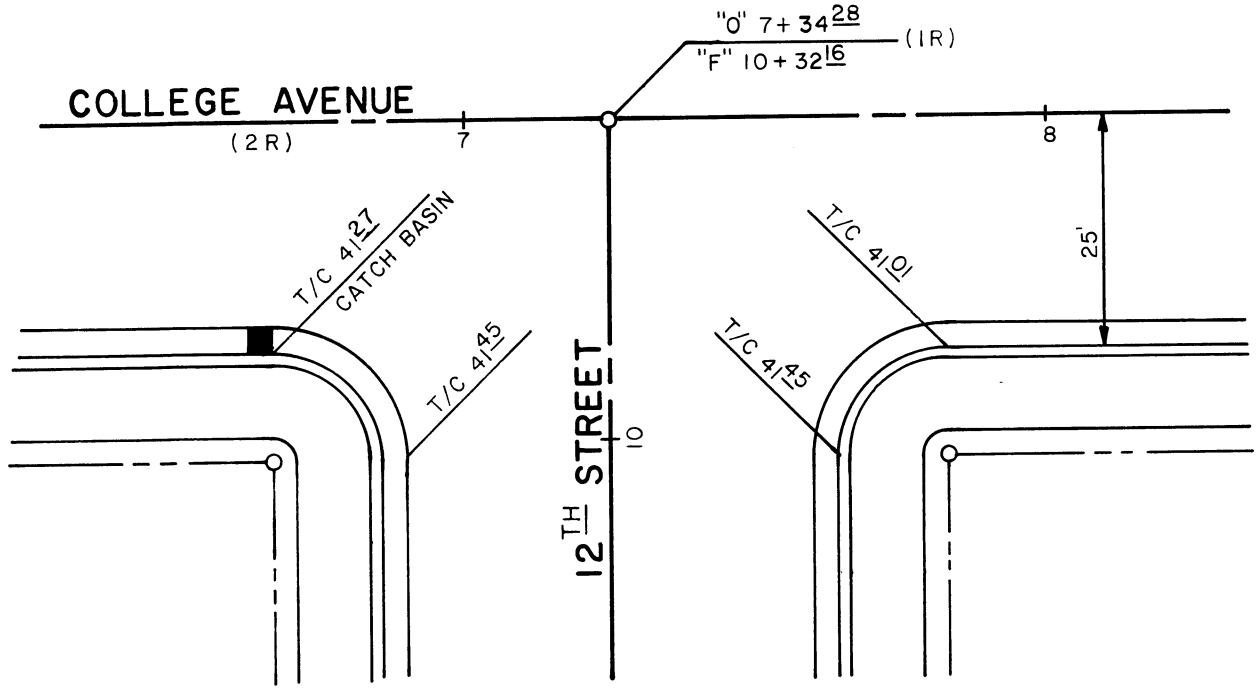


NEW CONSTRUCTION EXISTING CONDITIONS

STORM DRAIN & SANITARY SEWER PROFILE

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION CITY OF ELKO	
1	SPELLING	10-16-86	STANDARD DRAFTING SYMBOLS	DRAWING NO. E-12	
				DATE 12-83	PAGE 12





CONSTRUCTION CENTERLINE, RIGHT-OF-WAY, PROPERTY AND SURVEY BASE LINES

NO.	REVISION	DATE
1	SPELLING	10-16-86

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

STANDARD DRAFTING SYMBOLS

SECTION
CITY OF ELKO

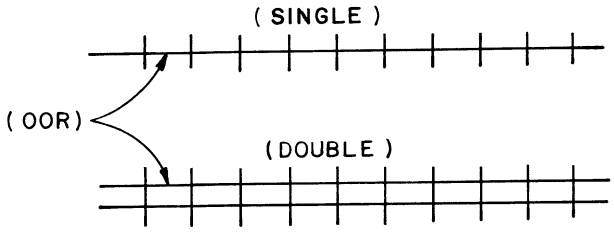
DRAWING NO.
E-13

DATE
12-83

PAGE
13

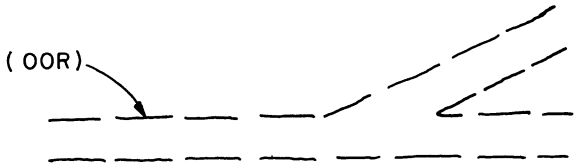
STONE WALL

RURAL MAIL BOX

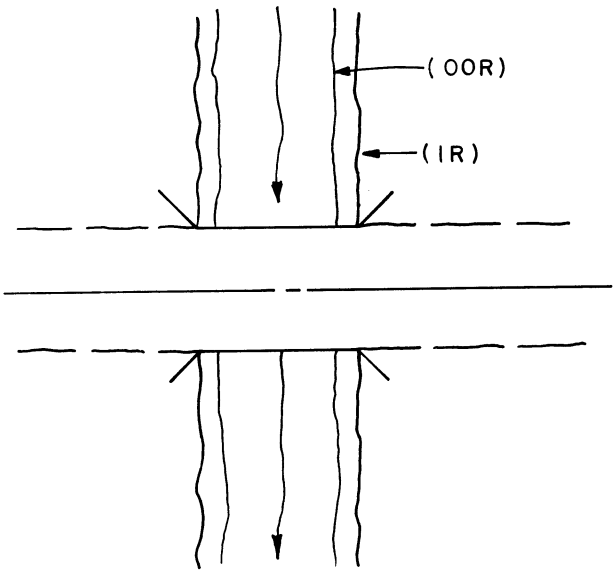


RAILROAD

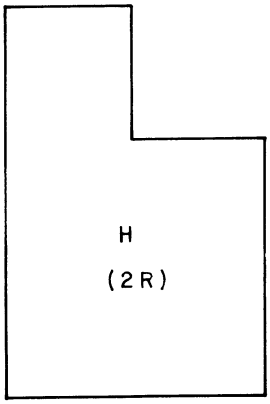
WATER VALVE



EXISTING ROAD OR TRAVELED WAY



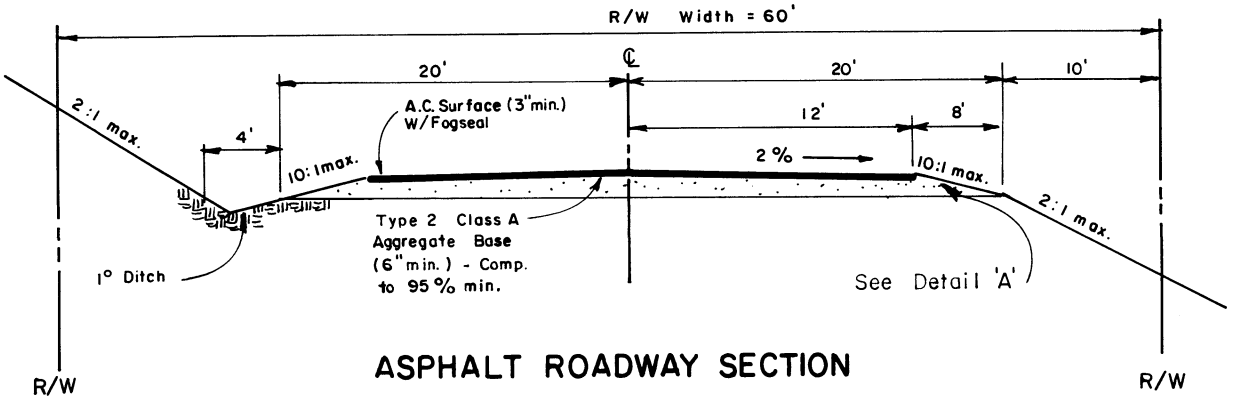
BRIDGE



H-HOUSE
G-GARAGE
M-MERCH. OR STORE
B-BARN
W-WAREHOUSE
S-SHED
SS-SERVICE STATION

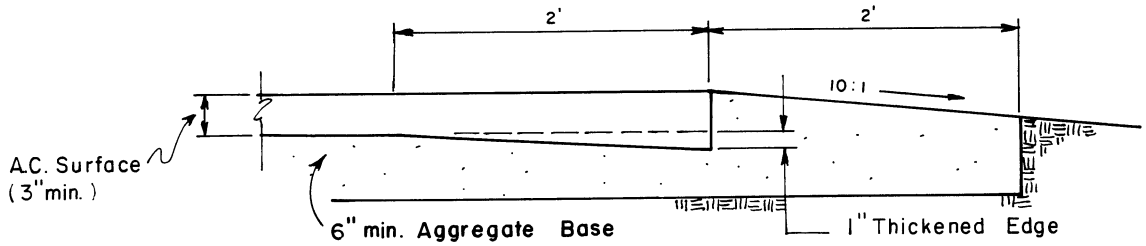
BUILDINGS

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION CITY OF ELKO	
			STANDARD DRAFTING SYMBOLS	DRAWING NO. E-14	
				DATE 12-83	PAGE 14

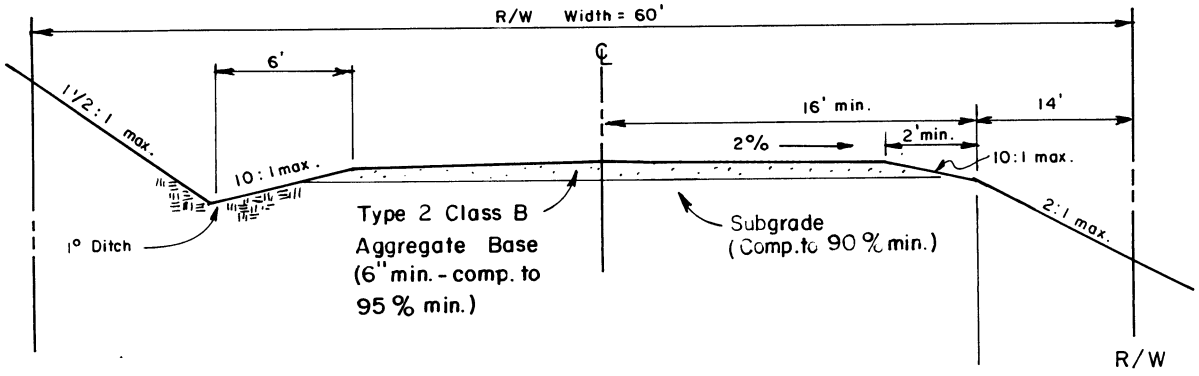


ASPHALT ROADWAY SECTION

NOTE : Structural section by Engineering design, but not less than 3" A. C. on 6" base.

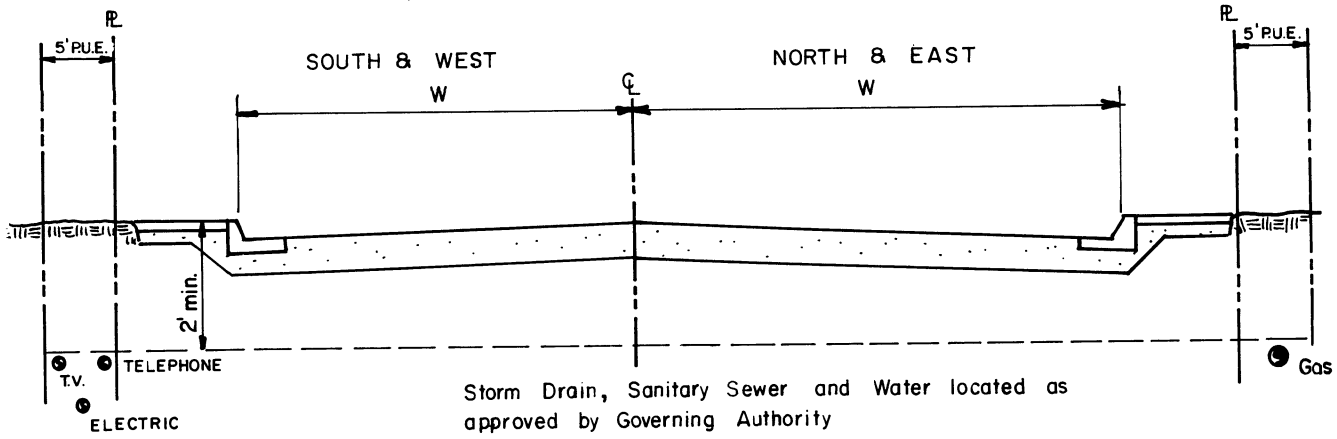


DETAIL 'A'



GRAVEL ROADWAY SECTION

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION EUREKA
			ROADWAY SECTIONS	DRAWING NO. EU-1 (314,319)
				DATE 12-83 / PAGE 1



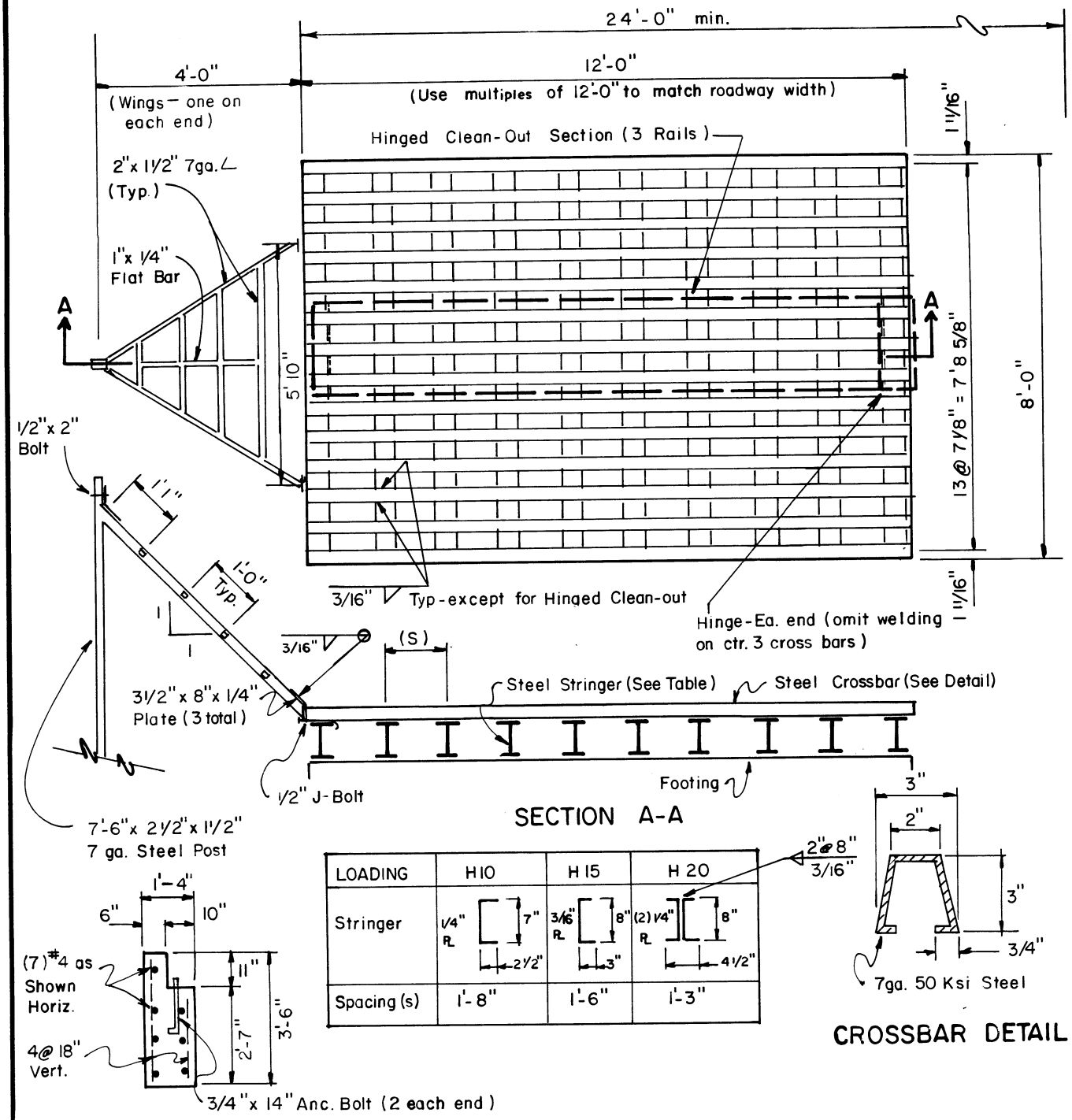
Storm Drain, Sanitary Sewer and Water located as approved by Governing Authority
(Min. Cover on Water Mains =48")

TYPICAL SECTION 'C'

NOTES :

1. Telephone, T.V., and gas locations will be coordinated with the corresponding agency.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION EUREKA	
			TYPICAL UTILITY MAIN LOCATIONS	DRAWING NO. EU-2	
				DATE 12-83	PAGE 2



LOADING	H10	H15	H20
Stringer	¼" R, 7", 2½"	3/16" R, 8", 3"	(2) ¼" R, 8", 4½"
Spacing (s)	1'-8"	1'-6"	1'-3"

FOOTING DETAIL

NOTES:

1.) Cattle Guard by Goshute Enterprises or equal.

2.) All Struc. Steel to receive one coat of Cat. Yellow Synthetic Enamel (100% Alkyd.)

3.) Footing to be 3000 psi Conc. Provide (2) ½"x 8" Lifting Chains connected to Reinf. Steel.

4.) For different loads or additional details, consult with Goshute Enterprises.

NO.	REVISION	DATE
1	SPELLING	10-16-86

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

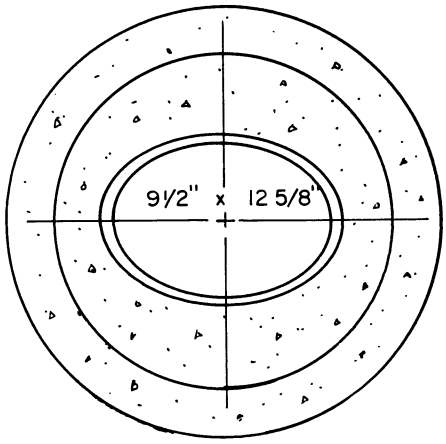
STEEL CATTLEGUARD

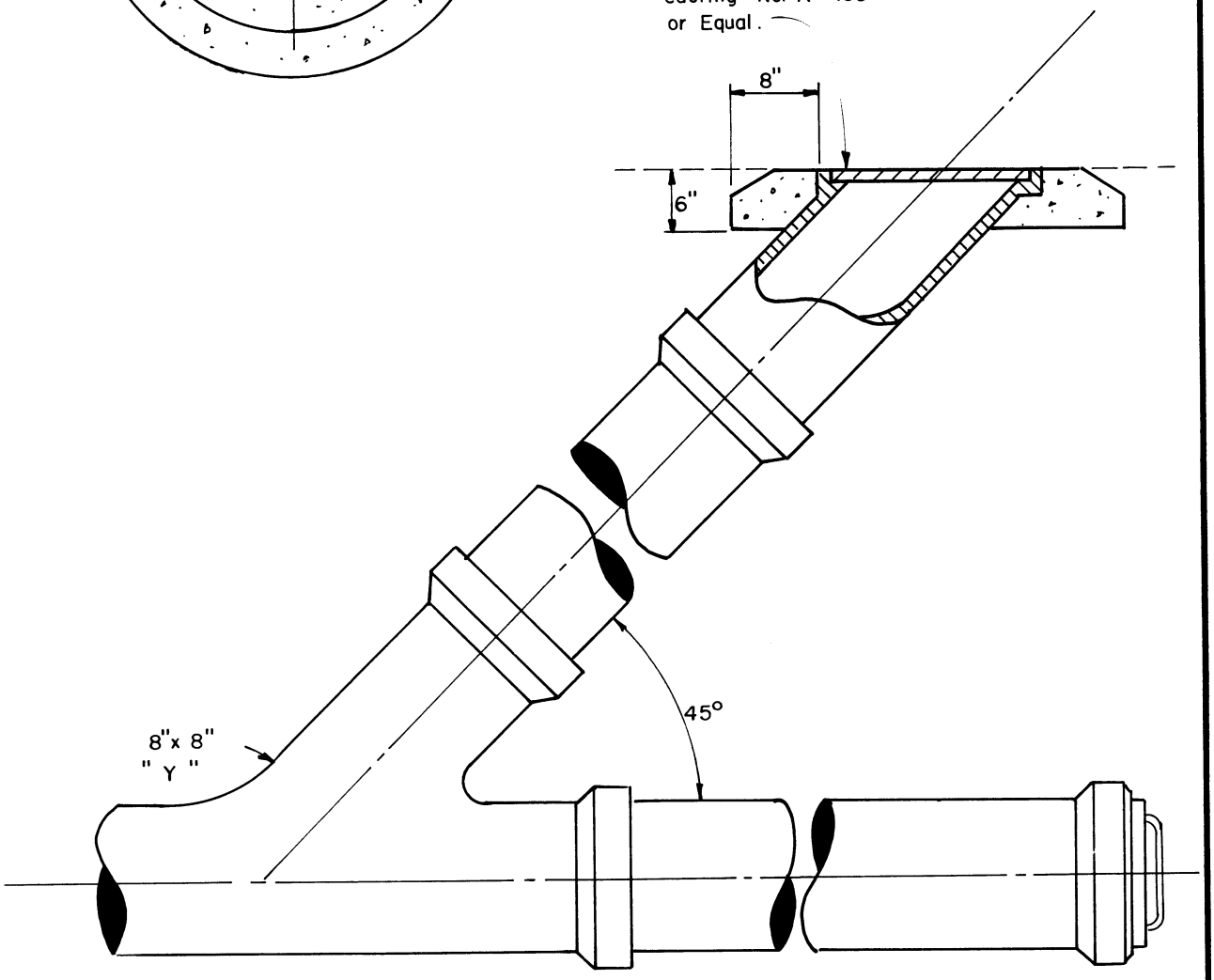
SECTION EUREKA

DRAWING NO. EU-3

DATE 12-83

PAGE 3



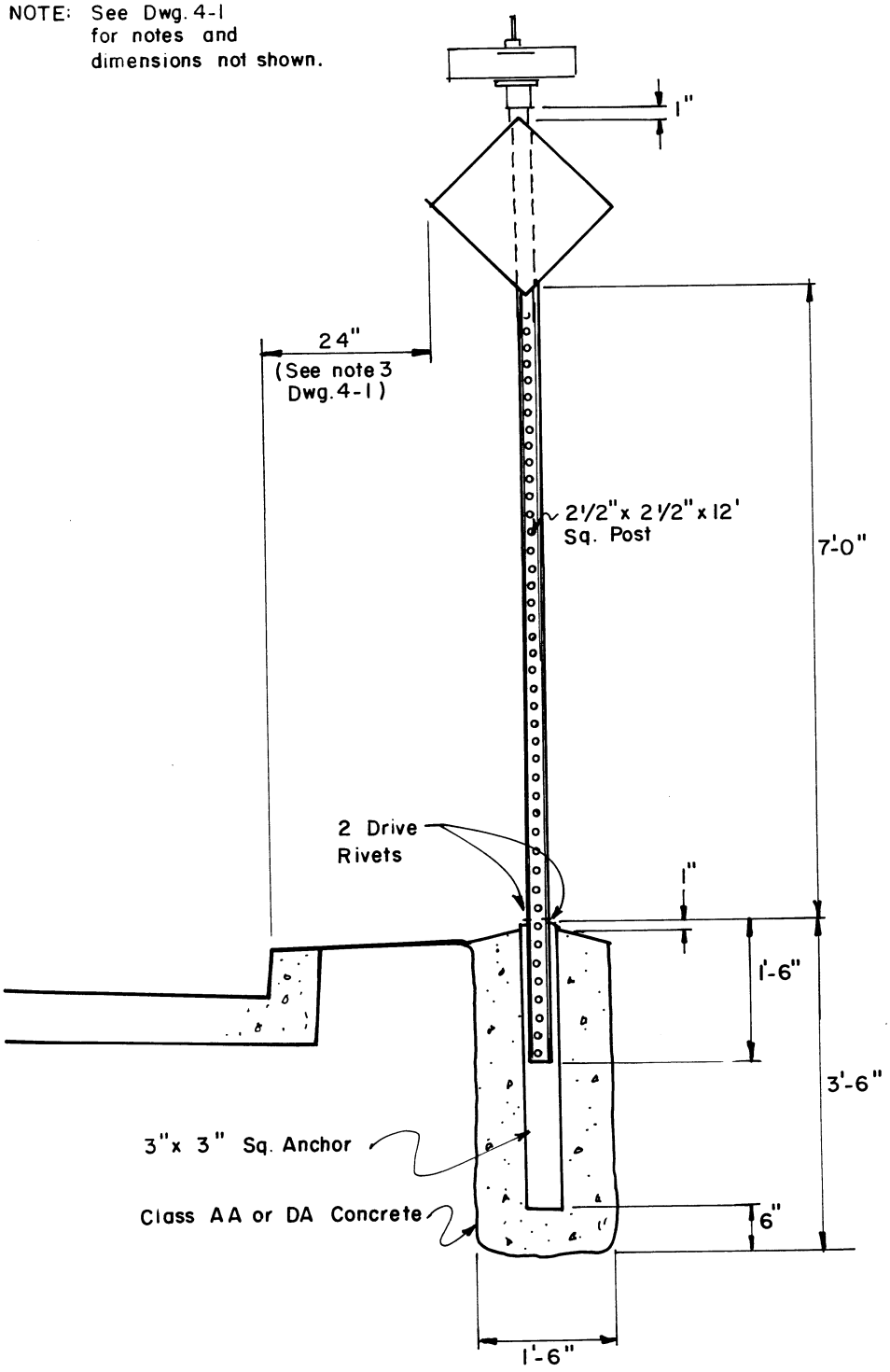


NOTE :

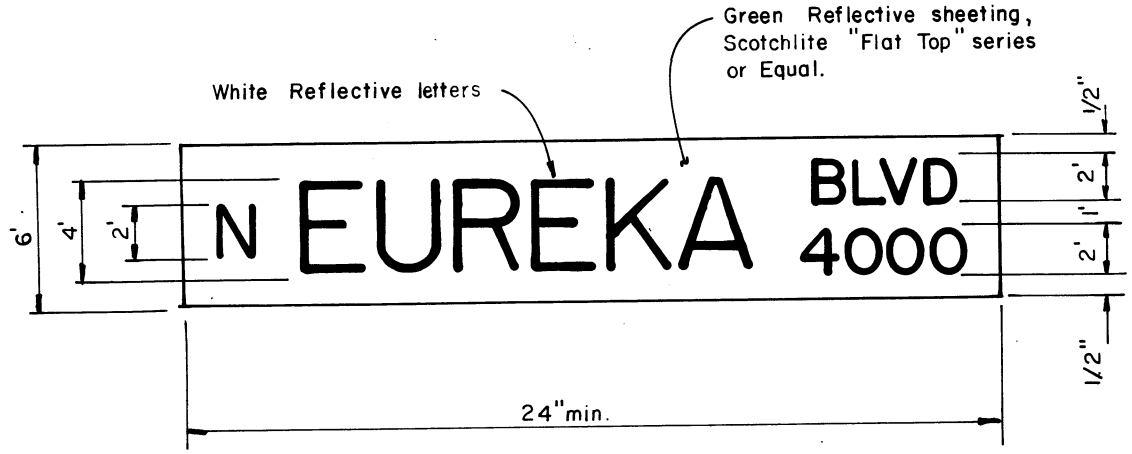
Cleanouts permitted only on dead-end lines serving 4 or less lots or buildings.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION EUREKA	
			SEWER MAIN CLEANOUT	DRAWING NO. EU-4	
				DATE 12-83	PAGE 4

NOTE: See Dwg. 4-1 for notes and dimensions not shown.



NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION EUREKA
			STREET SIGN POST	DRAWING NO. EU-5 (330)
				DATE 12-83 / PAGE 5



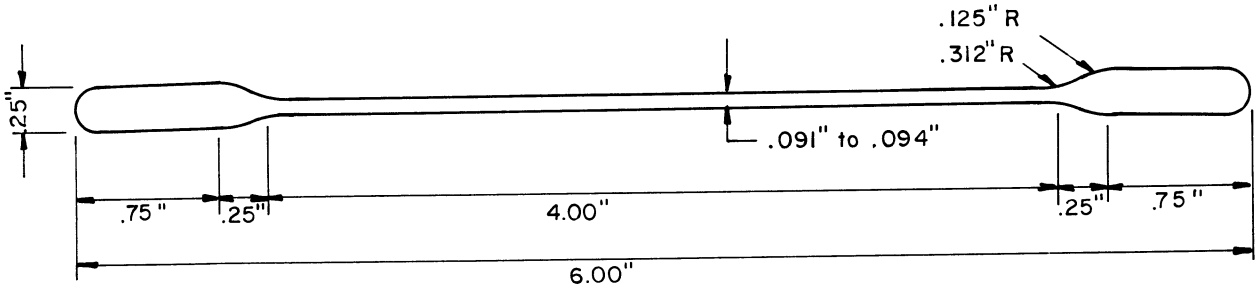
NOTES :

1.) Street name sign shall be in conformance with the latest edition of the M.U.T.C.D.

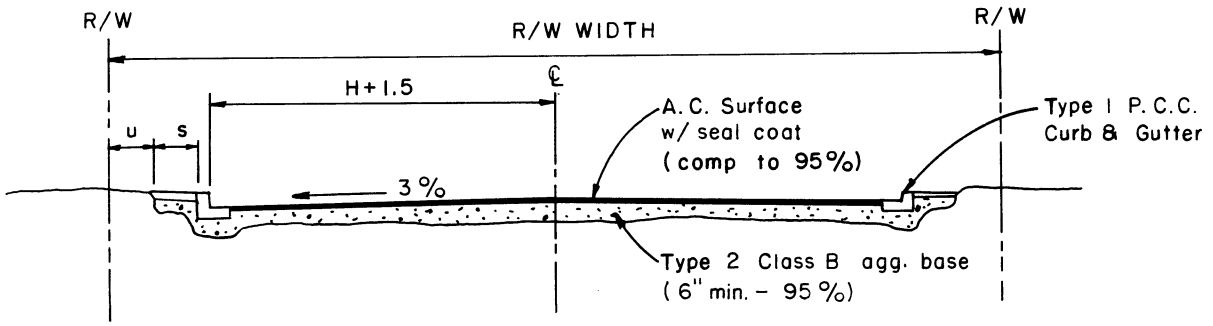
2.) Reflective materials shall be mounted on :

a.) Fiberglass plate as manufactured by the Carsonite Co. or approved equal, or

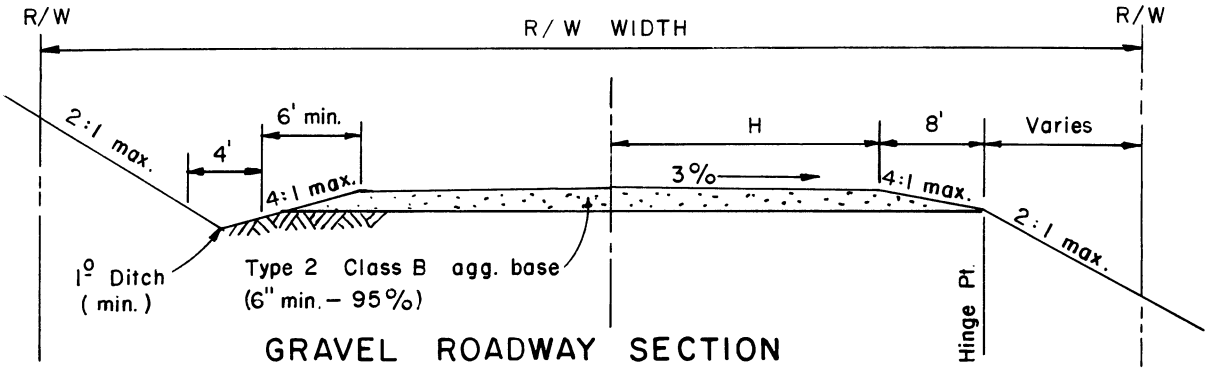
b.) Extruded aluminum No. 6063-T6, with a min. thickness of 0.091" (See Detail Below)



NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION EUREKA	
			STREET NAME SIGN	DRAWING NO. EU-6 (330)	
				DATE 12-83	PAGE 6



ASPHALT ROADWAY SECTION



GRAVEL ROADWAY SECTION

R/W WIDTH	H	S	U	NOTES OR REMARKS
100	15	4	29	Future Secondary (Min. 3" A.C.)
80	15	4	19	Arterial (Min. 3" A.C.)
60	12	4	12	General (Min. 2" A.C.)

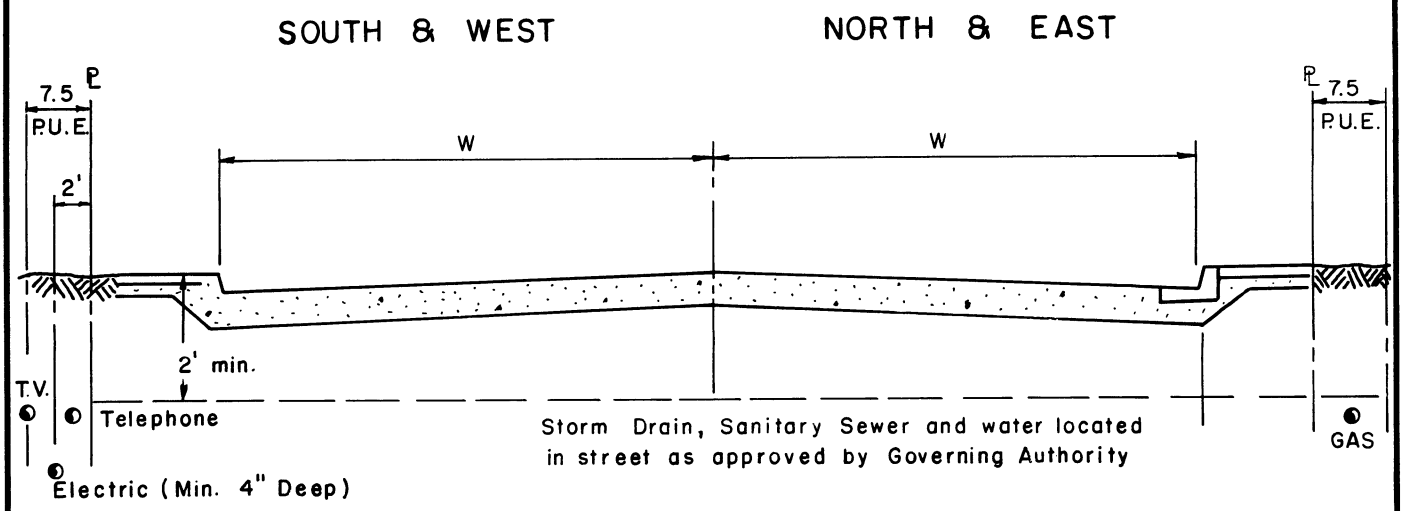
SEE DRAWING NO. H-1.2 FOR ROADWAY GENERAL NOTES.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION HUMBOLDT	
			ROADWAY SECTIONS	DRAWING NO. H-1.1 (319)	
				DATE 12-83	PAGE 1

NOTES:

1. STRUCTURAL SECTION SHALL BE BASED ON ENGINEERING DESIGN, BUT IN NO CASE SHALL IT BE LESS THAN THE MINIMUMS SPECIFIED ON DWG. NO. H-1.1 .
2. SEAL COAT WILL BE AS APPROVED BY THE COUNTY.
3. THE 3" A. C. SURFACE WILL BE PLACED IN TWO LIFTS OF APPROXIMATELY UNIFORM THICKNESS.
4. THE LOWER 3" OF THE BASE COURSE MAY BE 3" MINUS PIT RUN OR BETTER.
5. ROADS IN SUBDIVISIONS OF ONE (1) ACRE LOTS OR LARGER SHALL HAVE A GRAVEL ROADWAY SECTION. ROADS IN SUBDIVISIONS OF LESS THAN ONE (1) ACRE LOTS BUT MORE THAN 1/2 ACRE LOTS WILL HAVE PAVED SURFACE BUT MAY NOT REQUIRE CURBS AND GUTTERS. ROADS IN SUBDIVISIONS OF LESS THAN 1/2 ACRE LOTS WILL HAVE AN ASPHALT ROADWAY SECTION WITH CURB AND GUTTERS. SIGNS NECESSARY FOR TRAFFIC CONTROL AND INFORMATION SHALL BE INSTALLED BY THE DEVELOPER. THESE SIGNS SHALL CONFORM TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION HUMBOLDT	
			ROADWAY GENERAL NOTES	DRAWING NO. H— 1.2	
				DATE 12 - 83	PAGE 2

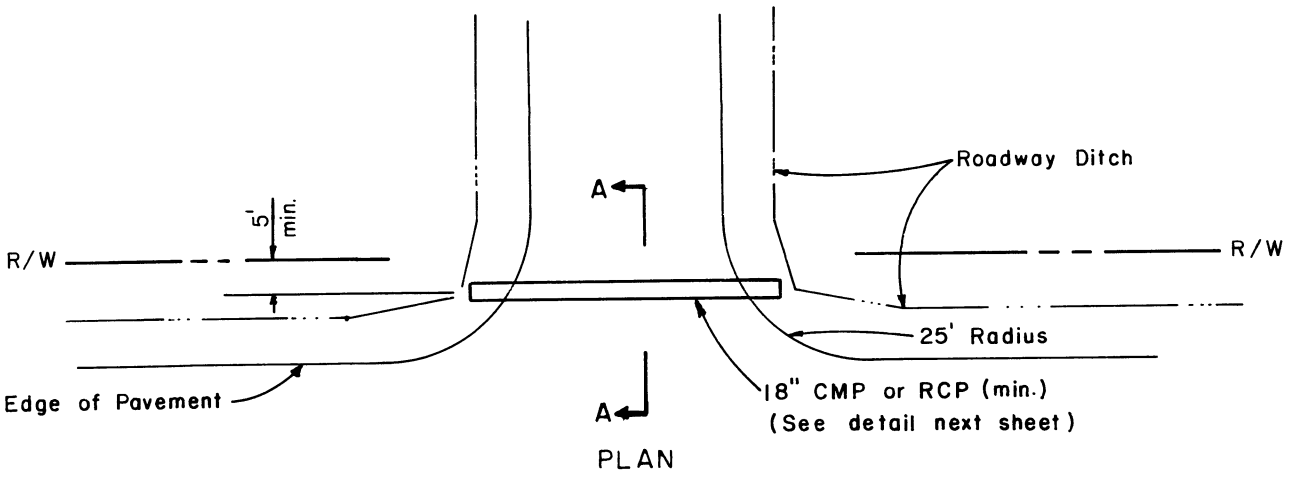


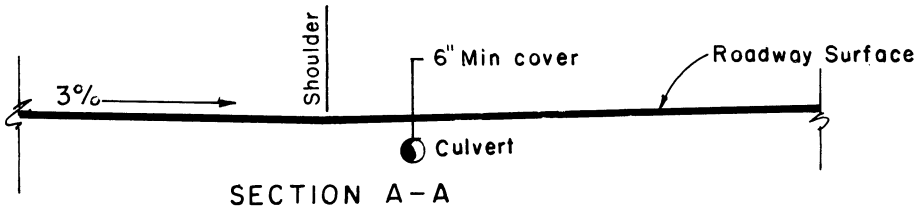
NOTE :

1. TELEPHONE , T.V., AND GAS LOCATIONS WILL BE COORDINATED WITH THE CORRESPONDING AGENCY.
2. METALLIC LOCATION TAPE SHALL BE INSTALLED 12" (MIN.) ABOVE WATER MAINS.

TYPICAL SECTION "C"

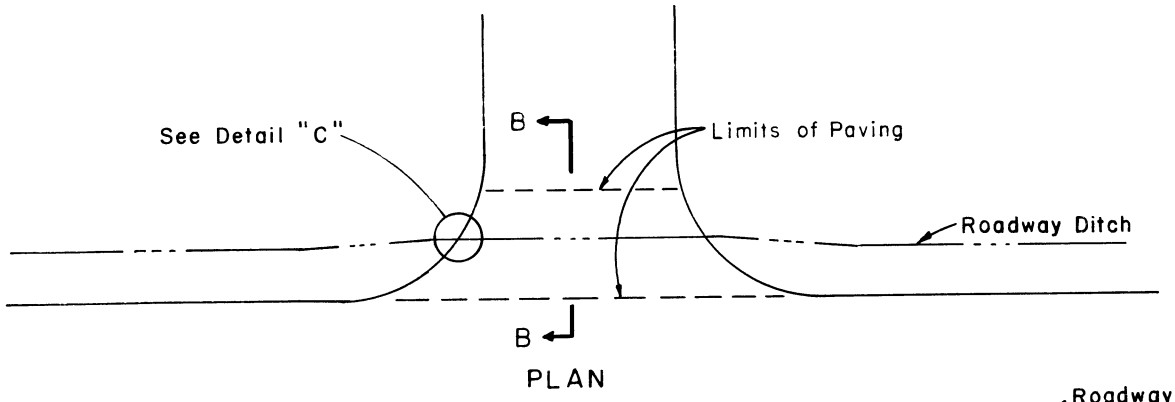
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION HUMBOLDT	
			TYPICAL UTILITY MAIN LOCATIONS	DRAWING NO. H-2	
				DATE 12-83	PAGE 3

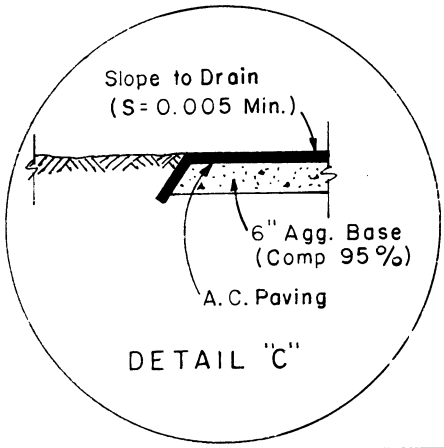


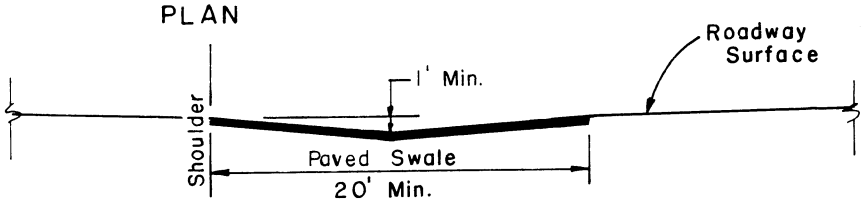


SECTION A-A

TYPE 'A' APPROACH







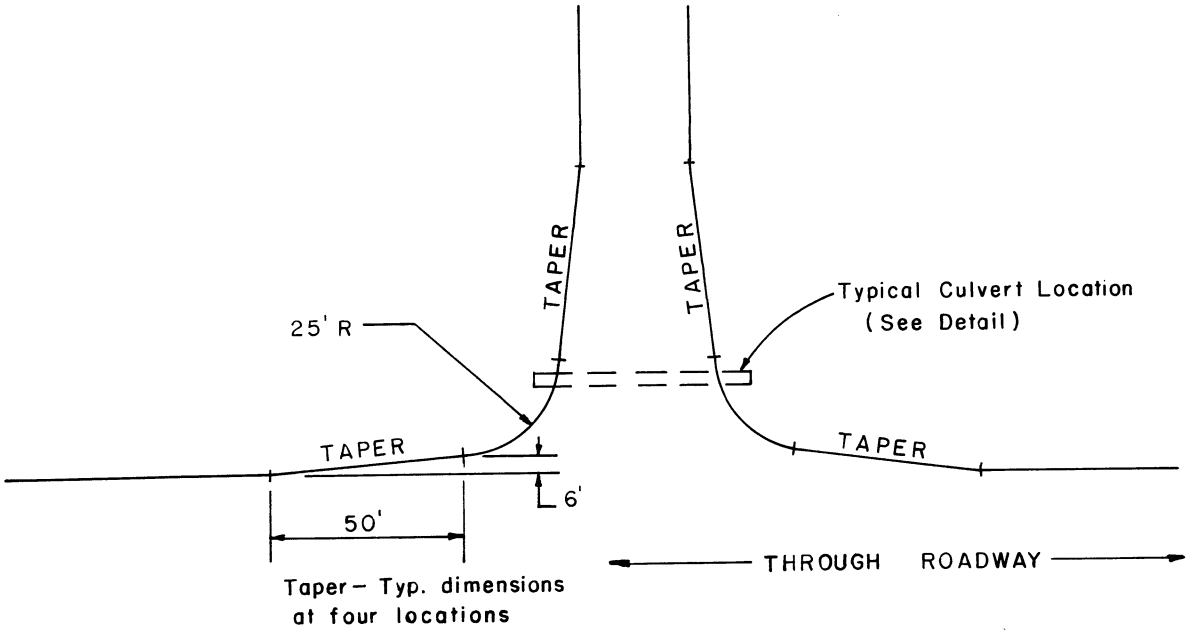
SECTION B-B

NOTE:

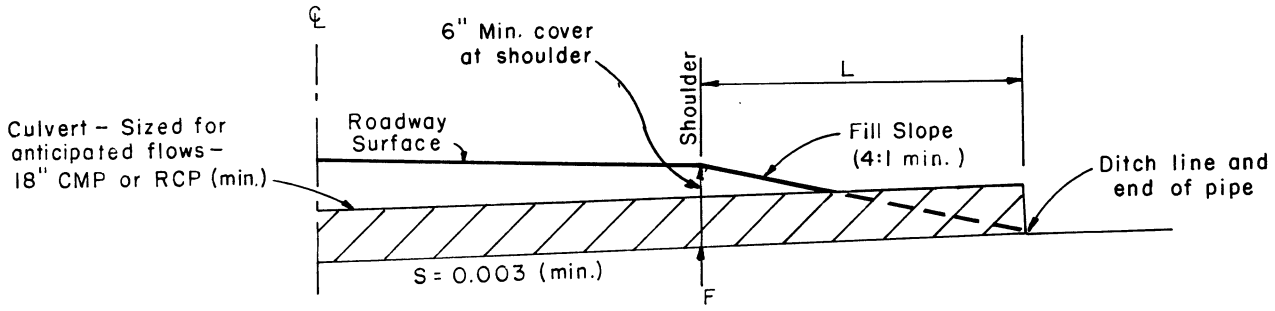
A.C. Paving thickness to match contiguous paving or be 3" when in gravel roadway. All A.C. to receive a fog seal.

TYPE 'B' APPROACH

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION HUMBOLDT	
			# APPROACHES	DRAWING NO. H-3.1	
				DATE 12-83	PAGE 4



TYPE 'AA' APPROACH
(LARGE TRUCK – COMMERCIAL)



F = Distance from Flow – Line to finish shoulder.

L = Length of culvert outside shoulder (min.)

L = F x Fill Slope

TYPICAL CULVERT INSTALLATION

NO.	REVISION	DATE
1	SPELLING	10-16-86

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

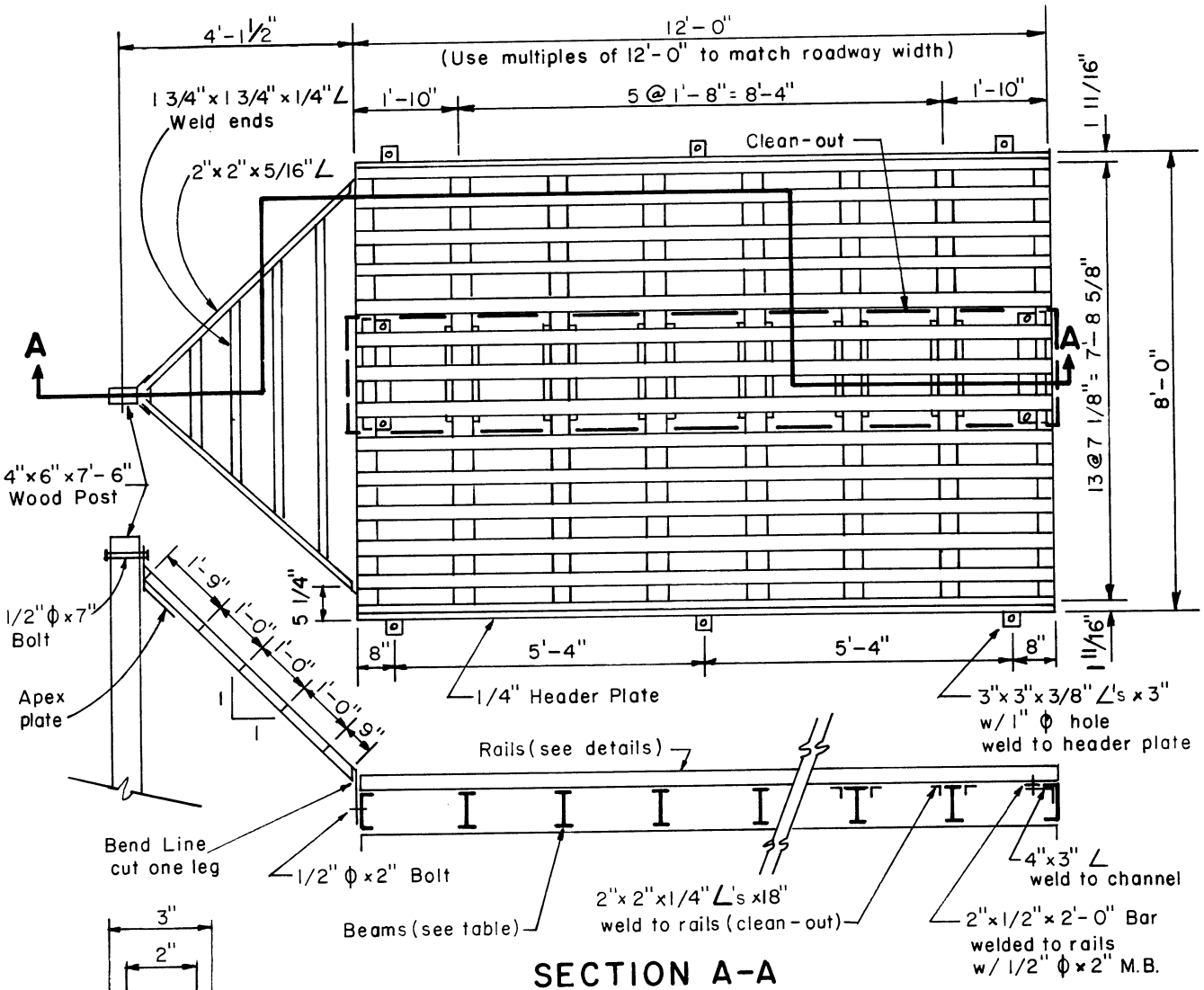
APPROACHES

SECTION
HUMBOLDT

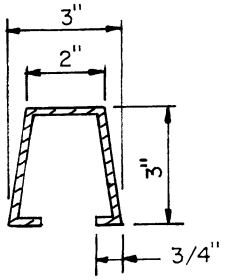
DRAWING NO.
H – 3.2

DATE
12 – 83

PAGE
5

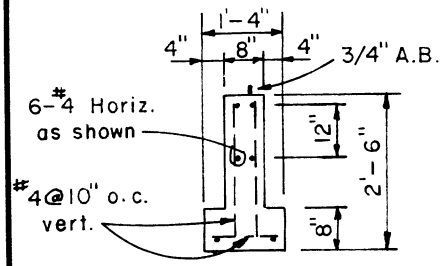


SECTION A-A



RAIL SECTION

Cold Rolled - A 36 Steel



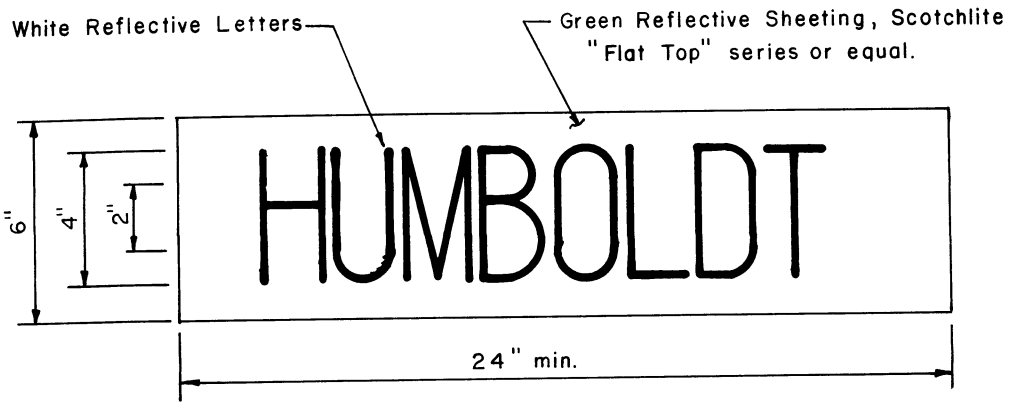
FOOTING SECTION

LOADING	H 10	H 15	H 20
BEAM	C 7x9.8	W 8x10 C 8x11.5	W 8x15
RAIL	10 ga.	10 ga.	8 ga.

NOTES:

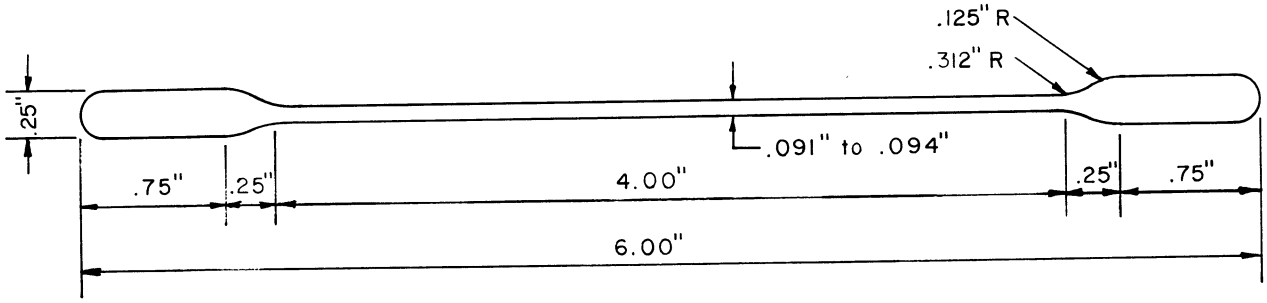
1. Cattle guard by Powder River or approved equal.
2. Footing to be Class AA or DA conc. (3000 psi) and have lifting hooks 1'-6" from each end.
3. For different loads or additional details, consult with Powder River.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION HUMBOLDT
			STEEL CATTLEGUARD	DRAWING NO. H-4
				DATE 12-83 / PAGE 6

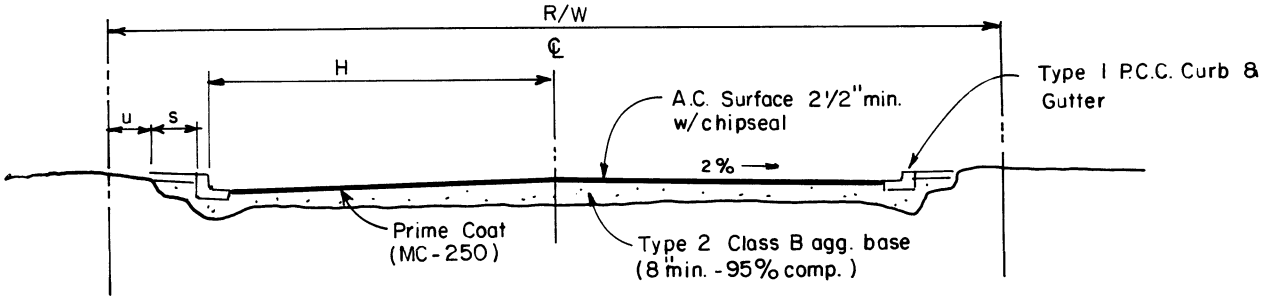


NOTES:

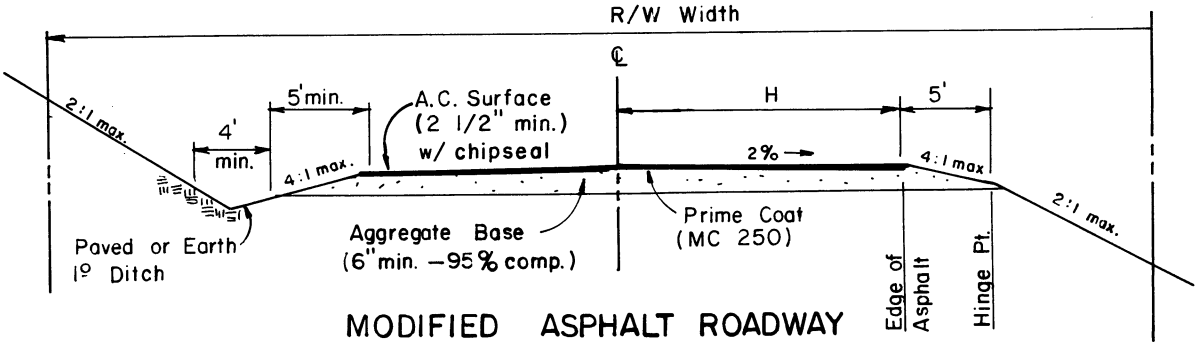
1. STREET NAME SIGN SHALL BE IN CONFORMANCE WITH THE LATEST EDITION OF THE M.U.T.C.D.
2. REFLECTIVE MATERIALS SHALL BE MOUNTED ON EXTRUDED ALUMINUM NO. 6063-T6 (SEE DETAIL BELOW).



NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION HUMBOLDT	
			STREET NAME SIGN	DRAWING NO. H-5 (330)	
				DATE 12-83	PAGE 7

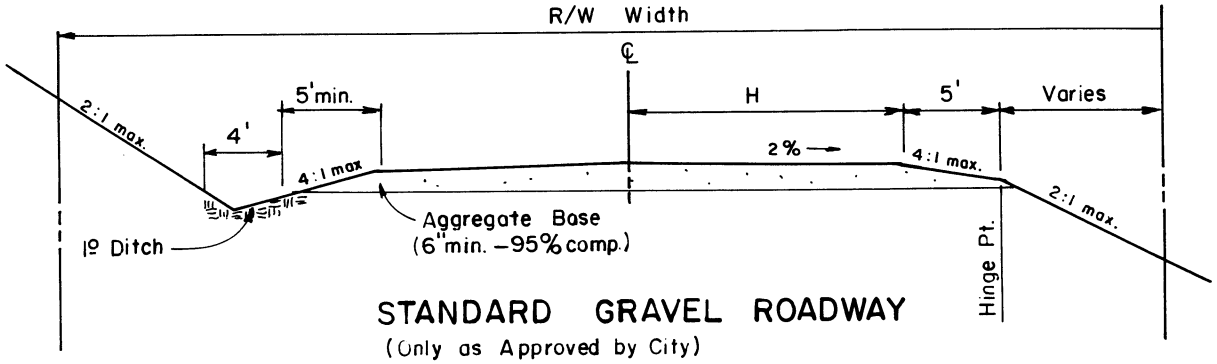


STANDARD ASPHALT ROADWAY



MODIFIED ASPHALT ROADWAY

(Only as Approved by City)



STANDARD GRAVEL ROADWAY

(Only as Approved by City)

R/W Width	H	S	U	Notes or Remarks
80	20	4	15.5	Major Arterial
60	20	4	5.5	Collector or Minor Residential

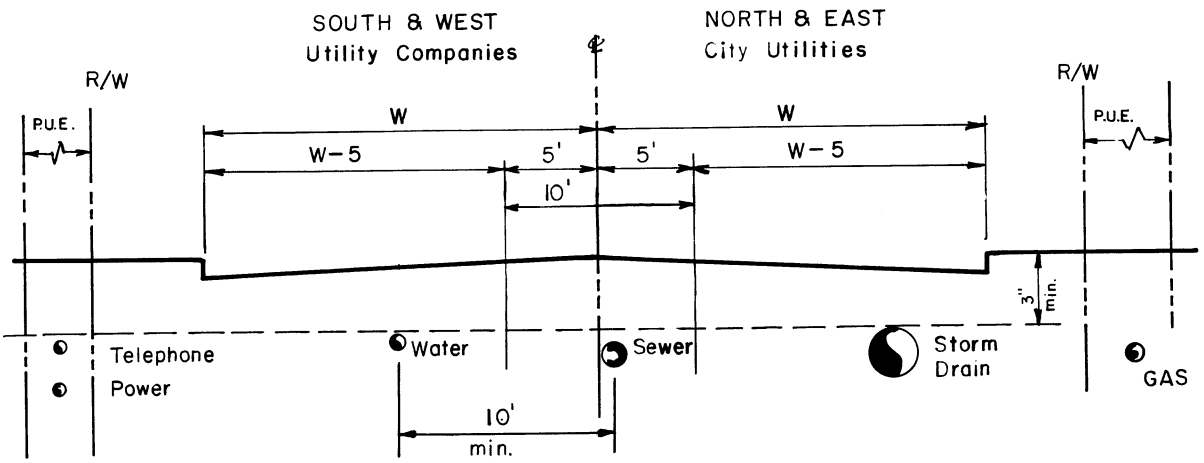
Notes :

1.) Structural Section by engineering design, but not less then the minimum shown above

2.) A.C. Curb may be substituted for P.C.C. Curb and gutter only as approved by the City.

3.) All paving shall be preceded by Prime Coat.

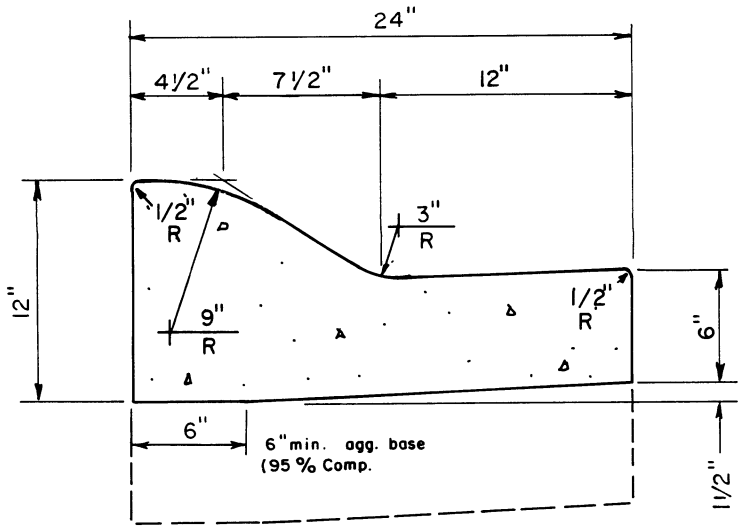
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION LOVELOCK
			ROADWAY SECTIONS	DRAWING NO. LO-1
				DATE 12-83 / PAGE 1



MODIFIED TYPICAL SECTION "A"

NOTE: FOR UTILITIES IN COMMON TRENCH SEE STANDARD DWG. #1-3

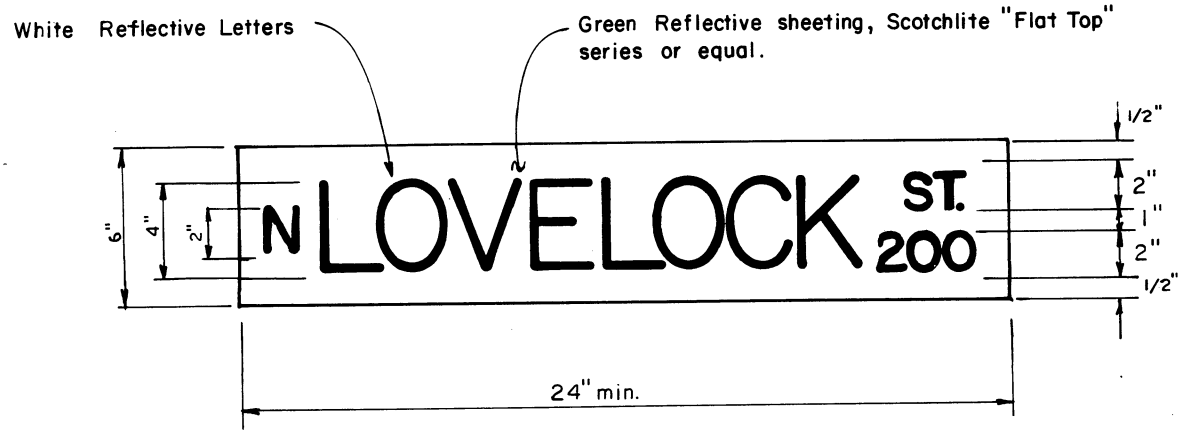
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION LOVELOCK
			TYPICAL UTILITY MAIN LOCATIONS	DRAWING NO. LO-2 (142)
				DATE 12-83 / PAGE 2



TYPE 2 CURB & GUTTER
(LOVELOCK ONLY)

NOTE : See general notes for all curb and gutter on standard Drawing 1-6.1

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION LOVELOCK	
			LOVELOCK TYPE 2 P.C.C. CURB / GUTTER	DRAWING NO. LO-3 (312)	
				DATE 12-3	PAGE 3

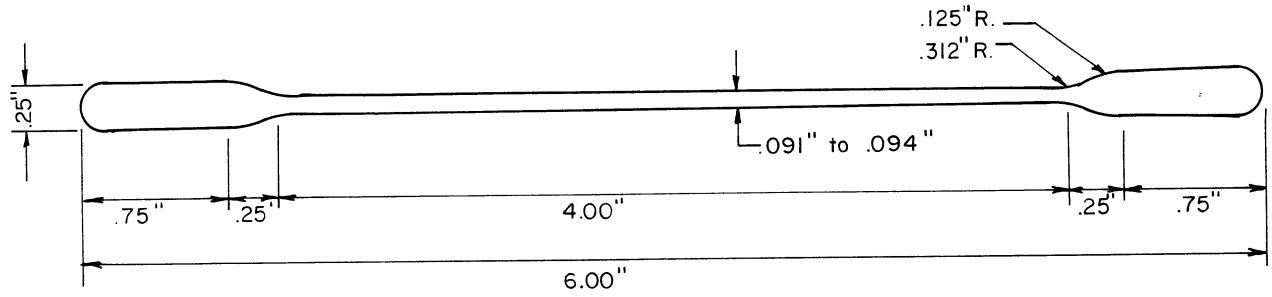


NOTES :

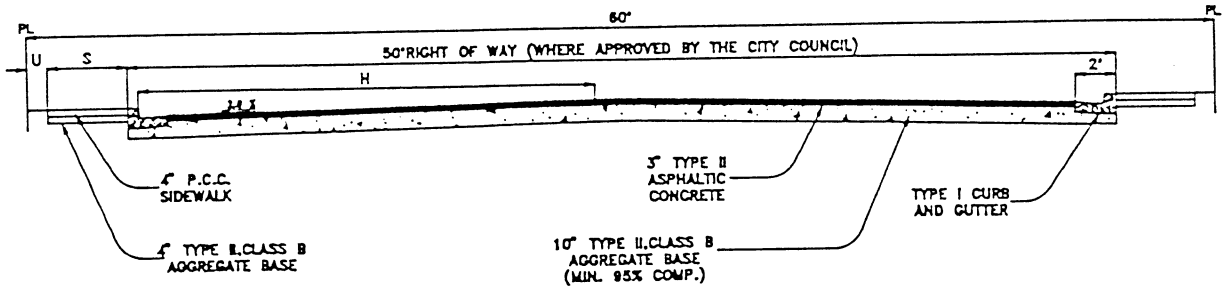
1.) Street name sign shall be in conformance with the latest edition of the M.U.T.C.D.

2.) Reflective materials shall be mounted on extruded aluminum No. 6063-T6 (See Detail Below)

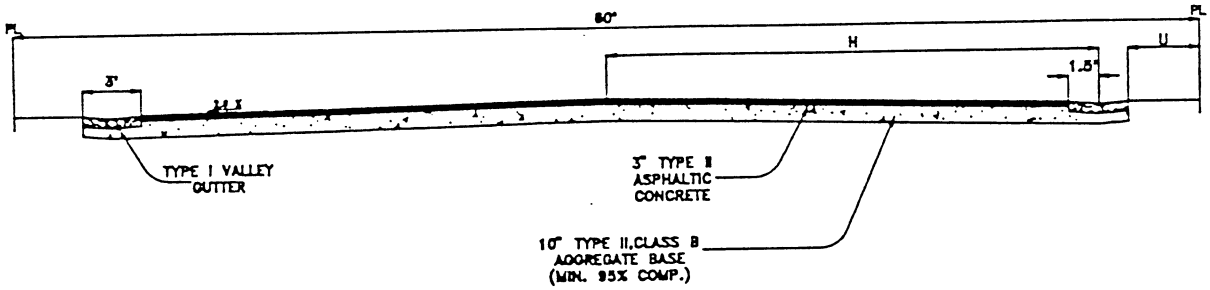
3.) Stop signs to be 36"x 36" unless approved otherwise by the City.



NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION LOVELOCK
			STREET NAME SIGN AND STOP SIGN	DRAWING NO. LO-4 (330)
				DATE 12-83 / PAGE 4



STANDARD STREET SECTION AND LIGHT COMMERCIAL STREET SECTION



HEAVY COMMERCIAL STREET SECTION

R/W WIDTH	H	S	U	NOTES OR REMARKS
80	31.5	5	3	ARTERIAL - 3' A.C. (MIN.) / 10' BASE (MIN.)
60	24.5	4	1	COLLECTOR - 3' A.C. (MIN.) / 10' BASE (MIN.)
60/50	20.5	4	5/0	RESIDENTIAL - 2 1/2' A.C. (MIN.) / 6' BASE (MIN.)
60/50	24.5	4	1/0	LIGHT COMMERCIAL - 3' A.C. (MIN.) / 10' BASE (MIN.)
60	25	-	3.5	HEAVY COMMERCIAL - 3' A.C. (MIN.) / 10' BASE (MIN.)

NOTES:

1. H IS MEASURED TO FLOWLINE OF GUTTERS, REGARDLESS OF TYPE.
2. STRUCTURAL SECTION TO BE DETERMINED BY ENGINEERING DESIGN, BUT IN NO CASE SHALL THE A.C. OR BASE BE LESS THAN SHOWN ABOVE.
3. STREET MONUMENTS WILL BE CONSTRUCTED AT ALL INTERSECTIONS, HORIZONTAL CURVES AND CUL-DE-SACS.
4. A 1/2' OPEN GRADE SURFACE SHALL BE REQUIRED FOR DEVELOPMENTS WITH AVERAGE SLOPES OF STREETS OVER 5% OR WHERE SPECIFICALLY REQUIRED BY THE CITY ENGINEER.
5. ARTERIAL STREETS SHALL HAVE A MORTERED BLOCK FENCE ALONG THE PROPERTY LINES AT LEAST 6 FEET IN HEIGHT.
6. TYPE 2 P.C.C. CURB AND GUTER AND A.C. CURB MAY BE USED ONLY AS APPROVED BY THE CITY ENGINEER.

NO.	REVISION	DATE

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

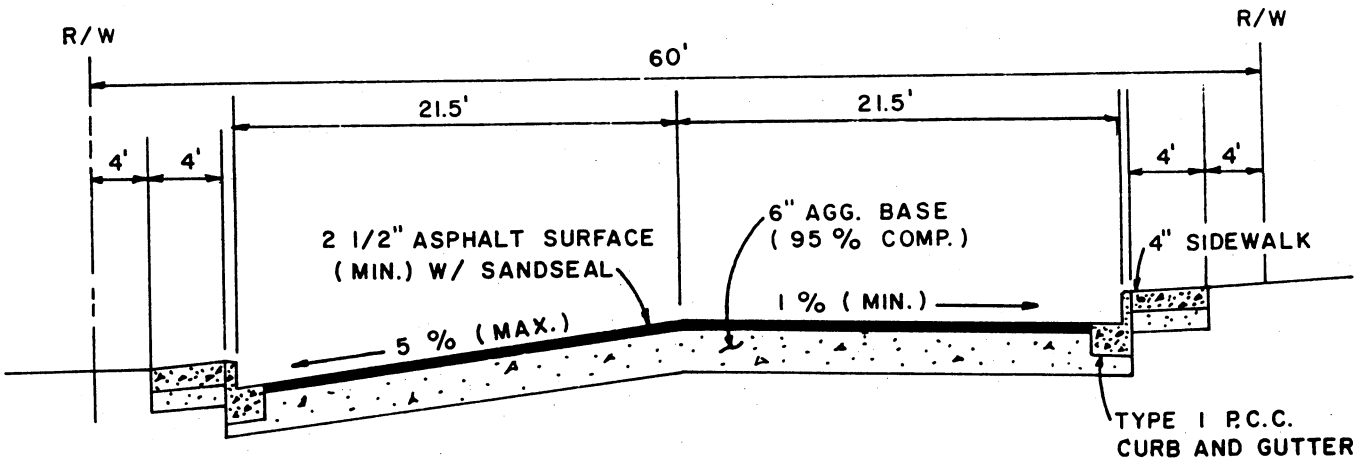
ROADWAY SECTIONS

SECTION: WINNEMUCCA

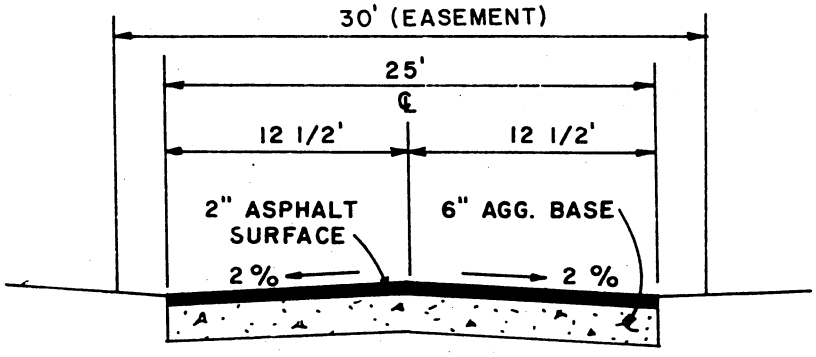
DRAWING NO.: WN - 1.1

DATE: 10/12/93

PAGE: 1



CROSS-SLOPED ROADWAY

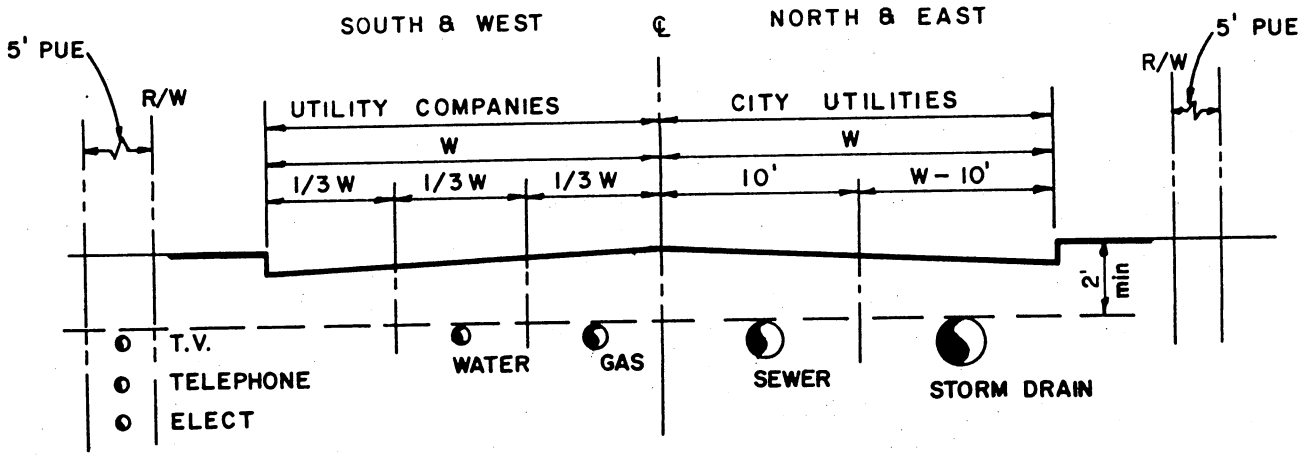


LIMITED ACCESS ROAD

NOTES:

1. CROSS-SLOPED ROADWAYS AND LIMITED ACCESS ROADS MAY BE USED ONLY AS APPROVED BY THE CITY ENGINEER.
2. SEE NOTES ON DWG. WN- 1.1 .

