# CITY OF SPARKS C STREET SEWER REHABILITATION PROJECT 18TH STREET TO 19TH STREET PWP#WA-2013-096 MAY, 2013

# CITY OF SPARKS OFFICIALS

GENO MARTINI ...... MAYOR

JULIA RATTI ....... COUNCIL MEMBER WARD 1

ED LAWSON ....... COUNCIL MEMBER WARD 2

RON SMITH ....... COUNCIL MEMBER WARD 3

MIKE CARRIGAN ....... COUNCIL MEMBER WARD 4

RON SCHMITT ...... COUNCIL MEMBER WARD 5

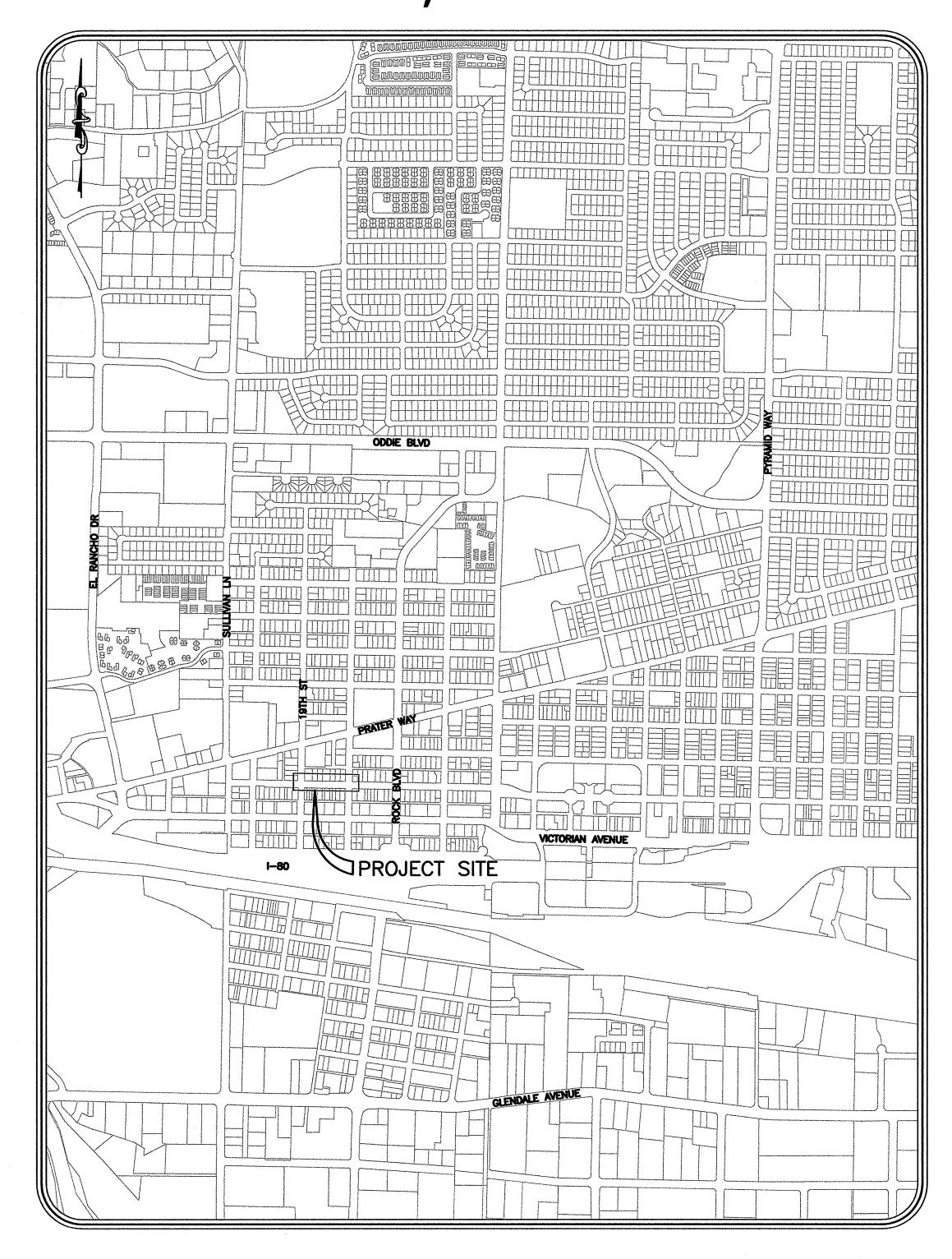


NEIL KRUTZ, P.E.
DEPUTY CITY MANAGER

APPROVED BY: DATE: 5-29-13

ANDY HUMMEL, P.E.

UTILITY MANAGER

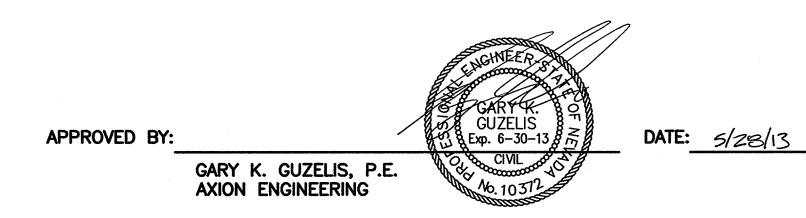


# SHEET INDEX

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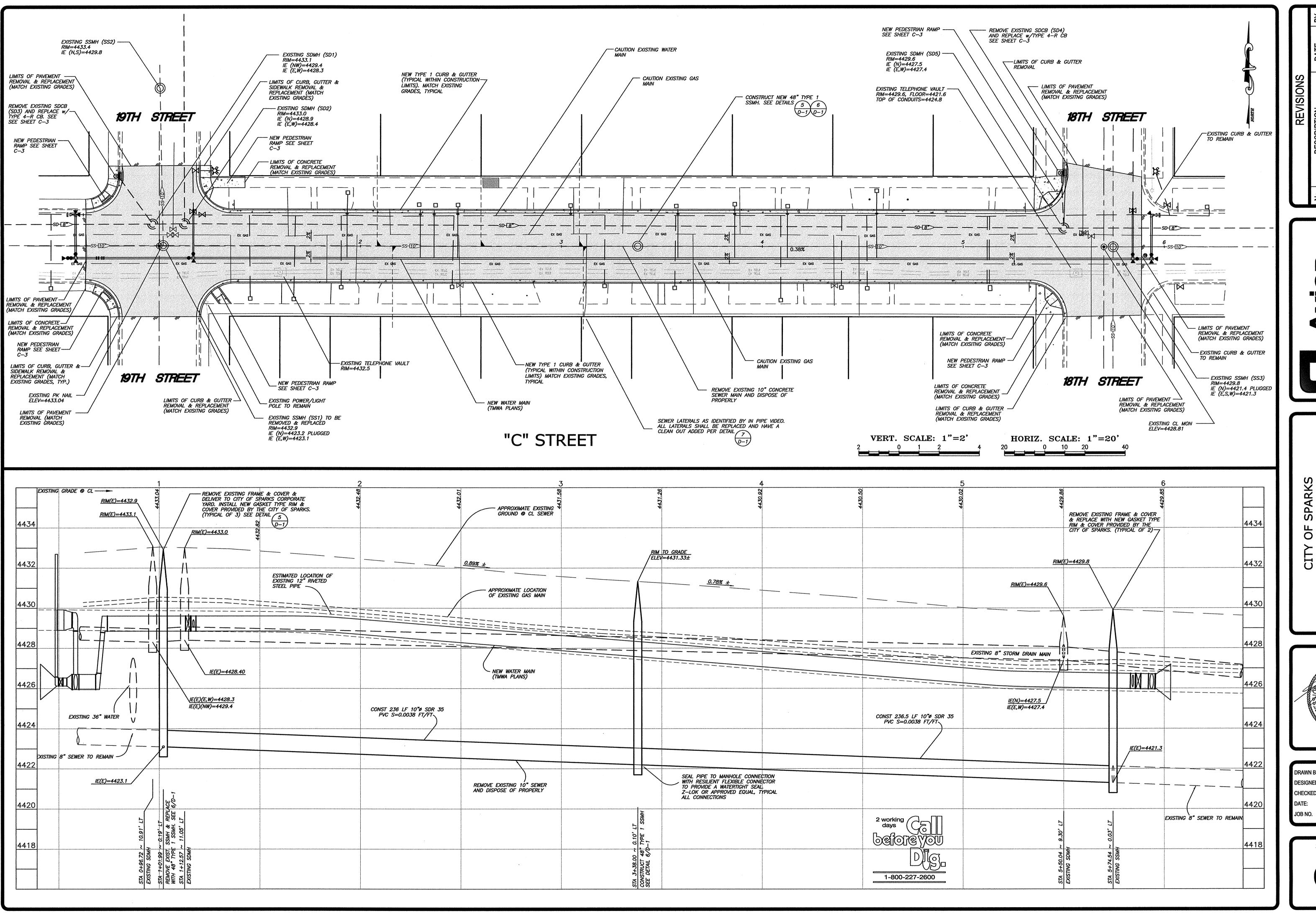
# **ENGINEER**

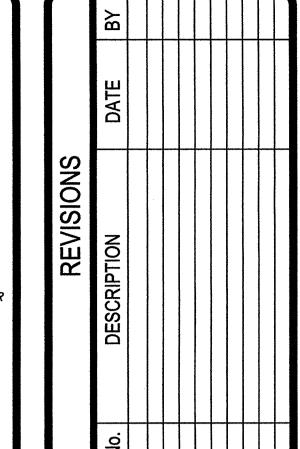




VICINITY MAP

C-1

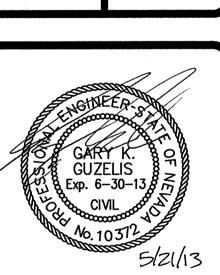




AXIOD EVELOPERING CIVIL ENGINEERING CIVIL ENGINEERING - Land Development LISON WAY - RENO, NEVADA 89502

ON 681 FDISON WA

TREET SEWER REHABILITAT
SEWER MAIN
PLAN & PROFILE



 DRAWN BY:
 GKG

 DESIGNED BY:
 GKG

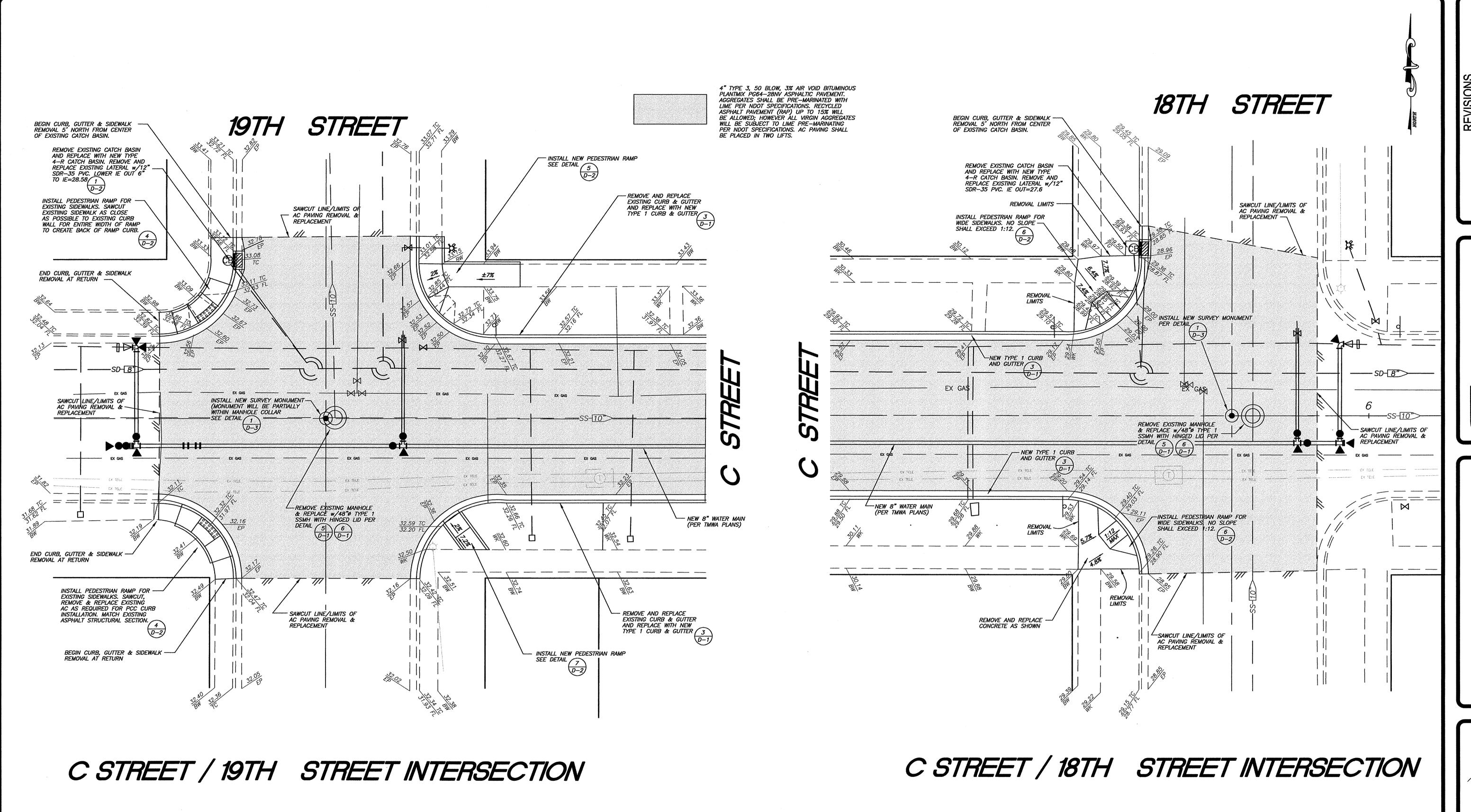
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 DATE:
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 JOB NO.
 12031

SHEET NUMBER

C-2



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5/21/2013 10:19 AM

SHEET NUMBER

1-800-227-2600

IT IS POSSIBLE THAT SOME UTILITIES NOT IDENTIFIED ON THE PLANS MAY BE ENCOUNTERED DURING EXCAVATION. THE CONTRACTOR SHALL EXERCISE CAUTION DURING THE 21ST STREET, SPARKS, NEVADA. COURSE OF CONSTRUCTION TO NOT DAMAGE EXISTING
UTILITIES. REPAIR AND/OR REPLACEMENT OF ANY DAMAGED

AND WASHOE COUNTY.

CONTRACTOR SHALL MAINTAIN VEHICLE ACCESS TO THE EXISTING

RESIDENCES. COORDINATE ANY ACCESS RESTRICTIONS WITH THE

CITY OF SPARKS AND THE AFFECTED RESIDENTS.

UTILITIES SHALL BE INCLUDED IN THE SCOPE OF CONTRACTOR SHALL HAVE ALL UTILITIES LOCATED WITHIN THE LIMITS OF THE PROPOSED WORK. ALL WORK SHALL BE IN ACCORDANCE STANDARD SPECIFICATIONS THE NORTHEAST RETURN OF ROCK BOULEVARD AND PRATER WAY. FOR PUBLIC WORKS CONSTRUCTION (2012 EDITION & ANY APPURTENANT SUPPLEMENTS) SPONSORED AND DISTRIBUTED BY RENO, SPARKS,

TO GROUND COMBINED SCALE FACTOR OF 1.000197939. THE CONTRACTOR SHALL PROVIDE A VIDEO INSPECTION OF THE NEWLY CONSTRUCTED SEWER LINE ONCE COMPLETED AND PRIOR TO PAVING & PROVIDE A DVD COPY TO THE CITY OF SPARKS & THE ENGINEER FOR THE CONTRACTOR SHALL BE RESPONSIBLE FOR DUST CONTROL DURING THE CONSTRUCTION OF ALL ITEMS HEREON. DUST CONTROL SHALL BE CONTINUOUS DURING CONSTRUCTION, 24 HOURS PER DAY, 7 DAYS PER WEEK. THE CONTRACTOR SHALL FOLLOW BEST MANAGEMENT PRACTICES WHILE IMPLEMENTING EROSION PROTECTION MEASURES.

