

NOTE:

All work shall be done in accordance with STD NO. 309 unless as shown this detail.

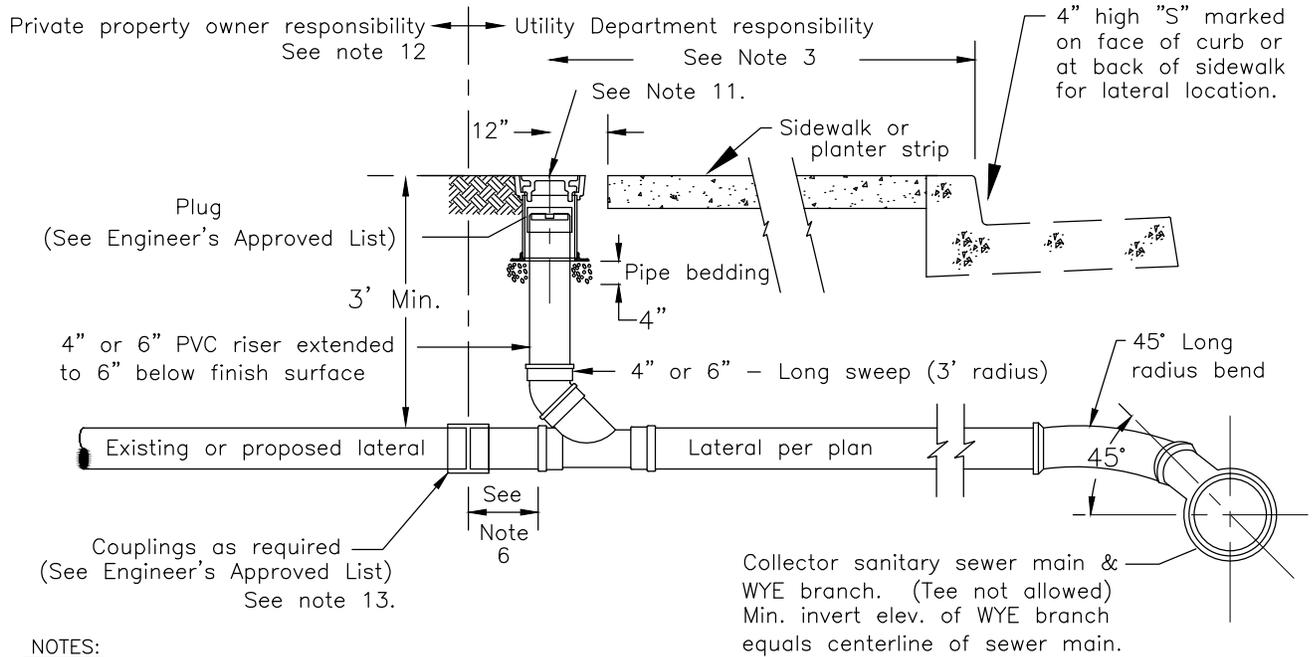


NEW SEWER SERVICE STUB

STD. NO.
321

SCALE: NONE | DRAWN: CAM | CHK: PC | APPVD:

DATE: FEB 2016



NOTES:

1. The sewer service lateral shall be of sufficient depth to adequately serve the building site, and in no case shall be less than 3 FT. deep at the cleanout unless otherwise authorized by the Director of Public Works.
2. Where problems are anticipated in providing sewer service to a given building site, the lateral invert at the cleanout shall be staked by the owner's engineer.
3. Cleanout must be installed within the Public Right of Way or P.U.E. Cleanout to be installed 18" from face of curb or 12" maximum behind sidewalk. Where service is in driveway, install cleanout 18" behind apron.
4. In cases where the cleanout installation conflicts with existing facilities, the contractor shall verify any alternate location with the Director of Public Works prior to installation.
5. Minimum 2% slope for 4" laterals and a min. 1% slope for 6" laterals are required unless a variance is specifically approved by the Director of Public Works.
6. A minimum of 12" when connecting to existing sewer lateral or extend to 1' behind P.U.E. or sidewalk for new construction. Coupler to be installed where required, not required for new construction. Two 11 1/4" may be used between cleanout and building to field fit to (E) SS lateral.
7. For new construction, install gripper plug at end of service lateral.
8. Lateral material shall be PVC SDR 26 or Ductile Iron pipe.
9. Cleanout components shall be the same size as the lateral.
10. Tap fittings on mains smaller than 12" may only be used under the approval of the Director of Public Works.

LATERAL CONNECTIONS TO EXISTING MAINS:

| Main Size & Material | Connection Type | Couplings |
|----------------------|--|----------------------------|
| 6-10" ACP, VCP | Cut in PVC wye w/12" spools each end | Rubber w/Steel shear bands |
| 6-10" PVC | Cut in PVC wye w/12" spools each end | Rigid slip couplings |
| 6-10" DIP | Cut in DIP wye w/12" spools each end | DIP couplings |
| 12" and larger | Tap fitting see Engineer's approved list | NA |

NOTES (CONT.) Long radius bends

11. Cleanout box shall be Christy F-8 box with F8D lid for non-traffic rated and F8C for traffic rated.
12. Contract may require connection to existing lateral at building.
13. Two 11 1/4" elbows may be used to field fit laterals to existing building connections



4" & 6" SEWER SERVICE LATERAL AND CLEANOUT

STD. NO. 309

SCALE: NONE

DRAWN: CAM

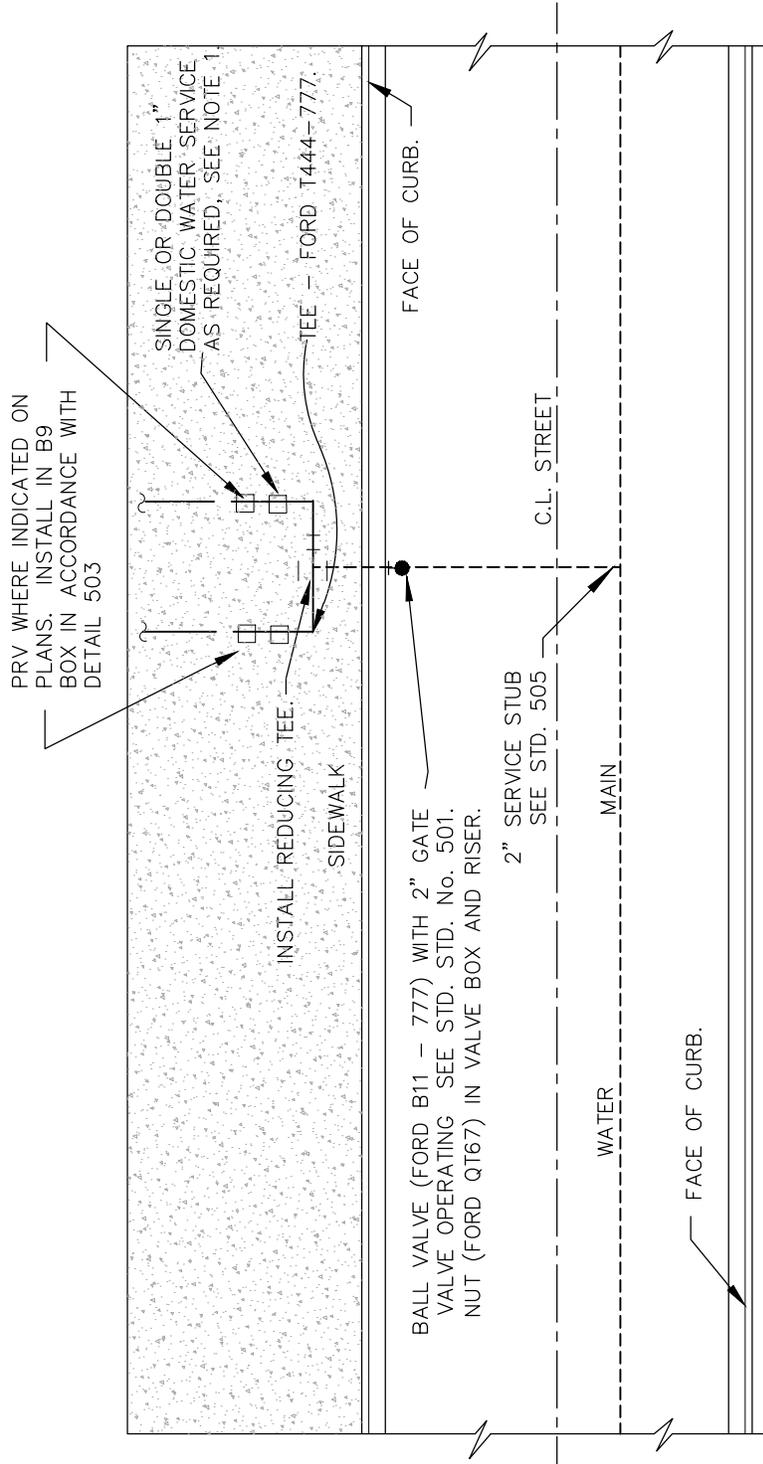
CHK: PC

APPVD:

DATE: FEB 2016

NOTES:

1. SINGLE 1" METER TO BE INSTALLED IN ACCORDANCE WITH STD. NO. 503, DUAL 1" SERVICE TO BE INSTALLED IN ACCORDANCE WITH DETAIL 509 (NEW).
2. LOCATION OF METER AND PRV BOXES TO BE IN ACCORDANCE WITH DETAIL 2, SHEET CD-2
3. WHERE ONLY ONE DOUBLE SERVICE IS SPECIFIED THE SIDE OF TEE NOT USED SHALL BE CAPPED.



QUAD 1" WATER SERVICE WITH 2" LATERAL

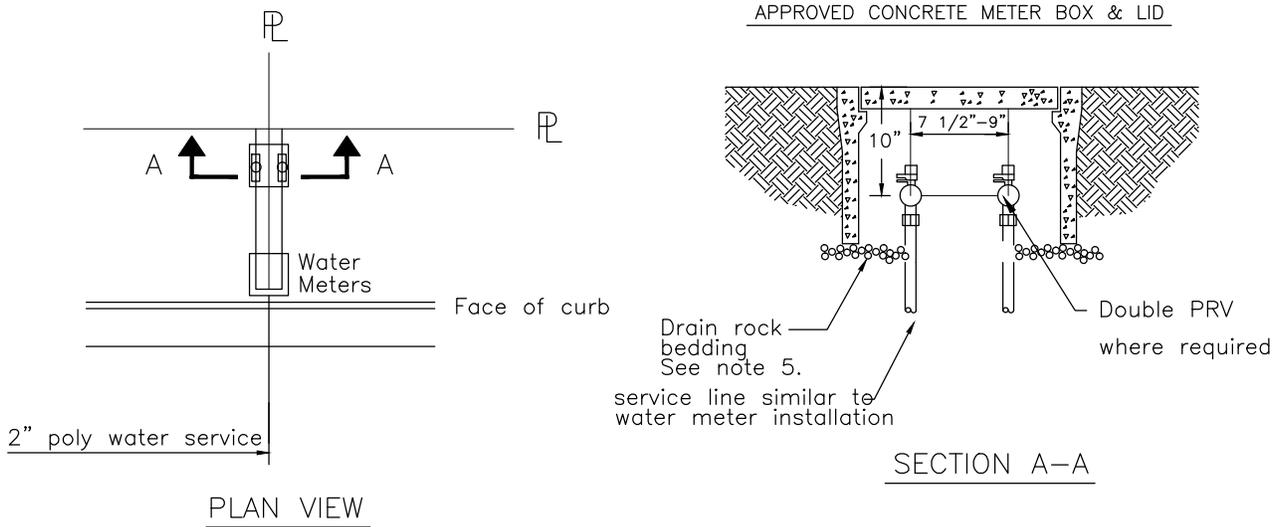


QUAD 1" WATER SERVICES
WITH 2" LATERAL

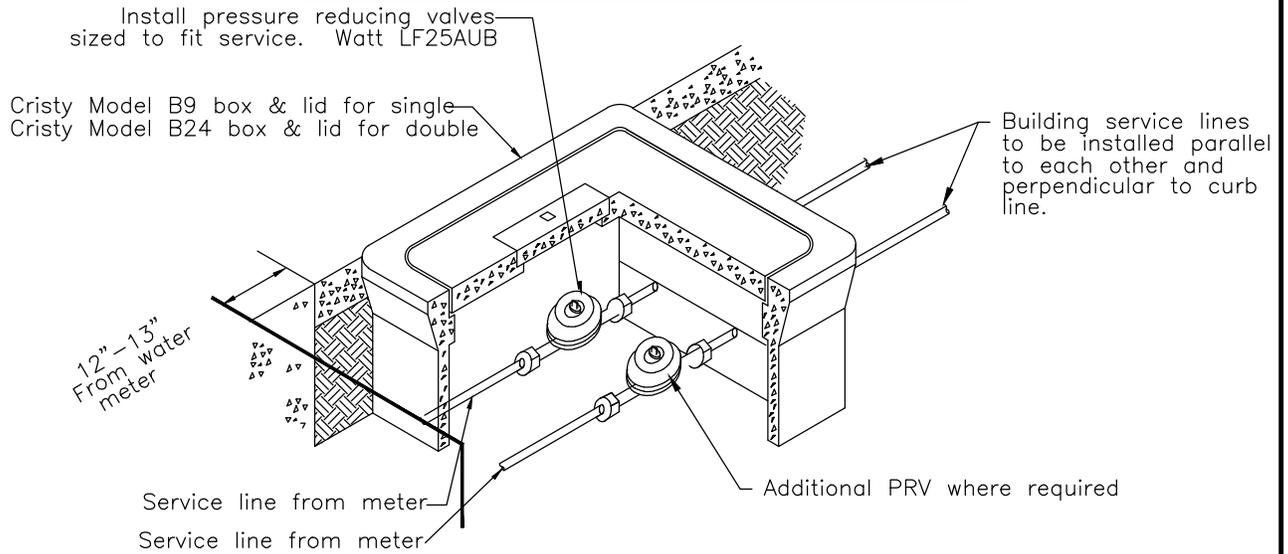
STD. NO.
514

SCALE: NONE DRAWN: KL CHK: CAM APPVD:

DATE: FEB 2016



SINGLE PRV BOX INSTALLATION
FOR PRESSURE REDUCING VALVES
DOUBLE OR SINGLE INSTALLATION



NOTES:

1. For double PRV installations in traffic loading areas, install two individual meter boxes.
3. Box knockouts will not be allowed.
4. Box installation and service line installation shall be done in conformance with STD NO. 504 for single and 509 for double, except as shown on this detail.



**1" AND 2" PRESSURE
REDUCING VALVES**

**STD. NO.
517**

SCALE: NONE

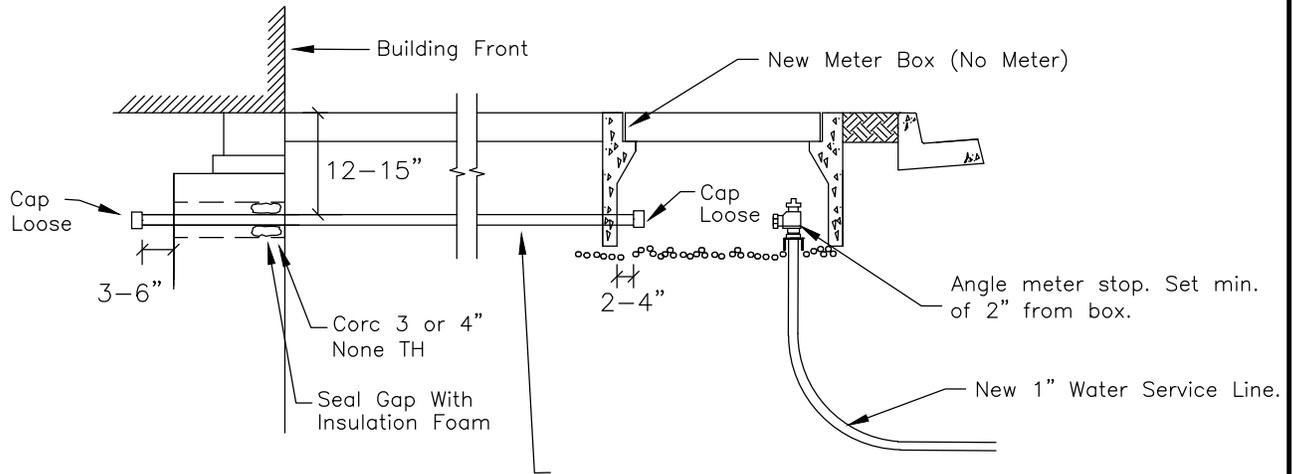
DRAWN: CAM

CHK: PC

APPVD:

DATE: FEB 2016

All new water service only



2" Schedule 40 Pipe Sleeve for future 1" lateral
 3" Schedule 40 Pipe Sleeve for future 2" lateral
 (Straight Run, No Bends)

NOTES

Install water meter, valve, box and lateral per the appropriate city standards for the type and size of installation, except as shown this detail.



NEW WATER SERVICE STUB

STD. NO.
526

SCALE: NONE

DRAWN: CAM

CHK: PC

APPVD:

DATE: FEB 2016

CITY OF LAKEPORT

DESIGN AND CONSTRUCTION STANDARDS

REFERENCED STANDARDS ONLY FOR PROJECT



JUNE 2012

CITY OF LAKEPORT

Public Works and Engineering Department

225 Park Street

Lakeport, CA 95453

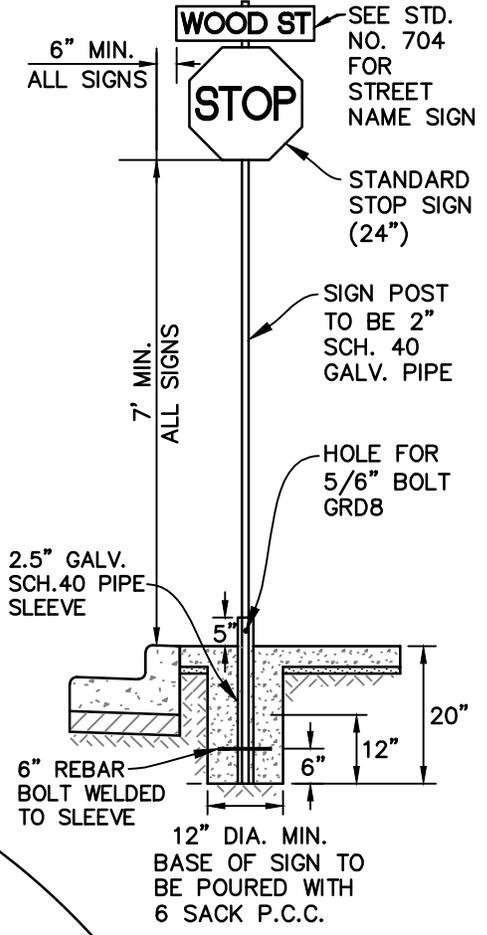
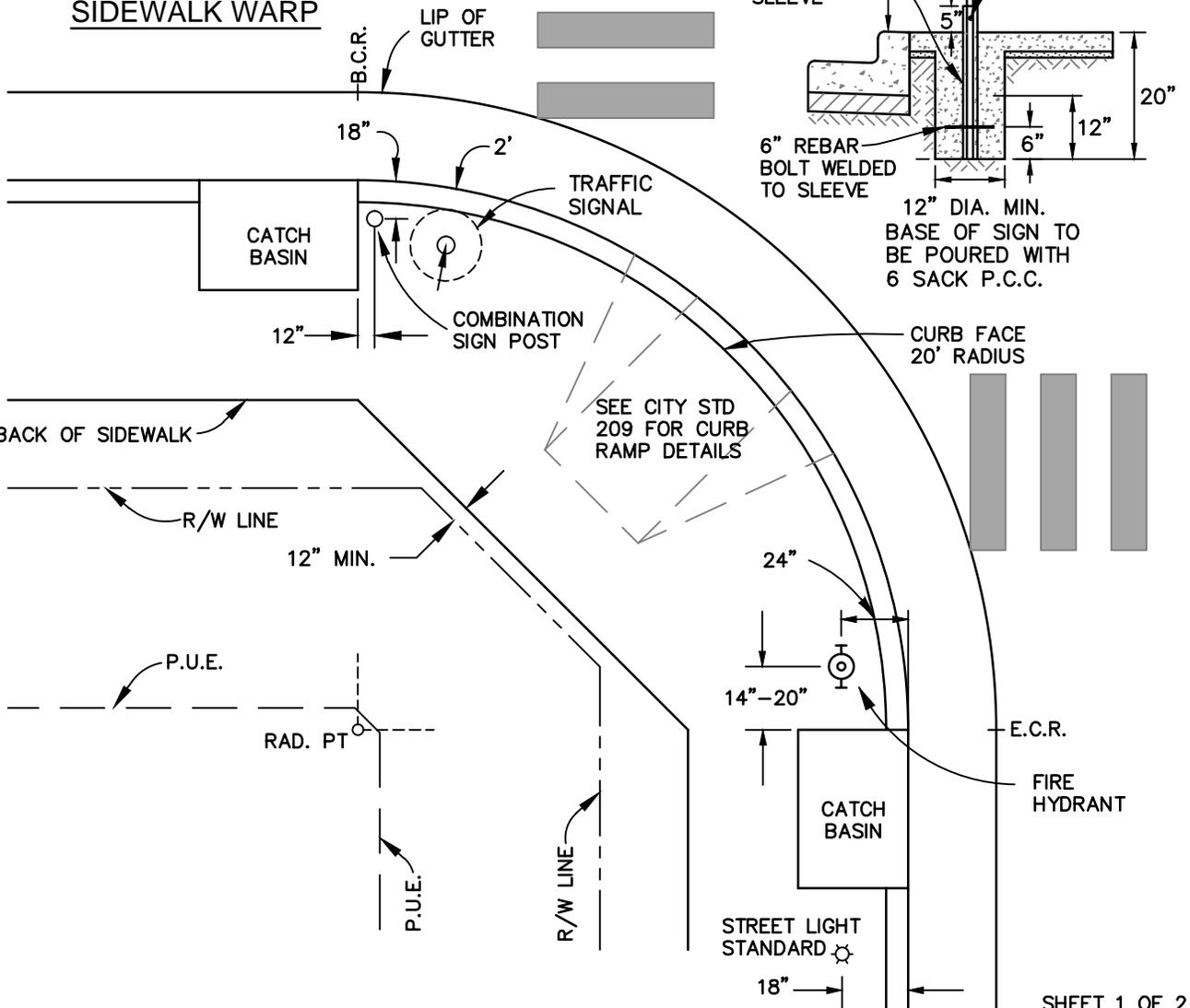
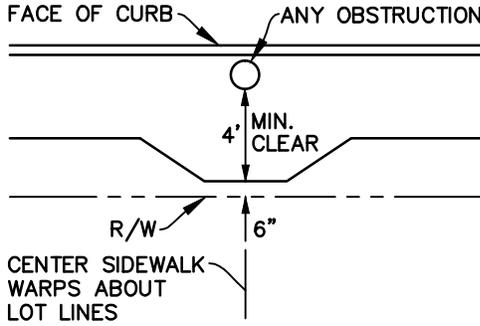
Phone: (707) 263-5615

Fax: (707) 263-8584

Web: <http://www.cityoflakeport.com/>

NOTES:

1. COMBINATION STREET NAME & STOP SIGN. SIGN POST SHALL BE MINIMUM 18" BEHIND CURB FACE OR 6" BEHIND SIDEWALK.
2. WIDEN OR MEANDER SIDEWALK AT OBSTRUCTIONS (INCLUDING DRIVEWAYS) TO MAINTAIN 4' MIN. CLEARANCE.
3. A 3' CLEAR SPACE SHALL BE MAINTAINED AROUND THE FIRE HYDRANT EXCEPT AS OTHERWISE REQUIRED OR APPROVED.



SHEET 1 OF 2

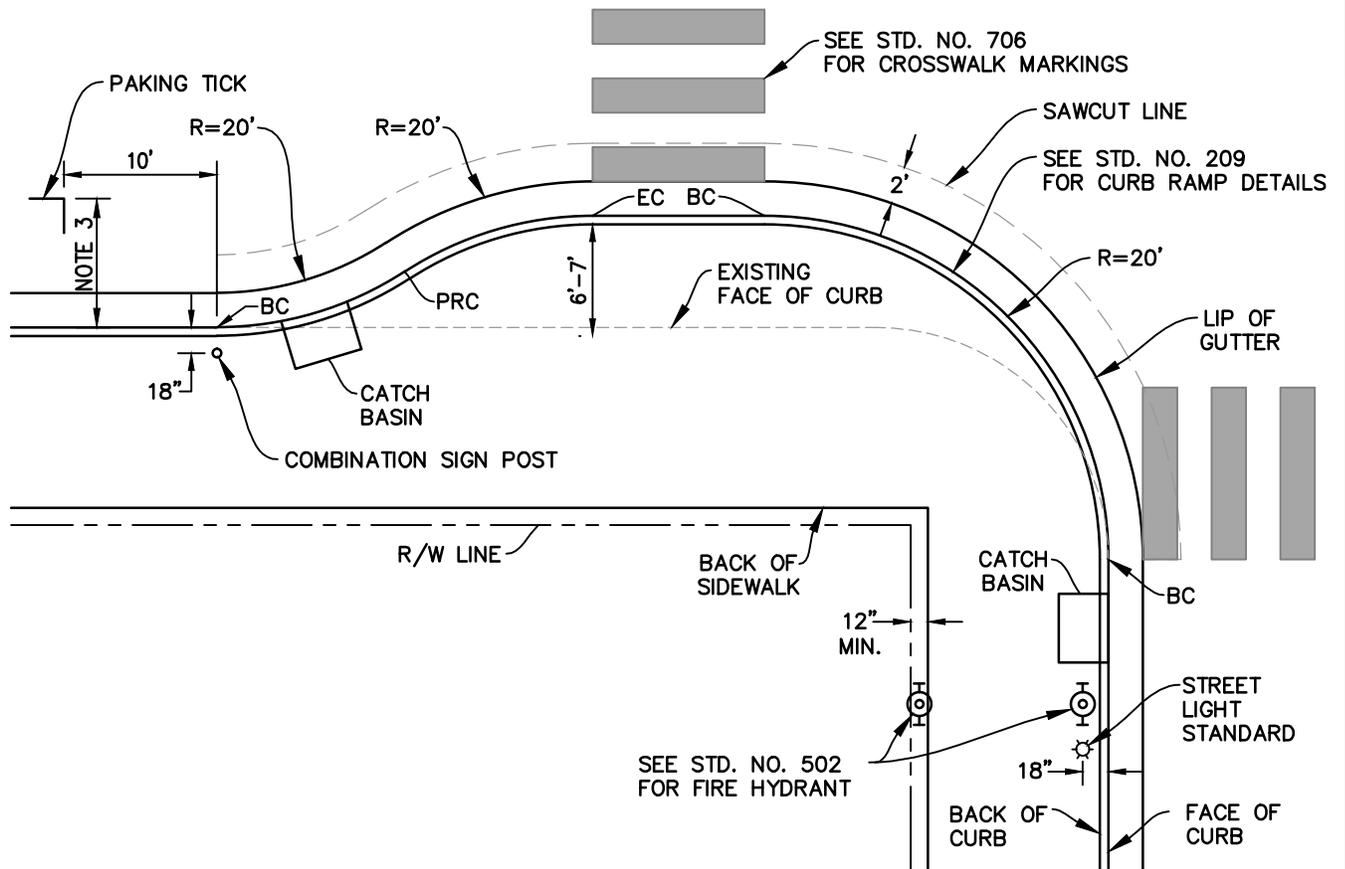


CURB RETURN, SIDEWALK WARP AND CORNER BULBOUT RETROFIT

STD. NO. **207**

SCALE: NONE | DRAWN: CFB | CHK: MGK | APPVD: *[Signature]*

DATE: JUN 2012



NOTES:

1. COMBINATION STREET NAME & STOP SIGN. SIGN POST SHALL BE MINIMUM 18" BEHIND CURB FACE OR 6" BEHIND SIDEWALK
2. WIDEN OR MEANDER SIDEWALK AT OBSTRUCTIONS (INCLUDING DRIVEWAYS) TO MAINTAIN 5' MIN. CLEARANCE.
3. MATCH PARKING WIDTH.

