

CITY OF SPARKS

4TH STREET SEWER REHABILITATION PROJECT

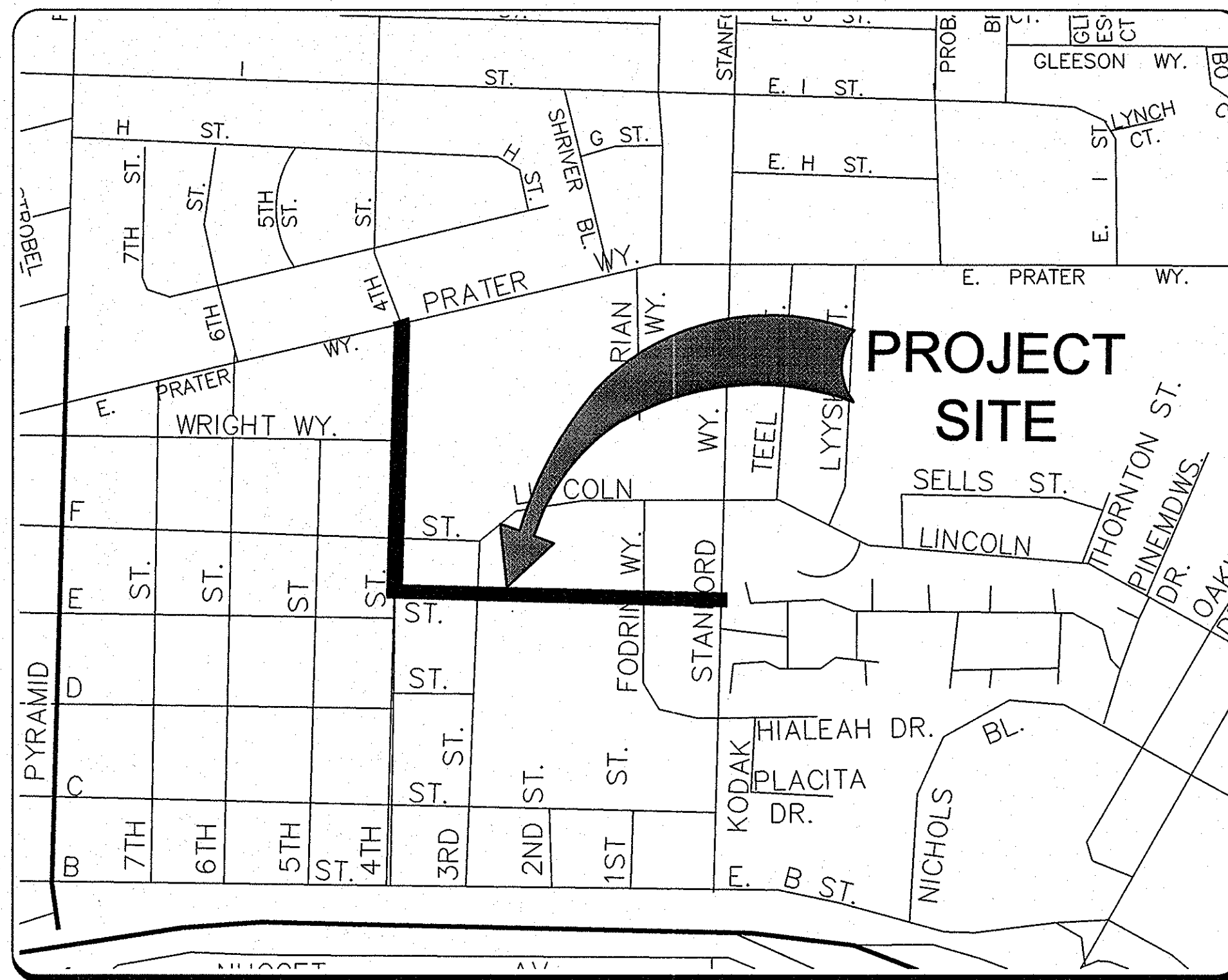
BID NO. 13/14 - 019, PWP #WA - 2014-165



cfa PLANNERS • ENGINEERS • LANDSCAPE ARCHITECTS
SURVEYORS • CONSTRUCTION INSPECTION
1150 CORPORATE BLVD. RENO, NV 89502 (775) 856-1150 FAX: (775) 856-1160

CITY COUNCIL

MAYOR..... GENO MARTINI
WARD ONE..... JULIA RATTI
WARD TWO..... ED LAWSON
WARD THREE..... RON SMITH
WARD FOUR..... MIKE CARRIGAN
WARD FIVE..... RON SCHMITT
CITY MANAGER..... STEPHEN DRISCOLL



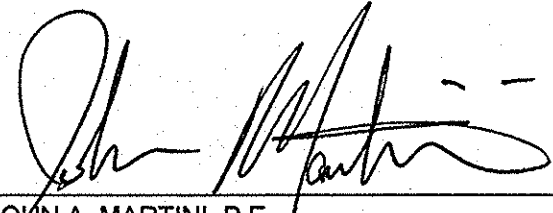
VICINITY MAP


N.T.S.

CIVIL:

CFA, INC.
1150 CORPORATE BOULEVARD
RENO, NEVADA 89502
(775) 856-1150 VOICE
(775) 856-1160 FAX
CONTACT: LONNIE JOHNSON, P.E.

COMMUNITY SERVICES



JOHN A. MARTINI, P.E.
ASSISTANT COMMUNITY SERVICES DIRECTOR AND CITY ENGINEER
4-2-14
DATE


ANDY HUMMEL, P.E.
UTILITY MANAGER
4-2-14
DATE


SHEET INDEX

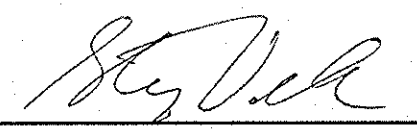
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PREPARED AND SUBMITTED BY:


LONNIE JOHNSON, P.E.
PROJECT MANAGER
3-27-14
DATE

REVIEWED BY:


SHAUN A. SMITH, P.E., LEED AP
DIRECTOR OF ENGINEERING
3-27-14
DATE


STEVE VOLK, P.E.
SENIOR ENGINEER (TMWA)
4-2-14
DATE

LEGEND

PROPOSED	EXISTING	PROPOSED	EXISTING
STORM DRAIN & MANHOLE		PEDESTRIAN RAMP	
STORM DRAIN & CB (AS NOTED)		FIRE HYDRANT	
SANITARY SEWER & MANHOLE		SIDEWALK CROSS DRAIN	
SANITARY SEWER LATERAL AND CLEAN OUT		LIGHTPOLE W/ LIGHT ONLY	
WATER MAIN		POWERPOLE/UTILITYPOLE W/ GUY WIRE ANCHOR	
GAS MAIN		ELECTRICAL PULL BOX (SPCCo)	
GAS SERVICE		ELECTRICAL PULL BOX (CITY)	
ELECTRIC LINE		TRAFFIC SIGNAL BOX	
UNDERGROUND TELEPHONE LINE W/ MANHOLE		WATER VALVE	
UNDERGROUND CABLE TELEVISION		WATER METER	
UNDERGROUND FIBER OPTIC CABLE		12 O' CLOCK LATERAL	
APPROXIMATE RIGHT-OF-WAY BOUNDARY		ABANDONED UTILITY MAIN (AS NOTED)	
APPROXIMATE PROPERTY LINE		SIGNS (SEE SIGNAGE PLAN SHEETS)	
CHAIN LINK FENCE		DEPTH OF GAS/WATER VALVE NUT TO A.C.	
WOOD FENCE		GAS TEST STATION	
OVERHEAD LINE		GAS END OF MAIN	
DESIGN ALIGNMENT		WATER TEST STATION	
SAWCUT AND/OR LIMITS OF RECONSTRUCTION (AS NOTED)		GRADE BREAK LINE	
DETAIL NUMBER/LETTER		SPOT ELEVATIONS	
SHEET ON WHICH DETAIL APPEARS			

ABBREVIATIONS:

AGG. AGGREGATE BASE	EVC END VERTICAL CURVE	RCP REINFORCED CONCRETE PIPE
AC ASPHALT CONCRETE	EX. EXISTING	ROW RIGHT-OF-WAY
ACP ASBESTOS CONCRETE PIPE	FC FACE OF CURB	RP REFERENCE POINT
ADA AMERICANS DISABILITIES ACT	FG FINISH GRADE	(S) SOUTH
ADJ. ADJUST	FH FIRE HYDRANT	S SLOPE
BC BEGIN HORIZONTAL CURVE	FL FLOWLINE	SD STORM DRAIN
BCR BEGIN CURB RETURN	GB GRADE BREAK	SF SQUARE FEET
BKW BLACK WRAP PIPE	G GAS	SL STREET LIGHT
BM BENCHMARK	GV GAS VALVE	SS SANITARY SEWER
BVC BEGIN VERTICAL CURVE	HDPE HIGH DENSITY POLYETHYLENE	SSCO SANITARY SEWER CLEANOUT
CATV CABLE TELEVISION PULL BOX	HP HIGH POINT	SSMH SANITARY SEWER MANHOLE
CB CATCH BASIN	IE INVERT ELEVATION	STA STATION
C&G CURB & GUTTER	INV. INVERT	STD STANDARD
CI CAST IRON	JP JOINT POLE	SY SQUARE YARD
CL CENTERLINE	LF LINEAR FEET OR LEFT	S/W SIDEWALK
CMP CORRUGATED METAL PIPE	LG LIP OF GUTTER	TC TOP OF CURB
CO CLEANOUT	MH MANHOLE	TBC TOP BACK OF CURB
CY CUBIC YARD	MON MONUMENT	TFC TOP FACE OF CURB
DG DECOMPOSED GRANITE	MTD MULTI TILE DUCT	TS TEST STATION
DI DUCTILE IRON/DROP INLET	(N) NORTH	TYP. TYPICAL
DIP DUCTILE IRON PIPE	NDP NO DIRECT PAYMENT	VC VERTICAL CURVE
DWY DRIVEWAY	NTS NOT TO SCALE	VG VALLEY GUTTER
(E) EAST	PCC PORTLAND CEMENT CONCRETE	(W) WEST
EAC EDGE OF ASPHALT	PL PROPERTY LINE	W/ WITH
ELEC. ELECTRICAL	PP POWER POLE	WM WATER METER
EB ELEC PULL BOX	PT POINT	WS WATER SERVICE
EC END HORIZONTAL CURVE	R RADIUS	WV WATER VALVE
EG EXISTING GRADE	RT RIGHT	
ECR END CURB RETURN		
EL ELEVATION		
EP EDGE OF PAVEMENT		

GENERAL NOTES

- ALL WORK SHALL BE IN ACCORDANCE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (2012 EDITION AND ANY APPURTENANT SUPPLEMENTS) SPONSORED AND DISTRIBUTED BY RENO, SPARKS, AND WASHOE COUNTY. ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO THE CONTRACT DOCUMENTS.
- CONTRACTOR IS REQUIRED TO OBTAIN ALL NECESSARY PERMITS AND PAY ALL FEES PRIOR TO CONSTRUCTION.
- IT IS THE INTENT OF THESE PLANS AND SPECIFICATIONS THAT THE WORK PERFORMED UNDER THE CONTRACT SHALL RESULT IN A COMPLETE OPERATING SYSTEM IN SATISFACTORY WORKING CONDITION WITH RESPECT TO THE FUNCTIONAL PURPOSE OF THE INSTALLATION. IF THERE ARE ANY DISCREPANCIES REGARDING THE IMPLIED MEANING OF THESE PLANS, THE CONTRACTOR IS DIRECTED TO CONTACT THE ENGINEER IMMEDIATELY.
- THE CONTRACTOR SHALL MAINTAIN ALL EXISTING DRAINAGE FACILITIES WITHIN THE CONSTRUCTION AREA UNTIL NEW DRAINAGE IMPROVEMENTS ARE IN PLACE AND FUNCTIONAL. NO FENCE OR OTHER OBSTRUCTION WHICH INTERFERES WITH DRAINAGE SHALL BE CONSTRUCTED OR ALLOWED WITHIN THE DRAINAGE/STORM DRAIN EASEMENTS.
- THE CONTRACTOR SHALL TAKE ALL NECESSARY AND PROPER PRECAUTIONS TO PROTECT ADJACENT PROPERTIES FROM ANY AND ALL DAMAGE THAT MAY OCCUR FROM STORM WATER RUNOFF AND/OR DEPOSITION OF DEBRIS RESULTING FROM ANY AND ALL WORK IN CONNECTION WITH PROJECT SCOPE.
- SHOULD ANY PREHISTORIC OR HISTORIC REMAINS OR ARTIFACTS BE DISCOVERED DURING CONSTRUCTION, WORK SHALL BE TEMPORARILY HALTED AT THE SPECIFIC SITE AND THE STATE HISTORIC PRESERVATION OFFICE OF THE DEPARTMENT OF MUSEUMS, LIBRARY AND ARTS, SHALL BE NOTIFIED TO RECORD AND PHOTOGRAPH THE SITE. THE PERIOD OF TEMPORARY DELAY SHALL BE LIMITED TO A MAXIMUM OF TWO (2) WORKING DAYS FROM THE DATE OF NOTIFICATION.
- WORK IN PUBLIC STREETS, ONCE BEGUN, SHALL BE PROSECUTED TO COMPLETION WITHOUT DELAY SO AS TO PROVIDE MINIMUM INCONVENIENCE TO ADJACENT PROPERTY OWNERS AND TO THE TRAVELING PUBLIC. THE CONSTRUCTION OF THE STREET IMPROVEMENTS SHALL ALLOW FOR THE PERPETUATION OF ALL EXISTING LEGAL ACCESSES AND EXISTING DRIVEWAYS. LOCATION AND WIDTH OF ALL LEGAL ACCESSES AND DRIVEWAYS SHALL BE IN ACCORDANCE WITH THE STANDARD DETAILS FOR PUBLIC WORK CONSTRUCTION.
- THE CONTRACTOR IS CAUTIONED THAT THE LOCATION AND/OR ELEVATIONS OF THE EXISTING UTILITIES AND FEATURES AS SHOWN ON THESE DRAWINGS IS BASED UPON THE BEST INFORMATION AVAILABLE TO THE ENGINEER. THE CONTRACTOR SHALL BEAR FULL RESPONSIBILITY FOR THE PROTECTION OF ALL UTILITIES. THE ENGINEER BEARS NO RESPONSIBILITY FOR UTILITIES NOT SHOWN ON THE PLAN OR NOT IN THE LOCATION SHOWN ON THE PLAN. SHOULD THE CONTRACTOR FIND ANY DISCREPANCIES BETWEEN THE CONDITIONS EXISTING IN THE FIELD AND INFORMATION SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION. IF NECESSARY, SUFFICIENT TIME SHALL BE ALLOWED FOR THE UTILITY OWNER AGENCY TO EXECUTE THE PROPER REMOVAL, RELOCATION, OR ADJUSTMENT OF ITS UTILITIES.
- NO MATERIALS OF ANY KIND SHALL BE STOCKPILED AND/OR PROCESSED ON CONCRETE, PARKWAY, OR ASPHALT SURFACES WITHIN THE CITY OF SPARKS RIGHT OF WAY WITHOUT APPROVAL BY THE ENGINEER.
- BEFORE ANY WORK IS STARTED IN THE STREET RIGHT-OF-WAY, THE CONTRACTOR SHALL INSTALL ADVANCED WARNING SIGNS FOR THE CONSTRUCTION ZONE. ALL CONSTRUCTION SIGNING, BARRICADING, AND TRAFFIC DELINEATION SHALL CONFORM TO THE "NEVADA TRAFFIC CONTROL MANUAL" - CURRENT EDITION AND TO THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" - CURRENT EDITION. TRAFFIC CONTROL IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AT ALL TIMES. THE CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN TO THE TRAFFIC ENGINEER OF THE CITY OF SPARKS FOR APPROVAL PRIOR TO PERFORMING ANY WORK IN THE STREET RIGHT-OF-WAY.
- THE CONTRACTOR SHALL COMPLY WITH ALL FEDERAL, STATE AND CITY OF SPARKS 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 THE CITY OF SPARKS.
- PROTECTION AND REPLACEMENT OF ALL SURVEY MONUMENTS OR PROPERTY STAKES NOT DELINEATED ON THE CONTRACT DRAWINGS SHALL BE THE CONTRACTOR'S RESPONSIBILITY. DAMAGED OR REMOVED MONUMENTS AND/OR PROPERTY STAKES SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE AND SHALL BE TO THE SATISFACTION OF THE CITY OF SPARKS' SURVEYOR.
- THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO PROTECT EXISTING IMPROVEMENTS FROM DAMAGE. ANY AND ALL SUCH IMPROVEMENTS DAMAGED BY THE CONTRACTOR'S OPERATION SHALL BE REPAIRED OR RECONSTRUCTED TO THE ENGINEER'S SATISFACTION AND AT THE EXPENSE OF THE CONTRACTOR.
- EXISTING SHRUBBERY AND/OR TREES SHALL BE REMOVED ONLY AS DIRECTED BY THE ENGINEER AND UNDER THE SUPERVISION OF A CERTIFIED ARBORIST.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE IMMEDIATE OFF-SITE DISPOSAL OF ALL MATERIAL INCLUDING BUT NOT LIMITED TO BITUMINOUS PAVEMENT, CONCRETE AND REINFORCEMENT. EXCAVATED SOILS MATERIALS SHALL NOT BE CAST ONTO THE STREET AND/OR PROPERTY; ALL EXCAVATED MATERIALS SHALL BE LOADED DIRECTLY INTO A TRUCK AND REMOVED FROM THE SITE.
- THE CONTRACTOR IS REQUIRED TO OBTAIN A DUST CONTROL PERMIT AND MAINTAIN A DUST CONTROL PROGRAM INCLUDING WATERING OF OPEN AREAS 24 HOURS A DAY. THE CONTRACTOR SHALL ADHERE TO WASHOE COUNTY AIR POLLUTION REGULATIONS.
- IN ACCORDANCE WITH THE NDPES GENERAL PERMIT FOR CONSTRUCTION ACTIVITIES; THE CONTRACTOR SHALL HAVE A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) ON SITE AT ALL TIMES. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN THE BMP'S, CONDUCT SELF INSPECTIONS, AND UPDATE SWPPP.
- THE CONTRACTOR SHALL PROVIDE A VIDEO INSPECTION OF THE NEWLY CONSTRUCTED SEWER LINE ONCE COMPLETED & PROVIDE A DVD COPY TO THE CITY OF SPARKS & THE ENGINEER FOR REVIEW.
- REMOVED MANHOLE FRAMES AND GRATES AND CATCH BASIN COMPONENTS SHALL BE DELIVERED TO THE CITY OF SPARKS MAINTENANCE YARD, 221 S. 21ST STREET, SPARKS, NEVADA.
- 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.

TMWA NOTES

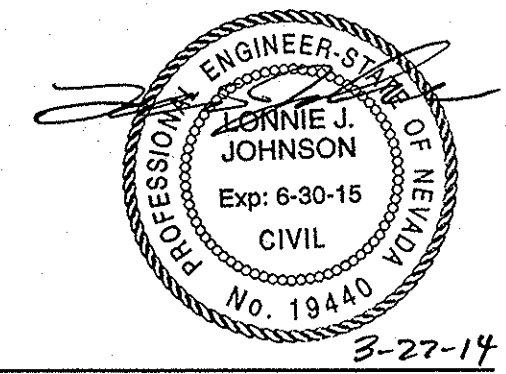
- AT ALL SS MAIN AND SS LATERAL CROSSINGS, REFER TO DETAIL 2/D-3. WATER MAIN SECTION REPLACEMENT SHALL ALSO BE DEPENDENT ON SOIL CONDITIONS, TRENCH SLOPE STABILITY, VERTICAL SEPARATION DISTANCE BETWEEN SS AND WATER, AND LOCATION OF WATER MAINS RELATIVE TO SS. CONTRACTOR SHALL CONSULT WITH TMWA INSPECTOR REGARDING CONSTRUCTION MEANS AND METHODS AROUND TMWA FACILITIES. IF NECESSARY, ALL WATER SHUTDOWNS SHALL BE COORDINATED WITH TMWA INSPECTOR. WHERE WATER MAIN SECTION REPLACEMENT IS NOT REQUIRED PER TMWA, TMWA INSPECTOR MAY REQUIRE SLURRY OR OTHER BACKFILL TYPE AND/OR METHOD BELOW WATER MAIN
- SANITARY SEWER LATERAL CROSSINGS UNDER TMWA 4" TO 8" TRANSITE AND CAST IRON PIPES SHALL REQUIRE THE FOLLOWING IF NO WATER MAIN SECTION REPLACEMENT IS APPROVED BY TMWA: THE TRENCH WIDTH BELOW THE WATER PIPE SHALL BE APPROXIMATELY 2' AND NON-SHRINK SLURRY BACKFILL TO THE WATER PIPE SPRING LINE SHALL BE USED. PRIOR TO SLURRY PLACEMENT THE LOWER UTILITY BEDDING SHALL BE MECHANICALLY COMPACTED TO 95% MAXIMUM DENSITY, AFTER WHICH ENGINEERING FABRIC SHALL BE PLACED ON THE BEDDING, OR SLURRY MAY BE USED FOR SS BEDDING. A BENCH OR OTHER NOTCH SHALL BE CUT INTO THE TRENCH SIDE WALL TO ACT AS A SUPPORT FOR THE SLURRY SECTION. SLURRY SHALL BE ALLOWED TO SET UP FOR A MINIMUM OF 24-HOURS BEFORE BACKFILLING THE REMAINDER OF THE TRENCH TO FINISH GRADE.

BASIS OF BEARINGS

THE BASIS OF BEARINGS FOR THIS SURVEY IS NEVADA STATE PLANE, WEST ZONE NAD83(94) BASED ON REAL TIME KINEMATIC (RTK) GPS OBSERVATIONS UTILIZING CORRECTIONS FROM THE NORTHERN NEVADA COOPERATIVE REAL TIME NETWORK. COORDINATES AND DISTANCES HEREON ARE AT GROUND LEVEL BASED ON A COMBINED GRID TO GROUND FACTOR OF 1.000197939.

BASIS OF ELEVATIONS

THE BASIS OF ELEVATIONS FOR THIS SURVEY IS CITY OF SPARKS BENCHMARK #77 BEING A RIVET AND 2" ALUMINUM WASHER IN THE TOP OF CURB AT THE NORTHEAST CORNER OF EAST PRATER WAY AND STANFORD WAY WITH A NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) ELEVATION OF 4407.56 FEET.



PLANNERS • ENGINEERS • LANDSCAPE ARCHITECTS
SURVEYORS • CONSTRUCTION OBSERVATION

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NEVADA

SPARKS SANITARY SEWER REHABILITATION
4TH STREET

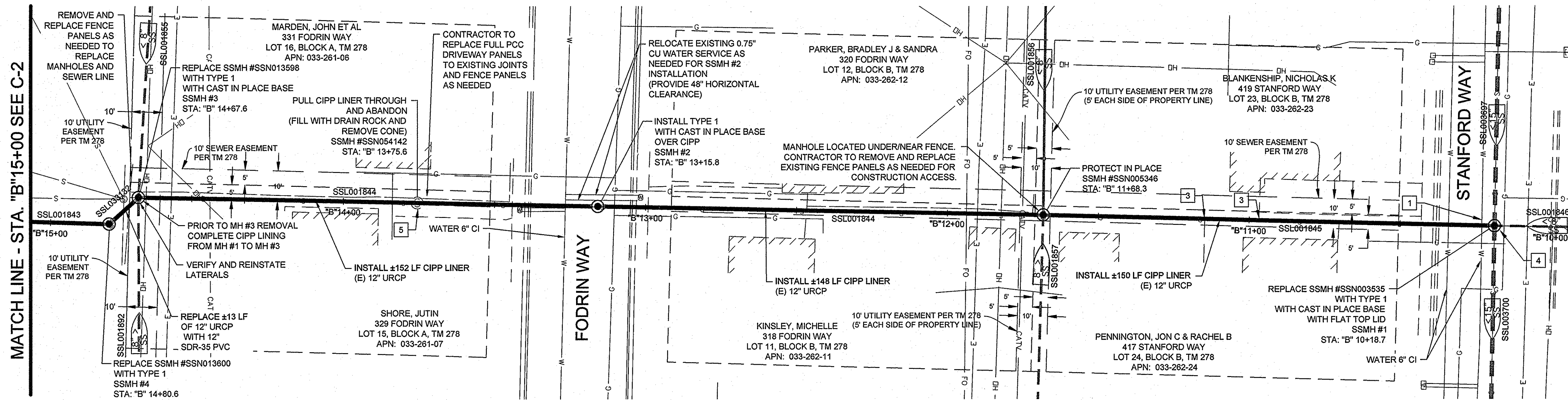
GENERAL NOTES

SPARKS, NV
WASHOE COUNTY

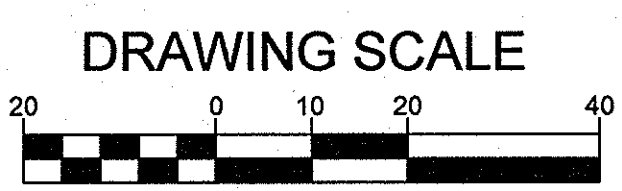
NO.	DATE	REVISIONS

JOB NO. 12048.03
DESIGNED BY LJ
DRAWN BY JDL

SHEET
2
OF
15



DRAWING SCALE
 22" x 34" : 1"=20"
 11" x 17" : 1"=40"

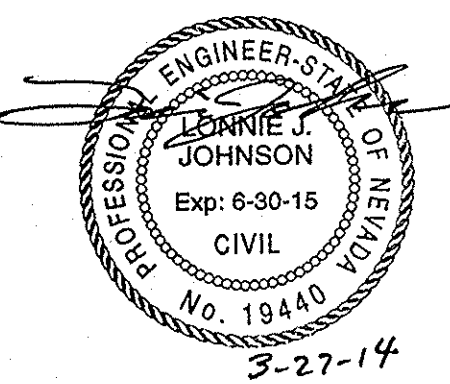
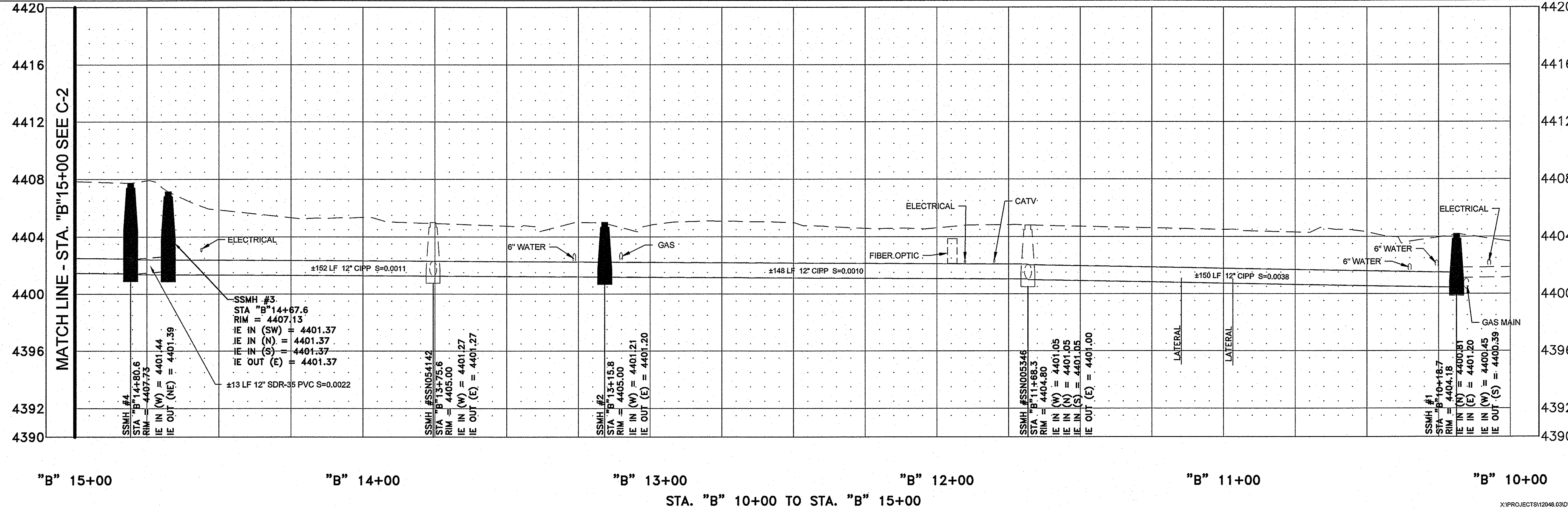


CONSTRUCTION NOTES

- INSTALL TMWA WATER SECTION REPLACEMENT. CONTRACTOR SHALL NOTIFY TMWA A MINIMUM OF 48 HOURS PRIOR TO SECTION REPLACEMENT. SECTION REPLACEMENTS MAY REQUIRE HORIZONTAL AND/OR VERTICAL REALIGNMENT. PRIOR TO CONSTRUCTION, CONTRACTOR SHALL POthOLE & COORDINATE WITH TMWA AND THE ENGINEER TO DETERMINE ALIGNMENT. DURING CONSTRUCTION, TMWA INSPECTOR MAY APPROVE TO PROTECT IN PLACE EXISTING WATER SECTION (REFERENCE TMWA NOTES ON PAGE 2).
- VERIFY & INSTALL SANITARY SEWER LATERAL USING A FLEXIBLE WYE TAP SADDLE (REFERENCE DETAIL 5 ON SHEET D-2). "INSERT A TEE" CONNECTIONS WILL NOT BE USED. LATERALS SHOWN ARE APPROXIMATE LOCATIONS BASED ON PREVIOUS CCTV AND HAVE NOT BEEN VERIFIED AS ACTIVE LATERALS. CONTRACTOR SHALL VERIFY THAT ALL SANITARY SEWER LATERALS ARE ACTIVE OR INACTIVE PRIOR TO THE INSTALLATION OF ANY MAIN LINE SANITARY SEWER PIPE SEGMENT (MH TO MH). EACH ACTIVE SEWER LATERAL WHERE FLOW IS EVIDENT BY SIMPLE VISUAL INSPECTION SHALL BE RECONNECTED AND DYE TEST VERIFICATION IS REQUIRED TO IDENTIFY SERVICE ADDRESS.
 IF NO INDICATIONS OF FLOW ARE PRESENT THEN A PUSH TYPE CAMERA WITH VIDEO TAPE INSPECTION CAPABILITY SHALL BE USED IN CONJUNCTION WITH CCTV & DYE/SMOKE TESTING TO CONFIRM IF LATERAL IS ACTIVE OR INACTIVE. THE CONTRACTOR SHALL MAINTAIN A LOG OF ALL INACTIVE AND ACTIVE LATERALS PRIOR TO RECONNECTION OR ABANDONMENT PER THE SPECIFICATIONS AND AN INSPECTOR SHALL BE PRESENT DURING ALL LATERAL VERIFICATIONS AND CONNECTIONS TO PROVIDE LOCATION MARK UP FOR GPS.
 LATERAL DIRECTION IS UNKNOWN FOR 12 O' CLOCK LATERALS. CONTRACTOR SHALL VERIFY DIRECTION PRIOR TO INSTALLATION.
 EXCAVATING CLOSER THAN 5 FEET FROM POWER POLE OR ANCHOR WILL REQUIRE THE CONTRACTOR TO NOTIFY AN NV ENERGY INSPECTOR AT 834-7824 SO A DETERMINATION CAN BE MADE IN REGARDS TO SUPPORTING THE POLE UNTIL THE AREA CAN BE BACKFILLED. NVE WILL BE RESPONSIBLE FOR SECURING THE POLE OR HAVING SOMEONE PRESENT WHILE QUALIFIED PERSONNEL SECURE THE POLE, AND THERE MAY BE A COST ASSOCIATED WITH THIS WORK, WHICH WILL BE THE RESPONSIBILITY OF THE CONTRACTOR. NO DIRECT PAYMENT.
- REINSTATE LATERAL USING TOP HAT CONNECTION (REFERENCE DETAIL 6 ON SHEET D-2).
- CONTRACTOR TO EXERCISE CAUTION DURING REMOVAL OF EXISTING SSMH TO PROTECT NEARBY 8 INCH XTC GAS MAIN. DURING INSTALLATION OF NEW SSMH BASE, CONTRACTOR TO PLACE FORMWORK TO PROTECT EXISTING 8 INCH XTC GAS FROM CONCRETE (PROVIDE MINIMUM 6" CLEARANCE).
- CONTRACTOR TO VERIFY NO SANITARY SEWER SERVICE ENTER SANITARY SEWER MANHOLE PRIOR TO ABANDONMENT.