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION WINNEMUCCA	
				DRAWING NO. WN- 1.2	
			ROADWAY SECTIONS	DATE 12- 83	PAGE 2

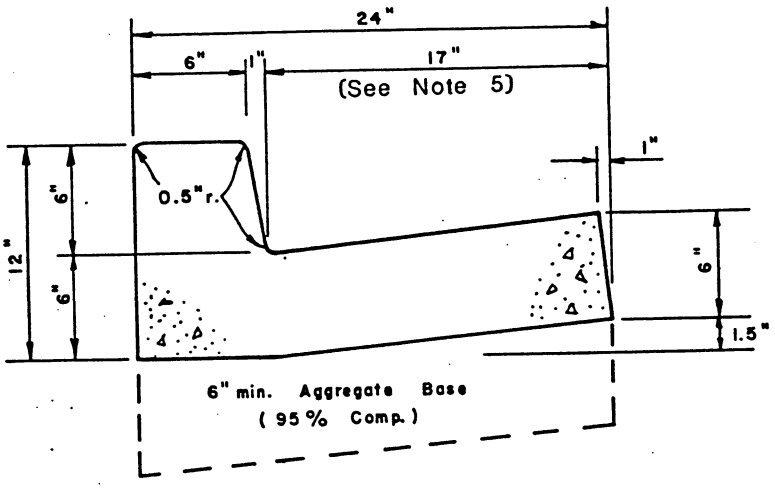


TYPICAL SECTION 'A'

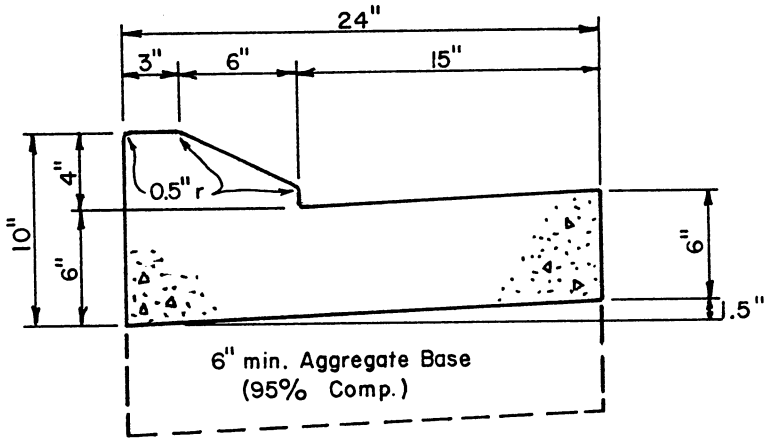
NOTES :

1. FOR COMMON TRENCH SECTION, SEE STANDARD DWG. NO. 1-3.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION WINNEMUCCA	
			TYPICAL UTILITY MAIN LOCATIONS	DRAWING NO. WN-2	
				DATE 12-83	PAGE 3



TYPE I CURB & GUTTER

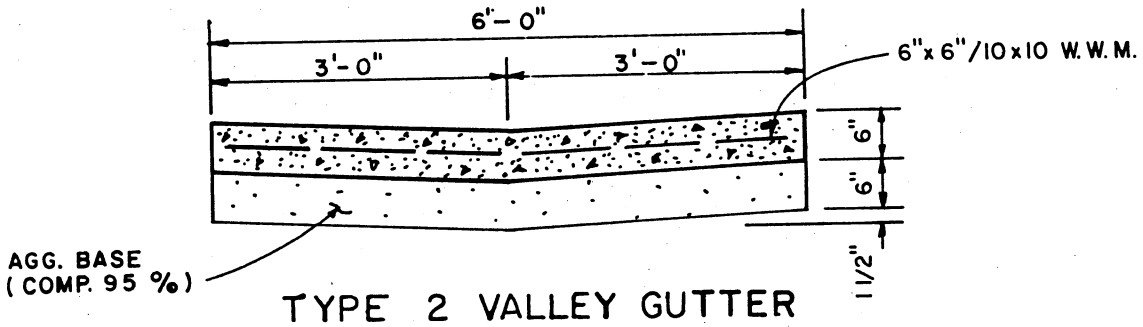


MODIFIED TYPE 2 CURB & GUTTER

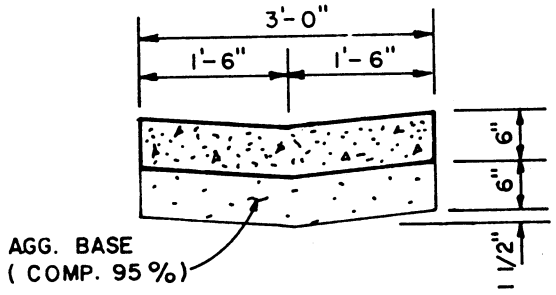
NOTES:

1. All P.C.C. curb, gutter, and sidewalk shall be class AA or DA concrete unless otherwise specified (3,000 psi).
2. All concrete curb, gutter, and sidewalk shall have 1/2" expansion joints every 30' (unless approved otherwise by the Engineer) and at all curb returns and shall have weakened plane joints every 10 feet.
3. Aggregate base material shall conform to the specifications for type 2 Aggregate Base and be comp. to a min. 95% max. dry density.
4. When A.C. curb constructed in Carson City or Lander County, modify edge as shown in Carson City or Lander County special section.
5. City of Reno only - When directed by the City Engineer use 23" gutter pan (see Reno Section, Dwg. No. R-7).
6. All A.C. curb installed in Washoe Co. to be manufactured with asphaltic cement, Grade AR8000.
7. Carson City only - no felt paper to be used for expansion joints for curb, gutter or sidewalk.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION WINNEMUCCA	
			P.C.C. Curb & Gutter	DRAWING NO. WN - 3	
				DATE 3 - 91	PAGE 4

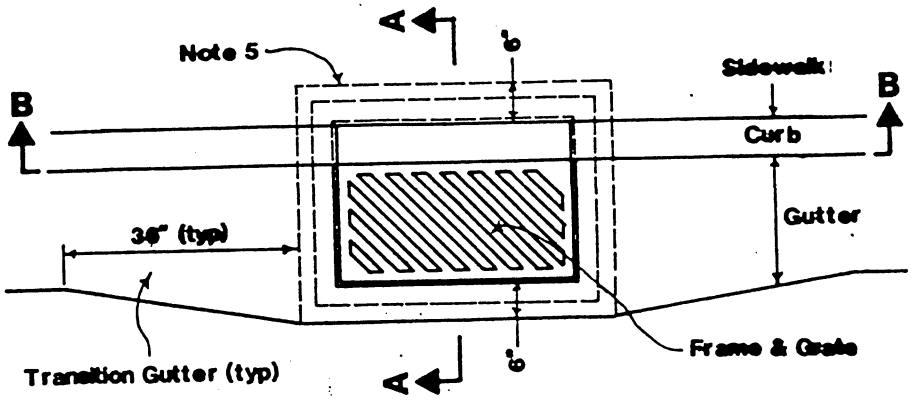


TYPE 2 VALLEY GUTTER

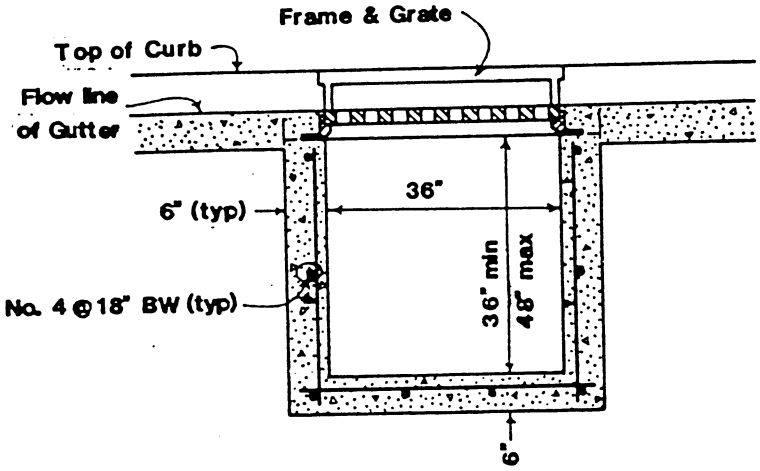


TYPE 1 VALLEY GUTTER

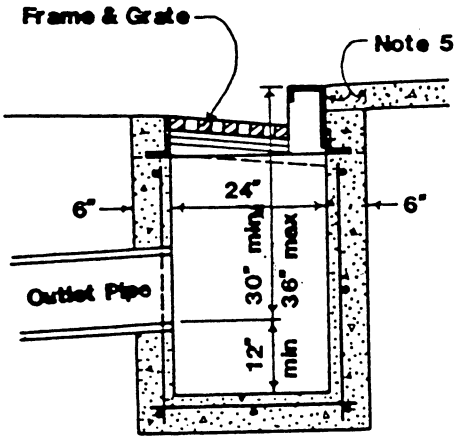
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION WINNEMUCCA	
			P.C.C. VALLEY GUTTER	DRAWING NO. WN-4	
				DATE 3-91	PAGE 5



PLAN



SECTION B-B

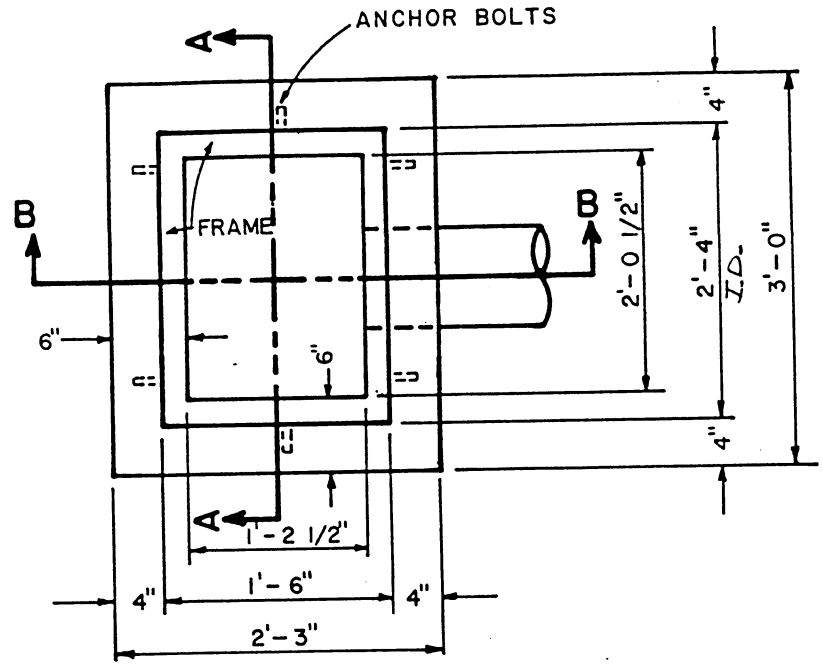


SECTION A-A

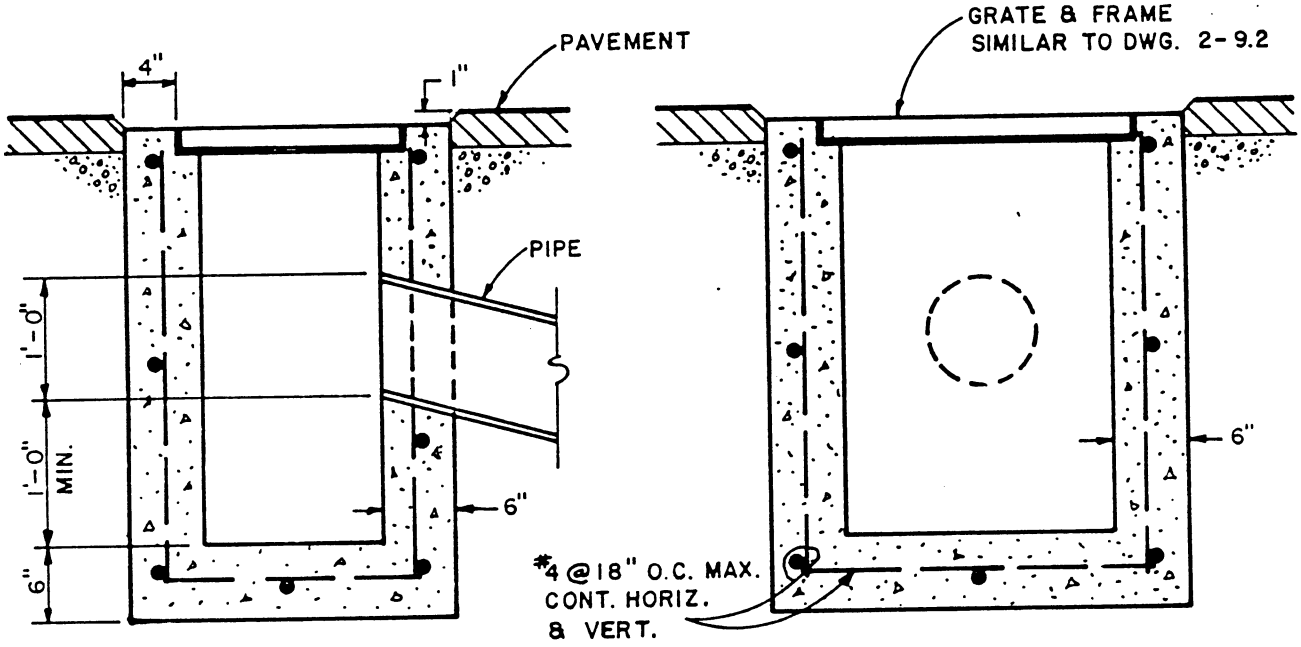
NOTES:

1. Concrete shall be Class AA or DA Portland cement concrete.
2. Reinforcing steel shall be Grade 40 steel and have 1.5" clear cover.
3. Concrete structure may be a pre-cast concrete unit upon approval of the City Engineer. Base of pre-cast concrete unit shall be placed on 3" fresh concrete.
4. Frame and grate shall be Neenah R-3067 or approved equal.
5. Concrete shall be placed as shown when not located in a sidewalk.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION WINNEMUCCA	
			CATCH BASIN TYPE 4-R	DRAWING NO. WN-5	
				DATE 3-91	PAGE 6



PLAN



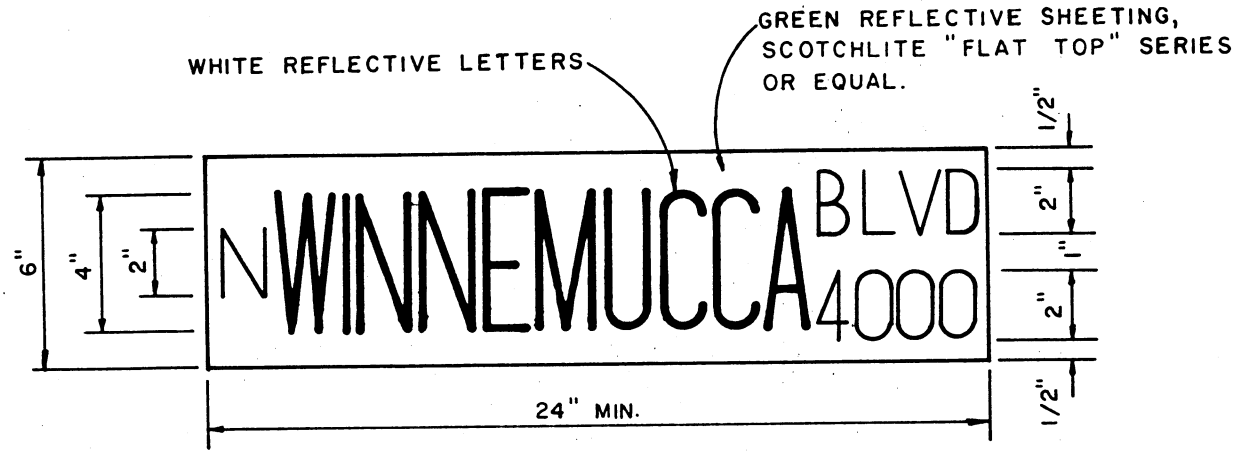
SECTION B-B

SECTION A-A

NOTES:

1. PIPE LOCATIONS AS SHOWN ON PLANS.
2. PORTLAND CEMENT CONCRETE SHALL BE 3000 P.S.I. MIN. (28 DAY), WITH 5% AIR ENTRAINMENT.
3. THIS CATCH BASIN TO BE USED ONLY UPON APPROVAL OF THE CITY ENGINEER.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION WINNEMUCCA	
			CATCH BASIN TYPE 3A	DRAWING NO. WN-6	
				DATE 3-91	PAGE 7

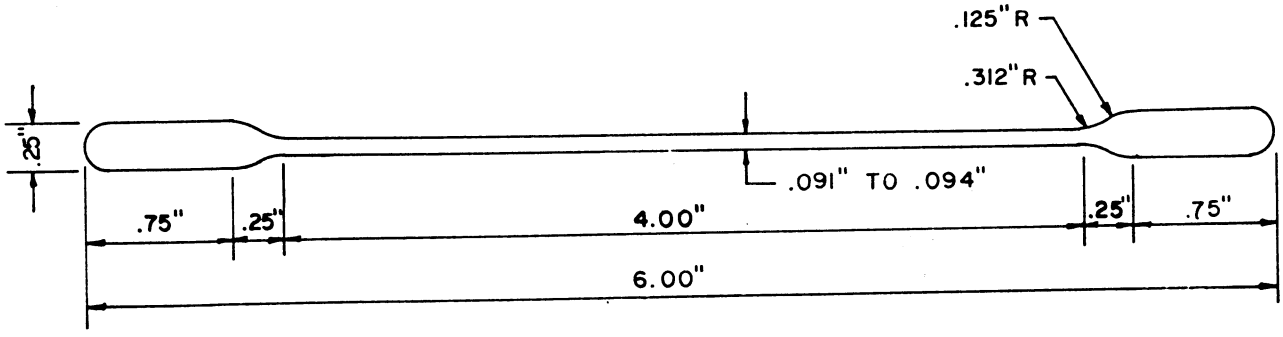


RECOMMENDED GUIDELINE

1. STREET NAME SIGN SHALL BE IN CONFORMANCE WITH THE LATEST EDITION OF THE M.U.T.C.D.

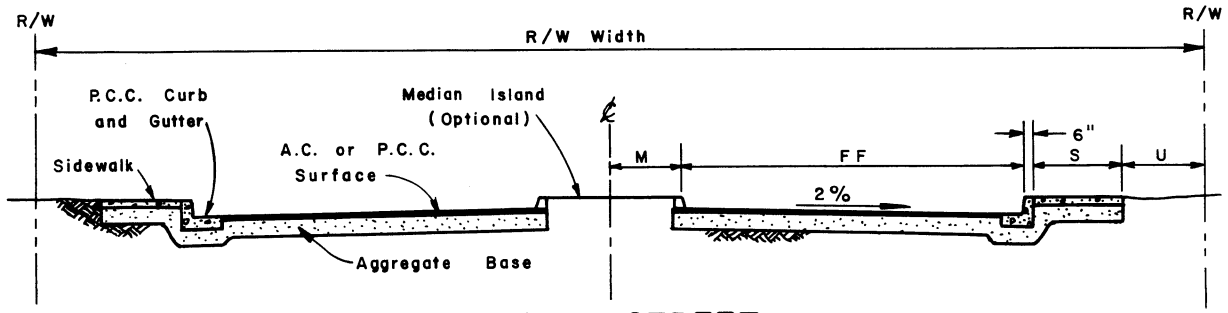
2. REFLECTIVE MATERIALS SHALL BE MOUNTED ON EXTRUDED ALUMINUM ON 6063-T6, WITH A MIN. THICKNESS OF 0.091" (SEE DETAIL BELOW).

3. LIGHTING— STREET LIGHTS SHALL BE 100 WATT H.P.S. LAMPS MOUNTED ON GALVANIZED STEEL POLES 30' HIGH WITH AN 8' ARM.

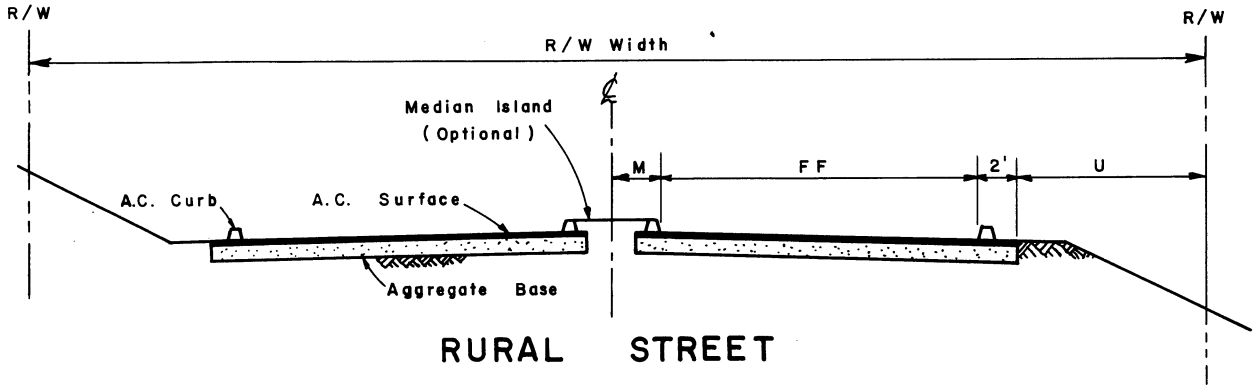


NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION WINNEMUCCA	
			STREET NAME SIGN AND STREET LIGHTS	DRAWING NO. WN-7	
				DATE 3-91	PAGE 8

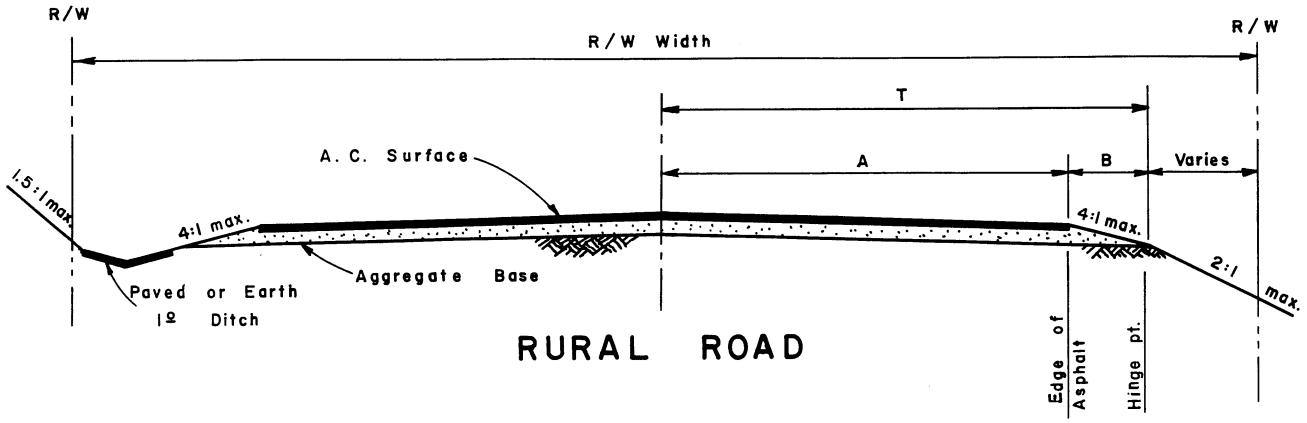
SECTION 1
GENERAL SURFACE



URBAN STREET



RURAL STREET



RURAL ROAD

FOR ALLOWABLE SECTIONS AND DIMENSIONS, SEE SPECIFIC GOVERNING AGENCY SECTION.

NO.	REVISION	DATE
1	SPELLING	10-16-86

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

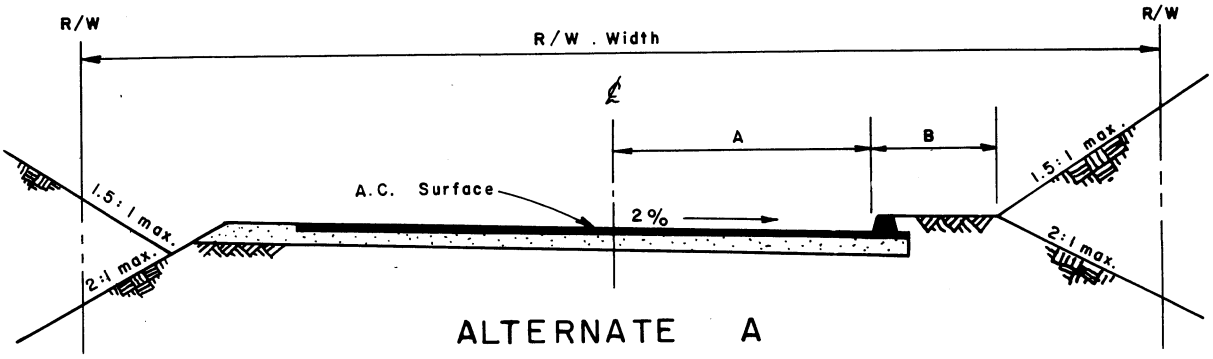
ROADWAY SECTIONS

SECTION 1

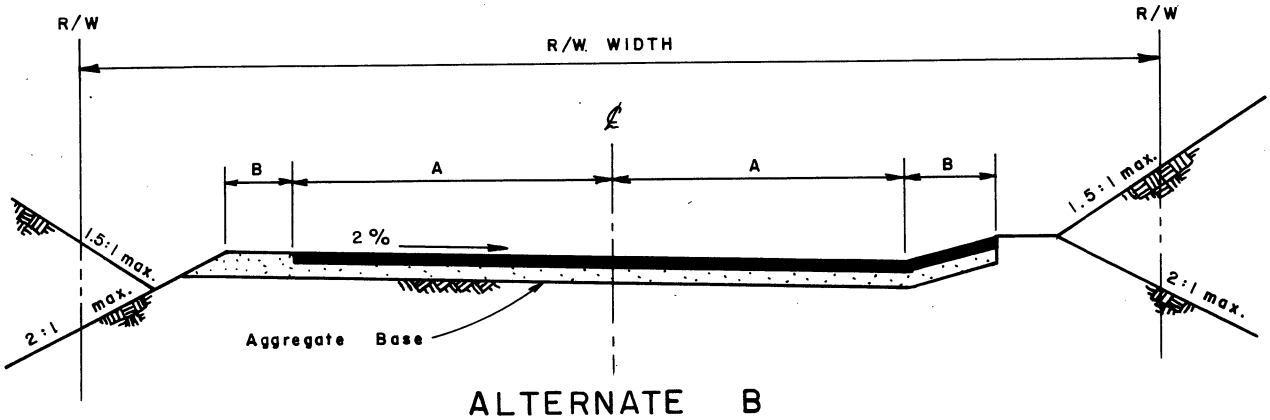
DRAWING NO. 1-1.1 (314, 319)

DATE 7-81

PAGE 1



ALTERNATE A



ALTERNATE B

RURAL HILLSIDE ROAD

FOR ALLOWABLE SECTIONS AND DIMENSIONS, SEE SPECIFIC GOVERNING AGENCY SECTION.

NO.	REVISION	DATE
1	SHOULDER	3-83

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

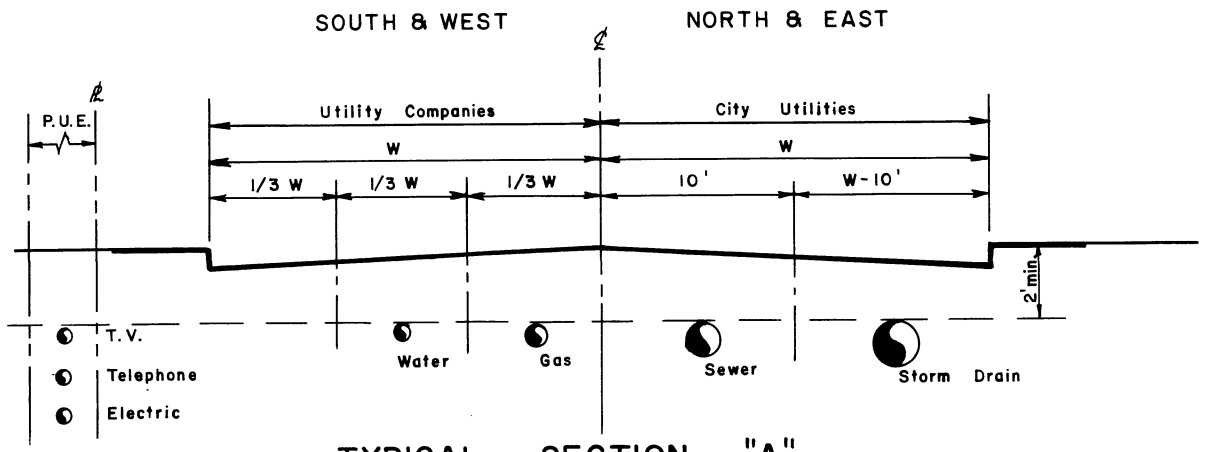
ROADWAY SECTIONS

SECTION 1

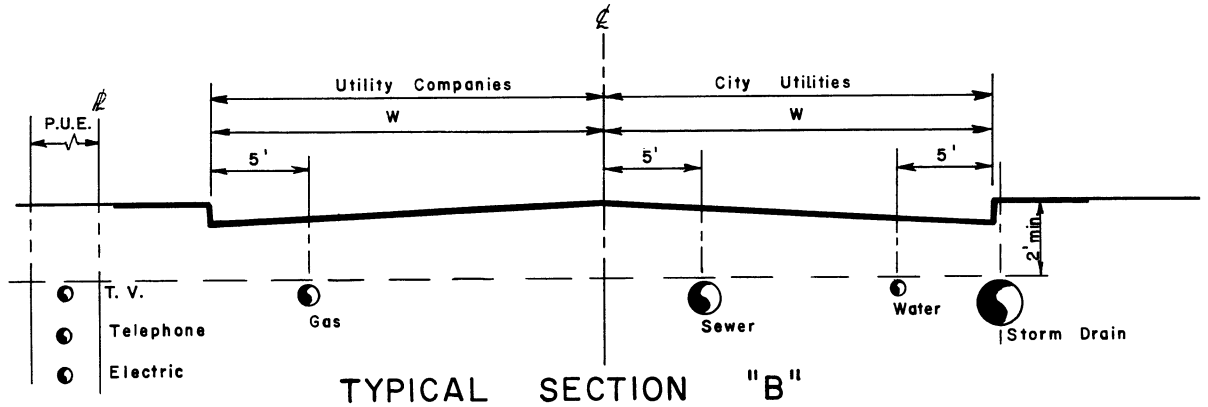
DRAWING NO. 1-1.2 (319)

DATE 7-81

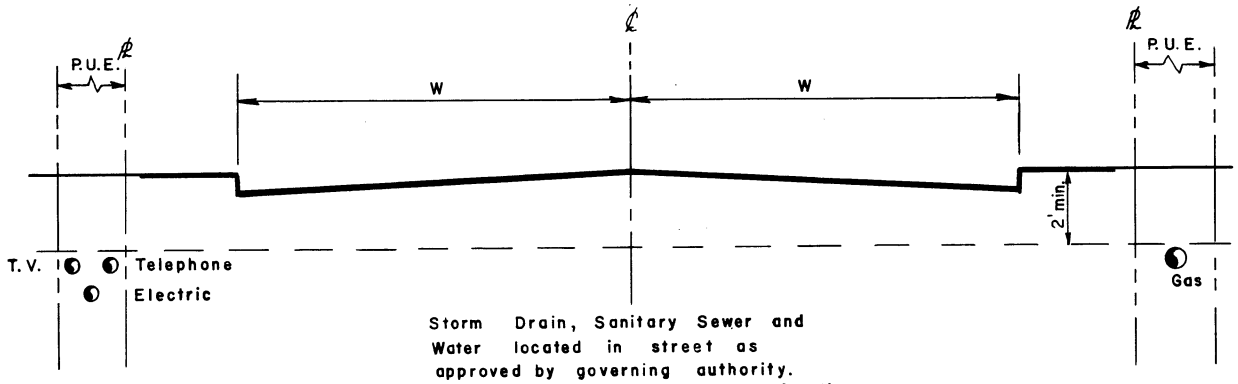
PAGE 2



TYPICAL SECTION "A"



TYPICAL SECTION "B"



Storm Drain, Sanitary Sewer and Water located in street as approved by governing authority.

TYPICAL SECTION "C"

FOR ALLOWABLE SECTIONS AND DIMENSIONS, SEE SPECIFIC GOVERNING AGENCY SECTION.

NO.	REVISION	DATE

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

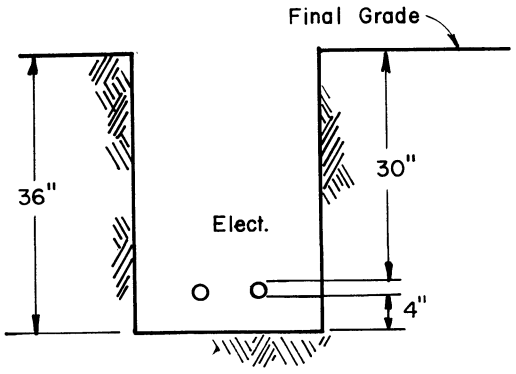
TYPICAL UTILITY MAIN LOCATIONS

SECTION 1

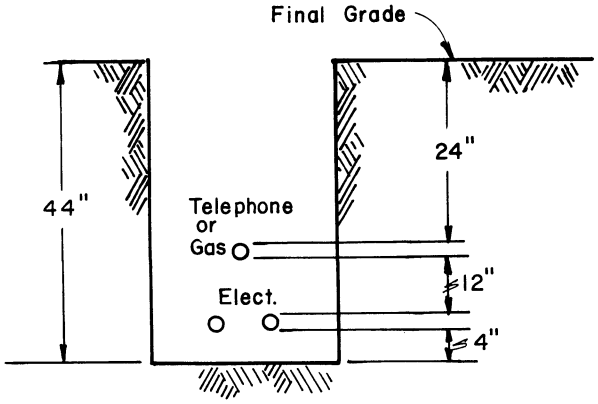
DRAWING NO. 1-2 (142)

DATE 7-81

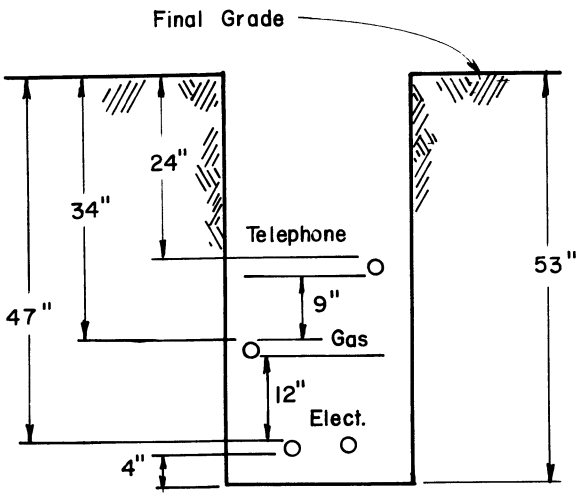
PAGE 3



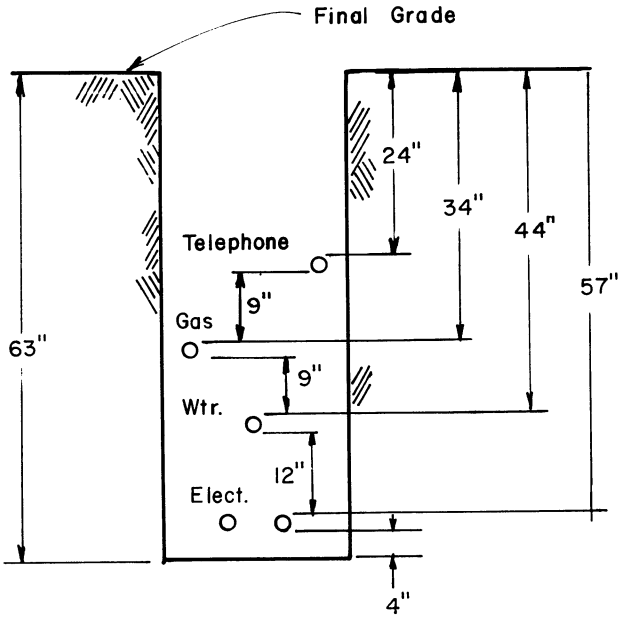
ELECTRIC ALONE



ELECTRIC & GAS
or
ELECTRIC & TELEPHONE



ELECTRIC, GAS & TELEPHONE



ELECTRIC, GAS, WATER
& TELEPHONE

(Not Permitted in Lander County
or in Carson City.)

NOTES:

1.) Combined trenches shall be used only when permitted by the participating Utility Companies.

2.) If Telephone is in conduit, and in a common trench with Gas, their relative position shall be reversed ~ Gas above Telephone.

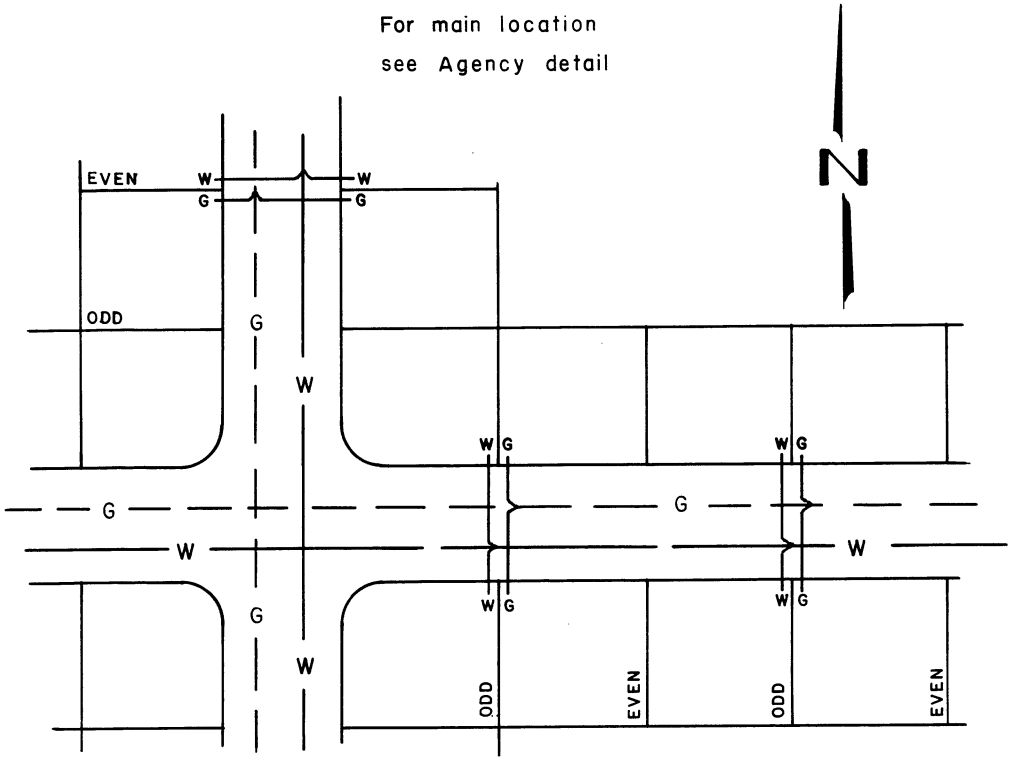
3.) Backfill limits (all compacted to 90%); Elec.~Class "B" from 4" below to 12" above, thence Class "E" to surface; Gas or Water ~ Class "B" from 6" below to ground surface; Telephone ~ Class "E" from 4" below to ground surface

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 1	
			UTILITY TRENCH	DRAWING NO. 1-3 (142)	
				DATE 7-81	PAGE 4

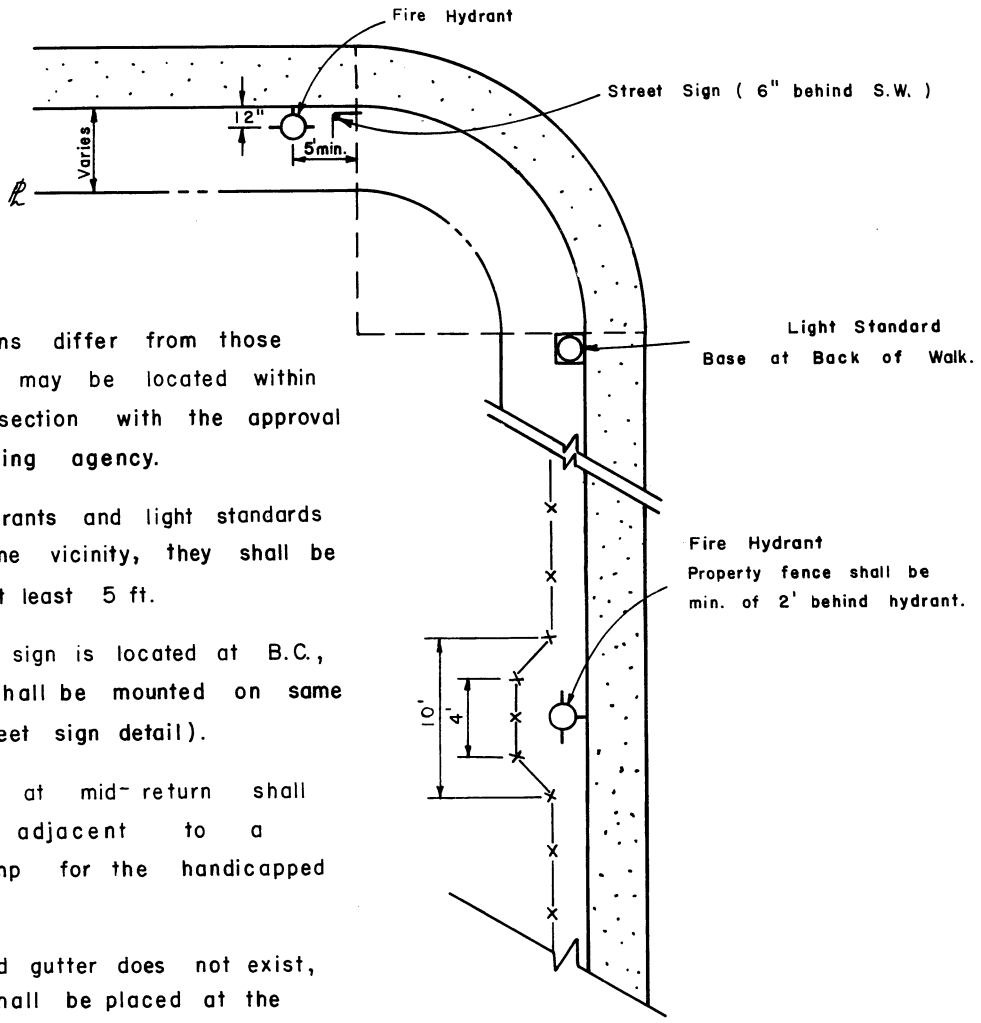
UTILITY LOCATION
GENERAL NOTES

1. Sanitary sewer lateral to be centered on lot (changes may be permitted upon approval of governing agency).
2. Common lot corners are defined as odd or even as counted North or East from the preceding street intersection.
3. Water services shall be placed on odd lot corners on East - West Streets and on even lot corners on North - South Streets. Additionally, water service shall be one foot West or North of the respective lot line (see sketch).
4. Gas services shall be placed on the same lot corners as for the water described above - except that it shall be one foot East or South of the respective lot line (opposite side of water) (see sketch).
5. Electricity, telephone, and cable T.V. shall be placed on even lot corners on East - West Streets and on odd lot corners on North - South Streets.
6. CARSON CITY ONLY - No dual services will be permitted. Single services must have at least 12" of separation.

NOTE:
For main location
see Agency detail



NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 1	
1	NOTE 6	10-85	UTILITY LATERALS LOCATION	DRAWING NO. 1-4 (142)	
				DATE 7-81	PAGE 5



NOTE :

1. Where conditions differ from those shown, utilities may be located within the sidewalk section with the approval of the governing agency.
2. When fire hydrants and light standards are in the same vicinity, they shall be separated by at least 5 ft.
3. When "STOP" sign is located at B.C., street signs shall be mounted on same pole (see street sign detail).
4. Street signs at mid- return shall be located adjacent to a pedestrian ramp for the handicapped if applicable.
5. Where curb and gutter does not exist, "STOP" sign shall be placed at the beginning of curve 6 feet from edge of paving.

NO.	REVISION	DATE
1	SPELLING	10-16-86

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

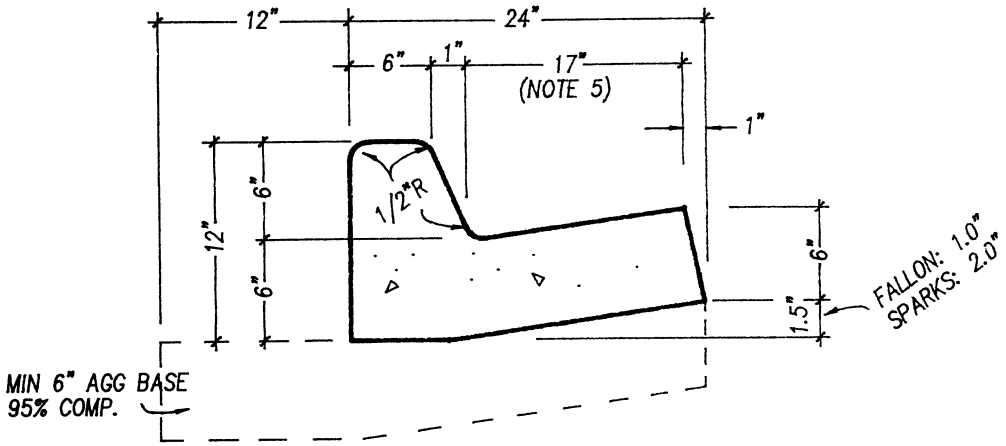
FIRE HYDRANT & STREET LIGHT LOCATIONS

SECTION 1

DRAWING NO. 1-5 (142)

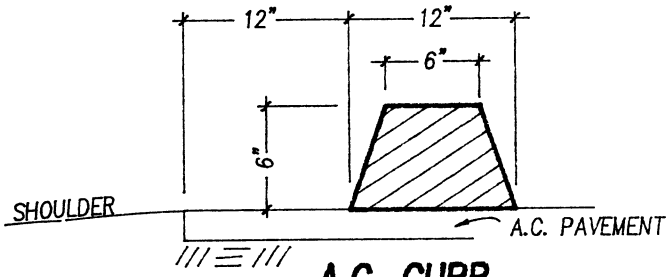
DATE 7-81

PAGE 6



TYPE 1 CURB & GUTTER

N.T.S.



A.C. CURB

N.T.S.

NOTES

1. ALL PCC CURB/GUTTER/SIDEWALK SHALL BE MIN 6sack OF CEMENT PER CU.YD. OF CONC UNLESS OTHERWISE SPECIFIED (4000psi) W/4.5–7.5% AIR. MAX SLUMP SHALL BE 4". MAX WATER/CEMENT RATIO SHALL BE .45
2. (a) ALL CONC CURB/GUTTER/VALLEY GUTTER SHALL HAVE WEAKENED PLANE JOINTS EVERY 10 FEET.
   (b) EXPANSION JOINTS 1/2" WIDE SHALL BE LOCATED IN CURBS & GUTTERS @ EA SIDE OF STRUCTURES, @ ENDS OF ALL CURB RETURNS, & ABUTTING HARDENED IN–PLACE CURB & GUTTER, EXCEPT THAT EXPANSION JTS. SHALL NOT BE INSTALLED WITHIN 20' OF AN ISLAND NOSE. EXPANSION JOINTS SHALL BE 1/2" THICK, SHAPED TO THE CROSS–SECTION OF THE CURB & GUTTER, & SHALL BE CONSTRUCTED @ RIGHT ANGLES TO THE CURB & GUTTER. JOINT FILLER MATERIAL SHALL CONFORM TO SECTION 202.10.
3. AGG BASE MATERIAL SHALL CONFORM TO SPECIFICATIONS FOR TYPE 2 CLASS B AGG BASE & BE COMP. TO A MIN 95% M.D.D.
4. WHEN A.C. CURB CONSTRUCTED IN CARSON CITY OR LANDER CO. MODIFY EDGE AS SHOWN IN CARSON CITY OR LANDER COUNTY SPECIAL SECTION.
5. CITY OF RENO ONLY: WHEN DIRECTED BY CITY ENGR. USE 23" GUTTER PAN (STD. DET. R–7A).
6. ALL A.C. CURB INSTALLED IN WASHOE CO TO BE MFD W/ASPHALTIC CEMENT, GRADE AC–20.
7. CARSON CITY ONLY: NO FELT PAPER TO BE USED FOR EXPANSION JOINTS FOR CURB, GUTTER OR SIDEWALK.

NO.	REVISION	DATE
1	REDRAWN	1/95vp

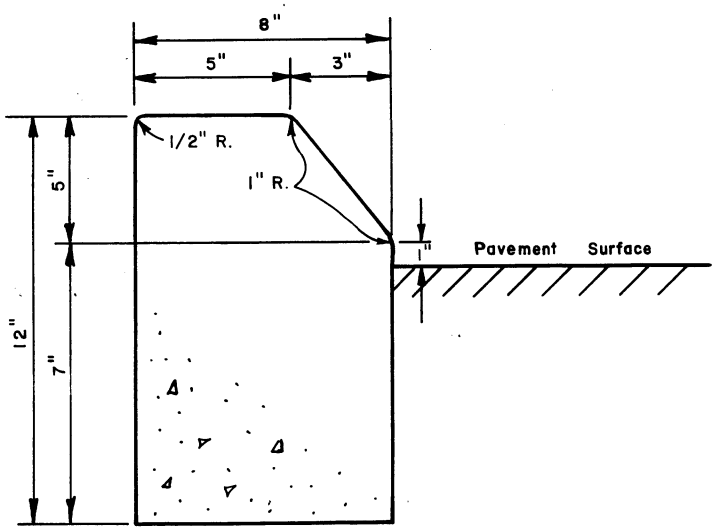
STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

TYPE 1 PCC CURB/GUTTER & A.C. CURB

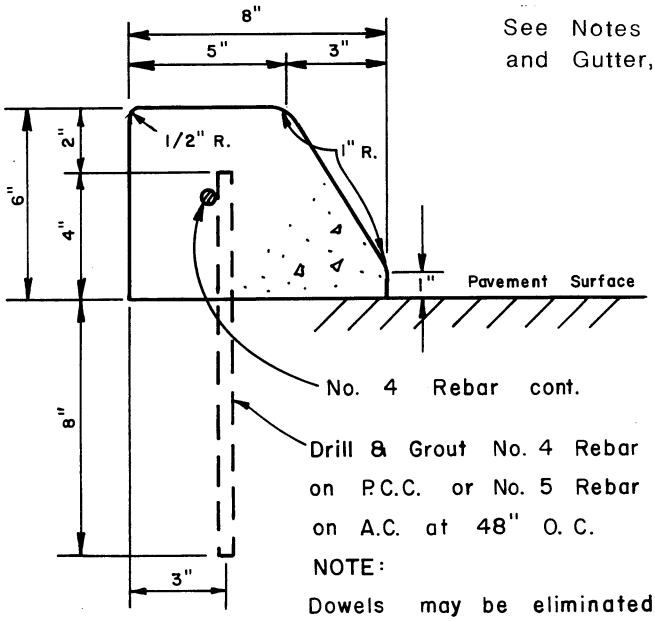
SECTIONS 1

DRAWING NO. 1–6.1 (312)

DATE 1/95vp | PAGE 7



TYPE 1 P.C.C. MEDIAN CURB



See Notes for Type 1 Curb and Gutter, Dwg. No. 1-6.1.

No. 4 Rebar cont.

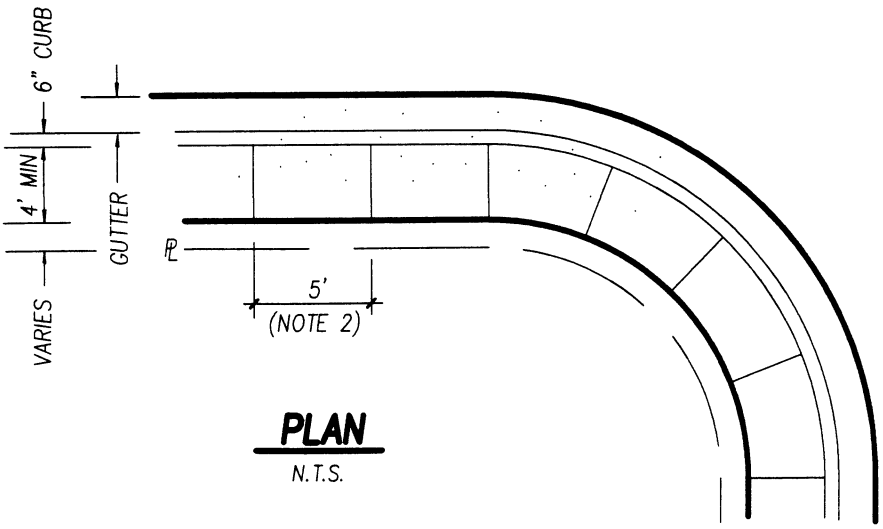
Drill & Grout No. 4 Rebar on P.C.C. or No. 5 Rebar on A.C. at 48" O. C.

NOTE:

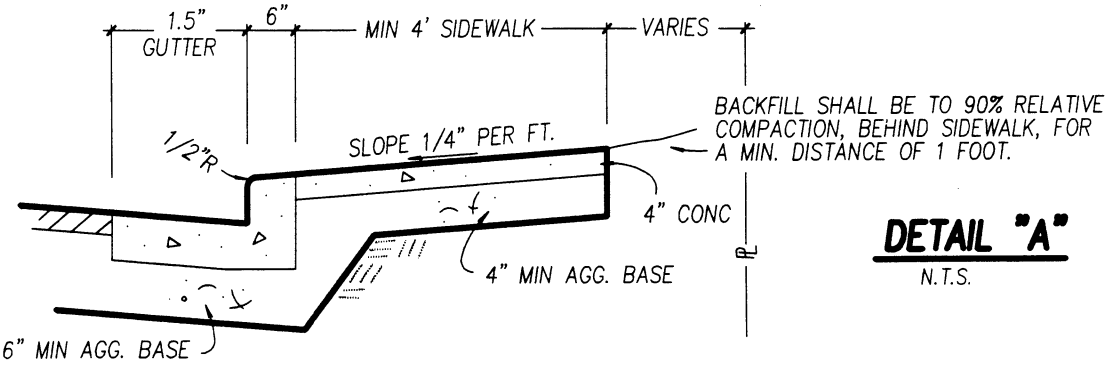
Dowels may be eliminated in lieu of an approved epoxy coat between the curb and pavement surface.

TYPE 2 P.C.C. MEDIAN CURB

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 1	
1	NOTE	3-83	P.C.C. MEDIAN CURB	DRAWING NO. 1 - 6.2 (312)	
				DATE 7-81	PAGE 8



PLAN
N.T.S.



DETAIL "A"
N.T.S.

NOTES

1. MIN CURB RETURN RADIUS SHALL BE 20 FEET UNLESS OTHERWISE SPECIFIED (15' IN FALLON & RENO)
2. (a) WEAKENED PLANE JOINTS SHALL BE CONSTRUCTED IN ACCORDANCE W/DETAIL "A". IN WASHOE COUNTY, REFER TO DWG. W-16.2
   (B) TRANSVERSE EXPANSION JOINTS 1/2" WIDE SHALL BE CONSTRUCTED AT ALL SIDEWALK RETURNS, OPPOSITE EXPANSION JOINTS IN ADJACENT CURB, & @ REGULAR INTERVALS NOT EXCEEDING 30'. ISOLATION JOINTS SHALL BE INSTALLED AROUND ALL STRUCTURES. EXPANSION & ISOLATION JOINTS SHALL BE FILLED W/JOINT FILLER STRIPS 1/2" THICK. JOINT MATERIAL SHALL CONFORM TO SEC.202.10.
3. ALL AGG. BASE SHALL BE TYPE 2 CLASS B.
4. RENO: COLORED CONC NOT ALLOWED.
5. ON SIDEWALKS WIDER THAN 5', JOINTING PATTERN SHALL BE .8 – 1.2 TIMES THE WIDTH OF THE SIDEWALK.
6. PORTLAND CEMENT CONC (P.C.C.) SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4000psi MIN COMP STRENGTH @ 28 DAYS, MIN 6 SACKS OF CEMENT PER CU.YD. W/MAX WATER-CEMENT RATIO OF 0.45, AIR ENTRAINMENT 6% ± 1.5%, SLUMP 1 TO 4 INCHES. ALL MATEIALS SHALL CONFORM TO SSPWC SEC. 202.

NO.	REVISION	DATE
1	REDRAWN	1/95vp
2	Corr Note 6	4/95vp
3	Corr 1/4"PerFt	3/96vp
4	Note 2	5/96 vp

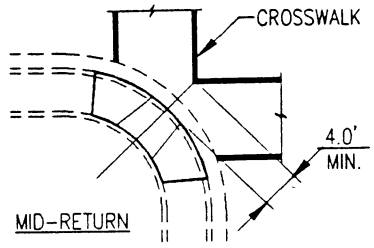
STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

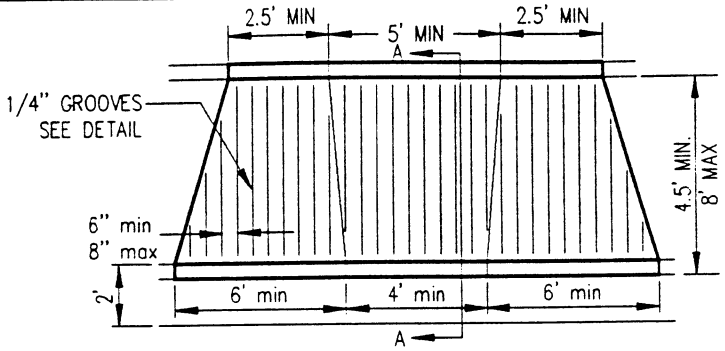
TYPICAL SIDEWALK

SECTIONS 1

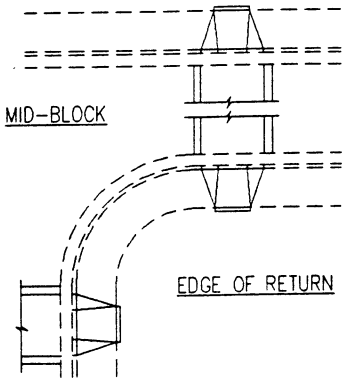
DRAWING NO. 1-7 (312)

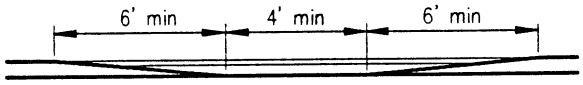
DATE 1/95vp | PAGE 9



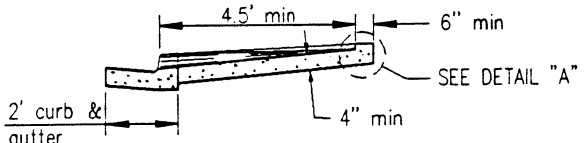


PLAN

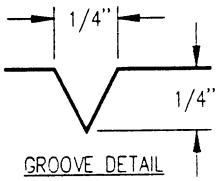


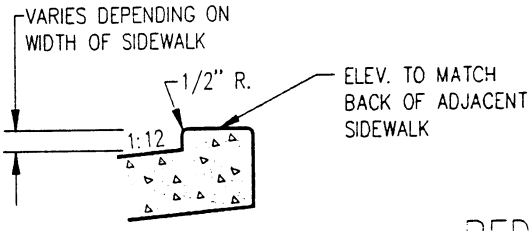


ELEVATION



SECTION "A-A"





DETAIL "A"

PEDESTRIAN RAMP FOR THE DISABLED

NOT TO SCALE

NOTES:

1. If obstructions such as inlets, Utility Poles, Fire Hydrants, etc. are encountered,the location and dimensions may be adjusted upon approval of the Engineer.
2. Texture to be heavy broom finish transverse to axis of ramp.
3. The mid-block ramp shown in detail shall be centered in the crosswalk, and have a minimum curb opening of 6 feet.
4. Slope to meet existing conditions.
5. All ramps shall be located within crosswalks areas.
6. All concrete to be removed to sawcut or expansion joints.
7. The gutter pan – sidewalk transition section (Section A-A) will be smooth with no lip at gutter flowline. This transition section may be a monolithic pour.
8. Slope on wings at 1:12, slope on ramp from flowline to back of walk 1:12 with curb on the back side if, needed
9. Curb detail "A" used only where an elevation difference is present between rear edge of walk and adjacent back edge of walk.
10. Portland cement concrete (P.C.C.) shall have the following characteristics: 4000 psi min compressive strength @ 28 days, min. 6 sacks of cement per cubic yard with a max. water/cement ratio of 0.45, air entrainment 6% ±1.5%, slump at 1 to 4 inches. All materials shall conform to SSPW Section 202.

NO.	REVISION	DATE
1	REDRAWN	8/92
2	REV. NOTE 7	12-92
3	ADD G/N 10.	3-95
APPROVED BY		3-95

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

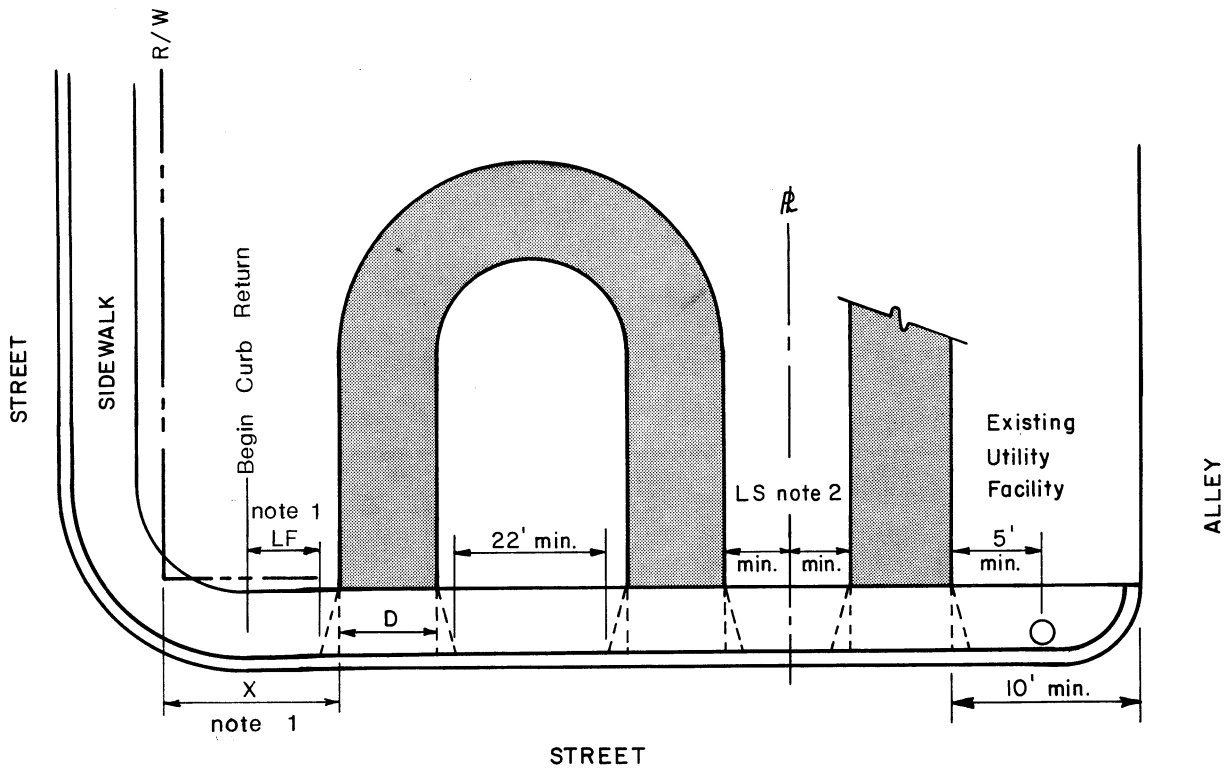
PEDESTRIAN RAMP
FOR THE DISABLED

SECTION 1

DRAWING NO. 1-8 (312)

DATE 7-81

PAGE 10



	RESIDENTIAL	LIGHT * COMMERCIAL	HEAVY COMMERCIAL** AND INDUSTRIAL
D (Driveway Width) See note 3	12' min. 24' max.	14' min. (one-way) 24' min. (two-way) 34' max. See note 3	14' min. (one-way) 30' min. (two-way) 54' max. (heavy truck) See note 3

NOTES:

1. LF (front-sideyard setback) Carson City, Yerington and Nye Co. = 20' min. Lyon Co. = 30' min. Elsewhere = 10' min. DOES NOT APPLY TO ELKO (See note 3).
2. LS (sideyard setback) Carson City = 10', Elsewhere = 5'

* Light Commercial includes office buildings and other commercial buildings 2 stories in height. Motel driveways shall not exceed 30', DOES NOT APPLY TO ELKO.

** Heavy Commercial includes drive-in establishments, factories, service stations and warehouses, DOES NOT APPLY TO ELKO.

3. Elko only, X = 40' (Measured from the intersection of the R/W line) on arterial streets, 25' elsewhere. Maximum driveway width at curb = 30'. Maximum driveway width at back of walk = 24'.

ANY DEVIATION FROM THESE DIMENSIONS MUST BE SUBMITTED AND APPROVED BY THE AGENCY ENGINEER.

NO.	REVISION	DATE
1	LF Dim.	3-83
2	NOTE 3	2-84

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

DRIVEWAY GEOMETRICS

SECTION 1

DRAWING NO. 1-9 (312)

DATE 7-81

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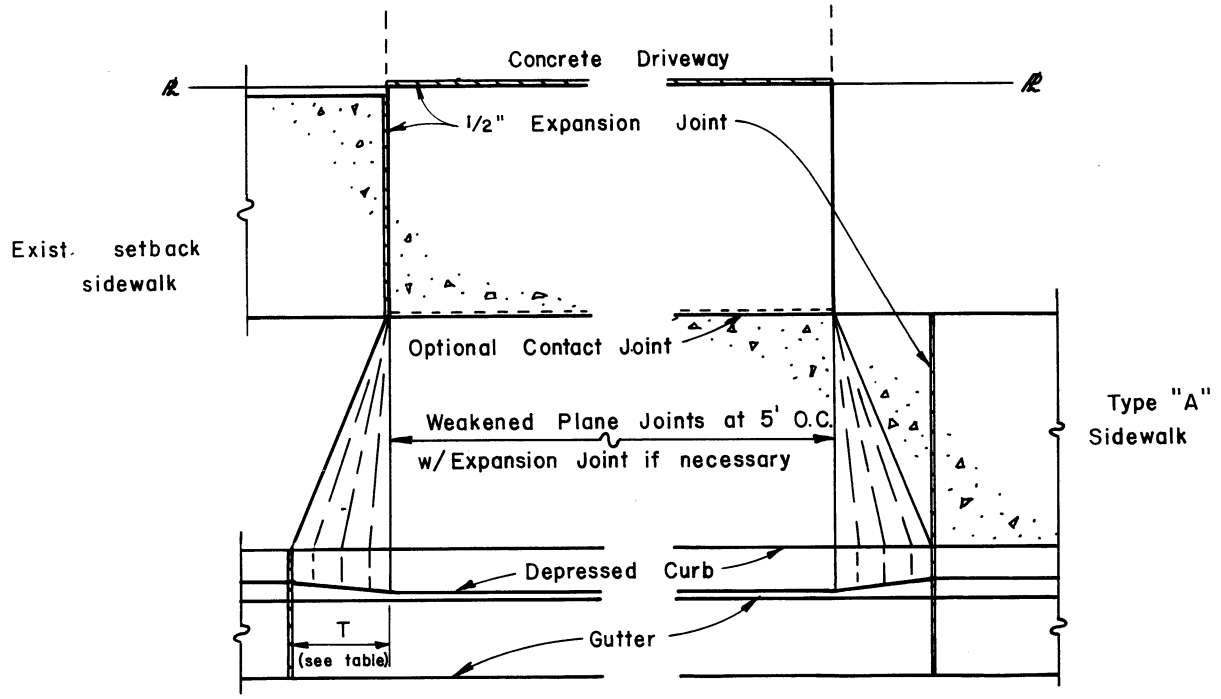
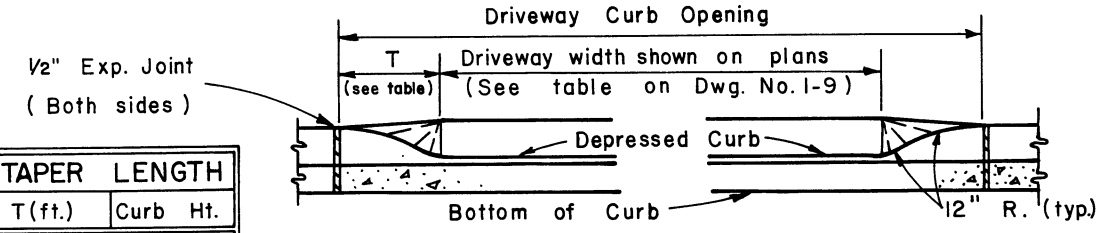
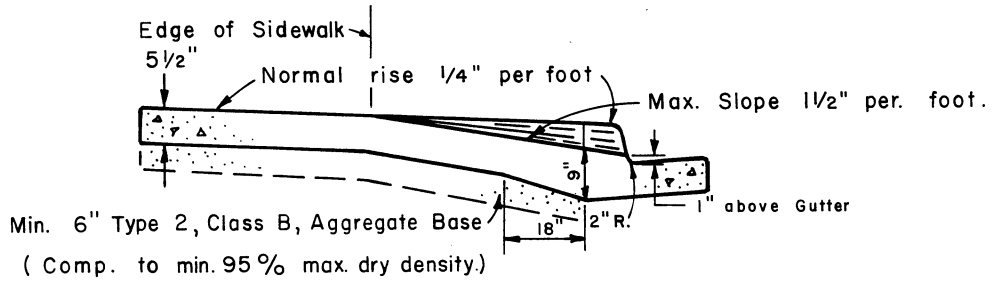




TAPER LENGTH	
T(ft.)	Curb Ht.
2.5'	≤ 5"
3.0'	6"
3.5'	7"
4.0'	8"
4.5'	≥ 9"



NOTES:

1. Not approved for construction in Douglas Co. or Fallon - see Agency Section.
2. No concrete shall be placed until forms and subgrade are inspected by the agency.
3. Concrete shall be class AA or DA.
4. Commercial driveways to have 6"x 6" 10/10 wire mesh extending into gutter pan.
5. If expansion joint exists within 4 feet of driveway, remove sidewalk and curb and gutter to that joint.
6. Concrete removal shall be to neat sawcut lines.
7. Remove concrete when constructing driveway where curb and gutter exist. Driveway to be monolithic to A.C. line.

NO.	REVISION	DATE
1	SPELLING	10-15-86

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

P.C.C. DRIVEWAY APRON

SECTION 1

DRAWING NO. 1-10 (312)

DATE 7-81

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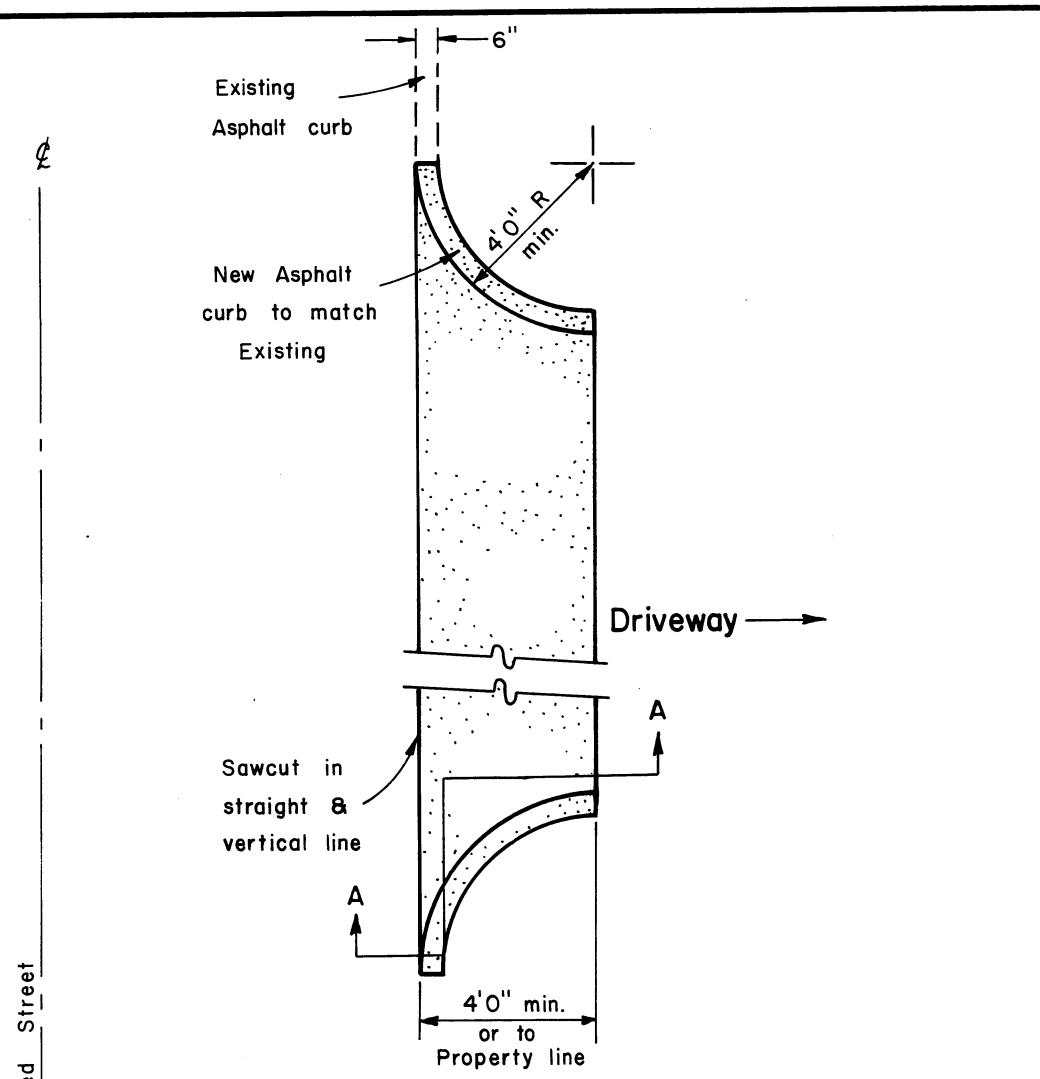
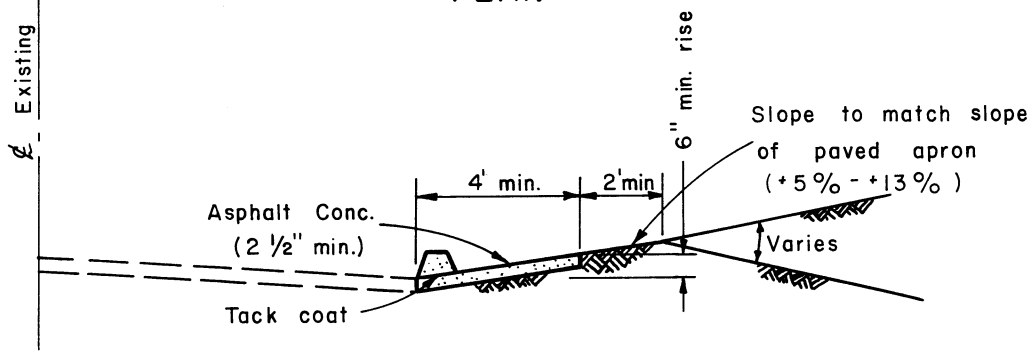


PLAN

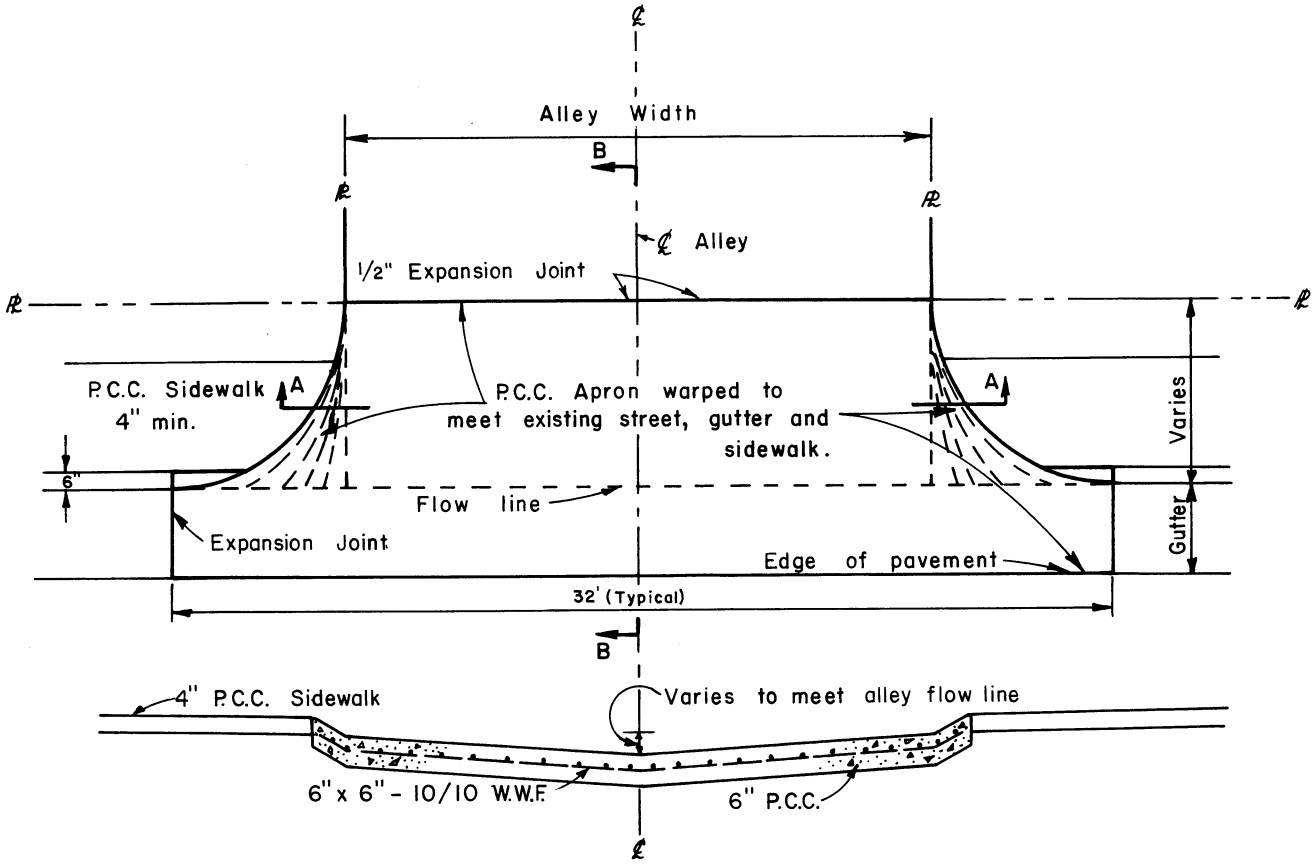


SECTION "A"

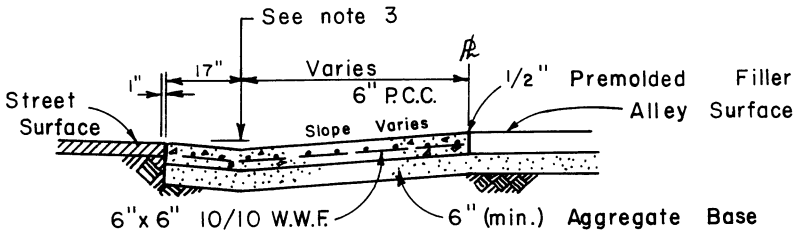
NOTE:

Approved for new construction only in Washoe County, Lander County, Lyon County, Yerington, and Carson City (see Carson City for modified apron on rural roads).

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION
1	NOTE	3-83	ASPHALT CONCRETE DRIVEWAY APRON	1
				DRAWING NO. 1-11 (319)
				DATE 7-81 / PAGE 13



SECTION A-A

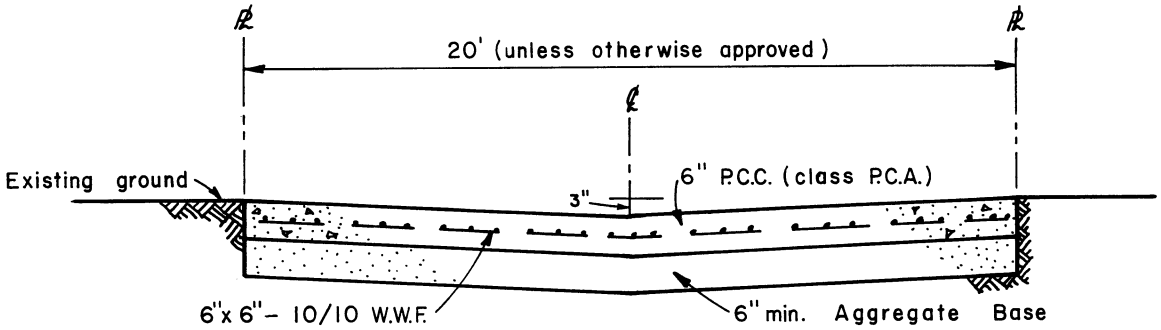


SECTION B-B

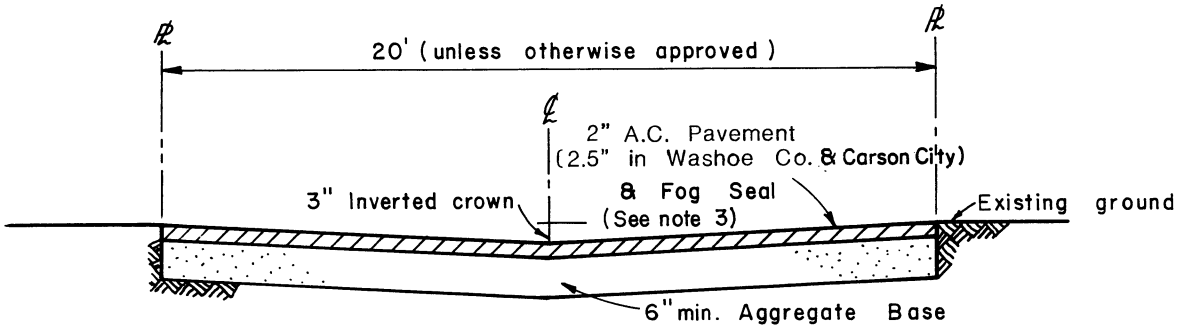
NOTES:

1. Portland Cement concrete shall be class AA or DA
2. Aggregate Base material shall conform to the requirements for Type 2, Class B, Aggregate base and be compacted to a min. 95% of max. dry density.
3. Flow line varies to match gutter - 1½" except Fallon = 1" and Sparks = 2½".

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 1	
			P.C.C. ALLEY APRON	DRAWING NO. 1-12 (312)	
				DATE 7-81	PAGE 14



P.C.C. ALLEY SECTION



(Not permitted in Reno for new construction)

A.C. ALLEY SECTION

NOTES:

1. See Fallon special section for aggregate alley section.
2. Aggregate base shall be Type 2, Class B and be compacted to a min. 95% of max. dry density.
3. Sparks - A.C. pavement will be finished with open graded pavement in lieu of fog seal.

NO.	REVISION	DATE
1	A.C. Thickness	3-83

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

TYPICAL ALLEY SECTIONS (P.C.C. and A.C.)

SECTION 1

DRAWING NO. 1-13 (314/319)

DATE 7-81

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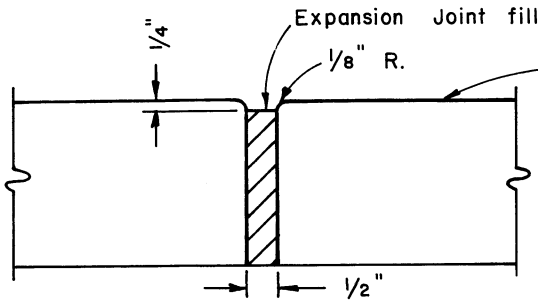
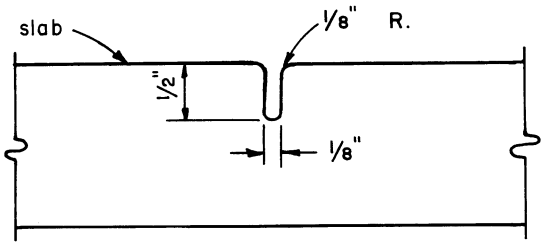
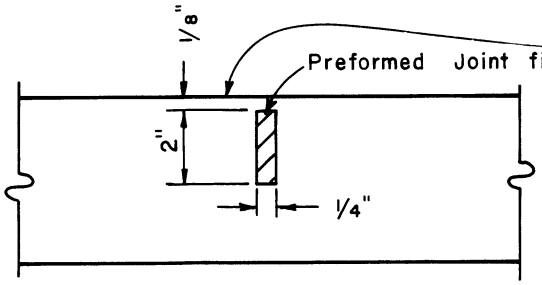


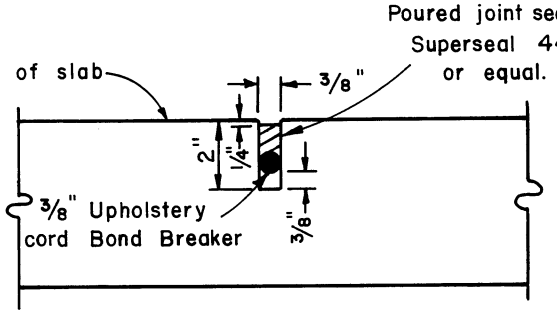
EXPANSION JOINT



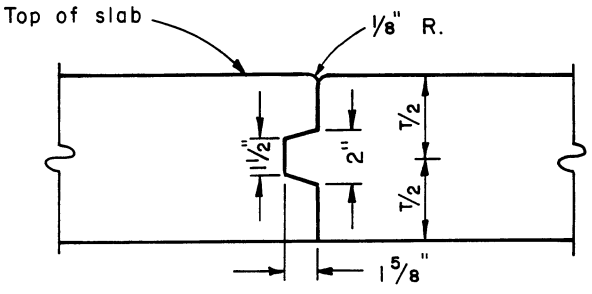
WEAKENED PLANE JOINT
SIDEWALK, CURB & GUTTER



WEAKENED PLANE JOINT
P.C.C. PAVEMENT

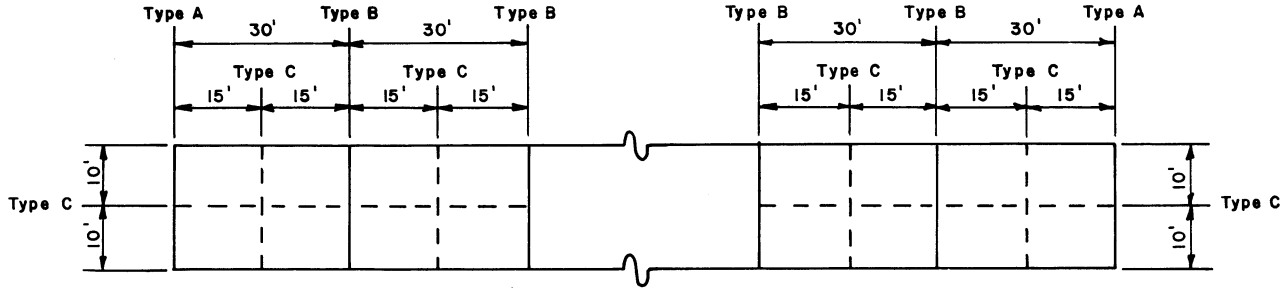


SAWED OR PREMOLDED
STRIP JOINT

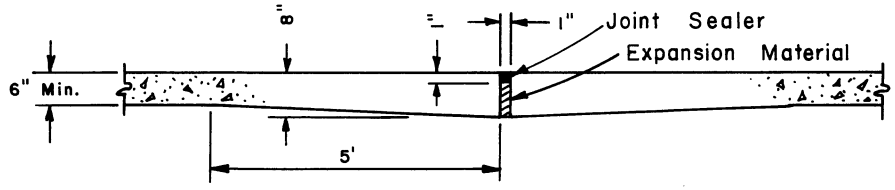


KEYED JOINT

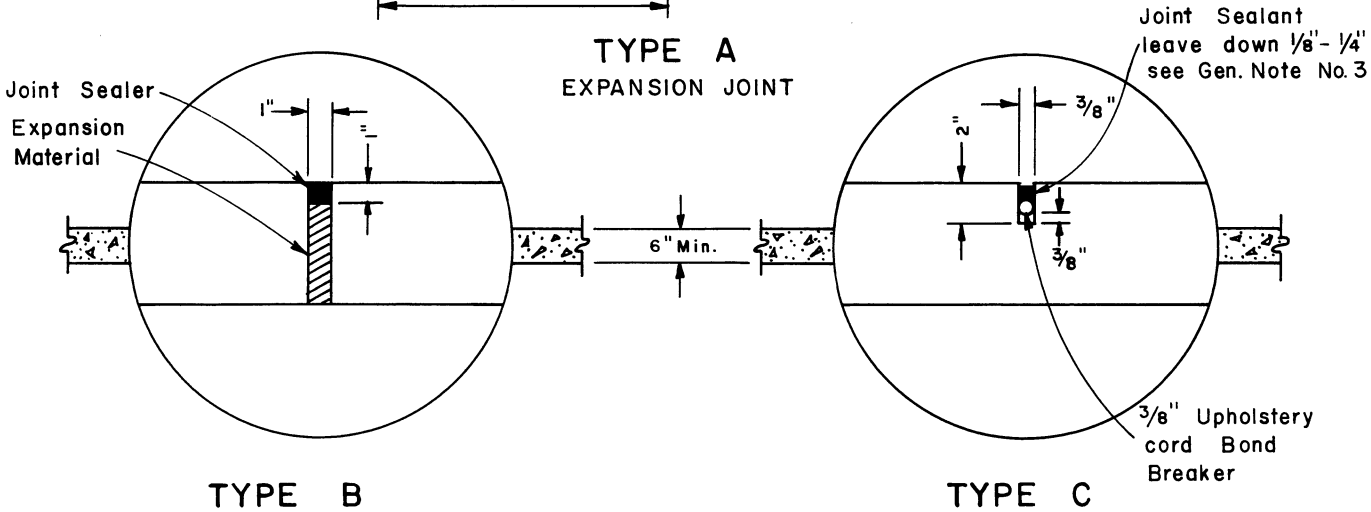
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 1	
			P.C.C. JOINTING DETAILS	DRAWING NO. 1-14.1 (312)	
				DATE 7-81	PAGE 16



ALLEY JOINT SPACING



TYPE A
EXPANSION JOINT



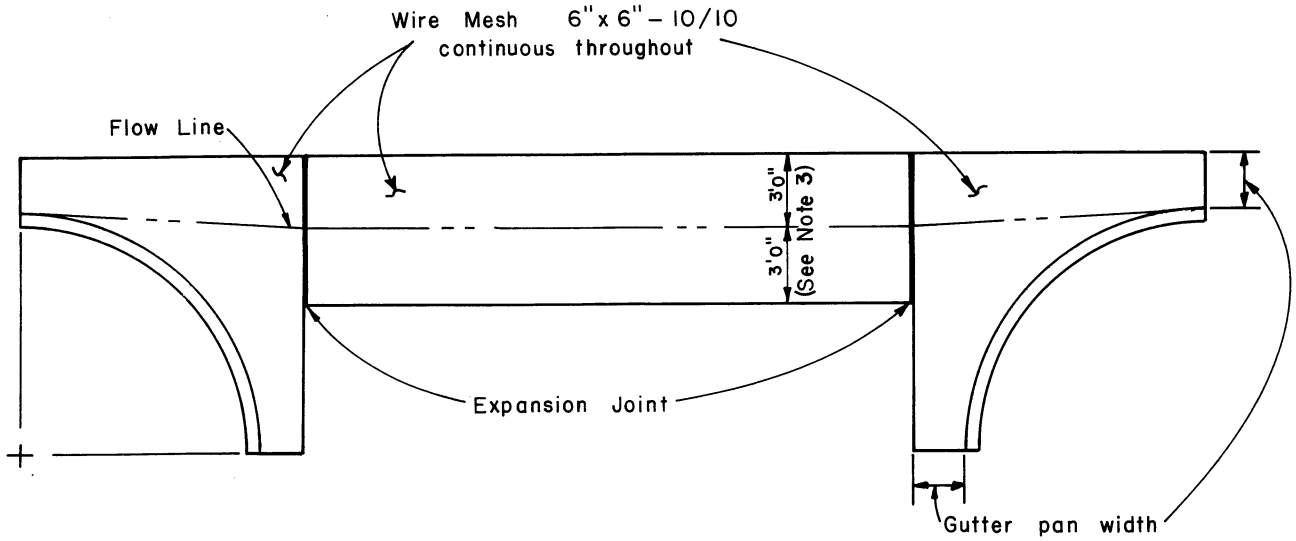
TYPE B
EXPANSION JOINT

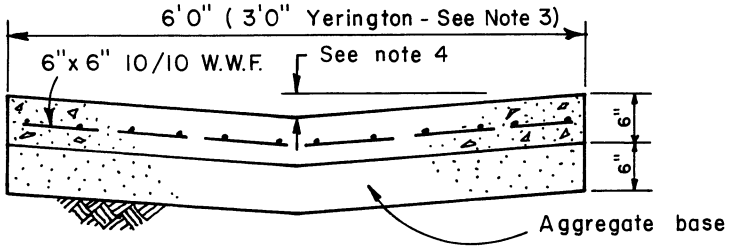
TYPE C
SAWED or PREMOLDED STRIP JOINT

NOTES

1. Portland Cement concrete shall be class P.C.A.
2. Base material will conform to the requirements for Type 2 Aggregate Base and shall be compacted to at least 95 % max dry density.
3. Type C joint sealers will be hot poured Super Seal 444 or equal.
4. Joint spacing for P.C.C. pavement not in alley sections shall be as specified in the contract documents.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 1	
			P.C.C. ALLEY JOINTING DETAILS	DRAWING NO. 1-14.2 (314)	
				DATE 7-81	PAGE 17





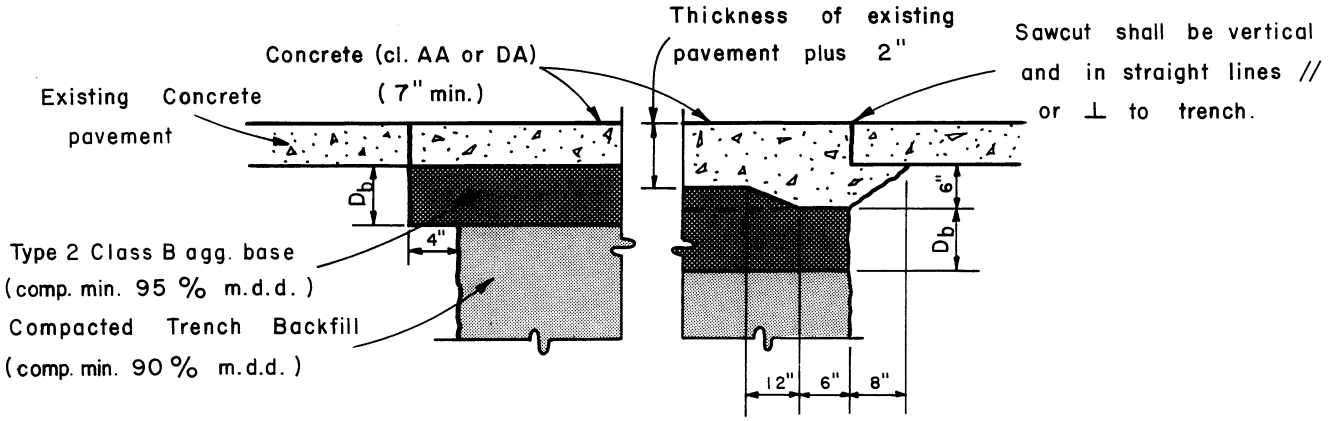
NOTES:

1. Aggregate Base shall be Type 2, Class B and be compacted to a min. 95% of max. density.
2. Portland Cement concrete shall be class AA or DA.
3. Gutter pan width shall be 3'0" total width in Yerington or 1'-6" half width.
4. Flow line varies to match gutter - 1½" except Fallon = 1" and Sparks = 2½".
5. Lyon County Engineer may required #4 bars at 12" each direction

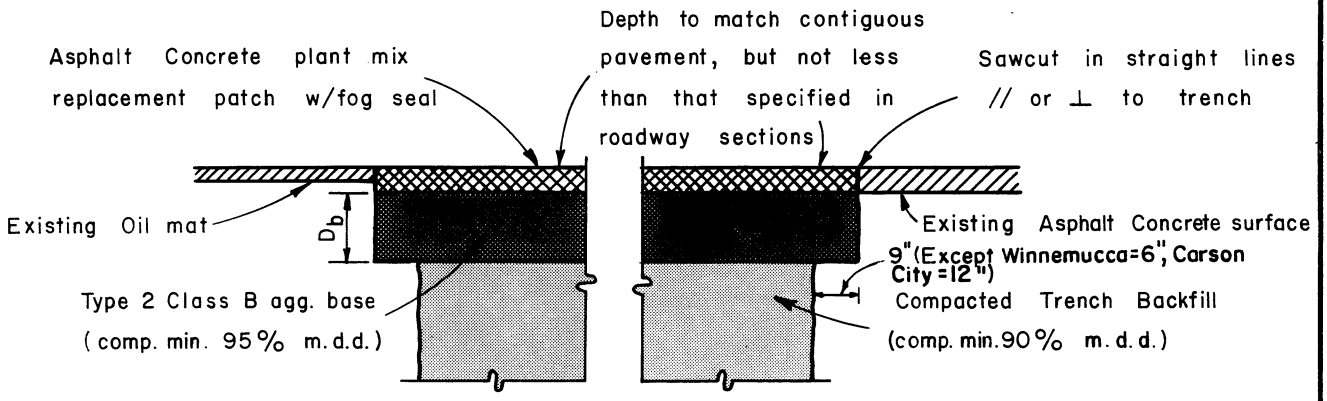
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 1	
			P.C.C. VALLEY GUTTER	DRAWING NO. 1-15 (312)	
				DATE 7-81	PAGE 18

NOTE:

1. If sawcut is within 12" of existing P.C.C. pavement, remove P.C.C. to existing edge and replace entire section.
2. D_b = 8" min. except Washoe Co. = 6" min.



