CITY OF SPARKS
'G' STREET SEWER IMPROVEMENTS AND WATER MAIN RELOCATION

City of Sparks

SPARKS CITY COUNCIL

MAYOR	ED LAWSON
WARD 1	DONALD ABBOTT
WARD 2	DIAN VANDERWELL
WARD 3	PAUL ANDERSON
WARD 4	CHARLENE BYBEE
WARD 5	JOE RODRIGUEZ

PWP # WA-2025-204

BID # 24/25-013

TMWA PROJECT # 10-0001.120

MARCH 2025

Dylan Carey

Digitally signed by Dylan Carey
DN: C=US,
E=dcarey@kellerassocaites.com,
CN=Dylan Carey
Reason: I am the author of this document
Date: 2025.03.03 12:43:22-08'00'

Jeremy Wilson

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Date: 2025.03.03 12:45:03-08'00'

APPROVED BY:

3/4/2025

AMBER SOSA, P.E. — DATE
CITY ENGINEER

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- C-530 - PIPE CONNECTIONS DETAILS 1
- C-531 - PIPE CONNECTIONS DETAILS 2

SANITARY SEWER OWNER
CITY OF SPARKS
431 PRATER WAY
SPARKS, NV 89431
CONTACT: BOB SCHRICKER, CCM
PHONE: 775-353-2305

WATER UTILITY PROJECT REPRESENTATIVE
TRUCKEE MEADOWS WATER AUTHORITY
1365 CAPTAL BLVD
RENO, NV 89520
CONTACT: BECCA EPSTEIN, PE
PHONE: 775-834-8057

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KELLER ASSOCIATES, INC.
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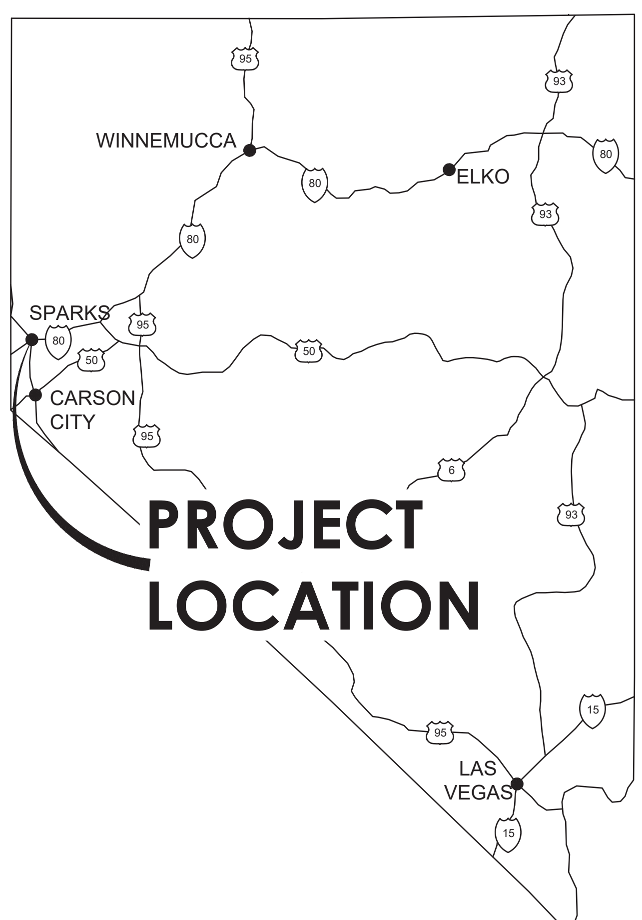
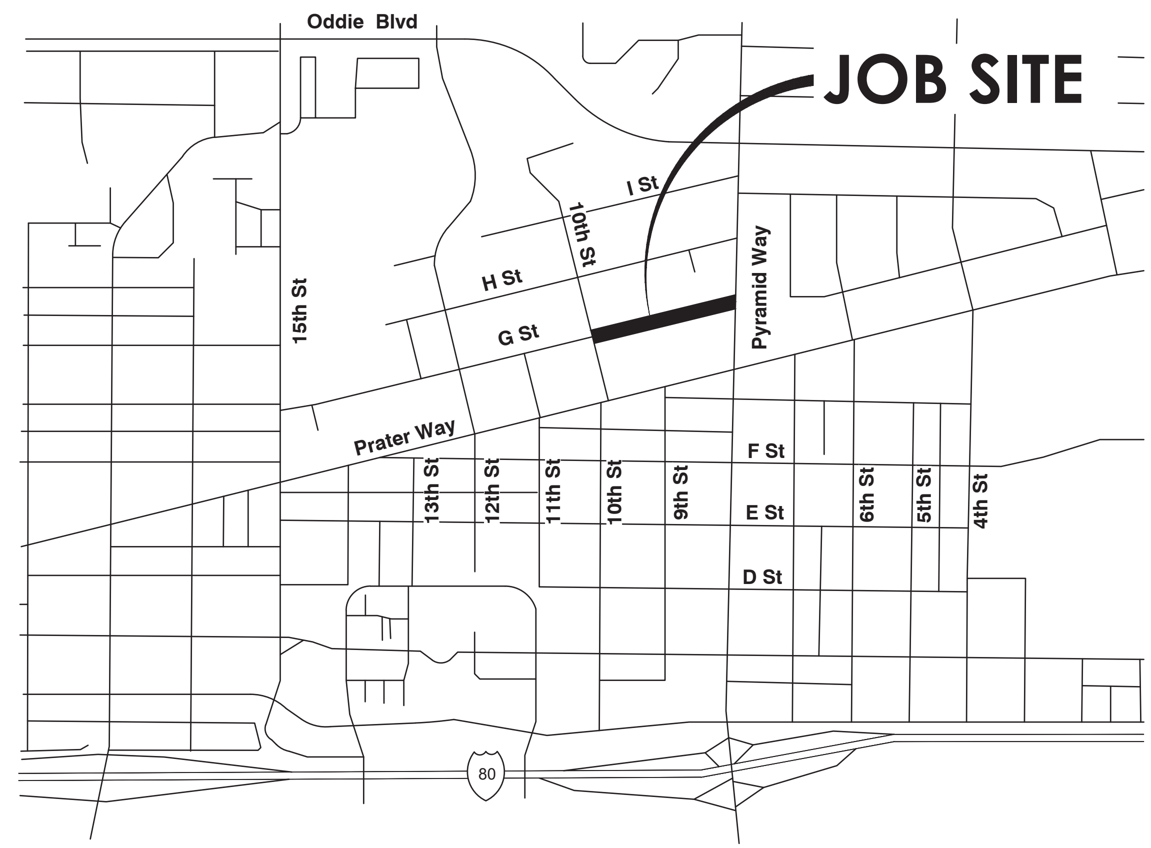


A1 LOCATION MAP
N.T.S.

811
Know what's below. Call before you dig.
800.342.1585



A3 VICINITY MAP
N.T.S.

KELLER ASSOCIATES
1325 Airmotive Way, Suite 375
Reno, NV 89502
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NO. | REVISIONS | DATE

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CITY OF SPARKS

G STREET SEWER IMPROVEMENTS AND WATER MAIN RELOCATION

COVER SHEET

DRAWN: EWC | CHECK: JW

VERIFY SCALE: Scales based on 22"x34" prints.
1-1/2 Inches

PROJECT NO. 223014 | PAGE

SHEET NO. G-001

GENERAL NOTES:

1) ALL CONSTRUCTION SHALL CONFORM TO THE 2012 EDITION OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION AND THE STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION FOR THE CITY OF SPARKS.

2) THE CONTRACTOR IS REQUIRED TO OBTAIN ALL NECESSARY PERMITS AND PAY ALL FEES PRIOR TO CONSTRUCTION.

3) 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 PURPOSES OF THE INSTALLATION. IF THERE ARE ANY DISCREPANCIES REGARDING THE IMPLIED MEANING OF THESE PLANS, THE CONTRACTOR IS DIRECTED TO CONTACT THE CONSULTING ENGINEER IMMEDIATELY.

   KELLER ASSOCIATES, INC.
   1325 AIRMOTIVE WAY, SUITE 375
   RENO, NEVADA 89502
   JEREMY WILSON, P.E., PROJECT MANAGER
   PHONE: (775) 451-7288

4) ALL EXCAVATION AND EMBANKMENT SHALL BE IN ACCORDANCE WITH CITY OF SPARKS STANDARDS.

5) THE CONTRACTOR SHALL MAINTAIN ALL EXISTING DRAINAGE FACILITIES WITHIN THE CONSTRUCTION AREA. NO FENCE OR OTHER OBSTRUCTION WHICH INTERFERES WITH DRAINAGE SHALL BE CONSTRUCTED OR ALLOWED.

6) THE CONTRACTOR SHALL TAKE ALL NECESSARY AND PROPER PRECAUTIONS TO PROTECT ADJACENT PROPERTIES FROM ANY AND ALL DAMAGE THAT MAY OCCUR FROM STORMWATER RUNOFF AND/OR DEPOSITION OF DEBRIS RESULTING FROM ANY AND ALL WORK IN CONNECTION WITH PROJECT SCOPE.

7) SHOULD ANY PREHISTORIC OR HISTORIC REMAINS OR ARTIFACTS BE DISCOVERED DURING CONSTRUCTION, WORK SHALL TEMPORARILY BE 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.

8) 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 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 WORKS CONSTRUCTION FOR THE CITY OF SPARKS.

9) PRIOR TO FINAL ACCEPTANCE AND BOND RELEASES, A CERTIFIED LEGIBLE AS-BUILT DRAWING MUST BE SUBMITTED TO THE CITY OF SPARKS. AS-BUILT DRAWING MUST SHOW ALL CHANGES AND ACTUAL FIELD LOCATIONS. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE AN AS-BUILT DRAWING SHOWING ALL CHANGES AND ACTUAL FIELD LOCATIONS. IN THE ABSENCE OF CHANGES, A COPY OF APPROVED DRAWINGS WILL BE REQUIRED STATING “INSTALLED AS PER DRAWINGS”.

10) CONTRACTOR SHALL PROVIDE ALL NECESSARY HORIZONTAL AND VERTICAL TRANSITION BETWEEN NEW CONSTRUCTION AND EXISTING SURFACES TO PROVIDE PROPER DRAINAGE AND OF INGRESS AND EGRESS TO SAID CONSTRUCTION. EXTENT OF TRANSITION TO BE DETERMINED BY THE ENGINEER.

11) EXISTING UTILTIES ARE LOCATED ON PLANS FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. THE CONTRACTOR SHALL BEAR FULL RESPOSIBILITY FOR THE PROTECTION OF UTILITIES AND THE ENGINEER BEARS NO RESPONIBILITY FOR UTILITIES NOT SHOWN ON THE PLANS OR NOT IN THE LOCATION SHOWN ON THE PLANS. THIS INCLUDES ALL SERVICE LATERALS OF ANY KIND.

12) CALL UNDERGROUND SERVICE ALERT NORTH (USA NORTH – 811) FOR UTILITY LOCATIONS PRIOR TO CONSTRUCTION.

13) THE CONTRACTOR SHALL OBTAIN WRITTEN APPROVAL FROM THE OWNER PRIOR TO USING A STAGING AREA WITHIN A RESIDENTIAL NEIGHBORHOOD. NO MATERIALS OF ANY KIND SHALL BE STOCKPILED OR CONSTRUCTION EQUIPMENT PARKED ON CONCRETE OR ASPHALT SURFACES WITHOUT APPROVAL BY THE OWNER. ONCE APPROVED, THE CONTRACTOR MUST MAINTAIN ALL STOCKPILED MATERIALS AND CONSTRUCTION EQUIPMENT WITHIN THE CITY RIGHT-OF-WAY IN THE DESIGNATED LOCATIONS APPROVED BY THE OWNER.

14) ALL EXCESS OR UNSUITABLE MATERIAL SHALL BE DISPOSED OF IN ACCORDANCE WITH CITY AND COUNTY CODES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMMEDIATE OFF-SITE DISPOSAL OF ALL BITUMINOUS PAVEMENT, CONCRETE AND REINFORCEMENT, AND SPOILS NOT NEEDED FOR BACKFILL AS REQUIRED BY THE ENGINEER AND PER SPECIFICATIONS. DISPOSE OF DEMOLISHED STUCTURES, EQUIPMENT AND OTHER MATERIALS OFFSITE AT A LOCATION DETERMINED BY THE CONTRACTOR IN ACCORDANCE WITH STATE AND FEDERAL LAWS UNLESS NOTED.

15) PROTECTION AND REPLACEMENT OF SURVEY MONUMENTS OR PROPERTY STAKES NOT DELINEATED ON THE CONTRACT DRAWINGS SHALL BE THE CONTRACTOR’S RESPONSIBILITY. REPLACEMENT OF SURVEY MONUMENTS OR PROPERTY STAKES SHALL BE DONE TO THE CITY OF SPARKS SURVEY SECTION’S SATISFACTION.

16) THE CONTRACTOR SHALL TAKE REASONABLE MEASURES TO PROTECT EXISTING IMPROVEMENTS FROM DAMAGE AND ALL SUCH IMPROVEMENTS DAMAGED BY THE CONTRACTOR’S OPERATION SHALL BE REPAIRED OR RECONSTRUCTED TO THE ENGINEER’S SATISFACTION AT THE EXPENSE OF THE CONTRACTOR.

17) THE CONTRACTOR SHALL MAINTAIN ACCESS TO AT LEAST ONE DRIVEWAY TO EACH PROPERTY DURING CONSTRUCTION.

18) ANY STRIPING DAMAGED OR REMOVED DURING CONSTRUCTION SHALL BE REPLACED AT THE CONTRACTOR’S EXPENSE TO THE SATISFACTION OF THE ENGINEER, UNLESS OTHERWISE DESIGNATED FOR REPLACEMENT ON THE PROJECT PLANS.

19) IN ACCORDANCE WITH THE NEVADA DIVISION OF ENVIRONMENTAL PROTECTION (NDEP) GENERAL PERMIT FOR CONSTRUCTION ACTIVITIES; AND THE NEVADA DEPARTMENT OF TRANSPORTATION (NDOT) STANDARD OCCUPANCY PERMIT FOR UNDERGROUND INSTALLATIONS; THE CONTRACTOR SHALL HAVE A RUNOFF CONTROL PLAN (RCP) ON SITE AT ALL TIMES. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN THE BMP’S CONDUCT SELF INSPECTIONS AND UPDATE THE RCP.

DEMOLITION:

20) DEMOLITION AND REMOVAL AREAS SHOWN ARE APPROXIMATE. PRIOR TO DEMOLITION, SPRAY PAINT LIMITS OF REMOVALS OF EXISTING FACILITY, OBTAIN ENGINEER’S APPROVAL OF REMOVAL LIMITS. IF THE CONTRACTOR REMOVES MORE THAN APPROVED BY THE ENGINEER OR FAILS TO OBTAIN THE ENGINEER’S APPROVAL, CONSTRUCTION TO REPLACE NON-APPROVED DEMOLITION WILL BE AT THE CONTRACTOR’S EXPENSE AND NO PAYMENT WILL BE MADE TO THE CONTRACTOR FOR NON-APPROVED DEMOLITION REPLACEMENT.

21) THE CITY AND ENGINEER ASSUME NO RESPONSIBILITY FOR ACTUAL CONDITIONS OF ITEMS OR STRUCTURES TO BE DEMOLISHED OR CONDITIONS EXISTING AT TIME OF COMMENCEMENT OF CONTRACT.

22) PROTECT FROM DAMAGE EXISTING FINISH WORK THAT IS TO REMAIN IN PLACE THAT BECOMES EXPOSED DURING DEMOLITION OPERATIONS TO PROTECT ADJACENT AREAS WITH SUITABLE COVERINGS WHEN NECESSARY TO PREVENT SURFACE DAMAGE, INCLUDING PROTECTING EXISTING CONCRETE AND ASPHALT SURFACES.

SANITARY SEWER:

23) THE HORIZONTAL SEPARATION OF POTABLE WATER MAINS AND NON-POTABLE WATER MAINS (SANITARY SEWER, STORM DRAIN, AND IRRIGATION) SHALL BE A MINIMUM OF TEN (10) FEET. WHERE IT IS NECESSARY FOR A POTABLE WATER MAIN AND NON-POTABLE WATER MAIN TO CROSS WITH LESS THAN EIGHTEEN (18) INCHES OF VERTICAL SEPARATION, THE CROSSING SHALL BE CONSTRUCTED IN ACCORDANCE WITH NEVADA ADMINISTRATIVE CODE (NAC 445A.67155).

24) GROUNDWATER LEVELS SHALL BE MAINTAINED BELOW THE TRENCH BOTTOM AT ALL TIMES DURING CONSTRUCTION. GROUNDWATER SHALL NOT BE PERMITTED TO ENTER THE PIPELINE SYSTEM DURING CONSTRUCTION.

25) SEWERS SHALL BE CLEANED AND TESTED AFTER ALL UTILITIES ARE INSTALLED AND PRIOR TO PAVING. MATERIAL CLEANED FROM THE CONSTRUCTION SHALL NOT BE PERMITTED TO DISCHARGE TO THE DOWNSTREAM RECEIVING PIPELINE. ALL INSTALLED SEWER PIPES SHALL BE TESTED IN ACCORDANCE WITH STANDARD D3212 OF THE AMERICAN SOCIETY FOR TESTING AND MATERIALS. A REPRESENTATIVE OF THE CITY MUST BE PRESENT TO OBSERVE THE TESTING. PIPELINE TESTING SHALL INCLUDE AIR PRESSURE TESTING. MANHOLES SHALL BE VACUUM OR HYDROSTATICALLY TESTED FOR LEAKAGE. THE SEWER SYSTEM SHALL NOT ACCEPT FLOWS UNTIL THE CITY ISSUES AN INITIAL ACCEPTANCE OF THE SYSTEM.

26) CLOSED-CIRCUIT TELEVISION (CCTV) VISUAL INSPECTION AND THE CCTV REPORT SHALL BE PROVIDED BY THE CITY.

27) LENGTH SHOWN ARE INTENDED TO REPRESENT THE DISTANCE FROM CENTER OF MANHOLE TO CENTER OF MANHOLE, IN ACCORDANCE WITH MEASUREMENT AND PAYMENT.

28) A REPRESENTATIVE OF THE CITY MUST BE PRESENT TO OBSERVE ALL SERVICE LINE CONNECTIONS TO EXISTING SERVICES AND THE MAINLINE.

29) ANY REQUIRED BYPASS PUMPING WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE BYPASS PUMPING SYSTEM MUST MAINTAIN THE CURRENT LEVEL OF SERVICE IN THE SANITARY SEWER SYSTEM THROUGHOUT CONSTRUCTION AND BE EQUIPPED WITH AN ALARM SYSTEM.

30) ALL MANHOLE BARREL JOINTS SHALL BE WRAPPED WITH EXTERNAL JOINT WRAP M-860 OR APPROVED EQUAL.

TOPOGRAPHIC SURVEY:

31) REFER TO SPECIAL PROVISIONS SECTION 29 FOR CONSTRUCTION STAKING.

32) A FIELD SURVEY WAS CONDUCTED ON JUNE 8, 2023 BY:

   US GEOMATICS, INC.
   648 LANDER ST
   RENO, NV 89509
   (775) 786-5111

33) THE LOCATION OF UNDERGOUND UTILITIES SHOWN HEREON ARE FROM SURFACE APPARENT MARKINGS AND FEATURES. UTILITY LOCATIONS ARE SHOWN ONLY FOR THE CONVENIENCE OF THE CONTRACTOR. THE CONTRACTOR SHALL BEAR FULL RESPONSIBILITY FOR THE PROTECTION OF THE UTILITIES AND US GEOMATICS, INC. BEARS NO RESPONSIBILITY FOR UTILITIES NOT SHOWN HEREON. THIS INCLUDES SERVICE LATERALS OF ANY KIND.

34) THIS MAP DOES NOT REPRESENT A BOUNDARY SURVEY, AND SHOULD NOT BE REFERRED TO OR USED AS SUCH.

35) NORTH WAS ESTABLISHED WITH GPS OBSERVATIONS (NEVADA STATE PLANE COORDINATES, WEST ZONE, NAD83) OF WASHOE COUNTY GPS POINT “N53SM01100”, WHICH HAS COORDINATES PUBLISHED ONLINE BY WASHOE COUNTY.

36) THE VERTICAL DATUM AND DISTANCES SHOWN HEREON HAVE GROUND VALUES. THE WASHOE COUNTY COMBINED FACTOR OF 0.999802100 WAS USED TO SCALE GRID COORDINATES TO GROUND COORDINATES.

   GROUND-TO-GRID SCALE FACTOR = 0.999802100
   GRID-TO-GROUND SCALE FACTOR = 1.000197939

EROSION AND SEDIMENT CONTROL:

37) THE PROJECT DISTURBS LESS THAN ONE ACRE AND IS THEREFORE EXEMPT FROM PREPARING A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) OR FILING A NOTICE OF INTENT. REFER TO GENERAL NOTE 19 FOR DETAILS.

38) ON SLOPING AREAS, THE CONTRACTOR SHALL TAKE PRECAUTIONS TO MITIGATE ANY POSSIBLE EROSION PROBLEMS IN TRENCHES DUE TO STORMWATER THAT MIGHT OCCUR DURING OR AFTER CONSTRUCTION AS DIRECTED OR APPROVED BY ENGINEER.

39) DURING CONSTRUCTION, THE CONTRACTOR IS FULLY RESPONSIBLE FOR ITERIM PROVISIONS FOR PASSAGE OF IRRIGATION AND STORMWATER. NO SUPPLEMENTAL COMPENSATION WILL BE MADE FOR WET CONDITIONS OR FLOW DIVERSIONS.

40) THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO ENSURE THAT NO STORM WATER/SEDIMENT AND/OR CONSTRUCTION DEBRIS ARE RELEASED FROM THE SITE. ANY RELEASES SHALL BE CLEANED AND MITIGATED AT CONTRACTOR’S EXPENSE.

KELLER ASSOCIATES
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NO.	REVISIONS	DATE

CITY OF SPARKS

G STREET SEWER IMPROVEMENTS AND WATER MAIN RELOCATION

GENERAL NOTES SHEET 1

DRAWN: EWC | CHECK: JW

VERIFY SCALE: Scales based on 22"x34" prints.

1-1/2 Inches

PROJECT NO. 223014 | PAGE

SHEET NO. G-002

EXISTING TOPOGRAPHY

- 2460 — TOPOGRAPHIC CONTOUR
- EG — EG — EDGE OF GRAVEL
- EP — EP — EDGE OF PAVEMENT
- CURB & GUTTER, SIDEWALK & DROP INLET
- GENERIC GATE — X — SWING GATE — FENCE (BARBED WIRE OR OTHER WITH GATES)
- SLIDER GATE — O — O — FENCE (CHAINLINK WITH GATE)
- DITCH FLOWLINE
- TP-31 — TEST PIT
- SIGN
- BUILDING OR STRUCTURE

PROPERTY & CONTROL

- CP #203 — SURVEY CONTROL POINT
- BM-#1 — BENCHMARK
- FOUND BRASS CAP
- FOUND ALUMINUM CAP
- FOUND 5/8" STEEL PIN
- SET 5/8" STEEL PIN W/CAP
- FOUND 1/2" STEEL PIN
- SET 1/2" STEEL PIN W/CAP
- FOUND PK NAIL
- SET PK NAIL
- CALCULATED POINT
- WC — WITNESS CORNER
- EASEMENT - UTILITY
- EASEMENT - TEMPORARY
- EASEMENT - SETBACK
- PROJECT BOUNDARY
- P/L — P/L — PROPERTY LINES
- SECTION LINES
- R/W — R/W — PRESCRIPTIVE RIGHT OF WAY
- ROW — ROW — DEDICATED RIGHT OF WAY
- ( ) — DATA OF RECORD
- 6 / 7 — QUARTER SECTION - NOT FOUND
- 5 — CENTER SECTION
- 5 / 6 / 7 / 8 — SECTION CORNER - FOUND

EXISTING UTILITY

- 8"W — W — 8"W — WATERLINE & VALVE
- W — WATER SERVICE LINE & METER
- 12"SS> — 12"SS> — SANITARY SEWER LINE & MANHOLE
- <4"SS — <4"SS — SANITARY SEWER SERVICE & CLEANOUT
- PS — PS — PRESSURE SEWER LINE & VALVE VAULT
- 10"SD> — 10"SD> — STORM DRAIN LINE & MANHOLE
- 8"PI — 8"PI — 8"PI — PRESSURE IRRIGATION & VALVE
- GI — GI — GI — GRAVITY IRRIGATION & MANHOLE
- PP — OHP — OHP — OVERHEAD POWER LINE & POWER POLE
- UGP — UGP — UNDERGROUND POWER LINE
- LIGHT POLE
- NG — NG — NG — NATURAL GAS LINE
- FO — FO — FO — FIBER OPTIC LINE
- TR — T — T — T — TELEPHONE LINE & RISER
- TV — CABLE — CABLE — CABLE LINE & RISER

PROPOSED GRADING

- 2457 — TOPOGRAPHIC CONTOUR
- RIDGELINE
- 1.50% — DRAINAGE ARROW & SLOPE
- +57.73 — SPOT ELEVATION
- SWALE FLOWLINE
- DAYLIGHT - CUT LINE
- DAYLIGHT - FILL LINE

PROPOSED DEMOLITION, ABANDONMENT, REMOVAL

- SAW CUT
- ABANDONED (PREVIOUS PROJECT)
- ABANDON IN PLACE
- 16"W — 16"W — DEMOLITION - REMOVE

PROPOSED SITE (CONT.)

- GENERIC GATE — X — SWING GATE — FENCE (BARBED WIRE OR OTHER WITH GATES)
- SLIDER GATE — O — FENCE (CHAINLINK WITH GATE)
- EP — EP — EDGE OF PAVEMENT
- EG — EG — EDGE OF GRAVEL
- SIGN
- 6" VERTICAL CURB, GUTTER, SIDEWALK & INLET
- 6" VERTICAL CUT CURB & GUTTER
- 6" REVERSE CURB & GUTTER
- 6" REVERSE CUT CURB & GUTTER
- IMBEDDED CURB

PROPOSED UTILITY

- BEND
- TEE
- REDUCING TEE
- REDUCER
- JOINT COUPLING
- CROSS
- CAP / BLIND FLANGE
- CHECK VALVE
- VALVE
- NORMALLY OPEN VALVE
- NORMALLY CLOSED VALVE
- FLUSH VALVE
- COMBINATION AIR RELEASE VALVE
- WATER SERVICE LINE & METER
- FIRE HYDRANT
- 18"W — 18"W — WATERLINE

PROPOSED UTILITY (CONT.)

- 8"SS< — 8"SS< — SANITARY SEWER & MANHOLE
- 4"SS< — SANITARY SEWER SERVICE & CAP
- 4"SS< — 4"SS< — SANITARY SEWER SERVICE & CLEANOUT
- 8"PS< — 8"PS< — PRESSURE SEWER & VALVE VAULT
- 18"SD< — 15"SD< — STORM DRAIN LINE, INLET & CATCH BASIN
- 12"SD< — 12"SD< — STORM DRAIN LINE & MANHOLE W/ VENTED LID
- JOINT TRENCH IN PROFILE
- C T — CABLE & TELEPHONE RISERS
- JT — DEVICE — JT — JOINT TRENCH & DEVICE
- JB — JUNCTION BOX & DUCT BANK
- NG — GM — NG — NATURAL GAS LINE & METER
- NG — GR — NG — NATURAL GAS LINE & RISER
- NG — NG — NATURAL GAS LINE & VALVE
- UGP — UGP — UNDERGROUND POWER
- OHP — PP — OHP — OVERHEAD POWER & POLE
- LIGHT POLE
- T — T — TR — TELEPHONE LINE & RISER
- T — FO — FO — FIBER OPTIC LINE & VAULT
- T/D — T/D — TELEPHONE DATA LINE
- TV — CABLE — CABLE & TV RISER

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PROFESSIONAL ENGINEER STATE OF NEVADA
DYLAN CAREY
Exp: 12.31.2026
CIVIL
No. 032142
DATE OF SIGNATURE

NO.	REVISIONS	DATE

CITY OF SPARKS

G STREET SEWER IMPROVEMENTS AND WATER MAIN RELOCATION

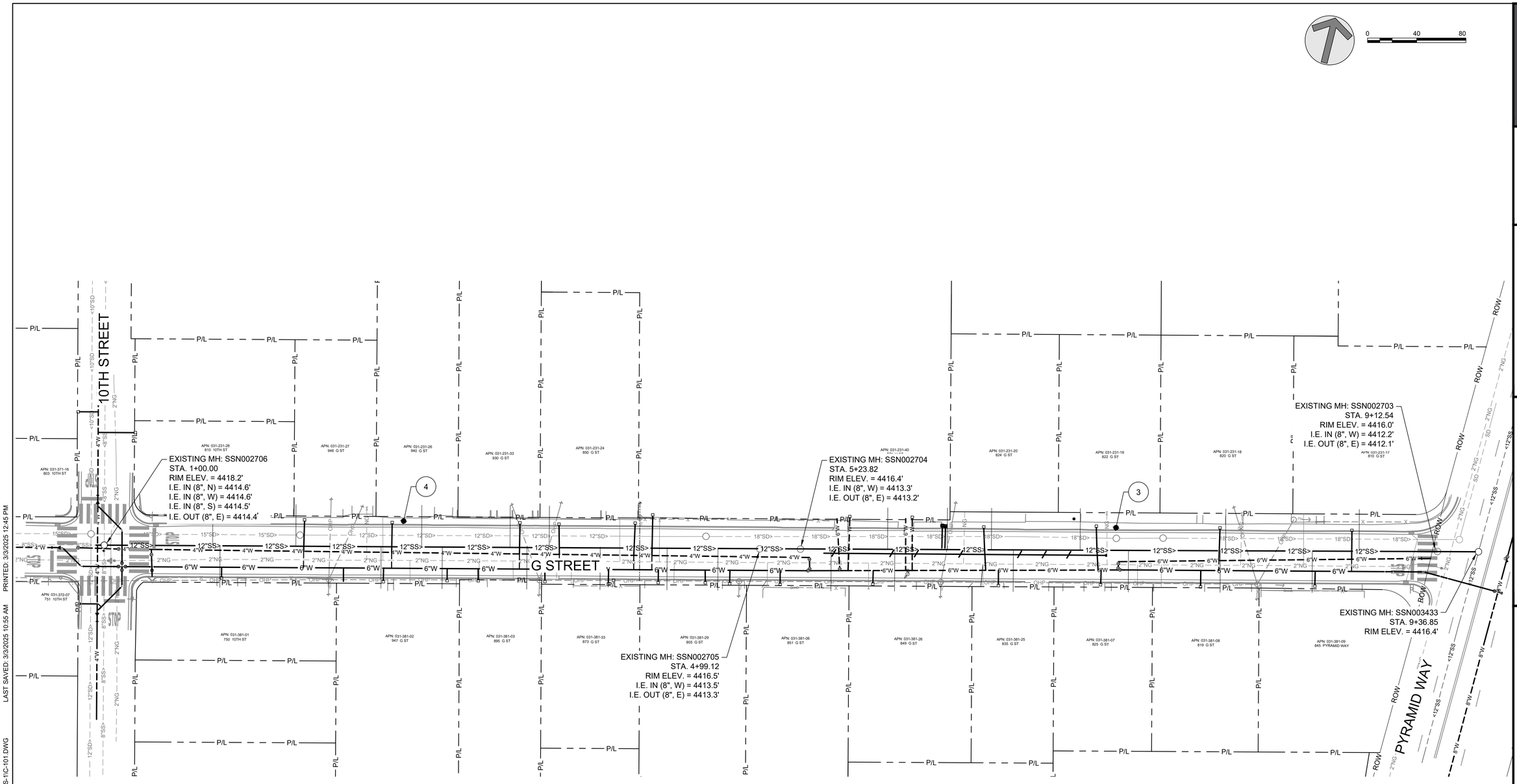
SYMBOLS & LINE LEGEND

DRAWN: EWC | CHECK: JW

VERIFY SCALE: Scales based on 22"x34" prints.
1-1/2 Inches

PROJECT NO. 223014 | PAGE

SHEET NO. C-001



Point Table				
Point #	Northing	Easting	Elevation	Raw Description
3	14872789.16	2295116.84	4415.98	SET MAGNAIL
4	14872693.60	2294693.10	4417.18	SET MAGNAIL

SURVEY NOTES

ALL GPS POINTS ADJUSTED HORIZONTALLY TO WASHOE COUNTY GPS CONTROL POINT "N53SM01100" AND VERTICALLY TO CITY OF SPARKS CONTROL POINT NO. 2003, WHICH HAS A PUBLISHED ELEVATION OF 4441.4 FEET.

