#### GENERAL NOTES

- 1. LOCATIONS OF UNDERGROUND FACILITIES SHOWN ON THE PLANS ARE APPROXIMATE, AND WERE NOT DETERMINED BY FIELD INVESTIGATION. EXISTING UTILITIES ARE SHOWN BASED UPON AVAILABLE RECORD DRAWINGS. ALL UNDERGROUND UTILITIES MAY NOT BE SHOWN. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL EXISTING UTILITY STRUCTURES, WHETHER SHOWN OR NOT, AND TO NOTIFY ALL UTILITY COMPANIES TO VERIFY IN THE FIELD THE LOCATION OF THEIR INSTALLATIONS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL PROTECT ALL UTILITY STRUCTURES FROM DAMAGE. THE EXPENSE OF REPAIR OR REPLACEMENT SHALL BE BORNE SOLELY BY THE CONTRACTOR. THE CONTRACTOR SHALL REQUEST FIELD MARKING OF EXISTING UTILITIES AT LEAST 48 HOURS IN ADVANCE OF BEGINNING CONSTRUCTION BY CALLING UNDERGROUND SERVICE ALERT AT 811. IT WILL BE THE CONTRACTORS RESPONSIBILITY TO MAINTAIN AND PROTECT ALL UTILITIES DURING CONSTRUCTION.
- 2. TOPOGRAPHIC INFORMATION CONTAINED WITHIN THESE CONSTRUCTION DOCUMENTS WAS PREPARED BY CONVENTIONAL FIELD TOPOGRAPHIC SURVEYS.
  - THE BASIS OF BEARING IS GRID NORTH, NAD 83 (2011) NEVADA STATE PLANE COORDINATE SYSTEM, WEST ZONE, UTILIZING A COMBINED GRID TO GROUND FACTOR OF 1.000197939
- THE BASIS OF ELEVATION IS NAVD '88, BASED UPON CITY OF SPARKS BENCH MARK No. 59 ELEVATION 4422.01'
- 3. WORK IN PUBLIC STREETS, ONCE BEGUN, SHALL BE EXECUTED 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, UNLESS OTHERWISE NOTED.
- 4. THE CONTRACTOR SHALL COOPERATE WITH OTHER CONTRACTORS OR UTILITY COMPANY FORCES WORKING ON THE SITE, AND WITH BUSINESS OWNERS ACTIVE OPERATIONS.
- 5. ALL SURFACES SHALL BE RESTORED TO THEIR ORIGINAL OR BETTER CONDITION AT THE COMPLETION OF CONSTRUCTION. EXISTING CONCRETE SUCH AS SIDEWALK, CURB, AND GUTTER SHALL BE REMOVED TO LIMITS MARKED IN FIELD BY THE ENGINEER. ALL REMOVAL MATERIALS SHALL BE DISPOSED OF OFF SITE AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL EXERCISE CAUTION WHEN WORKING ON PRIVATE PROPERTY.
- 6. AT LOCATIONS WHERE NEW UNDERGROUND FACILITIES CROSS EXISTING FACILITIES THE CONTRACTOR SHALL EXPOSE THE EXISTING FACILITY AND VERIFY THAT SUFFICIENT HORIZONTAL AND VERTICAL CLEARANCE EXISTS FOR THE NEW FACILITY TO BE CONSTRUCTED IN SUBSTANTIAL COMPLIANCE WITH THE PLANS. AT LOCATIONS WHERE NEW UNDERGROUND FACILITIES ARE TO BE CONNECTED TO EXISTING FACILITIES THE CONTRACTOR SHALL EXPOSE THE EXISTING FACILITY AND VERIFY THAT THE CONNECTION CAN BE MADE AS SHOWN ON THE PLANS. THIS VERIFICATION SHALL BE PERFORMED PRIOR TO ANY CONSTRUCTION. ANY CONFLICTS SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION AS SOON AS THEY ARE DISCOVERED.
- 7. ALL DIMENSIONS TO CURBS OR CURB AND GUTTERS ARE TO THE FRONT FACE OF CURB UNLESS NOTED OTHERWISE ON THE DRAWINGS.
- 8. EXISTING DRAINAGE FACILITIES, OR INTERIM ENGINEER APPROVED ALTERNATIVES, SHALL BE KEPT IN SERVICE AT ALL TIMES DURING CONSTRUCTION. CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF SECTION 1.03 a) STORM WATER POLLUTION PREVENTION PLAN COMPLIANCE, PHASE II AND b) STORM WATER POLLUTION PREVENTION PLAN (SWPPP) OF THE SUPPLEMENTAL GENERAL PROVISIONS OF THE SOLICITATION DOCUMENTS FOR SPARKS ALLEY WAY IMPROVEMENTS AND SANITARY SEWER REPLACEMENT.
- 9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING ROADS, BUILDINGS OR OTHER STRUCTURES RESULTING FROM HIS CONSTRUCTION ACTIVITIES. REPAIRS SHALL BE MADE TO THE SATISFACTION OF THE CITY OF SPARKS, THE PROPERTY OWNERS, AND THE ENGINEER AT NO ADDITIONAL COST.
- 10. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF DISCREPANCIES BETWEEN THE INFORMATION SHOWN ON THESE DRAWINGS AND THE CONDITIONS EXISTING IN THE FIELD. THE CONTRACTOR SHALL COMPARE ALL DRAWINGS AND VERIFY THE FIGURES BEFORE STARTING THE WORK AND WILL BE RESPONSIBLE FOR ANY ERRORS WHICH MIGHT HAVE BEEN AVOIDED THEREBY. IF THE CONTRACTOR FAILS TO NOTIFY THE OWNER OR THEIR REPRESENTATIVE IN A TIMELY MANNER OF ANY APPARENT ERROR OR OMISSION ON THE PLANS OR SPECIFICATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECTING WORK INCORRECTLY DONE AT THE CONTRACTOR'S EXPENSE.
- 11. THE USE OF POTABLE WATER FROM THE PUBLIC WATER SYSTEM FOR CONSTRUCTION PURPOSES IS PROHIBITED. CONSTRUCTION WATER USED FOR COMPACTION AND DUST CONTROL SHALL BE OBTAINED FROM THE RENO—SPARKS SEWAGE TREATMENT PLANT AT 8500 CLEAN WATER WAY, RENO NEVADA, TMWA'S TRUCK FILL STATIONS, OR ANOTHER APPROVED SOURCE.
- 12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT ALL MANHOLE RIMS AND ANY EXISTING UTILITY COVERS WITHIN THE CONSTRUCTION LIMITS ARE SET FLUSH WITH THE NEW FINISH GRADE.
- 13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING STAGING AREA LOCATIONS. CONTRACTOR SHALL OBTAIN WRITTEN APPROVAL PRIOR TO USING A STAGING AREA. THE CONTRACTOR SHALL OBTAIN ANY PERMITS FROM THE CITY OF SPARKS THAT ARE REQUIRED FOR STOCKPILING/PROCESSING MATERIALS.
- 14. PAYMENT FOR WORK SHOWN ON THESE PLANS EITHER SPECIFIED OR INFERRED, BUT NOT INCLUDED IN THE BID PROPOSAL, SHALL BE CONSIDERED AS INCLUDED IN THE PRICE PAID FOR OTHER ITEMS OF WORK.
- 15. DURING THE ENTIRE DURATION OF THIS CONSTRUCTION CONTRACT, THE CONTRACTOR SHALL IMPLEMENT STRINGENT DUST CONTROL MEASURES IN ACCORDANCE WITH THE TERMS OF THE APPROVED DUST CONTROL PERMIT AND WASHOE COUNTY HEALTH DEPARTMENT RULES AND REGULATIONS. THE CONTRACTOR IS REQUIRED TO SUPPRESS DUST AT ALL TIMES, 24 HOURS A DAY, SEVEN (7) DAYS A WEEK, REGARDLESS OF WHEN CONSTRUCTION ACTIVITIES ARE OCCURRING.
- 16. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRS TO EXISTING LANDSCAPING DAMAGED BY OR THROUGH CONSTRUCTION ACTIVITIES. REPAIRS SHALL BE MADE TO THE SATISFACTION OF THE ENGINEER AND OWNER. THERE WILL BE NO DIRECT PAYMENT FOR THIS WORK.
- 17. CITY OF SPARKS STANDARD DETAILS SHALL APPLY EXCEPT WHERE OTHERWISE NOTED ON THE PLANS.
- 18. 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 DEPARTMENT OF TRANSPORTATION STANDARD PLANS FOR ROAD AND BRIDGE CONSTRUCTION" CURRENT EDITION AND TO THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" CURRENT EDITION AND BE APPROVED BY THE CITY OF SPARKS.
- 19. 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.

## LEGEND ----SS----- SANITARY SEWER ----(S)--SS- SANITARY SEWER MANHOLE DROP INLET Q UTILITY POLE UTILITY POLE ANCHOR WATER LINE WATER METER WATER VALVE FIRE HYDRANT ——G—— GAS LINE GAS VALVE EFFLUENT WATER LINE —EFF— OVERHEAD POWER UNDERGROUND COMMUNICATIONS TRAFFIC SIGNAL POLE PULL BOX STORM DRAIN STORM DRAIN MANHOLE (EXISTING) STORM DRAIN MANHOLE (PROPOSED) STORM DRAIN FLARED END SECTION EX. CATCH BASIN CURB & GUTTER CONTROL POINT BENCH MARK TELEPHONE MANHOLE TELEPHONE LINE ELECTRIC FACILITIES (MANHOLE) UTILITY POLE W/ LIGHT LIGHT POLE OOOO GUARDRAIL FENCE BOLLARD — — PROPERTY LINE — — CENTERLINE RIGHT OF WAY GRADE BREAK — · · · — FLOWLINE NOTE: ALL SYMBOLS OR ABBREVIATIONS MAY NOT BE USED ON PLANS

#### ALGEBRAIC DIFFERENCE ANGLE POINT ASPHALT PAVEMENT PATH AIR RELEASE VALVE BEGINNING OF CURVE BOTTOM OF FOOTING BACK FACE OF CURB BEGINNING OF VERTICAL CURVE STATION BACK OF SIDEWALK CATCH BASIN CORRUGATED METAL PIPE CONCRETE CONC. CONST. CONSTRUCT DROP INLET DUCTILE IRON PIPE DRIVEWAY END OF CURVE EXISTING GROUND D.I.P. LEVATION EDGE OF PAVEMENT END OF VERTICAL CURVE ELEVATION END OF VERTICAL CURVE STATION EXISTING EXISTING FINISH FLOOR FRONT FACE OF CURB FINISH GRADE FIRE HYDRANT FLOWLINE LANGED TŪSH VALVE GRADE BREAK HORIZONTAL HEAD WALL INVERT ELEVATION RATE OF VERTICAL CURVATURE LINEAL FEET LOW POINT MAXIMUM DRY DENSITY MIN. MINIMUM MECHANICAL JOINT MID POINT OF CURVE NO DIRECT PAYMENT POINT OF CURVATURE MPOC NDP PORTLAND CEMENT CONCRETE POINT OF COMPOUND CURVATURE POINT OF INTERSECTION P.C.C PCC POINT ON CURVE POINT ON TANGENT PEDESTRIAN PUSH BUTTON POINT OF REVERSE CURVATURE POINT OF TANGENCY PVC POLYVINYL CHLORIDE POINT OF VERTICAL INTERSECTION REINFORCED CONCRETE PIPE REFERENCE RETURN RADIUS POINT RIGHT RIGHT OF WAY SLOPE STORM DRAIN STORM DRAIN MANHOLE SANITARY SEWER MANHOLE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION SANITARY SEWER STA. SUP SHARED USE PATH SW SIDEWALK TOP OF CURB TOP OF DEPRESSED CURB TOP OF PAVEMENT ΪΫ́Р. TYPICAL VERT. VERTICAL VERTICAL CURVE VALLEY GUTTER VERTICAL POINT OF INTERSECTION WALK

