

# WATER SYSTEM IMPROVEMENTS CONTRACT 1 AND CONTRACT 2

## FOR THE CASCADE METROPOLITAN DISTRICT NO. 1

APRIL 2017

DRAWING INDEX

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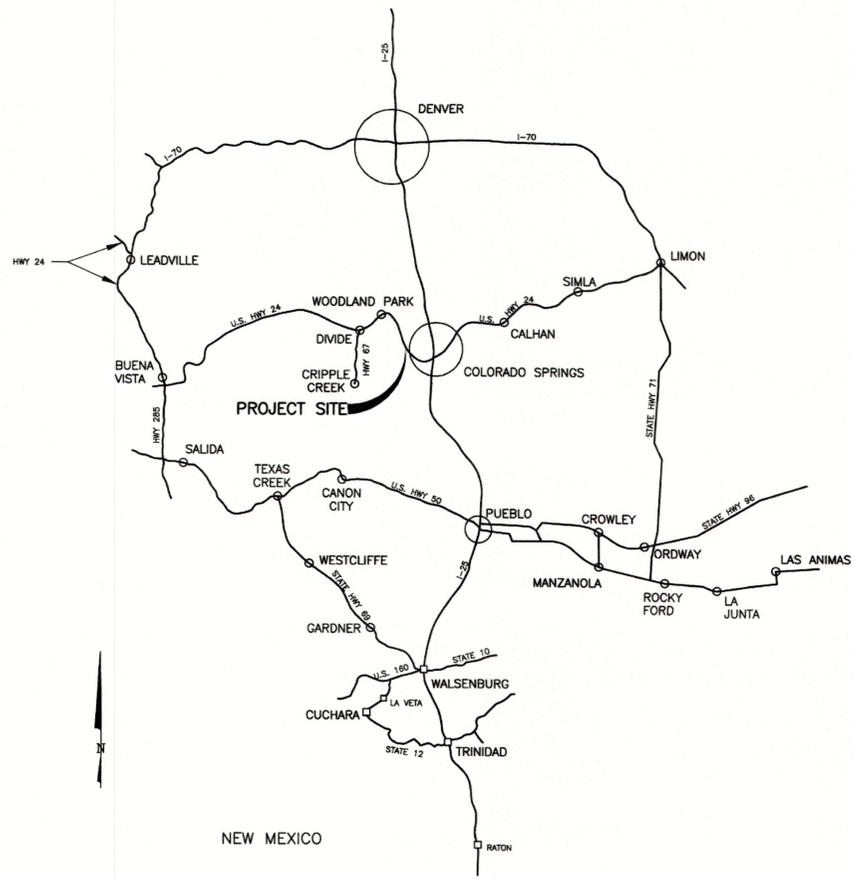
**APPROVED FOR BIDDING AND CONSTRUCTION**

THIS PLAN APPROVED FOR BIDDING AND CONSTRUCTION. IN THE EVENT OF ROAD IMPROVEMENTS, ADJUSTMENTS OF THIS UTILITY WILL BE AT THE OWNER'S EXPENSE. COUNTY PLAN REVIEW IS ONLY PROVIDED FOR GENERAL CONFORMANCE WITH COUNTY DESIGN CRITERIA. THE COUNTY IS NOT RESPONSIBLE FOR THE ACCURACY AND ADEQUACY OF THE DESIGN, DIMENSIONS, AND/OR ELEVATIONS, WHICH SHALL BE CONFIRMED AT THE JOB SITE. THE COUNTY THROUGH THE APPROVAL OF THIS DOCUMENT ASSUMES NO RESPONSIBILITY FOR COMPLETENESS AND/OR ACCURACY OF THIS DOCUMENT.