ALL POINTS THEN SCALED TO GROUND COORDINATES USING THE WASHOE COUNTY COMBINED FACTOR OF 0.999802100.

--> GRID-TO-GROUND = 1.000197939
--> GROUND-TO-GRID = 0.999802100

--> NEVADA STATE PLANE COORDINATES, WEST ZONE, NAD83, U.S. SURVEY FEET (GROUND)
--> NAVD88, U.S. SURVEY FEET

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PROFESSIONAL ENGINEER - STATE OF NEVADA
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CITY OF SPARKS

G STREET SEWER IMPROVEMENTS AND WATER MAIN RELOCATION

PROJECT OVERVIEW

DRAWN: EWC | CHECK: JW

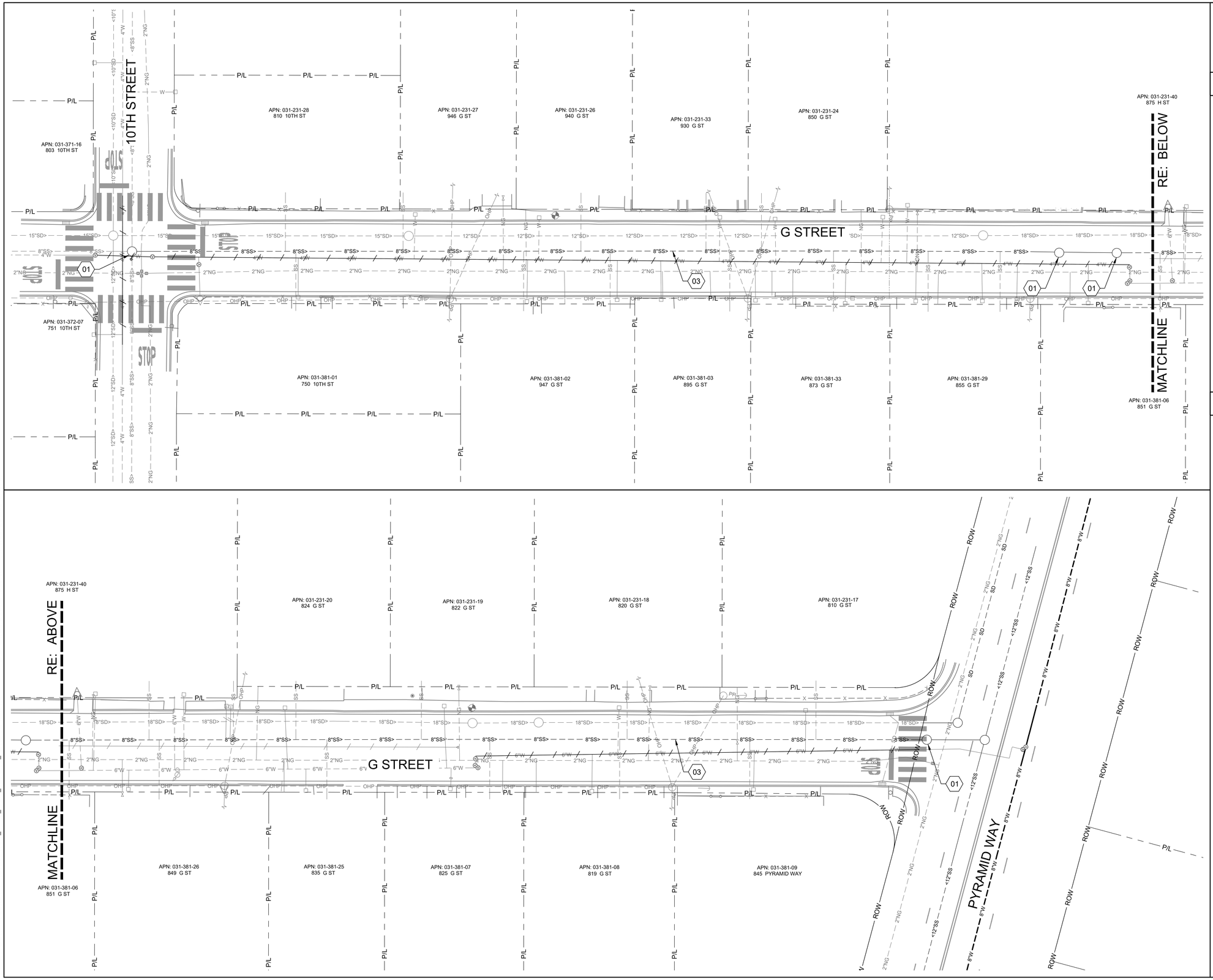
VERIFY SCALE: Scales based on 22"x34" prints.

1-1/2 Inches

PROJECT NO. 223014 | PAGE

SHEET NO. C-101

PRINTED: 3/3/2025 12:45 PM
LAST SAVED: 3/3/2025 10:55 AM
J:\223014 G STREET SEWER IMPROVEMENTS\C_DESN_CAD\3_DESIGN\D_PLANS-1\C-101.DWG



0 20 40

GENERAL SHEET NOTES

1. THE LOCATION, SIZE AND DEPTH OF EXISTING UTILITIES ARE APPROXIMATE. THE CONTRACTOR SHALL POTHOLE ALL UTILITY CROSSINGS AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.
2. CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES AND SURFACE FEATURES UNLESS NOTED OTHERWISE.
3. DISPOSE OF DEMOLISHED MATERIALS OFFSITE AT A LOCATION DETERMINED BY THE CONTRACTOR IN ACCORDANCE WITH STATE AND FEDERAL LAWS AND THE PROJECT SPECIFICATIONS, UNLESS NOTED OTHERWISE.
4. RESTORE ALL PAVEMENT MARKINGS DAMAGED OR REMOVED DURING CONSTRUCTION, PER CITY OF SPARKS STANDARDS.
5. CONTRACTOR TO MAINTAIN THE EXISTING LEVEL OF SANITARY SEWER SERVICE DURING CONSTRUCTION PER TECHNICAL SPECIFICATION 306.04.01.
6. CONTRACTOR TO FIELD DETERMINE EXTENTS OF SAWCUT AND REMOVE EXISTING ASPHALT, RE: C-103.
7. SEE SHEETS W-101 TO W-404 FOR WATER LINE CONSTRUCTION.

SHEET KEYNOTES

01 REMOVE EXISTING MANHOLE; RE: GENERAL NOTE #3

02 NOT USED

03 REMOVE PIPE; RE: GENERAL NOTE #3

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PROFESSIONAL ENGINEER · STATE OF NEVADA
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CITY OF SPARKS

G STREET SEWER IMPROVEMENTS AND WATER MAIN RELOCATION

SITE DEMOLITION - SANITARY SEWER MAIN IMPROVEMENTS

DRAWN: EWC CHECK: JW

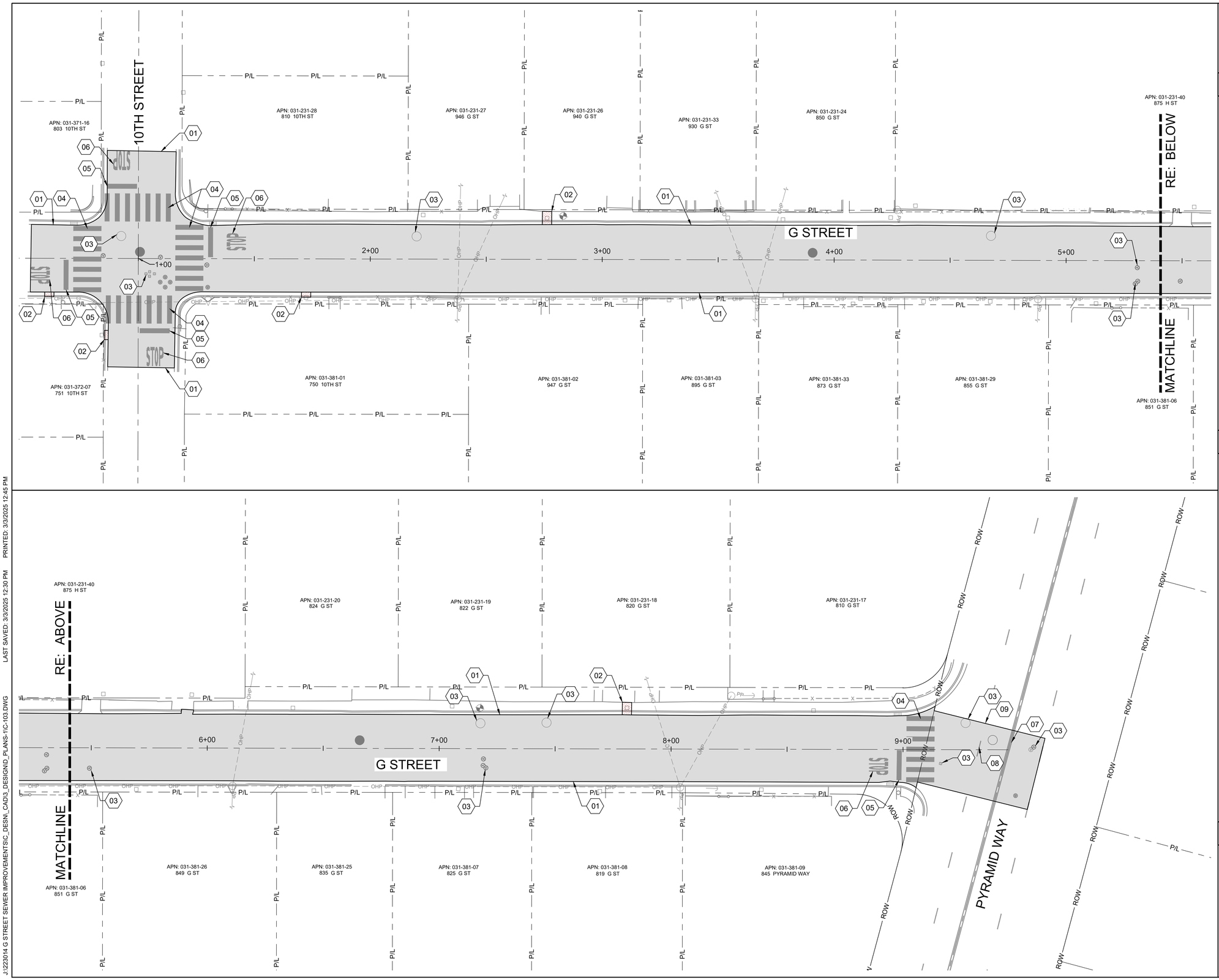
VERIFY SCALE: Scales based on 22"x34" prints.

1-1/2 Inches

PROJECT NO. 223014 PAGE

SHEET NO. C-102

J:\223014 G STREET SEWER IMPROVEMENTS\C_DESN_CAD\3_DESIGN\D_PLANS-11C-102.DWG LAST SAVED: 3/3/2025 10:56 AM PRINTED: 3/3/2025 12:45 PM



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GENERAL SHEET NOTES

1. THE LOCATION, SIZE AND DEPTH OF EXISTING UTILITIES ARE APPROXIMATE. THE CONTRACTOR SHALL POTHOLE ALL UTILITY CROSSINGS AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.
2. CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES AND SURFACE FEATURES UNLESS NOTED OTHERWISE.
3. DISPOSE OF DEMOLISHED MATERIALS OFFSITE AT A LOCATION DETERMINED BY THE CONTRACTOR IN ACCORDANCE WITH STATE AND FEDERAL LAWS AND THE PROJECT SPECIFICATIONS, UNLESS NOTED OTHERWISE.
4. RESTORE ALL PAVEMENT MARKINGS DAMAGED OR REMOVED DURING CONSTRUCTION, PER CITY OF SPARKS STANDARDS.
5. REFER TO SHEETS W-401 TO W-403 FOR WATER METER REPLACEMENT. COORDINATE WITH TMWA FOR THE REPLACEMENT OF EXISTING WATER SERVICE METERS.
6. CONTRACTOR TO REMOVE, SALVAGE, AND REPLACE OR REPLACE IN-KIND, LANDSCAPING FOR EACH PROPERTY AS IS NECESSARY TO COMPLETE CONSTRUCTION AND PROVIDE POSITIVE DRAINAGE AT NO DIRECT PAYMENT. LANDSCAPING INCLUDES, BUT IS NOT LIMITED TO, KEYSTONE WALLS, LANDSCAPE WALLS, SOD, IRRIGATION, BUSHES, ROCK MULCH, LARGE ROCK, ORNAMENTAL CONCRETE, MAILBOXES, ETC.

SHEET KEYNOTES

01 RECONSTRUCT ROAD SECTION: REMOVE 12-INCHES OF EXISTING ASPHALT, AGGREGATE BASE AND SUBGRADE, PLACE 8-INCHES OF TYPE 2 AGGREGATE BASE, COMPACT TO 95% MDD, PLACE 4-INCHES, PLANTMIX BITUMINIOUS PAVEMENT (TYPE 3, 50-BLOW, 3% VOIDS, PG64-28NV WITH LIME MARINATION). RE: S-115/C-501

02 REMOVE & REPLACE TYPE 1 PCC CURB & GUTTER, RE: CITY OF SPARKS DETAIL S-109/C-501. REMOVE SIDEWALK IF REQUIRED, RE: CITY OF SPARKS DETAIL S-109/C-501

03 CONTRACTOR TO PROTECT, LOWER, & ADJUST EXISTING MANHOLES/VALVES WITHIN RECONSTRUCT LIMITS TO NEW FINISHED GRADE

04 150 LF OF 24" CROSSWALK KEYS (THERMOPLASTIC)

05 65 LF OF STOP BAR (THERMOPLASTIC)

06 5 EA OF STOP LEGEND (THERMOPLASTIC)

07 32 LF OF 4" DOUBLE SOLID YELLOW STRIPING (TYPE 2 WATERBORNE PAINT)

08 32 LF OF 4" SINGLE DASHED WHITE STRIPING (TYPE 2 WATERBORNE PAINT)

09 FULL DEPTH PAVEMENT T-PATCH (1,550+/- SF). RE: NDOT TRENCH DETAIL 1/C-512 (SIMILAR)

IMPROVEMENT QUANTITIES

CITY OF SPARKS ROW	
PERMANENT PAVEMENT RESTORATION AND AGGREGATE BASE	26,823 SF
TYPE I CURB & GUTTER REPLACEMENT	16 LF
SIDEWALK REPLACEMENT	30 SF
NDOT ROW	
PERMANENT PAVEMENT RESTORATION & AGGREGATE BASE	1,550 SF

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DYLAN CAREY
Exp: 12.31.2025
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NO.	REVISIONS	DATE

CITY OF SPARKS

G STREET SEWER IMPROVEMENTS AND WATER MAIN RELOCATION

PAVEMENT RESTORATION PLAN

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VERIFY SCALE: Scales based on 22"x34" prints.
1-1/2 Inches

PROJECT NO. 223014 PAGE

SHEET NO. C-103

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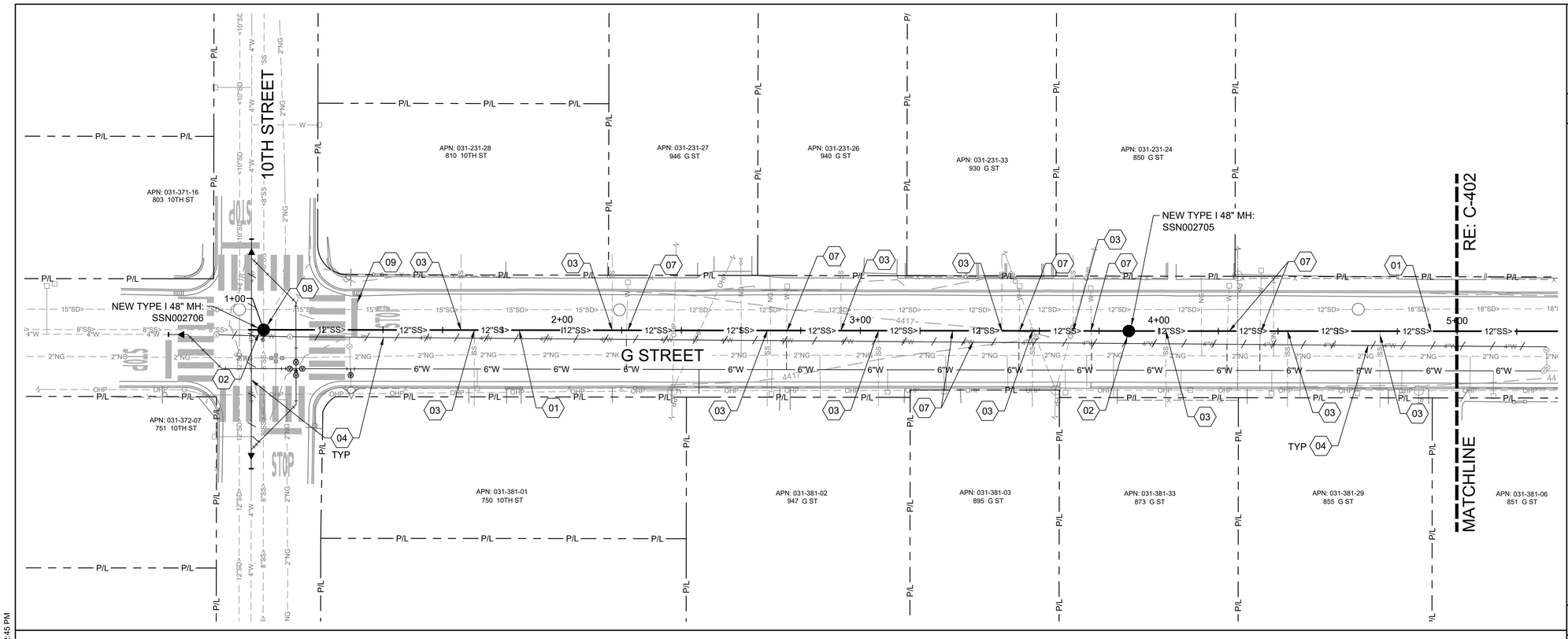

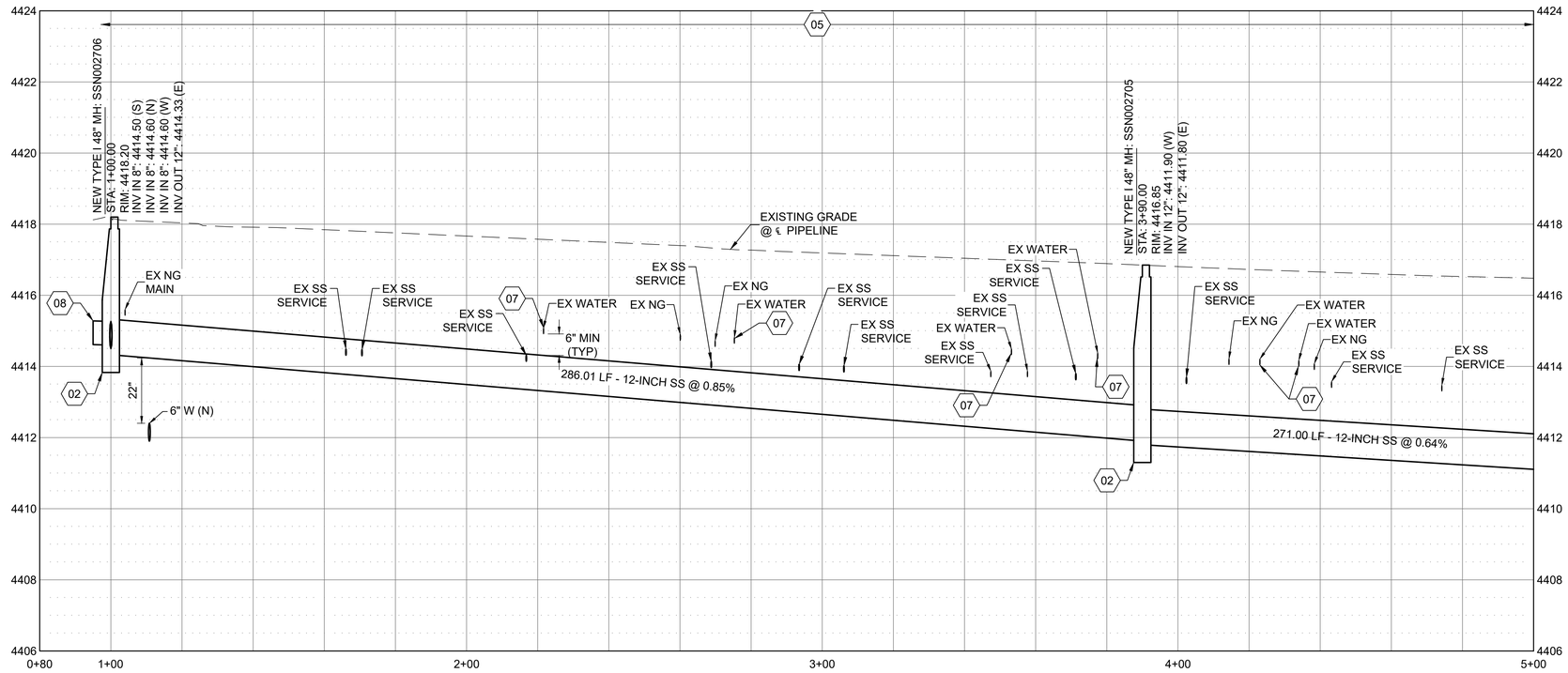

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GENERAL SHEET NOTES

1. CONTRACTOR TO FURNISH MATERIALS WHERE "INSTALL", "PLACE", "CONSTRUCT", "REPLACE" OR "RESET" IS REQUIRED UNLESS NOTED OTHERWISE.
2. CONTRACTOR TO RESTORE MINIMUM CROSS SLOPE IN ROAD FOR PERMANENT BITUMINOUS PAVEMENT PATCHING.
3. CONTRACTOR TO ADHERE TO ALL FEDERAL, STATE, COUNTY, AND ORANGE BOOK REQUIREMENTS WHEN WORKING UNDER OR IN CLOSE PROXIMITY TO OVERHEAD POWER LINES.
4. RETAIN AND PROTECT EXISTING UTILITIES (TYP), CONTRACTOR TO PROVIDE UTILITY SUPPORT AS REQUIRED.
5. PRIOR TO CONSTRUCTION CONTRACTOR TO POTHOLE IN A NON-DESTRUCTIVE MANNER TO VERIFY LOCATION & DEPTH. WHERE EXISTING UTILITIES WILL BE ENCOUNTERED IT IS RECOMMENDED THAT THE CONTRACTOR HAND DIG OR VACUUM TRUCK EXCAVATE FOR MATERIAL EXCAVATION IN THESE AREAS.
6. AREAS DISTURBED BY CONSTRUCTION WHERE SURFACE REPAIR IS NOT INDICATED SHALL BE RESTORED TO CONDITION PRIOR TO CONSTRUCTION.
7. CONTRACTOR RESPONSIBLE TO PREPARE, SUBMIT FOR APPROVAL AND ABIDE BY ALL TRAFFIC CONTROL AS REQUIRED BY THE CITY OF SPARKS AND NDOT; RE: G-002.
8. RESTORE ALL PAVEMENT MARKINGS DAMAGED OR REMOVED DURING CONSTRUCTION; RE: CITY OF SPARKS AND NDOT STANDARDS.
9. RETAIN AND PROTECT EXISTING UTILITIES (TYP), CONTRACTOR TO PROVIDE UTILITY SUPPORT AS REQUIRED.
10. SEE SHEETS W-101 TO W-404 FOR WATER LINE CONSTRUCTION.

SHEET KEYNOTES

01 INSTALL PIPE - 12" PVC SDR 35 PRESSURE CLASS; RE: CITY OF SPARKS DETAIL S-117/C-501

02 INSTALL 48" MH TYPE I; RE: CITY OF SPARKS DETAIL S-206A, S-206D, S-209A & S-210A/C-501

03 RETAIN, PROTECT, AND CONNECT EXISTING SS SERVICE TO NEW SS MAIN; RE: SSPWC 301.04, CITY OF SPARKS DETAILS, S-212A & S-212B/C-502. ENGINEER APPROVAL REQUIRED PRIOR TO DEVIATION FROM STANDARD DETAIL

04 REFER TO SHEET W-101 FOR WATER MAIN DEMOLITION & ABANDONMENT

05 PLACE ASPHALT PAVEMENT SURFACE MATCH EXISTING; RE: C-103

06 NOT USED

07 MAINTAIN WATER SEWER SEPARATION (TYP); RE: TMWA DETAIL 10L-10 & 10L-13/C-511

08 CONNECT EXISTING PIPE TO NEW MANHOLE USING FERNCO RS 5000 SERIES OR APPROVED EQUAL AND PVC SDR 35 PRESSURE CLASS PIPE MINIMUM OF 1 FOOT FROM MANHOLE OUTSIDE WALL; RE: SPEC 306.04

09 REMOVE EXISTING PIPE AND PLACE 12" SDR-35 STORM DRAIN LATERAL

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3/3/2025

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CITY OF SPARKS

G STREET SEWER IMPROVEMENTS AND WATER MAIN RELOCATION

PLAN & PROFILE - G STREET NEW GRAVITY SANITARY SEWER

DRAWN: MC	CHECK: JW

VERIFY SCALE: Scales based on 22"x34" prints.
1-1/2 Inches

PROJECT NO.	PAGE
223014	

SHEET NO. C-401

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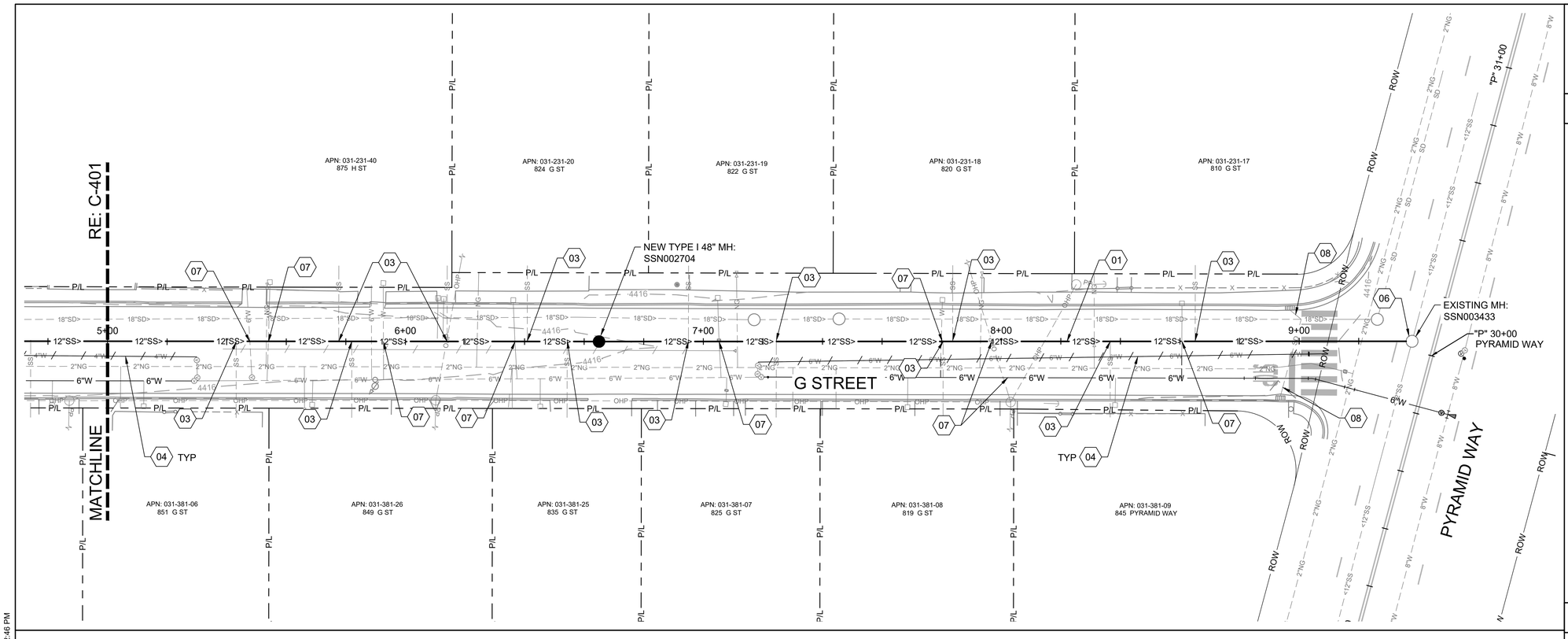

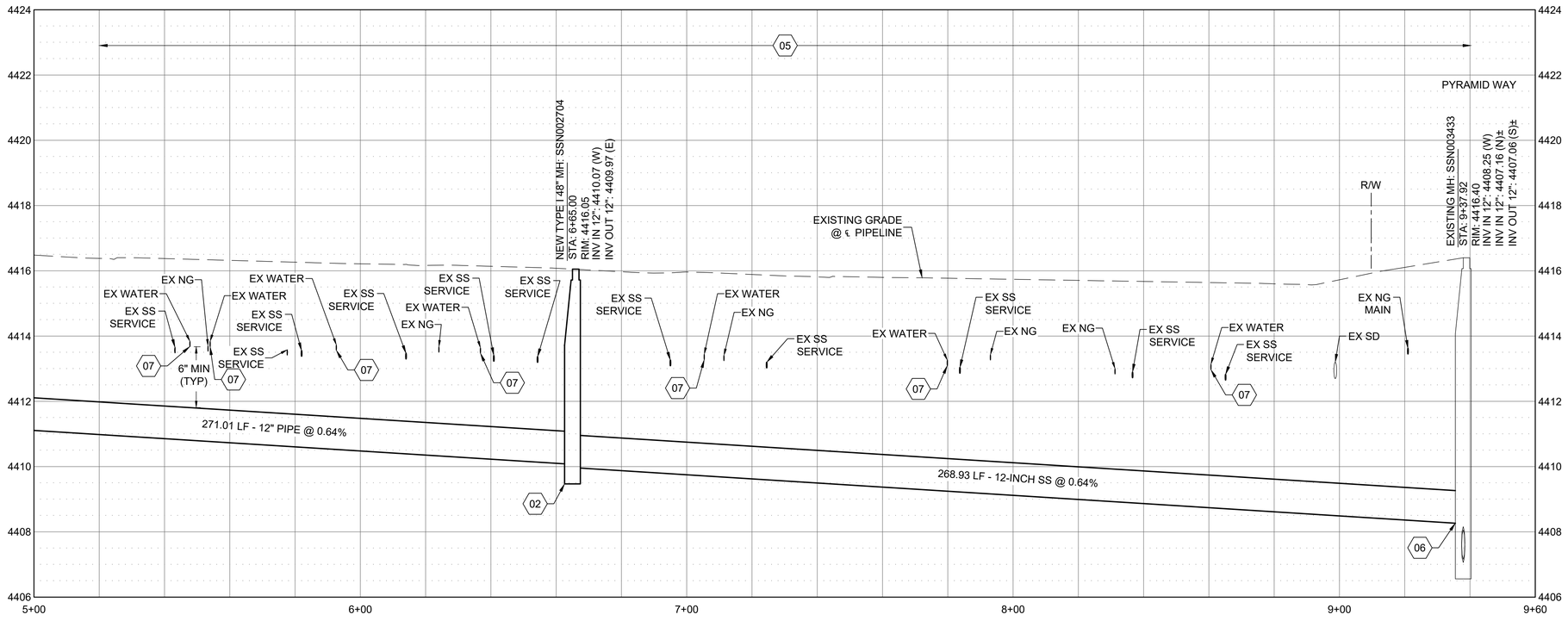

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GENERAL SHEET NOTES

1. CONTRACTOR TO FURNISH MATERIALS WHERE "INSTALL", "PLACE", "CONSTRUCT", "REPLACE" OR "RESET" IS REQUIRED UNLESS NOTED OTHERWISE.
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3. CONTRACTOR TO ADHERE TO ALL FEDERAL, STATE, COUNTY, AND ORANGE BOOK REQUIREMENTS WHEN WORKING UNDER OR IN CLOSE PROXIMITY TO OVERHEAD POWER LINES.
4. RETAIN AND PROTECT EXISTING UTILITIES (TYP), CONTRACTOR TO PROVIDE UTILITY SUPPORT AS REQUIRED.
5. PRIOR TO CONSTRUCTION CONTRACTOR TO POTHOLE IN A NON-DESTRUCTIVE MANNER TO VERIFY LOCATION & DEPTH. WHERE EXISTING UTILITIES WILL BE ENCOUNTERED IT IS RECOMMENDED THAT THE CONTRACTOR HAND DIG OR VACUUM TRUCK EXCAVATE FOR MATERIAL EXCAVATION IN THESE AREAS.
6. AREAS DISTURBED BY CONSTRUCTION WHERE SURFACE REPAIR IS NOT INDICATED SHALL BE RESTORED TO CONDITION PRIOR TO CONSTRUCTION.
7. CONTRACTOR RESPONSIBLE TO PREPARE, SUBMIT FOR APPROVAL AND ABIDE BY ALL TRAFFIC CONTROL AS REQUIRED BY THE CITY OF SPARKS AND NDOT; RE: G-002.
8. RESTORE ALL PAVEMENT MARKINGS DAMAGED OR REMOVED DURING CONSTRUCTION; RE: CITY OF SPARKS AND NDOT STANDARDS.
9. RETAIN AND PROTECT EXISTING UTILITIES (TYP), CONTRACTOR TO PROVIDE UTILITY SUPPORT AS REQUIRED.
10. SEE SHEETS W-101 TO W-404 FOR WATER LINE CONSTRUCTION.