**ABBREVIATIONS** 

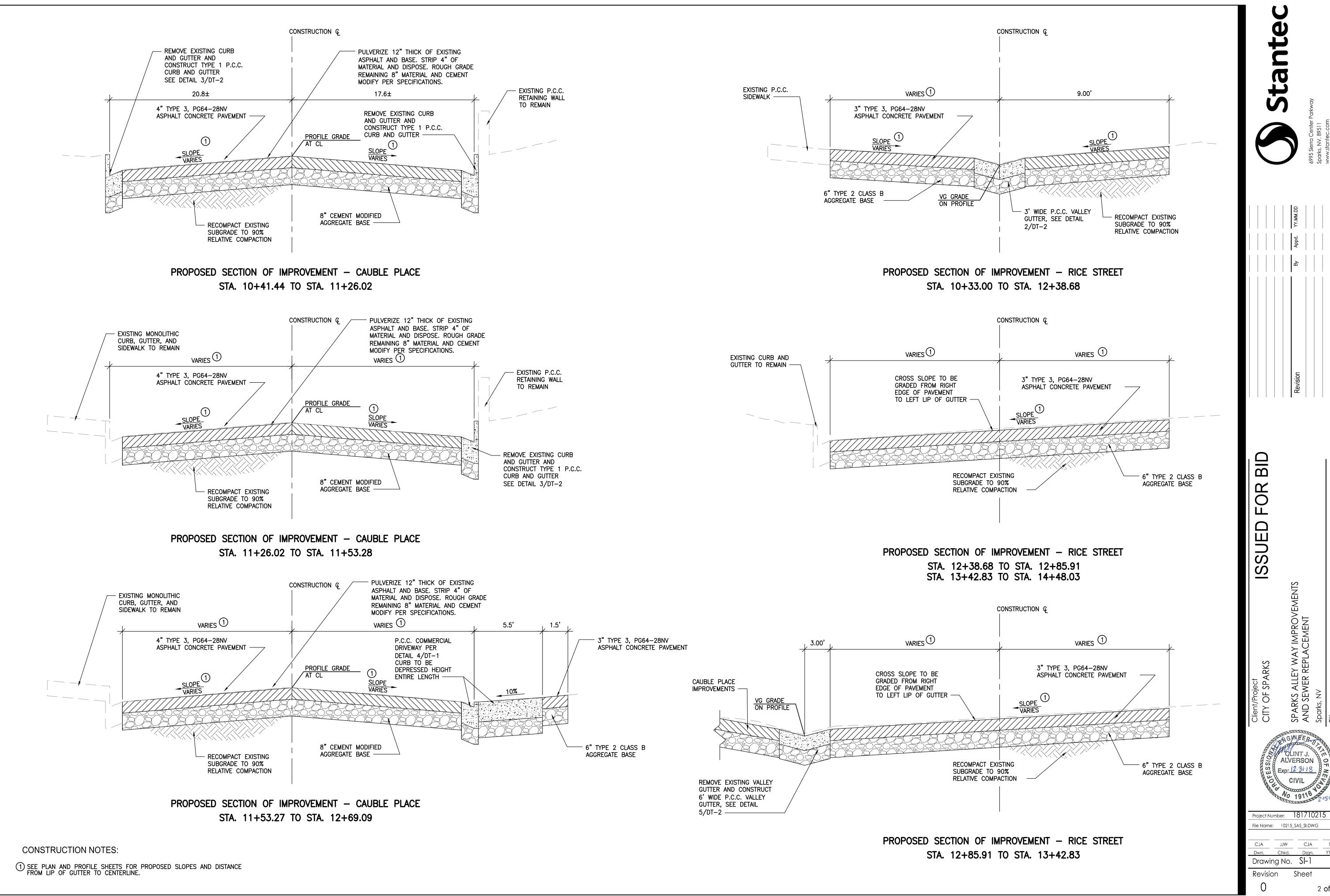
## INDEX OF SHEETS

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| 3 OF 16   | SI-2     | SECTIONS OF IMPROVEMENT ALLEY "A", 18TH ST, AND 19TH ST  |
| 4 OF 16   | SP-1     | OVERALL SITE PLAN  |
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| 16 OF 16  | DT-5     | DETAILS  |

1 of 16

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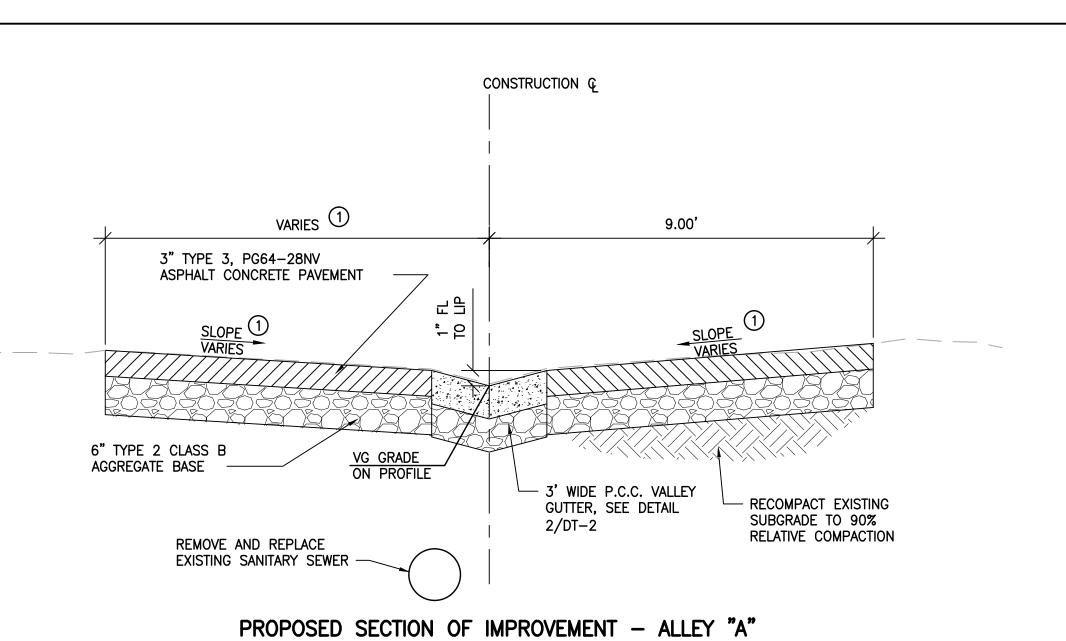
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SECTIONS OF IMPROVEMENT CAUBLE PLACE AND RICE STREET

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2 **of** 16



STA. 10+24.37 TO STA. 14+41.71

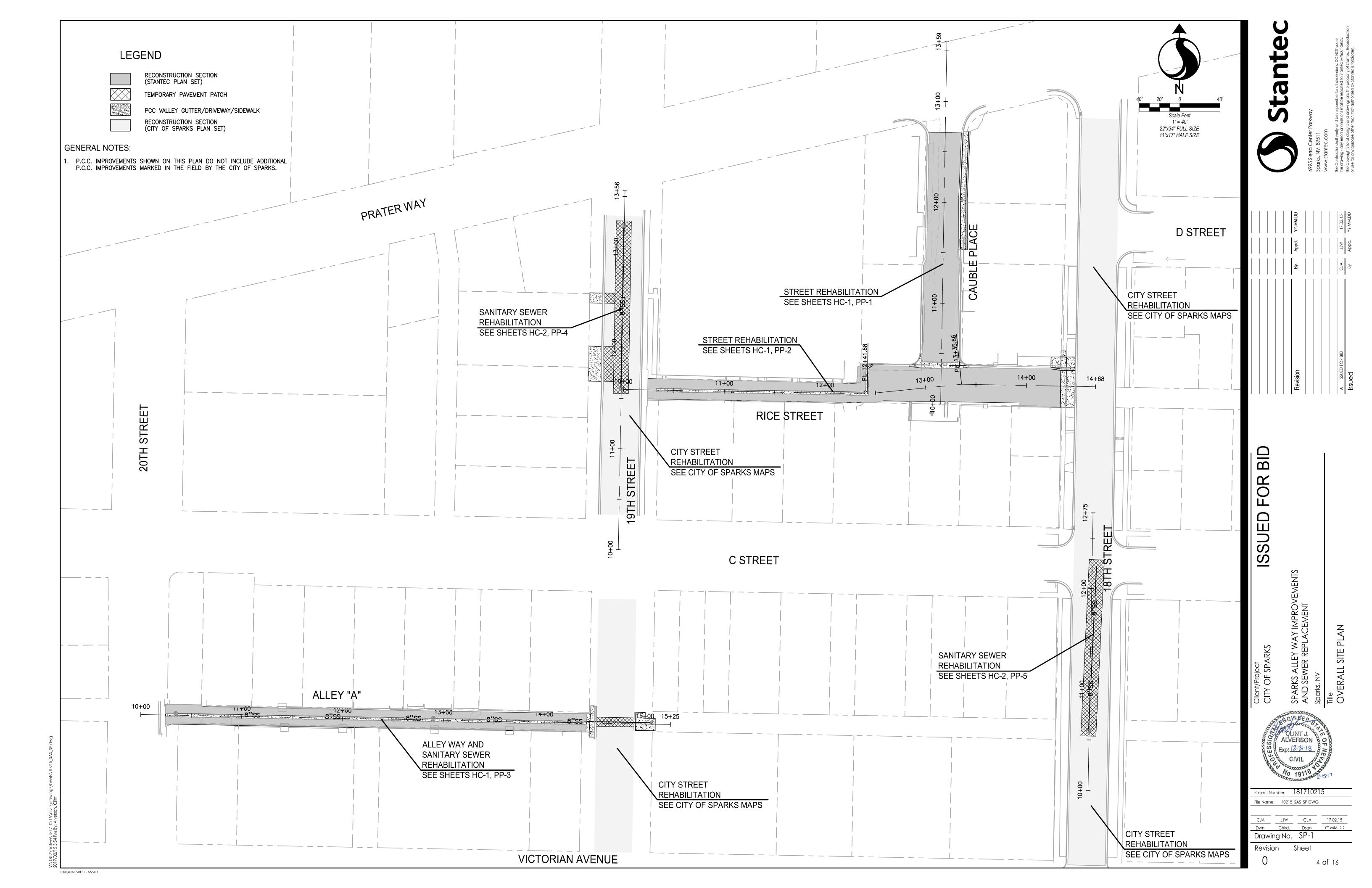
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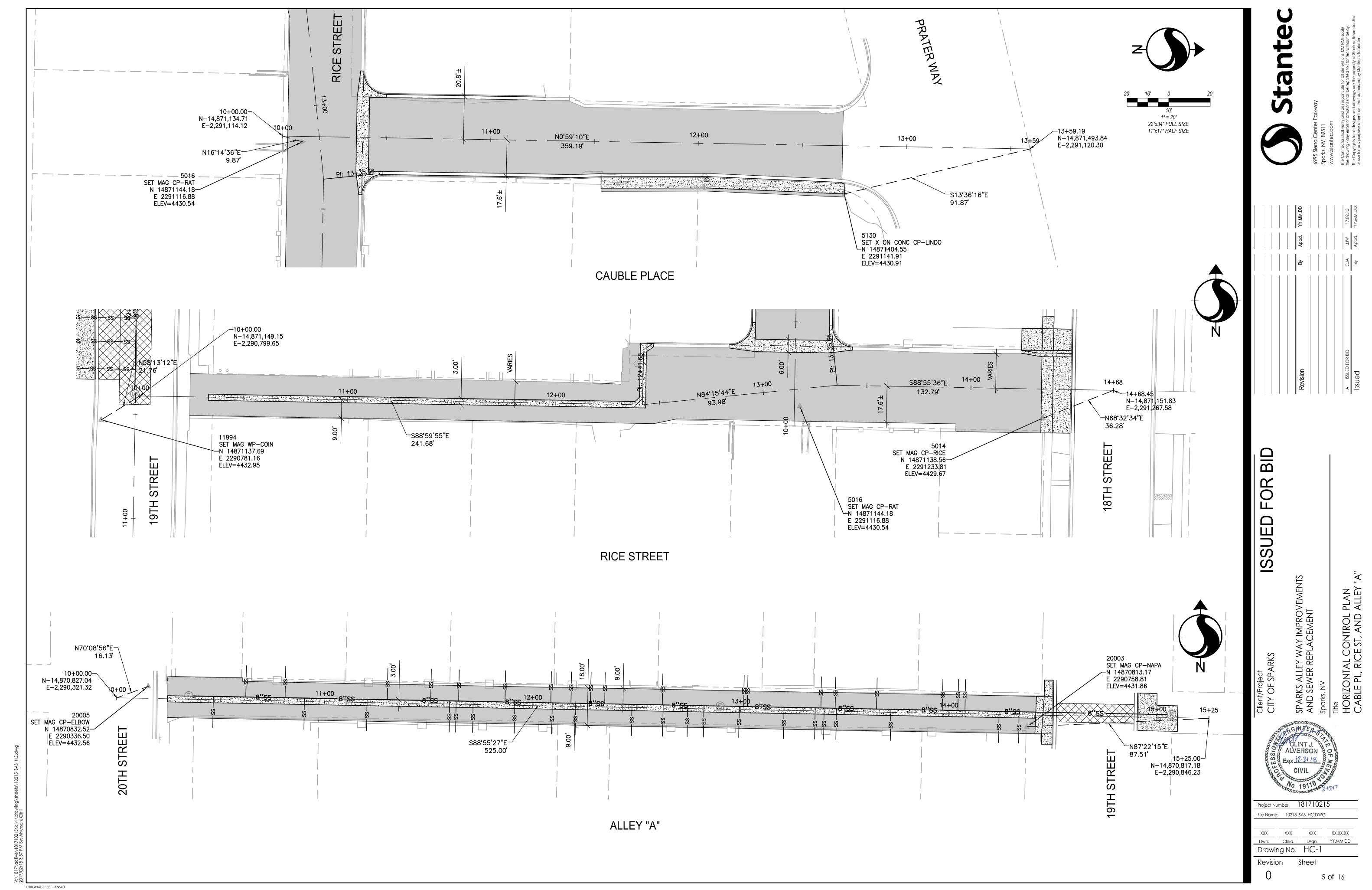
1) SEE PLAN AND PROFILE SHEETS FOR PROPOSED SLOPES AND DISTANCE FROM LIP OF GUTTER TO CENTERLINE.