TYPICAL PATCH FOR RIGID PAVEMENT



NOTE:

1. If sawcut is within 24" of edge of A.C. pavement remove existing pavement to that edge and replace entire section.
2. D_b = 8" min. except Washoe Co. = 6" min.

TYPICAL PATCH FOR FLEXIBLE PAVEMENT

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 1	
1	Backfill Dem.	11-83	**PAVEMENT PATCH (PERMANENT)**	DRAWING NO. 1-16 (314, 319)	
				DATE 7-81	PAGE 19

WALL TYPES

I - Toe Support
II - Heel Support
III - Toe & Heel Support
L - Level Backfill
S - Sloping Backfill

DESIGN CONDITIONS

Walls are to be used for the loading conditions shown for each type wall. Design H shall not be exceeded. Footing key is required except as shown otherwise. Special footing design is required where foundation material is incapable of supporting toe pressure listed in tables.

DESIGN DATA

Reinforced Concrete:
Fc = 1200 psi F'c = 3000 psi
Fs = 20,000 psi n = 10

Reinforced Masonry:
F'm = 600 psi Fm = 200 psi
Fs = 20,000 psi n = 50

Earth = 120 pcf and equivalent fluid pressure = 36 psf per foot of height.

Walls shown for 1 1/2:1 unlimited sloping surcharge are designed in accordance with Rankine's formula for unlimited sloping surcharge with $\phi = 33^{\circ}\ 42'$

REINFORCEMENT

Intermediate grade, hard grade, or rail steel deformation shall conform to ASTM A615, A616, A617. Bars shall lap 40 diameters, where spliced, unless otherwise shown on the plans. Bends shall conform to the Manual of Standard Practice, A.C.I. Backing for hooks is four diameters. All bar embedments are clear distances to outside of bar. Spacing for parallel bars is center to center of bars. All reinforcing shall be 3" clear unless otherwise shown.

CONCRETE

All concrete shall be class AA or DA.

MASONRY

All masonry shall conform to the requirements of sub-section 311.13 "Masonry Construction" of the "Standard Specifications for Public Works Construction". All masonry shall conform to the regulations of the U.B.C.

FOOTINGS

Bottom of footings will be placed at least 24" below finished ground surface (12" in Yerington). Changes in footing elevations shall be made in equal increments of masonry block height.

TESTING

Sufficient testing will be conducted to verify design data.

NO.	REVISION	DATE
1	FOOTINGS	2-84

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

MASONRY RETAINING WALL GENERAL NOTES

SECTION 1

DRAWING NO. 1-17.1 (311)

DATE 7-81

PAGE 20

MASONRY MORTAR

The mortar shall conform to the requirements of sub-section 311.13 "Masonry Construction" of the "Standard Specifications for Public Works Construction". Mortar in horizontal joints shall fully cover all face shell and web members. Vertical joints shall be buttered to a depth greater than the thickness of the face shells of the block. Furrowing of mortar will not be permitted.

GROUT

The grout shall conform to the requirements of sub-section 311.13 "Masonry Construction" of the "Standard Specifications for Public Works Construction." All cells shall be poured solid with grout.

EXCAVATION AND BACKFILL

Compaction of backfill material by jetting or ponding with water will not be permitted. Each layer of backfill shall be moistened to its optimum and thoroughly tamped, rolled or otherwise compacted to at least 90% of its maximum dry density. No backfill material shall be deposited against masonry retaining walls until the grout has developed a strength of 2,000 pounds per square inch in compression as determined by test 2" cubes, or until the masonry retaining wall has cured for a minimum of 14 days.

OPTIONAL MORTAR KEY

Embedment of the first course of block in a poured footing may be omitted by providing a mortar key. The key is formed by embedding a flat 2 x4 flush with the top of the freshly poured footing. Remove the 2 x4 after the concrete has started to harden.

EXPANSION JOINTS

Walls over 50 feet in length shall have expansion joints at 25'± intervals (See Details).

WEEP HOLES

Weep holes shall be installed at 10'o.c. in the first row of blocks above finished ground surface. Back face of wall will be waterproofed.

INTERCEPTOR SWALES

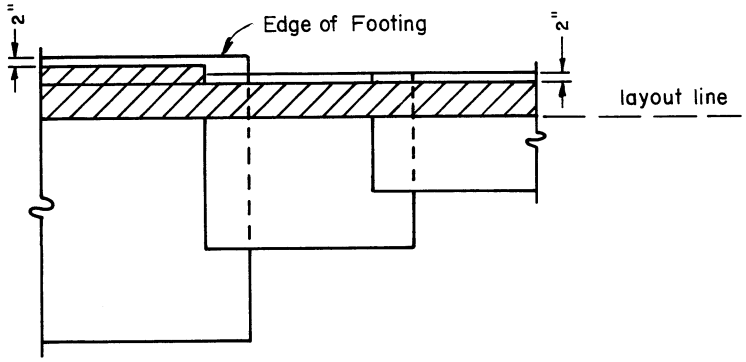
Interceptor swale to be constructed at back of wall when directed by the Agency Engineer.

NO.	REVISION	DATE
1	SWALES	3-83

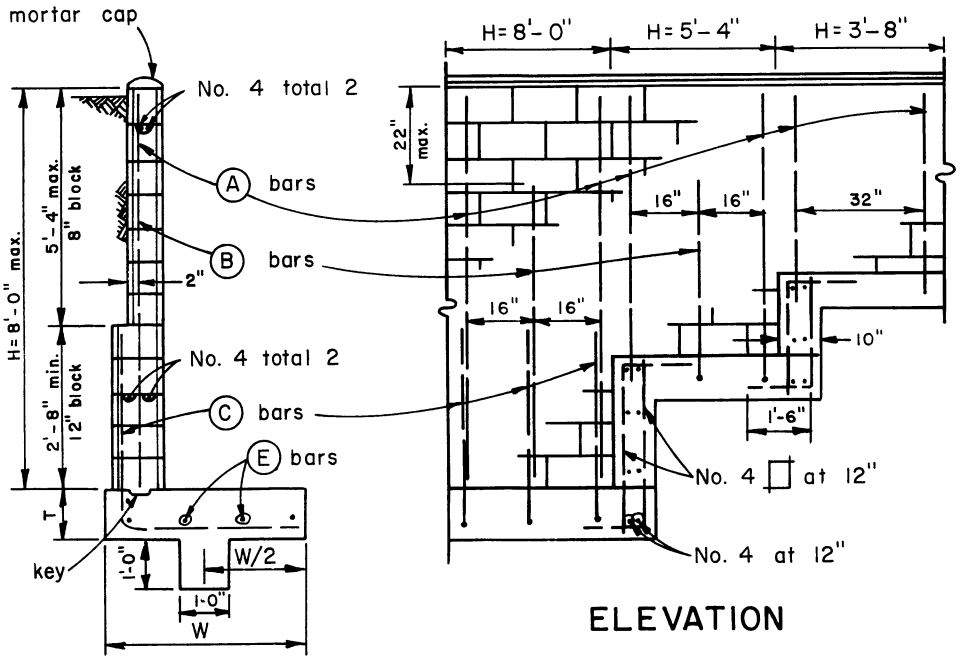
STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

MASONRY RETAINING WALL GENERAL NOTES

SECTION	1
DRAWING NO.	1-17.2 (311)
DATE	7-81
PAGE	21

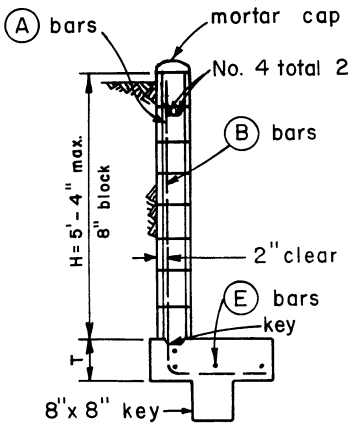


PLAN



TYPICAL SECTION
over 5'-4"

ELEVATION



TYPICAL SECTION
5'-4" max.

NOTE:

See Masonry Retaining Wall General Notes, Dwg. No. 1-17.1 and 1-17.2, and Details, Dwg. No. 1-19.

DIMENSIONS AND REINFORCING STEEL			
H (max)	3'-8"	5'-4"	8'-0"
T (min)	0'-8"	0'-10"	1'-0"
W (min)	2'-4"	3'-6"	5'-4"
(A) bars	No.4 at 32"	No. 4 at 32"	No. 4 at 32"
(B) bars	——	No.4 at 32"	No. 4 at 32"
(C) bars	——	——	No. 6 at 16"
(E) bars	No. 4 total 4	No. 4 total 5	No. 4 total 6
max soil press. (psf)	500	600	800

NO.	REVISION	DATE

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

MASONRY RETAINING WALL I-L

SECTION 1

DRAWING NO. 1-18.1 (311)

DATE 7-81

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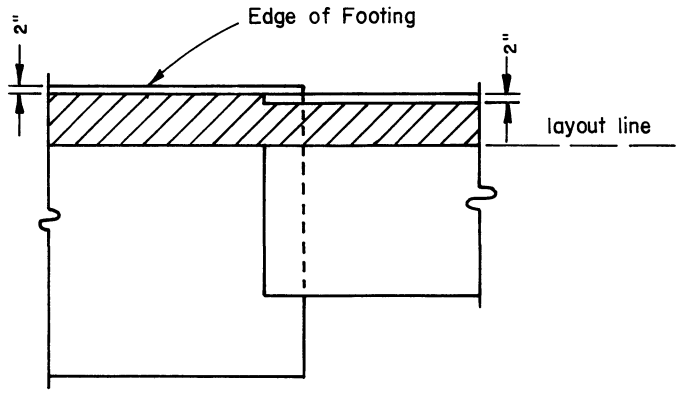

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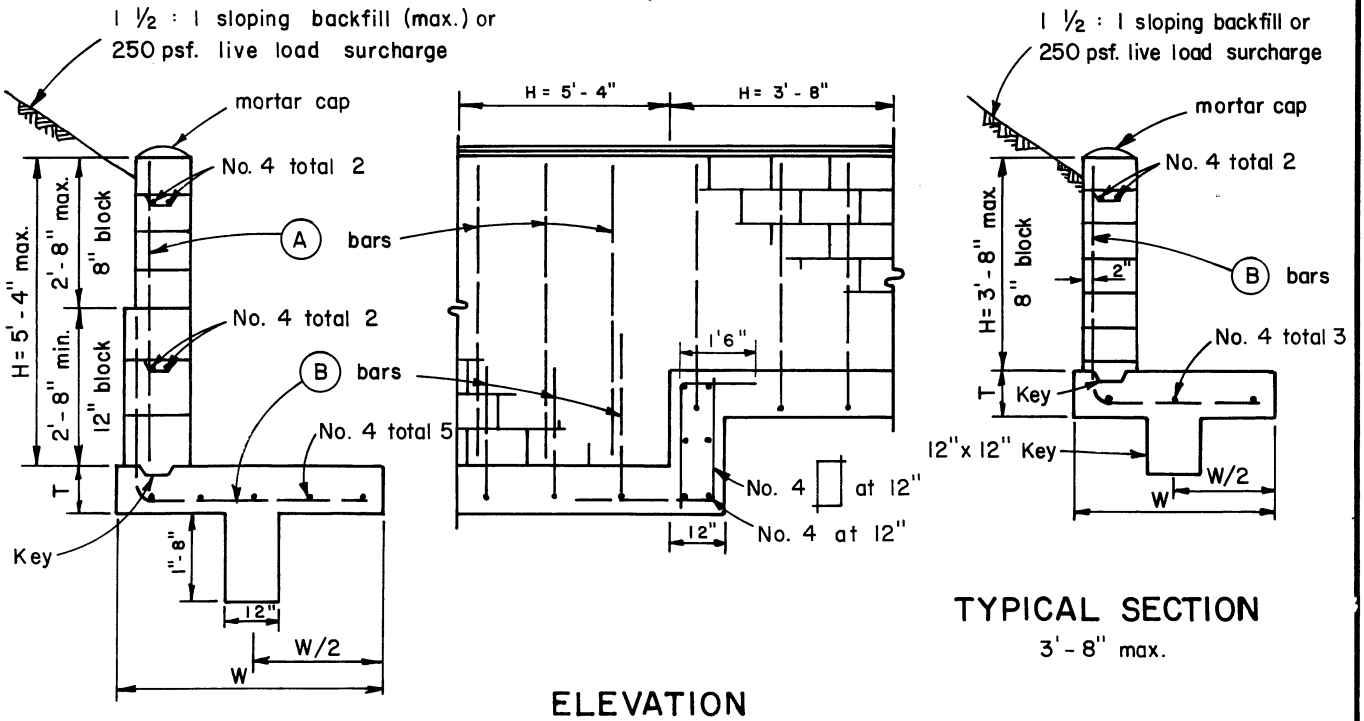


ELEVATION

TYPICAL SECTION
3'-8" max.

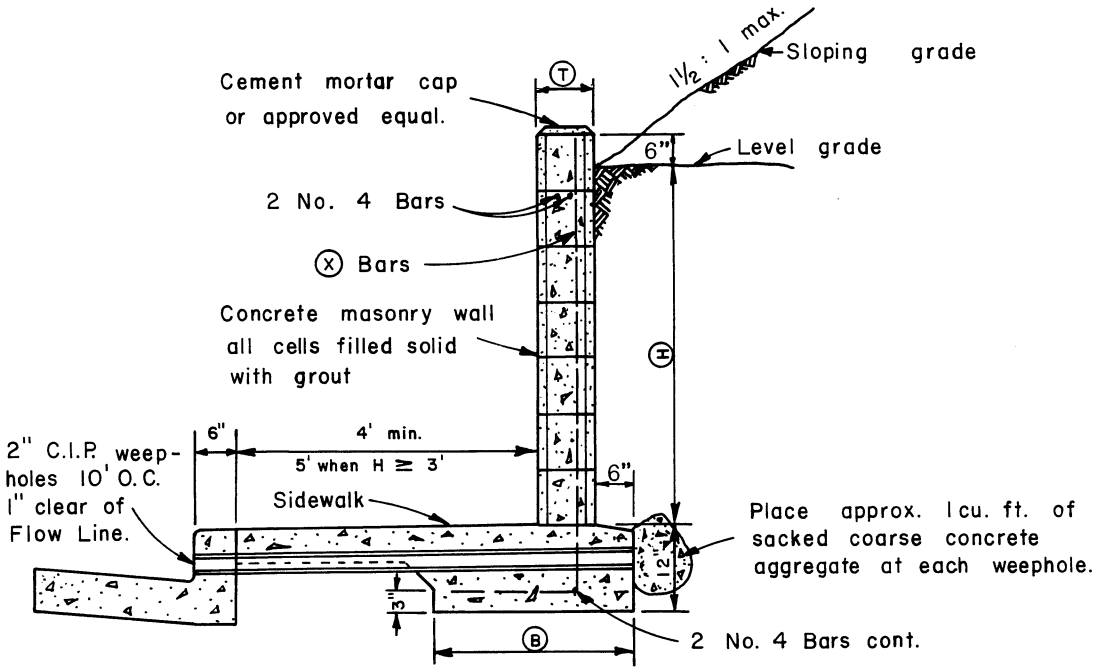
TYPICAL SECTION
over 3'-8"

NOTE:

See Masonry Retaining Wall General Notes., Dwg. No. 1-17.1 and 1-17.2, and Details, Dwg. No. 1-19

DIMENSIONS AND REINFORCING STEEL		
H (max.)	5'-4"	3'-8"
T (min.)	0'-10"	0'-10"
W (min.)	5'-0"	3'-9"
(A) bars	No. 4 at 16"	—
(B) bars	No. 6 at 16"	No. 4 at 16"
max. toe press. (psf)	700	550

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 1	
			MASONRY RETAINING WALL I-S	DRAWING NO. 1-18.2 (311)	
				DATE 7-81	PAGE 23



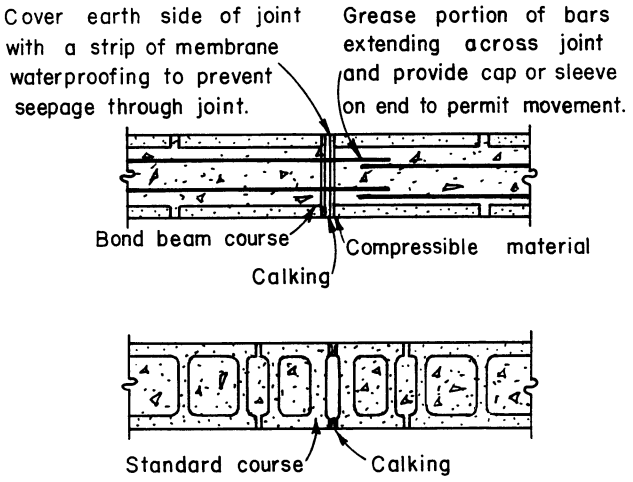
TYPICAL SECTION 5' MAX.

H	T	B	X Bars
1'	7 5/8	1'-2"	No. 4 at 32" O.C.
2'	7 5/8	1'-2"	No. 4 at 32" O.C.
3'	7 5/8	1'-9"	No. 4 at 32" O.C.
4'	7 5/8	2'-2"	No. 4 at 32" O.C.
5'	7 5/8	2'-9"	No. 4 at 24" O.C.

Design for level grade above wall

H	T	B	X Bars
1	7 5/8	1-8	No. 4 at 24 O.C.
2	7 5/8	1-8	No. 4 at 24 O.C.
3	7 5/8	2-3	No. 4 at 24 O.C.
4	7 5/8	3-0	No. 4 at 24 O.C.
5	7 5/8	3-6	No. 5 at 16 O.C.

Design for sloping grade above wall



TYPICAL EXPANSION JOINT DETAIL

NOTES:

1. Not permitted in Douglas County.
2. See Masonry Retaining Wall General Notes, Dwg. No. 1-17.1 and 1-17.2, and Details, Dwg. No. 1-19.

NO.	REVISION	DATE
1	DIMENSIONS	3-83

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

MASONRY RETAINING WALL I-L&S

SECTION 1

DRAWING NO. 1-18.3 (311)

DATE 7-81

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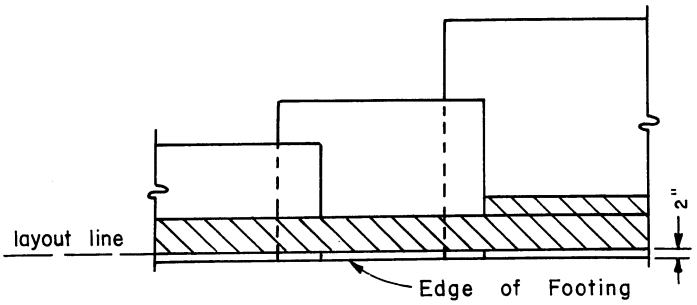

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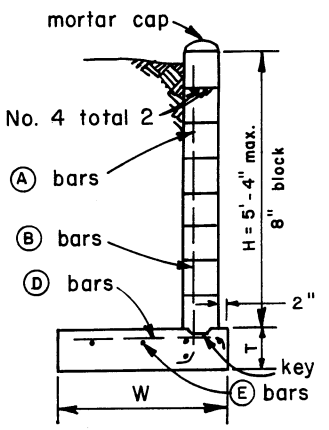
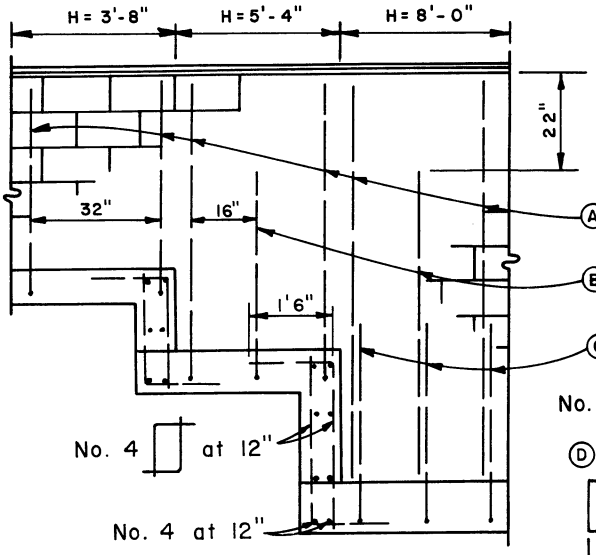


TYPICAL SECTION

5'-4" max.



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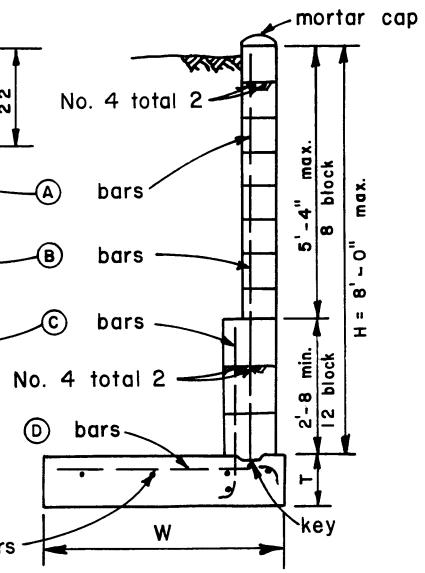

TYPICAL SECTION

over 5'-4"

DIMENSIONS AND REINFORCING STEEL			
H (max.)	3'-8"	5'-4"	8'-0"
T (min.)	0'-8"	0'-10"	1'-0"
W (min.)	2'-4"	3'-2"	4'-9"
Ⓐ bars	No. 4 at 32"	No. 4 at 32"	No. 4 at 32"
Ⓑ bars	—	No. 4 at 32"	No. 4 at 32"
Ⓒ bars	—	—	No. 6 at 16"
Ⓓ bars	No. 4 at 32"	No. 4 at 16"	No. 6 at 16"
Ⓔ bars	No. 4 total 4	No. 4 total 5	No. 4 total 6
max. soil press. (psf)	1100	1600	2200

NOTE:

See Masonry Retaining Wall General Notes, Dwg. No. 1-17.1 and 1-17.2 and Details, Dwg. No. 1-19.

NO.	REVISION	DATE

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

MASONRY RETAINING WALL II-L

SECTION 1

DRAWING NO. 1-18.4 (311)

DATE 7-81

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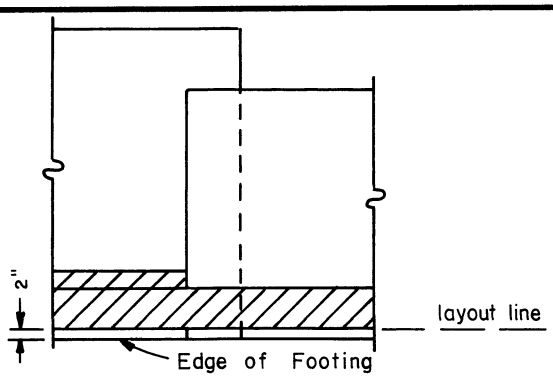

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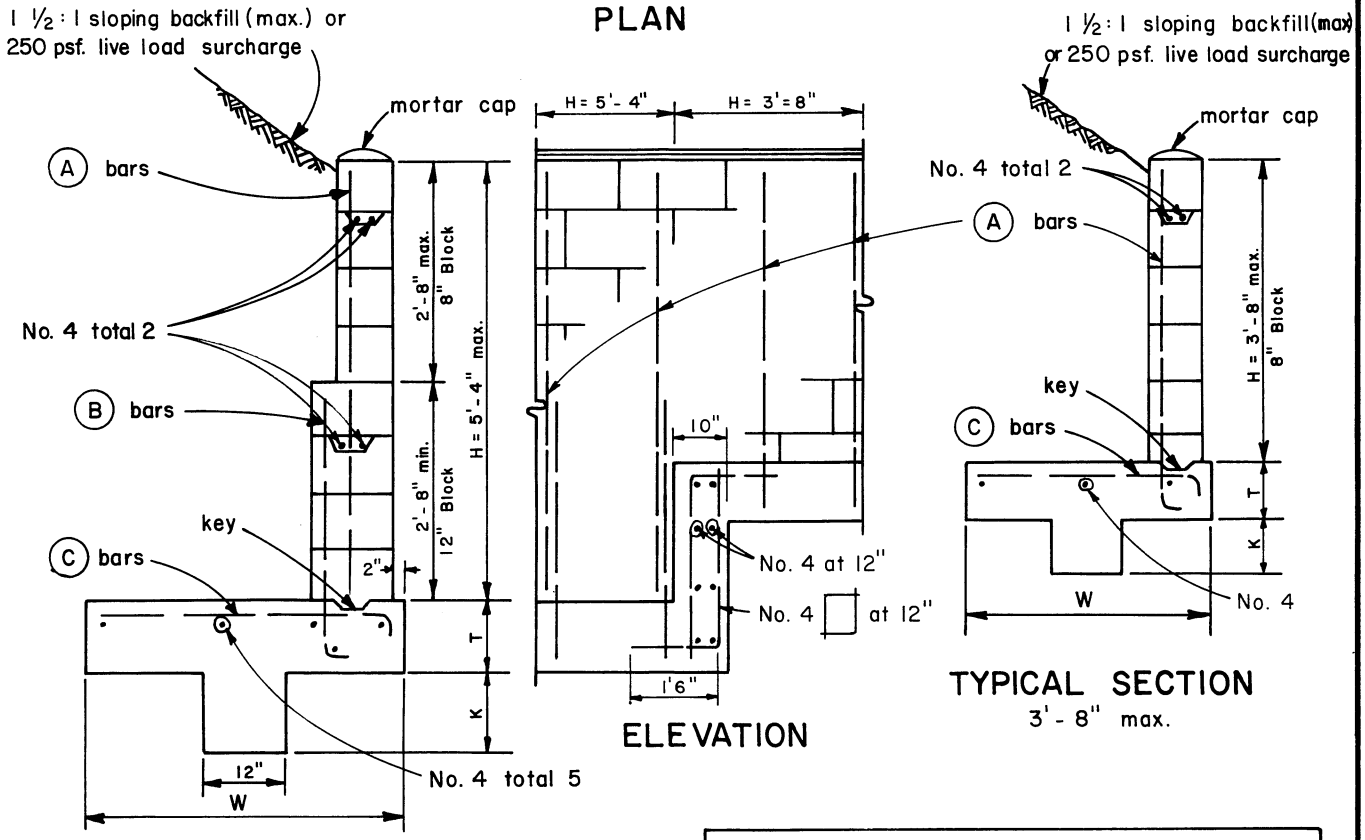

TYPICAL SECTION
over 3'-8"

TYPICAL SECTION
3'-8" max.

NOTE:
See Masonry Retaining Wall General Notes, Dwg. No. 1-17.1 and 1-17.2, and Details, Dwg. No. 1-19.

DIMENSIONS AND REINFORCING STEEL				
H (max)	5'-4"		3'-8"	
T (min.)	0'-10"		0'-8"	
W (min.)	4'-0"		3'-0"	
(A) bars	No. 4 at 16"		No. 4 at 16"	
(B) bars	No. 6 at 16"		———	
Surcharge	sloping	live load	sloping	live load
(C) bars	No. 6 at 8"	No. 6 at 16"	No. 6 at 16"	No. 6 at 16"
K (min.)	1'-0"	0'-8"	1'-0"	0'-8"
Toe press	2700 psf.	1900 psf.	1700 psf.	1430 psf.

NO.	REVISION	DATE

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

MASONRY RETAINING WALL II-S

SECTION 1

DRAWING NO. 1-18.5 (311)

DATE 7-81

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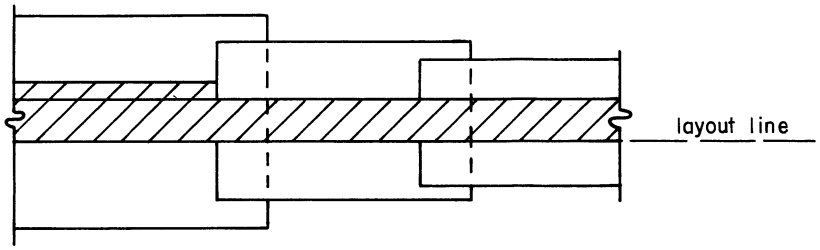
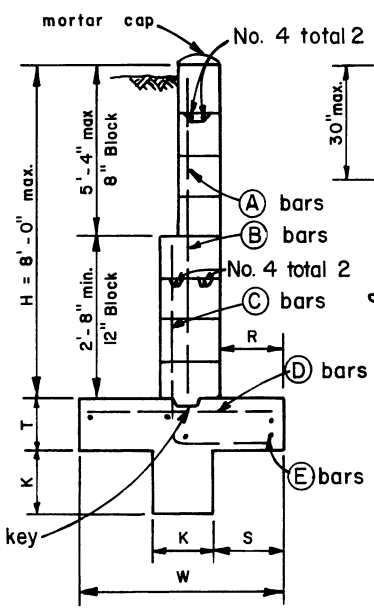
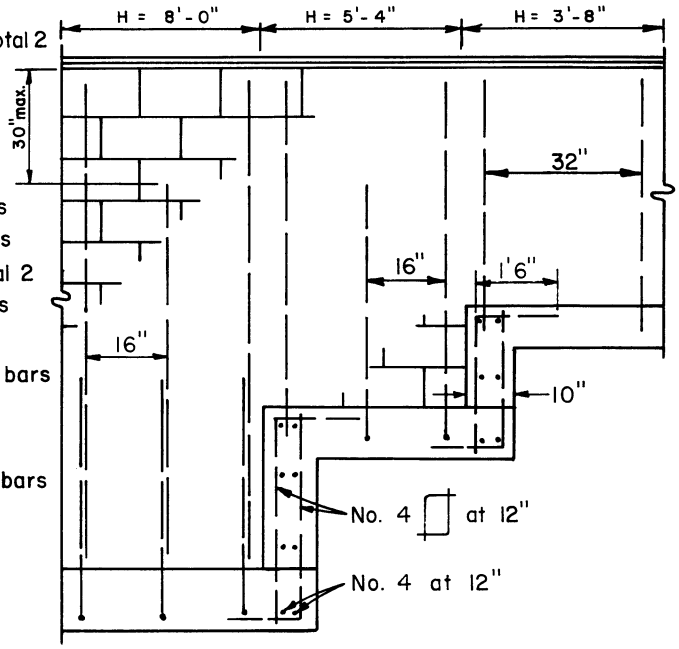


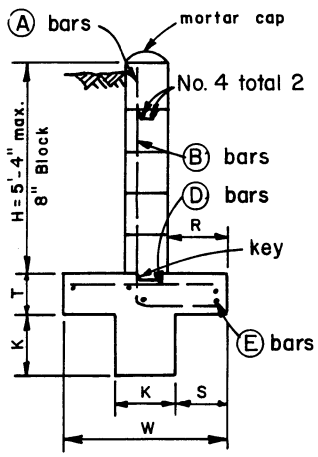
PLAN



TYPICAL SECTION
over 5'-4"



ELEVATION



TYPICAL SECTION
5'-4" max.

NOTE:
See Masonry Retaining Wall General Notes, Dwg. No. 1-17.1 and 1-17.2 and Details, Dwg. No. 1-19.

DIMENSIONS AND REINFORCING STEEL			
H (max.)	3'-8"	5'-4"	8'-0"
T (min.)	0'-8"	0'-10"	1'-0"
W (min.)	2'-1"	3'-1"	4'-3"
R	0'-9"	1'-2"	1'-5"
S	0'-8½"	1'-½"	1'-7½"
K	0'-8"	0'-8"	0'-12"
Ⓐ bars	No. 4 at 32"	No. 4 at 32"	No. 4 at 32"
Ⓑ bars	——	No. 4 at 32"	No. 4 at 32"
Ⓒ bars	——	——	No. 7 at 16"
Ⓓ bars	No. 4 at 32"	No. 4 at 16"	No. 4 at 16"
Ⓔ bars	No. 4 total 5	No. 4 total 5	No. 4 total 6
max. soil press (psf.)	774	1030	1660

NO.	REVISION	DATE

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

MASONRY RETAINING WALL III-L

SECTION 1

DRAWING NO. 1-18.6 (311)

DATE 7-81

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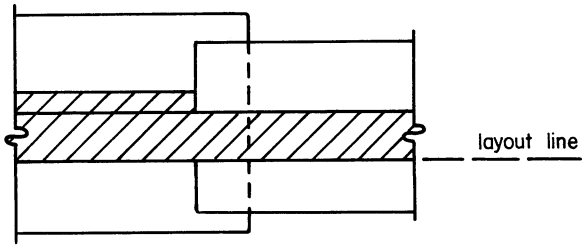
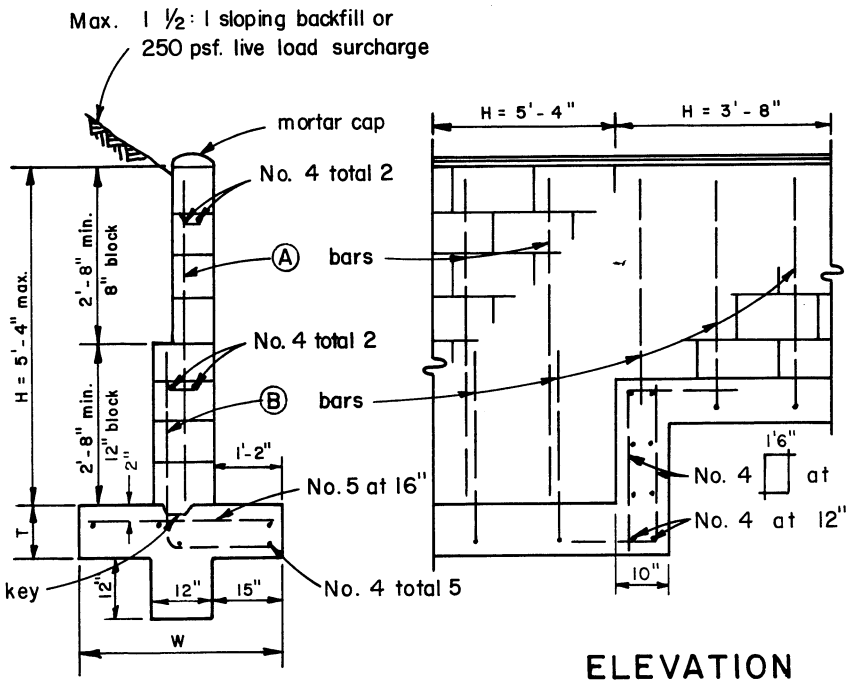
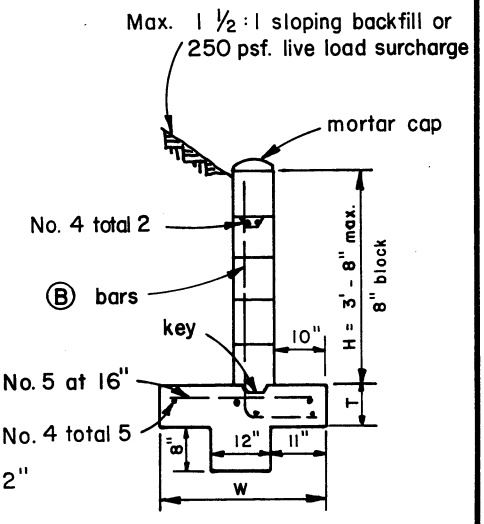


PLAN



TYPICAL SECTION
over 3'-8"

ELEVATION



TYPICAL SECTION
3'-8" max.

NOTE:
See Masonry Retaining Wall General Notes, Dwg. No. 1-17.1 and 1-17.2, and Details, Dwg. No. 1-19.

DIMENSIONS AND REINFORCING STEEL		
H (max.)	5'-4"	3'-8"
T (min.)	0'-10"	0'-8"
W (min.)	3'-10"	2'-9"
Ⓐ bars	No. 4 at 16"	——
Ⓑ bars	No. 6 at 16"	No 4 at 16"
Max. Toe Press. P.S.F.	2000	1400

NO	REVISION	DATE

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

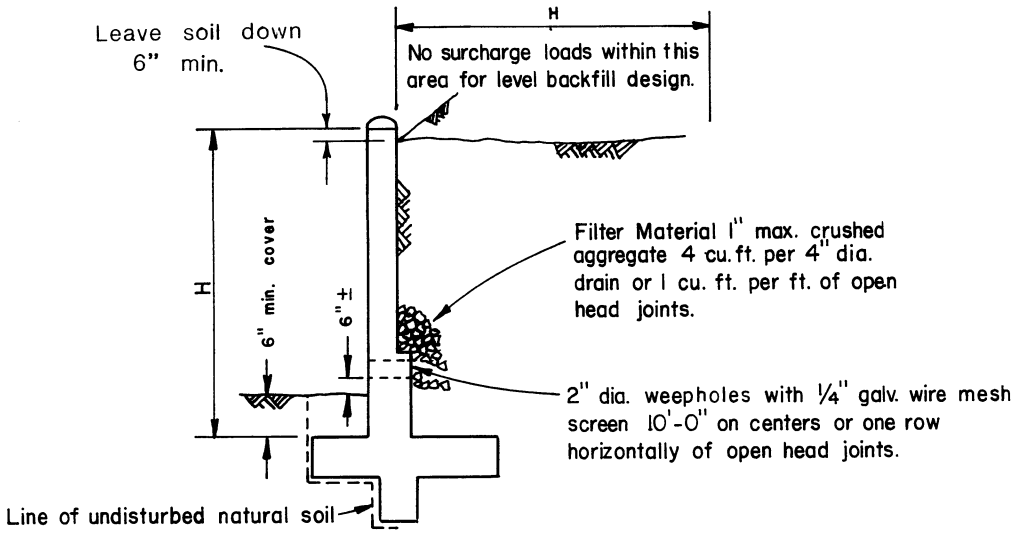
MASONRY RETAINING WALL III-S

SECTION 1

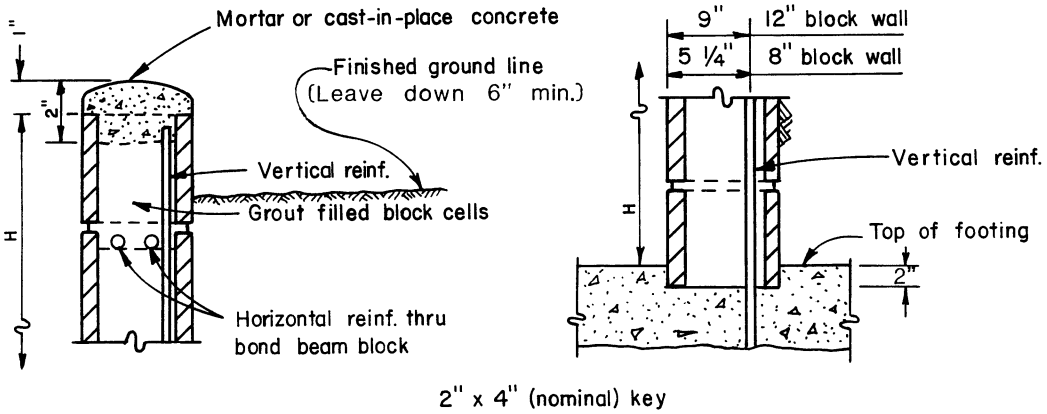
DRAWING NO. 1-18.7 (311)

DATE 7-81

PAGE 28



TYPICAL SECTION



CAP DETAIL

KEY DETAIL

NOTE:

All masonry retaining walls shall be constructed with cap, key and drainage details as shown hereon.

NO.	REVISION	DATE
1	GROUND LINE	3-83

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

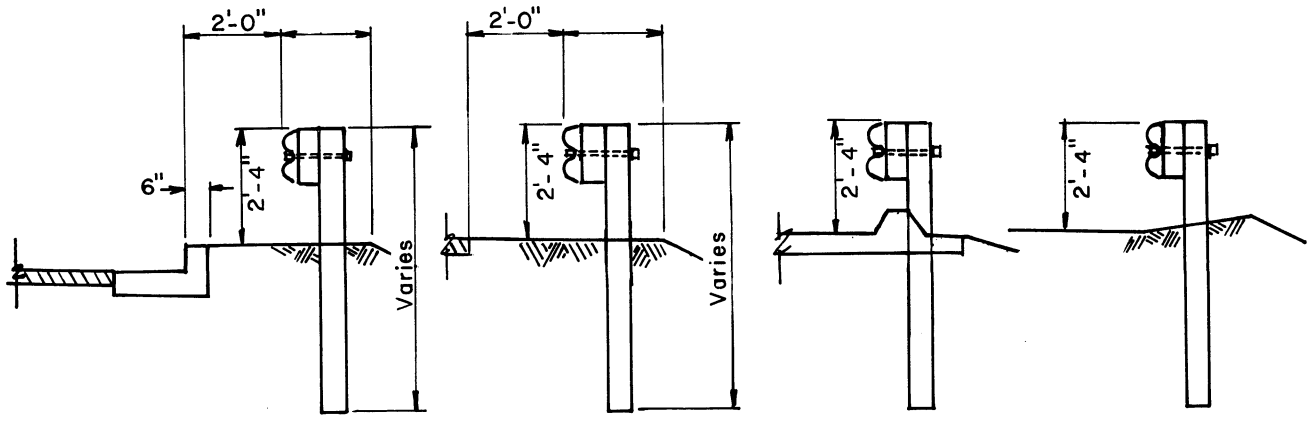
MASONRY RETAINING WALL DETAILS

SECTION 1

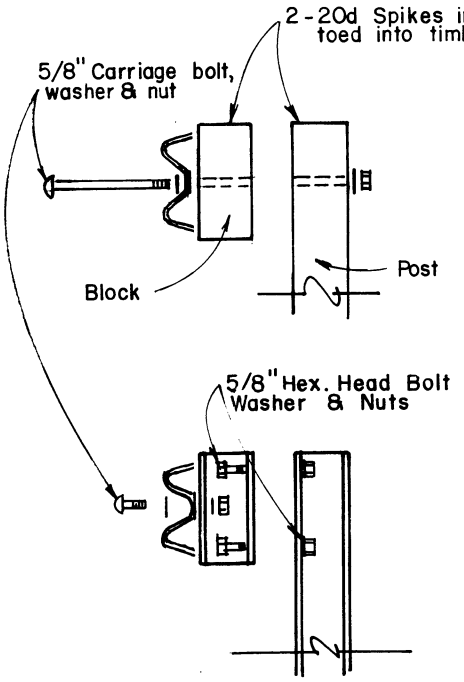
DRAWING NO. 1-19 (311)

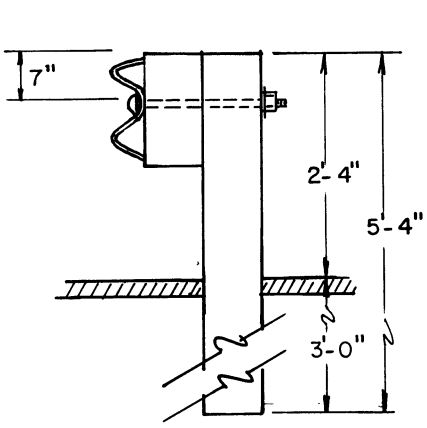
DATE 7 - 81

PAGE 29

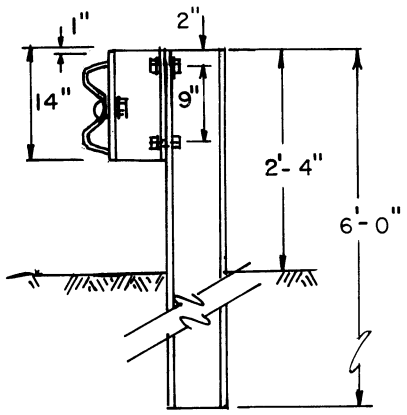


TYPICAL GUARDRAIL INSTALLATIONS





TIMBER POST



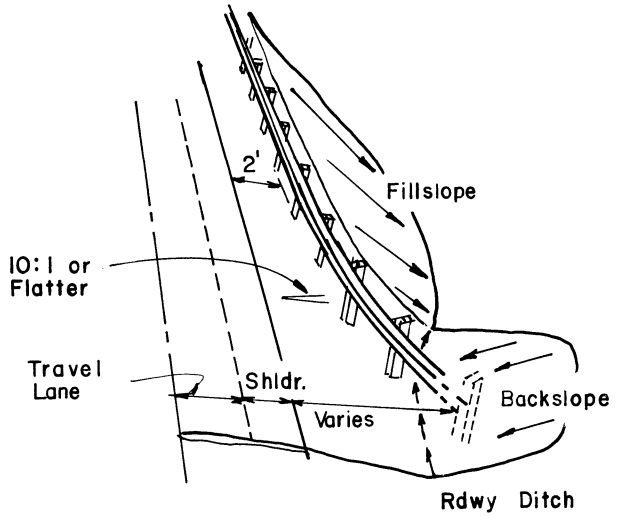
METAL POST

NOTES:

1. All holes 3/4"Ø
2. Rail mounts to block with bolt on approching traffic side of block and post web.
3. Block mounts to post with 2 bolts staggered. Lower bolt on approching traffic side of block and post web.

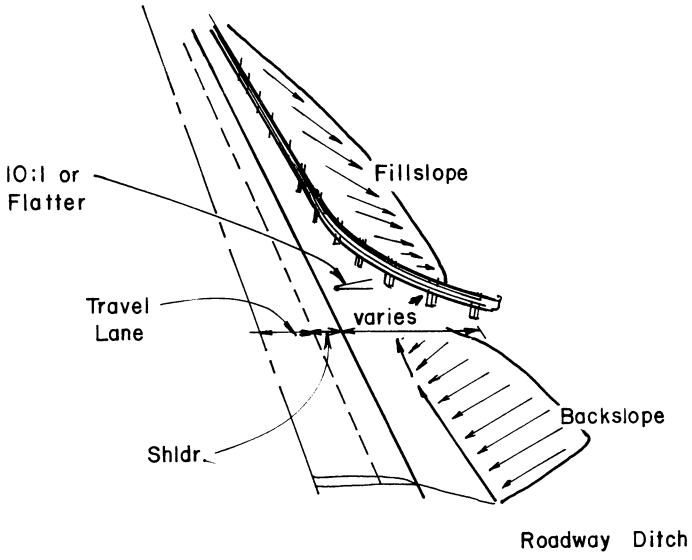
POST MATERIAL	
WOOD (D.F.)	STEEL
Post 10"x 10"x 5'-4" Block 6"x 8"x 1'-2" or Post 6"x 8"x 5'-4" Block 6"x 8"x 1'-2"	W6x15.5x 6'-0" W6x 8.5x 1'-2" or W6x 8.5x 6'-0" W6x 8.5x 1'-2"

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 1
			GUARDRAIL DETAILS	DRAWING NO. 1-20 (329)
				DATE 7-81 / PAGE 30



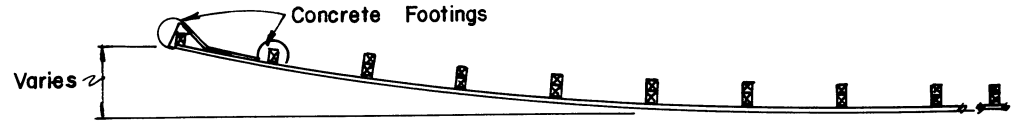
NOTE: Breakaway Cable Terminal shall be eliminated when guardrail is buried in backslope.

APPROACH END BURIED IN BACKSLOPE

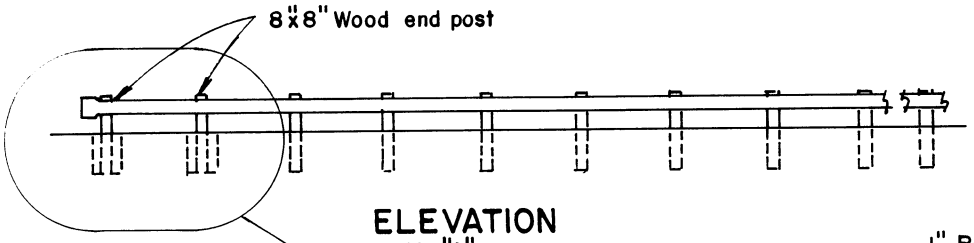


APPROACH END POSITIONED BEHIND BACKSLOPE

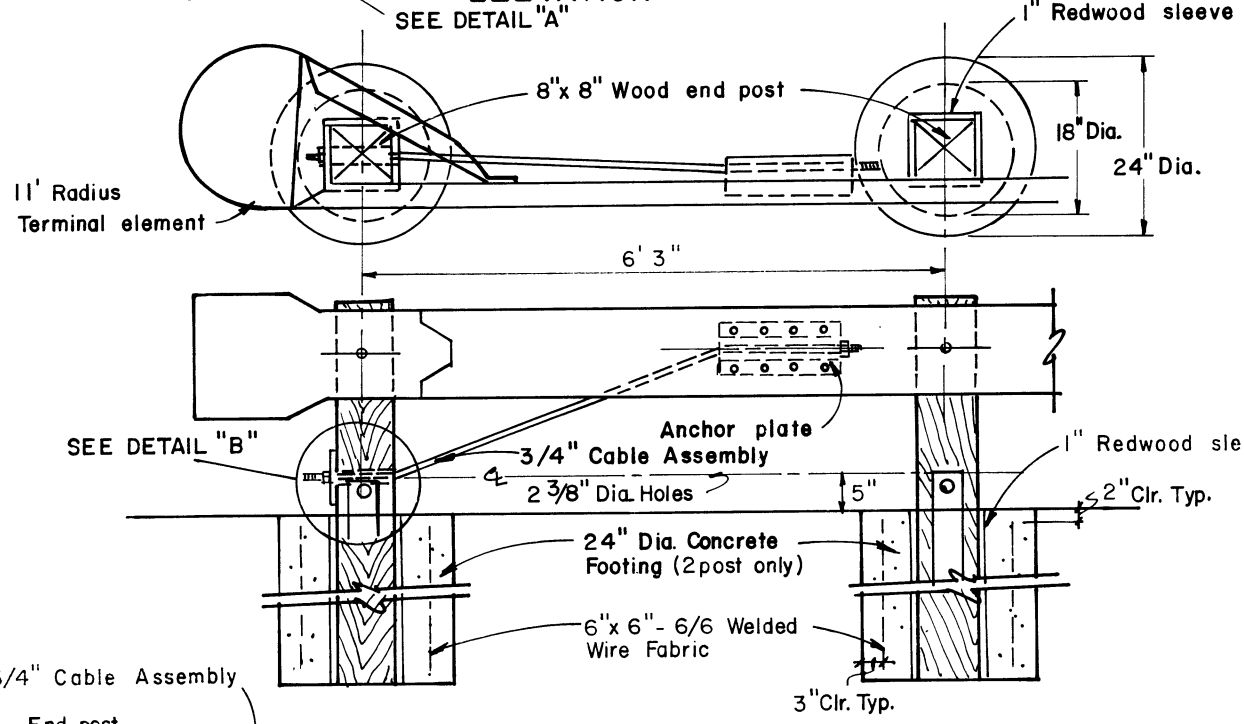
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 1	
			GUARDRAIL FLAIR	DRAWING NO. 1-21 (329)	
				DATE 7-81	PAGE 31

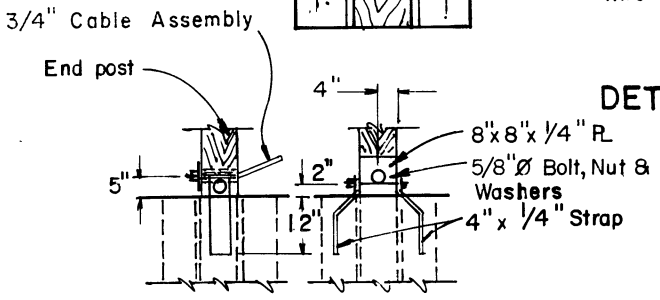


PLAN



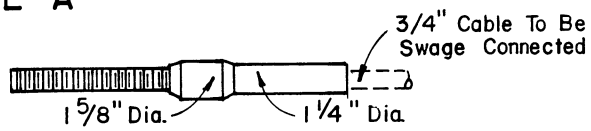
ELEVATION



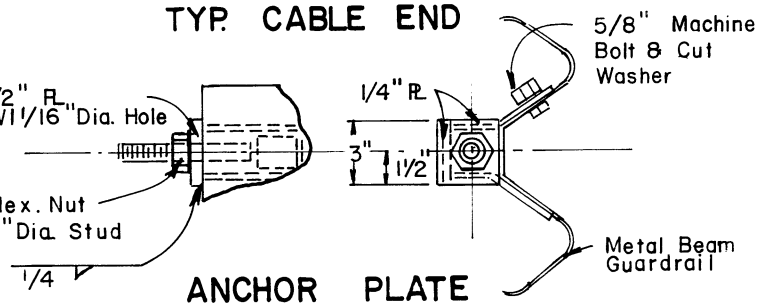


DETAIL "A"

DETAIL "B"



TYP. CABLE END

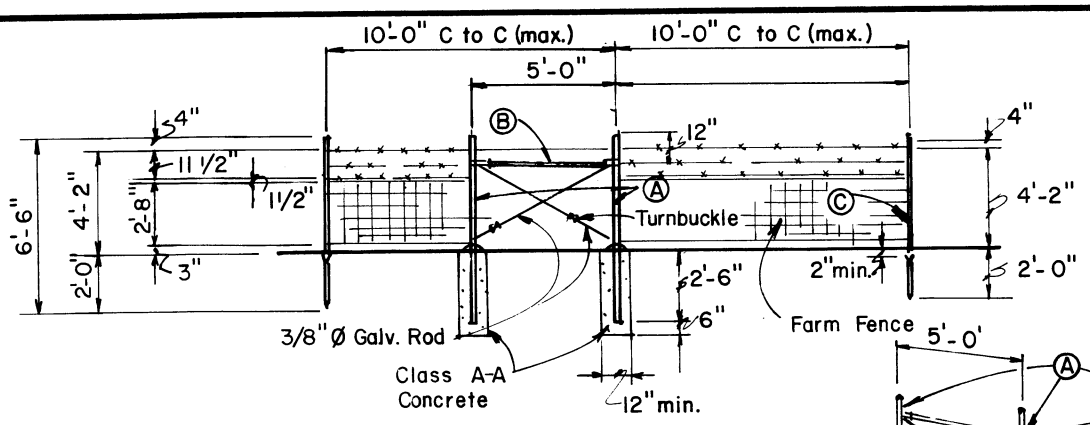


ANCHOR PLATE DETAILS

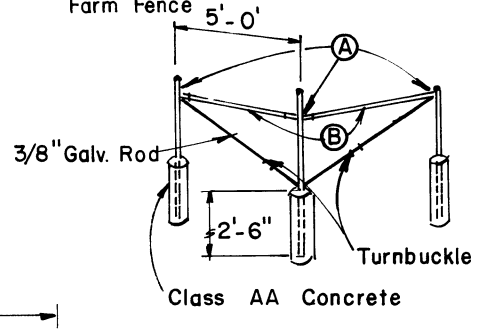
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

GUARDRAIL BREAKAWAY TERMINAL

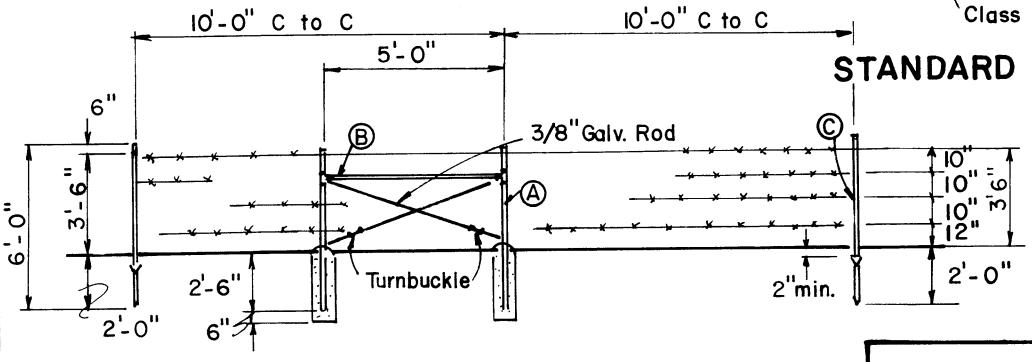
SECTION	1
DRAWING NO.	1-22 (329)
DATE	7-81
PAGE	32



TYPE A

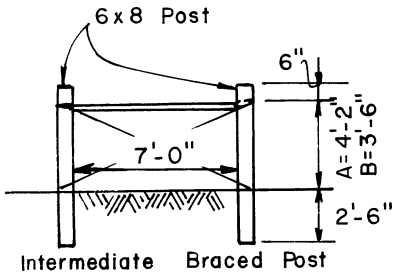


STANDARD CORNER BRACE

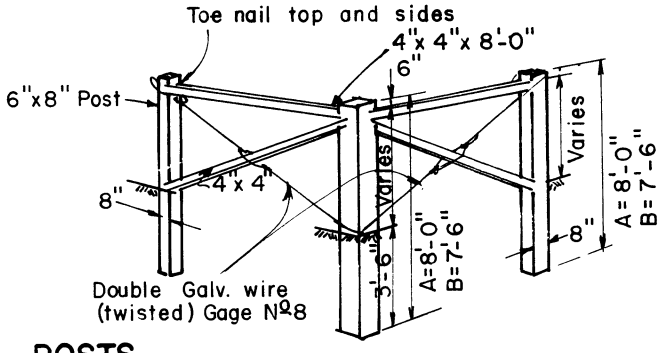


TYPE B

POST MATERIAL	
Ⓐ	2.351"O.D.(3.10 #/ft.) Galv. pipe
Ⓑ	1.630"O.D.(1.93 #/ft.) Galv. pipe
Ⓒ	Drive Steel Line Post (T or H Section)



ALTERNATE CORNER AND BRACED POSTS

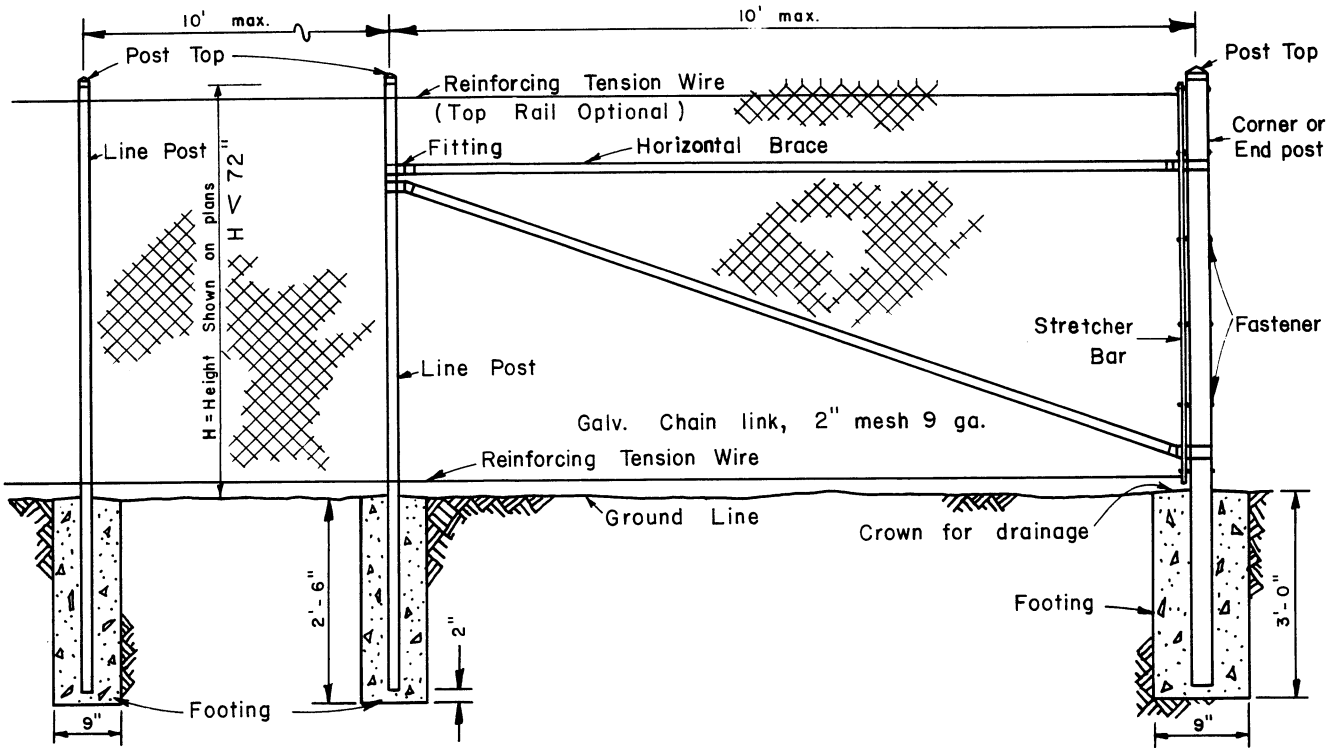


Timber Corner Brace

GENERAL NOTES:

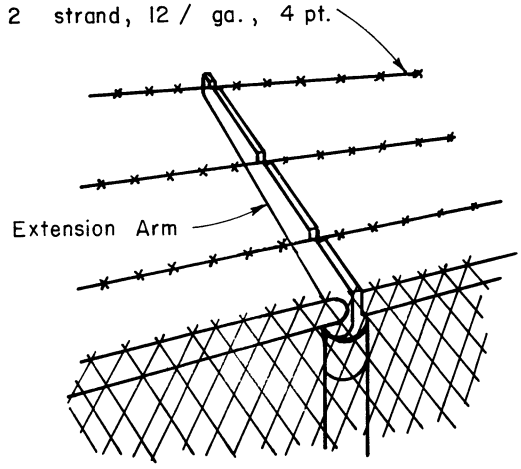
1. Type A Fence will have 3 lines of barb wire equally spaced.
2. All barb wire will be 2 strand, 12½ ga., 4 point.
3. Brace post interval shall not exceed 500 feet.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 1	
			PROPERTY FENCE TYPE "A" & "B"	DRAWING NO. 1-23 (325)	
				DATE 7-81	PAGE 33



NOTES:

1. Fencing shall be chain link and shall consist of galvanized chain link fabric on steel posts.
   (a) All post tops shall be fitted with suitable finials.
   (b) Braces shall be spaced approximately 12" below top of terminal posts and shall extend from end, gate, or corner posts to first adjacent line post.
   (c) All fittings shall be hot dipped galvanized malleable, cast iron, or pressed steel.
   (d) Top and bottom selvages of the fence shall have a twisted and barbed finish.
2. Barbed Wire, Extension Arms, and Top Horizontal Rails shall be installed only when shown on the plans and/or called for in the special provisions.



EXTENSION ARM AND BARBED WIRE

TABLE I

For Chain Link Fence 72" and Less

Location	Min. Size	Min. Weight (#/ft.)
End, corner & pull	2.351 O.D.	3.10
Line	1.869 O.D.	2.72
Braces	1.630 O.D.	2.27
Top Rail	1.630 O.D.	2.27

NO.	REVISION	DATE
1	LINE SIZE	3-83
2	SPELLING	10-16-86

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

CHAIN LINK FENCE

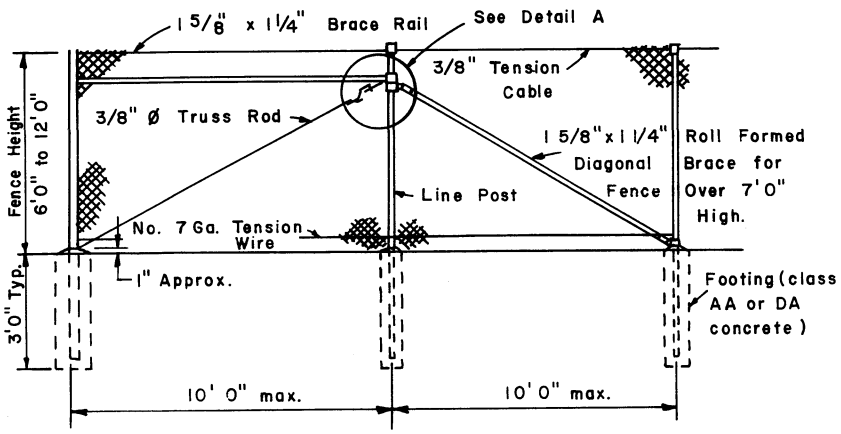
(72" High or Less)

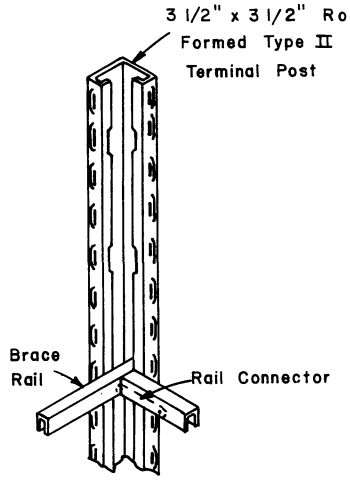
SECTION 1

DRAWING NO. 1-24.1 (325)

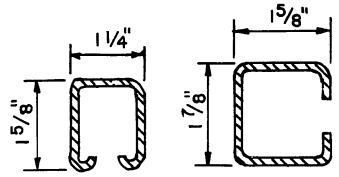
DATE 7-81

PAGE 34

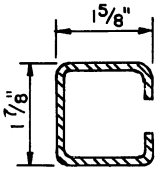




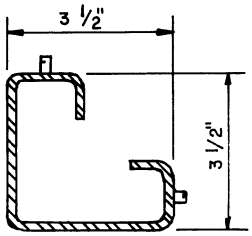
RAIL CONNECTION AT CORNER POSTS



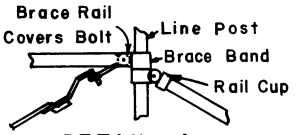
BRACE RAIL



LINE POST



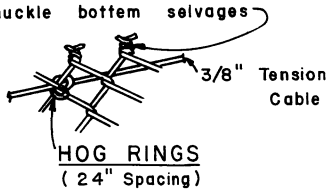
TYPE II TERMINAL POST



DETAIL A

CHAIN LINK FABRIC

No. 9 Ga. - 2" Mesh. Twist top & knuckle bottem selvages



NOTES:

1. Chain Link fencing shall consist of galvanized chain link fabric on steel posts (H - column, Tubular or C - column)
2. (A) Braces shall be spaced approx. 12" below top of terminal posts and shall extend from end, gate or corner posts to first adjacent line post.
   (B) All fittings shall be hot dipped galvanized malleable, cast iron, or pressed steel.
   (C) Fabric shall be fastened to line posts with fabric bands spaced approx. 14" apart, and to top and bottom tension cable with hog rings at 24".
3. Barbed Wire, Extension Arms, and top Horzontal Rails shall be installed only when shown on the plans and/or called for in the special provisions.

NO.	REVISION	DATE
1	SPELLING	10-16-86

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

CHAIN LINK FENCE

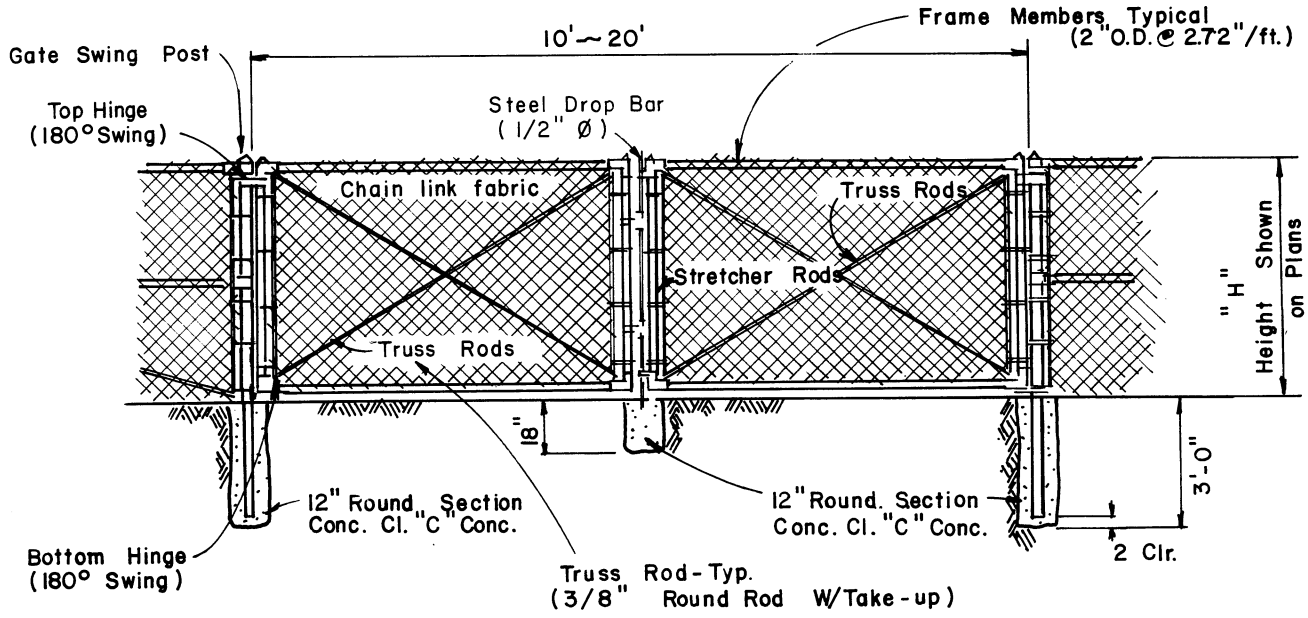
(6' to 12' High)

SECTION 1

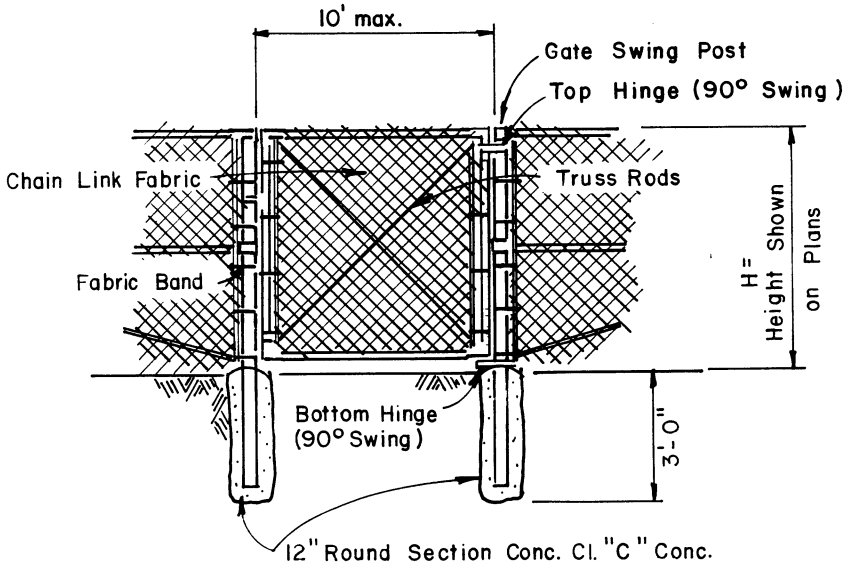
DRAWING NO. 1-24.2 (325)

DATE 7-81

PAGE 35



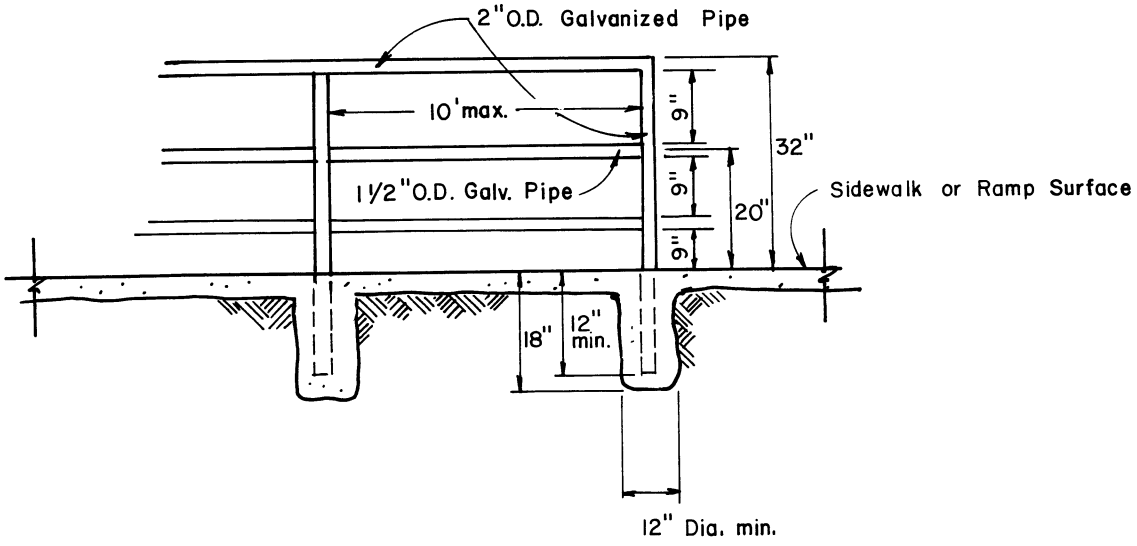
DOUBLE SWING GATE



SINGLE GATE

GATE SWING POST DIA.	
Gate Size	Pipe Dia.
6' and less	3" O.D. ~ 5.79 #/ft.
6' - 10'	4" O.D. ~ 9.10 #/ft.

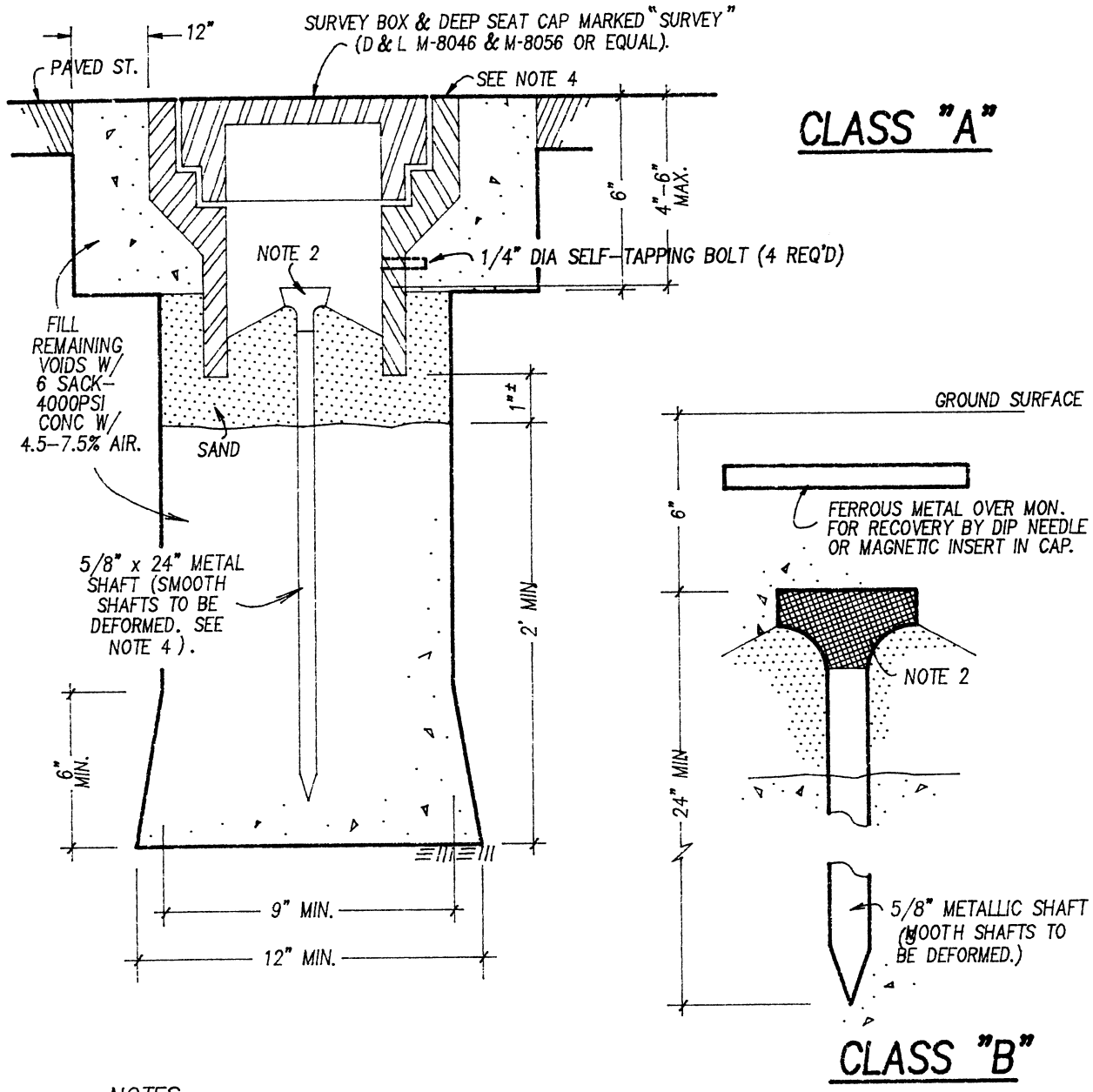
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 1
1	DIMENSIONS	3-83	CHAIN LINK GATES	DRAWING NO. 1-25 (325)
				DATE 7-81 / PAGE 36



NOTES:

1. Handrail may be installed on top of all standard retaining walls when next to walkway.
2. All concrete footings shall be Class AA or DA concrete.
3. All pipe joints shall be welded and ground smooth.
4. Any areas where galvanizing has been removed through abuse, welding or grinding shall be finished with a liquid galvanizing solution.
5. All handrail construction shall conform to the latest edition of the UBC and as approved by the governing authority.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 1	
			PIPE HANDRAIL	DRAWING NO. 1-26 (324)	
				DATE 7-81	PAGE 37



NOTES

1. BRONZE SURVEY MARKER (SERVCO #286 OR EQUAL) MAY BE SUBSTITUTED FOR THE 5/8" SHAFT & CAP – NOT PERMITTED IN CITY OF RENO.
2. 1 1/2" MIN NONFERROUS CAP W/PLS # PERMANENTLY ATTACHED PRIOR TO PLACEMENT.
3. IN CARSON CITY, SUPPORT BOX ON (2) 2x4 REDWOOD BLOCKS & PROVIDE 1" SAND BED.
4. IN WASHOE COUNTY, INSTALL IN ACCORDANCE WITH DWG. W-18.
5. PRE-PUNCHED CAPS SHALL NOT BE PERMITTED.