SHEET KEYNOTES

01 INSTALL PIPE - 12" PVC SDR 35 PRESSURE CLASS; RE: CITY OF SPARKS DETAIL S-117/C-501

02 INSTALL 48" MH TYPE I; RE: CITY OF SPARKS DETAIL S-206A, 206D, S-209A & S-210A/C-501

03 RETAIN, PROTECT, AND CONNECT EXISTING SS SERVICE TO NEW SS MAIN; RE: SSPWC 301.04, CITY OF SPARKS DETAILS, S-212A & S-212B/C-502. ENGINEER APPROVAL REQUIRED PRIOR TO DEVIATION FROM STANDARD DETAIL

04 REFER TO SHEET W-101 FOR WATER MAIN DEMOLITION & ABANDONMENT

05 PLACE ASPHALT PAVEMENT SURFACE MATCH EXISTING; RE: C-103

06 CORE DRILL EXISTING MANHOLE. PIPE CONNECTION TO MANHOLE SHALL BE WATERTIGHT; RE: CITY OF SPARKS DETAIL S-211A/C-502

07 MAINTAIN WATER SEWER SEPARATION (TYP); RE: TMWA DETAIL 10L-10 & 10L-13/C-511

08 REMOVE EXISTING PIPE AND PLACE 15" SDR-35 STORM DRAIN LATERAL

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CITY OF SPARKS

G STREET SEWER IMPROVEMENTS AND WATER MAIN RELOCATION

PLAN & PROFILE - G STREET NEW GRAVITY SANITARY SEWER

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PROJECT NO. 223014 PAGE

SHEET NO. C-402

GENERAL NOTES

1. CONTRACTOR SHALL PROVIDE ALL MATERIALS, EQUIPMENT, LABOR, AND INCIDENTALS REQUIRED TO CONSTRUCT THE IMPROVEMENTS AS SHOWN ON THE IMPROVEMENT PLANS AND ALL WORK SHALL BE ACCOMPLISHED IN STRICT ACCORDANCE WITH THE PROJECT SPECIFICATIONS.

2. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND FEATURES AS SHOWN ON THESE IMPROVEMENT PLANS IS BASED UPON THE BEST INFORMATION AVAILABLE TO THE ENGINEER. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. PRIOR TO STARTING ANY WORK, THE CONTRACTOR SHALL BE REQUIRED TO POTHOLE ALL EXISTING UTILITIES, AT PROPOSED POINTS OF CONNECTION, AND IN AREAS OF POSSIBLE CONFLICT PRIOR TO BEGINNING CONSTRUCTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THESE LOCATIONS AND ELEVATIONS. POTHOLED INFORMATION (INCLUDING DEPTH, SIZE, AND MATERIAL) MUST BE PROVIDED TO THE TMWA ENGINEER. SHOULD THE CONTRACTOR FIND ANY DISCREPANCIES BETWEEN THE CONDITIONS EXISTING IN THE FIELD AND THE INFORMATION SHOWN ON THE IMPROVEMENT PLANS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE TMWA ENGINEER. CONTRACTOR SHALL POTHOLE SUFFICIENTLY IN ADVANCE OF CONSTRUCTION TO ALLOW ADEQUATE TIME FOR TMWA ENGINEERING TO PREPARE A RE-DESIGNED PLAN SHOULD A CONFLICT BE ENCOUNTERED. ABSOLUTELY NO STAND-BY TIME WILL BE PAID TO THE CONTRACTOR DURING THIS RE-DESIGN PERIOD. CONTRACTOR SHALL BEGIN POTHOLING WITHIN 10 WORKING DAYS OF RECEIVING THE NOTICE TO PROCEED.

3. CONTRACTOR SHALL NOTIFY THE TMWA ENGINEER AT LEAST 5 WORKING DAYS IN ADVANCE OF CONSTRUCTION START TO ALLOW FOR THE ASSIGNMENT OF A TMWA INSPECTOR.

4. AT LEAST 3 WORKING DAYS BEFORE STARTING CONSTRUCTION, THE CONTRACTOR SHALL CALL UNDERGROUND SERVICE ALERT AT 811 AND REQUEST UTILITY MARKING. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE COST OF REPAIRING EXISTING FACILITIES THAT ARE DAMAGED BY HIS/HER OPERATIONS.

5. ENGINEER WILL PROVIDE CONSTRUCTION SURVEY STAKING OF CRITICAL POINTS AS IDENTIFIED WITH NORTHING AND EASTING COORDINATES IN THE IMPROVEMENT PLANS. THESE POINTS INCLUDE HYDRANTS, TEES, CROSSES AND/OR ELBOWS, AND EVERY 50' ALONG THE MAIN LINE. ADDITIONAL STAKING AND/OR SURVEY REQUIRED TO CONSTRUCT THE PROJECT, INCLUDING VERTICAL ELEVATION STAKING, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. ANY ADDITIONAL OR REPEAT SURVEY STAKING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

6. ANY DISCREPANCIES BETWEEN THE IMPROVEMENT PLANS AND THE ACTUAL FIELD CONDITIONS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE TMWA PROJECT MANAGER. PROCEEDING WITH WORK THAT DEVIATES FROM THE PLANS, EXCEPT FOR AN EMERGENCY LIFE-SAFETY CONDITION, SHALL BE AT THE SOLE RISK OF THE CONTRACTOR FOR THE COST TO REPLACE, IF DEEMED UNACCEPTABLE BY THE TMWA PROJECT MANAGER.

7. CONTRACTOR SHALL COMPLY WITH ALL FEDERAL, STATE, AND TMWA SAFETY REGULATIONS AND SHALL MAINTAIN THE WORK AREA IN A SAFE CONDITION 24 HOURS PER DAY UNTIL THE PROJECT IS COMPLETE. WORKER AND PUBLIC SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR, NOT TMWA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR JOB SITE SAFETY DURING CONSTRUCTION, AND ALL WORK SHALL CONFORM TO PERTINENT SAFETY REGULATIONS AND CODES. FENCE AND OR BARRICADE THE CONSTRUCTION AREA AS REQUIRED TO PROTECT ADJACENT SITES, VEHICULAR TRAFFIC AND PEDESTRIAN TRAFFIC. THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR COMPLIANCE WITH ALL APPLICABLE PROVISIONS OF OSHA AND NRS CHAPTER 618, IN THE CONSTRUCTION PRACTICES FOR ALL EMPLOYEES DIRECTLY ENGAGED IN THE CONSTRUCTION OF THIS PROJECT. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A SAFETY PLAN SUBMITTAL TO TMWA FOR REVIEW AND APPROVAL.

8. CONTRACTOR SHALL CONTROL DUST IN ACCORDANCE WITH WASHOE COUNTY DISTRICT HEALTH DEPARTMENT REGULATIONS. CONTRACTOR IS ALSO RESPONSIBLE FOR ANY STORMWATER PERMIT (SWPPP) REQUIREMENTS. REFERENCE GENERAL CONDITION SECTION 6.17 FOR DUST CONTROL REQUIREMENTS.

9. THE CONTRACTOR SHALL MAINTAIN A NEAT AND LEGIBLE DRAWING SET DENOTING ANY FIELD CHANGES THAT DEVIATE FROM THE CONFORMED DESIGN (AS-BUILT DRAWINGS). PRIOR TO TMWA'S ACCEPTANCE OF THE IMPROVEMENTS, THE CONTRACTOR IS TO PRESENT THE AS-BUILT DRAWINGS, WHICH REFLECT ALL FIELD CHANGES, TO THE TMWA INSPECTOR. REFERENCE GENERAL CONDITION SECTION 6.19 FOR AS-BUILT REQUIREMENTS.

10. THE CONTRACTOR SHALL OBTAIN ALL PERMITS AS REQUIRED BY THE JURISDICTIONAL AGENCY. CONTACT CITY OF SPARKS PRIOR TO CONSTRUCTION AND OBTAIN APPROVAL OF A TRAFFIC CONTROL PLAN. THE PROJECT WILL REQUIRE AN EXCAVATION/ENCROACHMENT PERMIT WHICH SHALL BE OBTAINED AND PAID FOR BY THE CONTRACTOR. REFERENCE GENERAL CONDITION SECTION 6.08 AND SUPPLEMENTARY CONDITIONS FOR PERMITTING REQUIREMENTS. TRAFFIC CONTROL AND WORKER/PUBLIC SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AT ALL TIMES.

11. THE REMOVAL AND DISPOSAL OF EXISTING FACILITIES AND APPURTENANCES REQUIRED TO MAKE CONNECTIONS TO EXISTING MAINS/FACILITIES AND/OR FOR THE INSTALLATION OF NEW WATER FACILITIES SHALL BE INCLUDED IN THE MOST APPROPRIATE BID ITEM. THE EXPOSED CUT ENDS OF THESE EXISTING FACILITIES THAT WILL BE ABANDONED IN PLACE SHALL BE PLUGGED WITH CONCRETE OR OTHER METHOD AS APPROVED BY THE TMWA INSPECTOR. COSTS FOR THESE ITEMS SHALL BE INCLUDED IN THE MOST APPROPRIATE BID ITEM. THIS ALSO INCLUDES REMOVAL AND DISPOSAL OF EXISTING VALVE/CURB VALVE BOXES, CONDUCTOR PIPES, METER BOXES, AND ANY OTHER FACILITIES IDENTIFIED IN THE IMPROVEMENT PLANS, INCLUDING BACKFILL WITH TYPE 2, CLASS B CRUSHED AGGREGATE BASE AND PLACEMENT OF EITHER TEMPORARY OR PERMANENT HOT-MIX AC PAVEMENT PATCH PER PAVING LIMIT ON PLAN AND PER TYPICAL TRENCH DETAIL.

12. ALL VALVES SHALL BE SUPPORTED WITH A CONCRETE PAD AND COLLAR AS DEPICTED IN TMWA STANDARD DETAIL 10J-2.

13. ALL SERVICE TAPS SHALL BE MADE USING A TAPPING MACHINE DESIGNED SPECIFICALLY FOR TAPPING PURPOSES WITH THE CORRECT CUTTING BIT FOR THE TYPE OF PIPE IN WHICH THE TAPS WILL BE MADE. THE USE OF A DRILL WITH HOLE-SAW BIT OR SIMILAR WILL NOT BE PERMITTED UNDER ANY CIRCUMSTANCES.

14. LOCATE AND/OR PROTECT ALL EXISTING AND PROPOSED PIPING, UTILITIES, TRAFFIC SIGNAL EQUIPMENT (BOTH ABOVE GROUND AND BELOW GROUND), STRUCTURES ADJACENT TO STREETS, AND ALL OTHER EXISTING IMPROVEMENTS THROUGHOUT CONSTRUCTION.

15. ALL CONSTRUCTION SHALL BE CLOSELY COORDINATED WITH TMWA SO THAT THE QUALITY OF WORK CAN BE CHECKED FOR APPROVAL.

16. INCORPORATE ADEQUATE DRAINAGE PROCEDURES DURING THE CONSTRUCTION PROCESS TO ELIMINATE EXCESSIVE PONDING AND/OR EROSION.

GENERAL NOTES (CONT)

17. THE CONTRACTOR SHALL MAINTAIN THE SITE IN A NEAT AND ORDERLY MANNER THROUGHOUT THE CONSTRUCTION PROCESS. ALL MATERIALS SHALL BE STORED WITHIN APPROVED CONSTRUCTION AREAS ON PAVED SURFACES ONLY.

18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF ALL EXISTING SURVEY MONUMENTS AND SHALL REPLACE ANY MONUMENTS OBLITERATED OR DAMAGED DURING CONSTRUCTION AT HIS/HER EXPENSE, REPLACEMENT SHALL BE PERFORMED BY A LICENSED PROFESSIONAL LAND SURVEYOR. IF ANY SURVEY MONUMENTS WILL BE IMPACTED, CONTRACTOR SHALL NOTIFY TMWA ENGINEER IMMEDIATELY.

19. NO FILL SHALL BE PLACED OR COMPACTED IN UNFAVORABLE WEATHER CONDITIONS. OVERLY WET, DRY OR FROZEN FILL SHALL NOT BE PLACED.

20. THE CONTRACTOR SHALL UTILIZE CONSTRUCTION TECHNIQUES TO MINIMIZE GRADING, VEGETATION REMOVAL, AND SURFACE DISTURBANCE. CONTRACTOR WILL BE RESPONSIBLE FOR THE RESTORATION OF ALL LANDSCAPING, SOD, CURBS, ASPHALT, DRIVEWAY PAVERS, RIP RAP, RETAINING WALLS, IRRIGATION PIPING AND LANDSCAPE LIGHTING TO EQUAL OR BETTER THAN EXISTING CONDITION. ALL COST FOR RESTORATION WILL BE INCLUDED IN THE APPLICABLE BID ITEM.

21. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN AT ALL TIMES EMERGENCY ACCESS TO THE PROJECT SITE TO THE SATISFACTION OF THE OWNER.

22. THE CONTRACTOR SHALL PROVIDE SUBMITTALS AND CUT SHEETS OF ALL MATERIALS TO BE USED DURING CONSTRUCTION TO THE PROJECT ENGINEER FOR APPROVAL PRIOR TO THE MANUFACTURING OR USE OF SUCH ITEMS. REFERENCE GENERAL CONDITION SECTIONS 6.09-6.12 FOR SUBMITTAL REQUIREMENTS.

23. UNLESS STATED ON THE PLANS FOR PERMANENT RESTORATION, ALL EXISTING CONCRETE REMOVALS INCLUDING CURB, GUTTER, AND SIDEWALK, SHALL BE REPLACED WITH TEMPORARY HOT-MIX ASPHALT UP TO EXISTING CONTROL JOINTS.

WATER GENERAL NOTES

1. CONTRACTOR SHALL UTILIZE EVERY MEANS POSSIBLE TO MINIMIZE WATER SERVICE OUTAGES TO CUSTOMERS. THE CONTRACTOR SHALL NOTIFY CUSTOMERS OF PLANNED WATER OUTAGES AT LEAST 48 HOURS PRIOR TO AN OUTAGE. THE NOTICE SHALL INCLUDE THAT OUTAGES WILL OCCUR DURING THE DAY BETWEEN 8:00 AM AND 5:00 PM (MONDAY TO THURSDAY ONLY) AND NAME AND PHONE NUMBER OF CONTRACTOR FOR QUESTIONS AND CONCERNS. ALL NOTICES SHALL BE POSTED ON NOTICE BOARDS AND PLACED FACING TRAFFIC AT ALL STREET ENTRANCES TO THE PROPOSED WORK AREAS. CONTRACTOR SHALL COORDINATE WITH OWNER FOR A LIST OF AFFECTED CUSTOMERS.

2. IF WATER OUTAGES EXTEND BEYOND ALLOWABLE/NOTIFIED TIMES, CONTRACTOR SHALL PROVIDE BOTTLED DRINKING WATER TO THE UTILITY CUSTOMERS AT A LOCATION CONVENIENT TO THE CUSTOMERS AFFECTED, AND AS APPROVED BY THE OWNER.

3. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT THE INTEGRITY OF EXISTING WATER LINES DURING CONSTRUCTION.

4. ALL WATER MAINS SHALL BE TESTED FOR PRESSURE AND LEAKAGE PER AWWA C600 & C605 WITH THE EXCEPTION THAT THE PRESSURE LOSS DURING PRESSURE TESTING SHALL BE ZERO PSI. TEST PRESSURE SHALL BE 150 PSI.

5. BACTERIOLOGICAL TESTING, DISINFECTION, AND FLUSHING, FOR POTABLE WATER LINE CONSTRUCTION, SHALL BE PERFORMED PER AWWA C651. THE OWNER SHALL BE RESPONSIBLE FOR PERFORMING AND FUNDING UP TO TWO BACTERIOLOGICAL TESTS PER RUN OF PIPE CONSTRUCTED. IF MORE THAN TWO TESTS ARE REQUIRED, THE COST SHALL BE PLACED UPON THE CONTRACTOR. TWO (2) BACTERIOLOGICAL TESTS SHALL BE CONDUCTED PER TEST SEGMENT. BACTERIOLOGICAL TEST SAMPLES WILL NOT BE COLLECTED ON FRIDAYS, WEEKENDS, TMWA OBSERVED HOLIDAYS, OR THE DAY BEFORE A TMWA OBSERVED HOLIDAY, UNLESS AUTHORIZED BY THE TMWA INSPECTOR.

6. PER NAC 445A.67145(6),
WATER MAIN MUST NOT BE PLACED INTO SERVICE AFTER ITS INITIAL CONSTRUCTION UNTIL:

   6.1. THE WATER MAIN HAS BEEN DISINFECTED AND FLUSHED IN ACCORDANCE WITH AWWA STANDARD C651.
   6.2. THE DISPOSAL OF ANY SPENT CHLORINE SOLUTIONS MUST BE COORDINATED WITH NDEP'S BUREAU OF WATER POLLUTION CONTROL (BWPC).
   6.3. ANALYSES OF THE WATER MAIN WHICH INDICATE THAT THE WATER MEETS PRIMARY DRINKING WATER STANDARDS FOR COLIFORM BACTERIA (ABSENT FOR COLIFORM BACTERIA) HAVE BEEN OBTAINED AND REPORTED TO THE BUREAU OF SAFE DRINKING WATER, PER AWWA STANDARD C651, TWO SETS OF CONSECUTIVE SAMPLES MUST BE TAKEN AT LEAST 24 HOURS APART FROM EVERY 1200 FEET OF MAIN, AT THE END OF THE LINE, AND FROM EACH BRANCH.

7. CONTRACTOR SHALL PROVIDE ALL MISCELLANEOUS PIPE, FITTINGS AND APPURTENANCES AS REQUIRED TO COMPLETE THE UTILITY WORK AS SHOWN.

8. CONTRACTOR SHALL SEAL ANY OPENINGS IN UNFINISHED PIPING OR APPURTENANCES AT THE END OF EACH WORKING DAY IN SUCH A MANNER AS TO PREVENT THE ENTRY OF BIRDS, OTHER ANIMALS, DIRT, TRENCH WATER, AND OTHER SOURCES OF POLLUTION OR CONTAMINATION.

9. CONTRACTOR SHALL NOTIFY THE FIRE DEPARTMENT OF FIRE HYDRANTS AFFECTED DURING CONSTRUCTION AT LEAST 24 HOURS IN ADVANCE.

10. PIPELINE DEPTHS SHALL BE INSTALLED PER PLAN TO AVOID ADDITIONAL HIGHPOINTS IN THE WATERLINE AND TO SUPPORT AIR RELIEF VALVE LOCATIONS SHOWN IN THE PLANS.

11. CONTRACTOR SHALL VERIFY CONSTRUCTION METHODS, PHASING PLAN AND OVERALL JOB APPROACH WITH TMWA AND ENGINEER PRIOR TO CONSTRUCTION.

12. THE CONTRACTOR REALIZES THAT INCLEMENT WEATHER (WINTER WEATHER) MAY OCCUR DURING THE PROPOSED WORK. NO ADDITIONAL PAYMENTS SHALL BE GRANTED FOR PROTECTING THE WORK IN PROGRESS AND DELAYS TO INCLEMENT WEATHER CONDITIONS.

13. TMWA DOES NOT GUARANTEE EXISTING VALVES WILL PROVIDE A COMPLETE SHUTDOWN. THE REMOVAL OF NUISANCE WATER TO CONDUCT THE WORK SHALL BE INCIDENTAL TO THE MOST APPROPRIATE BID ITEM. EXCESSIVE AMOUNTS OF WATER SHALL BE EVALUATED BY THE TMWA INSPECTOR FOR THE MOST APPROPRIATE ACTION TO PURSUE.

14. REMOVED VALVES SHALL BE SALVAGED AND DELIVERED TO TMWA YARD AT 21ST STREET AND GREG STREET, SPARKS, NV. CONCRETE SHALL BE REMOVED FROM SALVAGED VALVES PRIOR TO DELIVERY.

15. SYMBOLS ARE NOT TO SCALE AND DO NOT NECESSARILY REPRESENT ACTUAL LOCATIONS OF FACILITIES.

16. SOILS RETENTION MAY BE REQUIRED AROUND WATER METER BOXES, FIRE HYDRANTS, AND OTHER FACILITIES IF SLOPES EXCEED 15%.

17. UNUSED SERVICE LATERALS SHALL NOT BE CONNECTED TO NEW MAIN AFTER VERIFICATION BY TMWA INSPECTOR.

18. ALL HOT TAPS 4" AND LARGER TO BE COORDINATED WITH TMWA INSPECTOR AND COMPLETED BY TMWA CREW. TMWA INSPECTOR TO BE ON-SITE FOR ALL HOT TAPS PERFORMED BY THE CONTRACTOR SMALLER THAN 4".

WATER GENERAL NOTES (CONT)

19. WHEN WORKING WITH TRANSITE (ACP) CONTRACTOR SHALL CONFORM WITH SECTIONS 4.06 & 6.13 OF THE GENERAL CONDITIONS. THE CONTRACTOR SHALL HAVE POLLUTION LIABILITY INSURANCE COVERAGE FOR THIS WORK PER TMWA GENERAL CONDITION SECTION 5.02.

   19.1. CONTRACTOR WILL BE REQUIRED TO HANDLE, DISTURB OR REMOVE CERTAIN WATER PIPES CONSTRUCTED OF TRANSITE AND ASBESTOS CONTAINING MATERIALS REGULATED AS A POTENTIALLY HAZARDOUS MATERIAL AS PART OF THE WORK ASBESTOS OR TRANSITE PIPE WHICH HAS NOT BEEN CUT OR DAMAGED OR WHICH IS NOT TAPPED, CUT, DAMAGED OR REMOVED DURING PERFORMANCE OF THE WORK, SHALL NOT BE DEEMED "HAZARDOUS MATERIALS" FOR PURPOSES OF THESE GENERAL CONDITIONS. IF THE CONTRACTOR IS REQUIRED TO CUT, REMOVE OR TAP TRANSITE OR ASBESTOS PIPE AS PART OF THE WORK, OR IF THE CONTRACTOR OTHERWISE DAMAGES OR CUTS TRANSITE OR ASBESTOS PIPE DURING THE WORK, CONTRACTOR MUST UTILIZE THE SERVICES OF PERSONNEL OR A SUBCONTRACTOR THAT HAS RECEIVED SPECIALIZED OSHA TRAINING IN THE HANDLING AND DISPOSAL OF ASBESTOS TO PERFORM ANY WORK ON SUCH PIPE, INCLUDING CUTTING, TAPPING, REPAIRING OR REMOVING. TMWA MUST BE PROVIDED WITH CHAIN OF CUSTODY FORMS FOR ALL TRANSITE OR ASBESTOS PIPE DISPOSED OF BY CONTRACTOR OR ITS SUBCONTRACTORS. ANY DISTURBANCE, REMOVAL, DISPOSAL, HANDLING OR WORK ACTIVITY ON TRANSITE PIPE MUST BE DONE IN STRICT COMPLIANCE WITH APPLICABLE LAWS AND REGULATIONS GOVERNING THE SAFE HANDLING PRACTICES FOR DISTURBANCE, REMOVAL, HANDLING AND DISPOSAL OF ASBESTOS-CONTAINING MATERIAL, AND CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL COSTS AND ACTIONS NECESSARY TO COMPLY WITH SUCH LAWS AND REGULATIONS. CONTRACTOR SHALL PROVIDE THE DISPOSAL MANIFEST TO THE TMWA INSPECTOR SHOWING ALL TRANSITE PIPE MATERIAL HAS BEEN DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE LAWS AND REGULATIONS. CONTRACTOR SHALL INDEMNIFY AND HOLD TMWA HARMLESS FROM ANY CLAIMS, INJURIES, DEMANDS OR LIABILITIES ARISING FROM CONTRACTOR'S HANDLING, REMOVAL, DISPOSAL OR WORK ON OR ABOUT TRANSITE PIPE.

   19.2. CONTRACTOR'S PERSONNEL PERFORMING WORK ON ASBESTOS OR TRANSITE PIPE, INCLUDING WITHOUT LIMITATION CUTTING, TAPPING, REPAIRING, OR REMOVING, MUST HAVE SUCCESSFULLY COMPLETED SPECIALIZED OSHA TRAINING IN THE HANDLING AND DISPOSAL OF ASBESTOS PRIOR TO THE PERFORMANCE OF ANY SUCH WORK, OR CONTRACTOR SHALL HIRE A SUBCONTRACTOR THAT HAS SUCCESSFULLY COMPLETED SPECIALIZED OSHA TRAINING IN THE HANDLING AND DISPOSAL OF ASBESTOS TO PERFORM SUCH WORK.

20. INSTALLATION OF PIPELINE SHALL CONFORM TO THE 2012 STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION REVISION 8 AND THE TMWA CONSTRUCTION STANDARDS SECTIONS 2, 4, 5, 8, AND 9 AS FOUND AT HTTPS://TMWA.COM/NEW-CONSTRUCTION/STANDARDS/. PVC AS INDICATED IN SECTION 9 OF TMWA CONSTRUCTION STANDARDS IS NOT ALLOWED ON THIS PROJECT.

21. TRACER WIRE TEST STATIONS WILL BE INSTALLED AND LOCATED ALONG THE MAIN PER DETAIL 10L-9. TEST STATIONS SHOULD BE SPACED NO MORE THAN 500 FEET APART UNLESS OTHERWISE SPECIFIED ON THE PLANS. CP TEST STATIONS SHALL BE INSTALLED AT LOCATIONS SPECIFIED ON THE DRAWINGS.

22. WATER CROSSING UNDER EXISTING STORM OR SEWER BETWEEN 6 INCHES TO 18 INCHES VERTICALLY FROM THE EXTERIOR WALLS OF THE PIPES SHALL REQUIRE EXCAVATABLE SLURRY BACKFILL FROM THE UPPER LIMIT OF THE WATER PIPE ZONE TO THE SPRINGLINE OF THE STORM OR SEWER PIPE FOR MINIMUM OF 5 FEET ON EACH SIDE OF THE STORM OR SEWER PIPE.

23. ANTICIPATED WATER PRESSURES ARE BETWEEN 75 AND 85 PSI IN THE PROJECT AREA.

24. PRODUCTS INTENDED FOR CONTACT WITH POTABLE WATER SHALL BE CERTIFIED TO THE REQUIREMENTS OF NSF/ANSI 61 AND BE CERTIFIED LEAD-FREE PER NAC 445A.65825 WHEN APPLICABLE. CERTIFICATION SHALL BE PROVIDED TO TMWA PRIOR TO INSTALLATION OF MATERIALS IN THE FIELD.

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NO.	REVISIONS	DATE

CITY OF SPARKS

G STREET SEWER IMPROVEMENTS AND WATER MAIN RELOCATION

GENERAL NOTES SHEET 2

DRAWN: EWC | CHECK: JW

VERIFY SCALE: Scales based on 22"x34" prints.
1-1/2 Inches

PROJECT NO. 223014 | PAGE

SHEET NO. W-001

MATERIAL SPECIFICATIONS

1. SCOPE
THESE MATERIAL SPECIFICATIONS SUPPLEMENT THE TECHNICAL SPECIFICATIONS, AND THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION "ORANGE BOOK", LATEST EDITION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE TMWA PROJECT REPRESENTATIVE FOR RESOLUTION. A SUBMITTAL FOR EACH ITEM BELOW IS REQUIRED TO BE REVIEWED BY THE ENGINEER PRIOR TO INSTALLATION.

2. DUCTILE IRON PIPE, AND HIGH DENSITY POLYETHYLENE (HDPE) SERVICE LINE TUBING

2.1 ALL DUCTILE IRON PIPE SHALL BE PRESSURE CLASS 350 AND MEET THE REQUIREMENTS OF AWWA STANDARDS C151, C104 AND C111 WITH PRESSURE CLASS AS SPECIFIED IN THE IMPROVEMENT PLANS, STANDARD CEMENT LINING, BITUMINOUS COATING, AND SHALL BE NSF-61 CERTIFIED. ALL DUCTILE IRON PIPE SHALL BE POLYETHYLENE ENCASED PER AWWA C105. DUCTILE IRON PIPE SHALL BE EQUIPPED WITH TYTON TYPE BELL AND SPIGOT JOINTS. ALL PIPE SHALL BE RESTRAINED IN ACCORDANCE WITH ITEM 7 BELOW. DUCTILE IRON PIPE SHALL BE MANUFACTURED BY U.S. PIPE OR APPROVED EQUAL.

2.2 ALL HIGH DENSITY POLYETHYLENE (HDPE) SERVICE LINE TUBING SHALL BE PRESSURE CLASS 200 (SDR 9) COPPER TUBING SIZE (CTS) PER AWWA C901, AND SHALL BE NSF-61 CERTIFIED.

3. POLYETHYLENE ENCASEMENT
POLYETHYLENE ENCASEMENT MATERIAL SHALL CONSIST OF 3 LAYERS OF CO-EXTRUDED LINEAR LOW DENSITY POLYETHYLENE (LLDPE), MINIMUM 8 MILS THICKNESS, MEETING REQUIREMENTS OF AWWA C105/A21.5. MATERIAL SHALL BE V-BIO ENHANCED POLYETHYLENE ENCASEMENT FOR DUCTILE IRON.

4. FITTINGS
FITTINGS SHALL BE DUCTILE IRON AND MEET THE REQUIREMENTS OF AWWA STANDARDS C110/C153 AND C104 WITH END CONFIGURATIONS AS SPECIFIED IN THE IMPROVEMENT PLANS, AND SHALL BE NSF-61 CERTIFIED. ALL FITTINGS SHALL BE POLYETHYLENE ENCASED PER AWWA C105. FITTINGS SHALL BE ASPHALTIC COATED WITH CEMENT-MORTAR LINING PER AWWA C110/C153 AND C104. FOR FITTINGS WHERE CEMENT-MORTAR LININGS ARE NOT NORMALLY SUPPLIED, SUCH AS CAPS, PLUGS, AND SLEEVES, THE INSIDE OF THESE FITTINGS SHALL BE ASPHALTIC COATED PER AWWA C110/C153 CONFORMING TO ALL APPROPRIATE REQUIREMENTS FOR SEAL COAT PER AWWA C104.