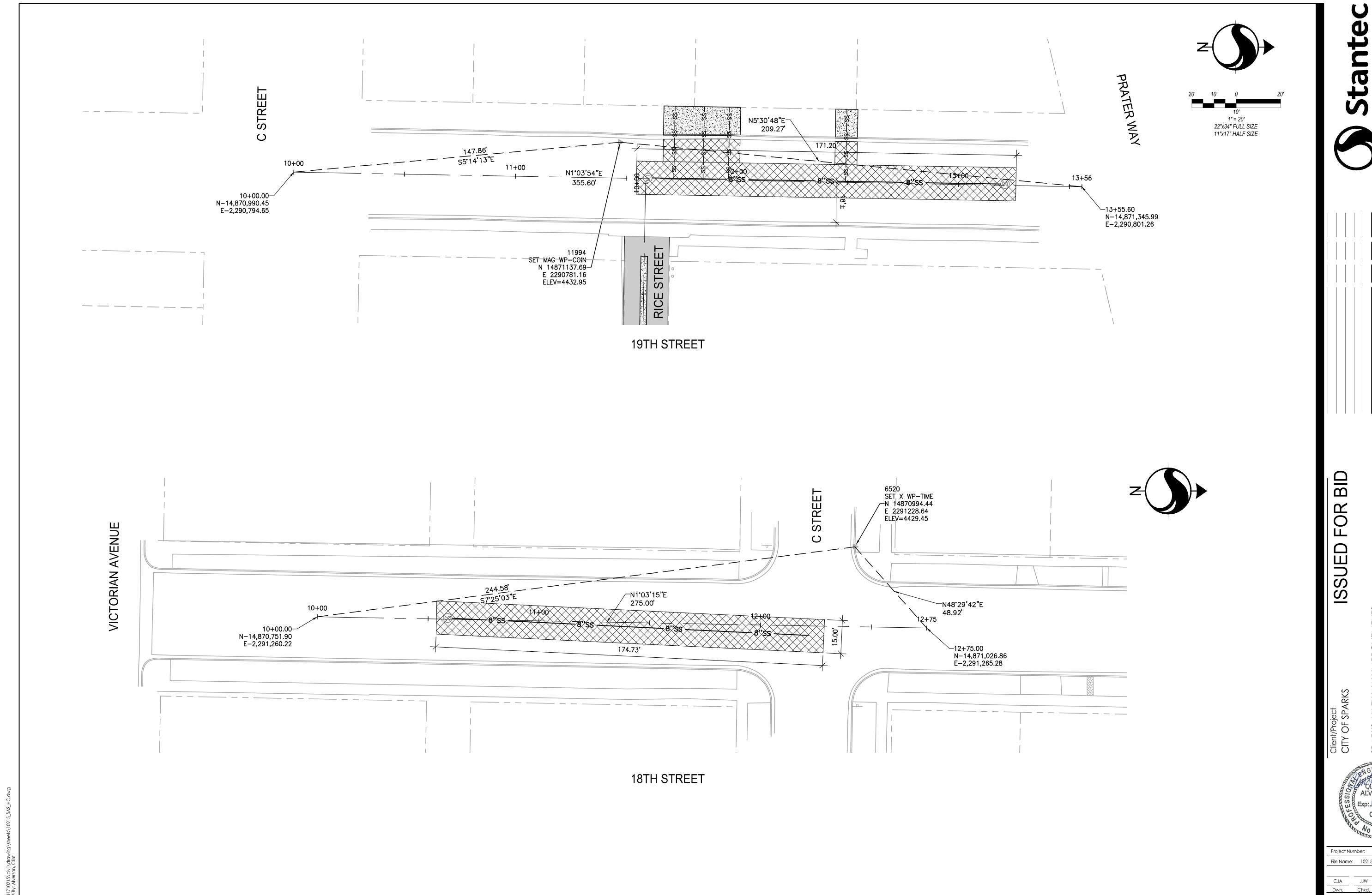
SECTIONS OF IMPROVEMENT ALLEY "A", 18TH ST, AND 19TH

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| CJA              | JJW                         | CJA    | 17.02.15 |  |  |  |
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| Drawing No. SI-2 |                             |        |          |  |  |  |
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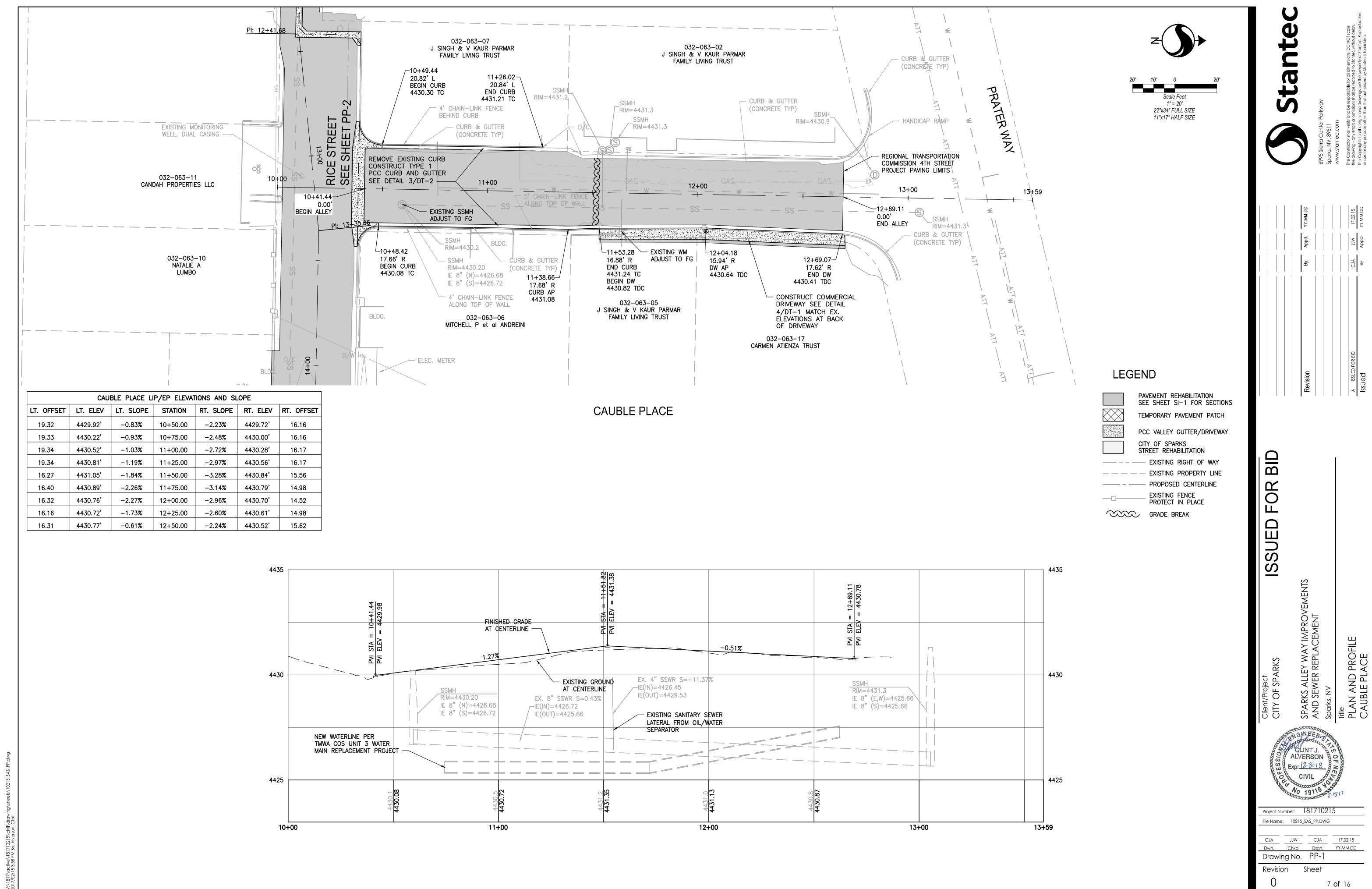


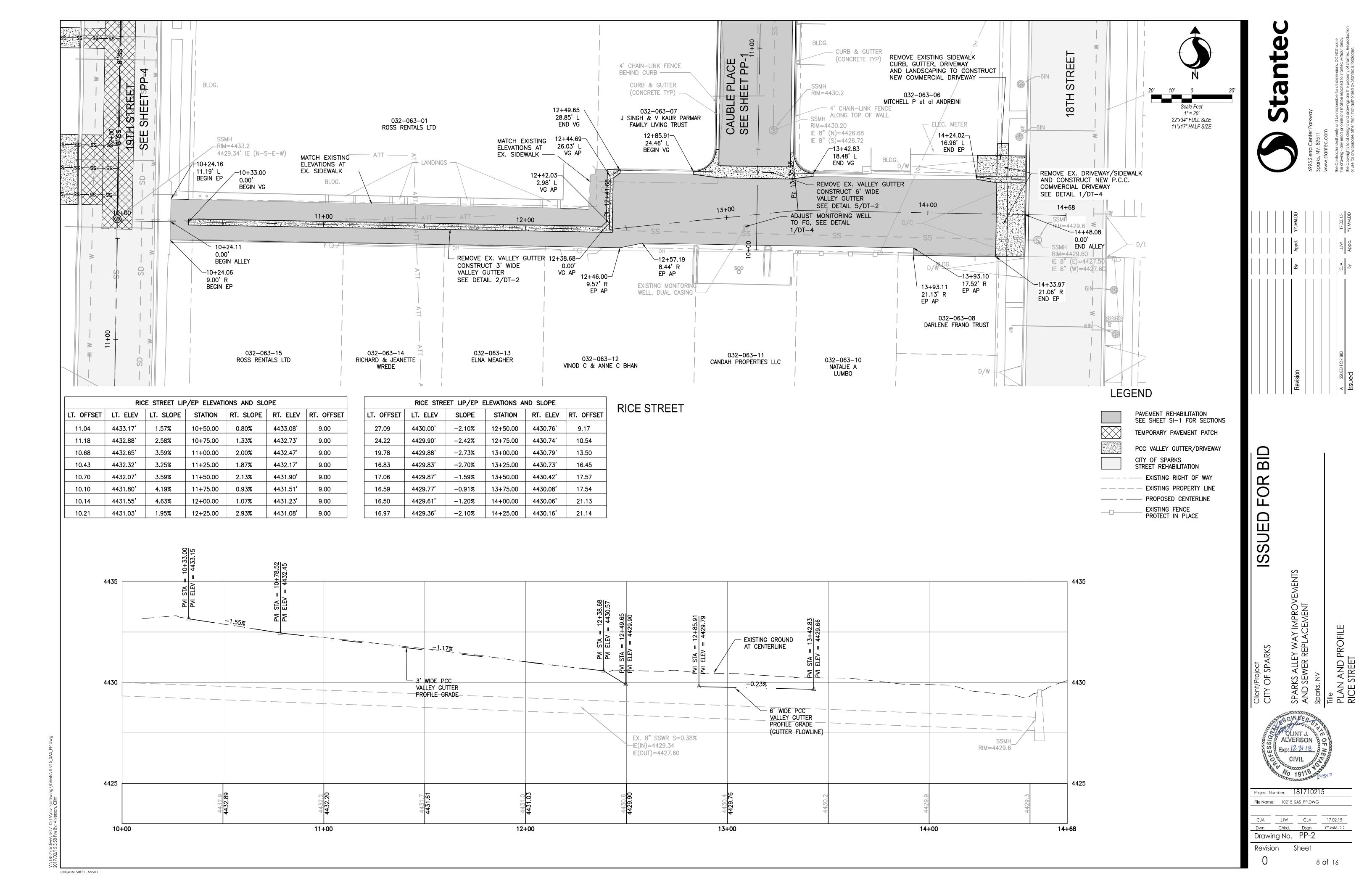
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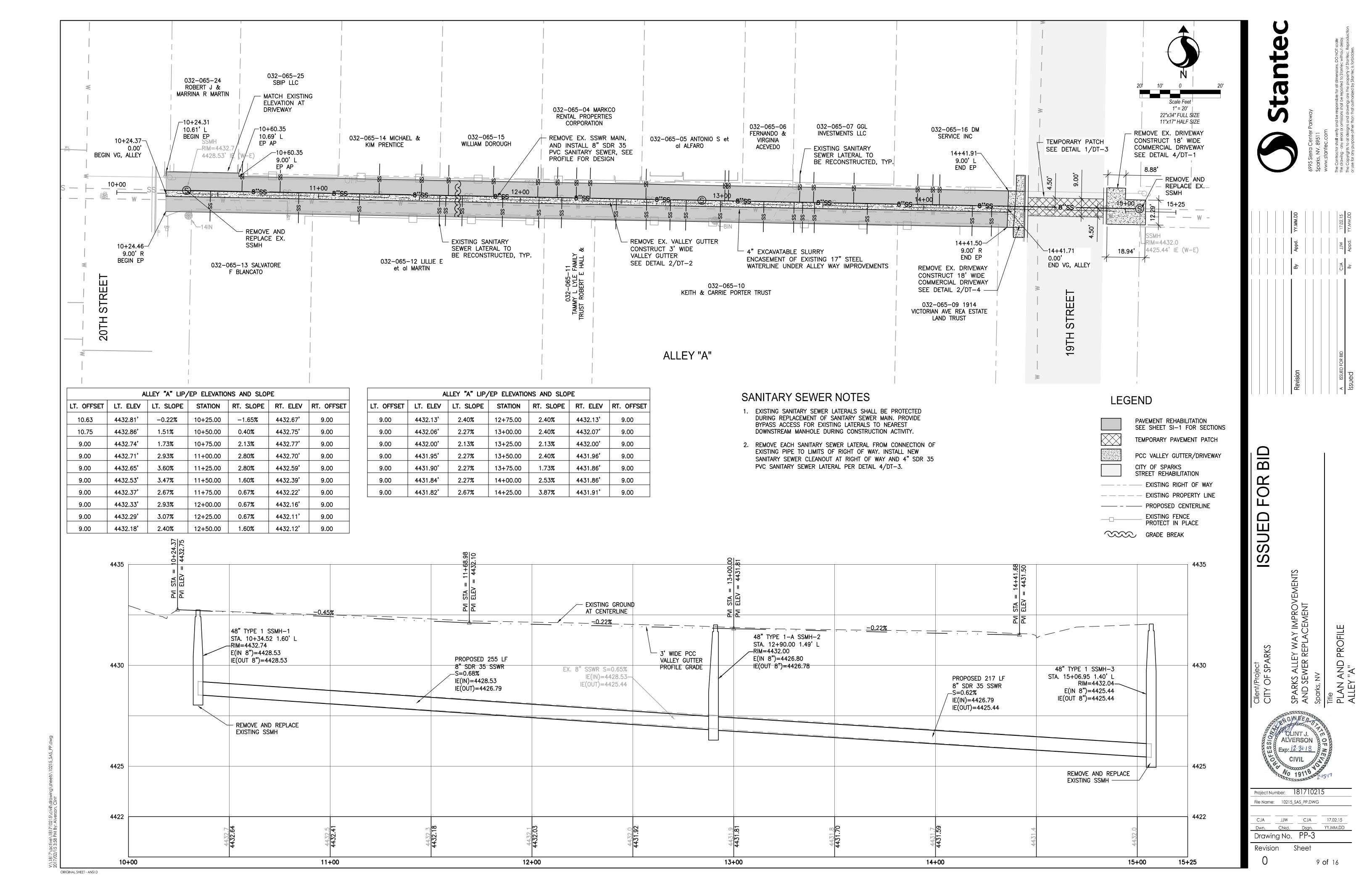
HORIZONTAL CONTROL 19TH ST AND 18TH ST