BY:  DATE: 27 JUNE 2017  
 JENNIFER E. IRVINE, P.E.,  
 COUNTY ENGINEER / ECM ADMINISTRATOR

<b>COLORADO SPRINGS UTILITIES CONSTRUCTION PLAN APPROVAL</b>	
APPROVED BY: <u>Andrew Rose</u> <u>Andrew Rose</u> DATE: <u>JUNE 14, 2017</u>	
PROJECT NUMBER: <u>N/A</u> WORK ORDER NUMBER: <u>3095128</u>	
CSU SHEET <u>1</u> OF <u>30</u>	
APPROVAL EXPIRES ONE (1) YEAR FROM THE DATE ABOVE AND RESUBMITTAL OF THESE PLANS FOR REVIEW AND APPROVAL IS REQUIRED IF CONSTRUCTION DOES NOT BEGIN DURING THIS PERIOD.	

BY:  DATE: 6/20/17  
 MICHAEL WHITTEMORE, DISTRICT PRESIDENT



**VICINITY MAP**  
NO SCALE



**SITE MAP**  
N.T.S.

**GMS, INC.**  
 611 NORTH WEBER, SUITE 300  
 COLORADO SPRINGS, COLORADO 80903

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GENERAL NOTES

(NOTES GIVEN HEREUNDER APPLY TO THE ENTIRE PROJECT AND DRAWINGS)

GENERAL

- 1. The following General Notes apply to the entire project. The project is being undertaken under two separate Contracts. The General Notes are applicable to each contract.
2. The locations of utilities shown on the Drawings have been determined from utility companies/departments records with a private locator company to secure location on all utilities with the exception of water lines. There may be other utilities not shown on the Drawings which presently exist in the areas of construction. The Engineer and/or Owner assume responsibility for completion of the information shown. The Contractor shall coordinate all utility agencies prior to construction for purposes of locating existing utilities on the project site. The following personnel may be contacted for utility information and locations. The Utility Notification Center of Colorado may be contacted at 811.
Water System: Cascade Metropolitan District No. 1..... 719-200-5201
Colorado Springs Water System..... 719-688-7205
Sanitary Sewer System: On-site Septic Tanks and Leach Fields..... Property Owners
Gas: Black Hills Energy..... 1-800-684-8989
Electric: Colorado Utilities (CSU)..... 719-688-7205
El Paso County Transportation..... 719-520-6808
Fiber Optic: CDO Fiber Optics..... 719-520-9108
El Paso County Tracer..... 719-520-9108
Colorado Springs Utilities (CSU)..... 719-688-7205
Fiber Optic/Telephone: Century Link..... 1-800-778-9140
Fiber Optic/Cable: Comcast..... 1-800-778-9140