5. GASKETS
GASKETS SHALL BE FULL FACE TYPE WITH PROFILE BY ACIPCO (TORUSEAL), US PIPE (FLANGETYTE) OR APPROVED EQUAL. THE GASKET SHALL BE OF SUCH SIZE AND SHAPE TO PROVIDE AN ADEQUATE COMPRESSIVE FORCE AGAINST THE PLAIN END AND SOCKET AFTER ASSEMBLY TO AFFECT A POSITIVE SEAL UNDER ALL CONDITIONS OF JOINT AND GASKET TOLERANCES. THE SIZE, MOLD NUMBER, GASKET MANUFACTURER'S MARK, THE TRADEMARK OF THE JOINT, AND YEAR OF MANUFACTURER SHALL BE MOLDED ON THE GASKETS. MARKINGS SHALL NOT BE ON THE SEALING SURFACES. ONE GASKET SHALL BE FURNISHED WITH EACH LENGTH OF PIPE. LUBRICANT, WHERE REQUIRED, SHALL BE NONTOXIC, SHALL NOT SUPPORT THE GROWTH OF BACTERIA, AND SHALL HAVE NO DETERIORATION EFFECTS ON THE GASKET MATERIAL NOR SHALL IT IMPART TASTE OR ODOR TO WATER IN A PIPE. THE LUBRICANT SHALL BE DELIVERED TO THE SITE IN UNOPENED, SEALED CONTAINERS LABELED WITH THE TRADEMARK OR TRADE NAME AND THE PIPE MANUFACTURER'S NAME.

6. GATE VALVES
GATE VALVES FOR SIZES UP TO AND INCLUDING 12-INCHES SHALL MEET AWWA C509 OR C515, NON-RISING STEM, RESILIENT-SEATED VALVES WITH 2-INCH OPERATING NUT FOR BURIED SERVICE. VALVES MEETING THE AWWA C515 STANDARD SHALL HAVE A DUCTILE IRON BODY. VALVE ENDS SHALL BE AS SPECIFIED IN THE IMPROVEMENT PLANS. ALL GATE VALVES SHALL BE FUSION EPOXY LINED AND COATED, AND SHALL BE NSF-61 CERTIFIED. ALL VALVES SHALL BE POLYETHYLENE ENCASED PER AWWA C105. GATE VALVES UP TO AND INCLUDING 12-INCHES SHALL BE MUELLER 2361 SERIES RESILIENT WEDGE GATE VALVES, AMERICAN AVK COMPANY SERIES 45/65 RESILIENT WEDGE GATE VALVES, OR APPROVED EQUAL.

7 7.1 RESTRAINED JOINT PIPE AND RESTRAINED JOINT FITTINGS
ALL RESTRAINED JOINT PIPING SHALL BE DUCTILE IRON PIPE, UNLESS OTHERWISE SPECIFIED IN THE IMPROVEMENT PLANS. BELL AND SPIGOT PUSH-ON TYPE DUCTILE IRON TYTON JOINTS SHALL BE RESTRAINED USING STYRENE BUTADIENE RUBBER (SBR) GASKETS WITH STAINLESS STEEL LOCKING SEGMENTS VULCANIZED INTO THE RUBBER GASKETS, AND SHALL BE NSF-61 CERTIFIED. RESTRAINED JOITN RUBBER GASKETS SHALL BE FIELD LOK 350 GASKETS AS MANUFACTURED BY U.S. PIPE AND FOUNDRY CO., PIRANHA RESTRAINING GASKET AS MANUFACTURED BY ROMAC INDUSTRIES, INC., OR APPROVED EQUAL.

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

8. FLANGE AND MECHANICAL JOINT T-HEAD BOLTS AND NUTS
8.1. FLANGE BOLTS AND NUTS: BOLTS AND NUTS SHALL BE CARBON STEEL WITH A MINIMUM 60,000 PSI TENSILE STRENGTH CONFORMING TO ASTM A307, GRADE A. BOLTS SHALL BE STANDARD ANSI B1.1, CLASS 2A COARSE THREADS. NUTS SHALL CONFORM TO ASTM A563 AND BE STANDARD ANSI B1.1, CLASS 2A COARSE THREADS. ALL BOLT HEADS AND NUTS SHALL BE HEXAGONAL. IDENTIFICATION ON THE HEAD OF THE BOLT SHALL BE: 307A
8.2. MECHANICAL JOINT T-HEAD BOLTS AND NUTS: BOLTS SHALL BE ASTM A242 WEATHERING STEEL WITH A MINIMUM YIELD STRENGTH OF 45,000 PSI. ALL T-HEAD BOLTS AND NUTS SHALL BE THREADED IN ACCORDANCE WITH ANSI B1.1, CLASS 2A COARSE THREADS. HEAVY HEX NUTS SHALL BE USED. BOLT HEADS SHALL BE IN ACCORDANCE WITH THE DIMENSIONS OF ANSI/AWWA C111/A21.11-95.
8.3. FINISH: ALL FLANGE BOLTS AND NUTS AND MECHANICAL JOINT T-HEAD BOLTS AND NUTS SHALL BE FINISHED WITH THE TRIPAC 2000 BLUE COATING SYSTEM TO SIGNIFICANTLY REDUCE THE EFFECTS OF CORROSION, OR APPROVED EQUAL. A MULTI-STEP PROCESS SHALL BE UTILIZED TO CHEMICALLY CLEAN, ABRASIVE BLAST, AND PRIME WITH ZINC/NICKEL PHOSPHATE PRIMER PRIOR TO APPLICATION OF THE XYLAN FLUOROPOLYMER. WEAR RESISTANCE (K-FACTOR) SHALL BE IN THE RANGE OF 6 TO 8 (EXCELLENT) AND MINIMAL EFFECTS SHOULD BE SEEN AFTER A 3,000 HOUR SALT SPRAY TEST CONFORMING TO ASTM B-117. WAX TAPE SHALL BE USED ON ALL FLANGES AND MJ FITTINGS.

9. PIPE COUPLINGS
PIPE COUPLINGS SHALL MEET THE REQUIREMENTS OF AWWA C219. SLEEVE MATERIAL SHALL BE CARBON STEEL OR DUCTILE IRON WITH NSF-61 REGISTERED FUSION-BONDED EPOXY COATING. BOLTS AND NUTS FOR BURIED SERVICE APPLICATIONS SHALL BE 304 STAINLESS STEEL. COUPLINGS SHALL BE DESIGNED SPECIFICALLY FOR THE PIPE MATERIAL/SIZE AND APPLICATION. COUPLINGS SHALL INSTALL WITH A MAXIMUM OF ONE BOLT AT EACH END. PIPE COUPLINGS SHALL BE HYMAX COUPLINGS AS MANUFACTURED BY MUELLER, ROMAC MACRO HP TWO-BOLT WIDE RANGE DUCTILE IRON COUPLING AS MANUFACTURED BY ROMAC INDUSTRIES, INC., OR APPROVED EQUAL. AT CONNECTIONS TO EXISTING METAL PIPE, INSULATED TRANSITION COUPLING SHALL BE USED FOR CATHODIC PROTECTION.

10. FLANGED COUPLING ADAPTERS
FLANGED COUPLING ADAPTERS SHALL MEET THE REQUIREMENTS OF AWWA C219 WITH AWWA C207 CLASS D ANSI 150 LB DRILLING FLANGE. SLEEVE MATERIAL SHALL BE CARBON STEEL WITH NSF-61 REGISTERED FUSION-BONDED EPOXY COATING. BOLTS AND NUTS FOR BURIED SERVICE APPLICATIONS SHALL BE ANSI 304/303 STAINLESS STEEL. FLANGED COUPLING ADAPTERS SHALL BE DESIGNED SPECIFICALLY FOR THE PIPE MATERIAL, SIZE AND APPLICATION AND SHALL INSTALL WITH A MAXIMUM OF ONE BOLT ON THE COMPRESSION END. FLANGED COUPLING ADAPTERS SHALL BE HYMAX FLANGED ADAPTERS AS MANUFACTURED BY MUELLER, 921 TOP BOLT FLANGED COUPLING ADAPTERS AS MANUFACTURED BY SMITH-BLAIR, INC., OR APPROVED EQUAL.

11. MJxMJ ADAPTERS
ALL MJxMJ ADAPTERS SHALL INCORPORATE A BOLT-THROUGH RESTRAINT MECHANISM THAT ALLOWS FOR CONNECTION OF MJxMJ BELLS OF VALVES AND FITTINGS WITH T-HEAD BOLTS. ADAPTER SHALL BE MANUFACTURED FROM HIGH-STRENGTH DUCTILE IRON IN ACCORDANCE WITH ASTM A536. ADAPTERS SHALL CONFORM TO ANSI/AWWA C116/A21.16. MUST BE NSF-61 CERTIFIED. SEE MECHANICAL JOINT T-HEAD BOLTS AND NUTS SPECIFICATION FOR HARDWARE REQUIREMENTS. ALL FITTINGS SHALL BE POLYETHYLENE ENCASED PER AWWA C105. MJxMJ ADAPTER TO BE "MJxMJ ADAPTER" BY STAR PIPE PRODUCTS, OR APPROVED EQUAL.

12. HOT-TAP TAPPING SLEEVES
HOT-TAPPING SLEEVES SHALL BE FULL-CIRCLE ASTM A 240 TYPE 304 STAINLESS STEEL WITH FULL CIRCUMFERENCE GASKETS THROUGHOUT SLEEVE LENGTH WITH AWWA C207 CLASS D ANSI 150 LB DRILLING ASTM A 240 TYPE 304 STAINLESS STEEL FLANGE. TYPE 304 STAINLESS STEEL STUD BOLTS, HEAVY HEX NUTS, AND WASHERS SHALL BE INCLUDED. HEAVY HEX NUTS AND STUD BOLTS SHALL BE COATED TO PREVENT GALLING. TAPPING SLEEVE SHALL BE RATED FOR A TEST PRESSURE OF 300 PSI AND WORKING PRESSURE OF 200 PSI. TAPPING SLEEVE SHALL BE ROMAC STYLE "SST" AS MANUFACTURED BY ROMAC INDUSTRIES, INC., SMITH-BLAIR 663 AS MANUFACTURED BY SMITH-BLAIR, INC., OR APPROVED EQUAL.

13. SERVICE SADDLES
SERVICE SADDLE BODY SHALL BE CAST FROM DUCTILE IRON MEETING OR EXCEEDING ASTM A536, WITH A FUSION BONDED NYLON COATING, OR COATED WITH AN IMPACT AND CORROSION RESISTANT FUSION BONDED EPOXY, MIN. 10-12 MILS THICK, AND EQUIPPED WITH DOUBLE TYPE 304 STAINLESS STEEL STRAPS. SERVICE SADDLES SHALL HAVE A NPT THREADED INLET. SERVICE SADDLES SHALL BE SMITH-BLAIR 317 TAPERSEAL AS MANUFACTURED BY SMITH-BLAIR, INC., OR ROMAC STYLE 202NS AS MANUFACTURED BY ROMAC INDUSTRIES, INC., OR APPROVED EQUAL.

14. CORPORATION STOPS FOR SERVICE CONNECTIONS
CORPORATION STOPS SHALL BE BALL VALVE, BRASS CONFORMING TO AWWA C800 AND ASTM B-62, AND SUITABLE FOR A WORKING PRESSURE OF 300 PSI. ALL BRASS THAT CONTACTS POTABLE WATER SHALL BE LEAD FREE CONFORMING TO AWWA C800 AND NSF-61 CERTIFIED. CORPORATION STOPS SHALL HAVE THE LETTERS "NL" OR SIMILAR CAST INTO THE MAIN BODY FOR PROPER LEAD FREE IDENTIFICATION. INLET END SHALL BE MALE IRON PIPE THREAD (MIP), OUTLET END SHALL BE COMPRESSION CONNECTION SUITABLE FOR CONNECTION TO CTS O.D. HDPE TUBING, SIZE AS SPECIFIED IN THE IMPROVEMENT PLANS. A TYPE 304 STAINLESS STEEL INSERT STIFFENER SHALL BE USED WHEN CONNECTING TO PE TUBING. CORPORATION STOPS FOR SERVICE CONNECTIONS SHALL BE FORD BALLCORP CORPORATION STOPS WITH QUICK JOINT COMPRESSION CONNECTION OUTLET MODEL # FB1100-X-Q-NL AS MANUFACTURED BY THE FORD METER BOX COMPANY, INC., MUELLER 300 BALL CORPORATION VALVES WITH MUELLER 110 CONDUCTIVE COMPRESSION CONNECTION OUTLET MODEL # B-25028N, OR APPROVED EQUAL.

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

16. COMPRESSION COUPLINGS AND ADAPTERS FOR SERVICE LINE CONNECTIONS
ALL BRASS THAT CONTACTS POTABLE WATER SHALL BE LEAD FREE CONFORMING TO AWWA C800 AND NSF-61 CERTIFIED. COMPRESSION COUPLINGS AND ADAPTERS SHALL HAVE THE LETTERS "NL" OR SIMILAR CAST INTO THE MAIN BODY FOR PROPER LEAD FREE IDENTIFICATION. A TYPE 304 STAINLESS STEEL INSERT STIFFENER SHALL BE USED WHEN CONNECTING TO PE TUBING. COMPRESSION COUPLINGS AND ADAPTERS FOR CONNECTING NEW CTS PE SERVICE LINES TO EXISTING COPPER SERVICE LINES OR METER SETTERS SHALL BE FORD QUICK JOINT COUPLINGS, MUELLER 110 COMPRESSION CONNECTIONS, OR APPROVED EQUAL.

17. WAX TAPE
WAX TAPE SHALL BE TRENTON #2 OR APPROVED EQUAL.

18. DISINFECTION TABLES
DISINFECTION TABLES SHALL BE CALCIUM HYPOCHLORITE AS OUTLINED IN AWWA C651, TABLET METHOD, LATEST EDITION. A NSF-61 APPROVED, FOOD-GRADE ADHESIVE (LOCTITE AA H3101, HO EQUAL) SHALL BE USED TO ADHERE CALCIUM HYPOCHLORITE TABLES TO THE INTERIOR OF THE PIPE LENGTHS AS THE PIPE IS INSTALLED. LOCTITE AA H3101 SHALL BE USED ALONE, AND NOT WITH THE PRIMER 2000 PRODUCT.

19. PERMANENT PAVEMENT
PERMANENT PAVEMENT IN CITY OF SPARKS RIGHT-OF-WASY SHALL BE PG64-22 TYPE 2 PER THE LATEST EDITION OF THE ORANGE BOOK. DENSE-GRADED PLANTMIX BITUMINOUS MIX DESIGN NDOT RIGHT-OF-WAY SHALL BE A PREVIOUSLY APPROVED NDOT MIX, WITHIN THE PAST 12 MONTHS.

20. GROUT MATERIAL
GROUT MATERIAL SHALL CONSIST OF PORTLAND CEMENT AND FLY ASH, AND/OR ADDITIVES. BIODEGRADABLE MATERIALS WILL NOT BE PERMITTED IN THE MIXTURE. THE GROUT SHALL HAVE A MINIMUM PENETRATION RESISTANCE OF 100 PSI IN 24 HOURS WHEN TESTED IN ACCORDANCE WITH ASTM C403 AND A MINIMUM COMPRESSIVE STRENGTH OF 300 PSI IN 28 DAYS WHEN TESTED IN ACCORDANCE WITH ASTM C495 OR C109. GROUT MATERIAL SHALL HAVE LESS THAN 1% SHRINKAGE BY VOLUME AND BE HIGHLY FLOWABLE. THE VISCOSITY SHALL NOT EXCEED 20 SECONDS IN ACCORDANCE WITH ASTM C939 UNLESS OTHERWISE APPROVED BY THE ENGINEER.

21. INCIDENTAL ITEMS
THE CONTRACTOR SHALL FURNISH ALL INCIDENTAL ITEMS REQUIRED TO COMPLETE THE WORK THAT ARE NOT SPECIFICALLY REFERRED TO HEREIN. INCIDENTAL ITEMS, WHICH SHALL BE FURNISHED BY THE CONTRACTOR INCLUDE, BUT ARE NOT LIMITED TO: THRUST BLOCKS, VALVE BOXES, TRACER STATION BOXES, CONDUCTOR PIPES, TRACER WIRE, WARNING TAPE, FLANGE GASKETS, BOLTS, NUTS, PIPE COATINGS, CORROSION PROTECTION, ETC.

22. PIPE TRENCH MATERIALS:
TRENCH MATERIALS SHALL CONFORM TO THE TMWA CONSTRUCTION STANDARDS AS INDICATED IN SECTION 5. THESE MATERIALS SHALL BE SUBMITTED TO TMWA FOR APPROVAL PRIOR TO INSTALLATION. TMWA CONSTRUCTION STANDARDS CAN BE FOUND AT HTTPS://TMWA.COM/NEW-CONSTRUCTION/STANDARDS/

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DYLAN CAREY
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No. 032142

NO.	REVISIONS	DATE

CITY OF SPARKS

G STREET SEWER IMPROVEMENTS AND WATER MAIN RELOCATION

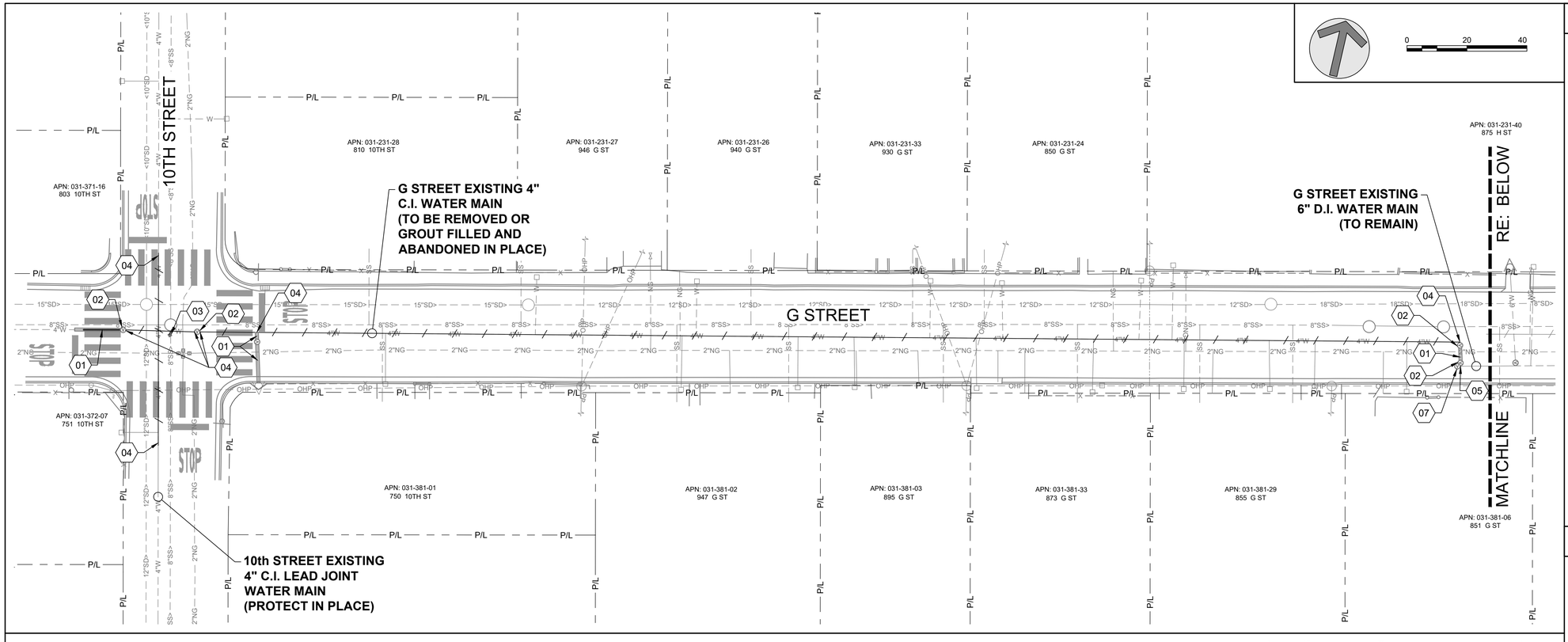
MATERIALS SPECIFICATIONS

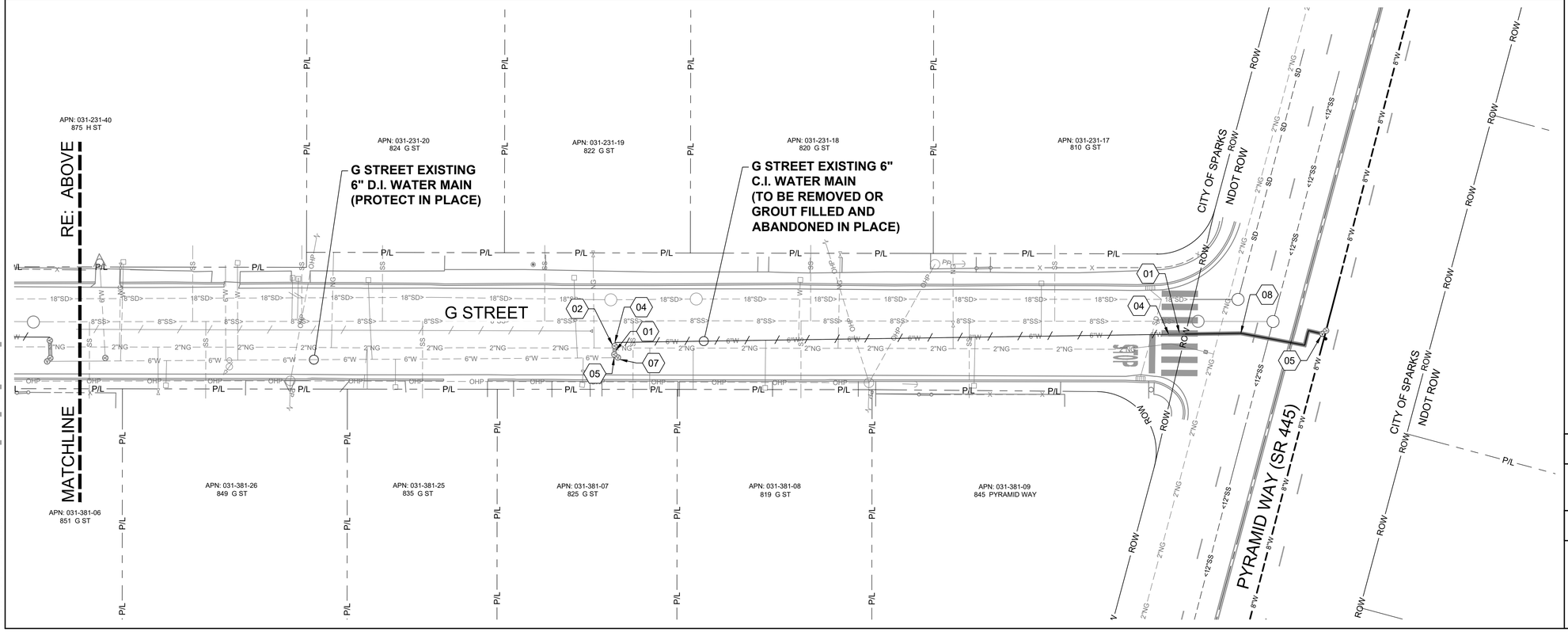
DRAWN: EWC | CHECK: JW

VERIFY SCALE: Scales based on 22"x34" prints.
1-1/2 Inches

PROJECT NO. 223014 | PAGE

SHEET NO. W-002





GENERAL SHEET NOTES

- THE LOCATION, SIZE AND DEPTH OF EXISTING UTILITIES ARE APPROXIMATE. THE CONTRACTOR SHALL POTHOLE ALL UTILITY CROSSINGS AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.
- AREAS DISTURBED BY CONSTRUCTION WHERE SURFACE REPAIR IS NOT INDICATED SHALL BE RESTORED TO CONDITION PRIOR TO CONSTRUCTION.
- CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES AND SURFACE FEATURES UNLESS NOTED OTHERWISE.
- DISPOSE OF DEMOLISHED MATERIALS OFFSITE AT A LOCATION DETERMINED BY THE CONTRACTOR IN ACCORDANCE WITH STATE AND FEDERAL LAWS AND THE PROJECT SPECIFICATIONS, UNLESS NOTED OTHERWISE.
- TRENCHES FOR PIPES REMOVED DURING DEMOLITION SHALL BE BACKFILLED WITH TYPE 2 AGGREGATE BASE AND COMPACT TO 95% OF ASTM D1557.
- SEE SHEETS W-401 THRU W-404 FOR WATER SERVICE CONNECTIONS.
- RESTORE ALL PAVEMENT AND CURB MARKINGS DAMAGED OR REMOVED DURING CONSTRUCTION, PER CITY OF SPARKS STANDARDS.
- CONTRACTOR TO FIELD DETERMINE EXTENTS OF SAWCUT AND REMOVE EXISTING ASPHALT, RE: C-103.
- SEE SHEETS C-102 TO C-402 FOR SEWER LINE CONSTRUCTION.

SHEET KEYNOTES

01 DEMO EXISTING PIPE, RE: GENERAL NOTES, RE: CITY OF SPARKS DETAIL S-117

02 VALVE TO BE REMOVED & SALVAGED, 10Z-3/C511

03 REMOVE EXISTING TEST STATION

04 CAP END OF ABANDONED PIPE & INSTALL SWEEP & VENT FOR GROUT FILLING

05 REMOVE VALVE & SALVAGE, INSTALL FITTING - 6" BLIND FLANGE AT TEE WITH WAX TAPE AND THRUST BLOCK, RE: TMWA DETAIL 10L-2/C-510 & W-403

07 VALVE TO BE OPENED & OPERATIONAL WITH CONSTRUCTION OF THIS PLAN SET, RE: C-531

08 REMOVE EXISTING PIPE, RE: GENERAL NOTES. BACKFILL WITH TYPE II BASE PER NDOT STANDARD SPECIFICATIONS INSIDE NDOT R-O-W

ABBREVIATIONS

D.I. - DUCTILE IRON

C.I. - CAST IRON

LEGEND

ABANDON (THIS CONTRACT)

ABANDONED (PREVIOUS PROJECT)

4"W DEMOLITION - REMOVE

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CITY OF SPARKS

G STREET SEWER IMPROVEMENTS AND WATER MAIN RELOCATION

SITE DEMOLITION - WATER MAIN IMPROVEMENTS

DRAWN: EWC CHECK: JW

VERIFY SCALE: Scales based on 22"x34" prints.

1-1/2 Inches

PROJECT NO. 223014 PAGE

SHEET NO. W-101

SERVICE REPLACEMENT SCHEDULE

TAG NO.	EXISTING SIZE & MATERIAL	NEW SERVICE SIZE	ADDRESS	FULL REPLACEMENT Y OR N
1	.75" HDPE	.75"	751 10TH ST	Y

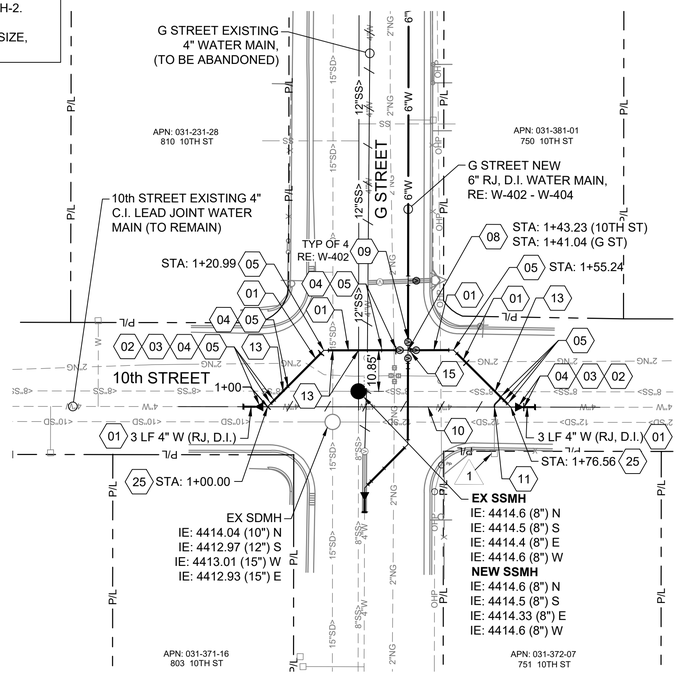
WATER SERVICE NOTES:

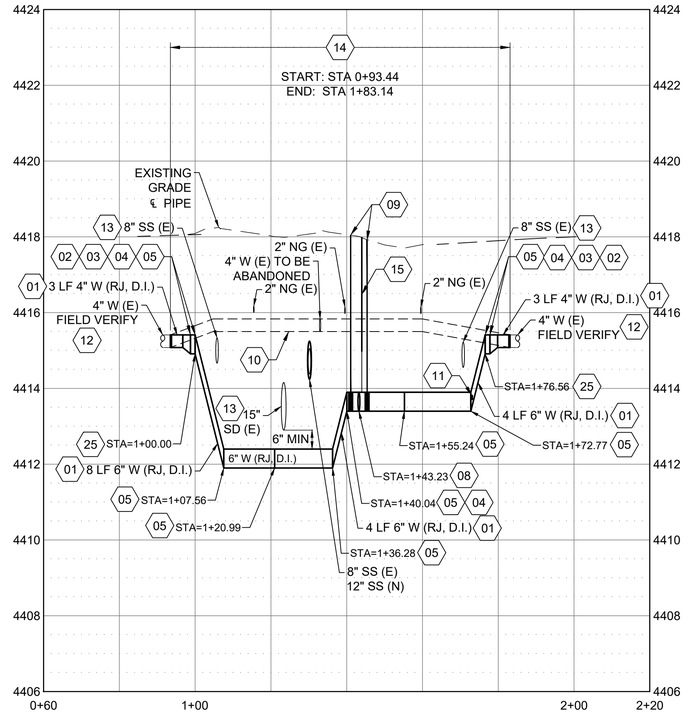
1. WATER SERVICE RECONNECTION (HDPE), PIPE LENGTH AS REQUIRED. CUT EXISTING SERVICE LINE AT EXISTING TAP AND CONNECT TO NEW SERVICE LINE W/ COMPRESSION FITTING. TAP SERVICE TO NEW WATER MAIN PER DETAIL 10H-2.
2. WHERE JOINING EXISTING AND NEW SERVICE LATERAL OF NON-EQUAL OD SIZE, CONNECTION TO BE A SINGLE REDUCER TRANSITION COUPLING.

LEGEND

- ABANDON (THIS CONTRACT)
- ABANDONED (PREVIOUS PROJECT)
- 4"W — DEMOLITION - REMOVE

GRAPHIC SCALE
HORIZ: 0 20 40
VERT: 0 2 4





GENERAL SHEET NOTES

- PIPE TRENCH SHALL COMPLY WITH TMWA STANDARD DETAIL 10L-6.
- TEMPORARY AC PATCH IS REQUIRED ON ALL STREETS PER CITY OF SPARKS STANDARD DETAIL S-116, UNLESS NOTED OTHERWISE. STRIPING SHALL BE PLACED ON ALL TEMP AC.
- CONTRACTOR SHALL POTHOLE TO VERIFY DEPTHS AND REQUIRED MATERIALS FOR CONNECTION TO EXISTING. LOCATIONS OF EXISTING UTILITIES ARE APPROXIMATE AND BASED ON BEST AVAILABLE INFORMATION.
- ALL DUCTILE IRON PIPE SHALL BE RESTRAINED WITH FIELD LOCK GASKETS OR APPROVED EQUAL.
- ALL MECHANICAL JOINT (MJ) CONNECTIONS TO DUCTILE IRON SHALL BE RESTRAINED (MEGALUG OR APPROVED EQUAL).
- RETIRED CI AND PVC MAINS SHALL BE GROUT FILLED AND CONCRETE CAPPED.
- EMAIL GASINSPECTION@NVENERGY.COM AT LEAST 2 WORKING DAYS IN ADVANCE FOR A STANDBY WHEN WORKING IN CLOSE PROXIMITY TO GAS FACILITIES.
- ALL RESTRAINT GLANDS AND STAINLESS STEEL HARDWARE TO BE WAX TAPED WITH TRENTON WAX TAPE #2 SYSTEM OR APPROVED EQUAL.
- RETAIN AND PROTECT EXISTING UTILITIES (TYP), CONTRACTOR TO PROVIDE UTILITY SUPPORT AS REQUIRED.
- CONTRACTOR TO FURNISH MATERIALS WHERE "INSTALL", "PLACE", "CONSTRUCT", "REPLACE" OR "RESET" IS REQUIRED UNLESS NOTED OTHERWISE.
- SEE SHEETS C-102 TO C-402 FOR SEWER LINE CONSTRUCTION.