GENERAL NOTES

- PIPE LENGTHS SHOWN WERE CALCULATED FROM CENTER OF MANHOLE TO CENTER OF MANHOLE.
- PROTECTION OF ALL UTILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR. NOTE THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND FEATURES SHOWN ON THESE DRAWINGS IS APPROXIMATE AND NOT TO BE RELIED ON AS EXACT OR COMPLETE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO POTHOLE AND VERIFY THE LOCATIONS AND/OR ELEVATIONS PRIOR TO CONSTRUCTION. DISCREPANCIES BETWEEN THE EXISTING CONDITIONS IN THE FIELD AND THE INFORMATION SHOWN ON THESE DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH CONSTRUCTION.
- CONTRACTOR SHALL USE DEBRIS CONTAINMENT DEVICES WHEN WORKING IN AND/OR AROUND ALL SANITARY SEWER MANHOLES, STORM DRAIN MANHOLES AND DROP INLETS.
- VERY LIMITED EXISTING UTILITY INFORMATION AVAILABLE FOR SCHOOL, PARK, AND PRIVATE PROPERTIES; CONTRACTOR TO WORK WITH PROPERTY OWNERS AND/OR MAINTENANCE PERSONNEL TO ASSIST WITH LOCATIONS.



City of Sparks
 Community Services

PLANNERS • ENGINEERS • LANDSCAPE ARCHITECTS
 SURVEYORS • CONSTRUCTION OBSERVATION

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NEVADA

SPARKS SANITARY SEWER REHABILITATION
 4TH STREET
 STA. "B" 10+00 TO "B" 15+00
 SPARKS, NV

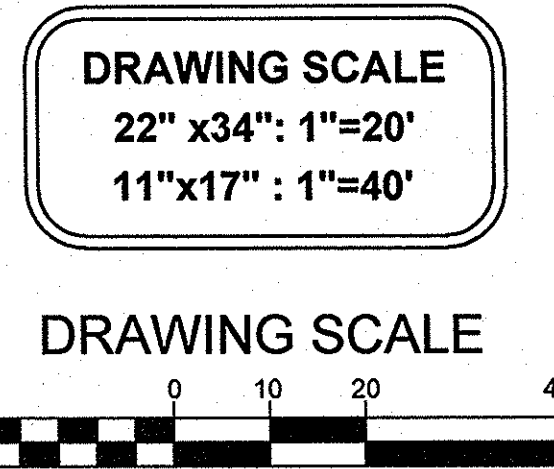
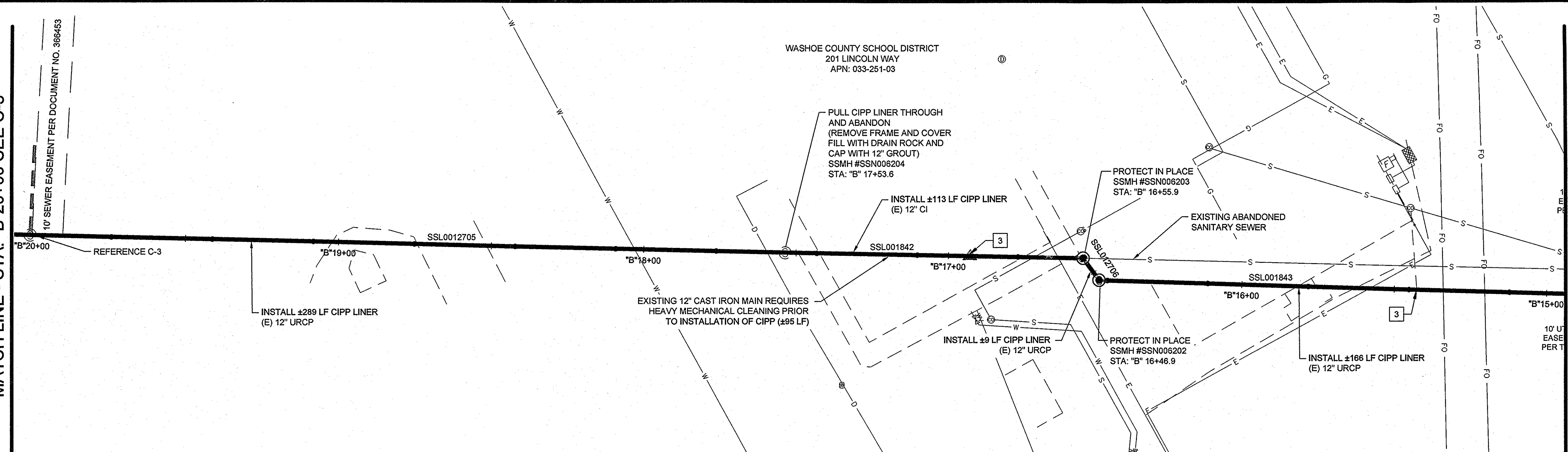
WASHOE COUNTY

JOB NO. 12048.03
 DESIGNED BY LJ
 DRAWN BY JDL
 SHEET

C-1
 15

Exp: 6-30-15
 CIVIL
 No. 19440
 3-27-14

MATCH LINE - STA. "B"20+00 SEE C-3
10' SEWER EASEMENT PER DOCUMENT NO. 366463



KEY
▲ = VERTICAL (12 O' CLOCK) LATERAL

CONSTRUCTION NOTES

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2. VERIFY & INSTALL SANITARY SEWER LATERAL USING A FLEXIBLE WYE TAP SADDLE (REFERENCE DETAIL 5 ON SHEET D-2). "INSERT A TEE" CONNECTIONS WILL NOT BE USED. LATERALS SHOWN ARE APPROXIMATE LOCATIONS BASED ON PREVIOUS CCTV AND HAVE NOT BEEN VERIFIED AS ACTIVE LATERALS. CONTRACTOR SHALL VERIFY THAT ALL SANITARY SEWER LATERALS ARE ACTIVE OR INACTIVE PRIOR TO THE INSTALLATION OF ANY MAIN LINE SANITARY SEWER PIPE SEGMENT (MH TO MH). EACH ACTIVE SEWER LATERAL WHERE FLOW IS EVIDENT BY SIMPLE VISUAL INSPECTION SHALL BE RECONNECTED AND DYE TEST VERIFICATION IS REQUIRED TO IDENTIFY SERVICE ADDRESS.

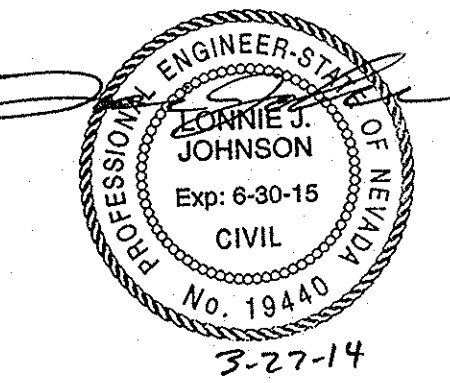
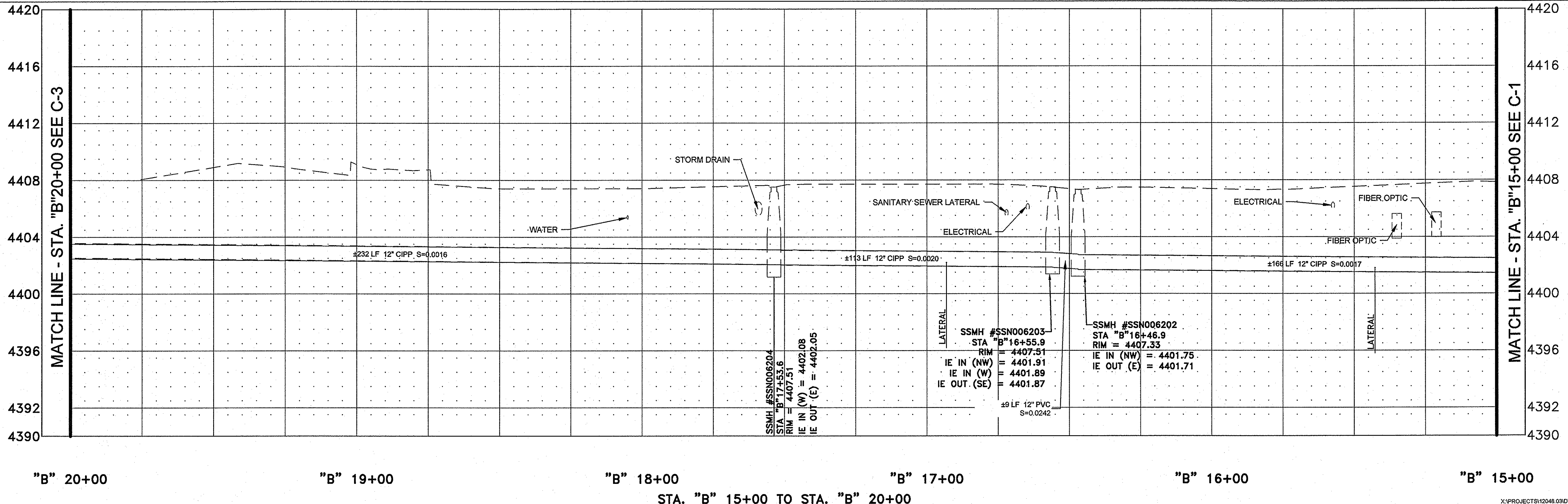
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LATERAL DIRECTION IS UNKNOWN FOR 12 O' CLOCK LATERALS. CONTRACTOR SHALL VERIFY DIRECTION PRIOR TO INSTALLATION.

EXCAVATING CLOSER THAN 5 FEET FROM POWER POLE OR ANCHOR WILL REQUIRE THE CONTRACTOR TO NOTIFY AN NV ENERGY INSPECTOR AT 834-7824 SO A DETERMINATION CAN BE MADE IN REGARDS TO SUPPORTING THE POLE UNTIL THE AREA CAN BE BACKFILLED. NVE WILL BE RESPONSIBLE FOR SECURING THE POLE OR HAVING SOMEONE PRESENT WHILE QUALIFIED PERSONNEL SECURE THE POLE, AND THERE MAY BE A COST ASSOCIATED WITH THIS WORK, WHICH WILL BE THE RESPONSIBILITY OF THE CONTRACTOR. NO DIRECT PAYMENT.
3. REINSTATE LATERAL USING TOP HAT CONNECTION (REFERENCE DETAIL 6 ON SHEET D-2).

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City of Sparks
Community Services

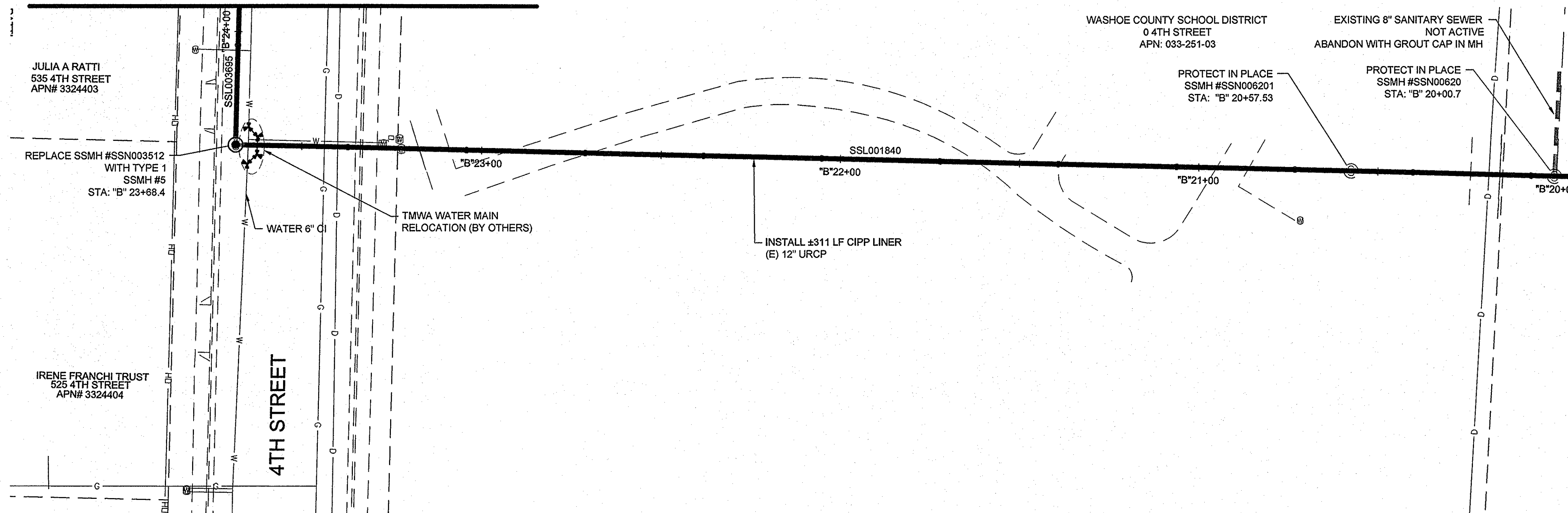
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SPARKS SANITARY SEWER REHABILITATION
4TH STREET
STA. "B"15+00 TO "B"20+00
SPARKS, NV
WASHOE COUNTY NEVADA

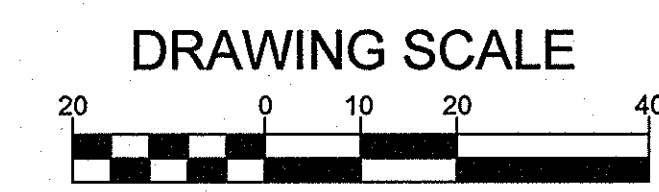
JOB NO. 12048.03
DESIGNED BY LJ
DRAWN BY JDL
SHEET
C-2
OF 15

5-27-14

MATCH LINE - STA. "B"24+00 SEE C-4



DRAWING SCALE
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 11" x17" : 1"=40'



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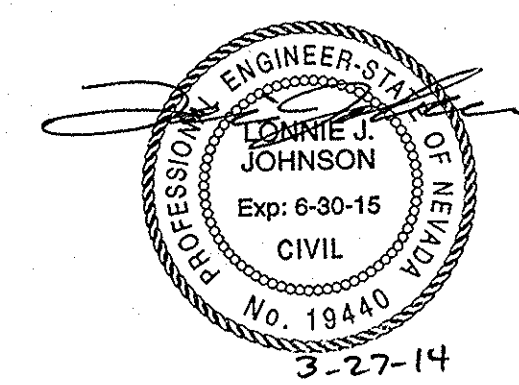
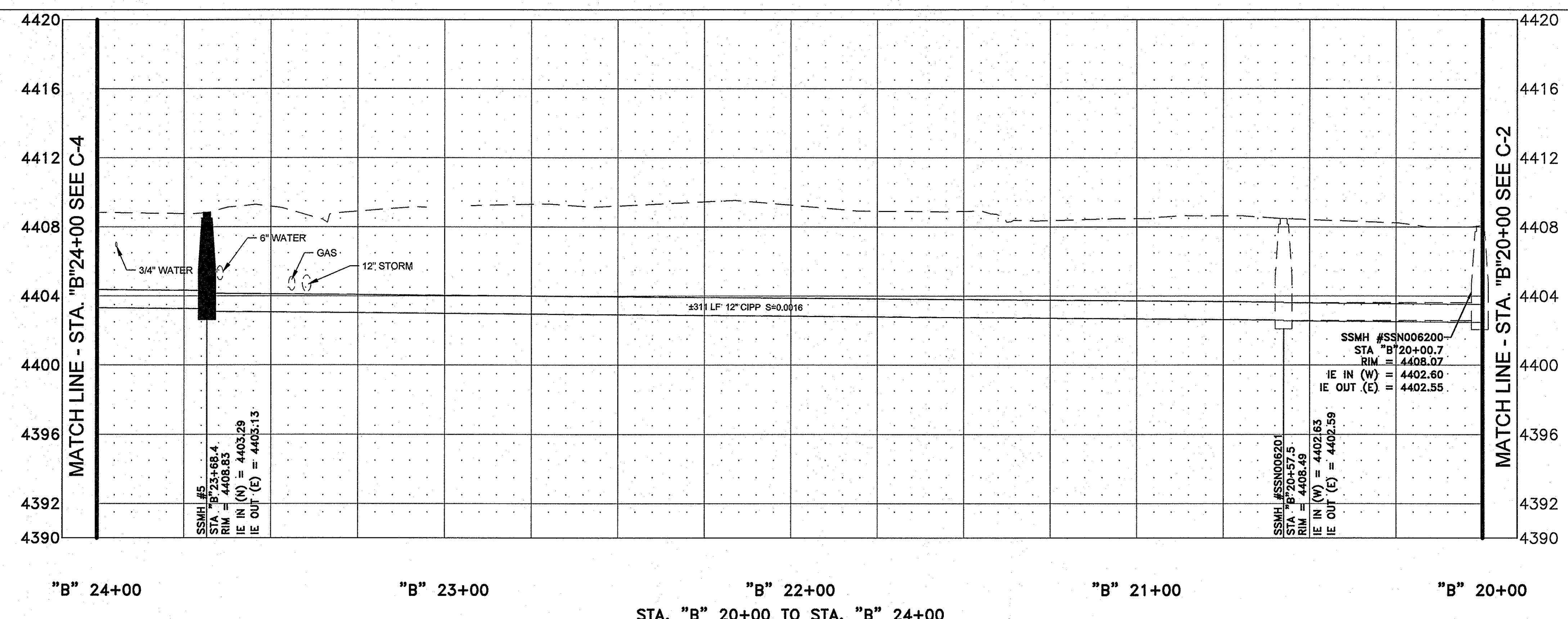
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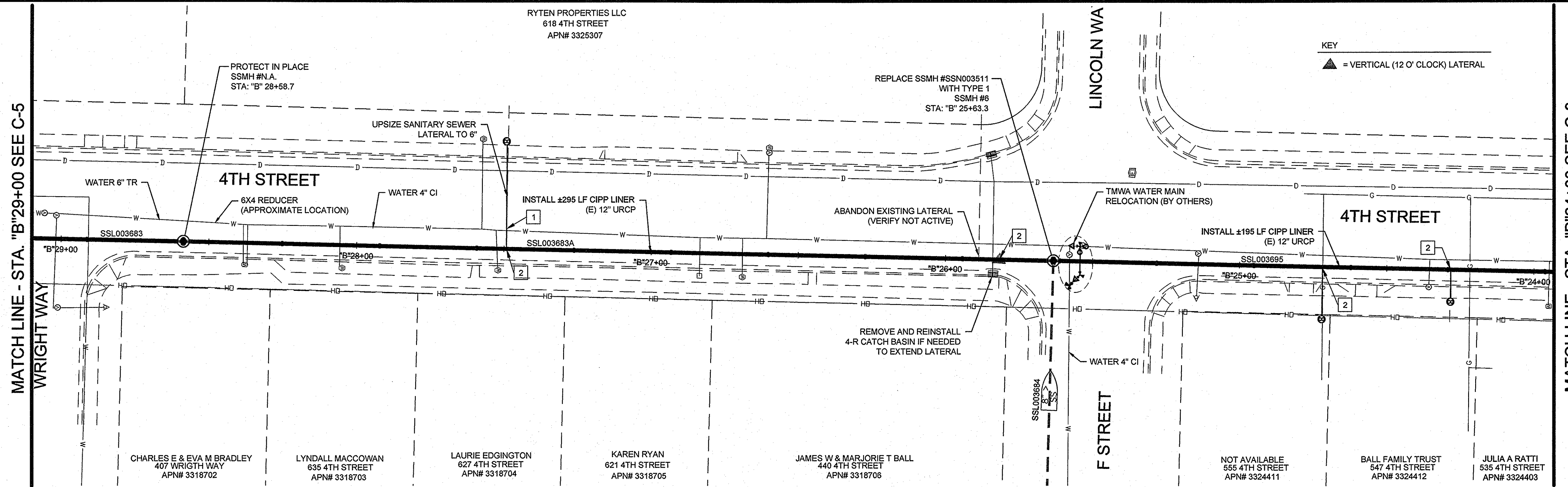


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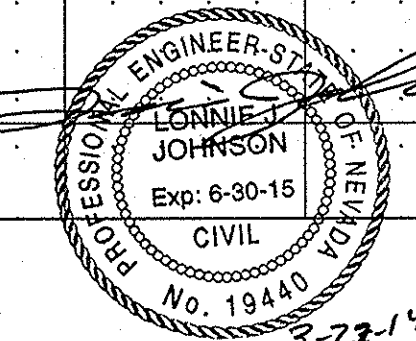
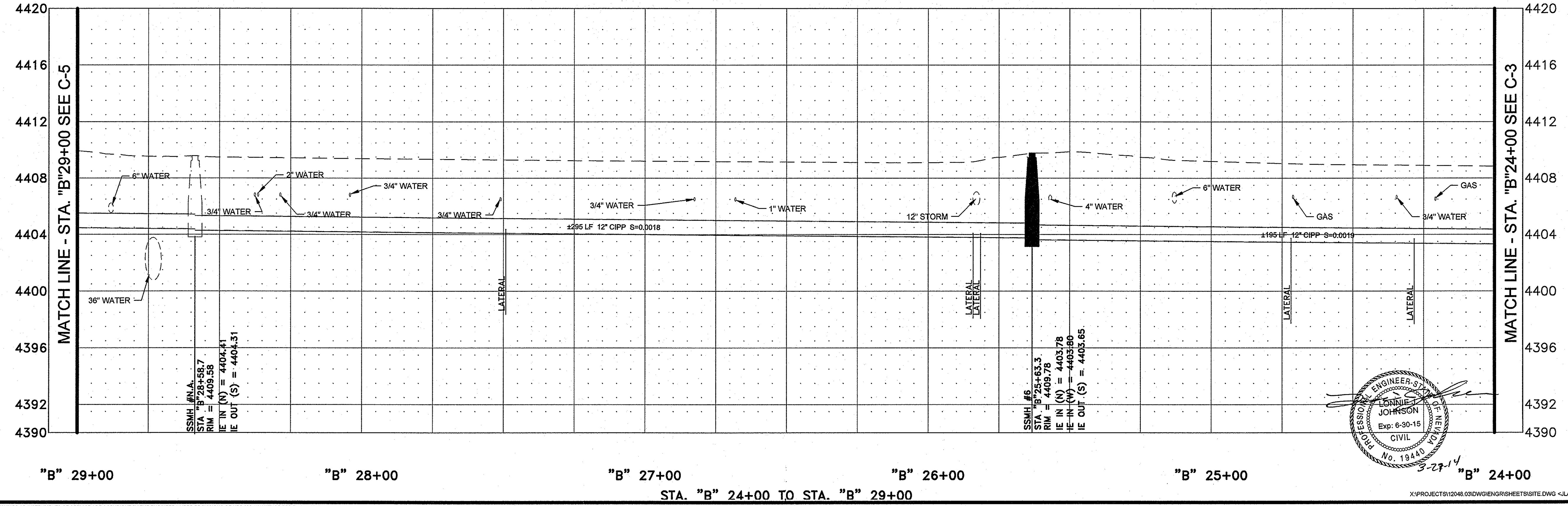
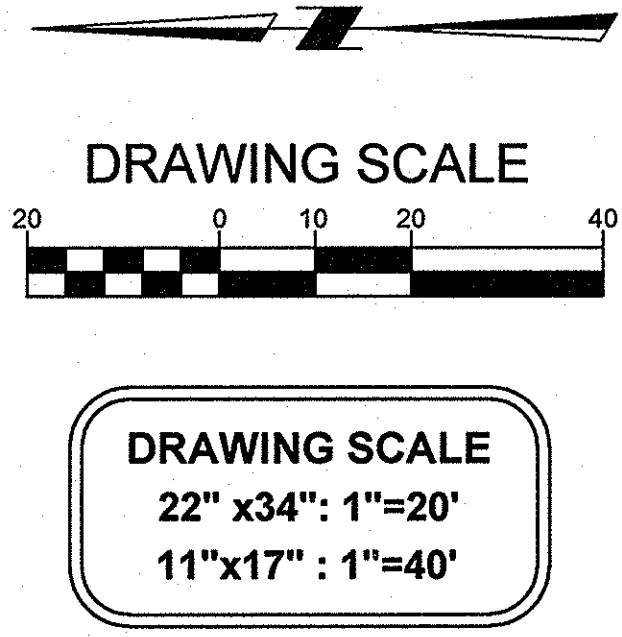
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RYTEN PROPERTIES LLC
618 4TH STREET
APN# 3325307

KEY
▲ = VERTICAL (12 O' CLOCK) LATERAL

LINCOLN WA

4TH STREET

4TH STREET

F STREET

WRIGHT WAY

MATCH LINE - STA. "B" 29+00 SEE C-5

MATCH LINE - STA. "B" 24+00 SEE C-3

CHARLES E & EVA M BRADLEY
407 WRIGHT WAY
APN# 3318702

LYNDALL MACCOWAN
635 4TH STREET
APN# 3318703

LAURIE EDGINGTON
627 4TH STREET
APN# 3318704

KAREN RYAN
621 4TH STREET
APN# 3318705

JAMES W & MARJORIE T BALL
440 4TH STREET
APN# 3318706

NOT AVAILABLE
555 4TH STREET
APN# 3324411

BALL FAMILY TRUST
547 4TH STREET
APN# 3324412

JULIA A RATTI
535 4TH STREET
APN# 3324403

CONSTRUCTION NOTES

GENERAL NOTES

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11" x 17" : 1"=40'

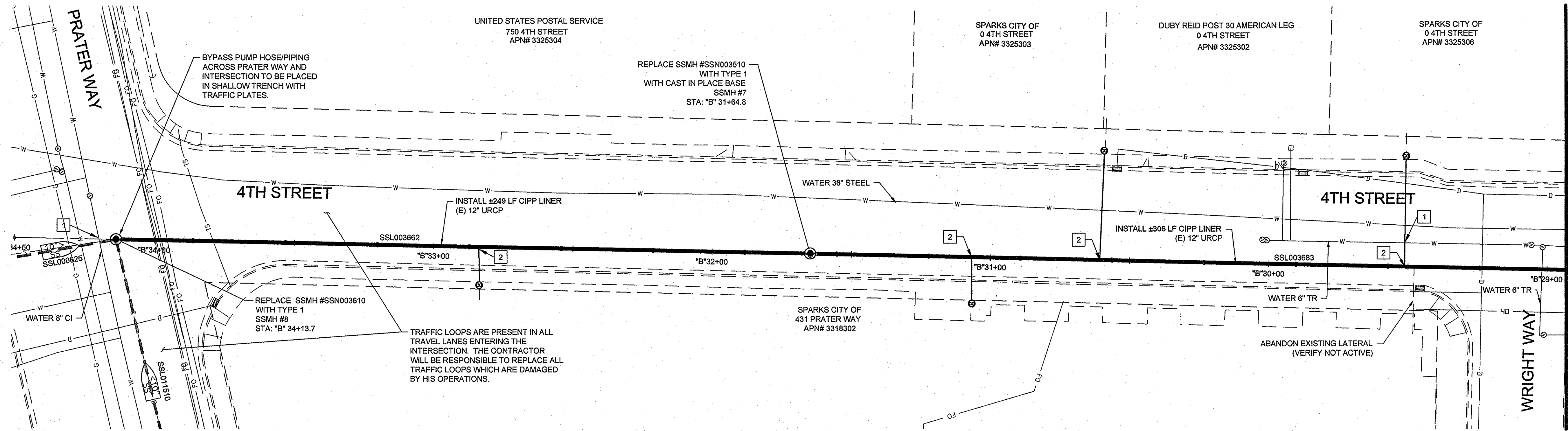
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SPARKS SANITARY SEWER REHABILITATION
4TH STREET
STA. "B" 24+00 TO "B" 29+00