REMOVED MANHOLE FRAMES AND GRATES AND CATCH BASIN COMPONENTS SHALL BE DELIVERED TO THE CITY OF SPARKS MAINTENANCE YARD, 221 S. PROTECT TREES, TREE ROOTS, VEGETATION LANDSCAPING AND ANY OTHER PHYSICAL FEATURES IN AS MUCH AS POSSIBLE. REPLACEMENT OF DAMAGED

ITEMS SHALL BE AT THE CONTRACTORS EXPENSE. BASIS OF ELEVATION: NAVD 88, PROJECT BENCHMARK = CITY OF SPARKS BENCHMARK No. 56 PER RECORD OF SURVEY MAP No. 3885 HAVING AN ELEVATION OF 4429.19'. BENCHMARK LOCATED ON THE TOP OF CURB IN BASIS OF BEARINGS: NEVADA COORDINATE SYSTEM OF 1983, WEST ZONE, NAD 83/94. DISTANCES SHOWN ARE GROUND DISTANCES USING A GRID

ALL UTILITY BOXES/LIDS OR OTHER STRUCTURES SHALL BE ADJUSTED TO TO FINISH GRADE AS NECESSARY PER SECTION 323.00 OF THE ORANGE. BOOK STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION. ALL CONCRETE COLLARS SHALL BE REPLACED TO CURRENT CITY OF SPARKS STANDARDS AND TO THAT OF THE UTILITY OWNERS STANDARDS. EXISTING SURVEY MONUMENTS SHALL HAVE THEIR POSITIONS LOCATED BY SETTING REFERENCE MONUMENTS. THIS WORK SHALL BE DONE PRIOR TO ANY WORK THAT MAY DISTURB THE EXISTING MONUMENTS. THE REFERENCE MONUMENTS MUST BE SUFFICIENT TO REESTABLISH THE LOCATION OF THE EXISTING MONUMENTS.

- 16. PRECAST BASE CONNECTION SHALL USE CAST-IN-BOOT CONNECTOR SUCH AS THAT MANUFACTURED BY A LOK PRODUCTS INC OR EQUAL.
- 15. FOR CAST-IN-PLACE CONCRETE BASE OR ANY CORED CONNECTIONS, PROVIDE WATERTIGHT CONNECTION. FILL ANNULUS WITH EPOXY GROUT.
- 14. NO STEPS, LADDERS OR OTHER CLIMBING DEVICES SHALL BE INSTALLED IN THE MANHOLE.
- 13. PRIOR TO BACKFILLING, ALL MANHOLES SHALL BE VACUUM TESTED PER THE REQUIREMENTS OF ASTM C-1244.
- 12. ALL MANHOLES SHALL BE WATERTIGHT. WRAP ALL JOINTS WITH JOINT WRAP.
- 11. MATCH PIPE INVERTS TO MANHOLE INVERTS WHERE PIPES CONNECT TO MANHOLE BASE.
- 10. PRECAST CONCRETE BASE MAY BE USED IN LIEU OF CAST-IN-PLACE BASE.
- 9. NO SEWER LINE PIPE DIAMETERS OF LESS THAN 8" IN DIAMETER SHALL BE CONNECTED TO THE MANHOLE UNLESS NOTED OTHERWISE.
- 8. MANHOLE PRECAST SECTION LENGTHS SHALL BE ARRANGED TO FIT THE REQUIRED DEPTH.
- STRUCTURES. NATURAL ANGLE OF REPOSE WILL BE ALLOWED IN ALL OTHER AREAS.
- EXISTING STREET SECTIONS, ALLEY SECTIONS AND CONFINED AREAS, SUCH AS LIMITED EASEMENTS OR ADJACENT
- 7. EXCAVATION SHALL BE AS NEARLY VERTICAL AS POSSIBLE (SHEET AND SHORE IF SOIL CONDITIONS REQUIRE) IN
- 6. EXCAVATION AND BACKFILL SHALL BE AS SPECIFIED FOR "TRENCH EXCAVATION AND BACKFILL" IN SECTION 305 OF THE SSPWC.
- 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.
- MANHOLE MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF SECTION 204 "MANHOLES AND CATCH BASINS" OF THE SSPWC.
- 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.

3. MANHOLE BASE SHALL BE PORTLAND CEMENT CONCRETE (P.C.C.) AND SHALL HAVE THE FOLLOWING

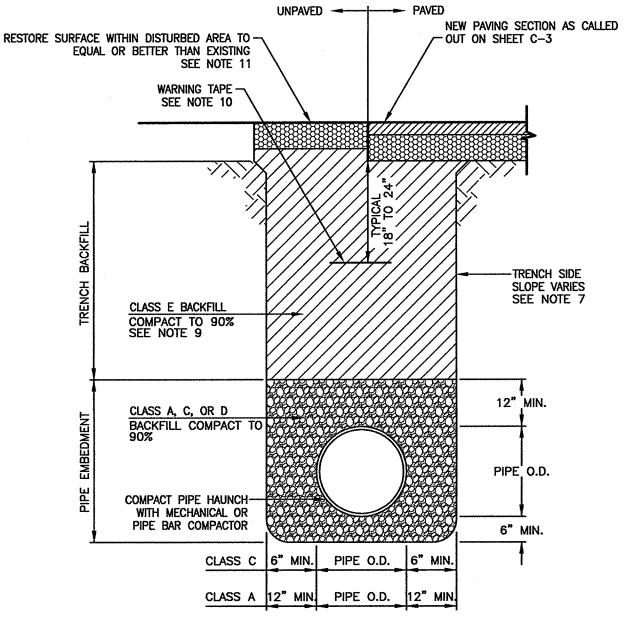
- 2. PIPES SHALL NOT PROTRUDE MORE THAN 3" INSIDE MANHOLE SECTION AS MEASURED AT THE OUTSIDE EDGES OF THE PIPE, VERTICALLY ALIGNED WITH THE SPRINGLINE. CONSTRUCT WATERTIGHT CONNECTION TO MANHOLE.
- 1. PRECAST MANHOLE COMPONENTS SHALL CONFORM TO ASTM C-478.

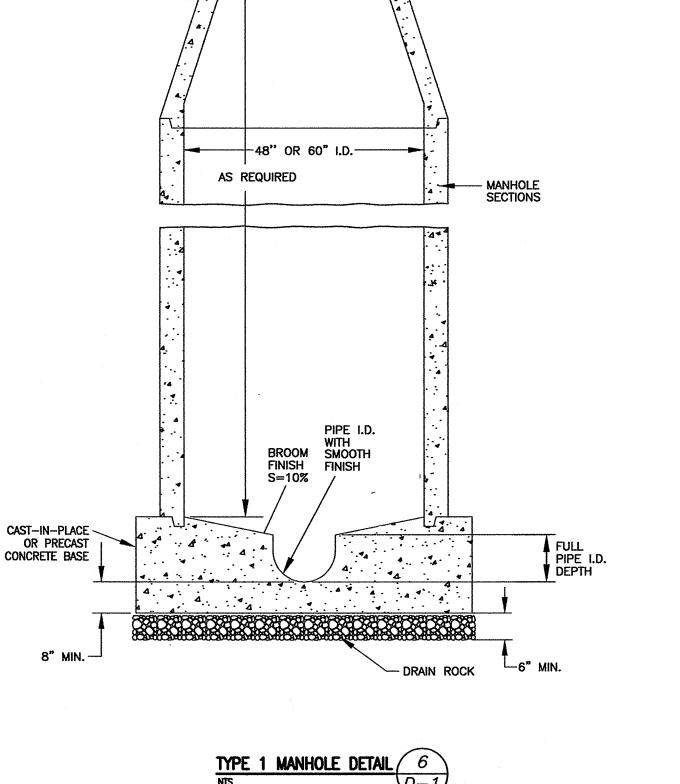
# SEWER TRENCH SECTION & NOTES /

- 11. RESTORE SURFACE WITHIN DISTURBED AREA AS TO A CONDITION EQUAL OR BETTER THAN EXISTED PRIOR TO CONSTRUCTION, INCLUDING PAVEMENTS, GRAVEL, TOPSOIL, LANDSCAPE, OR REVEGETATION. REPLACE AC OR PC PAVEMENTS PER DETAILS HEREIN. RESEED AND REVEGETATE PER PLANS AND SPECIFICATIONS.
- 10. PROVIDE GREEN WARNING TAPE MARKED SEWER.
- CLASS E BACKFILL THAT WILL ACHIEVE AN R VALUE OF AT LEAST 30.

- 8. WHERE GROUNDWATER IS ENCOUNTERED, PROVIDE GEOTEXTILE FABRIC BETWEEN CLASS B OR C BACKFILL
- 9. THE TOP 2 FEET OF TRENCH BACKFILL WITHIN EXISTING ROADWAY RIGHT OF WAY SHALL CONSIST OF

- 7. TRENCH SIDE SLOPE VARIES DEPENDING ON IN-SITU SOIL TYPES, SHORING AND SHEETING AND CONSTRUCTION METHODS, COMPLY WITH OSHA STANDARDS.
- 6. ENGINEER SHALL MONITOR FOUNDATION ZONE THROUGHOUT CONSTRUCTION. SATURATED, UNSTABLE MATERIALS SHALL BE REMOVED AND REPLACED WITH CLASS D BACKFILL.
- 5. DEWATER TRENCH EXCAVATION THROUGHOUT PIPE PLACEMENT, BEDDING AND BACKFILL OPERATIONS SO AS TO PROVIDE A DRY AND STABLE CONSTRUCTION PLATFORM AND TO ENSURE BEDDING AND BACKFILL MATERIALS DO NOT BECOME SATURATED PRIOR TO COMPLETION OF COMPACTION EFFORTS.
- OF THE TRENCH SHIELD TO ENSURE COMPACTED BACKFILL WITHIN THE PIPE EMBEDMENT ZONE.
- DIAMETER PLUS 24 INCHES MAXIMUM. WHEN MOVEABLE TYPE TRENCH SHIELDS ARE USED, THE SHIELD SHALL REST ON TOP OF A SHELF CONSTRUCTED ABOVE THE TOP OF THE PIPE AND TO THE SIDE. THE TRENCH WIDTH FROM THE TOP OF THE PIPE DOWN SHALL BE THE SAME AS FOR UNSUPPORTED TRENCHES. THE TRENCH WIDTH ABOVE THE TOP OF THE PIPE SHALL BE AS REQUIRED FOR THE MOVEABLE SHIELD AND SHELF. WHERE MOVEABLE TRENCH SHIELDS ARE USED BELOW THE TOP OF PIPE, THE TRENCH WIDTH SHALL BE LIMITED TO THE PIPE DIAMETER PLUS 12 INCHES MINIMUM, OR THE PIPE DIAMETER PLUS 24 INCHES MAXIMUM. ADDITIONAL COMPACTION WILL BE REQUIRED FOLLOWING MOVEMENT
- TRENCH WIDTH SHALL BE LIMITED TO THE PIPE DIAMETER PLUS 12 INCHES MINIMUM OR THE PIPE
- 4. FOR UNSUPPORTED TRENCHES, OR THOSE TRENCHES SUPPORTED BY HYDRAULIC JACKS, THE ALLOWABLE
- 3. 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, OR
- ABOVE WILL GOVERN IN APPLICABLE AREAS.
- 2. ANY CONDITIONS OF AN ENCROACHMENT OR RIGHT-OF-WAY PERMIT WHICH MAY DIFFER FROM THE
- 1. ALL MATERIALS AND INSTALLATION PROCEDURES SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, LATEST REVISION.





HINGED FRAME & COVER -ROADWAY SURFACE (PROVIDED BY THE CITY OF SPARKS) CONCRETE COLLAR —

TYPICAL (8" WHERE INDICATED)

1. ALL P.C.C. CURB/GUTTER/SIDEWALK SHALL BE FIBER REINFORCED P.C.C. AND MEET 4,000 PSI

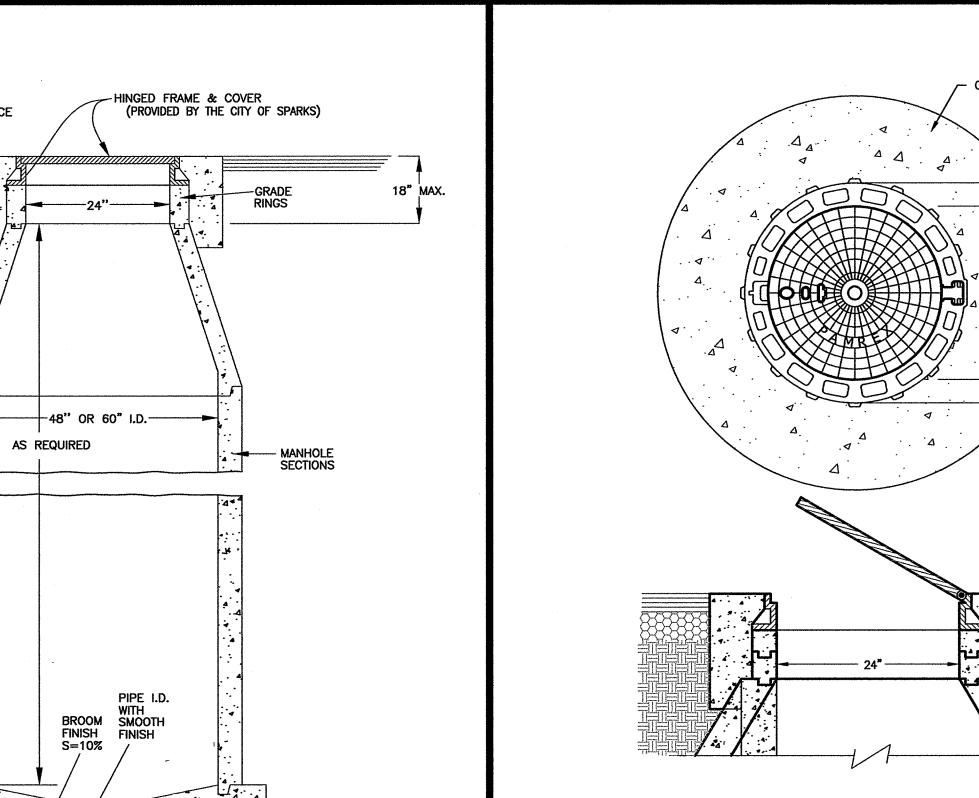
2. ALL CONCRETE CURB/GUTTER/SIDEWALK/VALLEY GUTTER SHALL HAVE 1/2" EXPANSION JOINTS EVERY 30 FEET (UNLESS APPROVED OTHERWISE BY THE ENGINEER) AND AT ALL CURB RETURNS.

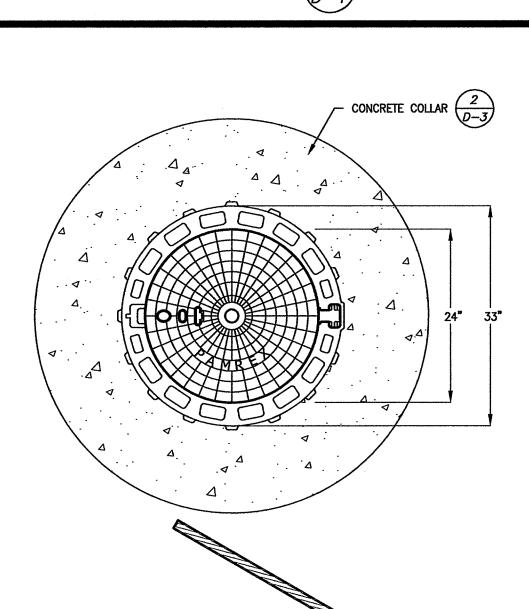
3. AGGREGATE BASE MATERIAL SHALL CONFORM TO THE SPECIFICATIONS FOR TYPE 2 AGGREGATE

AND SHALL HAVE WEAKENED PLANE JOINTS EVERY 10 FEET.