SHEET 2 OF 2



**CURB RETURN, SIDEWALK WARP
AND CORNER BULBOUT RETROFIT**

STD. NO.
207

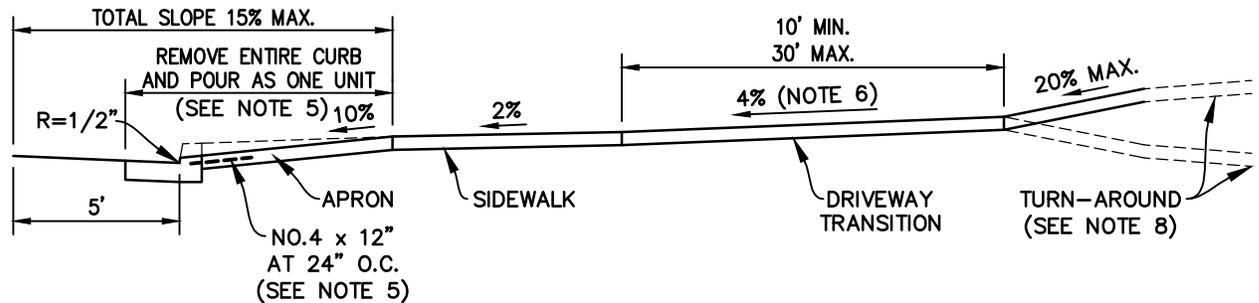
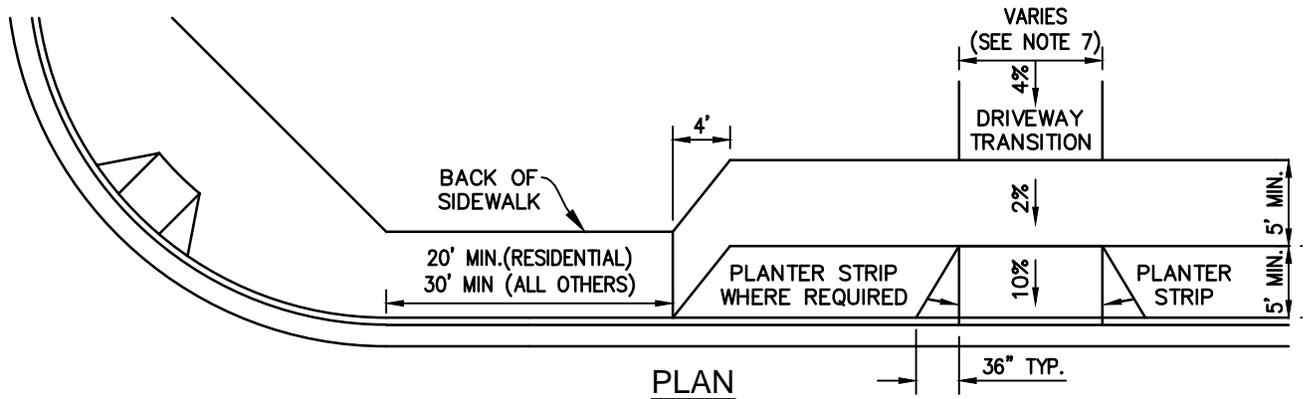
SCALE: NONE

DRAWN: CFB

CHK: MGK

APPVD:

DATE: JUN 2012



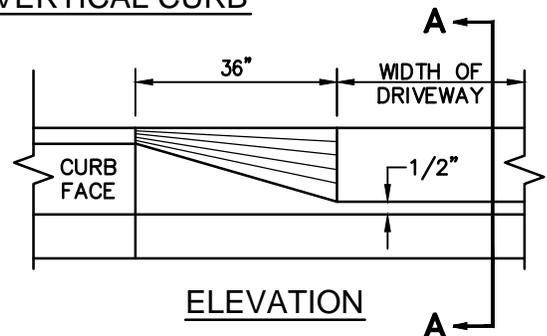
SECTION A-A WITH VERTICAL CURB

NOTES:

- WEAKENED PLANE JOINTS (WPJ) REQUIRED ON CENTERLINE FOR ALL DRIVEWAYS. DRIVEWAYS SHALL HAVE TWO WPJ EVENLY SPACED AT 1/3 AND 2/3 POINTS. SEE STD 209 SHEET 2 FOR WPJ DETAIL.
- ALL CONSTRUCTION AND MATERIALS IN CONFORMANCE WITH CITY STANDARDS.
- THICKNESS OF APRONS SHALL BE 6". ON COMMERCIAL DRIVEWAYS SIDEWALK SHALL BE REMOVED AND REPLACED WITH 6" CONCRETE.
- WIDEN OR MEANDER SIDEWALK AT OBSTRUCTIONS (INCLUDING DRIVEWAYS) TO MAINTAIN 5' MIN. CLEARANCE.
- IF CURB AND GUTTER ARE POURED SEPARATE OF APRON THEN DOWELS ARE REQUIRED AT BACK OF CURB. 3" IN CURB AND 9" IN CENTER OF APRON.
- ON RECONSTRUCTION PROJECTS THE SLOPE CAN BE 10%.
- DRIVEWAY WIDTHS SHALL BE AS FOLLOWS:

| DRIVEWAY TYPE | MAX. WIDTH |
|----------------------------------|------------|
| RESIDENTIAL SINGLE | 10' |
| RESIDENTIAL DOUBLE | 19' |
| COMMERCIAL SINGLE | 12' |
| COMMERCIAL DOUBLE | 22' |
| COMMERCIAL DOUBLE WITH 5' MEDIAN | 27' |

- PROVIDE TURN-AROUND IN ACCORDANCE WITH FIRE DEPARTMENT REQUIREMENTS.

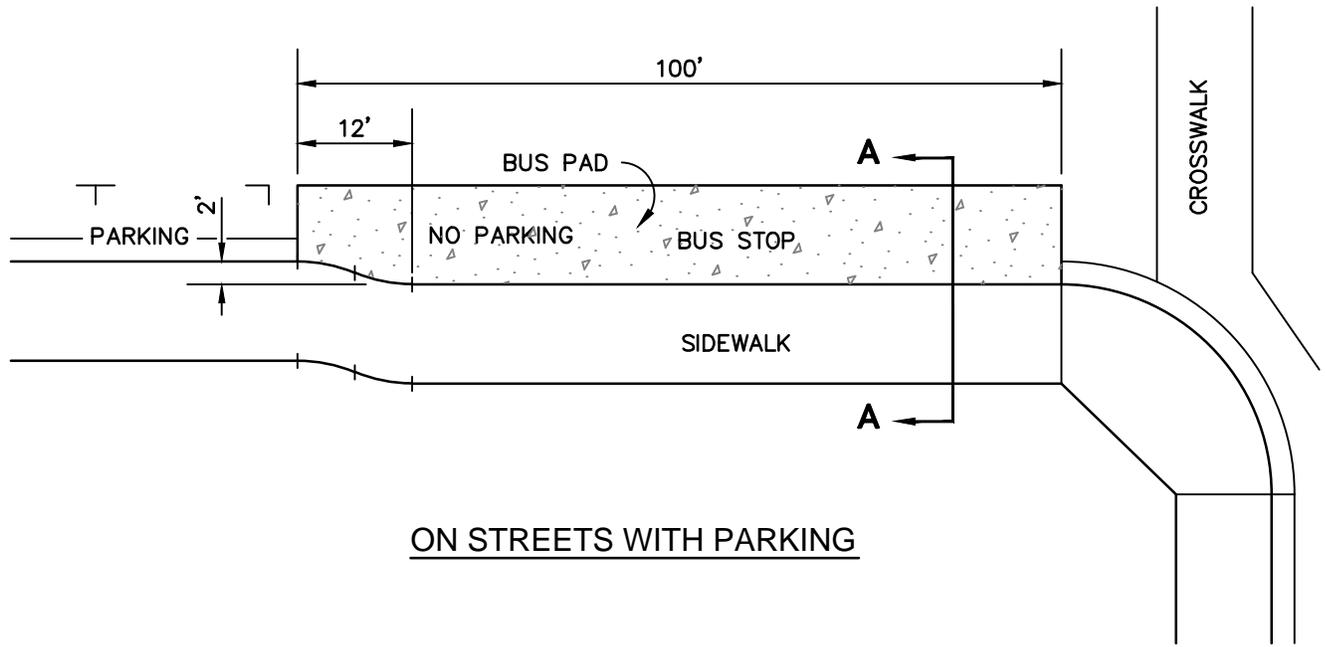


DRIVEWAY DETAILS

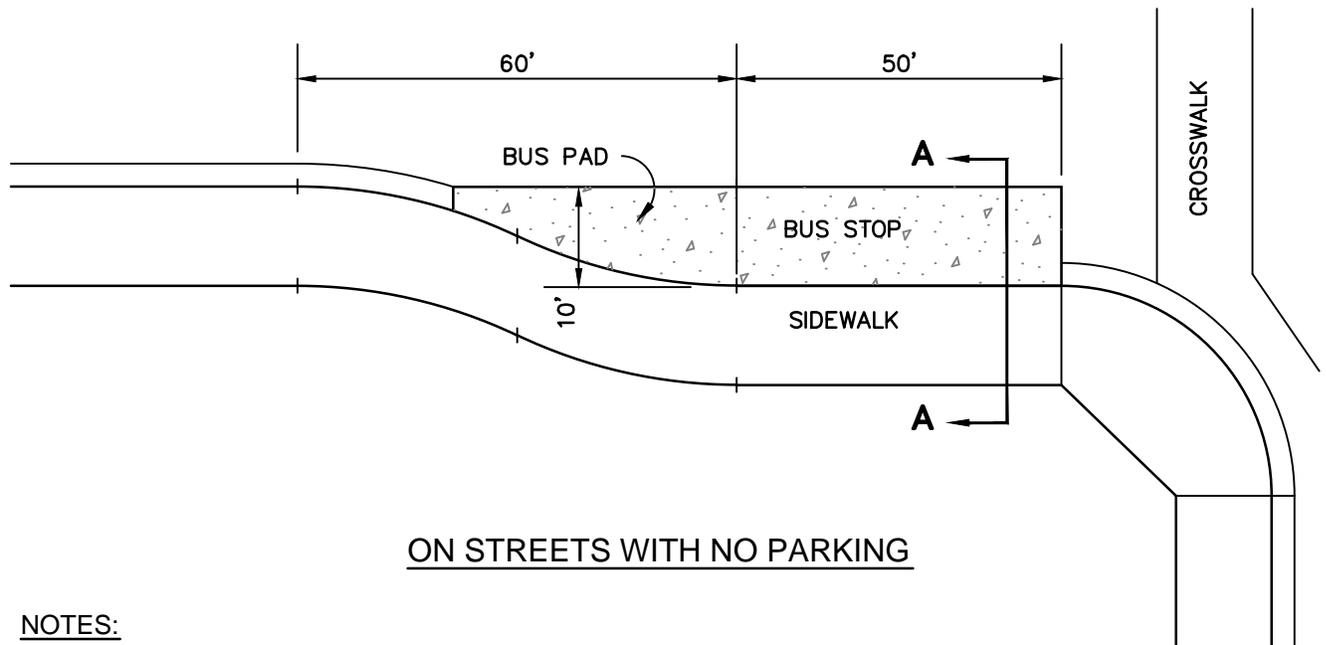
STD. NO.
210

SCALE: NONE DRAWN: CFB CHK: MGK APPVD: *[Signature]*

DATE: JUN 2012



ON STREETS WITH PARKING



ON STREETS WITH NO PARKING

NOTES:

1. SEE SECTION A-A, SHEET 4.
2. BUS BENCHES AND SHELTER SHALL BE LOCATED BEHIND THE SIDEWALK OR IN SUCH A MANNER THAT A MINIMUM 5' CLEAR SIDEWALK IS PROVIDED.
3. DESIGN SHALL CONFORM TO THESE REQUIREMENTS, EXCEPT AS OTHERWISE APPROVED BY THE CITY ENGINEER.

SHEET 1 OF 4



**BUS STOP
AT INTERSECTION**

STD. NO.
211

SCALE: NONE

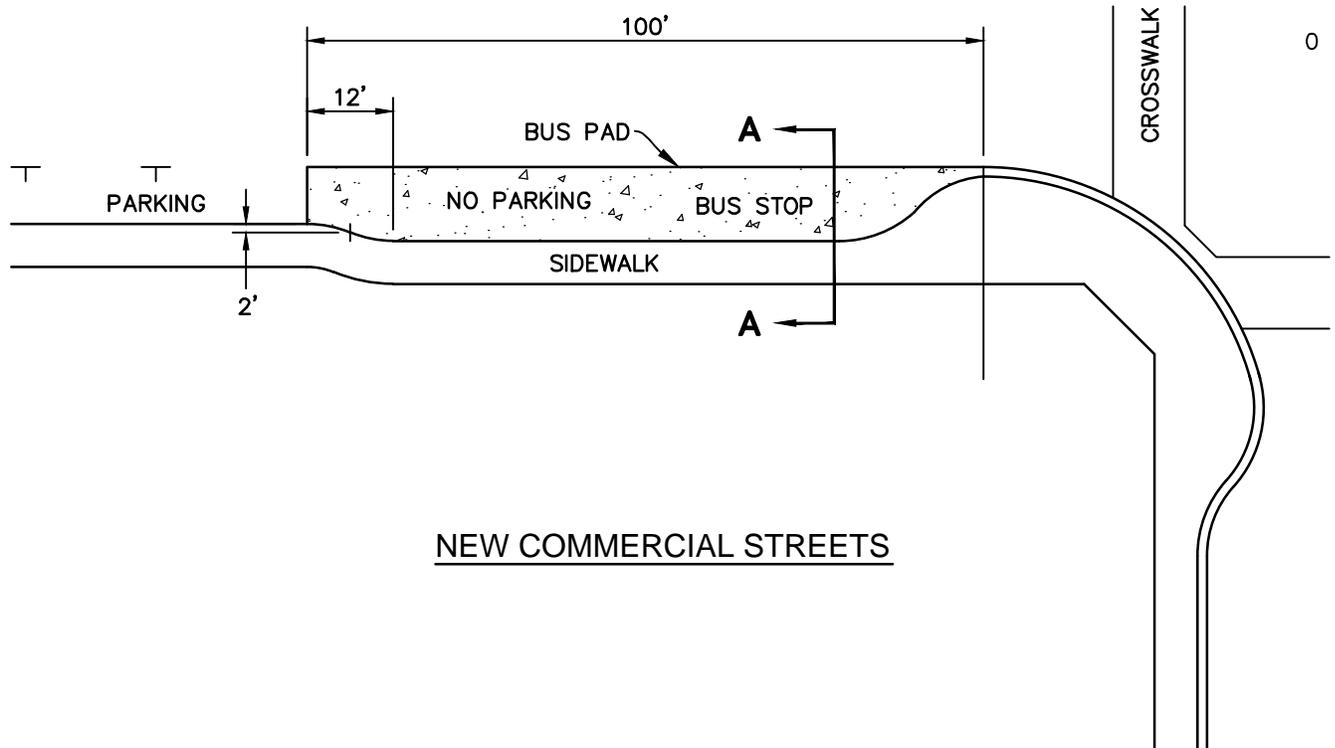
DRAWN: CFB

CHK: MGK

APPVD:

[Signature]

DATE: JUN 2012



NEW COMMERCIAL STREETS

NOTES:

1. SEE SECTION A-A, SHEET 4.
2. BUS BENCHES AND SHELTER SHALL BE LOCATED BEHIND THE SIDEWALK OR IN SUCH A MANNER THAT A MINIMUM 5' CLEAR SIDEWALK IS PROVIDED.
3. DESIGN SHALL CONFORM TO THESE REQUIREMENTS, EXCEPT AS OTHERWISE APPROVED BY THE CITY ENGINEER.

SHEET 2 OF 4

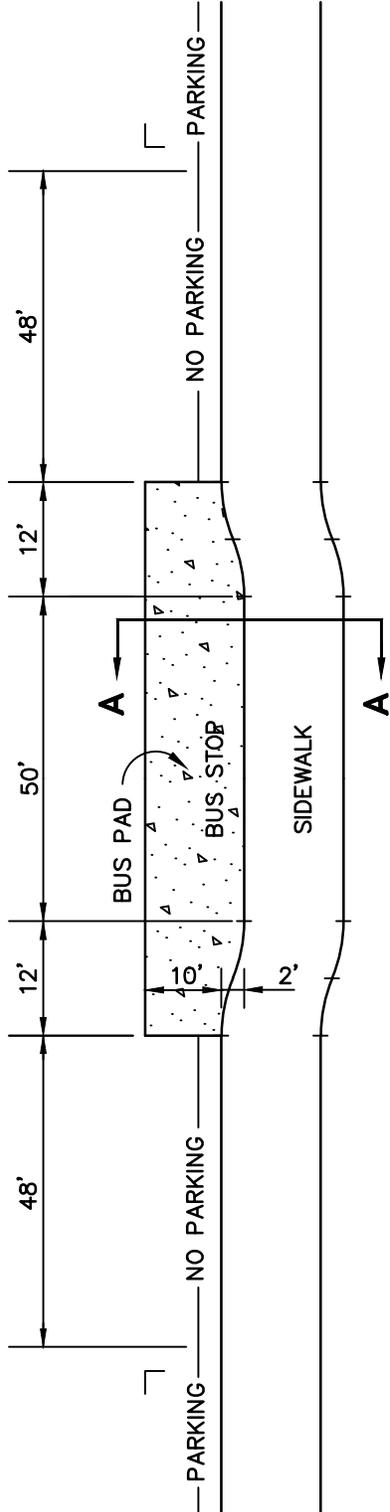


**BUS STOP
AT INTERSECTION**

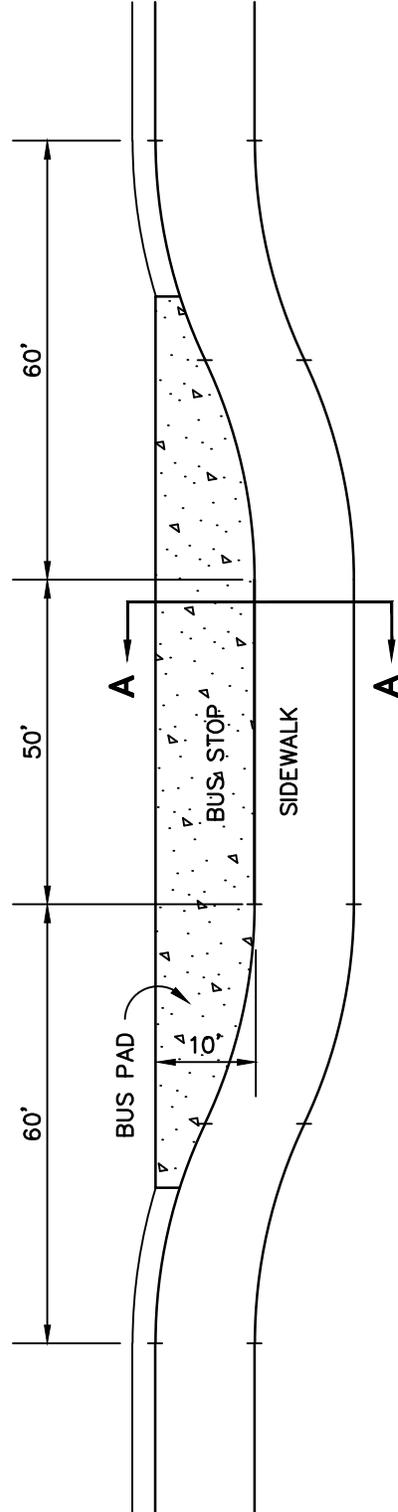
STD. NO.
211

SCALE: NONE | DRAWN: CFB | CHK: MGK | APPVD: *[Signature]*

DATE: JUN 2012



ON STREETS WITH PARKING



ON STREETS WITH NO PARKING

NOTES:

1. SEE SECTION A-A, SHEET 3.
2. BUS BENCHES AND SHELTER SHALL BE LOCATED BEHIND THE SIDEWALK OR IN SUCH A MANNER THAT A MINIMUM 5' CLEAR SIDEWALK IS PROVIDED.
3. DESIGN SHALL CONFORM TO THESE REQUIREMENTS, EXCEPT AS OTHERWISE APPROVED BY THE CITY ENGINEER.

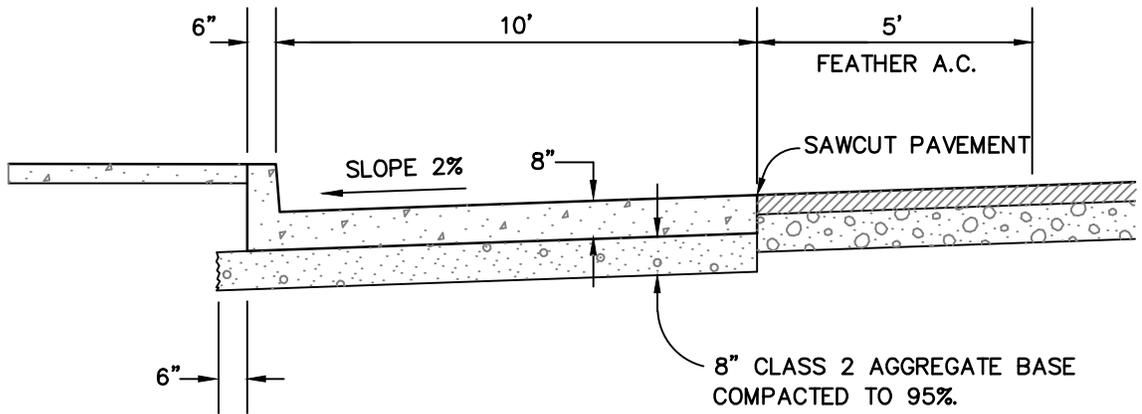


MID BLOCK BUS STOP

STD. NO.
211

SCALE: NONE DRAWN: CFB CHK: MGK APPVD: *[Signature]*

DATE: JUN 2012



SECTION A-A

NOTES:

1. EXPANSION JOINTS & SCORE MARKS TO MATCH EXISTING CURB, GUTTER, & SIDEWALK.
2. USE NOT LESS THAN 6 SACKS OF CEMENT PER CUBIC YARD.
3. CONSTRUCT SUBDRAINS WHEN REQUIRED BY CITY ENGINEER.
4. REINFORCING STEEL REQUIRED IN CONC. #4 @ 12" O.C. EACH WAY, OR #5 @ 16" O.C. EACH WAY.
5. DESIGN SHALL CONFORM TO THESE REQUIREMENTS EXCEPT AS OTHERWISE APPROVED BY THE CITY ENGINEER.

SHEET 4 OF 4



CONCRETE BUS PAD DETAIL

STD. NO.
211

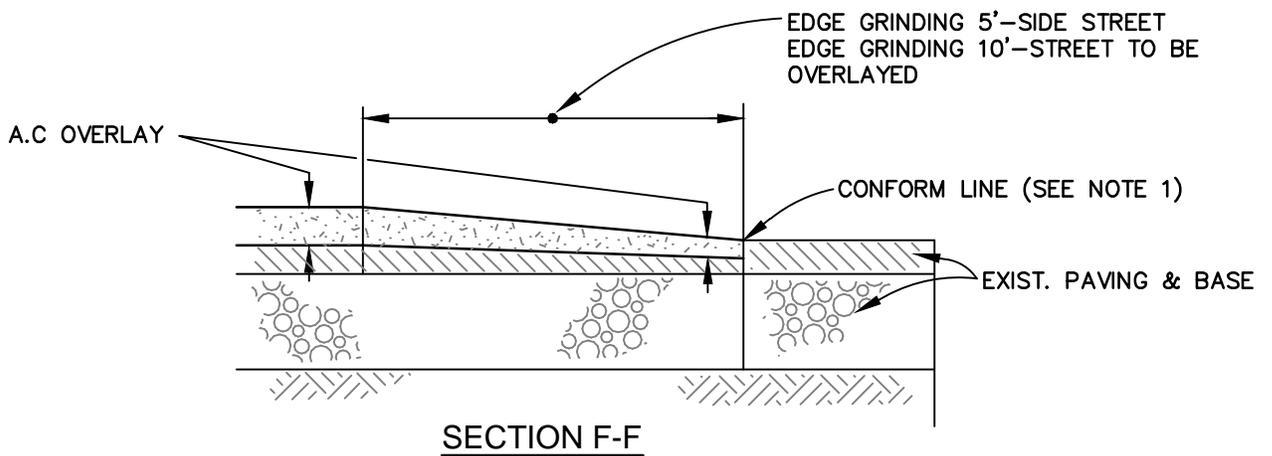
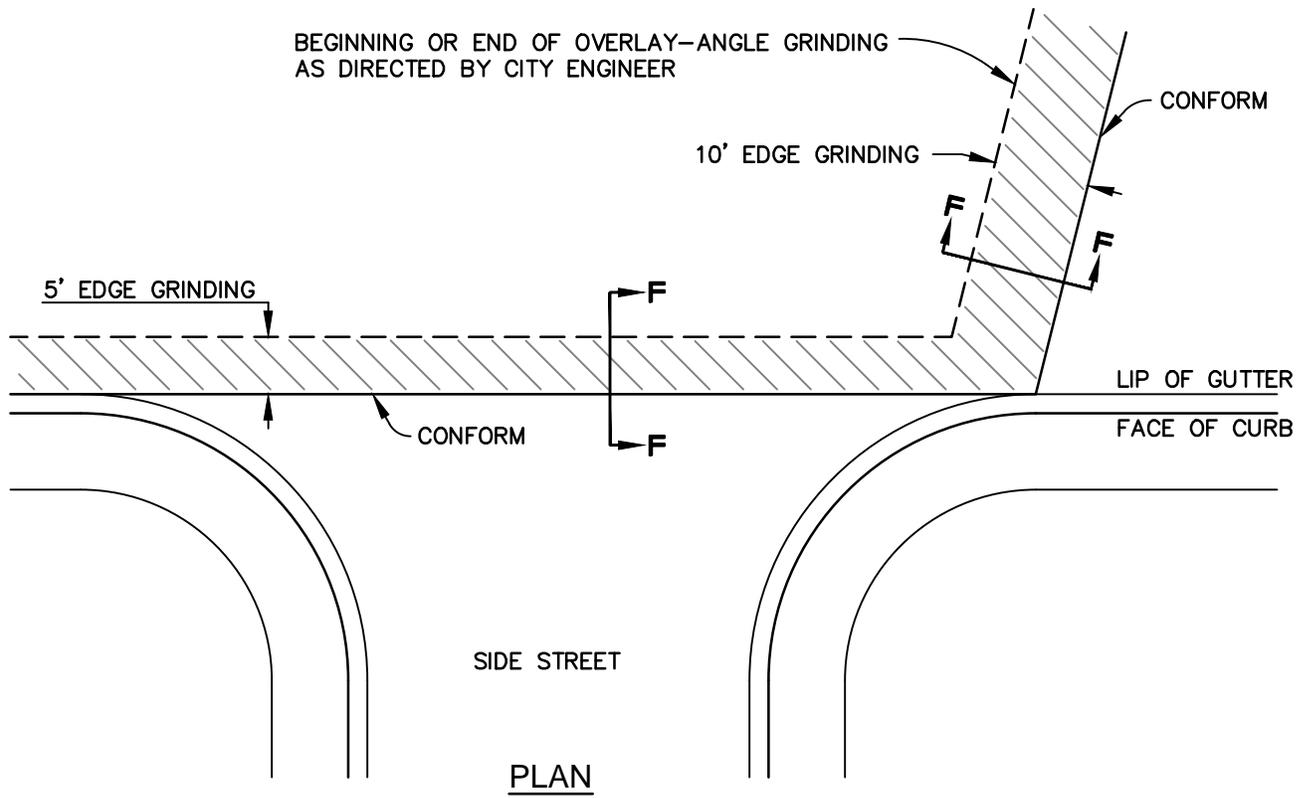
SCALE: NONE

DRAWN: CFB

CHK: MGK

APPVD:

DATE: JUN 2012



NOTES:

1. EDGE GRINDING SHALL BE 1"±1/4".
2. DESIGN SHALL CONFORM TO THESE REQUIREMENTS EXCEPT AS OTHERWISE APPROVED BY THE CITY ENGINEER.