WASHOE COUNTY
SPARKS, NV
NEVADA

JOB NO. 12048.03
DESIGNED BY L.J.
DRAWN BY JDL
SHEET C-4 OF 15

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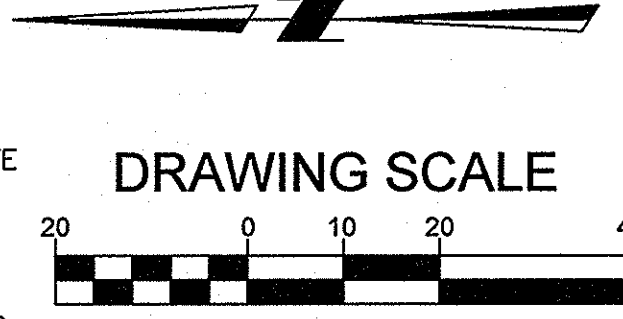
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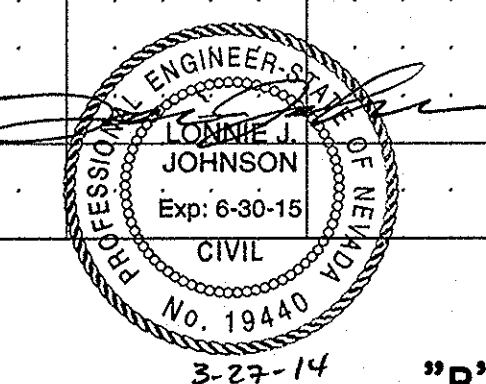
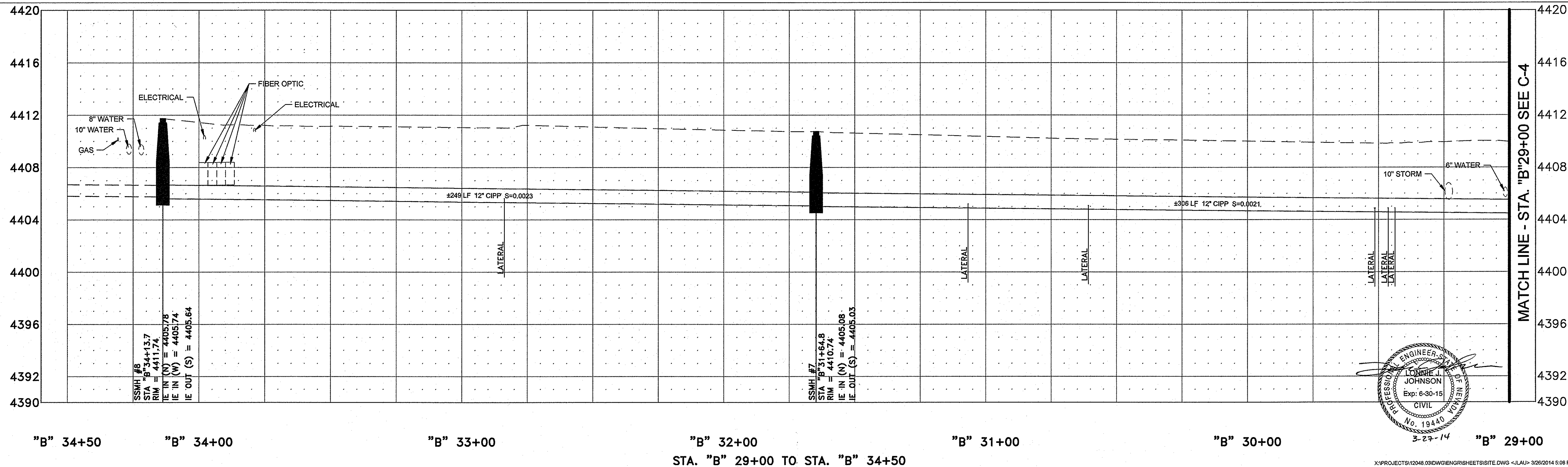
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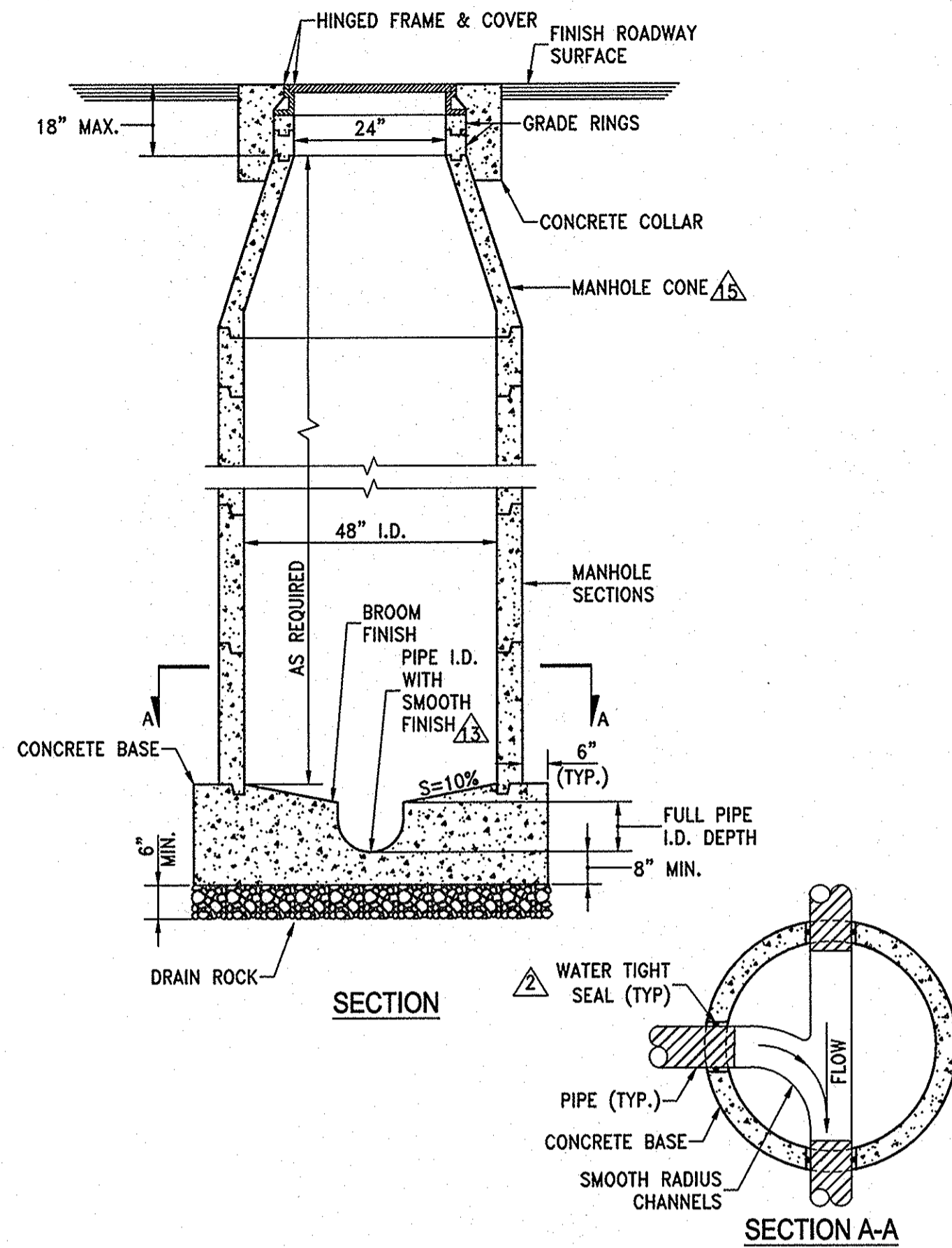
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C-5
 OF 15



1 MANHOLE - TYPE 1

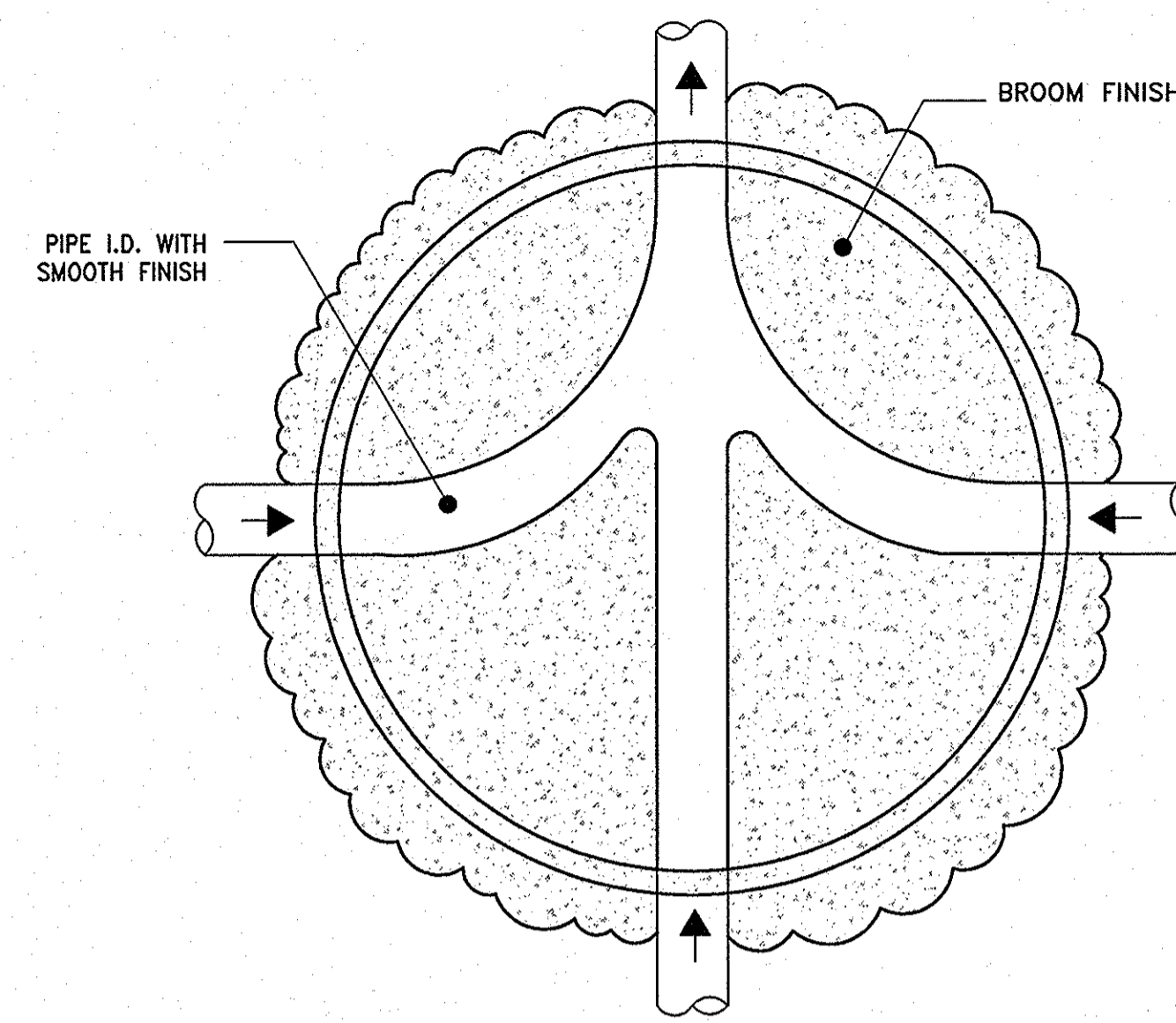
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GENERAL MANHOLE NOTES

1. ALL PRECAST MANHOLE COMPONENTS SHALL CONFORM TO ASTM C-478.
2. PIPES SHALL NOT PROTRUDE MORE THAN 3" INSIDE MANHOLE SECTION AS MEASURED AT THE OUTSIDE EDGES OF THE PIPE, VERTICALLY ALIGNED WITH THE SPRINGLINE. PIPE CONNECTION TO MANHOLE SHALL BE WATERTIGHT.
3. MANHOLE BASE SHALL BE PORTLAND CEMENT CONCRETE (P.C.C.) AND SHALL HAVE THE FOLLOWING CHARACTERISTICS: 3000 PSI MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS, MINIMUM 6 SACKS OF CEMENT PER CUBIC YARD WITH SLUMP AT 1 TO 4 INCHES. ALL MATERIAL SHALL CONFORM TO STANDARD SPECIFICATIONS OF PUBLIC WORKS CONSTRUCTION (SSPWC). PRECAST CONCRETE BASE MAY BE USED IN LIEU OF CAST-IN-PLACE BASE.
4. TYPE I MANHOLE TO BE UTILIZED FOR PIPE DIAMETERS OF 12" OR SMALLER AND DEPTHS NOT EXCEEDING 18 FEET.
5. TYPE V MANHOLE TO BE UTILIZED FOR PIPE DIAMETERS OF 15" THROUGH 27" OR DEPTHS EXCEEDING 18 FEET.
6. MANHOLE MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF SECTION 204 "MANHOLES AND CATCH BASINS" OF THE STANDARD SPECIFICATIONS.
7. PRECAST MANHOLE SECTIONS, OTHER THAN GRADE RINGS, SHALL BE JOINED WITH FLEXIBLE GASKET MATERIAL SUCH AS "RAM-NEK" OR EQUAL AS PER MANUFACTURER'S RECOMMENDATIONS.
8. EXCAVATION AND BACKFILL SHALL BE AS SPECIFIED FOR "TRENCH EXCAVATION AND BACKFILL" IN SECTION 305 OF THE STANDARD SPECIFICATIONS.
9. EXCAVATION SHALL BE AS NEARLY VERTICAL AS POSSIBLE (SHEET AND SHORE IF SOIL CONDITIONS REQUIRE) IN EXISTING STREET SECTIONS, ALLEY SECTIONS, AND CONFINED AREAS, SUCH AS LIMITED EASEMENTS OR ADJACENT STRUCTURES.
10. MANHOLE PRECAST SECTION LENGTH SHALL BE ARRANGED TO FIT THE REQUIRED DEPTH.
11. NO LATERALS OR PIPES LESS THAN 8" IN DIAMETER SHALL BE CONNECTED TO THE MANHOLE.
12. PRECAST CONCRETE BASE MAY BE USED IN LIEU OF CAST-IN-PLACE BASE.
13. MATCH PIPE INVERTS TO MANHOLE INVERTS WHERE PIPES CONNECT TO MANHOLE BASE.
14. ALL MANHOLES SHALL BE WATERTIGHT. WRAP ALL JOINTS WITH JOINT WRAP.
15. THE USE OF FLAT TOP MANHOLE CONES REQUIRES PRIOR APPROVAL FROM THE CITY ENGINEER.
16. PRIOR TO BACKFILLING, ALL MANHOLES SHALL BE VACUUM TESTED PER ASTM C-1244.
17. NO STEPS, LADDERS, OR OTHER CLIMBING DEVICES SHALL BE INSTALLED IN THE MANHOLE.
18. FOR CAST-IN-PLACE CONCRETE BASE OR ANY CORED CONNECTIONS, PROVIDE WATERTIGHT CONNECTION. FILL ANNULUS WITH EPOXY GROUT.
19. PRECAST BASE CONNECTION SHALL USE CAST-IN-BOOT CONNECTOR SUCH AS THAT MANUFACTURED BY LOK PRODUCTS INC OR EQUAL.

2 MANHOLE - NOTES

SCALE: N.T.S.



3 CAST IN PLACE MANHOLE BASE

SCALE: N.T.S.

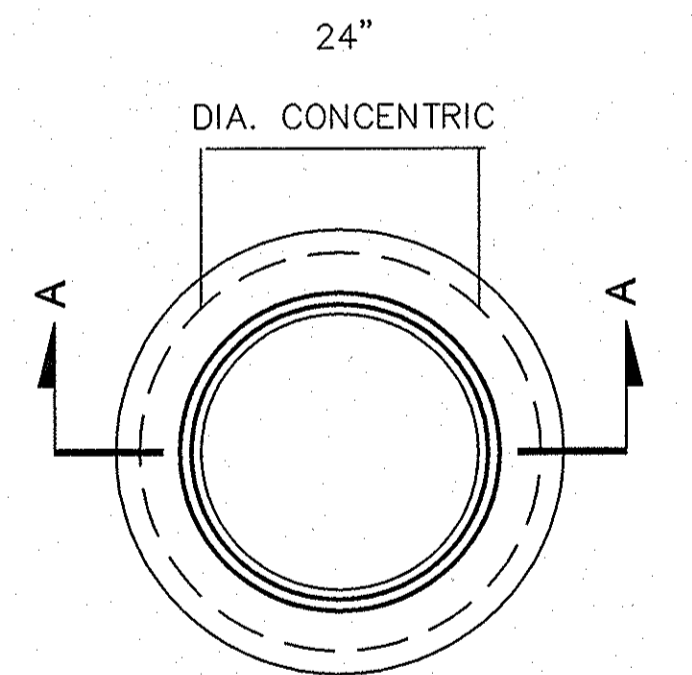
NOTES:

1. FOR DIMENSIONS, NOTES AND DETAILS NOT SHOWN, REFER TO THE APPLICABLE STANDARD DETAIL DRAWING NOS. R-207A THROUGH R-211.
2. SET BOTTOM BARREL SECTION A MINIMUM OF 6" INTO THE POURED IN PLACE BASE. TROWEL FINISH CONCRETE AGAINST BOTH SIDES OF THE BARREL WALLS.

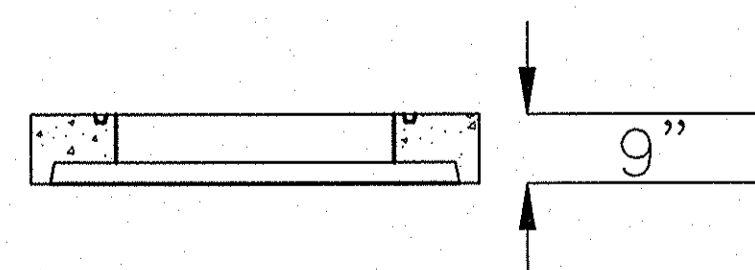
4 NOT USED

SCALE: N.T.S.

48" I.D. FLAT TOP



SECTION A-A



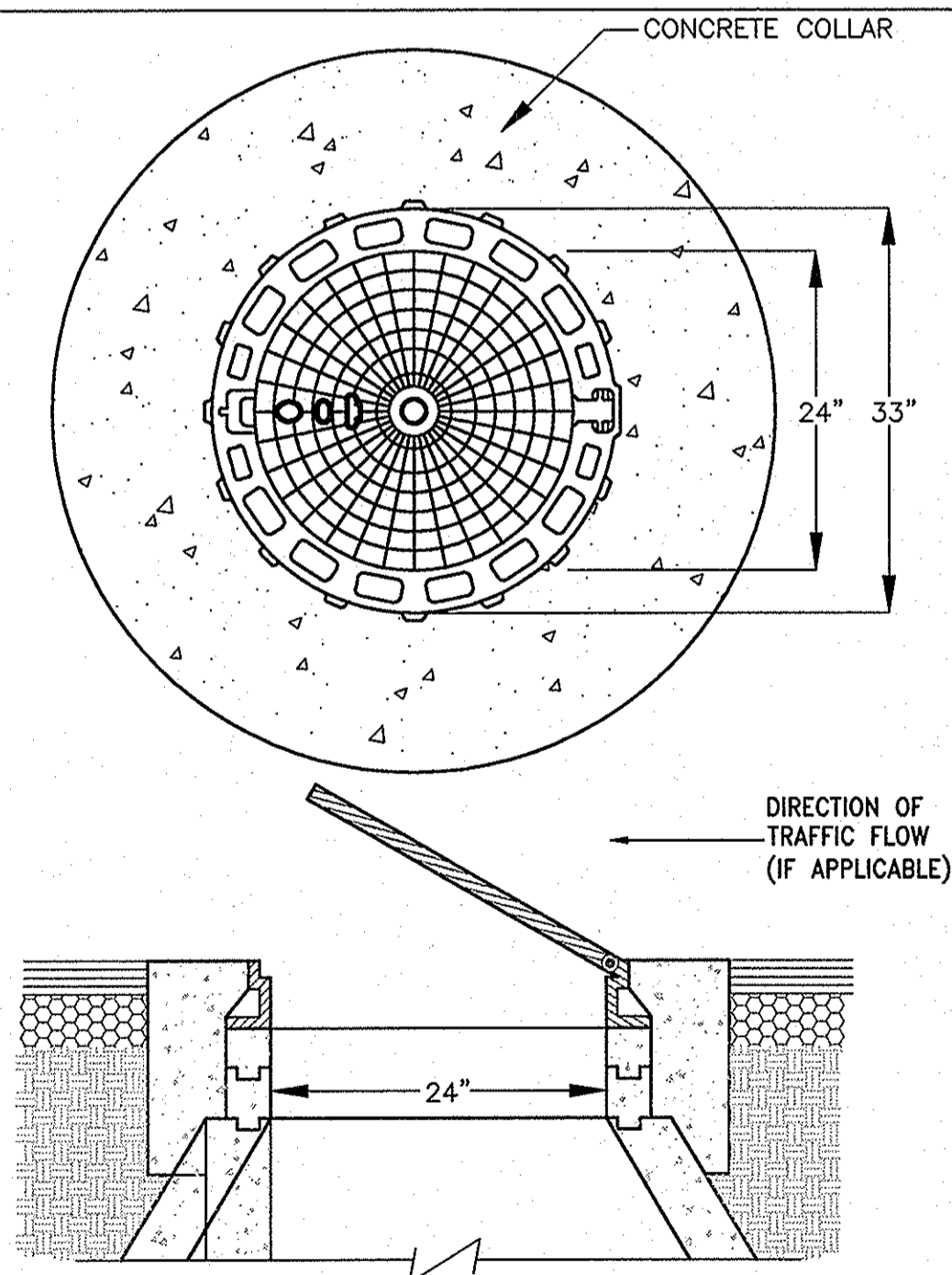
FOR COMPLETE DESIGN AND PRODUCT INFORMATION, CONTACT JENSEN PRECAST.

MANHOLE COMPONENTS CONFORM TO CURRENT SPECIFICATIONS, ASTM C-478 AND AASHTO M199.

FLAT TOPS AND BASE SLABS ARE DESIGNED FOR AASHTO HS-20 WHEEL LOADING.

5 TYPE I MANHOLE FLAT TOP

SCALE: N.T.S.

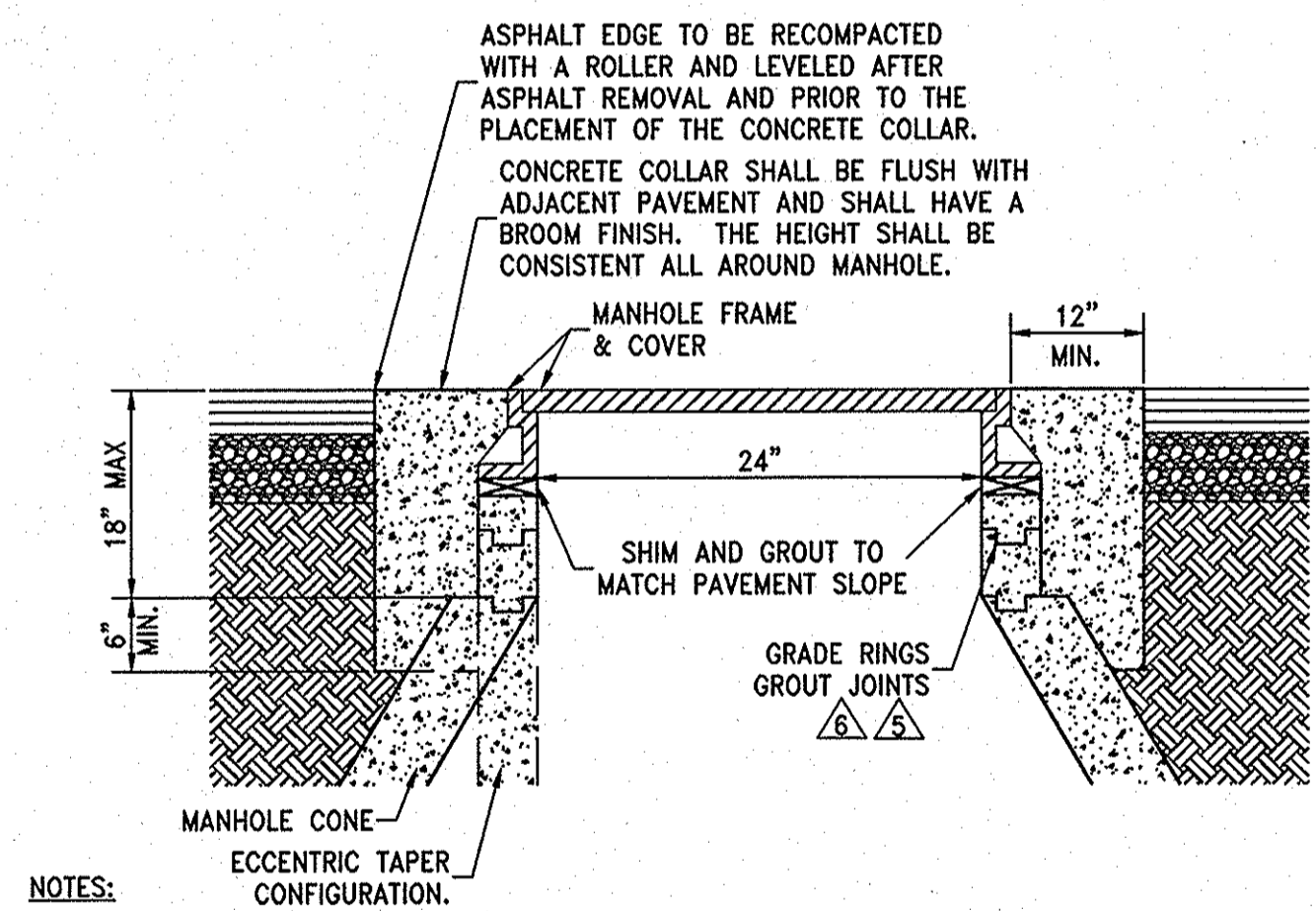


NOTES:

1. HINGED MANHOLE COVER SHALL BE PAMREX OR EJW ERGO 24-INCH MODEL OR APPROVED EQUAL.
2. COVER TO BE HINGED AND INCORPORATE A 90 DEGREE BLOCKING SYSTEM TO PREVENT ACCIDENTAL CLOSURE.
3. FRAME AND COVER SHALL BE ELASTOMER GASKETED.
4. ALL COMPONENTS SHALL BE BLACK COATED.
5. LID SHALL BE STAMPED "SANITARY SEWER".
6. FRAME AND COVER SHALL BE PROVIDED BY THE CONTRACTOR.

6 HINGED MANHOLE COVER

SCALE: N.T.S.



NOTES:

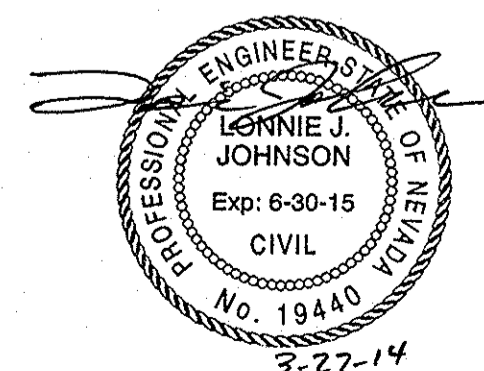
1. PORTLAND CEMENT CONCRETE (P.C.C.) SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4000 PSI MIN. COMPRESSIVE STRENGTH AT 28 DAYS, MIN. 6 SACKS OF CEMENT PER CUBIC YARD WITH MAX. WATER-CEMENT RATIO OF 0.45, AIR ENTRAINMENT 6% ±1.5%, SLUMP AT 1 TO 4 INCHES. MIX DESIGN SHALL CONFORM TO THE REQUIREMENTS OF SECTION 337 OF STANDARD SPECIFICATIONS OF PUBLIC WORKS CONSTRUCTION (SSPWC). CEMENT SHALL BE TYPE II. ALL CEMENT CONCRETE SHALL HAVE A COARSE AGGREGATE GRADATION CONFORMING TO SIZE No. 67. ALL MATERIALS SHALL CONFORM TO SSPWC.
 2. CIRCUMSTANCES MAY REQUIRE THE NEED FOR SPECIAL TYPES OF TOP OF MANHOLE CONFIGURATIONS SUCH AS FLAT TOP, ABOVE GROUND, ETC. AS DIRECTED BY THE CITY OF SPARKS. DETAILED PLANS OF ANY SPECIAL TOP OF MANHOLE CONFIGURATIONS AND ASSOCIATED COLLARS MUST BE APPROVED BY THE ENGINEER.
 3. IN UNPAVED AREAS, IT SHALL BE NECESSARY TO SET THE MANHOLE RIM APPROXIMATELY 6 INCHES ABOVE THE SURROUNDING AREA. INSTALL A 6 INCH THICK RING OF CONCRETE, TAPERED AT A 3:1 SLOPE, FROM THE TOP, OUTSIDE EDGE OF THE COLLAR TO THE EXISTING GROUND SURFACE.
 4. MANHOLE LIDS SHALL NOT BE LOCATED IN GUTTER PANS, UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
- ALL GRADE RING JOINTS ARE TO BE GROUTED WITH NON-SHRINK GROUT HAVING THE FOLLOWING CHARACTERISTICS: 3000 PSI MIN. COMPRESSIVE STRENGTH AT 28 DAYS, MIN. 6 SACKS OF CEMENT PER CUBIC YARD AND SLUMP AT 1 TO 4 INCHES. ALL MATERIAL SHALL CONFORM TO SSPWC.
- ALL GRADE RINGS SHALL BE PORTLAND CEMENT CONCRETE. PVC GRADE RINGS ARE NOT ALLOWED.