- 23. Trench backfill utilizing cohesive native excavated material shall be compacted to a minimum of 95% of its maximum dry density as determined by the Standard Proctor Dry Density test (ASTM D698). Fill shall be placed in horizontal lifts having a compacted thickness of 6-inches or less at a moisture content of ±2% of optimum Standard Proctor Dry Density.
30. Trench backfill utilizing cohesionless native excavated material shall be compacted to a minimum of 95% of its maximum dry density as determined by the Modified Proctor Test (ASTM D-1557) at a moisture content of ±2% of optimum Modified Proctor Dry Density. Fill shall be placed in horizontal lifts having a compacted thickness of 6-inches or less. Alternatively, the fill shall be compacted to 100% of its maximum dry density as determined by the Standard Proctor Dry Density test (ASTM D698) with moisture at ±2% of optimum.
31. The Contractors shall provide appropriate submittals on the proposed hot mix asphalt and Class "B" bedding for review and approval by the Engineer in advance of placement. The asphalt mix design is subject to El Paso County's approval.
32. The Contractors shall secure the Colorado Department of Public Health and Environment's fugitive dust permit if required and provide appropriate dust control measures as required at no additional cost to the Owner.
33. A small portion of the project lies within the Pikes Peak Highway. The Engineer has secured on behalf of the Owner, approval of the work to be undertaken within the Pikes Peak Highway. The Contractor shall comply with CSU's Water LESS specifications for backfill. The Drawings note the nature of the required asphalt section.
34. Portions of the projects lie within the Colorado Department of Transportation's rights-of-way. The Engineer has secured on behalf of the Owner preliminary approval of the work to be undertaken within US Highway 24. The Contractors shall secure appropriate final permits from CDOT.
35. The work within CDOT's rights-of-way shall be undertaken in accordance with the permits secured by the Contractors. The Contractors shall provide to CDOT a traffic control plan and insurance coverage for the work within CDOT as an additional insured prior to initiating work within CDOT's rights-of-way.
36. Where applicable, all pedestrian traffic shall be accommodated in the same manner as vehicular traffic during construction.
37. The Owner has secured approval of the Drawings from the El Paso County Department of Transportation. The Contractors shall secure the final utility permits from El Paso County for all work in County rights-of-way. The Contractors shall coordinate with El Paso County representatives and comply with the conditions of the COUNTY CANCELED THE ASSESSMENT OF PERMIT FEES TOGETHER WITH DEGRADATION FEES AND TRAFFIC CONTROL FEES FOR THESE PROJECTS.
38. The Contractors shall contact CDOT, City of Colorado Springs Toll Booth, the Colorado Springs Utilities Inspector, and El Paso County representatives two (2) working days prior to beginning construction in their respective rights-of-way. The CSU Inspector on the project is Jose Tofano who may be reached at 719-661-2635, email: jtofano@csu.org.
39. In the event the Contractor desires to leave an open hole overnight within any CDOT right-of-way, approval from CDOT must be secured. If said hole is located within 30 feet of the edge of payment, Type IV traffic control shall be used. The Contractor may opt to backfill the hole at the close of work and open the hole at the beginning of work, Contractor's option.
40. The Engineer on behalf of the Owner has secured a determination from the US Army Corps of Engineers on the bored and cased crossings of Fountain and Cascade Creeks. That determination indicates no formal permit is required; however, activities at these two drainageways must be undertaken in accordance with general requirements established for work within the US Army Corps of Engineers. The Contractor shall undertake appropriate measures to insure that construction disturbance is not within jurisdictional channels or wetlands.
41. The majority of the pipeline components of the project lie within road and highway rights-of-way. Traffic control shall be undertaken in accordance with the Manual on Uniform Traffic Control Devices. Where applicable, the Contractor shall coordinate with El Paso County utility permit requirements shall be taken into account within the traffic control plans.
42. The Contractors shall provide traffic control plans in accordance with the provisions of the CDOT and El Paso County utility permits where applicable. Approval of the traffic control plans for all work contained within the State and County road rights-of-way shall be obtained prior to the initiation of any construction within the respective rights-of-way.

STREET SURFACE RESTORATION (Items 42 to 56)