SHEET KEYNOTES

01 INSTALL NEW RJ DI CL 350 PSI, WATER MAIN W/POLY WRAP (SIZE AS NOTED - SEE PROFILE). (RE: TMWA DETAIL 10L-6/C-511).

02 INSTALL FITTING - 4" MJ TRANSITION COUPLING, RE: A1/C-530

03 INSTALL FITTING - 6" x 4" (MRJxMRJ) ECCENTRIC REDUCER (FLAT SIDE UP), RE: A1/C-530

04 INSTALL FITTING - 6" MRJxMRJ ADAPTER, TO CONNECT ALL VALVES TO ELBOWS, RE: A1/C-530

05 INSTALL FITTING - 6" 45° BEND (MRJxMRJ), RE: A1/C-530

08 INSTALL FITTING - 6" FLG CROSS

09 INSTALL VALVE - 6" GATE (MRJxFLG) WITH RESTRAINT GLANDS, (FLG CONNECTS TO FLG, MRJ CONNECTS TO PIPE) RE: TMWA DETAIL 10J-2/C-510

10 EXISTING 4" WATER MAIN TO BE GROUT FILLED, RE: W-101

11 CONNECT NEW WATER SERVICE LINE TO EXISTING WATER SERVICE LINE, RE: TMWA DETAIL 10H-2/C-510 SEE SERVICE REPLACEMENT SCHEDULE

12 WATER MAIN PARALLEL TO SEWER MAIN, RE: TMWA DETAIL 10L-10/C-511, (NON-POTABLE POTABLE CROSSING)

13 WATER MAIN CROSSING SEWER MAIN, RE: TMWA DETAIL 10L-11/C-511, (NON-POTABLE POTABLE CROSSING)

14 INSTALL 4" CONCRETE ENCASEMENT WITHIN TRENCH EXTENTS; RE: TMWA DETAIL 10L-10 & 10L-11/C-511 AND 2024 WATER DISTRIBUTION FACILITIES DESIGN STANDARDS

15 INSTALL TEST STATION, RE: TMWA DETAIL 10L-9/C-511

25 PLACE THRUST BLOCK, RE: TMWA DETAIL 10L-2/C-510.

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DYLAN CAREY
Exp: 12.31.2026
CIVIL
No. 032142

NO.	REVISIONS	DATE

CITY OF SPARKS

G STREET SEWER IMPROVEMENTS AND WATER MAIN RELOCATION

PLAN & PROFILE - 10TH STREET NEW WATER MAIN

DRAWN: EWC | CHECK: JW

VERIFY SCALE: Scales based on 22"x34" prints.
1-1/2 Inches

PROJECT NO. 223014 | PAGE

SHEET NO. W-401

LEGEND

- ABANDON (THIS CONTRACT)
- ABANDONED (PREVIOUS PROJECT)
- 4"W — DEMOLITION - REMOVE

SERVICE REPLACEMENT SCHEDULE

TAG NO.	EXISTING SIZE & MATERIAL	NEW SERVICE SIZE	ADDRESS	FULL REPLACEMENT Y OR N
2	.75" CU	.75"	946 G ST	N
3	.75" GALV	.75"	940 G ST	Y
4	.75" CU	.75"	930 G ST	N
5	1.0" CU	1.0"	850 & 852 G ST	N
6	.75" CU	.75"	848 & 854 G ST	N
10	.75" CU	.75"	750 10th ST	Y

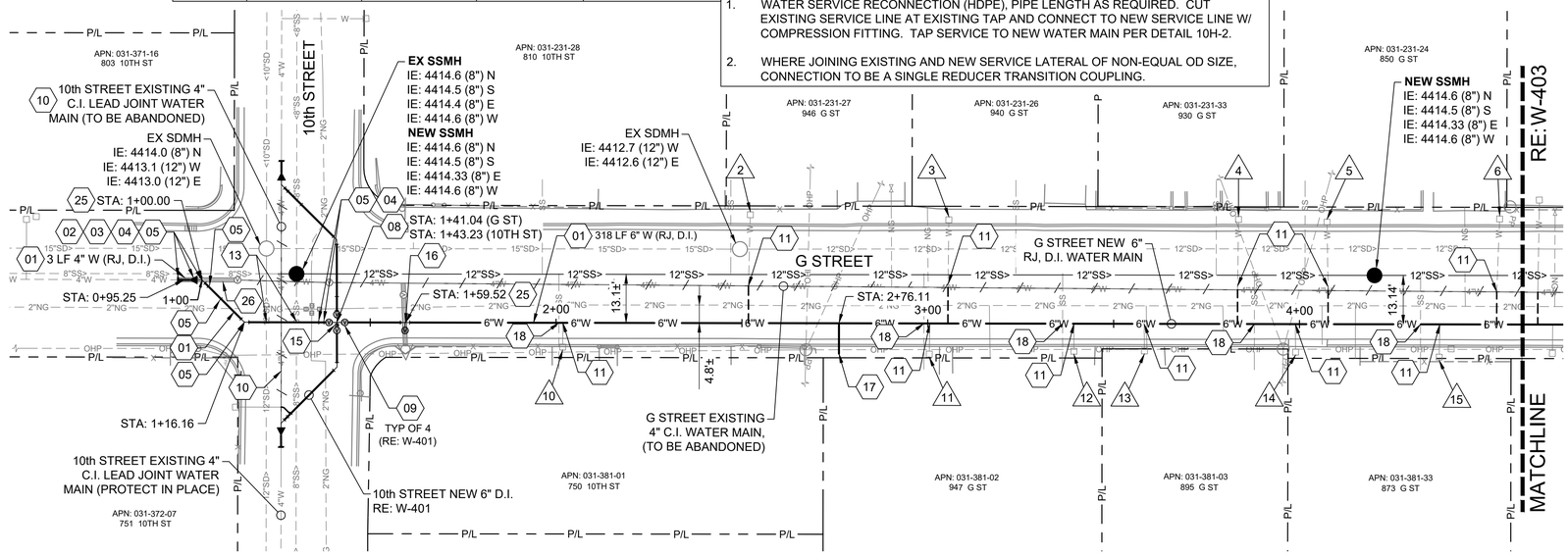
SERVICE REPLACEMENT SCHEDULE

TAG NO.	EXISTING SIZE & MATERIAL	NEW SERVICE SIZE	ADDRESS	FULL REPLACEMENT Y OR N
11	.75" CU	.75"	947 G ST	N
12	.75" CU	.75"	945 G ST	N
13	.75" CU	.75"	895 G ST	N
14	.75" CU	.75"	875 G ST	N
15	.75" CU	.75"	873 G ST	N

WATER SERVICE NOTES:

1. WATER SERVICE RECONNECTION (HDPE), PIPE LENGTH AS REQUIRED. CUT EXISTING SERVICE LINE AT EXISTING TAP AND CONNECT TO NEW SERVICE LINE W/ COMPRESSION FITTING. TAP SERVICE TO NEW WATER MAIN PER DETAIL 10H-2.
2. WHERE JOINING EXISTING AND NEW SERVICE LATERAL OF NON-EQUAL OD SIZE, CONNECTION TO BE A SINGLE REDUCER TRANSITION COUPLING.

GRAPHIC SCALE
HORIZ: 0 20 40
VERT: 0 2 4



SHEET KEYNOTES CONT.

16 CONNECT TO EXISTING FIRE HYDRANT.
INSTALL 6"x6" MRJxFLG TEE W/ THRUST BLOCK PER DETAIL 10L-2/C-510
INSTALL 6" FLG VALVE PER DETAIL 10J-2/C-510
INSTALL 6"x4" FLG REDUCER
INSTALL 4" FLGxMRJ ADAPTER
INSTALL 4" RESTRAINED DUCTILE IRON PIPE
INSTALL 4" MJ BARREL COUPLING

17 INSTALL ARV (COMBINATION AIR RELEASE VALVE), RE: TMWA DETAIL 10L-4/C-511 (CONTRACTOR TO COORDINATE PLACEMENT OF ARV WITH TMWA REPRESENTATIVE PRIOR TO INSTALLATION)

18 WATER MAIN CROSSING SEWER SERVICE, RE: TMWA DETAIL 10L-12/C-511, (NON-POTABLE POTABLE CROSSING)

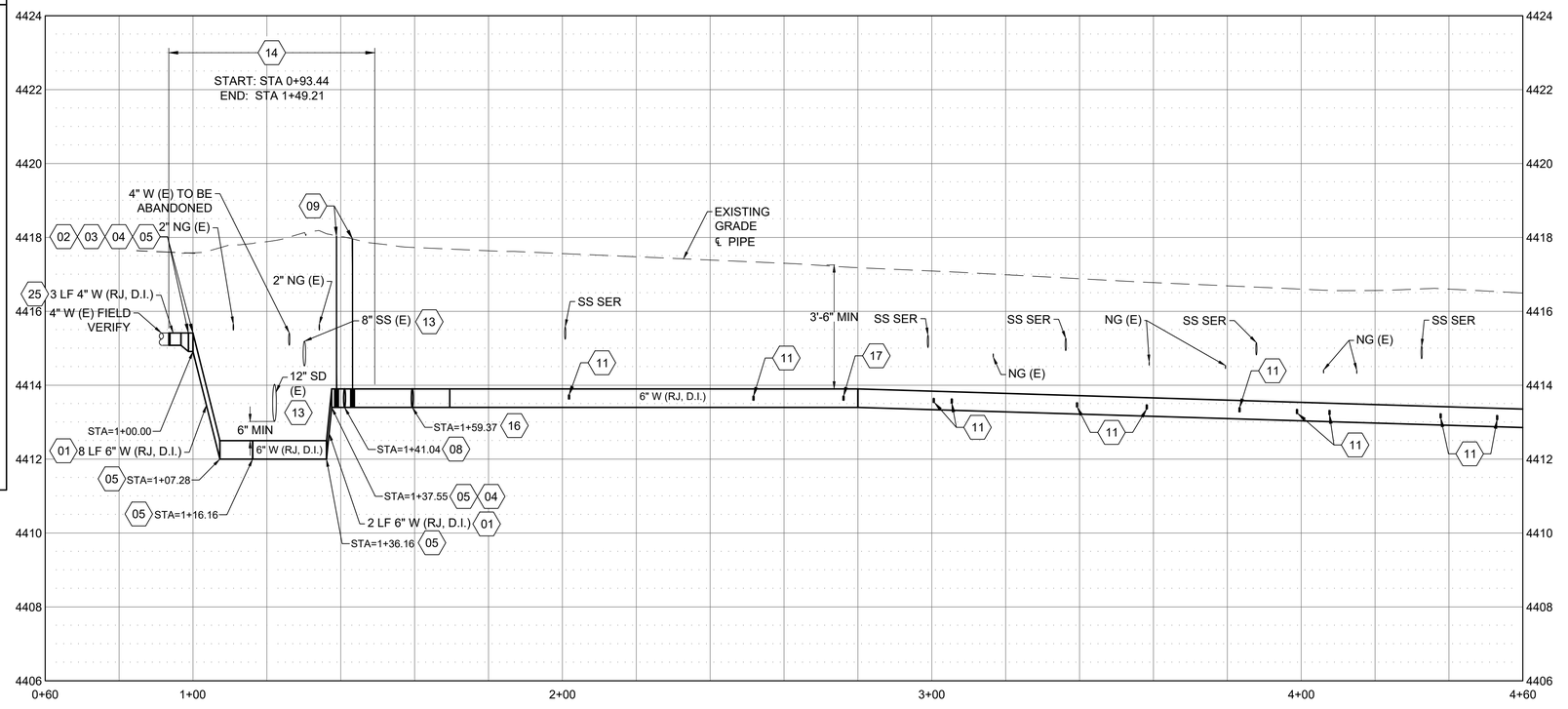
19 NOT USED

20 NOT USED

21 NOT USED

25 PLACE THRUST BLOCK, RE: TMWA DETAIL 10L-2/C-510

26 EXISTING 4" WATER MAIN TO BE REMOVED, RE: W-101



GENERAL SHEET NOTES

- PIPE TRENCH SHALL COMPLY WITH TMWA STANDARD DETAIL 10L-6.
- TEMPORARY AC PATCH IS REQUIRED ON ALL STREETS PER CITY OF SPARKS STANDARD DETAIL S-116, UNLESS NOTED OTHERWISE. STRIPING SHALL BE PLACED ON ALL TEMP AC.
- CONTRACTOR SHALL POTHOLE TO VERIFY DEPTHS AND REQUIRED MATERIALS FOR CONNECTION TO EXISTING. LOCATIONS OF EXISTING UTILITIES ARE APPROXIMATE AND BASED ON BEST AVAILABLE INFORMATION.
- ALL DUCTILE IRON PIPE SHALL BE RESTRAINED WITH FIELD LOCK GASKETS OR APPROVED EQUAL.
- ALL MECHANICAL JOINT (MJ) CONNECTIONS TO DUCTILE IRON SHALL BE RESTRAINED (MEGALUG OR APPROVED EQUAL).
- RETIRED CI AND PVC MAINS SHALL BE GROUT FILLED AND CONCRETE CAPPED.
- EMAIL GASINSPECTION@NVENERGY.COM AT LEAST 2 WORKING DAYS IN ADVANCE FOR A STANDBY WHEN WORKING IN CLOSE PROXIMITY TO GAS FACILITIES.
- ALL RESTRAINT GLANDS AND STAINLESS STEEL HARDWARE TO BE WAX TAPED WITH TRENTON WAX TAPE #2 SYSTEM OR APPROVED EQUAL.
- RETAIN AND PROTECT EXISTING UTILITIES (TYP), CONTRACTOR TO PROVIDE UTILITY SUPPORT AS REQUIRED.
- CONTRACTOR TO FURNISH MATERIALS WHERE "INSTALL", "PLACE", "CONSTRUCT", "REPLACE" OR "RESET" IS REQUIRED UNLESS NOTED OTHERWISE.
- CONTRACTOR TO FIELD DETERMINE EXTENTS OF SAWCUT AND REMOVE EXISTING ASPHALT, RE: C-103.
- SEE SHEETS C-102 TO C-402 FOR SEWER LINE CONSTRUCTION.

SHEET KEYNOTES

01 INSTALL NEW RJ DI CL 350 PSI, WATER MAIN W/POLY WRAP (SIZE AS NOTED - SEE PROFILE). (RE: TMWA DETAIL 10L-6/C-511).

02 INSTALL FITTING - 4" MJ TRANSITION COUPLING, RE: A1/C-530

03 INSTALL FITTING - 6" x 4" (MRJxMRJ) ECCENTRIC REDUCER (FLAT SIDE UP), RE: A1/C-530

04 INSTALL FITTING - 6" MRJxMRJ ADAPTER, TO CONNECT ALL VALVES TO ELBOWS, RE: A1/C-530

05 INSTALL FITTING - 6" 45° BEND (MRJxMRJ), RE: A1/C-530

08 INSTALL FITTING - 6" FLG CROSS

09 INSTALL VALVE - 6" GATE (MRJxFLG) WITH RESTRAINT GLANDS, (FLG CONNECTS TO FLG, MRJ CONNECTS TO PIPE) RE: TMWA DETAIL 10J-2/C-510

10 EXISTING 4" WATER MAIN TO BE GROUT FILLED, RE: W-101

11 CONNECT NEW WATER SERVICE LINE TO EXISTING WATER SERVICE LINE, RE: TMWA DETAIL 10H-2/C-510 SEE SERVICE REPLACEMENT SCHEDULE

13 WATER MAIN CROSSING SEWER MAIN, RE: TMWA DETAIL 10L-11/C-511, (NON-POTABLE POTABLE CROSSING)

14 INSTALL 4" CONCRETE ENCASEMENT WITHIN TRENCH EXTENTS; RE: TMWA DETAIL 10L-10 & 10L-11/C-511 AND 2024 WATER DISTRIBUTION FACILITIES DESIGN STANDARDS

15 INSTALL TEST STATION, RE: TMWA DETAIL 10L-9/C-511

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PROFESSIONAL ENGINEER - STATE OF NEVADA
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CITY OF SPARKS

G STREET SEWER IMPROVEMENTS AND WATER MAIN RELOCATION

PLAN & PROFILE - G STREET NEW WATER MAIN

DRAWN: EWC | CHECK: JW

VERIFY SCALE: Scales based on 22"x34" prints.
1-1/2 Inches

PROJECT NO. 223014 | PAGE

SHEET NO. W-402

SERVICE REPLACEMENT SCHEDULE

TAG NO.	EXISTING SIZE & MATERIAL	NEW SERVICE SIZE	ADDRESS	FULL REPLACEMENT Y OR N
7	1.5" CU	1.5"	875 H ST	N
8	.75" CU	.75"	820 G ST	Y
16	.75" CU	.75"	853 G ST	N
17	1.0" CU	1.0"	857 G ST	N
18	TO BE ABANDONED			
19	.75" CU	.75"	851 G ST	N
20	.75" CU	.75"	819 G ST	N

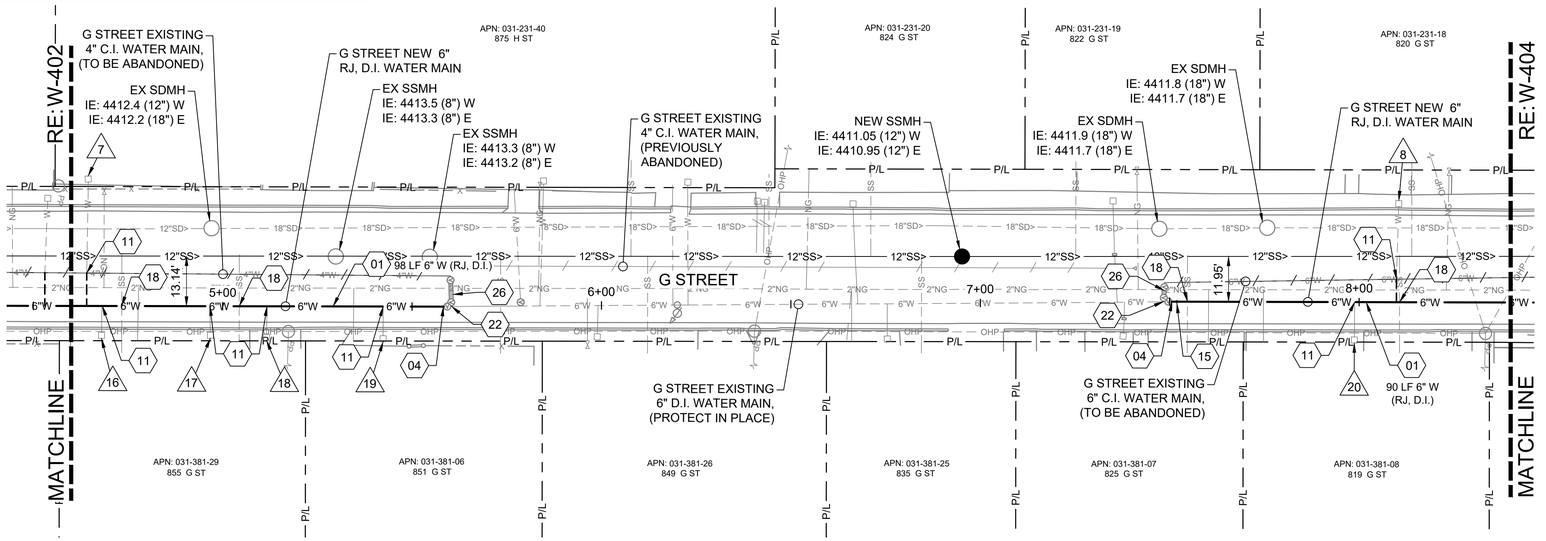
WATER SERVICE NOTES:

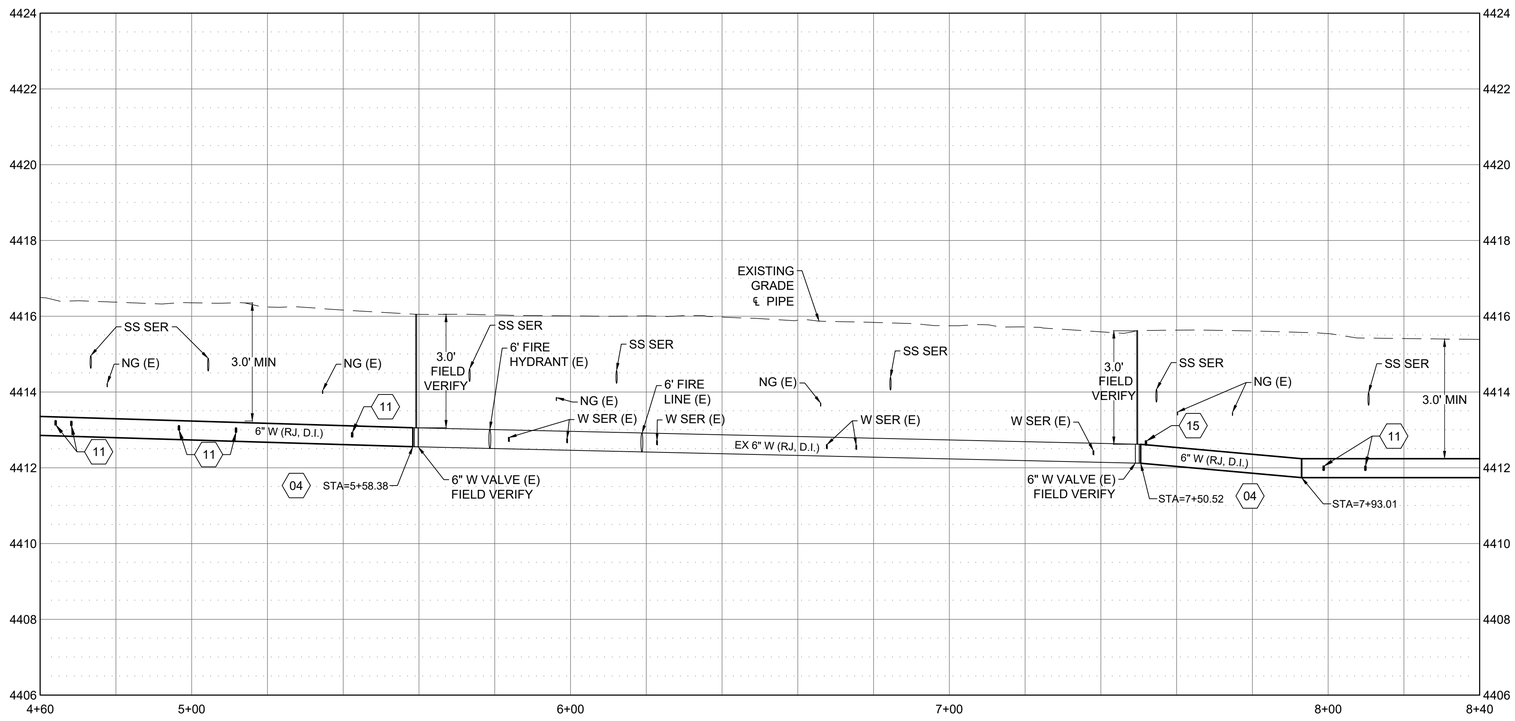
1. WATER SERVICE RECONNECTION (HDPE), PIPE LENGTH AS REQUIRED. CUT EXISTING SERVICE LINE AT EXISTING TAP AND CONNECT TO NEW SERVICE LINE W/ COMPRESSION FITTING. TAP SERVICE TO NEW WATER MAIN PER DETAIL 10H-2.
2. WHERE JOINING EXISTING AND NEW SERVICE LATERAL OF NON-EQUAL OD SIZE, CONNECTION TO BE A SINGLE REDUCER TRANSITION COUPLING.

LEGEND

- ABANDON (THIS CONTRACT)
- ABANDONED (PREVIOUS PROJECT)

GRAPHIC SCALE
HORIZ: 0 20 40
VERT: 0 2 4





GENERAL SHEET NOTES

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- CONTRACTOR TO FIELD DETERMINE EXTENTS OF SAWCUT AND REMOVE EXISTING ASPHALT, RE: C-103.
- SEE SHEETS C-102 TO C-402 FOR SEWER LINE CONSTRUCTION.

SHEET KEYNOTES

01 INSTALL NEW RJ DI CL 350 PSI, WATER MAIN W/POLY WRAP (SIZE AS NOTED - SEE PROFILE). (RE: TMWA DETAIL 10L-6/C-511)

04 INSTALL FITTING - 6" MRJxFLG ADAPTER (THIS IS A FLANGED NORMALLY CLOSED GATE VALVE WITH BLIND FLANGE FITTING INSTALLED IN 2023. REMOVE BLIND FLANGE & CONNECT WITH 6" MRJxFLG ADAPTER. VALVE TO BE OPENED & OPERATIONAL WITH CONSTRUCTION OF THIS PLAN SET). RE: W-101

11 CONNECT NEW WATER SERVICE LINE TO EXISTING WATER SERVICE LINE, RE: TMWA DETAIL 10H-2/C-510 SEE SERVICE REPLACEMENT SCHEDULE

14 NOT USED

15 INSTALL TEST STATION, RE: TMWA DETAIL 10L-9/C-511

18 WATER MAIN CROSSING SEWER SERVICE, RE: TMWA DETAIL 10L-12/C-511, (NON-POTABLE POTABLE CROSSING)

22 INSTALL BLIND FLANGE (MATCH PIPE SIZE). PLACE THRUST BLOCK, RE: TMWA DETAIL 10L-2/C-510 & C-531

26 EXISTING 4" WATER MAIN TO BE REMOVED, RE: W-101

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PROFESSIONAL ENGINEER STATE OF NEVADA
DYLAN CAREY
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CIVIL
No. 032142
STATE OF NEVADA

NO.	REVISIONS	DATE

CITY OF SPARKS

G STREET SEWER IMPROVEMENTS AND WATER MAIN RELOCATION

PLAN & PROFILE - G STREET NEW WATER MAIN

DRAWN: EWC | CHECK: JW

VERIFY SCALE: Scales based on 22"x34" prints.
1-1/2 Inches

PROJECT NO. 223014 | PAGE

SHEET NO. W-403

SERVICE REPLACEMENT SCHEDULE

TAG NO.	EXISTING SIZE & MATERIAL	NEW SERVICE SIZE	ADDRESS	FULL REPLACEMENT Y OR N
9	1.0" CU	1.0"	810 G ST	N
21	.75" CU	.75"	845 PYRAMID WAY	N

WATER SERVICE NOTES:

1. WATER SERVICE RECONNECTION (HDPE), PIPE LENGTH AS REQUIRED. CUT EXISTING SERVICE LINE AT EXISTING TAP AND CONNECT TO NEW SERVICE LINE W/ COMPRESSION FITTING. TAP SERVICE TO NEW WATER MAIN PER DETAIL 10H-2.
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LEGEND

- ABANDON (THIS CONTRACT)
- ABANDONED (PREVIOUS PROJECT)

GRAPHIC SCALE
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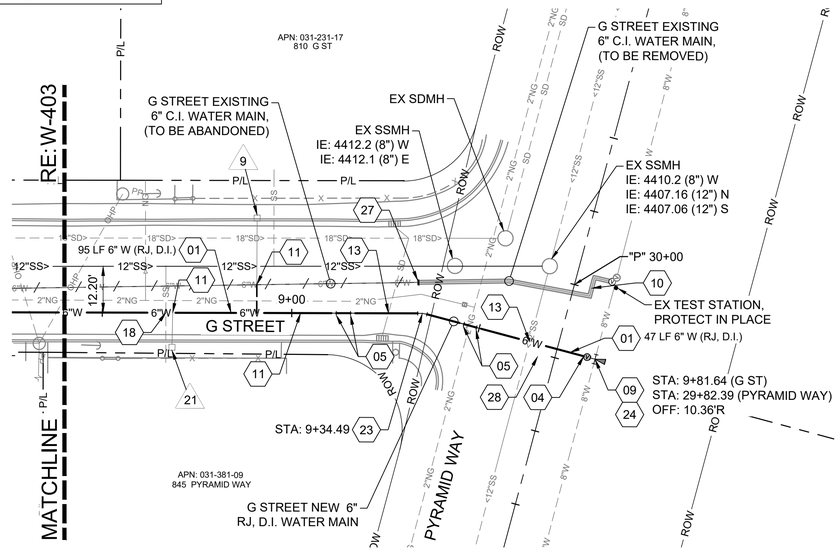
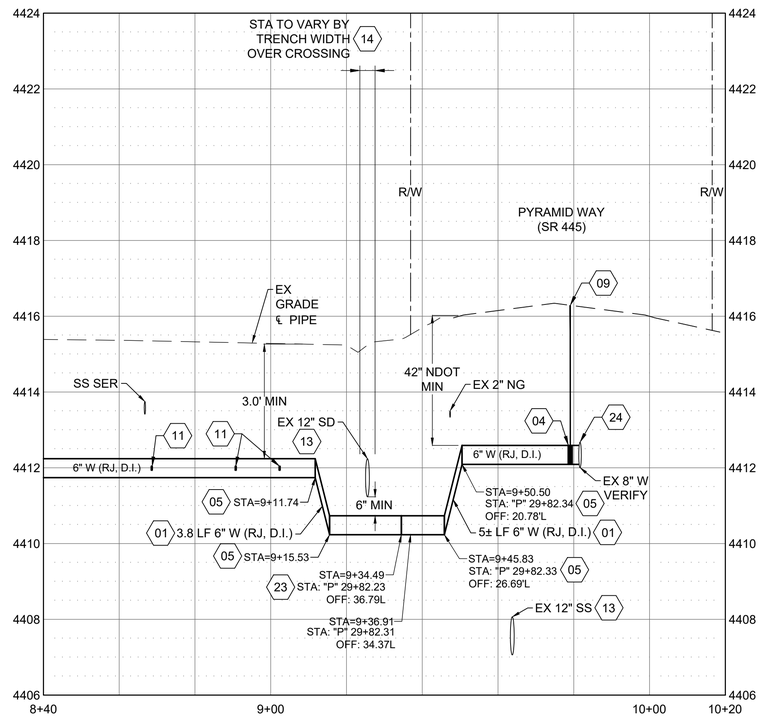
VERT: 0 2 4





GENERAL SHEET NOTES

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- CONTRACTOR TO FIELD DETERMINE EXTENTS OF SAWCUT AND REMOVE EXISTING ASPHALT, RE: C-103.
- SEE SHEETS C-102 TO C-402 FOR SEWER LINE CONSTRUCTION.

SHEET KEYNOTES

01 INSTALL NEW RJ DI CL 350 PSI, WATER MAIN W/POLY WRAP (SIZE AS NOTED - SEE PROFILE). (RE: TMWA DETAIL 10L-6/C-511 AND S-116/C-501).