NO.	REVISION	DATE
1	REDRAW	1/93vp
2	NOTES	1/95vp

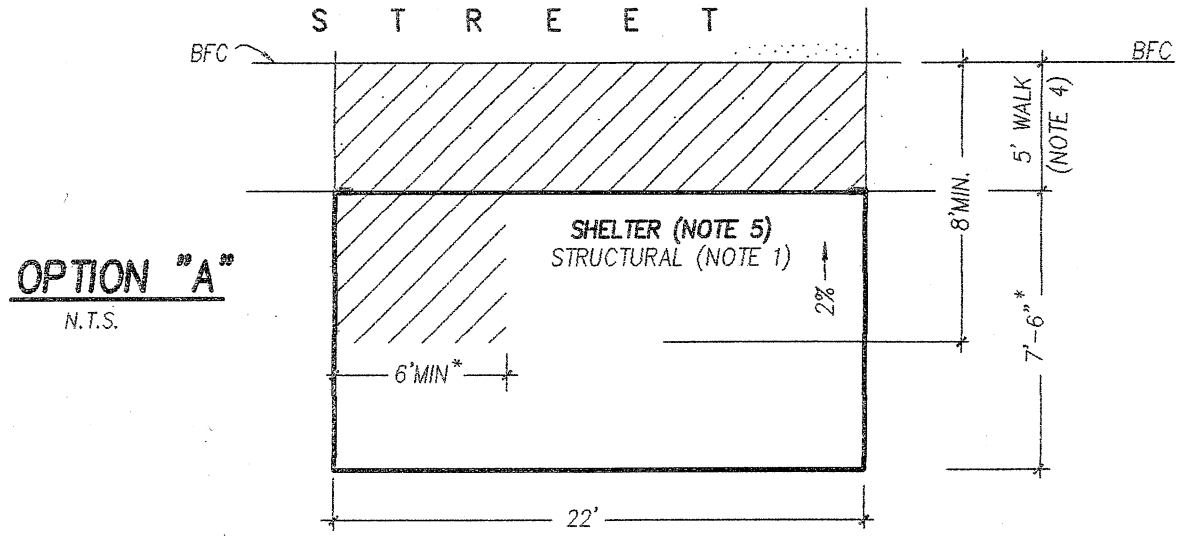
STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

MONUMENTS

SECTIONS 1

DRAWING NO. 1-27 (332)

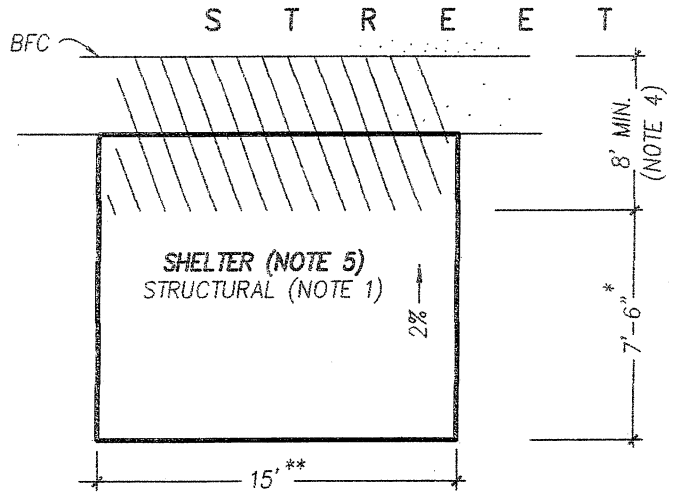
DATE 1/93 vp



OPTION "A"

N.T.S.

= NO OBSTACLES WITHIN AREA (MIN ADA CLEAR ZONE: 5'x8').



OPTION "B"

N.T.S.

* = REDUCE 1' IF BOLLARDS/CURB/RET'G. WALLS ARE NOT REQ'D BY RTC @ REAR OF PAD.
** = REDUCE 1' IF CURB/RET'G. WALL IS NOT REQ'D BY RTC @ ONE SIDE OF PAD.
REDUCE 2' IF CURBS/RET'G. WALLS ARE NOT REQ'D BY RTC @ BOTH SIDES OF PAD.

NOTES

1. 4" PORTLAND CEMENT CONC (PCC) ON 4" TYPE 2 CLASS B BASE OR 6" PCC ON COMPACTED NATIVE SUB-GRADE. PCC SHALL BE 4000psi MIN COMPRESSIVE STRENGTH @ 28 DAYS, 6-8 SACKS OF CEMENT PER CU.YD. W/MAX WATER-CEMENT RATIO OF 0.45, AIR ENTRAINMENT 6%± 1.5%, SLUMP @ 1"-4". ALL MATERIALS SHALL CONFORM TO SSPWC SEC.202. REINFORCING SHALL CONSIST OF COLLATED, FIBRILLATED, POLYPROPYLENE FIBERS AS MFD. BY FIBERMESH OR APPROVED EQUAL. USE 1 1/2 LBS. PER CU.YD. OF CONCRETE.
2. PREPARE SUBGRADE IN ACCORDANCE W/STD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
3. WEATHER PROOFING SILANE SEALER, HAVING A 40% SOLIDS CONCENTRATION, SUCH AS EUCO-GUARD S-40, ENVIROSEAL 40, OR OTHER EQUIVALENT SILANE SEALER APPROVED BY THE RTC SHALL BE APPLIED TO CONCRETE SURFACE PER MANUFACTURER SPECIFICATIONS.
4. IF NO SIDEWALK EXISTS BETWEEN CURB & SHELTER SITE, EXTEND PCC PAD TO BACK FACE OF CURB (BFC).
5. EXACT LOCATION OF CONC PAD & ORIENTATION OF SHELTER TO BE DETERMINED BY R.T.C.
6. OPTION "A" & "B": CURB, RET WALLS OR OTHER PROTECTION ACCEPTABLE TO RTC SHALL BE REQ'D FOR SLOPES LOCATED WITHIN 2' OF PAD.

NO.	REVISION	DATE
1	REDRAW	1/95vp
2	Note 3	4/95vp
3	Notes 1,3 clear zone	7/01vp
4	Opt.A min. add BFC	9/01vp

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

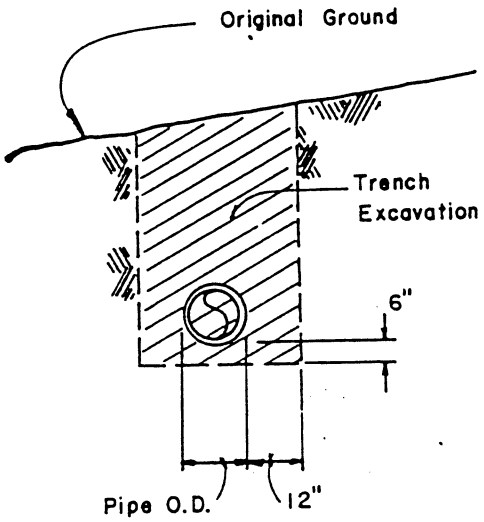
BUS STOP SHELTER PAD

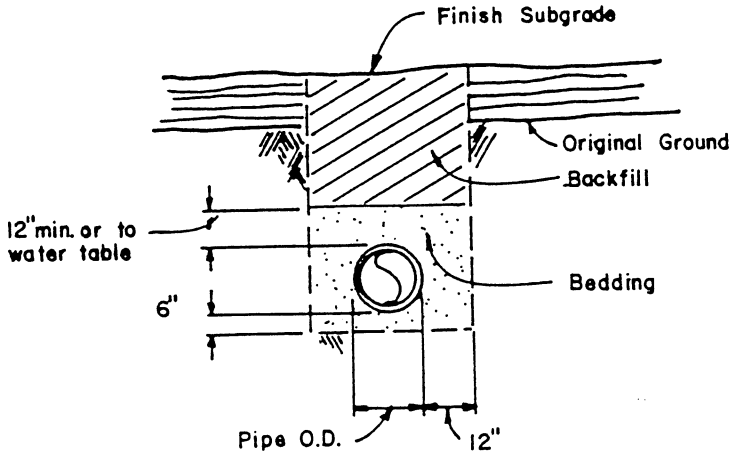
SECTIONS 1

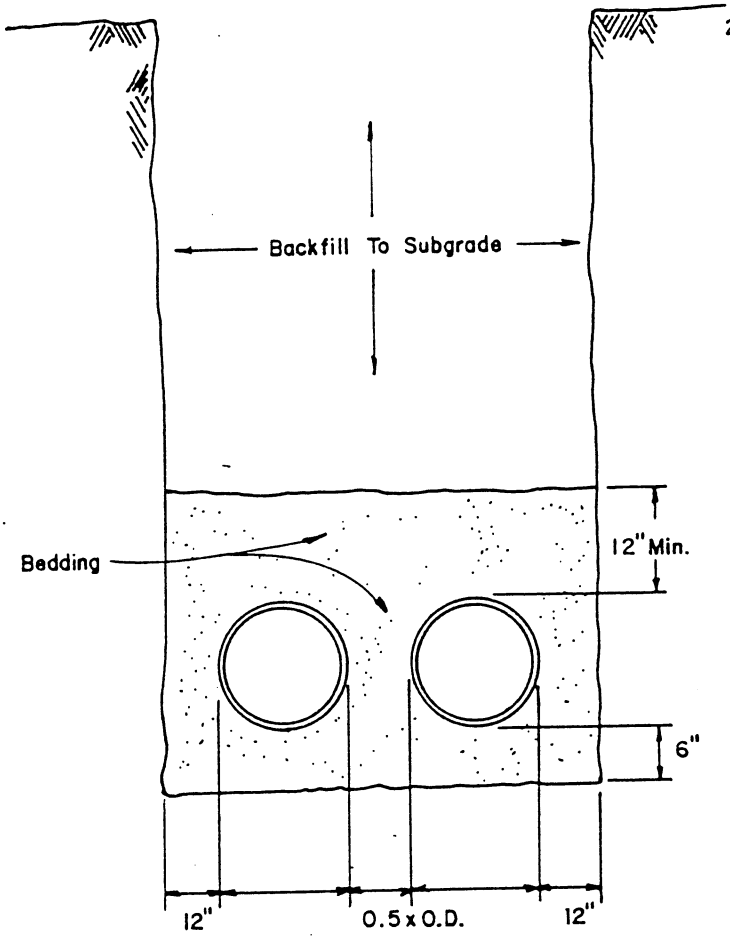
DRAWING NO. 1-28

DATE 1/95vp | PAGE 39

SECTION 2
SEWER/STORM DRAIN







GENERAL NOTES:

1.) Water densified backfill and tunneling shall be by special provision only.

2.) Backfill shall meet the requirements for Class "E" backfill with no rocks over 4" compacted in 6" (max.) lifts to min. 90% of max. dry density.

3.) Bedding Material shall meet requirements for Class "A" Backfill as shown in subsection 200.03.02 of Standard Specifications or as specified by the Agency and shall be compacted to at least 95% of max. dry density.

4.) For trenches in roadway section, see trench patch details See Dwg. No. 1-16

5.) For the purpose of payment, excavation and backfill quantities are based on these standard drawings, and no additional compensation will be made. Shoring or sloped cut slopes may be necessary, but there will be no additional payment. All excavations shall conform to the latest O.S.H.A. - requirements.

6.) Not for use in City of Reno. Refer to Dwg. R-24.

7.) Place metallic location tape 1 ft. above water pipe, Carson City.

NO.	REVISION	DATE
1	Note 6	6-95

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

TRENCH EXCAVATION AND BACKFILL

SECTION 2

DRAWING NO. 2-1 (305)

DATE 7 - 81

PAGE 1

GENERAL NOTES

1. Manhole materials & construction shall conform to the requirements of Sec.204 "Manholes & Catch Basins" of the Standard Specifilcations.

2. Portland Cement Concrete (PCC) shall have the following characteristics: 3000psi min. compressive strength @ 28 days, min. 6 sacks of cement per cu.yd. Slump @ 1–4 inches. All materials shall conform to SSPWC Sec.202. 3000psi conc shall be permitted on manhole bases only.

3. Reinforcing steel shall be as shown, wired tightly at all intersections & embedded at least one inch clear unless otherwise noted.

4. All manholes shall include Pinkerton A–107 frame & cover assembly, or equal, with identification of storm drain or sewer clearly displayed on the cover. City of Reno ONLY – eccentric manholes over 5 feet deep shall have Pinkerton A–463 assembly, or equal. Eureka County ONLY – sanitary sewer manhole frame & cover assembly shall be COMCO 1035 or approved equal. City of Elko ONLY – D&L A–1181 or approved equal.

5. Excavation & backfill shall be as specified for "Trench Excavation & Backfill" in Sec.305.00 of the Standard Specifications.

6. Excavation shall be as nearly vertical as possible, (sheet & shore if soil conditions require), in existing street sections, alley sections & confined areas such as limited easements, or adjacent to structures. Natural angle of repose will be allowed in all other areas. City of Elko – NOSHA stds. min.

7. City of Reno & Washoe Co. ONLY – Steps ("MA" Manhole step by MA Industries or equivalent) will be required in all manholes 5 feet or more in depth.

8. City of Carson ONLY – Manhole cover will have no "thru" holes in it. "Blind" pick holes will be required (South Bay Foundry A45 or approved equal).

9. Precast manhole sections, other than grade rings, shall be joined with flexible plastic gasket material such as "Ram–Nek" or equal as per manufacturer's recommendations.

10. Manhole design for pipe larger than 60" shall be submitted to the governing agency for approval.

NO.	REVISION	DATE
1	Redraw	5/95vp

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

MANHOLES GENERAL NOTES

SECTIONS 2

DRAWING NO. 2–2.1 (306)

DATE 5/95vp | PAGE 2

GENERAL NOTES

11. Manhole design for depths exceeding 18 feet shall be submitted to the governing agency for approval.

12. Lander County – Manhole exterior shall be sealed with one coat of asphaltic tar.

13. Type & size of manhole to be constructed in a particular location shall be determined by the pipe size, alignment & grade as follows:

TYPE I

48" size

a. All cases for pipe 18" and smaller
b. 24" and smaller pipe on tangent line and grade

60" size

a. 27" through 36" pipe on tangent line and grade
b. 21" through 27" pipe at angle points and changes in grade or pipe size

TYPE I–A

Used in place of Type I as authorized by the governing agency.

TYPE I–B

Used in place of Type I only as authorized by the agency when cover above conduit is limited.

TYPE II

48" size

30" through 60" pipe on tangent line with a change in grade or pipe size.

TYPE III

Used in place of Type I when 2' or more drop is desired in sewer main.

TYPE IV (for City of Reno – MH cover to be 36" dia.)

Tangent

60" size

a. 39" through 60" pipe on tangent line & grade with no change in pipe size.
b. In Washoe Co. 36" dia. manhole cover required for all Type IV manholes.

Angle Point

60" size

30" through 60" pipe at angle point in line

14. Manhole min. wall thickness shall be 5" when steps are required. Within City of Reno min. wall thickness shall be in accordance with ASTM C–478.

NO.	REVISION	DATE
1	Redraw	5/95vp

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

MANHOLES GENERAL NOTES

SECTIONS 2

DRAWING NO. 2–2.2 (306)

DATE 5/95vp | PAGE 3

GENERAL NOTES

15. Reno – a. Manhole Type V for pipe 18' or greater in depth.
b. See Std. Det. 2–7 for concrete collar

16. City of Reno – an agency approved form of seal or water stop is required on all sanitary sewer installations & in other applications as required by the City to provide a watertight connection.

17. City of Reno – a flexible joint shall be installed within 1' (min.), 3' (max.) of the manhole on all sanitary sewer installations.

18. City of Reno – a resilient flexible connector installed in accordance with Std. Dwg. R–14A (311) may be used to satisfy the requirements

NO.	REVISION	DATE
1	Redraw	5/95vp

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

MANHOLES GENERAL NOTES

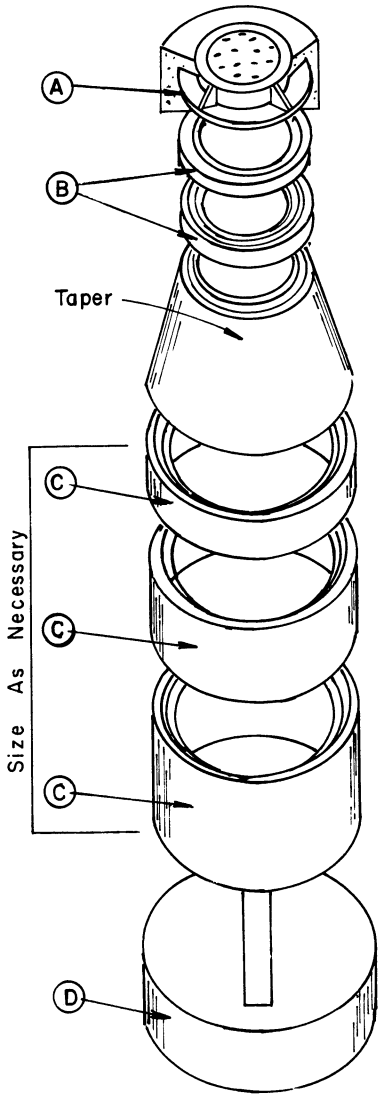
SECTIONS 2

DRAWING NO. 2-2.3 (306)

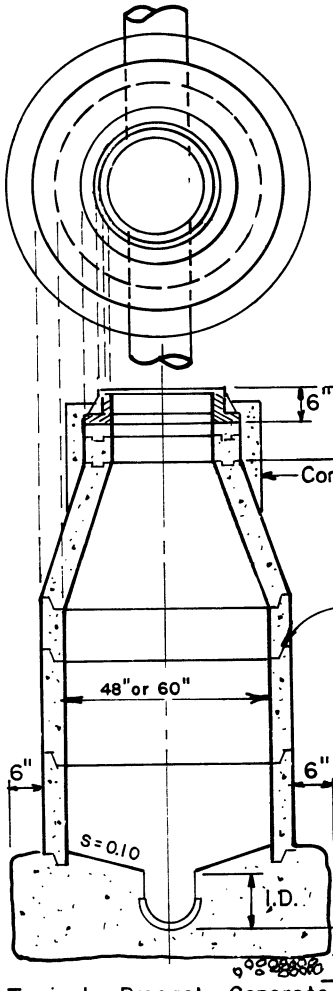
DATE 5/95vp | PAGE 3-A

Precast Manhole Components shall conform to ASTM C-478

SYM.	ITEM
A	Ring & Cover
B	Grade Adjusting Ring
C	Precast manhole section
D	Base

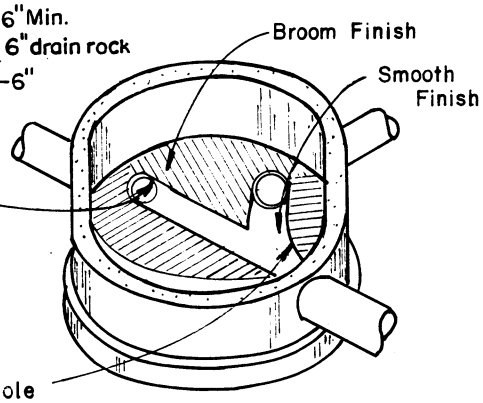


EXPLODED VIEW



Typical Precast Concrete Manhole with Concentric Taper

TAPER HEIGHT	
Dia.	h
48"	24" min.
60"	48" min.



Pipes shall not protrude more than 3" inside of Manhole Section. Construct Water tight connection to Manhole

Form smooth curve in manhole base for intersecting sewer

ISOMETRIC VIEW

NOTES:

1.) Manhole section lengths arranged to fit depth

2.) Precast base may be used if approved by Governing Agency

NO.	REVISION	DATE
1	SEE NOTE	3-83
2	ITEM C, D	8-85
3	Collar, dr. rock	5-95vp

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

MANHOLE TYPE I

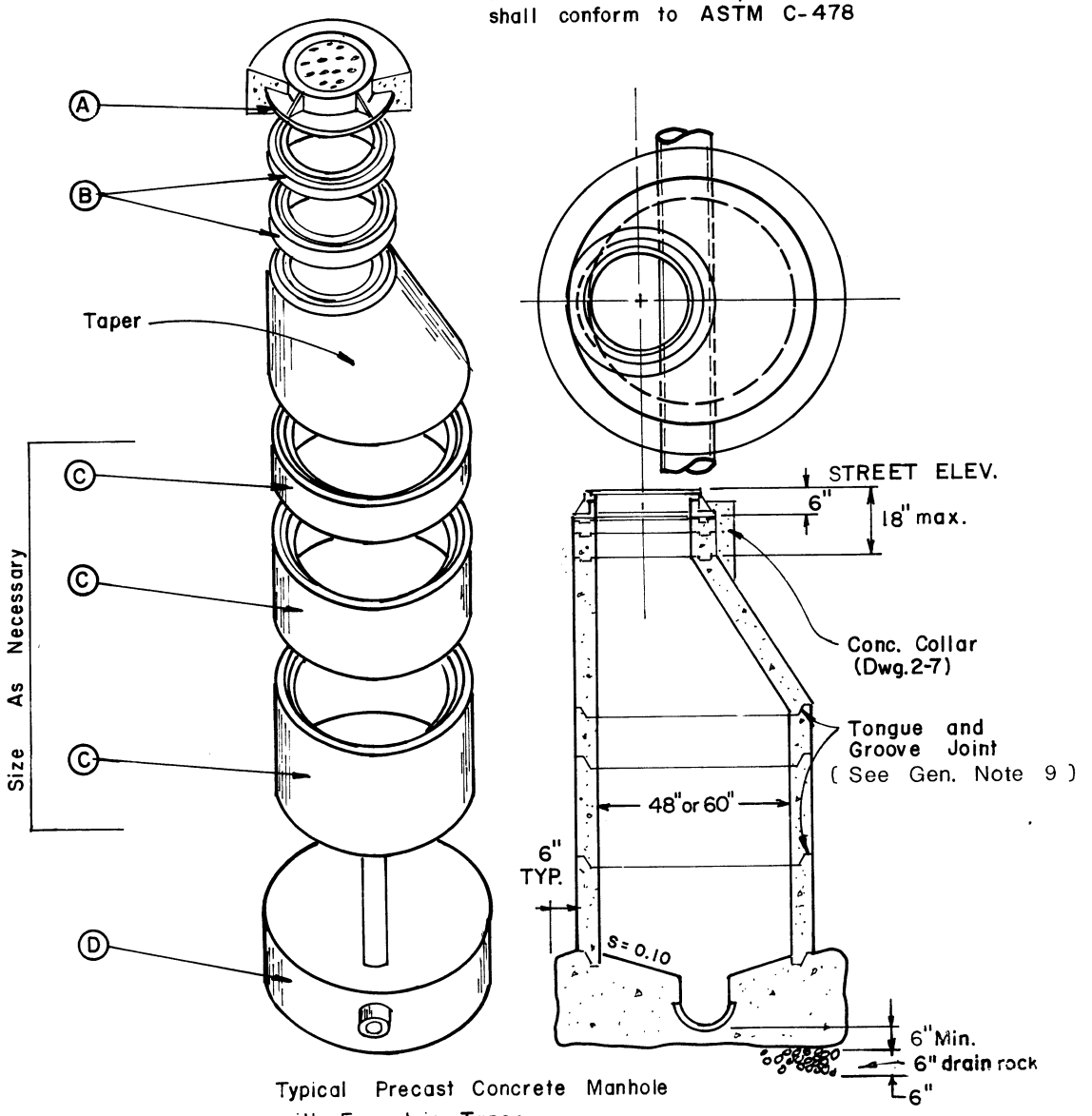
SECTION 2

DRAWING NO. 2 - 3.1 (306)

DATE 7 - 81

PAGE 4

Precast Manhole Components shall conform to ASTM C-478



Typical Precast Concrete Manhole with Eccentric Taper

EXPLODED VIEW

SYM.	ITEM
A	Ring & Cover
B	Grade Adjusting Ring
C	Precast manhole section
D	Base

NOTES:

1. Manhole section lengths arranged to fit depth.
2. Precast base may be used if approved by Governing Agency.
3. Lander Co. Only - Manholes constructed in non-paved area shall have min. wall thickness of 5" on cone and barrel sections

NO.	REVISION	DATE
1	NOTE 3	3-83
2	ITEM C,D	8-85
3	Collar, dr. rock	5-95 vp

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

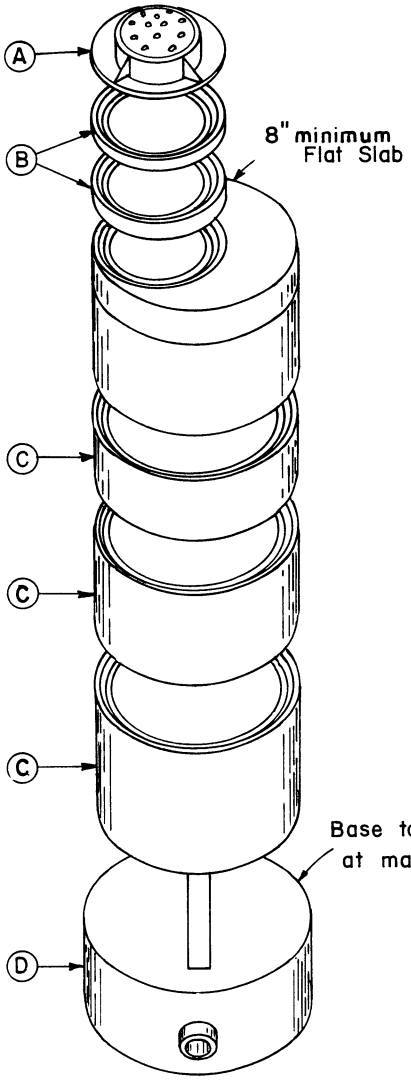
MANHOLE TYPE I-A

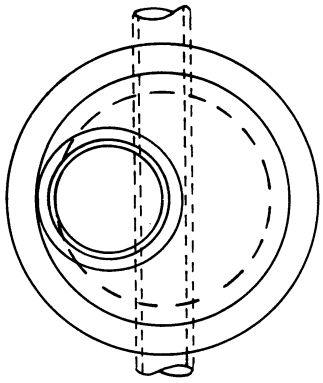
SECTION 2

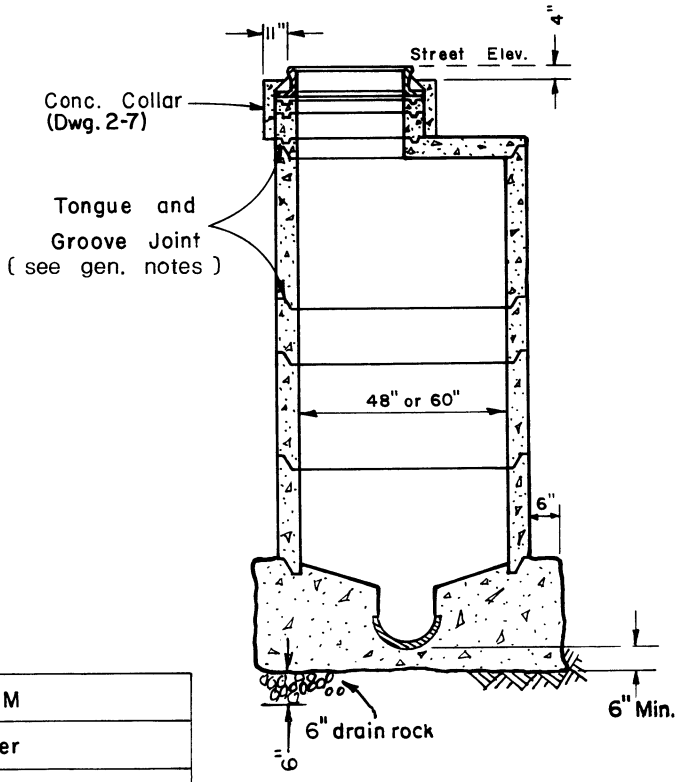
DRAWING NO. 2 - 3.2 (306)

DATE 7 - 81

PAGE 5







SYM.	ITEM
A	Ring & Cover
B	Grade Adjusting Ring
C	Precast manhole section
D	Base

NOTES:

1. Manhole section lengths arranged to fit depth.
2. Precast base may be used if approved by Governing Agency.
3. Lander Co. Only - Manholes constructed in non-paved areas shall have min. wall thickness of 5" on cone and barrel sections.

NO.	REVISION	DATE
1	NOTE 3	3-83
2	ITEM C, D	8-85
3	Collar, dr.rock	5-95vp

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

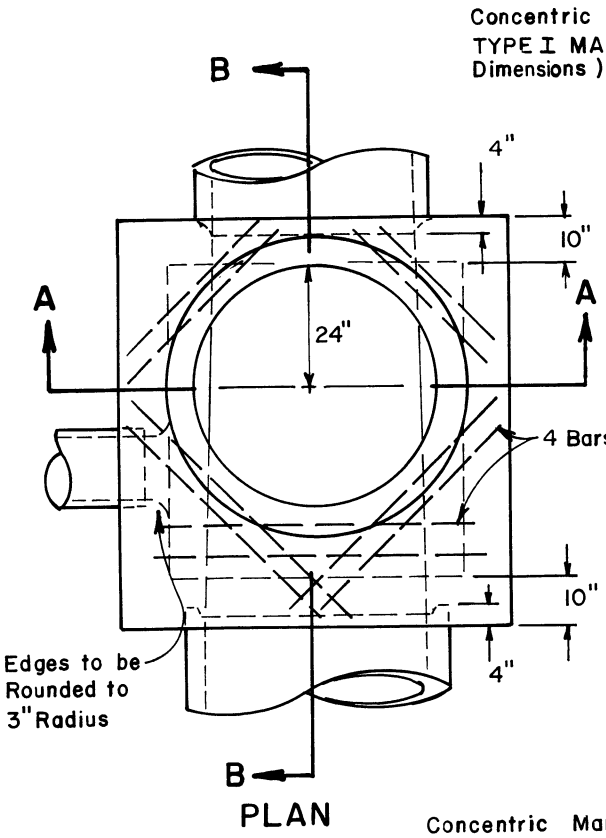
MANHOLE TYPE I-B

SECTION 2

DRAWING NO. 2 - 3.3 (306)

DATE 7 - 81

PAGE 6



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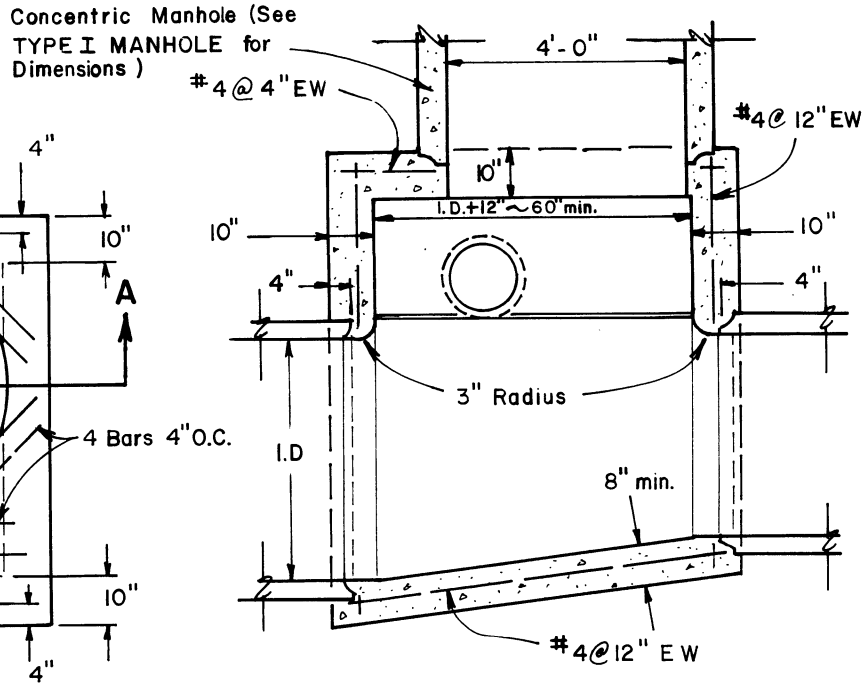
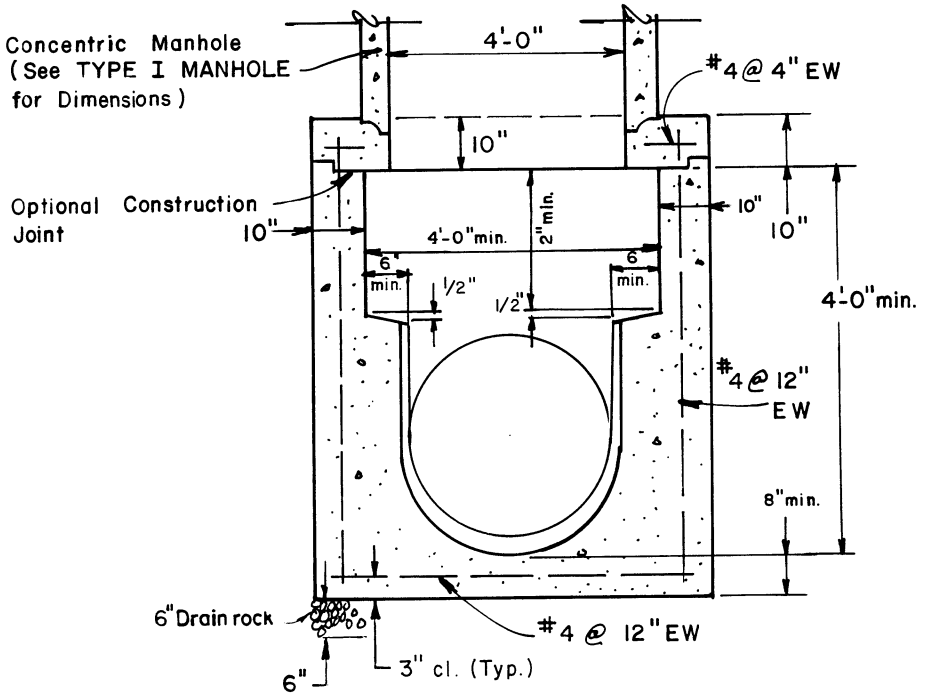


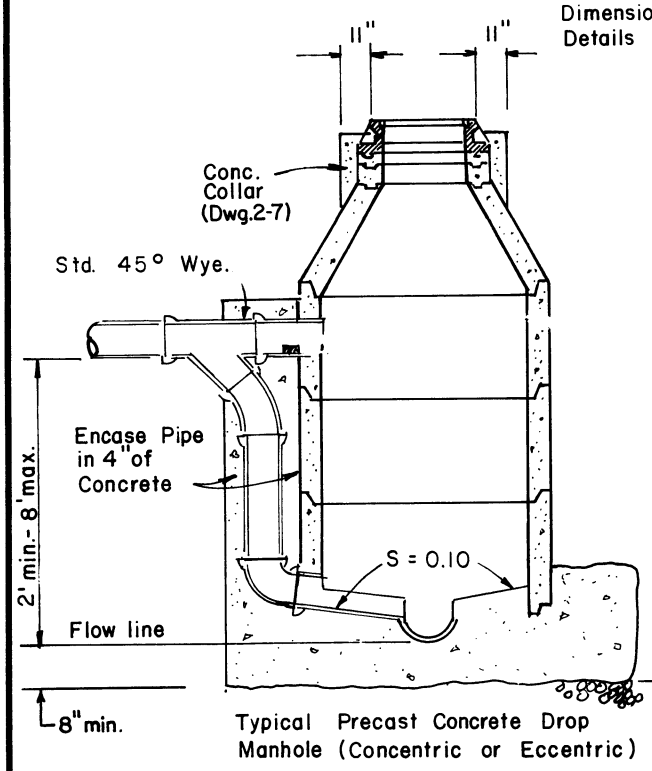
SECTION BB



SECTION AA

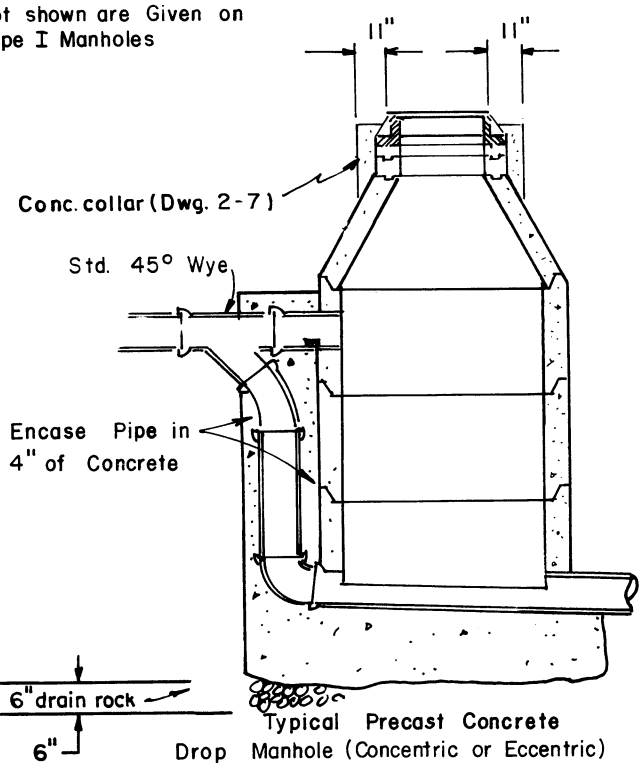
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 2	
1	dr. rock	5-95vp	MANHOLE TYPE II	DRAWING NO. 2 - 4 (306)	
				DATE 7 - 81	PAGE 7

NOTE:
Dimensions not shown are Given on Details on Type I Manholes



Typical Precast Concrete Drop Manhole (Concentric or Eccentric)

LATERAL TO MAIN



Typical Precast Concrete Drop Manhole (Concentric or Eccentric)

MAIN TO MAIN

NOTES:

1.) Drop manholes are to be used on all Sanitary Sewers with more than 2 feet vertical drop at manhole, not to exceed 8 feet.

2.) Eccentric Cones may be used at the direction of the governing authority.

3.) Mains shall be sloped to fall at least 0.1 feet across manhole section.

4.) Pipe section within manhole may be P.V.C.

5.) Not for use in Carson City, See Agency Section.

6.) 8 Foot vertical drop may only be exceeded in Washoe County & the City of Reno upon approval of the Sanitary Engineers.

NO.	REVISION	DATE
1	ADD NOTE 6	7-83
2	collar,dele,dr.rk.	5-95 vp

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

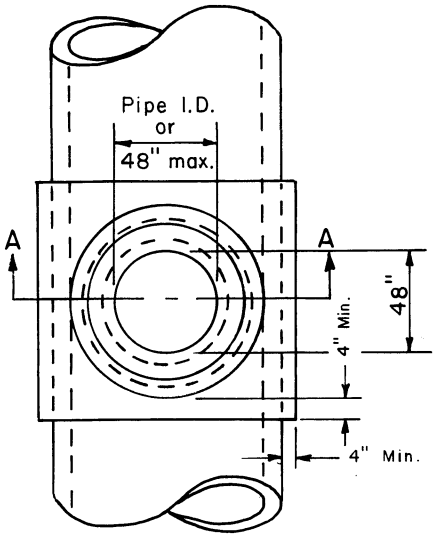
MANHOLE TYPE III

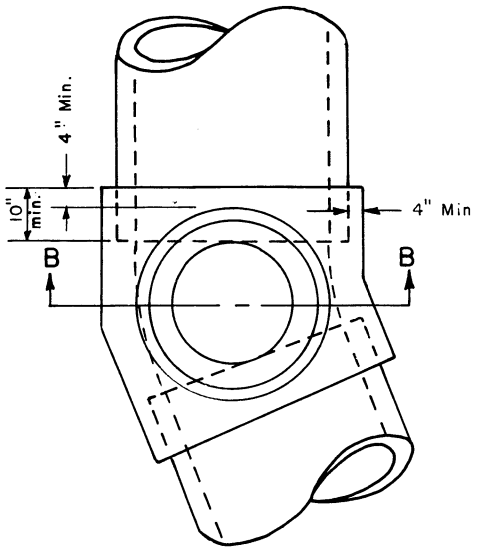
SECTION 2

DRAWING NO. 2 - 5 (306)

DATE 7 - 81

PAGE 8





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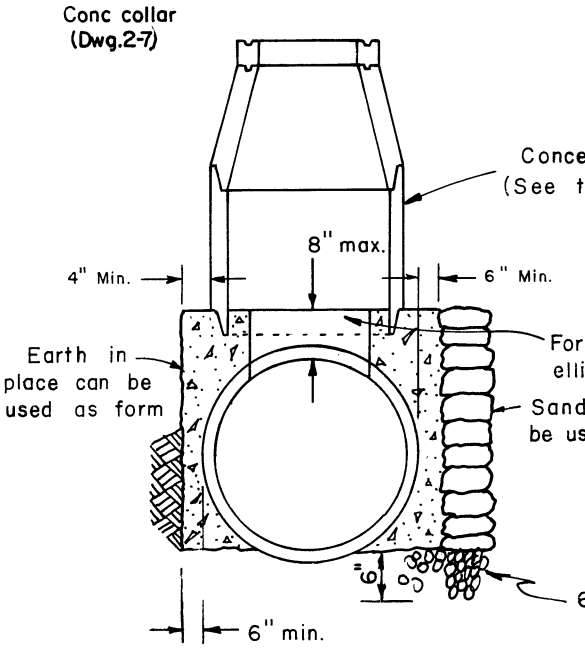
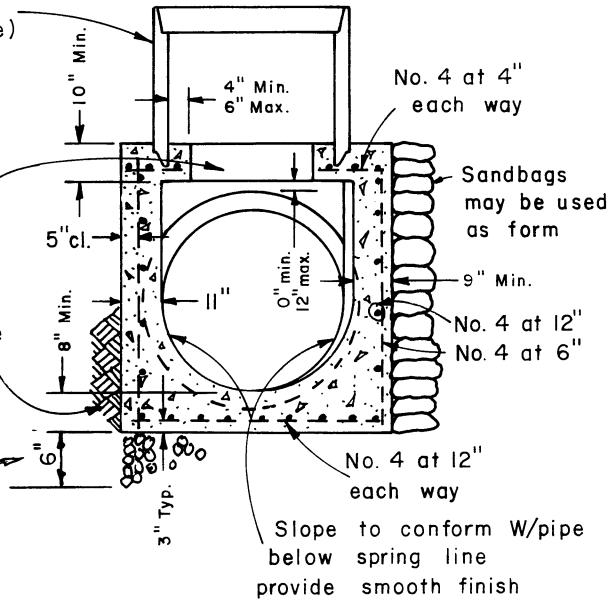


SECTION A-A

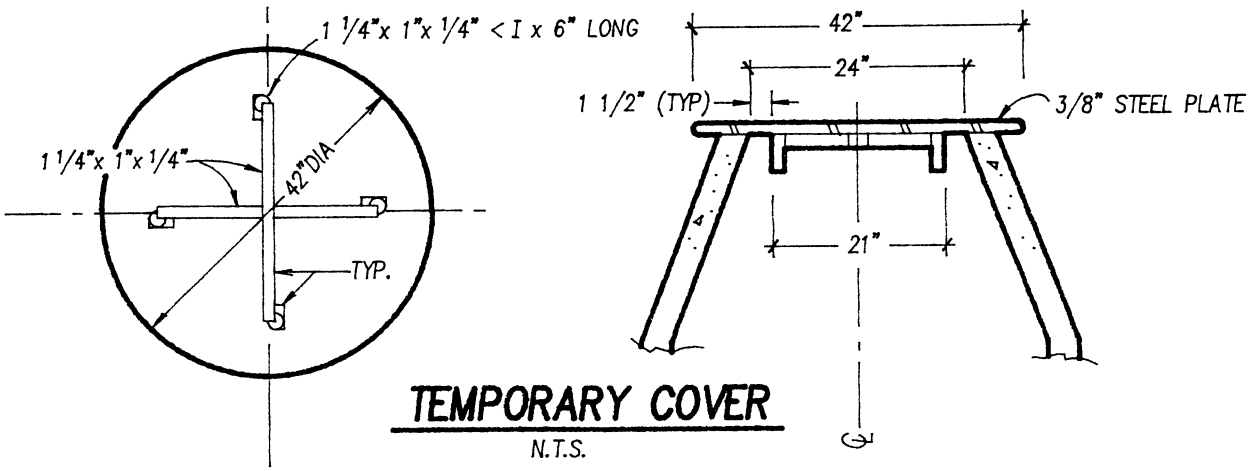
TANGENT



SECTION B-B

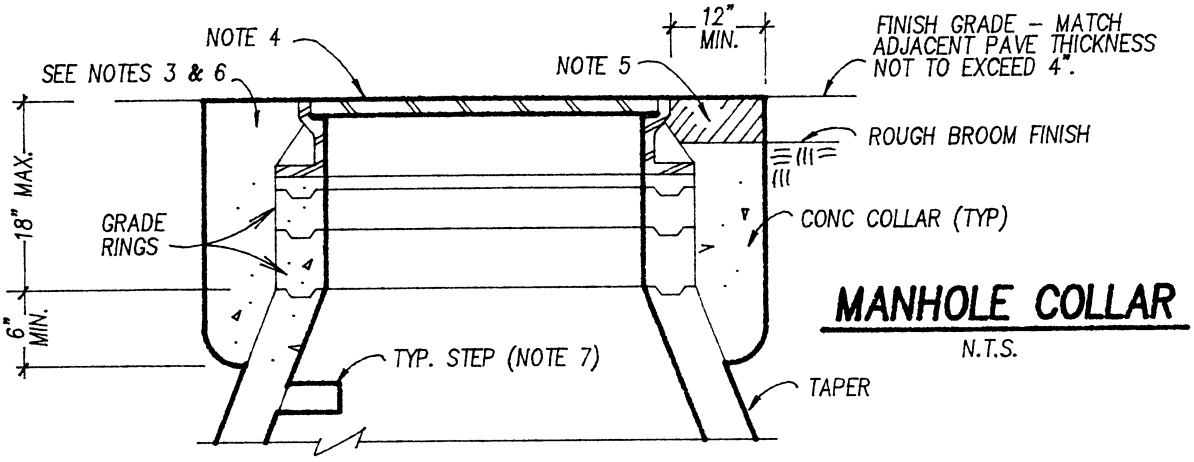
ANGLE POINT

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 2	
1	Drain rock	5-95vp		DRAWING NO. 2-6 (306)	
			MANHOLE TYPE IV	DATE 7-81	PAGE 9



TEMPORARY COVER

N.T.S.



MANHOLE COLLAR

N.T.S.

NOTES

1. CONC COLLAR TO BE PORTLAND CEMENT CONC (P.C.C.) W/THE FOLLOWING CHARACTERISTICS: 4000psi MIN COMP STRENGTH @ 28 DAYS, MIN 6 SACKS OF CEMENT PER CU.YD. W/MAX WATER-CEMENT RATIO OF 0.45, AIR ENTRAINMENT 6% ± 1.5%, SLUMP @ 1 TO 4 INCHES. IN WASHOE CO. MIN CEMENT CONTENT TO BE 16.25sack. ALL MATERIAL SHALL CONFORM TO SSPWC SEC.202.
2. HEIGHT OF COLLAR SHALL BE CONSISTANT ALL AROUND MANHOLE.
3. RENO - CONC COLLAR SHALL BE FLUSH W/ADJACENT PAVEMENT.
4. WASHOE CO.-MANHOLE RING SHALL BE SET 3/8"-5/8" BELOW FINISH ROADWAY SURFACE. MANHOLES IN ALL OTHER AREAS SHALL BE SET FLUSH W/FINISH GRADE UNLESS OTHERWISE NOTED.
5. WASHOE CO.-CONC COLLAR SHALL BE LEFT 2" BELOW FINISH ASPH SURFACE. PLACE 2" THICK TYPE 3 A.C. PAVING AROUND MANHOLES & APPLY SS-1 TACK COAT BEFORE PAVING, SEAL A.C. SURFACE W/SS-1 & SAND CHIP SEAL, SLURRY SEAL, SAND SEAL OR FOG SEAL PAVED SURFACE AS REQ'D BY PLANS OR SPECS. EXCEPTION - EXTEND CONC COLLAR TO FIN. GRADE WHEN NOT LOCATED IN ASPH PAVE OR IN AN UNPAVED AREA.
6. SPARKS-CONC COLLAR SHALL BE FLUSH W/ADJACENT PAVEMENT. PLACE ONE #3 REBAR RING IN COLLAR IN UNIMPROVED AREAS.
7. WASHOE CO.-STEPS ARE REQ'D FOR SANITARY SEWER/STORM DRAIN MANHOLES OF 5 FEET OR GREATER DEPTH.
8. CARSON CITY-REFER TO DETAIL C-6.4

NO.	REVISION	DATE
1	REDRAW	11/94vp
2	NOTE 2,9	1/94vp
3	Note 4,7	1/95vp
4	Corr Note 1	4/95vp

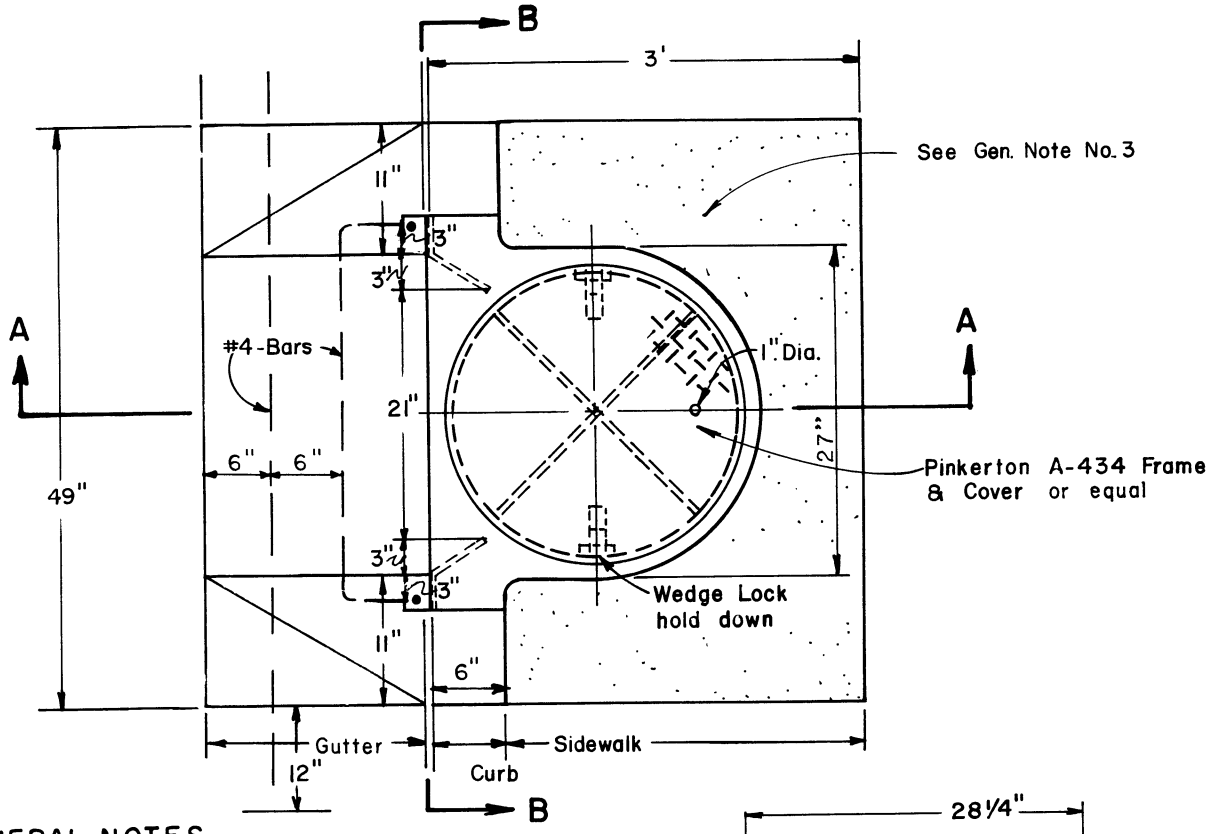
STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

MANHOLE COLLAR & TEMPORARY COVER

SECTIONS 2

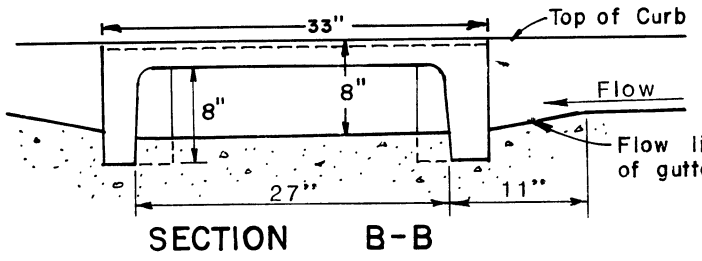
DRAWING NO. 2-7 (306)

DATE 11/92 vp

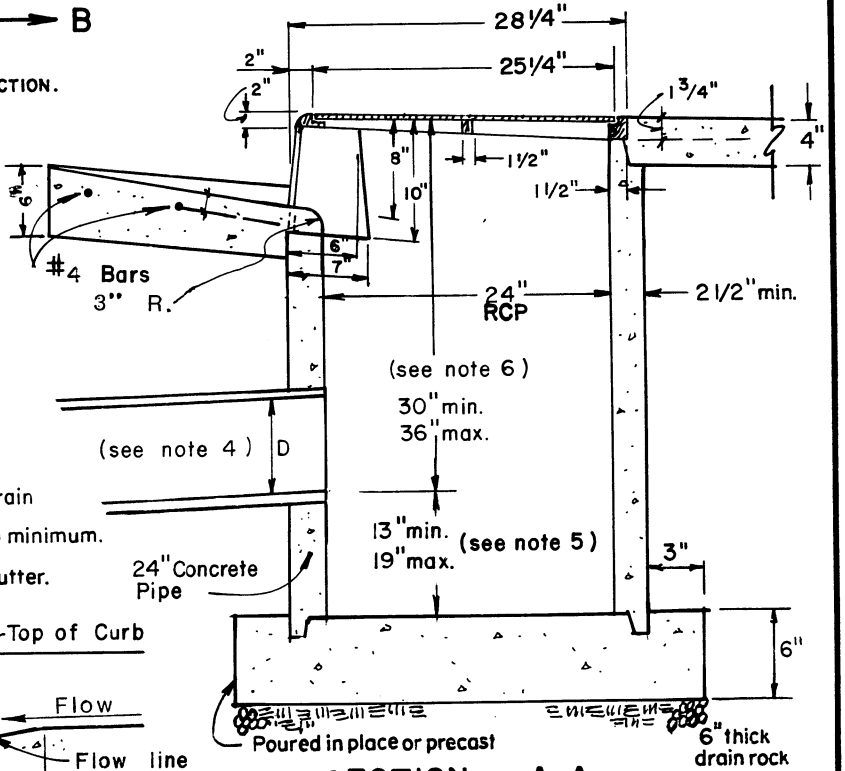


GENERAL NOTES

1. NOT PERMITTED IN FALLON. SEE FALLON SPECIAL SECTION.
2. PORTLAND CEMENT CONCRETE (PCC) SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4000 PSI MIN. COMPRESSIVE STRENGTH AT 28 DAYS, MIN. 6 SACKS OF CEMENT PER CU. YD. W/MAX. WATER-CEMENT RATIO OF 0.45, AIR ENTRAINMENT 6.0% ± 1.5%, SLUMP AT 1 TO 4 INCHES. ALL MATERIALS SHALL CONFORM TO SSPWC SEC. 202
3. A 4" THICK CONC. PAD SHALL BE CONSTRUCTED AS SHOWN WHEN NOT LOCATED IN A SIDEWALK.
4. "D" shall have a min. dia. as shown below:
   - a.) Lyon Co. Carson City — D = 15"
   - b.) Douglas Co. Lander Co. — D = 12"
   - c.) Elsewhere — D = 10"
5.) Carson City - Remove sump, slope base to drain
6.) Yerington - Depth to pipe as necessary, no minimum.
7.) Reno - For use only in low point (sump) in curb and gutter.



SECTION B-B



SECTION A-A

NO.	REVISION	DATE
1	FLOW	3-83
2	Dim's.	8-85
3	Notes	6-95

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

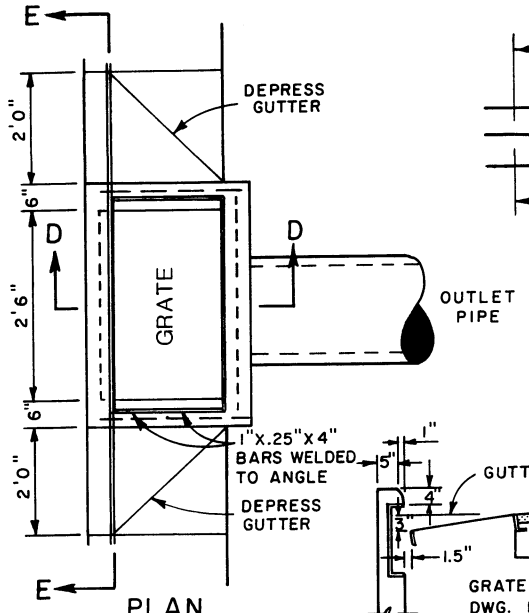
CATCH BASIN TYPE I

SECTION 2

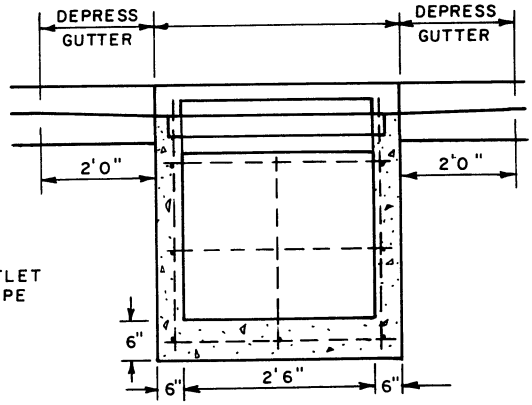
DRAWING NO. 2-8 (306)

DATE 7-81

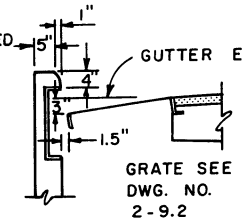
PAGE 11

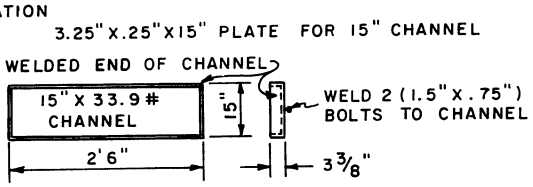


PLAN

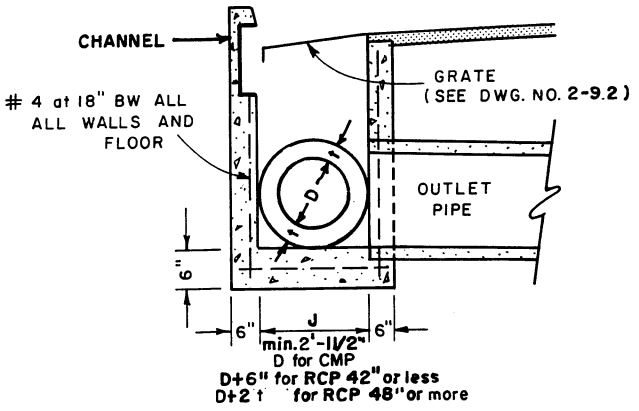


SECTION E-E





CHANNEL DETAIL

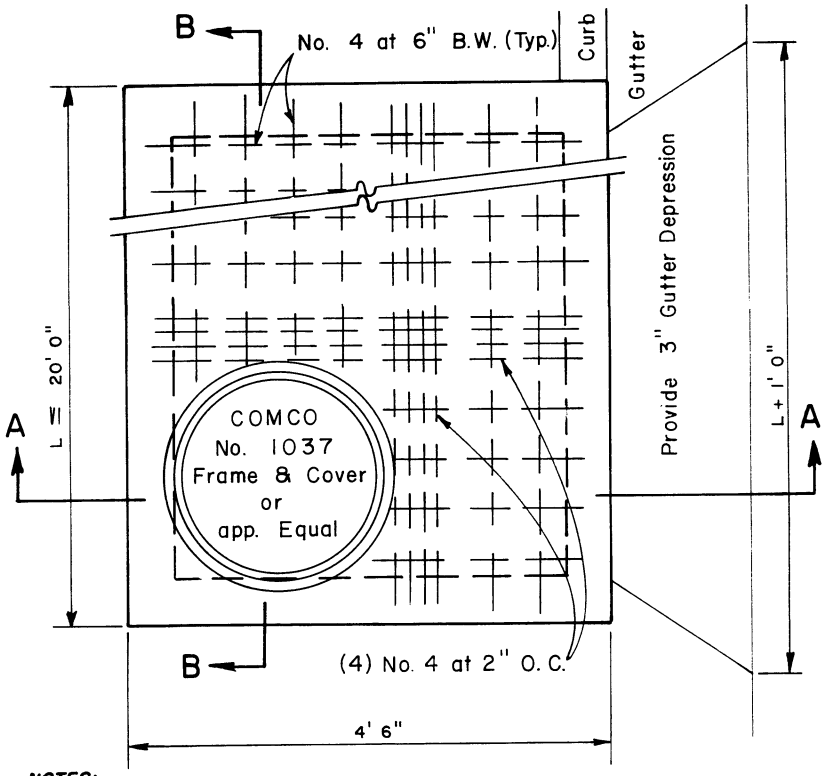


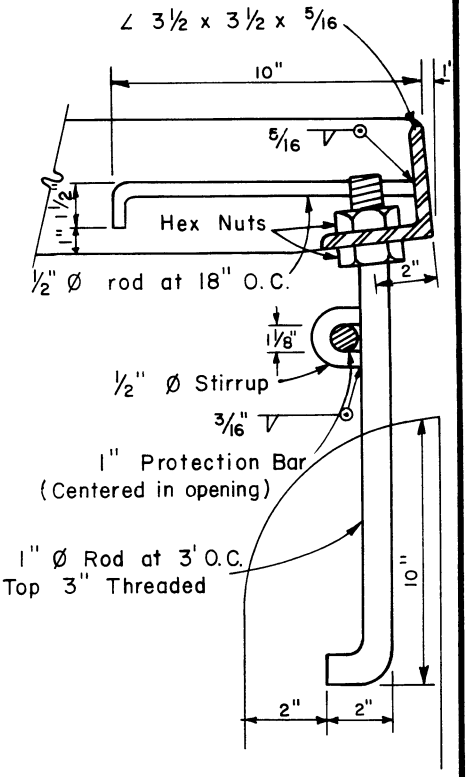
SECTION D-D

NOTES:

1. OUTLET PIPE TO BE MINIMUM SIZE AS SHOWN ON DWG. NO. 2-8.
2. ALL CONCRETE TO BE CLASS AA OR DA.
3. ALL REINFORCING STEEL TO BE NO. 4 BAR, GRADE 40 MIN. SPACE AT 18" O.C. MIN. WITH 1.5" CLEAR COVER UNLESS SHOWN OTHERWISE.
4. ALL EXPOSED CONCRETE EDGES TO BE CHAMFERED .75".
5. NOT FOR USE IN CITY OF RENO.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 2	
			CATCH BASIN TYPE IA	DRAWING NO. 2-8.1	
				DATE 1-83	PAGE 11 A



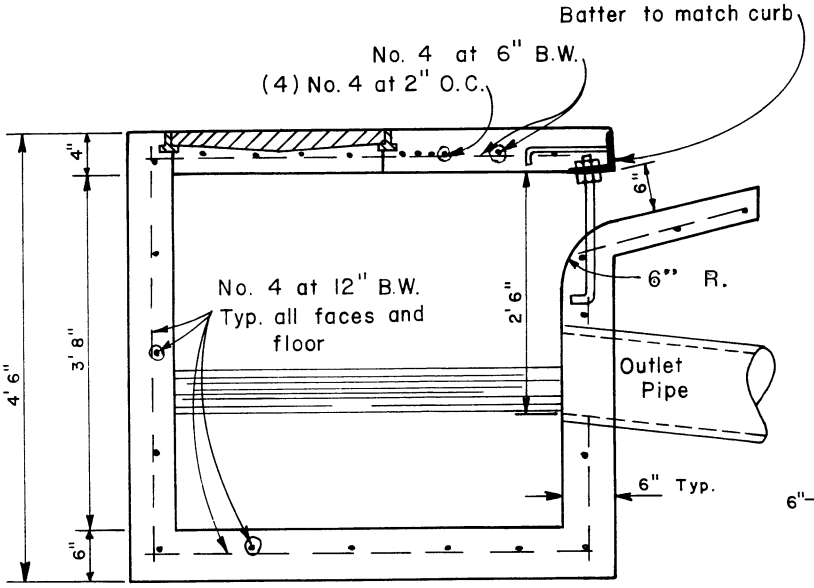


CURB SUPPORT DETAIL

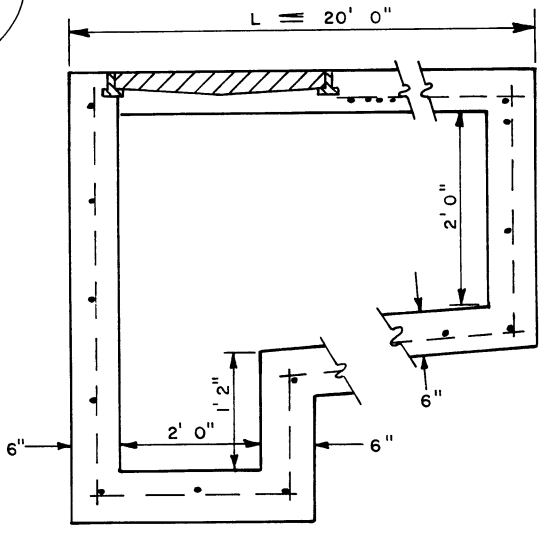
(Carson City - use curb support shown on Dwg. #2-9.3)

NOTES:

1. *ALL STEEL TO HAVE 1½" CLEAR COVER UNLESS OTHERWISE NOTED.*
2. *GENERAL NOTES FROM CATCH BASIN TYPE I SHALL ALSO APPLY.*
3. *PORTLAND CEMENT CONCRETE (PCC) SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4000 PSI MIN. COMPRESSION STRENGTH AT 28 DAYS, MIN. 6 SACKS OF CEMENT PER CU. YD. W/MAX WATER-CEMENT RATIO OF 0.45, AIR ENTRAINMENT 6.0% ± 1.5%, SLUMP AT 1-4 INCHES. ALL MATERIAL SHALL CONFORM TO SSPWC SEC. 202.*
4. *INSTALL GREASE TRAP WITH THE BOTTOM EDGE PARALLEL TO THE WATER SURFACE WITH THE RECTANGULAR OPENING FACING DOWNWARD AND THE CIRCULAR END PLACED INSIDE THE OUTLET PIPE.*



SECTION A-A

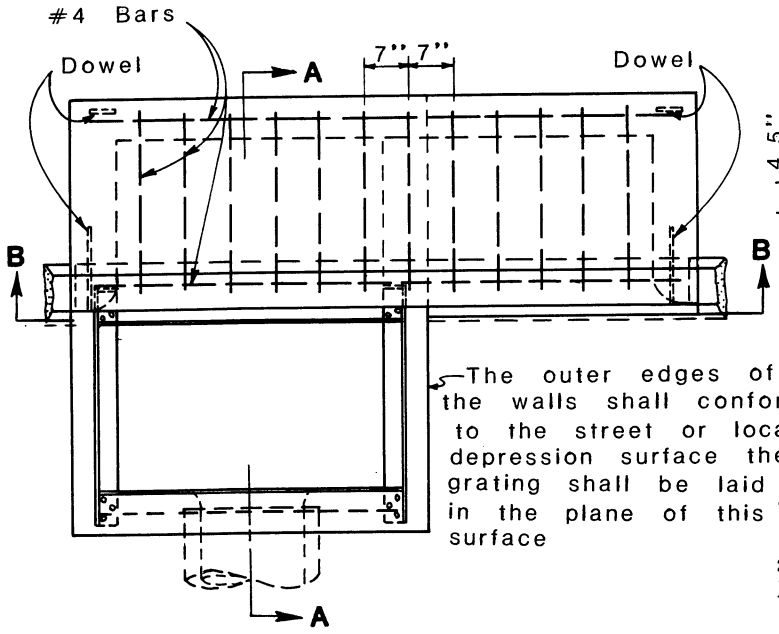


SECTION B-B

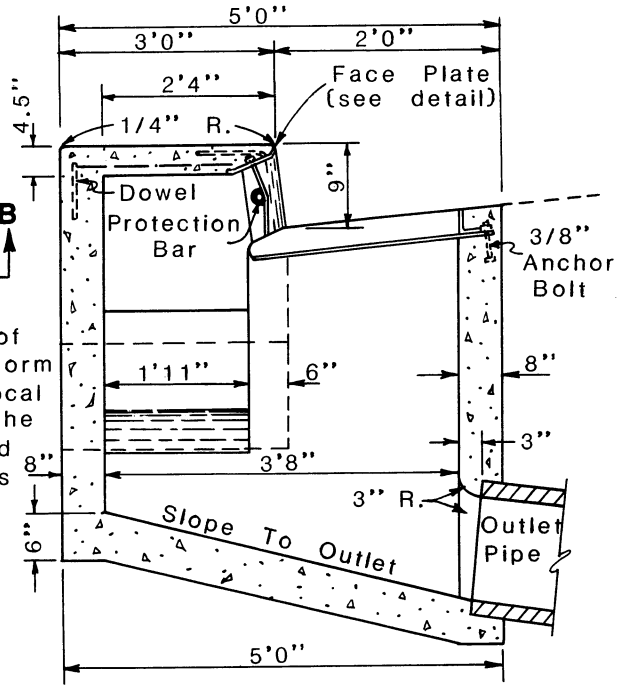
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION
1	6"Radius	3-83	
2	NOTES	6-95	

CATCH BASIN TYPE 2

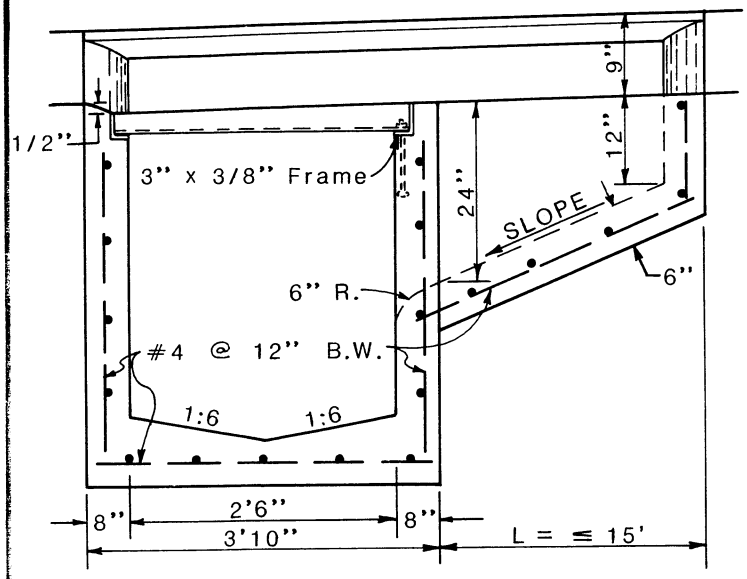
SECTION	2
DRAWING NO.	2-9 (306)
DATE	7-81
PAGE	12



PLAN



SECTION A-A

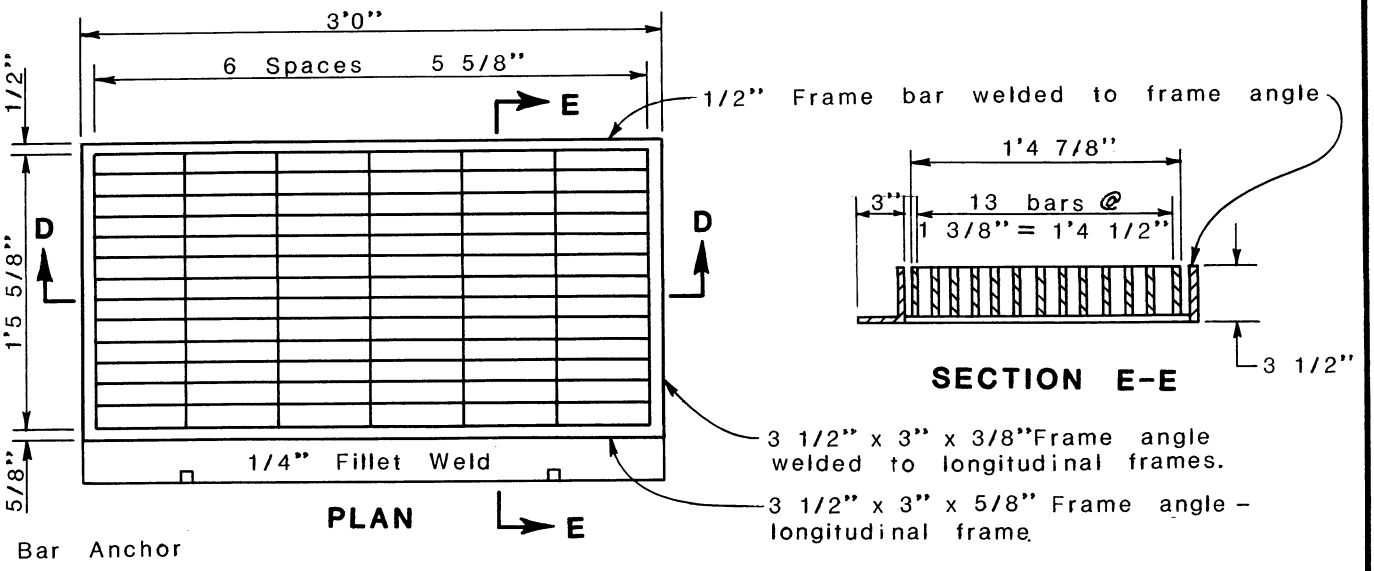


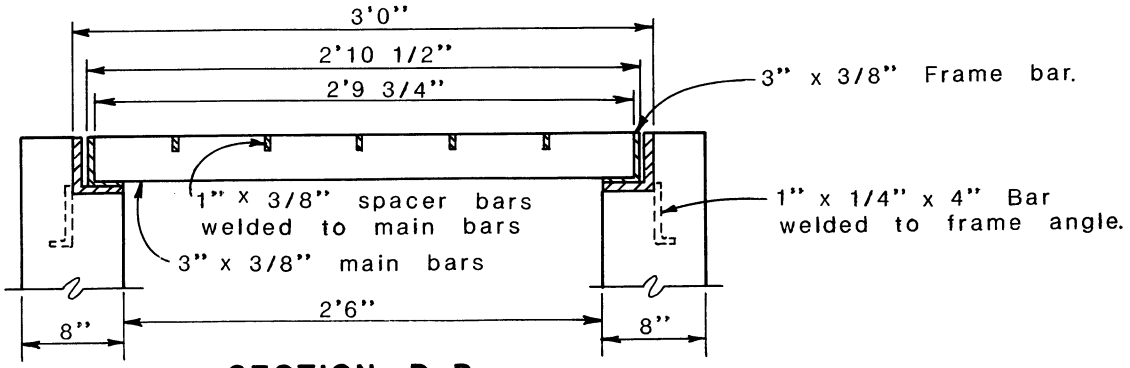
SECTION B-B

NOTES:

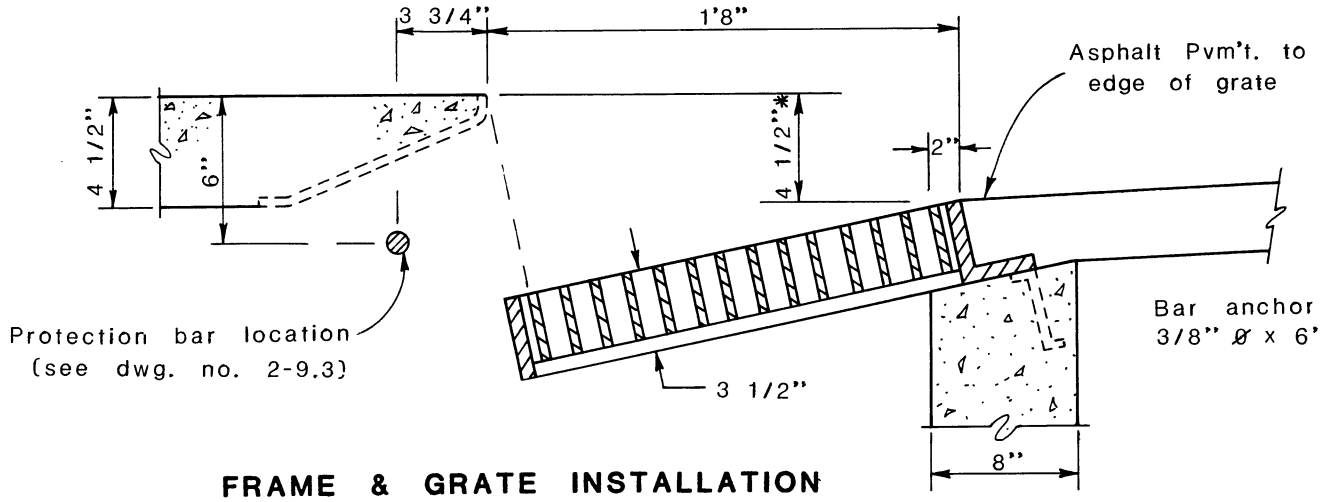
1. Outlet pipe may be placed in any wall as shown on improvement drawings. Slope floor to outlet pipe
2. All concrete shall be class AA or DA
3. All reinforcing steel shall be grade 40 (min.) and have 1.5" clear cover unless shown otherwise
4. See dwgs. no. 2-9.2 and 2-9.3 for additional details
5. **Not for use in City of Reno.**

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 2	
1	SPELLING	10-16-86	CATCH BASIN TYPE 2A	DRAWING NO. 2-9.1	
				DATE 1-83	PAGE 12 A





SECTION D-D



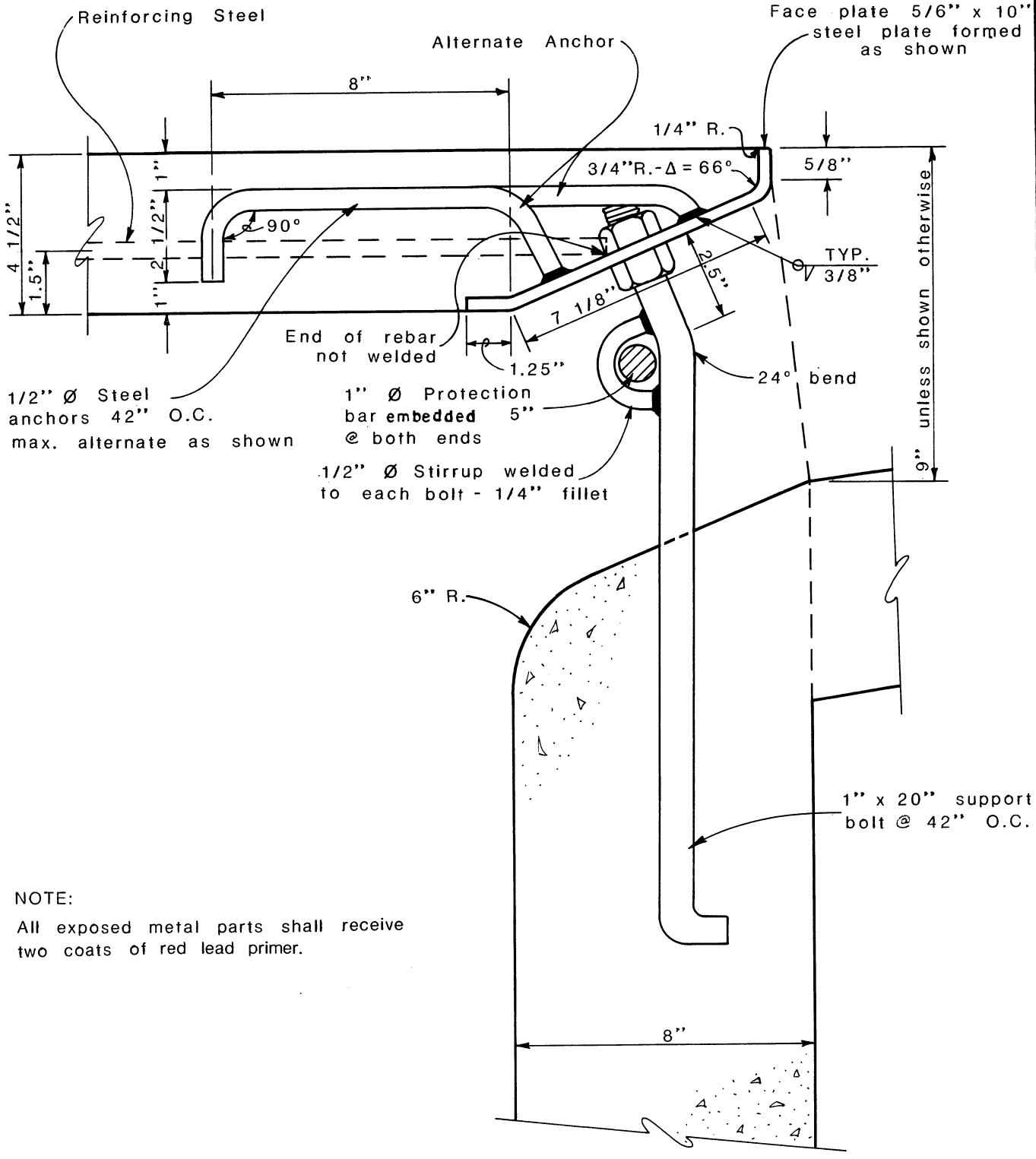
FRAME & GRATE INSTALLATION

NOTE:

All exposed metal parts shall be galvanized and all galvanizing damaged by fabrication or installation shall receive two coats of aluminum paint (Galvonox or Equal).

* 3 1/2" In Sparks and 5" in Fallon

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 2	
1	SPLLLING	10-16-86	FRAME AND GRATE DETAIL TYPE IA AND 2A C.B.	DRAWING NO. 2-9.2	
				DATE 3-83	PAGE 12 B



NOTE:

All exposed metal parts shall receive two coats of red lead primer.