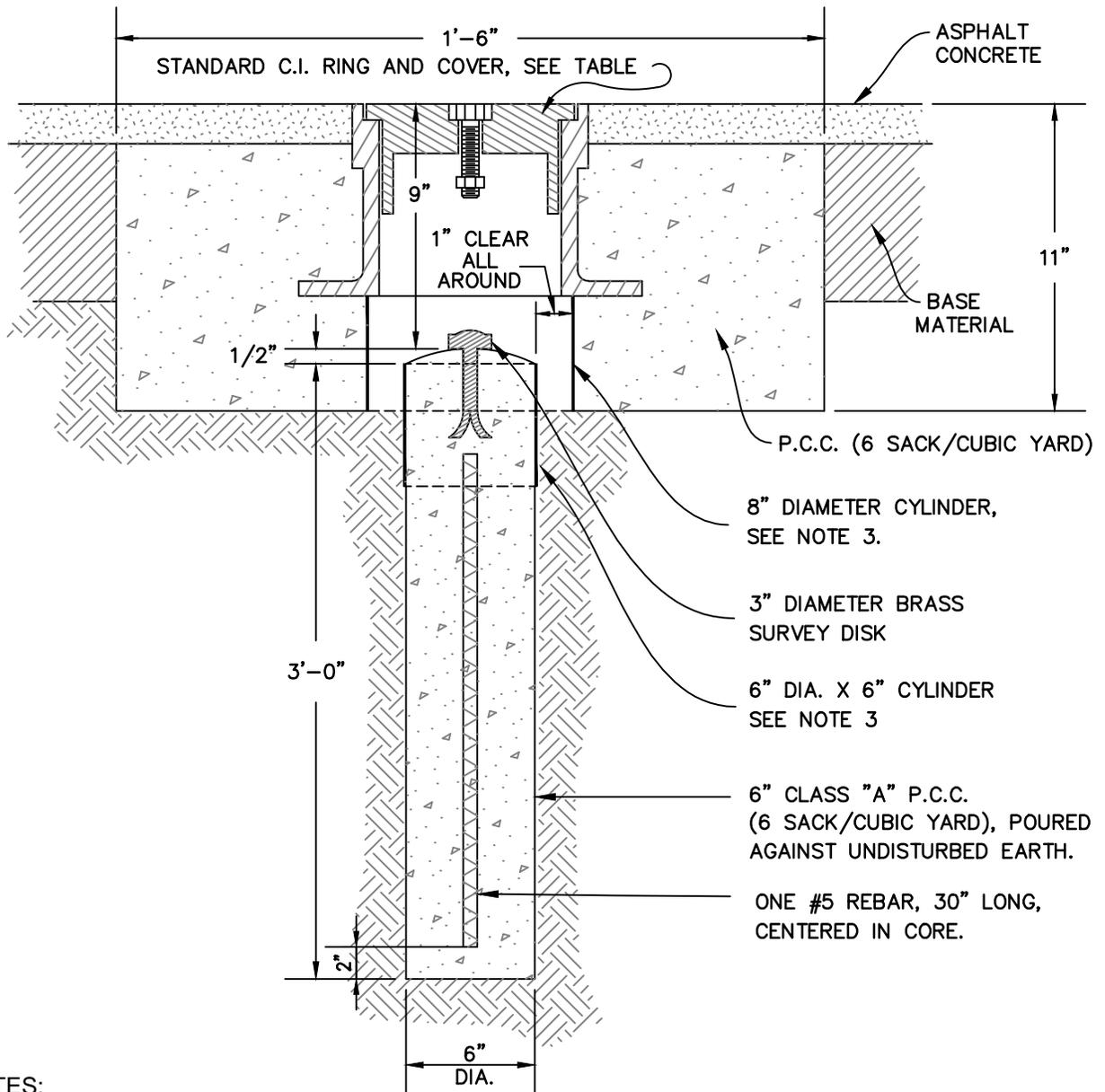


**SIDE STREET AND
END OF OVERLAY CONFORM**

STD. NO.
216

SCALE: NONE | DRAWN: CFB | CHK: MGK | APPVD: *[Signature]*

DATE: JUN 2012



NOTES:

1. SURVEYOR OR ENGINEER SETTING THE MONUMENT SHALL INDICATE EXACT POINT BY MAKING A CROSS ON THE CAP AND SHALL STAMP YEAR SET AND HIS/HER LICENSE TYPE AND NUMBER.
2. THE DEPTH OF THE MONUMENT POST SHALL BE LENGTHENED OR SHORTENED AS DICTATED BY THE GROUND CONDITIONS OR AS APPROVED BY THE CITY ENGINEER. IN SOFT GROUND OR FILL ARE AS THE MONUMENT POST SHALL BE LENGTHENED TO BED IT ON A STABLE BASE.
3. CYLINDER MATERIAL SHALL BE THINWALL A.B.S. OR P.V.C. PLASTIC PIPE.
4. TOP OF MONUMENT CORE SHALL BE FINISHED SMOOTH AND ROUNDED WITH NO CONCRETE ABOVE EDGE OF BRASS SURVEY MARKER.
5. ASTM CLASS 30 IRON CASTINGS DIPPED IN ASPHALT PAINT

| APPROVED MONUMENT COVERS: | |
|---------------------------|---|
| 1. | SOUTH BAY FOUNDRY SBF 1201 |
| 2. | "VISCO NO. 129" |
| 3. | "AMERICAN BRASS AND IRON FOUNDRY MODEL 5020-21" |
| 4. | ARTMARK PROD. CO. APC-51 |
| 5. | SANTA ROSA CAST PRODUCTS SP-51 |

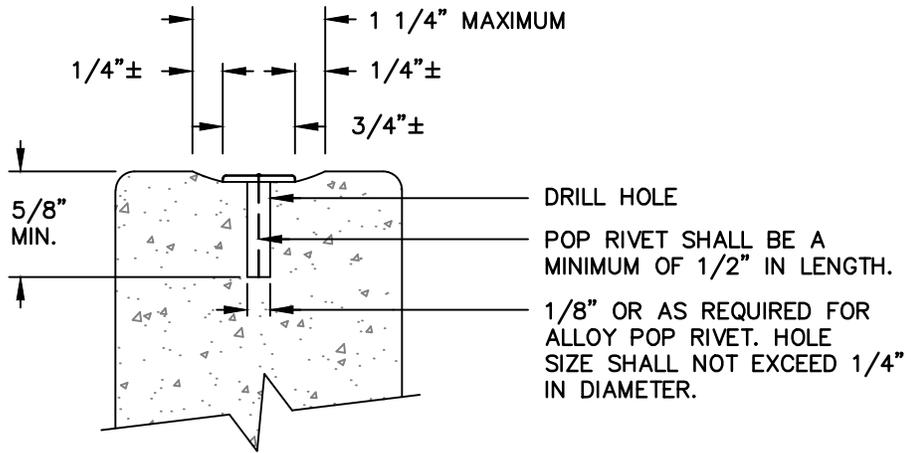


CITY MONUMENT

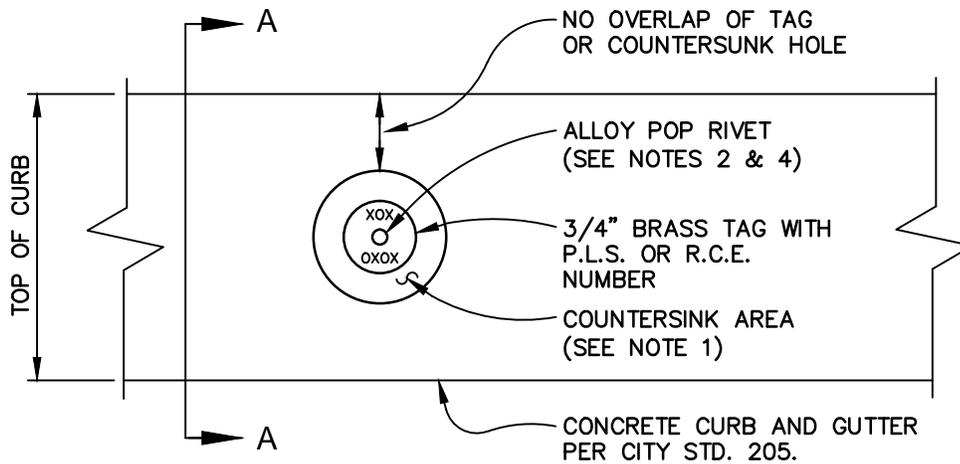
STD. NO.
219

SCALE: NONE | DRAWN: CFB | CHK: MGK | APPVD: *[Signature]*

DATE: JUN 2012



SECTION A-A



NOTES:

1. BRASS TAG SHALL BE COUNTERSUNK SO THAT TOP OF TAG AND RIVET IS AT OR BELOW THE SURFACE OF THE TOP OF CURB. BRASS TAG SHALL BE SET TO ENSURE A PERMANENTLY PLACED MONUMENT. EPOXY RESIN MAY BE USED IN ADDITION TO ABOVE METHODS.
2. DRILL HOLE SHALL BE DRILLED ONLY. AN ALLOY POP RIVET SHALL BE USED TO ATTACH BRASS TAG TO TOP OF CURB.
3. DESIGN SHALL CONFORM TO THESE REQUIREMENTS EXCEPT AS OTHERWISE APPROVED BY THE CITY ENGINEER.
4. IMPACT FASTENERS ARE NOT ALLOWED.



**LOT CORNER REFERENCE MONUMENT
AT STREET FRONTAGE**

STD. NO.
220

SCALE: NONE

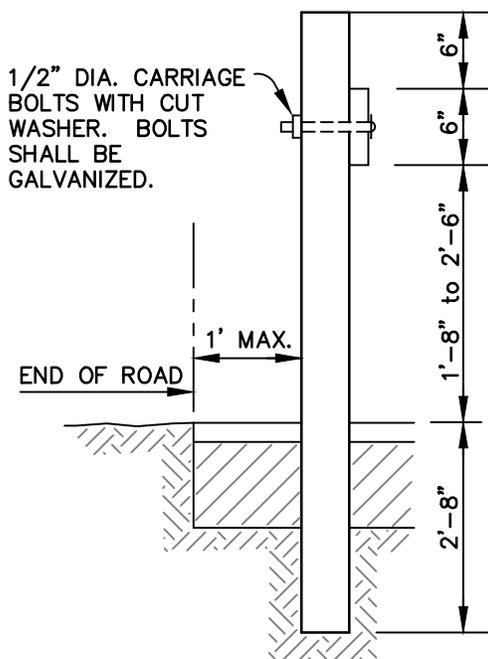
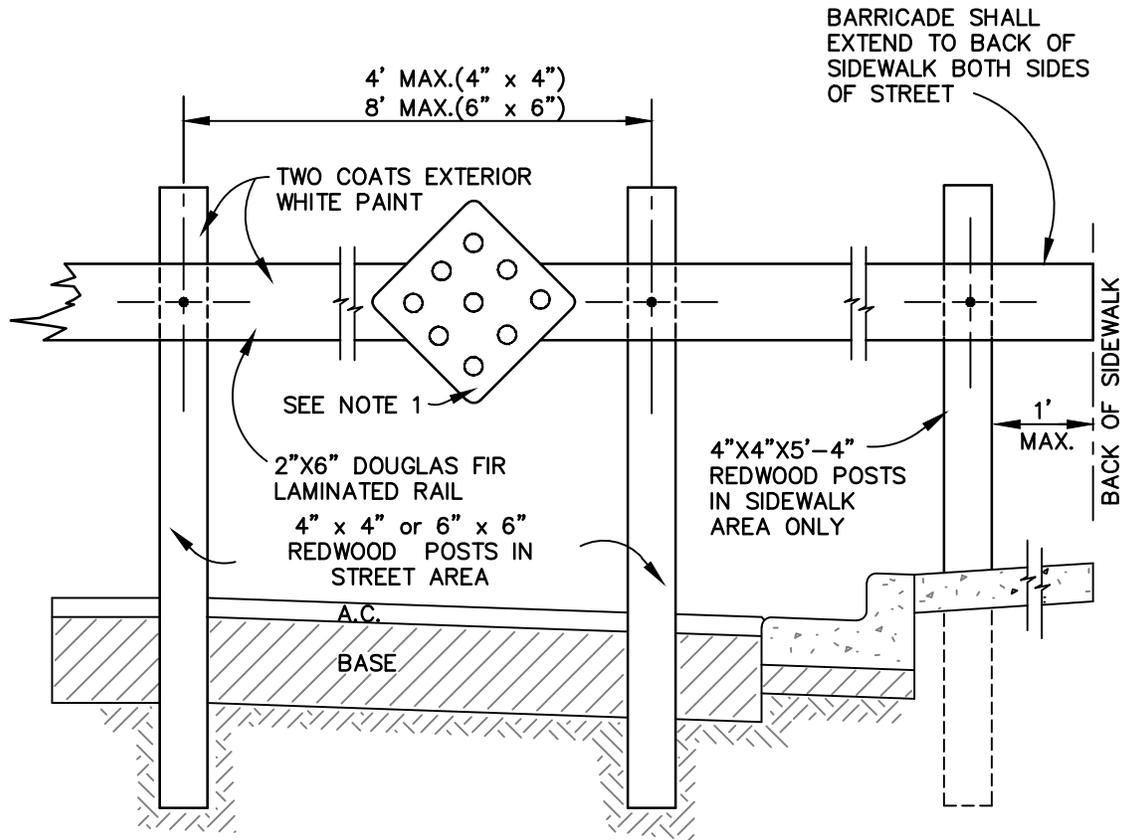
DRAWN: CFB

CHK: MGK

APPVD:

[Signature]

DATE: JUN 2012



NOTES:

1. INSTALL 18" X 18" ALUMINUM TYPE N-2 REFLECTOR, NO MORE THAN 8' O.C., MINIMUM 3
2. SIDEWALKS ONLY – INSTALL 4" YELLOW REFLECTORS.



STANDARD BARRICADE

STD. NO.
221

SCALE: NONE DRAWN: CFB CHK: MGK APPVD: *[Signature]*

DATE: JUN 2012

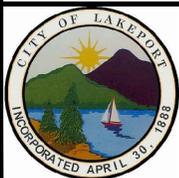
NOTES:

1. WHERE EXISTING STREET IS PCC OVERLAID WITH HMA, THE PCC SECTION REMOVED BY TRENCHING SHALL NOT BE REPLACED.
2. FINAL TRENCH PAVING IS REQUIRED TO BE EXPANDED TO A PAINTED LANE STRIPE, EXISTING PAVEMENT PATCH, THE LIP OF GUTTER OR EDGE OF PAVEMENT WHERE SUCH STREET FEATURE IS WITHIN 3 FEET OF THE FINAL SAWCUT.
3. PERMANENT PAVING MUST BE COMPLETED WITHIN 30 DAYS. AC OR CUTBACK (1" THICK) MAY BE PLACED AS A TEMPORARY SURFACE IN ROADWAY AREAS AND SHALL BE MAINTAINED UNTIL PERMANENT PAVING IS COMPLETED. WHERE WARRANTED AND AT THE DISCRETION OF THE CITY ENGINEER, TRENCH PLATES MAY BE USED FOR UP TO 2 WEEKS. TRENCH PLATES SHALL HAVE A SKID RESISTANT SURFACE, SECURED WITH 24" WIDE COLLAR OF CURBACK AROUND ALL SIDES OF PLATE, AND TAPERED TO PROVIDE SMOOTH TRANSITIONS.
4. A TACK COAT OF ASPHALTIC EMULSION OR PAVING GRADE ASPHALT SHALL BE APPLIED TO EXISTING HMA PAVEMENT AT ALL CONTACT SURFACES PRIOR TO PERMANENT HMA PAVING PER SECTION 22-7 OF STANDARD SPECIFICATIONS.
5. EXISTING PAVEMENT SHALL BE SAWCUT AND REMOVED IN SUCH A MANNER AS NOT TO TEAR, BULGE, OR DISPLACE ADJACENT PAVEMENT. EDGES SHALL BE CLEAN AND VERTICAL WHEN PRACTICAL. ALL CUTS SHALL BE PARALLEL OR PERPENDICULAR TO THE STREET CENTERLINE.
6. R.C. – RELATIVE COMPACTION AS DETERMINED BY ASTM DESIGNATION D 1557 AND CITY STANDARDS.
7. NO SOLID BLOCKING PERMISSIBLE BENEATH PIPE.
8. JETTING BACKFILL IS NOT PERMITTED.
9. ROCKS EXCEEDING 6" SHALL NOT BE PERMITTED WITHIN THE TRENCH SECTION.
10. THE MINIMUM EQUIPMENT REQUIRED FOR COMPACTION OF NATIVE BACKFILL MATERIAL SHALL CONSIST OF A SHEEPSFOOT VIBRATORY ROLLER WITH A MINIMUM DRUM WIDTH OF 48", A MINIMUM GROSS WEIGHT OF 4600 LBS, OR MUST MEET APPROVAL OF THE CITY ENGINEER.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH THE PRIVATE SOILS ENGINEER AND THE CITY INSPECTOR 48 HOURS PRIOR TO EXCAVATION.
12. THE PRIVATE SOILS ENGINEER SHALL PROVIDE TESTING AND OBSERVATIONS ON A FULLTIME BASIS DURING ALL NATIVE BACKFILLING OPERATIONS. THE PRIVATE SOILS ENGINEER IS RESPONSIBLE FOR THE VERIFICATION OF ALL NATIVE BACKFILL WORK INCLUDING COMPACTION AND UNIFORM MOISTURE CONDITIONING, AND THAT MOISTURE CONTENT IS ABOVE OPTIMUM MOISTURE TO THE EXTENT APPROPRIATE FOR THE NATIVE MATERIAL BEING USED.

| TRENCH WIDTH FOR HDPE PIPE | |
|----------------------------|---------------------|
| PIPE SIZE* | TRENCH WIDTH (MIN.) |
| 15" | 36" |
| 18" | 48" |
| 24" | 54" |
| 30" | 60" |
| 36" | 72" |

PIPE MUST BE CENTERED IN THE TRENCH.
*INSIDE DIAMETER

SHEET 1 OF 2



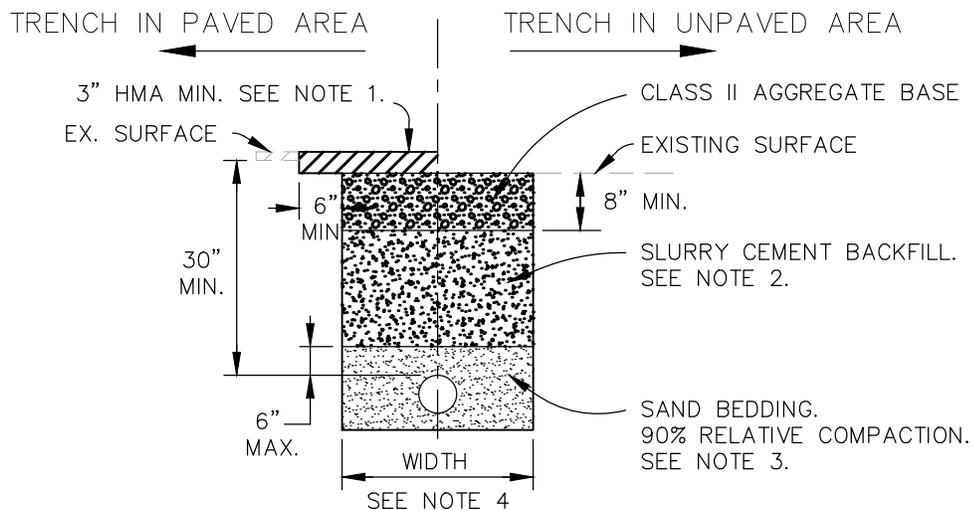
STANDARD TRENCH NOTES

STD. NO.
222

SCALE: NONE DRAWN: CFB CHK: MGK APPVD: *[Signature]*

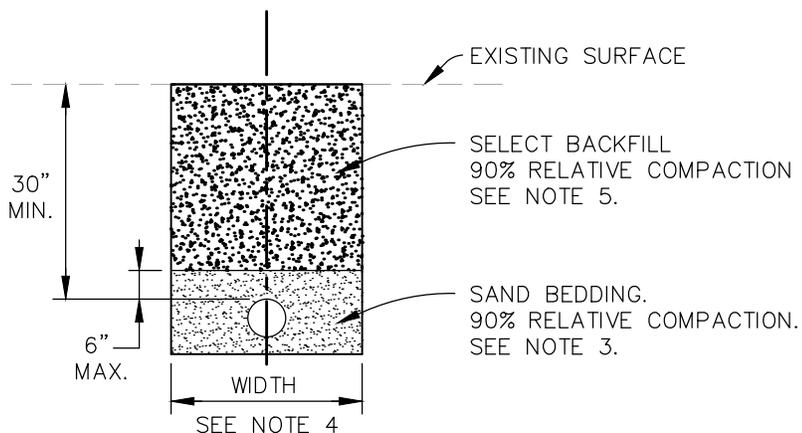
DATE: JUN 2012

DETAIL 'A'



TRENCH IN ROADWAY, SHOULDER OR DRIVEWAY AREAS

DETAIL 'B'



TRENCH OUTSIDE ROADWAY, SHOULDER OR DRIVEWAY AREAS

NOTES:

1. HMA THICKNESS TO MATCH EXISTING OR 3" MINIMUM WHICHEVER IS GREATER. HMA TO BE PLACED IN LIFTS NOT EXCEEDING 2" IN THICKNESS. HMA TO BE TYPE A OR B, 3/4", PER CALTRANS STANDARD SPECIFICATIONS, LATEST EDITION.
2. SLURRY BACKFILL SHALL BE USED IN PAVING AREAS EXCEPT WHERE APPROVED BY PUBLIC WORKS DIRECTOR OR CITY ENGINEER.
3. SAND BEDDING MUST BE LEVELED AND COMPACTED PRIOR TO BACKFILLING.
4. IF WIDTH IS LESS THAN 12", SLURRY CEMENT BACKFILL SHALL BE USED.
5. SELECT BACKFILL MATERIAL AS APPROVED BY THE CITY ENGINEER.

SHEET 2 OF 2



STANDARD TRENCH DETAIL TRENCH BACKFILL

STD. NO.

222

SCALE: NONE

DRAWN: CFB

CHK: MGK

APPVD:

[Signature]

DATE: JUN 2012

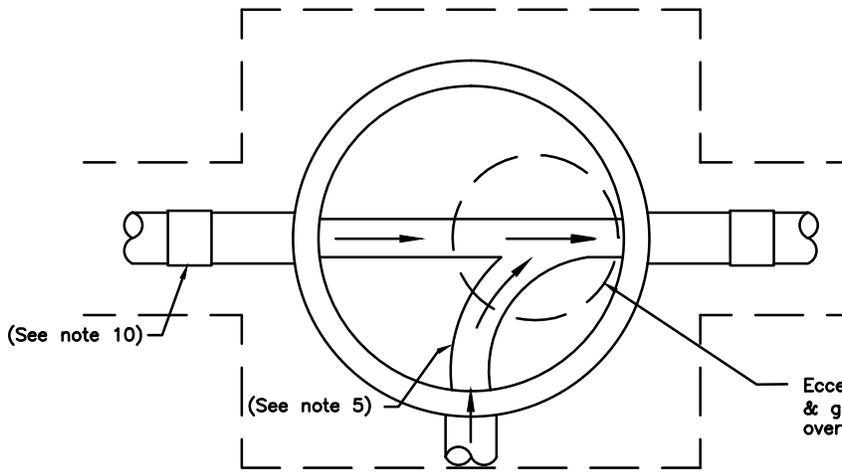
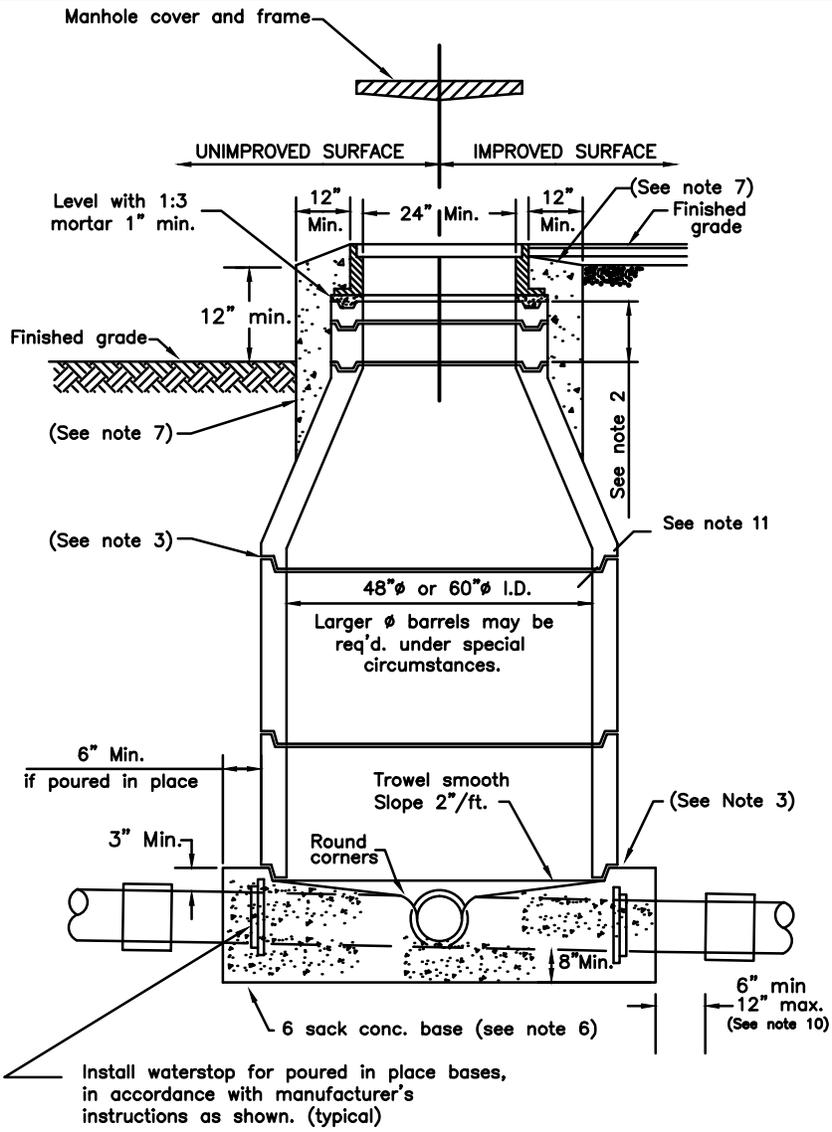
B – Sewer Standard Plans (300 Series)

SEWER STANDARD PLANS

DESCRIPTION

300 SERIES - SEWERS

| | |
|-----|--|
| 300 | Junction Structure for Multiple Laterals |
| 301 | Standard Precast Concrete Sanitary Sewer Manhole |
| 302 | Sanitary Manhole Retrofit |
| 303 | Manhole Frame and Cover |
| 304 | Inside Drop Inlet Manhole |
| 305 | Outside Drop Inlet Manhole |
| 306 | Standard Pre-cast Concrete Manhole Reducer Slabs |
| 307 | Rodding Inlet |
| 308 | Temporary Mainline Cleanout |
| 309 | 4" and 6" Sewer Service Lateral |
| 310 | Typical Sewer Service Connection Details |
| 311 | Discharge for Private Force Main |
| 312 | Abandoned Pipe Plug Detail |
| 313 | Abandoned Manhole Detail |
| 314 | Plastic Sewer Pipe Deflection Mandrell |
| 315 | Sewer-Water Main Crossing Details |
| 316 | Miscellaneous Pipe Installation Details |
| 317 | Precast Grease Interceptor |
| 318 | Sand and Grease Interceptor |
| 319 | Sampling Manhole Exterior Use |
| 320 | Sampling Box Building Interior |



MANHOLE BASE
CHANNELIZATION PLAN AND LOCATION OF
ECCENTRIC MANHOLE COVER

NOTES:

1. When manholes are installed in unimproved areas, the top of the cover shall be a min. of 1 foot above grade.
2. Min. of one 3" grade adjustment ring. Max. height of grade adjustment rings = 20". Alternately, contractor may cast grade adjustment rings in place.
3. Set all barrel sections & taper sections in plastic gasket, Ram-nek or approved alternate. Typical joint use (1) 3/4" x 2-1/2" Ram-nek seal, (2 seals in high water table areas).
4. Cone section (taper) must be concentric for 48" ϕ manhole or eccentric for 60" ϕ manhole unless otherwise specified and approved by the City
5. After lower ring section is set, break out top half of pipe flush with inside face of M.H. wall and construct shelf and u-shaped channel. Make elevation changes gradually and directional changes with smooth curves. Slope and size of channels shall match upstream and downstream pipes. Manhole channels with a horizontal change in direction of 30° or more shall have a minimum drop of 0.1' across the manhole or shall match the slope of the pipe, whichever is greater.
6. Poured-in-place base shall be poured full thickness on undisturbed soil. Precast base to be from City approved list and placed on 6" minimum of 3/4" drain rock installed against undisturbed earth.
7. 7 sack conc. collar shall be flush with finished grade.
8. Standard manhole barrel section per ASTM C478.
9. 48" I.D. M.H. to be used for sewer mains less than 18" ϕ . 60" I.D. M.H. to be used for all trunk and collector sewers 18" ϕ to 48" ϕ or where drop fittings are used.
10. Flexible pipe coupling is required on all pipe other than SDR 35 PVC pipe. Flex coupling to be installed in mainline trench and out of manhole excavation.
11. 60" Dia. Manholes are required for main lines 18" or larger in Dia.