04 INSTALL FITTING - 6" MRJxFLG ADAPTER, RE: A1/C-530

05 INSTALL FITTING - 6" 45° BEND (MRJxMRJ), RE: A1/C-530

09 INSTALL 6" GATE VALVE (FLG) FOR HOT TAP (10J-2/C-502)

10 EXISTING 6" WATER MAIN TO BE REMOVED, RE: W-101

11 CONNECT NEW WATER SERVICE LINE TO EXISTING WATER SERVICE LINE, RE: TMWA DETAIL 10H-2/C-510 SEE SERVICE REPLACEMENT SCHEDULE

13 WATER MAIN CROSSING SEWER MAIN, RE: TMWA DETAIL 10L-11/C-511, (NON-POTABLE POTABLE CROSSING)

14 INSTALL 4" CONCRETE ENCASEMENT WITHIN TRENCH EXTENTS; RE: TMWA DETAIL 10L-10 & 10L-11/C-511 AND 2024 WATER DISTRIBUTION FACILITIES DESIGN STANDARDS

18 WATER MAIN CROSSING SEWER SERVICE, RE: TMWA DETAIL 10L-12/C-511, (NON-POTABLE POTABLE CROSSING)

23 INSTALL FITTING - 6" 11.25° BEND (MRJxMRJ) (INSTALL IN HORIZONTAL POSITION)

24 INSTALL 8"x6" STAINLESS STEEL TAPPING SLEEVE FOR HOT TAP ON (EX) 8" DI WATER (10D-2 &10D-3/C-502) AND INSTALL THRUST BLOCK (10L-2/C-502)

27 CAP END OF ABANDONED PIPE & INSTALL SWEEP & VENT FOR GROUT FILLING, RE: W-101

28 FULL DEPTH PAVEMENT T-PATCH WITHIN NDOT R-O-W (SR 445) (1,310+/- SF) REFERENCE NDOT TRENCH DETAIL (1/C-512) FOR LIMITS OF RESTORATION

KELLER ASSOCIATES
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G STREET SEWER IMPROVEMENTS AND WATER MAIN RELOCATION

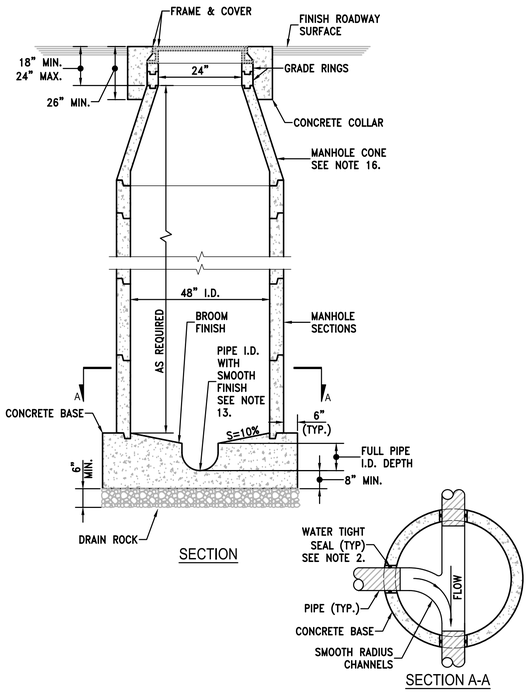
PLAN & PROFILE - G STREET NEW WATER MAIN

DRAWN: EWC | CHECK: JW

VERIFY SCALE: Scales based on 22"x34" prints.
1-1/2 Inches

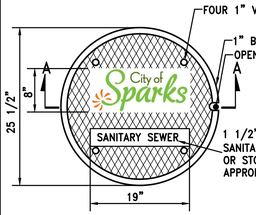
PROJECT NO. 223014 | PAGE

SHEET NO. W-404

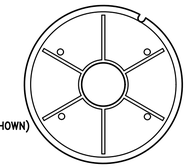


GENERAL MANHOLE NOTES

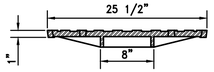
1. ALL PRECAST MANHOLE COMPONENTS SHALL CONFORM TO ASTM C-478.
2. PIPES SHALL NOT PROTRUDE MORE THAN 3" INSIDE MANHOLE SECTION AS MEASURED AT THE OUTSIDE EDGES OF THE PIPE, VERTICALLY ALIGNED WITH THE SPRINGLINE. PIPE CONNECTION TO MANHOLE SHALL BE WATERTIGHT PER STANDARD DETAILS S-211A, S-211B AND S-211C.
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), AS ADOPTED BY CITY COUNCIL. 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.
15. SEE DETAIL FOR INSIDE DROP MANHOLE FOR SANITARY SEWERS WITH MORE THAN 2 FEET VERTICAL DROP AT THE MANHOLE. THE USE OF "OUTSIDE 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 1½" 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 DETAIL S-211A & S-211B.
21. TYPE IV MANHOLES SHOULD ONLY BE USED AS APPROVED BY CITY ENGINEER.
22. ALL MANHOE BARREL JOINTS TO BE WRAPPED WITH EXTERNAL JOINT WRAP M-860 OR APPROVED EQUAL.



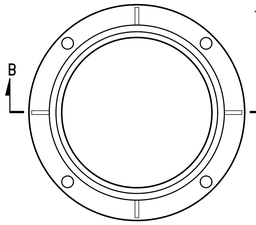
24" COVER PLAN – TOP



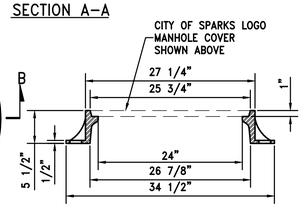
24" COVER PLAN – BOTTOM



SECTION A-A



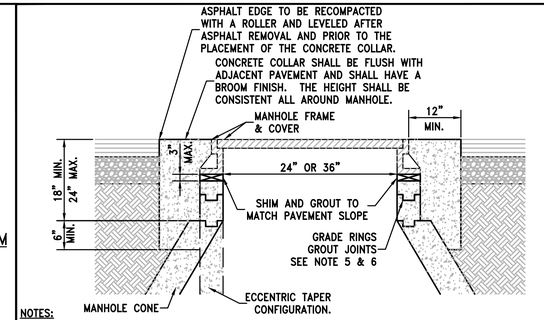
24" MANHOLE FRAME



SECTION B-B

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, NO PAINT.



NOTES:

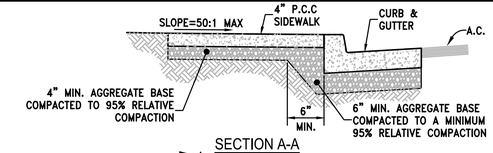
1. PORTLAND CEMENT CONCRETE (P.C.C.) SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4000 PSI MIN. COMPRESSIVE STRENGTH AT 28 DAYS, MIN. 6 SACKS OF CEMENT PER CUBIC YARD WITH MAX. WATER-CEMENT RATIO OF 0.45, AIR ENTRAINMENT 6% ±1.5%, SLUMP AT 1 TO 4 INCHES. MIX DESIGN SHALL CONFORM TO THE REQUIREMENTS OF SECTION 337 OF STANDARD SPECIFICATIONS OF PUBLIC WORKS CONSTRUCTION (SSPWC), AS ADOPTED BY CITY COUNCIL. CEMENT SHALL BE TYPE II. ALL CEMENT CONCRETE SHALL HAVE A COARSE AGGREGATE GRADATION CONFORMING TO SIZE No. 67. POLYPROPYLENE OR CELLULOSE FIBERS SHALL BE ADDED TO THE P.C.C. AT 1.5 LBS. PER CUBIC YARD. ALL MATERIALS SHALL CONFORM TO SSPWC, AS ADOPTED BY CITY COUNCIL.
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 CITY 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, AS ADOPTED BY CITY COUNCIL.
6. ALL GRADE RINGS SHALL BE PRECAST CONCRETE. PVC GRADE RINGS ARE NOT ALLOWED. CONTRACTOR SHALL USE AS FEW GRADE RINGS AS POSSIBLE TO REACH REQUIRED DEPTH. HOWEVER IN NO CASE SHALL THE QUANTITY EXCEED 4 GRADE RINGS WITHOUT APPROVAL OF THE CITY ENGINEER.
7. P.C.C. COLLARS IN ALL ROADWAYS SHALL BE PROTECTED FROM TRAFFIC LOADS UNTIL MINIMUM 3000 PSI IS ATTAINED.

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	DRAWING No.
City of Sparks MANHOLE TYPE I	S-206A
APPROVED BY: JE	DATE: 1/2020

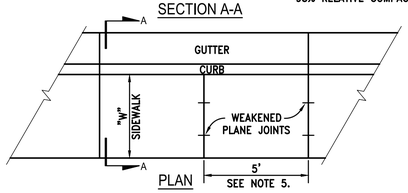
STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	DRAWING No.
City of Sparks NOTES - MANHOLE TYPE I, TYPE V & TYPE IV	S-206D
APPROVED BY: JE	DATE: 1/2020

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	DRAWING No.
City of Sparks 24" MANHOLE FRAME & COVER	S-209A
APPROVED BY: JE	DATE: 2/2020

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	DRAWING No.
City of Sparks MANHOLE COLLAR	S-210A
APPROVED BY: JE	DATE: 1/2020



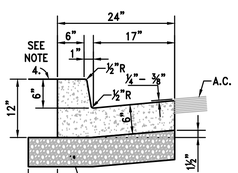
SECTION A-A



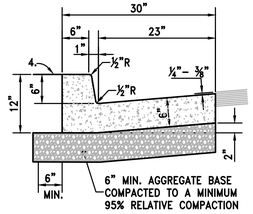
PLAN

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), AS ADOPTED BY CITY COUNCIL. CEMENT SHALL BE TYPE II. ALL CEMENT CONCRETE SHALL HAVE A COARSE AGGREGATE GRADATION CONFORMING TO SIZE No. 67. POLYPROPYLENE OR CELLULOSE FIBERS SHALL BE ADDED TO THE P.C.C. AT 1.5 LBS. PER CUBIC YARD. ALL MATERIALS SHALL CONFORM TO SSPWC, AS ADOPTED BY CITY COUNCIL.
2. AGGREGATE BASE MATERIAL UNDER SIDEWALKS SHALL BE TYPE 2, CLASS B CRUSHED AGGREGATE BASE. MATERIALS SHALL CONFORM TO SSPWC SECTION 200, AS ADOPTED BY CITY COUNCIL.
3. SIDEWALK WIDTH "W" SHALL BE 4 FT MIN. WITH 60" PASSING SPACE EVERY 200' ON RESIDENTIAL STREETS AND 6 FT MIN. ON COLLECTOR AND ARTERIAL STREETS.
4. WEAKENED PLANE JOINTS SHALL BE CONSTRUCTED AT 5 FT INTERVALS AND ACCORDANCE WITH SECTION 312 OF THE SSPWC, AS ADOTED BY CITY COUNCIL.
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. TUNNELING AND/OR BORING IS NOT ALLOWED.



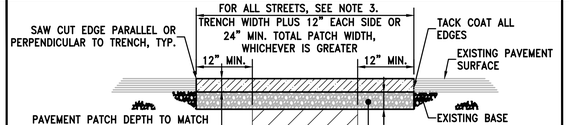
TYPE 1



TYPE 1A

NOTES:

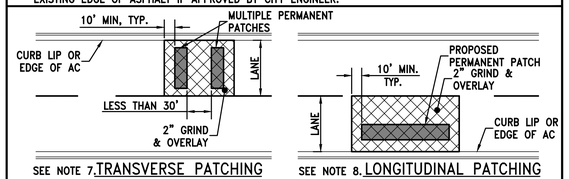
1. PORTLAND CEMENT CONCRETE (P.C.C.) SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4000 PSI MIN. COMPRESSIVE STRENGTH AT 28 DAYS, MIN. 6 SACKS OF CEMENT PER CUBIC YARD WITH MAX. WATER-CEMENT RATIO OF 0.45, AIR ENTRAINMENT 6% ±1.5%, SLUMP AT 1 TO 4 INCHES. MIX DESIGN SHALL CONFORM TO THE REQUIREMENTS OF SECTION 337 OF STANDARD SPECIFICATIONS OF PUBLIC WORKS CONSTRUCTION (SSPWC), AS ADOPTED BY CITY COUNCIL. CEMENT SHALL BE TYPE II. ALL CEMENT CONCRETE SHALL HAVE A COARSE AGGREGATE GRADATION CONFORMING TO SIZE No. 67. POLYPROPYLENE OR CELLULOSE FIBERS SHALL BE ADDED TO THE P.C.C. AT 1.5 LBS. PER CUBIC YARD. ALL MATERIALS SHALL CONFORM TO SSPWC, AS ADOPTED BY CITY COUNCIL.
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, AS ADOPTED BY CITY COUNCIL.
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.



SECTION

NOTES:

1. AN EXCAVATION/ENCROACHMENT PERMIT MUST BE OBTAINED FROM CITY OF SPARKS PRIOR TO CUTTING ANY PUBLIC RIGHT-OF-WAY.
2. IF SAW CUT IS WITHIN 2 FEET OF AN EXISTING PAVEMENT EDGE OR EXISTING PAVEMENT PATCH, REMOVE EXISTING PAVEMENT TO THAT EDGE AND REPLACE ENTIRE SECTION.
3. ALL PERMANENT PATCH REPLACEMENT REQUIREMENTS ARE MINIMUM WIDTHS ONLY AND INCLUDES ALL AREAS WHERE THE ASPHALT PAVEMENT HAS BEEN UNDERMINED. THE CITY ENGINEER MAY REQUIRE WIDER PATCH SECTIONS OR OTHERWISE ALTER THESE REQUIREMENTS.
4. AGGREGATE BASE MATERIAL UNDER BITUMINOUS PAVEMENT PATCH SHALL BE TYPE 2, CLASS B CRUSHED AGGREGATE BASE. MATERIALS SHALL CONFORM TO SSPWC SECTION 200, AS ADOPTED BY CITY COUNCIL.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACEMENT OF LOOP DETECTORS, ADJUSTMENT OF UTILITIES AND SURVEY MONUMENTS TO GRADE AND INSTALLATION OF PERMANENT PAVEMENT MARKINGS.
6. FOR P.C.C. CURB REPLACEMENT, SAW CUT EXISTING PAVEMENT 18 INCHES MIN. FROM GUTTER LIP LINE, REMOVE AND REPLACE PAVEMENT TO SAW CUT EDGES. CONCRETE MAY BE POURED NEAT AGAINST EXISTING EDGE OF ASPHALT IF APPROVED BY CITY ENGINEER.

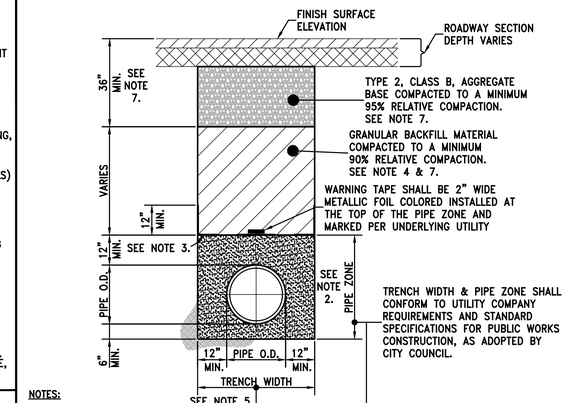


SEE NOTE 7. TRANSVERSE PATCHING

SEE NOTE 8. LONGITUDINAL PATCHING

ALL STREETS WITH PAVEMENT CONDITION INDEX (PCI) GREATER THAN 65:

7. TRANSVERSE PATCHES SHALL INCLUDE A GRIND AND OVERLAY WHEREVER THERE ARE MULTIPLE PATCHES WITHIN 30 FEET OF EACH OTHER. 2" MINIMUM FOR RESIDENTIAL, COLLECTORS & INDUSTRIALS. 3" MINIMUM FOR ARTERIALS.
8. LONGITUDINAL PATCHES SHALL INCLUDE GRIND AND OVERLAY TO THE LANE LINES (BIKE, PARKING, OR TRAVEL). 2" MINIMUM FOR RESIDENTIAL, COLLECTORS & INDUSTRIALS. 3" MINIMUM FOR ARTERIALS.
9. DRIVEWAY & INTERSECTION LIMITS TO BE DETERMINED BY STREET CUT COORDINATOR.



NOTES:

1. ALL MATERIALS AND INSTALLATION PROCEDURES SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (SSPWC), AS ADOPTED BY CITY COUNCIL.
2. BEDDING MATERIAL SHALL CONFORM TO OWNING-UTILITY COMPANY REQUIREMENTS AS APPROVED BY THE CITY OF SPARKS. FOR CITY-OWNED UTILITIES, BEDDING MATERIAL SHALL BE CLASS A OR C, COMPACTED TO MINIMUM 90% RELATIVE COMPACTION. MATERIALS SHALL CONFORM TO SSPWC SECTION 200, AS ADOPTED BY CITY COUNCIL.
3. CLASS C BEDDING REQUIRES INSTALLATION OF GEOTEXTILE FABRIC BETWEEN PIPE ZONE AND BACKFILL MATERIAL. GEOTEXTILE FABRIC SHALL BE MIRAFI 180N OR APPROVED EQUAL.
4. 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, AS ADOPTED BY CITY COUNCIL.
5. ALL EXCAVATIONS SHALL CONFORM TO THE LATEST O.S.H.A. REQUIREMENTS.
6. EXISTING PIPE TO BE ABANDONED SHALL BE GROUT FILLED OR COMPLETELY REMOVED.
7. 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, AS ADOPTED BY CITY COUNCIL.

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	DRAWING No.
City of Sparks SIDEWALK DETAIL	S-103
APPROVED BY: JE	DATE: 1/2020

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	DRAWING No.
City of Sparks P.C.C. CURB & GUTTER	S-109
APPROVED BY: JE	DATE:

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	DRAWING No.
City of Sparks PERMANENT BITUMINOUS PAVEMENT PATCH	S-115
APPROVED BY: JE	DATE: 1/2020

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION	DRAWING No.
City of Sparks TRENCH EXCAVATION/BACKFILL	S-117
APPROVED BY: JE	DATE: 1/2020

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PROFESSIONAL ENGINEER STATE OF NEVADA
DYLAN CAREY
Exp: 12-31-2026
CIVIL
No. 032142

NO.	REVISIONS	DATE

CITY OF SPARKS

G STREET SEWER IMPROVEMENTS AND WATER MAIN RELOCATION

DETAILS - CITY OF SPARKS 1

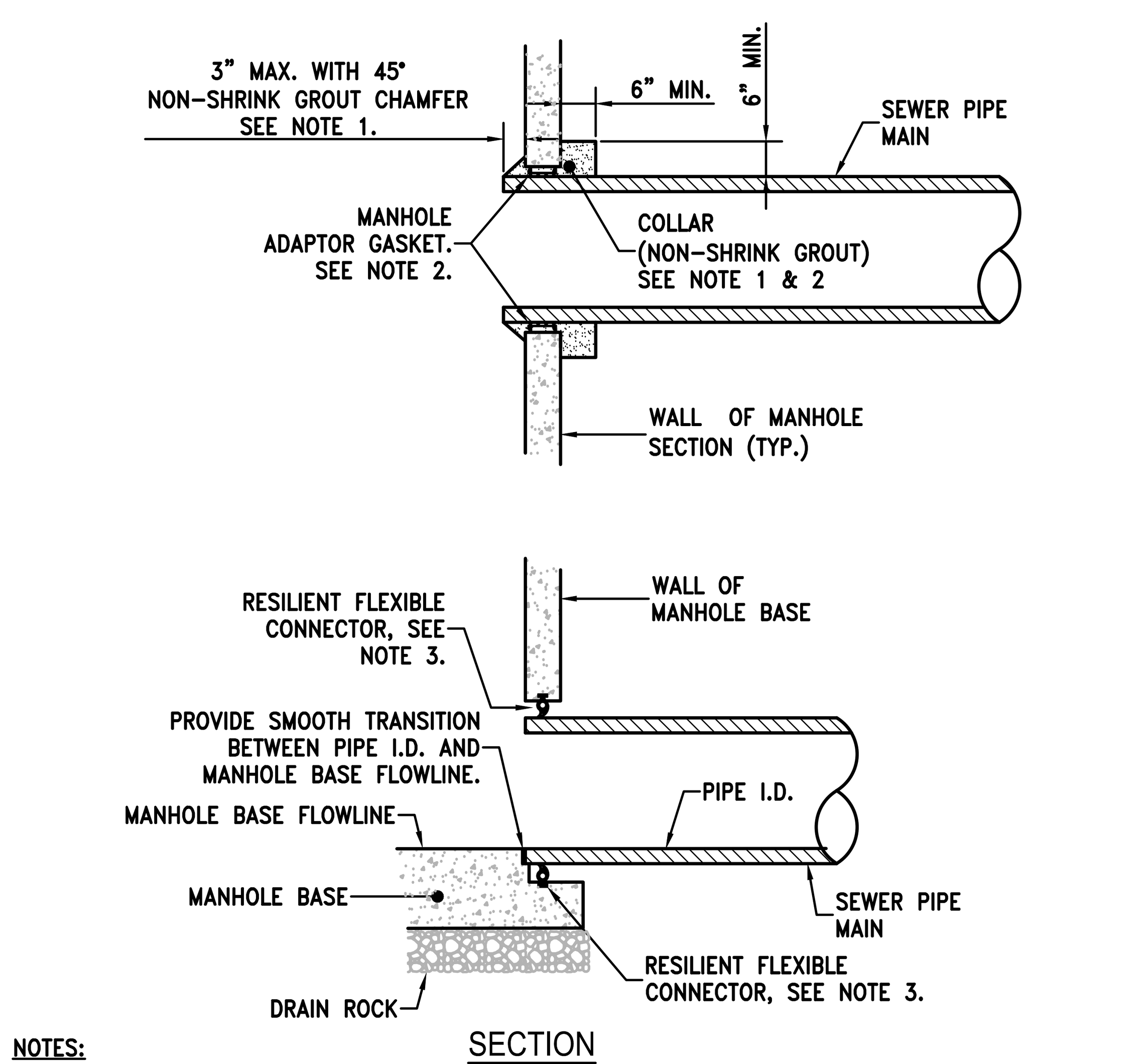
DRAWN: MC | CHECK: JW

VERIFY SCALE: Scales based on 22"x34" prints.

1-1/2 Inches

PROJECT NO. 223014 | PAGE

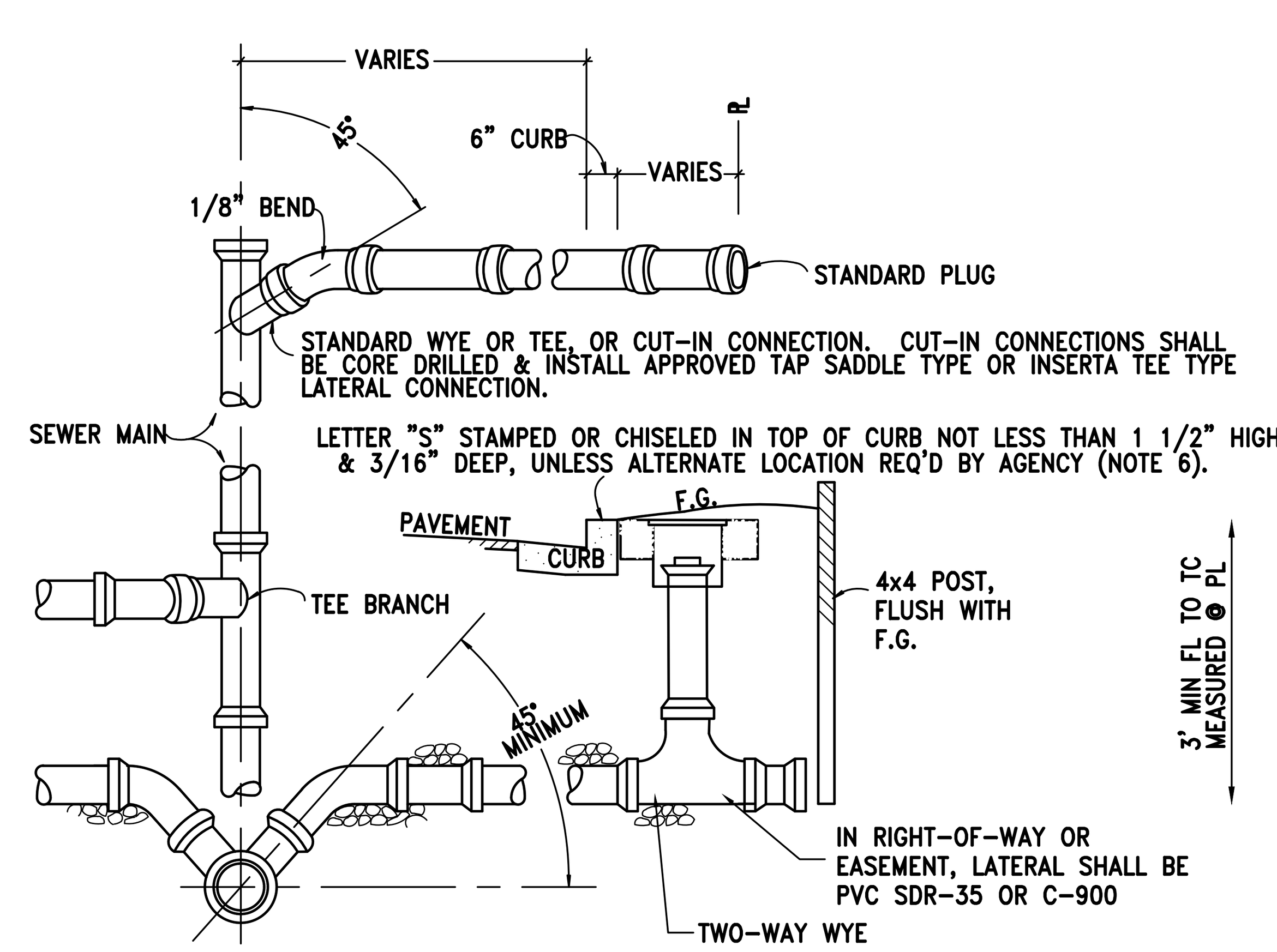
SHEET NO. C-501



NOTES:

1. NON-SHRINK GROUT SHALL HAVE THE FOLLOWING CHARACTERISTICS: 3000 PSI MIN. COMPRESSIVE STRENGTH AT 28 DAYS, MIN. 6 SACKS OF CEMENT PER CUBIC YARD AND SLUMP AT 1 TO 4 INCHES. ALL MATERIAL SHALL CONFORM TO STANDARD SPECIFICATIONS OF PUBLIC WORKS CONSTRUCTION (SSPWC) SECTION 202, AS ADOPTED BY CITY COUNCIL.
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 S-211C.
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.

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION		DRAWING No.
City of Sparks	SANITARY SEWER PIPE TO MANHOLE CONNECTION	S-211A
		APPROVED BY: JE | DATE: 1/2020



NOTES

1. SEWER LATERALS SHALL HAVE A MINIMUM SLOPE OF 2%, UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
2. LATERAL SHALL BE CUT BACK TO SOUND MATERIAL FOR COUPLING.
3. ALL CONNECTIONS TO THE CITY SEWER MAINS MUST BE CORE DRILLED.
4. ENCASE LATERAL CONNECTION IN CEMENT, STABILIZED SAND OR 2000 PSI CONCRETE FOLLOWING INSTALLATION. CONNECTION MUST BE INSPECTED BY CITY PRIOR TO BACKFILL.
5. NO LATERAL CONNECTIONS SHALL BE MADE TO SANITARY SEWER "INTERCEPTOR" LINES WITHOUT THE APPROVAL OF THE CITY ENGINEER.
6. ALL APPLICABLE SANITARY SEWER PIPE INSTALLATION WORK SHALL BE IN ACCORDANCE WITH THE UNIFORM PLUMBING CODE.

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION		DRAWING No.
City of Sparks	SANITARY SEWER LATERAL	S-212A
		APPROVED BY: JE | DATE: 1/2020

NOTES:

1. SEWER LATERALS SHALL HAVE A MINIMUM PIPE DIAMETER OF 4-INCHES.
2. 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.
3. SERVICE LATERALS SHALL HAVE A MINIMUM SLOPE OF 1/4-INCH PER FOOT UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
4. 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.
5. 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 AND BE INSTALLED PER DETAIL S-212C.
6. SEWER LATERALS SHALL HAVE A CLEANOUT INSTALLED BETWEEN SIDEWALK AND RIGHT-OF-WAY. A G5 BOX CLEARLY MARKED "SEWER" SHALL BE INSTALLED OVER THE TOP OF THE CLEANOUT RISER CAP PIPE.
7. SEWER LATERALS SHALL NOT BE CONNECTED DIRECTLY TO OR WITHIN 5-FEET OF A MANHOLE STRUCTURE.
8. EXISTING SEWER LATERALS SHALL BE CUT BACK TO SOUND MATERIAL FOR COUPLING. PLACE 6-INCH THICK CONCRETE PAD UNDER CONNECTION.
9. 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.
10. 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.
12. EACH INDIVIDUAL PARCEL SHALL HAVE A MINIMUM OF ONE SEWER LATERAL. TWO OR MORE PARCELS SHALL NOT SHARE ONE SEWER LATERAL.
13. SANITARY SEWER LATERAL IDENTIFICATION AND LOCATING REQUIREMENTS SHALL BE PER SPARKS MUNICIPAL CODE 17.16.130 (SMC 17.16.130).
14. 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.
15. PROPERTY OWNER SHALL BE RESPONSIBLE FOR OPERATION, MAINTENANCE AND REPAIR OF THE SEWER LATERAL WITHIN THE PUBLIC RIGHT-OF-WAY PER SPARKS MUNICIPAL CODE.

STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION		DRAWING No.
City of Sparks	NOTES - SANITARY SEWER LATERAL	S-212B
		APPROVED BY: JE | DATE: 1/2020

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PROFESSIONAL ENGINEER · STATE OF NEVADA
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No. 032112

NO.	REVISIONS	DATE

CITY OF SPARKS

G STREET SEWER IMPROVEMENTS AND WATER MAIN RELOCATION

DETAILS - CITY OF SPARKS 2

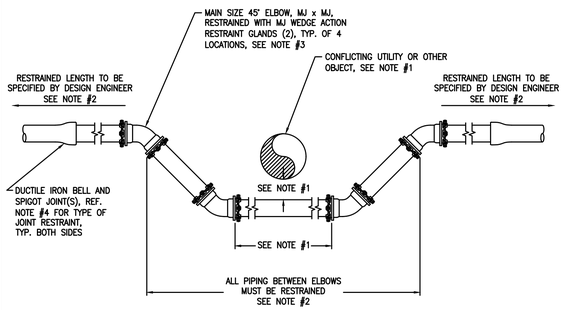
DRAWN: MC CHECK: JW

VERIFY SCALE: Scales based on 22"x34" prints.
1-1/2 Inches

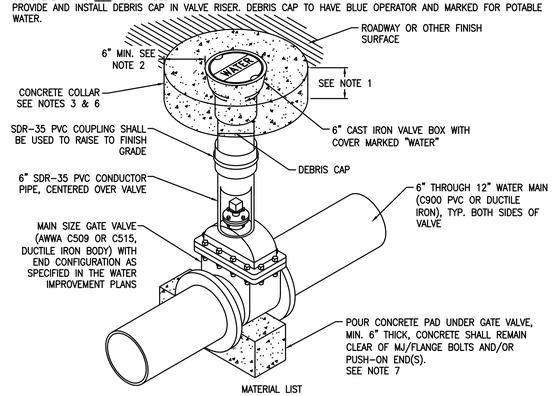
PROJECT NO. 223014
PAGE

SHEET NO. C-502

NOTES:
1. REFERENCE TMWA ENGINEERING & CONSTRUCTION STANDARDS SECTIONS 7, 8, AND/OR 8A FOR UTILITY SEPARATION REQUIREMENTS.
2. ALL RESTRAINED JOINT PIPING SHALL BE DUCTILE IRON PIPE (RJ-DIP). RESTRAINED LENGTHS OUTSIDE OUTERMOST ELBOWS SHALL BE CALCULATED BY THE DESIGN ENGINEER AND SPECIFIED ON THE WATER IMPROVEMENT PLANS.
3. RESTRAINED JOINT FITTINGS SHALL BE MECHANICAL JOINT (MJ) DUCTILE IRON RESTRAINED WITH MECHANICAL JOINT WEDGE ACTION RESTRAINT GLANDS.
4. BELL AND SPIGOT PUSH-ON JOINTS SHALL BE RESTRAINED USING RUBBER GASKETS WITH STAINLESS STEEL LOCKING SEGMENTS VULCANIZED INTO THE RUBBER GASKET.
5. ALL BOLTS AND EXPOSED METAL SHALL BE COATED WITH BRUSHED-ON MASTIC.
6. FITTINGS, DUCTILE IRON PIPE, AND OTHER METAL PARTS SHALL BE ENCASED WITH POLYETHYLENE WRAP PER AWWA C105.