4. ALL MATERIALS SHALL CONFORM TO SSPWC CURRENT EDITION.

BASE AND BE COMPACTED TO MIN. 95% MAXIMUM DRY DENSITY (M.D.D.).





1. HINGED MANHOLE COVER SHALL BE EAST JORDAN "ERGO" OR PAMREX 24-INCH MODEL.

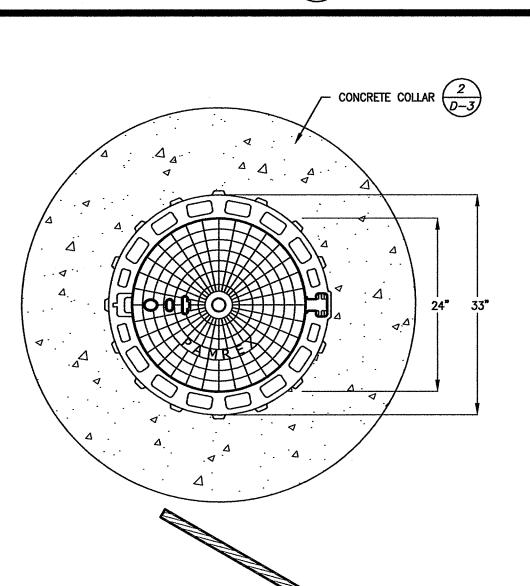
3. FRAME AND COVER SHALL BE ELASTOMER GASKETED.

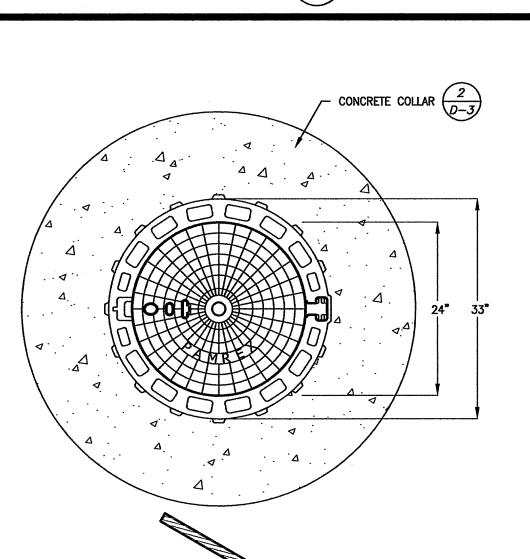
6. FRAME AND COVER SHALL BE PROVIDED BY THE CITY OF SPARKS

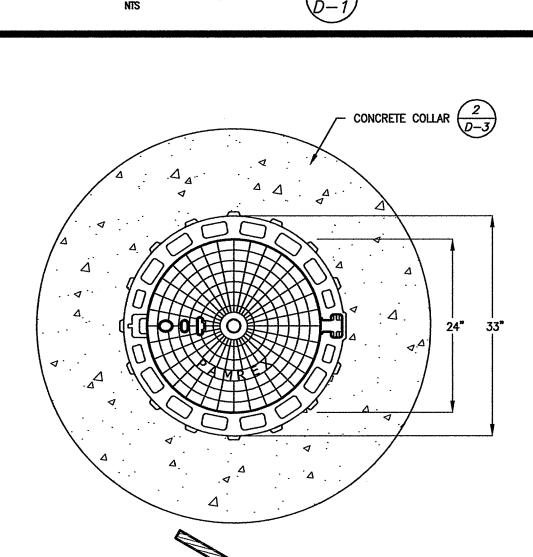
4. ALL COMPONENTS SHALL BE BLACK COATED.

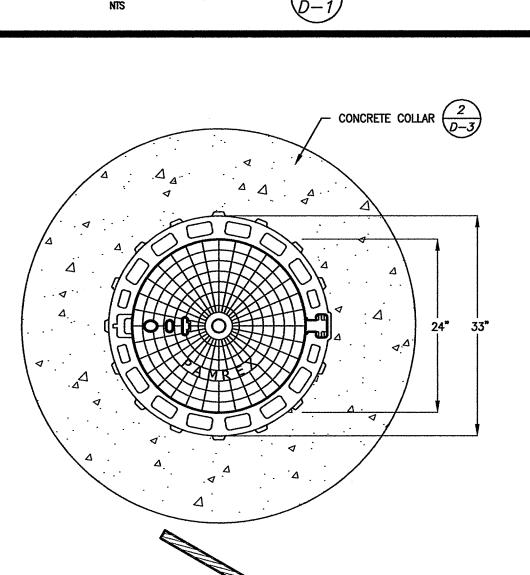
5. LID SHALL BE STAMPED "SANITARY SEWER".

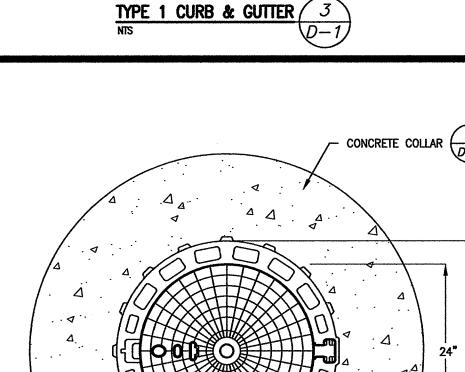
2. COVER TO BE HINGED AND INCORPORATE A 90 DEGREE BLOCKING SYSTEM TO PREVENT ACCIDENTAL CLOSURE.

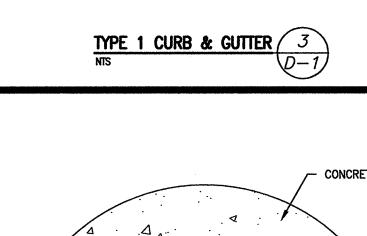


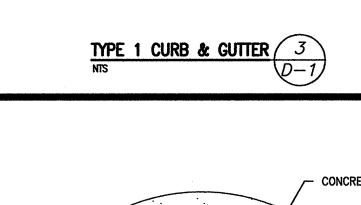


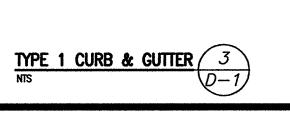








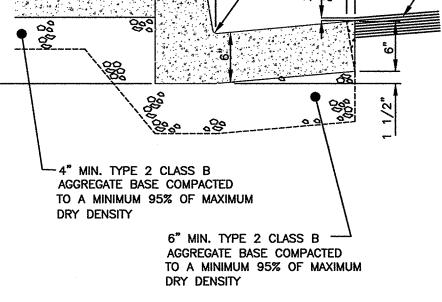


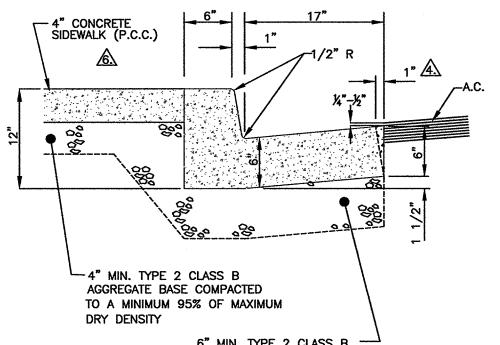


6\ WHEN SIDEWALK IS NOT REQUIRED, BACKFILL BEHIND THE CURB TO THE TOP FOR A HORIZONTAL DISTANCE OF 12" FROM BACK FACE OF CURB, WITH A MATCH TO EXISTING GRADE OF NOT EXCEEDING A 3:1 SLOPE.

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.

- 3. CURB & GUTTER SECTIONS SHALL BE PLACED SEPARATELY FROM SIDEWALK SECTIONS. !\ "BATTERED" CONSTRUCTION ALLOWED FOR NEW CONSTRUCTION, WHILE "VERTICAL" CONSTRUCTION PERMITTED FOR
- SECTION OF THE CURB AND GUTTER, AND CONSTRUCTED AT RIGHT ANGLES TO THE CURB AND GUTTER. JOINT FILLER THE BACK, TOP AND FACE OF THE CURB AND THE TOP OF THE GUTTER PAN.
- BE INSTALLED WITHIN 20 FEET OF AN ISLAND NOSE. EXPANSION JOINTS SHALL BE 1/2-INCH THICK, SHAPED TO THE CROSS MATERIAL SHALL CONFORM TO SSPWC SECTION 202.10. WEAKENED PLANE JOINTS SHALL BE EVERY 10 FEET AND LOCATED ON
- 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
- @ 28 DAYS, MIN. 6 SACKS OF CEMENT PER CU. YD w/ 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.
- . PORTLAND CEMENT CONCRETE (P.C.C) SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4000 PSI MIN. COMPRESSIVE STRENGTH





-Final Grade 18" MIN. 1 SEWER LINE

CROSSING DETAILS

1. IF WATER LINE IS LOCATED 18" OR MORE ABOVE THE SEWER, THE DISTANCE BETWEEN LINES

LESS THAN 18" CLEARANCE REQUIRES THE SEWER TO BE DUCTILE IRON OR REINFORCED CONCRETE ENCASED TO A LENGTH OF 10 FEET IN EITHER DIRECTION FROM THE WATER MAIN.

WORKS CONSTRUCTION, AKA "THE ORANGE BOOK") FOR MORE SANITARY SEWER CROSSING

TYPICAL UTILITY CROSSING DETAIL

-1/8 BEND

Surface of street

INSTALL APPROPRIATELY

OR BELOW THE CENTERLINE OF THE PIPE.

2. SEWER LATERALS SHALL HAVE A MINIMUM SLOPE OF 2%.

OTHERWISE DIRECTED BY THE CITY OF SPARKS.

SIZED. WYE, TEE OR

INSERTA TEE

LESS THAN 4"

SEWER M

TEE BRANCH -

CURB LINE

STANDARD WYE, TEE OR SADDLE CONNECTION.

BE CORE DRILLED. SEE NOTE 5.

Curb

1. IN NO CASE SHALL A LATERAL CONNECT TO THE SEWER MAIN DIRECTLY ON TOP OF THE PIPE

3. ALL JOINTS ON SEWER LATERAL PIPE WITHIN THE RIGHT-OF-WAY SHALL BE COMPRESSION TYPE.

6. ENTITY REQUESTING SEWER LATERAL ABANDONMENT SHALL CUT, CAP OR PLUG THE EXISTING

7. ALL SEWER CLEAN-OUTS SHALL TO BE SET 16" TO 24" BEHIND CURB OR SIDEWALK OR AS

8. BUTT FUSION LATERAL PIPE SHALL BE SAME SIZE AS EXISTING LATERAL BUT IN NO CASE

Sewer Lateral Detail

SEWER LATERAL TO BE ABANDONED WITHIN 6 INCHES OF THE SEWER MAIN. INSPECTION BY

5. SADDLE CONNECTION SHALL BE PVC SADDLE WITH STAINLESS STEEL STRAPS. ???? INSERTA TEE ?????

N:\Axion Engineering\Projects AE\City of Sparks\Sparks C Street Sewer Rehabilitation\Acad\C Street Sewer Replacement.dwg

4. LATERAL SHALL EXTEND TO PROPERTY LINE UNLESS OTHERWISE SHOWN ON PLANS.

CITY OF SPARKS PUBLIC WORKS IS REQUIRED PRIOR TO BACKFILL.

2-WAY CLEANOUT TEE

IN RIGHT-OF-WAY OR EASEMENT, -

LATERAL SHALL BE PVC SDR-35

WHERE A SADDLE CONNECTION IS USED, IT SHALL

LETTER "S" STAMPED OR CHISELED ON TOP OF CURB NOT LESS THAN 1-1/2" HIGH AND 3/16" DEEP.

STANDARD PLUG - OR CONNECTION

TO EXISTING LATERAL

INSTALL SEWER CAP 4" TO 6" BELOW F.G.

SEWER CLEAN-OUT IN A G-5 BOX

4x4 POST, FLUSH w/F.G.

3' MIN. FROM TOP OF

CURB TO LATERAL FLOW

LINE MEASURED @ P.L.

- CRISTY G-5 BOX WITH

METAL LID MARKED

STANDARD PLUG OR CONNECTION

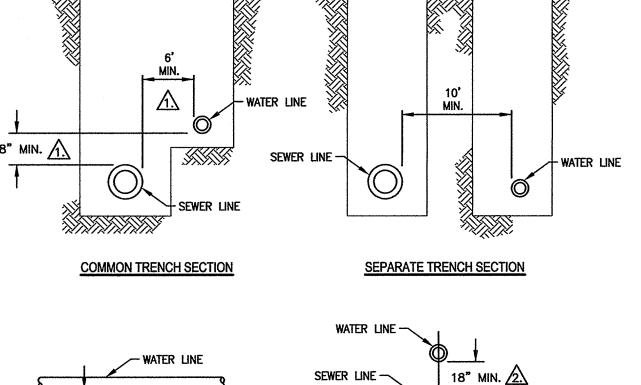
TO EXISTING LATERAL

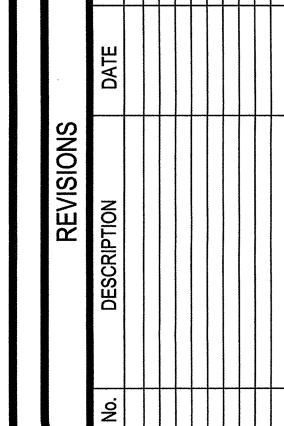
"SEWER"

WHEN PLUGGED

3. REFER TO STANDARD DETAIL DRAWING NO. 2-19 (OF THE STANDARD DETAILS FOR PUBLIC

CAN BE REDUCED TO A MINIMUM OF 6 FEET.





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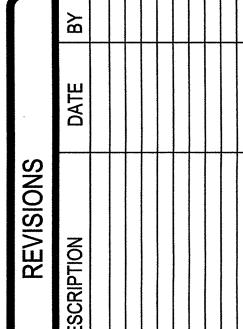
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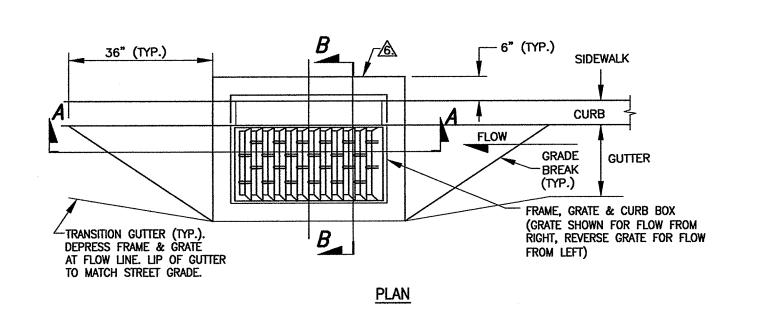
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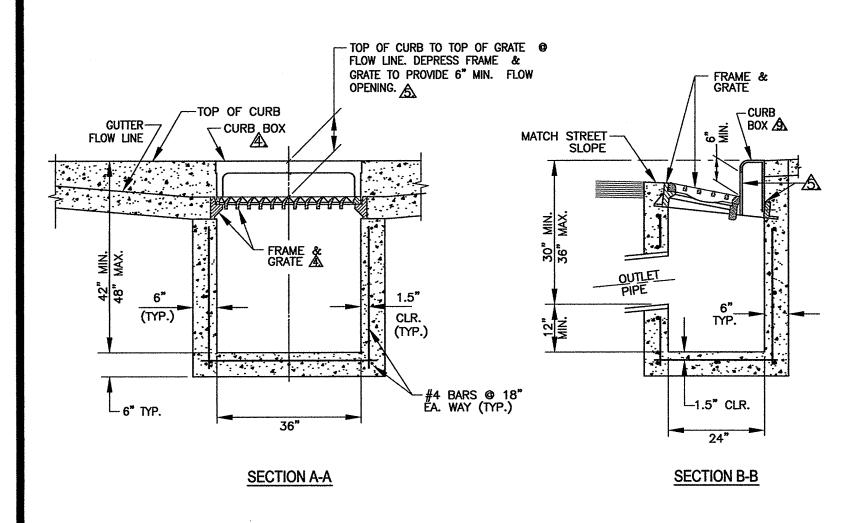
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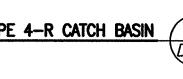


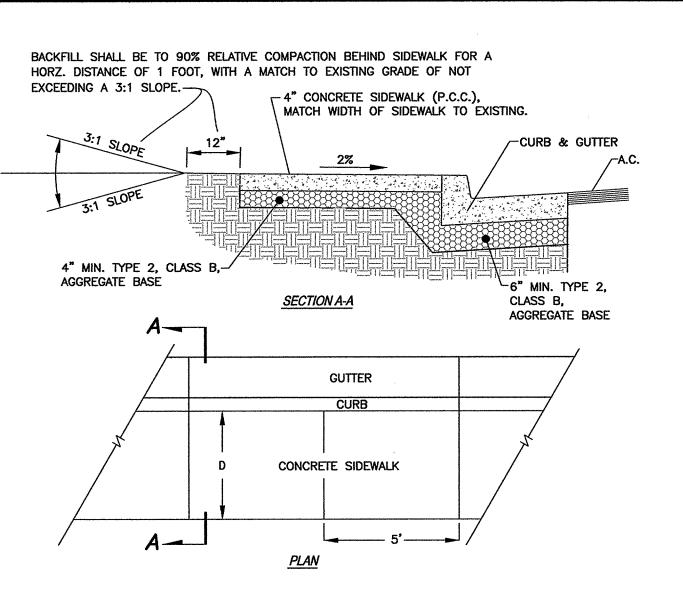
- PORTLAND CEMENT CONCRETE (P.C.C.) SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4000 PSI MIN. COMPRESSIVE STRENGTH @ 28 DAYS (CURB AND GUTTER TRANSITION ONLY, ALL UNEXPOSED CONCRETE MAY BE 3000 PSI), MIN. 6 SACKS OF CEMENT PER CUBIC YARD WITH A MAX. WATER/CEMENT RATIO OF 0.45, AIR ENTRAINMENT 6% ±1.5%, SLUMP AT 1 TO 4 INCHES. ALL MATERIALS SHALL
- 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"

CONFORM TO SSPWC SECTION 202.