**STANDARD PRECAST CONCRETE
SANITARY SEWER MANHOLE**

STD. NO.
301

SCALE: NONE | DRAWN: CFB | CHK: MGK | APPVD: *[Signature]*

DATE: JUN 2012

GENERAL NOTES

1. CONTRACTOR SHALL LET 12" 7 SACK CONCRETE COLLAR CURE FOR 24 HOURS PRIOR TO TRAFFIC LOADING. COVER MANHOLE WITH STEEL PLATE.
2. CONTRACTOR SHALL SUBMIT THE FOLLOWING IN ACCORDANCE WITH THE SPECIFICATIONS:
 - A. WORK PLAN – INCLUDES SCHEDULE, EQUIPMENT LIST, DEMOLITION/CONSTRUCTION PROCEDURE, TRAFFIC CONTROL.
 - B. HOT MIX ASPHALT PER SCSS CITY STANDARDS SECTION 39.
 - C. PORTLAND CEMENT CONCRETE PER SCSS CITY STANDARDS SECTION 40.
 - D. HDPE RING CUT SHEET.
 - E. TAPE PRODUCT DESCRIPTION.
 - F. FOAM PRODUCT DESCRIPTION.
3. CONTRACTOR SHALL BE LIABLE FOR ALL FALLEN DEBRIS IN THE SEWER MANHOLE FROM THEIR DEMOLITION ACTIVITY. IF CLOGGING OF SEWER SYSTEM OCCURS DUE TO CONTRACTOR NEGLIGENCE, THE CONTRACTOR SHALL BE LIABLE TO ALL COSTS THAT OCCURRED AND SHALL BE HELD FULLY RESPONSIBLE FOR SEWER BACK-UPS SUBSEQUENT COSTS.

SHEET 1 OF 3

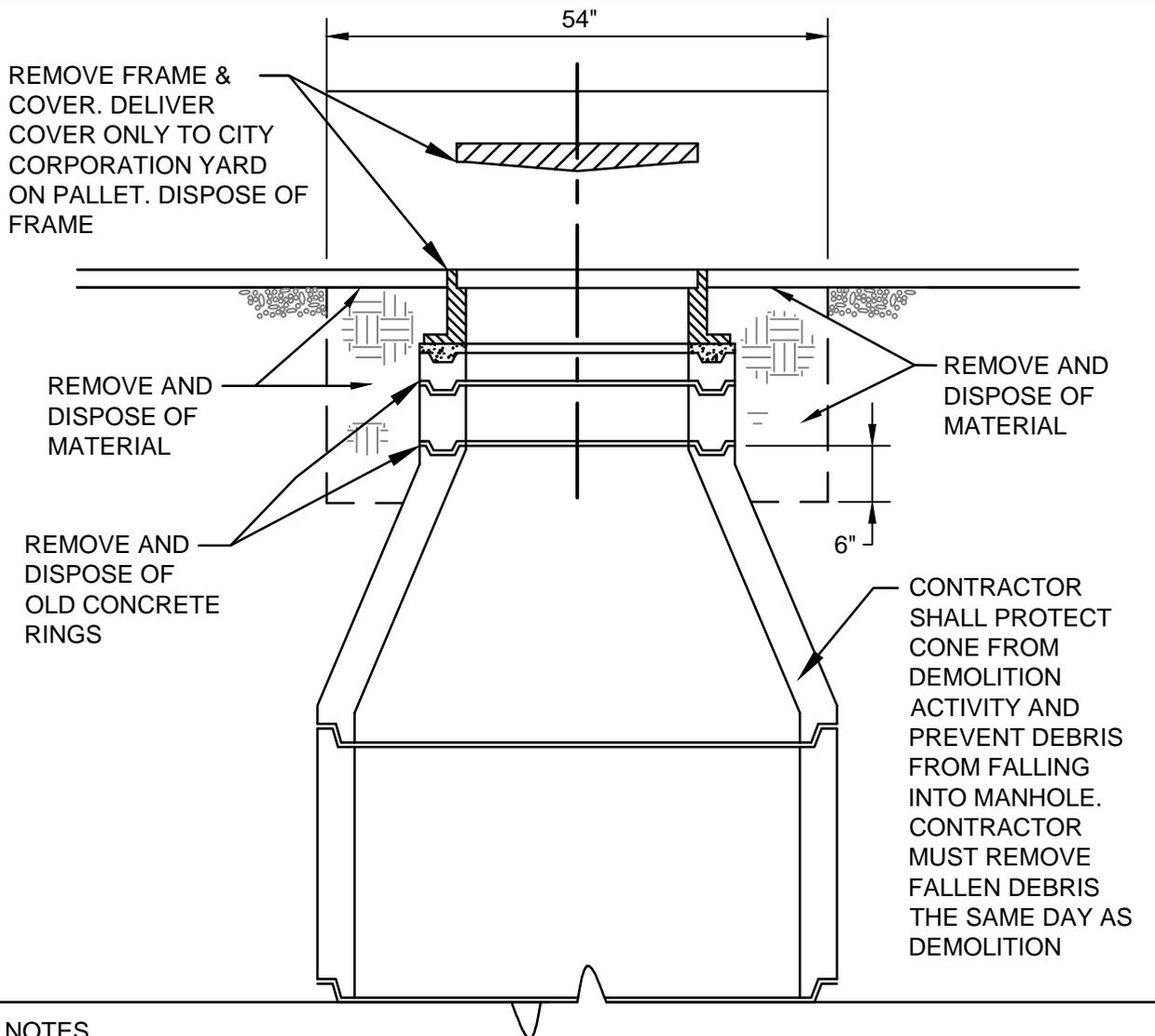


**SANITARY MANHOLE RETROFIT
GENERAL NOTES**

STD. NO.
302

SCALE: NONE | DRAWN: CFB | CHK: MGK | APPVD: *[Signature]*

DATE: JUN 2012



NOTES

1. PRECAUTIONS MUST BE TAKEN TO PREVENT DEBRIS FROM ENTERING THE MANHOLE DURING THE ENTIRE REMOVAL AND RECONSTRUCTION PROCESS. A TEMPORARY PROTECTIVE SHEET OR PLATFORM SHALL BE INSTALLED INSIDE THE EXISTING MANHOLE CONE SECTION TO PREVENT DEBRIS FROM DEMOLITION AND CONSTRUCTION FROM CLOGGING THE MANHOLE AND SEWER MAINS. REMOVE DEBRIS AND SHEET AFTER COMPLETION OF WORK.
2. CUT AND REMOVE THE ASPHALT PAVEMENT AROUND THE EXISTING MANHOLE CASTING. DISPOSE OF THE ASPHALT. REMOVE ALL ADJUSTING RINGS TO THE TOP OF THE CONCRETE CONE. DISPOSE OF THIS MATERIAL.
3. REMOVE ALL AGGREGATE AROUND THE MANHOLE THAT HAS BEEN EXPOSED BY THE ASPHALT REMOVAL AND DISPOSE OF THIS AGGREGATE. THE AGGREGATE MUST BE REMOVED TO A MINIMUM OF 6" BELOW THE LEVEL OF THE TOP OF THE CONCRETE CONE.
4. CLEAN AND INSPECT THE TOP SURFACE OF THE CONCRETE CONE. THE SURFACE SHOULD BE SMOOTH AND FREE OF BUMPS AND PITS THAT MAY PREVENT A GOOD WATER TIGHT SEAL.
5. GRIND THE SURFACE AS NEEDED TO REMOVE PROTRUSIONS. UTILIZE COMPRESSED AIR TO BLOW DUST AND DEBRIS FROM THE SURFACE AFTER GRINDING. UTILIZE A HYDRAULIC CEMENT, ACCORDING TO MANUFACTURER'S RECOMMENDATIONS, TO FILL IN DEPRESSIONS.

SHEET 2 OF 3

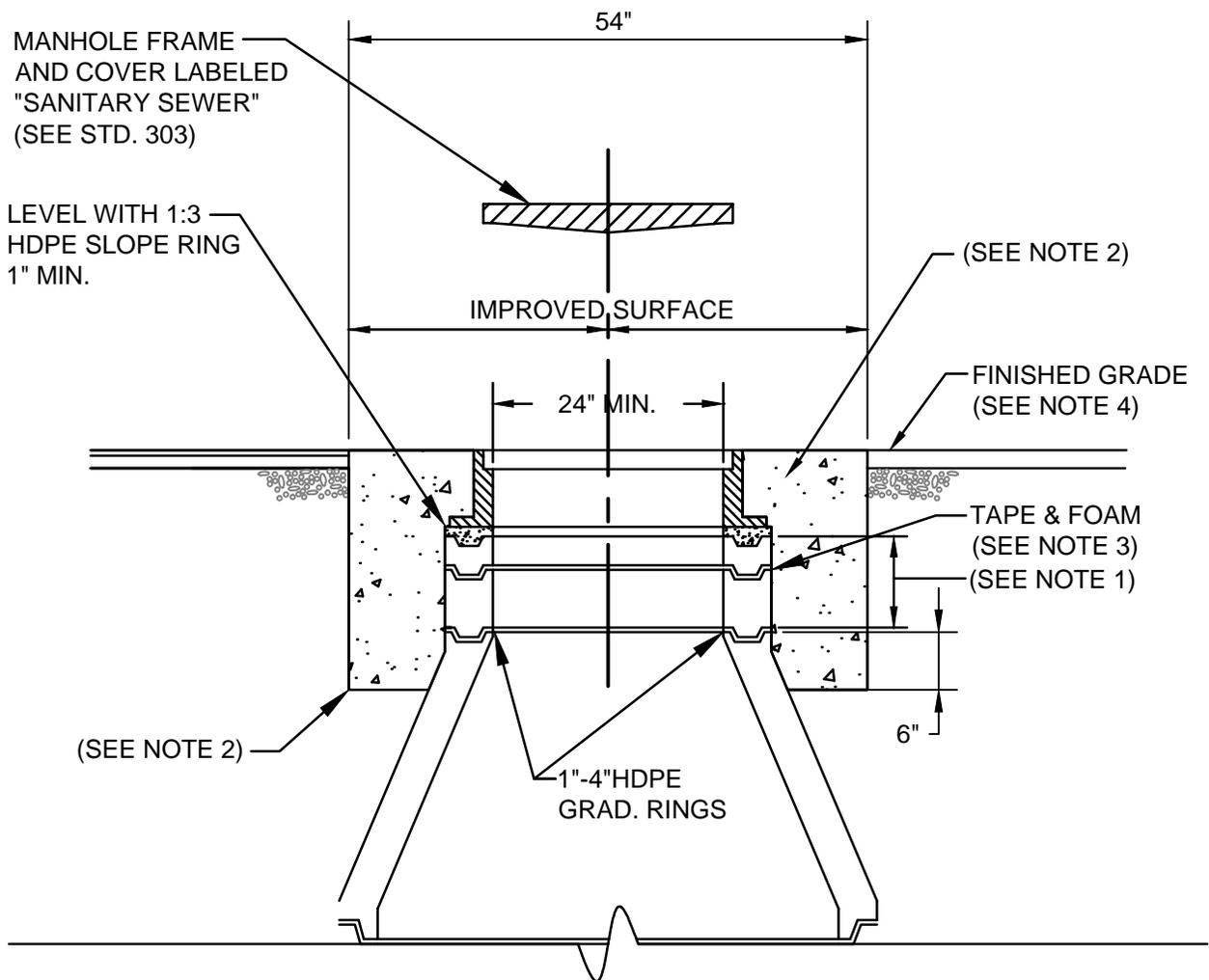


**SANITARY MANHOLE RETROFIT
DEMOLITION**

STD. NO.
302

SCALE: NONE | DRAWN: CFB | CHK: MGK | APPVD: *[Signature]*

DATE: JUN 2012



NOTES

1. MIN. OF ONE 3" GRADE ADJUSTMENT RING. DEPTH VARIES
2. 7 SACK CONCRETE COLLAR SHALL BE FLUSH WITH FINISHED GRADE.
3. INSTALL CONSTRUCTION FOAM BETWEEN THE BOTTOM HDPE RING AND THE CONE AND THE TOP HDPE RING AND THE MANHOLE FRAME. WRAP ALL HDPE RINGS WITH 50 MIL 6 INCH WIDE CORROSION TAPE. EXTEND CORROSION TAPE 3 INCHES BELOW THE LAST RING ONTO THE CONE.
4. COMPLETED HOT MIX ASPHALT SHOULD MAKE A SMOOTH TRANSITION FROM THE EXISTING PAVING TO THE CASTING IN ALL DIRECTIONS.

SHEET 3 OF 3

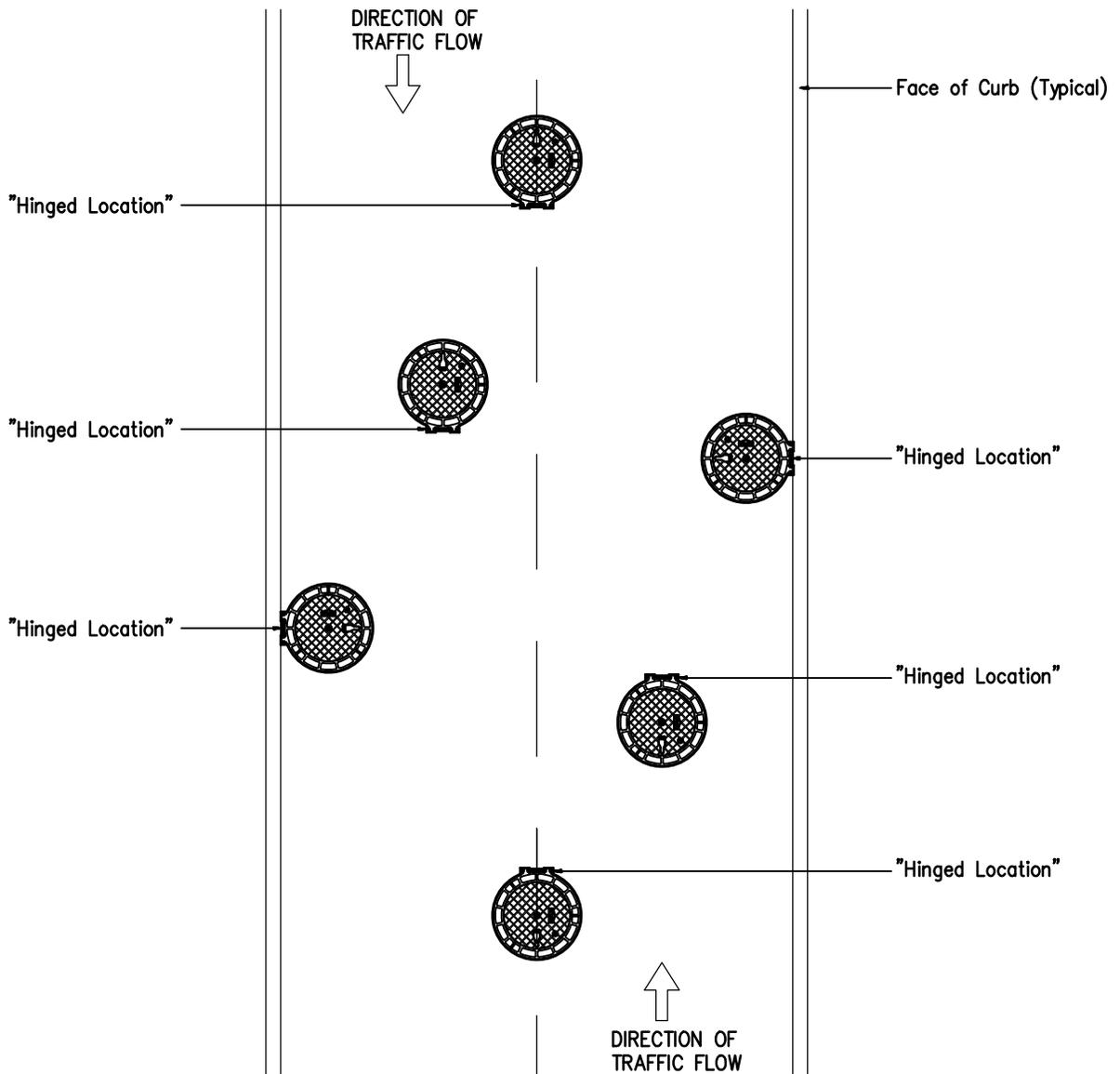


**SANITARY MANHOLE RETROFIT
CONSTRUCTION**

STD. NO.
302

SCALE: NONE | DRAWN: CFB | CHK: MGK | APPVD: *[Signature]*

DATE: JUN 2012



NOTES:

1. Specify sanitary sewer, storm drain, electrical vault, or water when ordering. All castings shall be dipped in approved ASPHALTUM or BITUMINOUS Paint.
2. All material used in manufacturing shall conform to A.S.T.M. designation A-48 Class 35 B, or of United States Government Specifications QQ1-652b.
3. Minimum weight components: Cover – 122 pounds
Frame – 73 pounds
4. Lockable covers are required on all sewer mains. Locks will be required on all manholes not located in a paved City maintained street. Coat the lock bolt threads with never cease or Teflon based pipe dope upon installation of lock.
5. Covers shall be one-man operable using standard tools.

APPROVED MANHOLE FRAME & COVER

See Engineer's Approved List.

SHEET 3 OF 3



MANHOLE FRAME AND COVER

STD. NO.
303

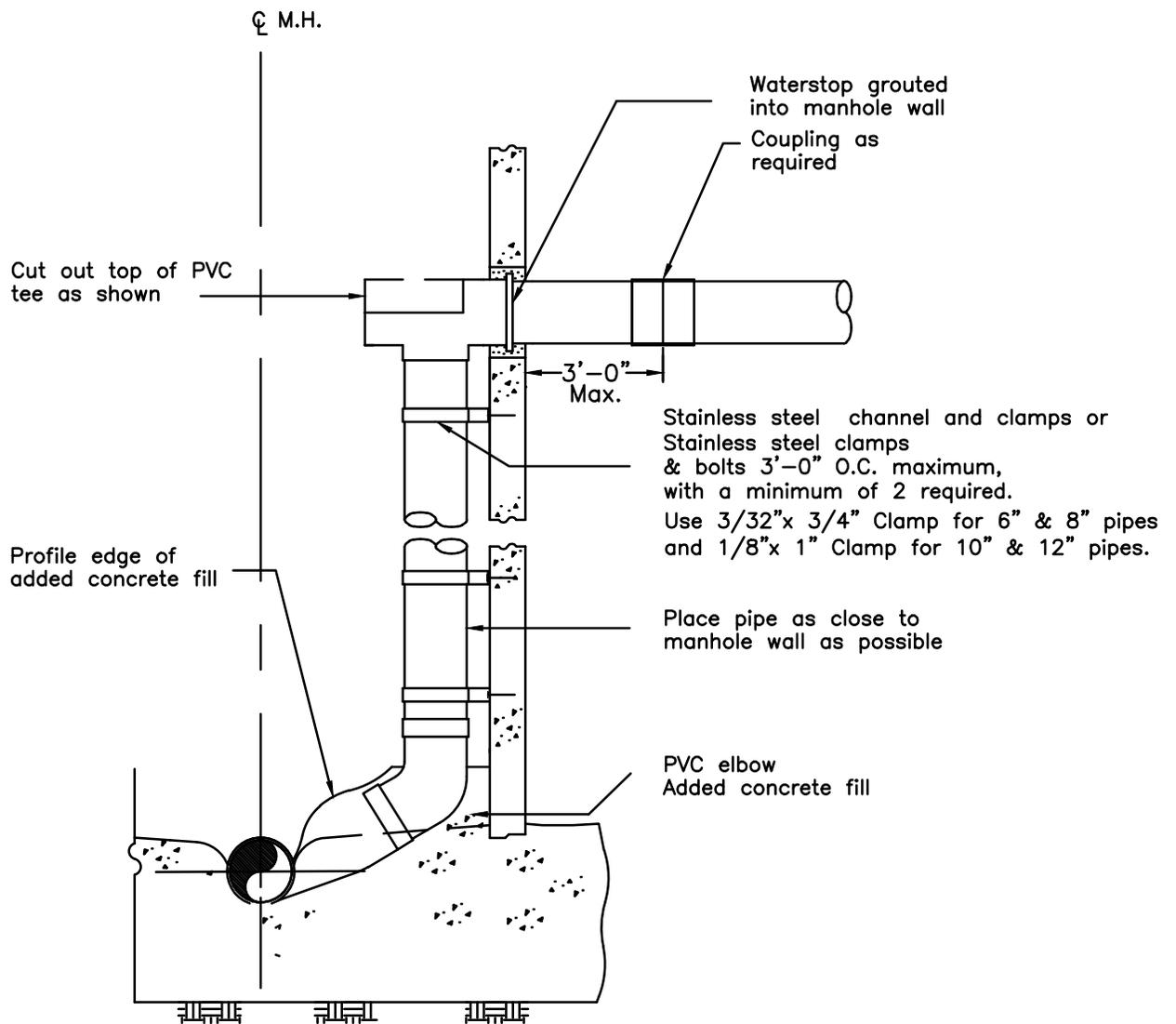
SCALE: NONE

DRAWN: CFB

CHK: MGK

APPVD:

DATE: JUN 2012



NOTES:

1. Manholes constructed using this standard shall be 60" in diameter and installed in conformance with City Standard. Use 72" MH where there are two drop connections.
2. Enclose elbow in concrete. Form smooth channel with sweep to manhole flowline.
3. Install waterstop in accordance with manufacturer's instructions as shown.
4. PVC pipe and fittings shall have same nominal size and SDR rating as incoming pipes.



**INSIDE
DROP MANHOLE**

STD. NO.
304

SCALE: NONE

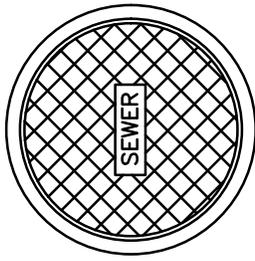
DRAWN: CFB

CHK: MGK

APPVD:

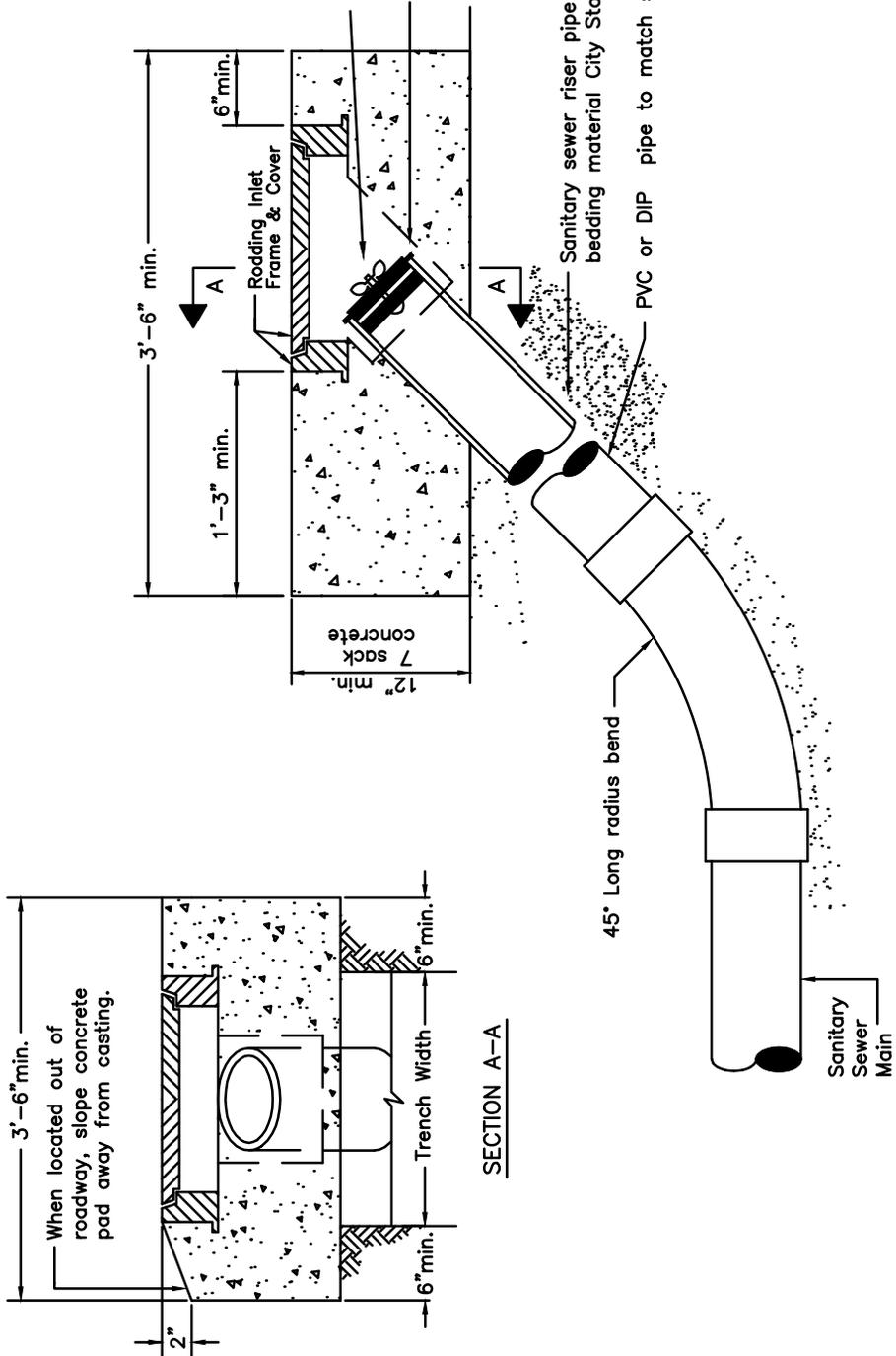
DATE: JUN 2012

APPROVED FRAME & COVER
See City's Approved List



PLAN VIEW

Plastic mechanical gripper plug required.
1" clear from outside wall of pipe to allow for gripper plug tabs.



Note: To be used for main sizes 6" only and where sewer main will not be extended.
Mains larger than 6" shall terminate at manholes.



RODDING INLET

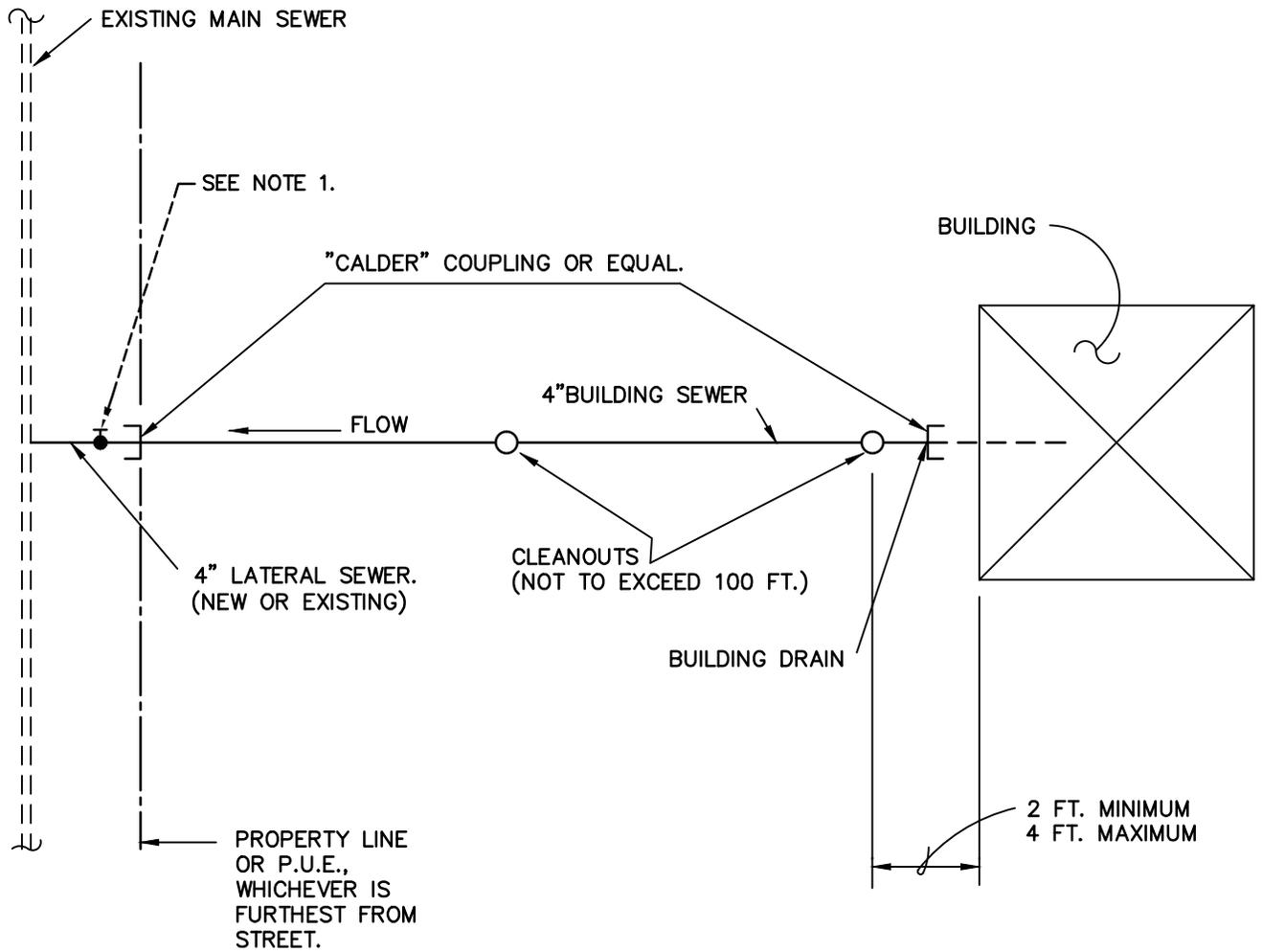
STD. NO.
307

SCALE: NONE DRAWN: CFB CHK: MGK APPVD: *[Signature]*

DATE: JUN 2012

NOTE:

WHERE BUILDING SEWERS ARE LOCATED UNDER DRIVEWAYS,
CAST IRON OR DUCTILE IRON SEWER PIPE SHALL BE USED.