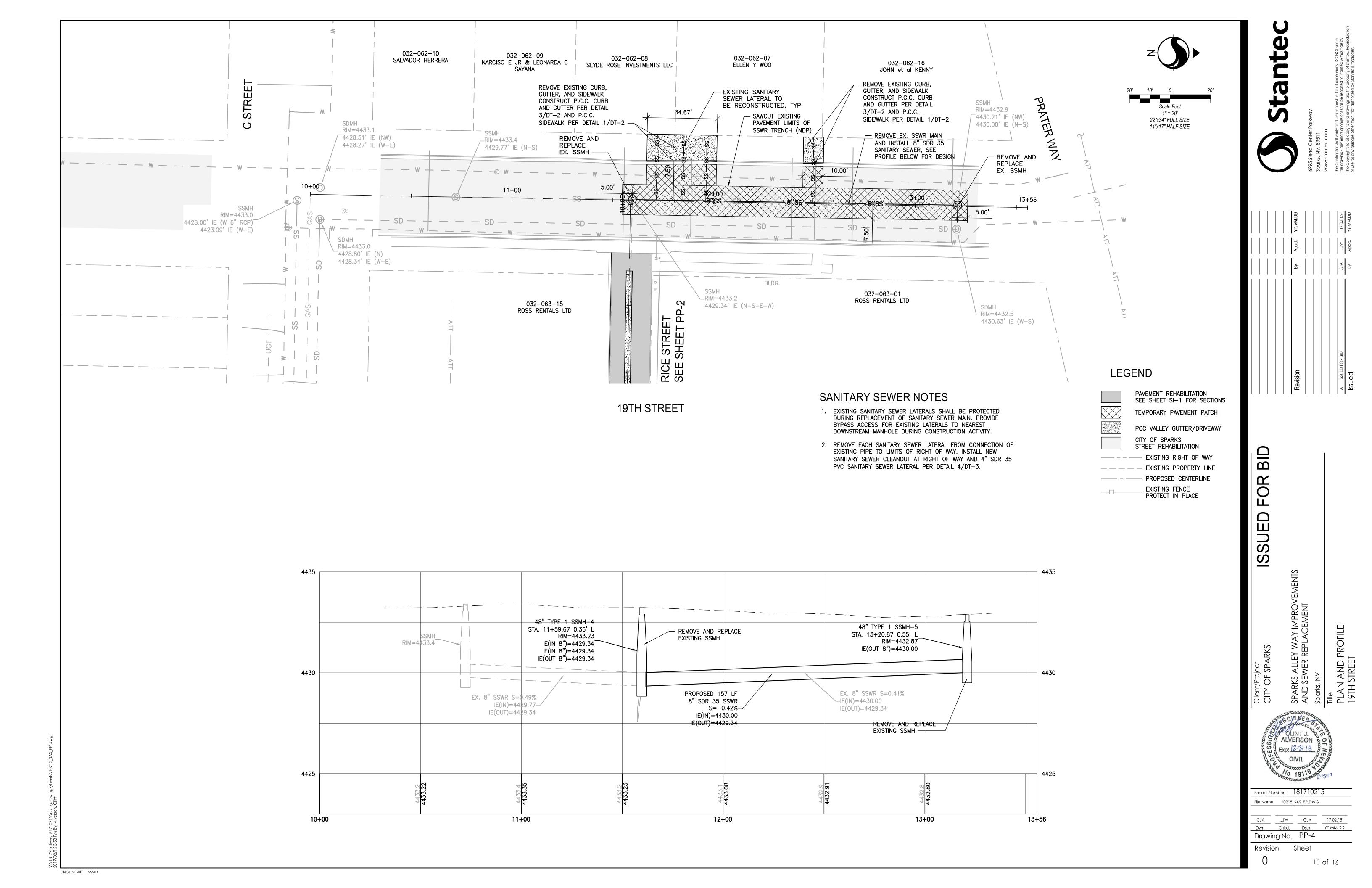
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 CJA
 17.02.15

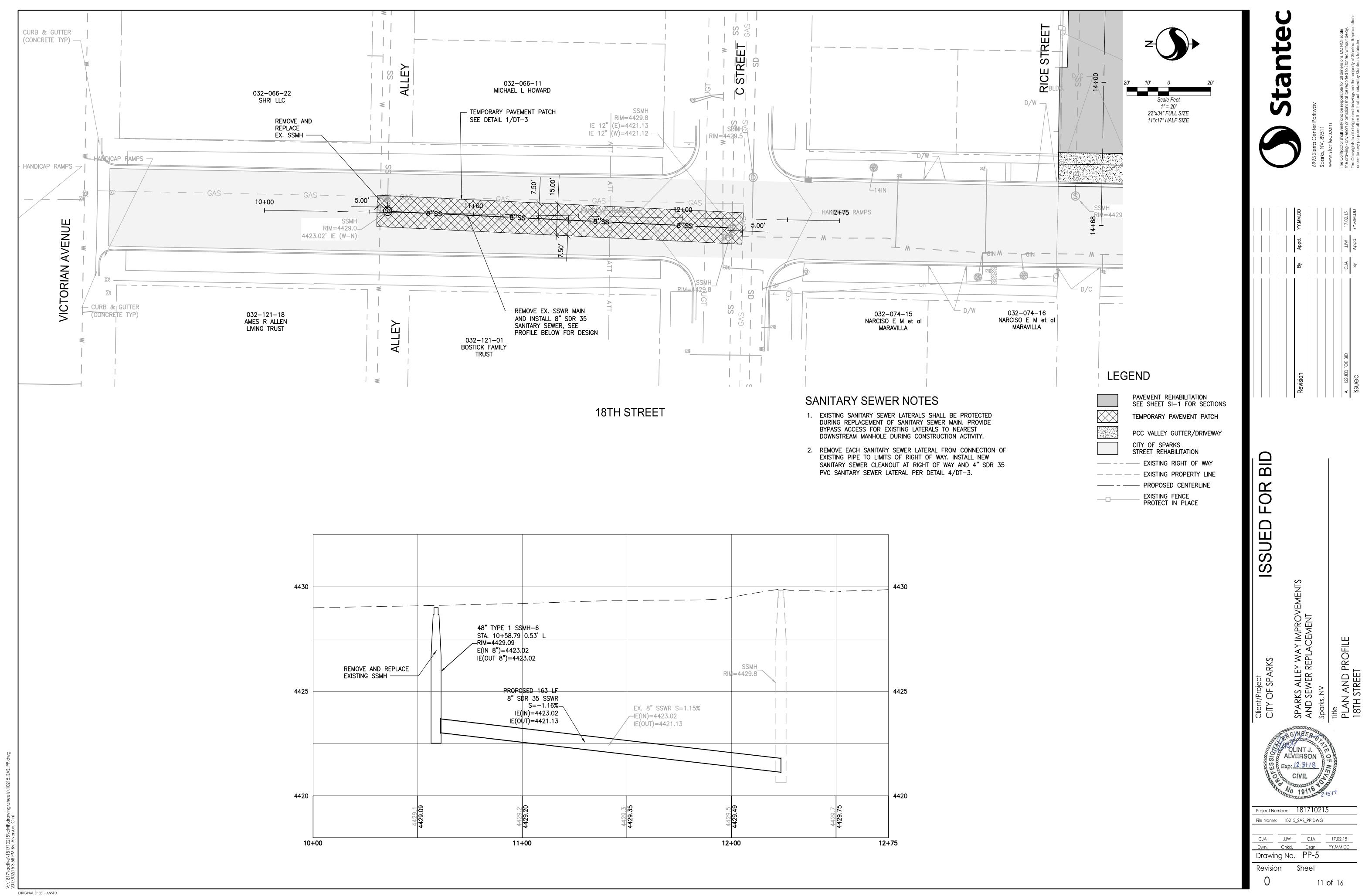
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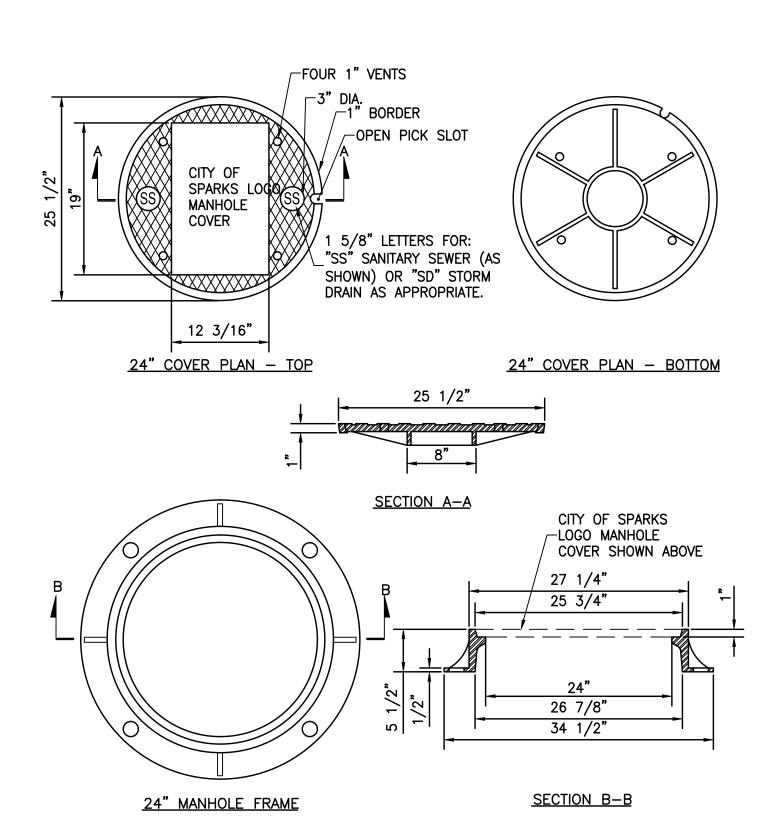