- ⚠ 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.
- ⚠ 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).
- A 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
- A 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.







- 1. MINIMUM 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. TRANSVERSE 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"
- 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

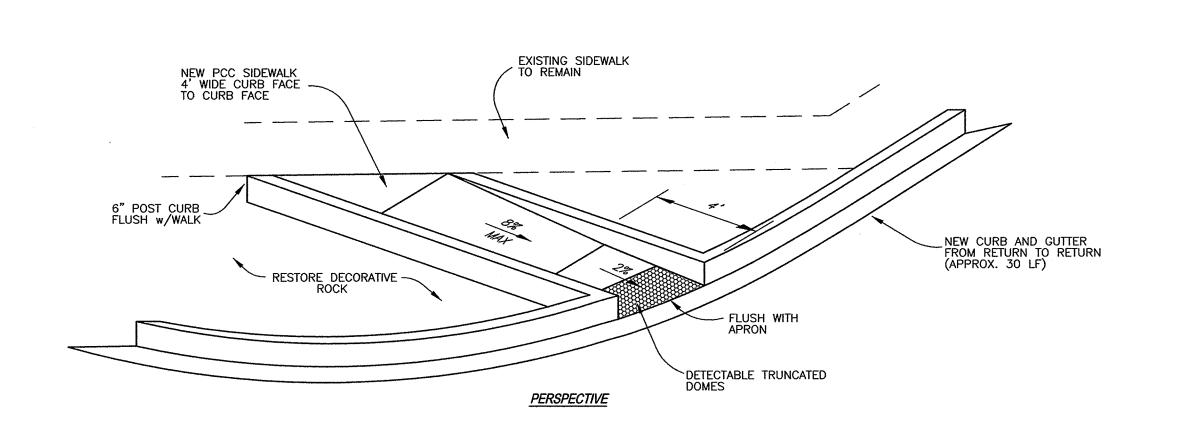
THICK. JOINT MATERIAL SHALL CONFORM TO SSPWC SECTION 202.10.

- WIDTH OF THE SIDEWALK.
- 6. SIDEWALK WIDTH "D" SHALL BE 4' MIN. ON RESIDENTIAL STREETS AND 6' MIN. ON COLLECTOR AND ARTERIAL STREETS. 7. 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.
- 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.

- 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. LATERAL OBSTRUCTION MAY REQUIRE ADDITIONAL RIGHT OF WAY AS DIRECTED BY THE CITY ENGINEER.
- NO LIP SHALL BE PERMITTED AT THE CURB RAMP SLOPE TO GUTTER PAN.
- 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.
- 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 SLOPE RATES ARE RELATIVE TO LEVEL AND SHALL MEET ADAAG STANDARDS.
- 7.\ GUTTER SHALL MAINTAIN POSITIVE DRAINAGE TO PREVENT PONDING.
- 8. DETECTABLE WARNING SHALL CONSIST OF "CASTINTACT" OR "NAVIPLATE" DETECTABLE WARNING PANELS, 12" X 12" PAVERS, OR AN APPROVED EQUIVALENT. DETECTABLE WARNING SHALL BE CONSTRUCTED PER MANUFACTURER'S INSTALLATION GUIDELINES AND CONFORM TO ADAAG (4.29.2).
- 9. ALL CONCRETE TO BE REMOVED TO SAW CUT OR EXPANSION JOINTS.
- 10. 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.
- 11. CONTRACTORS SHALL CORRECT ANY CONFLICT WITH EXISTING PULL BOXES EXISTING 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.
- 12. SIDEWALK AT BOTH SIDES OF RAMP MAY BE RECONSTRUCTED 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. A TRANSITION SECTION OF SIDEWALK MAY BE NECESSARY TO MATCH CROSS SLOPE OF EXISTING SIDEWALK TO PEDESTRIAN RAMP IMPROVEMENTS. TRANSITION SECTIONS SHALL BE APPROVED BY THE ENGINEER.

13. DETECTABLE WARNING SHALL BE INSTALLED PER MANUFACTURERS RECOMMENDATIONS AND SHALL BE PLACED ON FOUR (4) INCHES OF P.C.C.

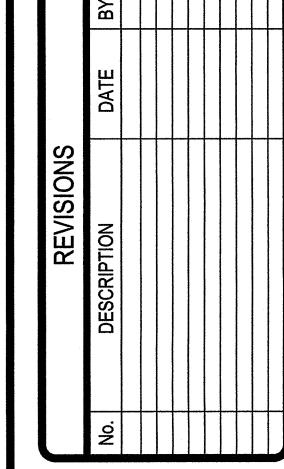
DETECTABLE TRUNCATED — DOMES SHALL BE PLACED BACK OF SIDEWALK ON 4" MIN. P.C.C. DETECTABLE TRUNCATED DOMES, SEE R-106E CURB AND GUTTER 6" AGGREGATE BASE COMPACTED TO 95%-COMPACTION SIDEWALK ---WIDE SIDEWALK ( 6 4" CONCRETE SIDEWALK-CLASS "B" AGGREGATE BASE SECTION A-A NEW CONCRETE POST CURB TO MATCH EXISTING GRADE. EXPOSED HEIGHT VARIES FROM 0" TO 8" - EXISTING SIDEWALK BACK OF CURB LINE ---DETECTABLE TRUNCATED . ±4' WING TO ACHIEVE \_6" MIN. TYPE 2 DOMES SHALL BE PLACED ON 4" MIN. P.C.C. 10:1 SLOPE, VERIFY IN CLASS "B" AGGREGATE BASE 10:1 SLOPE, VERIFY IN SECTION B-B EXISTING SIDEWALKS NORTHEAST RETURN 19TH & C STREETS (

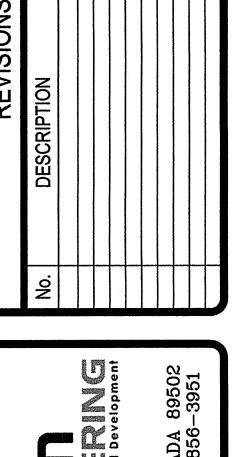


SOUTHEAST RETURN 19TH & C STREETS ( 7

PEDESTRIAN RAMP DETAILS

N:\Axion Engineering\Projects AE\City of Sparks\Sparks C Street Sewer Rehabilitation\Acad\C Street Sewer Replacement.dwg



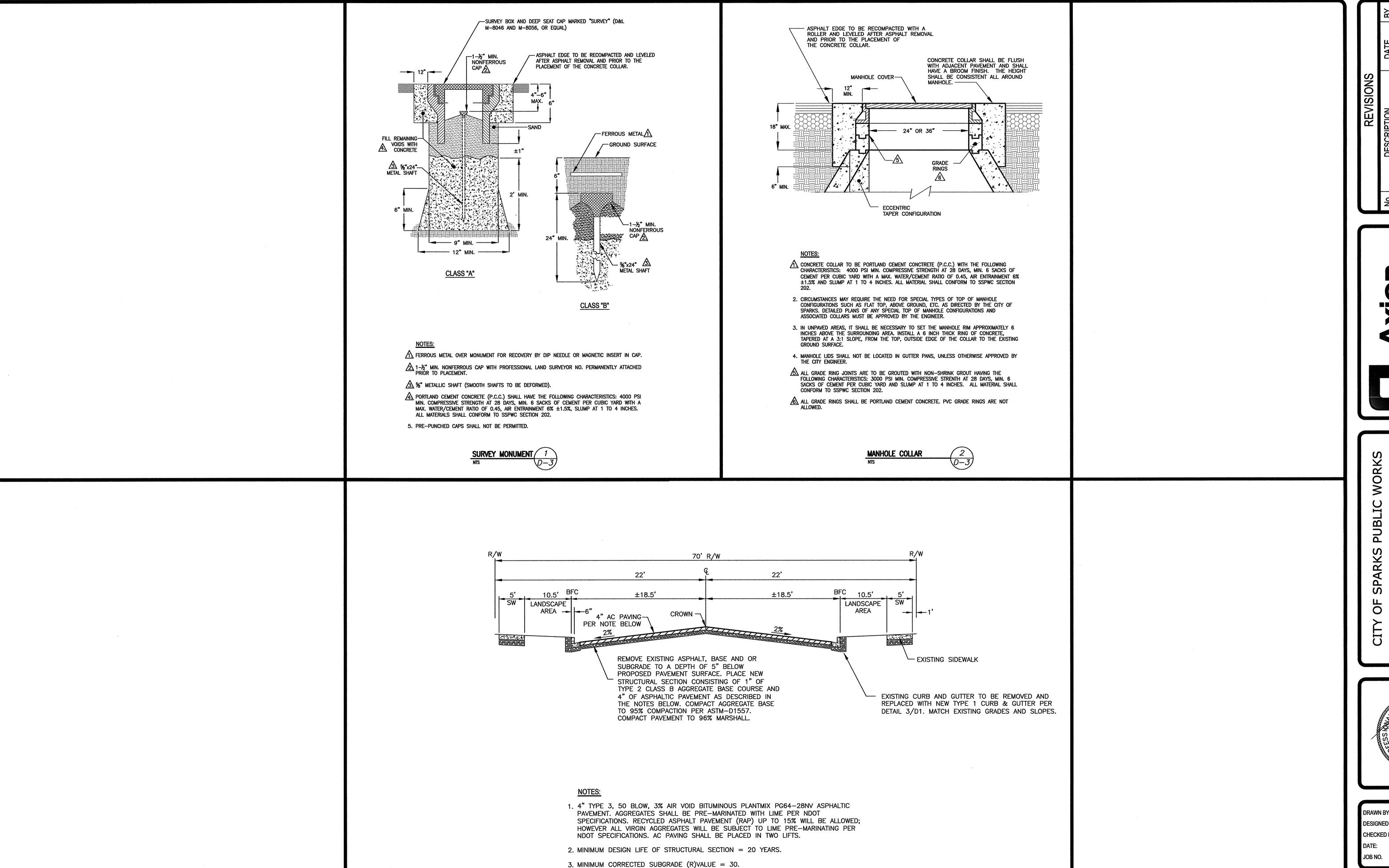




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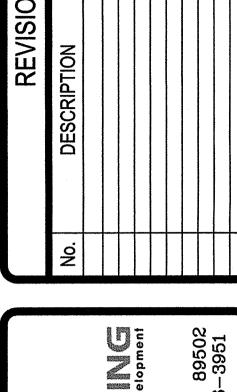


4. PAVEMENT DESIGN BASED ON EQUIVALENT SINGLE AXLE LOAD OF 145,000 LBS.

SHALL BE RESTORED TO EQUAL OR BETTER CONDITION.

5. ANY DISTURBED LANDSCAPING OR OTHER SURFACE OR SUBSURFACE IMPROVEMENTS

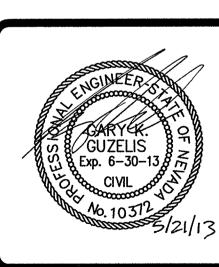
C STREET ROAD CROSS SECTION 3







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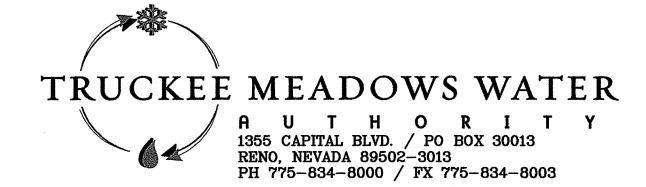
SHEET NUMBER

N: Axion Engineering\Projects AE\City of Sparks\Sparks C Street Sewer Rehabilitation\Acad\C Street Sewer Replacement.dwg

# TRUCKEE MEADOWS WATER AUTHORITY C STREET 8" WATER MAIN REPLACEMENT PROJECT 18TH STREET TO 19TH STREET

TMWA CONTACT

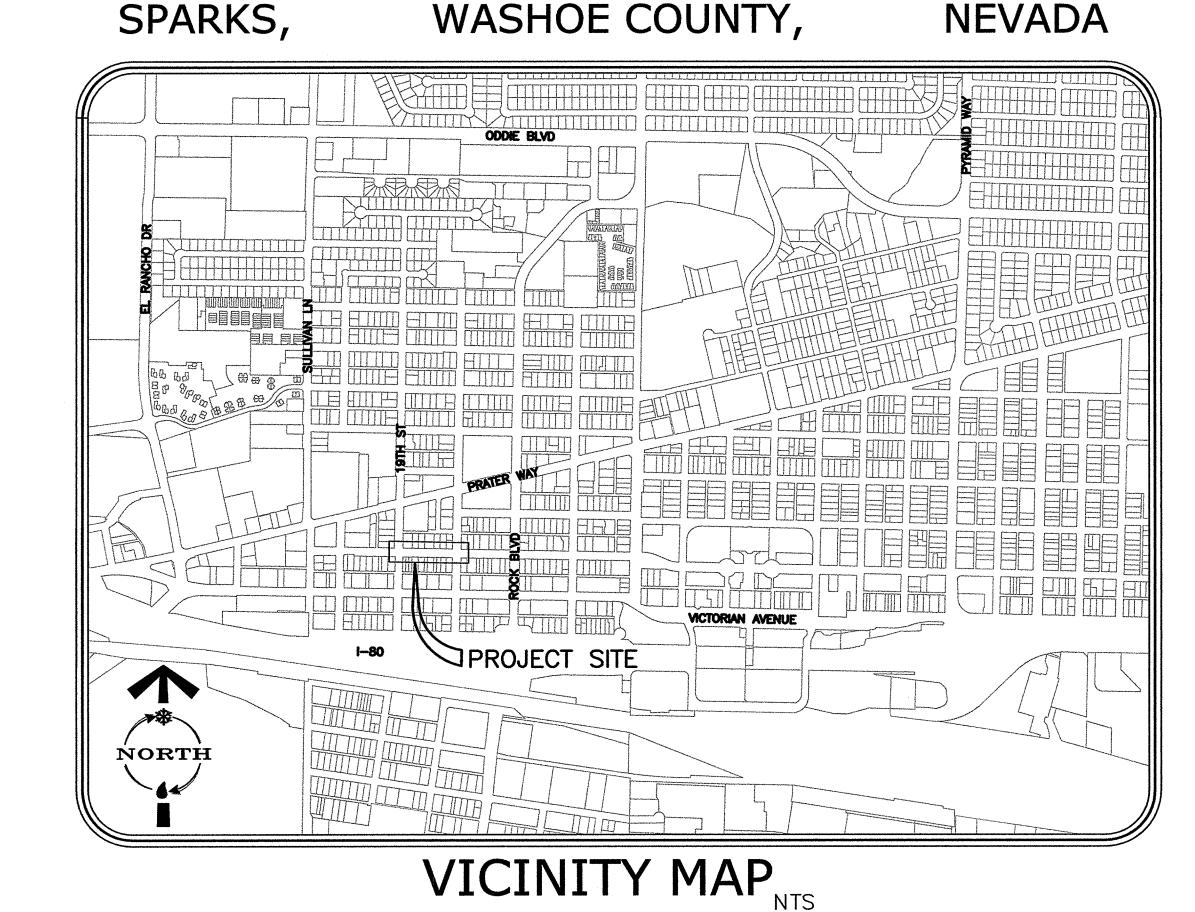
STEVE VOLK, P.E. PROJECT MANAGER 1355 CAPITAL BLVD. RENO, NV 89520-3013 775-834-8024