PLAN

NOTES:

1. VALVE SHALL BE INSTALLED ON NON-RESIDENTIAL DEVELOPMENTS AT THE DISCRETION OF THE CITY ENGINEER. VALVES TO BE PER STD 501.

SHEET 1 OF 3



**TYPICAL SEWER SERVICE
CONNECTION DETAIL**

STD. NO.
310

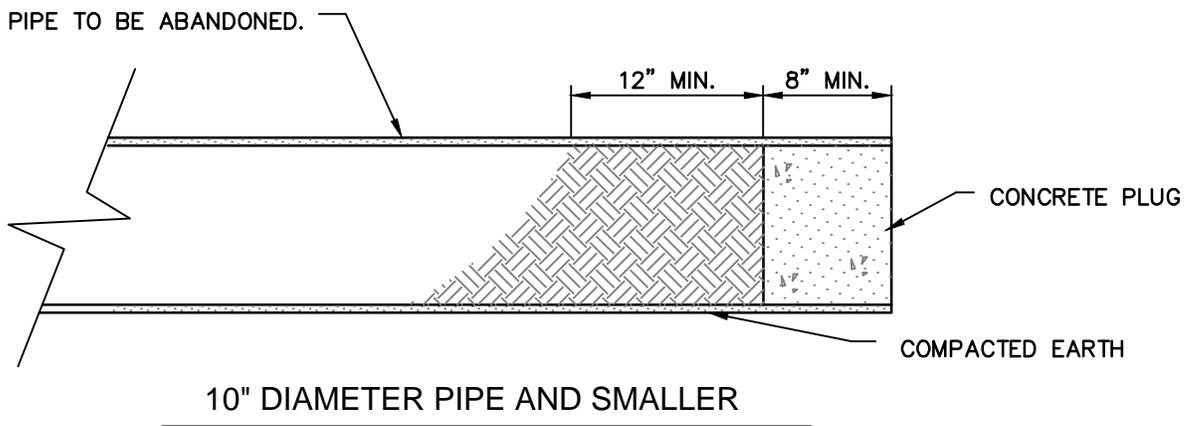
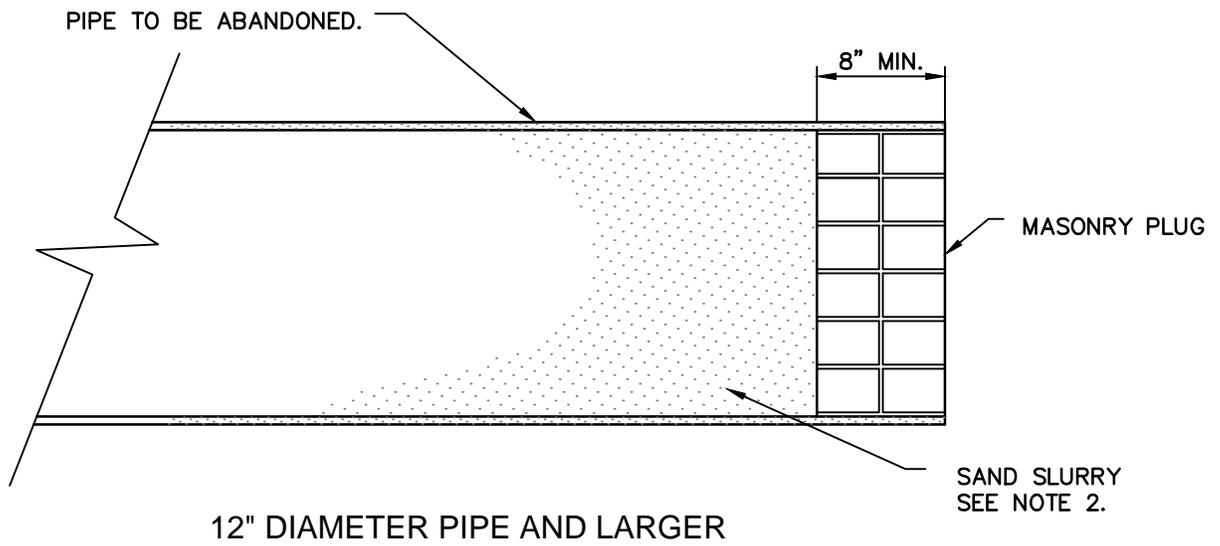
SCALE: NONE

DRAWN: CFB

CHK: MGK

APPVD:

DATE: JUN 2012



NOTES:

1. PIPE PLUGS SHALL BE INSTALLED TO THE SATISFACTION OF THE CITY ENGINEER.
2. ABANDONED PIPES, 12" AND LARGER, SHALL BE BROKEN INTO EVERY 50' AND SHALL BE FILLED COMPLETELY WITH SAND SLURRY.

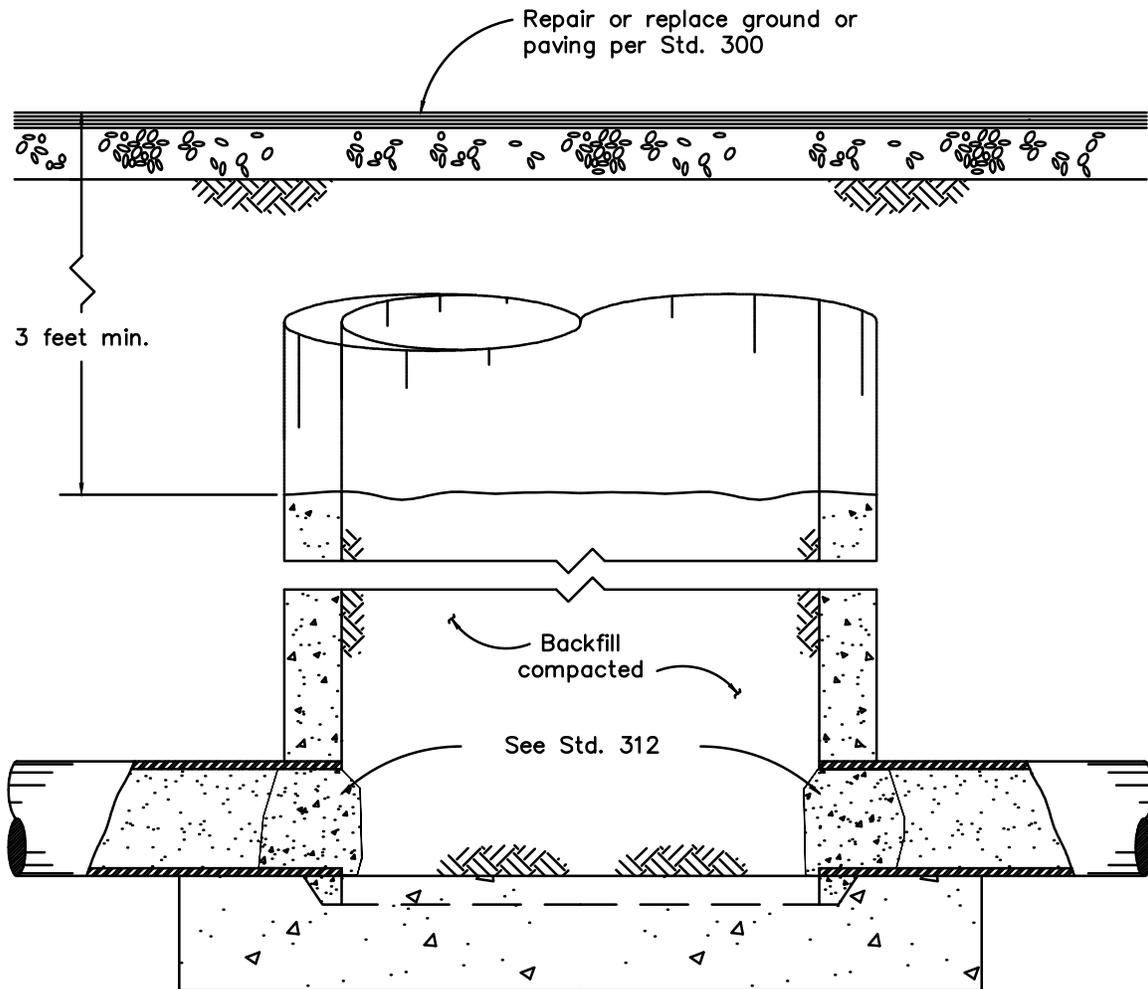


ABANDONED PIPE PLUG DETAIL

STD. NO.
312

SCALE: NONE | DRAWN: CFB | CHK: MGK | APPVD: *[Signature]*

DATE: JUN 2012



NOTES:

1. Remove frame, cover, taper and barrel sections as required to a minimum of 3' below finished grade.
2. After plugging all pipes in manhole, the remaining portion of the barrel section and all voids created by the removal of the upper portions of the manhole, shall be backfilled and compacted to 90% relative density. Use trench backfill or pipe bedding material per Std. 222.



ABANDONED MANHOLE

STD. NO.
313

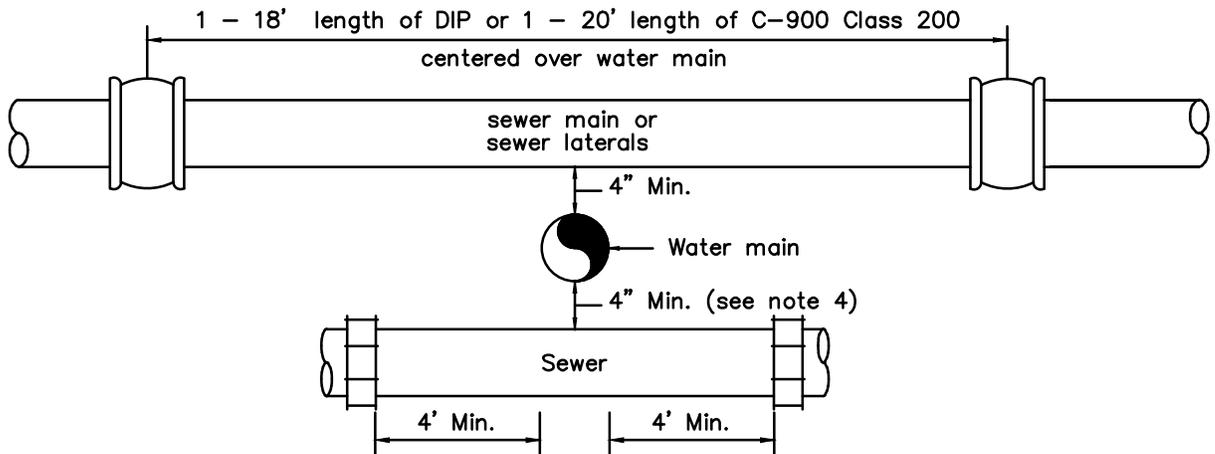
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DRAWN: CFB

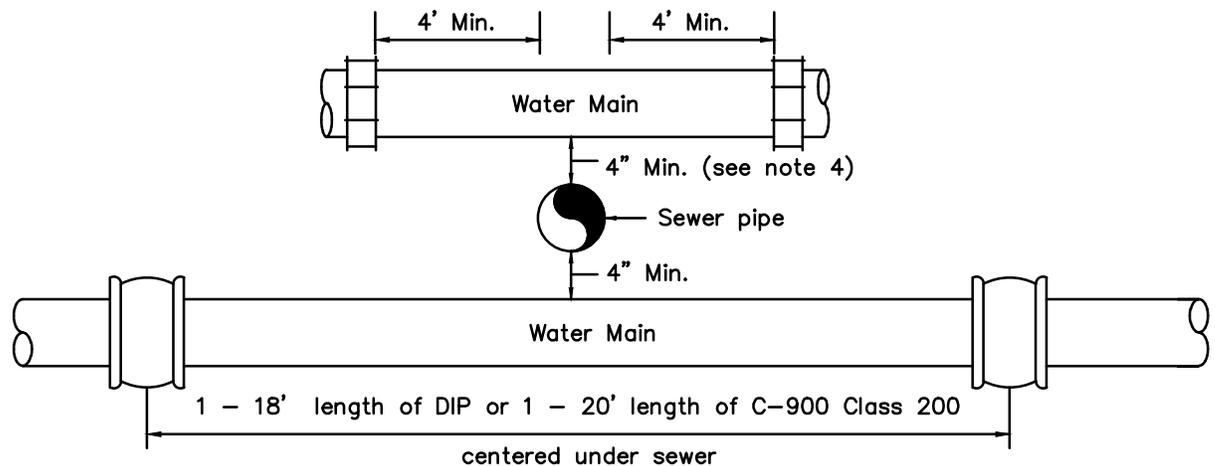
CHK: MGK

APPVD:

DATE: JUN 2012



SEWER OVER OR UNDER WATER



WATER OVER OR UNDER SEWER

NOTES:

1. All installations shall conform to the State of California Dept. of Health Services "Criteria For The Separation of Water Mains & Sanitary Sewers".
2. This Standard applies to pipes less than 24" in diameter. All crossings of larger diameter shall be as approved by the Director of Utilities.
3. All new Ductile Iron shall be wrapped in polyethylene per City of Santa Rosa Construction Specifications.
4. Per State Std.'s, a min. 4" clearance is required where sewer crosses below a water main. Where there is 1' or more vertical clearance, no special installation is required.
5. Any pipe / pipe crossings with less than 6" vertical clearance shall be padded with styrofoam, felt expansion joint material, or other expansive materials between pipes as approved by the Director of Utilities.

APPROVED COUPLINGS
See Engineer's Approved List



SEWER-WATER MAIN CROSSING DETAILS

STD. NO.
315

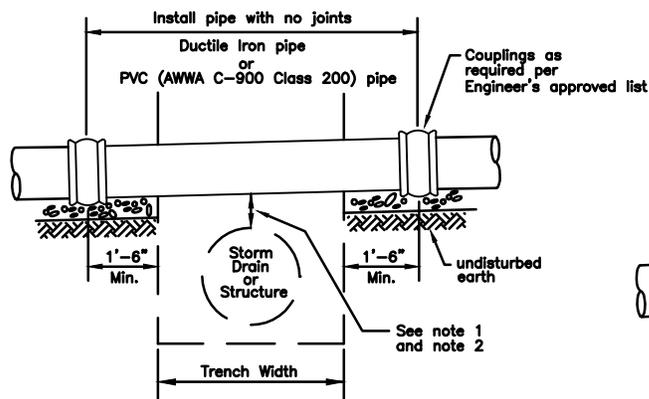
SCALE: NONE

DRAWN: CFB

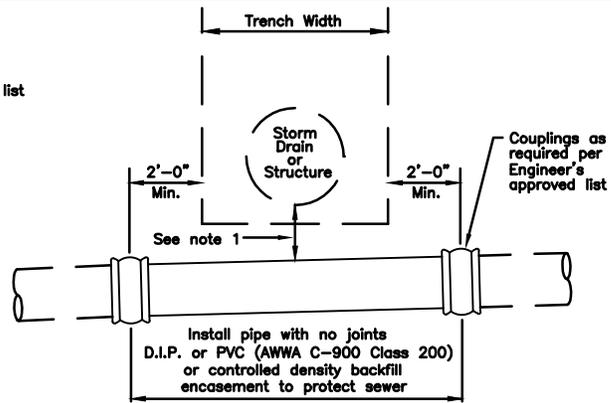
CHK: MGK

APPVD:

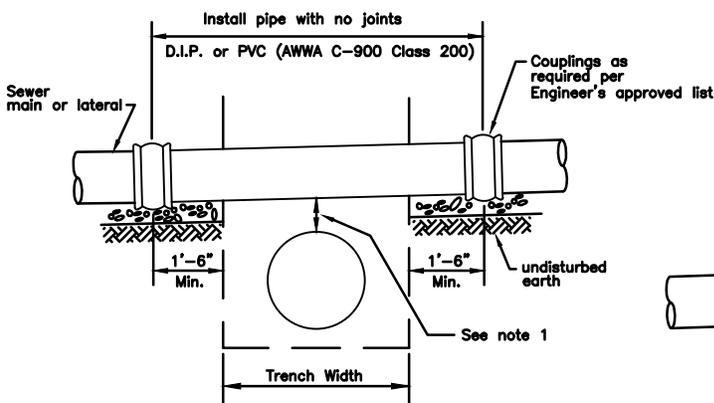
DATE: JUN 2012



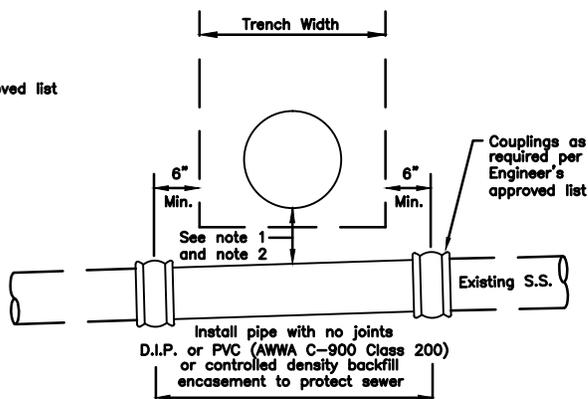
INSTALLATION OVER PIPE OR STRUCTURE



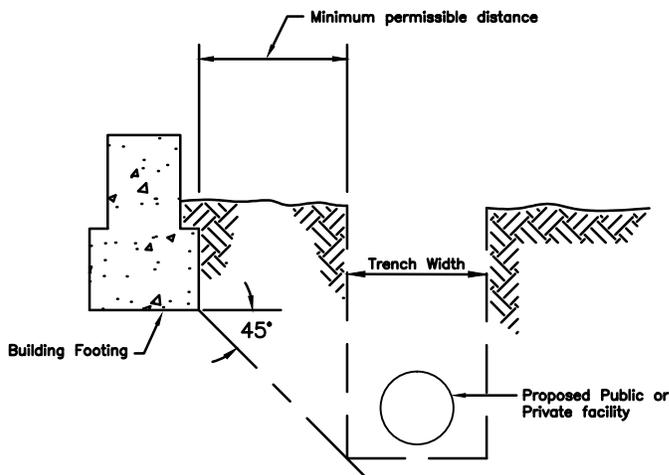
INSTALLATION UNDER PIPE OR STRUCTURE



INSTALLATION OF PIPE OR STRUCTURE UNDER SANITARY SEWER



INSTALLATION OF PIPE OR STRUCTURE OVER SANITARY SEWER



DETAIL OF BUILDING SETBACK FROM UNDERGROUND UTILITY

* NOTE: REQUIRED PER UNIFORM PLUMBING CODE SECTION 315.1

NOTES:

1. 1" minimum vertical clearance is required between pipes. Where clearance is less than 6", install felt expansion material or styrofoam between pipes.
2. This installation detail is required only if clearance is less than 1'.
3. Ductile Iron pipe shall be encased in polyethylene film per AWWA standards.



MISCELLANEOUS PIPE INSTALLATION DETAILS

STD. NO. 316

SCALE: NONE DRAWN: CFB CHK: MGK APPVD: *[Signature]*

DATE: JUN 2012

B – Storm Drain Standard Plans (400 Series)

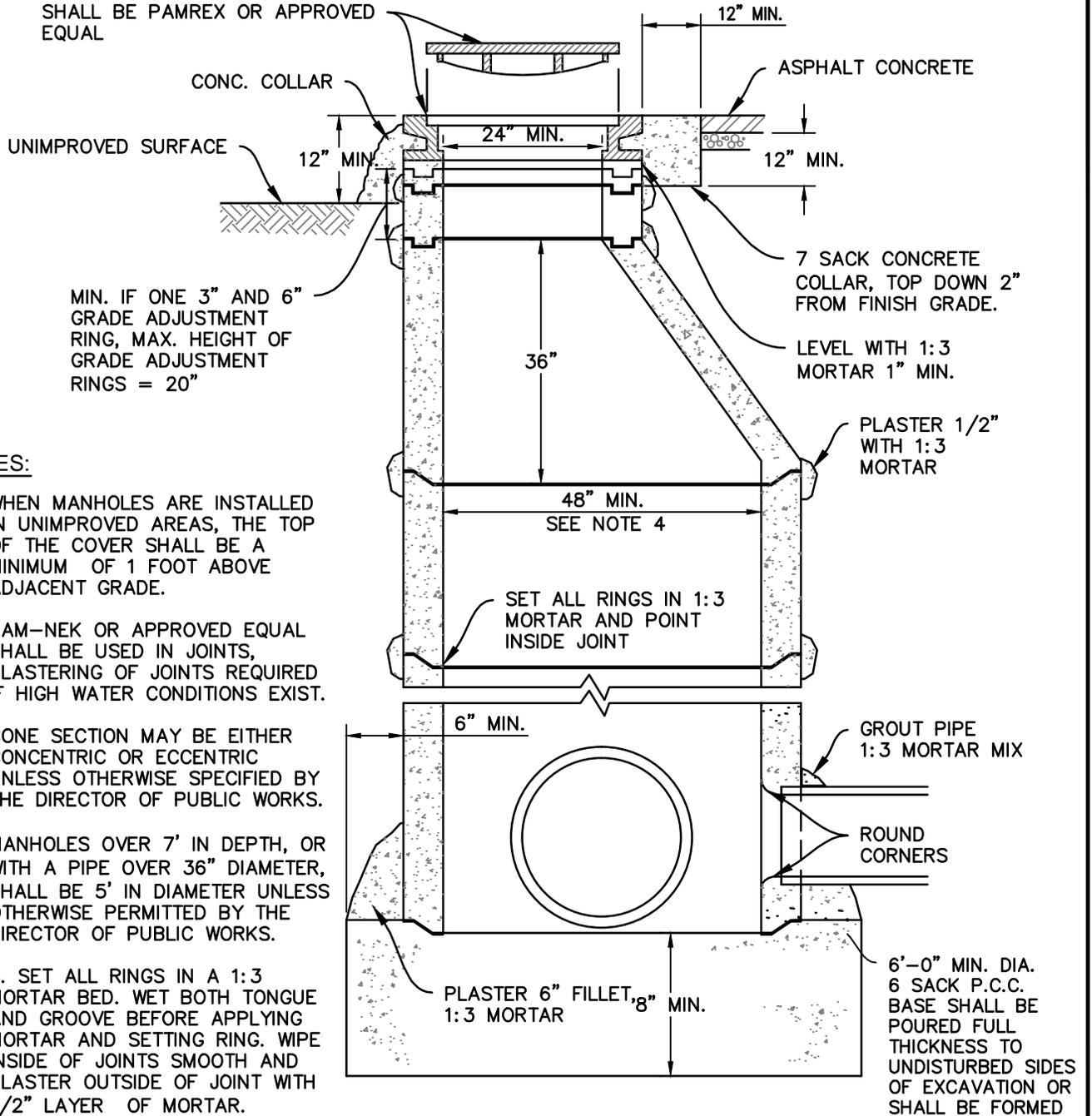
STORM DRAIN STANDARD PLANS

DESCRIPTION

400 SERIES – STORM DRAIN

| | |
|-----|--|
| 400 | Storm Drain Manhole |
| 401 | Standard Manhole Frame and Cover |
| 402 | Standard Precast Concrete Storm Drain Manhole Reducer Slab |
| 403 | Precast Catch Basin Hood |
| 404 | Curb Opening Catch Basin |
| 405 | Catch Basin for Pipes Larger Than 24" |
| 406 | Storm Drain Gallery |
| 407 | Not Used |
| 408 | Typical Storm Drain Outfall Detail |
| 409 | Sidewalk Drain |
| 410 | Sidewalk Cross Drain |
| 411 | Sidewalk Underdrain With Cover Plate |
| 412 | Sidewalk Corner Cross Drain |
| 413 | Typical Lot Drainage |
| 414 | Storm Drain Message Layout |

MANHOLE COVER AND FRAME SHALL BE PAMREX OR APPROVED EQUAL



MIN. IF ONE 3" AND 6" GRADE ADJUSTMENT RING, MAX. HEIGHT OF GRADE ADJUSTMENT RINGS = 20"

NOTES:

1. WHEN MANHOLES ARE INSTALLED IN UNIMPROVED AREAS, THE TOP OF THE COVER SHALL BE A MINIMUM OF 1 FOOT ABOVE ADJACENT GRADE.
2. RAM-NEK OR APPROVED EQUAL SHALL BE USED IN JOINTS, PLASTERING OF JOINTS REQUIRED IF HIGH WATER CONDITIONS EXIST.
3. CONE SECTION MAY BE EITHER CONCENTRIC OR ECCENTRIC UNLESS OTHERWISE SPECIFIED BY THE DIRECTOR OF PUBLIC WORKS.
4. MANHOLES OVER 7' IN DEPTH, OR WITH A PIPE OVER 36" DIAMETER, SHALL BE 5' IN DIAMETER UNLESS OTHERWISE PERMITTED BY THE DIRECTOR OF PUBLIC WORKS.
5. SET ALL RINGS IN A 1:3 MORTAR BED. WET BOTH TONGUE AND GROOVE BEFORE APPLYING MORTAR AND SETTING RING. WIPE INSIDE OF JOINTS SMOOTH AND PLASTER OUTSIDE OF JOINT WITH 1/2" LAYER OF MORTAR.
6. CONSTRUCT ALL FLOW CHANNELS OF PIPE WHEREVER POSSIBLE. AFTER BASE IS POURED, BREAK OUT TOP HALF OF PIPE FLUSH WITH INSIDE FACE OF M.H. WALL AND CONSTRUCT U-SHAPED CHANNEL. MAKE ELEVATION CHANGES GRADUALLY AND DIRECTIONAL CHANGES WITH SMOOTH CURVES. SET RING BASE IN MORTAR.
7. ALL SECTIONS OF MANHOLE MUST BE OF IDENTICAL MAKE AND MANUFACTURER.