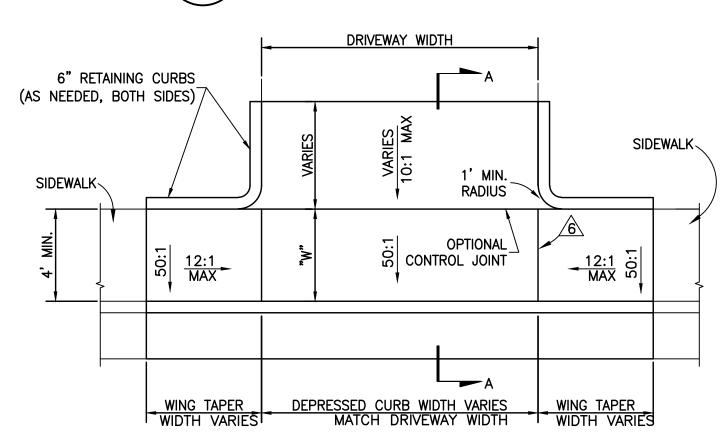




- 24" FRAME AND COVER NOTES:

  1. CITY OF SPARKS LOGO FRAME AND COVERS SHALL BE D&L FOUNDRY A1032 CITY OF SPARKS FRAME AND COVER OR APPROVED EQUAL. SPARKS LOGO FRAMES AND COVERS ARE TO BE PLACED ONLY ON CITY OF SPARKS MAINTAINED FACILITIES. PRIVATE FACILITIES SHALL NOT HAVE THE SPARKS LOGO ON THE LIDS. THEY SHALL ONLY HAVE THE LETTERS INDICATING "SS" OR "SD".
- 2. FURNISHED WITH MACHINED HORIZONTAL BEARING SURFACE. 3. CASTINGS SHALL BE CAST GRAY IRON AND MEET THE REQUIREMENTS OF ASTM A-48, CLASS 35B,



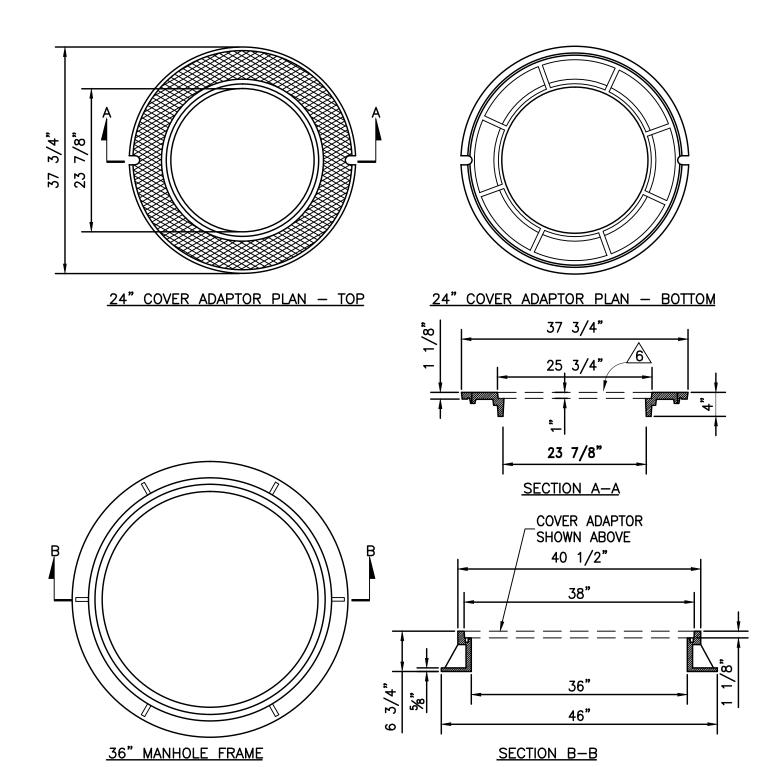


4' MIN. **EXISTING** 6" P.C.C¬ DRIVEWAY BEVELED @ 1:1 ASPHALT PAVEMENT 6" MIN. AGGREGATE BASE 6" MIN. AGGREGATE BASE -COMPACTED TO A MINIMUM COMPACTED TO A MINIMUM— 95% RELATIVE COMPACTION 95% RELATIVE COMPACTION SECTION A-A

## TYPICAL DRIVEWAY WITH SIDEWALK

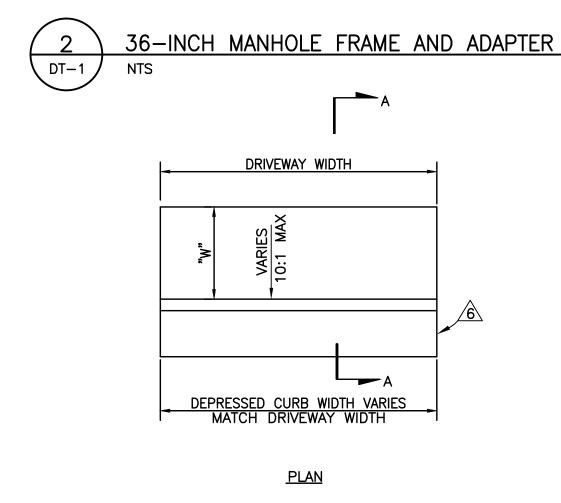
<u>PLAN</u>

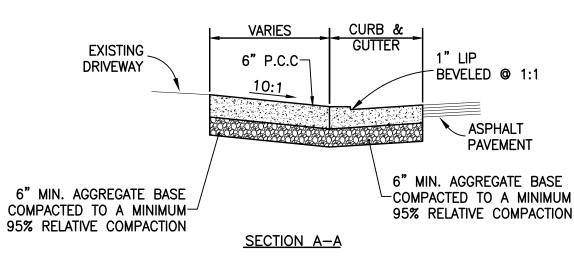
COMMERCIAL DRIVEWAY DT-1 NTS



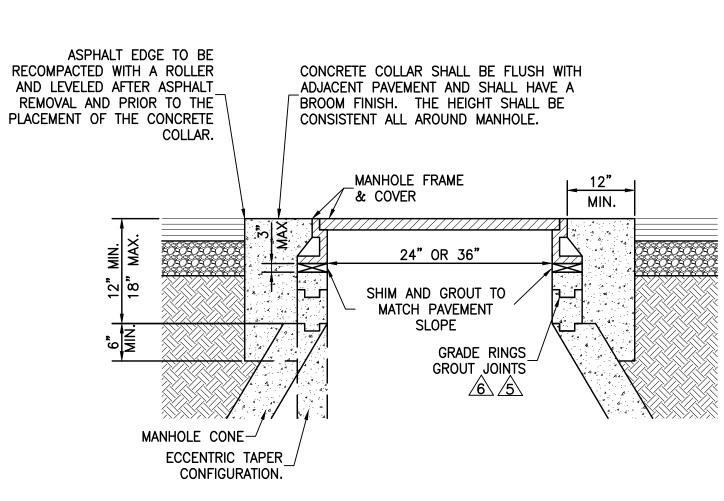
36" FRAME AND COVER ADAPTOR NOTES:

- 1. 24" COVER ADAPTOR SHALL BE D&L FOUNDRY A1462-R5, TO ACCEPT D&L FOUNDRY A1032 CITY OF SPARKS MANHOLE COVERS AND TO SET IN D&L FOUNDRY A1462 CITY OF SPARKS FRAME OR APPROVED EQUAL.
- 2. 36" MANHOLE FRAME SHALL BE D&L FOUNDRY A1462 CITY OF SPARKS FRAME OR APPROVED EQUAL. 3. CASTINGS SHALL BE CAST GRAY IRON, AND MEET THE REQUIREMENTS OF ASTM A-48, CLASS 35B, NO PAINT.
- 4. FURNISHED WITH MACHINED HORIZONTAL BEARING SURFACE.
- 5. MANHOLE COVER ADAPTOR SHALL BE FREE OF HOOKS OR PROTRUSIONS THAT MAY HINDER REMOVAL. 6 FOR A1032 CITY OF SPARKS LOGO COVER, SEE 24" MANHOLE FRAME AND COVER DETAIL (COVER

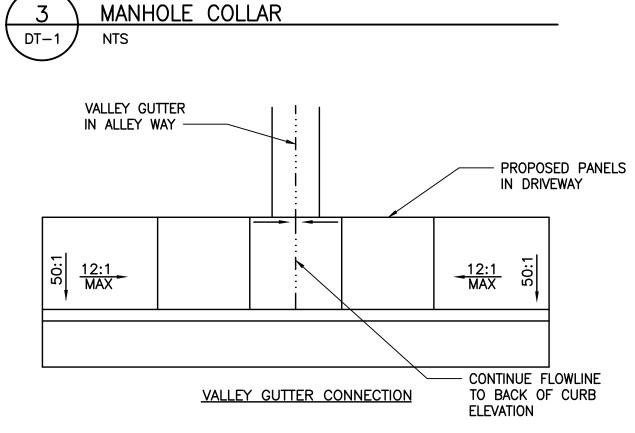




TYPICAL DRIVEWAY WITH NO SIDEWALK

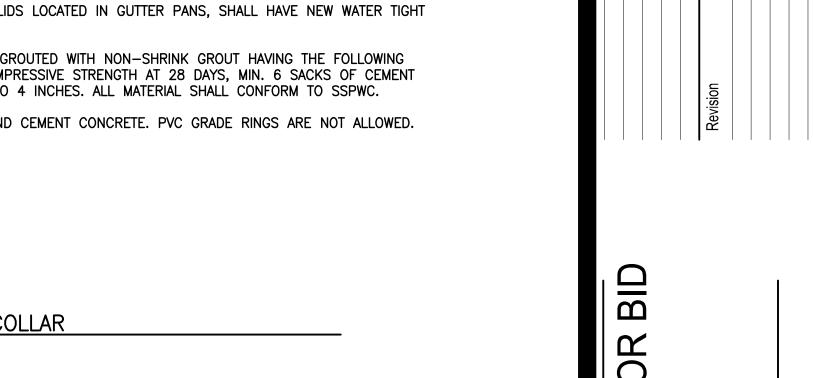


- 1. SEE CONCRETE GENERAL NOTES (DETAIL 4/DT-2) FOR CONCRETE MIX.
- 2. CIRCUMSTANCES MAY REQUIRE THE NEED FOR SPECIAL TYPES OF TOP OF MANHOLE CONFIGURATIONS SUCH AS FLAT TOP, ABOVE GROUND, ETC. AS DIRECTED BY THE CITY OF SPARKS. DETAILED PLANS OF ANY SPECIAL TOP OF MANHOLE CONFIGURATIONS AND ASSOCIATED 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. EXISTING SANITARY SEWER MANHOLE LIDS LOCATED IN GUTTER PANS, SHALL HAVE NEW WATER TIGHT FRAMES AND COVERS.
- /5\ 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.
- 6. ALL GRADE RINGS SHALL BE PORTLAND CEMENT CONCRETE. PVC GRADE RINGS ARE NOT ALLOWED.



## NOTES:

- 1. SEE CONCRETE GENERAL NOTES (DETAIL 4/DT-2) FOR CONCRETE MIX.
- 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. COMMERCIAL DRIVEWAYS MAY 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. WHEN COMMERCIAL DRIVEWAY APPROACH AND CURB & GUTTER IS POURED SEPARATELY, IT SHALL BE REQUIRED FOR EACH REINFORCING BAR TO BE DOWELED INTO ADJACENT CURB & GUTTER. DOWELS SHALL #4 REBAR, PENETRATE INTO CURB & GUTTER MINIMUM OF 6", SPACED AT 18" ON CENTER AND BE SECURELY TIED TO THE DRIVEWAY APPROACH REINFORCING.
- 4. IF JOINT EXISTS WITHIN 4 FEET OF DRIVEWAY, REMOVE SIDEWALK AND CURB AND GUTTER TO THAT JOINT.
- 5. ALL ADJACENT CONCRETE REMOVAL SHALL BE TO NEAT SAW CUT LINES AT RIGHT ANGLES. DOWEL INTO EXISTING ADJACENT CONCRETE 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.
- 6. WEAKENED PLANE JOINTS SHALL BE CONSTRUCTED AT 5 FT INTERVALS AND IN ACCORDANCE WITH SECTION 312 OF THE SSPWC.



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Project Number: 181710215 File Name: 10215\_SAS\_DT.DWG

CJA 17.02.15 JJW Drawing No. DT-1 Revision

ORIGINAL SHEET - ANSI D

- 1. SEE CONCRETE GENERAL NOTES (DETAIL 4/DT-2) FOR CONCRETE MIX.
- 2. AGGREGATE BASE MATERIAL UNDER SIDEWALKS SHALL BE TYPE 2, CLASS B CRUSHED AGGREGATE BASE. MATERIALS SHALL CONFORM TO SSPWC SECTION 200.