- 42. CDOT right-of-way: The work occurring within the CDOT right-of-way is programmed to be undertaken in accordance with the CDOT specifications and shall be undertaken in accordance with the Specifications and the permit. Topsoil shall be fully stripped and reinstalled. Seeding is required. The work that impacts CDOT's asphalt requires a replacement asphalt mat section to be installed. The minimum thickness shall be 6-inches. The required CDOT mix design is SX(75)PC58-28. A 2 foot section of acceptable on-site granular material underlying the mat is required. The remainder of the trench from a point 6-inches below the pipe to the base course is to be installed with compacted CDOT Class 2 structural material. Special care shall be taken to comply the compaction requirements set forth within CDOT's permit. Payment for the work shall be made for the actual quantity installed mat to exceed the minimum mat thickness. In several areas, the work shall include asphalt removal and replacement and subgrade preparation within the CDOT right-of-way is established on the Bid Form and includes traffic control, asphalt removal and replacement, Class 2 structural fill and on-site base course together with the haul off of excess excavated material.
44. El Paso County rights-of-way with asphalt: The work being undertaken in El Paso County Road rights-of-way will be impacting asphalt surfacing and chip seal to varying degrees. The Drawings contain detailed information per road segment on the requirements of the thickness of asphalt patches, the installation of asphalt curb heads and the installation of chip seal surfacing. This work varies on a road by road basis. In several areas, the work shall include maximum asphalt pay width for both water main and service line installations including how many feet outside of the centerline of the pipe. The existing asphalt surfacing shall be wheel or saw-cut to a neat edge. Existing asphalt edges shall be backfilled. The Contractor shall install asphalt replacement patch in accordance with the requirements set forth on the Drawings on compacted trench backfill. Payment for the work shall be made for the actual quantities installed not to exceed the maximum pay widths where set forth on the Drawings. Close coordination is required between the Contractors, Engineer and County representative. Compliance with the County cut permit is required. The asphalt mix design and work are subject to County and Engineer approval.
45. El Paso County rights-of-way with gravel surfacing: In those areas where construction activity is located in or crosses gravel roads, the gravel shall be stripped, stockpiled and reinstalled. In the event the gravel is contaminated, lost or not sufficiently stripped, the Contractor shall provide makeup gravel as required at no additional cost to the Owner. Gravel shall be placed to match as a minimum, pre-existing thicknesses and is subject to El Paso County and Engineer approval.
46. Driveway restoration: In those areas where construction activity impacts driveways, existing surface materials shall be fully stripped, stockpiled and reinstalled. Driveway restoration shall result in a driveway that is equal to or better than that existing prior to construction. This work shall be undertaken as an incidental to the pipeline installation at no additional cost to the Owner.
47. The maximum pay quantities for asphalt removal and replacement are set forth within the Drawings. Payment will be made for actual quantities removed and replaced up to the maximum pay quantities shown. Any quantities in excess of the maximum pay width shall be replaced by the Contractor at no additional expense to the Owner.
48. Existing road surfacing, curb heads, crosspans and other surface improvements not shown to be removed within the construction project shall not be disturbed.
49. El Paso County asphalt road restoration must occur within seven (7) days after the water line installation in accordance with the El Paso County utility permits and County requirements. Appropriate barricading or other measures must be provided during the course of construction and until such time as the replacement sections have been installed and the road is opened to the public. In the event paving of these disturbed areas is deferred with County consent, the Contractor shall backfill the trench to full depth to accommodate localized traffic. Care shall be taken to preclude damage to the existing asphalt. The Contractor shall at the time of the asphalt replacement, remove the excess fill and provide a clean, straight cut edge for placement of new asphalt against the existing. These temporary provisions shall be undertaken at no additional cost to the Owner.
50. All work in CDOT's rights-of-way shall be undertaken in compliance with the utility permits issued by CDOT. No higher than required existing road level shall be used. Any disturbance or damage to the road surface or other CDOT property that is not shown to be disturbed shall be restored or replaced per CDOT requirements at the sole expense of the Contractor.
51. All work in the CDOT right-of-way or El Paso County road rights-of-way shall be specifically undertaken in utility permit issued by the CDOT or El Paso County.
52. On El Paso County asphalt roadways, if imported base course is present, the replacement asphalt section shall include matching the existing base course thickness. Payment for base course will be made on the basis of the one-inch thickness unit price established on the Bid Form times the thickness installed.
53. The Pikes Peak Highway, Ute Pass Avenue, Fountain Avenue and Chippa Park Road are higher volume roadways. The Contractor shall undertake the work in the roadways in an expeditious manner. Restriping the roadways to match the existing striping patterns with epoxy paint meeting the specifications shall be undertaken by the Contractor.
54. The Contractor shall not have any construction activity occurring in the Pikes Peak Highway over the following dates:
o Pikes Peak Hill Climb
o Practice Days: June 20 -24, 2017
o Race Day: August 12, 2017
o Pikes Peak Ascent and Marathon
o Ascent: August 20, 2017
o March: August 20, 2017
Scheduling to avoid the month of June in its entirety is desirable.
55. The Contractors shall notify affected residents in advance of any planned detours.
56. All County road surface restoration shall be in accordance with the Specifications, construction Drawings and the El Paso County PSD Engineering Criteria Manual.
The asphalt mix design and chip seal design for work in the County road rights-of-way is subject to El Paso County approval.
58. A Bid Item is included on the Bid Form for service line connections that includes the installation of the service saddle, corporation stop and the connection of the new service line material to the existing service line.