STORM DRAIN MANHOLE

STD. NO.
400

SCALE: NONE

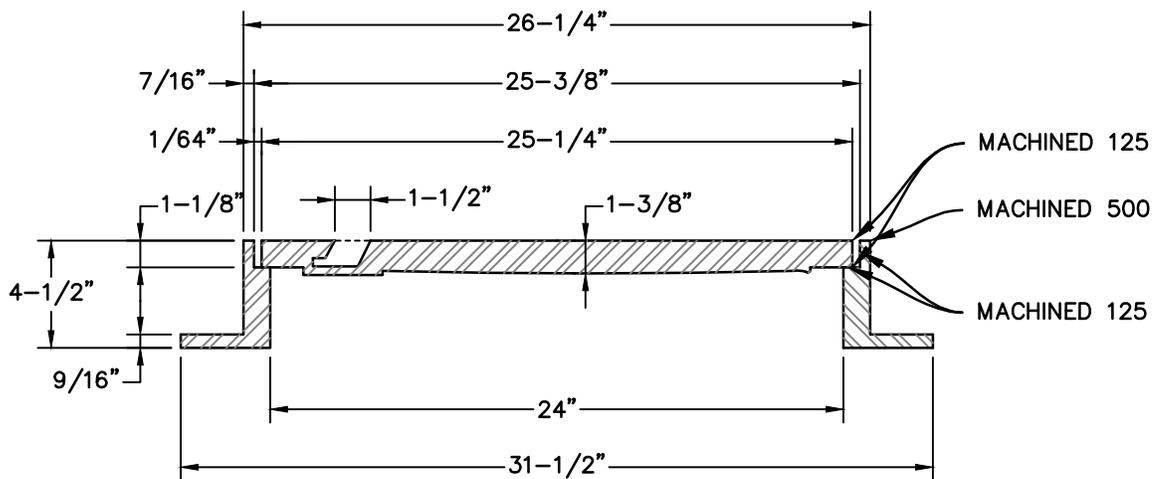
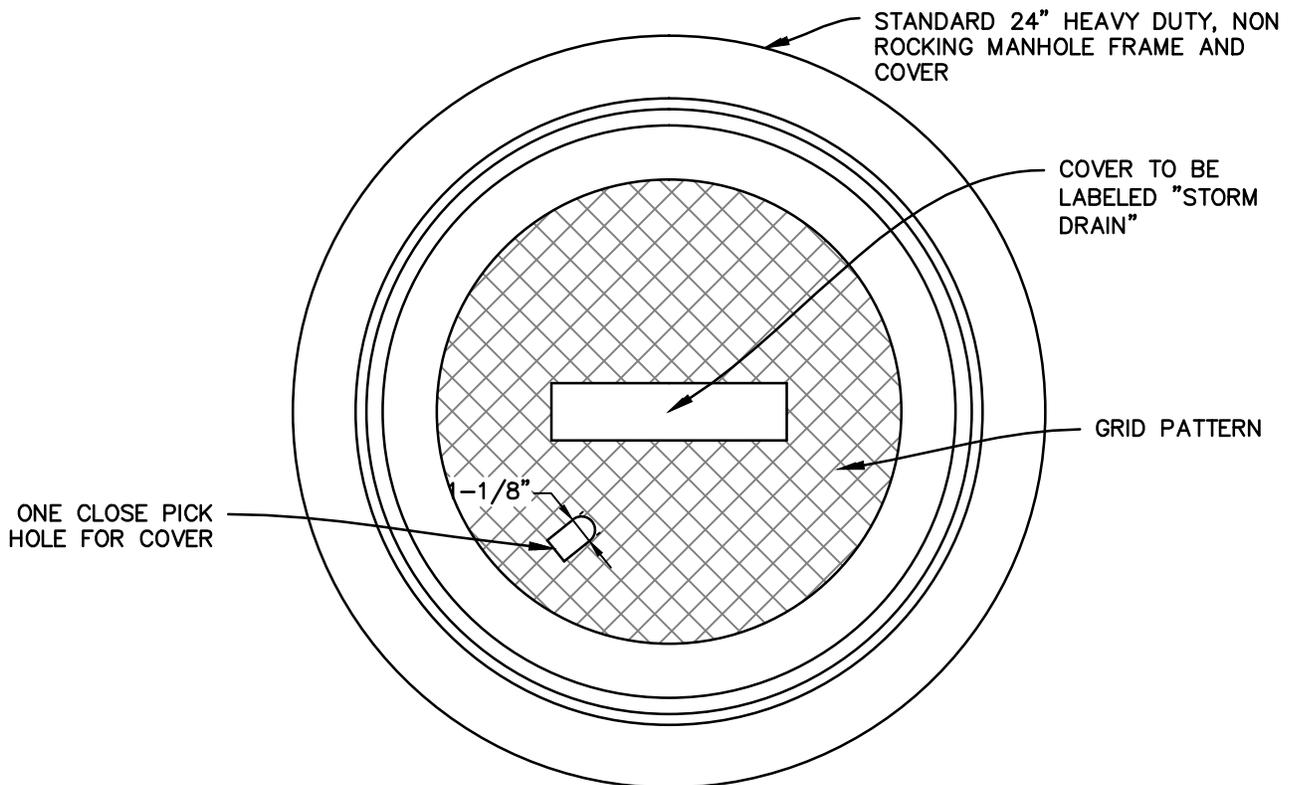
DRAWN: CFB

CHK: MGK

APPVD:

[Signature]

DATE: JUN 2012



NOTES:

1. ALL CASTINGS SHALL BE DIPPED IN APPROVED ASPHALT PAINT.
2. ALL MATERIAL USED IN MANUFACTURING SHALL CONFORM TO A.S.T.M. DESIGNATION 48-30, OR TO UNITED STATES GOVERNMENT SPECIFICATIONS QQI-652B.
3. MINIMUM WEIGHT COMPONENTS:
 COVER - 130 POUNDS
 FRAME - 135 POUNDS

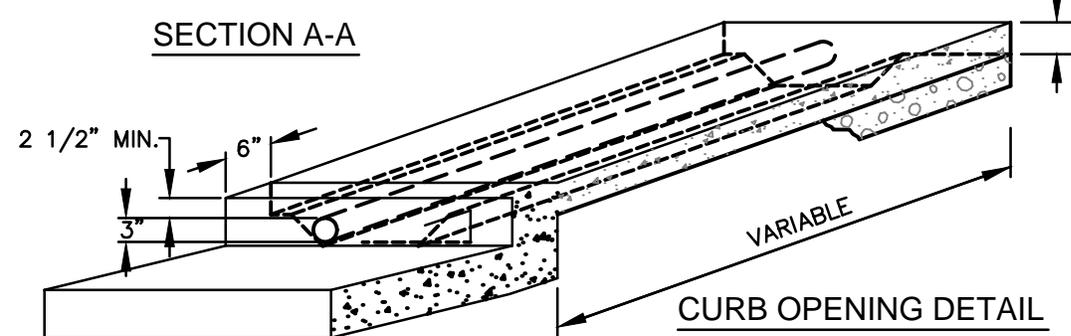
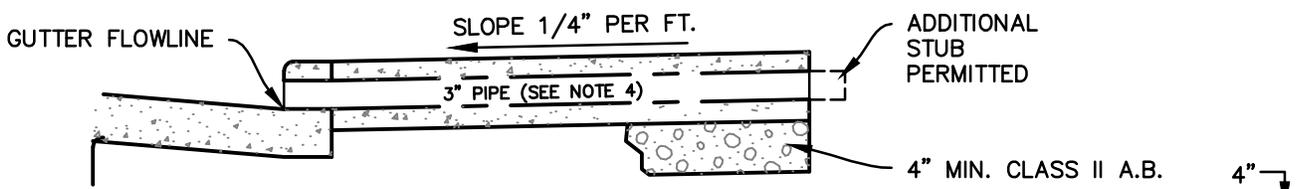
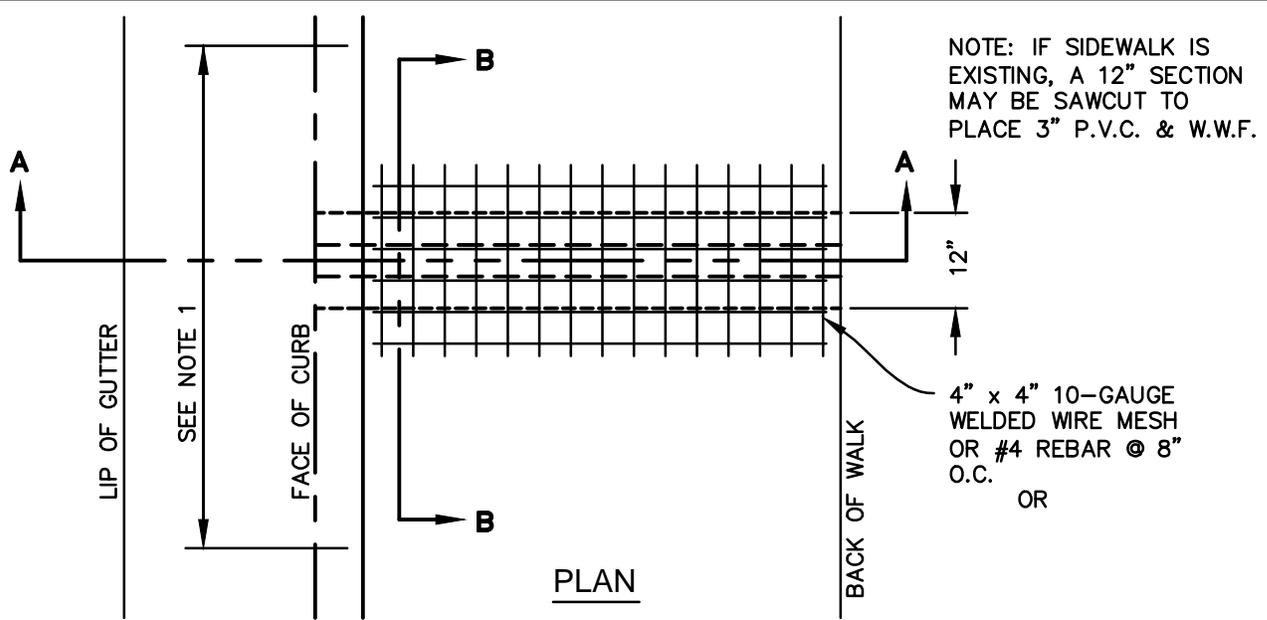


**STANDARD MANHOLE
FRAME AND COVER**

STD. NO.
401

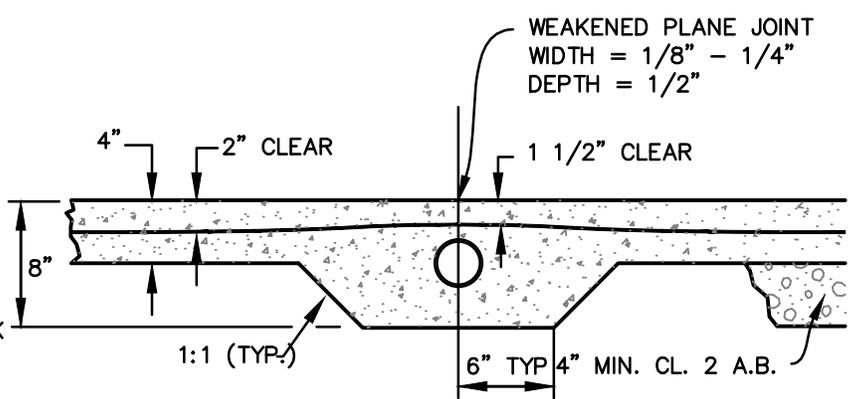
SCALE: NONE DRAWN: CFB CHK: MGK APPVD: *[Signature]*

DATE: JUN 2012



NOTES:

1. WIRE MESH OR REBAR SHALL BE 2' WIDE. LENGTH SHALL EQUAL SIDEWALK WIDTH MINUS 4". IF SIDEWALK IS EXISTING, SEE NOTE ABOVE.
2. ON-SITE DRAINAGE AND LOCATION OF CURB OUTLETS SHALL BE BY THE OWNER TO THE SATISFACTION OF THE DIRECTOR OF PUBLIC WORKS.
3. DRAIN PIPE SHALL BE INSTALLED SO THAT TOP OF PIPE IS 2-1/2" MIN. BELOW FINISH GRADE AT BACK OF SIDEWALK.
4. SIDEWALK DRAIN TO BE 3" SCH. 40, HEAVY WALL, RIGID POLYVINYL CHLORIDE PIPE OR APPROVED SUBSTITUTE.



SECTION B-B

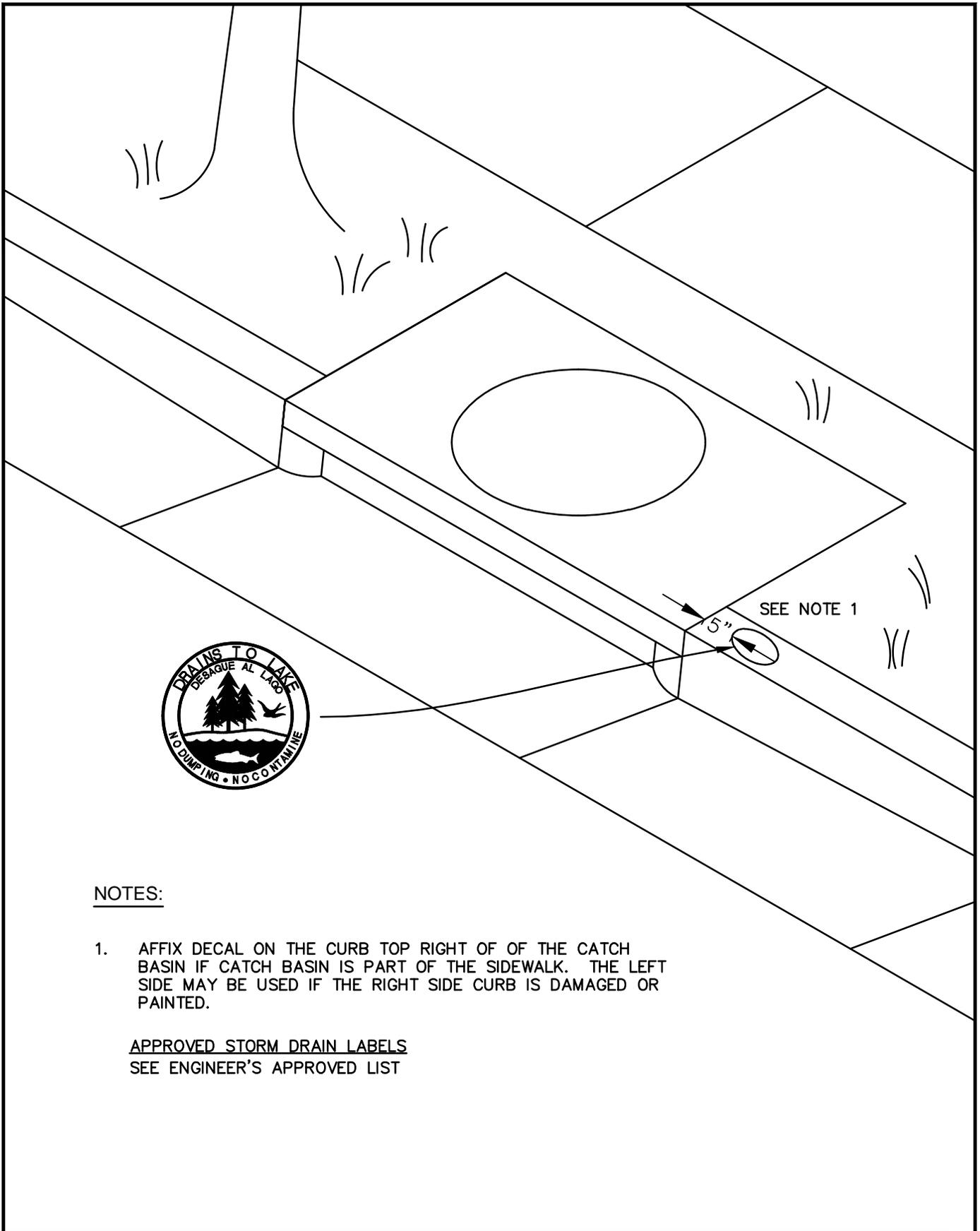


SIDEWALK DRAIN

STD. NO.
409

SCALE: NONE DRAWN: CFB CHK: MGK APPVD: *[Signature]*

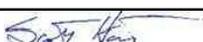
DATE: JUN 2012



NOTES:

1. AFFIX DECAL ON THE CURB TOP RIGHT OF OF THE CATCH BASIN IF CATCH BASIN IS PART OF THE SIDEWALK. THE LEFT SIDE MAY BE USED IF THE RIGHT SIDE CURB IS DAMAGED OR PAINTED.

APPROVED STORM DRAIN LABELS
SEE ENGINEER'S APPROVED LIST

| | | | | | |
|---|-------------------------------------|--------------------------------|----------|--|----------------|
|  | <h2>STORM DRAIN MESSAGE LAYOUT</h2> | <p>STD. NO. 414</p> | | | |
| | SCALE: NONE | DRAWN: CFB | CHK: MGK | APPVD:  | DATE: JUN 2012 |

B – Water System Standard Plans (500 Series)

WATER SYSTEM STANDARD PLANS

DESCRIPTION

500 SERIES - WATER SYSTEM

| | |
|-----|--|
| 500 | Water Main Construction Notes |
| 501 | Gate Valve and Valve Box With Riser |
| 502 | Fire Hydrant Detail |
| 503 | 3/4" & 1" Domestic Water Service Lateral |
| 504 | 1" Dual Water Service Lateral |
| 505 | 2" Domestic Water Service Lateral |
| 506 | 4" Water Service Lateral Installation for 3" Meter |
| 507 | 4" Water Service Lateral Installation for 4" Meter |
| 508 | 6" Water Service Lateral Installation for 6" Meter |
| 509 | Not used |
| 510 | Reduced-Pressure Backflow Preventer |
| 511 | Double Check Detector Fire Line Backflow Assembly |
| 512 | Air Release Valve |
| 513 | Single Combination Water Service |
| 514 | Not Used |
| 515 | Temporary Blowoff with Main Line Valve |
| 516 | Blowoff with Harness |
| 517 | Not used |
| 518 | Not used |
| 519 | Concrete Anchor Blocks for Vertical Bends |

| | |
|-----|--|
| 520 | Concrete Thrust Block |
| 521 | Not used |
| 522 | Not used |
| 523 | Installation of Pressure Reducing Valves |
| 524 | Not used |
| 525 | Installation of Air and Vacuum & Air Release Valve |
| 526 | Not used |
| 527 | Dirt Stop and Water Main Encasement |
| 528 | Water Main Lowering Detail |
| 529 | Water Main Installation Over Structure |

WATER MAIN CONSTRUCTION NOTES

1. ALL MATERIAL, WORKMANSHIP, AND CONSTRUCTION DETAILS SHALL CONFORM TO THE CITY OF LAKEPORT, "STANDARD SPECIFICATIONS," INCLUDING ALL ADDENDA, STANDARD PLAN REVISIONS AND SPECIAL PROVISIONS.
2. START EXCAVATION BY EXPOSING END OF EXISTING MAIN TO DETERMINE ITS LINE AND GRADE. START NEW MAIN 8 – 10 FEET FROM, AND ON SAME LINE AND GRADE AS EXISTING MAIN. PIPE LAYING SHALL THEN BE ADJUSTED SO THE DEPTH OF NEW MAIN CONFORMS TO NOTE #3.
3. MINIMUM DEPTH OF COVER FROM FINISHED GRADE SHALL BE: 32" FOR 6" MAINS; 36" FOR 8" MAINS, 44" FOR 12" MAINS; AND 48" FOR 14" AND LARGER MAINS. 4" AND 10" MAINS MUST BE SPECIFICALLY APPROVED BY THE CITY ENGINEER. 4" THROUGH 16" MAIN LINE VALVES SHALL BE RESILIENT SEAT GATE. 18" AND LARGER MAINLINE VALVES SHALL BE BUTTERFLY VALVES. BLOW OFF VALVES SHALL BE 2" OR 3" BALL VALVES WITH ROTATION STOPS.
4. NO. 10 INSULATED COPPER WIRE SHALL BE LAID ON TOP OF AND ALONG ENTIRE LENGTH OF ALL MAINS AND SERVICES, AND SHALL BE EXTENDED TO THE SURFACE AT ALL VALVE LOCATIONS, BLOWOFFS AND METER BOXES SUFFICIENT FOR LOCATOR EQUIPMENT TO BE ATTACHED. FASTEN THE WIRE TO THE TOP OF THE PIPE SO AS NOT TO BE DISPLACED BY BACKFILLING PROCEDURE (ONE METHOD OF ACCOMPLISHING THIS IS TO AFFIX THE WIRE TO THE TOP OF THE PIPE WITH DUCT TAPE AT APPROXIMATELY 10 FEET INTERVALS).
5. MAINS TO BE CONSTRUCTED WITHIN 10' OF SEWER PIPE REQUIRE SPECIAL INSTALLATION AND DESIGN MUST BE SPECIFICALLY APPROVED BY THE CITY ENGINEER.
6. ALL TRENCHING, BACKFILL AND RESURFACING REQUIRED FOR INSTALLATION OF WATER SYSTEM FACILITIES SHALL BE PER CITY STANDARD 222.
7. ONLY CITY PERSONNEL SHALL OPERATE VALVES ON EXISTING WATER MAINS OR WATER SERVICES.
8. SERVICE LATERALS OTHER THAN THOSE SHOWN OR NOTED ON THE PLANS SHALL NOT BE INSTALLED PRIOR TO OBTAINING CITY APPROVAL.
9. UNLESS OTHERWISE SHOWN ON THE PLANS, 1" WATER SERVICE LATERALS FOR 1" METER INSTALLATIONS AND SHALL BE INSTALLED IN RESIDENTIAL DEVELOPMENTS AND 2" OR LARGER WATER SERVICE LATERALS SHALL BE INSTALLED IN COMMERCIAL DEVELOPMENTS. WHERE SERVICE LENGTHS ARE OVER 40 FEET FROM METER TO MAIN LINE, 1" SERVICE LATERALS SHALL BE USED. FOR SERVICE LENGTHS OVER 60 FEET, 1-1 1/2" SERVICE LATERAL SIZE SHALL BE APPROVED BY THE CITY ENGINEER PRIOR TO PLACEMENT.
10. NO MORE THAN ONE WATER SERVICE SHALL BE PLACED WITHIN A TRENCH.
11. WATER AND SEWER SERVICE LATERALS SHALL BE SEPARATED HORIZONTALLY BY A MINIMUM OF 10 FEET.
12. AT THE LOCATION OF EACH WATER SERVICE LATERAL, THE LETTER "W" SHALL BE INSCRIBED INTO THE FACE OF THE CURB. THE LETTER "W" SHALL BE 4" HIGH AND COMPLETELY LEGIBLE.
13. ALL WATER SERVICE POLY TUBING SHALL BE GOLD LABEL, 200 PSI, IPS SIZE 1 1/2-2 INCH CTS.

SHEET 1 OF 3



WATER MAIN CONSTRUCTION NOTES

STD. NO.
500

SCALE: NONE

DRAWN: CFB

CHK: MGK

APPVD:

[Signature]

DATE: JUN 2012

WATER MAIN CONSTRUCTION NOTES (CONTINUED):

14. ALL METER BOXES, VAULTS AND PITS SHALL BE BEDDED ON 3" MINIMUM THICK, 3/4" DRAIN ROCK, AB-2, OR OTHER CLEAN MATERIAL WITH TYPICAL SAND EQUIVALENT OF 20 MINIMUM, UNCONTAMINATED BY NATIVE SOIL, AGAINST COMPACTED OR UNDISTURBED BASE. THE GRAVEL BED SHALL EXTEND TO A 4" MINIMUM BEYOND ALL SIDES OF THE METER BOX. BOX SHALL BE SET FLUSH WITH TOP OF CURB, SIDEWALK OR GROUND, WHICHEVER IS APPLICABLE. LOT NUMBERS MUST BE NOTED ON TOP SIDE OF METER BOX WITH A PERMANENT MARKING PEN.
15. METER BOXES SHALL BE LOCATED OUT OF TRAFFIC LOADING AREAS WHENEVER POSSIBLE.
16. METER BOXES AND VAULTS SHALL BE SET SO THAT THE READING LIDS ARE ALIGNED OVER THE METER REGISTERS AS CLOSELY AS POSSIBLE.
17. UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER, THE WATER SERVICE LINE SHALL BE THE SAME SIZE AS THE WATER METER, 1" FOR 3/4 AND 1" METERS, OR 3/4" FOR DUPLEX.
18. ITEMS SPECIFIED ON THE STANDARD PLANS, OR THE ENGINEER'S APPROVED LIST, ARE APPROVED FOR USE BY THE CITY ENGINEER. ALL OTHERS SHALL BE SUBMITTED TO THE CITY ENGINEER FOR APPROVAL.
19. METER MANIFOLDS MUST BE DETAILED AND APPROVED BY THE CITY ENGINEER. IN GENERAL, MANIFOLDS WHERE ALL FITTINGS ARE 2" OR LESS, SHALL BE CONSTRUCTED FROM THREADED BRASS PIPES AND FITTINGS FROM THE END OF THE SERVICE LATERAL TO THE METER CONNECTION. NO PLASTIC PIPE SHALL BE USED IN CONSTRUCTING MANIFOLDS OF ANY SIZE. NO MORE THAN SIX METERS MAY BE MANIFOLDED OFF A SINGLE WATER SERVICE LATERAL, WITH NO MORE THAN 3 ON EITHER SIDE OF THE SERVICE.
20. GASKETS FOR FLANGE FITTINGS SHALL CONFORM TO AWWA STD. C115.
21. TO ABANDON A WATER SERVICE, EXPOSE AND TURN OFF CORPORATION STOP, THEN SEVER THE LATERAL CONNECTION.
22. THERE SHALL BE NO UNMETERED CONNECTIONS TO THE CITY OF LAKEPORT WATER SYSTEM, INCLUDING CONNECTIONS BYPASSING METER FOR TESTING ON-SITE PLUMBING OR FOR OBTAINING CONSTRUCTION WATER. PRESSURE TESTING AGAINST VALVES WILL NOT BE ALLOWED. WHEN A SUBDIVISION WATER MAIN HAS BEEN ACCEPTED AND TIED-IN, THE INDIVIDUAL CURB STOPS WILL BE LOCKED OFF WITH CABLE TIES. CUTTING OFF OR TAMPERING WITH THE CABLE TIES WILL CONSTITUTE A STRAIGHT TIE-IN CONNECTION. SUCH CONNECTIONS WILL BE SEVERED BY THE CITY AND WILL RESULT IN PENALTIES INCLUDING PAYMENT OF FINES AND ESTIMATED WATER USAGE FEES.
23. BEFORE COMBUSTIBLE MATERIALS MAY BE STORED OR CONSTRUCTED ON SITE, THE FIRE DEPARTMENT MUST APPROVE FIRE FLOW AND ACCESS. BEFORE A FIRE HYDRANT MAY BE PLACED IN SERVICE, A HIGH VELOCITY FLUSHING OF THE HYDRANT LATERAL SHALL BE WITNESSED AND APPROVED BY CITY PERSONNEL. HIGH VELOCITY FLUSHING SHALL CONSIST OF REMOVING THE HYDRANT AND REPLACING IT WITH A SUITABLE ELBOW AND DIFFUSER. UNDER CITY SUPERVISION, THE HYDRANT LATERAL IS FLUSHED UNTIL CITY PERSONNEL ARE SATISFIED THAT THE LINES ARE CLEAR OF DEBRIS.
24. UPON COMPLETION OF CONSTRUCTION, FINAL CONNECTION WILL BE MADE BY THE CONTRACTOR AT THE DEVELOPER'S EXPENSE UNDER INSPECTION BY A CITY REPRESENTATIVE, UNLESS OTHERWISE SPECIFIED ON THE PLANS.

SHEET 2 OF 3



**WATER MAIN
CONSTRUCTION NOTES**

STD. NO.
500

SCALE: NONE

DRAWN: CFB

CHK: MGK

APPVD:

DATE: JUN 2012

WATER MAIN CONSTRUCTION NOTES (CONTINUED):

- 25. WHEN A CONNECTION IS REQUIRED TO AN EXISTING WATER MAIN, THE CONTRACTOR SHALL PROVIDE ALL EXCAVATION, SHORING, BACKFILL AND TRENCH RESURFACING PER CITY STANDARD 222. WHERE THE CONNECTION IS TO BE A "HOT TAP," THE CONTRACTOR SHALL PROVIDE AND INSTALL THE TAPPING VALVE AND SLEEVE, AND ANY OTHER HARDWARE REQUIRED AND WILL MAKE THE TAP AT THE DEVELOPER'S EXPENSE. NO HOT TAP SHALL BE MADE WITHIN 4 FEET OF A JOINT (MEASURED FROM JOINT TO CENTERLINE OF INTERSECTING PIPE). THE JOINT SHALL BE REMOVED, AND THE PROPOSED HOT TAP SHALL BE REPLACED WITH A "CUT-IN" TEE. WHEN A "CUT-IN" TEE AND VALVE(S) ASSEMBLY IS REQUIRED ON THE PLANS, THE CONTRACTOR SHALL PROVIDE AND INSTALL THE ENTIRE ASSEMBLY (INCLUDING VALVES), AND ANY OTHER HARDWARE NECESSARY UNDER CITY INSPECTION, AND SHALL PROVIDE ALL OTHER WORK AND MATERIALS NECESSARY TO COMPLETE THE INSTALLATION TO CITY STANDARDS.
- 26. THE CONTRACTOR SHALL COORDINATE ALL WATER MAIN CONNECTION WORK WITH THE CITY ENGINEER A MINIMUM OF 72 HOURS PRIOR TO COMMENCING WORK.
- 27. AFTER A STREET HAS BEEN OVERLAID, ALL WATER VALVE BOXES WILL BE MARKED IN WHITE PAINT BEFORE THE CLOSE OF THAT WORK DAY.
- 28. WITHIN 48 HOURS OF PAVING, ALL WATER VALVE BOXES WILL BE BROUGHT TO GRADE AND INSPECTED
- 29. ALL FIRE HYDRANT FLOW TESTING PERFORMED ON CITY FIRE HYDRANTS SHALL BE PERFORMED BY THE CITY OF LAKEPORT PUBLIC WORKS DEPARTMENT. THOSE DESIRING FLOW TESTS SHALL NOTIFY THE CITY ENGINEER. PRIOR TO TESTING AND ACCEPTANCE OF HYDRANTS, BURLAP SACKS SHALL BE PLACED OVER HYDRANTS.
- 30. FOR MORE THAN FOUR (4) METERS, CONFIGURATION SHALL BE APPROVED BY CITY ENGINEER.