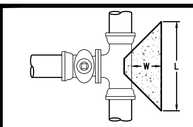


NOTES:
1. CONCRETE COLLAR SHALL BE MINIMUM 6-INCHES THICK OR MATCH PAVEMENT THICKNESS, WHICHEVER IS GREATER, UNLESS OTHERWISE SPECIFIED BY THE JURISDICTIONAL AGENCY RESPONSIBLE FOR THE ROADWAY.
2. FOR MULTIPLE VALVE/RISER BOXES IN CLOSE PROXIMITY, A MONOLITHIC CONCRETE COLLAR MAY BE POURED.
3. CONTRACTOR AND/OR DESIGN ENGINEER SHALL CONSULT WITH THE JURISDICTIONAL AGENCY RESPONSIBLE FOR THE ROADWAY FOR REQUIREMENTS THAT MAY VARY FROM THIS STANDARD PRIOR TO CONSTRUCTION.
4. BURIED BOLTS TO BE STAINLESS STEEL 304, OR TRIPAC 2000 BLUE (XYLAN 1424). APPLY TRENTON #1 WAX TAPE TO BOLTED ASSEMBLIES. RE: SPECIFICATIONS 15000.
5. GATE VALVE, DUCTILE IRON PIPE, AND OTHER METAL PARTS SHALL BE ENCASED WITH POLYETHYLENE WRAP PER AWWA C105.
6. UNLESS OTHERWISE SPECIFIED BY THE JURISDICTIONAL AGENCY RESPONSIBLE FOR THE ROADWAY, PORTLAND CEMENT CONCRETE (P.C.C.) FOR CONCRETE COLLAR SHALL HAVE THE FOLLOWING CHARACTERISTICS: 4,000 PSI MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS, MINIMUM 6 SACKS OF CEMENT PER CUBIC YARD WITH A MAXIMUM WATER/CEMENT RATIO OF 0.45, AIR ENTRAINMENT 6% ±1.5%, SLUMP AT 1 TO 4 INCHES. BAG CONCRETE MIX IS NOT ACCEPTABLE.
7. CONCRETE FOR PAD SHALL HAVE A COMPRESSIVE STRENGTH OF NOT LESS THAN 3,000 PSI AFTER 28 DAYS. BAG CONCRETE MIX IS NOT ACCEPTABLE.
7. PROVIDE AND INSTALL DEBRIS CAP IN VALVE RISER. DEBRIS CAP TO HAVE BLUE OPERATOR AND MARKED FOR POTABLE WATER.

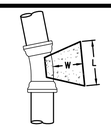


MATERIAL LIST

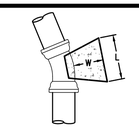
QTY	DESCRIPTION
1	MAIN SIZE GATE VALVE (AWWA C509 OR C515, DUCTILE IRON BODY) WITH END CONFIGURATION AS SPECIFIED IN THE WATER IMPROVEMENT PLANS
1	MASTIC (1 GALLON CAN – BRUSH ON)
1	6" ø SDR-35 PVC CONDUCTOR PIPE SECTION
1	6" ø CAST IRON VALVE BOX WITH COVER MARKED "WATER"
1	FULL FACE GASKET
1	CONCRETE BULK – PAD AND COLLAR
1	DEBRIS CAP



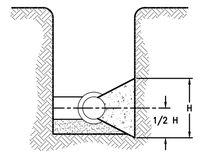
TEE / TAPPING SLEEVE PLAN VIEW



11.25° ELBOW PLAN VIEW

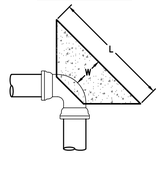


22.5° ELBOW PLAN VIEW



TYPICAL SECTION VIEW

45° ELBOW PLAN VIEW



90° ELBOW PLAN VIEW

THRUST BLOCK DIMENSIONS

TEE, TAP, OR DEAD END				11.25° ELBOW			22.5° ELBOW			45° ELBOW			90° ELBOW		
BRANCH SIZE (INCHES)	L (FEET)	H (FEET)	W MIN. (FEET)	ELBOW SIZE (INCHES)	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)
8	3	2	1	8	1.5	1	1	1.5	1.5	1	2.5	2	1	4	2	1
10	3.5	2.5	1	10	2	1	1	2	2	1	3	2.5	1	5	2.5	1
12	4.5	3	1	12	2	1.5	1	2.5	2	1	4	2.5	1	6	3	1
14	5	3.5	1	14	2.3	1.5	1	2.3	3	1	4.4	3	1	8.2	3	1
16	5.5	4.5	1	16	2.2	2	1	2.6	3.5	1	5	3.5	1	9.1	3.5	1

THRUST BLOCK DESIGN CRITERIA:

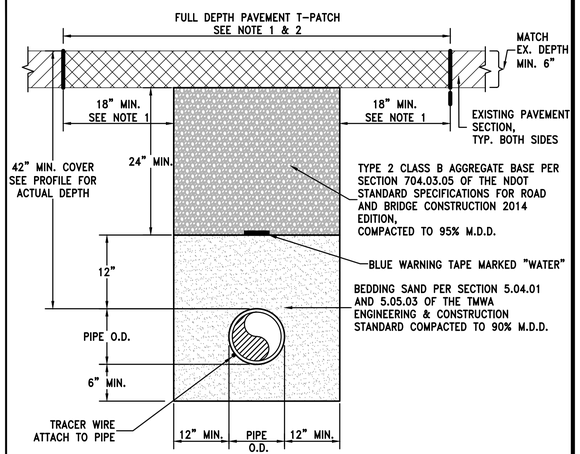
THRUST BLOCK SIZES HAVE BEEN CALCULATED USING THE METHOD AND EQUATIONS PUBLISHED IN *THRUST RESTRAINT DESIGN FOR DUCTILE IRON PIPE, SIXTH EDITION 2006* BY THE DUCTILE IRON PIPE RESEARCH ASSOCIATION (DIPRA) UTILIZING THE FOLLOWING DESIGN PARAMETERS: DESIGN PRESSURE = 150 PSI (SEE NOTE #4 BELOW), SOIL 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 WHERE 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.

	DATE		DRAWING NUMBER
TRUCKEE MEADOWS WATER AUTHORITY	7/2001	APPENDIX 10I VERTICAL ELBOW INSTALLATION RESTRAINED JOINT VERTICAL OFFSET UNDER UTILITY/OBJECT FOR MAINS 6" TO 12"	10I-2
	REV 7/2011		

	DATE		DRAWING NUMBER
TRUCKEE MEADOWS WATER AUTHORITY	1/2002	APPENDIX 10J DISTRIBUTION VLAVE INSTALLATION IN-LINE GATE VALVE WITH CONCRETE COLLAR	10J-2
	REV 7/2011		

	DATE		DRAWING NUMBER
TRUCKEE MEADOWS WATER AUTHORITY	7/2011	APPENDIX 10L THRUST BLOCKS TEES, TAPPING SLEEVES, DEAD ENDS 11.25, 22.5, 45 AND 90 DEGREE ELBOWS 4" TO 12"	10L-2
	REV		



NOTES:
1. THE EDGES OF THE PAVEMENT PATCH SHALL BE STRAIGHT AND UNIFORM (EDGES SHALL BE SAW-CUT). DENSE-GRADE ASPHALTIC CONCRETE SHALL CONFORM AND BE PLACED IN ACCORDANCE WITH SECTION 401 OF THE STATE OF NEVADA DEPARTMENT OF TRANSPORTATION (NDOT) 2014 STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION. PAVEMENT MIX DESIGN SHALL BE AS SPECIFIED IN THE NDOT OCCUPANCY PERMIT TERMS AND CONDITIONS.
2. ALL IMPACTED STRIPING SHALL BE REPLACED IN KIND.

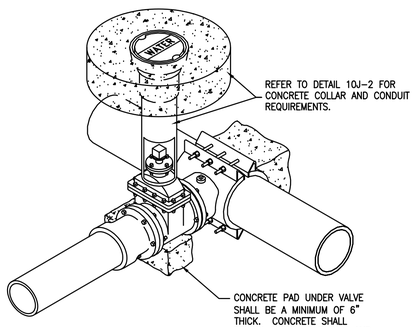
NTS	NDOT RIGHT-OF-WAY TRENCH EXCAVATION AND BACKFILL	DRAWING No. 1

TAP SIZE – FLANGED BRANCH

MAIN SIZE	VENDOR	MAIN TYPE	4"	6"	8"	10"	12"
4"	SM ROM	DI/CI PVC	663-04800400-200 SST-4.90 x 4" FL				
6"	SM ROM	DI/CI PVC	663-06630400-000 SST-7.00 x 4" FL	663*06630600-200 SST-7.00 x 6" FL			
	SM ROM	TR	663-(OD)400-000 SST-(OD) x 4" FL	663-(OD)0600-200 SST-(OD) x 6" FL			
8"	SM ROM	DI/CI PVC	663-09050400-000 SST-9.06 x 4" FL	663-09050600-000 SST-9.06 x 6" FL	663-09050800-200 SST-9.06 x 8" FL		
	SM ROM	TR	663-(OD)0400-000 SST-(OD) x 4" FL	663-(OD)0600-000 SST-(OD) x 6" FL	663-(OD)0800-200 SST-(OD) x 8" FL		
	SM ROM	SCH 40 STEEL	663-08630400-000 SST-8.63 x 4" FL	663-08630600-000 SST-8.63 x 6" FL	663-08630800-200 SST-8.63 x 8" FL		
10"	SM ROM	DI/CI PVC	663-11100400-000 SST-11.45 x 4" FL	663-11100600-000 SST-11.45 x 6" FL	663-11100800-000 SST-11.45 x 8" FL	663-11101000-200 SST-11.45 x 10" FL	
	SM ROM	TR	663-(OD)0400-000 SST-(OD) x 4" FL	663-(OD)0600-000 SST-(OD) x 6" FL	663-(OD)0800-000 SST-(OD) x 8" FL	66-(OD)1000-200 SST-(OD) x 10" FL	
	SM ROM	SCH 40 STEEL	663-10750400-000 SST-11.13 x 4" FL	663-10750600-000 SST-11.13 x 6" FL	663-10750800-000 SST-11.13 x 8" FL	663-10751000-200 SST-11.13 x 10" FL	
12"	SM ROM	DI/CI PVC	663-10750400-000 SST-13.30 x 4" FL	663-13200600-000 SST-13.30 x 6" FL	663-13200800-000 SST-13.30 x 8" FL	663-13201000-000 SST-13.30 x 10" FL	663-13201200-200 SST-13.30 x 12" FL
	SM ROM	TR	663-(OD)0400-000 SST-(OD) x 4" FL	663-(OD)0600-000 SST-(OD) x 6" FL	663-(OD)0800-00004 SST-(OD) x 8" FL	663-(OD)1000-000 SST-(OD) x 10" FL	663-(OD)1200-200 SST-(OD) x 12" FL
	SM ROM	SCH 40 STEEL	663-12750400-000 SST-12.85 x 4" FL	663-12750600-000 SST-12.85 x 6" FL	663-12750800-000 SST-12.85 x 8" FL	663-12751000-000 SST-12.85 x 10" FL	663-12751200-200 SST-12.85 x 12" FL

NOTES:
1. MAXIMUM TEST PRESSURE IS 300 PSI FOR LISTED MANUFACTURERS.
2. FLANGES (FL) SHALL BE STAINLESS STEEL ASTM A 240, TYPE 304.
3. VENDOR (MANUFACTURER): SM = SMITH-BLAIR, ROM = ROMAC INDUSTRIES
4. (OD) = PIPE OUTSIDE DIAMETER. CHECK WITH MANUFACTURER FOR CATALOG NUMBER FOR OTHER SIZES.
5. FOR TAPS ON TRANSITE MAINS OD MUST BE FIELD MEASURED PRIOR TO ORDERING PARTS.

	DATE		DRAWING NUMBER
TRUCKEE MEADOWS WATER AUTHORITY	7/2011	APPENDIX 10D DISTRIBUTION TAP INSTALLATION WATER TAPPING SLEEVES	10D-2
	REV		



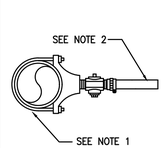
NOTES:
1. REQUIRES ONE (1) TAPPING SLEEVE. REFER TO 10D-2.
2. WHEN TAPPING STEEL OR OD STEEL BACKING PLATE MUST BE DESIGNED BY ENGINEER. WHEN TAPPING OD STEEL SIZE ON SIZE, REDUCE TAP ONE SIZE THEN BELL UP AFTER TAP.
3. REFER TO DETAIL 10L-2 FOR THRUST BLOCK SIZING. BAG CONCRETE IS NOT ACCEPTABLE FOR PAD OR THRUST BLOCK. CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3,000 PSI.
4. ALL EXPOSED METAL MUST BE COATED WITH BRUSH ON MASTIC.
5. REMOVE TEST PLUG AND HYDROSTATICALLY PRESSURE TEST TAPPING SLEEVE NOT TO EXCEED MANUFACTURER'S PRESSURE RATING, APPLY PIPE COMPOUND, AND REINSERT PLUG.
6. VALVE SHALL BE BLIND FLANGED AND PRESSURE TESTED AT TIME OF TAPPING SLEEVE PRESSURE TEST.
7. TAP SHALL BE A MINIMUM OF 24" FROM THE CUT OR SPIGOT END OF THE PIPE OR THE PIPE TO BELL TRANSISTION.

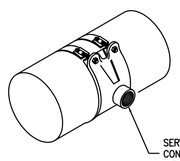
MATERIAL LIST

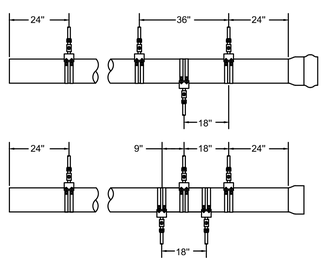
QTY	DESCRIPTION
1	FL x FL RESILIENT WEDGE GATE VALVE WITH 2" OPERATING NUT (SIZE TO MATCH TAP DIAMETER)
1	TAPPING SLEEVE (STAINLESS STEEL FLANGE)
1	FL x PO ADAPTER
1	6" ø SDR-35 PVC CONDUIT PIPE SECTION
1	6" ø CAST IRON VALVE BOX WITH COVER MARKED "WATER"
1	FULL FACE GASKET
1	CONCRETE BULK
1	MASTIC (1 GALLON CAN – BRUSH ON)

	DATE		DRAWING NUMBER
TRUCKEE MEADOWS WATER AUTHORITY	7/2001	APPENDIX 10D DISTRIBUTION TAP INSTALLATIONS STANDARD TAP 4" TO 30"	10D-3
	REV 7/2011		

NOTES:
1. SERVICE CLAMP SIZE IS DEPENDENT UPON THE SIZE AND TYPE OF MAIN.
2. SDR-9 CTS HDPE TUBING, LENGTH AND DIAMETER TO BE DETERMINED BY ENGINEER. REFER TO APPROVED PLAN.
3. STOP CORP IP THREAD INLET, COMPRESSION OUTLET, DIAMETER TO MATCH TAP SIZE AS SHOWN ON PLAN.
4. INSERT RIGID STAINLESS STEEL LINER TO SDR-9 CTS HDPE TUBING.
5. SERVICE TAPS OFF OF EXISTING PVC MAINS SHALL USE TAPPED FULL CIRCLE REPAIR CLAMP, MINIMUM LENGTH: 15". MANUFACTURER SHALL BE APPROVED BY TMWA.







	DATE		DRAWING NUMBER
TRUCKEE MEADOWS WATER AUTHORITY		APPENDIX 10H SERVICE TAP INSTALLATIONS FOR 1", 1.25", 1.5", AND 2" SERVICE TAPS	10H-2
	REV		

KELLER ASSOCIATES
1325 Airmotive Way, Suite 375
Reno, NV 89502
(775) 451-7288

PROFESSIONAL ENGINEER – STATE OF NEVADA
DYLAN CAREY
Exp: 12.31.2025
CIVIL
No. 032442

NO.	REVISIONS	DATE

CITY OF SPARKS

G STREET SEWER IMPROVEMENTS AND WATER MAIN RELOCATION

DETAILS - TRUCKEE MEADOWS WATER AUTHORITY 1

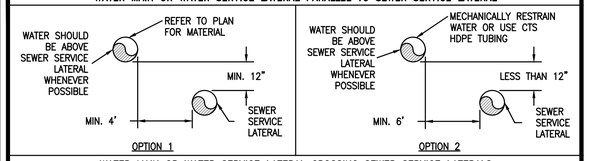
DRAWN: EWC CHECK: JW

VERIFY SCALE: Scales based on 22"x34" prints.
1-1/2 Inches

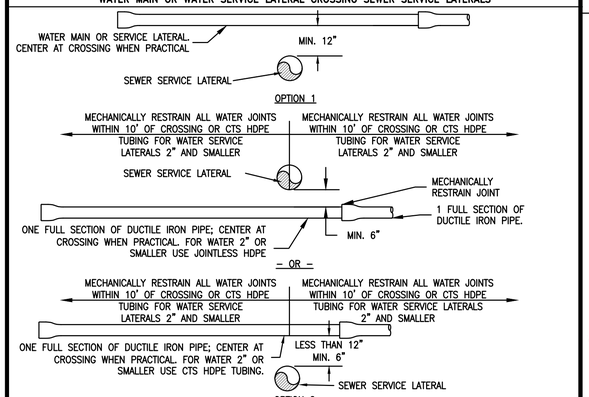
PROJECT NO. 223014 PAGE

SHEET NO. C-510

WATER MAIN OR WATER SERVICE LATERAL PARALLEL TO SEWER SERVICE LATERAL

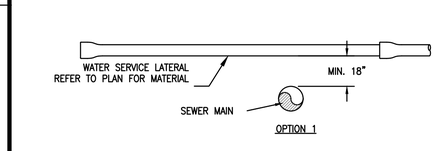


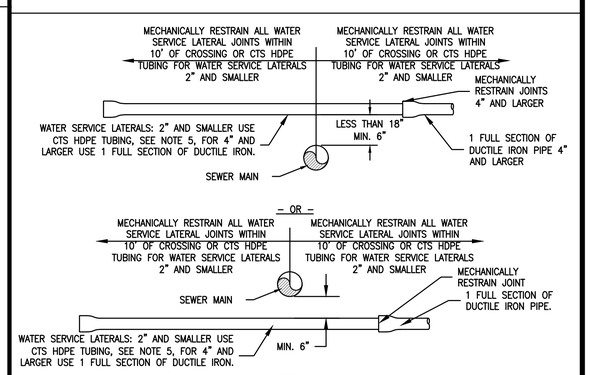
WATER MAIN OR WATER SERVICE LATERAL CROSSING SEWER SERVICE LATERALS



NOTES:
1. OPTION 1 SHOULD BE UTILIZED WHEN POSSIBLE.
2. NON–PRESSURIZED SEWER SERVICE LATERALS SHALL BE SDR 35 PVC. IF SEWER SERVICE LATERALS ARE NON SDR 35 PVC, SEWER SERVICE LATERALS SHALL BE ENCASED IN 4" OF EXCAVATABLE SLURRY, USE EXTERNAL JOINT SEALANT OR OTHER MITIGATION TO ENSURE JOINTS ARE WATERTIGHT. WHERE THE SEWER SERVICE LATERALS ARE PRESSURIZED, THE SEWER SERVICE LATERALS SHALL HAVE MECHANICALLY RESTRAINED JOINTS OR SHALL USE WELDED OR FUSED PIPE.
3. ALL MECHANICALLY RESTRAINED WATER PIPES SHALL BE DUCTILE IRON WITH POLYETHYLENE WRAP PER AWWA C105.
4. FOR WATER SERVICE LATERALS 2" AND SMALLER THERE SHALL BE NO JOINTS OR FITTINGS BETWEEN THE WATER MAIN AND THE WATER METER.

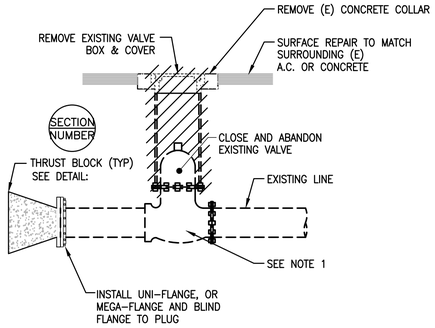
TRUCKEE MEADOWS WATER AUTHORITY	DATE	APPENDIX 10L MISCELLANEOUS WATER DETAILS WATER MAIN OR WATER SERVICE LATERAL PARALLEL TO OR CROSSING SEWER SERVICE LATERAL	DRAWING NUMBER
	02/2014		10L-12
	REV		





NOTES:
1. OPTION 1 SHOULD BE UTILIZED WHEN POSSIBLE.
2. NON–PRESSURIZED SEWER MAINS SHALL BE SDR 35 PVC. IF SEWER MAINS ARE NON SDR 35 PVC, SEWER MAINS SHALL BE ENCASED IN 4" OF EXCAVATABLE SLURRY, USE EXTERNAL JOINT SEALANT OR OTHER MITIGATION TO ENSURE JOINTS ARE WATERTIGHT. WHERE THE SEWER MAINS ARE PRESSURIZED, THE SEWER MAINS SHALL HAVE MECHANICALLY RESTRAINED JOINTS OR SHALL USE WELDED OR FUSED PIPE.
3. ALL MECHANICALLY RESTRAINED WATER PIPES SHALL BE DUCTILE IRON WITH POLYETHYLENE WRAP PER AWWA C105.
4. FOR WATER SERVICE LATERALS 2" AND SMALLER THERE SHALL BE NO JOINTS OR FITTINGS BETWEEN THE WATER MAIN AND THE WATER METER.

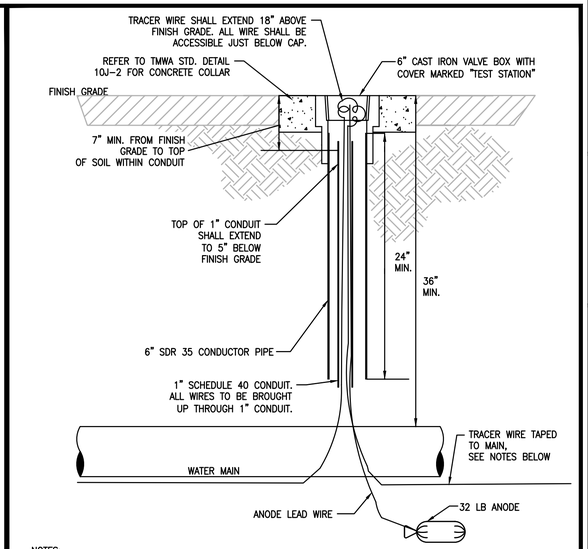
TRUCKEE MEADOWS WATER AUTHORITY	DATE	APPENDIX 10L MISCELLANEOUS WATER DETAILS WATER SERVICE LATERAL CROSSING SEWER MAIN	DRAWING NUMBER
	02/2014		10L-13
	REV		



NOTES:

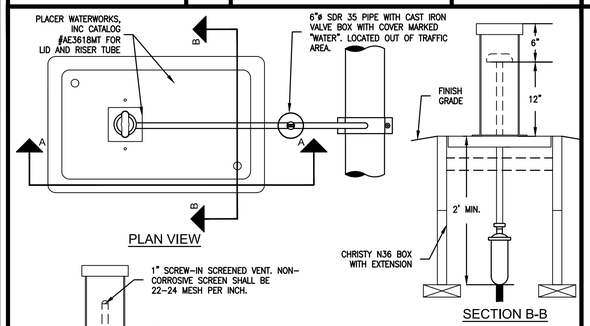
1. ALL VALVES TO BE RETIRED SHALL BE ABANDONED IN THE CLOSED POSITION, UNLESS SHOWN OTHERWISE, BY REMOVING A MINIMUM OF THE TOP TWENTY–FOUR (24) INCHES OF THE VALVE BOX AND THEN FILLING THE BOTTOM OF THE BOX WITH A MINIMUM OF EIGHT (8) INCHES OF SAND OR TYPE 2, CLASS B AGGREGATE BASE, THE REMAINING PORTION OF THE VALVE BOX SHALL BE FILLED WITH CONCRETE.
2. ABANDONMENT CONDITION SHOWN INDICATES THE EXISTING VALVE IS NOT RESTRAINED AND THRUST RESTRAINT IS INSTALLED ON CONNECTING PIPE. SEE NOTE 2 FOR FLANGED VALVE CONDITION.
3. IF EXISTING VALVE BEING ABANDONED IS FLANGED, INSTALL BLIND FLANGE AND THRUST BLOCK AS SHOWN IN DETAIL DIRECTLY ONTO VALVE BODY.

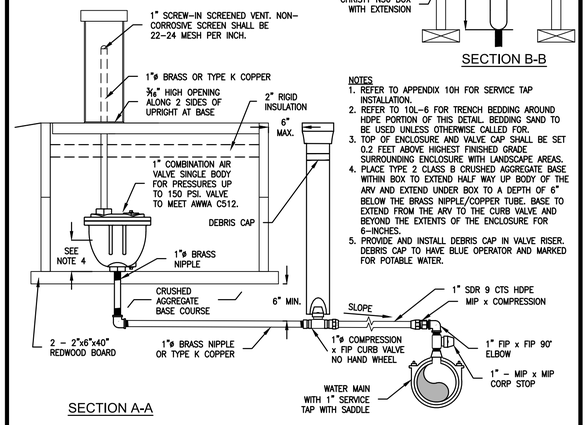
TRUCKEE MEADOWS WATER AUTHORITY	DATE	TYPICAL ABANDONED VALVE & PIPE	DRAWING NUMBER
			10Z-3
	REV		



NOTES:
1. TRACER WIRE SHALL BE #14 COPPER CLAD STAINLESS STEEL CORE WITH 30 MILS BLUE HDPE INSULATION.
2. ALL WIRE SPLICES SHALL BE MADE USING A SPLIT BOLT CONNECTOR WRAPPED WITH AQUASEAL AND ELECTRIC TAPE.
3. CONTRACTOR SHALL INSTALL A REPLACEABLE MAGNESIUM ANODE AT EVERY TEST STATION PER DETAIL 5/C–514.1.
4. TEST STATIONS SHALL BE LOCATED ALONG THE MAIN NO MORE THAN 500 FEET APART UNLESS OTHERWISE SPECIFIED ON THE PLANS.
5. PRIOR TO ACCEPTANCE OF WATER MAIN, THE CONTRACTOR SHALL PERFORM A CONTINUITY TEST ON THE INSTALLED TRACER WIRE SYSTEM.
6. WHERE DIRECTED, TRACER WIRE SHALL BE PLACED WITH ALL SERVICE LINES AND SHALL BE EXTENDED INTO THE METER BOX. TRACER WIRE SHALL BE ACCESSIBLE FROM METER BOX AND SHALL EXTEND 12 INCHES ABOVE GROUND. CONNECT TO MAIN TRACER WIRE AS SPECIFIED IN NOTE 2.

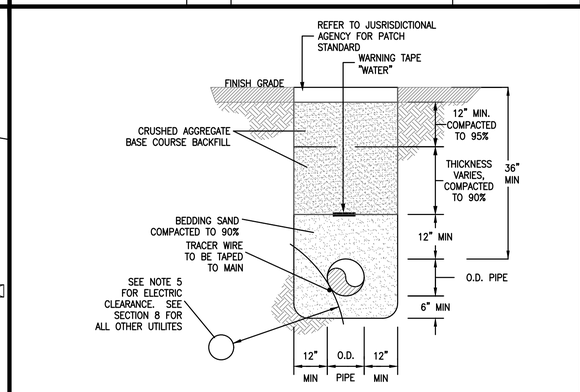
TRUCKEE MEADOWS WATER AUTHORITY	DATE	APPENDIX 10L MISCELLANEOUS WATER DETAILS TEST STATION	DRAWING NUMBER
	02/2014		10L-9
	REV		





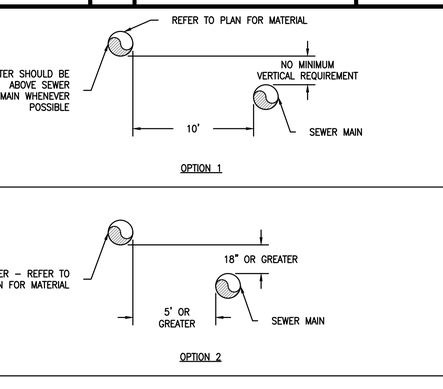
NOTES
1. REFER TO APPENDIX 10H FOR SERVICE TAP INSTALLATION.
2. REFER TO 10L–6 FOR TRENCH BEDDING AROUND HDPE PORTION OF THIS DETAIL. BEDDING SAND TO BE USED UNLESS OTHERWISE CALLED FOR.
3. TOP OF ENCLOSURE AND VALVE CAP SHALL BE SET 0.2 FEET ABOVE HIGHEST FINISHED GRADE SURROUNDING ENCLOSURE WITH LANDSCAPE AREAS.
4. PLACE TYPE 2 CLASS B CRUSHED AGGREGATE BASE WITHIN BOX TO EXTEND HALF WAY UP BODY OF THE ARV AND EXTEND UNDER BOX TO A DEPTH OF 6" BELOW THE BRASS NIPPLE/COPPER TUBE. BASE TO EXTEND FROM THE ARV TO THE CURB VALVE AND BEYOND THE EXTENTS OF THE ENCLOSURE FOR 6–INCHES.
5. PROVIDE AND INSTALL DEBRIS CAP IN VALVE RISER. DEBRIS CAP TO HAVE BLUE OPERATOR AND MARKED FOR POTABLE WATER.

TRUCKEE MEADOWS WATER AUTHORITY	DATE	APPENDIX 10L COMBINATION AIR RELEASE VALVE	DRAWING NUMBER
	7/2005		10L-4
	REV		
	9/2016		



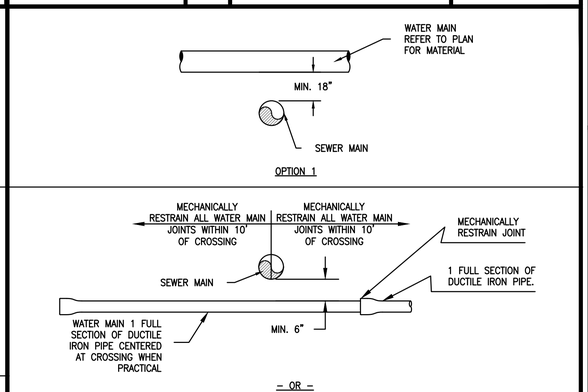
NOTES:
1. ALL TRENCHES MUST CONFORM TO APPLICABLE TMWA, CITY, STATE, COUNTY, AND OSHA SPECIFICATIONS AND REQUIREMENTS. IN THE CASE OF CONFLICT, THE MORE RIGID SPECIFICATION OR STANDARD SHALL APPLY.
2. BEDDING SAND SHALL BE COMPACTED TO 90% MAXIMUM DENSITY PER SECTION 5.05.03 AND SHALL BE A MINIMUM OF 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.
5. ELECTRIC UTILITIES MUST BE LOCATED BELOW WATER & MAINTAIN 2' MINIMUM RADIAL CLEARANCE FROM TMWA WATER FACILITIES. IF 2' 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 PLACE 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. TRACER WIRE SHALL BE #14 COPPER CLAD STEEL CORE WITH 30 MILS BLUE HDPE INSULATION. ALL WIRE SPLICES SHALL BE MADE USING A SPLIT BOLT CONNECTOR WRAPPED WITH AQUASEAL AND ELECTRIC TAPE. THE CONTRACTOR SHALL INSTALL A 3 POUND ANODE AT EVERY TEST STATION. TEST STATIONS SHALL BE LOCATED ALONG THE MAIN NO MORE THAN 500 FEET APART. REFER TO 10L–9.
9. ALL TO INCLUDE V–BIO POLYWRAP AND OTHER APPARATUSES PER SPECIFICATION 15000.