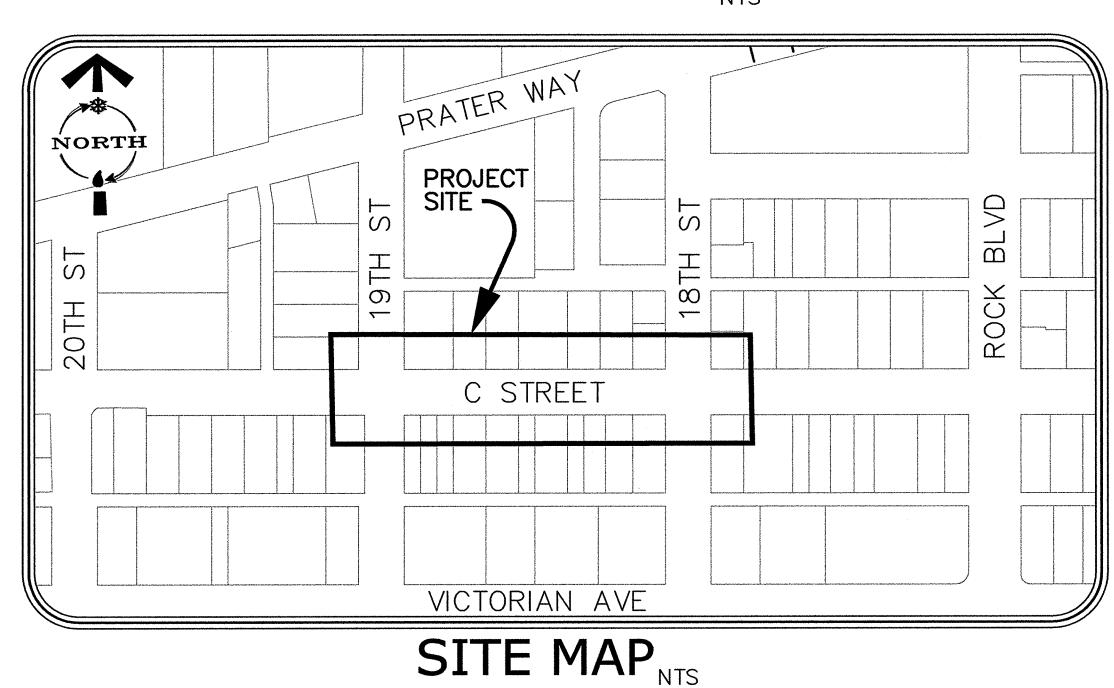


NOT REPRODUCIBLE

PROPERTY OF
TRUCKEE MEADOWS WATER
AUTHORITY, RETURN UPON
COMPLETION OF PROJECT
(Per Homeland Security Act)







TMWA WORK ORDER #10.0001.016

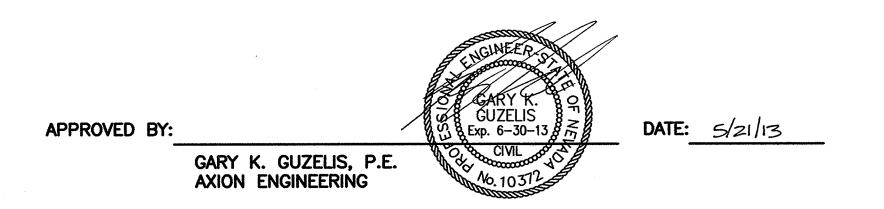
# SHEET INDEX

DRAWING NO.	DESCRIPTION		
C-1	TITLE SHEET		
C-2	GENERAL NOTES		
C-3	"C" STREET PLAN & PROFILE		
C-4	VERTICAL OFFSETS/DETAIL SHEET		
C-5	DETAIL SHEET		
C-6	DETAIL SHEET		
	C-1 C-2 C-3 C-4 C-5		

# **ENGINEER**



681 EDISON WAY - RENO, NEVADA 89502 PH 775-771-5554 / FX 775-856-3951



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#### **GENERAL NOTES**

- CONTRACTOR SHALL PROVIDE ALL MATERIALS, EQUIPMENT, LABOR, AND INCIDENTALS REQUIRED TO CONSTRUCT THE IMPROVEMENTS AS SHOWN ON THE IMPROVEMENT PLANS AND AS REQUIRED BY TMWA ENGINEERING & CONSTRUCTION STANDARDS AND CITY OF RENO REQUIREMENTS.
- . THE CONTRACTOR SHALL OBTAIN COPIES OF THE TMWA ENGINEERING & CONSTRUCTION STANDARDS FOR HIS/HER USE. A COPY OF THE STANDARDS SHALL BE AVAILABLE AT THE JOB SITE AT ALL TIMES.
- INSPECTION WILL BE BY THE ASSIGNED TMWA INSPECTOR. CONTRACTOR IS TO NOTIFY THE TMWA PROJECT REPRESENTATIVE AT LEAST FIVE BUSINESS DAYS BEFORE STARTING CONSTRUCTION.
- THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND FEATURES AS SHOWN ON THESE IMPROVEMENT PLANS IS BASED UPON THE BEST INFORMATION AVAILABLE TO THE ENGINEER. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THESE LOCATIONS AND/OR ELEVATIONS B' POTHOLING AT THE PROPOSED POINTS OF CONNECTION AND IN AREAS OF POSSIBLE CONFLICT PRIOR TO BEGINNING CONSTRUCTION. SHOULD THE CONTRACTOR FIND ANY DISCREPANCIES BETWEEN THE CONDITIONS EXISTING IN THE FIELD AND THE INFORMATION SHOWN ON THE IMPROVEMENT PLANS. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE TMWA ENGINEER. CONTRACTOR SHALL POTHOLE SUFFICIENTLY IN ADVANCE OF CONSTRUCTION TO ALLOW THREE (3) WORKING DAYS FOR TMWA ENGINEERING TO PREPARE A RE-DESIGNED PLAN SHOULD A CONFLICT BE ENCOUNTERED. ABSOLUTELY NO STAND-BY TIME WILL BE PAID TO THE CONTRACTOR DURING THIS THREE (3) DAY RE-DESIGN PERIOD.
- AT LEAST 3 WORKING DAYS BEFORE STARTING CONSTRUCTION, THE CONTRACTOR SHALL CALL UNDERGROUND SERVICE ALERT AT 811 AND REQUEST UTILITY MARKING. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE COST OF REPAIRING EXISTING FACILITIES THAT ARE DAMAGED BY HIS/HER OPERATIONS.
- CONTRACTOR SHALL OBTAIN ALL STREET CUT ENCROACHMENT PERMITS. AND SHALL BE RESPONSIBLE FOR GENERATING AND SUBMITTING ALL AGENCY REQUIRED TRAFFIC CONTROL PLANS. TRAFFIC CONTROL AND WORKER/PUBLIC SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AT ALL TIMES.
- THE CITY OF SPARKS WILL PROVIDE CONSTRUCTION SURVEY STAKING OF CRITICAL POINTS AS IDENTIFIED WITH NORTHING AND EASTING COORDINATES IN THE IMPROVEMENT PLANS. THESE POINTS INCLUDE VALVES, TEES, TAPPING LOCATIONS, AND/OR ELBOWS. ADDITIONAL STAKING AND/OR SURVEY REQUIRED TO CONSTRUCT THE PROJECT. INCLUDING VERTICAL ELEVATION STAKING, SHALL BE THE RESPONSIBILITY OF THE
- ANY DISCREPANCIES BETWEEN THE IMPROVEMENT PLANS AND THE ACTUAL FIELD CONDITIONS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE TMWA INSPECTOR AND/OR TMWA PROJECT REPRESENTATIVE. PROCEEDING WITH WORK THAT DEVIATES FROM THE PLANS, EXCEPT FOR AN EMERGENCY LIFE-SAFETY CONDITION. SHALL BE AT THE SOLE RISK OF THE CONTRACTOR FOR THE COST TO REPLACE, IF DEEMED UNACCEPTABLE BY THE TMWA PROJECT REPRESENTATIVE.
- CONTRACTOR SHALL COMPLY WITH ALL FEDERAL, STATE, AND TMWA SAFETY REGULATIONS AND SHALL MAINTAIN THE WORK AREA IN A SAFE CONDITION 24 HOURS PER DAY UNTIL THE PROJECT IS COMPLETE. WORKER AND PUBLIC SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR, NOT TMWA.
- 10. CONTRACTOR SHALL CONTROL DUST IN ACCORDANCE WITH WASHOE COUNTY DISTRICT HEALTH DEPARTMENT REGULATIONS. CONTRACTOR IS ALSO RESPONSIBLE FOR ANY STORMWATER PERMIT (SWPPP) REQUIREMENTS.
- THE CONTRACTOR SHALL MAINTAIN A NEAT AND LEGIBLE DRAWING SET DENOTING ANY FIELD CHANGES THAT DEVIATE FROM THE CONFORMED DESIGN (AS-BUILT DRAWINGS). PRIOR TO TMWA'S ACCEPTANCE OF THE IMPROVEMENTS, THE CONTRACTOR IS TO PRESENT THE AS-BUILT DRAWINGS, WHICH REFLECT ALL FIELD CHANGES, TO THE TMWA
- 12. IF SEWER LATERALS ARE ENCOUNTERED. EVERY EFFORT MUST BE MADE TO CENTER FULL-LENGTH WATER MAIN PIPE SECTIONS AT THE POINT OF SEWER LATERAL CROSSING, A MINIMUM OF 12-INCHES VERTICAL CLEARANCE SHALL BE MAINTAINED BETWEEN THE EXTERIOR OF THE WATER MAIN PIPE AND SEWER LATERAL PIPE.
- 13. THE REMOVAL AND DISPOSAL OF EXISTING FACILITIES AND APPURTENANCES REQUIRED TO MAKE CONNECTIONS TO EXISTING MAINS/FACILITIES AND/OR FOR THE INSTALLATION OF NEW WATER FACILITIES SHALL BE CONSIDERED INCIDENTAL TO THE WORK WITH NO DIRECT PAYMENT. EXISTING FACILITIES THAT WILL BE ABANDONED IN PLACE SHALL BE GROUT FILLED AS SPECIFIED ON THE PLANS OR OTHER METHOD AS APPROVED BY THE TMWA INSPECTOR. COSTS FOR THESE ITEMS SHALL BE INCLUDED IN THE MOST APPROPRIATE BID ITEM. THIS ALSO INCLUDES REMOVAL AND DISPOSAL OF EXISTING VALVE/CURB VALVE BOXES, CONDUCTOR PIPES, METER BOXES, AND ANY OTHER FACILITIES IDENTIFIED IN THE IMPROVEMENT PLANS, INCLUDING BACKFILL WITH TYPE 2. CLASS B CRUSHED AGGREGATE BASE AND PLACEMENT OF TEMPORARY HOT-MIX AC PAVEMENT PATCH PER TYPICAL TRENCH DETAIL.
- 14. ALL VALVES SHALL BE SUPPORTED WITH A CONCRETE PAD AS DEPICTED IN TMWA STANDARD DETAIL 10J-2.
- 15. ALL SERMCE TAPS SHALL BE MADE USING A TAPPING MACHINE DESIGNED SPECIFICALLY FOR TAPPING PURPOSES WITH THE CORRECT CUTTING BIT FOR THE TYPE OF PIPE IN WHICH THE TAPS WILL BE MADE. THE USE OF A DRILL WITH HOLE-SAW BIT OR SIMILAR WILL NOT BE PERMITTED UNDER ANY CIRCUMSTANCES.
- 16. BASIS OF BEARINGS THIS SURVEY IS BASED ON THE NEVADA COORDINATE SYSTEM OF 1983, WEST ZONE, NAD 83/94. DISTANCES SHOWN ARE GROUND DISTANCES USING A GRID TO GROUND COMBINED SCALE FACTOR OF 1.000197939.
- 17. THE BASIS OF ELEVATION FOR THIS PROJECT IS NAVD 88
- PROJECT BENCHMARK = CITY OF SPARKS BENCHMARK No. 56 PER RECORD OF SURVEY MAP No. 3885 HAVING AN ELEVATION OF 4429.19'. BENCHMARK LOCATED ON THE TOP OF CURB IN THE NORTHEAST RETURN OF ROCK BOULEVARD AND PRATER WAY.
- 18. PRODUCTS INTENDED FOR CONTACT WITH POTABLE WATER SHALL BE CERTIFIED TO THE REQUIREMENTS OF NSF/ANSI 61.
- 19. A IN PIPE VIDEO OF THE EXISTING SEWER MAIN IS AVAILABLE FROM THE CITY OF SPARKS FOR THE CONTRACTOR'S USE.

THESE MATERIAL SPECIFICATIONS SUPPLEMENT THE TECHNICAL SPECIFICATIONS, THE TRUCKEE MEADOWS WATER AUTHORITY ENGINEERING & CONSTRUCTION STANDARDS, AND THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION "ORANGE BOOK", LATEST EDITION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE TMWA PROJECT REPRESENTATIVE FOR RESOLUTION.

#### DUCTILE IRON PIPE, C900 PVC PIPE, AND HIGH DENSITY POLYETHYLENE (HDPE) SERVICE LINE TUBING

ALL PIPE MATERIALS AND APPURTENANCES SHALL BE PER THE TMWA ENGINEERING & CONSTRUCTION STANDARDS, UNLESS MODIFIED/AMENDED HEREIN. INSTALLATION, WORKMANSHIP, PRESSURE TESTING AT 150 PSI, AND DISINFECTION SHALL BE PER THE TMWA ENGINEERING & CONSTRUCTION STANDARDS.

MATERIAL SPECIFICATIONS

ALL DUCTILE IRON PIPE SHALL MEET THE REQUIREMENTS OF AWWA STANDARDS C151, C104 AND C111 WITH PRESSURE CLASS AS SPECIFIED IN THE IMPROVEMENT PLANS. ALL DUCTILE IRON PIPE SHALL BE POLYETHYLENE ENCASED PER AWWA C105. DUCTILE IRON PIPE SHALL BE EQUIPPED WITH TYTON TYPE BELL AND SPIGOT JOINTS. DUCTILE IRON PIPE SHALL BE TYTON JOINT DUCTILE IRON PIPE AS MANUFACTURED BY U.S. PIPE, GRIFFIN TYTON JOINT DUCTILE IRON PIPE AS MANUFACTURED BY GRIFFIN PIPE PRODUCTS CO., INC., OR EQUAL.