NO.	REVISION	DATE
1	SPELLING	10-16-86

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

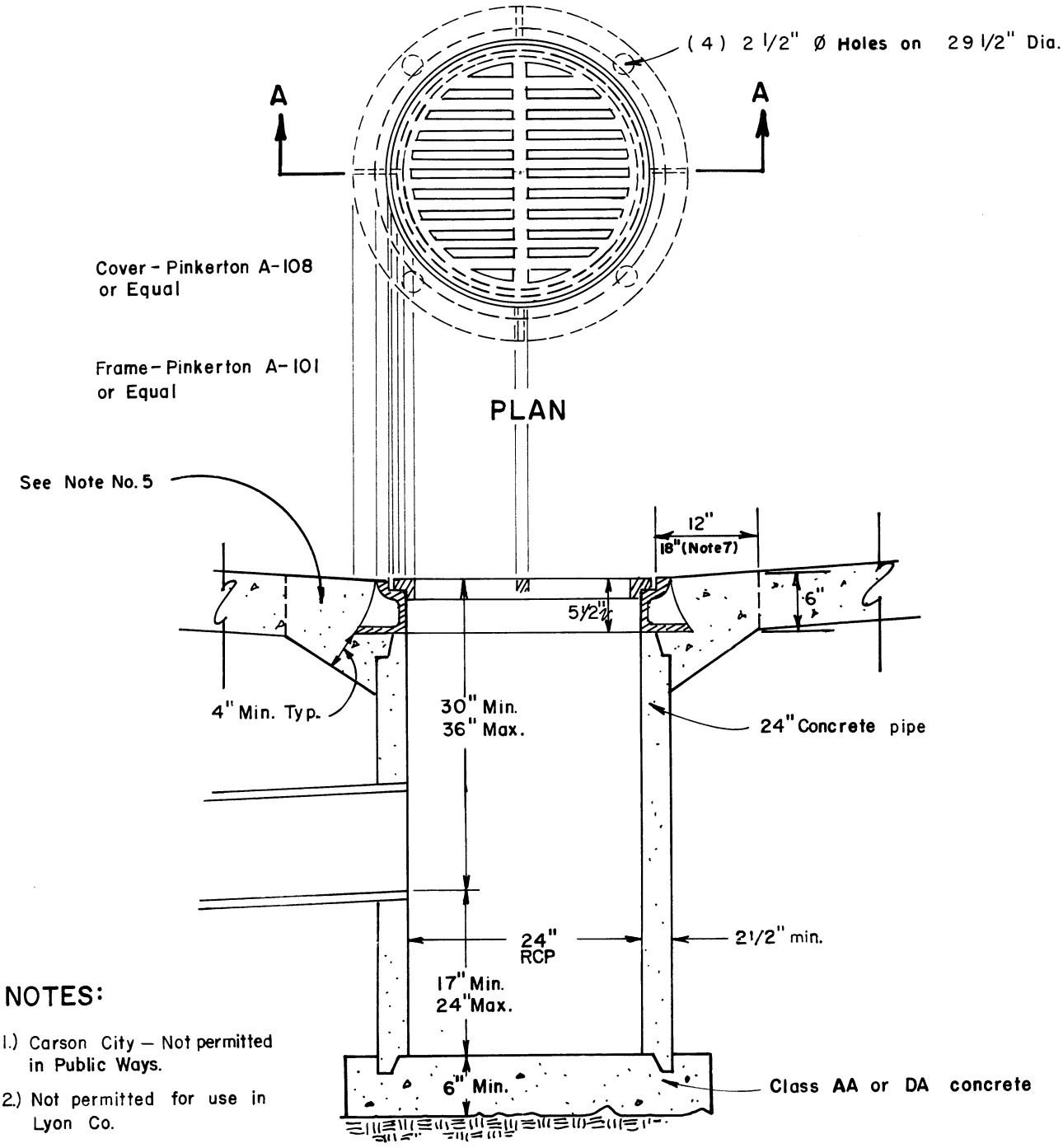
FACE PLATE DETAIL TYPE 2A C.B.

SECTION 2

DRAWING NO. 2-9.3

DATE 3-83

PAGE 12C



SECTION A-A

NOTES:

1.) Carson City – Not permitted in Public Ways.

2.) Not permitted for use in Lyon Co.

3.) Fallon – See Agency Section

4.) "Bee Hive" grate (Neenah #R-2563, R-2564 or equal) may be used in unimproved or landscaped areas as approved by the Engineer.

5.) Reno - For use only in unimproved areas. A concrete collar shall be constructed as shown.

6.) Outlet pipe to be minimum size as shown on Dwg. 2-8

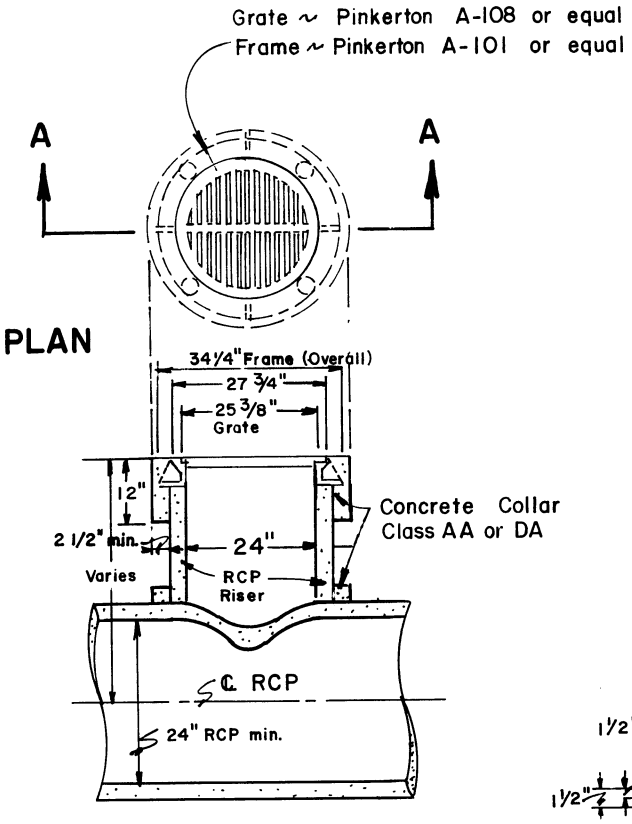
7.) In Washoe Co. conc. collar shall be 18" in width at all locations.

NO.	REVISION	DATE
1	NOTE 4	3-83
2	Conc. Collar	10/83
3	Dim's	8-85
4	NOTE 1	10-85
5	SPELLING	10-16-86
6	NOTE 7	9-90

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

CATCH BASIN TYPE 3

SECTION	2
DRAWING NO.	2-10 (306)
DATE	7-81
PAGE	13

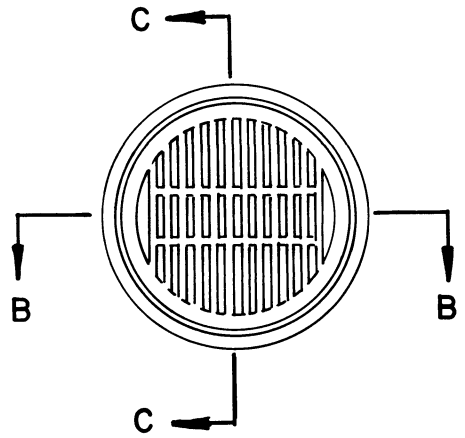


PLAN

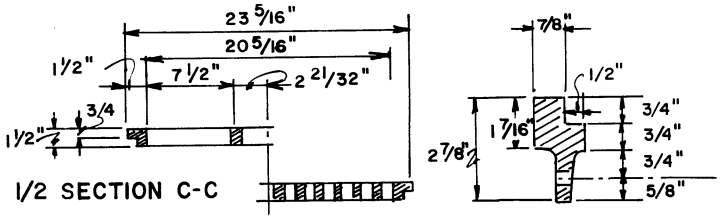
SECTION A-A

TYPE 1 RISER INLET

NOTE:
Not for use in Carson City.



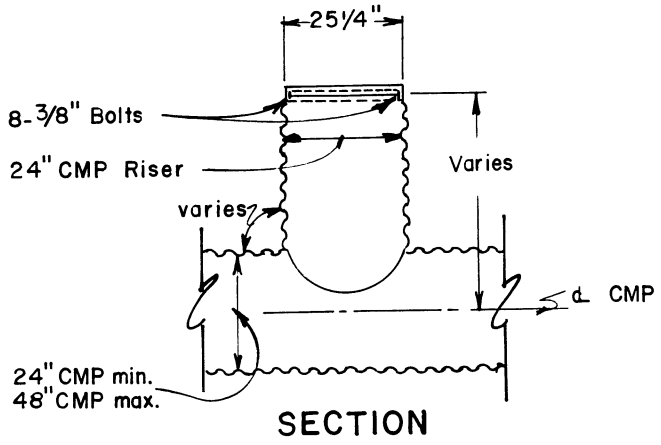
PLAN OF FRAME AND GRATE (CASTINGS)



1/2 SECTION C-C

1/2 SECTION B-B

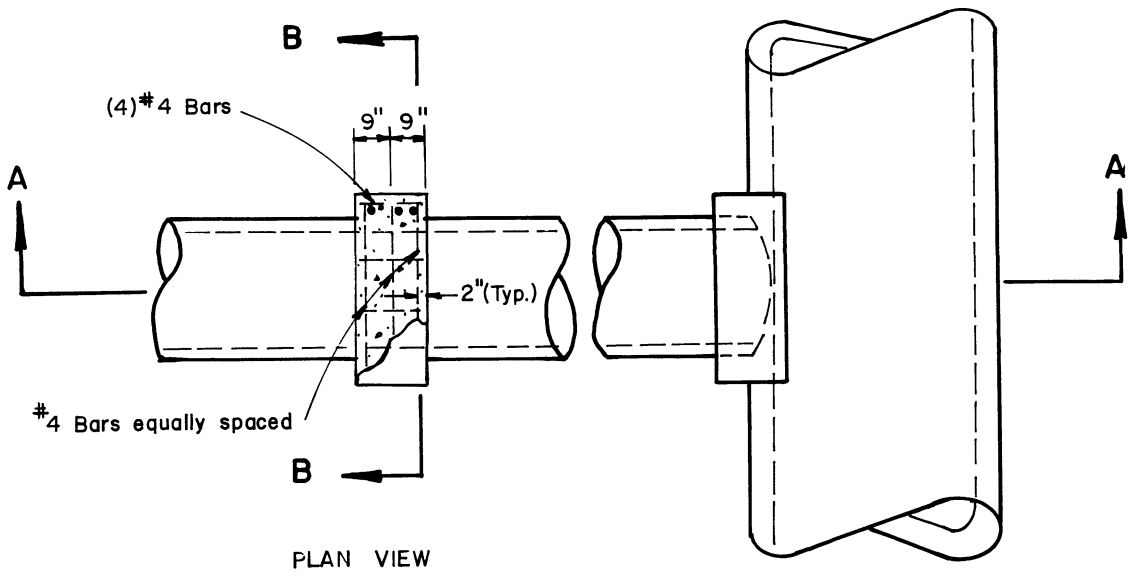
SECTION OF FRAME



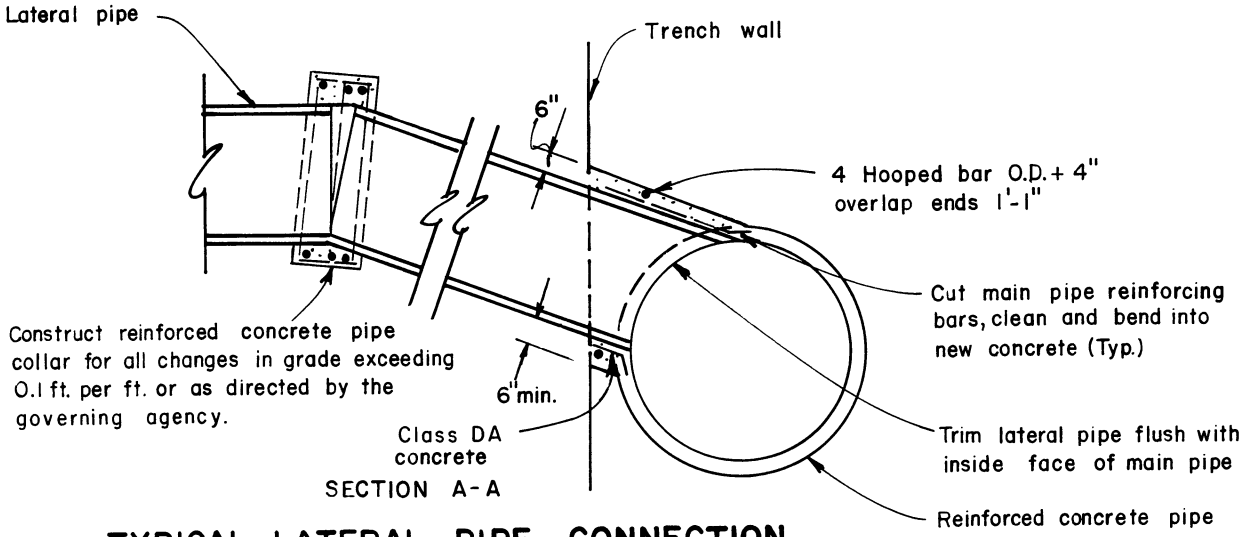
SECTION

TYPE 2 RISER INLET

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 2	
1	Dim's.	8-85	RISER TYPE DROP INLET	DRAWING NO. 2-11 (306)	
2	NOTE	10-85		DATE 7-81	PAGE 14

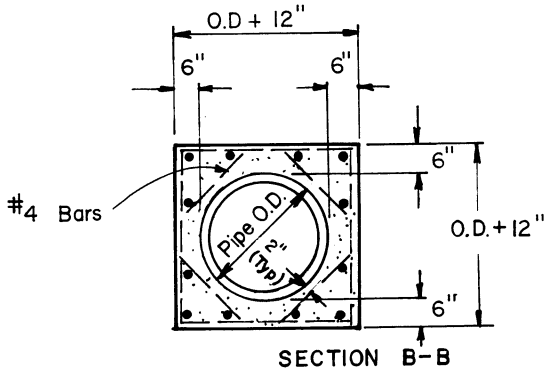


PLAN VIEW



SECTION A-A

TYPICAL LATERAL PIPE CONNECTION TO R.C.P.

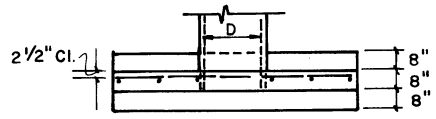


SECTION B-B

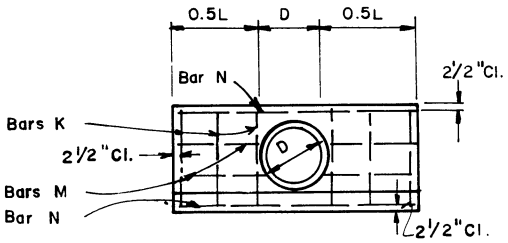
TYPICAL REINFORCED CONCRETE PIPE COLLAR

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 2	
			STORM DRAIN LATERAL	DRAWING NO. 2-12 (306)	
				DATE 7-81	PAGE 15

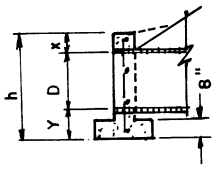
NOTE:
For Dimensions not shown, see tables on Dwg. No.s 2-13.3 and 2-13.4



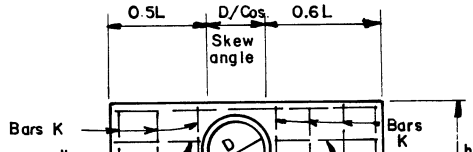
PLAN



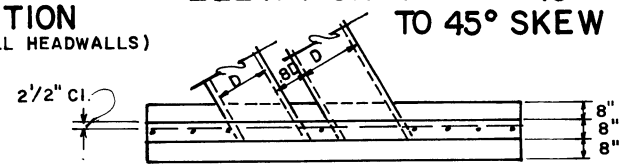
ELEVATION SINGLE 0° SKEW



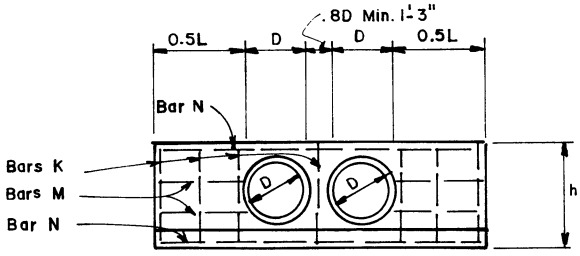
SECTION
(FOR ALL HEADWALLS)



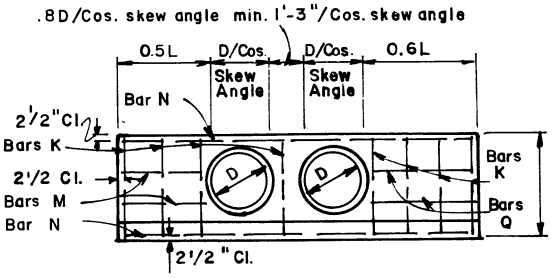
ELEVATION SINGLE 15° TO 45° SKEW



PLAN



ELEVATION DOUBLE 0° SKEW



ELEVATION DOUBLE 15° TO 45° SKEW

GENERAL NOTES:

1.) Concrete shall be Class AA or DA

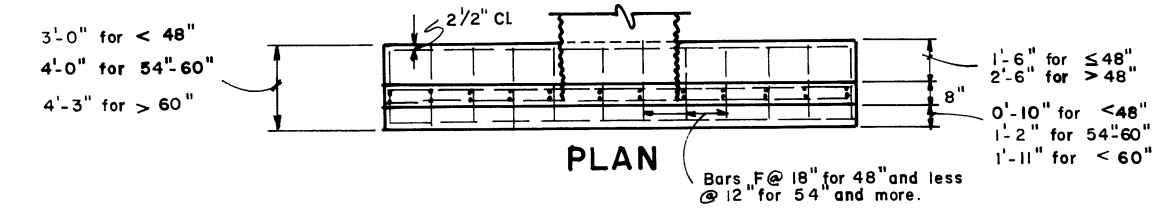
2.) Reinforcing steel shall be deformed bars with maximum spacing of 18" set 2½" clear of surface of concrete except as noted. Bar ends shall be kept 1½" clear of surface of concrete. Reinforcing bars may be cut and bent in the field.

3.) Footings shown are of minimum depth and shall be extended if soil is unsuitable or liable to scour.

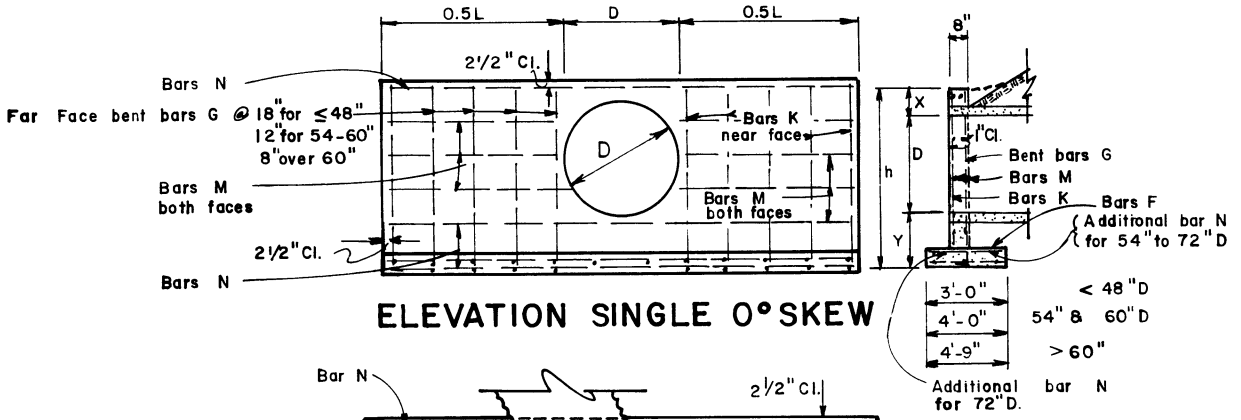
4.) Culvert pipes to be set on a skew shall be mitered when headwalls are constructed. When headwalls are not constructed the pipe shall not be mitered except in overflow section.

5.) For estimating headwall quantities on skewed culverts:
0° to 10° ~ Use quantities for 0° skew, 11° to 45° ~ Use quantities for 30° skew
Over 45° ~ Calculate quantities required.
Culverts should be installed on 0°, 30° where it is feasible.

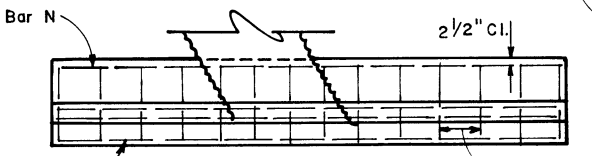
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 2
			CULVERT HEADWALLS (12"- 42" C.M.P.) (12"- 36" R.C.P.)	DRAWING NO. 2-13.1 (311)
				DATE 7-81 / PAGE 16



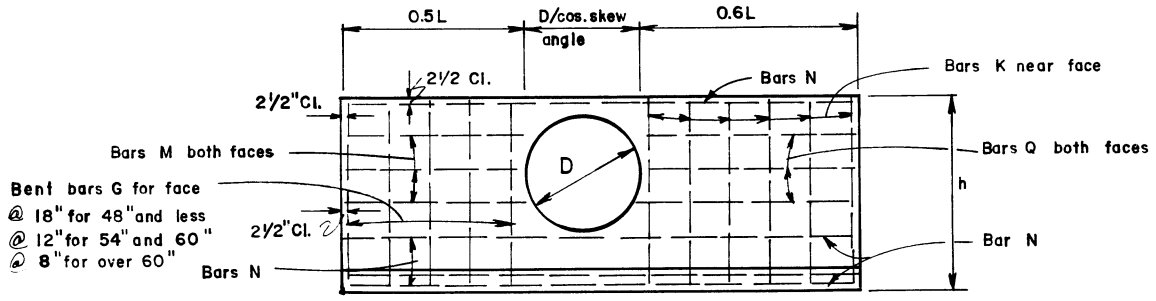
PLAN



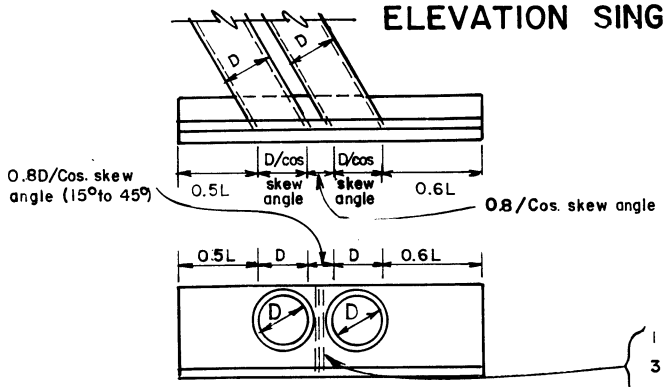
ELEVATION SINGLE 0° SKEW



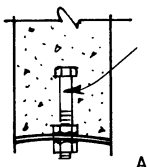
PLAN



ELEVATION SINGLE 15° TO 45° SKEW



ELEVATION DOUBLE RCP 0° TO 45° SKEW



Anchor bolts to be installed on inlet end only.

ANCHOR BOLT DETAIL

1 Bar G, 1 Bar K = 42" & 48" D
3 Bars G, 2 Bars K = 54" & 60" D
5 Bars G, 3 Bars K = 72" D

NOTE:
1.) SEE GENERAL NOTES ON DWG. NO. 2-13.1
2.) FOR DIMENSIONS SEE TABLE ON DWG. NO. 2-13.5 and 2-13.6

NO.	REVISION	DATE

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

CULVERT HEADWALLS
(42" - 72" RCP)

SECTION 2

DRAWING NO. 2-13.2 (311)

DATE 7-81

PAGE 17

NOTE:
Bar sizes, dimensions and quantities have been taken from the NDOT Standard Plans. Additional skew angle information may be obtained from that publication.

CMP SIZE D	CORR CMAP S X R	CMP AREA SQ FT	L	SINGLE C M P				DOUBLE C M P			
				0° SKEW		30° SKEW		0° SKEW		30° SKEW	
				CONC cu yd	STEEL lb	CONC cu yd	STEEL lb	CONC cu yd	STEEL lb	CONC cu yd	STEEL lb
12"		0.79	3'-6"	0.85	35	0.94	37	1.21	46	1.35	50
15"	18" x 11"	1.23	4'-3"	1.09	48	1.21	51	1.51	61	1.68	65
18"	22" x 13"	1.77	5'-0"	1.36	55	1.51	59	1.83	70	2.05	75
24"	29" x 18"	3.14	6'-6"	1.95	78	2.16	84	2.53	95	2.84	103
30"	36" x 22"	4.91	8'-0"	2.61	105	2.90	112	3.39	126	3.79	135
36"	43" x 27"	7.07	9'-6"	3.36	122	3.72	131	4.34	147	4.85	158
42"	50" x 31"	9.62	11'-0"	4.18	167	4.64	179	5.39	196	6.03	210

X=8" Y= 1'0" h=D+ 1'8"

LENGTH OF REINFORCING BARS									
CMP SIZE D	SINGLE C M P			SINGLE or DOUBLE CMP			DOUBLE C M P		
	0° to 45°	0°	30°	0°	30°		0° to 45°	0°	30°
	NO 4	NO 5	NO 5	NO 4	NO 4	NO 4	NO 4	NO 5	NO 5
	K	N	N	M	M	Q	K	N	N
12"	4@2'-5"	2@4'-3"	2@4'-9"	2@1'-6"	1@1'-3"	1@2'-1"	5@2'-5"	2@6'-3"	2@7'-1"
15"	6@2'-8"	2@5'-3"	2@5'-11"	2@1'-8"	1@1'-5"	1@2'-3"	7@2'-8"	2@7'-6"	2@8'-6"
18"	6@2'-11"	2@6'-3"	2@7'-0"	2@2'-3"	1@2'-0"	1@3'-0"	7@2'-11"	2@8'-9"	2@9'-10"
24"	6@3'-5"	2@8'-3"	2@9'-3"	4@3'-0"	2@2'-9"	2@3'-10"	7@3'-5"	2@11'-3"	2@12'-8"
30"	8@3'-11"	2@10'-3"	2@11'-5"	4@3'-9"	2@3'-6"	2@4'-9"	9@3'-11"	2@14'-0"	2@15'-9"
36"	8@4'-5"	2@12'-3"	2@13'-8"	4@4'-6"	2@4'-3"	2@5'-8"	9@4'-5"	2@16'-9"	2@18'-10"
42"	10@4'-11"	2@14'-3"	2@15'-11"	6@5'-3"	3@5'-0"	3@6'-7"	11@4'-11"	2@19'-6"	2@21'-11"

NO.	REVISION	DATE

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

HEADWALL DIMENSIONS
(CMP 12" - 42")

SECTION 2
DRAWING NO. 2-13.3 (311)
DATE 7-81
PAGE 18

RCP SIZE D	RCP AREA SQ FT	SINGLE RCP				DOUBLE RCP				X	Y	L	h
		0° SKEW		30° SKEW		0° SKEW		30° SKEW					
		CONC cu yd	STEEL lb	CONC cu yd	STEEL lb	CONC cu yd	STEEL lb	CONC cu yd	STEEL lb				
12"	0.79	1.00	46	1.10	49	1.41	59	1.58	64	10"	14"	4'0"	3'0"
15"	1.23	1.32	55	1.47	59	1.80	70	2.01	75	10.25"	14.25"	5'0"	3'3.5"
18"	1.77	1.62	69	1.80	74	2.15	85	2.40	91	10.5"	14.5"	5'9"	3'7"
21"	2.41	1.95	77	2.16	83	2.59	95	2.90	103	10.75"	14.75"	6'6"	3'10.5"
24"	3.14	2.27	96	2.52	103	3.01	116	3.37	125	11"	15"	7'3'	4'2"
27"	3.98	2.62	105	2.90	112	3.48	128	3.89	137	11"	15"	8'0"	4'5"
30"	4.91	3.08	117	3.41	124	4.07	141	4.55	152	11.5	15.5"	9'0"	4'9"
33"	5.94	3.50	125	3.87	134	4.62	153	5.17	164	11.75"	15.75'	9'9"	5'0.5"
36"	7.07	3.93	161	4.34	171	5.19	190	5.80	204	1'0"	16"	10'6"	5'4"

LENGTH OF REINFORCING BARS

RCP SIZE	SINGLE			SINGLE or DOUBLE			DOUBLE		
	0 to 45°	0°	30°	0°	30°		0 to 45°	0°	30°
	No.4	No.5	No.5	No.4	No.4	No.4	No.4	No.5	No.5
	K	N	N	M	M	Q	K	N	N
12"	6@2'-9"	2@ 4'-9"	2@5'-4"	2@1'-7"	1@1'-4"	1@2'-2"	7@2'-9"	2@7'-0"	2@7'-11"
15"	6@3'-1"	2@ 6'-0"	2@6'-8"	2@2'-1"	1@1'-10"	1@2'-9"	7@3'-1"	2@8'-6"	2@9'-7"
18"	6@3'-4"	2@ 7'-0"	2@7'-10"	4@2'-5"	2@2'-2"	2@3'-2"	7@3'-4"	2@9'-9"	2@11'-0"
21"	6@3'-8"	2@ 8'-0"	2@8'-11"	4@2'-9"	2@2'-6"	2@3'-7"	7@3'-8"	2@11'-2"	2@12'-7"
24"	8@3'-11"	2@9'-0"	2@10'-1"	4@3'-2"	2@2'-11"	2@4'-1"	9@3'-11"	2@12'-7"	2@14'-2"
27"	8@4'-2"	2@10'-0"	2@11'-2"	4@3'-6"	2@3'-3"	2@4'-5"	9@4'-2"	2@14'-1"	2@15'-10"
30"	8@4'-6"	2@11'-3"	2@12'-7"	4@4'-0"	2@3'-9"	2@5'-1"	9@4'-6"	2@15'-9"	2@17'-9"
33"	8@4'-10"	2@12'-3"	2@13'-8"	4@4'-3"	2@4'-0"	2@5'-4"	9@4'-10"	2@17'-3"	2@19'-5"
36"	10@5'-1"	2@13'-3"	2@14'-9"	6@4'-8"	3@4'-5"	3@5'-10"	11@5'-1"	2@18'-8"	2@21'-0"

NOTE:
Bar sizes, dimensions and quantities have been taken from the NDOT Standard Plans. Additional skew angle information may be obtained from that publication.

NO.	REVISION	DATE

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

HEADWALL DIMENSIONS
(RCP 12" - 36")

SECTION 2

DRAWING NO. 2-13.4 (311)

DATE 7-81

PAGE 19

CMP SIZE D	CORR CMAP S X R	CMP AREA SQ FT	L	SINGLE CMP				DOUBLE CMP			
				0° SKEW		30° SKEW		0° SKEW		30° SKEW	
				CONC. CU YD	STEEL LB	CONC. CU YD	STEEL LB	CONC. CU YD	STEEL LB	CONC. CU.YD	STEEL LB
48"	58"x36"	12.57	12'6"	6.72	597	7.45	656	8.76	715	9.82	815
54"	65"x40"	15.90	14'0"	7.90	706	8.76	802	10.28	841	11.51	950
60"	72"x44"	19.64	15'6"	10.17	993	11.28	1095	13.28	1229	14.87	1381
72"		28.27	18'6"	13.13	1265	14.56	1424	17.07	1538	19.11	1753

X=8" Y=2'0" h=D+2'8"

LENGTH OF REINFORCING BARS

CMP SIZE D	SINGLE CMP											
	0° SKEW					30° SKEW						
	NO 5	NO 5	NO 4	NO 4	NO 4	NO 5	NO 5	NO 4	NO 4	NO 4	NO 4	NO 4
	F	G	M	N	K	F	G	M	Q	N	K	
48"	12@ 2'-9"	10@ 7'-7"	12@6'-0"	9@16'-3"	10@5'-10"	13@2'-9"	11@7'-7"	6@5'-8"	6@7'-3"	9@18'-2"	11@5'-10"	
54"	13@ 2'-9"	12@ 8'-1"	12@6'-9"	9@18'-3"	12@6' - 4"	15@2'-9"	14@8'-1"	6@6'-5"	6@8'-1"	9@20'-4"	14@6'-4"	
60"	21@ 3'-9"	18@ 8'-9"	12@7'-6"	10@20'-3"	12@6'-10"	23@3'-9"	20@8'-9"	6@7'-2"	6@9'-0"	10@22'-7"	13@6'-10"	
72"	25@ 3'-9"	20@ 9'-9"	16@9'-0"	10@24'-3"	14@7'-10"	28@3'-9"	23@9'-9"	8@8'-8"	8@10'-10"	10@27'-0"	16@7'-10"	
DOUBLE CMP												
48"	16@ 2'-9"	11@ 7'-7"	12@6'-0"	9@22'-3"	11@5'-10"	18@2'-9"	13@ 7'-7"	6@5'-8"	6@7'-3"	9@25'-1"	13@5'-10"	
54"	18@ 2'-9"	13@ 8'-1"	12@6'-9"	9@25'-0"	13@6' - 4"	20@2'-9"	15@ 8'-1"	6@6'-5"	6@8'-1"	9@28'-2"	15@6' - 4"	
60"	29@ 3'-9"	21@ 8'-9"	12@7'-6"	10@27'-9"	14@6'-10"	32@3'-9"	24@ 8'-9"	6@7'-2"	6@9'-0"	10@31'-3"	16@6'-10"	
72"	34@ 3'-9"	23@ 9'-9"	16@9'-0"	10@33'-3"	16@7'-10"	38@3'-9"	27@ 9'-9"	8@8'-8"	8@10'-10"	10@37'-5"	19@7'-10"	

NOTE:
Bar sizes, dimensions and quantities have been taken from the NDOT Standard Plans. Additional skew angle information may be obtained from that publication.

NO.	REVISION	DATE
1	SPELLING	10-16-86

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

HEADWALL DIMENSIONS
(CMP 48"- 72")

SECTION 2

DRAWING NO. 2-13.5 (311)

DATE 7-81

PAGE 20

NO.	REVISION	DATE

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

HEADWALL DIMENSIONS

(RCP 42" - 72")

SECTION 2

DRAWING NO. 2-13.6 (311)

DATE 7-81

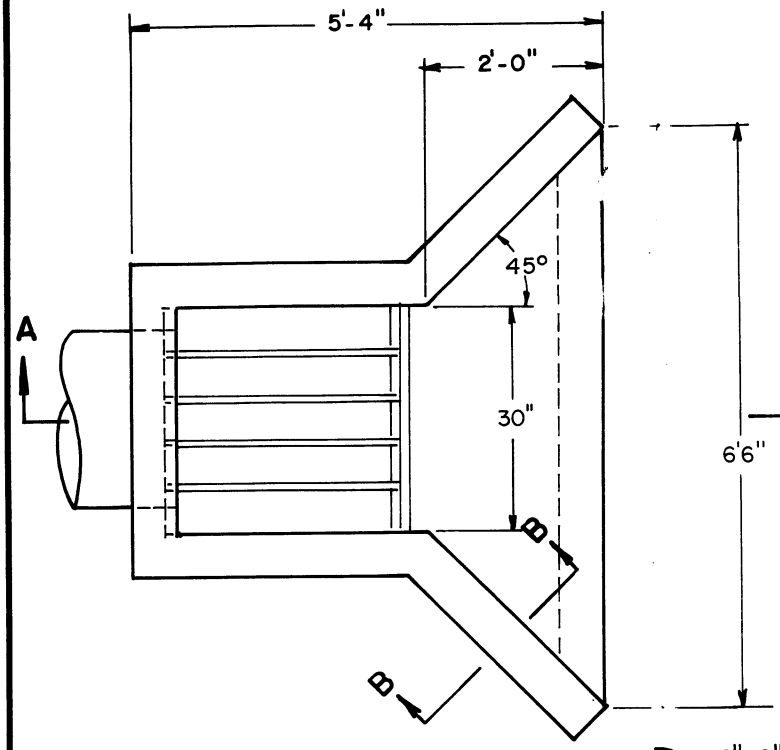
PAGE 21

RCP SIZE D	RCP AREA SQ FT.	SINGLE RCP 0° SKEW CONC cu yd	SINGLE RCP 0° SKEW STEEL lb	SINGLE RCP 30° SKEW CONC cu yd	SINGLE RCP 30° SKEW STEEL lb	DOUBLE RCP 0° SKEW CONC cu yd	DOUBLE RCP 0° SKEW STEEL lb	DOUBLE RCP 30° SKEW CONC cu yd	DOUBLE RCP 30° SKEW STEEL lb	X	Y	L	h	RCP SIZE D
42"	9 62	6.10	571	6.76	627	8.18	692	9.15	790	1-0¼	2-0¼	12-0	6-6½	42
48"	12 57	7.41	688	8.21	781	9.88	829	11.07	935	1-1	2-1	13-9	7-2	48
54"	15 90	9.81	990	10.87	1096	13.11	1236	14.68	1395	1-1½	2-1½	15-6	7-9	54
60"	19 64	11.29	1137	12.50	1250	15.08	1407	16.88	1596	1-2	2-2	17-0	8-4	60
72"	28 27	15.62	1825	17.30	2045	20.87	2247	23.36	2596	1-3	2-3	20-3	9-6	72

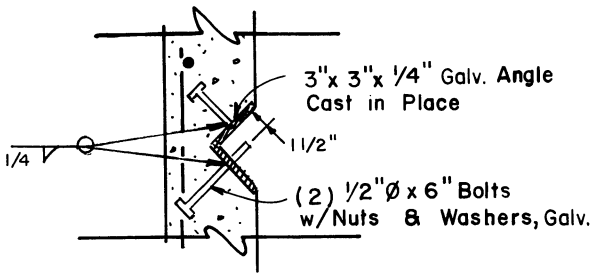
NOTE:
Bar sizes, dimensions and quantities have been taken from the NDOT Standard Plans. Additional skew angle information may be obtained from that publication.

LENGTH OF REINFORCING BARS

R C P SIZE	SINGLE R C P 0° SKEW NO. 5 F	NO. 5 G	NO. 4 M	NO. 4 N	NO. 4 K	30° SKEW NO. 5 F	NO. 5 G	NO. 4 M	NO. 4 Q	NO. 4 N	NO. 4 K
42"	12@2'-9"	10@7'-6"	12@5'-5"	9@15'-3"	10@5'-8"	13@2'-9"	11@7'-6"	6@5'-1"	6@6'-6"	9@17'-0"	11@5'-8"
48"	13@2'-9"	12@8'-1"	12@6'-3"	9@17'-6"	12@6'-3"	15@2'-9"	14@8'-1"	6@5'-11"	6@7'-5"	9@19'-6"	14@6'-3"
54"	21@3'-9"	16@9'-1"	16@7'-1"	10@19'-9"	12@6'-10"	23@3'-9"	18@9'-1"	8@6'-9"	8@8'-5"	10@22'-0"	13@6'-10"
60"	23@3'-9"	18@9'-8"	16@7'-9"	10@21'-9"	14@7'-5"	25@3'-9"	20@9'-8"	8@7'-5"	8@9'-4"	10@24'-3	15@7'-5"
72"	27@4'-6"	30@11'-7"	20@9'-11"	12@26'-0"	16@8'-7"	30@4'-6"	34@11'-7"	10@9'-0"	10@11'-3"	12@29'-0"	18@8'-7"
	DOUBLE R C P										
42"	16@2'-9"	11@7'-6"	12@5'-5"	9@21'-6"	11@5'-8"	18@2'-9"	13@7'-6"	6@5'-1"	6@6'-6"	9@24'-3	13@5'-8"
48"	18@2'-9"	13@8'-1"	12@6'-3"	9@24'-9"	13@6'-3"	20@2'-9"	15@8'-1"	6@5'-11"	6@7'-5"	9@27'-10"	15@6'-3"
54"	29@3'-9"	19@9'-1"	16@7'-0"	10@27'-10"	14@6'-10"	32@3'-9"	22@9'-1"	8@6'-9"	8@8'-5"	10@31'-4"	16@6'-10"
60"	32@3'-9"	21@9'-8"	16@7'-9"	10@30'-9"	14@7'-5"	36@3'-9"	25@9'-8"	8@7'-5"	8@9'-4"	10@34'-8"	17@7'-5"
72"	37@4'-6"	35@11'-7"	20@9'-11"	12@36'-10"	19@8'-7"	42@4'-6"	42@11'-7"	10@9'-0"	10@11'-3"	12@41'-5"	22@8'-7"



PLAN



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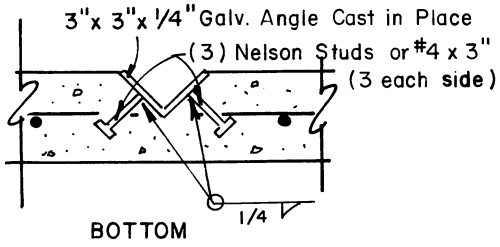
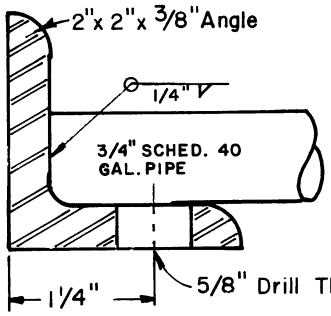
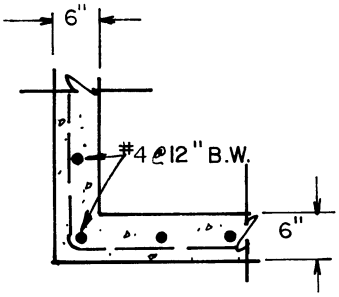


BOTTOM

CAST ANGLE DETAILS



SECTION C-C



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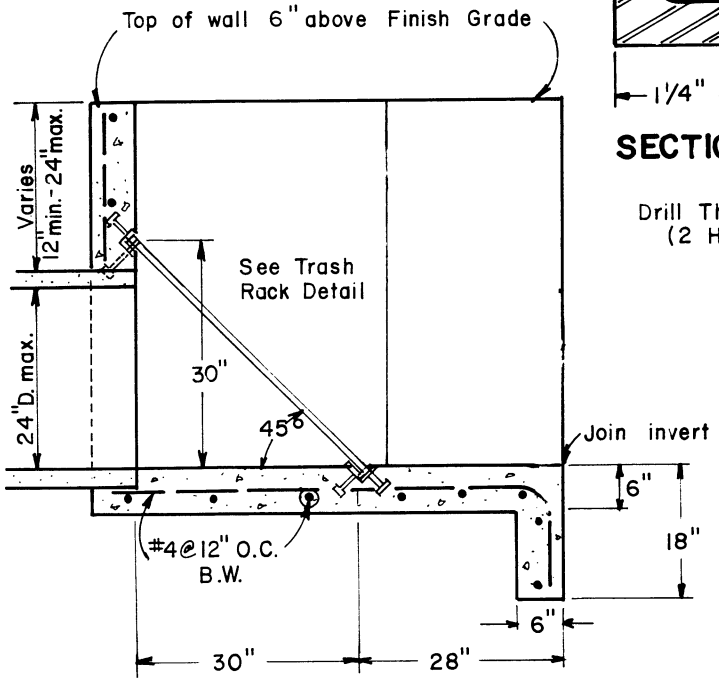
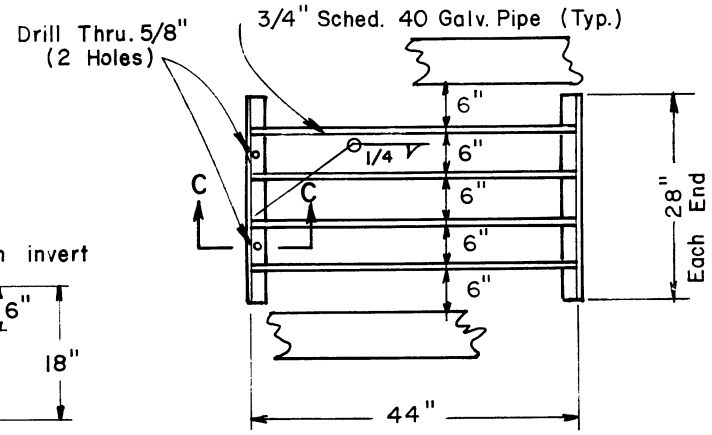


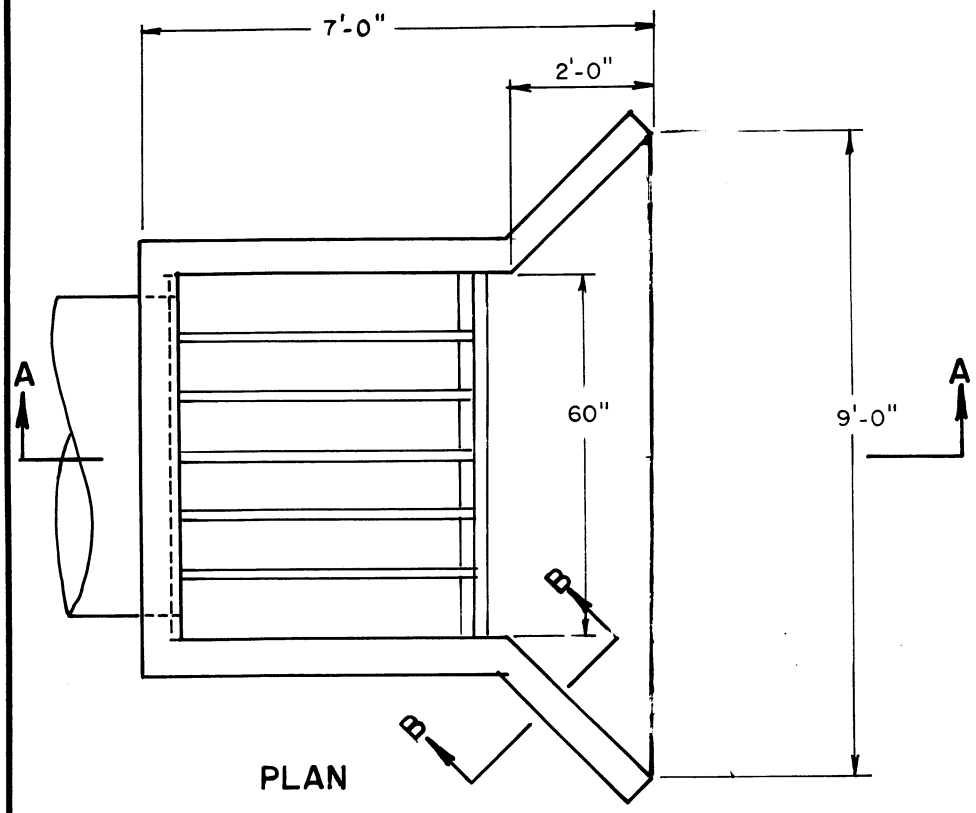
SECTION A-A



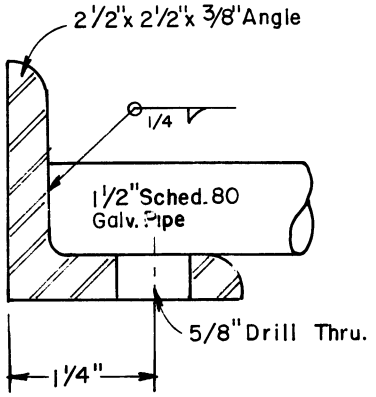
TRASH RACK DETAIL

Note: Not for use in City of Reno. (See Reno Section)

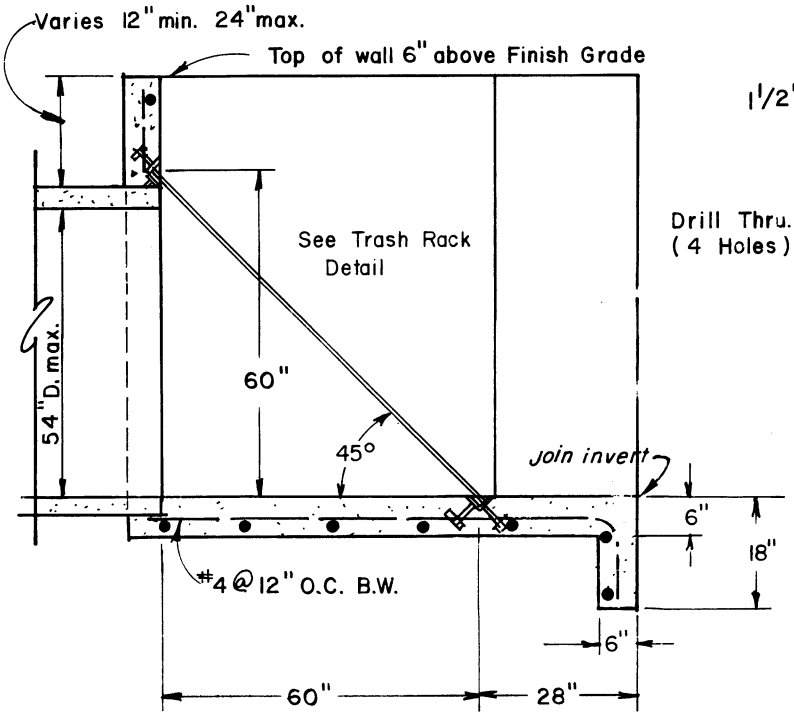
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 2	
			TRASH RACK (24" PIPE AND SMALLER)	DRAWING NO 2 - 14.1 (311, 324)	
				DATE 7 - 81	PAGE 22



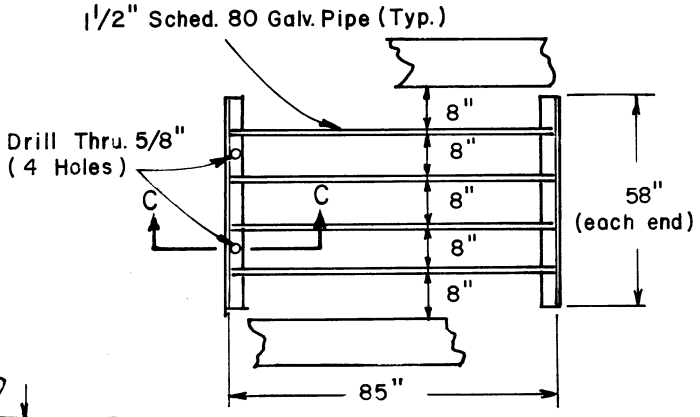
PLAN



SECTION C-C



SECTION A-A



TRASH RACK DETAIL

NOTE: 1. For Details not shown see Trash Rack -24" Pipe and smaller

2. Not for use in City of Reno (see Reno Section)

NO.	REVISION	DATE
1	SEC. C-C	10-16-86

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

TRASH RACK
(27" THRU 54" PIPE)

SECTION 2

DRAWING NO. 2-14.2 (311, 324)

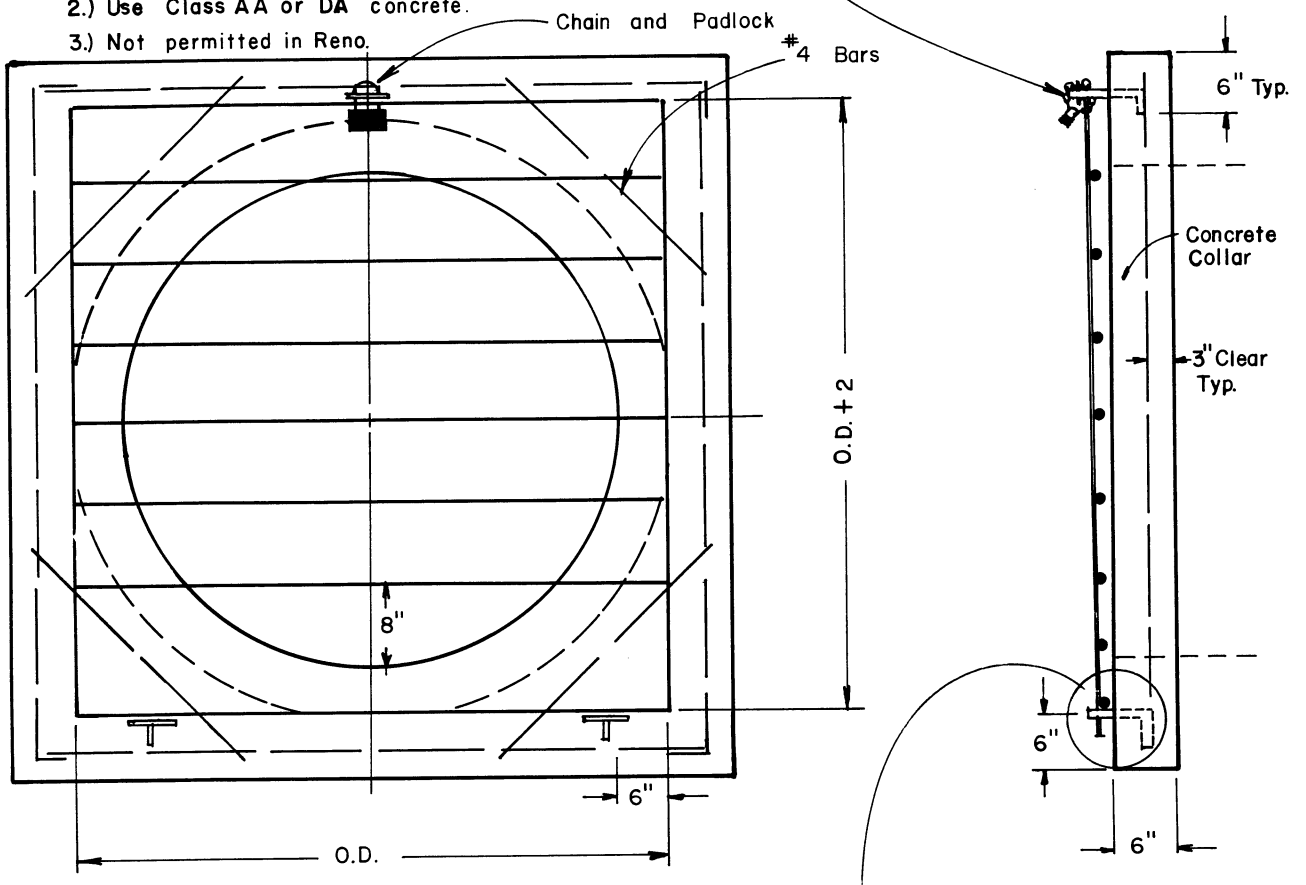
DATE 7-81

PAGE 23

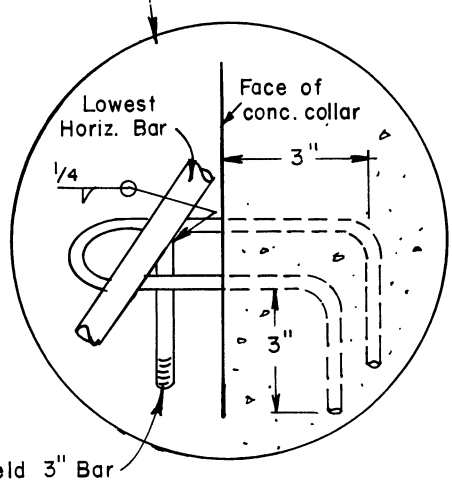
1.) Rack to be welded reinforcing steel or round bars of equal diameter with horizontal bars being 8" center to center (See table).

2.) Use Class AA or DA concrete.

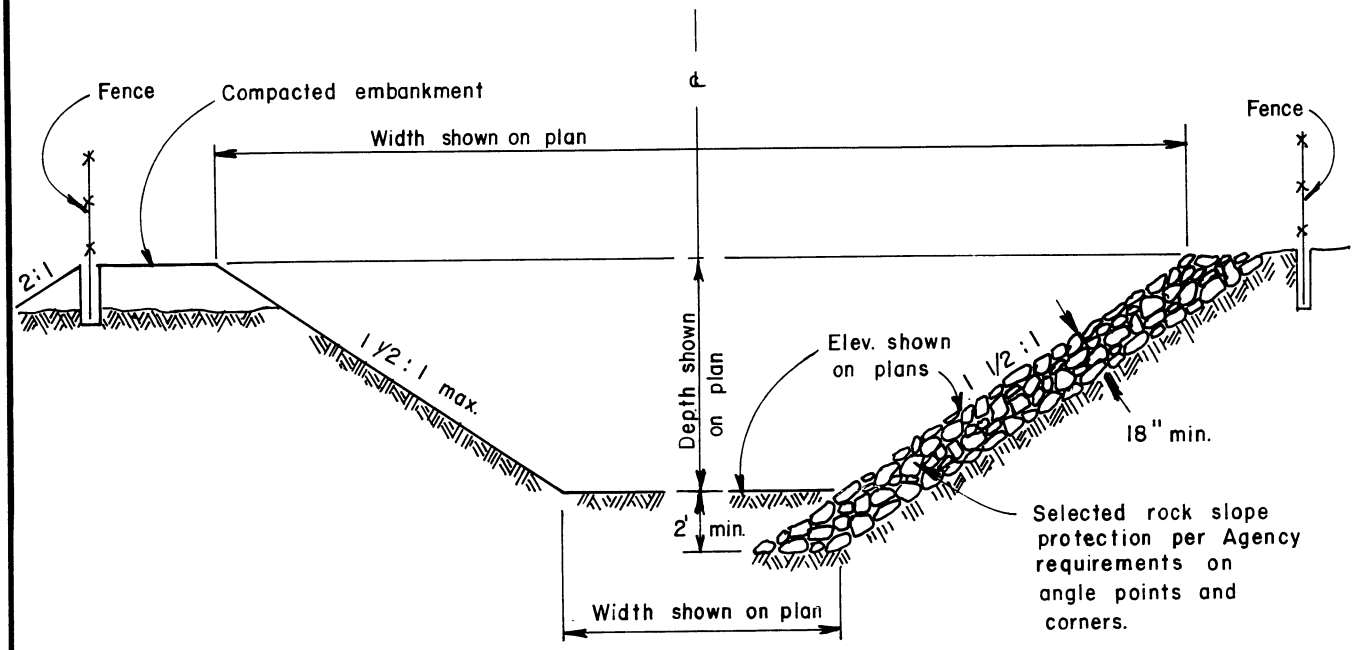
3.) Not permitted in Reno.



PIPE SIZE	BAR SIZE
21"	4
24"	4
27"	5
30"	5
33"	6
36"	6
42"	7
48"	7
54"	7
60"	8
66"	8
72"	8
84"	8



NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 2	
			ACCESS CONTROL RACK	DRAWING NO. 2-15 (324)	
				DATE 7-81	PAGE 24

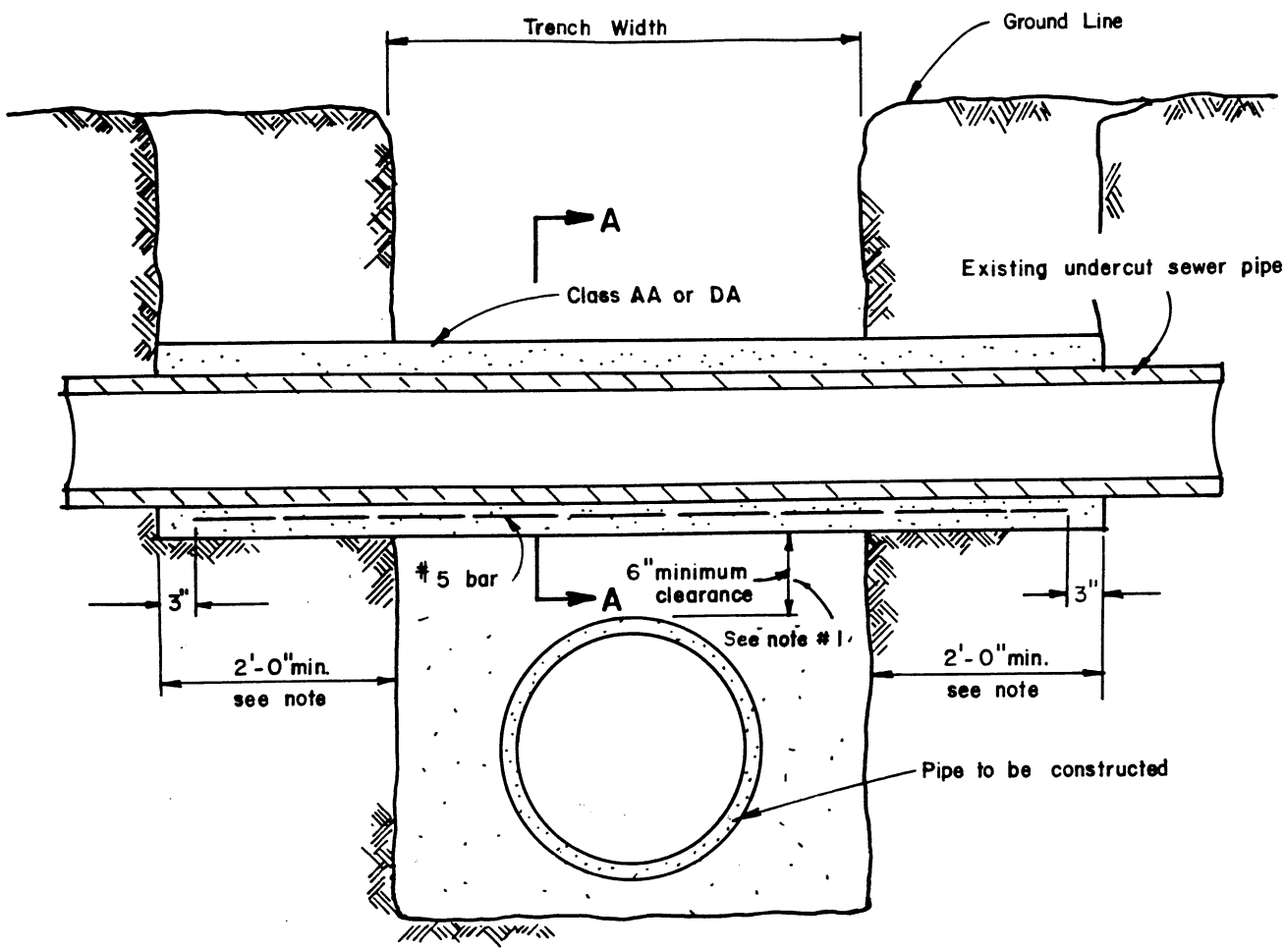


TYPICAL SECTION

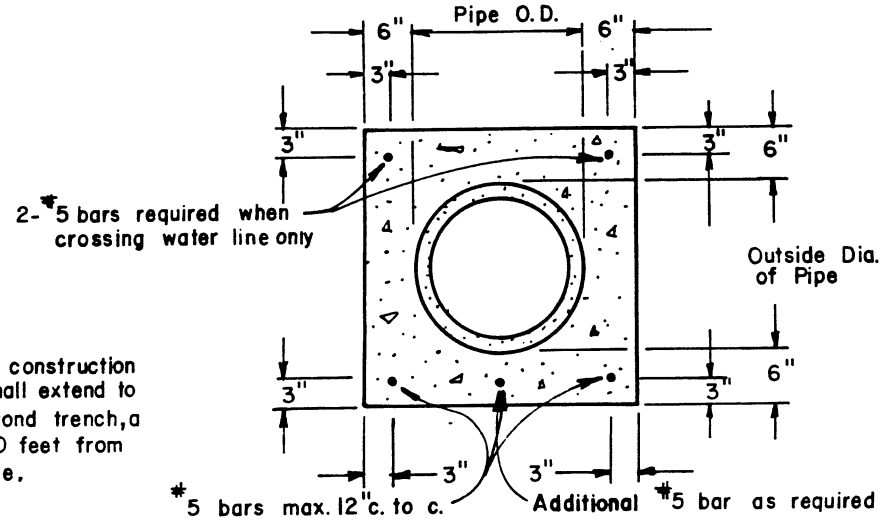
NOTES:

1. The following shall be as required by Agency:
   a.) Low flow channel
   b.) Filter blanket
   c.) Cutoff wall
   d.) Fence
2. Not for use in Reno.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 2	
			DRAINAGE CHANNEL (EARTH / ROCK LINED)	DRAWING NO. 2-16 (303)	
				DATE 7-81	PAGE 25



TYPICAL SECTION



SECTION A-A

NOTE:

For water line construction encasement shall extend to first joint beyond trench, a minimum of 10 feet from the water line.

1. IN CARSON CITY, THE MINIMUM CLEARANCE BETWEEN PIPES SHALL BE 18".

NO.	REVISION	DATE
1	NOTE # 1	2/92

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

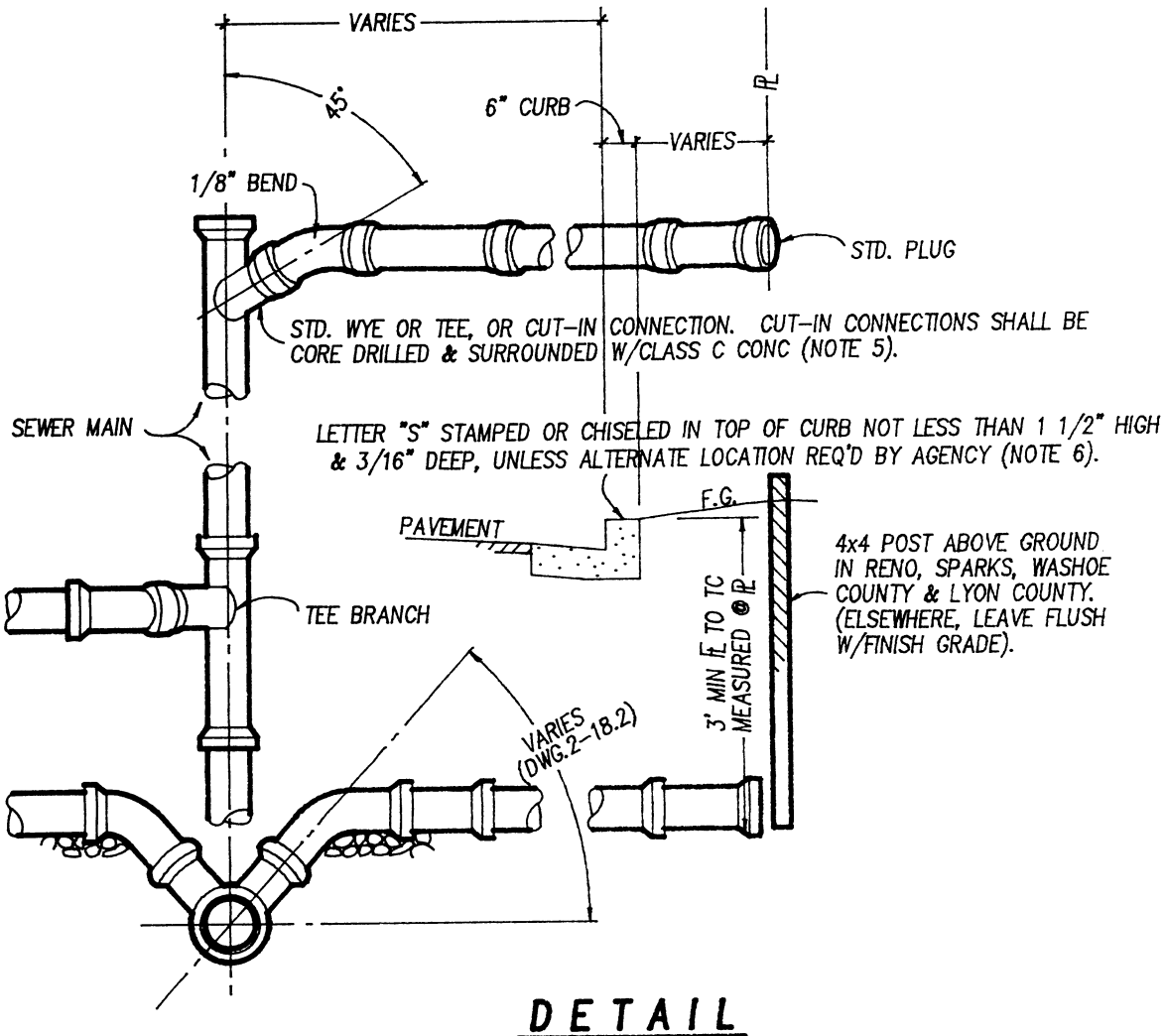
CONCRETE SUPPORT for UNDERCUT SEWER PIPE

SECTION 2

DRAWING NO. 2-17 (311)

DATE 7-81

PAGE 26



DETAIL

N.T.S.

NOTES

1. IN NO CASE SHALL A LATERAL CONNECT TO THE SEWER MAIN DIRECTLY ON TOP OF THE PIPE.
2. SEWER LATERALS SHALL HAVE A MIN SLOPE OF 2%.
3. ALL JOINTS ON SEWER LATERAL PIPE SHALL BE COMPRESSION TYPE OR APPROVED SOLVENT WELD.
4. LATERAL SHALL EXTEND TO PROPERTY LINE UNLESS OTHERWISE SHOWN ON PLANS.
5. CITY OF RENO: SEWER LATERAL "CUT-IN" CONNECTION WILL BE SHOWN ON DWG.2-20.
6. THE LETTER "S" SHALL BE RESTAMPED INTO THE CURB WHEN CURB REMOVAL IS REQ'D.

NO.	REVISION	DATE
1	REDRAWN	1/95vp

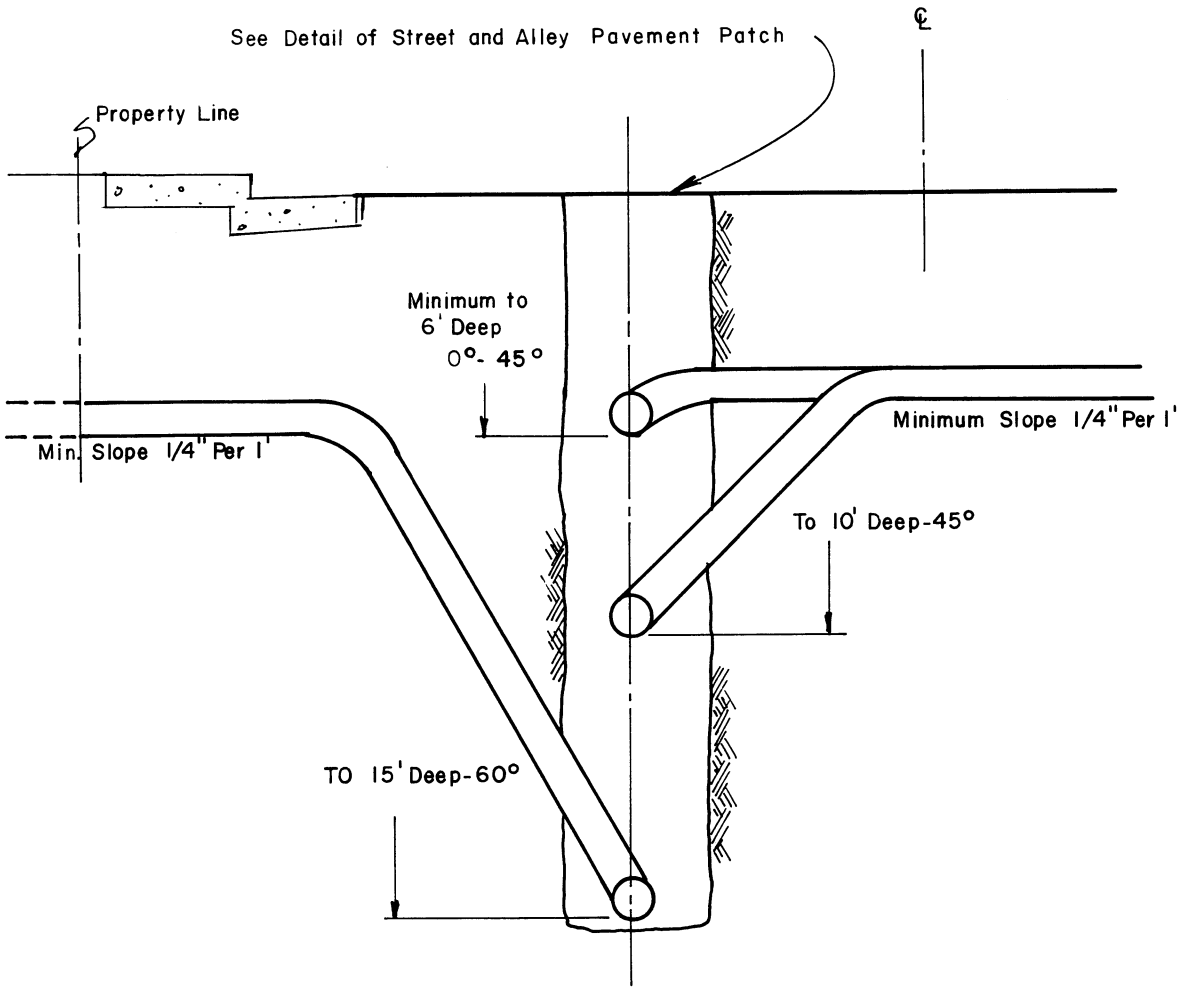
STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

SEWER LATERAL CONNECTION

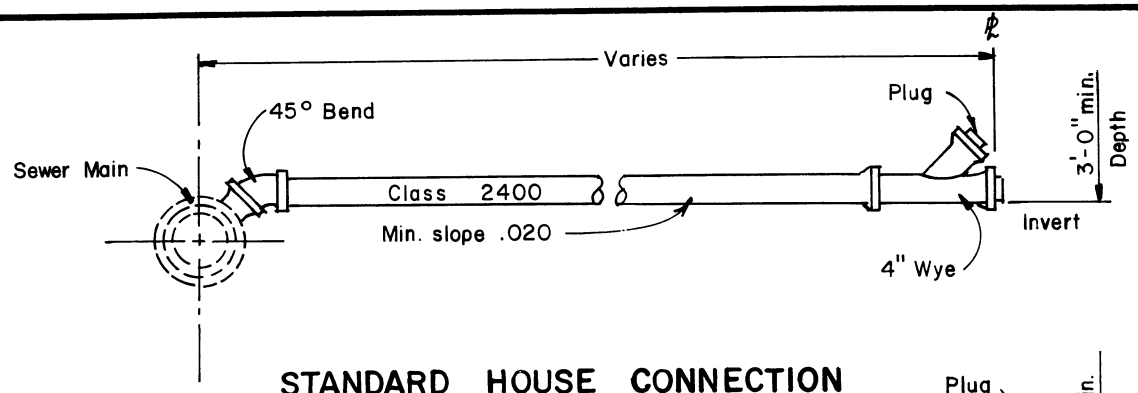
SECTIONS 2

DRAWING NO. 2-18.1 (306)

DATE 1/95vp | PAGE 27

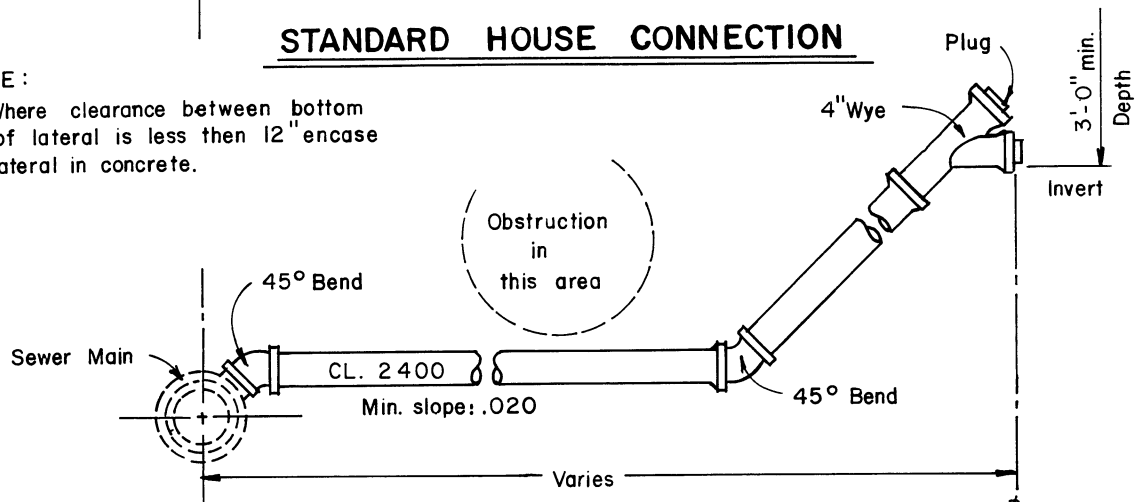


NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 2	
			SEWER LATERAL CONNECTION	DRAWING NO. 2-18.2 (306)	
				DATE 7-81	PAGE 28



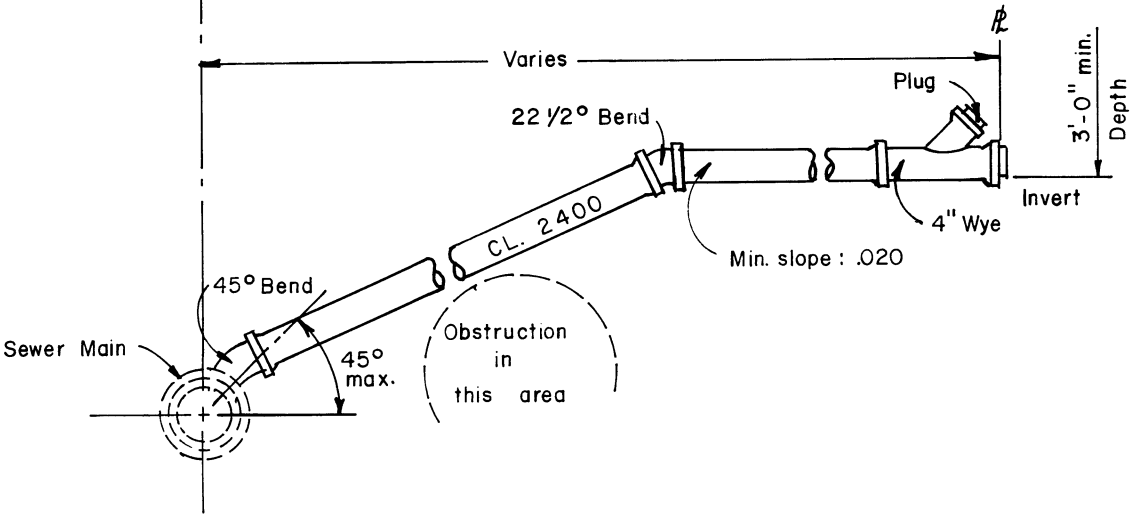
STANDARD HOUSE CONNECTION

NOTE :
Where clearance between bottom of lateral is less then 12" encase lateral in concrete.



HOUSE CONNECTION UNDER OBSTRUCTION

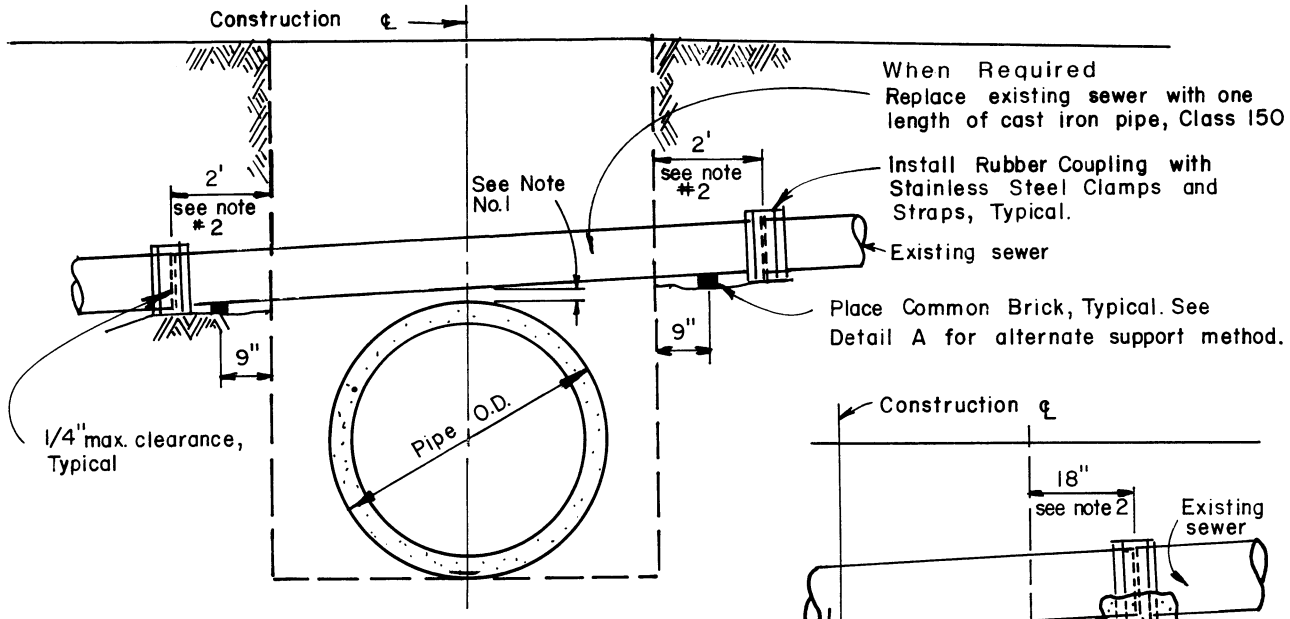
(UPON APPROVAL ONLY)



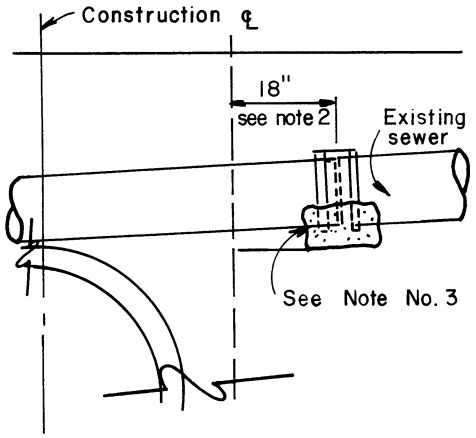
HOUSE CONNECTION OVER OBSTRUCTION

(UPON APPROVAL ONLY)

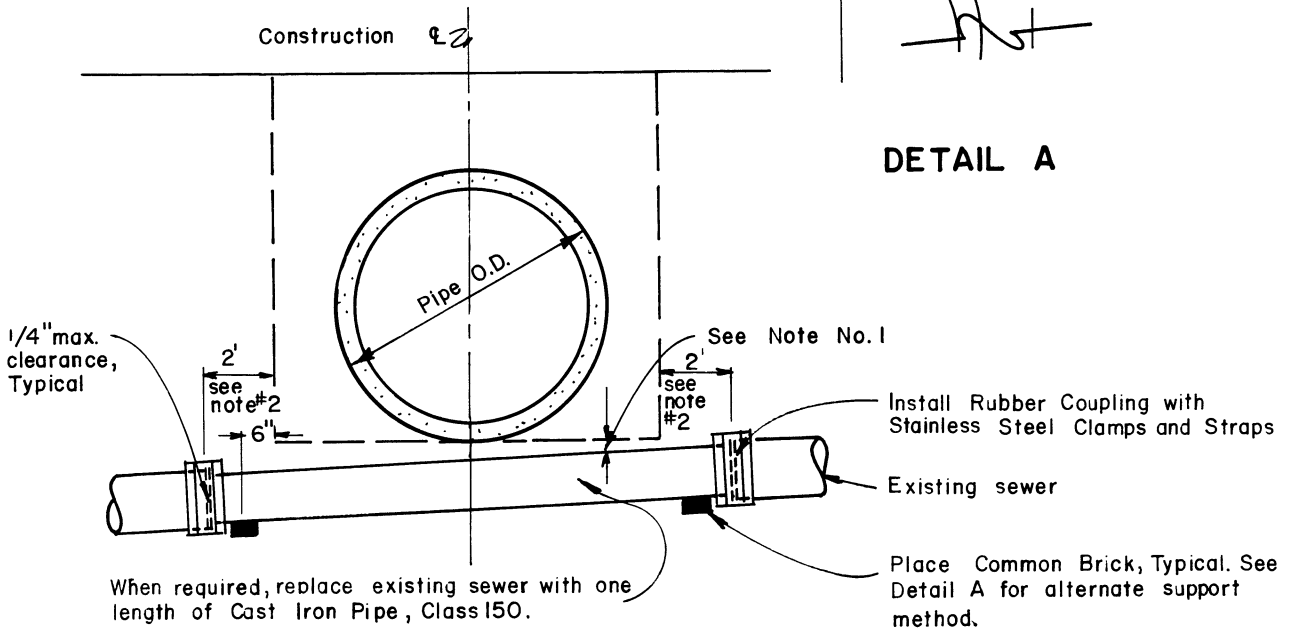
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 2	
			SEWER LATERAL WITH CLEANOUT WYE	DRAWING NO. 2 - 18.3 (306)	
				DATE 7 - 81	PAGE 29



CROSSING UNDER SANITARY SEWER



DETAIL A



CROSSING OVER SANITARY SEWER

GENERAL NOTES:

1.) Provide minimum clearance as required by the appropriate governing agency.