**WATER MAIN
CONSTRUCTION NOTES**

STD. NO.
500

SCALE: NONE

DRAWN: CFB

CHK: MGK

APPVD:

DATE: JUN 2012



GATE VALVE AND VALVE BOX WITH RISER

STD. NO.
501

SCALE: NONE DRAWN: CFB CHK: MGK APPVD: *[Signature]* DATE: JUN 2012

STEM EXTENSION FABRICATION NOTES:

1. ALL WELDS TO RISER SHAFT SHALL BE FILLET WELD ALL AROUND.
2. ALL STEEL REQUIRED FOR RISER FABRICATION SHALL BE STRUCTURAL STEEL PER ASTM A36.

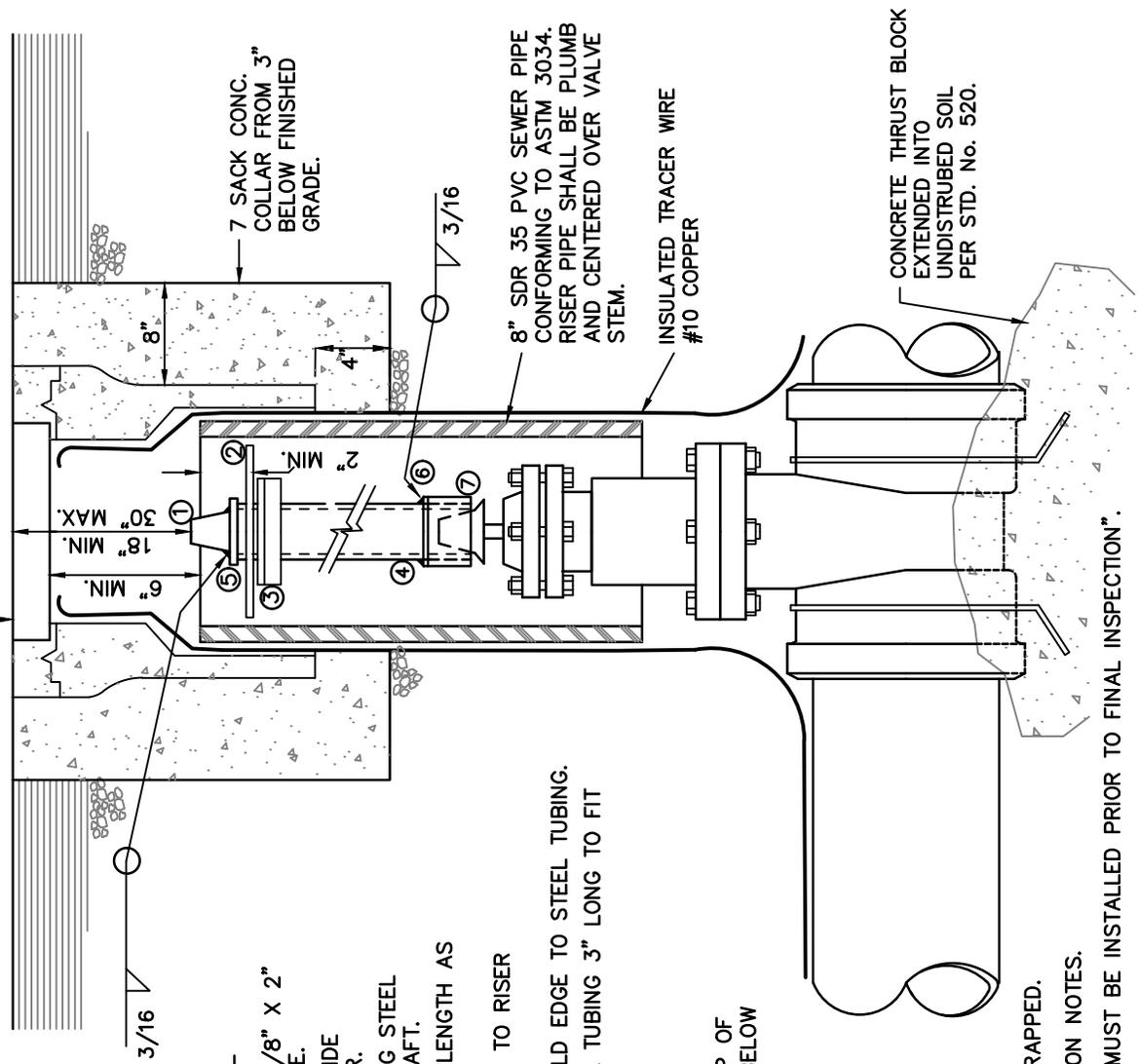
VALVE STEM EXTENSION PARTS LIST:

1. VALVE OPERATING NUT OR 1 7/8" X 1 7/8" X 2" HIGH, SOLID STEEL WELDED TO TOP PLATE.
2. 3/16" THK. X 7" DIA. FREE SPINNING GUIDE PLATE WITH 3 5/8" DIA. HOLE IN CENTER.
3. TWO 3/16" X 1 1/2" X 1 1/2" X 5" LONG STEEL ANGLE WELD TO TWO SIDES OF RISER SHAFT.
4. 2 1/2" X 3/16" SQUARE STEEL TUBING, LENGTH AS REQUIRED. EDGE WELD TO TOP PLATE.
5. 3" X 3" X 1/4" STEEL TOP PLATE. WELD TO RISER SHAFT AFTER GUIDE PLATE IS IN PLACE.
6. 2" X 2" X 1/4" STEEL BASE PLATE. WELD EDGE TO STEEL TUBING.
7. 2" X 2" X 3/16" SQ. STRUCTURAL STEEL TUBING 3" LONG TO FIT OPERATING NUT.

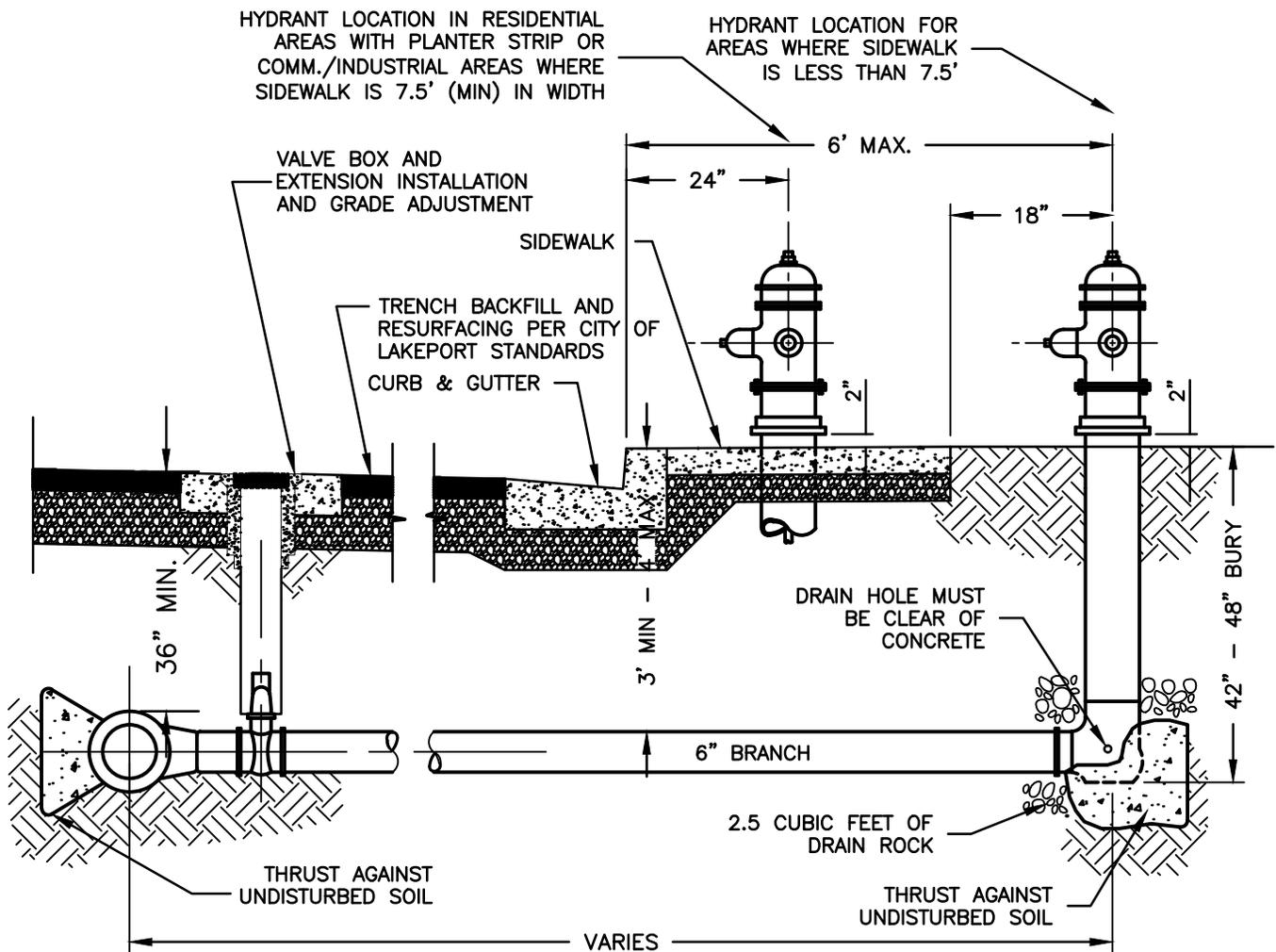
NOTES:

1. IF VALVE IS INSTALLED SO THAT THE TOP OF THE OPERATING NUT IS LESS THAN 30" BELOW FINISHED GRADE, THE VALVE STEM RISER IS NOT REQUIRED.
2. VALVES 2" THROUGH 10" SHALL BE RESILIENT WEDGE GATE VALVES AND VALVES 12" AND LARGER SHALL BE BUTTERFLY VALVES (SEE STD 522) UNLESS OTHERWISE APPROVED BY THE CITY.
3. ALL EXTERNAL BOLTS AND NUTS ON VALVES SHALL BE DUCTILE IRON. VALVE ASSEMBLY SHALL NOT BE POLY WRAPPED.
4. SEE STD. 500 FOR GENERAL CONSTRUCTION NOTES.
5. NOTE ON DRAWING: "VALVE EXTENSIONS MUST BE INSTALLED PRIOR TO FINAL INSPECTION".
6. GATE VALVE ILLUSTRATED. SIMILAR INSTALLATION REQUIRED FOR BALL VALVES & BUTTERFLY VALVES.

PRECAST VALVE BOX SET FLUSH WITH STREET SURFACE WITH CAST IRON RING AND COVER MARKED "WATER". BUTTERFLY VALVE BOX CONCRETE RING TO HAVE AN ARROW INSCRIBED SHOWING MAIN SIDE AND MAIN DIRECTION. SEE ENGINEER'S APPROVED LIST.



CONCRETE THRUST BLOCK EXTENDED INTO UNDISTURBED SOIL PER STD. No. 520.



NOTES:

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF LAKEPORT CONSTRUCTION STANDARDS AND STANDARDS FOR PUBLIC WORKS CONSTRUCTION (GREEN BOOK, LATEST EDITION).
2. JOINTS ARE TO BE MECHANICAL WITH MEGALUG RESTRAINTS, OR APPROVED EQUAL.
3. FIRE HYDRANTS ARE TO BE 5¼" DRY BARREL WITH (1) 4½" & (2) 2½" NOZZLES.
4. APPROVED HYDRANTS:
 - A. AMERICAN DARLING B-62-B
 - B. CLOW - MEDALLION
 - C. KENNEDY - GUARDIAN
 - D. WATEROUS
5. HYDRANT BURY DEPTH MAY VARY WITH PRIOR APPROVAL OF THE CITY ENGINEER.
6. PRIVATE ON SITE HYDRANT LOCATIONS TO BE APPROVED BY THE GOVERNING FIRE DISTRICT.
7. ISOLATION VALVE SHALL BE LOCATED AT PROPERTY LINE ON ALL PRIVATE HYDRANTS.
8. PROVIDE MINIMUM 4' CLEARANCE BEHIND HYDRANTS INSTALLED IN SIDEWALKS.



FIRE HYDRANT DETAIL

STD. NO.
502

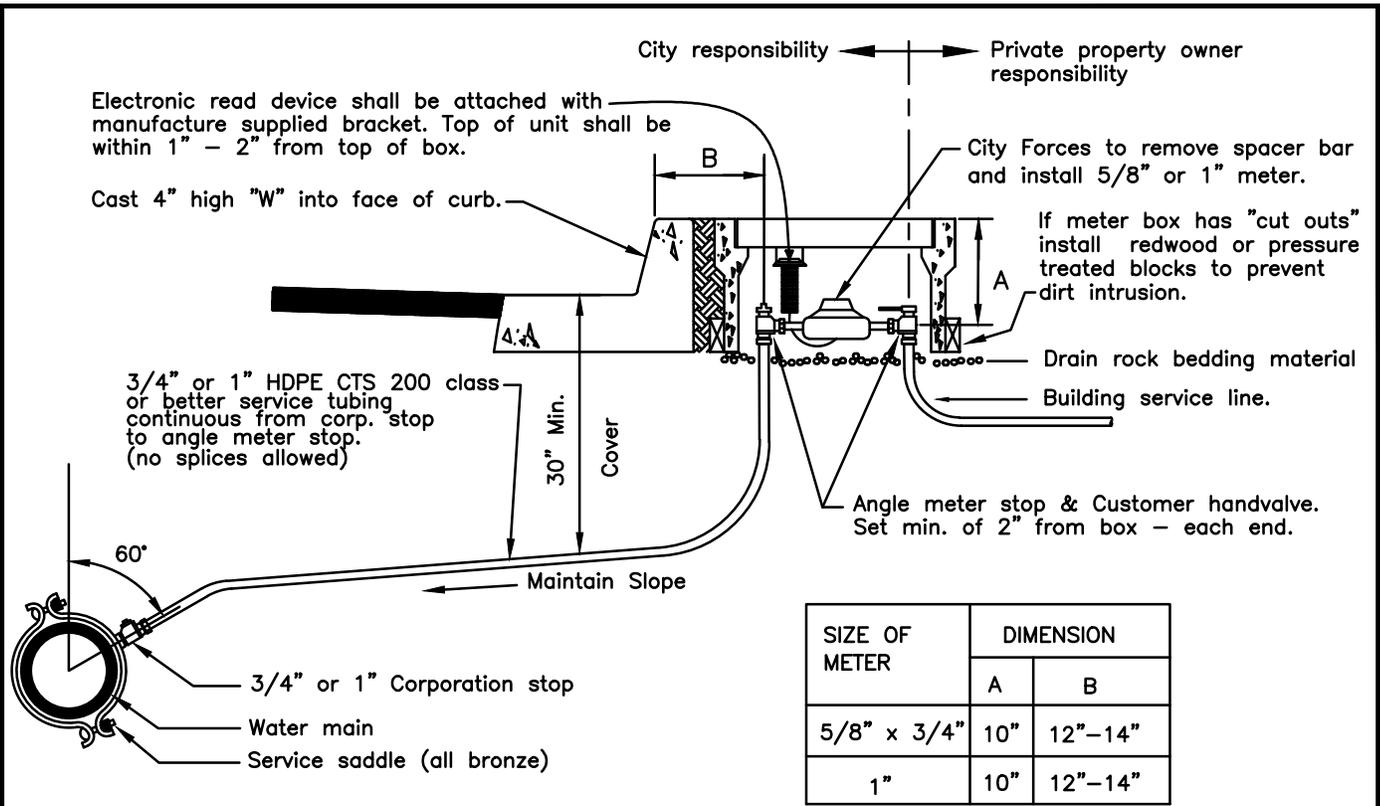
SCALE: NONE

DRAWN: CFB

CHK: MGK

APPVD:

DATE: JUN 2012



| SIZE OF METER | DIMENSION | |
|---------------|-----------|---------|
| | A | B |
| 5/8" x 3/4" | 10" | 12"-14" |
| 1" | 10" | 12"-14" |

NOTES

1. Service lateral bedding material to be compacted to minimum 90% relative compaction prior to installation of poly service tubing.
2. Unless otherwise specified on the plans, provide for 5/8" x 3/4" meter installation for residential uses and 1" meter installation for commercial uses.
3. Unless otherwise specified on the plans, install 3/4" service tubing for residential uses and 1" service tubing for commercial uses.
4. The City of Lakeport requires a minimum of 10 ft of separation between potable water and sewer lines.
5. Meter box must be set flush with top of curb or sidewalk, if applicable.
6. Prior to meter set, address to be clearly marked on topside lip of meter box with permanent felt marker.
7. For 5/8" x 3/4" meter installation on a 1" water service lateral, use a reducing adapter.
8. Traffic lid to be installed in all drive approaches and locations where vehicular traffic may occur, and where specified on plans.
9. #10 tracer wire required if service lateral is not installed perpendicular to main.

METER SETTING ASSEMBLY PARTS LIST

| METER SIZE | Angle Meter Stop | Hand Valve |
|-------------|-------------------------|----------------------------------|
| 5/8" x 3/4" | Ford BA43-332W or equal | Ford B13-332W or equal, w/handle |
| 1" | Ford BA43-444W or equal | Ford B13-444W or equal, w/handle |

METER BOXES AND COVERS

- 3/4" Christy B9X Box, with B9XG or B9X61G (traffic) cover.
- 1" Christy B12 Box, with B12G or B1261G (traffic) cover.

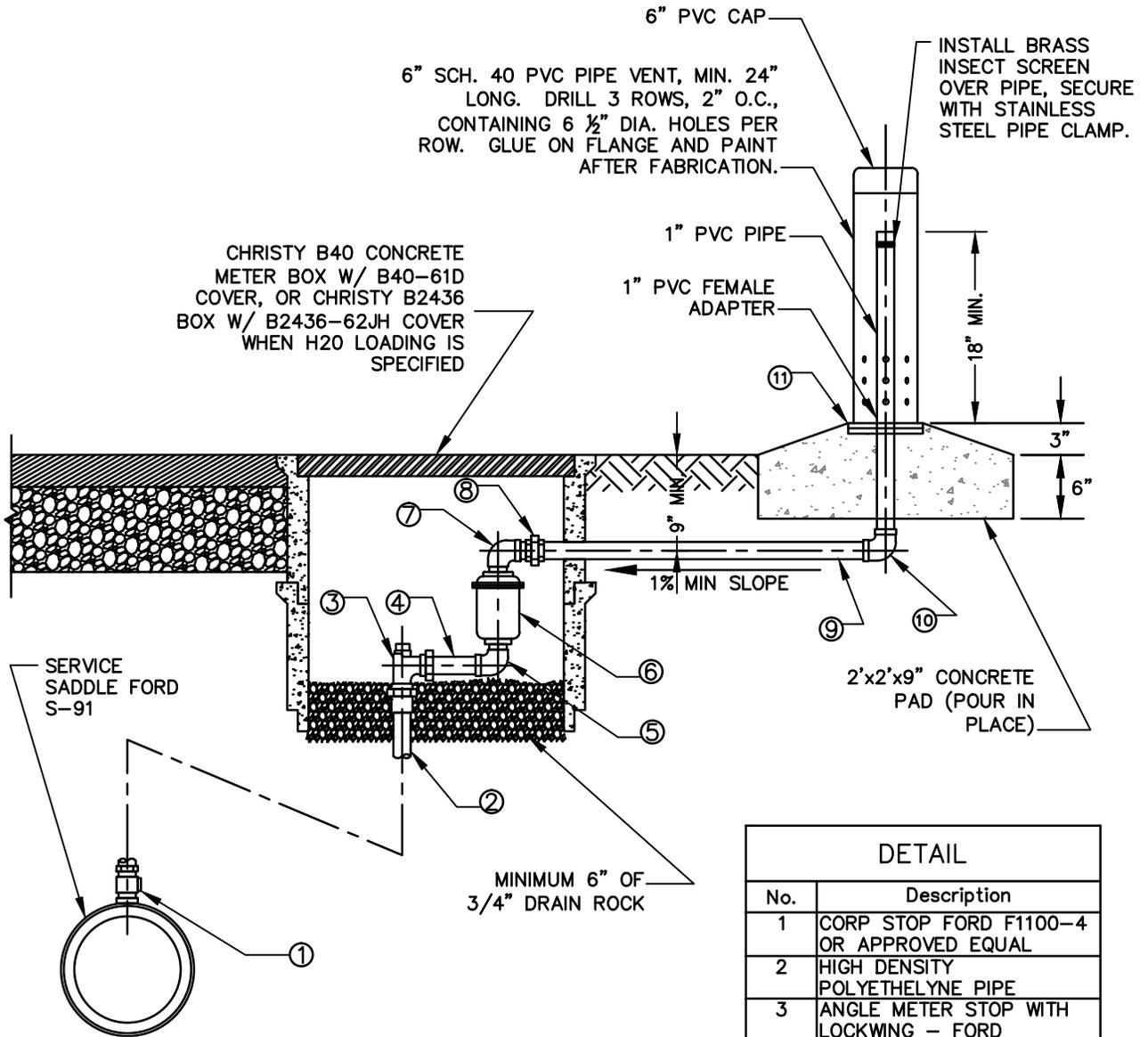


3/4" & 1" WATER SERVICE LATERAL FOR 5/8" x 3/4" & 1" METERS

STD. NO. **503**

SCALE: NONE | DRAWN: CFB | CHK: MGK | APPVD: *[Signature]*

DATE: JUN 2012



NOTES:

1. AIR RELEASE VALVES SHALL BE 1" UNLESS SHOWN OTHERWISE ON THE PLANS.
2. INSIDE DIAMETER OF PIPE AND FITTINGS SHALL NOT BE LESS THAN A.R.V. SIZE.
3. CAST COMPANION FLANGE IN CONCRETE.
4. VENT TO BE LOCATED IN THE FIELD.
5. VENT PIPE SHALL BE LOCATED ABOVE THE FLOOD LEVEL.
6. SET THE BOX FLUSH WITH THE PAVED SURFACE, SLOPE GROUND AWAY FROM BOX.
7. BURIED METAL PIPE SHALL BE TAPE WRAPPED.

| DETAIL | |
|--------|---|
| No. | Description |
| 1 | CORP STOP FORD F1100-4 OR APPROVED EQUAL |
| 2 | HIGH DENSITY POLYETHYLENE PIPE |
| 3 | ANGLE METER STOP WITH LOCKWING - FORD BA43-342W |
| 4 | RED BRASS NIPPLE, N.P.T. |
| 5 | 90 DEG. BRONZE STREET ELBOW |
| 6 | COMBINATION AIR RELEASE VALVE |
| 7 | 90 DEG. IRON STREET ELBOW |
| 8 | GALV. IRON UNION, MALE - FEMALE, N.P.T. |
| 9 | GALV. IRON PIPE OR HDPE |
| 10 | 90 DEG. GALV IRON ELBOW |
| 11 | GLUED PVC FLANGES (2) WITH BOLTS (4 MINIMUM) |



AIR RELEASE VALVE DETAIL

STD. NO.
512

SCALE: NONE

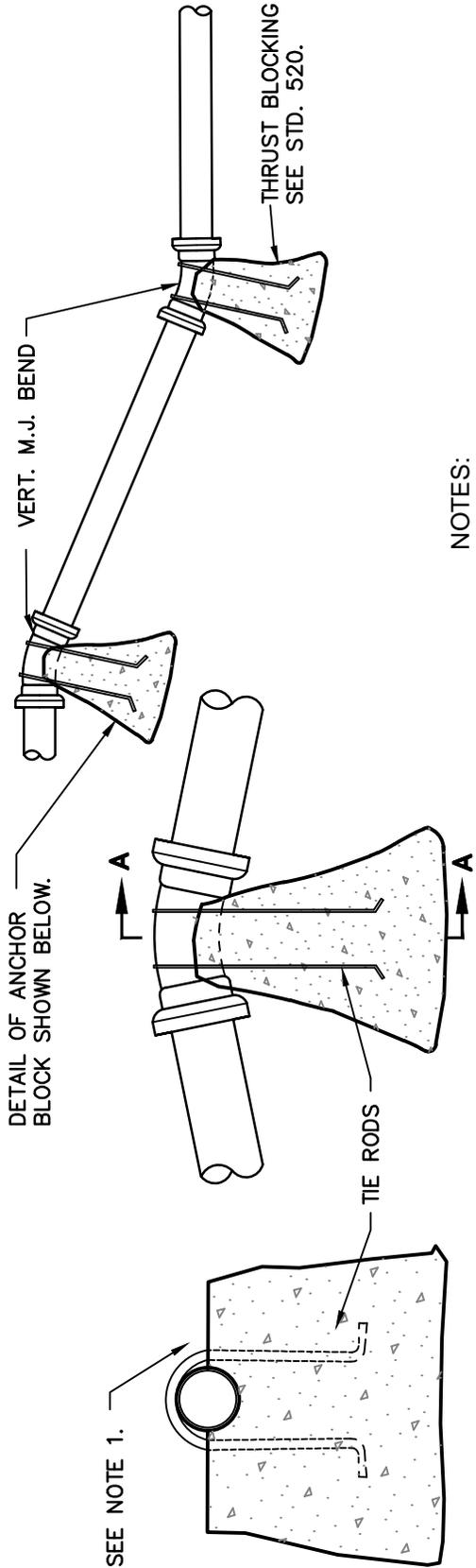
DRAWN: CFB

CHK: MGK

APPVD:

[Signature]

DATE: JUN 2012

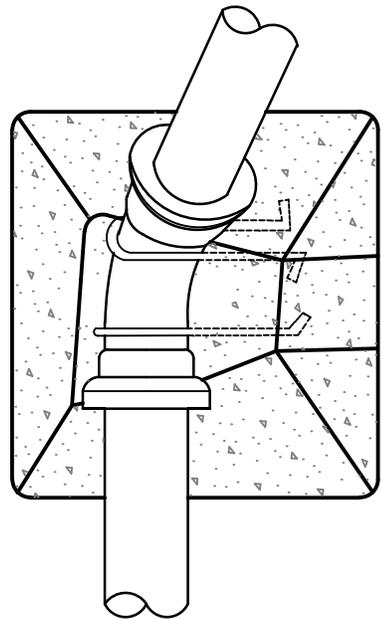
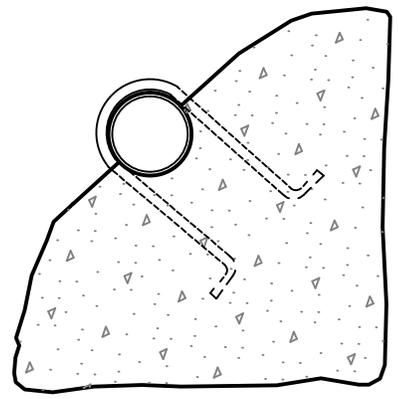


NOTES:

1. CONCRETE ANCHOR BLOCKS SHALL BE INSTALLED BY THE CONTRACTOR TO WITHSTAND A THRUST PRODUCED BY THE TEST PRESSURE PLUS 50 P.S.I.
2. CONCRETE SHALL BE 6 SACK MIX.