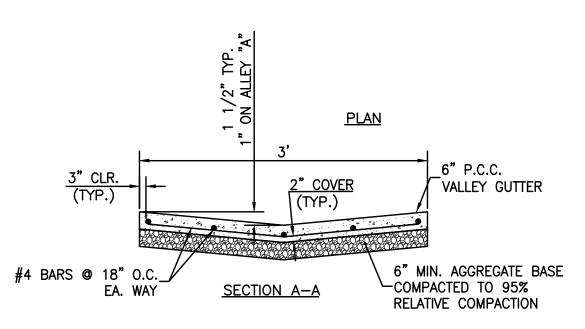
SEE NOTE 5

3. SIDEWALK WIDTH "W" SHALL BE 4 FT MIN. ON RESIDENTIAL STREETS AND 6 FT MIN. ON COLLECTOR AND ARTERIAL STREETS.

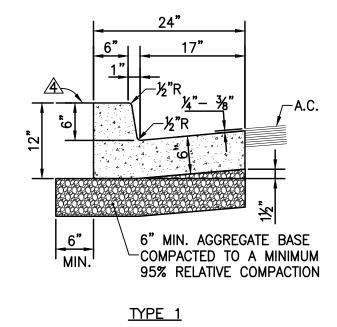
<u>PLAN</u>

- 4. WEAKENED PLANE JOINTS SHALL BE CONSTRUCTED AT 5 FT INTERVALS AND ACCORDANCE WITH SECTION 312 OF THE SSPWC.
- 5. ALL ADJACENT CONCRETE REMOVAL SHALL BE TO NEAT SAW CUT LINES AT RIGHT ANGLES TO NEW SIDEWALK. DOWEL INTO EXISTING ADJACENT CONCRETE SIDEWALK WITH A MINIMUM OF TWO (2) No. 4 REINFORCEMENT BARS EQUALLY SPACED ACROSS WIDTH "W". DOWELS SHALL PENETRATE A MINIMUM OF 4" INTO EXISTING CONCRETE.
- 6. SIDEWALKS SHALL NOT BE POURED MONOLITHICALLY WITH CURBS.
- 7. COLORED CONCRETE AND PAVERS ARE NOT ALLOWED.
- 8. TUNNELING AND/OR BORING IS NOT ALLOWED.





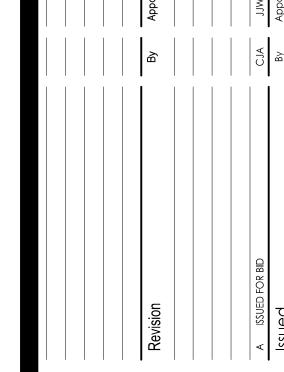
- 1. SEE CONCRETE GENERAL NOTES (DETAIL 4/DT-2) FOR CONCRETE MIX.
- 2. AGGREGATE BASE UNDER VALLEY GUTTER AND SPANDRELS SHALL BE TYPE 2, CLASS B CRUSHED AGGREGATE. ALL MATERIALS SHALL CONFORM TO SSPWC SECTION 200.
- 3. P.C.C VALLEY GUTTER DETAIL FOR RESIDENTIAL OR COMMERCIAL ZONES ONLY FOR OTHER APPLICATIONS AN ENGINEERED DESIGN IS REQUIRED.
- 4. VALLEY GUTTER SHALL HAVE WEAKENED PLANE JOINTS EVERY 10 FEET.
- 5. VALLEY GUTTER SECTIONS (SPANDRELS) ALONG CURB & GUTTER MAY BE A MONOLITHIC POUR AS SHOWN. DOWELS MATCHING REBAR SPACING SHOWN ARE REQUIRED FROM VALLEY GUTTER SECTION TO SPANDREL SECTION IF POURED SEPARATELY.



### NOTES:

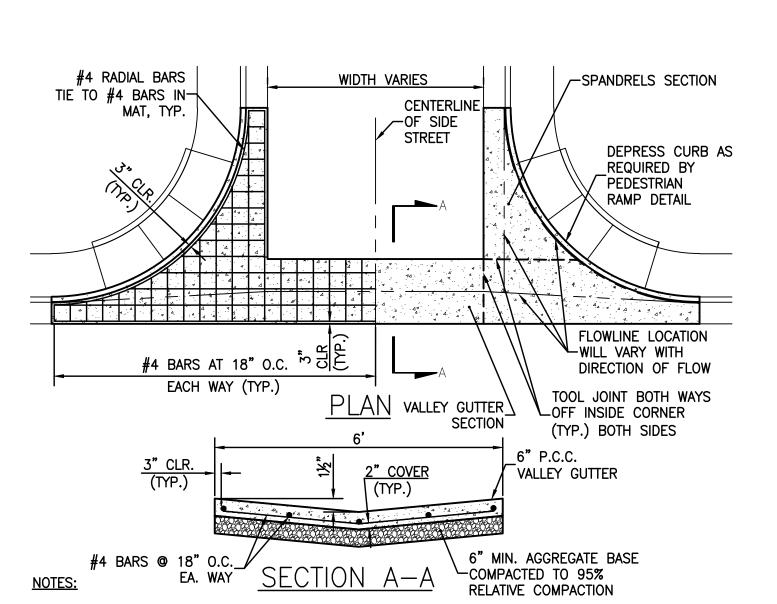
- 1. SEE CONCRETE GENERAL NOTES (DETAIL 4/DT-2) FOR CONCRETE MIX.
- 2. AGGREGATE BASE MATERIAL UNDER AND BEHIND CURB AND GUTTER SHALL BE TYPE 2, CLASS B CRUSHED AGGREGATE BASE. MATERIALS SHALL CONFORM TO SSPWC SECTION 200.
- 3. WEAKENED PLANE JOINTS SHALL BE EVERY 10 FEET AND LOCATED ON THE BACK, TOP AND FACE OF THE CURB AND THE TOP OF THE GUTTER PAN.
- 4. CURB & GUTTER SECTIONS SHALL BE PLACED SEPARATELY FROM SIDEWALK SECTIONS. WHEN SIDEWALK IS NOT REQUIRED DIRECTLY BEHIND THE CURB. BACKFILL TO TOP OF CURB FOR A HORIZONTAL DISTANCE OF 12" FROM BACK FACE OF CURB AND COMPACT TO 90% RELATIVE COMPACTION.
- 5. FOR REPLACEMENT OF EXISTING CURB AND GUTTER, MATCH EXISTING TYPE.

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.



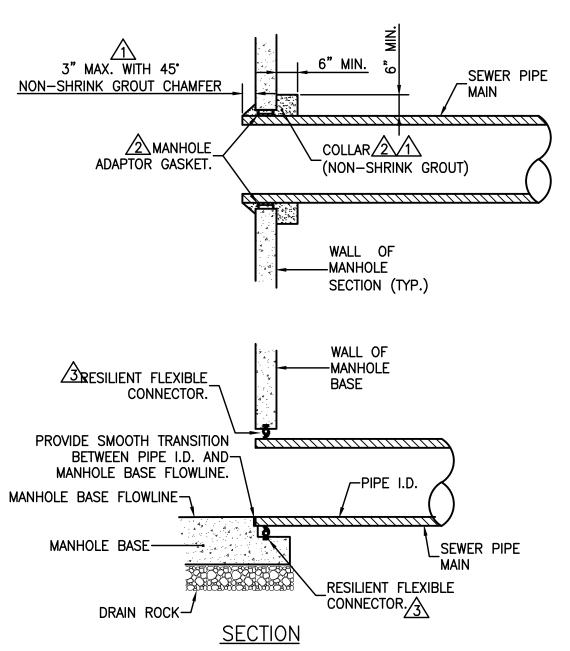
LONGITUDINAL P.C.C. VALLEY GUTTER

CURB AND GUTTER



- 1. SEE CONCRETE GENERAL NOTES (DETAIL 4/DT-2) FOR CONCRETE MIX.
- 2. AGGREGATE BASE UNDER VALLEY GUTTER AND SPANDRELS SHALL BE TYPE 2, CLASS B CRUSHED AGGREGATE. ALL MATERIALS SHALL CONFORM TO SSPWC SECTION 200.
- 3. P.C.C VALLEY GUTTER DETAIL FOR RESIDENTIAL OR COMMERCIAL ZONES ONLY FOR OTHER APPLICATIONS AN ENGINEERED DESIGN IS REQUIRED.
- 4. VALLEY GUTTER SHALL HAVE WEAKENED PLANE JOINTS EVERY 10 FEET.
- 5. VALLEY GUTTER SECTIONS (SPANDRELS) ALONG CURB & GUTTER MAY BE A MONOLITHIC POUR AS SHOWN. DOWELS MATCHING REBAR SPACING SHOWN ARE REQUIRED FROM VALLEY GUTTER SECTION TO SPANDREL SECTION IF POURED SEPARATELY.





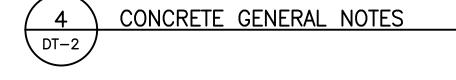
/1\ NON-SHRINK GROUT SHALL HAVE THE FOLLOWING CHARACTERISTICS: 3000 PSI MIN. COMPRESSIVE STRENGTH AT 28 DAYS, MIN. 6 SACKS OF CEMENT PER CUBIC YARD AND SLUMP AT 1 TO 4 INCHES. ALL MATERIAL SHALL CONFORM TO STANDARD SPECIFICATIONS OF PUBLIC WORKS CONSTRUCTION (SSPWC) SECTION 202.

2. SANITARY SEWER PIPE CONNECTION TO MANHOLE SECTIONS (DROP MANHOLES) REQUIRE AN AGENCY-APPROVED FORM OF SEAL OR WATER STOP TO PROVIDE A WATERTIGHT CONNECTION. UTILIZE A ROMAC STYLE "LCT" MANHOLE ADAPTOR GASKET OR APPROVED EQUAL IN CONJUNCTION WITH NON-SHRINK GROUT.

3 SANITARY SEWER PIPE CONNECTION TO MANHOLE BASE SHALL REQUIRE A RESILIENT FLEXIBLE CONNECTOR INSTALLED IN ACCORDANCE WITH STANDARD DETAIL 7/DT-2.

4. ALL PIPE OPENINGS TO NEW MANHOLES MUST BE EITHER CAST-IN-PLACE OR PRE-FORMED AND PIPE OPENINGS TO EXISTING MANHOLES MUST BE CORE DRILLED.

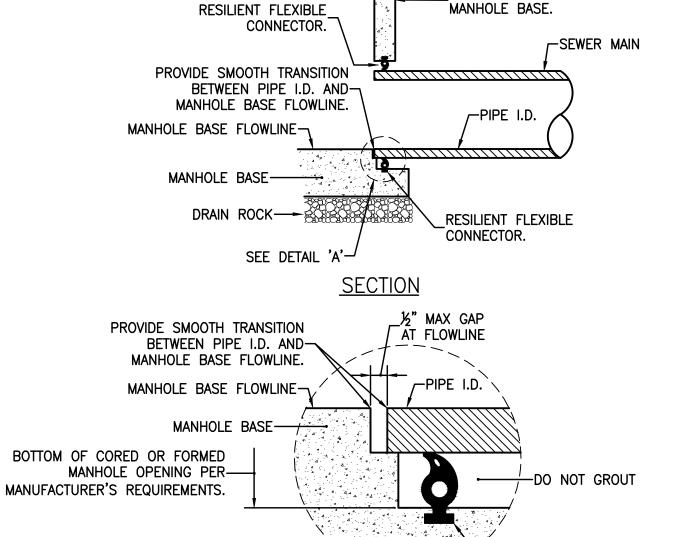
> SANITARY SEWER PIPE TO MANHOLE CONNECTION



WALL OF

RESILIENT FLEXIBLE

CONNECTOR



### NOTES:

- 1. 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.
- /2\ A RESILIENT FLEXIBLE CONNECTOR PER ASTM C 923-89 SHALL BE USED AT THE MANHOLE/PIPE CONNECTION TO SATISFY THE REQUIREMENTS OF NOTE 1. FOR PRE-CAST CONCRETE STRUCTURES, THE RESILIENT FLEXIBLE CONNECTOR SHALL BE AN "A-LOK" TYPE PIPE-TO-MANHOLE CONNECTOR OR APPROVED EQUAL. FOR CAST-IN-PLACE STRUCTURES, THE RESILIENT FLEXIBLE CONNECTOR SHALL BE A "KOR-N-SEAL I - TOGGLE KORBAND" TYPE PIPE-TO-MANHOLE CONNECTOR OR APPROVED EQUAL.
- 3. THE INTERIOR MANHOLE CONNECTION SHALL HAVE A SMOOTH TRANSITION BETWEEN PIPE I.D. AND MANHOLE BASE FLOWLINE. NO GROUT OR CONCRETE SHALL BE PLACED AROUND THE RESILIENT FLEXIBLE CONNECTOR.

RESILIENT FLEXIBLE CONNECTOR

DETAIL 'A

ALVERSON Exp: 12-31-18

KS SE

Project Number: 181710215 File Name: 10215\_SAS\_DT.DWG JJW CJA 17.02.15 Drawing No. DT-2 Revision Sheet

13 **of** 16

#### **NOTES:**

(NEW CONSTRUCTION)

SEWER

PLAN

ANGLE VARIABLE

SECTION

SANITARY SEWER LATERAL

(45° MAX.)