7 MANHOLE COLLAR

SCALE: N.T.S.

8 NOT USED

SCALE: N.T.S.



City of Sparks Community Services

PLANNERS • ENGINEERS • LANDSCAPE ARCHITECTS
SURVEYORS • CONSTRUCTION OBSERVATION

1150 CORPORATE BLVD. RENO, NV 89502
(775) 856-1150 FAX: (775) 856-1160

SPARKS, NV

WASHOE COUNTY

NEVADA

SPARKS SANITARY SEWER REHABILITATION
4TH STREET
DETAILS

JOB NO. 12048.03
DESIGNED BY LJ
DRAWN BY JDL
SHEET D-1
OF 15

REVISIONS

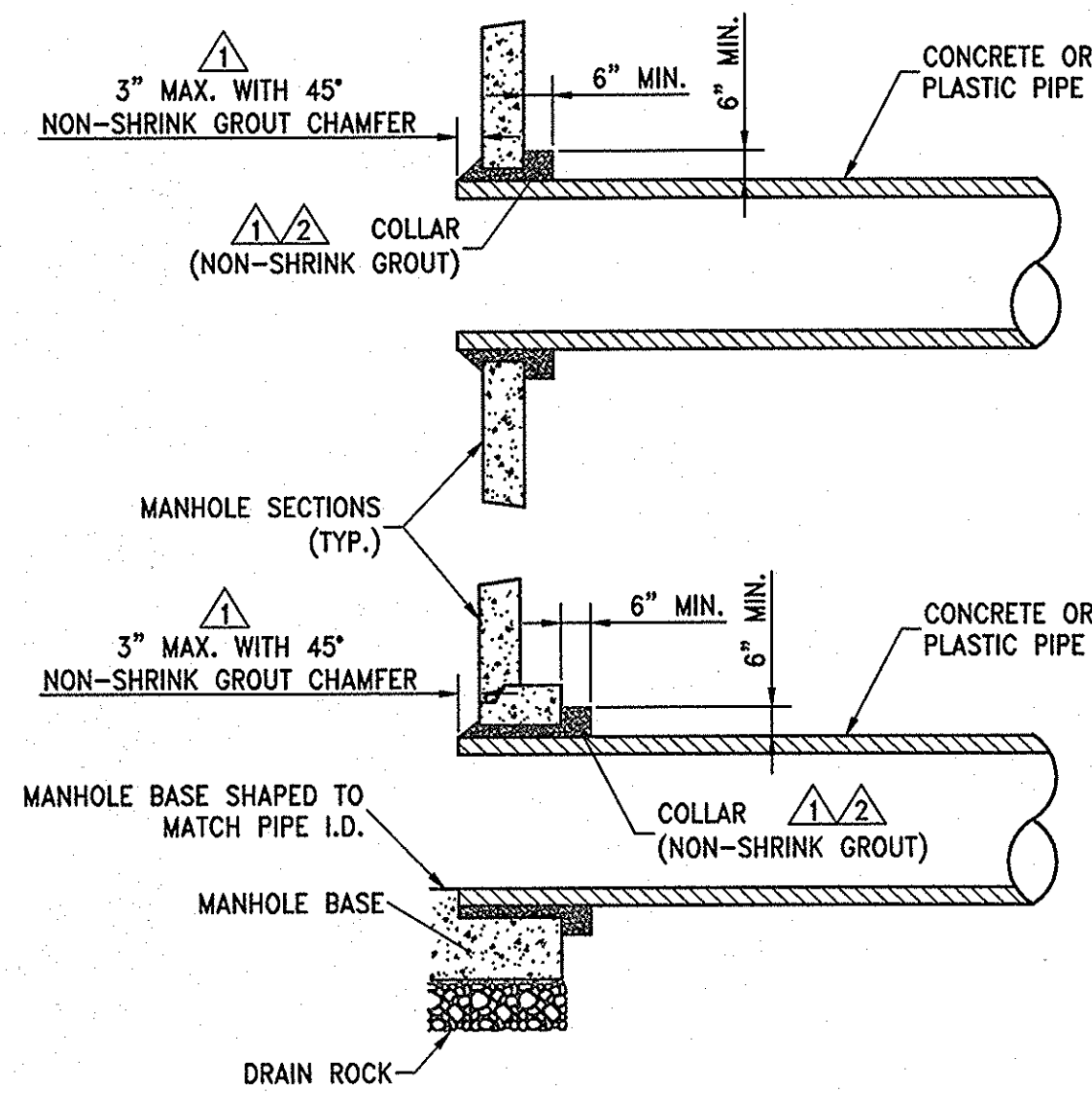
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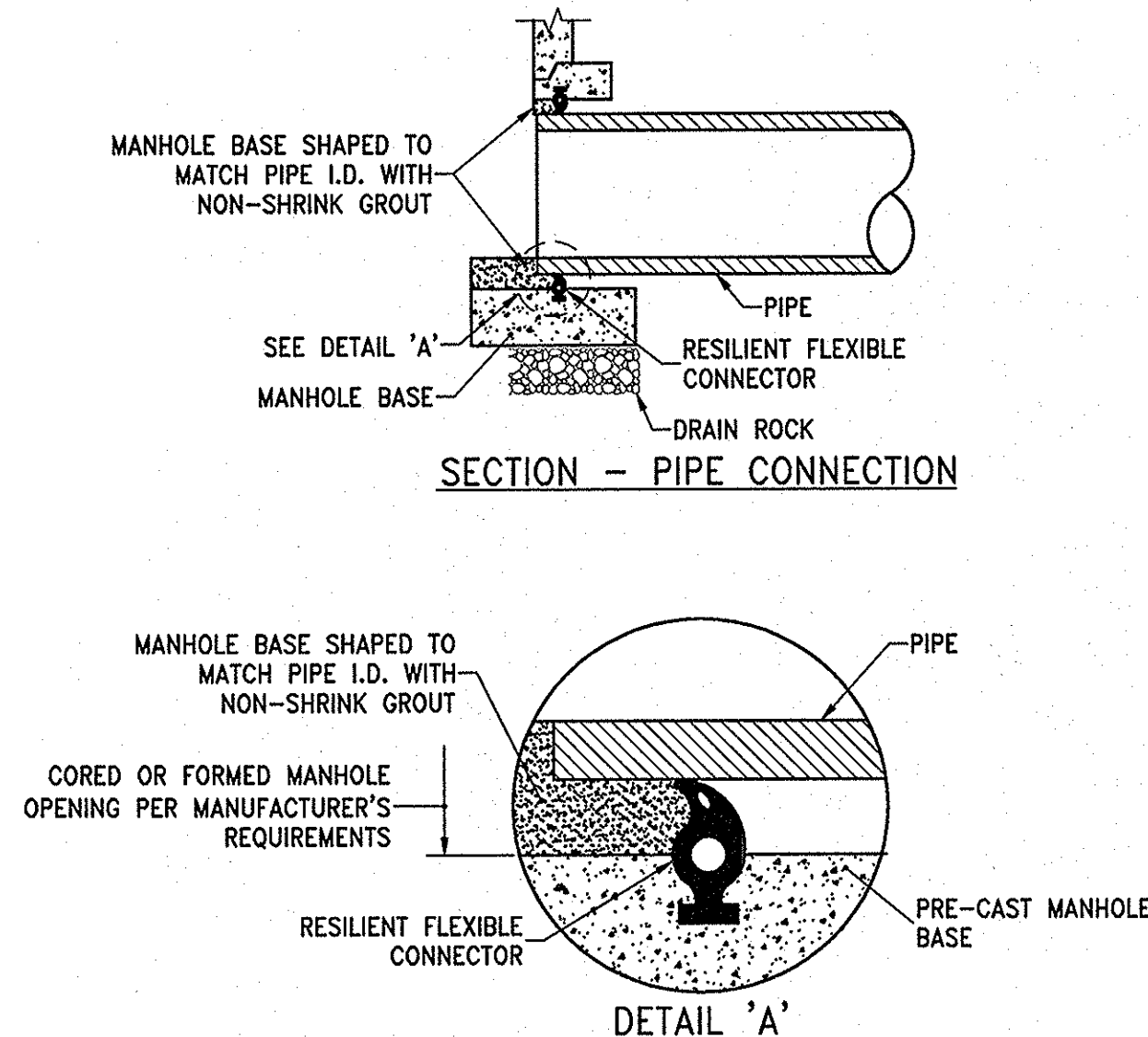
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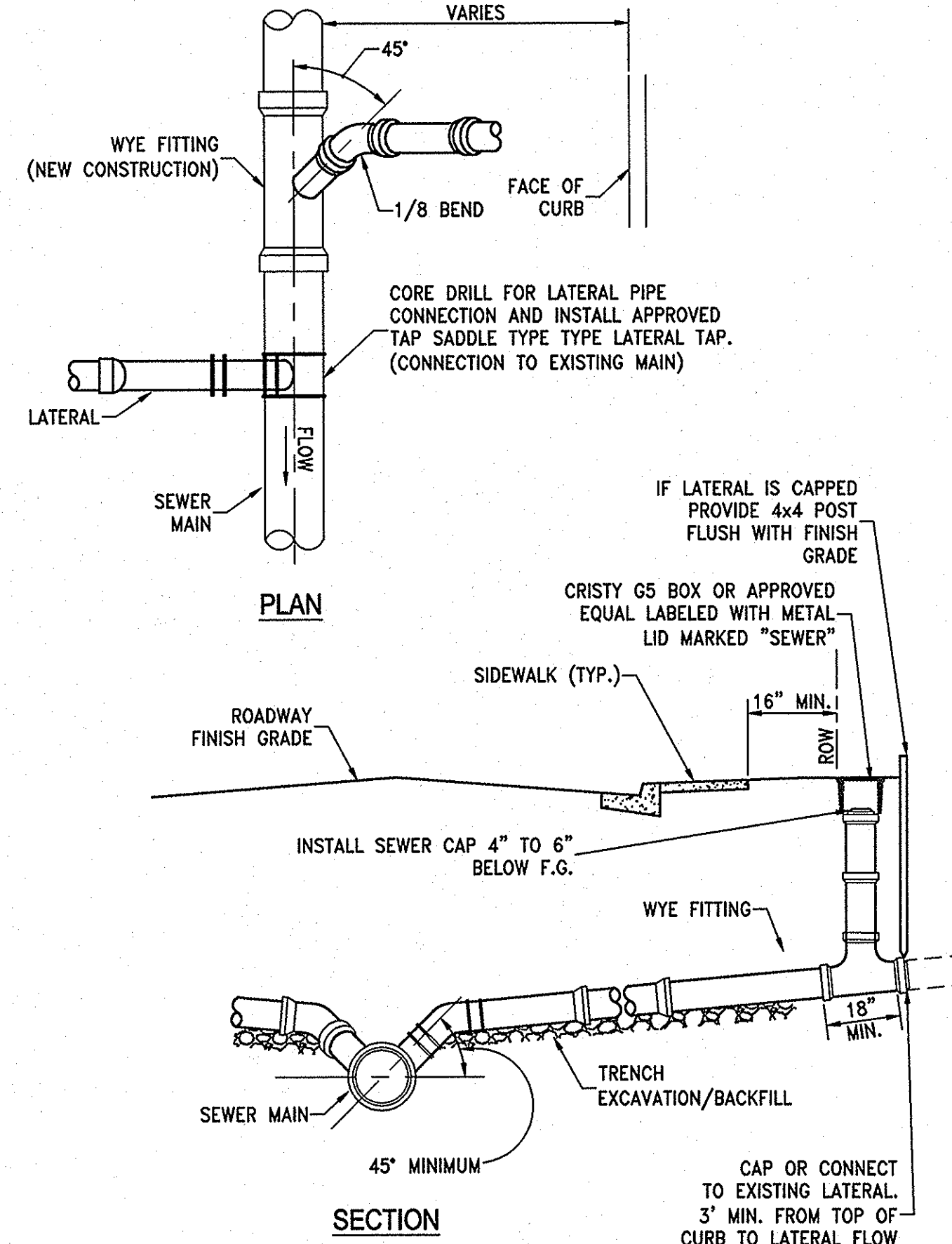
- NOTES:**
- NON-SHRINK GROUT SHALL HAVE THE FOLLOWING CHARACTERISTICS: 3000 PSI MIN. COMPRESSIVE STRENGTH AT 28 DAYS, MIN. 6 SACKS OF CEMENT PER CUBIC YARD AND SLUMP AT 1 TO 4 INCHES. ALL MATERIAL SHALL CONFORM TO STANDARD SPECIFICATIONS OF PUBLIC WORKS CONSTRUCTION (SSPWC) SECTION 202.
 - AN AGENCY-APPROVED FORM OF SEAL OR WATER STOP IS REQUIRED ON ALL STORM DRAIN INSTALLATIONS.
 - A RESILIENT FLEXIBLE CONNECTOR INSTALLED IN ACCORDANCE WITH STD. CONNECTION DETAIL A OF STD. DETAIL 2 ON PAGE D-2 MAY BE USED TO SATISFY THE REQUIREMENTS OF NOTE 2 ABOVE.
 - ALL PIPE OPENINGS TO NEW MANHOLES MUST BE EITHER CAST-IN-PLACE OR PRE-FORMED AND PIPE OPENINGS TO EXISTING MANHOLES MUST BE CORE DRILLED.

1 SANITARY SEWER OR STORM PIPE TO MANHOLE SCALE: N.T.S.



- NOTES:**
- A SEAL OR WATER STOP IS REQUIRED ON ALL SANITARY SEWER INSTALLATIONS AND IN OTHER APPLICATIONS AS REQUIRED BY THE CITY TO PROVIDE A WATERTIGHT CONNECTION.
 - A RESILIENT FLEXIBLE CONNECTOR PER ASTM C 923-89 MAY BE USED AT THE MANHOLE/PIPE CONNECTION TO SATISFY THE REQUIREMENTS OF NOTE 1. FOR PRE-CAST CONCRETE STRUCTURES, THE RESILIENT FLEXIBLE CONNECTOR SHALL BE AN "A-LOK" TYPE PIPE-TO-MANHOLE CONNECTOR OR APPROVED EQUAL. FOR CAST-IN-PLACE STRUCTURES, THE RESILIENT FLEXIBLE CONNECTOR SHALL BE A "KOR-N-SEAL 1 - TOGGLE KOR-BAND" TYPE PIPE-TO-MANHOLE CONNECTOR OR APPROVED EQUAL.
 - THE INTERIOR MANHOLE CONNECTION SHALL BE GROUTED TO FORM A SMOOTH TRANSITION BETWEEN PIPE AND MANHOLE BASE. NO GROUT OR CONCRETE SHALL BE PLACED AROUND THE RESILIENT FLEXIBLE CONNECTOR ON THE OUTSIDE OF THE MANHOLE. NON-SHRINK GROUT SHALL HAVE THE FOLLOWING CHARACTERISTICS: 3000 PSI MIN. COMPRESSIVE STRENGTH AT 28 DAYS, MIN. 6 SACKS OF CEMENT PER CUBIC YARD AND SLUMP AT 1 TO 4 INCHES. ALL MATERIAL SHALL CONFORM TO STANDARD SPECIFICATIONS OF PUBLIC WORKS CONSTRUCTION (SSPWC) SECTION 202.

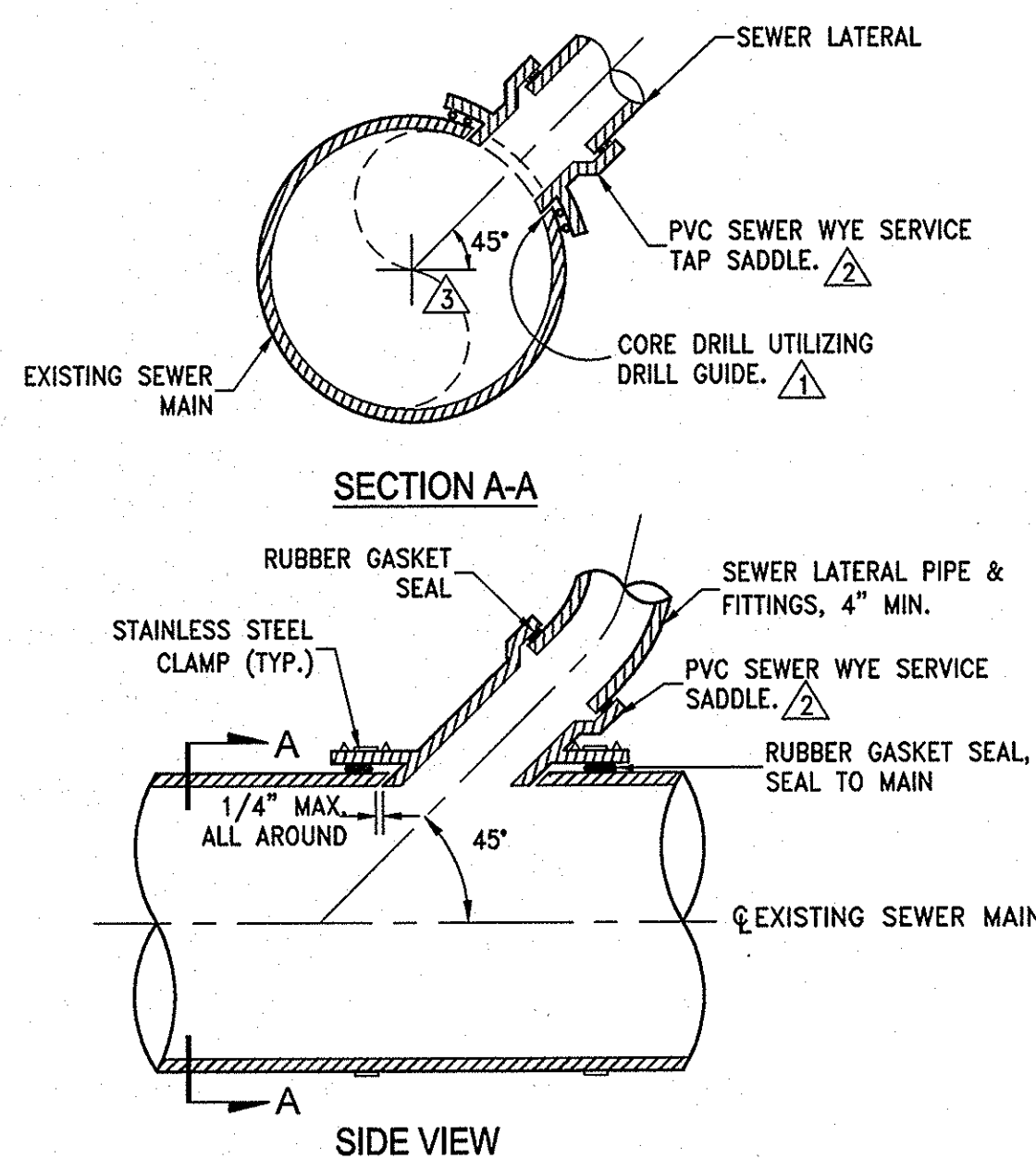
2 RESILIENT FLEXIBLE CONNECTOR SCALE: N.T.S.



3 SANITARY SEWER LATERAL SCALE: N.T.S.

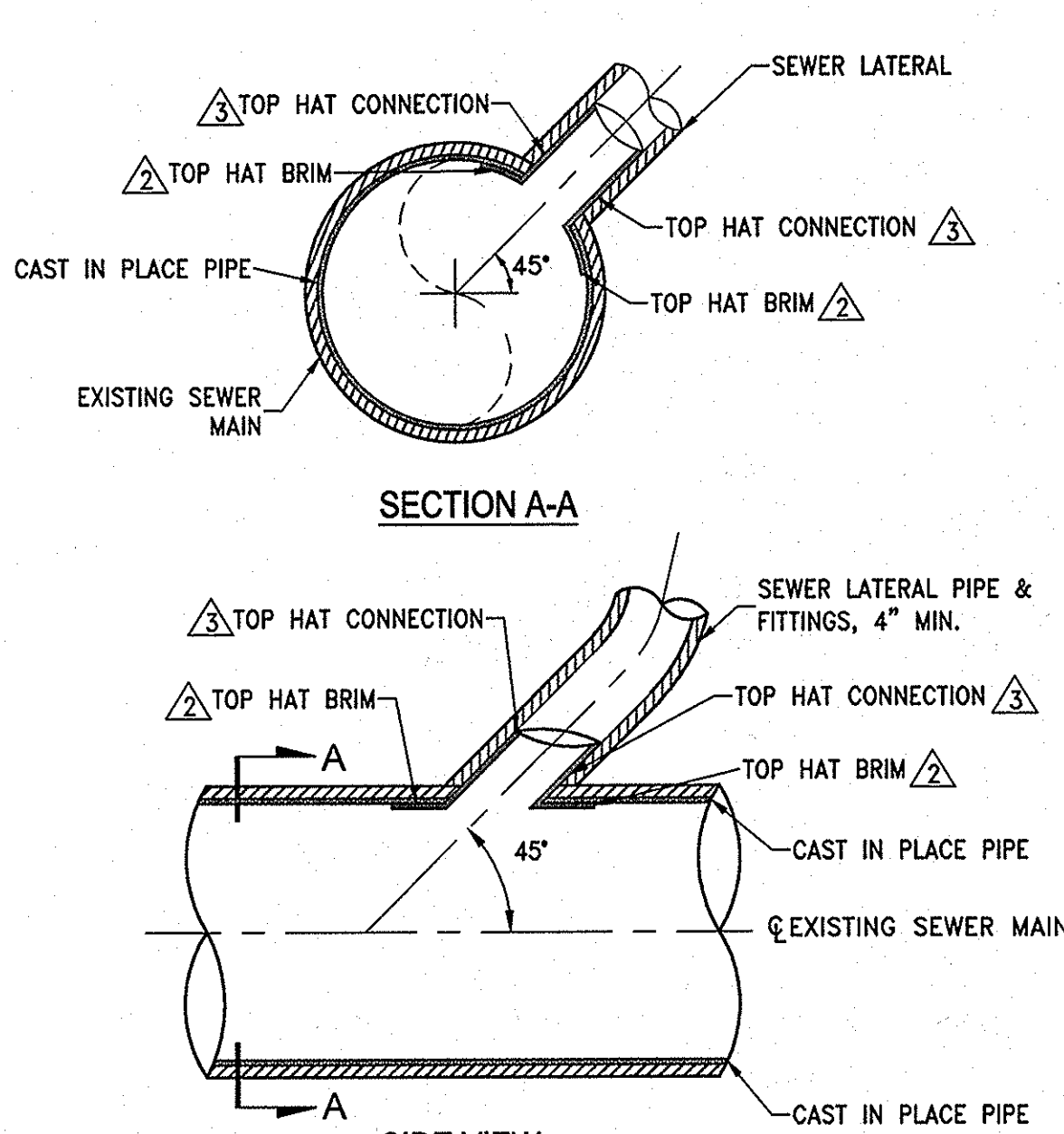
- NOTES:**
- SEWER LATERALS SHALL HAVE A MINIMUM PIPE DIAMETER OF 4-INCHES.
 - IN RIGHT-OF-WAY OR EASEMENT, LATERAL SHALL BE PVC SDR-35 OR C-900.
 - SERVICE LATERALS SHALL HAVE A MINIMUM SLOPE OF 2% UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
 - SADDLE CONNECTION SHALL BE PVC SADDLE WITH STAINLESS STEEL STRAPS.
 - SEWER LATERALS SHALL HAVE A CLEANOUT INSTALLED IMMEDIATELY UPSTREAM OF THE POINT WHERE THE SERVICE LATERAL EXITS THE PUBLIC RIGHT-OF-WAY OR EASEMENT. A G5 BOX CLEARLY MARKED "SEWER" SHALL BE INSTALLED OVER THE TOP OF THE CLEANOUT RISER CAP PIPE.
 - SEWER LATERALS SHALL NOT BE CONNECTED DIRECTLY TO OR WITHIN 5- FEET OF A MANHOLE STRUCTURE.
 - NO LATERAL CONNECTIONS SHALL BE MADE DIRECTLY TO A SANITARY SEWER "INTERCEPTOR" UNLESS APPROVED BY THE CITY ENGINEER.
 - DISCONTINUANCE OF USE OF AN EXISTING SEWER LATERAL REQUIRES ABANDONMENT OF THE LATERAL. CUT, REMOVE 1-FOOT OF EXISTING LATERAL AND CAP BOTH ENDS OF THE EXISTING SEWER LATERAL TO BE ABANDONED WITHIN 6-INCHES OF THE SEWER MAIN. ABANDONMENT MUST BE INSPECTED BY CITY PRIOR TO BACKFILL.
 - IN NO CASE SHALL A LATERAL CONNECT TO THE SEWER MAIN DIRECTLY ON TOP OF THE PIPE OR BELOW THE CENTERLINE OF THE PIPE.
 - ALL JOINTS ON SEWER LATERAL PIPE WITHIN THE RIGHT-OF-WAY SHALL BE COMPRESSION TYPE.
 - LATERAL SHALL EXTEND TO PROPERTY LINE UNLESS OTHERWISE SHOWN ON PLANS.
 - ALL SEWER CLEAN-OUTS SHALL BE SET 16" TO 24" BEHIND CURB OR SIDEWALK OR AS OTHERWISE DIRECTED BY THE CITY OF SPARKS.

4 NOTES - SANITARY SEWER LATERAL SCALE: N.T.S.



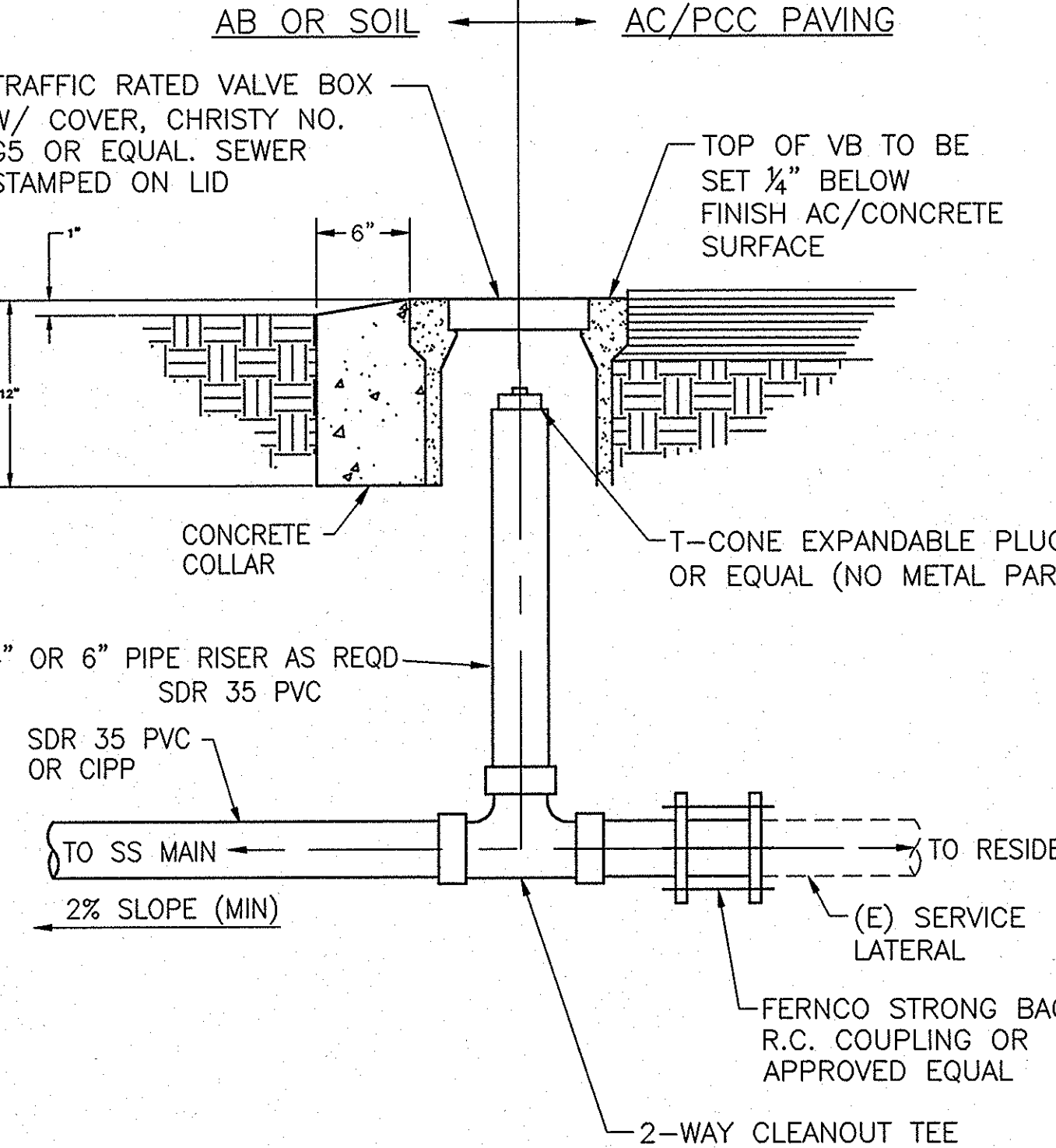
- NOTES:**
- EXISTING SEWER MAINS SHALL BE CORE DRILLED UTILIZING A DRILL GUIDE FOR A WYE SADDLE AND A CORE DRILL WITH A LENGTH EXCEEDING THE LATERAL DIAMETER, INSERT-A-DRILL ID75 & EXTRA LONG HOLE SAW OR APPROVED EQUAL. DIAMOND CORE BITS SHALL BE USED ON NON-PVC MAINS.
 - SERVICE TAP SADDLES SHALL BE PVC SEWER WYE SADDLES. A ROMAC STYLE "CB" SEWER SADDLE OR APPROVED EQUAL MAY BE USED ON EXISTING SEWER MAINS ONLY WHEN MAIN IS NOT PVC.
 - SADDLES SHALL BE INSTALLED AT 45 DEGREES TO MAIN AS SHOWN IN SECTION A-A. IN NO CASE SHALL A LATERAL CONNECTING TO THE EXISTING SEWER MAIN BE LOCATED DIRECTLY ON TOP OF THE PIPE, NOR SHALL IT MATCH THE FLOWLINE OF THE PIPE.