- 59. Separate Bid Items are included on the Bid Form for the installation of new service lines. The Bid Items include both copper and HDPE material and different size of pipe. All specific service lines require the installation of tracer wire. One tracer wire shall be installed at the termination of the tracer wire and a ground level test box in accordance with CSU Water LESS. Service line footage will be paid on the basis of the unit prices established on the Bid Form subject to the maximum pay widths or lengths established on the Drawings. Coordination with the Engineer is required on such installations. Approval of total footage and additional pay quantities is required on a case-by-case basis.
60. The project incorporates the utilization of both Type K copper and HDPE CTS material. All HDPE pipe installations for service line material shall utilize elastomers specified within CSU Water LESS together with fused connections where appropriate and approved connection material and tracer wire (HDPE applications).
61. The removal and installation of asphalt or other related improvements which have a unit price established on the Bid Form and are required to be removed as a result of the installation of the new service lines will be paid for at the unit prices established on the Bid Form subject to the maximum pay widths or lengths established on the Drawings. Coordination with the Engineer is required on such installations. Approval of total footage and additional pay quantities is required on a case-by-case basis.
62. Connections to existing service lines shall be made per CSU's requirements and Drawings. Changes in size for connections to new and existing service lines shall be in accordance with CSU Water LESS requirements and at no additional cost to the Owner. The Contractor shall coordinate the connections to the existing service lines with representatives of the Owner and the Engineer.
63. The location of each new service line connection is to be established in the field by the Contractor with assistance from the Owner/Engineer. Service line footages must be approved by the Engineer prior to installation. The Drawings contain the estimated pay quantities for the various service line connection locations. All final pay footages must be approved by the Engineer.
64. At some service line locations surface restoration may include the removal and reinstallation of landscaping materials, i.e., railroad ties, decorative rock or similar landscaping items. These items are to be removed and reinstalled within the unit price of the service line footage at no additional cost to the Owner.
65. The minimum depth of cover for the new service line installations is 7.0 feet for copper and 9.0 feet for HDPE. The Contractor shall deflect the pipe as needed to make the connection to the existing service line in the event that the existing service line is not at the depth of cover. This work shall be undertaken within the established unit prices in the Bid Form.
66. The Contractors shall coordinate closely with Owner/Engineer and affected property owners and comply with the provisions set forth within the Specifications for notice and limiting disruption of service to users. Coordination with property owners is required for all work that is to occur on private property.
67. The Contractors shall notify affected property owners a minimum of 24 hours in advance of the discontinuance of water service to them to accommodate the new service line connections. Water service is to be restored within 2 hours. See the Specifications for additional requirements.
68. An accurate record is required for the locations of new service lines, service line materials and existing meter related components. The Contractor is to record new and existing service line materials and the locations of the new service line tops on his "as-constructed" drawings for submission to the Engineer. The Contractor is also required to record on each individual pipe to complete the required CSU Location of Private Water Service Data Sheet. All available information shall be incorporated onto the sheet including a sketch of the water service, the structure and the intersection to the water main. A sample of the Location of Private Water Service Data Sheet is contained within an appendix to the Specifications. In addition, information on existing meter related equipment is required. Information is to be incorporated by the Contractor on an individual basis for every meter in which work is undertaken in part by CSU representatives on either an Inside Meter Data Information Sheet or an Outside Meter Pit Assembly Data Information Sheet. The data sheets should be completed by the Contractor for each meter installed.