TRUCKEE MEADOWS WATER AUTHORITY	DATE	APPENDIX 10L MISCELLANEOUS WATER DETAILS TRENCH DETAIL WATER ONLY	DRAWING NUMBER
	7/2011		10L-6
	REV		
	02/2014		



NOTES:
1. IF SEPARATION IS 10 FEET OR MORE USE OPTION 1.
2. NON–PRESSURIZED SEWER MAINS SHALL BE SDR 35 PVC. IF SEWER MAINS ARE NON SDR 35 PVC, SEWER MAINS SHALL BE ENCASED IN 4" OF EXCAVATABLE SLURRY, USE EXTERNAL JOINT SEALANT OR OTHER MITIGATION TO ENSURE JOINTS ARE WATERTIGHT. WHERE THE SEWER MAINS ARE PRESSURIZED, THE SEWER MAINS SHALL HAVE MECHANICALLY RESTRAINED JOINTS OR SHALL USE WELDED OR FUSED PIPE.
3. FOR STORM SEWER MAINS WITH A DIAMETER OF 24" OR LARGER, THE WATER MAINS SHALL BE INSTALLED WITH WATER TIGHT JOINTS THAT USE JOINT SEALANTS OR JOINT GASKETS.

TRUCKEE MEADOWS WATER AUTHORITY	DATE	APPENDIX 10L MISCELLANEOUS WATER DETAILS WATER MAIN OR WATER SERVICE LATERAL PARALLEL TO SEWER MAIN	DRAWING NUMBER
	02/2014		10L-10
	REV		



NOTES:
1. OPTION 1 SHOULD BE UTILIZED WHEN POSSIBLE.
2. NON–PRESSURIZED SEWER MAINS SHALL BE SDR 35 PVC. IF SEWER MAINS ARE NON SDR 35 PVC, SEWER MAINS SHALL BE ENCASED IN 4" OF EXCAVATABLE SLURRY, USE EXTERNAL JOINT SEALANT OR OTHER MITIGATION TO ENSURE JOINTS ARE WATERTIGHT. WHERE THE SEWER MAINS ARE PRESSURIZED THE SEWER MAINS SHALL HAVE MECHANICALLY RESTRAINED JOINTS OR SHALL USE WELDED OR FUSED PIPE.
3. ALL MECHANICALLY RESTRAINED WATER PIPES SHALL BE DUCTILE IRON WITH POLYETHYLENE WRAP PER AWWA C105.

TRUCKEE MEADOWS WATER AUTHORITY	DATE	APPENDIX 10L MISCELLANEOUS WATER DETAILS WATER MAIN CROSSING SEWER MAIN	DRAWING NUMBER
	02/2014		10L-11
	REV		

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DYLAN CAREY
Exp: 12-31-2025
CIVIL
No. 032142
DYLAN M. CAREY

NO.	REVISIONS	DATE

CITY OF SPARKS

G STREET SEWER IMPROVEMENTS AND WATER MAIN RELOCATION

DETAILS - TRUCKEE MEADOWS WATER AUTHORITY 2

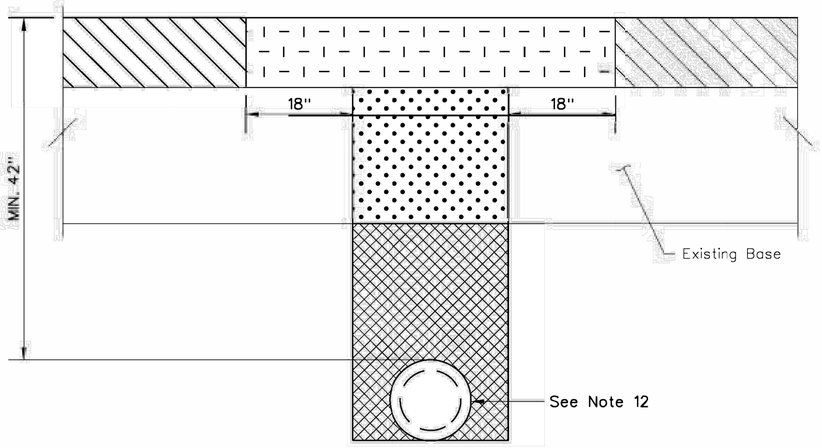
DRAWN: EWC | CHECK: JW

VERIFY SCALE: Scales based on 22"x34" prints.

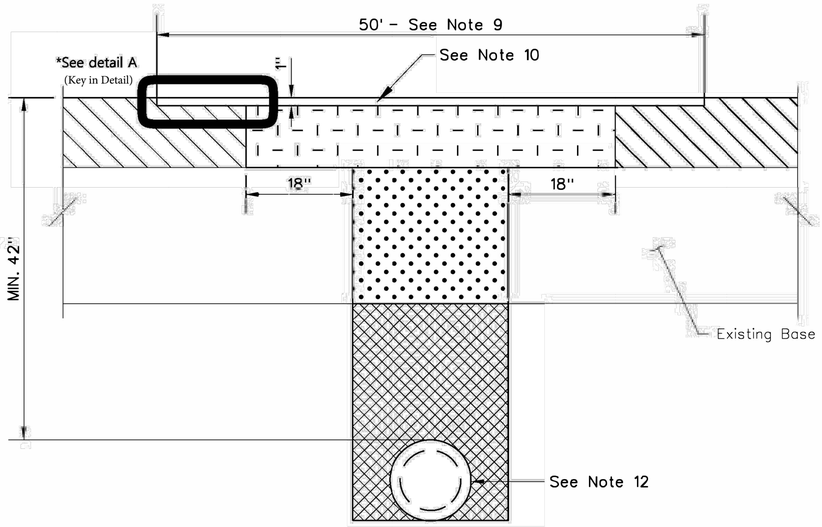
1-1/2 Inches

PROJECT NO. 223014 | PAGE

SHEET NO. C-511

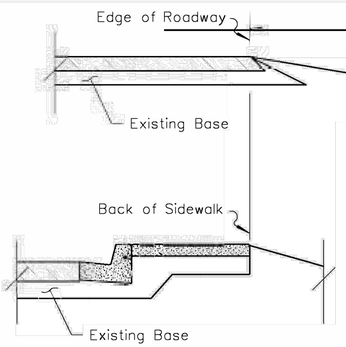


ROADWAY WITH NO OPEN GRADE

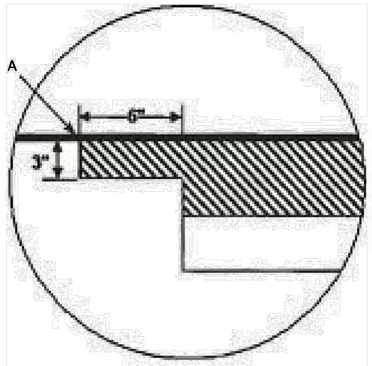


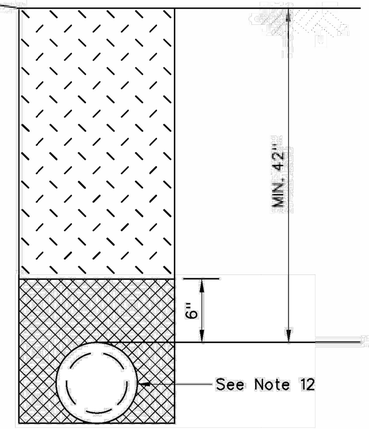
ROADWAY WITH OPEN GRADE

TRENCHING IN PAVEMENT



(A) Key in detail





TRENCHING IN NATIVE SOIL

NOTES:

1. REMOVE EXISTING PAVEMENT AND REPLACE WITH NEW APPROVED MATERIAL OF SAME TYPE. MATCH EXISTING PAVEMENT DEPTH BUT NOT LESS THAN 6".
2. RECOMPACT EXISTING BASE MATERIAL AROUND TRENCH TO MEET COMPACTION REQUIREMENTS FOR THAT MATERIAL TYPE AND LOCATION.
3. THE INSPECTOR MAY FOR GOOO CAUSE, REQUIRE A WIDER TRENCH AND PATCH SECTIONS OR OTHERWISE ALTER THE REQUIREMENTS.
4. IF SAW CUT IS WITHIN 3' OF AN EXISTING PAVEMENT EDGE, EXISTING PAVEMENT PATCH, OR EDGE OF LIP OF GUTTER, REMOVE EXISTING PAVEMENT TO THAT EDGE AND REPLACE ENTIRE SECTION.
5. THE EDGES OF THE PAVEMENT PATCH SHALL BE STRAIGHT AND UNIFORM (EDGES SHALL BE SAW-CUT) ALL EXCESS EXCAVATED MATERIAL SHALL BE HAULED AWAY AND DISPOSED OFF THE HIGHWAY RIGHT-OF-WAY UNLESS OTHERWISE PERMITTED.
6. IF THE PATCH EXTENDS INTO THE EXISTING ADJOINING STIPE OR AC JOINT OF ANY LANE, THE ENTIRE WIDTH OF THAT LANE MUST BE MILLED AND PAVED.
7. GRANULAR BACKFILL SHALL BE IN ACCORDANCE WITH SECTION 207 AND COMPACTED TO NOT LESS THAN 90% OF THE MAXIMUM DENSITY. DRAIN ROCK MAY NOT BE USED AS GRANULAR BACKFILL.
8. AGGREGATE BASE SHALL BE IN ACCORDANCE WITH SECTION 302 AND COMPACTED TO NOT LESS THAN 95% OF THE MAXIMUM DENSITY. AGGREGATE BASE SHALL MATCH EXISTING DEPTH BUT NOT LESS THAT 12".
9. 50' IS THE MINIMUM LENGTH OF THE OPEN GRADE PATCH. EXACT LENGTH OF PATCH WILL BE DETERMINED IN THE FIELD BY THE INSPECTOR.
10. COLDMILL 1" DEEP AND REPLACE WITH OPEN-GRADED PLANTMIX.
11. AGGREGATE BASE SHALL MATCH EXISTTING DEPTHE BUT NOT LESS THAN 12".
12. PIPES PLACED WITHIN THE ROADWAY PRISM CARRYING FLUID OR GASEOUS SUBSTANCES SHALL BE ENCASED PER NAC 408.453.

LEGEND:

- Existing Pavement
- Aggregate (See Note 8)
- Open Grade Pavement
- Granular Backfill (See Note 7)
- Limits of Removal & Repair of Pavement (See Note 1)
- Backfill

STATE OF NEVADA
DEPARTMENT OF TRANSPORTATION

DISTRICT II
TRENCH AND PAVEMENT
PATCH DETAIL

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PROFESSIONAL ENGINEER - STATE OF NEVADA
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CIVIL
No. 032142

NO.	REVISIONS	DATE

CITY OF SPARKS

G STREET SEWER IMPROVEMENTS AND WATER MAIN RELOCATION

DETAILS - NDOT

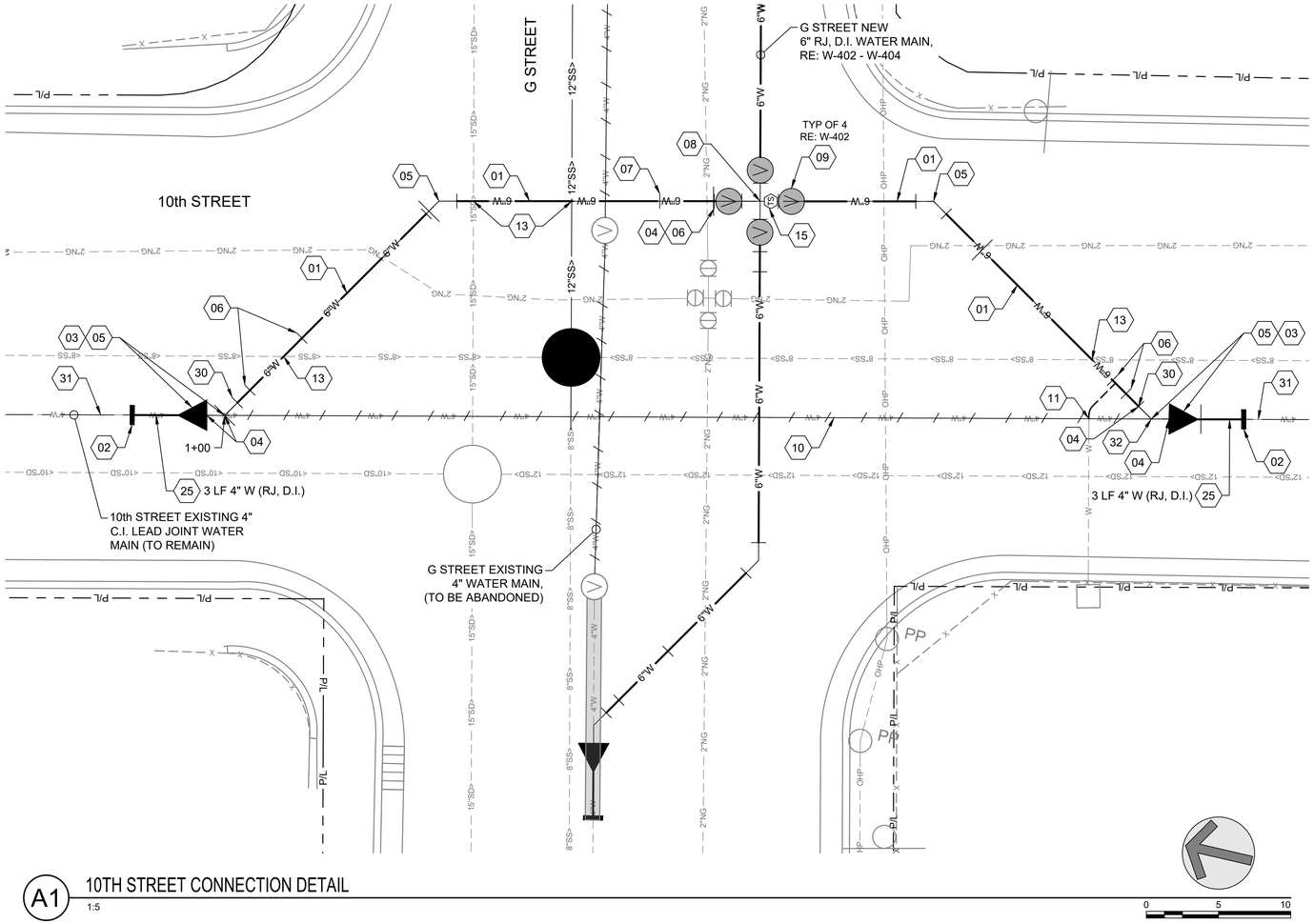
DRAWN: EWC | CHECK: JW

VERIFY SCALE: Scales based on 22"x34" prints.

1-1/2 Inches

PROJECT NO. 223014 | PAGE

SHEET NO. C-512



A1 10TH STREET CONNECTION DETAIL
1:5

0 5 10

GENERAL SHEET NOTES

- PRIOR TO CONSTRUCTION CONTRACTOR TO POTHOLE IN A NON-DESTRUCTIVE MANNER EXISTING UTILITIES TO VERIFY LOCATION & DEPTH. WHERE EXISTING UTILITIES WILL BE ENCOUNTERED IT IS RECOMMENDED THAT THE CONTRACTOR HAND DIG OR VACUUM TRUCK EXCAVATE FOR MATERIAL EXCAVATION IN THESE AREAS.
- HORIZONTAL AND VERTICAL LOCATION OF EXISTING UTILITIES ARE APPROXIMATE.
- INSTALL FITTING TO DEFLECT PIPE VERTICALLY AND HORIZONTALLY. DEFLECT FITTINGS AND PIPE JOINTS A MAXIMUM OF 4° IN VERTICALLY AND HORIZONTAL DIRECTION, DO NOT EXCEED.
- ALL PIPE JOINTS, FITTINGS, AND VALVES ARE TO BE RESTRAINED. VALVES SHALL BE MECHANICALLY RESTRAINED. RESTRAINED PUSH-ON JOINTS AND FITTINGS SHALL BE DESIGNED FOR A WORKING WATER PRESSURE OF 250 PSI. PLACE THRUST BLOCK, RE: TMWA DETAIL 10L-2/C-510.
- PAVEMENT MARKINGS NOT SHOWN FOR CLARITY, RE: SHEET W-101.
- CONTRACTOR TO ADHERE TO ALL FEDERAL, STATE, COUNTY, AND ORANGE BOOK REQUIREMENTS WHEN WORKING UNDER OR IN CLOSE PROXIMITY TO OVERHEAD POWER LINES.
- RETAIN AND PROTECT EXISTING UTILITIES (TYP), CONTRACTOR TO PROVIDE UTILITY SUPPORT AS REQUIRED.
- CONTRACTOR TO FURNISH MATERIALS WHERE "INSTALL", "PLACE", "CONSTRUCT", "REPLACE" OR "RESET" IS REQUIRED UNLESS NOTED OTHERWISE.
- SEE SHEETS C-102 TO C-402 FOR SEWER LINE CONSTRUCTION.

SHEET KEYNOTES

01 INSTALL PIPE - 6" W (DUCTILE IRON, AWWA C151/ANSI A21.51, 250 PSI, CEMENT MORTAR LINED) WITH TRACER WIRE, RE: TMWA DETAIL 10L-6/C-511

02 INSTALL FITTING - 4" MJ TRANSITION COUPLING

03 INSTALL FITTING - 6" x 4" (FLG) ECCENTRIC REDUCER (FLAT SIDE UP)

04 INSTALL FITTING - 6" MRJxMRJ ADAPTER, TO CONNECT ALL VALVES TO ELBOWS

05 INSTALL FITTING - 6" 45° BEND (MRJxMRJ) (INSTALL IN HORIZONTAL POSITION)

06 INSTALL FITTING - 6" 45° BEND (MRJxMRJ) (INSTALL FITTING IN VERTICAL POSITION), RE: TMWA DETAIL 10I-2/C-510

08 INSTALL FITTING - 6" FLG CROSS

09 INSTALL VALVE - 6" GATE (MRJxFLG) WITH RESTRAINT GLANDS, (FLG CONNECTS TO FLG, MJ CONNECTS TO PIPE), RE: TMWA DETAIL 10J-2/C-510

10 EXISTING 4" WATER MAIN TO BE REMOVED, RE: W-101

11 CONNECT NEW WATER SERVICE LINE TO EXISTING WATER SERVICE LINE, RE: TMWA DETAIL 10H-2/C-510 SEE SERVICE REPLACEMENT SCHEDULE W-401

13 WATER MAIN CROSSING SEWER MAIN, RE: TMWA DETAIL 10L-11/C-511, (NON-POTABLE POTABLE CROSSING)

15 INSTALL TEST STATION, RE: TMWA DETAIL 10L-9/C-511

25 INSTALL PIPE - 4" W (DUCTILE IRON, AWWA C151/ANSI A21.51, 250 PSI, CEMENT MORTAR LINED) WITH TRACER WIRE, RE: TMWA DETAIL 10L-6/C-511

30 CONTRACTOR TO INSTALL TEMP DI PUP AND REST. MJ CAP W/ 2" PORT FOR PRESSURE TESTING PROCEDURES. ONCE COMPLETE, REMOVE ASSEMBLY AND INSTALL PERMANENT PIPING AS SHOWN

31 2" SERVICE TAP FOR FINAL FLUSHING. LOCATED BY TMWA INSPECTOR. TEMPORARY 2" SERVICE FLUSH ASSEMBLIES TO BE RETIRED AND PLUGGED AT THE MAIN ONCE BRANCHES HAVE BEEN BROUGHT INTO SERVICE

32 PLACE THRUST BLOCK, RE: TMWA DETAIL 10L-2/C-510

LEGEND

ABANDON (THIS CONTRACT)

4"W DEMOLITION - REMOVE

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PROFESSIONAL ENGINEER STATE OF NEVADA
DYLAN CAREY
Exp: 12.31.2025
CIVIL
No. 032142
DYLAN M. CAREY

NO.	REVISIONS	DATE

CITY OF SPARKS

G STREET SEWER IMPROVEMENTS AND WATER MAIN RELOCATION

PIPE CONNECTIONS DETAILS 1

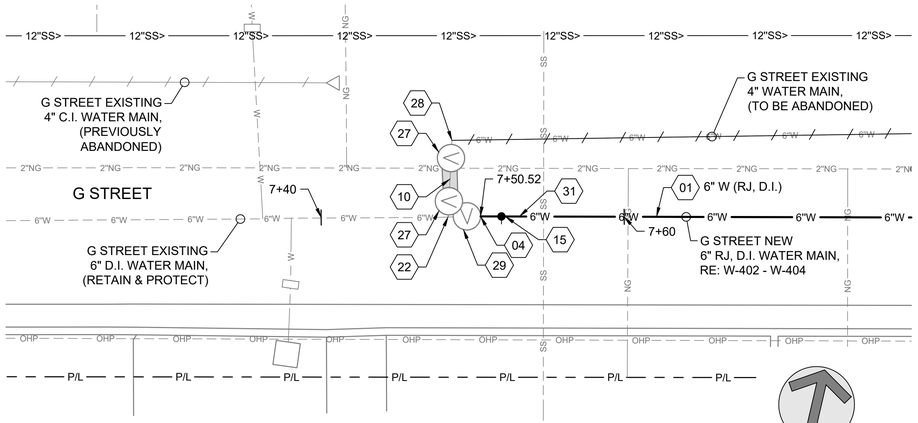
DRAWN: EWC | CHECK: JW

VERIFY SCALE: Scales based on 22"x34" prints.
1-1/2 Inches

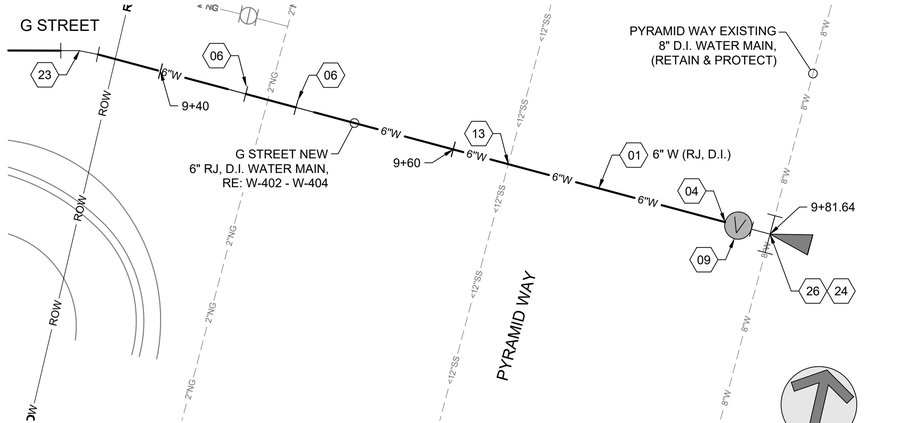
PROJECT NO. 223014 | PAGE

SHEET NO. C-530

PRINTED: 3/3/2025 12:49 PM
LAST SAVED: 3/3/2025 11:17 AM
J:\223014 G STREET SEWER IMPROVEMENTS\C_DESN_CAD\3_DESIGN\D_PLANS-1\C-530.DWG



B1 G STREET CONNECTION - STA: 7+50.52
1:5



B3 G STREET CONNECTION - STA: 9+81.64
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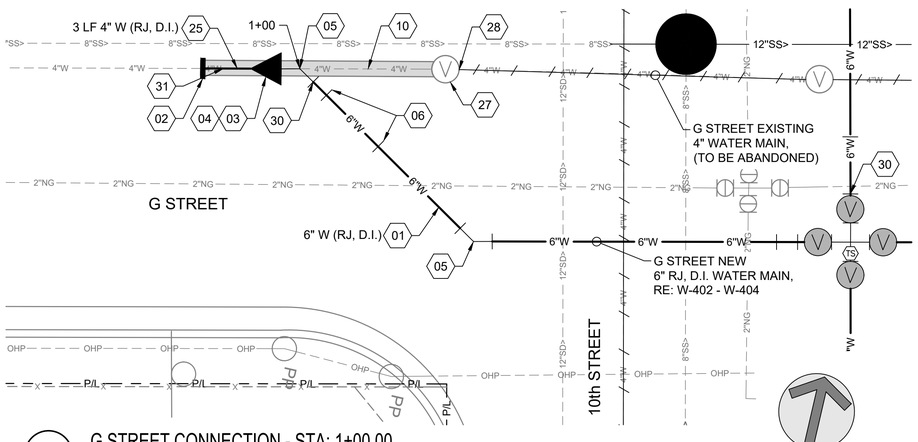
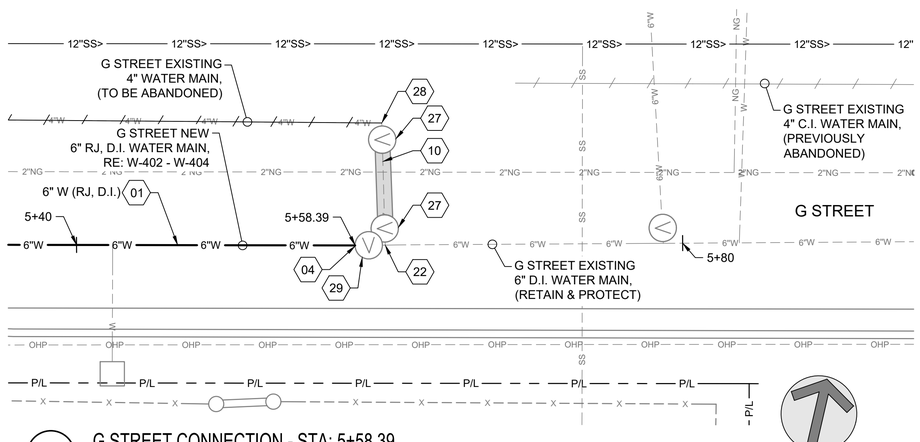


A1 G STREET CONNECTION - STA: 1+00.00
1:5



A3 G STREET CONNECTION - STA: 5+58.39
1:5

LEGEND

	ABANDON (THIS CONTRACT)
	ABANDONED (PREVIOUS PROJECT)
4"W	DEMOLITION - REMOVE

SHEET KEYNOTES CONT.

30 CONTRACTOR TO INSTALL TEMP DI PUP AND REST. MJ CAP W/ 2" PORT FOR PRESSURE TESTING PROCEDURES. ONCE COMPLETE, REMOVE ASSEMBLY AND INSTALL PERMANENT PIPING AS SHOWN

31 2" SERVICE TAP FOR FINAL FLUSHING. LOCATED BY TMWA INSPECTOR. TEMPORARY 2" SERVICE FLUSH ASSEMBLIES TO BE RETIRED AND PLUGGED AT THE MAIN ONCE BRANCHES HAVE BEEN BROUGHT INTO SERVICE

GENERAL SHEET NOTES

- PRIOR TO CONSTRUCTION CONTRACTOR TO POTHOLE IN A NON-DESTRUCTIVE MANNER EXISTING UTILITIES TO VERIFY LOCATION & DEPTH. WHERE EXISTING UTILITIES WILL BE ENCOUNTERED IT IS RECOMMENDED THAT THE CONTRACTOR HAND DIG OR VACUUM TRUCK EXCAVATE FOR MATERIAL EXCAVATION IN THESE AREAS.
- HORIZONTAL AND VERTICAL LOCATION OF EXISTING UTILITIES ARE APPROXIMATE.
- INSTALL FITTING TO DEFLECT PIPE VERTICALLY AND HORIZONTALLY. DEFLECT FITTINGS AND PIPE JOINTS A MAXIMUM OF 4° IN VERTICALLY AND HORIZONTAL DIRECTION, DO NOT EXCEED.
- ALL PIPE JOINTS, FITTINGS, AND VALVES ARE TO BE RESTRAINED. VALVES SHALL BE MECHANICALLY RESTRAINED. RESTRAINED PUSH-ON JOINTS AND FITTINGS SHALL BE DESIGNED FOR A WORKING WATER PRESSURE OF 250 PSI. PLACE THRUST BLOCK, RE: TMWA DETAIL 10L-2/C-510.
- PAVEMENT MARKINGS NOT SHOWN FOR CLARITY, RE: SHEET W-101.
- CONTRACTOR TO ADHERE TO ALL FEDERAL, STATE, COUNTY, AND ORANGE BOOK REQUIREMENTS WHEN WORKING UNDER OR IN CLOSE PROXIMITY TO OVERHEAD POWER LINES.
- RETAIN AND PROTECT EXISTING UTILITIES (TYP), CONTRACTOR TO PROVIDE UTILITY SUPPORT AS REQUIRED.
- CONTRACTOR TO FURNISH MATERIALS WHERE "INSTALL", "PLACE", "CONSTRUCT", "REPLACE" OR "RESET" IS REQUIRED UNLESS NOTED OTHERWISE.
- SEE SHEETS C-102 TO C-402 FOR SEWER LINE CONSTRUCTION.

SHEET KEYNOTES

01 INSTALL PIPE - 6" W (DUCTILE IRON, AWWA C151/ANSI A21.51, 250 PSI, CEMENT MORTAR LINED) WITH TRACER WIRE, RE: TMWA DETAIL 10L-6/C-511

02 INSTALL FITTING - 4" MJ TRANSITION COUPLING

03 INSTALL FITTING - 6" x 4" (FLG) ECCENTRIC REDUCER (FLAT SIDE UP)

04 INSTALL FITTING - 6" MRJxMRJ ADAPTER, TO CONNECT ALL VALVES TO ELBOWS

05 INSTALL FITTING - 6" 45° BEND (MRJxMRJ) (INSTALL IN HORIZONTAL POSITION)

06 INSTALL FITTING - 6" 45° BEND (MRJxMRJ) (INSTALL FITTING IN VERTICAL POSITION), RE: TMWA DETAIL 10I-2/C-510

09 INSTALL VALVE - 6" GATE (MRJxFLG) WITH RESTRAINT GLANDS, (FLG CONNECTS TO FLG, MJ CONNECTS TO PIPE), RE: TMWA DETAIL 10J-2/C-511

10 EXISTING 4" WATER MAIN TO BE REMOVED, RE: W-101

13 WATER MAIN CROSSING SEWER MAIN, RE: TMWA DETAIL 10L-11/C-511, (NON-POTABLE POTABLE CROSSING)

15 INSTALL TEST STATION, RE: TMWA DETAIL 10L-9/C-511

17 INSTALL ARV (COMBINATION AIR RELEASE VALVE), RE: TMWA DETAIL 10L-4/C-511 (CONTRACTOR TO COORDINATE PLACEMENT OF ARV WITH TMWA REPRESENTATIVE PRIOR TO INSTALLATION)

22 INSTALL BLIND FLANGE (MATCH PIPE SIZE). PLACE THRUST BLOCK, RE: TMWA DETAIL 10L-2/C-510 & C-531

23 INSTALL FITTING - 6" 11.25° BEND (MRJxMRJ - WITH RESTRAINED GLANDS) (INSTALL IN HORIZONTAL POSITION)

24 8"X6" TAPPING SLEEVE WITH THRUST BLOCK, RE: TMWA DETAIL 10D-2 & 10D-3/C-510

25 INSTALL PIPE - 4" W (DUCTILE IRON, AWWA C151/ANSI A21.51, 250 PSI, CEMENT MORTAR LINED) WITH TRACER WIRE, RE: TMWA DETAIL 10L-6/C-511

26 6" HOT TAP ON EXISTING 8" D.I. MAIN, RE: TMWA DETAIL 10D-2 & 10D-3/C-510

27 VALVE TO BE REMOVED & SALVAGED, RE: W-101

28 CAP END OF ABANDONED PIPE & INSTALL SWEEP & VENT FOR GROUT FILLING

29 INSTALL FITTING - 6" MRJxFLG ADAPTER (THIS IS A FLANGED NORMALLY CLOSED GATE VALVE WITH BLIND FLANGE FITTING INSTALLED IN 2023. REMOVE BLIND FLANGE & CONNECT WITH 6" MRJxFLG ADAPTER. VALVE TO BE OPENED & OPERATIONAL WITH CONSTRUCTION OF THIS PLAN SET). RE: W-101

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PROFESSIONAL ENGINEER - STATE OF NEVADA
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NO.	REVISIONS	DATE

CITY OF SPARKS

G STREET SEWER IMPROVEMENTS AND WATER MAIN RELOCATION

PIPE CONNECTIONS DETAILS 2

DRAWN: EWC | CHECK: JW

VERIFY SCALE: Scales based on 22"x34" prints.
1-1/2 Inches

PROJECT NO. 223014 | PAGE

SHEET NO. C-531