5 SANITARY SEWER TAP SADDLE SCALE: N.T.S.

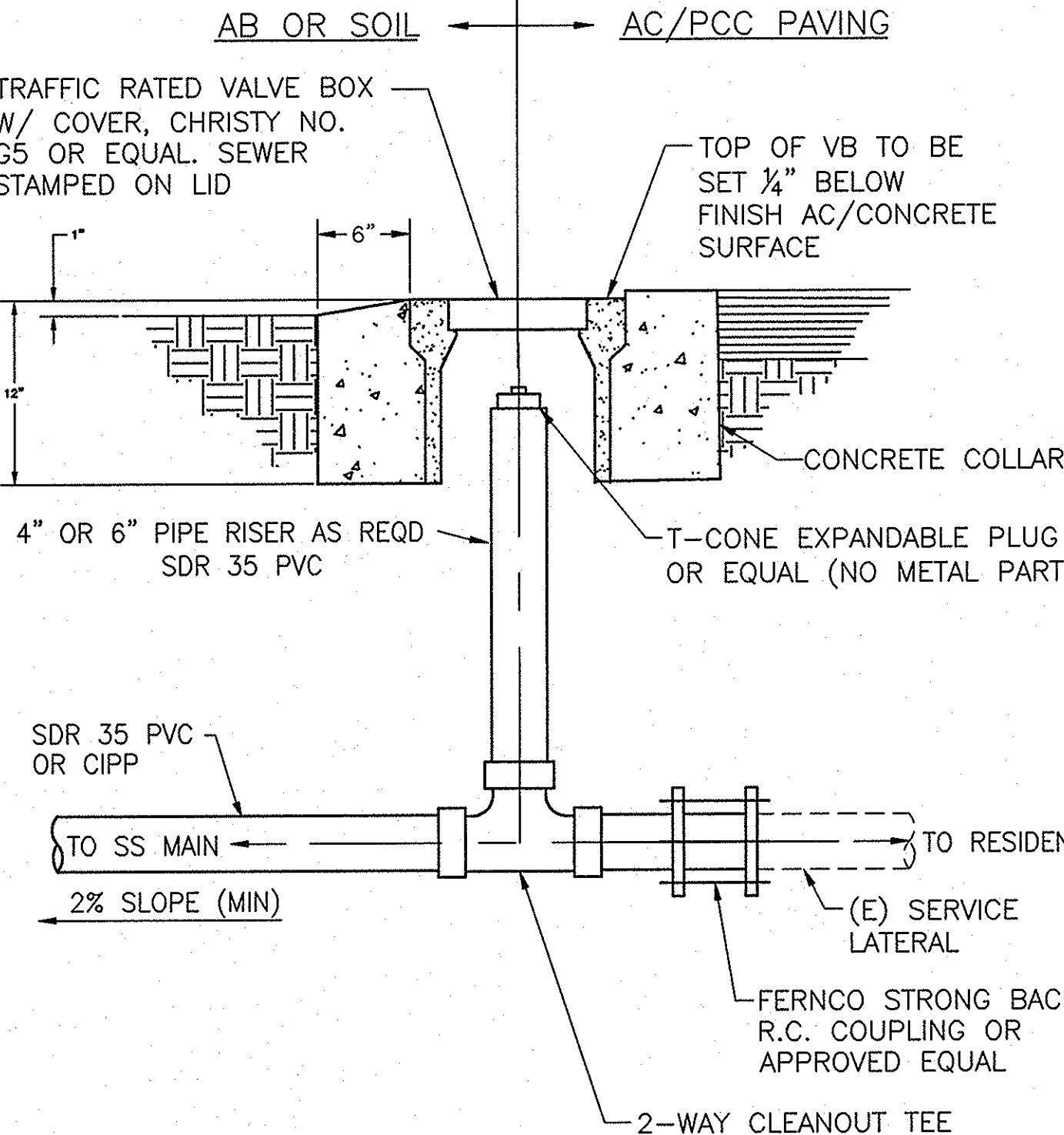


- NOTES:**
- LATERALS TO BE RESTORED INTERNALLY WITH ROBOTICALLY CONTROLLED CUTTING DEVICE AND TOP HAT INSERTION.
 - TOP HAT BRIM TO BE 3 INCHES MINIMUM AROUND LATERAL CONNECTION IN THE MAINLINE.
 - TOP HAT CONNECTION TO EXTEND A MINIMUM 6 INCHES INTO LATERAL.
 - TOP HATS SHALL BE UNIQUE ACCORDING TO WHETHER LATERAL IS A TEE OR WYE CONNECTION WITH NO CREASING OR BUMPS TO EFFECT FLOW.

6 SANITARY SEWER TOP HAT SCALE: N.T.S.



7 SANITARY SEWER LATERAL CLEAN OUT (NOT EXPOSED TO TRAFFIC) SCALE: N.T.S.



8 SANITARY SEWER LATERAL CLEAN OUT (EXPOSED TO TRAFFIC) SCALE: N.T.S.

REVISIONS

DATE	MARK

City of Sparks
Community Services

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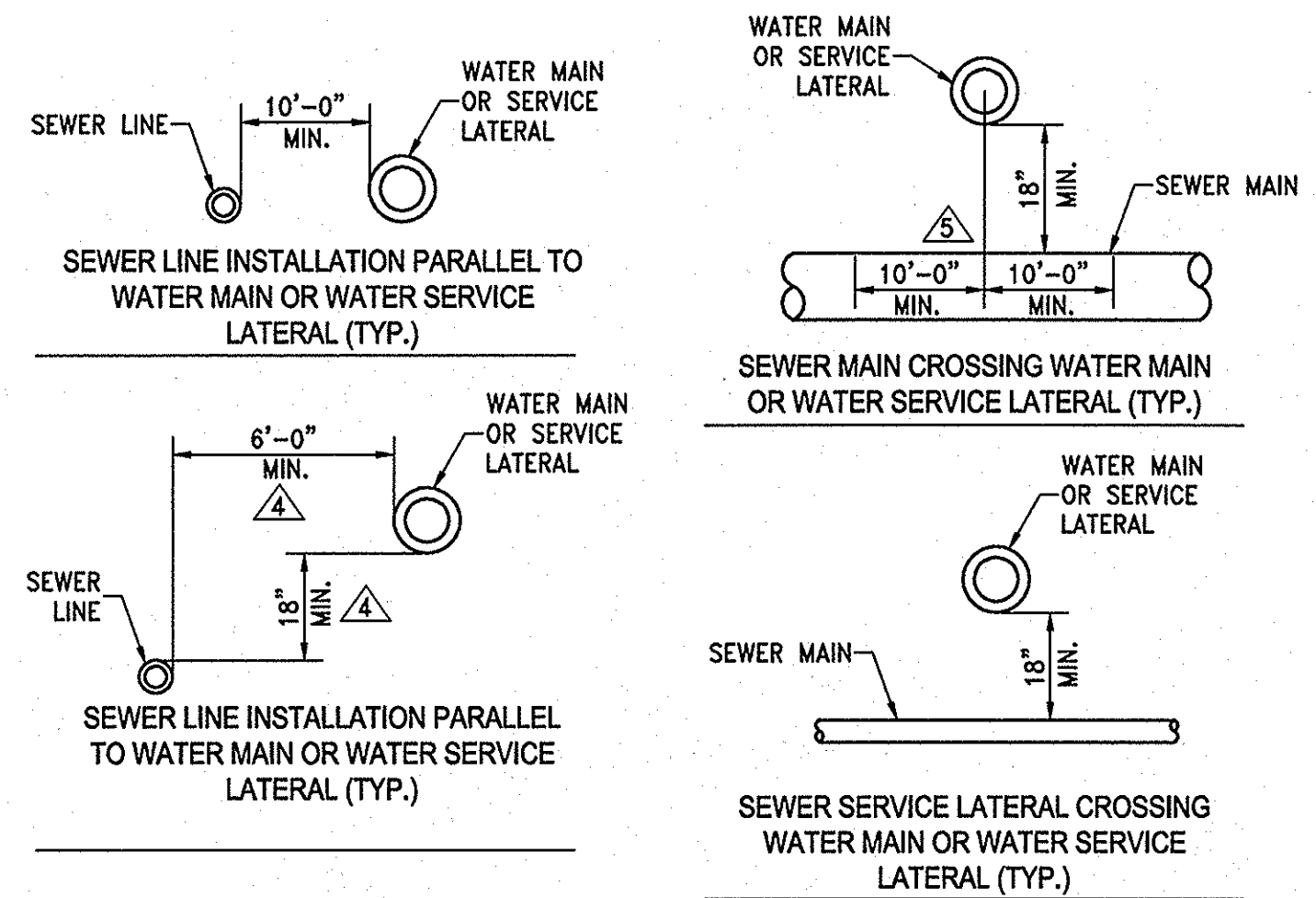
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ENGINEER-STATE OF NEVADA
JOHN JOHNSON
No. 18444

SCALE: N.T.S.

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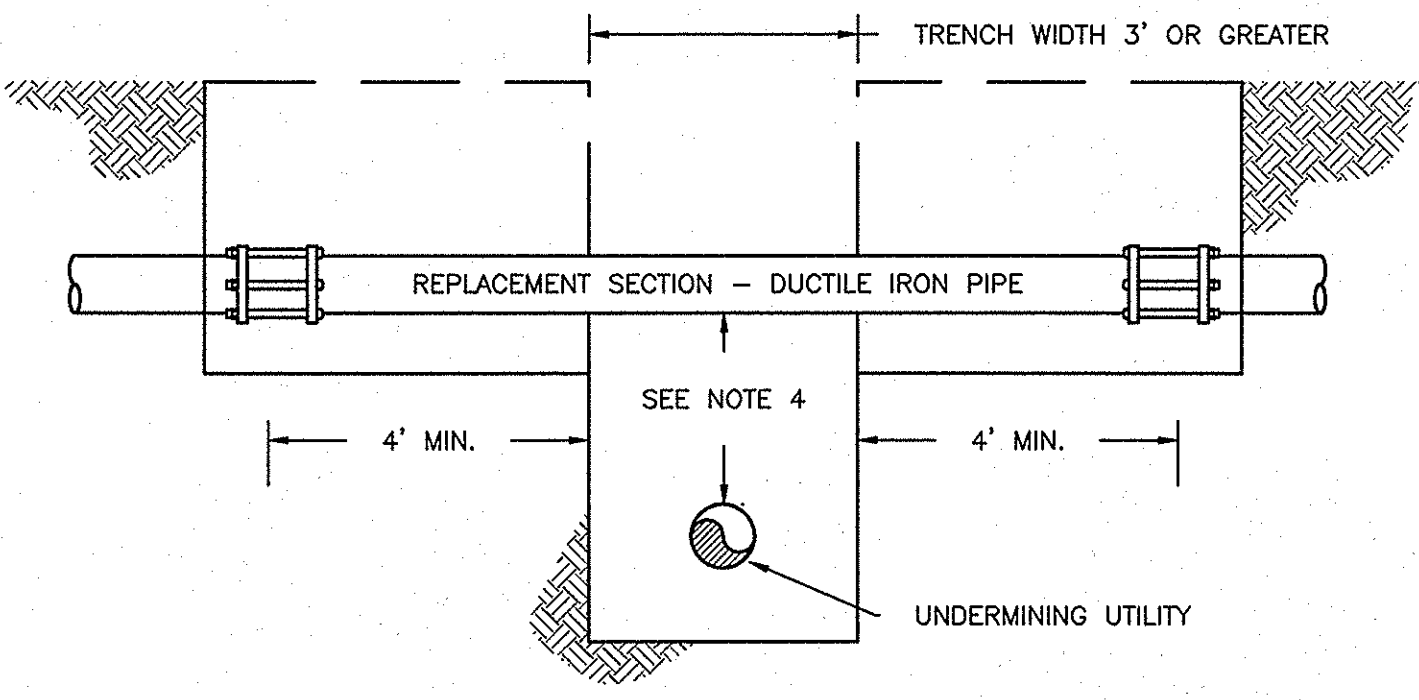
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NOTES:

- INSTALLATION OF SEWER LINES AND LATERALS SHALL BE IN CONFORMANCE WITH ALL STATE OF NEVADA WATER/SEWER SYSTEM SEPARATION REGULATIONS.
- WHENEVER POSSIBLE, SEWER LINES AND LATERALS SHALL BE INSTALLED IN SEPARATE TRENCHES IN THE TYPICAL CONFIGURATIONS SHOWN ABOVE.
- REFER TO STANDARD DETAIL DRAWING NO. 2-19 (OF THE STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION, AKA "THE ORANGE BOOK") FOR MORE SANITARY SEWER CROSSING CRITERIA. IF THE PIPE CANNOT BE INSTALLED IN THE TYPICAL OR ALTERNATIVE CONFIGURATIONS, THE CONTRACTOR SHALL HAVE WRITTEN APPROVAL FROM THE DIVISION OF HEALTH FOR ANY OTHER INSTALLATION CONFIGURATION.
- IF WATER LINE IS LOCATED 18" OR MORE ABOVE THE SEWER, THE DISTANCE BETWEEN LINES CAN BE REDUCED TO A MINIMUM OF 6 FEET.
- 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.

1 WATER/SEWER SEPERATION SCALE: N.T.S.

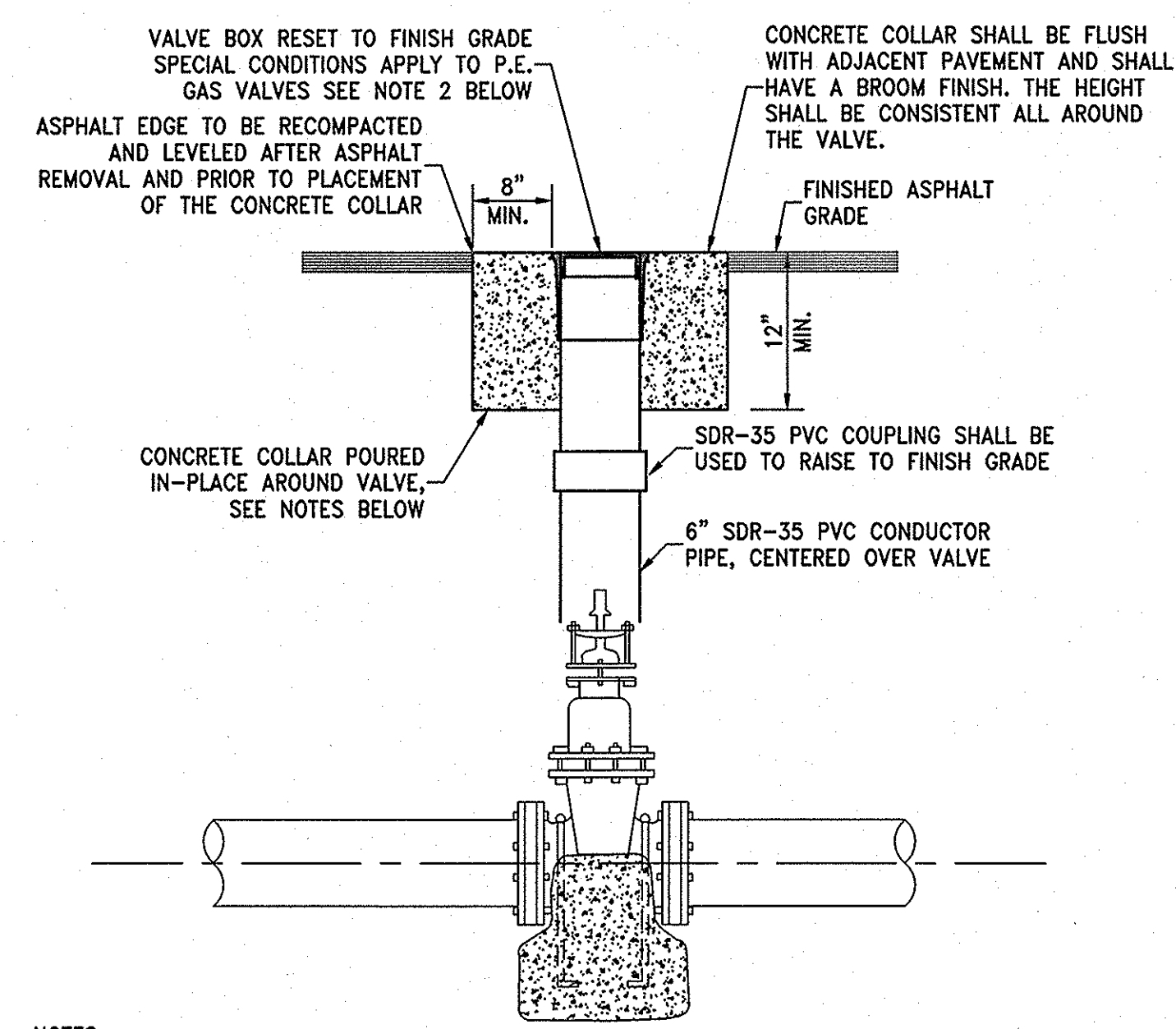


- COUPLINGS SHALL BE ROMAC STYLE 501, FUSION EPOXY COATING, CENTER RING LENGTH MINIMUM 7".
- BACKFILL AND COMPACTION REQUIREMENTS SHALL COMPLY WITH SECTION 5, TRENCH BEDDING, BACKFILL & EXCAVATION.
- REPLACEMENT SECTION OF PIPE SHALL BE DUCTILE IRON.
- REFER TO TMAW CONSTRUCTION AND DESIGN STANDARDS FOR MINIMUM CLEARANCE REQUIREMENTS.

2 CROSSING UNDER EXISTING TRANSITE OR SMALL DIAMETER CAST IRON MAINS SCALE: N.T.S.

3 NOT USED SCALE: N.T.S.

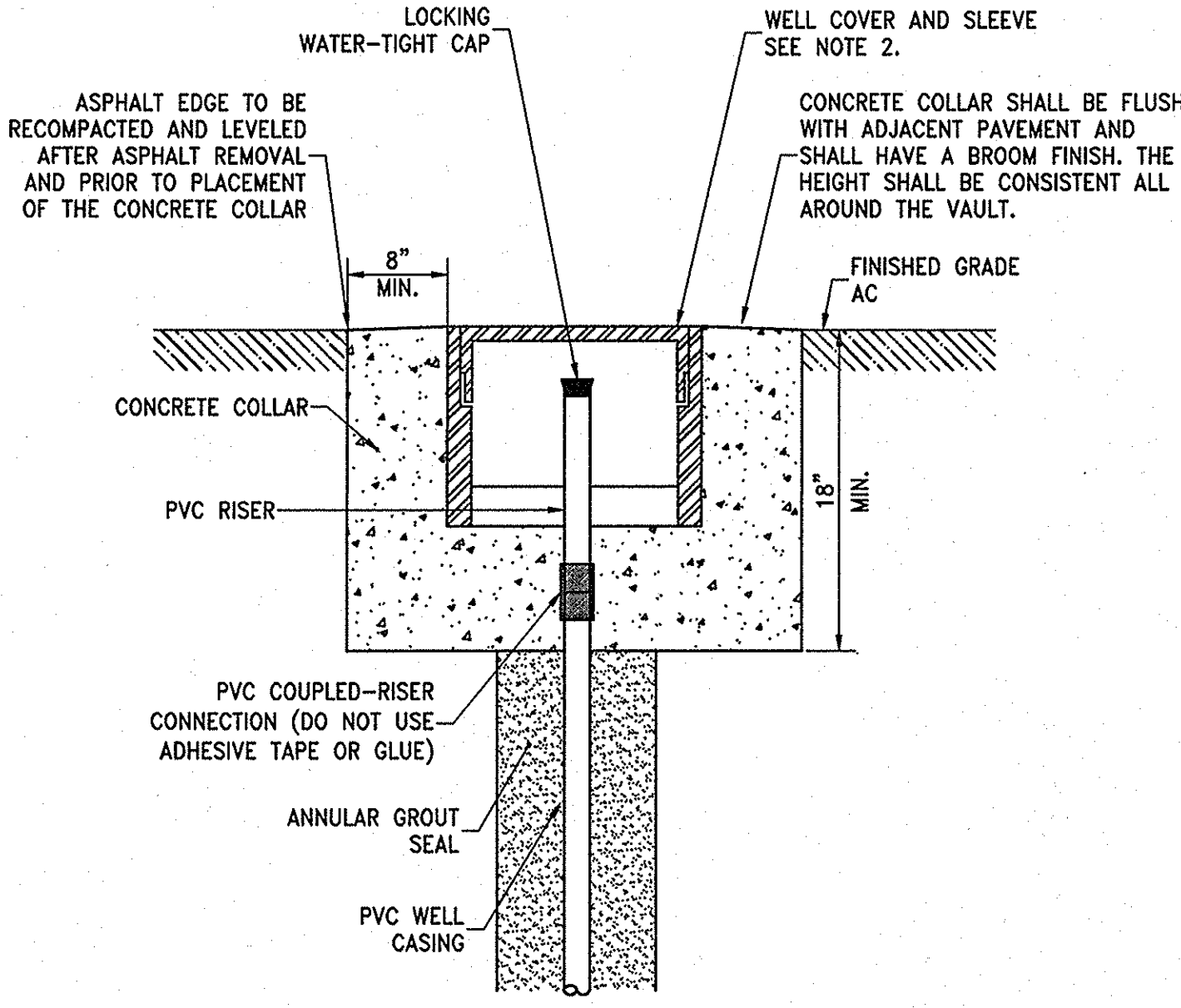
4 NOT USED SCALE: N.T.S.



NOTES:

- 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. MIX DESIGN SHALL CONFORM TO THE REQUIREMENTS OF SECTION 337 OF STANDARD SPECIFICATIONS OF PUBLIC WORKS CONSTRUCTION (SSPWC). CEMENT SHALL BE TYPE II. ALL CEMENT CONCRETE SHALL HAVE A COARSE AGGREGATE GRADATION CONFORMING TO SIZE No. 67. ALL MATERIALS SHALL CONFORM TO SSPWC.
- SPECIAL CONDITIONS APPLY TO P.E. GAS VALVES WITH TELESCOPING RISERS. CONTRACTORS SHALL NOT RAISE TO GRADE RISERS THAT HAVE BEEN CUT-OFF DURING LOWERING. RISERS CUT-OFF DURING LOWERING SHALL BE REMOVED COMPLETELY TO MAIN AND TAKEN TO NV ENERGY FOR EXACT MATERIAL REPLACEMENT PRIOR TO RAISING TO GRADE.

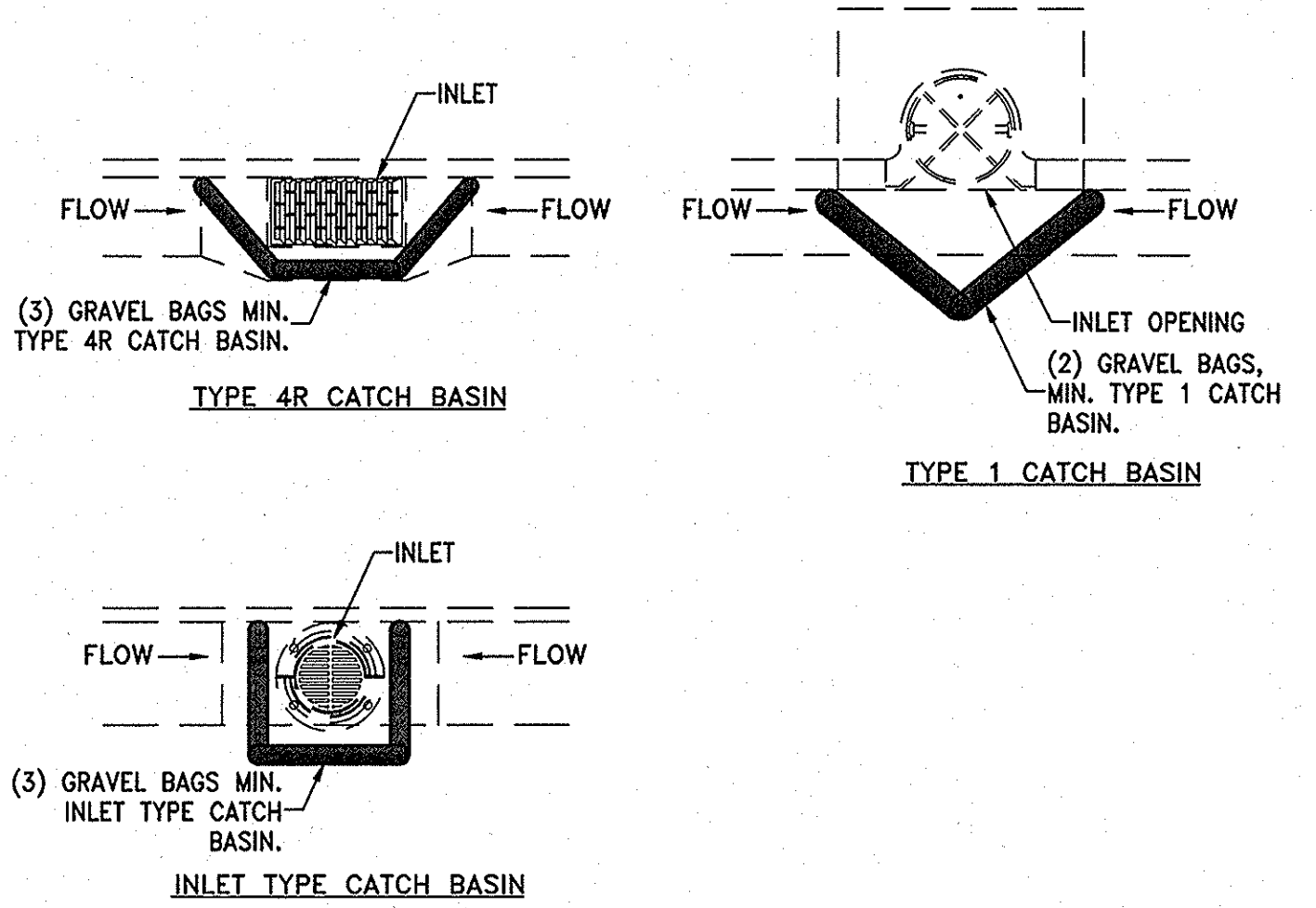
5 VALVE BOX COLLAR SCALE: N.T.S.



NOTES:

- CONCRETE COLLAR SHALL BE PORTLAND CEMENT CONCRETE (P.C.C.) SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4000 PSI MIN. COMPRESSIVE STRENGTH AT 28 DAYS, AIR ENTRAINMENT 6% ±1.5%, AND SLUMP AT 1 TO 4 INCHES. ALL MATERIALS SHALL CONFORM TO SECTION 200 OF THE SSPWC.
- WELL COVER AND SLEEVE SHALL BE MORRISON 12 FIG 418XA WELL COVER (12" DIAMETER COVER BY 12" DEEP SLEEVE).
- CONTRACTOR SHALL CONTACT TMAW OR WASHOE COUNTY DEPARTMENT OF WATER RESOURCES PRIOR TO CONSTRUCTION TO COORDINATE LOWER AND RAISING OF MONITORING WELLS.