69. Within the Contractor's inventory and recording effort for data associated with both inside and outside meter pit assemblies, the Contractor shall confirm that a curb stop exists and that it is functional. In addition, the Contractor shall review the pressure reducing valves to insure they are functional as well as inlet and outlet valves and the Contractor shall replace any of these items or be made in need of replacement, the Contractor shall replace same. Payment will be made per the supplement unit prices contained on the Bid Form.
70. The Contractors shall review with the Owner and Engineer sufficiently in advance on a block by block basis existing water service line and meter locations. The Contractors are responsible to locate all water services and meter pits or to be installed in accordance with the Specifications and scheduling with CSU representatives is required for CSU's meter replacement related work.
71. In some cases off-horizon connections may be required to minimize down time to water users. See Specification Sections 01010 for additional requirements.
72. The project requires the installation of new meters throughout the entire District's service area. The new meters will be installed by Colorado Springs Utilities' (CSU) representatives. CSU will include meter replacement, the installation of automatic meter reading (AMR) wiring for indoor meters to be set up on the exterior wall of the building and the installation of the meter. The Contractor shall install the AMR and wiring for meter pits, retrofitting old meter pit lids or installing replacement meter pit lids. CSU will provide data on the meter number to reference the address where the meter is to be installed. The Contractor at the time CSU is installing the meters is to determine the existence or lack thereof of curb stops. If curb stops are recovered, they are required on the Contractor's part to be determined if they are operable. If they are not operable, they are required to be replaced in several areas, the work shall include maximum asphalt pay width for both water main and service line installations including how many feet outside of the centerline of the pipe. The existing asphalt surfacing shall be wheel or saw-cut to a neat edge. Existing asphalt edges shall be backfilled. The Contractor shall install asphalt replacement patch in accordance with the requirements set forth on the Drawings on compacted trench backfill. Payment for the work shall be made for the actual quantities installed not to exceed the maximum pay widths where set forth on the Drawings. Close coordination is required between the Contractors, Engineer and County representative. Compliance with the County cut permit is required. The asphalt mix design and work are subject to County and Engineer approval.
73. The Contractors are to install new curb stops where shown on the Drawings and as directed by the Engineer on or near the property line nearest to the water tap in a location outside of roadway or driveway. Each new curb stop installation's location is to be reviewed and approved by the Engineer/Owner.
74. Service tops shall be made a minimum of three feet (3') from the bell or appurtenance on the water main. Taps shall be a minimum of three feet (3') apart on the same side of the water main and a minimum of one-and-a-half feet (1.5') when taps are made on opposite sides of the water main.