2.) For waterline construction, Cast Iron Sewer Pipe shall extend to a minimum of 10 feet from the waterline.

3.) Place Class "A" Concrete Support under Couplings.

4.) Lander Co.- Replaced sewer shall be PVC pressure pipe, Cl. 150.

NO.	REVISION	DATE
1	When Req'd.	3-83

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

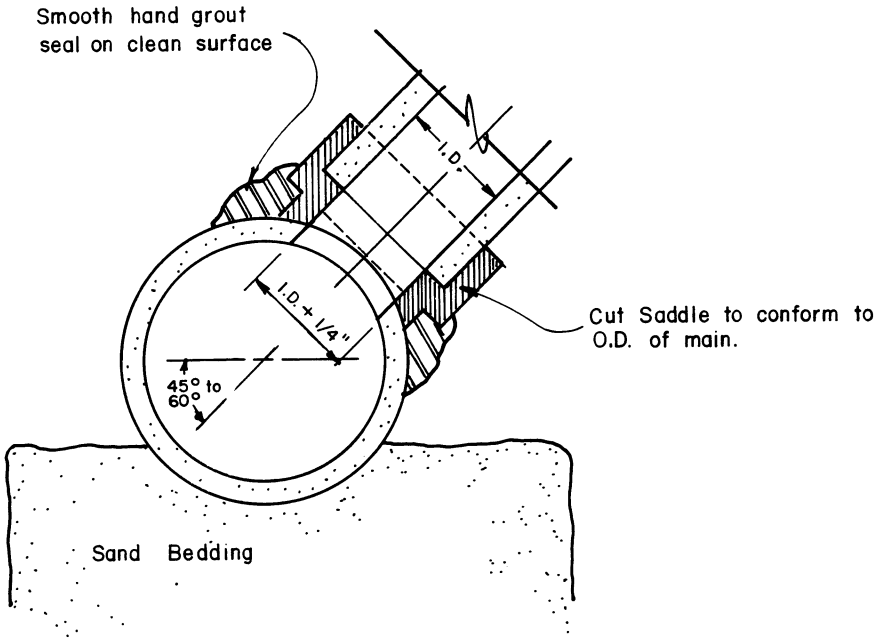
SANITARY SEWER CROSSING

SECTION 2

DRAWING NO. 2-19 (306)

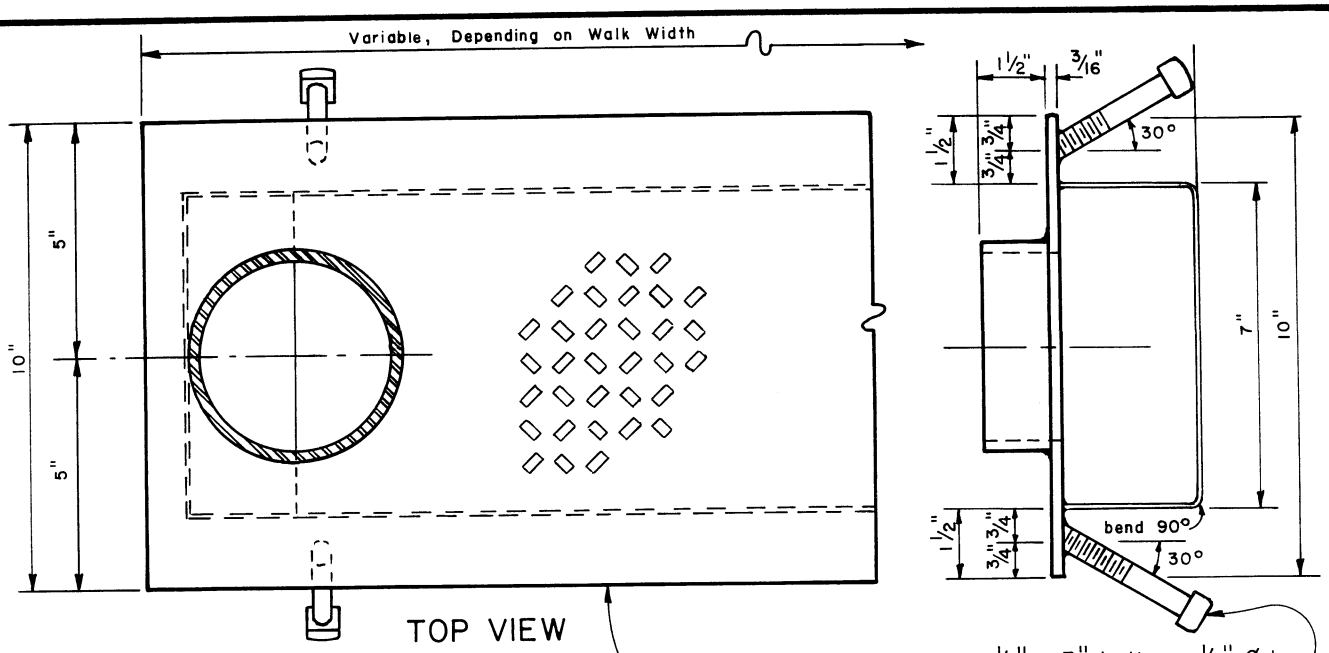
DATE 7 - 81

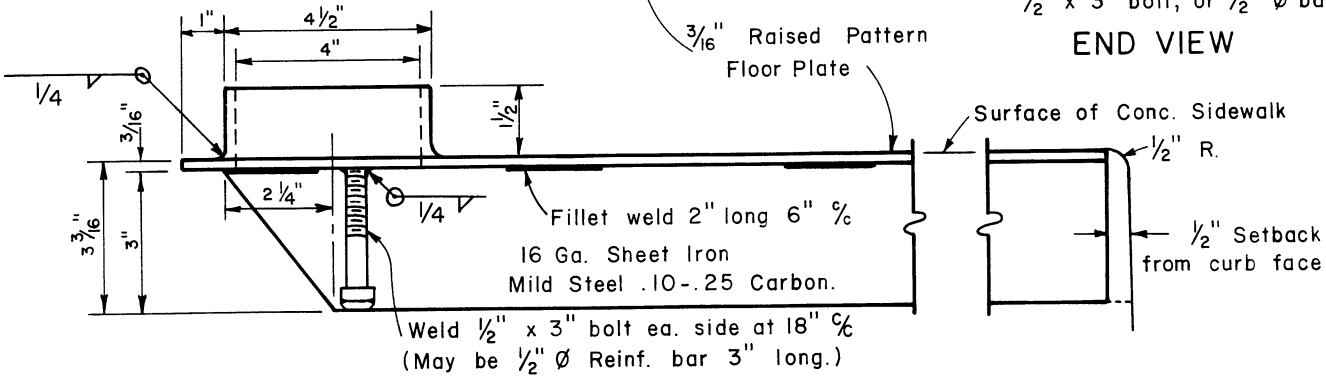
PAGE 30

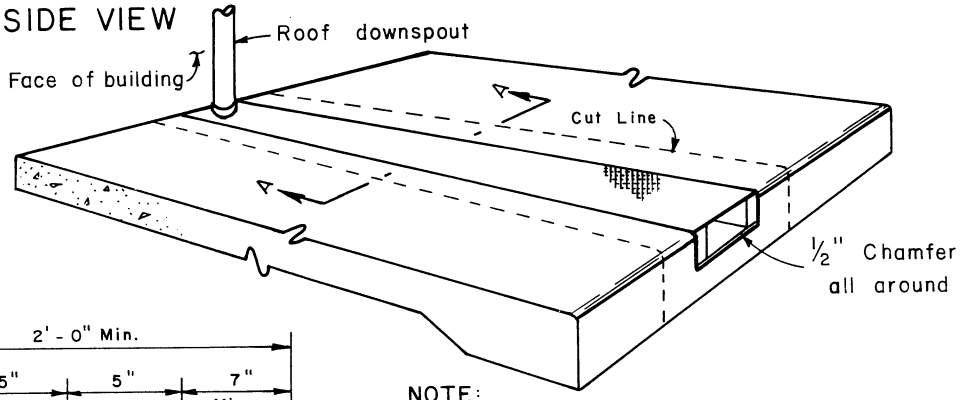


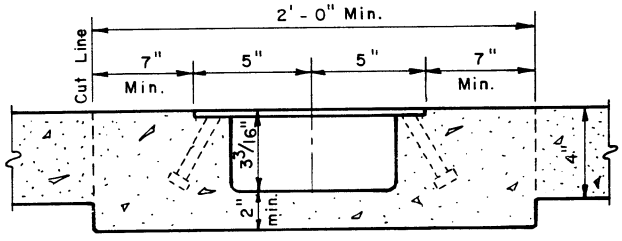
SADDLE DETAIL

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 2	
			SEWER LATERAL "CUT-IN"	DRAWING NO. 2-20 (306)	
				DATE 7-81	PAGE 31







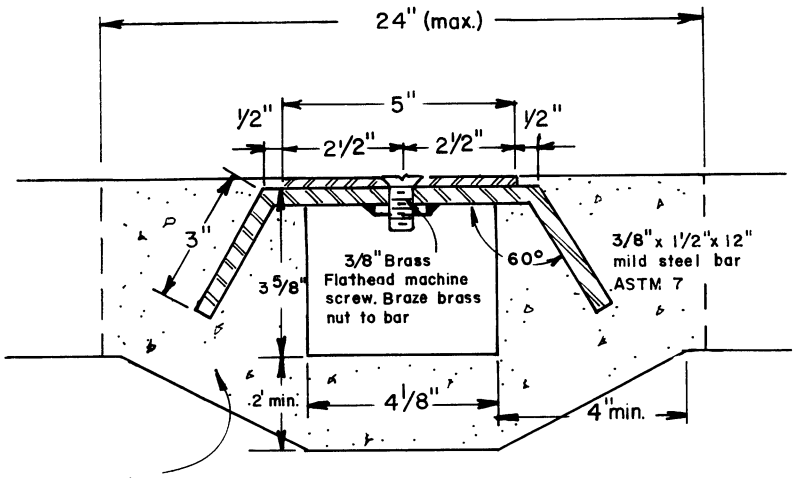


SECTION A-A

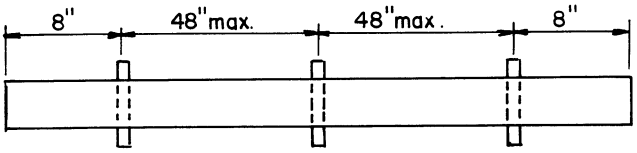
NOTE:

1. Steel drain to end ½" from face of curb.
2. Concrete shall be class DA.
3. When drain is placed in existing sidewalk the sidewalk shall be saw cut at cut line.
4. Payment based on saw cut width.
5. Sidewalk drain in place per lin. ft.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 2
			SIDEWALK CROSS-DRAIN TYPE I	DRAWING NO. 2-21.1 (324)
				DATE 7-81 / PAGE 32



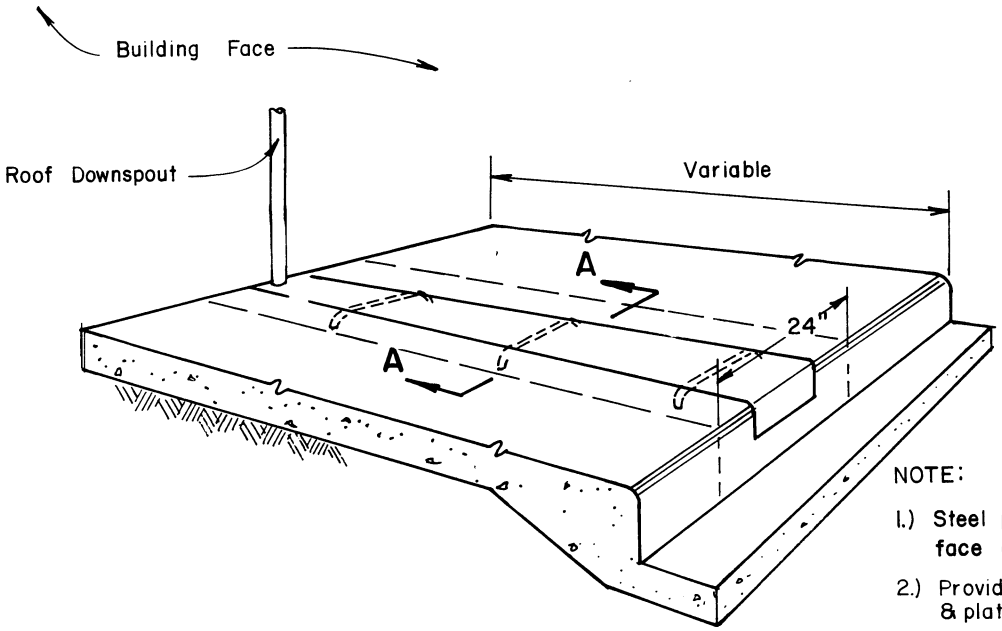
SECTION A-A



NOTE

For walks 6' and less use 2 bars
For walks 6' to 10' use 3 bars
For walks over 10' use 4 bars

BAR SPACING



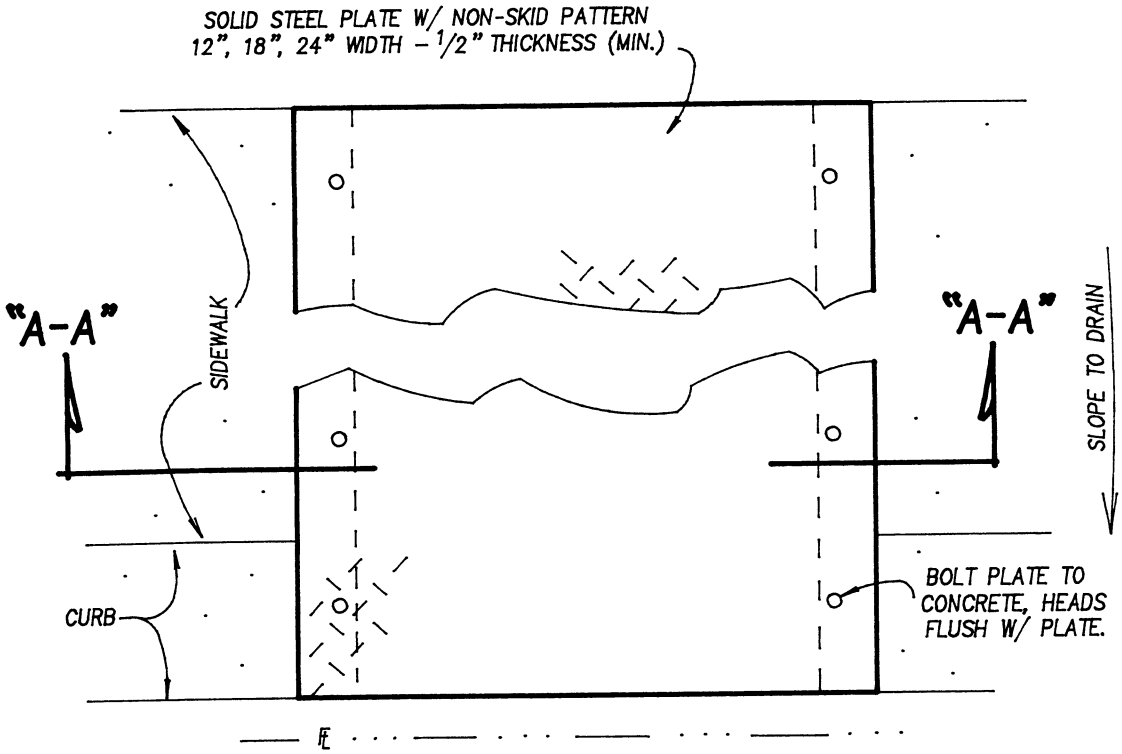
NOTE:

1.) Steel plate to end 1/2" from face of curb.

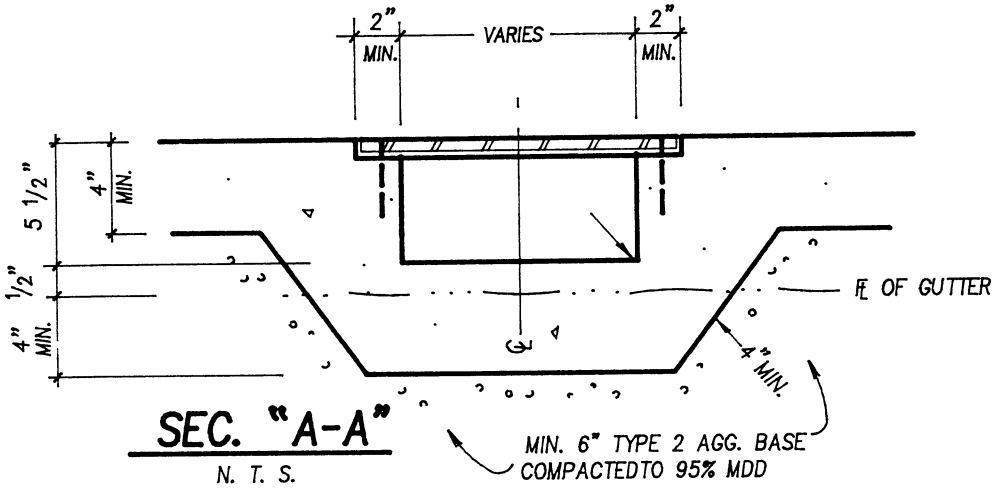
2.) Provide space between bldg. & plate for downspout.

3.) When drain is placed in existing sidewalk, the sidewalk shall be sawcut (not to exceed 24" wide)

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 2	
			SIDEWALK CROSS-DRAIN TYPE II	DRAWING NO. 2-21.2 (324)	
				DATE 7-81	PAGE 33



PLAN N. T. S.



SEC. "A-A"
N. T. S.

NO.	REVISION	DATE
1	REDRAW	8/93 vp

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

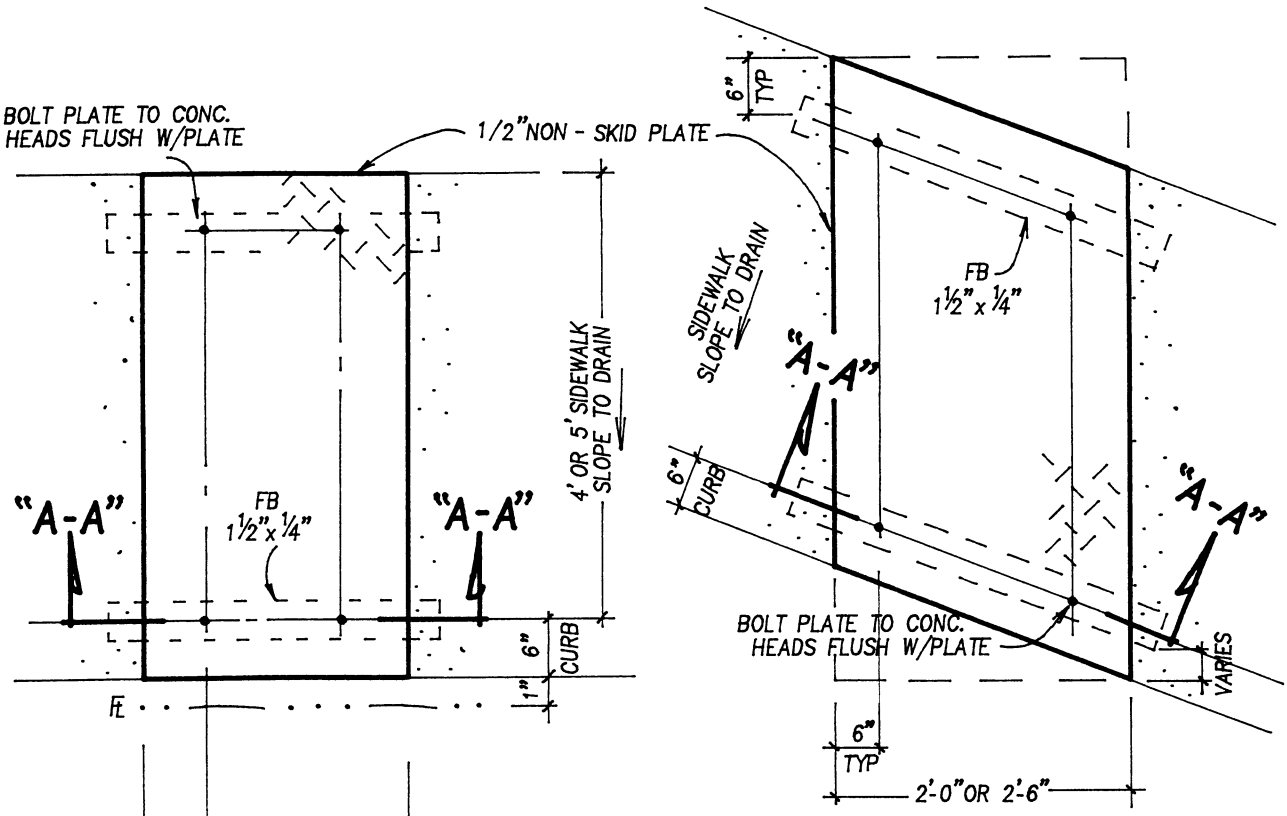
SIDEWALK CROSS-DRAIN TYPE III

SECTIONS 2

DRAWING NO. 2-21.3 (324)

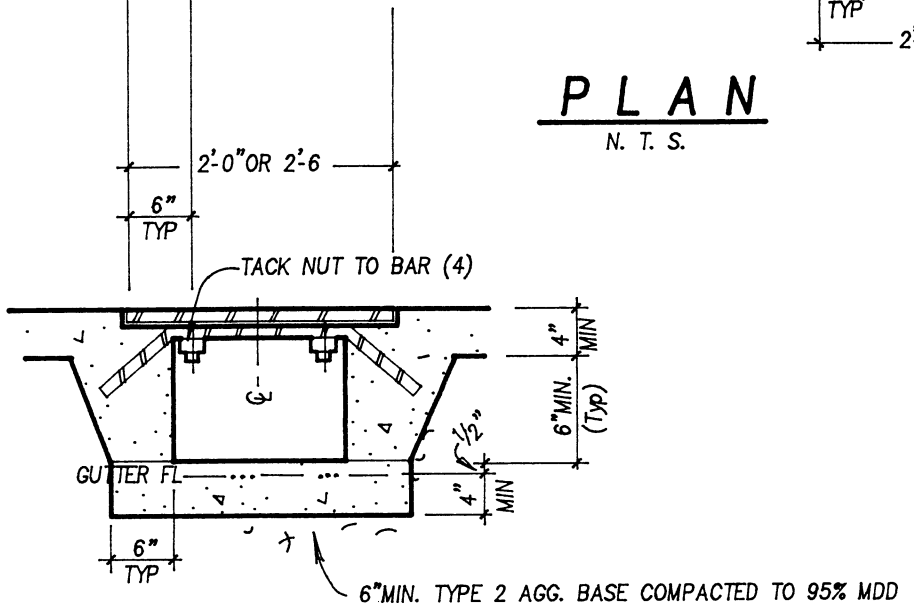
DATE 2/93 PAGE 34

walk



PLAN

N. T. S.



SEC. "A-A"

N. T. S.

NO.	REVISION	DATE
1	REDRAW	8/93 vp

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

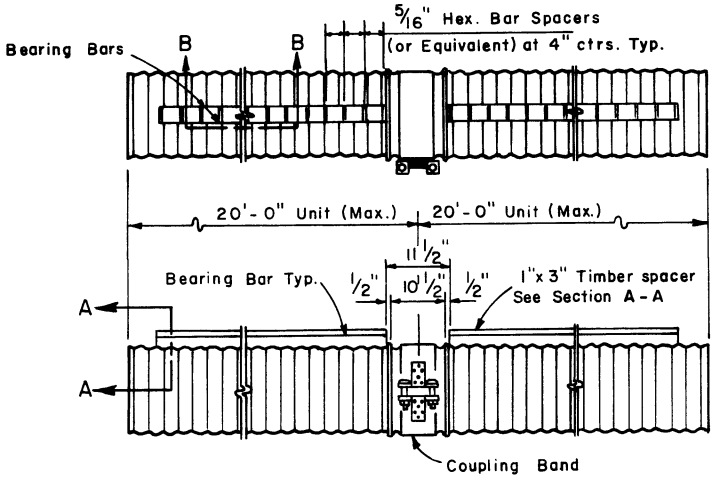
SIDEWALK CROSS-DRAIN TYPE III (MODIFIED)

SECTIONS 2

DRAWING NO. 2-21.4 (324)

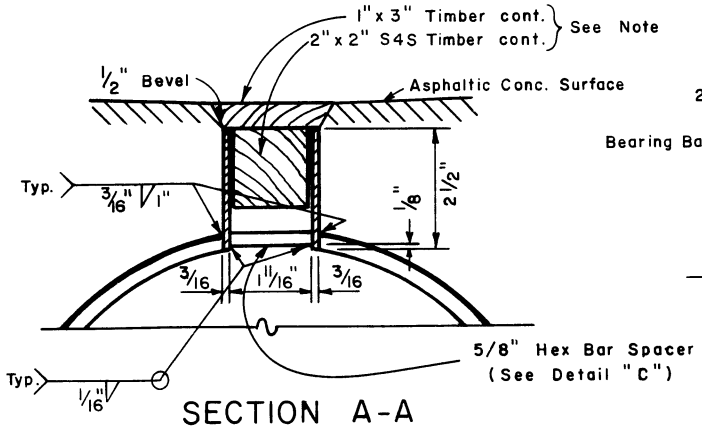
DATE 2/93 | PAGE 34-A

walkmo

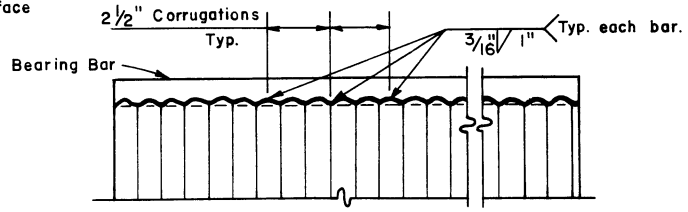


PLAN VIEW WITH TIMBER SPACERS REMOVED

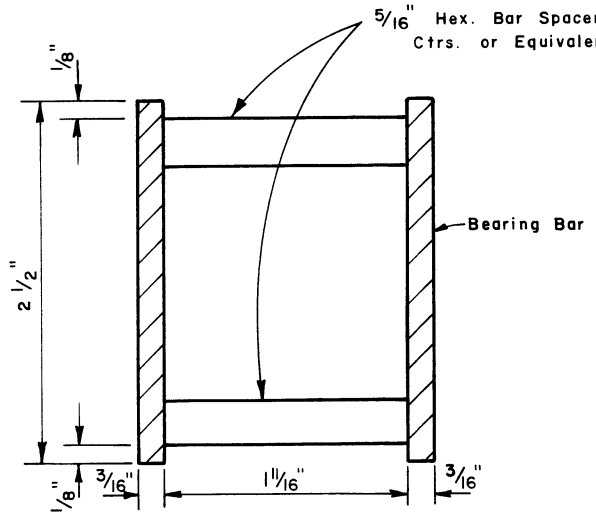
SLOTTED DRAIN DETAIL



SECTION A-A



SECTION B-B



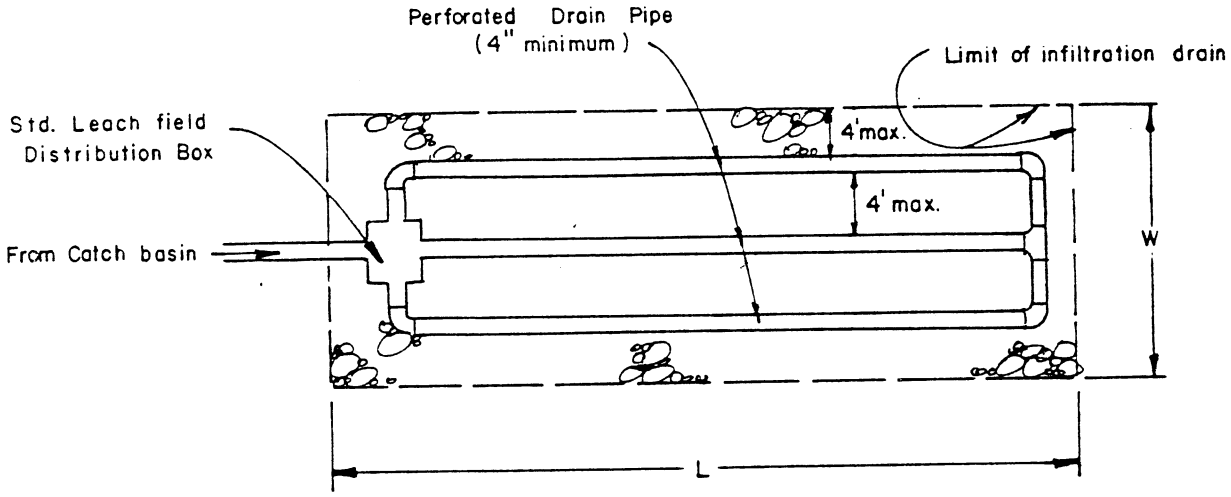
DETAIL "C"

DOUBLE BAR SPACERS TO BE USED IN URBAN AREAS

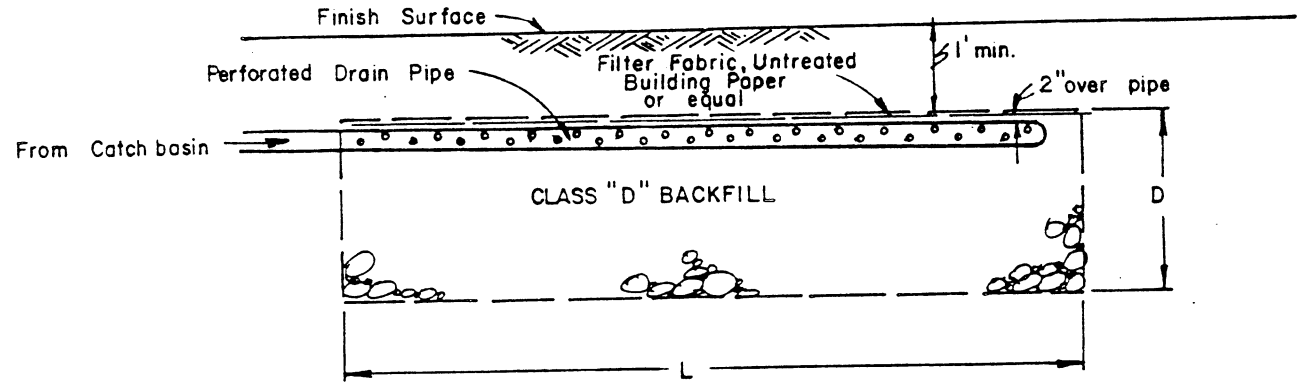
NOTE:

Continuous timbers shall be nailed together and left in place during paving operations. Remove when paving is completed.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 2	
1	PAGE	3-83	SLOTTED C.M.P. DRAIN	DRAWING NO. 2-22 (306)	
				DATE 7-81	PAGE 35



PLAN VIEW



PROFILE

NOTES:

1) Not for use in the City of Reno.
2) Design size to be based on percolation tests.
3) Design storm shall be the 5-Year, 10 minute duration (minimum)
4) Volume of voids shall be considered to be 35% maximum.
5) Catch basin will provide silting protection to the infiltration pit and will have a greasetrap. See Carson City special section for standard infiltration pit catch basin or overflow protection catch basin.
6) Not to be located in Roadway section.

NO.	REVISION	DATE
1	Building Paper	1/83

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

INFILTRATION DRAIN

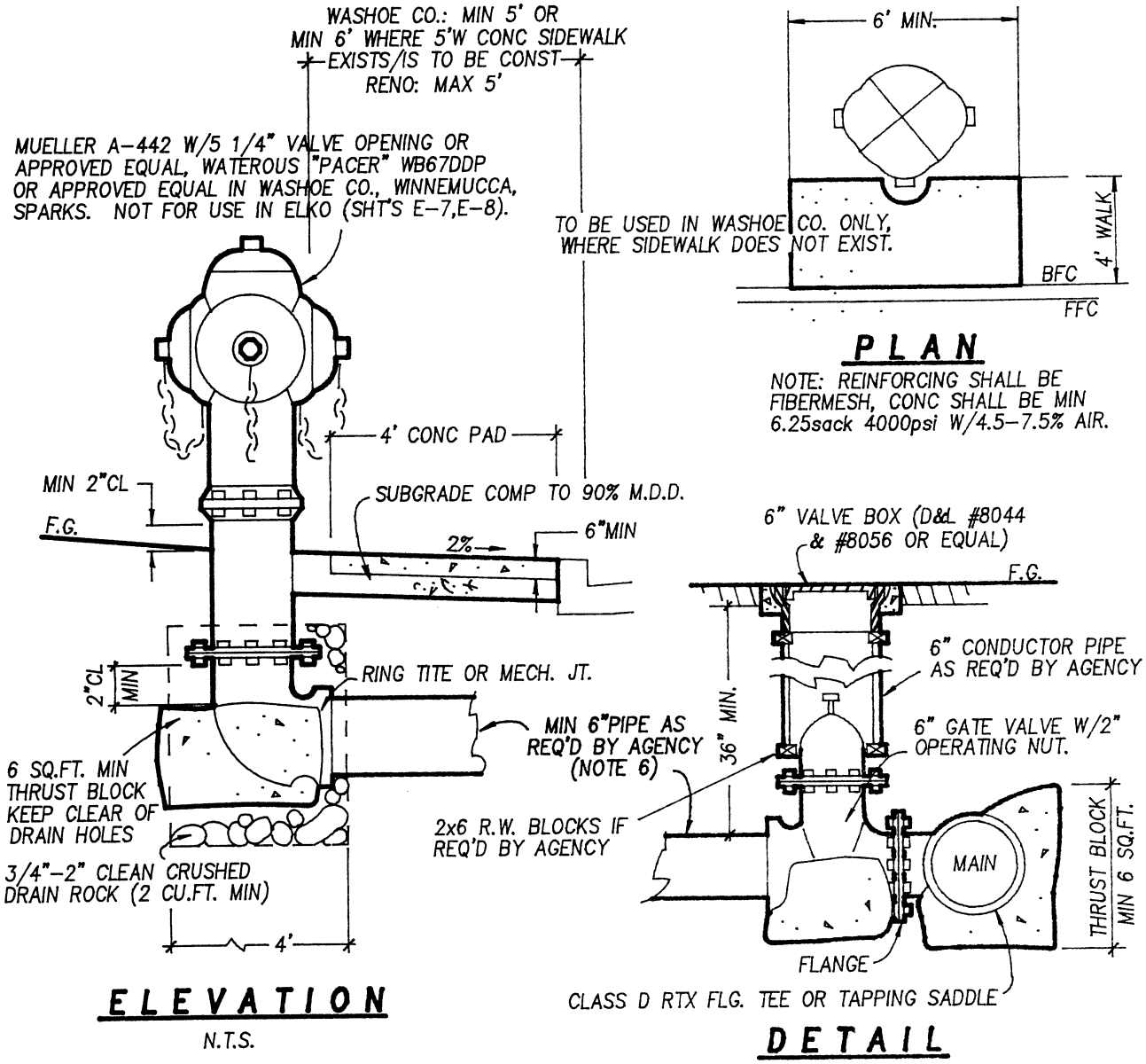
SECTION 2

DRAWING NO. 2-23 (306)

DATE 7-81

PAGE 36

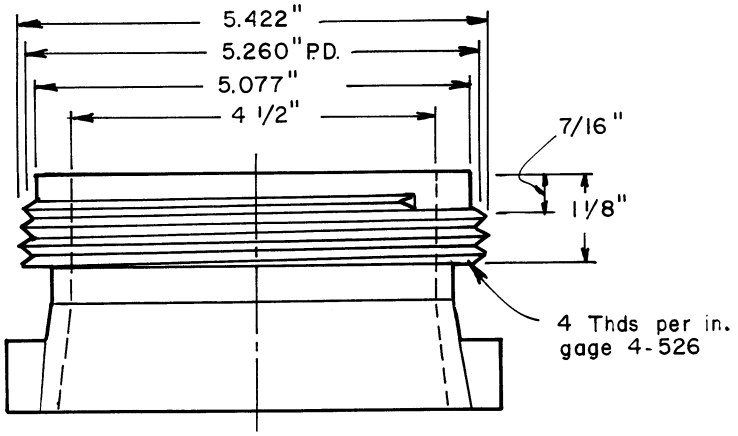
SECTION 3
WATER SYSTEMS



NOTES

1. HYDRANT SHALL BE ENAMELED RED EXCEPT IN SPARKS, WASHOE CO., WINNEMCCA, YERINGTON & DOUGLAS CO. WHERE IT SHALL BE YELLOW.
2. ALL HYDRANTS SHALL HAVE (2) 2 1/2" HOSE NOZZLES & (1) 4 1/2" STEAMER NOZZLE. ALL THREADS SHALL BE AS SPECIFIED FOR AMERICAN NATIONAL HOSE COUPLING EXCEPT RENO, SPARKS & WASHOE CO. (DET."A")
3. OPERATING NUT SHALL BE 1 1/2" PENTAGON EXCEPT: RENO, SPARKS AND WASHOE CO. (DET."B")
4. INSPECTION BY APPROPRIATE AGENCY SHALL BE REQUIRED PRIOR TO BACKFILLING.
5. YERINGTON MIN. DEPTH OF MAIN SHALL BE 42".
6. LANDER CO. - BUTTERFLY VALVE SHALL BE USED IN LIEU OF GATE VALVE IN STREET. WATER PIPE SHALL BE PVC CLASS 150. NO A.C. IN WASHOE CO.
7. NO FENCES SHALL BE ALLOWED WITHIN 3' OF ANY PORTION OF A FIRE HYDRANT.
8. IN CARSON CITY, SEE DET. "C-10.3"

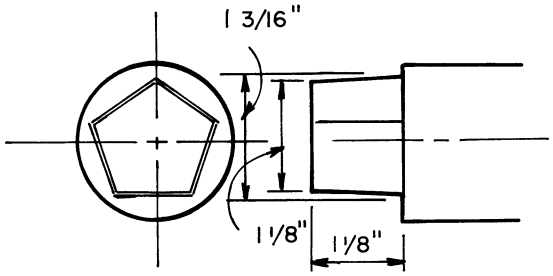
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTIONS 3
	REDRAWN	11/94vp	FIRE HYDRANT	DRAWING NO. 3-1.1 (307)
				DATE 11/94 vp PAGE 1



4 1/2" Steamer Nozzle

DETAIL "A"

(Reno, Sparks, and Washoe Co. only)

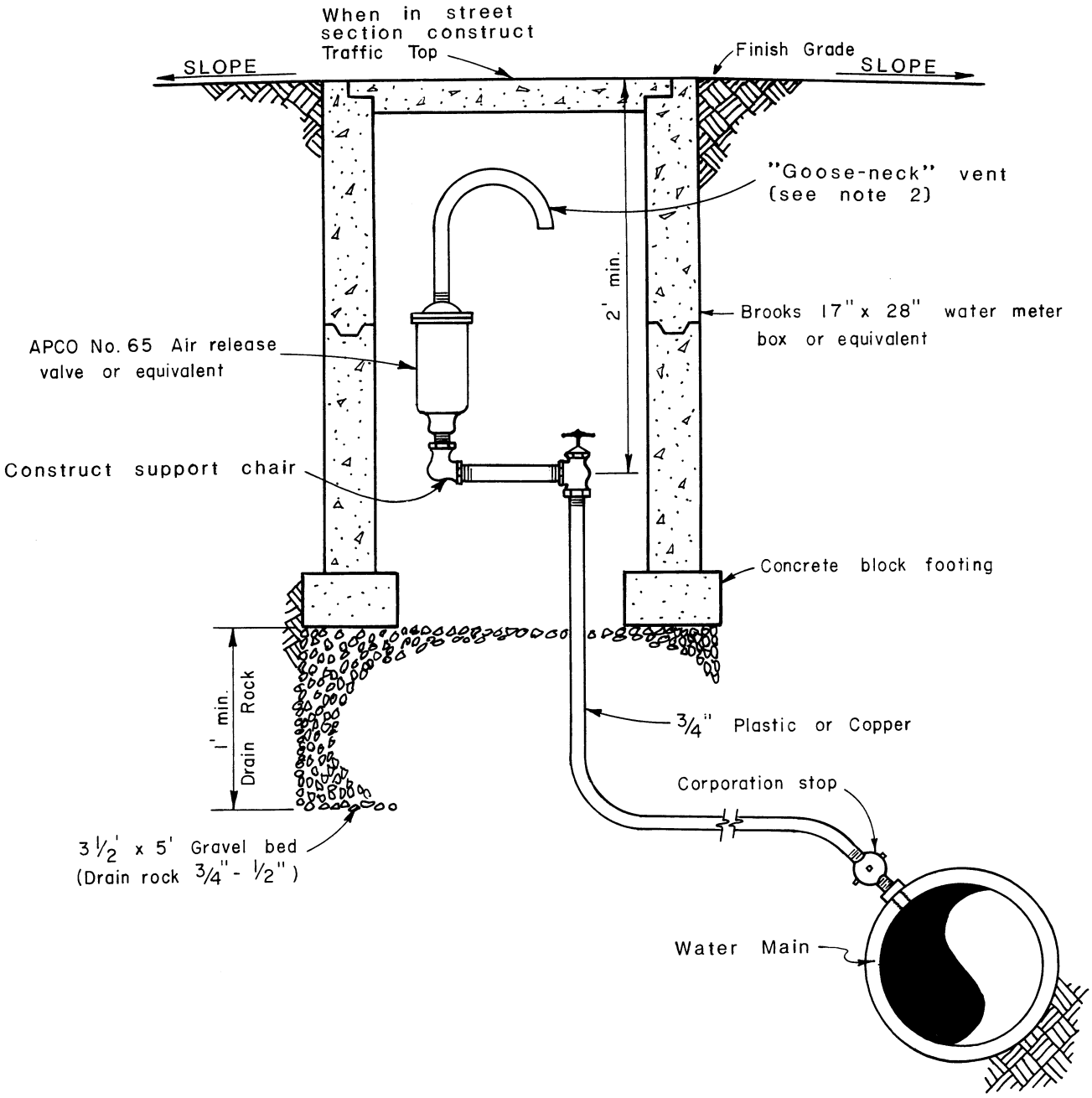


Operating Nut – Pentagon

DETAIL "B"

(Reno, Sparks, and Washoe Co. only)

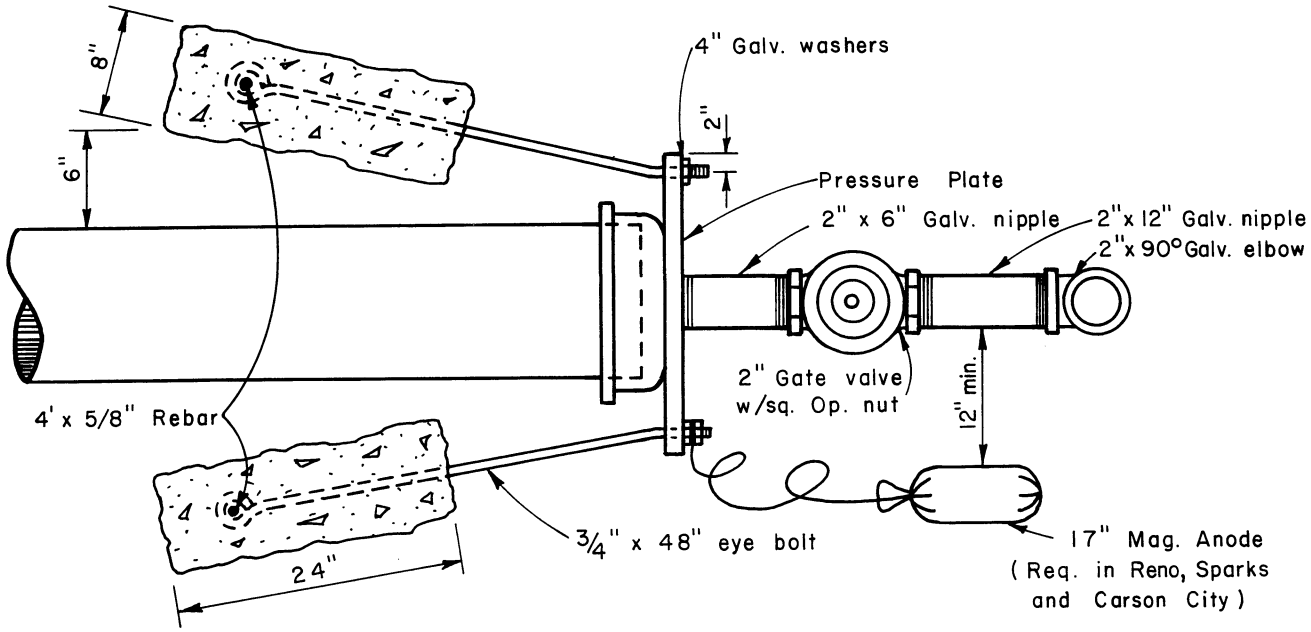
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 3	
			FIRE HYDRANT SPECIAL DETAILS	DRAWING NO. 3 - 1.2 (216)	
				DATE 7 - 81	PAGE 2

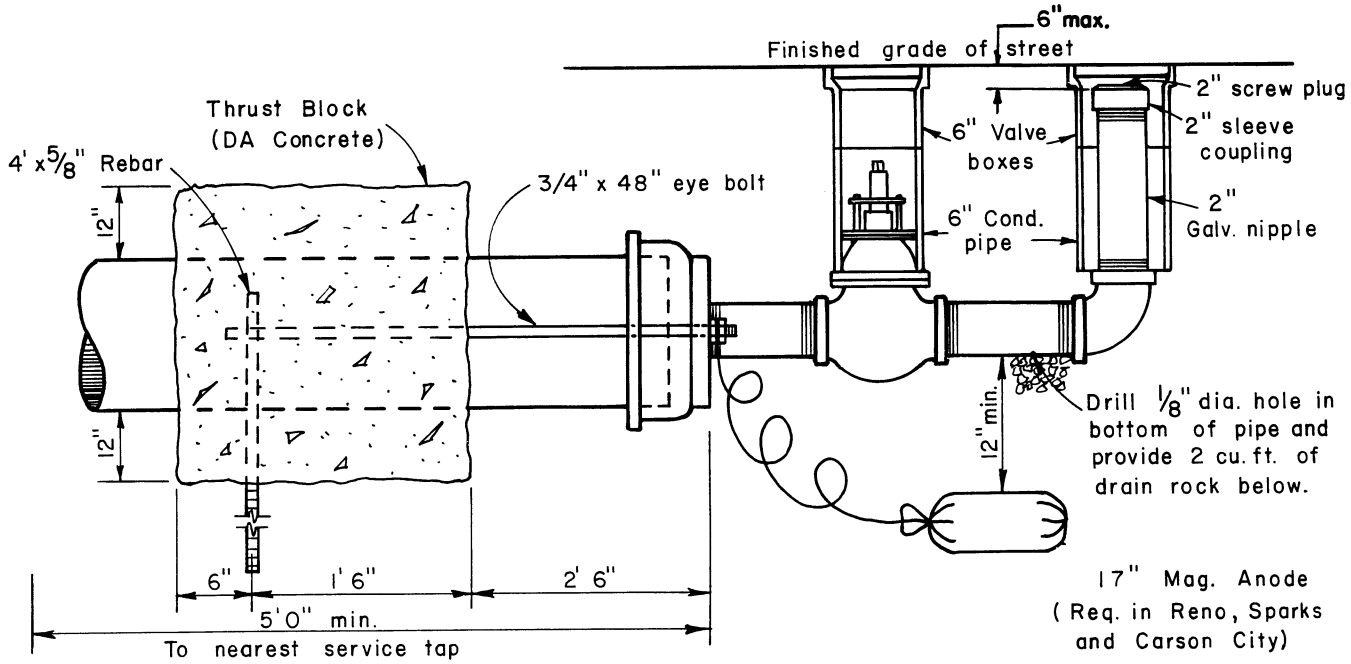


NOTES:

1. Air release valves shall be installed outside pavement section whenever possible. Slope ground away from valve box or construct curbing to protect from flooding by surface waters.
2. When constructed in street section construct air release tube to side of roadway and construct "Goose-neck" above surrounding grade as directed by the agency Engineer.
3. All pipes will be sloped up to air release valve.

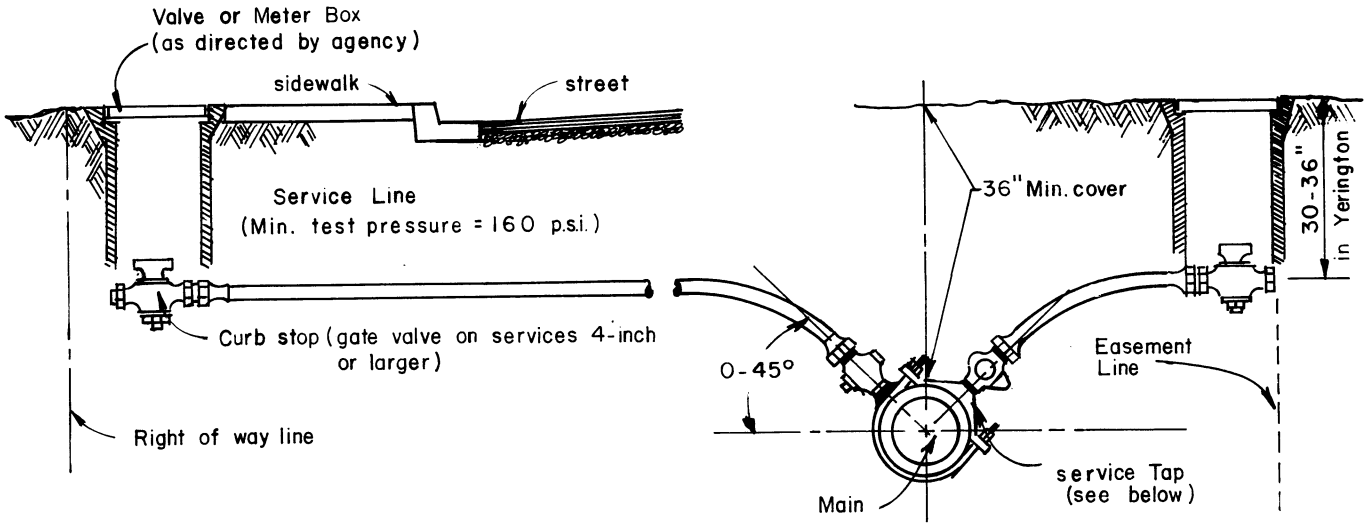
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 3	
1	Vent	3/83	AIR-RELEASE VALVE	DRAWING NO. 3-2 (307)	
				DATE 7 - 81	PAGE 3



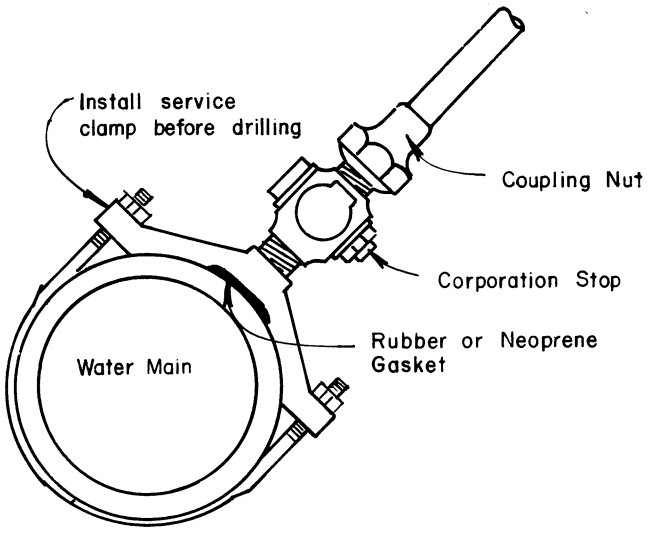


NOTE:
All 2" dia. materials shall be increased to 4" dia. when constructed in the Reno - Sparks - Carson area.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 3	
			FLUSH VALVE ASSEMBLY	DRAWING NO. 3-3 (307)	
				DATE 7-81	PAGE 4



TYPICAL WATER SERVICES



SERVICE TAP

NOTES:

1.) Not for use in Carson City (See Carson City section).

2.) Corporation stop, curb stop, (gate valve 4" or larger) and service line to be same size.

3.) Service clamps shall be single strap (double strap in Yerington) for up to 1" services. and double strap for larger sizes, except where size of tap exceeds manufacturers recommended limit for size of main. For this situation, a special fitting will be specified.

4.) Yerington and Lyon Co. maximum 2 houses per. service tap.

5.) Lyon Co., and Yerington - All transite water mains shall be min. class 150.

6.) Fallon and Lander Co. - Water main shall conform to the requirements for plastic pipe as specified in AWWA standard C900 Metallic location tape shall be installed 12" min. above water main in Fallon only, In Lander County PVC shall be class 150.

NO.	REVISION	DATE
1	NOTE 1-6	10-85

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

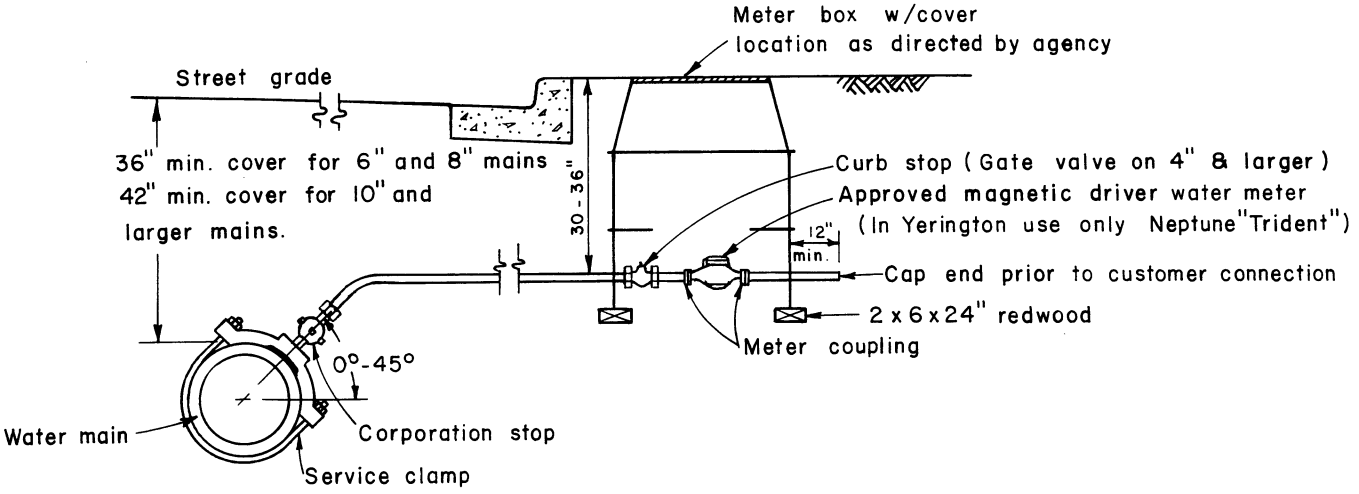
WATER SERVICE CONNECTION

SECTION 3

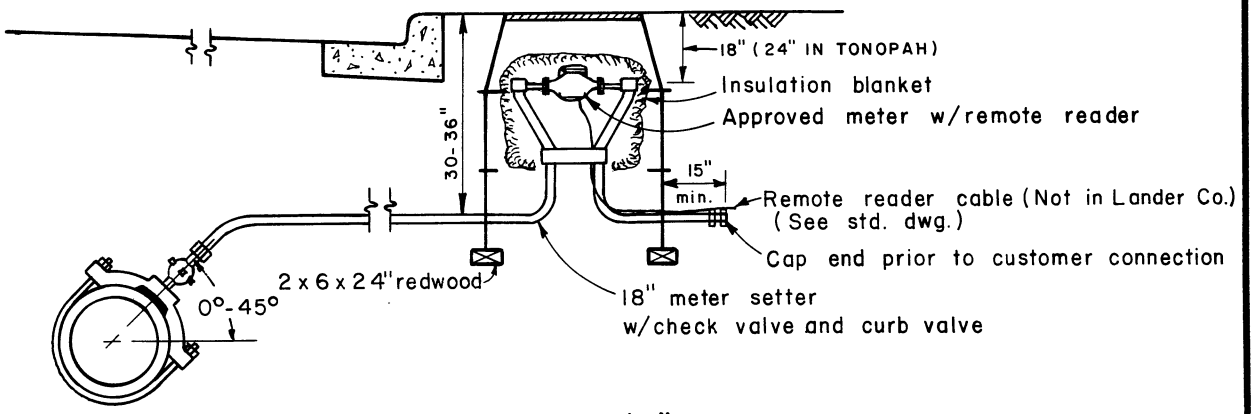
DRAWING NO. 3-4.1 (307)

DATE 7-81

PAGE 5



ALTERNATE "A"



ALTERNATE "B"

NOTE:

1. Not for use in Carson City.
2. Water meters shall be installed where required. Where meters are to be installed by others or at later date, an idler shall be installed.
3. Water service connections shall be as shown for non-meter applications.
4. Corporation stop, curb stop and service line shall be of the same size.
5. Flared type couplings shall be used at all connections.
6. Meter assembly, consisting of curb stop, meter couplings and meters shall be centered in meter box.
7. Alternate Type "A" or "B" to be determined by governing agency.

NO.	REVISION	DATE
1	NOTE 1-7	10 - 85

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

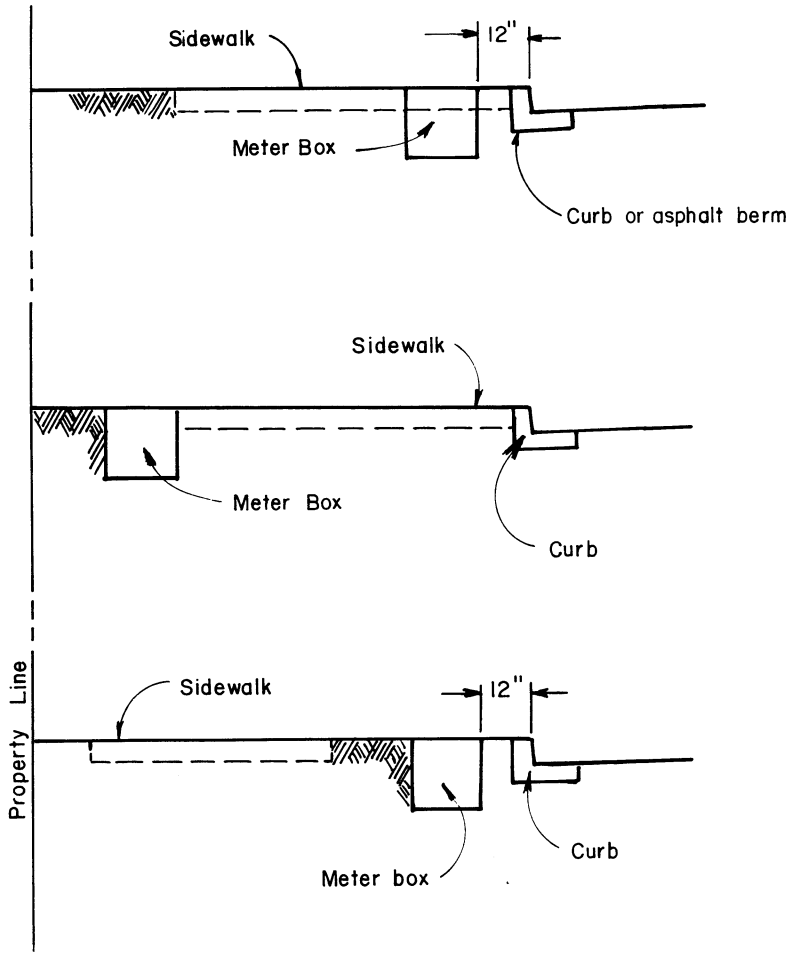
WATER SERVICE CONNECTION W/METER

SECTION 3

DRAWING NO. 3 - 4.2 (307)

DATE 7 - 81

PAGE 6



TYPE A
WITH OR WITHOUT SIDEWALK

TYPE B
CONTIGUOUS SIDEWALK

TYPE C
NON-CONTIGUOUS SIDEWALK

GENERAL NOTES:

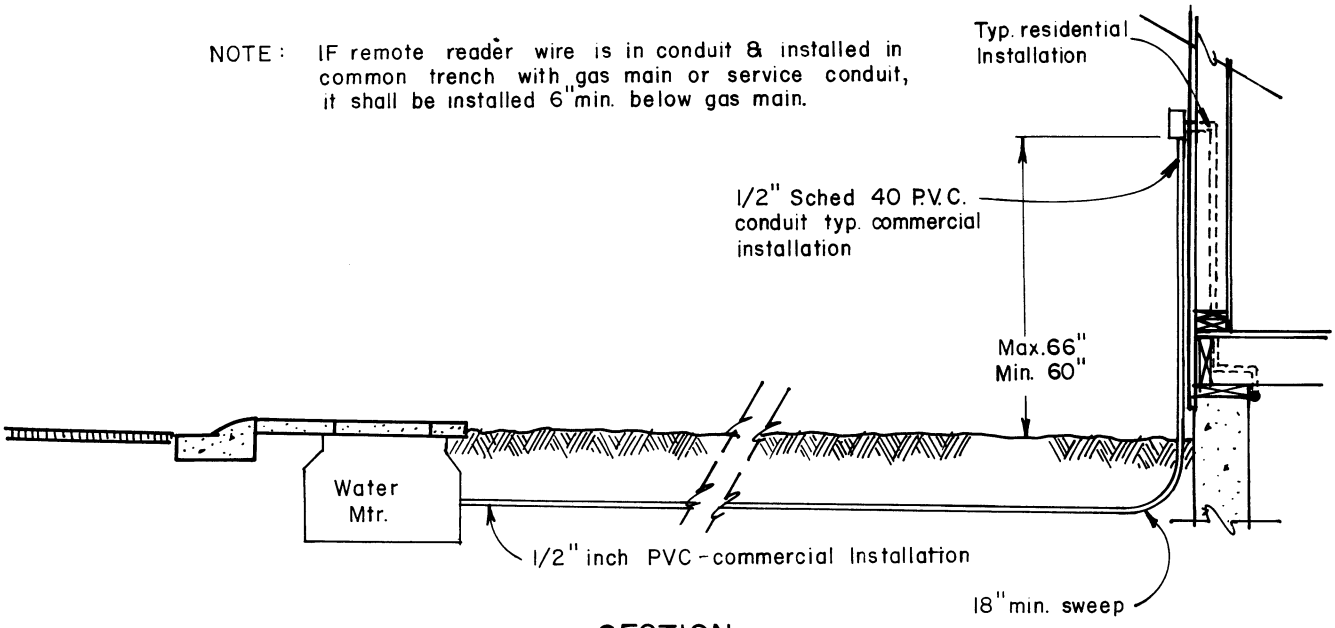
1.) Type A – Use in Fallon or Lander Co. only.

2.) Type B – Used everywhere except Lander Co.

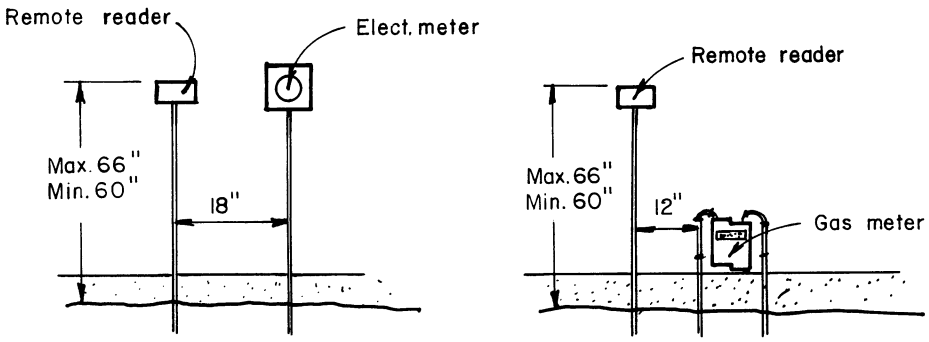
3.) Type C – Used everywhere except Yerington.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 3	
			WATER METER BOX LOCATIONS	DRAWING NO. 3-5 (307)	
				DATE 7-81	PAGE 7

NOTE: IF remote reader wire is in conduit & installed in common trench with gas main or service conduit, it shall be installed 6" min. below gas main.



SECTION



ELEVATIONS ALT.

General Notes :

1.) Customer shall furnish cable and conduit (where necessary) from meter box to reader.

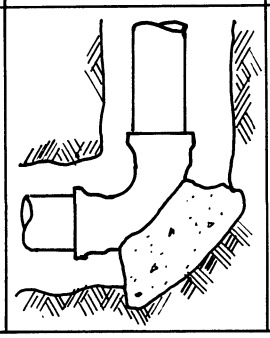
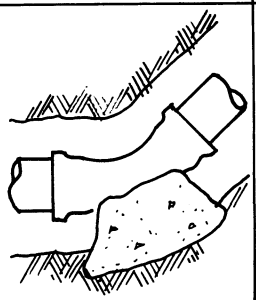
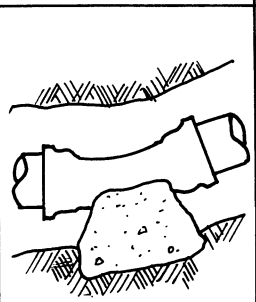
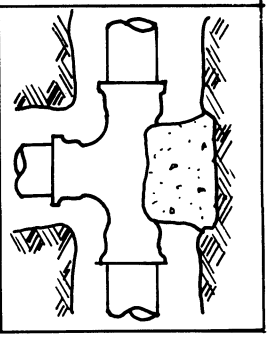
2.) Residential customer may use direct burial cable. Commercial customer shall provide 1/2" PVC (Sch. 40) conduit from box to remote reader.

3.) Residential customer may install cable along mudsill and up inside wall or may install in outside wall in 1/2" PVC Sch. 40 conduit.

4.) Remote reader cable shall be 2-conductor wire.

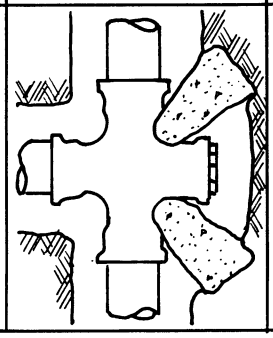
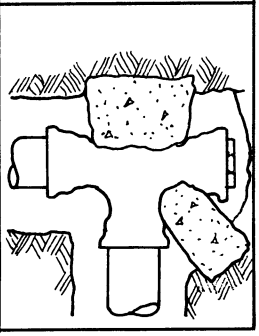
5.) All installations shall provide for 1/2" Sch. 40 conduit under concrete or asphalt.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 3	
1	NOTE 3	10-16-86	WATER METER REMOTE READER	DRAWING NO. 3-6 (307)	
				DATE 7-81	PAGE 8

Type of Fitting	90° Bend	45° Bend	11¼° or 22½° Bend	Tee or Dead End
Typical Installation				

THRUST BLOCK BEARING AREA (sq. ft.)

Type of Fitting	90° Bend	45° Bend	11¼° or 22½° Bend	Tee or Dead End	Tee w/plug	Cross w/plug
Size of pipe 4"	2	1	1	2	2	2
6"	4	4	2	4	4	4
8"	7	4	2	5	7	7
10"	12	6	3	8	12	12
12"	16	10	5	12	16	16
14"	20	12	6	14	20	20
16"	27	15	8	18	27	27
18"	45	25	13	32	45	45
24"	65	35	18	46	65	65

Type of Fitting	Cross w/plug	Tee w/plug
Typical Installation		

NOTES:

1.) Thrust blocks to be constructed of class "C" concrete.

2.) Areas given are for class 150 pipe at test pressure of 150 P.S.I., with 2000 P.S.F bearing capacity. Installations using different pipe, test pressures, and/or soil types should adjust areas accordingly, subject to approval of engineer.

3.) Blocks to be poured against undisturbed soil.

4.) Joints and face of plugs to be kept clear of concrete.

NO.	REVISION	DATE
1	NOTE 2	3/83

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

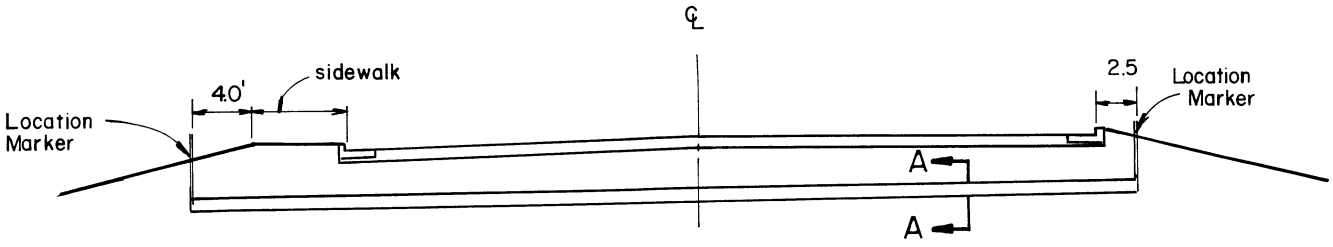
THRUST BLOCK BEARING AREAS

SECTION 3

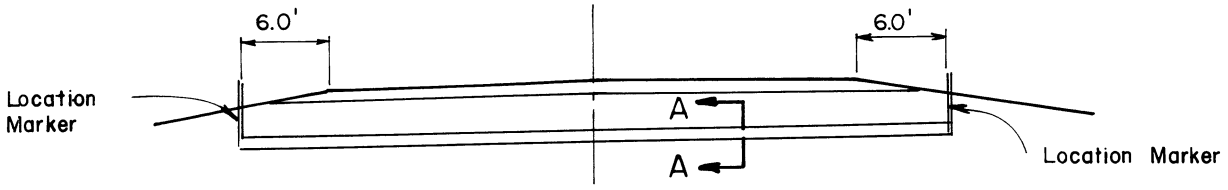
DRAWING NO. 3-7 (307)

DATE 7-81

PAGE 9

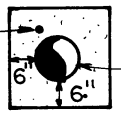


URBAN STREET



RURAL STREET

NOTE:
Locate detection wire in upper half of trench.



Conduit size varies (see plan)

SECTION A-A

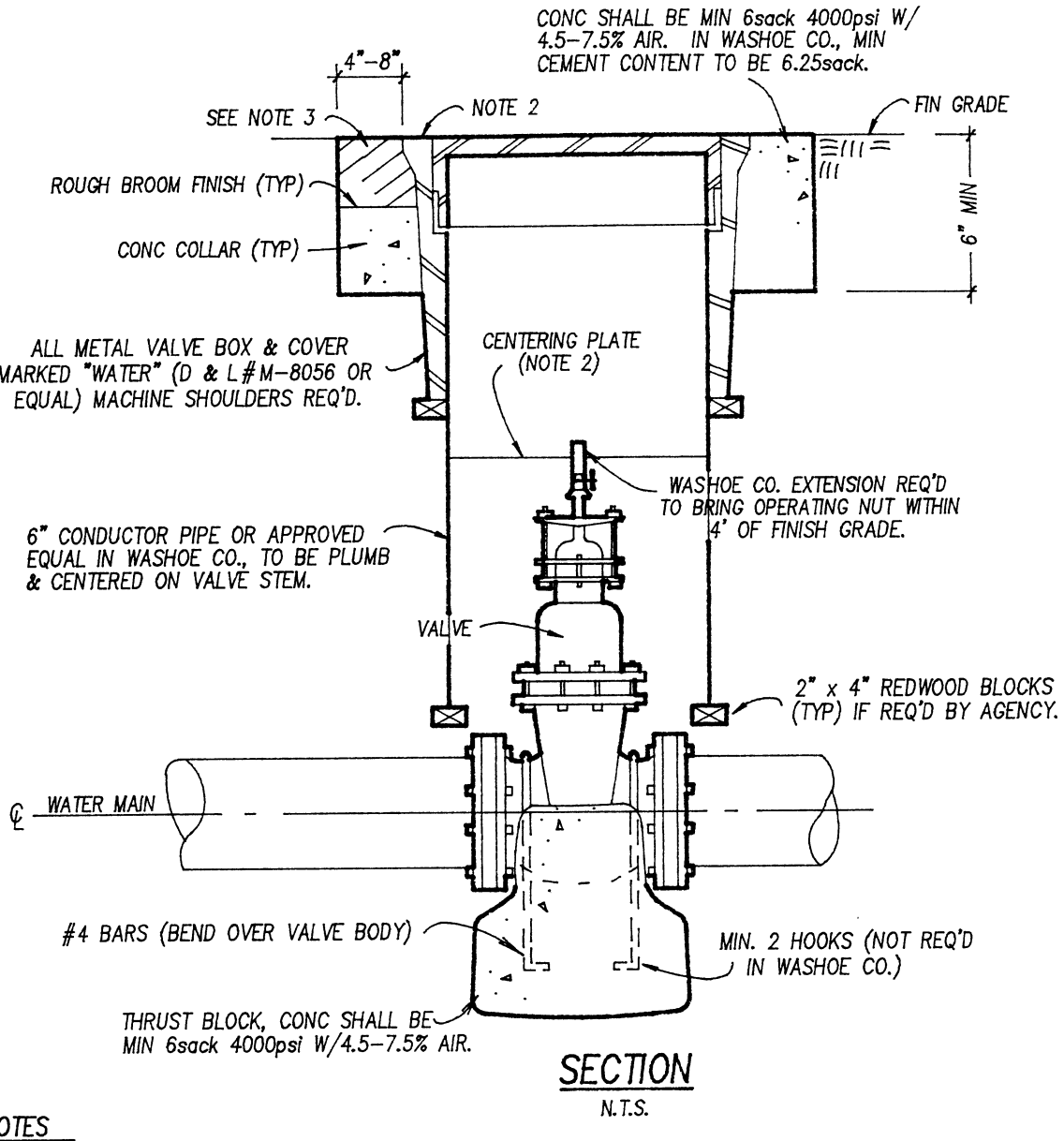
GENERAL NOTES:

1.) Minimum 3.0' cover over top of conduit at shoulder line.

2.) 12 Gauge detection wire to lay in trench adjacent to conduit and attach to location marker at each end.

3.) Location marker shall be 5.0' steel fence line post.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 3	
			CONDUIT INSTALLATION FOR FUTURE WATER LINES	DRAWING NO. 3-8 (307)	
				DATE 7-81	PAGE 10



SECTION

N.T.S.

NOTES

1. SEE DWG 3–7 FOR THRUST BLOCK SIZE.
2. IN WASHOE CO., VALVE BOXES FOR BOTH GAS & WATER TO BE SET 3/8"–5/8" BELOW FINISH ROADWAY SURFACE. INSTALL OPERATING EXTENSION W/OPERATING NUT RESTRAINING BOLT & TOP CENTERING PLATE. ANCHOR BARS & REDWOOD BLOCKS NOT REQ'D WHEN OPERATING NUT IS AT GREATER DEPTH THAN 4' FROM FIN GRADE.
3. IN WASHOE CO., CONC COLLAR TO BE LEFT 2" BELOW FINISH ASPH SURFACE. PLACE 2" OF TYPE 3 ASPH PAVING AROUND VALVE BOX. APPLY SS–1 TACK COAT BEFORE PAVING. SEAL A.C. SURFACE W/SS–1 SAND. CHIP SEAL, FOG SEAL, SAND SEAL OR SLURRY SEAL PAVED SURFACE AS REQ'D BY PLANS OR SPECS. EXTEND CONC COLLAR TO GRADE WHEN NOT LOCATED IN ASPH PAVE OR IN UNPAVED AREA.
4. IN CARSON CITY REFER TO DETAIL C–10.1
5. RENO ONLY: PLACE VALVE BOX & CONC COLLAR FLUSH W/ASPHALT.

NO.	REVISION	DATE
1	REDRAW	3/94vp
2	NOTES 2,3,4	1/95vp
3	NOTE 5	4/95vp

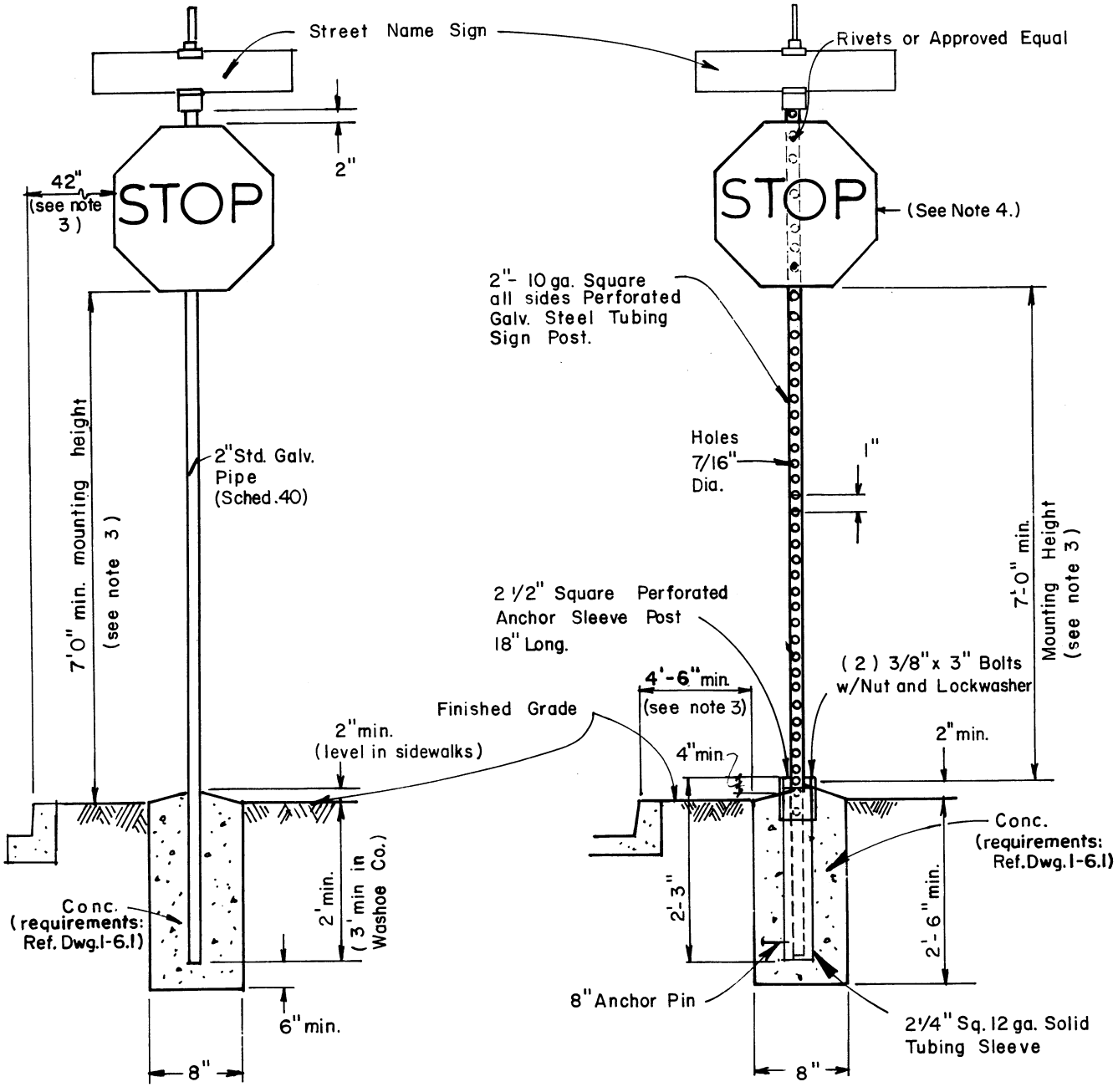
STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

VALVE, BOX & COVER

SECTIONS 3

DRAWING NO. 3-9 (307)

DATE 7/90 PAGE 11



TYPE 1

(Not permitted in Sparks)
(Not permitted in Carson City)

TYPE 2

NOT FOR USE IN CITY OF RENO

NOTES

1.) Sign materials, construction and placement shall bein conformance w/the latest edition of the Manual on Uniform Traffic Control Devices.

2.) Street name sign shall be as specified by the governing agency and mounted with vandal-proof hardware. (See Agency Section).

3.) On streets where curbing does not exist, set sign 6' minimum from pavement edge. In Yerington and Fallon min. mounting height = 6'-6".

4.) Carson City stop sign 30"

5.) Sign post shall not be anchored in sidewalk.