6 MONITORING WELL SCALE: N.T.S.



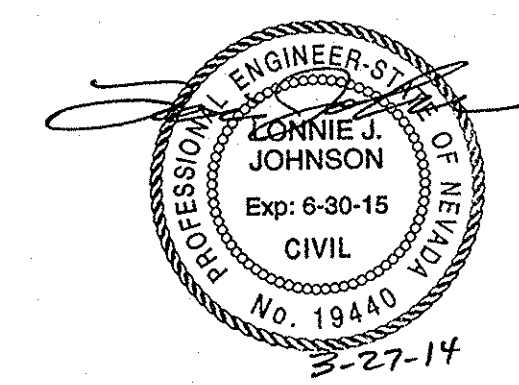
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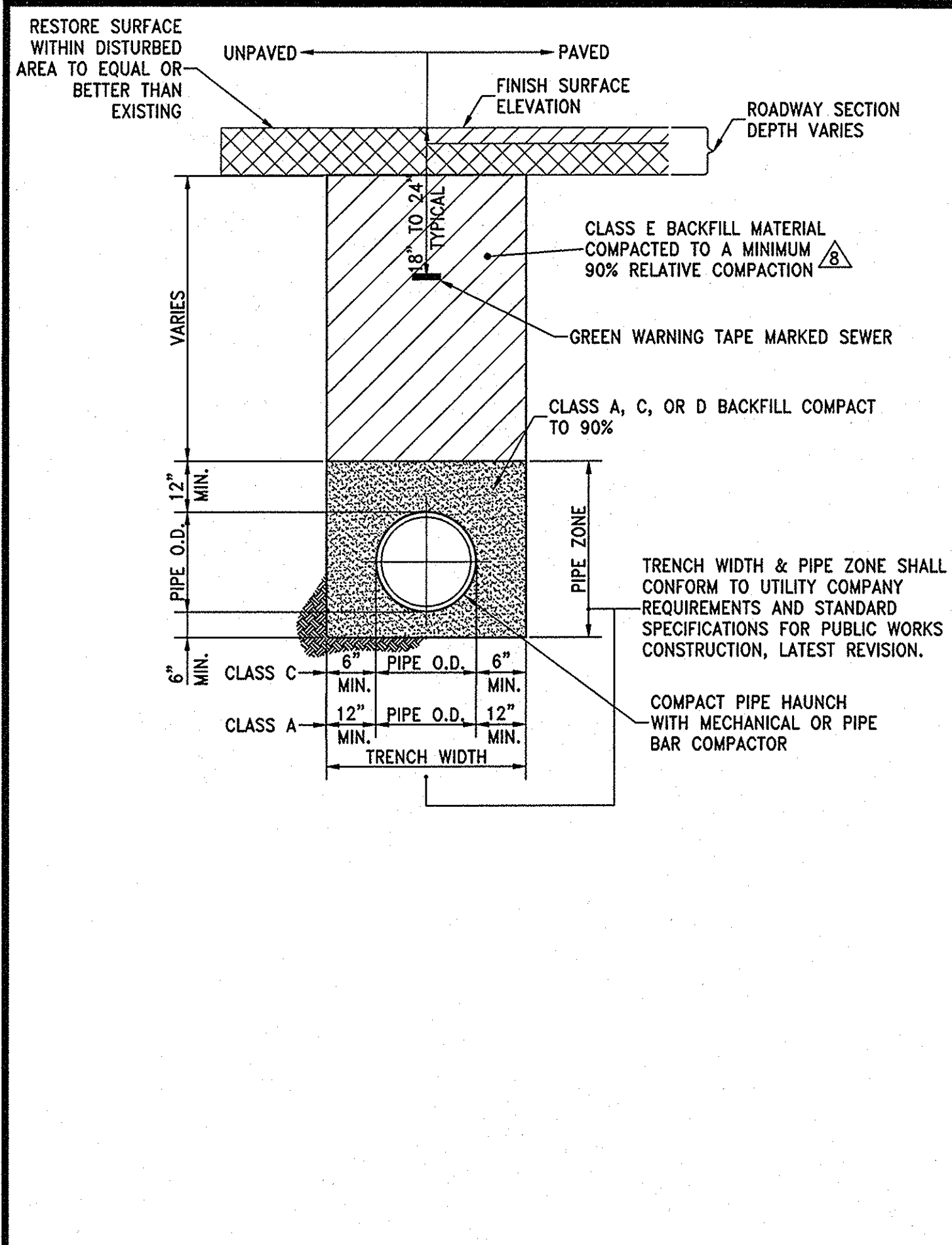
- ALL STORM DRAIN INLET PROTECTION SHALL BE IN PLACE PRIOR TO COMMENCING CONSTRUCTION. ALL SITE BMP PLACEMENT AND MAINTENANCE SHALL CONFORM TO THE REQUIREMENTS OF THE CONTRACTOR'S STORM WATER POLLUTION PREVENTION PLAN (SWPPP).
- THE CONTRACTOR SHALL INSPECT THE SITE DAILY, PRIOR TO FORECASTED WEATHER EVENTS AND WITHIN 24 HOURS OF ANY EVENT THAT CREATES RUNOFF AT THE SITE. DISTURBED OR BROKEN BAGS SHALL BE REPLACED. SEDIMENT AND DEBRIS SHALL BE REMOVED AND DISPOSED.
- GRAVEL BAGS:
 - BAGS SHALL BE WOVEN POLYPROPYLENE, POLYETHYLENE OR POLYAMITE FABRIC, MIN. WEIGHT 4oz/SY, MULLEN BURST STRENGTH EXCEEDING 300 PSI AND ULTRA VIOLET STABILITY EXCEEDING 70%.
 - EACH GRAVEL-FILLED BAG SHALL HAVE A MIN. LENGTH OF 30", MIN. WIDTH OF 8" AND MIN. THICKNESS OF 4".
 - GRAVEL SHALL BE BETWEEN 1/2" TO 1" IN DIAMETER AND CLEAN AND FREE FROM CLAY BALLS, ORGANIC MATTER AND OTHER DELETERIOUS MATERIALS.
- AFTER CONSTRUCTION WHEN GRAVEL BAGS ARE REMOVED, ALL CONSTRUCTION MATERIAL, DEBRIS, SEDIMENT, ETC. SHALL BE REMOVED FROM INLET OR CATCH BASIN BY VACUUM TRUCK.

7 STORM DRAIN INLET PROTECTION SCALE: N.T.S.

8 NOT USED SCALE: N.T.S.

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PLANNERS • ENGINEERS • LANDSCAPE ARCHITECTS SURVEYORS • CONSTRUCTION OBSERVATION 1150 CORPORATE BLVD. RENO, NV 89502 (775) 856-1150 FAX: (775) 856-1160			
SPARKS SANITARY SEWER REHABILITATION 4TH STREET DETAILS SPARKS, NV WASHOE COUNTY NEVADA			
JOB NO. 12048.03 DESIGNED BY L.J. DRAWN BY J.D.L. SHEET			D-3 15 OF

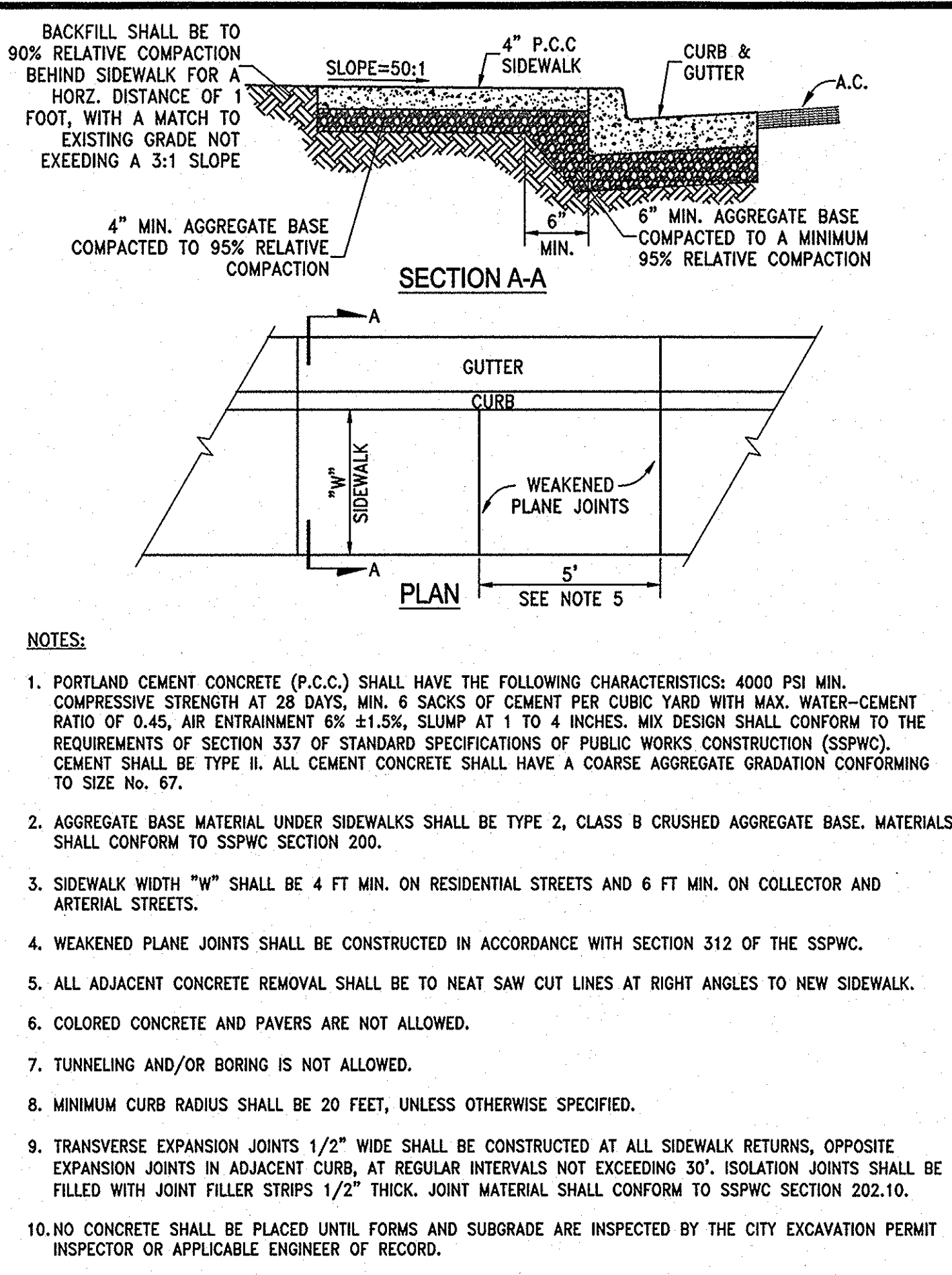




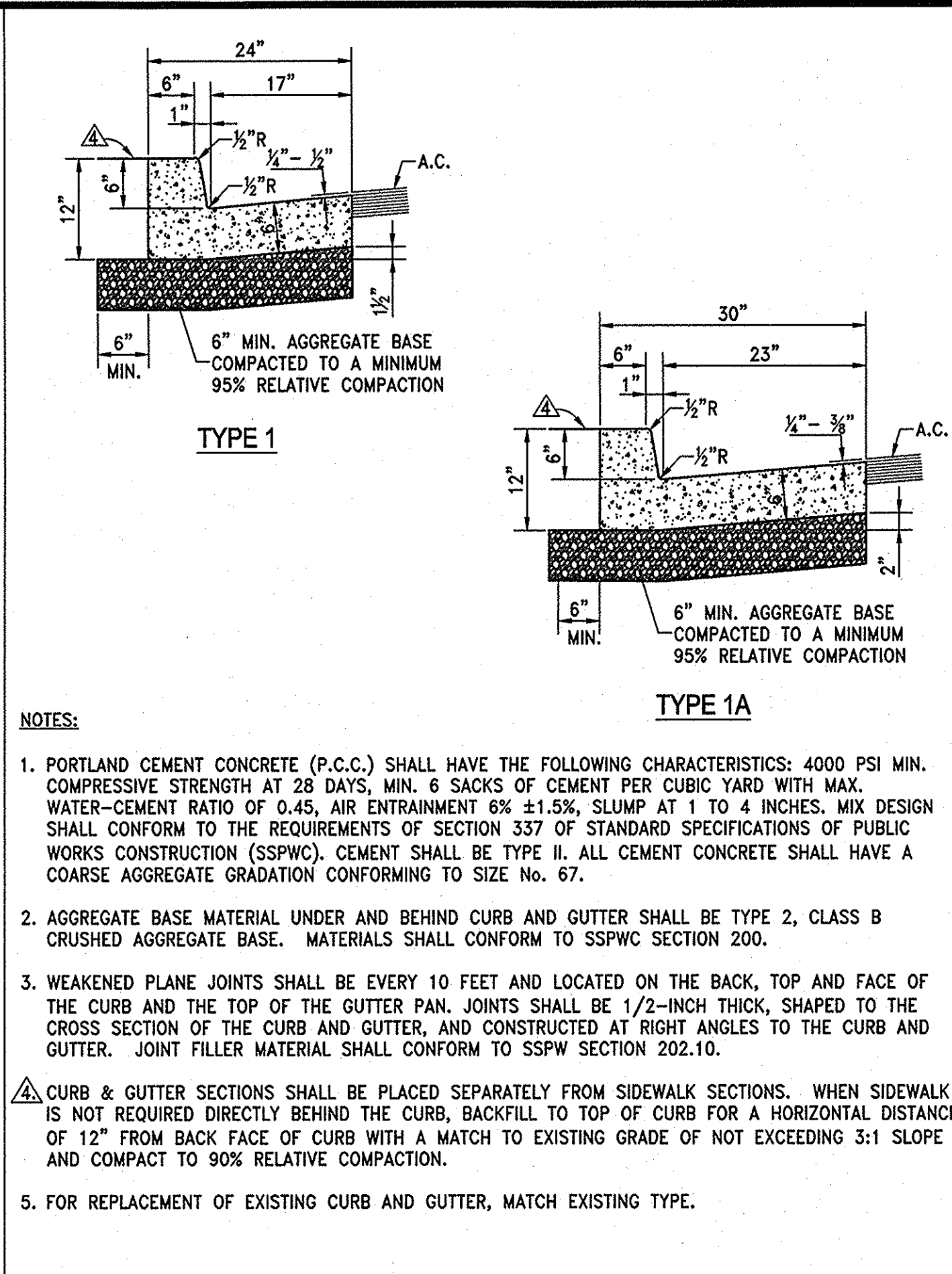
1 TRENCH EXCAVATION AND BACKFILL SCALE: N.T.S.

- NOTES:
- ALL MATERIALS AND INSTALLATION PROCEDURES SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (SSPWC), LATEST REVISION.
 - 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 SHORING.
 - ANY CONDITIONS OF AN ENCROACHMENT OR RIGHT-OF-WAY PERMIT WHICH MAY DIFFER FROM THE ABOVE WILL GOVERN IN APPLICABLE AREAS.
 - 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.
 - ENGINEER SHALL MONITOR FOUNDATION ZONE THROUGHOUT CONSTRUCTION. STURATED, UNSTABLE MATERIALS SHALL BE REMOVED AND REPLACED WITH CLASS D BACKFILL.
 - TRENCH SIDE SLOPE VARIES DEPENDING ON IN-SITU SOIL TYPES, SHORING AND SHEETING AND CONSTRUCTION METHODS, COMPLY WITH OSHA STANDARDS.
 - WHERE GROUNDWATER IS ENCOUNTERED, PROVIDE GEOTEXTILE FABRIC BETWEEN CLASS B OR C BACKFILL AND CLASS E TRENCH BACKFILL ABOVE.
 - THE TOP 2 FEET OF TRENCH BACKFILL WITHIN EXISTING ROADWAY RIGHT OF WAY SHALL CONSIST OF CLASS E BACKFILL THAT WILL ACHIEVE AN R VALUE OF AT LEAST 30.
 - FOR UNSUPPORTED TRENCHES, OR THOSE TRENCHES SUPPORTED BY HYDRAULIC JACKS, THE ALLOWABLE TRENCH WIDTH SHALL BE LIMITED TO THE PIPE DIAMETER PLUS 12 INCHES MINIMUM OR THE PIPE 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 OF THE TRENCH SHIELD TO ENSURE COMPACTED BACKFILL WITHIN THE PIPE EMBEDMENT ZONE.

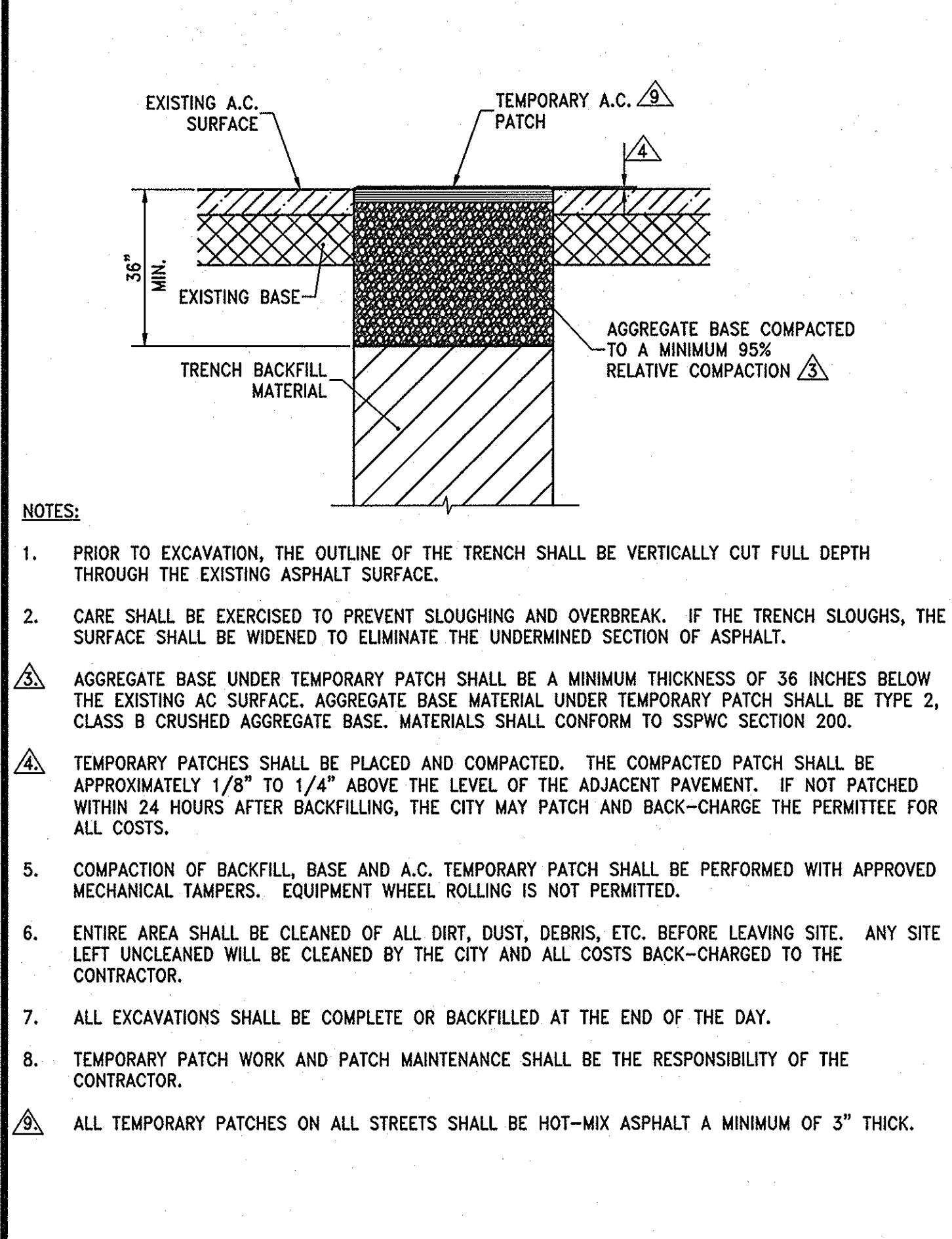
2 TRENCH EXCAVATION AND BACKFILL - NOTES SCALE: N.T.S.



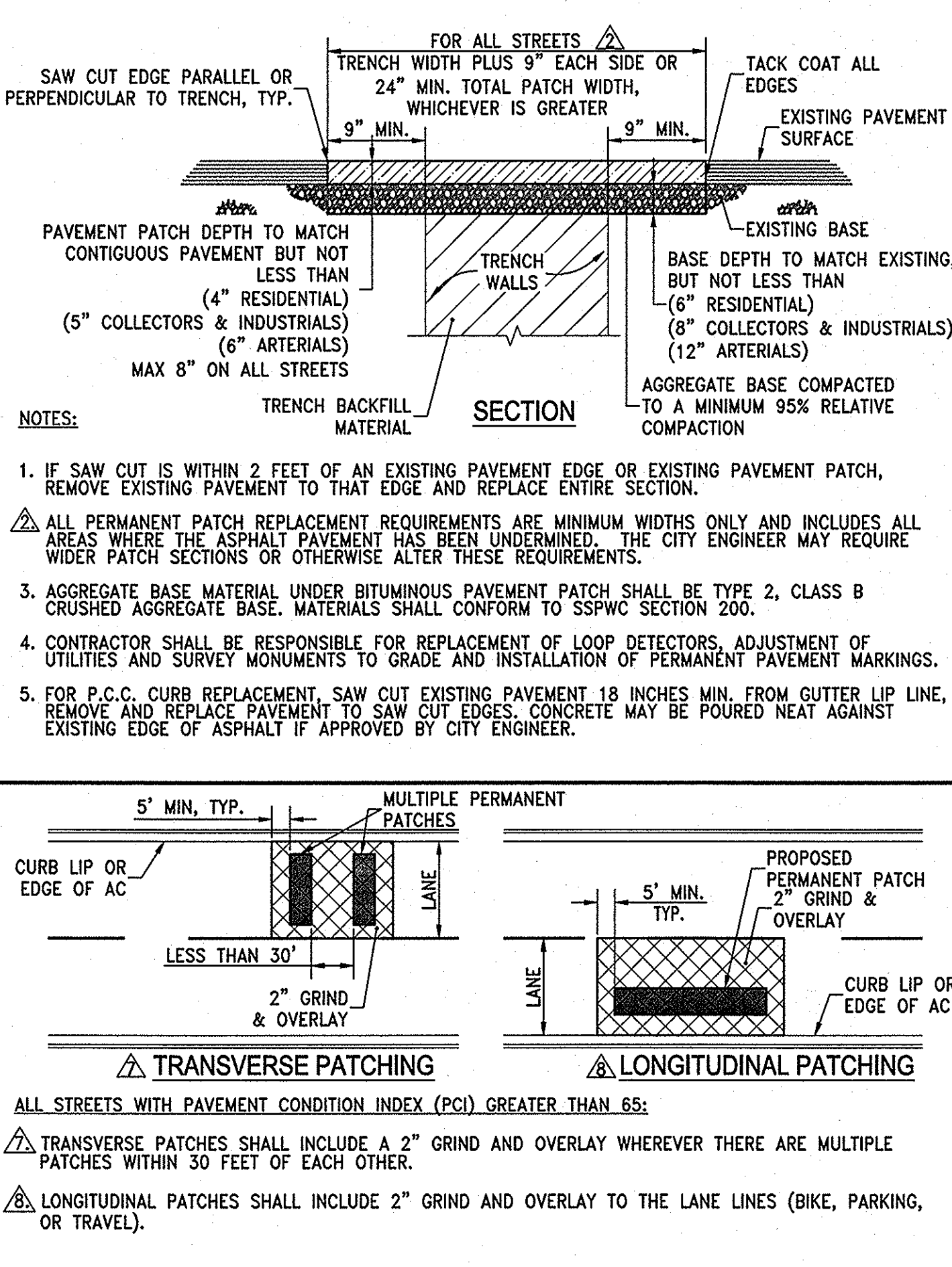
3 SIDEWALK SCALE: N.T.S.



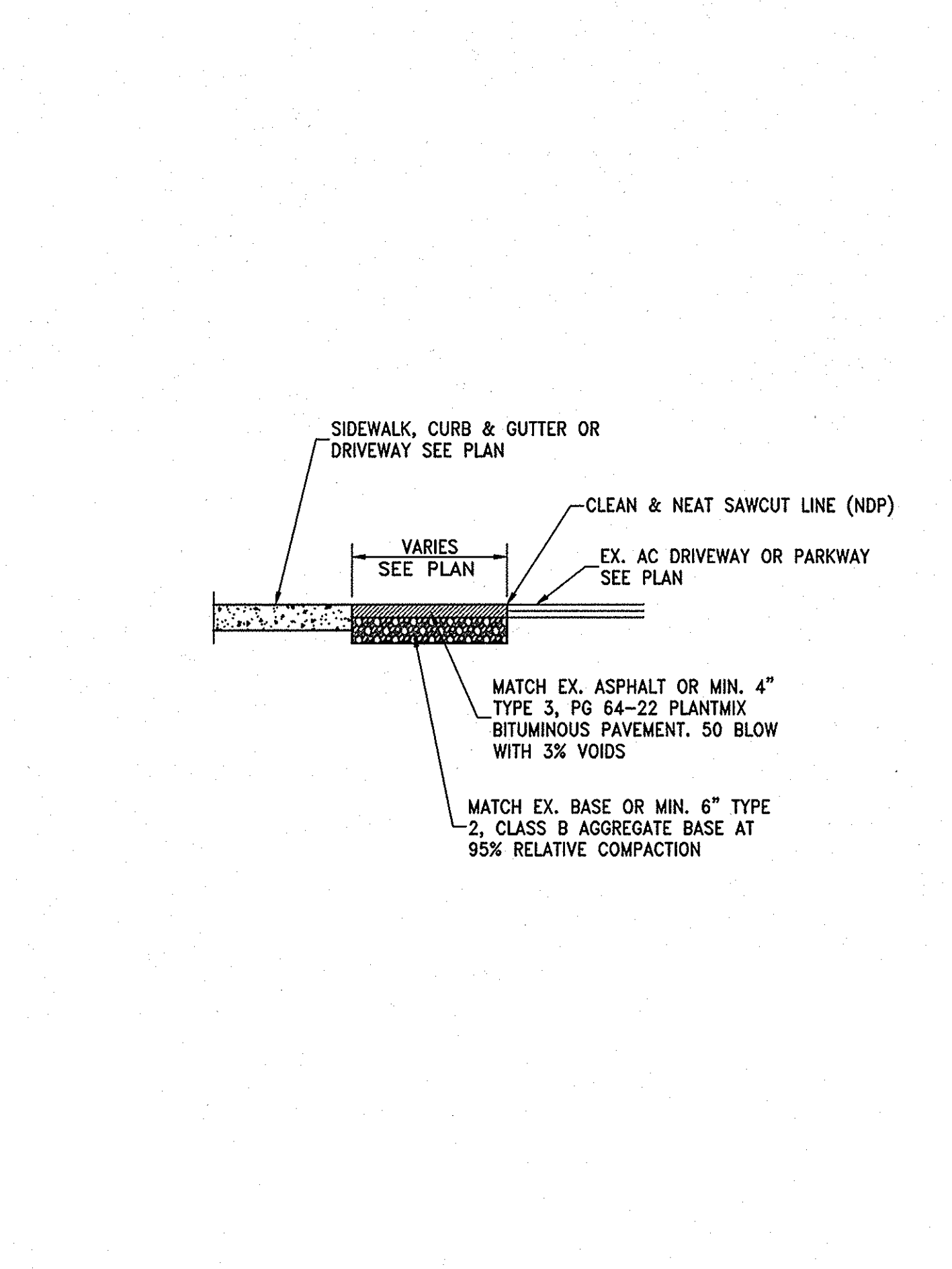
4 P.C.C. CURB AND GUTTER SCALE: N.T.S.