ELEVATION

TYPICAL CONCRETE ANCHOR BLOCK FOR VERTICAL BEND



TYPICAL CONCRETE ANCHOR BLOCK FOR COMBINATION HORIZONTAL-VERTICAL BEND



CONCRETE ANCHOR BLOCK FOR VERTICAL BENDS

STD. NO.
519

SCALE: NONE DRAWN: CFB CHK: MGK APPVD: *[Signature]*

DATE: JUN 2012



CONCRETE THRUST BLOCKS

STD. NO.
520

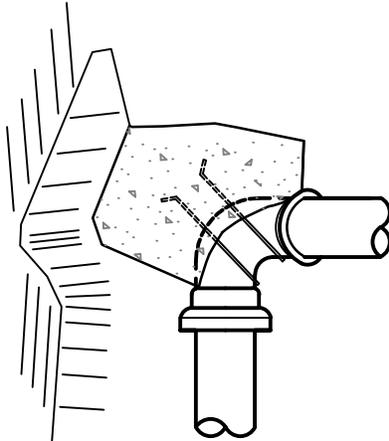
SCALE: NONE

DRAWN: CFB

CHK: MGK

APPVD:

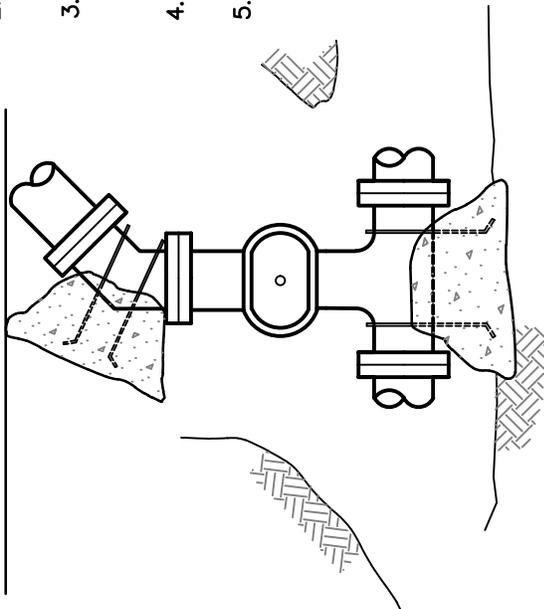
DATE: JUN 2012



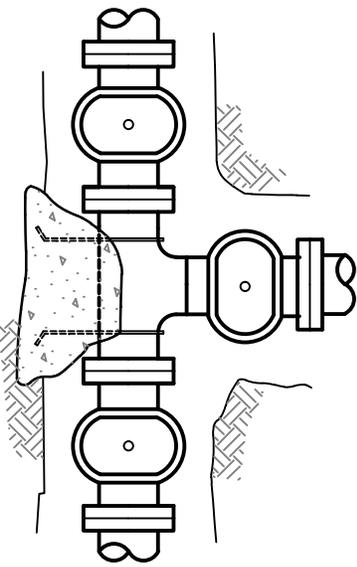
BEND

TYPICAL CONC. BLOCKING

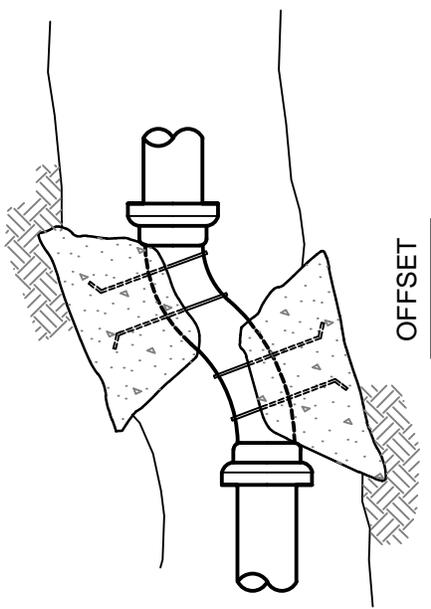
SHOWN IN PERSPECTIVE



WYE



TEE



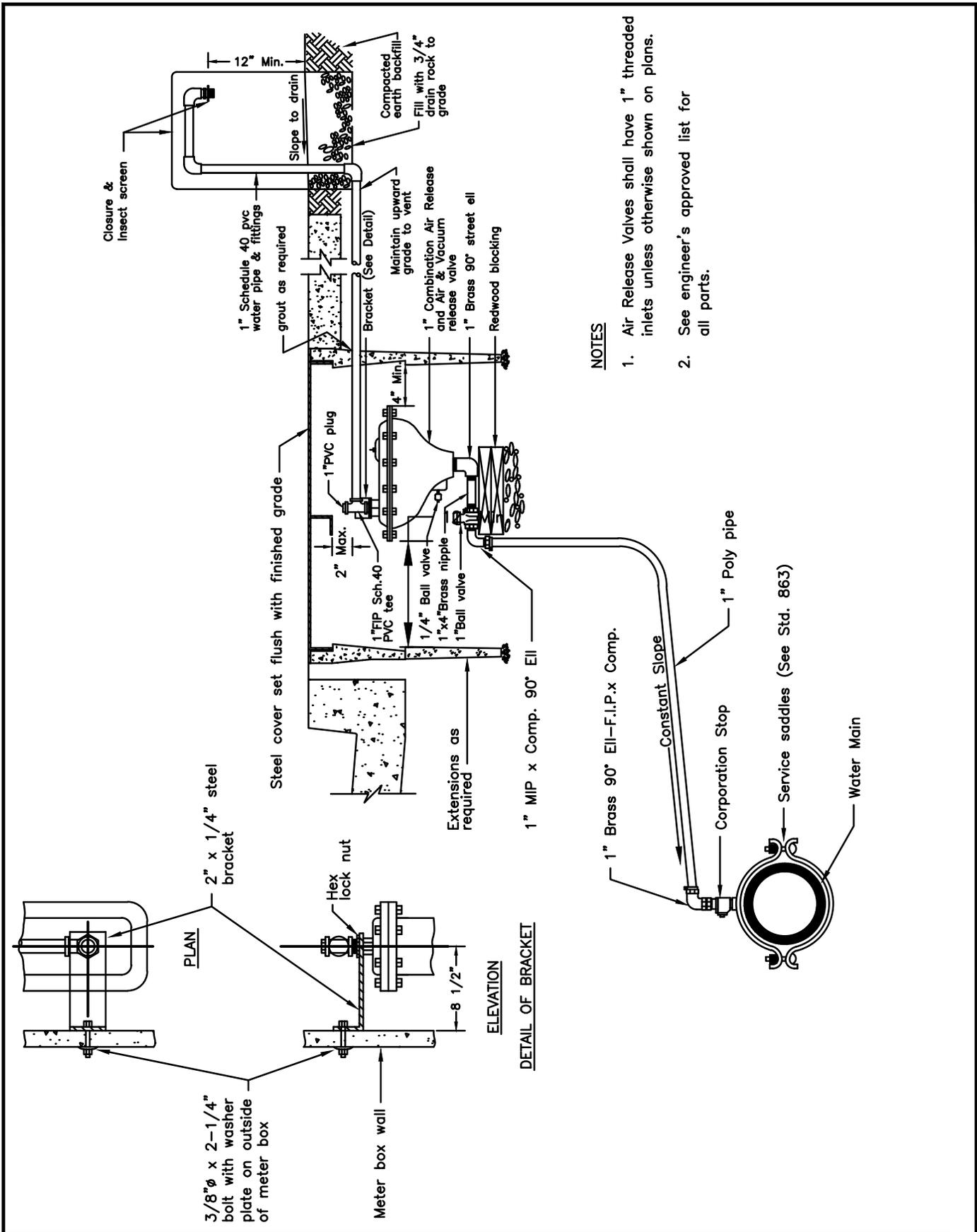
OFFSET

NOTES:

1. SAFE BEARING LOAD OF SOIL FOR HORIZONTAL THRUST SHALL NOT BE EXCEEDED.
2. CONCRETE BLOCKING, CAST-IN-PLACE, TO EXTEND FROM BELLS OF FITTINGS TO UNDISTURBED SOIL AND ENTIRE BEARING AREA MUST BE AGAINST UNDISTURBED SOIL.
3. IN USING THE THRUST BLOCKING TABLE BELOW, ASSUME 2000 P.S.F. BEARING CAPACITY UNLESS OTHERWISE SHOWN ON THE PLANS. THE DESIGN ENGINEER SHALL SPECIFY THRUST BLOCKING REQUIREMENTS FOR ALL OTHER SOIL BEARING CONDITIONS.
4. FOR PLUGGED LEG(S) OF TEE OR CROSS, USE HARNESS TYPE BLOCKING AS SHOWN ON STD. 516 AND CONCRETE BLOCKING INDICATED IN TABLE BELOW.
5. CONCRETE SHALL BE 6 SACK MIX.

| PIPE SIZE | SOIL BEARING CAPACITY | HARNESS BLOCKS | TEES & DEAD ENDS | 90° BENDS | 45° BENDS | 22-1/2° BENDS |
|-----------|-----------------------|----------------|------------------|-----------|-----------|---------------|
| 6" | 1000 | 4 | 4 | 6 | 3 | 2 |
| | 2000 | 2 | 2 | 3 | 2 | 1 |
| 8" | 1000 | 7 | 7 | 10 | 5 | 3 |
| | 2000 | 4 | 4 | 5 | 3 | 2 |
| 12" | 1000 | 16 | 16 | 22 | 12 | 6 |
| | 2000 | 8 | 8 | 11 | 6 | 3 |

* MULTIPLY NO. IN TABLE BY TEST PRESSURE & DIVIDE BY 100.



INSTALLATION OF AIR & VACUUM AND AIR RELEASE VALVE

STD. NO.
525

SCALE: NONE | DRAWN: CFB | CHK: MGK | APPVD: *[Signature]*

DATE: JUN 2012

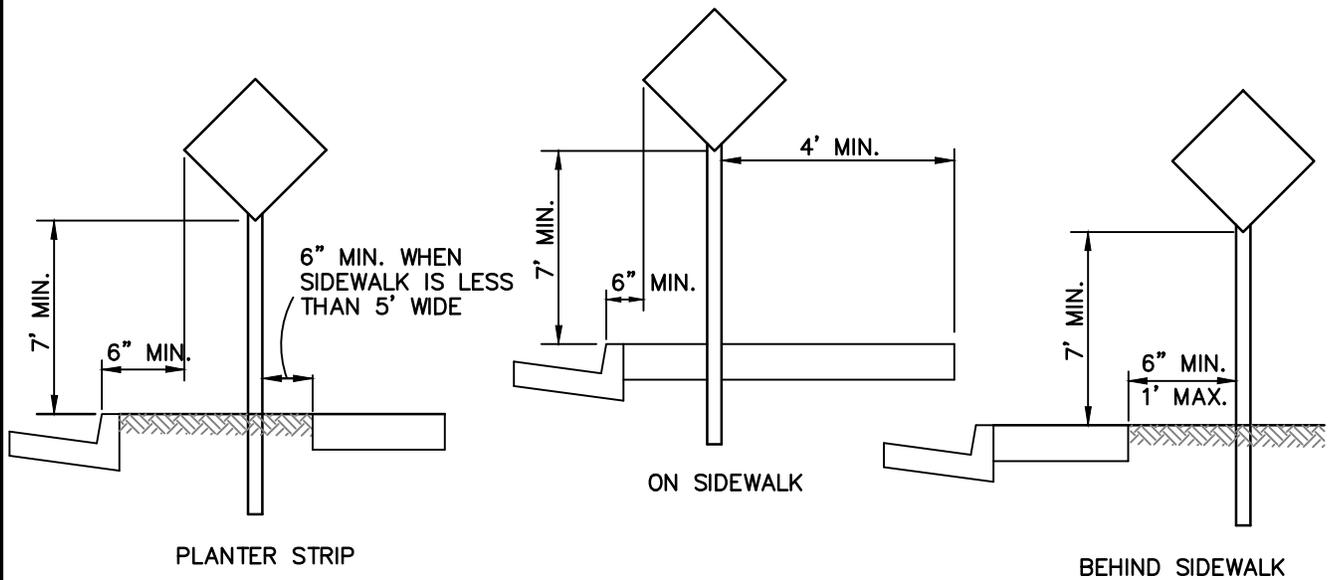
B – Traffic Control Standard Plans (700 Series)

TRAFFIC STANDARD PLANS

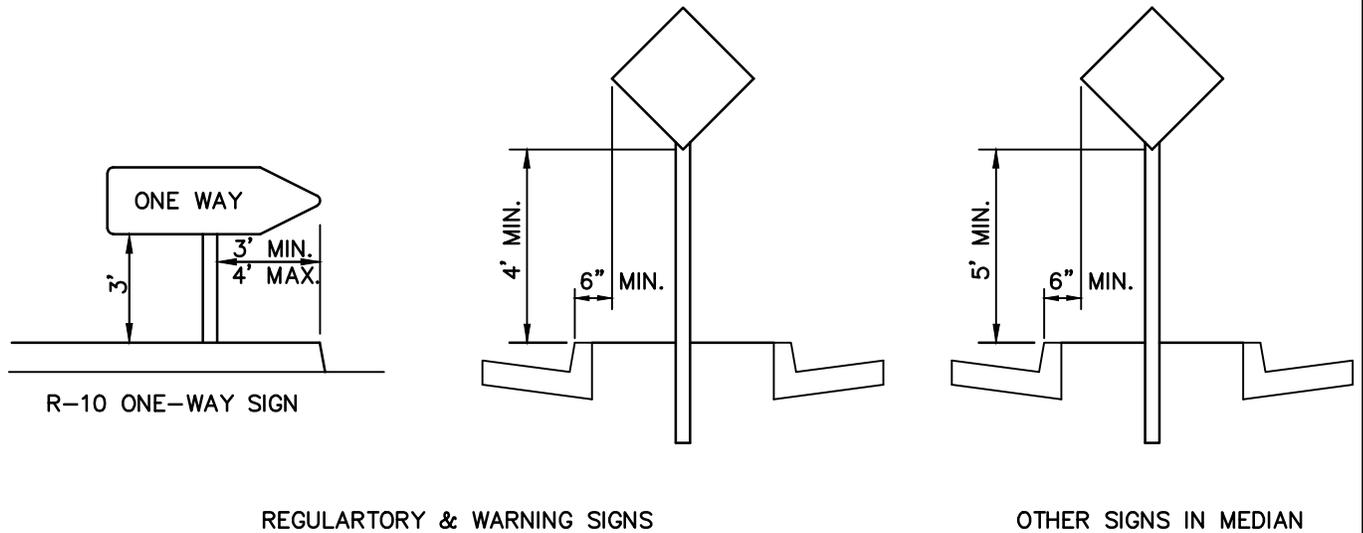
DESCRIPTION

700 SERIES - TRAFFIC

| | |
|-----|---|
| 701 | Traffic Signs Urban Installations |
| 702 | Traffic Signs Rural Installations |
| 703 | Street Name Sign Un-Signalized Intersection |
| 704 | Street Name Sign Standard |
| 705 | Not Used |
| 706 | Crosswalk Markings |
| 707 | Bike Lanes - Signs and Markings |
| 708 | Not Used |
| 709 | Electric Service Detail Overhead Service |
| 710 | Speed Hump Detail |



SIDEWALK AREA



NOTES:

- DESIGN SHALL CONFORM TO THE LATEST EDITION OF THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND THESE REQUIREMENTS EXCEPT AS OTHERWISE APPROVED BY THE DIRECTOR OF PUBLIC WORKS.

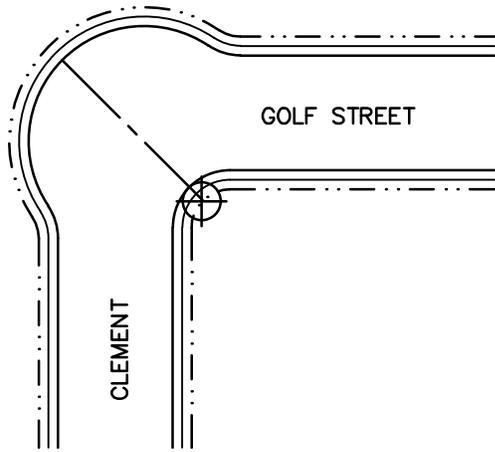


**TRAFFIC SIGNS
URBAN INSTALLATIONS**

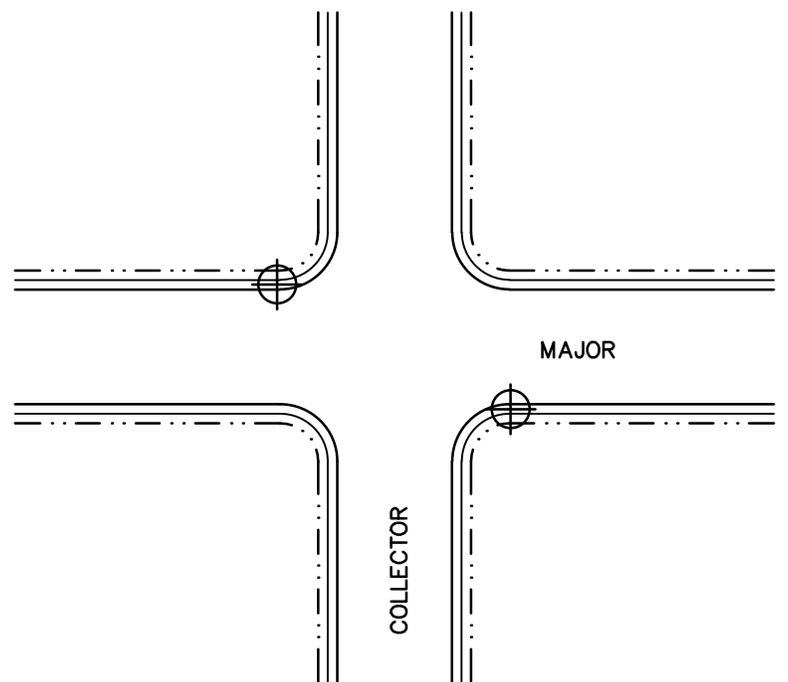
STD. NO.
701

SCALE: NONE | DRAWN: CFB | CHK: MGK | APPVD: *[Signature]*

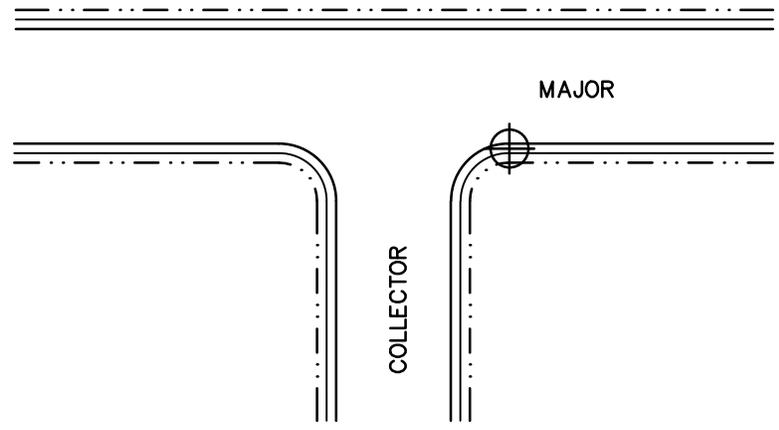
DATE: JUN 2012



"L" INTERSECTION



"FOUR WAY" INTERSECTION



"T" INTERSECTION

LEGEND:

 STREET NAME SIGN

NOTES:

- DESIGN SHALL CONFORM TO THE LATEST EDITION OF THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND THESE REQUIREMENTS EXCEPT AS OTHERWISE APPROVED BY THE DIRECTOR OF PUBLIC WORKS.

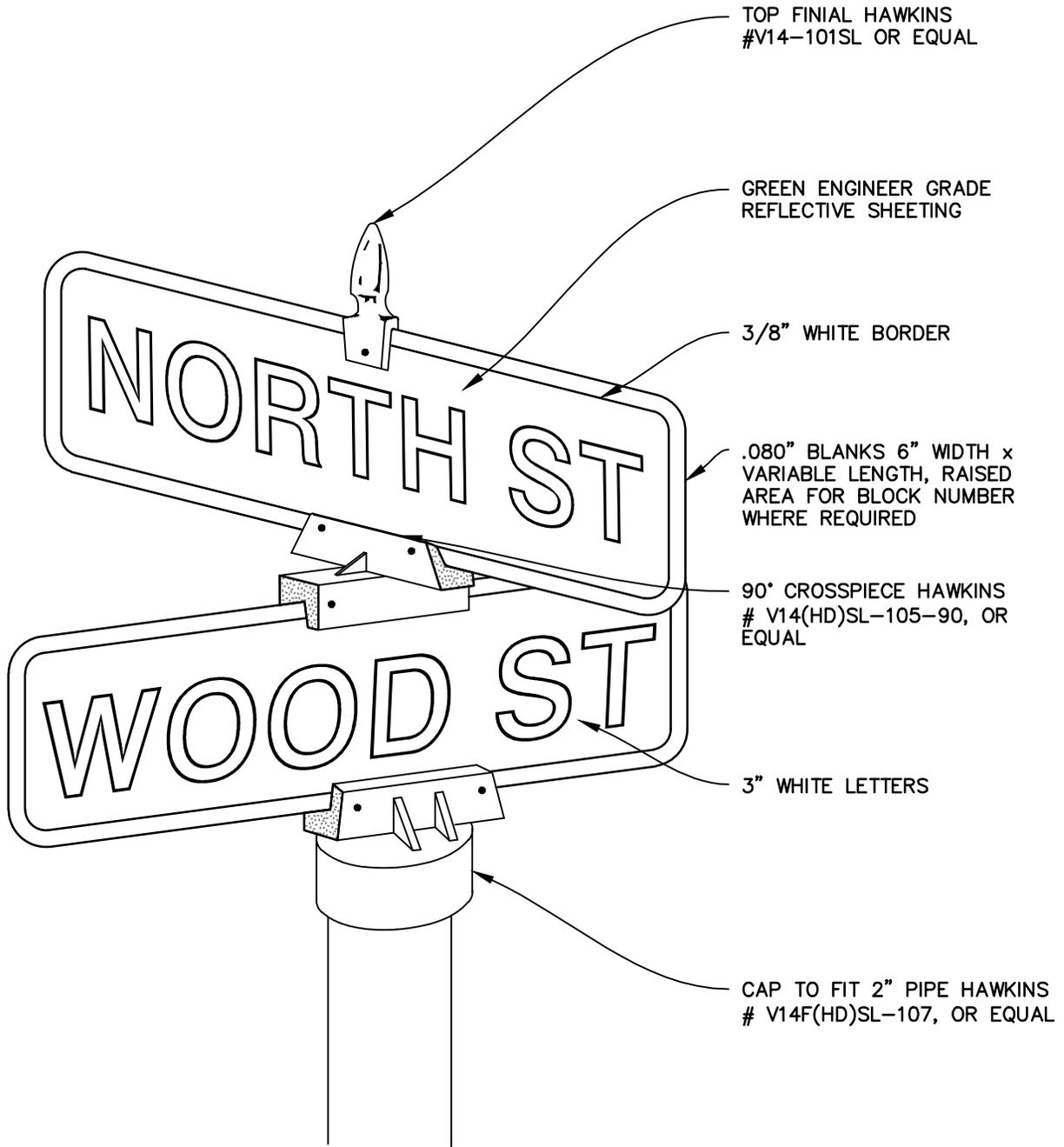


**STREET NAME SIGN
UN-SIGNALIZED INTERSECTION**

STD. NO.
703

SCALE: NONE | DRAWN: CFB | CHK: MGK | APPVD: 

DATE: JUN 2012



NOTES:

1. DESIGN SHALL CONFORM TO THE LATEST EDITION OF THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND THESE REQUIREMENTS EXCEPT AS OTHERWISE APPROVED BY THE DIRECTOR OF PUBLIC WORKS.



STREET NAME SIGN STANDARD

STD. NO.
704

SCALE: NONE

DRAWN: CFB

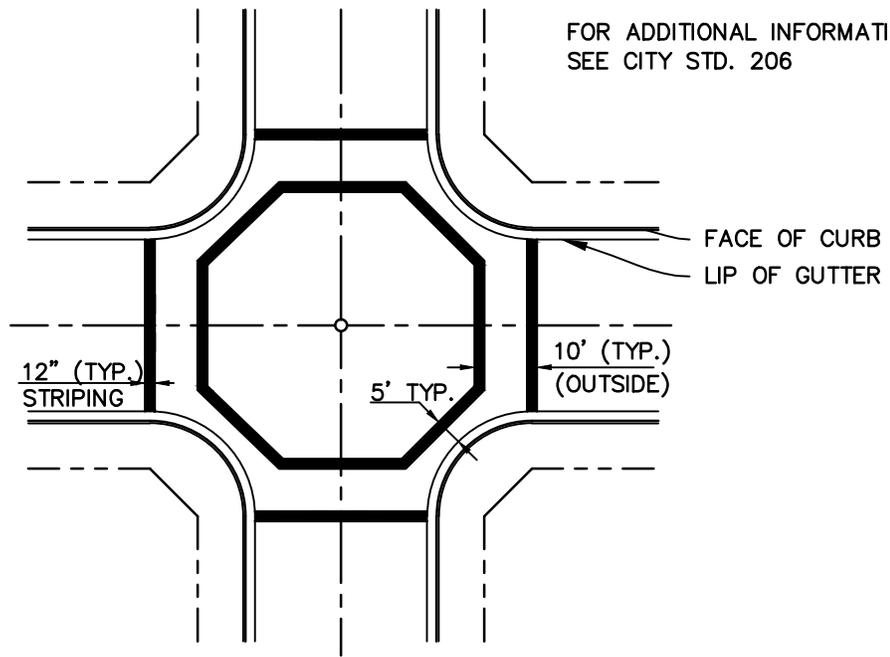
CHK: MGK

APPVD:

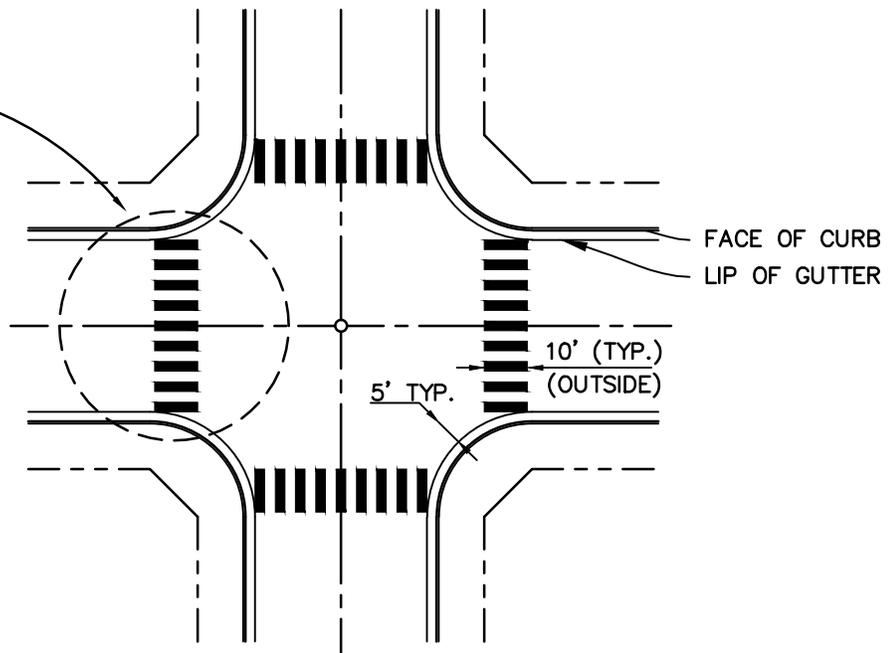
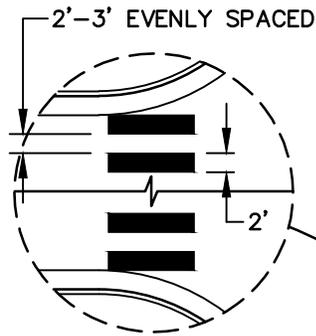
[Signature]

DATE: JUN 2012

FOR ADDITIONAL INFORMATION
SEE CITY STD. 206



TYPE "A" CROSSWALK



TYPE "B" CROSSWALK

NOTES:

1. DESIGN SHALL CONFORM TO THE LATEST EDITION OF THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND THESE REQUIREMENTS EXCEPT AS OTHERWISE APPROVED BY THE DIRECTOR OF PUBLIC WORKS.
2. TYPE "B" CROSSWALK LINES SHALL BE LAID OUT TO AVOID STREET TRAFFIC WHEEL TRACKS.



CROSSWALK MARKINGS

STD. NO.
706

SCALE: NONE

DRAWN: CFB

CHK: MGK

APPVD:

DATE: JUN 2012