NO.	REVISION	DATE
1	NOTES	3-83
2	NOTE 4	3-88
3	Notes 1,5 & misc.	5-95vp

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

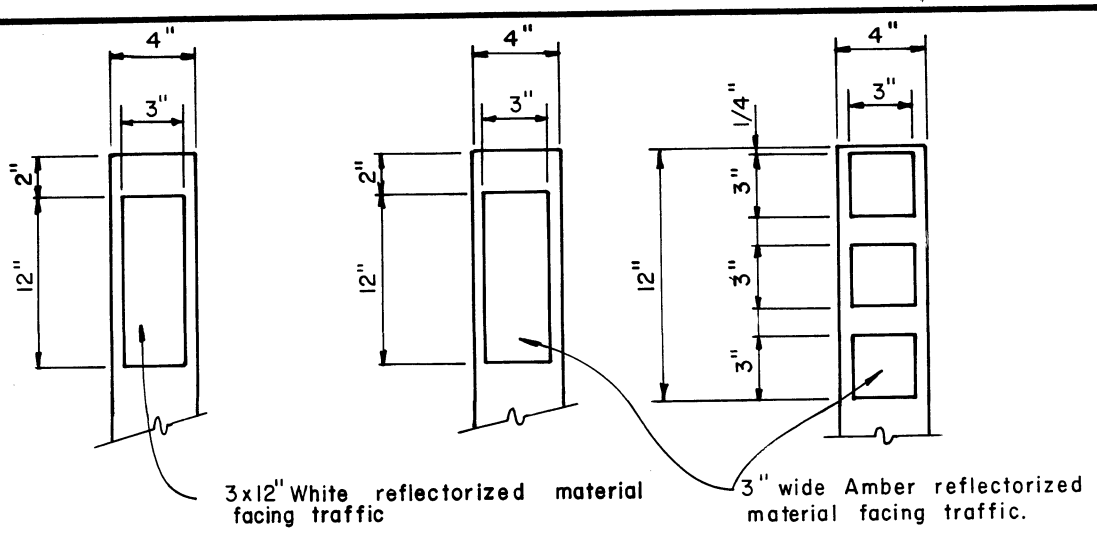
STANDARD STREET SIGN

SECTION 4

DRAWING NO. 4-1 (330)

DATE 7-81

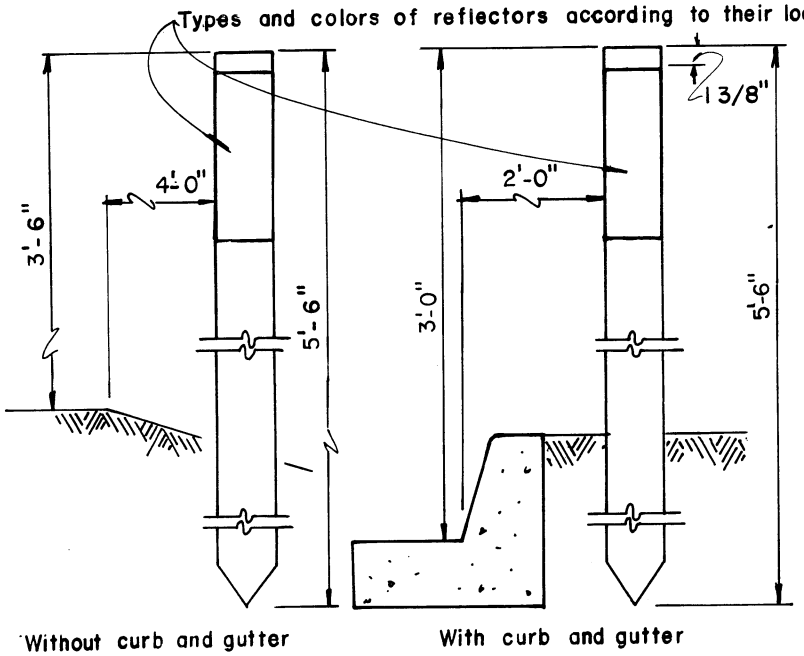
PAGE 1



TYPE 1 (Roadway)

TYPE 2 (Driveways / Approaches)

TYPE 3 (Islands, Curbs, Shouder Dikes)

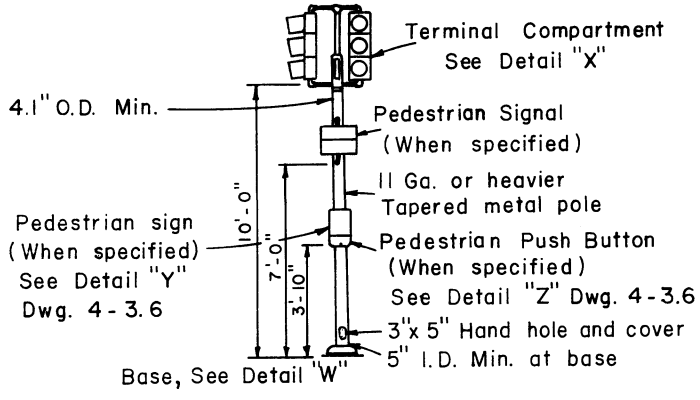


TYPICAL INSTALLATION

NOTES:

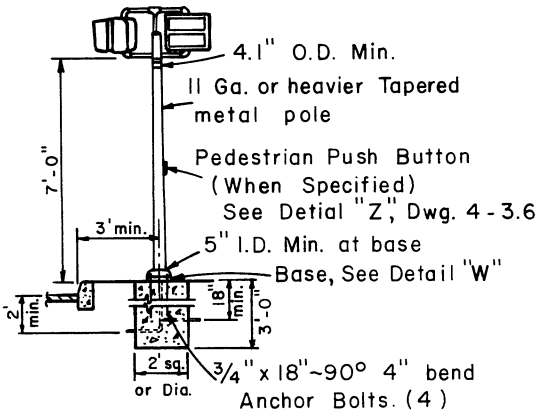
1. Posts shall be of synthetic flexible material (Carsonite CRM - 375 or approved equal) Metal post may be permitted as approved by the governing agency
2. Where guardrail is to be installed, post shall be omitted and reflector plates shall be installed on guardrail posts.
3. Delineator spacing shall be as shown in the current edition of the MUTCD.
4. Delineator shall be installed at the beginning and ending of each curve.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 4	
			ROADWAY DELINEATORS	DRAWING NO. 4-2 (326)	
				DATE 7-81	PAGE 2



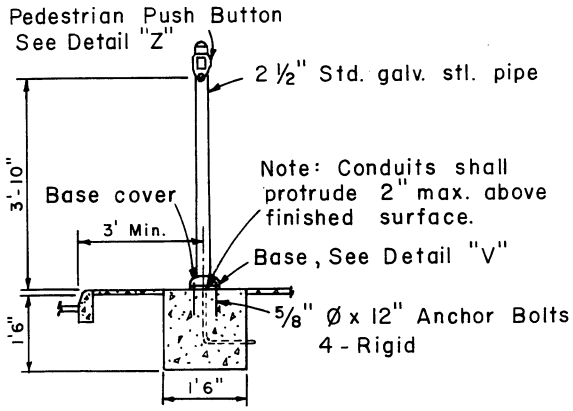
Foundation same as Type 1-B

TYPE 1-A

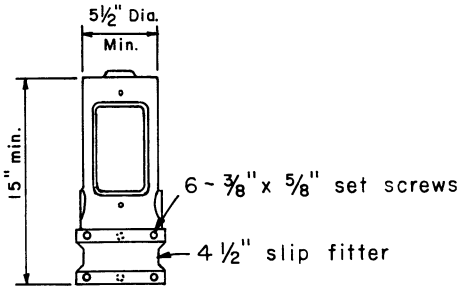


TYPE 1-B

SIGNAL STANDARDS

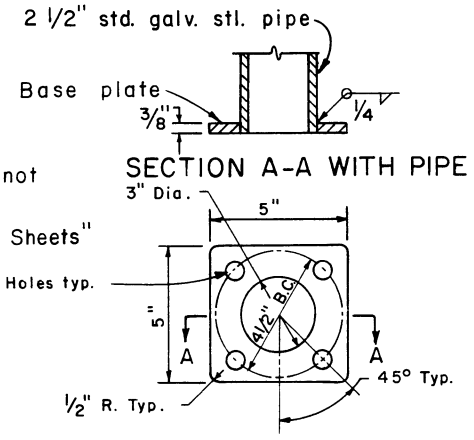


PEDESTRIAN PUSH BUTTON POST

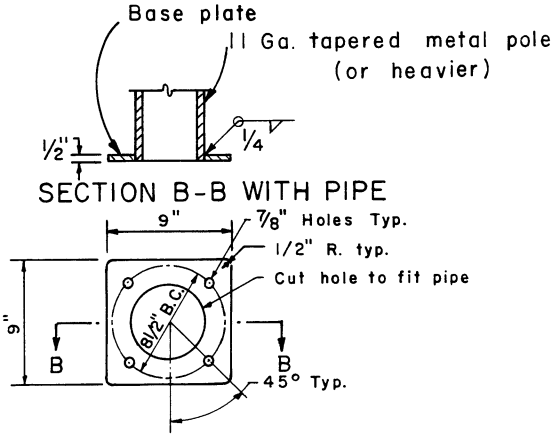


DETAIL "X"

NOTE:
For Details not shown, see "Traffic Detail Sheets"

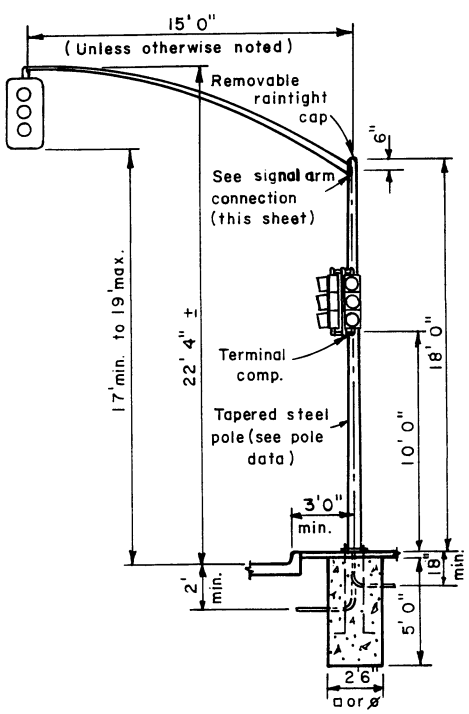


DETAIL "V"

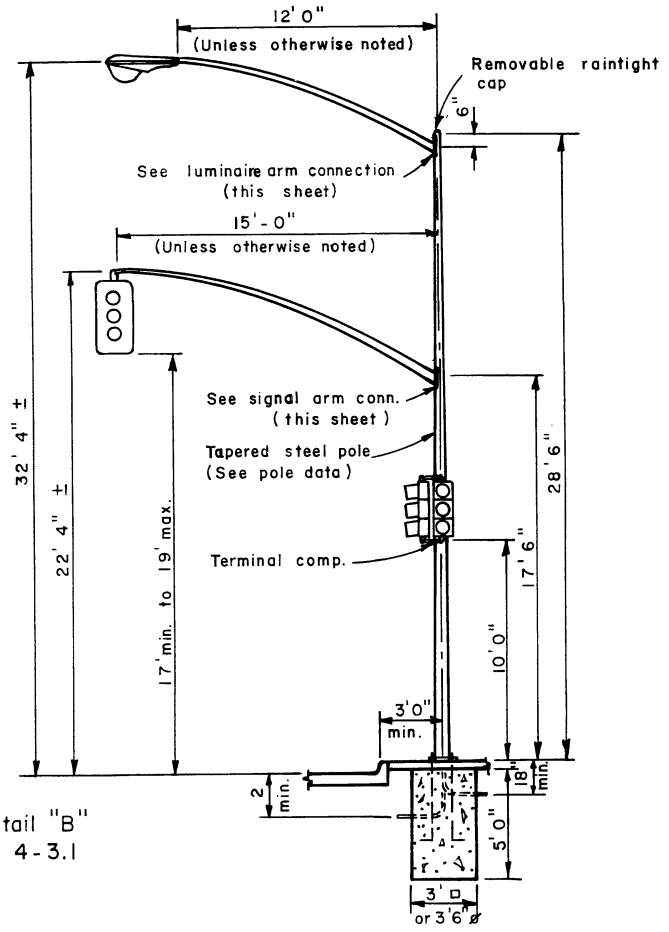


DETAIL "W"

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 4	
			TRAFFIC POLES TYPE 1-A AND 1-B	DRAWING NO. 4-3.1 (323)	
				DATE 7-81	PAGE 3



POLE TYPE 5

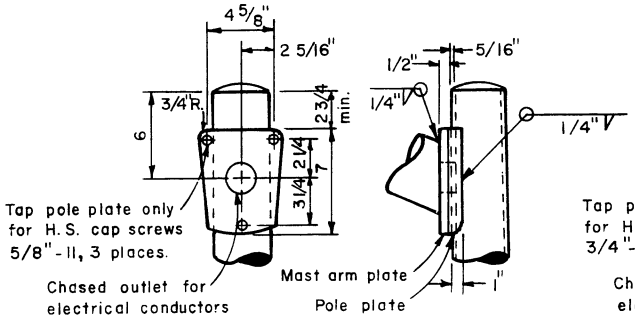


POLE TYPE 6

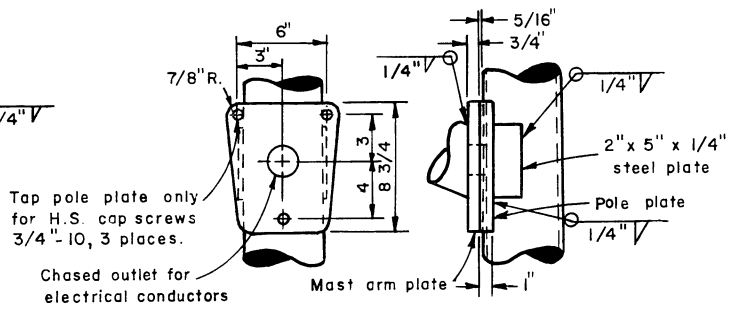
NOTE:
For base plate detail see detail "B" on traffic detail sheet, Dwg. 4-3.1

POLE DATA

Pole type	Pole Height & gage	Pole O.D.		Signal arm data		Luminaire arm data	
		Base	Top	Gage	Min. O.D. at pole	Gage	Min. O.D. at pole
5	18' x 10 gage	7 3/4"	5 1/4"	10 gage	4 5/8"	No Luminaire arm	
6	28'6" x 7 gage	7 3/4"	3 7/8"	10 gage	4 5/8"	10 gage	3 3/4"



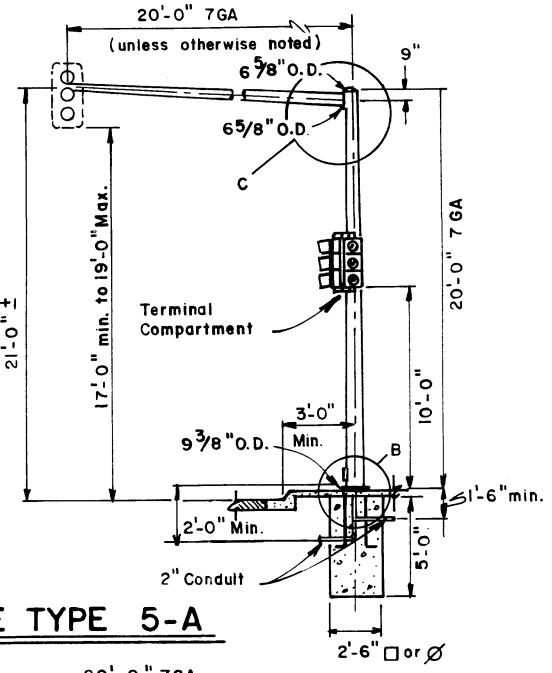
LUMINAIRE ARM CONNECTION



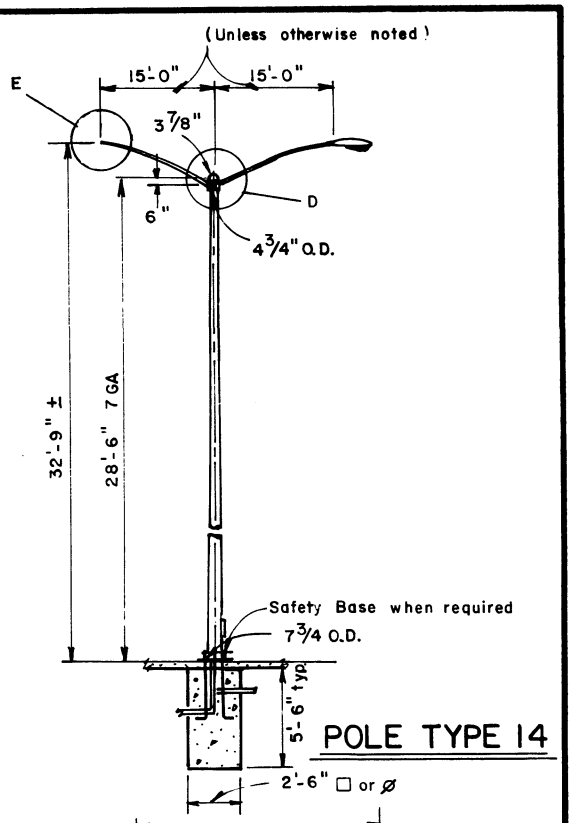
SIGNAL ARM CONNECTION

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 4	
			TRAFFIC POLES TYPE 5 AND 6	DRAWING NO. 4-3.2 (323)	
				DATE 7-81	PAGE 4

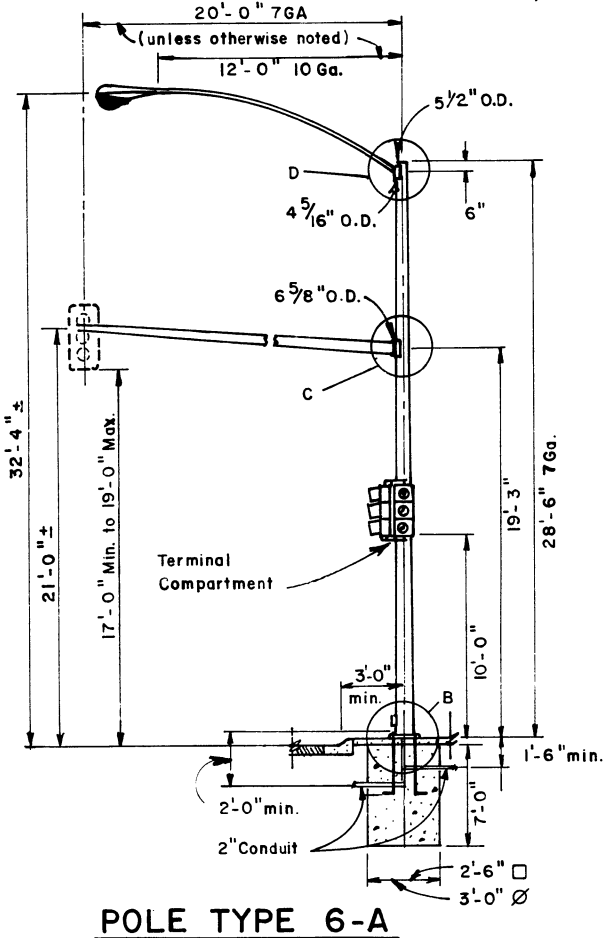
NOTE:
For Details not shown, see "Traffic Detail Sheets"



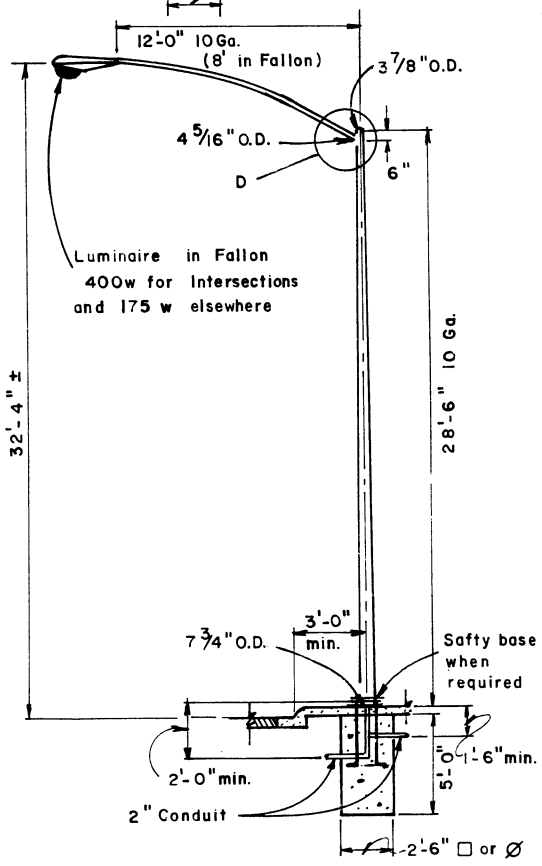
POLE TYPE 5-A



POLE TYPE 14

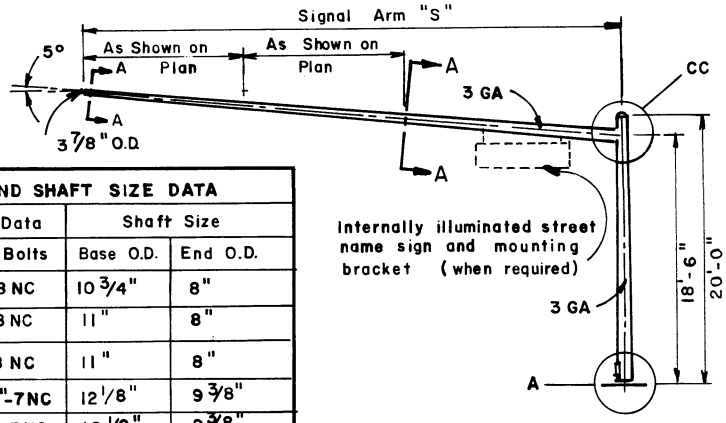


POLE TYPE 6-A



POLE TYPE 7

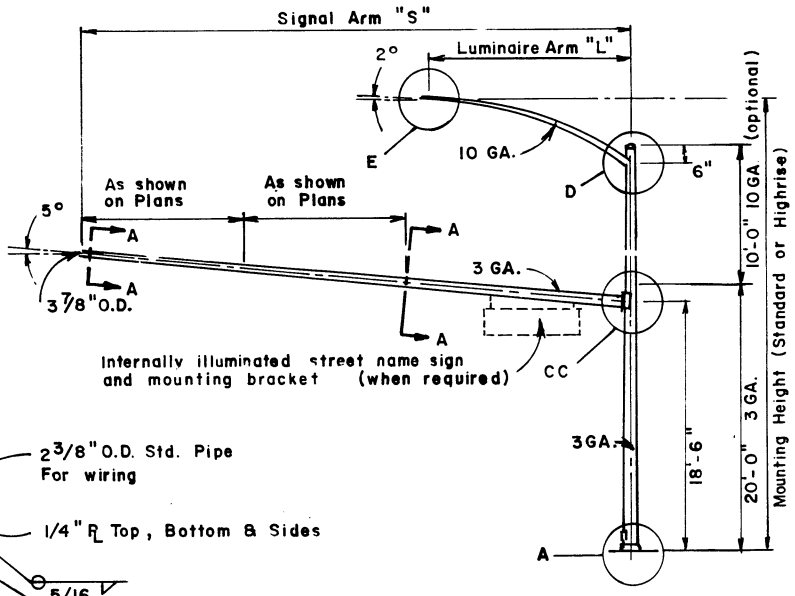
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 4	
			TRAFFIC POLES TYPE 5-A, 6-A, 7 AND 14	DRAWING NO. 4-3.3 (323)	
				DATE 7-81	PAGE 5



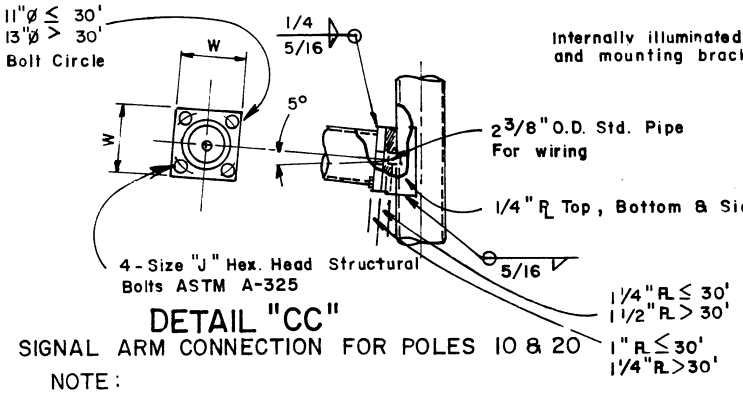
POLE TYPE 10

SIGNAL ARM AND SHAFT SIZE DATA						
Pole Type	Signal Arm Data				Shaft Size	
	"S"	Base O.D.	"W"	"J" Bolts	Base O.D.	End O.D.
10	20'-0"	6 5/8"	10 1/2"	1"-8 NC	10 3/4"	8"
	25'-0"	7 3/8"	10 1/2"	1"-8 NC	11"	8"
	30'-0"	8"	10 1/2"	1"-8 NC	11"	8"
	35'-0"	8 3/4"	13"	1 1/4"-7NC	12 1/8"	9 3/8"
	40'-0"	9 1/2"	13"	1 1/4"-7 NC	12 1/8"	9 3/8"
20	20'-0"	6 5/8"	10 1/2"	1"-8NC	10 3/4"	6 5/8"
	25'-0"	7 3/8"	10 1/2"	1"-8 NC	11"	6 5/8"
	30'-0"	8"	10 1/2"	1"-8NC	11"	6 5/8"
	35'-0"	8 3/4"	13"	1 1/4"-7NC	12 1/8"	8"
	40'-0"	9 1/2"	13"	1 1/4"-7NC	12 1/8"	8"

Pole Type 20 Luminaire Data			
"L"	Min. O.D. @ Pole	Mtg. Height	
		Highrise	Standard
6'-0"	3 3/8"	32'-9"	31'-9"
8'-0"	3 7/8"	34'-0"	32'-3"
10'-0"	4 3/16"	35'-9"	32'-6"
12'-0"	4 1/2"	37'-3"	33'-9"
15'-0"	4 3/4"	37'-9"	34'-3"



POLE TYPE 20



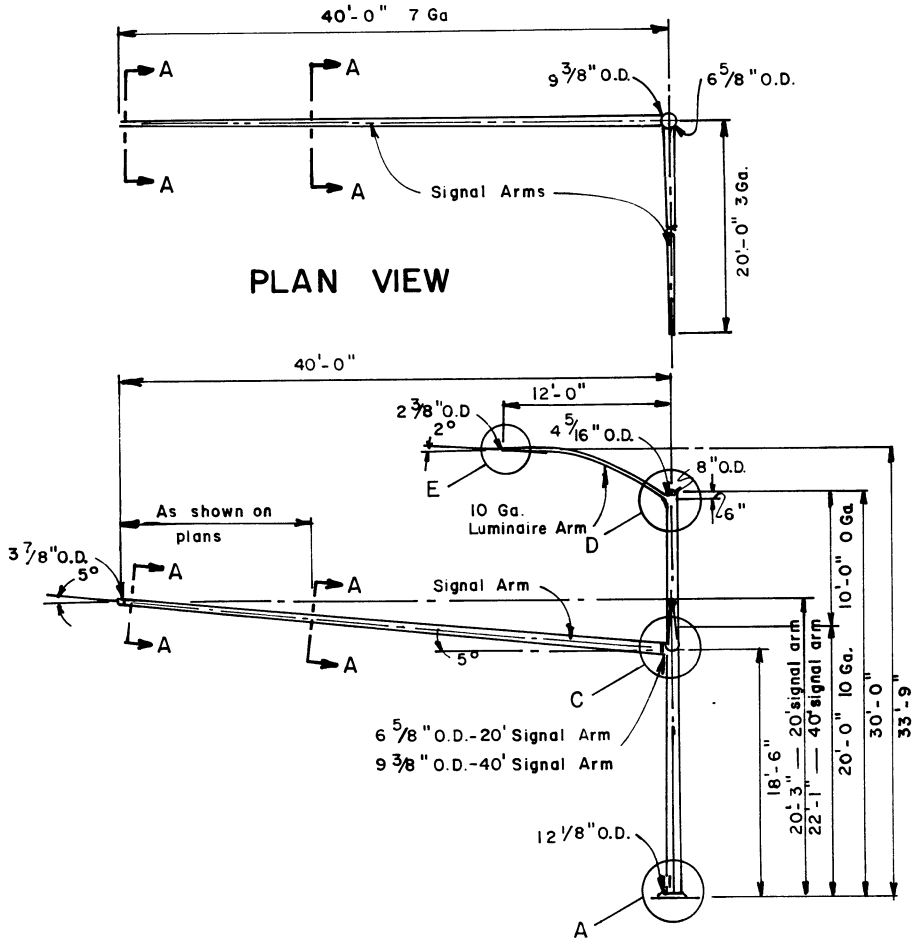
DETAIL "CC"

SIGNAL ARM CONNECTION FOR POLES 10 & 20

NOTE:

For Details and Sections not shown on this Sheet, see "Traffic Detail Sheets"

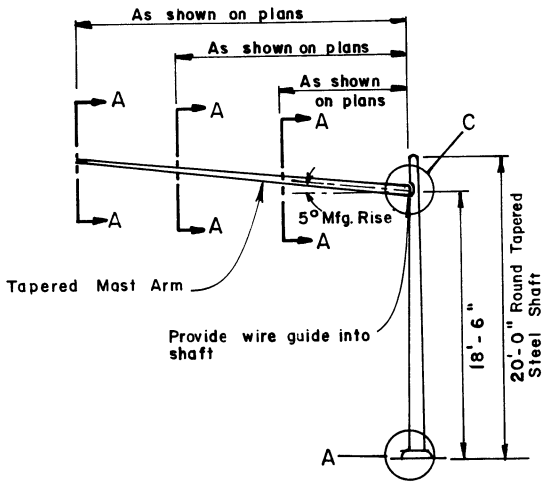
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 4	
			TRAFFIC POLES TYPES 10 AND 20	DRAWING NO. 4-3.4 (323)	
				DATE 7 - 81	PAGE 6



NOTE:
For Details not shown, see "Traffic Detail Sheets"

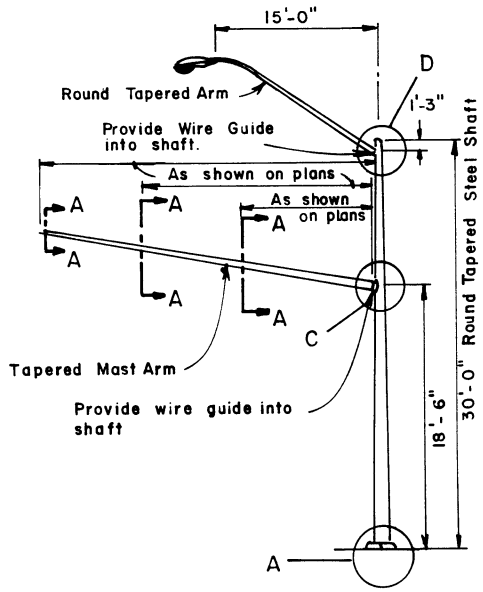
POLE TYPE 28

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 4	
			TRAFFIC POLE TYPE 28	DRAWING NO. 4-3.5 (323)	
				DATE 7-81	PAGE 7



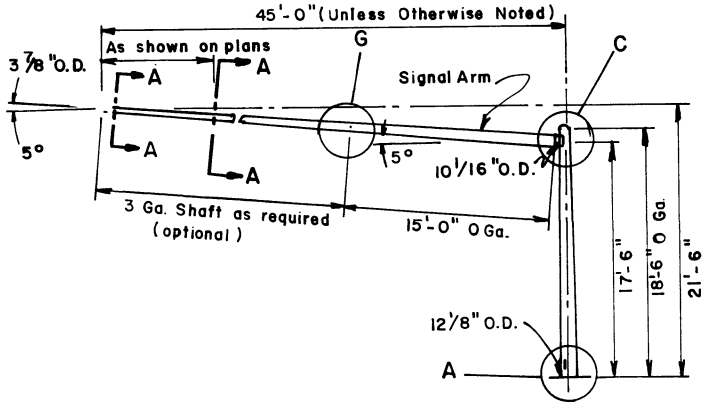
POLE TYPE 30

NOTE:
For Details not shown, see "Traffic Detail Sheets"



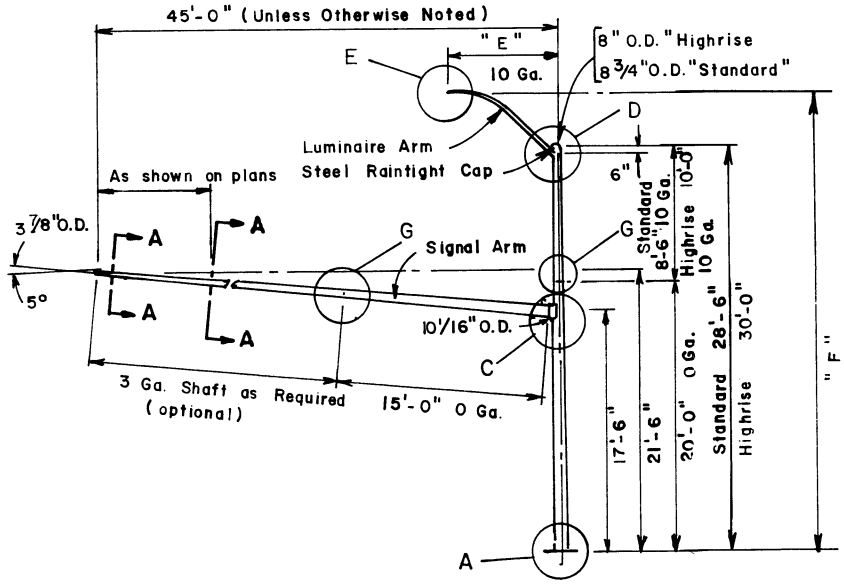
POLE TYPE 35

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 4	
			TRAFFIC POLE TYPES 30 AND 35	DRAWING NO. 4-3.6 (323)	
				DATE 7-81	PAGE 8



POLE TYPE 40

(USE SAME FOUNDATION AS POLE TYPE 45)



NOTE:
For Details not shown, see
"Traffic Detail Sheets"

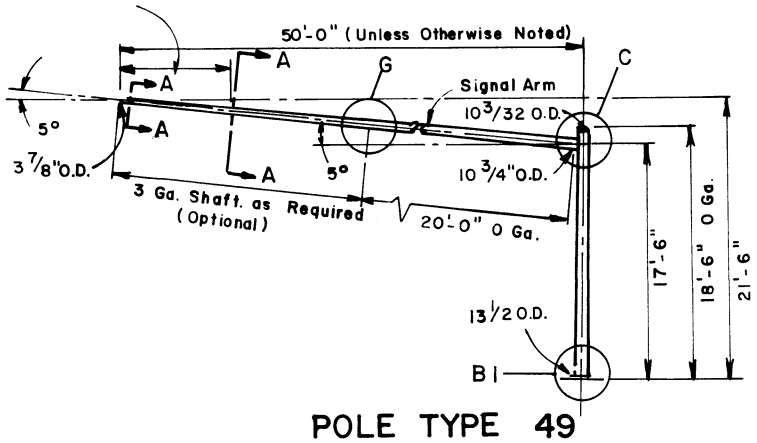
POLE TYPE 45

(FOR FOUNDATION SEE DWG. No. 4-3.4)

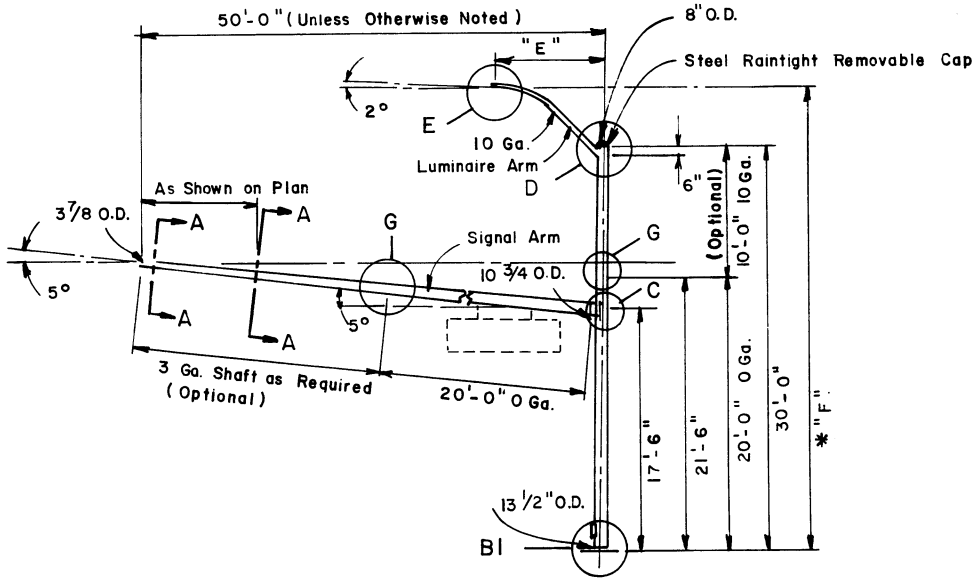
LUMINAIRE ARM DATA				
	STANDARD		HIGH RISE	
"E" PROJECTED ARM LENGTH	*F	MIN. O.D. @ POLE	*F	MIN. O.D. @ POLE
6'-0"	30'-0"	3 3/8"	32'-9"	3 3/8"
8'-0"	30'-9"	3 5/8"	34'-0"	3 7/8"
10'-0"	31'-0"	3 7/8"	35'-9"	4 3/16"
12'-0"	32'-3"	4 5/16"	37'-3"	4 1/2"
15'-0"	32'-9"	4 3/4"	37'-9"	4 3/4"

* MOUNTING HEIGHTS ARE NOMINAL (± 6" FROM BASE PLATE TO ℄ OF LUMINAIRE ARM)

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 4	
			TRAFFIC POLES TYPE 40 AND 45	DRAWING NO. 4-3.7 (323)	
				DATE 7-81	PAGE 9



POLE TYPE 49



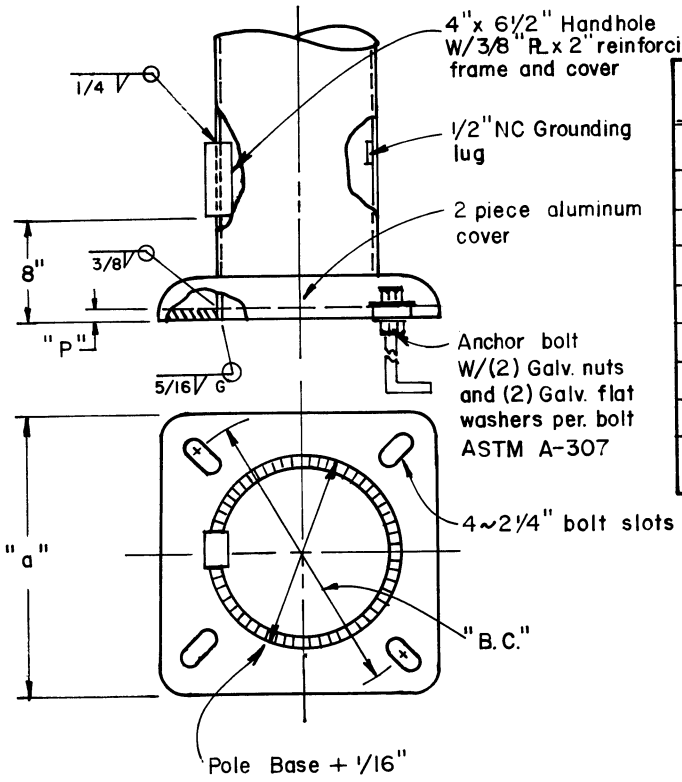
POLE TYPE 50

POLE TYPE 50		
"E"	"F" *	BASE O.D.
6'-0"	32'-9"	3 3/8"
8'-0"	34'-0"	3 7/8"
10'-0"	35'-9"	4 3/16"
12'-0"	37'-3"	4 1/2"
15'-0"	37'-9"	4 3/4"

* Mounting heights are nominal (± 6")

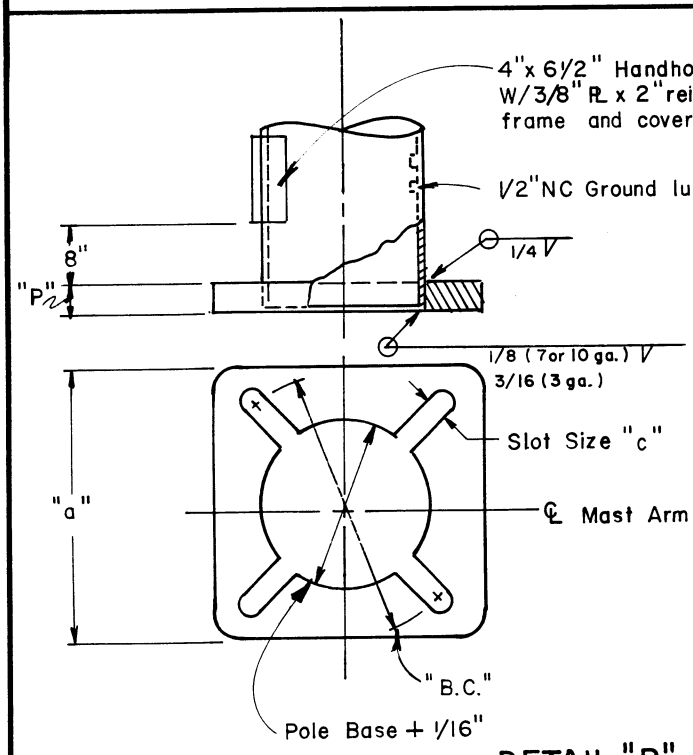
NOTE:
For Details not shown, see
"Traffic Detail Sheets"

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 4
			TRAFFIC POLES TYPE 49 & 50	DRAWING NO. 4-3.8 (323)
				DATE 7-81 / PAGE 10



Pole Type	Base Plate "a"	B.C.	P	Anchor Bolt Size
10	18	17½	1¾	2 x 66 x 6
20	18	17½	1¾	2 x 66 x 6
28	18	17½	2	2 x 66 x 6
30	17	16½	2	1¾ x 60 x 6
35	17	16½	2	1¾ x 60 x 6
40	18	17½	2	2 x 66 x 6
45	18	17½	2	2 x 66 x 6
49	20	19	2	2 x 66 x 6
50	20	19	2	2 x 66 x 6

DETAIL "A"



Pole Type	Base Plate "a"	"c"	"B. C."	Anchor Bolt Size	P
5	11½	1¼	11	1 x 36 x 4	1
6	11½	1½	11	1¼ x 44 x 4	1
5A	13½	1½	12½	1¼ x 44 x 4	1¼
6A	13½	1½	12½	1¼ x 44 x 4	1¼
7	13½	1¼	11	1 x 36 x 4	1¼

DETAIL "B"

NO.	REVISION	DATE

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

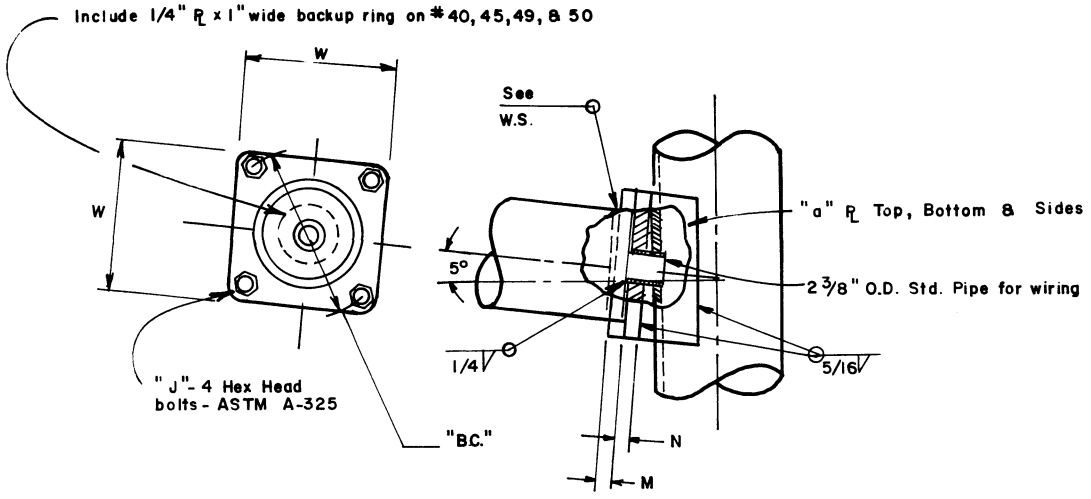
TRAFFIC DETAIL SHEET
BASE DETAILS

SECTION 4

DRAWING NO. 4 - 4.1 (323)

DATE 7 - 81

PAGE 11



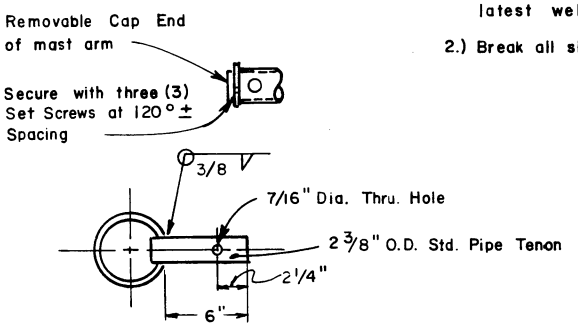
STANDARD SIGNAL ARM CONNECTION DETAIL "C"

Pole Type	a	J	W	M	N	B. C.	W. S.
5-A, 6-A and 7	1/4	1"x 8NC x 2 1/2"	8 1/2"	1"	1"	9"	1/4
10 and 20	1/4	SEE TABLE ON TRAFFIC POLE SHEET					1/4 5/16
28	1/4	"L" 1 1/4"x7NC x 3"	12"	1" for 20' 1 1/4 for 40'	1 1/2"	12"	Typ. 5/16 1/4 G 1/4 and Typ. 5/16
30 and 35	5/16	1 1/2" x 4"	15"	2 1/2"	1 1/2"	15"	1/4 5/16
40 and 45	5/16	1 1/4" x 7NC x 3"	13"	1 1/2"	1 3/4"	13"	3/16 G (on B.U.℄) & 3/8
49 and 50	5/16	1 1/2" x 6NC x 4"	15"	1 3/4"	2"	15"	5/16 G (on B.U.℄) & 3/8

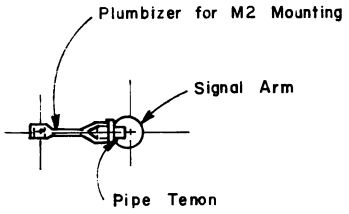
GENERAL NOTES:

1.) For weld sizes not shown, use minimum size weld as specified by the latest welding code.

2.) Break all sharp edges for wire protection.



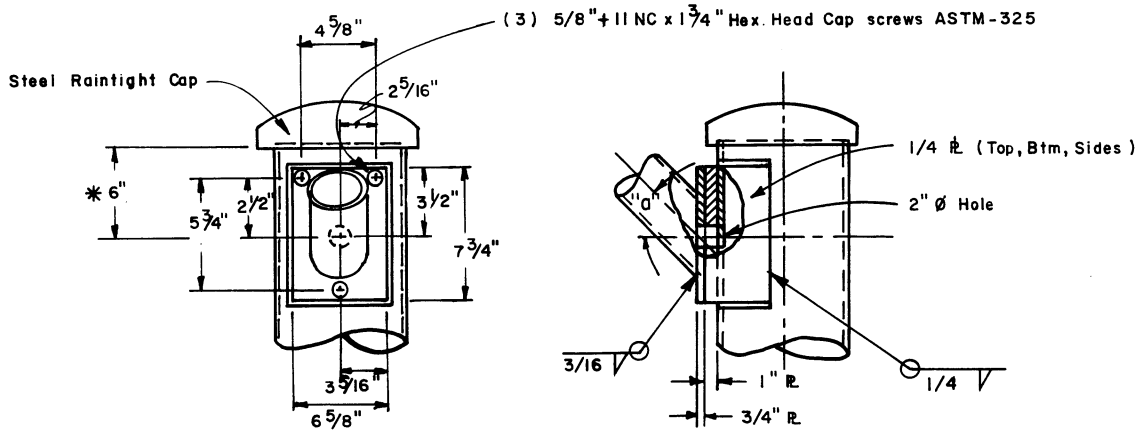
SECTION A-A
SIGNAL TENON ATTACHMENT



SPECIAL DETAIL
FOR MOUNTING SIGNAL HEAD

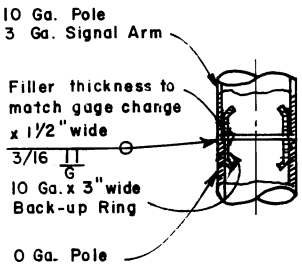
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 4	
			TRAFFIC DETAIL SHEET SIGNAL ARM DETAILS	DRAWING NO. 4 - 4.2 (323)	
				DATE 7 - 81	PAGE 12

POLE TYPE	a
49 and 50	45°
40 and 45	28°- Std. 45°-"Highrise
30 and 35	45°
28	45°
10 and 20	28°-, Std. 45°-"Highrise
5-A, 6-A, 7 and 14	———

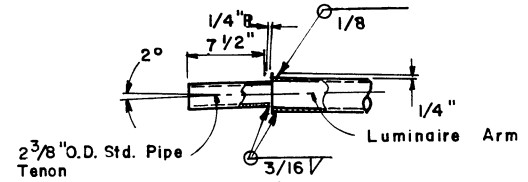


* POLE 30 and 35 = 15"

STANDARD LUMINAIRE ARM CONNECTION
DETAIL "D"

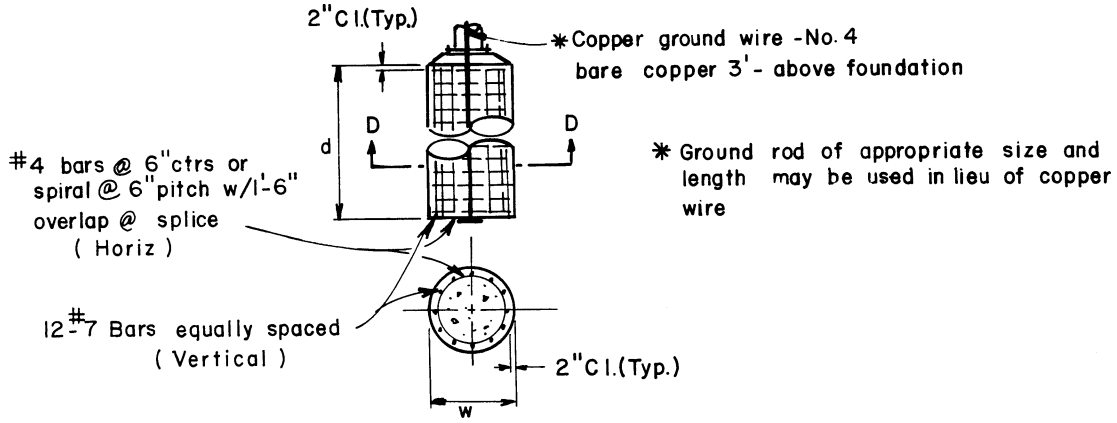


DETAIL "G"
SPLICE DETAIL



DETAIL "E"
LUMINAIRE TENON DETAIL

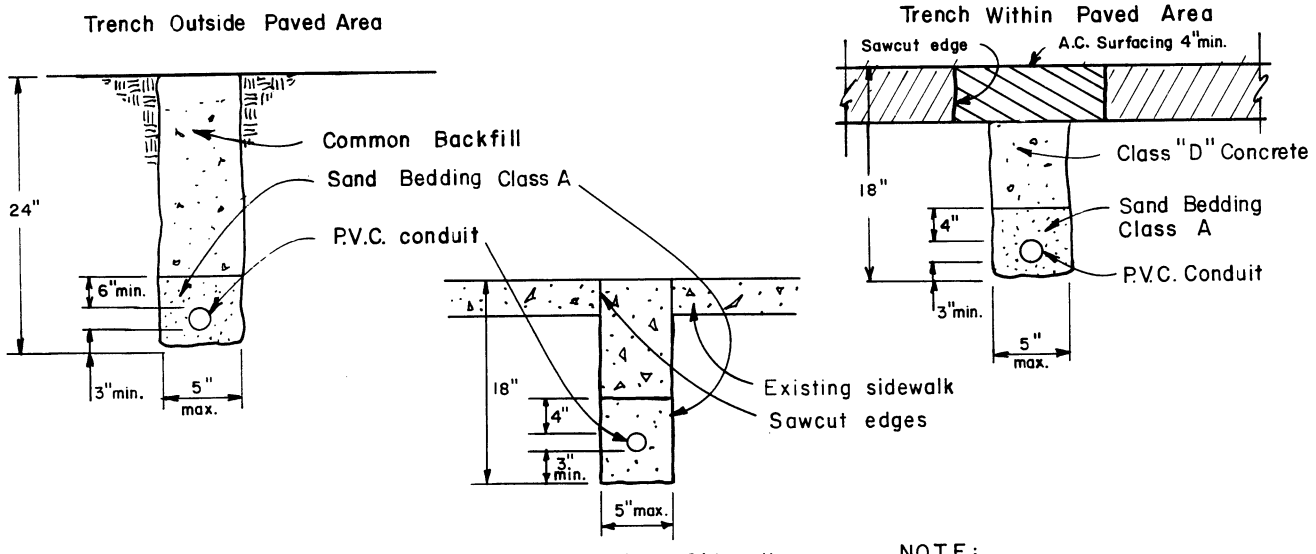
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 4	
			TRAFFIC DETAIL SHEET LUMINAIRE ARM DETAILS	DRAWING NO. 4-4.3 (323)	
				DATE 7-81	PAGE 13



SECTION D-D
PILE FOUNDATION

Pole Type	Signal arm length	" d "	" w "
10 and 20	≤ 30'	8'-6"	30"
10 and 20	> 30'	10'-6"	36"
28,30,35,40,45	all	12'-0"	36"
49,50	all	13'-0"	36"

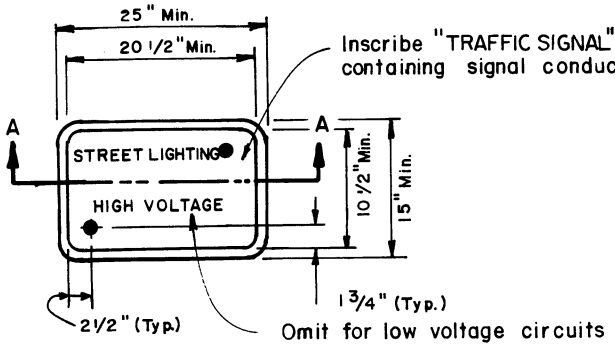
DETAIL "I"



NOTE:
See standard trench patch section.

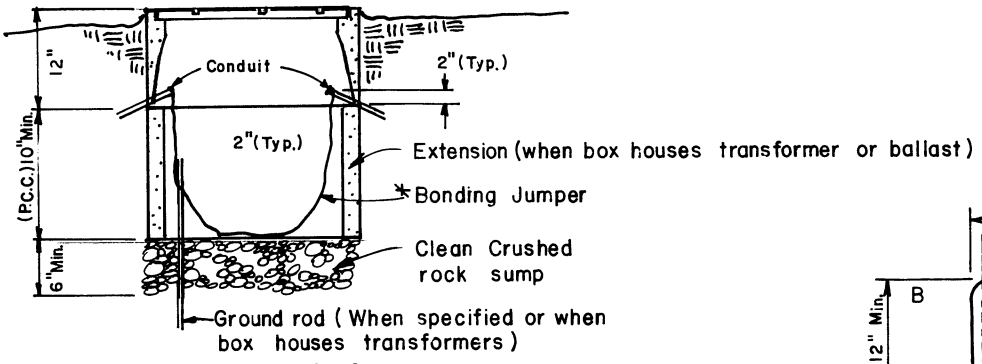
TRENCH DETAILS

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 4	
			TRAFFIC DETAIL SHEET TRENCH AND FOUNDATION	DRAWING NO. 4-4.4 (323)	
				DATE 7-81	PAGE 14

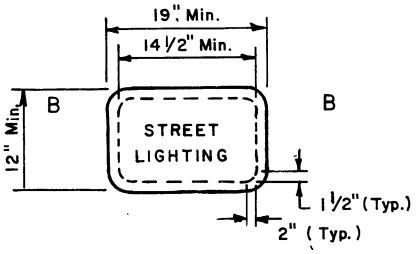


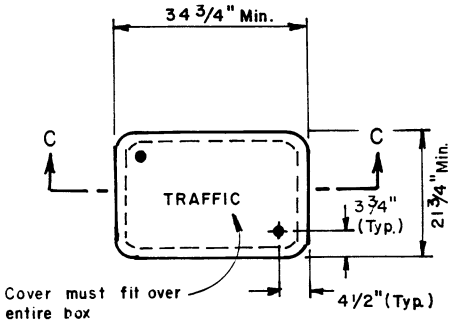
Note:

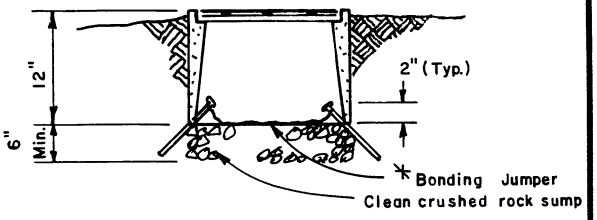
All boxes to be reinforced concrete in Sparks and fiberglass elsewhere



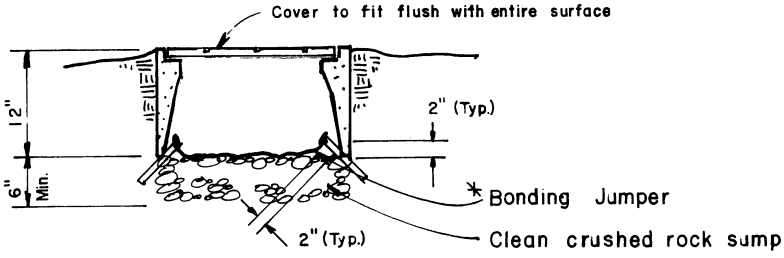
SECTION A-A
PULL BOX NO. 5







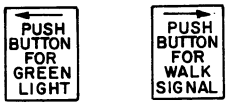
SECTION B-B
PULL BOX NO. 3 1/2



SECTION C-C
PULL BOX NO. 7

* Applicable only when metal conduit is used.

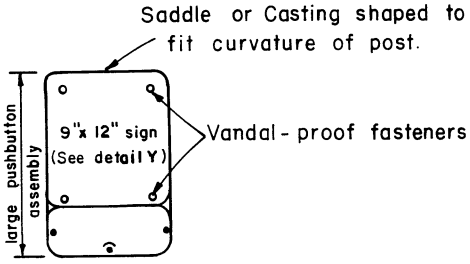
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 4	
1	SPELLING	10-16-86	TRAFFIC DETAIL SHEET PULL BOXES	DRAWING NO. 4-4.5 (323)	
				DATE 7-81	PAGE 15



(For 3 light signal) (For walk signal)

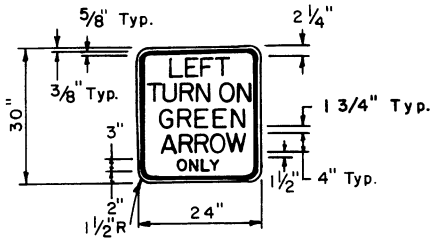
NOTE:
1. Arrow to be left or right or both as required
2. Porcelain enameled 9"x12" sign, black letters on white background.

DETAIL "Y"



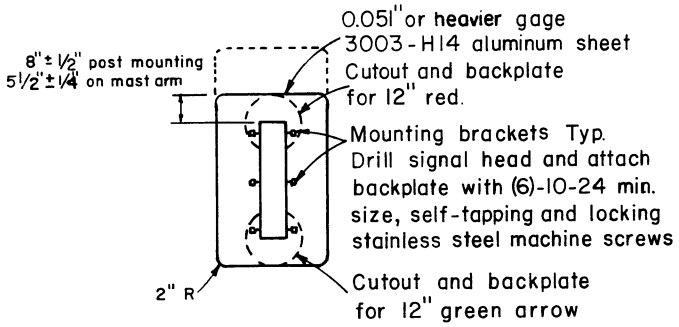
DETAIL "Z"

PEDESTRIAN PUSH BUTTON DETAILS



NOTE:
Sign to be black on reflectorized white

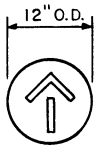
TYPICAL LEFT TURN SIGN



REAR VIEW

NOTE:
No background light to show between plate and head. Mast arm backplate shall be louvered

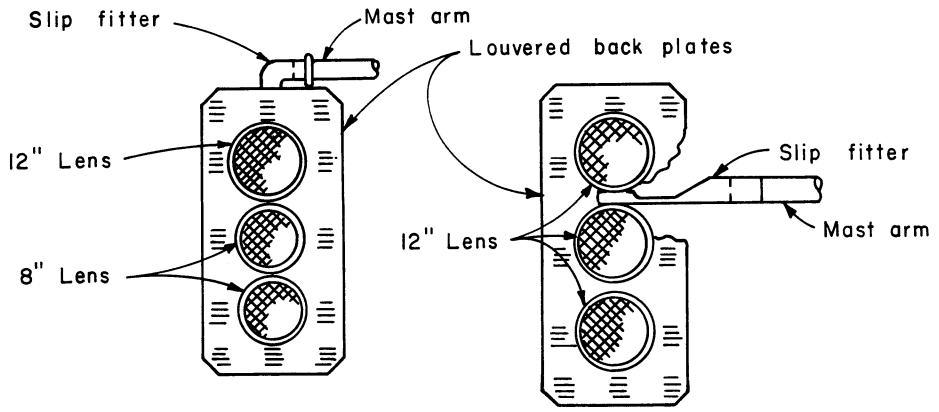
TYPICAL BACKPLATE



TYPICAL ARROW LENS

TYPICAL DIRECTIONAL LOUVER

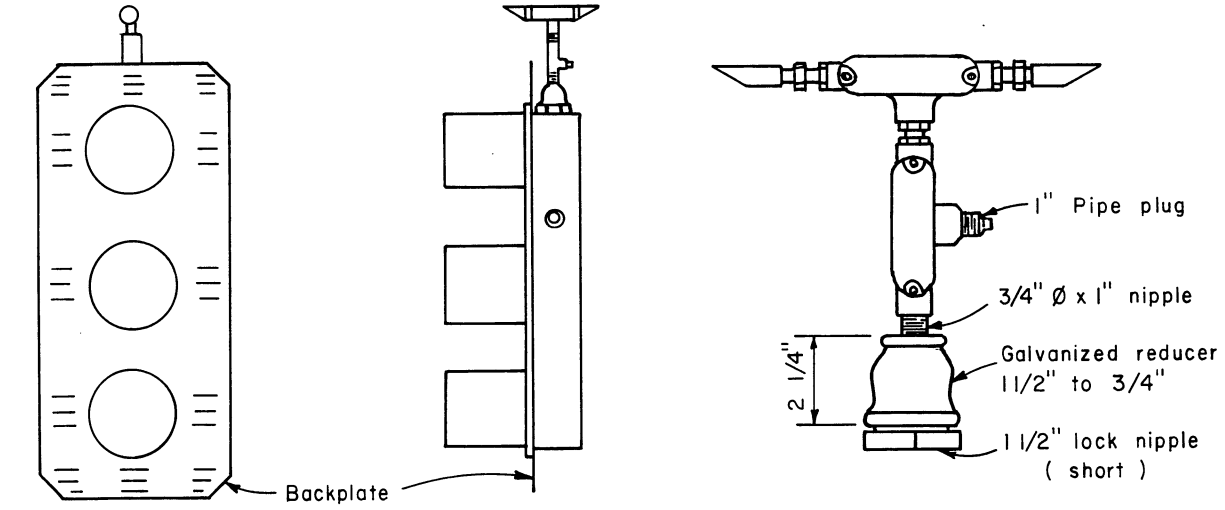
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 4	
1	SPELLING	10-16-86	TRAFFIC DETAILS	DRAWING NO. 4-4.6 (323)	
				DATE 7-81	PAGE 16



M-1
TOP MOUNTED

M-2
SIDE MOUNTED SLIP FITTER
(Use only when noted on plans)

MAST ARM SIGNAL MOUNT



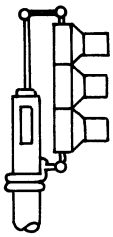
FRONT VIEW

SIDE VIEW

OPTICOM UNIT

OPTICOM 105 DETECTOR UNIT

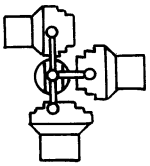
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 4	
			TRAFFIC DETAIL SHEET SIGNAL MOUNTS	DRAWING NO. 4-4.7 (323)	
				DATE 7-81	PAGE 17



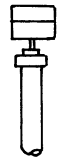
A-2

A-3

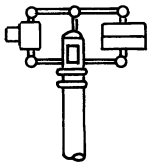
A-4



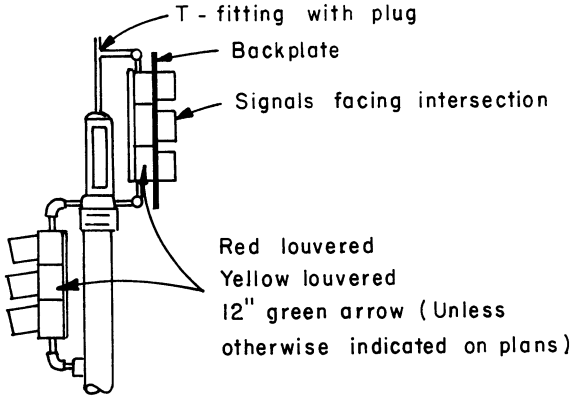
A-5



W-1

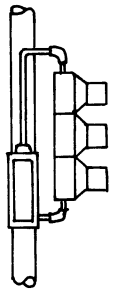


W-2

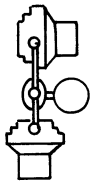


A-6

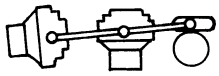
POST TOP MOUNTING



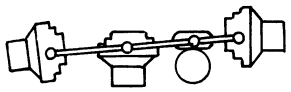
B-1



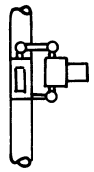
B-2



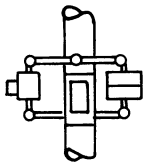
B-3



B-4



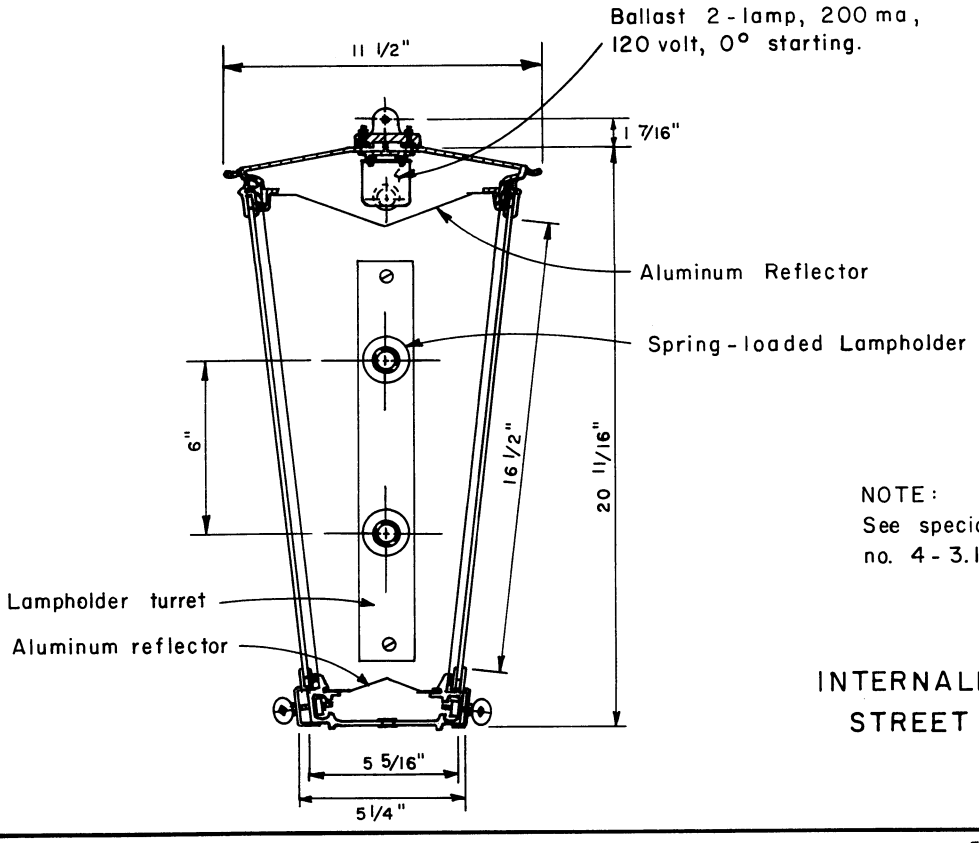
W-0



W-3

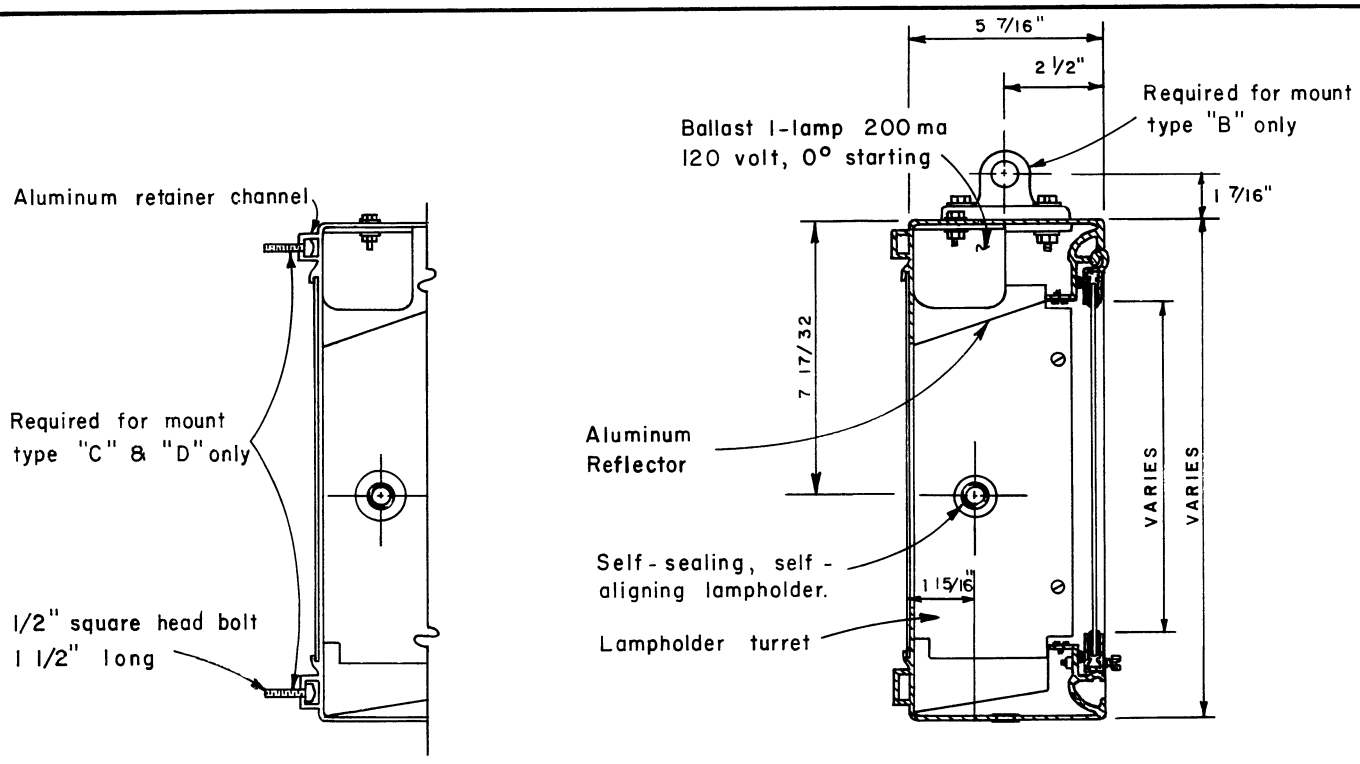
BRACKET MOUNTING

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 4	
			TRAFFIC DETAIL SHEET SIGNAL MOUNTINGS	DRAWING NO. 4-4.8 (323)	
				DATE 7-81	PAGE 18



NOTE:
See special notes on Dwg. no. 4-3.10.

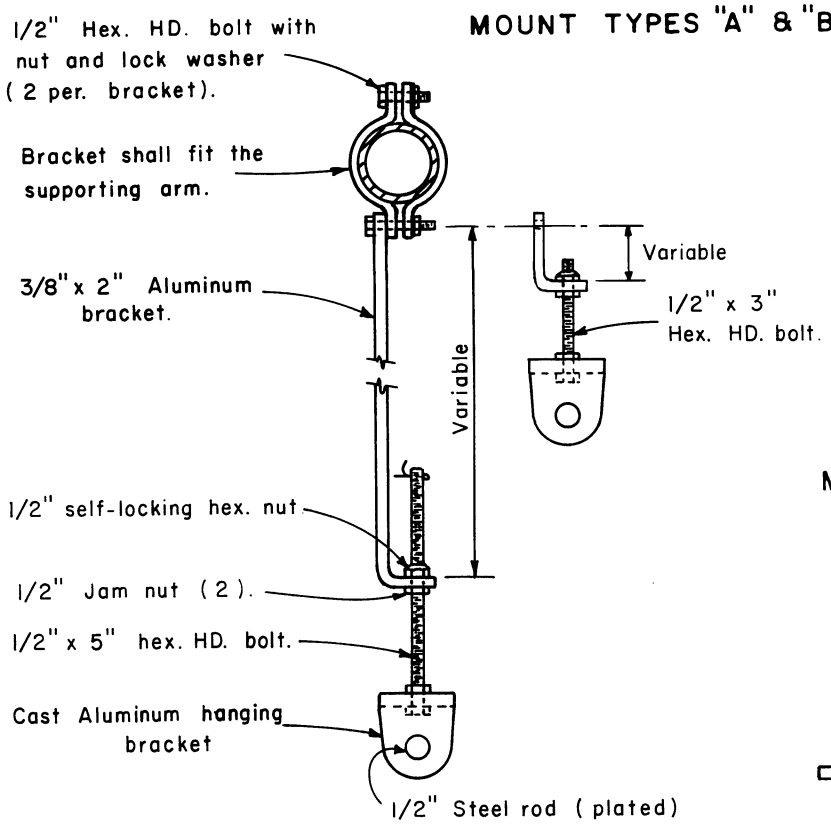
INTERNALLY ILLUMINATED STREET NAME SIGN



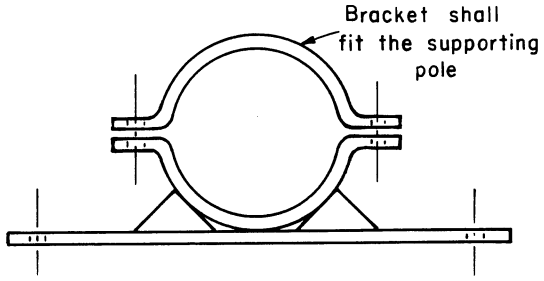
INTERNALLY ILLUMINATED REGULATORY SIGN

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 4	
			TRAFFIC DETAIL SHEET ILLUMINATED SIGNS	DRAWING NO. 4-4.9 (323)	
				DATE 7-81	PAGE 19

MOUNT TYPES "A" & "B"



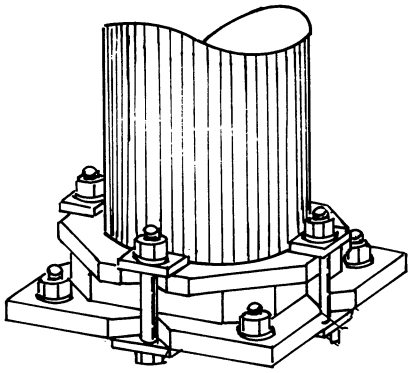
MOUNT TYPES "C" & "D"



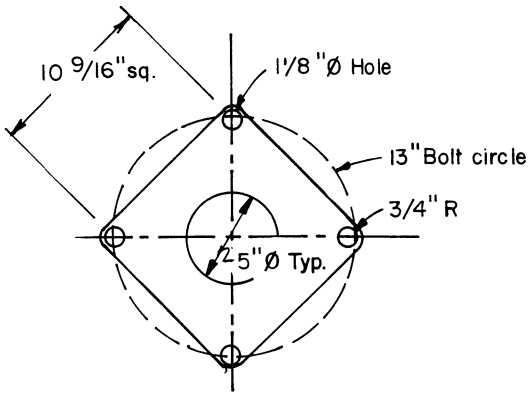
SPECIAL NOTES

1. Legend on street name sign shall be series "E", 8" caps and 6" lower case.
2. Panel material shall be fiberglass (Tuflite), or similar approved material.
3. All fasteners and associated hardware shall be stainless steel or aluminum Type 302 or 316
4. Lamp load shall be fused inside unit.
5. Type "D" mounting brackets same as Type "C" mounted vertically and adjustable to fit taper of arm.
6. Sign clamps shall be sized to fit respective signal arms.
7. Regulatory sign sizes and legends shall conform to Part II of the Manual on Uniform Traffic Control Devices.
8. 14-3 SJ cable to be installed in 1/2" liquid tight flexible steel conduit with liquid tight connectors.
9. The 14-3 SJ cable used to provide service to the illuminated signs shall be run continuously from each sign to the nearest pull box without splices.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 4	
			TRAFFIC DETAIL SHEET SIGN MOUNTING & NOTES	DRAWING NO. 4 - 4.10 (323)	
				DATE 7 - 81	PAGE 20



SAFETY BASE



SLIP BOLT GASKET
22 Gage Galvanized sheet metal

SAFETY BASE NOTES FOR POLE TYPES 7 & 14

1.) Place bottom plate with spacer plate on leveling nuts on anchor bolts and fasten in place.

2.) Top plate shall be furnished by light pole fabricator as light pole base plate with dimensions as shown in plan view.

3.) Erect light pole and secure with 1"Ø high strength bolts. Bolts shall be installed in the slots so that the bolt shanks are in contact with the plates.

4.) All steel plate assemblies shall be hot-dip galvanized after fabrication.

5.) All nuts, bolts and washers shall be electro-plated cadmium in accordance with ASTM A-165, Type TS.

6.) All contact areas of plates shall be free of galvanizing beads or runs.

7.) Safety bases shall be utilized on all steel light poles only when specified.

8.) Slip bolts shall be torqued to 150 foot-pounds

9.) Grouting shall be done after light pole has been located in final position.

NO.	REVISION	DATE
1	SPELLING	10-16-86

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

SAFETY BASE DETAIL A

SECTION 4

DRAWING NO. 4 - 5.1 (323)

DATE 7-81

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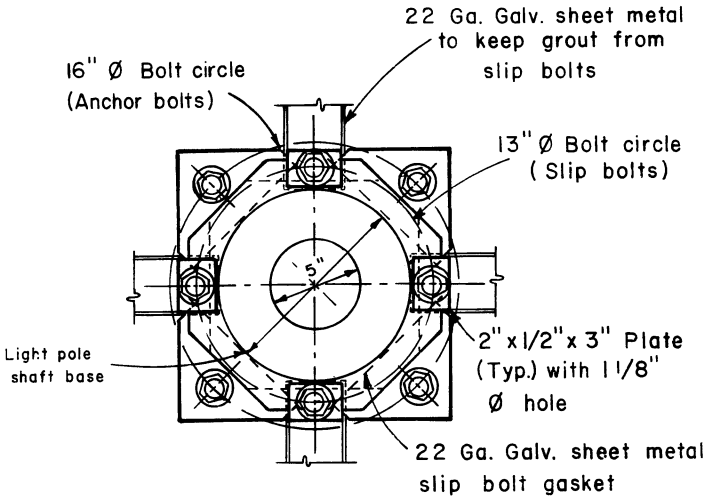
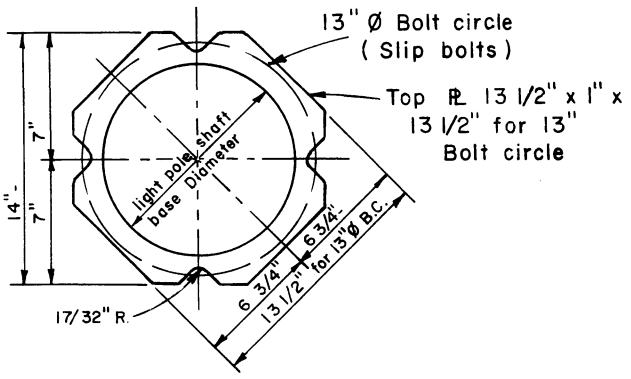
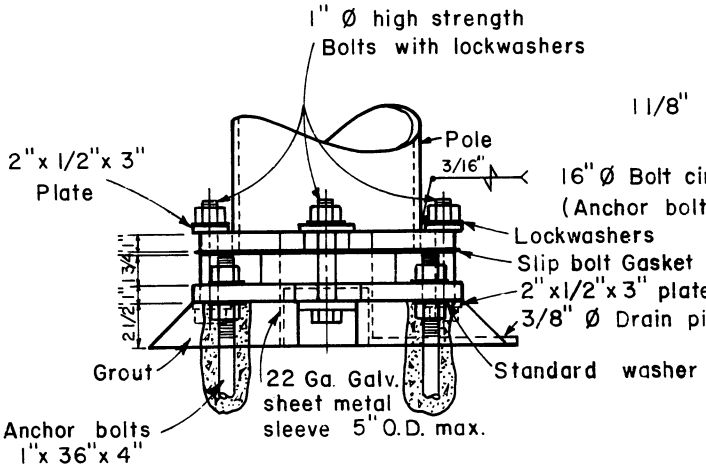


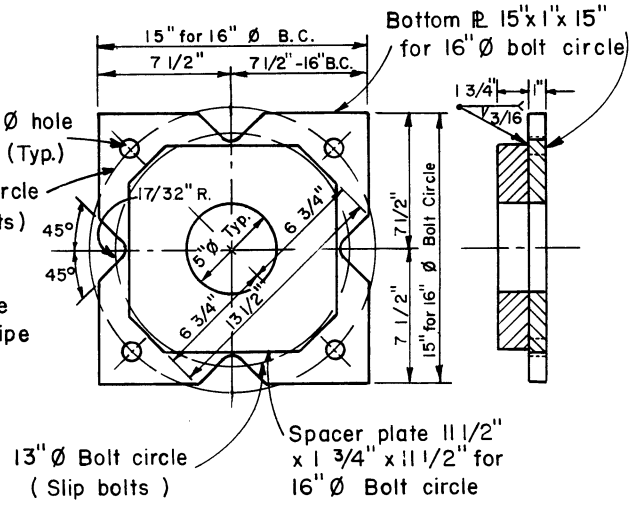
PLAN



PLAN OF TOP PLATE

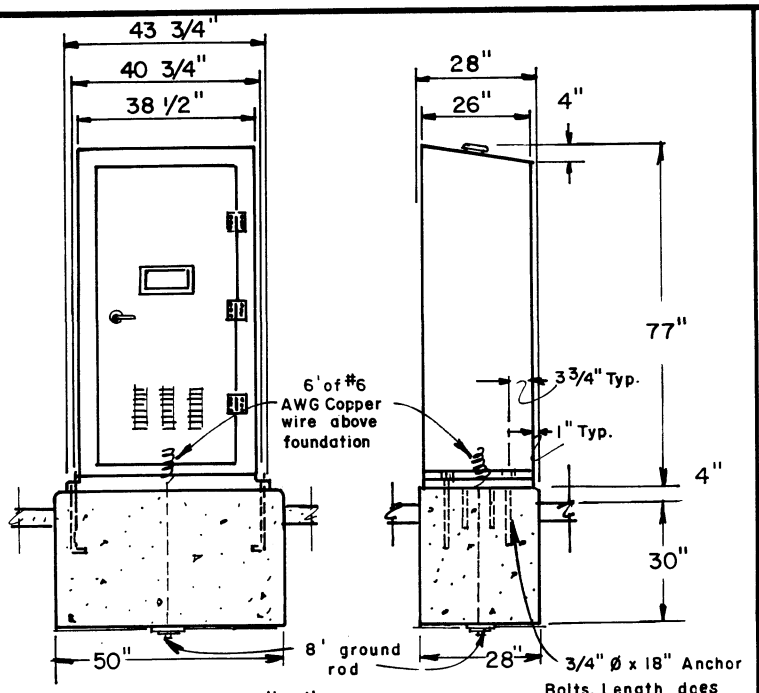


LIGHT POLE BASE

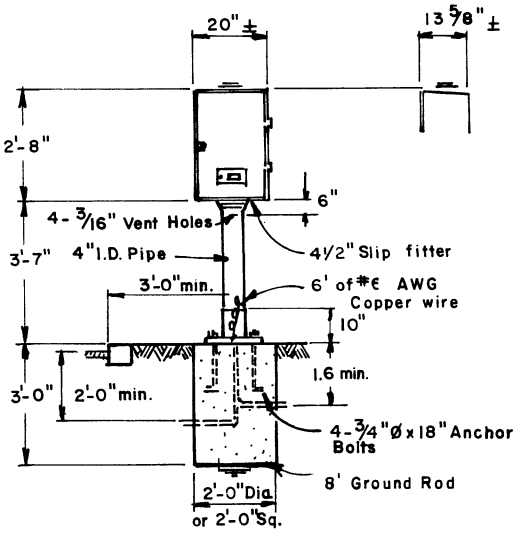


PLAN OF BOTTOM AND SPACER PLATE

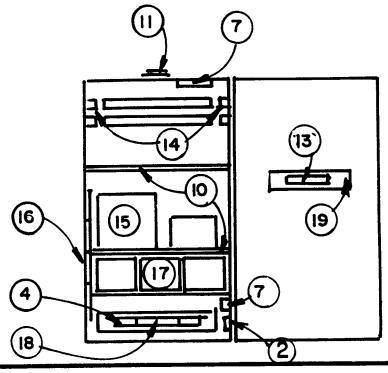
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 4	
			SAFETY BASE DETAIL B	DRAWING NO. 4 - 5.2 (323)	
				DATE 7 - 81	PAGE 22



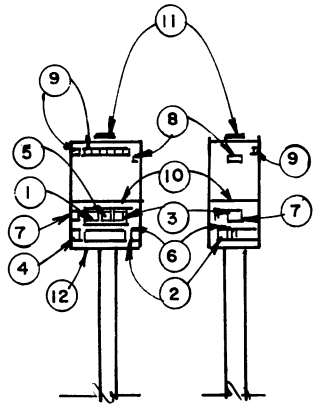
TYPE "R" CABINET

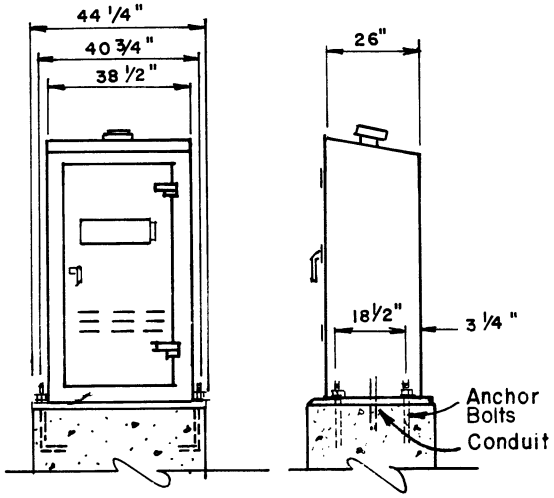


TYPE "G" CABINET



NOTE:
Cabinet to be installed minimum 6' from T. W. or curb line.