5 TEMPORARY AC TRENCH PATCH SCALE: N.T.S.



6 PERMANENT BITUMINOUS PAVEMENT PATCH SCALE: N.T.S.



7 PERMANENT ASPHALT PATCH - DRIVEWAYS ONLY SCALE: N.T.S.

NOT USED

8 NOT USED SCALE: N.T.S.

REVISIONS
DATE
MARK

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Community Services

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cfa

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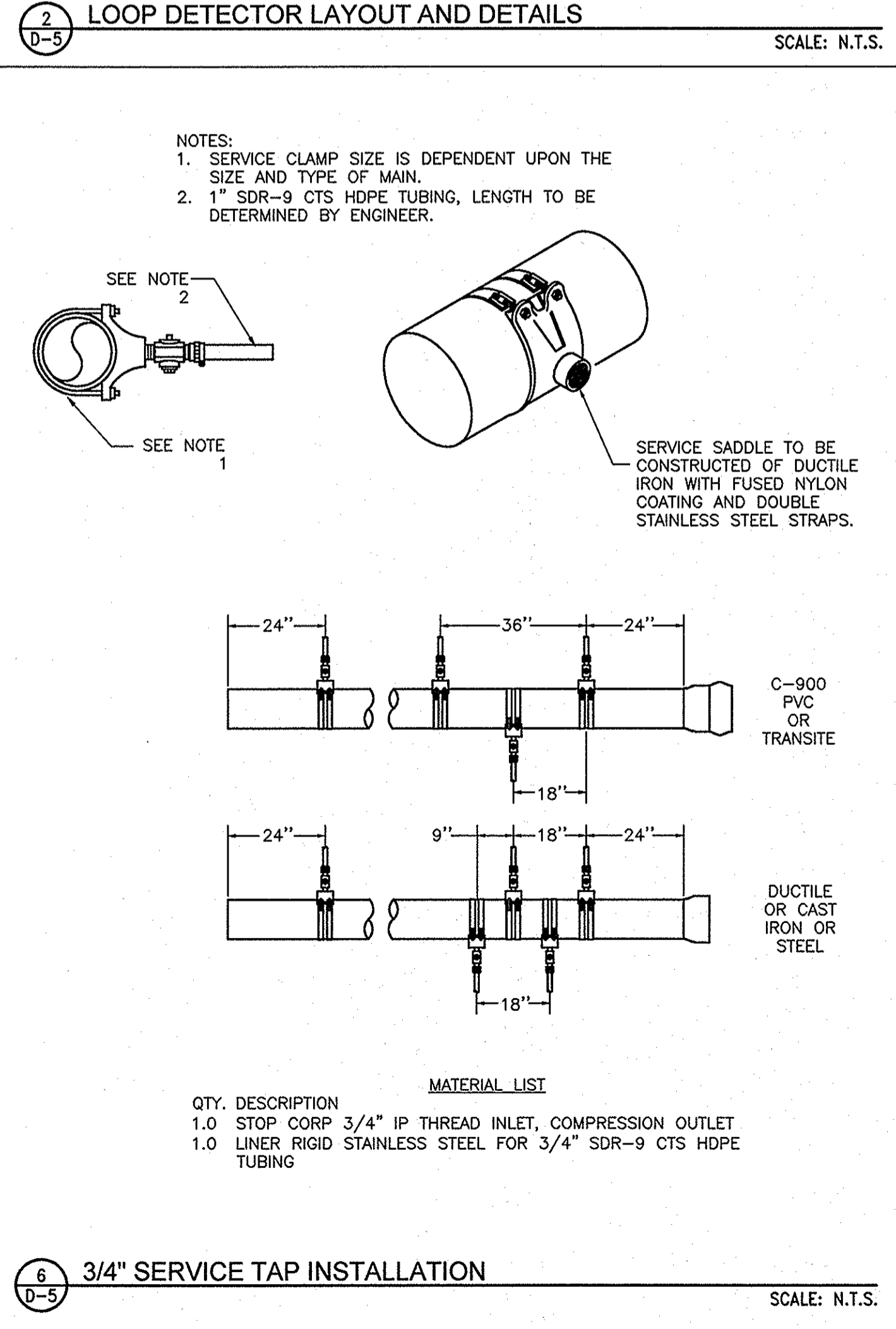
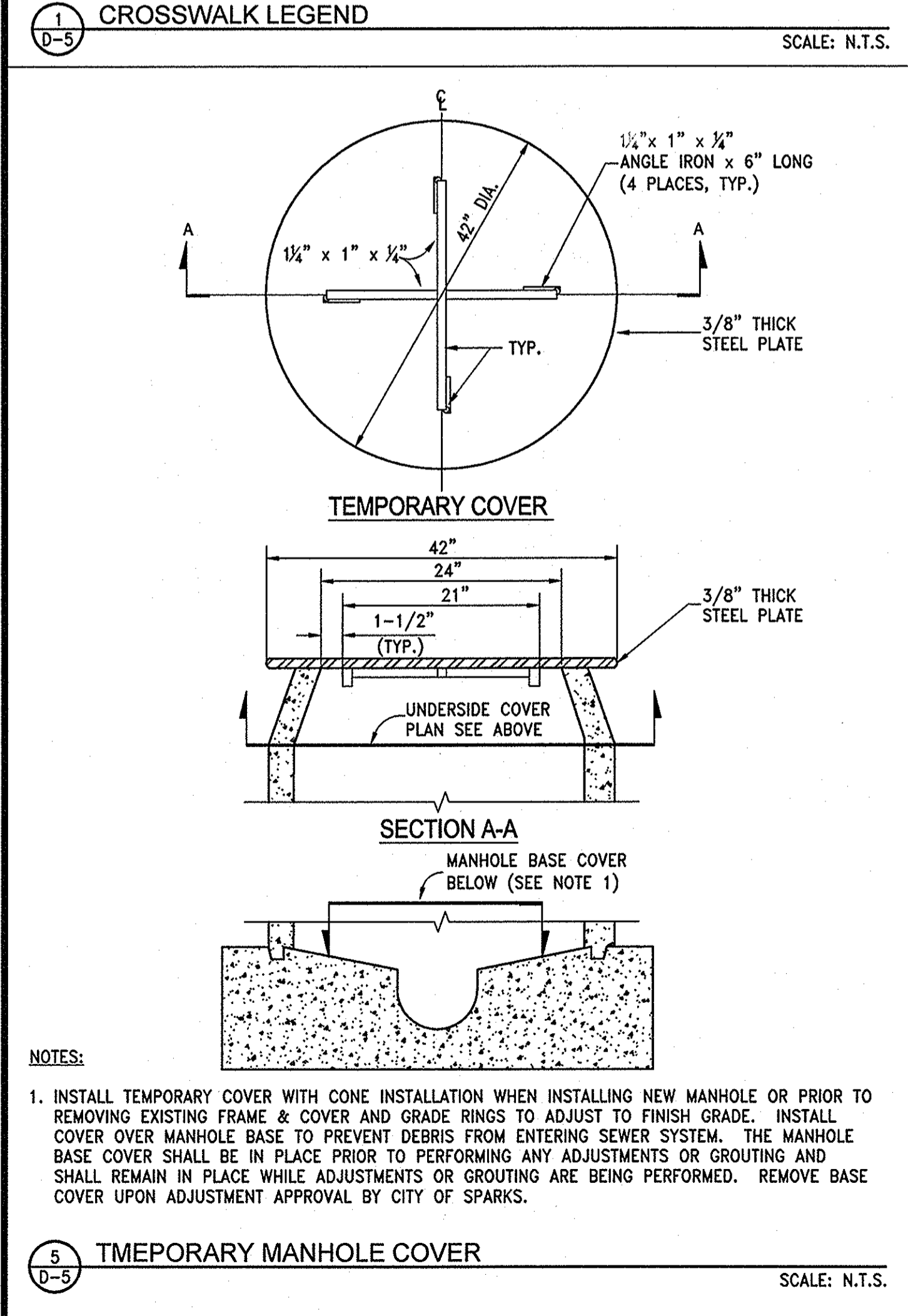
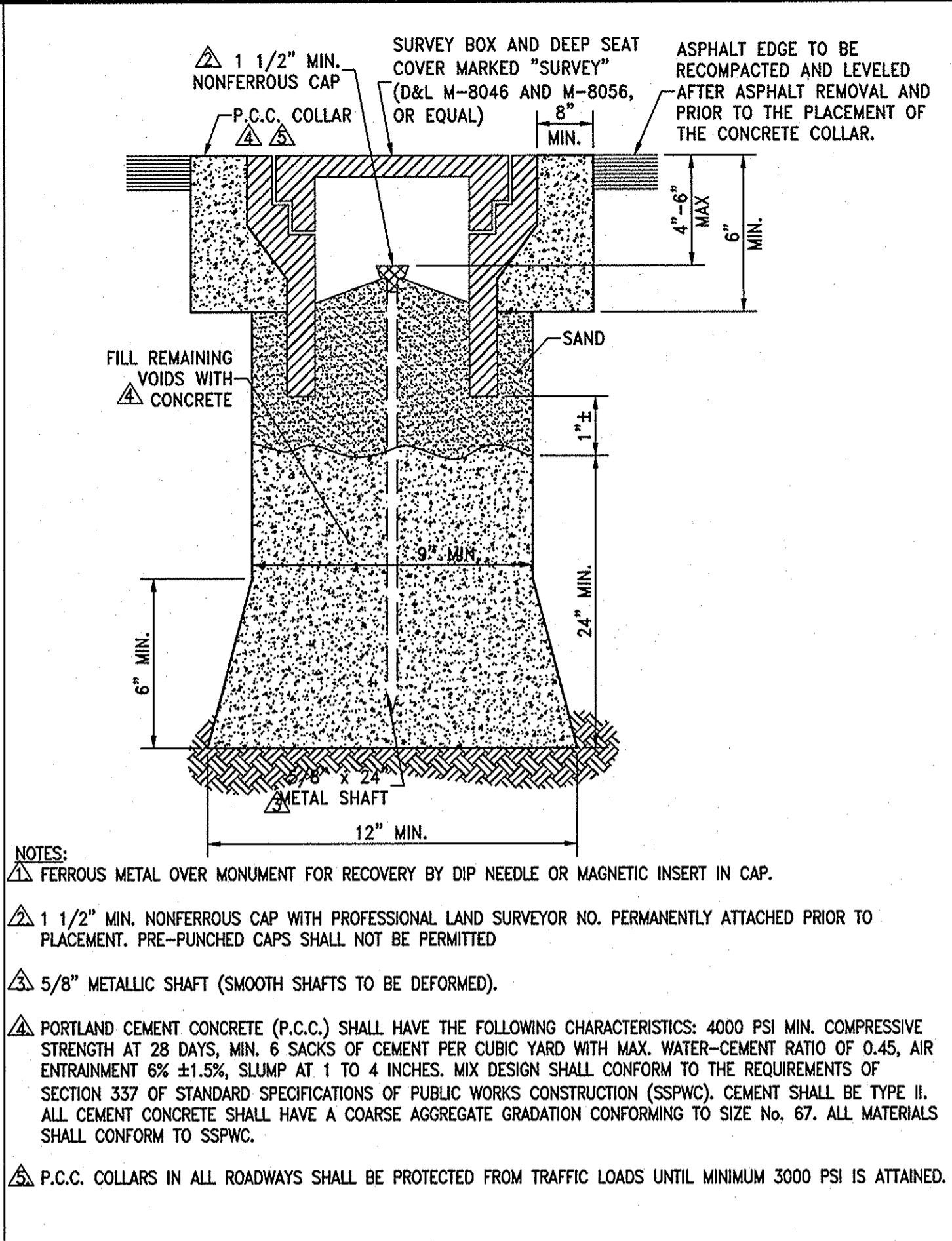
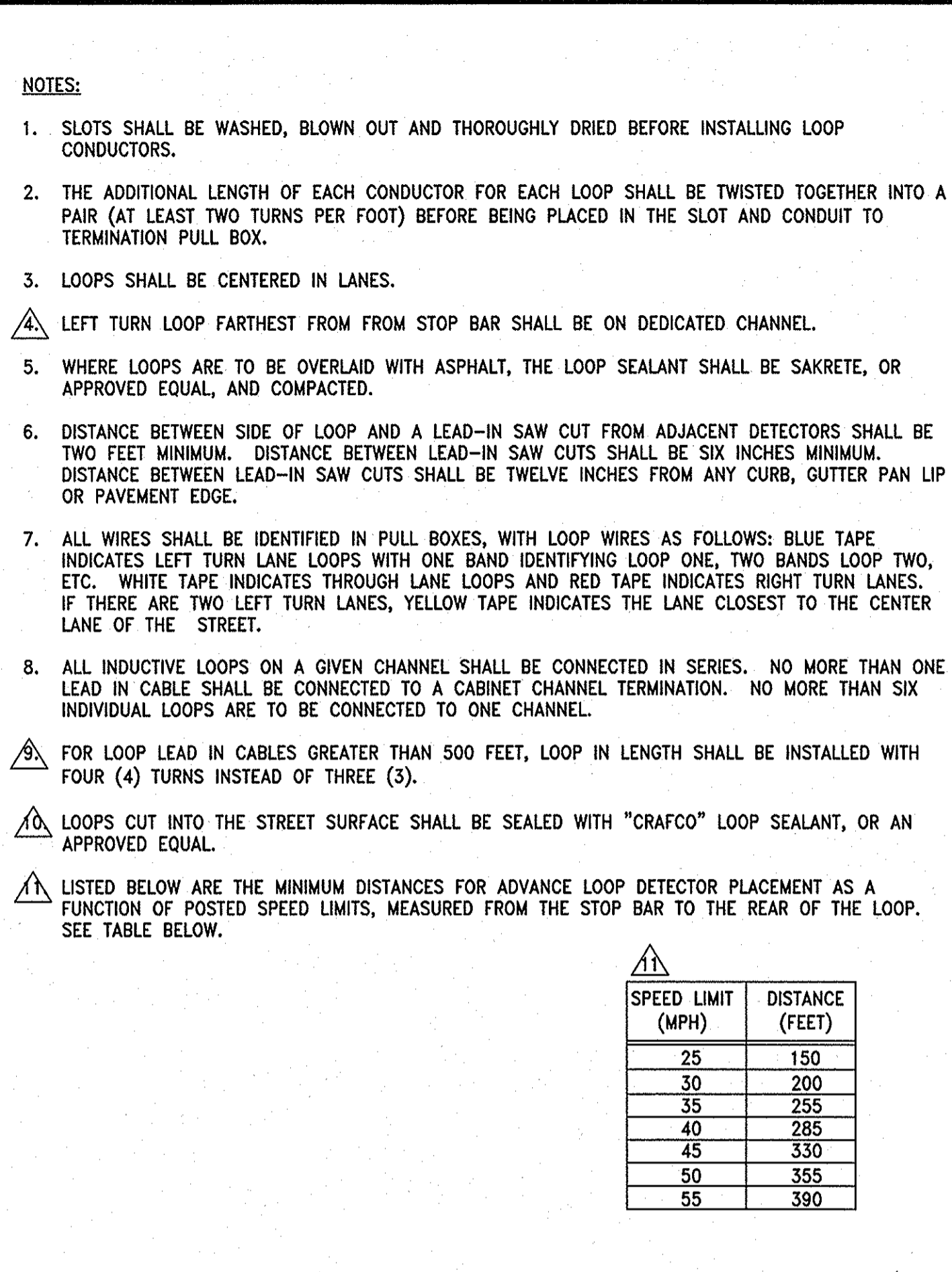
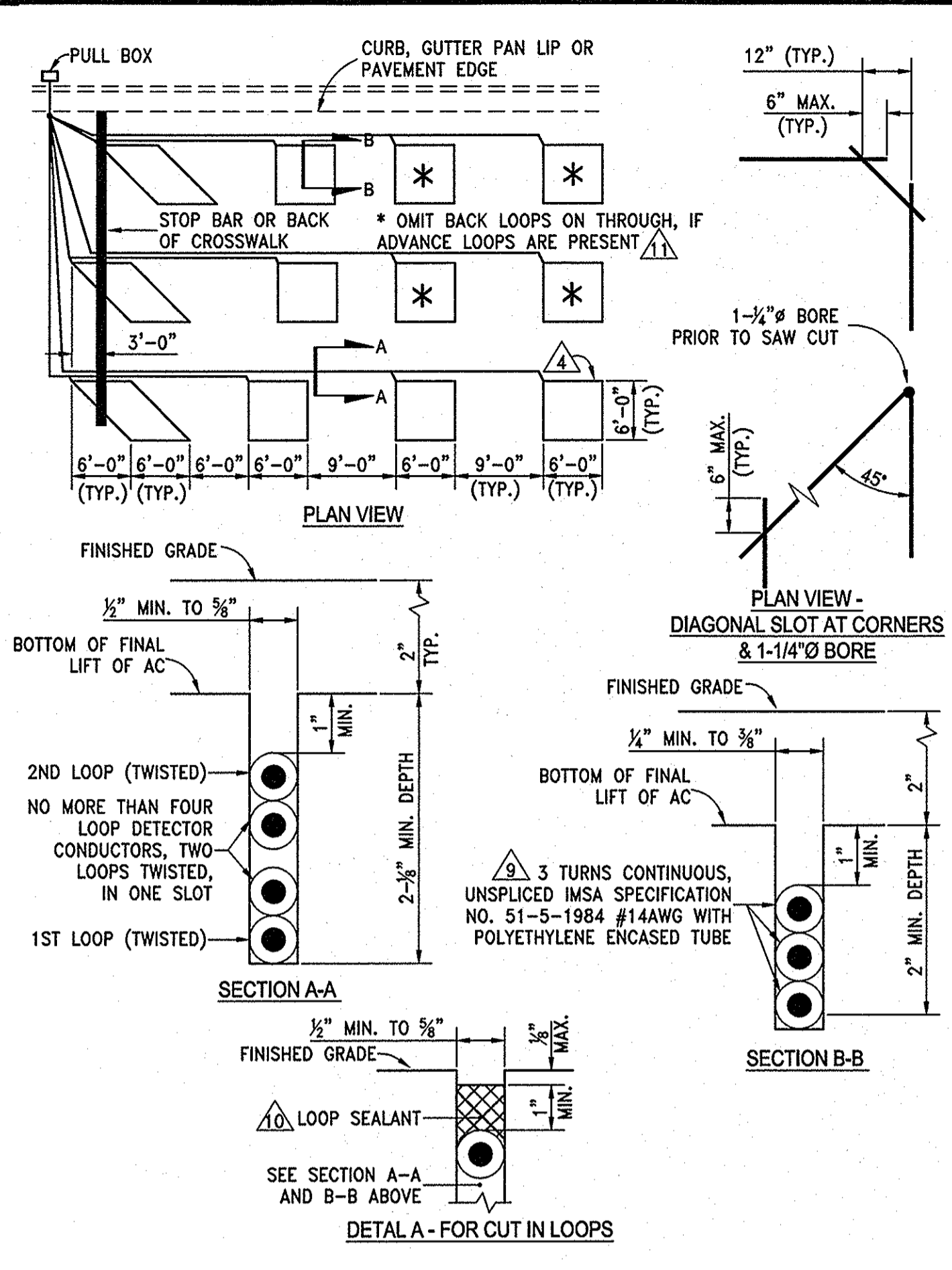
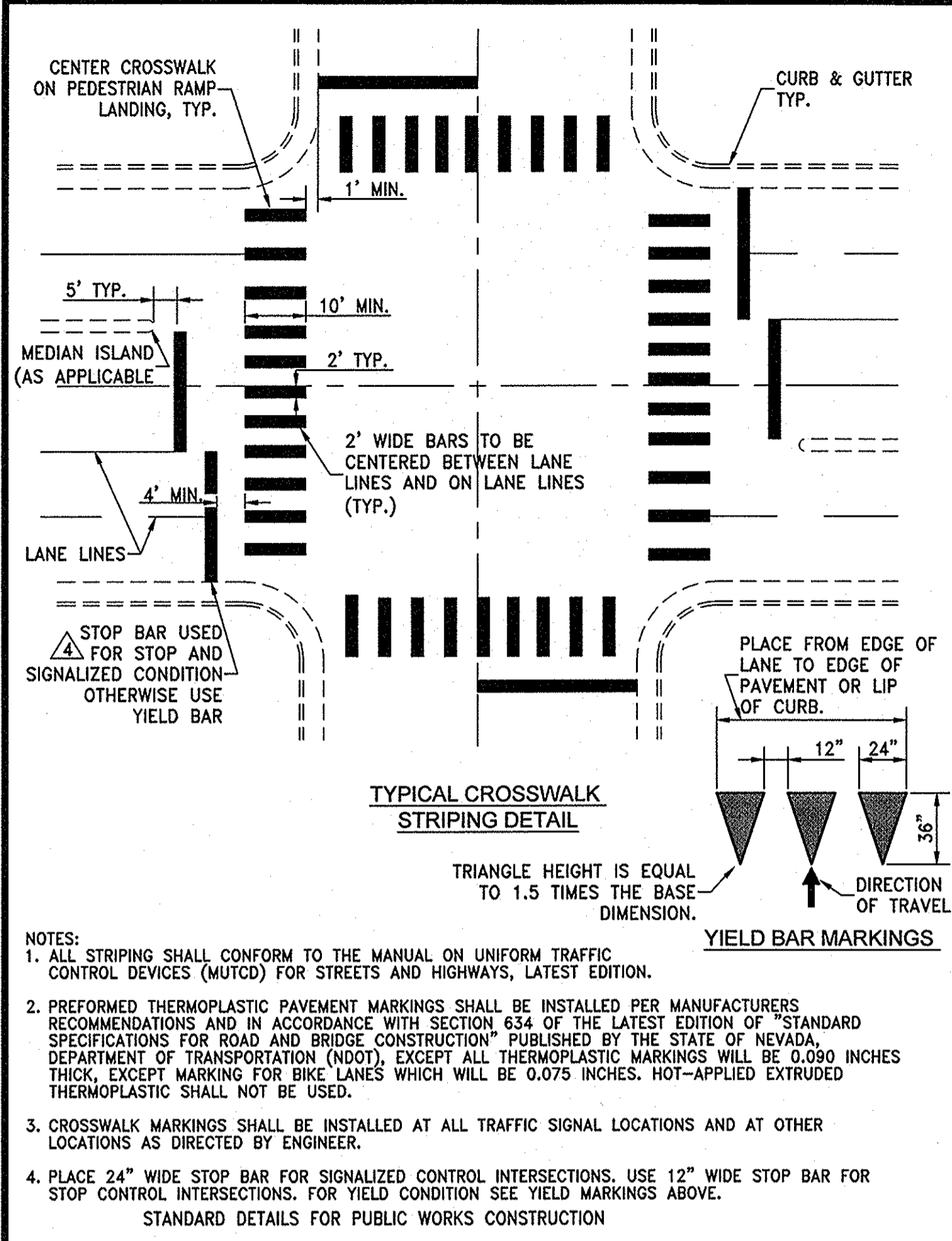
SPARKS SANITARY SEWER REHABILITATION
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ENGINEER
LANNIE J. JOHNSON
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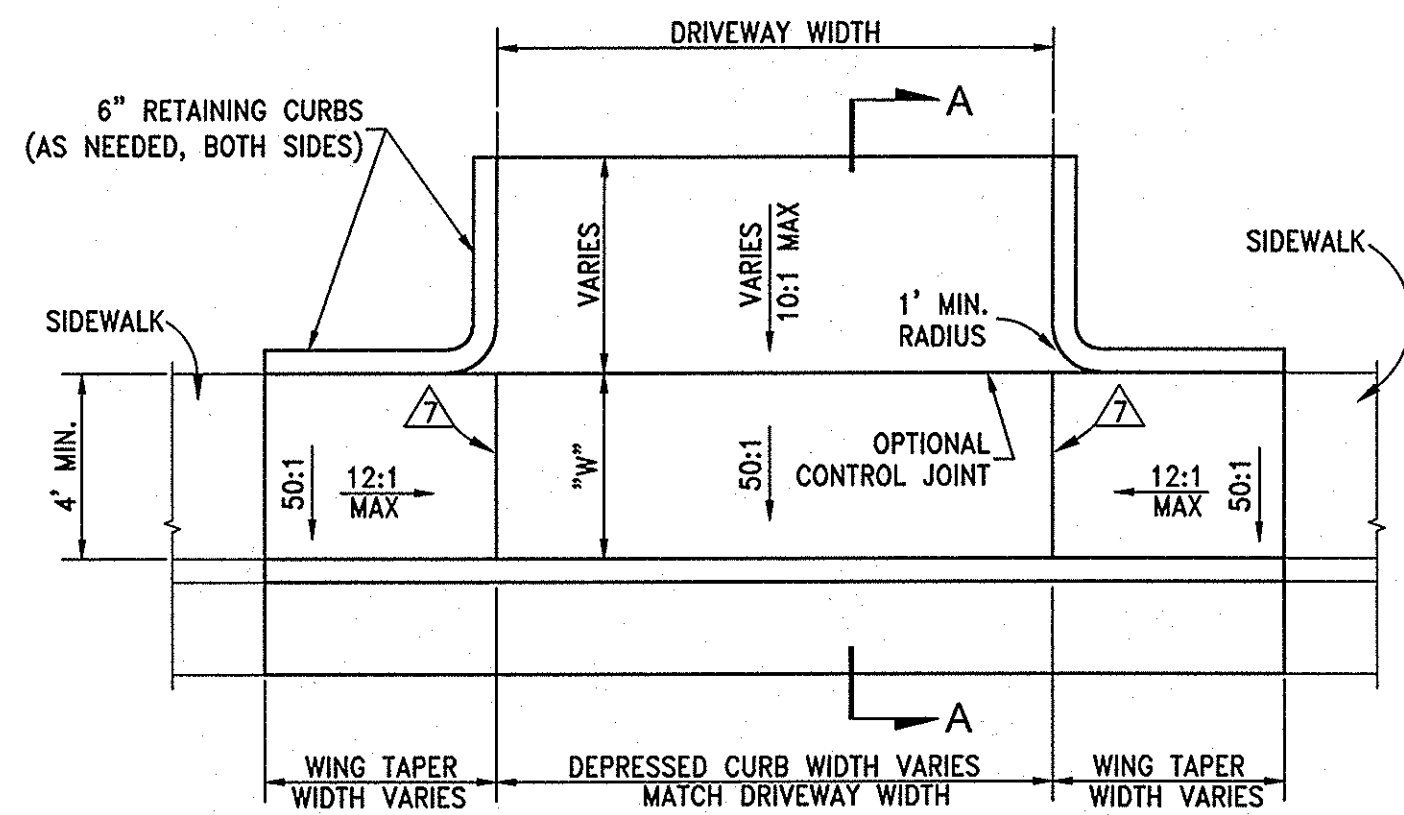
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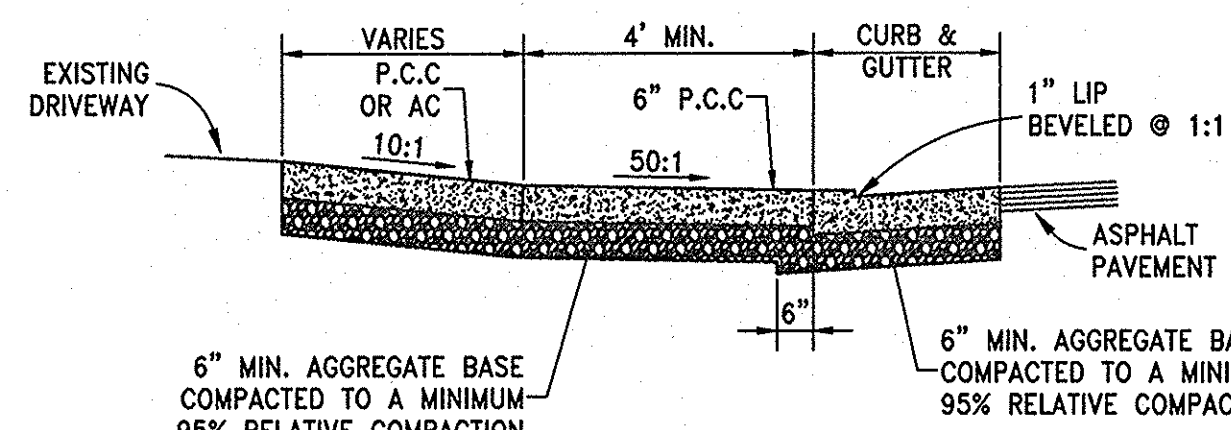
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PLAN



SECTION A-A

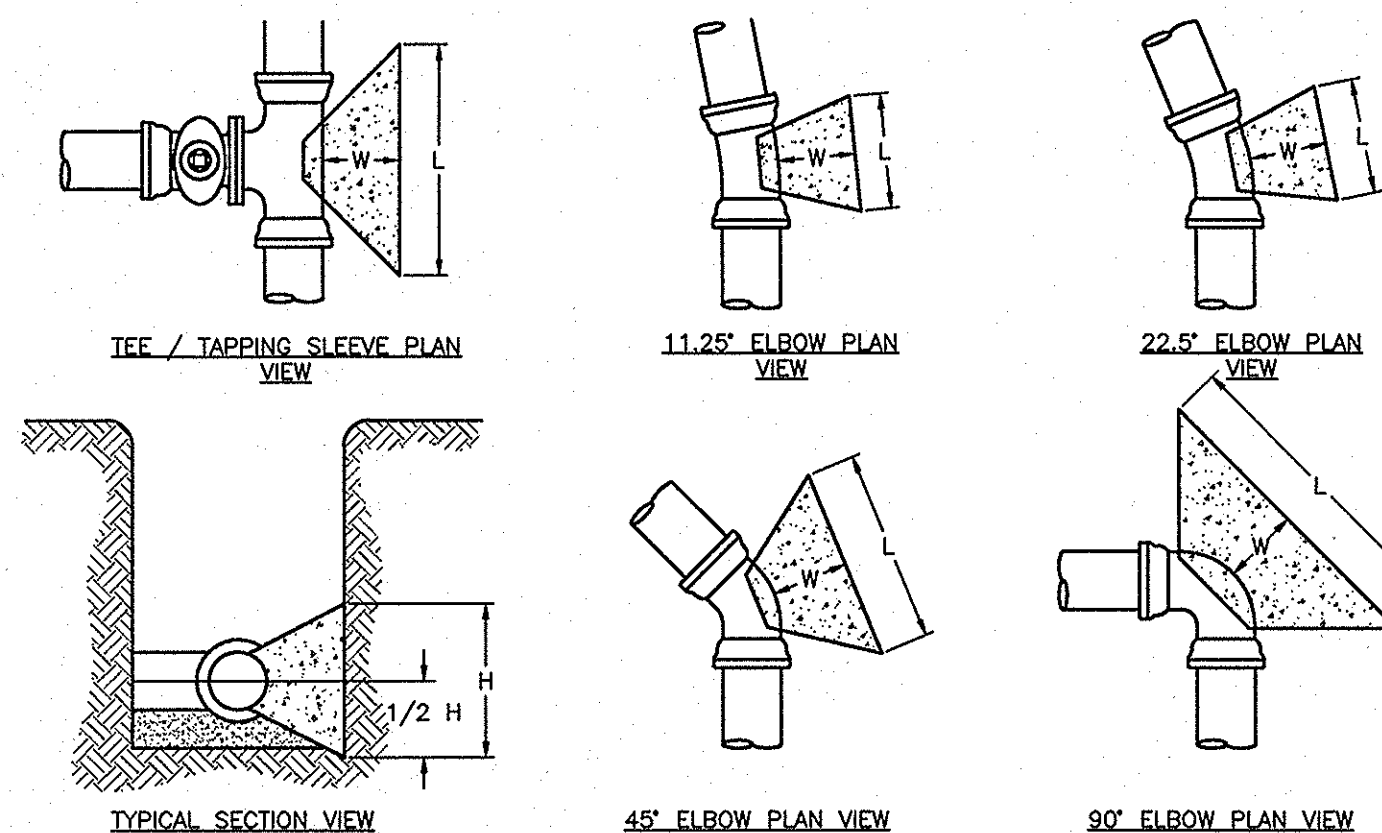
1 P.C.C. RESIDENTIAL AND COMMERCIAL DRIVEWAY APRON SCALE: N.T.S.

NOTES:

1. PORTLAND CEMENT CONCRETE (P.C.C.) SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4000 PSI MIN. COMPRESSIVE STRENGTH AT 28 DAYS, MIN. 6 SACKS OF CEMENT PER CUBIC YARD WITH MAX. WATER-CEMENT RATIO OF 0.45, AIR ENTRAINMENT 6% ±1.5%, SLUMP AT 1 TO 4 INCHES. MIX DESIGN SHALL CONFORM TO THE REQUIREMENTS OF SECTION 337 OF STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (SSPWC). CEMENT SHALL BE TYPE II. ALL CEMENT CONCRETE SHALL HAVE A COARSE AGGREGATE GRADATION CONFORMING TO SIZE No. 67.
2. AGGREGATE BASE MATERIAL UNDER DRIVEWAYS AND SIDEWALKS SHALL BE TYPE 2, CLASS B CRUSHED AGGREGATE BASE. ALL MATERIALS SHALL CONFORM TO SSPWC SECTION 200.
3. RESIDENTIAL DRIVEWAYS SHALL BE POURED SEPARATE FROM CURB AND GUTTER.
4. COMMERCIAL DRIVEWAYS SHALL BE POURED MONOLITHIC WITH CURB AND GUTTER. COMMERCIAL DRIVEWAYS TO HAVE #4 BARS AT 18" ON CENTER LONGITUDINAL & TRANSVERSE EXTENDING INTO GUTTER PAN AND DRIVEWAY WINGS. MINIMUM 2" CONCRETE COVER FOR ALL REINFORCING BARS.
5. IF JOINT EXISTS WITHIN 4 FEET OF DRIVEWAY, REMOVE SIDEWALK AND CURB AND GUTTER TO THAT JOINT.
6. ALL ADJACENT CONCRETE REMOVAL SHALL BE TO NEAT SAW CUT LINES AT RIGHT ANGLES. DOWEL INTO EXISTING ADJACENT DRIVEWAY APPROACH OR SIDEWALK WITH (2) No. 4 REINFORCEMENT BARS EQUALLY SPACED ACROSS WIDTH "W". DOWELS SHALL PENETRATE A MINIMUM OF 4" INTO EXISTING CONCRETE.