ALL C900 PVC WATER PIPE SHALL BE MANUFACTURED FROM NSF APPROVED COMPOUNDS CONFORMING TO ASTM D1784 WITH A CELL CLASSIFICATION OF 12454. C900 PVC WATER PIPE SHALL MEET ALL THE DIMENSIONAL. CHEMICAL, AND PHYSICAL REQUIREMENTS AS OUTLINED IN AWWA C900 AND WILL BE SUPPLIED IN 20 FOOT LAYING LENGTHS. JOINTS SHALL MEET THE REQUIREMENTS OF ASTM D3139 AND SHALL BE FORMED USING RIEBER TECHNOLOGY. GASKETS SHALL MEET THE REQUIREMENTS OF ASTM F477. C900 PVC WATER PIPE SHALL BE PRESSURE CLASS 235 (DR 18) PER AWWA C900. C900 PVC WATER PIPE SHALL BE AS MANUFACTURED BY DIAMOND PLASTICS CORPORATION, VINYLTECH PVC PIPE, NORTH AMERICAN PIPE CORPORATION, OR EQUAL. NOTE - C900 PVC WATER PIPE MANUFACTURED BY JM EAGLE WILL NOT BE ACCEPTED BY TMWA FOR THIS PROJECT.

ALL HIGH DENSITY POLYETHYLENE (HDPE) SERVICE LINE TUBING SHALL BE PRESSURE CLASS 200 (SDR 9) COPPER TUBING SIZE (CTS) PER AWWA C901.

#### GATE\_VALVES

1. SCOPE

GATE VALVES FOR SIZES UP TO AND INCLUDING 12-INCHES SHALL MEET AWWA C509 OR C515. NON-RISING STEM. RESILIENT-SEATED VALVES WITH 2-INCH OPERATING NUT FOR BURIED SERVICE. VALVES MEETING THE AWWA C515 STANDARD SHALL HAVE A DUCTILE IRON BODY. 14-INCH AND LARGER GATE VALVES SHALL MEET AWWA C515, DUCTILE IRON BODY AND BONNET, NON-RISING STEM, RESILIENT-SEATED VALVES WITH 2-INCH OPERATING NUT FOR BURIED SERVICE. VALVE ENDS SHALL BE AS SPECIFIED IN THE IMPROVEMENT PLANS. ALL GATE VALVES SHALL BE FUSION EPOXY LINED AND COATED. ALL VALVES SHALL BE POLYETHYLENE ENCASED PER AWWA C105, GATE VALVES UP TO AND INCLUDING 12-INCHES SHALL BE MUELLER 2360 SERIES RESILIENT WEDGE GATE VALVES, AMERICAN AVK COMPANY SERIES 25 RESILIENT WEDGE GATE VALVES, OR EQUAL. GATE VALVES 14-INCH AND LARGER SHALL BE MUELLER A-2361 D.I. RESILIENT WEDGE GATE VALVES, AMERICAN SERIES 2500 RESILIENT WEDGE GATE VALVES, OR EQUAL.

ALL FITTINGS SHALL BE DUCTILE IRON AND MEET THE REQUIREMENTS OF AWWA STANDARDS C110/C153 AND C104 WITH END CONFIGURATIONS AS SPECIFIED IN THE IMPROVEMENT PLANS. ALL FITTINGS SHALL BE POLYETHYLENE ENCASED PER AWWA C105. FITTINGS SHALL BE ASPHALTIC COATED WITH CEMENT-MORTAR LINING PER AWWA C110/C153 AND C104. FOR FITTINGS WHERE CEMENT-MORTAR LININGS ARE NOT NORMALLY SUPPLIED, SUCH AS CAPS, PLUGS, AND SLEEVES, THE INSIDE OF THESE FITTINGS SHALL BE ASPHALTIC COATED PER AWWA C110/C153 CONFORMING TO ALL APPROPRIATE REQUIREMENTS FOR SEAL COAT PER AWWA C104.

#### 5. RESTRAINED JOINT PIPE AND RESTRAINED JOINT FITTINGS

ALL RESTRAINED JOINT PIPING SHALL BE DUCTILE IRON PIPE, UNLESS OTHERWISE SPECIFIED IN THE IMPROVEMENT PLANS. BELL AND SPIGOT PUSH-ON TYPE DUCTILE IRON TYTON JOINTS SHALL BE RESTRAINED USING RUBBER GASKETS WITH STAINLESS STEEL LOCKING SEGMENTS VULCANIZED INTO THE RUBBER GASKETS. RESTRAINED JOINT RUBBER GASKETS SHALL BE FIELD LOK 350 GASKETS AS MANUFACTURED BY U.S. PIPE, THE GRIPPER GASKET AS MANUFACTURED BY GRIPPER GASKET LLC, OR EQUAL.

RESTRAINED JOINT FITTINGS SHALL BE MECHANICAL JOINT (MJ) DUCTILE IRON WITH MECHANICAL JOINT WEDGE ACTION RESTRAINT GLANDS COMPATIBLE WITH ALL MECHANICAL JOINTS CONFORMING TO ANSI/AWWA C111/A21.11. GLAND BODY, WEDGES, AND WEDGE ACTUATING COMPONENTS SHALL BE CAST FROM GRADE 65-45-12 DUCTILE IRON IN ACCORDANCE WITH ASTM A536. DUCTILE IRON GRIPPING WEDGES SHALL BE HEAT TREATED WITHIN A RANGE OF 370 TO 470 BHN. WEDGE ASSEMBLIES SHALL BE XYLAN FLUOROPOLYMER COATED. CASTING BODIES SHALL BE COATED WITH A POLYESTER BASED POWDER TO PROVIDE CORROSION PROTECTION THAT IS ELECTROSTATICALLY APPLIED AND HEAT CURED. MECHANICAL JOINT WEDGE ACTION RESTRAINT GLANDS SHALL BE MEGALUG SERIES 1100 FOR DUCTILE IRON PIPE OR MEGALUG SERIES 2000PV FOR C900 PVC PIPE AS MANUFACTURED BY EBAA IRON, INC., STARGRIP SERIES 3000 WITH STARBOND COATING FOR DUCTILE IRON PIPE OR PVC STARGRIP SERIES 4000 WITH STARBOND COATING FOR C900 PVC PIPE AS MANUFACTURED BY STAR PIPE PRODUCTS, OR EQUAL.

#### 6. STRAIGHT AND TRANSITION COUPLINGS

STRAIGHT AND TRANSITION COUPLINGS SHALL MEET THE REQUIREMENTS OF AWWA C219. SLEEVE MATERIAL SHALL BE CARBON STEEL OR DUCTILE IRON WITH NSF-61 REGISTERED FUSION-BONDED EPOXY COATING. BOLTS AND NUTS FOR BURIED SERVICE APPLICATIONS SHALL BE 304 STAINLESS STEEL. COUPLINGS SHALL BE DESIGNED SPECIFICALLY FOR THE PIPE MATERIAL/SIZE AND APPLICATION. COUPLINGS SHALL INSTALL WITH A MAXIMUM OF ONE BOLT AT EACH END. STRAIGHT AND TRANSITION COUPLINGS SHALL BE HYMAX 2000 SERIES AS MANUFACTURED BY TOTAL PIPING SOLUTIONS, INC., ROMAC MACRO TWO-BOLT WIDE RANGE DUCTILE IRON COUPLING AS MANUFACTURED BY ROMAC INDUSTRIES, INC., OR EQUAL.

#### 7. FLANGED COUPLING ADAPTERS

FLANGED COUPLING ADAPTERS SHALL MEET THE REQUIREMENTS OF AWWA C219. SLEEVE MATERIAL SHALL BE CARBON STEEL WITH NSF-61 REGISTERED FUSION-BONDED EPOXY COATING. BOLTS AND NUTS FOR BURIED SERVICE APPLICATIONS SHALL BE ANSI 304/303 STAINLESS STEEL. FLANGED COUPLING ADAPTERS SHALL BE DESIGNED SPECIFICALLY FOR THE PIPE MATERIAL/SIZE AND APPLICATION AND SHALL INSTALL WITH A MAXIMUM OF ONE BOLT ON THE COMPRESSION END. FLANGED COUPLING ADAPTERS SHALL BE HYMAX 2100 SERIES FLANGED ADAPTERS AS MANUFACTURED BY TOTAL PIPING SOLUTIONS, INC., OR EQUAL.

#### 8. FLANGE AND MECHANICAL JOINT T-HEAD BOLTS AND NUTS

FLANGE BOLTS AND NUTS: BOLTS AND NUTS SHALL BE CARBON STEEL WITH A MINIMUM 60,000 PSI TENSILE STRENGTH CONFORMING TO ASTM A307, GRADE A. BOLTS SHALL BE STANDARD ANSI B1.1, CLASS 2A COARSE THREADS. NUTS SHALL CONFORM TO ASTM A563 AND BE STANDARD ANSI B1.1, CLASS 2A COARSE THREADS. ALL BOLT HEADS AND NUTS SHALL BE HEXAGONAL. IDENTIFICATION ON THE HEAD OF THE BOLT SHALL BE: A

MECHANICAL JOINT T-HEAD BOLTS AND NUTS: BOLTS SHALL BE ASTM A242 WEATHERING STEEL WITH A MINIMUM YIELD STRENGTH OF 45,000 PSI. ALL T-HEAD BOLTS AND NUTS SHALL BE THREADED IN ACCORDANCE WITH ANSI B1.1, CLASS 2A COARSE THREADS. HEAVY HEX NUTS SHALL BE USED. BOLT HEADS SHALL BE IN ACCORDANCE WITH THE DIMENSIONS OF ANSI/AWWA C111/A21.11-95. FINISH: ALL FLANGE BOLTS AND NUTS AND MECHANICAL JOINT T-HEAD BOLTS AND NUTS SHALL BE FINISHED WITH THE TRIPAC 2000 BLUE COATING SYSTEM TO SIGNIFICANTLY REDUCE THE EFFECTS OF CORROSION, OR EQUAL. A MULTI-STEP PROCESS SHALL BE UTILIZED TO CHEMICALLY CLEAN, ABRASIVE BLAST, AND PRIME WITH ZINC/NICKEL PHOSPHATE PRIMER PRIOR TO APPLICATION OF THE XYLAN FLUOROPOLYMER. WEAR RESISTANCE (K-FACTOR) SHALL BE IN THE RANGE OF 6 TO 8 (EXCELLENT) AND MINIMAL EFFECTS SHOULD BE SEEN AFTER A 3,000 HOUR SALT SPRAY TEST CONFORMING TO ASTM B-117. BOLTS AND NUTS FINISHED WITH THE TRIPAC 2000 BLUE COATING SYSTEM DO NOT REQUIRE COATING WITH MASTIC.

#### CORPORATION STOPS FOR SERVICE CONNECTIONS

CORPORATION STOPS SHALL BE BALL VALVE, BRASS CONFORMING TO AWWA C800 AND ASTM B-62, AND SUITABLE FOR A WORKING PRESSURE OF 300 PSI. INLET END SHALL BE MALE IRON PIPE THREAD (MIP) OR AWWA I.P. THREAD, OUTLET END SHALL BE COMPRESSION CONNECTION SUITABLE FOR CONNECTION TO CTS O.D. HDPE TUBING, SIZE AS SPECIFIED IN THE IMPROVEMENT PLANS. CORPORATION STOPS FOR SERVICE CONNECTIONS SHALL BE FORD BALLCORP CORPORATION STOPS WITH QUICK JOINT COMPRESSION CONNECTION OUTLET MODEL # FB1100-X-Q AS MANUFACTURED BY THE FORD METER BOX COMPANY, INC., MUELLER 300 BALL TYPE CORPORATION VALVES WITH MUELLER 110 COMPRESSION CONNECTION OUTLET MODEL # B-25028, OR EQUAL.

#### 10. CORPORATION STOPS FOR 2-INCH TEMPORARY FLUSHING AND TESTING ASSEMBLIES

CORPORATION STOPS SHALL BE BALL VALVE, BRASS CONFORMING TO AWWA C800 AND ASTM B-62, AND SUITABLE FOR A WORKING PRESSURE OF 300 PSI. INLET END SHALL BE MALE IRON PIPE THREAD (MIP) OR AWWA I.P. THREAD, OUTLET END SHALL BE MALE IRON PIPE THREAD (MIP). CORPORATION STOPS FOR 2-INCH TEMPORARY FLUSHING AND TESTING ASSEMBLIES SHALL BE FORD BALLCORP CORPORATION STOPS MODEL # FB500-7 AS MANUFACTURED BY THE FORD METER BOX COMPANY, INC., MUELLER 300 BALL TYPE CORPORATION VALVES MODEL # B-2969, OR EQUAL.

#### 11. COMPRESSION COUPLINGS AND ADAPTERS FOR SERVICE LINE CONNECTIONS

COMPRESSION COUPLINGS AND ADAPTERS FOR CONNECTING NEW CTS HDPE SERVICE LINES TO EXISTING SERVICE LINES OR METER SETTERS SHALL BE QUICK JOINT COUPLINGS AS MANUFACTURED BY THE FORD METER BOX COMPANY, INC., MUELLER 110 COMPRESSION CONNECTIONS, OR EQUAL.

#### 12. HOT-TAP TAPPING SLEEVES

TAPPING SLEEVES SHALL BE FULL-CIRCLE STAINLESS STEEL WITH FULL CIRCUMFERENCE GASKETS THROUGHOUT SLEEVE LENGTH WITH DUCTILE IRON OR EPOXY COATED CARBON STEEL FLANGE. TAPPING SLEEVE SHALL BE RATED FOR A TEST PRESSURE OF 300 PSI AND WORKING PRESSURE OF 200 PSI. TAPPING SLEEVE SHALL BE A ROMAC STYLE "SST" AS MANUFACTURED BY ROMAC INDUSTRIES, INC., SMITH-BLAIR 662 AS MANUFACTURED

#### 13. SERVICE SADDLES

SERVICE SADDLE BODY SHALL BE CAST FROM DUCTILE IRON MEETING OR EXCEEDING ASTM A536, WITH A FUSION BONDED NYLON COATING, OR COATED WITH AN IMPACT AND CORROSION RESISTANT FUSION BONDED EPOXY, MIN. 10-12 MILS THICK, AND EQUIPPED WITH DOUBLE TYPE 304 STAINLESS STEEL STRAPS. SERVICE SADDLES SHALL HAVE A NPT THREADED INLET. FOR INSTALLATIONS ON C900 PVC PIPE, MAXIMUM O.D. OF SERVICE SADDLE'S O.D. RANGE SHALL BE EQUIVALENT TO THE O.D. OF THE C900 PVC PIPE FOR WHICH IT WILL BE INSTALLED. SERVICE SADDLES SHALL BE SMITH-BLAIR 317 TAPERSEAL AS MANUFACTURED BY SMITH-BLAIR, INC., OR ROMAC STYLE 202NS AS MANUFACTURED BY ROMAC INDUSTRIES, INC., OR EQUAL.

#### 14. TAPPED FULL CIRCLE REPAIR CLAMP

TAPPED FULL CIRCLE REPAIR CLAMP SHALL BE FULL CIRCUMFERENTIAL, SINGLE SECTION, ALL STAINLESS STEEL REPAIR CLAMP WITH 1" FIP TAPPED OUTLET AND O.D. SIZE RANGE TO FIT 8" TRANSITE (AC) PIPE. ANTICIPATED O.D. OF EXISTING 8" TRANSITE (AC) PIPE IS 9.40", TO BE FIELD VERIFIED. SHELL, LUGS, BOLTS, NUTS, AND WASHERS SHALL BE TYPE 304 STAINLESS STEEL. GASKET SHALL BE SBR PER ASTM D 2000 MAA 610 COMPOUNDED FOR WATER SERVICE. TAPPED FULL CIRCLE REPAIR CLAMP SHALL BE ROMAC STYLE SSI WITH 1" IP TAP, O.D. SIZE RANGE 9.30 - 9.70, AS MANUFACTURED BY ROMAC INDUSTRIES INC., OR EQUAL.