75. All construction methods and materials shall meet Colorado Springs Utilities' Water Line Extension and Service Standards (Water LESS), 2017 Edition. The Owner of these projects is Cascade Metropolitan District No. 1. As such, CSU on the Specifications contains a detailed listing of the connections at specific locations corresponding to the unit prices established on the Bid Form. In general, line foot prices shall apply up to the last fitting or main line tee prior to connection to the existing pipeline. The connection price shall include the final fitting or main line tee, the solid sleeve or mechanical coupling required to make connection to the pipeline, any additional required reducers and any short lengths of pipe needed to affect the connection. The cost of the materials and the work shall all be included in the appropriate connection unit price.
76. Corrosion protection measures shall comply with the CSU Water LESS and the requirements set forth on the Drawings. Generally these requirements include:
a. All ductile iron pipe and fire hydrants shall be polyethylene tubing wrapped.
b. All ductile iron pipe and fittings shall have double copper straps bonded to them at all locations.
c. High potential magnesium anodes with 20 foot leads shall be installed to and bonded to:
1) 1 1/2 anodes on each fire hydrant.
2) 1 1/2 anodes on end of each casing pipe.
3) 1 1/2 anodes on ductile iron piping. Anodes shall be installed at the locations designated on the Drawings.
d. All bolts, nuts and miscellaneous metal appurtenances shall be cathodically protected in accordance with CSU Water LESS.
e. Blue post mount moloney cathodic test stations will be provided to the Contractor at no cost from Colorado Springs Utilities. All test stations shall be installed with permanent reference electrodes (PREs) buried next to the pipe and brought up in the test stations.
f. Post mount installations shall be installed clear of traffic hazards. In the event a flush mount test station is required, the Contractor shall provide both flush mount test stations as well as the installation. The test station leads shall be bonded to the water system components as detailed in CSU Water LESS.
g. Cathodic test stations shall be installed at distances not to exceed 1,000 feet on the piping or any portion thereof as directed by the Engineer and CSU representative.
h. All corrosion control shall be undertaken in accordance with CSU Water LESS.
i. Tracer wire is required to be installed on all HDPE mains and service lines. Tracer wire is NOT required on ductile iron or copper piping. Where HDPE lines are directionally drilled, the tracer wire shall consist of:
1) Stainless steel tracer wire (304 stainless steel alloy, 133 strands, annealed) with a rating of 30 volta maximum and 1,700 pound yield strength, in the long directionally drilled.
2) The insulating jacket shall consist of high molecular weight high density polyethylene, colored blue for potable water.
3) Size shall be 1/4 inch.
4) On HDPE directionally drilled service lines the tracer wire shall meet CSU Water LESS requirements.
5) Tracer wire test stations and anodes shall also be installed at the termination of all HDPE service lines using a ground level test box.
6) Where required, tracer wire shall be brought to the surface at fire hydrants and valve installations.
77. All trench backfill and compaction shall be in accordance with Section 206 of the City of Colorado Springs Standards Specifications Manual and Section 5.18 of the Water LESS. Where the El Paso County or Colorado Department of Transportation requirements apply, comply with the more stringent requirement.
78. Shop drawing submittals shall be made for all materials to be incorporated into this project.
79. The Contractor shall provide the Owner with an up-to-date schedule of the roads on which work will be undertaken to allow the Owner sufficient time to inform the public as to construction activity.
80. No trees or shrubs shall be removed without prior acknowledgment of the Owner/Engineer except where shown on the Drawings.
81. Deflections at pipe joints shall be limited to the allowable deflections contained in CSU's Water Line Extension and Service Standards, Exhibit A4-1.
82. In areas to receive asphalt replacement, the Contractors shall set all valve boxes 1/4" below finish grade. In all off-road areas, the Contractors shall set the valve boxes flush with finished grade. In gravel roadways, valve boxes shall be set 4-inches below finish grade.