**ROADWAY** 

FINISH GRADE

LATERAL-

- PRIOR TO EXCAVATION, THE OUTLINE OF THE TRENCH SHALL BE VERTICALLY CUT FULL DEPTH THROUGH THE EXISTING ASPHALT SURFACE.
- CARE SHALL BE EXERCISED TO PREVENT SLOUGHING AND OVERBREAK. IF THE TRENCH SLOUGHS, THE SURFACE SHALL BE WIDENED TO ELIMINATE THE UNDERMINED SECTION OF ASPHALT.
- AGGREGATE BASE UNDER TEMPORARY PATCH SHALL BE A MINIMUM THICKNESS OF 36 INCHES BELOW THE EXISTING AC SURFACE. AGGREGATE BASE MATERIAL UNDER TEMPORARY PATCH SHALL BE TYPE 2, CLASS B CRUSHED AGGREGATE BASE. MATERIALS SHALL CONFORM TO SSPWC SECTION
- TEMPORARY PATCHES SHALL BE PLACED AND COMPACTED. THE COMPACTED PATCH SHALL BE APPROXIMATELY 1/8" TO 1/4" ABOVE THE LEVEL OF THE ADJACENT PAVEMENT. IF NOT PATCHED WITHIN 24 HOURS AFTER BACKFILLING, THE CITY MAY PATCH AND BACK-CHARGE THE PERMITTEE FOR ALL COSTS.
- COMPACTION OF BACKFILL, BASE AND A.C. TEMPORARY PATCH SHALL BE PERFORMED WITH APPROVED MECHANICAL TAMPERS. EQUIPMENT WHEEL ROLLING IS NOT PERMITTED.
- ENTIRE AREA SHALL BE CLEANED OF ALL DIRT, DUST, DEBRIS, ETC. BEFORE LEAVING SITE. ANY SITE LEFT UNCLEANED WILL BE CLEANED BY THE CITY AND ALL COSTS BACK-CHARGED TO THE CONTRACTOR.
- 7. ALL EXCAVATIONS SHALL BE COMPLETE OR BACKFILLED AT THE END OF THE DAY.

-ANGLE VARIABLE

CURB

CONNECTION AND INSTALL APPROVED

-TAP SADDLE TYPE OR INSERT A TEE

(CONNECTION TO EXISTING MAIN)

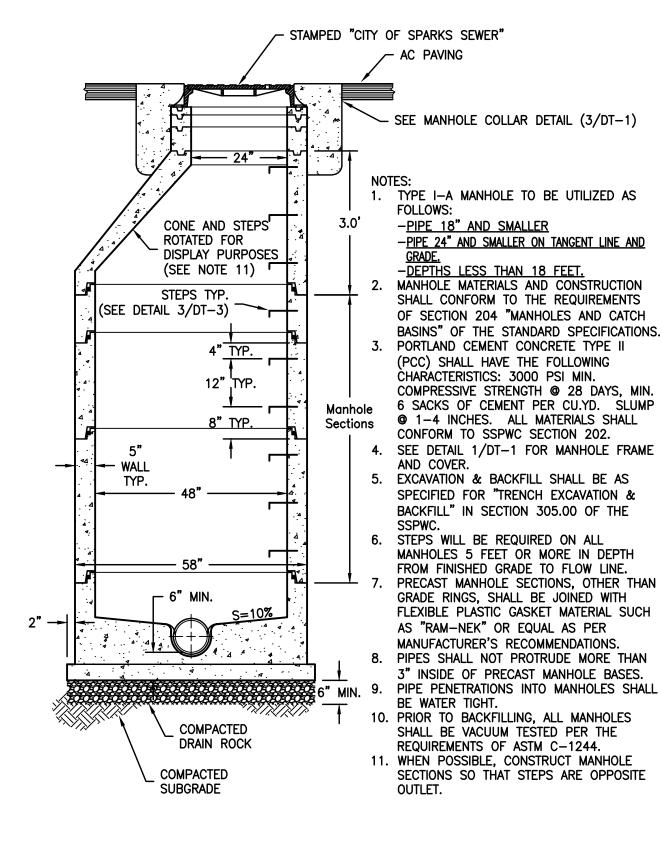
SIDEWALK (TYP.)-

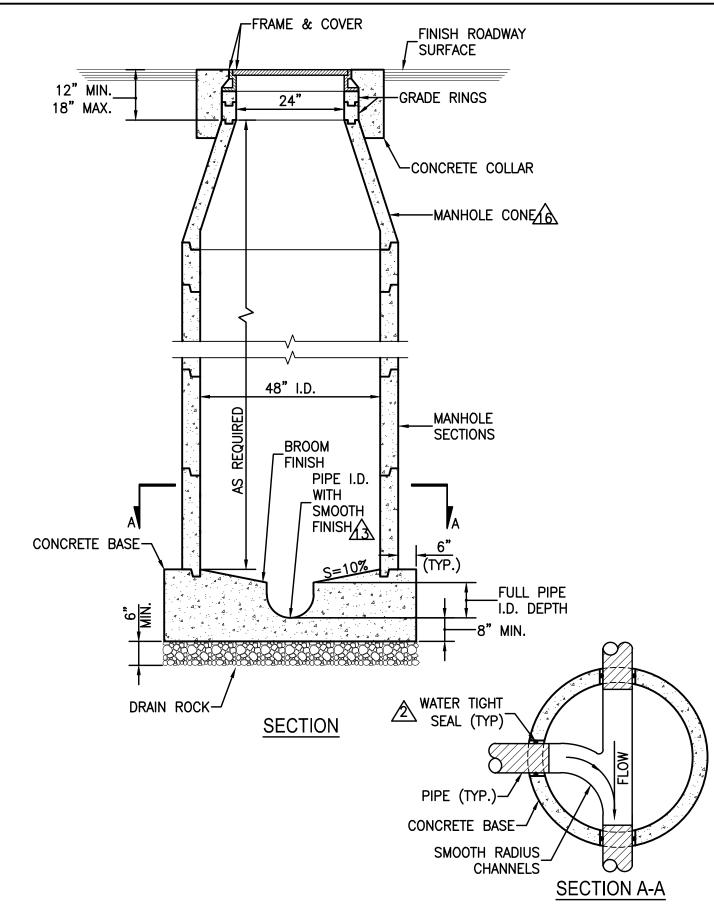
STAMP "S'

IN CURB

TYPE LATERAL TAP.

TEMPORARY PATCH WORK AND PATCH MAINTENANCE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.





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 PER DETAILS 6/DT-2 AND 7/DT-2.
- 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
- 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.
- $\cancel{1}$  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.
- $\sqrt{3}$  match pipe inverts to manhole inverts where pipes connect to manhole base.
- 14. ALL MANHOLES SHALL BE WATERTIGHT.
- 15. SEE DETAIL FOR OUTSIDE DROP MANHOLE FOR SANITARY SEWERS WITH MORE THAN 2 FEET VERTICAL DROP AT THE MANHOLE. THE USE OF "INSIDE DROP" MANHOLES IS NOT PERMITTED.
- 16 THE USE OF FLAT TOP MANHOLE CONES REQUIRES PRIOR APPROVAL FROM THE CITY ENGINEER.
- 17. PRIOR TO BACKFILLING, ALL MANHOLES SHALL BE VACUUM TESTED PER ASTM C-1244.
- 18. NO STEPS, LADDERS, OR OTHER CLIMBING DEVICES SHALL BE INSTALLED IN THE MANHOLE.
- 19. REINFORCING STEEL SHALL BE AS SHOWN, WIRED TIGHTLY AT ALL INTERSECTIONS AND
- EMBEDDED AT LEAST 11/2" CLEAR, UNLESS OTHERWISE NOTED
- 20. WHEN PIPE CONNECTIONS TO EXISTING MANHOLES ARE ALLOWED, THEY SHALL BE MADE BY CORE DRILLING THE MANHOLE AND CONNECTING THE PIPE PENETRATION PER DETAILS 6/DT-2





IF LATERAL IS CAPPED

REDWOOD STAKE POST

JENSEN PRECAST G5 BOX

WYE FITTING-

EXCAVATION/BACKFILL

CAP OR CONNECT

TO EXISTING LATERAL

OR APPROVED EQUAL-

LABELED "SEWER"

PROVIDE 4x4-

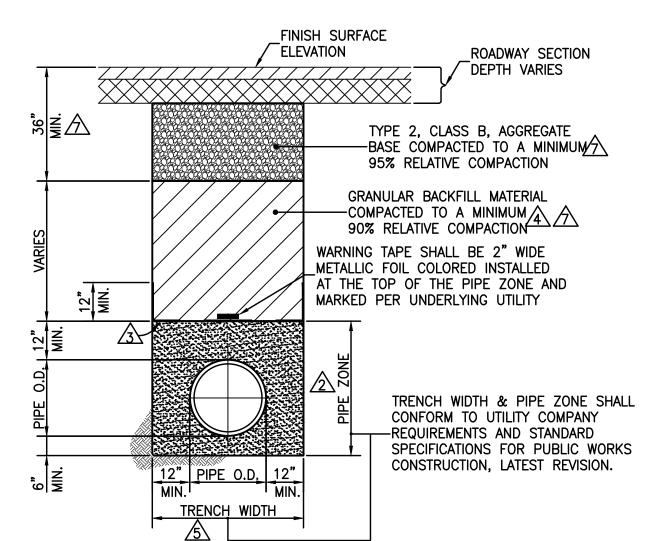


TYPE 1-A SANITARY SEWER MANHOLE

- SEWER LATERALS SHALL HAVE A MINIMUM PIPE DIAMETER OF 4—INCHES.
- ALL PLASTIC PIPE USED FOR SEWER SERVICE LATERAL CONSTRUCTION SHALL BE SOLID WALL AND SHALL MEET THE REQUIREMENTS OF D-2412, HAVE A MINIMUM STIFFNESS OF 46 PSI AS DEFINED BY THE REQUIREMENTS OF ASTM D-3034.
- SERVICE LATERALS SHALL HAVE A MINIMUM SLOPE OF 1/4-INCH PER FOOT UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
- SEWER LATERALS SHALL HAVE A MINIMUM COVER OF 36-INCHES IN THE PUBLIC RIGHT-OF-WAY AND IN EASEMENTS UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER. THE DEFINITION OF "COVER" IS THE DISTANCE FROM THE TOP OF PIPE TO FINISHED GRADE.
- USE OF SEWER SERVICE TAP SADDLE CONNECTIONS SHALL NOT BE ALLOWED FOR NEW SEWER MAIN CONSTRUCTION. WHEN A TAP SADDLE CONNECTION IS TO BE USED ON AN EXISTING SEWER MAIN, IT SHALL BE A WYE SADDLE.
- 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
- SEWER LATERALS SHALL NOT BE CONNECTED DIRECTLY TO OR WITHIN 5-FEET OF A MANHOLE
- EXISTING SEWER LATERALS SHALL BE CUT BACK TO SOUND MATERIAL FOR COUPLING. PLACE 6-INCH THICK CONCRETE PAD UNDER CONNECTION.
- SEWER LATERAL CONNECTION SHALL BE STABILIZED WITH APPROVED MATERIAL FOLLOWING INSTALLATION. CONNECTION TO CITY SEWER MAIN MUST BE INSPECTED BY THE CITY PRIOR TO BACKFILL
- NO LATERAL CONNECTIONS SHALL BE MADE DIRECTLY TO A SANITARY SEWER "INTERCEPTOR" UNLESS APPROVED BY THE CITY ENGINEER.
- 11. SEWER LATERALS SHALL NOT BE CONNECTED TO A SEWER MAIN UNLESS THE CONNECTION POINT IS BETWEEN TWO MANHOLE STRUCTURES.
- PARCELS SHALL NOT SHARE ONE SEWER LATERAL.

12. EACH INDIVIDUAL PARCEL SHALL HAVE A MINIMUM OF ONE SEWER LATERAL. TWO OR MORE

- 13. 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.
- 14. PROPERTY OWNER SHALL BE RESPONSIBLE FOR OPERATION, MAINTENANCE AND REPAIR OF THE SEWER LATERAL WITHIN THE PUBLIC RIGHT-OF-WAY PER SPARKS MUNICIPAL CODE.