#### 15. FOSTER ADAPTERS

DUCTILE IRON CONFORMING TO ANSI/AWWA C153/A21.53 (CURRENT REVISION). FUSION BONDED EPOXY COATED. MECHANICAL JOINT (MJ) VALVES & FITTINGS SHALL BE CONNECTED USING A BOLT-THROUGH POSITIVE RESTRAINT MECHANISM MANUFACTURED OF DUCTILE IRON CONFORMING TO ASTM A 80-55-06 WHERE INDICATED ON THE PLANS. THE POSITIVE RESTRAINT DEVICE SHALL CONNECT THE VALVES AND/OR FITTINGS AT A LINEAR DISTANCE NOT TO EXCEED ONE(1) INCH AND WITHOUT ATTACHMENT TO PIPE. THE BOLT-THROUGH MJ POSITIVE RESTRAINING DEVICE SHALL BE SUPPLIED WITH ASPHALTIC/EPOXY COATINGS IN ACCORDANCE WITH ANSI/AWWA C153/A 21.53 AND ANSI/AWWA C104A/21.4 AND SIZED TO BE USED WITH STANDARD MECHANICAL JOINT FITTINGS (AWWA C110 or C153) AND VALVES. THE DEVICE SHALL HAVE A MINIMUM WORKING PRESSURE RATING OF 350 PSI.

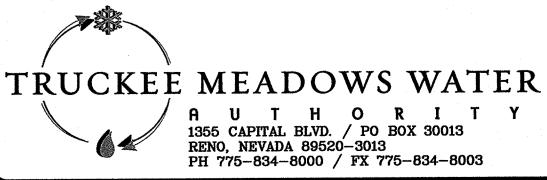
**ABBREVIATIONS** - PROPOSED CL 235 C900 PVC WATER MAIN DIAMETER PROPOSED DUCTILE IRON WATER MAIN - RESTRAIN WHERE SPECIFIED PLUS OR MINUS PROPOSED FULL LENGTH 18 LF DUCTILE IRON WATER MAIN ASPHALT CONCRETE PAVEMENT ASBESTOS CEMENT PIPE ------ PROPOSED WATER SERVICE LINE ansi AMERICAN NATIONAL STANDARDS INSTITUTE ----- EXISTING WATER SERVICE LINE APPROX. APPROXIMATE(LY) PREVIOUSLY ABANDONED WATER SERVICE LINE AWWA AMERICAN WATER WORKS ASSOCIATION PROPOSED FIRE HYDRANT LATERAL LINE CAST IRON CURE IN PLACE PIPE EXISTING FIRE HYDRANT LATERAL LINE ---- 18"SD -- -- 18"SD -- EXISTING STORM DRAIN MAIN/LATERAL WITH SIZE CLASS **CORPORATION** COPPER TUBING SIZE DUCTILE IRON DUCTILE IRON PIPE — — — — AT&T — — — AT&T — EXISTING UNDERGROUND AT&T TELECOMMUNICATIONS FACILITY EXISTING FCA FLANGED COUPLING ADAPTER —— — — — FOC — — — FOC —— EXISTING FIBER OPTIC CABLE — CHARTER COMMUNICATIONS FIRE DEPARTMENT CONNECTION —— — — — use — — — use — EXISTING UNDERGROUND ELECTRIC FACILITY FEMALE IRON PIPE FLG **FLANGE** \_\_\_\_\_ APPROXIMATE EXISTING ROADWAY CENTERLINE GALV. **GALVANIZED** ----- EXISTING RIGHT-OF-WAY BOUNDARY HDPE HIGH DENSITY POLYETHYLENE EXISTING LOT LINE POUND PROPOSED TEE / TAPPING SLEEVE LINEAR FEET PROPOSED 90° ELBOW LEFT PROPOSED 45° ELBOW **MAXIMUM** MINIMUM PROPOSED 11.25° ELBOW MALE IRON PIPE PROPOSED VERTICAL ELBOW MECHANICAL JOINT EXISTING VERTICAL ELBOW NEVADA DEPARTMENT OF TRANSPORTATION PROPOSED THRUST BLOCK NATIONAL SANITATION FOUNDATION PROPOSED REDUCER NTS NOT TO SCALE PROPOSED GATE VALVE OUTSIDE DIAMETER PROPOSED GATE VALVE - NORMALLY CLOSED P.C.C. PORTLAND CEMENT CONCRETE EXISTING ISOLATION VALVE PLAIN END PE EXISTING ISOLATION VALVE - NORMALLY CLOSED PUSH-ON PROPOSED COUPLING PSF POUNDS PER SQUARE FOOT PROPOSED CAP / FCA WITH BLIND FLANGE POUNDS PER SQUARE INCH EXISTING CAP POLYVINYL CHLORIDE PROPOSED NEW WATER METER BOX AND COVER RCP REINFORCED CONCRETE PIPE EXISTING WATER METER FACILITY REF. REFERENCE PROPOSED FLUSH ASSEMBLY RFCA RESTRAINED FLANGE COUPLING ADAPTER RJ RESTRAINED-JOINT EXISTING FLUSH ASSEMBLY RJ-DIP RESTRAINED-JOINT DUCTILE IRON PIPE EXISTING SINGLE CHECK VALVE EXISTING FIRE HYDRANT REGIONAL TRANSPORTATION COMMISSION EXISTING STORM DRAIN MANHOLE (SDMH) SD STORM DRAIN EXISTING SANITARY SEWER MANHOLE (SSMH) SDMH STORM DRAIN MANHOLE EXISTING STORM DRAIN CATCH BASIN TYPE 1 SS SANITARY SEWER EXISTING STORM DRAIN CATCH BASIN TYPE 4-R SANITARY SEWER MANHOLE FXISTING ROUND STORM DRAIN CATCH BASIN WITH GRATE STANDARD SPECIFICATIONS FOR PUBLIC WORKS EXISTING NATURAL GAS VALVE CONSTRUCTION, LATEST EDITION EXISTING NATURAL GAS CAP STA STATION EXISTING NATURAL GAS REDUCER STL STEEL EXISTING UTILITY POLE TRUCKEE MEADOWS WATER AUTHORITY EXISTING UNDERGROUND ELECTRIC VAULT WITH MANHOLE ACCESS TRANSITE (AC) PIPE EXISTING ELECTRIC BOX / VAULT (SIZES VARY) TYP. EXISTING ELECTRIC TRANSFORMER EXISTING TELECOMMUNICATIONS BOX / VAULT (SIZES VARY) EXISTING TELECOMMUNICATIONS VAULT WITH MANHOLE ACCESS EXISTING CHARTER COMMUNICATIONS CABLE TV / FIBER OPTIC BOX (SIZES VARY) EXISTING TRAFFIC SIGNAL BOX (SIZES VARY) EXISTING TRAFFIC SIGNAL CABLE MANHOLE ACCESS BOX EXISTING TRAFFIC SIGNAL - MULTIPLE LIGHTS WITH ARM EXISTING TRAFFIC SIGNAL - SINGLE LIGHT ENGINEERING EXISTING STREET LIGHT Civil Engineering • Land Developmen



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**AXION JOB NUMBER: 13004** 

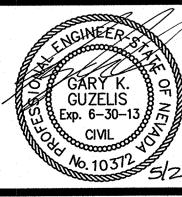
N:\Axion Engineering\Projects AE\TMWA\C Street Main Replacement\ACAD\C StreetTMWATitle.dwg VORK ORDER NO. \_\_\_\_\_10.0001.16\_ DATE DESCRIPTION REVISION GKG DESIGNED: 5/21/2013 CHECKED BY: UBMITTED: ECOMMENDED: . PPROVED:



### NOT REPRODUCIBLE

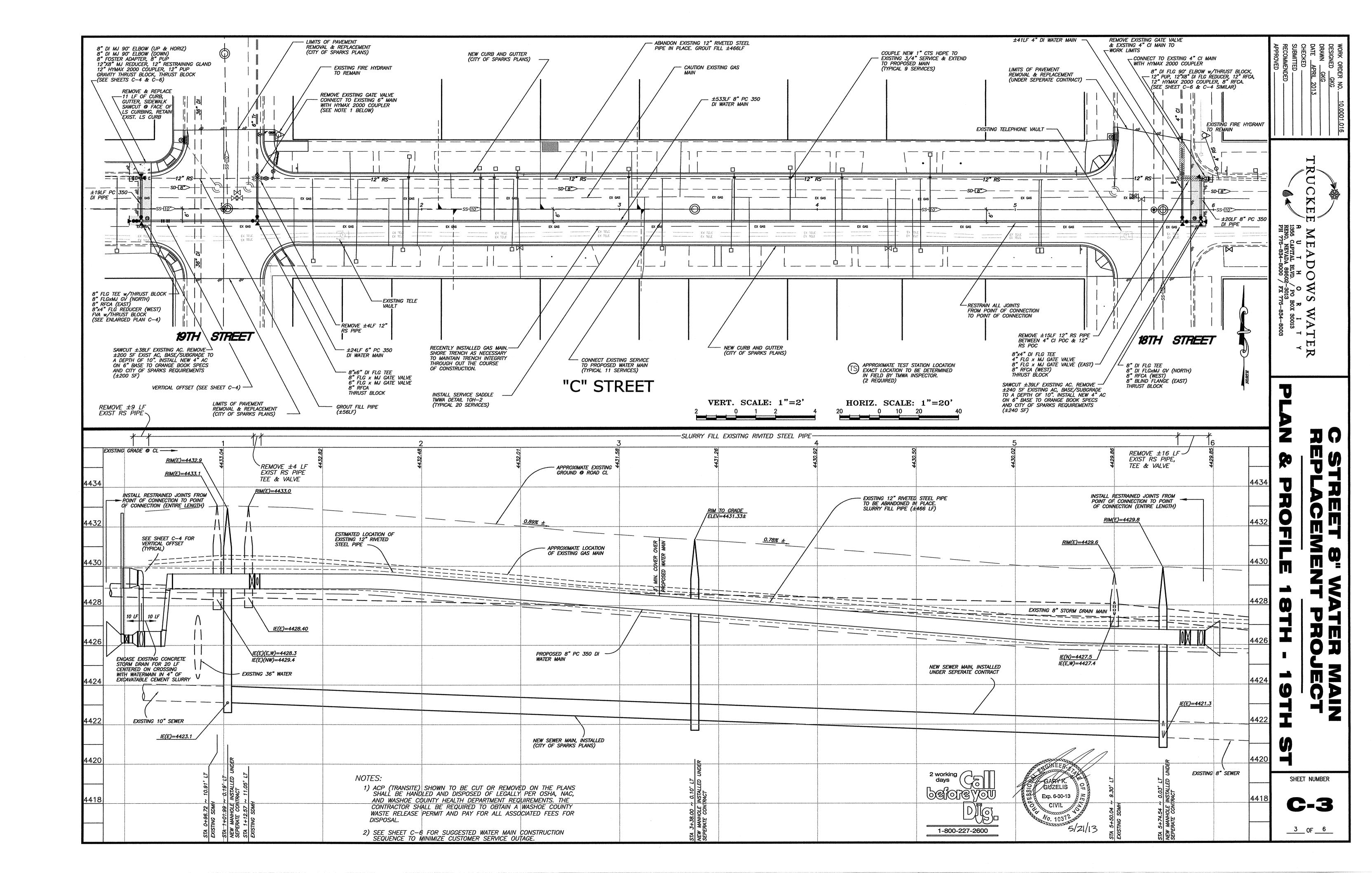
PROPERTY OF C-STREET 8" WATER MAIN REPLACEMENT TRUCKEE MEADOWS WATER AUTHORITY, RETURN UPON 18TH STREET TO 19TH STREET **COMPLETION OF PROJECT** NOTES, ABBREVIATIONS & LEGEND (Per Homeland Security Act)

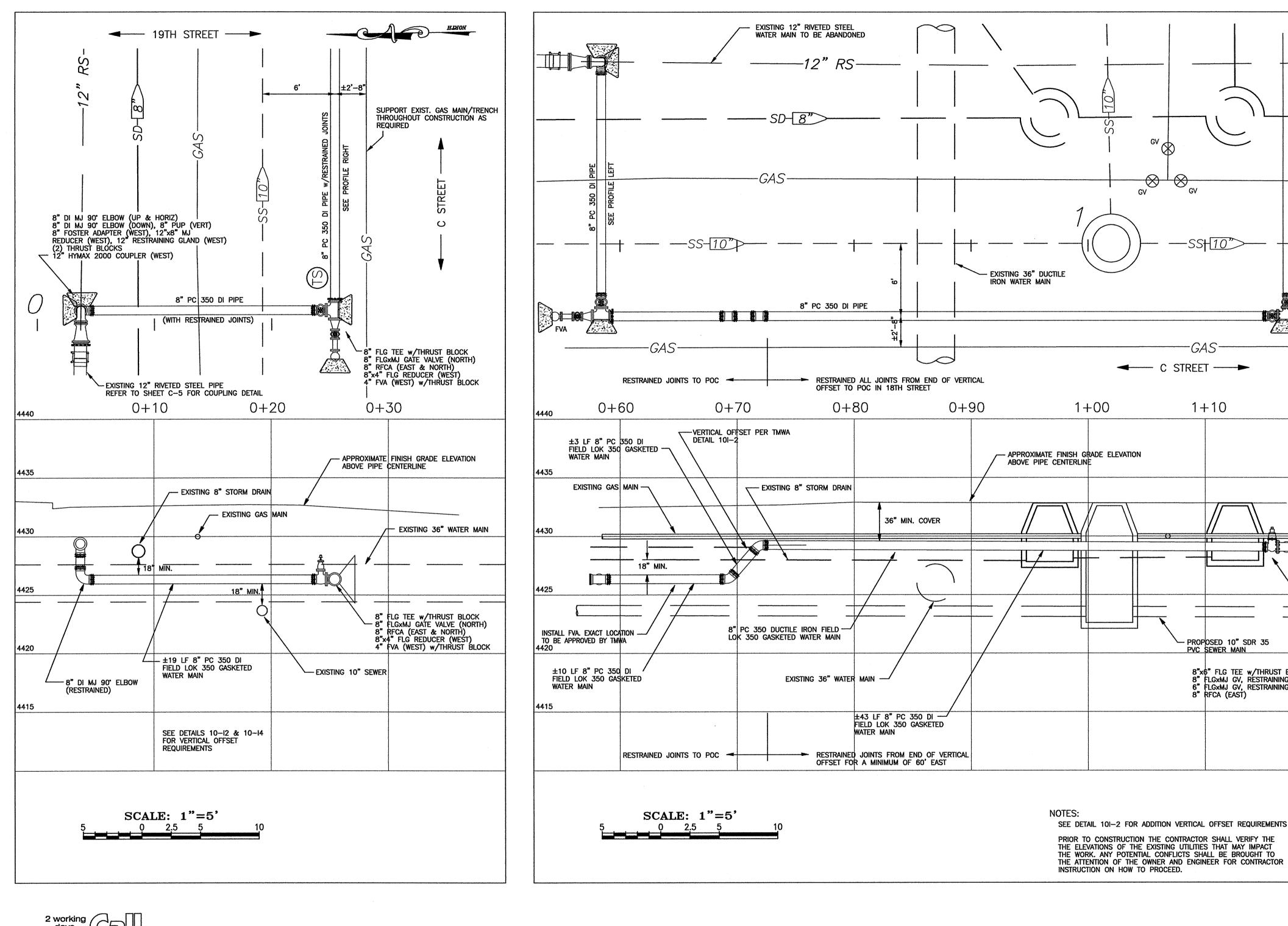
TRUCKEE MEADOWS WATER AUTHORITY



LEGEND

SHEET NUMBER







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1+20

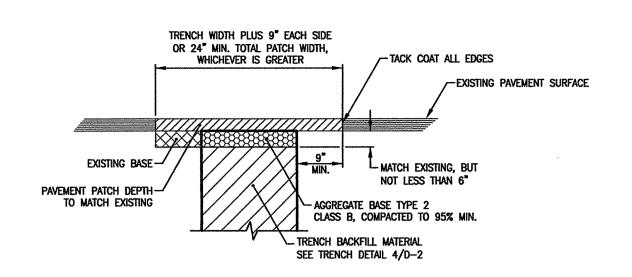
1 + 10

PROPOSED 10" SDR 35

8"x6" FLG TEE W/THRUST BLOCK
8" FLGxMJ GV, RESTRAINING GLAND (NORTH)
6" FLGxMJ GV, RESTRAINING GLAND (WEST)