WEAKENED PLANE JOINTS SHALL BE CONSTRUCTED AT 5 FT INTERVALS AND IN ACCORDANCE WITH SECTION 312 OF THE SSPWC.

2 P.C.C. RESIDENTIAL AND COMMERCIAL DRIVEWAY APRON - NOTES SCALE: N.T.S.



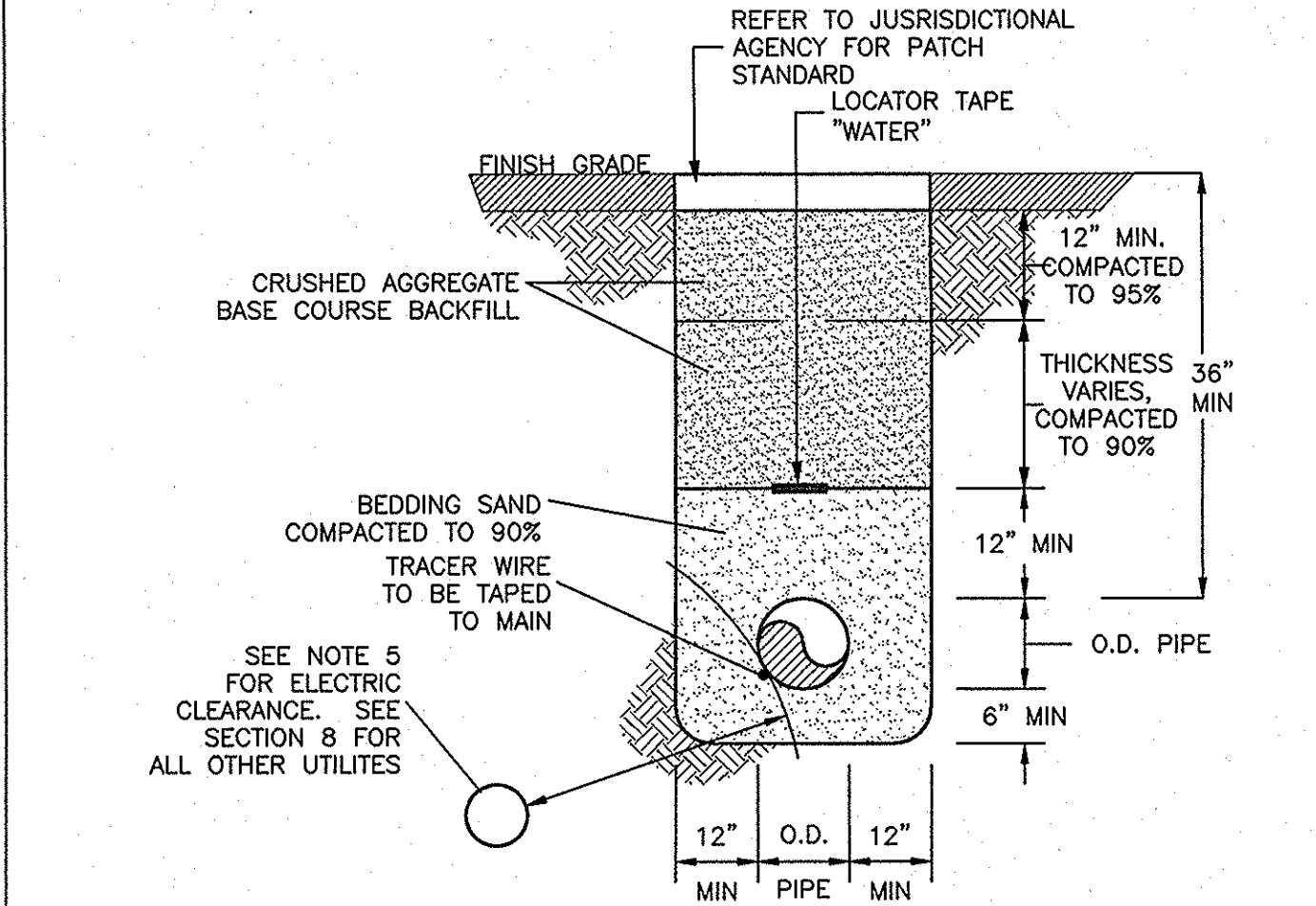
THRUST BLOCK DIMENSIONS

TEE, TAP, OR DEAD END	11.25° ELBOW			22.5° ELBOW			45° ELBOW			90° ELBOW					
	L (FEET)	H (FEET)	W MIN. (FEET)	L (FEET)	H (FEET)	W MIN. (FEET)	L (FEET)	H (FEET)	W MIN. (FEET)	L (FEET)	H (FEET)	W MIN. (FEET)			
4	1.5	1	1	1	1	1	1	1	1	1.5	1	1	2	1	1
6	2	2	1	1	1	1	1.5	1	1	2	1.5	1	2.5	2	1
8	3	2	1	1	1	1.5	1.5	1	1	2.5	2	1	4	2	1
10	3.5	2.5	1	1	1	2	2	1	1	3	2.5	1	5	2.5	1
12	4.5	3	1	1	1	2.5	2	1	1	4	2.5	1	6	3	1

THRUST BLOCK DESIGN CRITERIA:
 THRUST BLOCK SIZES HAVE BEEN CALCULATED USING THE METHOD AND EQUATIONS PUBLISHED IN *THRUST RESTRAINT DESIGN FOR DUCTILE IRON PIPE*, SIXTH EDITION 2006 BY THE DUCTILE IRON PIPE RESEARCH ASSOCIATION (DIPRA) UTILIZING THE FOLLOWING DESIGN PARAMETERS: BAG CONCRETE MIX IS NOT ACCEPTABLE.
 DESIGN PRESSURE = 150 PSI (SEE NOTE #4 BELOW), SOIL BEARING CAPACITY = 2,000 PSF (SEE NOTE #4 BELOW), SAFETY FACTOR = 1.5, AND NOMINAL PIPE DIAMETER

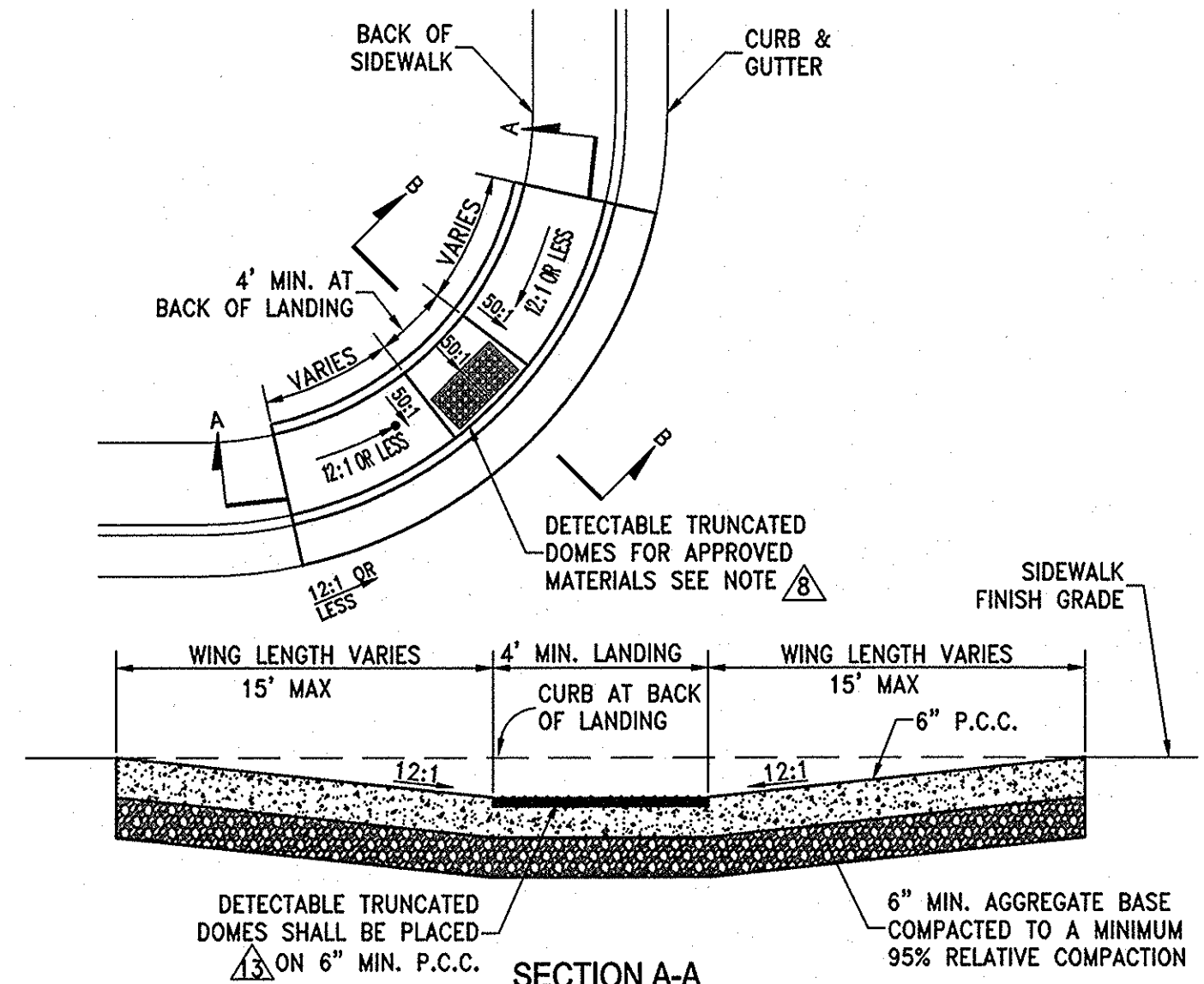
- THRUST BLOCK NOTES:
1. CONCRETE FOR THRUST BLOCKS SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3,000 PSI. REFERENCE SECTION 1.1.13 OF THE TRUCKEE MEADOWS WATER AUTHORITY ENGINEERING & CONSTRUCTION STANDARDS FOR ADDITIONAL REQUIREMENTS. BAG CONCRETE MIX IS NOT ACCEPTABLE.
 2. ALL FITTINGS SHALL BE WRAPPED WITH POLYETHYLENE WRAP PER AWWA C105. MASTIC (BRUSH-ON) SHALL BE APPLIED TO ALL BOLTS, ETC.
 3. THRUST BLOCKS SHALL BE POURED AGAINST UNDISTURBED SOIL. IN CASES WHERE THIS IS NOT PRACTICAL, BACKFILL AREA BEHIND THRUST BLOCK WILL BE POURED WITH TYPE 2, CLASS B AGGREGATE BASE (PER SECTION 200.01.03 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION - ORANGE BOOK) COMPACTED TO 95% MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT AS DETERMINED BY PROCEDURES SET FORTH IN ASTM D 1557, CUT-BACK COMPACTED AGGREGATE BASE TO EXPOSE A FIRM SURFACE, THEN POUR THRUST BLOCK.
 4. FOR SOIL BEARING CAPACITY LESS THAN 2,000 PSF AND/OR DESIGN PRESSURE IN EXCESS OF 150 PSI, INCREASE THRUST BLOCK BEARING AREAS ACCORDINGLY. REVISED THRUST BLOCK SCHEDULE FOR SPECIFIC CONDITIONS SHALL BE SUBMITTED BY THE DESIGN ENGINEER.

3 THRUST BLOCKS - TEES, TAPPING SLEEVES, DEAD ENDS 11.25, 22.5, 45 AND 90 DEGREE ELBOWS - 4" TO 12" SCALE: N.T.S.

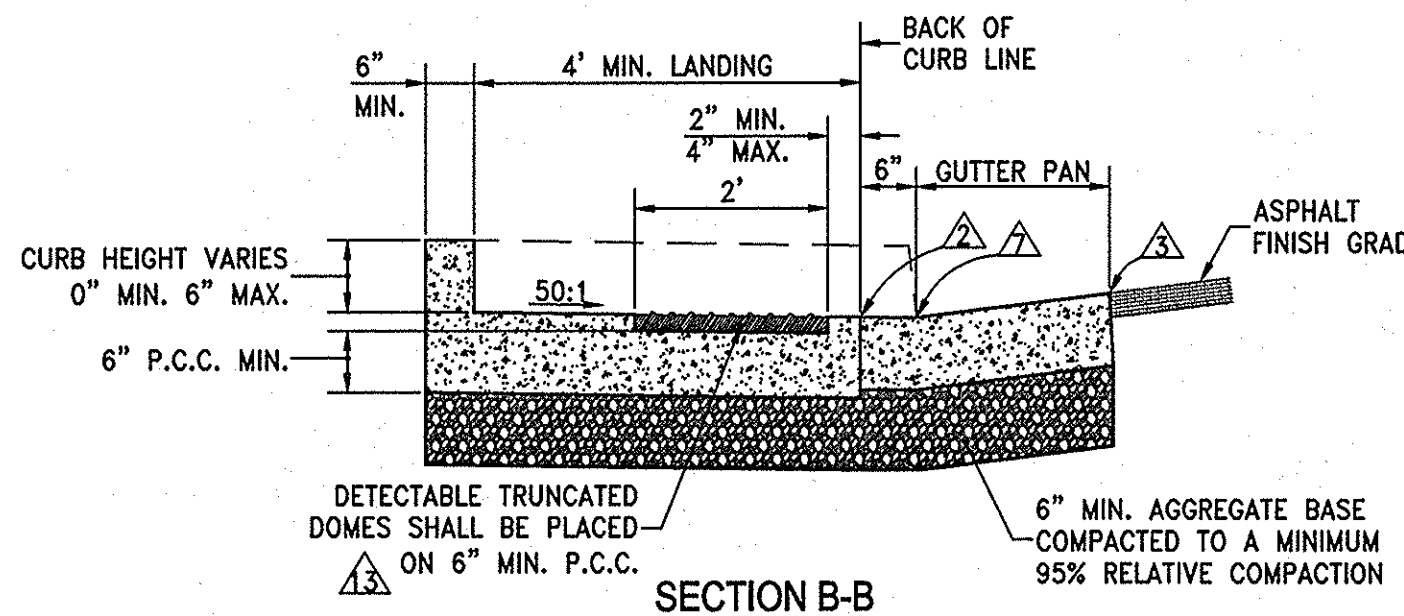


- NOTES:
1. ALL TRENCHES MUST CONFORM TO APPLICABLE TMWA, CITY, STATE, COUNTY, AND OSHA SPECIFICATIONS AND REQUIREMENTS. IN THE CASE OF CONFLICT, THE MORE RIGID SPECIFICATION OR STANDARD SHALL APPLY.
 2. BEDDING SAND SHALL BE COMPACTED TO 90% MAXIMUM DENSITY PER SECTION 5.05.03 AND SHALL BE A MINIMUM OF 12" ABOVE AND 6" BELOW THE MAIN. PER SECTION 5 OF TMWA STANDARDS.
 3. CRUSHED AGGREGATE BASE COURSE BACKFILL SHALL BE PLACED IN 12" MAXIMUM LOOSE LIFTS. THE TOP 12" SHALL BE COMPACTED TO 95% MAXIMUM DENSITY. THE AREA ABOVE THE BEDDING SAND & BELOW 12" FROM FINISH GRADE SHALL BE COMPACTED TO 90% MAXIMUM DENSITY. PER SECTION 5 OF TMWA STANDARDS.
 4. NON-METALLIC BLUE WARNING TAPE SHALL BE PLACED IN ALL TRENCHES AT LEAST 12" ABOVE THE WATER MAIN. METALLIC WARNING TAPE MUST BE UTILIZED WITH WATER FACILITIES WHEN THERE IS NO OTHER DETECTABLE MEANS AVAILABLE.
 5. ELECTRIC UTILITIES MUST BE LOCATED BELOW WATER & MAINTAIN 2" MINIMUM RADIAL CLEARANCE FROM TMWA WATER FACILITIES. IF 2" RADIAL CLEARANCE CAN NOT BE MET ELECTRIC CONDUIT MUST BE CONCRETE ENCASED AT LEAST 18" EACH SIDE OF WATER CROSSING. FIBER OPTIC AND/OR COMMUNICATION CONDUITS SHALL NOT BE PLACED IN THE SAME TRENCH AS WATER.
 6. ALL CHANGES MUST BE APPROVED BY THE TMWA INSPECTOR AND/OR THE TMWA ENGINEER.
 7. SEPARATION FOR PIPES IN A JOINT TRENCH SHALL BE A MINIMUM OF 12".

4 TRENCH DETAIL - WATER ONLY SCALE: N.T.S.



SECTION A-A

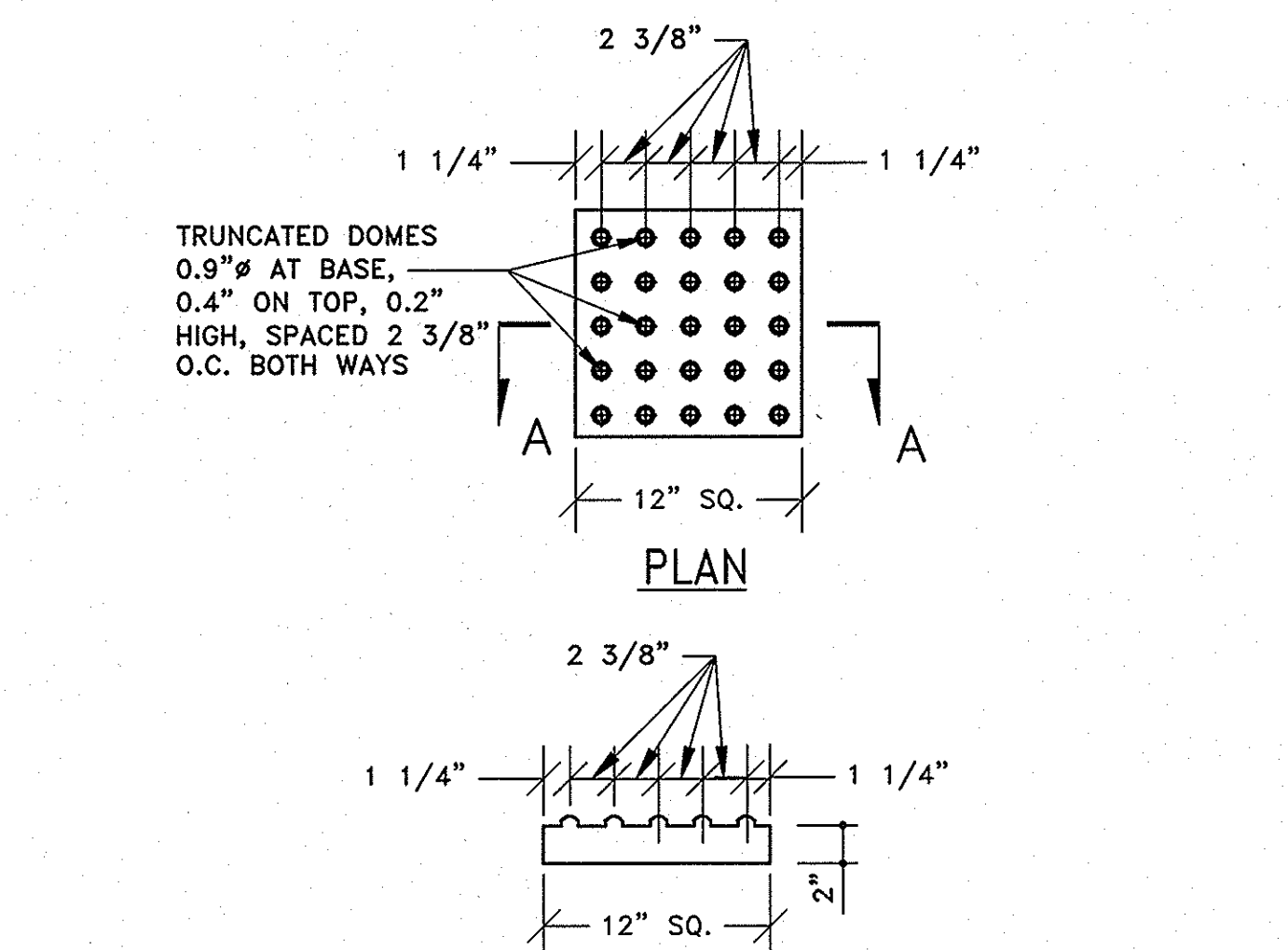


SECTION B-B

5 PEDESTRIAN RAMP SCALE: N.T.S.

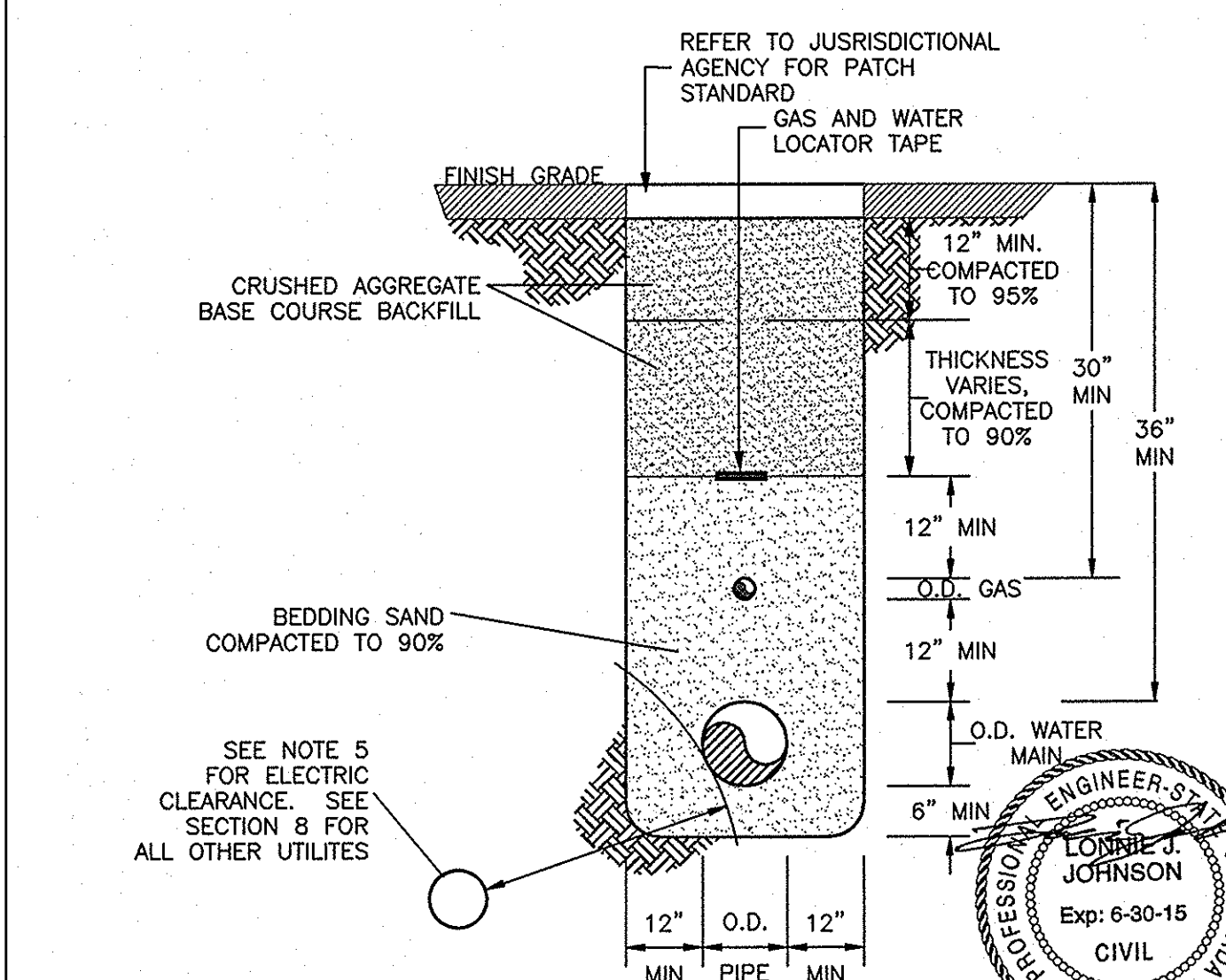
1. STORM DRAIN INLETS OR SIMILAR ACCESSES SHALL NOT BE LOCATED IN THE AREA AT THE BASE OF THE CURB RAMP OR LANDING AREA. IF OBSTRUCTIONS SUCH AS INLETS, UTILITY POLES, PULL BOXES, FIRE HYDRANTS, ETC. ARE ENCOUNTERED, THE LOCATION AND DIMENSIONS MAY BE ADJUSTED UPON APPROVAL OF THE ENGINEER.
- NO LIP 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.
- ROUGH BROOM TEXTURE ON CURB RAMPS AND WINGS.
- DETECTABLE WARNING SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS AND SHALL BE PLACED ON MIN. SIX (6") INCHES OF P.C.C.
- ALL SLOPE RATES ARE RELATIVE TO LEVEL AND SHALL COMPLY WITH THE PUBLIC RIGHT-OF-WAY ACCESSIBILITY GUIDELINES (PROWAG) STANDARDS, CURRENT VERSION.
- GUTTER SHALL MAINTAIN POSITIVE DRAINAGE TO PREVENT PONDING.
- DETECTABLE WARNING SHALL CONSIST OF PRECAST WETSET TILES WITH MIN. SIZE OF 2' X 2', COLOR DARK RED. APPROVED PRODUCTS INCLUDE: "CASTINACT", "TEKWAY DOME-TILES", "ARMOR CAST WET SET TILES", AND "ARCIS WET SET TILES". DETECTABLE WARNING SHALL BE CONSTRUCTED PER MANUFACTURER'S INSTALLATION GUIDELINES AND CONFORM TO ADAAG.
- CONCRETE REMOVAL SHALL BE TO NEAT SAW CUT LINES
- AGGREGATE BASE MATERIAL UNDER PEDESTRIAN RAMPS SHALL BE TYPE 2, CLASS B CRUSHED AGGREGATE BASE. MATERIALS SHALL CONFORM TO SSPWC SECTION 200.
- 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. MIX DESIGN SHALL CONFORM TO THE REQUIREMENTS OF SECTION 337 OF STANDARD SPECIFICATIONS OF PUBLIC WORKS CONSTRUCTION (SSPWC). CEMENT SHALL BE TYPE II. ALL CEMENT CONCRETE SHALL HAVE A COARSE AGGREGATE GRADATION CONFORMING TO SIZE No. 67.
- CONTRACTORS SHALL CORRECT ANY GRADE CONFLICT WITH EXISTING BOXES. THE ENGINEER SHALL MAKE THE FINAL DETERMINATION REGARDING THE DEGREE OF MODIFICATIONS REQUIRED BY THE CONTRACTOR FOR GRADE CONFLICTS BETWEEN EXISTING BOXES AND NEW PEDESTRIAN RAMPS.
- 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 ENGINEER, SUBJECT TO PROWAG 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 PRIOR TO INSTALLATION.
- CONTRACTOR SHALL CONSTRUCT ROUNDED CURBS WHERE THEY INTERSECT. RADIUS SHALL BE 1 FT MINIMUM MEASURED FROM FACE OF CURB. CURBS THAT INTERSECT AT A POINT SHALL NOT BE ALLOWED.

6 PEDESTRIAN RAMP - NOTES SCALE: N.T.S.



SECTION A-A

7 TRUNCATED DOMES SCALE: N.T.S.



- NOTES:
1. ALL TRENCHES MUST CONFORM TO APPLICABLE TMWA, CITY, STATE, COUNTY, AND OSHA SPECIFICATIONS AND REQUIREMENTS. IN THE CASE OF CONFLICT, THE MORE RIGID SPECIFICATION OR STANDARD SHALL APPLY.
 2. BEDDING SAND SHALL BE COMPACTED TO 90% MAXIMUM DENSITY PER SECTION 5.05.03 AND SHALL BE A MINIMUM OF 12" ABOVE AND 6" BELOW THE MAIN. PER SECTION 5 OF TMWA STANDARDS.
 3. CRUSHED AGGREGATE BASE COURSE BACKFILL SHALL BE PLACED IN 12" MAXIMUM LOOSE LIFTS. THE TOP 12" SHALL BE COMPACTED TO 95% MAXIMUM DENSITY. THE AREA ABOVE THE BEDDING SAND & BELOW 12" FROM FINISH GRADE SHALL BE COMPACTED TO 90% MAXIMUM DENSITY. PER SECTION 5 OF TMWA STANDARDS.
 4. NON-METALLIC WATER AND GAS WARNING TAPE SHALL BE PLACED IN ALL TRENCHES AT LEAST 12" ABOVE THE GAS.
 5. ELECTRIC UTILITIES MUST BE LOCATED BELOW WATER & MAINTAIN 2" MINIMUM RADIAL CLEARANCE FROM TMWA WATER FACILITIES. IF 2" RADIAL CLEARANCE CAN NOT BE MET ELECTRIC CONDUIT MUST BE CONCRETE ENCASED AT LEAST 18" EACH SIDE OF WATER CROSSING. FIBER OPTIC AND/OR COMMUNICATION CONDUITS SHALL NOT BE PLACED IN THE SAME TRENCH AS WATER.
 6. ALL CHANGES MUST BE APPROVED BY THE TMWA INSPECTOR AND/OR THE TMWA ENGINEER.
 7. SEPARATION FOR PIPES IN A JOINT TRENCH SHALL BE A MINIMUM OF 12".

8 TRENCH DETAIL - GAS AND WATER SCALE: N.T.S.

City of Sparks Community Services

PLANNERS • ENGINEERS • LANDSCAPE ARCHITECTS
 SURVEYORS • CONSTRUCTION OBSERVATION

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 (775) 856-1150 FAX: (775) 856-1160

SPARKS SANITARY SEWER REHABILITATION
 4TH STREET
 DETAILS

SPARKS, NV
 WASHOE COUNTY
 NEVADA

DESIGNED BY LJ
 DRAWN BY JDL

NO. 19440
 CIVIL
 Exp: 6-30-15

3-27-14

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REVISIONS

DATE

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BY