NOTES:

- ALL MATERIALS AND INSTALLATION PROCEDURES SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (SSPWC), LATEST REVISION.
- BEDDING MATERIAL SHALL CONFORM TO OWNING-UTILITY COMPANY REQUIREMENTS AS APPROVED BY THE CITY OF SPARKS. FOR BEDDING MATERIAL SHALL BE CLASS A OR C. COMPACTED TO MINIMUM 90% RELATIVE COMPACTION. MATERIALS SHALL CONFORM TO SSPWC SECTION 200.
- CLASS C BEDDING REQUIRES INSTALLATION OF GEOTEXTILE FABRIC BETWEEN PIPE ZONE AND BACKFILL MATERIAL. GEOTEXTILE FABRIC SHALL BE MIRAFI 180N OR APPROVED EQUAL.
- BACKFILL MATERIAL SHALL BE TYPE 2, CLASS B OR CLASS E AND COMPACTED TO MINIMUM 90% RELATIVE COMPACTION. MATERIALS SHALL CONFORM TO SSPWC SECTION 200.
- ALL EXCAVATIONS SHALL CONFORM TO THE LATEST O.S.H.A. REQUIREMENTS.
  - EXISTING PIPE TO BE ABANDONED SHALL BE GROUT FILLED OR COMPLETELY REMOVED.
  - MINIMUM BACKFILL DEPTH REQUIREMENT IS FOR TRENCHING IN EXISTING PAVED STREETS. TRENCHING FOR **NEW DEVELOPMENT** WHERE STREETS HAVE NOT YET BEEN CONSTRUCTED, BACKFILL MATERIAL SHALL BE TYPE 2, CLASS B OR CLASS E AND COMPACTED TO MINIMUM 90% RELATIVE COMPACTION. MATERIALS SHALL CONFORM TO SSPWC SECTION 200.



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Drawing No. DT-3

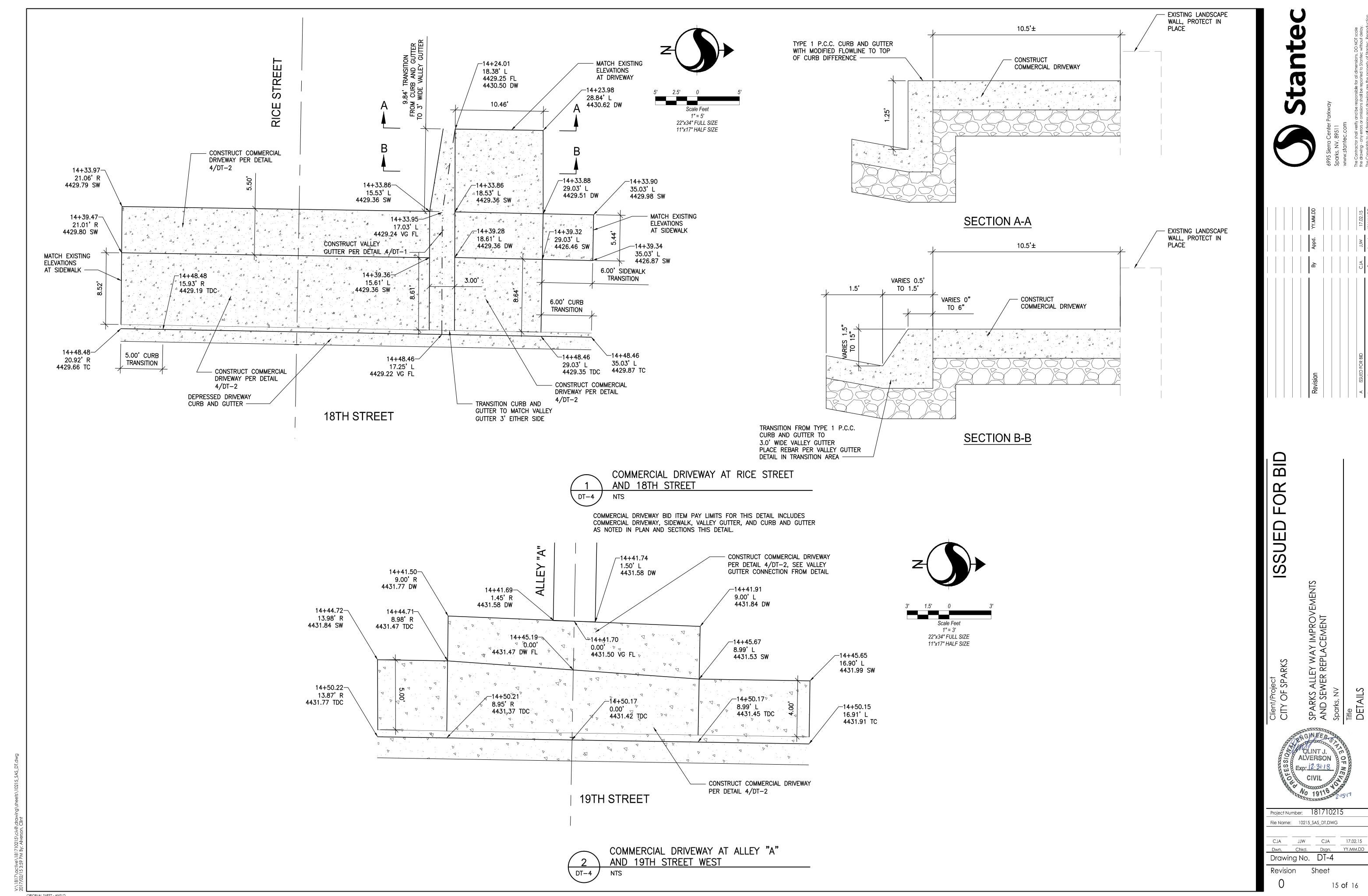
Sheet Revision

ORIGINAL SHEET - ANSI D

DT-3

SANITARY SEWER LATERAL NOTES

TRENCH BEDDING AND BACKFIL DT-3





Department of Water Resources 4930 Energy Way Tel: (775) 954-4600 Fax: (775) 954-4610

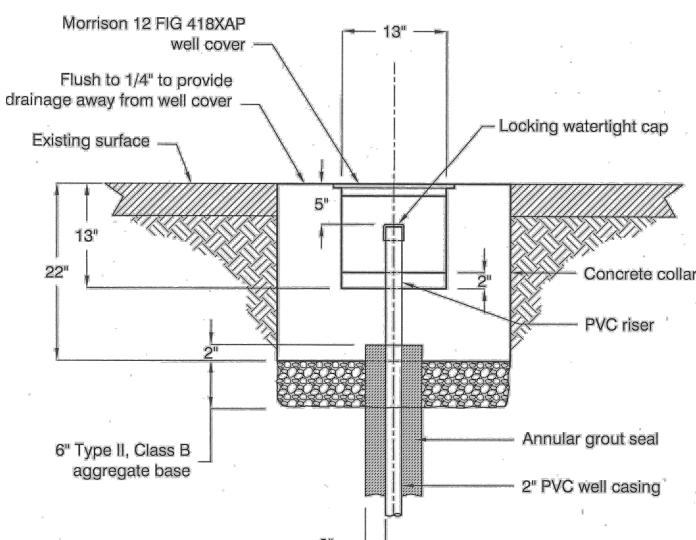
Department of

Specifications for Preserving and Reconstructing WCDWR CTMRD Program Groundwater Monitoring Wells

- 1. Contact Tim Donahoe (954-4635/544-3826) immediately when a monitoring well is identified near the footprint of planned construction
- 2. The Washoe County Department of Water Resources asks that Tim Donahoe (954-4635/544-3826) be contacted before a well is to be lowered or raised to provide oversight for the process.
- 3. See the next page (Fig. 1) for the Preconstruction Condition of the

#### REQUIRED MATERIALS:

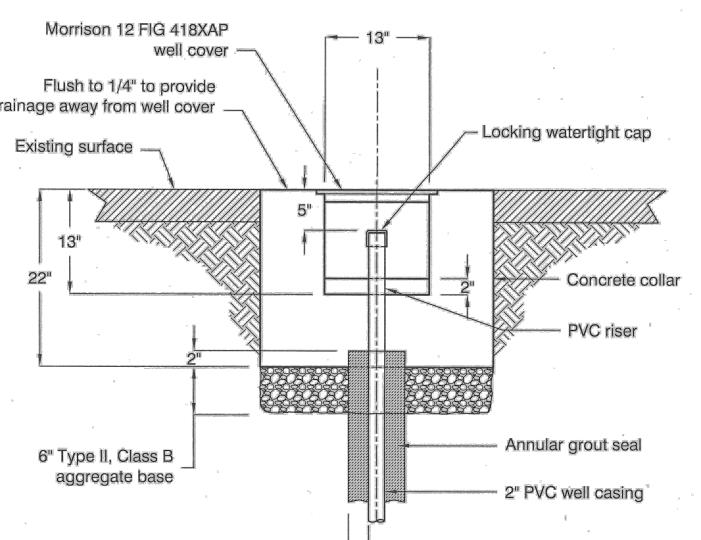
- 1. Well Cover: Morrison 12" diameter manhole with 12" sleeve (MODEL #12 FIG 418XAP).
- 2. Portland Cement Concrete that meets current standard detail for City or County agency overseeing construction
- 3. ASTM F480 well casing PVC to be used in raising well after construction (It is best to save the old piece, which is cut off, and reuse it)
- 4. PVC coupling to join buried pipe and riser to be attached \*NO PVC glue or primer are to be used.



## Preconstruction condition

Well reconstruction

Figure 1



Department of

4930 Energy Way

Reno, NV 89502-4106

Tel: (775) 954-4600 Fax: (775) 954-4610 Lowering of PVC well casing during construction

- 1. Contact Tim Donahoe (954-4635/544-3826) before a monitoring well is to be lowered to provide oversight for the process.
- 2. Excavate around the well casing to a depth of 23" below the existing
- 3. Cut the PVC well casing flush 19" below the ground surface, and place the water-tight cap from the top of the casing into the top and tighten.
- 4. Expose 2" of PVC casing below the cut by removing the grout seal, but leave 2" or more of the seal exposed above the bottom of the excavation.
- 5. See Figure 2 on the next page for details.

\*SAVE the piece of PVC well casing to reuse in raising the well as it is a special well casing ASTM F480 standard.

# Existing surface \_\_\_ Annular grout seal 2" PVC well casing

# **During construction**

Figure 2



**Washoe County** Department of Water Resources 4930 Energy Way Reno, NV 89502-4106 Tel: (775) 954-4600 Fax: (775) 954-4610

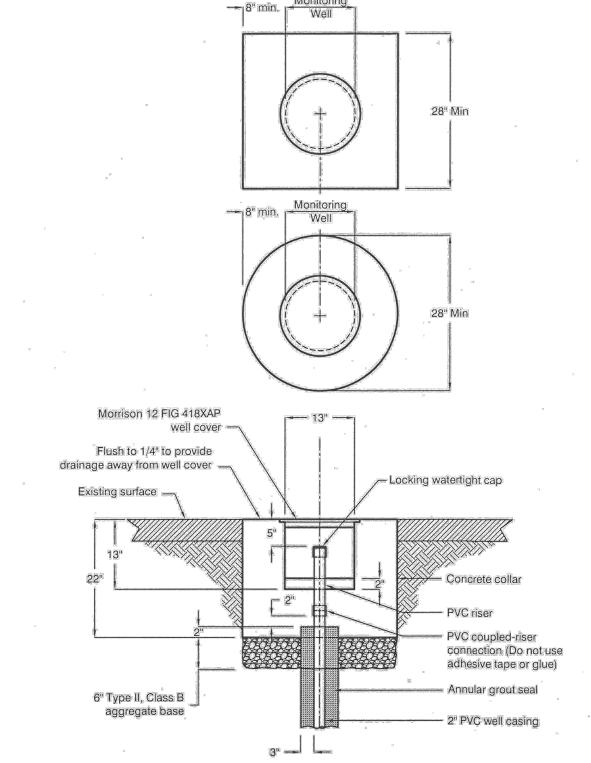
1. Contact Tim Donahoe (954-4635/544-3826) before reconstructing and raising a monitoring well to provide oversight of the process.

Excavate around the well to a circular diameter of at least 28" and a depth of 28". Square-shape excavation is not recommended unless required by

- 3. Place 6" of Type 2, Class B aggregate base at the base of the excavation and compact manually.
- Add the PVC riser pipe by dry-fitting a PVC coupling. Use either the piece of pipe that was cut off and saved or an ASTM F480 pipe which matches the schedule and diameter of the buried pipe. Do not use any glue or adhesive!
- 5. Pour concrete to cover the road base, grout seal around the pipe, and PVC
- 6. Set the Morrison manhole/valve box so that the lip is no more than 1/4" above the final grade of the road. The triangle on the lid should point North.
- 7. Check the final dimensions (Fig. 3) and complete the apron with a broom finish.

Department of

\*Do not use any PVC glue, primer, or any type of adhesive on the coupling!



The completed vault will have a well cover that is centered within the concrete collar and is flush or extends no more than one-quarter inch above the roadway surface. The concrete apron will be graded such that the well cover rim is flush with the concrete and the apron slopes away from the well cover to provide drainage away from the well cover creating a watertight configuration. Well cover and concrete collar shoall be appropriately traffic-rated and meet City or County specifications.

**WCDWR Monitoring Well Vault specifications** Figure 3



WASHOE COUNTY MONITORING WELL

ADJUSTMENT DETAIL

16 **of** 16

CJA 17.02.15

Revision

Drawing No. DT-5

BED