PVC SEWER MAIN

8" RFCA (EAST)

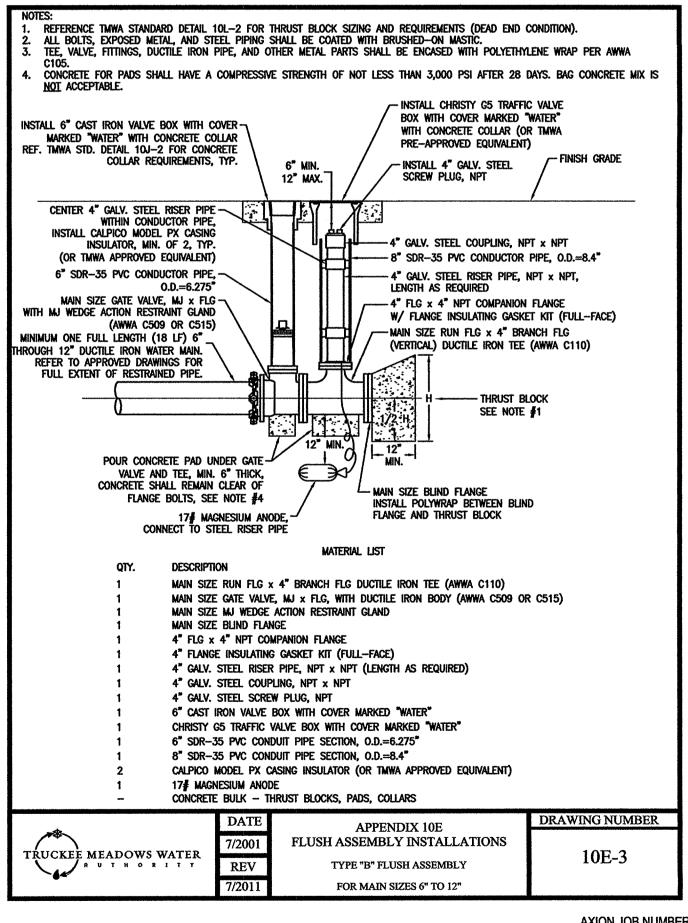


- 1. A PERMIT MUST BE OBTAINED FROM THE CITY ENGINEER PRIOR TO CUTTING ANY PUBLIC RIGHT-OF-WAY. 24 HOURS PRIOR TO TRENCH EXCAVATION, THE PERMITTEE MUST NOTIFY THE CITY EXCAVATION PERMIT INSPECTOR OR
- 2. IF SAW CUT IS WITHIN 2 FEET OF AN EXISTING PAVEMENT EDGE OR EXISTING PAVEMENT PATCH, REMOVE EXISTING PAVEMENT TO THAT EDGE AND REPLACE ENTIRE SECTION.
- 3. ALL A.C. REPLACEMENT REQUIREMENTS ARE MINIMUM WIDTHS ONLY. THE CITY ENGINEER MAY REQUIRE WIDER PATCH SECTIONS OR OTHERWISE ALTER THESE REQUIREMENTS.
- 4. EDGE OF 4" ROCK WHEEL TRENCHES FOR CONDUIT SHALL BE LOCATED A MIN. OF 9" FROM GUTTER LIP AND
- SHALL BE PATCHED AS PER THE ABOVE DETAIL. 5. AGGREGATE BASE AND BITUMINOUS PAVEMENT SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR
- 6. CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACEMENT OF LOOP DETECTORS, ADJUSTMENT OF UTILITIES AND

OF ASPHALT IF APPROVED BY CITY ENGINEER.

- SURVEY MONUMENTS TO GRADE AND INSTALLATION OF TEMPORARY PAVEMENT MARKERS. 7. FOR P.C.C CURB REPLACEMENT, SAW CUT EXISTING PAVEMENT 18—INCHES MINIMUM FROM GUTTER LIP LINE, REMOVE AND REPLACE PAVEMENT TO SAW CUT EDGES. CONCRETE MAY BE POURED NEAT AGAINST EXISTING EDGE
- 8. NO TEMPORARY PATCHING IS REQUIRED WITHIN THE CITY OF SPARKS ROAD RECONSTRUCTION AREA. MATCH ADJACENT STREET GRADE WITH AGGREGATE BASE.

#### PERMANENT PAVEMENT PATCH DETAIL



**AXION JOB NUMBER: 13004** 

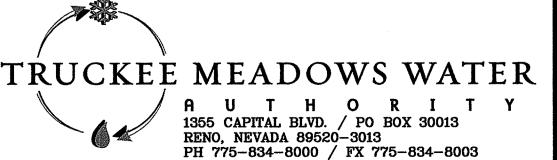
TRUCKEE MEADOWS WATER AUTHORITY **NOT REPRODUCIBLE** PROPERTY OF C-STREET 8" WATER MAIN REPLACEMENT TRUCKEE MEADOWS WATER **AUTHORITY, RETURN UPON** 18TH STREET TO 19TH STREET **COMPLETION OF PROJECT** 

8 GUZELIS 8 Exp. 6-30-13 CIVIL 16.10312

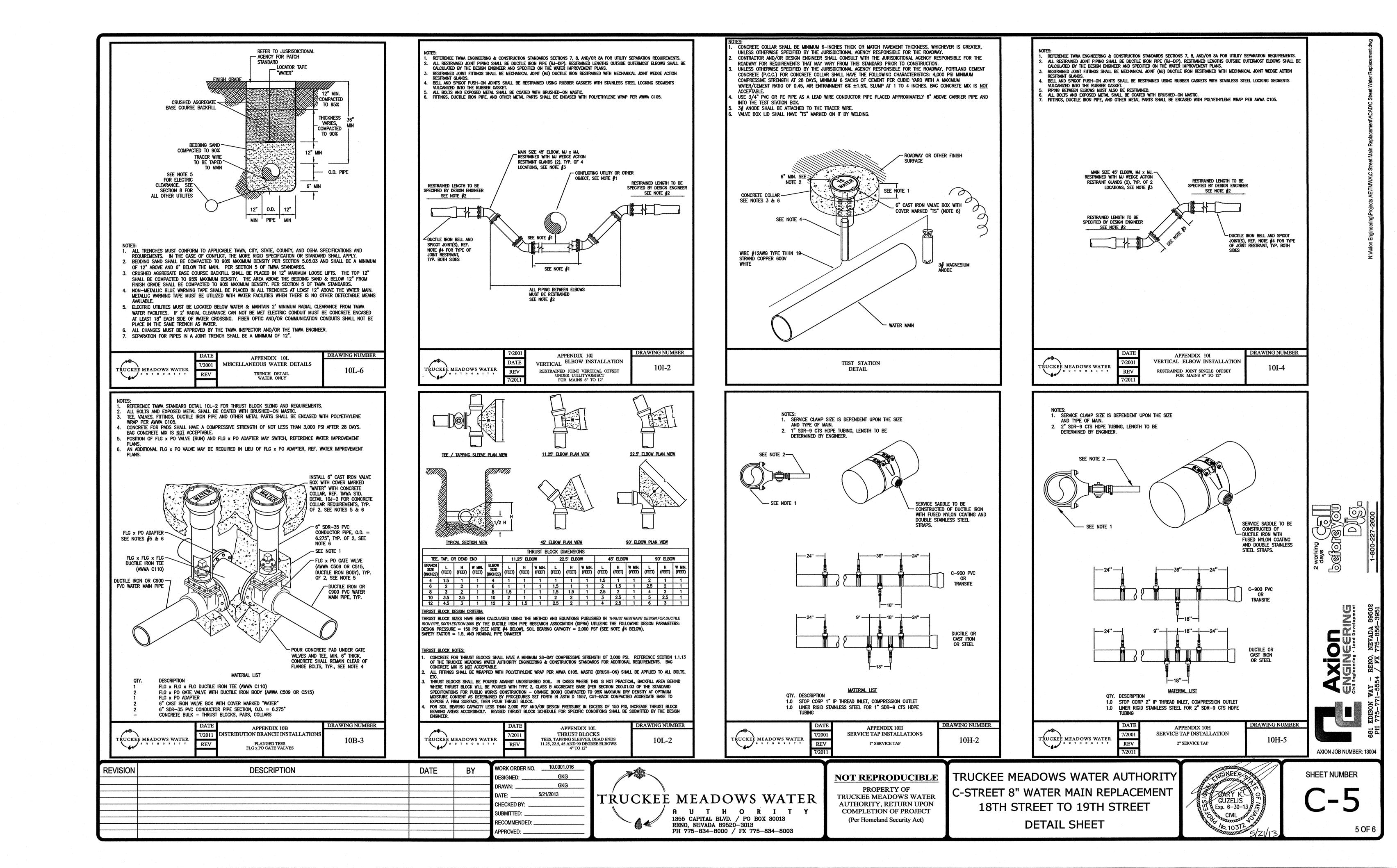
SHEET NUMBER

N:\Axion Engineering\Projects AE\TMWA\C Street Main Replacement\ACAD\C Street Water Replacement.dwg WORK ORDER NO. \_\_\_\_10.0001.016 REVISION DESCRIPTION DATE GKG DESIGNED: GKG **CHECKED BY** SUBMITTED RECOMMENDED: PPROVED: \_

1-800-227-2600

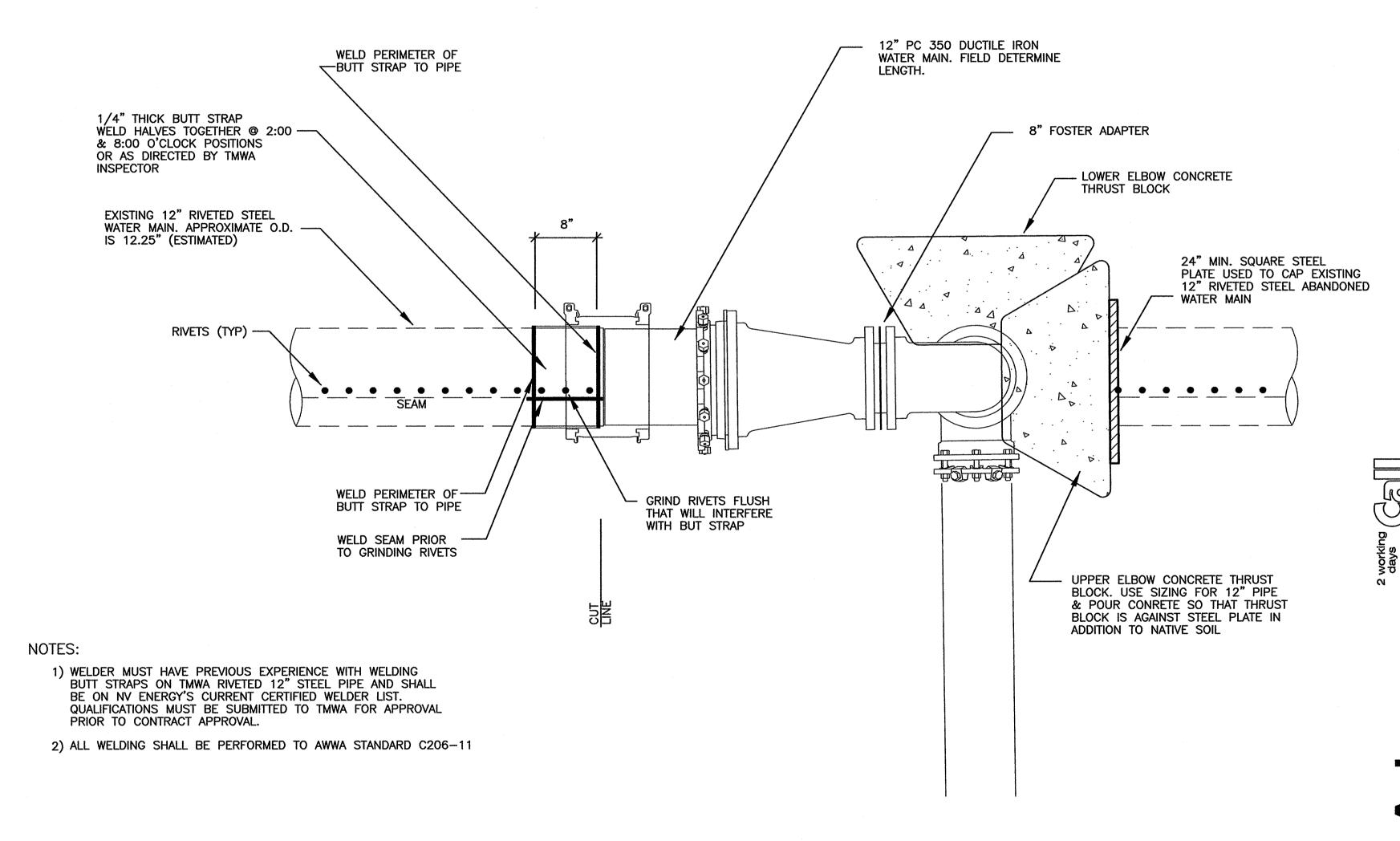


(Per Homeland Security Act) VERTICAL OFFSETS/DETAILS



#### SUGGESTED CONSTRUCTION SEQUENCE

- 1) CONSTRUCT 8" DI MAIN FROM 18TH STREET TO 19TH STREET. (1 AND 2 CAN BE CONCURRENT).
- 2) CONNECT TO 4" CI MAIN IN 18TH STREET AND GO OVER/UNDER 12" RS MAIN TO CONNECT TO NEWLY INSTALLED 8" MAIN. (4" TO SUPPLY NEW 8", 8" VALVES IN 18TH AND 19TH SHUT). TEST AND BACTI
- 3) CONNECT EXISTING SERVICES TO NEW 8" MAIN.
- 4) CLOSE 6" AND 12" VALVE IN 19TH STREET INTERSECTION AND NEAREST 12" VALVE TO WEST.
- 5) REMOVE 12" RS MAIN IN 19TH STREET WHERE INDICATED ON THE DRAWINGS AND CONNECT 8" MAIN TO EXISTING 12" RS MAIN.
- 6) SHUT OFF 6" TR MAIN AND MAKE CONNECTION TO NEWLY INSTALLED 8" MAIN. SHUT DOWN 12" RS MAIN FROM CLOSEST VALVE EAST OF 18TH STREET.
- 7) REMOVE 12" RS PIPE IN 18TH STREET INTERSECTION WHERE INDICATED ON PLANS.
- 8) CONNECT 12" RS MAIN TO 8" MAIN, 4" CI MAIN TO 8" MAIN. IF PREVIOUS CI CONNECTION NOT ACCEPTABLE FOR PERMANENT DESIGN.



REVISION	DESCRIPTION	DATE	BY	WORK ORDER NO
				DESIGNED: GKG
				DRAWN:GKG
				DATE:5/21/2013
				CHECKED BY:
		· · · · · · · · · · · · · · · · · · ·		SUBMITTED:
				RECOMMENDED:
				APPROVED:
				ALL ROVED.

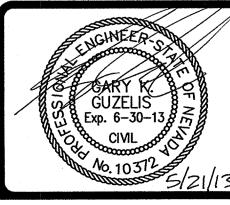


# NOT REPRODUCIBLE

12" RIVETED STEEL CONNECTION

PROPERTY OF
TRUCKEE MEADOWS WATER
AUTHORITY, RETURN UPON
COMPLETION OF PROJECT
(Per Homeland Security Act)

TRUCKEE MEADOWS WATER AUTHORITY
C-STREET 8" WATER MAIN REPLACEMENT
18TH STREET TO 19TH STREET
DETAIL SHEET



SHEET NUMBER

**AXION JOB NUMBER: 13004**