TYPE "P" CABINET

CABINET LEGEND

1. Main Switch
2. Plug Fuse
3. Signal Flash Switch inside cabinet
4. Field Wire Terminal Blocks.
5. Auxiliary Door Flash Switch
6. N.E.M.A Standard Plug Receptacle with Grounding Contact
7. Radio Interference Suppressor
8. Solid State Signal Flasher (Cabinet Mfr. To Determine Poles & Capacity, unless otherwise Specified)
9. External light Relays
10. Shelf
11. Thermostat-Controlled Fan with T Vent
12. Eight 1/2" Screened Vent Holes
13. Internal Power Panel and Recall Switches
14. Control Relays
15. Dispatcher Unit
16. Internal Interconnect Terminal Strips
17. Minor Movement Units
18. Slant Panel
19. Police Panel
20. Instrument Terminal Strips

NO.	REVISION	DATE
1	SPELLING	10-16-86

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

CONTROLLER CABINET DETAILS

SECTION 4

DRAWING NO. 4 - 6.1 (323)

DATE 7-81

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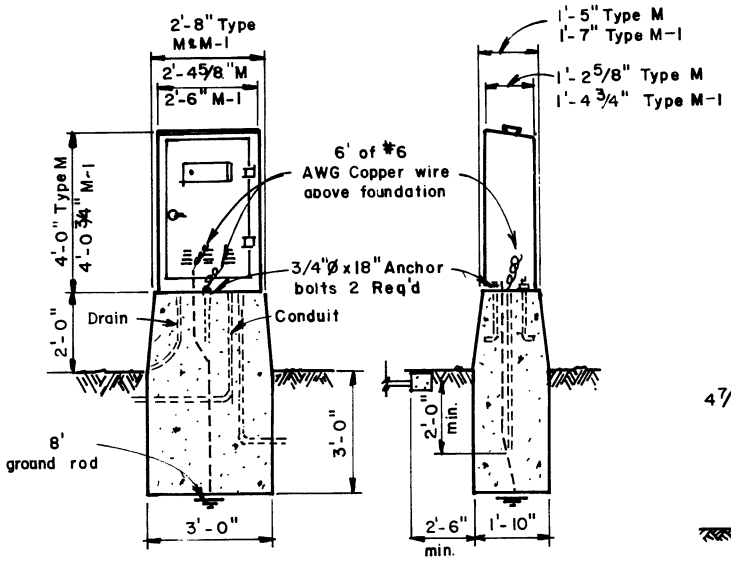
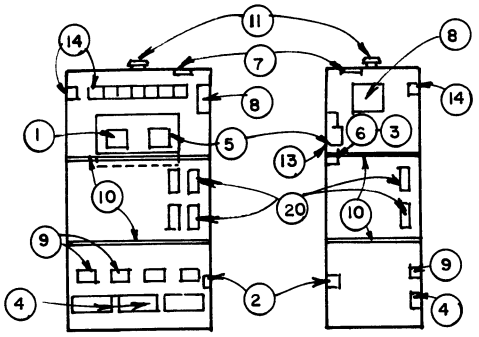
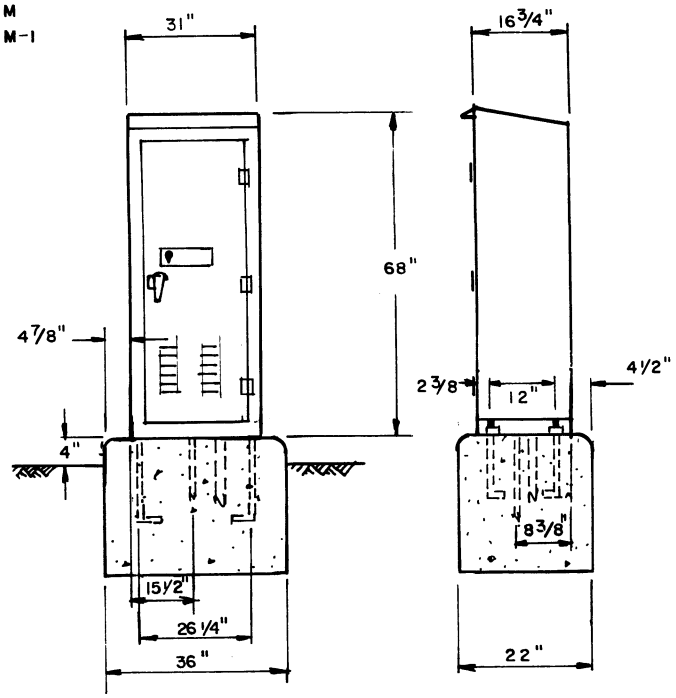


TYPE M & M-I CABINET

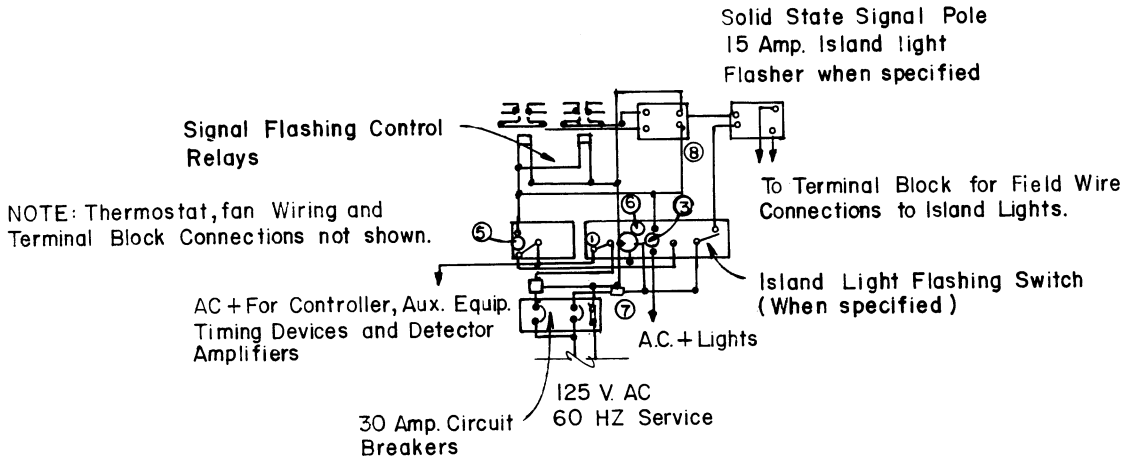




EXTENDED TYPE M CABINET

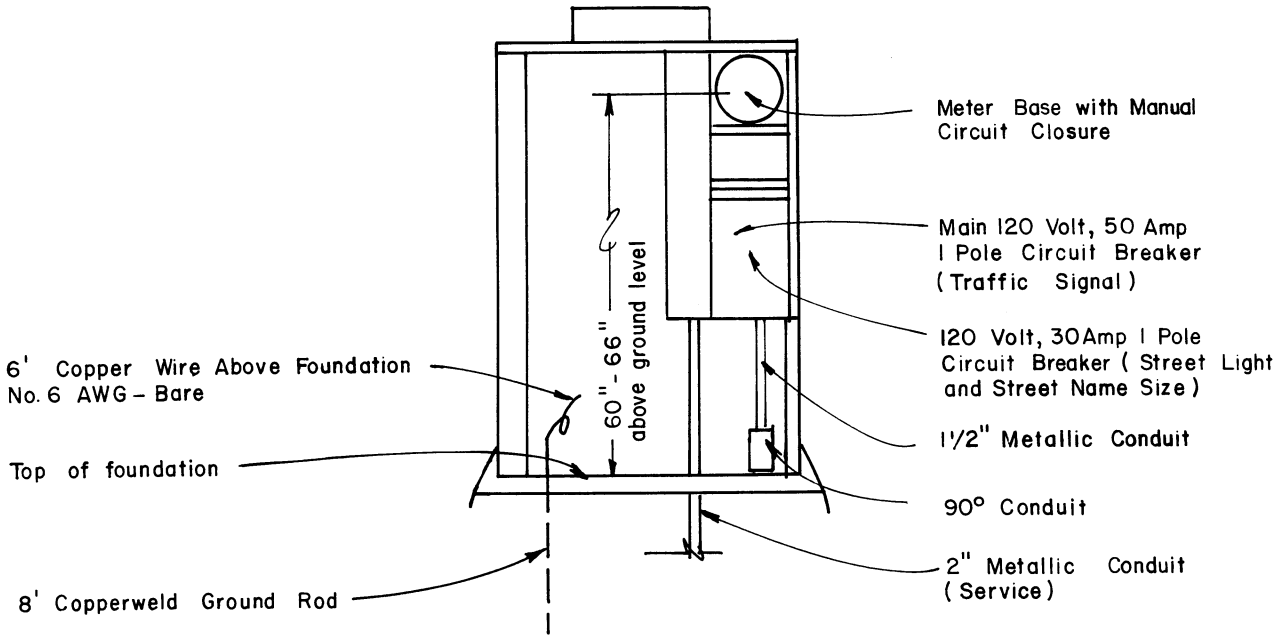
(Ground as shown on Type M)

NOTE:
Description of cabinet reference numbers "②" may be found on Dwg. No. 4-5.1



CABINET WIRING

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 4	
			CONTROLLER CABINET DETAILS	DRAWING NO. 4-6.2 (323)	
				DATE 7-81	PAGE 24



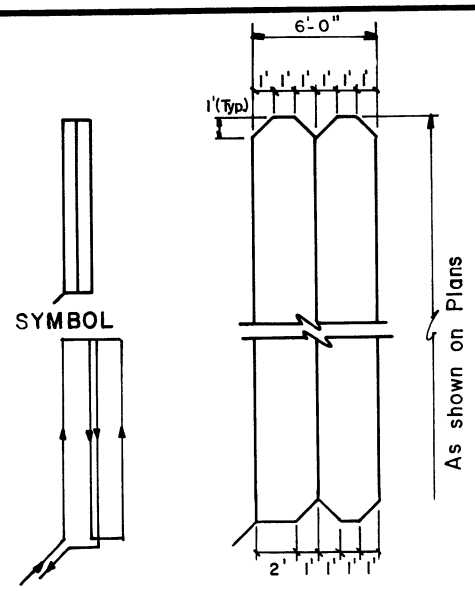
ELECTRIC SERVICE NOTES :

1.) The 20/240 V.A.C. service shall be completed as shown. The traffic signal, street lighting, and street name sign service shall be metered 120 Volt A.C. power.

2.) Enclosures for circuit breakers and disconnect switches shall have hasps and locks (Master#761 or Approved equal)

3.) Street light and street name sign shall be inside cabinet.

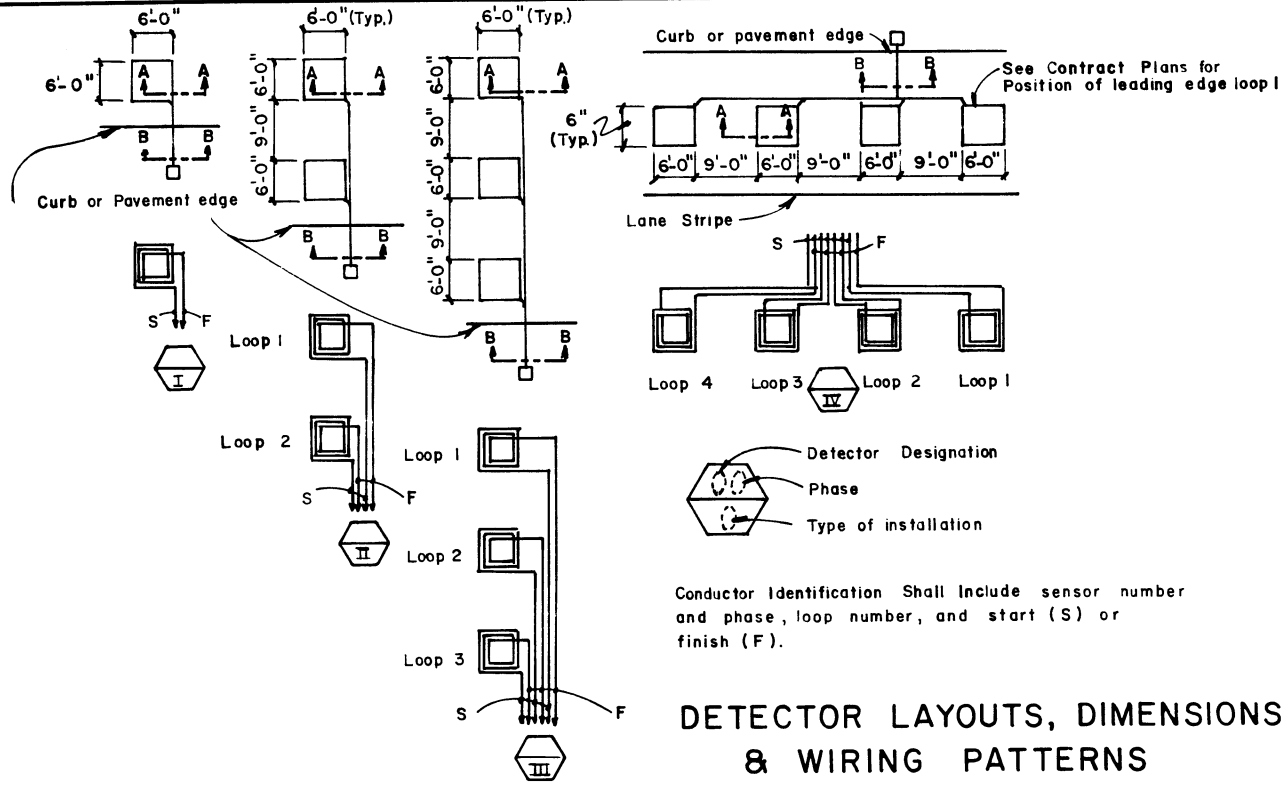
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 4
			CONTROLLER CABINET SERVICE INSTALLATION	DRAWING NO. 4-7 (323)
				DATE 7-81 / PAGE 25



Loop Installation Procedure

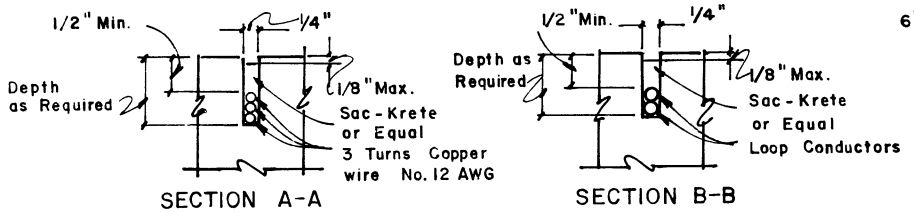
1.) Saw Slots in Pavement for Loop Conductors
2.) Install Termination Pull Box
3.) Install #12 AWG Loop Conductor in Slots. Allow additional length for the run to Termination Pull Box plus 5 feet of slack in pull box.
4.) Identify loop circuit pairs. Identify start of conductor
5.) Splice loop conductors to lead-in cable. All Splices shall be soldered using rosin core solder.
6.) Fill slots as shown in Details.
7.) No more than four loop detector conductors shall be installed in one sawed slot.
8.) Lead-in cable shall not be spliced between the termination pull box and the controller cabinet.
9.) Distance between side of loop and lead-in saw cut shall be 2'-0" minimum. Distance between lead-in saw cuts shall be 6" minimum.

QUADRAPOLE DETECTOR LOOP



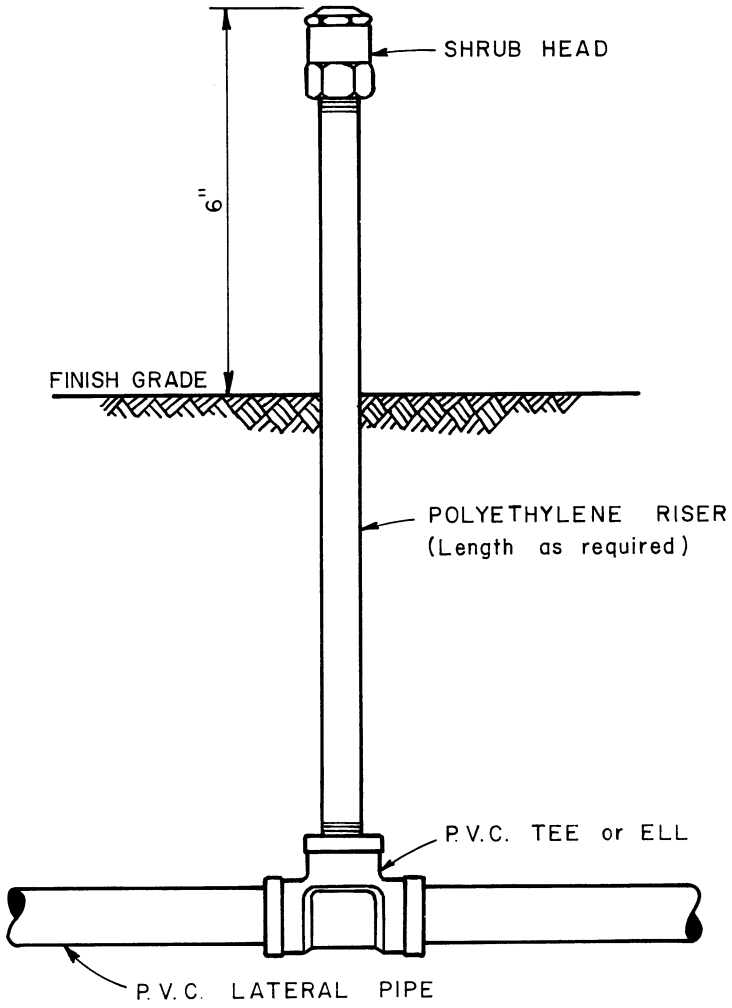
Conductor Identification Shall Include sensor number and phase, loop number, and start (S) or finish (F).

DETECTOR LAYOUTS, DIMENSIONS & WIRING PATTERNS



NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 4
			LOOP DETECTORS	DRAWING NO. 4 - 8 (323)
				DATE 7-81 / PAGE 26

SECTION 5
LANDSCAPE



TYPICAL SHRUB HEAD DETAIL

(FIXED JOINT)

(NOT PERMITTED IN SPARKS)

NO.	REVISION	DATE
1	SPELLING	10-16-86

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

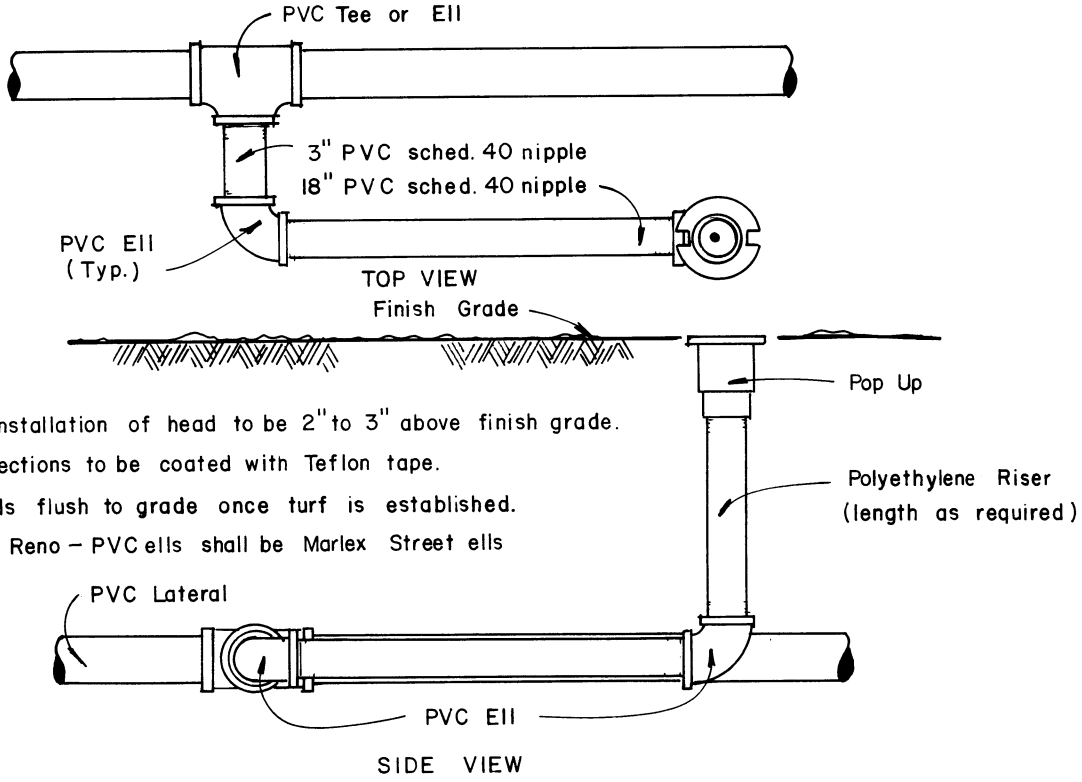
SPRINKLER HEADS FIXED JOINTS

SECTION 5

DRAWING NO. 5-1.1 (307)

DATE 7-81

PAGE 1



NOTE:

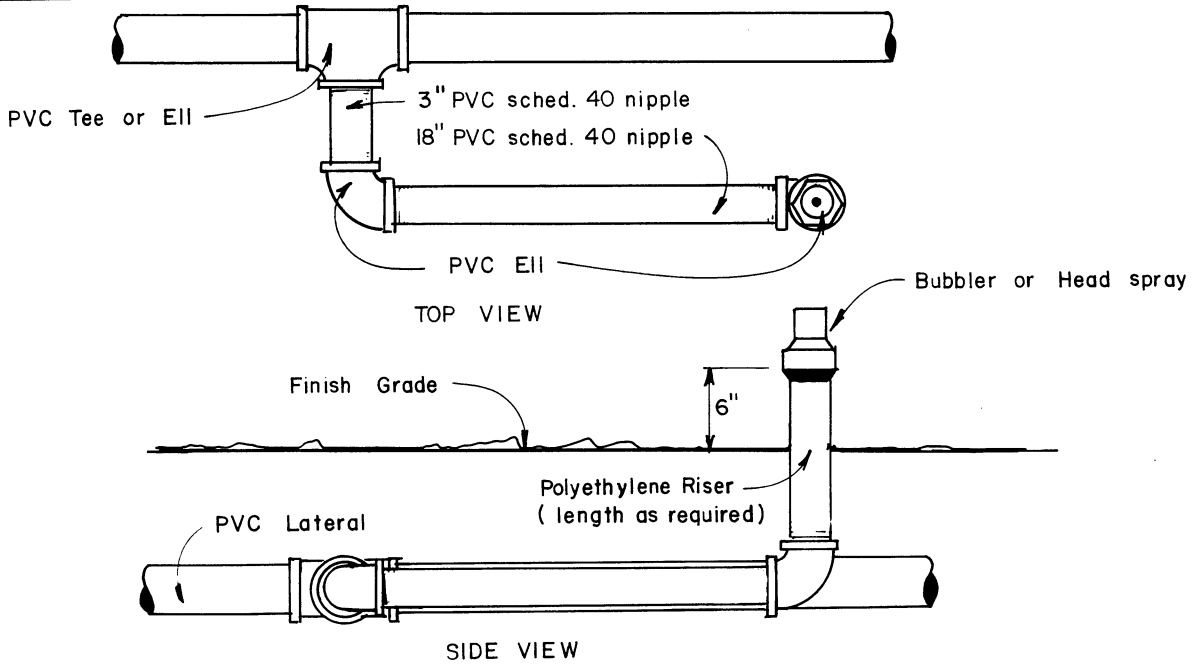
1.) Initial installation of head to be 2" to 3" above finish grade.

2.) All connections to be coated with Teflon tape.

3.) All heads flush to grade once turf is established.

4.) City of Reno – PVC ells shall be Marlex Street ells

TYPICAL POP UP DETAIL



TYPICAL SHRUB HEAD DETAIL

NO.	REVISION	DATE
1	SPELLING	10-16-86

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

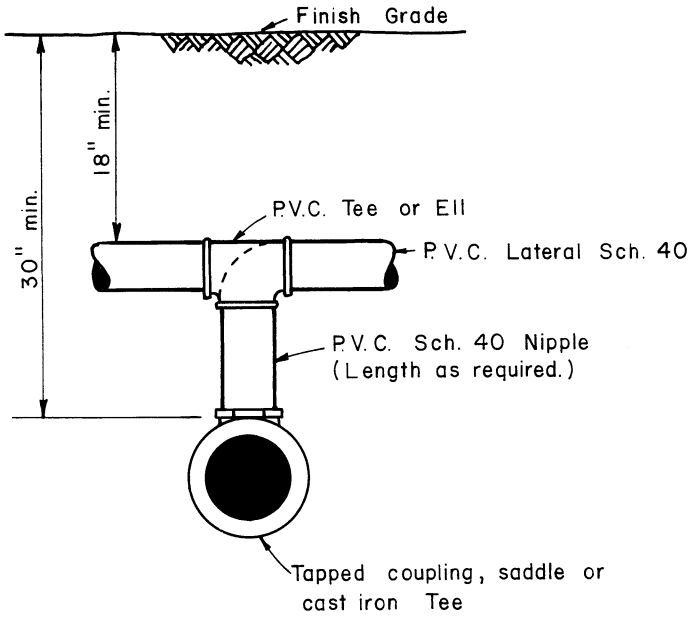
SPRINKLER HEADS SWING JOINT

SECTION 5

DRAWING NO. 5-1.2 (307)

DATE 7-81

PAGE 2

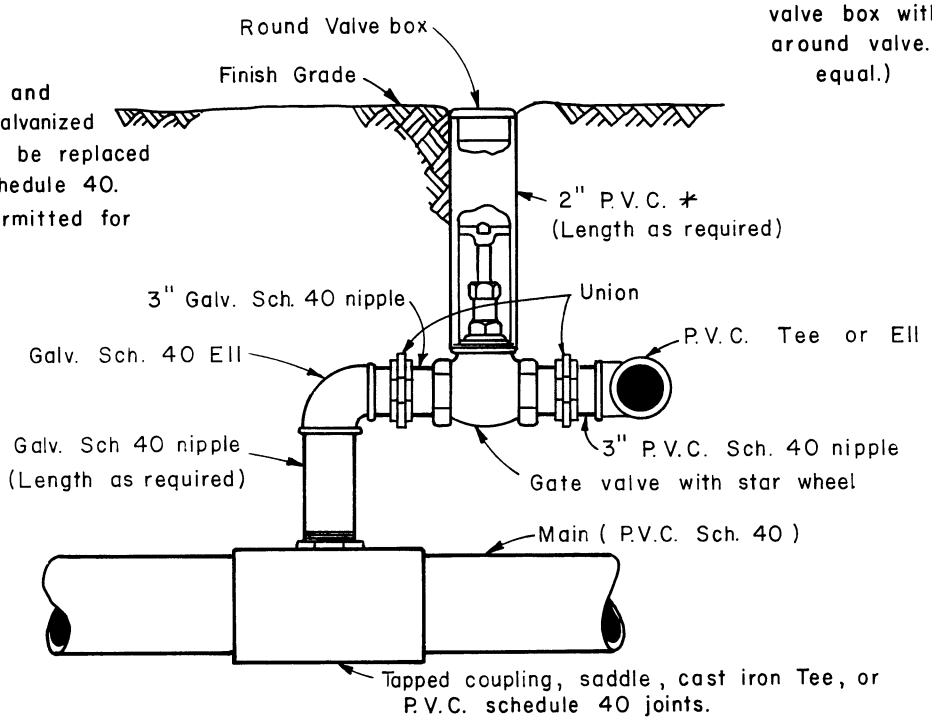


NOTE:
Sparks - Not permitted for city use.

MAIN TO LATERAL DETAIL

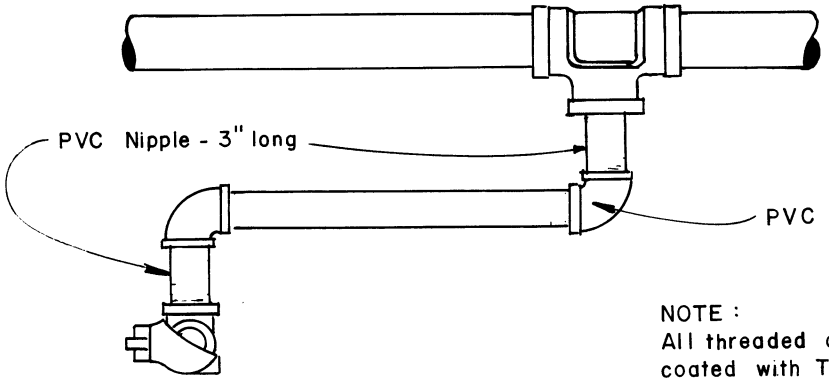
*In Reno and Lander County use "Brooks" plastic valve box with 6" clearance around valve. (or approved equal.)

NOTE:
Lander County and Yerington - All galvanized materials shall be replaced with P.V.C. schedule 40.
Sparks - Not permitted for city use.

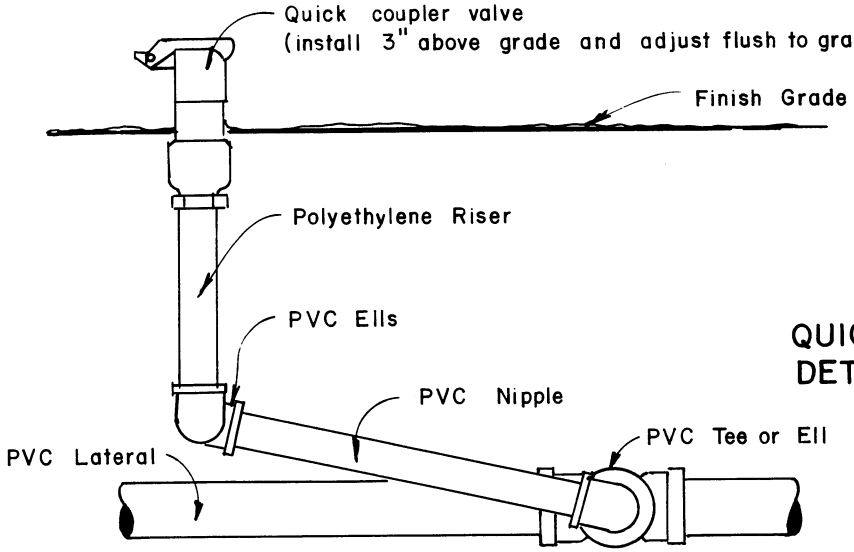


MAIN TO LATERAL DETAIL WITH GATE VALVE

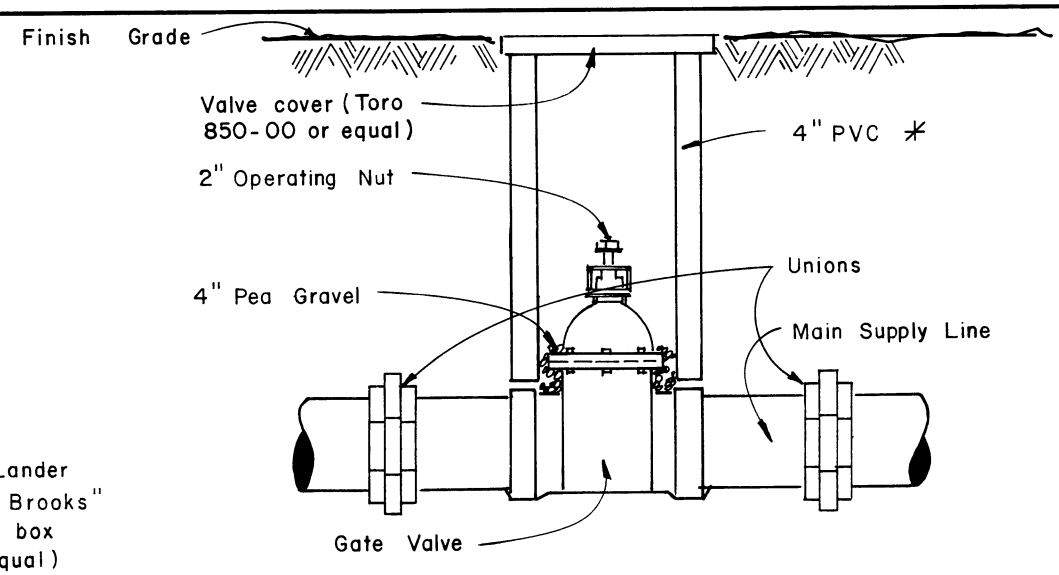
NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 5	
			MAIN TO LATERAL DETAILS	DRAWING NO. 5-2 (307)	
				DATE 7-81	PAGE 3



NOTE :
All threaded connections to be coated with Teflon tape or pipe joint compound. City of Reno- all P.V.C. ells to be Marlex street ells



QUICK COUPLING VALVE DETAIL



In Reno and Lander County use "Brooks" plastic valve box (or approved equal) 6" clearance around valve.

GATE VALVE ASSEMBLY DETAIL

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 5	
1	SPELLING	10-16-86	VALVES	DRAWING NO 5-3 (307)	
				DATE 7-81	PAGE 4

NO.	REVISION	DATE
1	SPELLING	10-16-86

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

CONTROLLER & VALVE ASSEMBLY

SECTION 5

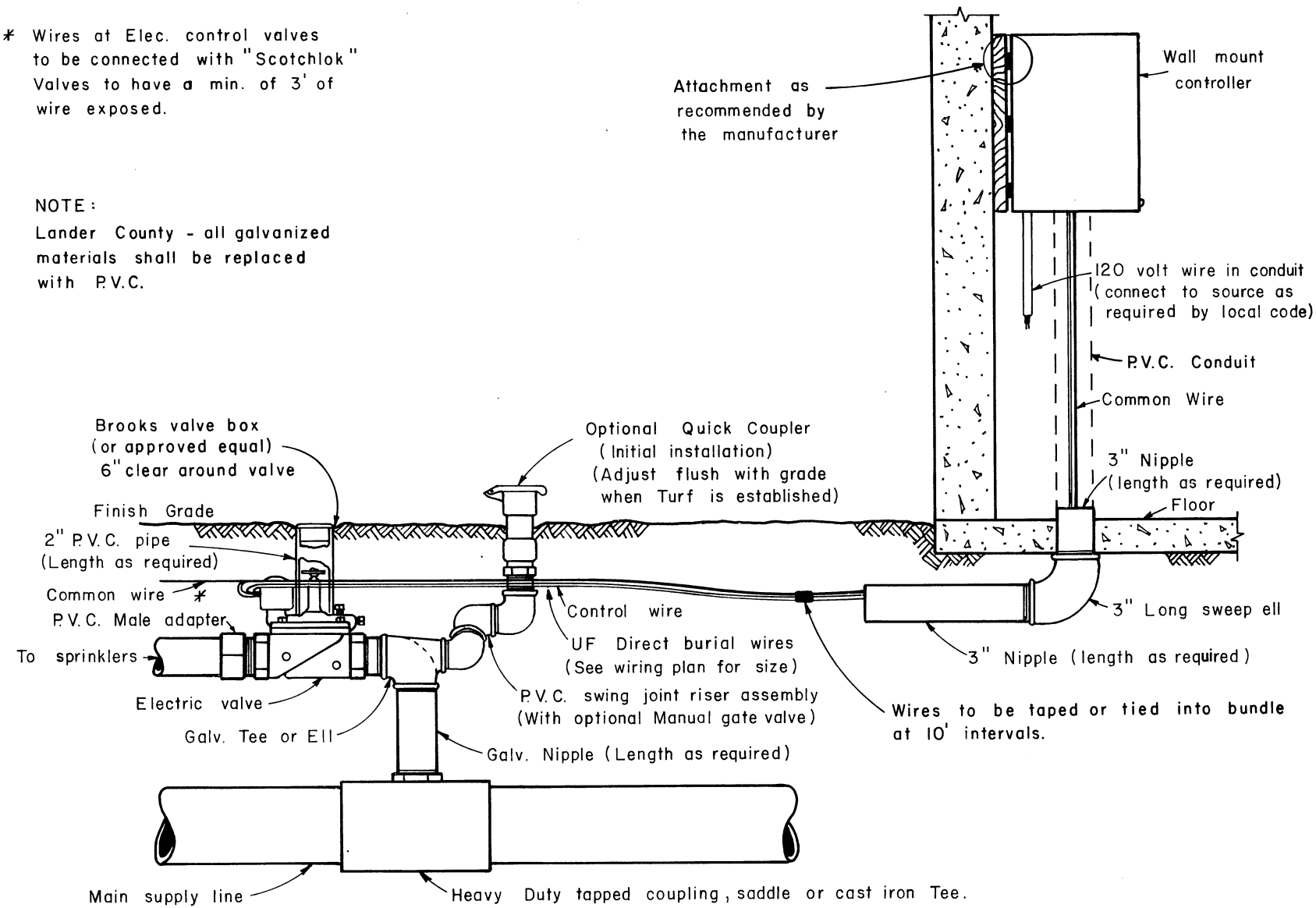
DRAWING NO. 5 - 4 (307)

DATE 7-81

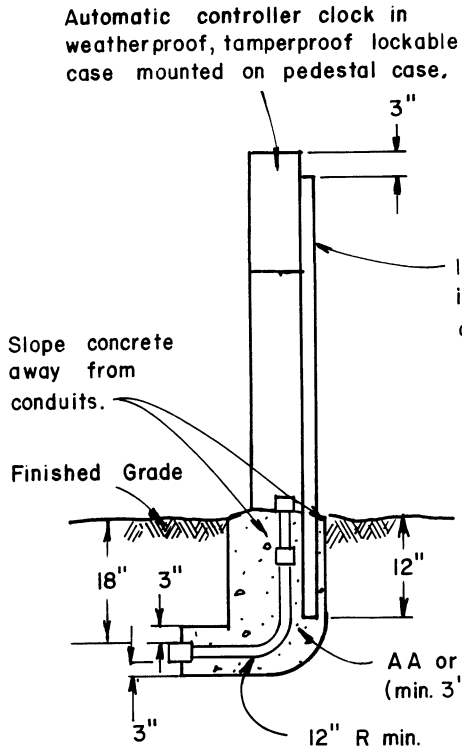
PAGE 5

* Wires at Elec. control valves to be connected with "Scotchlok" Valves to have a min. of 3' of wire exposed.

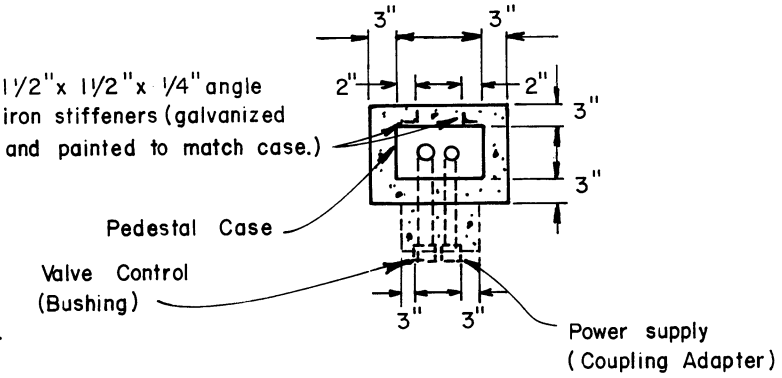
NOTE:
Lander County - all galvanized materials shall be replaced with P.V.C.



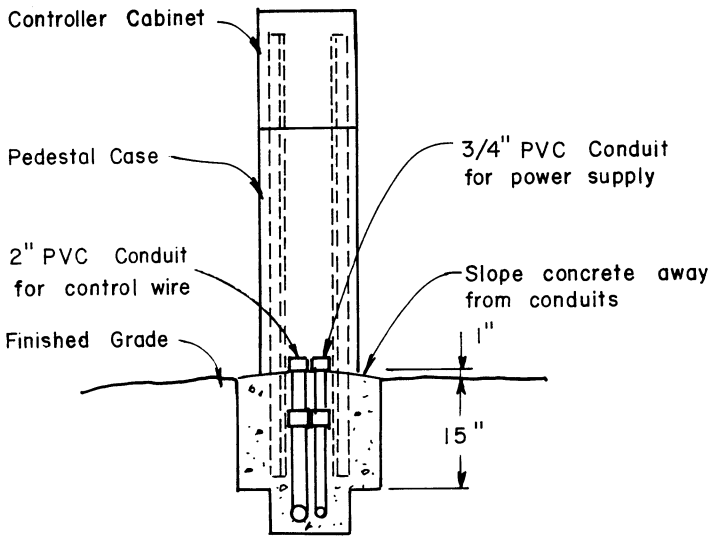
TYPICAL ELECTRIC CONTROLLER & VALVE ASSEMBLY DETAIL
(Not Permitted for City of Sparks)



SIDE VIEW



PLAN VIEW



ELEVATION

NOTES:

1.) Where two or more controllers are mounted on a common concrete base, a minimum of three inches shall be left between controller cabinets.

2.) Anchor controller pedestal to base as required by manufacturer.

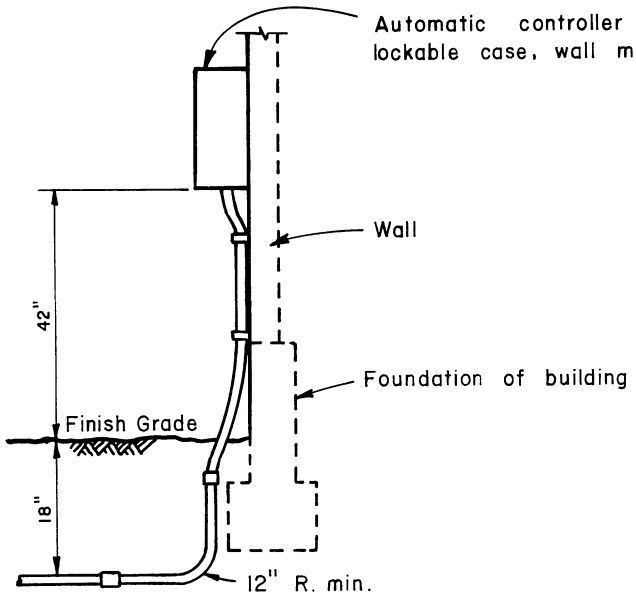
3.) Make all electrical connections inside controller cabinet.

4.) For location of supply conduit and conductors, see electrical plans.

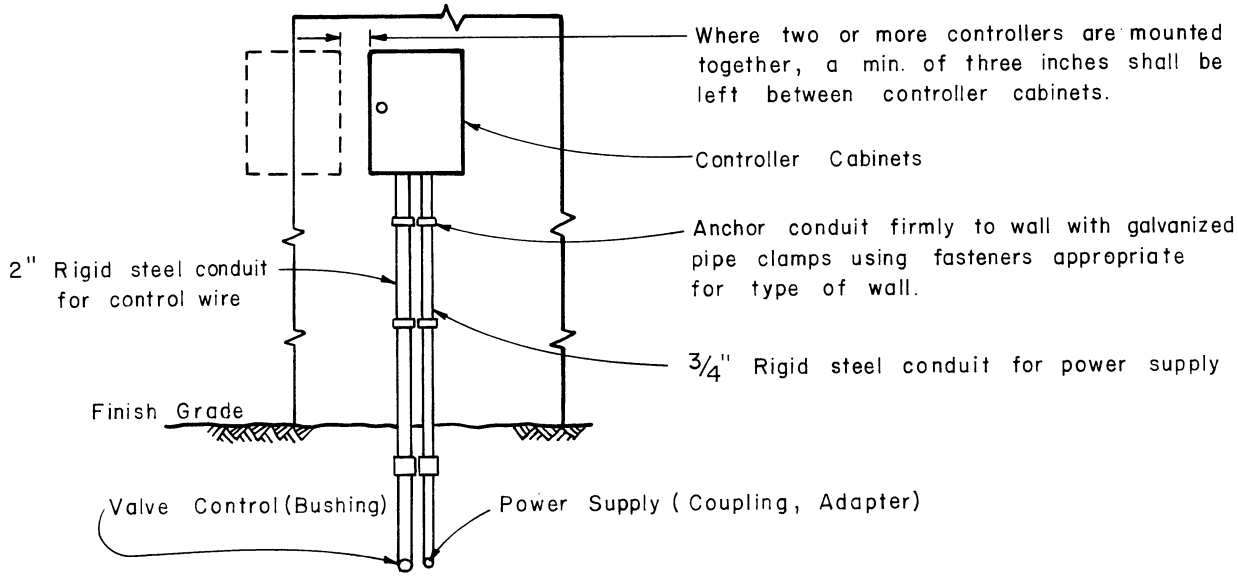
5.) Stiffeners shall be fastened to controller and pedestal cases by 3/16" x 3/4" cadmium plated stove bolts not more than 12" on center (min. 6 bolts per stiffener).

6.) Controller shall be grounded at power supply by ground wire.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 5	
			CONTROLLER PEDESTAL MOUNT	DRAWING NO. 5-5.1 (307)	
				DATE 7-81	PAGE 6



SIDE VIEW



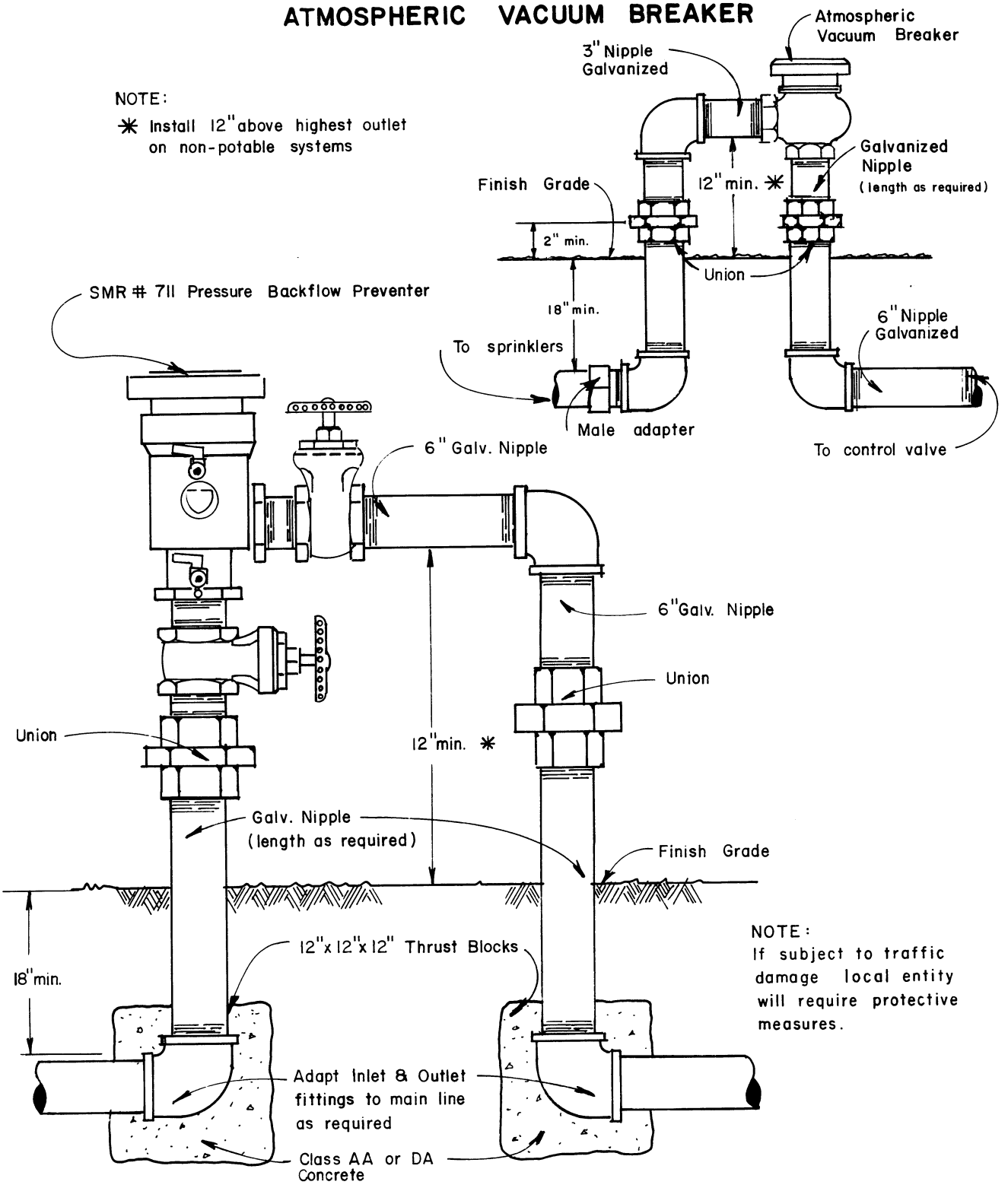
ELEVATION

NOTE:

1. For location of supply conduit and conductor, refer to the plans.
2. Controller shall be grounded at power supply by ground wire.
3. Make all electrical connections inside controller cabinet.
4. Controller shall be inside building whenever possible.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 5	
			CONTROLLER WALL MOUNT	DRAWING NO. 5 - 5.2 (307)	
				DATE 7 - 81	PAGE 7

ATMOSPHERIC VACUUM BREAKER



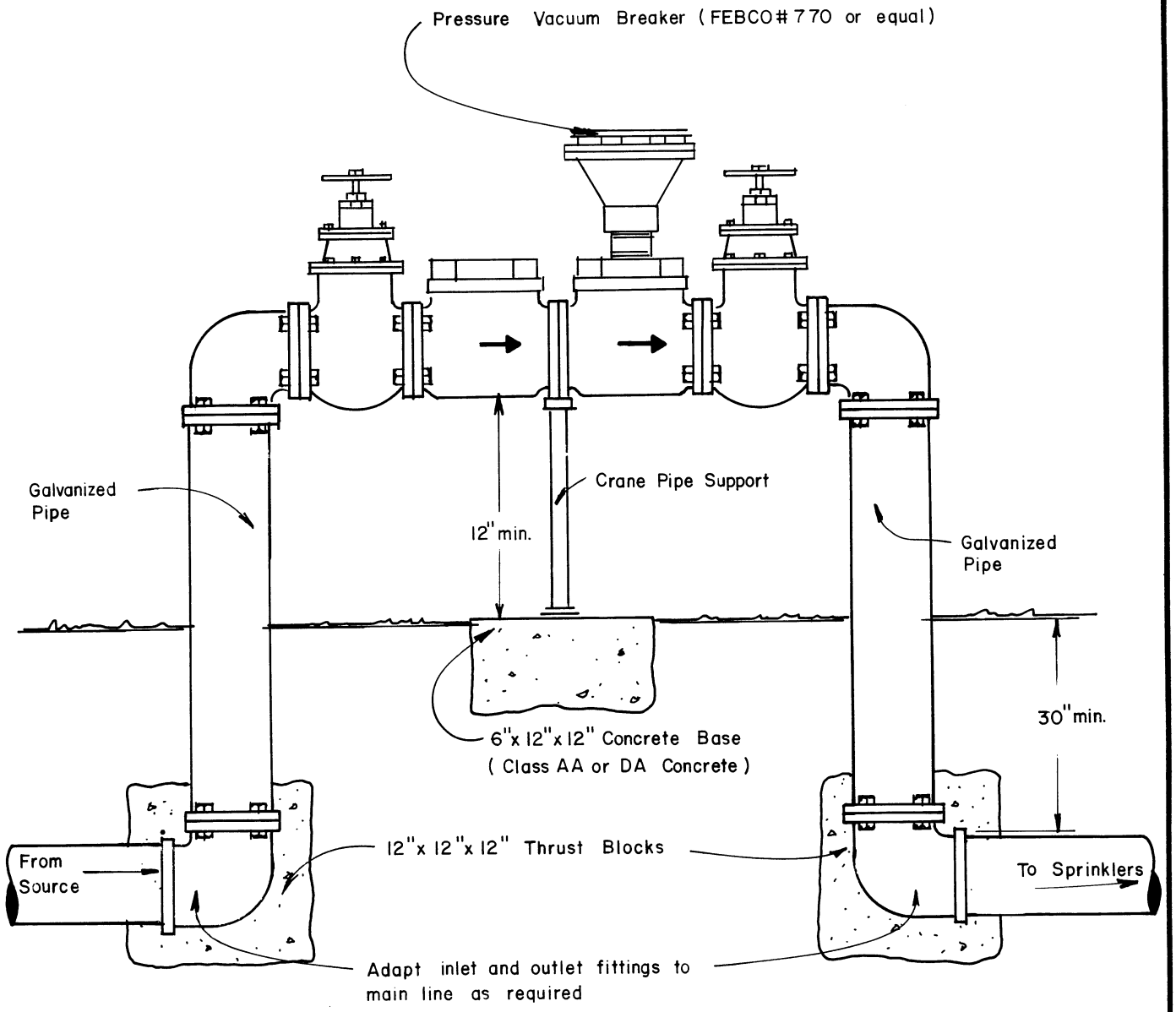
TYPICAL BACKFLOW PREVENTER ASSEMBLY DETAIL

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 5	
			BACKFLOW PREVENTER AND VACUUM BREAKER	DRAWING NO. 5-6.1 (307)	
				DATE 7-81	PAGE 8

NOTE:

1.) All connections on assembly to be flanged.

2.) Install 12" above highest outlet on non-potable system.



TYPICAL BACKFLOW PREVENTER ASSEMBLY DETAIL

(Not permitted for City of Sparks)

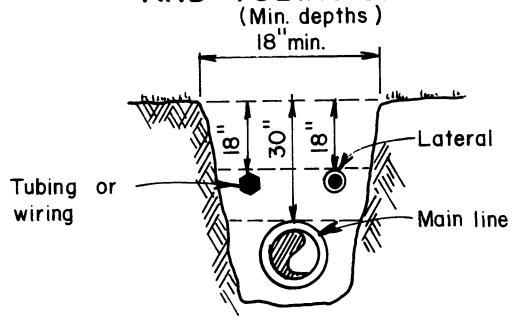
NOTE:

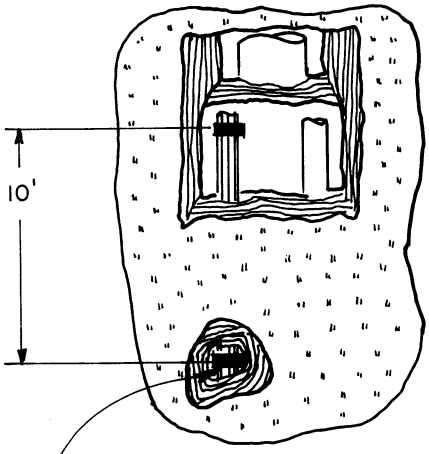
If subject to traffic damage local entity will require protective measures.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 5	
			BACKFLOW PREVENTER	DRAWING NO. 5-6.2 (307)	
				DATE 7-81	PAGE 9

MAIN SUPPLY, LATERAL AND TUBING OR WIRING

(Min. depths)

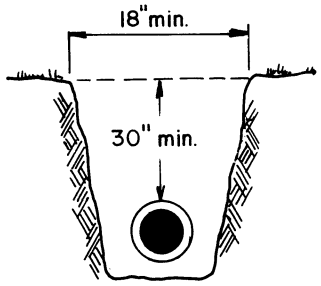


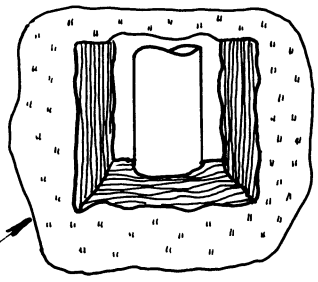


Tape and bundle tubing or wiring at 10 ft. intervals

MAIN SUPPLY

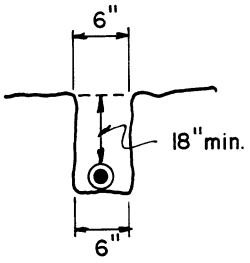
(Bed in compacted sand)

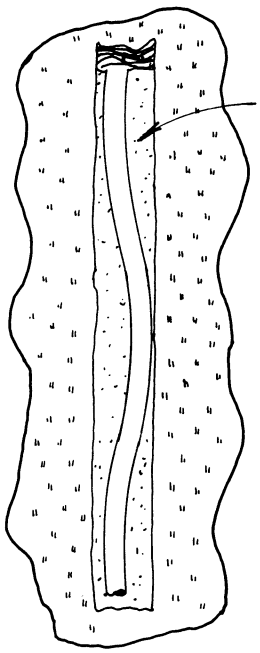




All main supply lines to be installed in accordance with manufacturers installation specifications

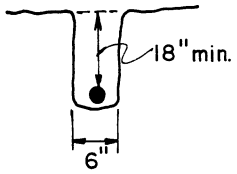
PLASTIC LATERAL



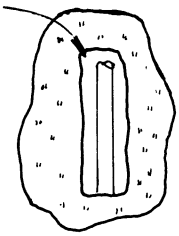


All plastic piping to be snaked in trenches as shown

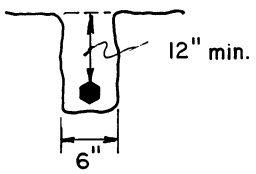
120 VOLT IN CONDUIT

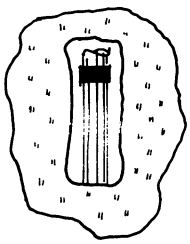


All 120 volt wiring in conduit to be installed in accordance with local code, or UF direct burial wire-size as noted on plans.



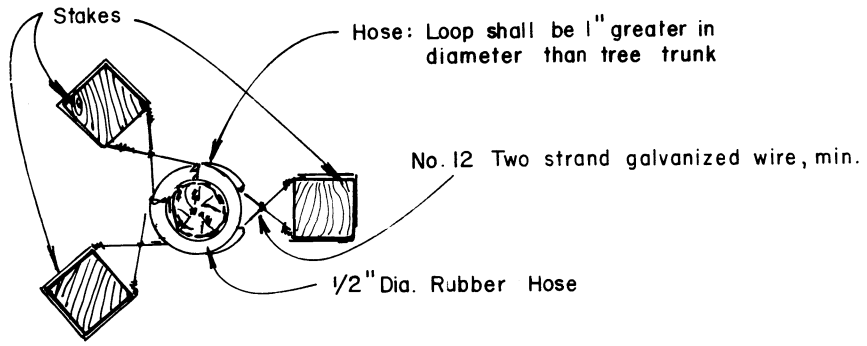
TUBING OR WIRING



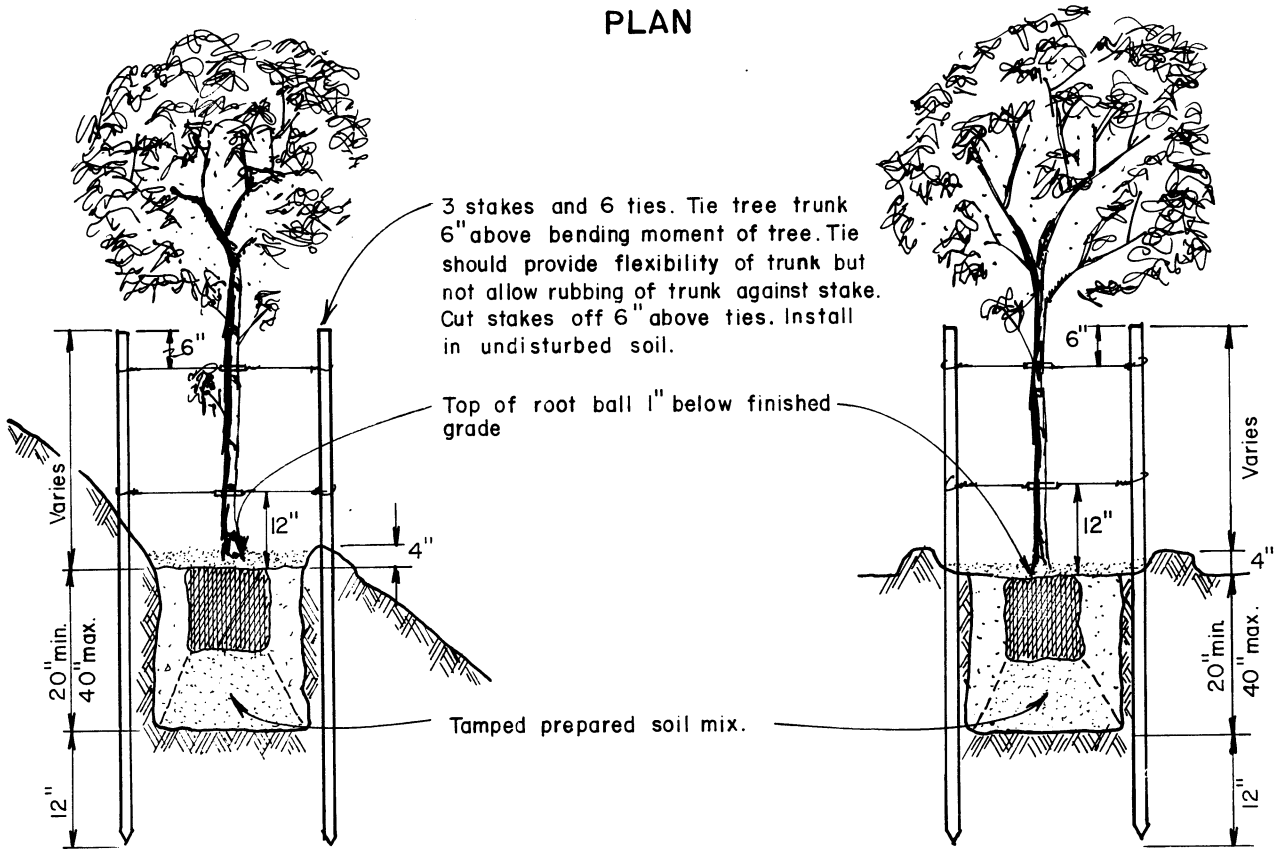


NOTE: All PVC pipe to be schedule 40 in City of Reno

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 5	
			IRRIGATION TRENCH SECTIONS	DRAWING NO. 5-7 (307)	
				DATE 7-81	PAGE 10



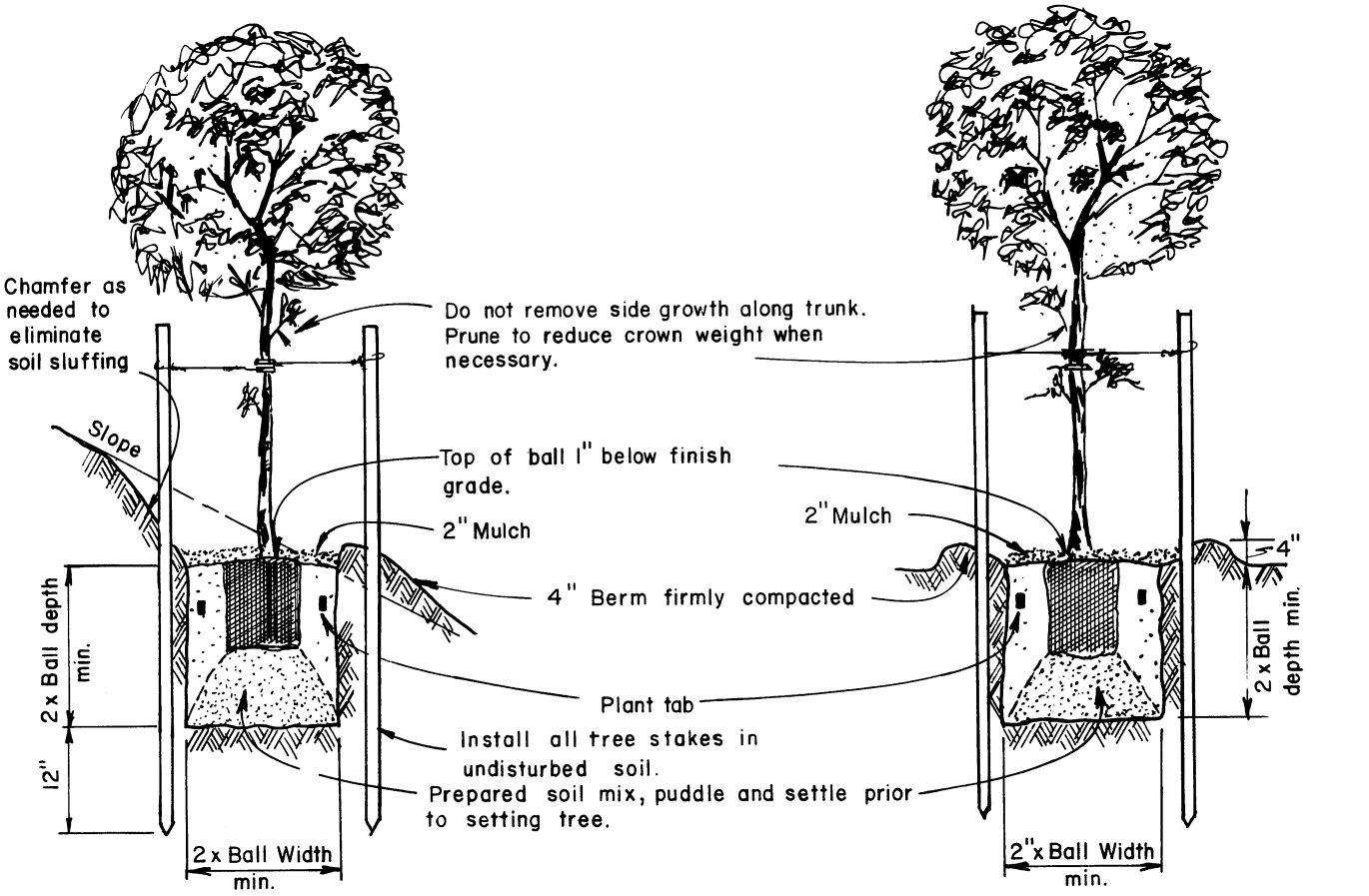
PLAN



TREE STAKING - SLOPES

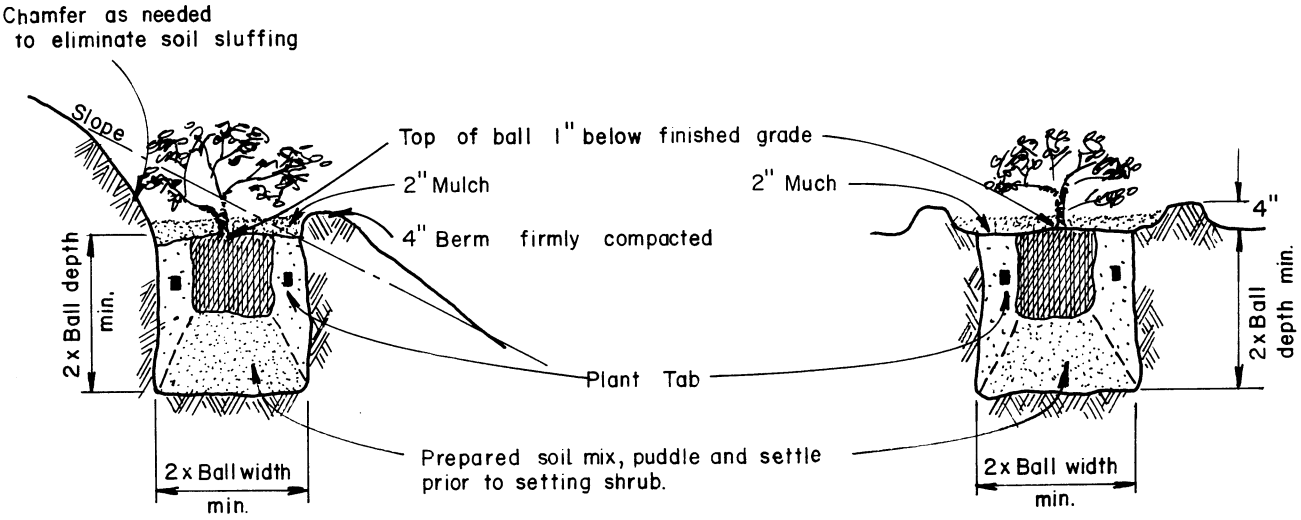
TREE STAKING - LEVEL GROUND

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 5	
1	SPELLING	10-16-86	TREE STAKING	DRAWING NO. 5-8.1 (331)	
				DATE 7-81	PAGE 11



TREE PLANTING - SLOPES

TREE PLANTING - LEVEL GROUND

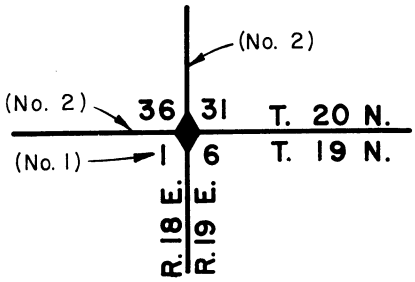


SHRUB PLANTING - SLOPES

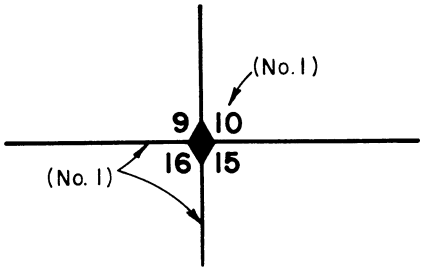
SHRUB PLANTING - LEVEL GROUND

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 5	
			TREE AND SHRUB PLANTING	DRAWING NO. 5-8.2 (331)	
				DATE 7-81	PAGE 12

SECTION 6
DRAFTING SYMBOLS



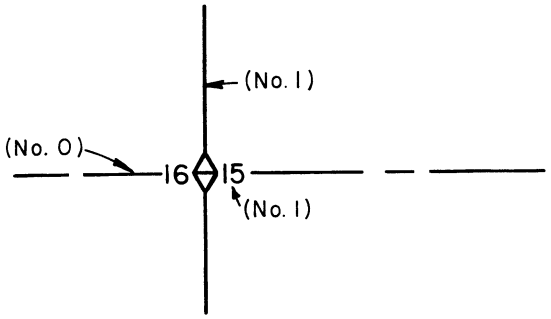
TOWNSHIP & RANGE AT CORNER



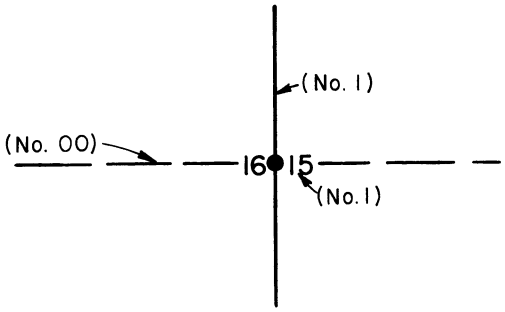
SECTION LINES AT CORNER

Found Corner ♦ (Description by note)

Corner not Found ◇ (Description by note)



1/4 SECTION LINE AT 1/4 CORNER



1/16 SECTION LINE AT 1/16 CORNER

COUNTY LINE

CITY LIMITS

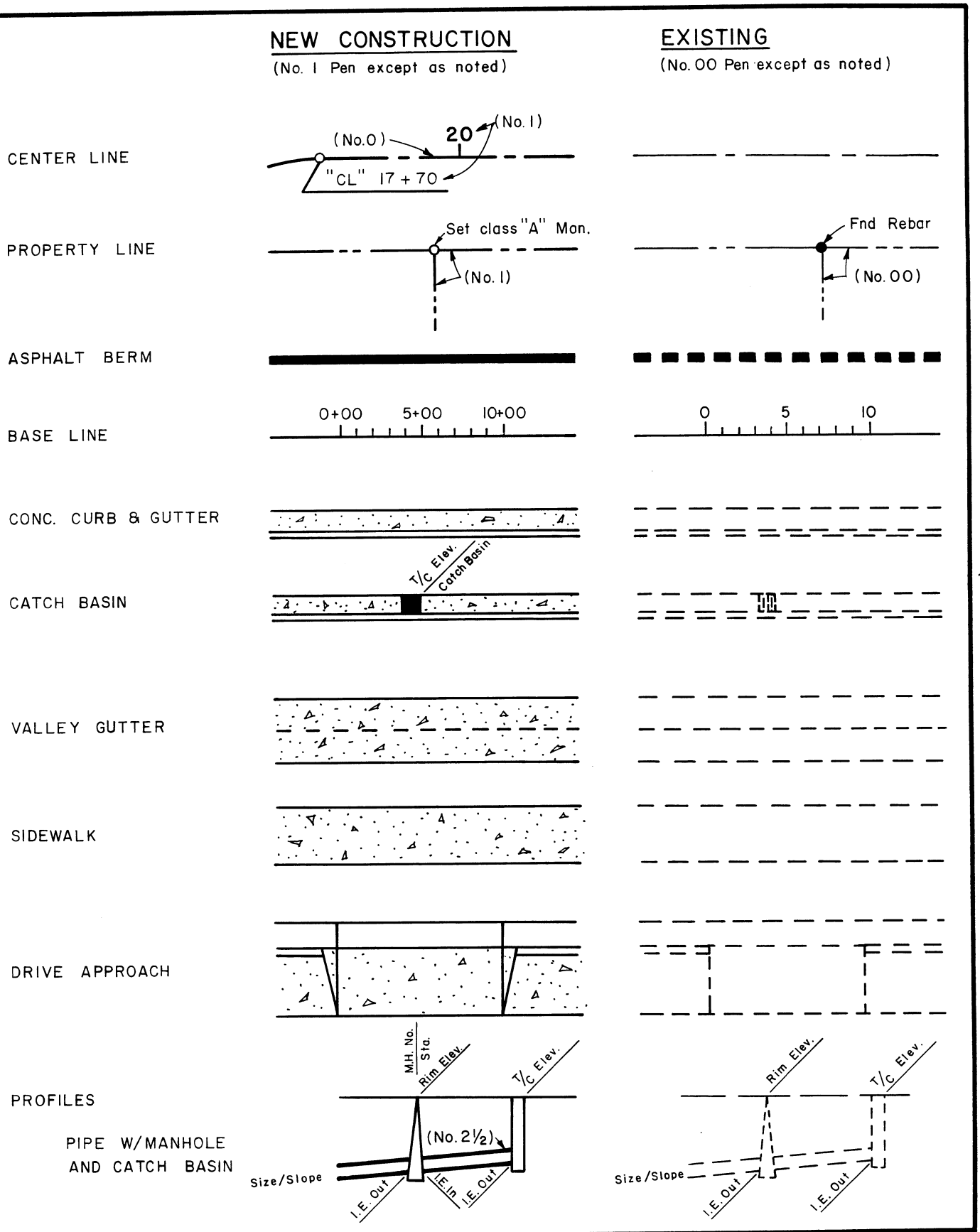
Set Monument ⊙ (Class by note)

Found Monument ● (Class by note)

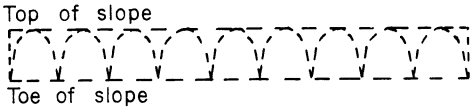
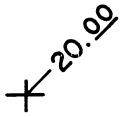
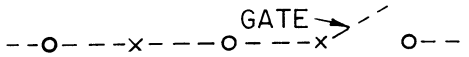
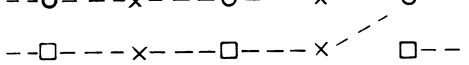
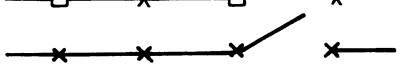
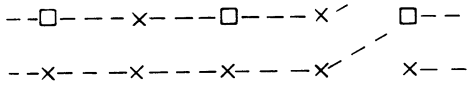
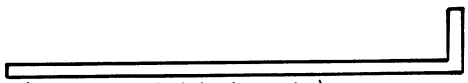
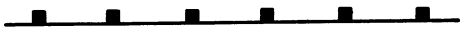
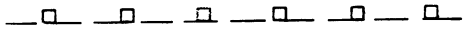
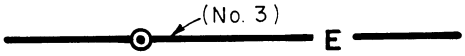
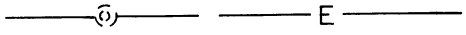
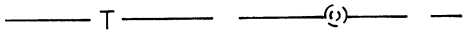
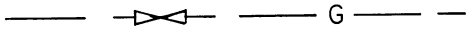
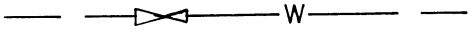
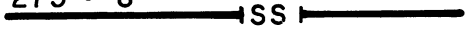
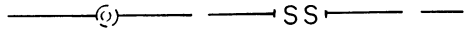
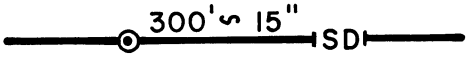
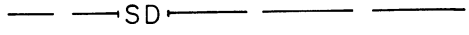
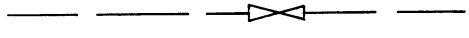
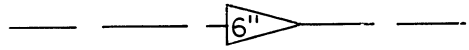
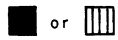
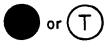
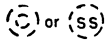
NOTE:

1. (No. 1) Indicates Rapidograph pen size.
2. Pen and lettering size shown shall be used as a guide only. Size should vary according to the scale of the drawing.

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 6	
			MONUMENTS	DRAWING NO. 6-1	
				DATE 7-81	PAGE 1



NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 6	
			SYMBOLS	DRAWING NO. 6-2	
				DATE 7-81	PAGE 2

	NEW CONSTRUCTION (No. 1 Pen except as noted)	EXISTING (No. 00 Pen except as noted)
CUT OR FILL SLOPE		
SPOT ELEVATIONS		(20.00)
STATIONING	20+00.00	20+00.00
FENCE (1) Chain Link		
(2) Wood		
(3) Wire		
RETAINING WALL	 (Type and height by note)	
GUARDRAIL		
ELECTRIC		
TELEPHONE		
GAS		
WATER		
SANITARY		
STORM		
VALVE		
DIRECTION OF FLOW & PIPE SIZE		
CATCH BASIN - CURB INLET		
CATCH BASIN - DROP INLET		
MANHOLE		

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 6	
			SYMBOLS	DRAWING NO. 6-3	
				DATE 7-81	PAGE 3

HOSE BIB H/B

PARKING METER P/M

FILLER CAP F/C

SPRINKLER HEAD S/H

WATER FAUCET W/F

FIRE HYDRANT

FIRE ALARM ON PEDESTAL F/A

STREET/TRAFFIC SIGNS

STREET LIGHTS

TRAFFIC SIGNALS

PULL BOX P/B

TEL. BOOTH

DROP MAIL BOX M

RURAL MAIL BOX M/Bx

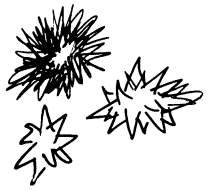
GAS METERS G/M

WATER METERS W/M

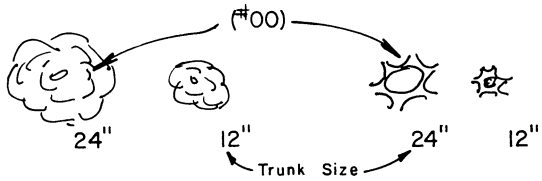
CULVERT W/FLOW

GUY POLES

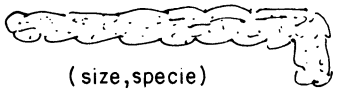
OVERHEAD UTILITY LINE



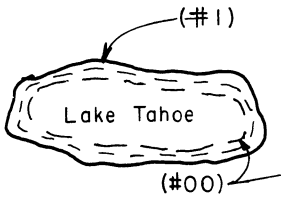
BUSHES & SHRUBS



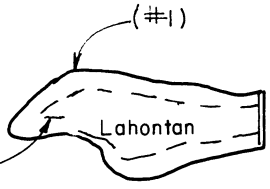
TREES STUMPS



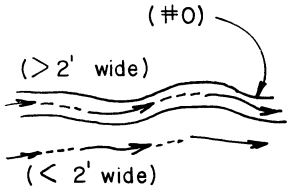
HEDGE



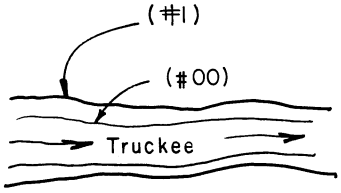
LAKE



RESERVOIR

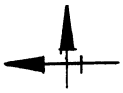
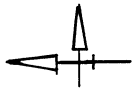
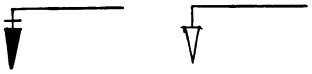
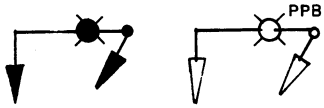
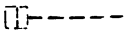
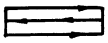
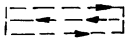


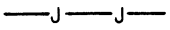
DITCH



RIVER

NO.	REVISION	DATE	STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	SECTION 6	
			# SYMBOLS	DRAWING NO. 6 - 4	
				DATE 7 - 81	PAGE 4

NEW	EXISTING	DESCRIPTION
		Luminaire
		Electrolier
		Underpass Luminaire
		Traffic Signal Head, 3 Section, 12" Red Yellow and Green Section
		Traffic Signal Head with All Sections Louvered
		Traffic Signal Head with Back Plate
		Traffic Signal Head, Programmed Visibility, 12" Green Arrow, 12" Solid Yellow and Red Sections, with Back Plate
		Traffic Signal Head with 12" Green, Yellow and Red Arrow Sections, with Back Plate.
		Mast Arm Signal with Back Plate
		Combination Traffic Signal Standard with Luminaire and Signal Mast Arms and Attached Heads (all 12"), with Back Plate. PPB= Pedestrian Push Button and Sign
		Pedestrian Signal (Walk-Don't Walk)
		Vehicle Detector - Inductive Loop Unless Otherwise Indicated (See Dwg. 4-7 for Information on Identification and Configuration)
		Quadrapole Detector Loop

NEW	EXISTING	DESCRIPTION
		Pull Box
		Controller Cabinet
		Service (120-240 V.A.C. Unless Otherwise Specified)
		Transformer Pad
		Power Source
		Conduit
		Conduit (Jacked)
		Pole Designation
		Conduit Run
		Junction Box
		Wood Power Pole

NO.	REVISION	DATE
1	SPELLING	10-16-86

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION

TRAFFIC DRAFTING SYMBOLS

SECTION 6

DRAWING NO. 6-5

DATE 7-81

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