- 83. The Contractors shall limit their construction activity to existing rights-of-way, construction easements and the Owner's property as noted on the Drawings.
84. The Contractors are responsible to field confirm the size, location and material associated with the existing water system's piping and connections where connections are required. Appropriate fittings and transition gaskets shall be provided by the Contractor at no additional cost. These areas shall be potholed in advance to adequately determine connection requirements. The potholing activity shall be undertaken at no additional cost to the Owner.
85. Gate valve installations on the new mains shall be laid out such that the gate valves are located three (3) feet from adjacent less or other fittings unless otherwise shown on the Drawings or required by CSU's Water Line Extension and Service Standards.
86. Fire hydrant assemblies shall be installed in accordance with the details contained in CSU's Water LESS Drawings. The locations of fire hydrant assemblies are subject to refinement in the field with clarification from the Owner and Engineer.
87. Pipelines shall be laid out in straight alignments between points of intersection and curve/veer as shown on the Drawings. Deviations are subject to the Engineer's approval.
88. Minimum cover on all water lines installed within this project is 7.0 feet for ductile iron and copper pipe and 9.0 feet for HDPE pipe except where noted on the Drawings.
89. Multiple fittings installed at one location to achieve the necessary deflection in the pipeline alignment shall be connected with foster adaptors as detailed in CSU Water LESS requirements.
90. Fittings that require thrust blocks are noted on the Drawings. The thrust blocks shall be installed in accordance with CSU's Water LESS requirements. This work shall be undertaken as an incidental to the pipeline installation and at no additional cost to the Owner.
91. All fittings installed on the project require mechanical joint restraints. The restraints are to be installed not only at the fittings but depending upon the size of the line and corresponding working pressure, are to be installed a defined distance on any joints contained within that footing. The Drawings contain an exhibit depicting the working pressure of the distribution system as well as a copy of CSU's Water LESS mechanical joint restraint table. Care shall be taken to insure that all joints within the defined lengths are equipped with mechanical joint restraints. This work shall be undertaken as an incidental to the pipeline installation and at no additional cost to the Owner.
92. Coordination by the Contractors with the Engineer and Owner for connections to existing utilities is required to insure a minimum of disruption to existing service. Off-hour construction work may be required at some locations.
93. A new fire hydrant assembly installed on a new water main consists of the appropriate sized main tee, the fire hydrant, appropriate joint restraints, anode and appurtenances. These items are all included in the fire hydrant assembly unit price for a new hydrant on a new main as contained within the Bid Form. The lineal footage of 6-inch lateral piping, the 6-inch lateral valve and asphalt replacement if required will be paid for at their respective individual unit prices as contained on the Bid Form.
94. Removal and disposal of existing pipeline materials and appurtenances required to accomplish the specified scope work shall be incidental to the removal of the line and corresponding items, salvage of existing material such as fire hydrants and valves may be required. The Owner will clarify at the time of the removal of the existing materials, what are considered salvage to be delivered by the Contractor to the Owner. No additional payment will be made for this work.
95. Any signs, delineator posts, mail boxes, newspaper boxes and other appurtenances removed during construction shall be reinstalled in the same location and in an acceptable condition at no additional cost to the Owner.
96. In those areas where new pipeline construction impacts existing fencing, the Contractor shall remove the fencing as necessary. All fencing removed during construction shall be reinstalled in a condition as good as or better than originally found at no additional cost to the Owner.
97. Locations, sizes, materials, and conditions of existing water mains and services may not be as shown on the Drawings or known by the Owner. The Contractor shall be required to field locate the existing water mains and services and confirm the location (horizontally and vertically), size, and material of all pipelines at the locations of tie-ins. With that data the required field adjustments can be determined and all necessary transition couplings and other materials made available by the Contractor for the construction. Cost for this effort shall be included in the appropriate pipeline or connection unit price. No additional compensation will be made by the Owner.
98. The Contractor shall install new water main segments in such a manner that they can be filled, pressure tested, chlorinated, obtain a clean bacteriological test and flushed prior to being placed into service. Service connections can be made once these procedures have been satisfactorily followed. The Contractor shall conduct acceptable procedures when flushing highly chlorinated water to preclude water quality impacts to adjacent surface water.
99. All existing drainage structures shall remain in place unless otherwise indicated on the Drawings. Any structures damaged or removed during construction shall be repaired or replaced at no additional cost to the Owner and to the satisfaction of El Paso County.
100. The Contractor shall limit his general area of disruption in the water main, service line, curb stop and related installations to the immediate areas of the actual installations.
101. Existing property corners and section monumentation shall not be disturbed. In the event any existing property monumentation is disturbed during the course of construction, it shall be replaced at the Contractor's cost by a surveyor licensed in the State of Colorado.
102. All thrust blocks installed throughout this project shall have a bond breaker between the fitting and the thrust block. All ductile iron pipe and fittings shall be polyethylene wrapped and receive two #8 standard or solid copper straps welded at all joints in accordance with the CSU Water LESS standards.
103. Saw cutting of existing asphalt surface improvements is required. The asphalt saw cutting and removal is to be considered incidental to the applicable associated removal and reinstallation unit price.
104. Any reverse anchors, blow-off assemblies, etc. required to make connections to existing lines and provide for pressure testing and other construction activities are incidental to the overall construction. Associated costs shall be incorporated into applicable unit prices.
105. Existing utilities to the extent defined in the field for the Engineer by the various utility providers are shown on the Drawings. In all instances, unless otherwise noted, care shall be taken on the Contractor's part to not disturb existing utilities. The Contractors shall secure utility locations in advance of construction.
106. The Contractor's surveyor shall coordinate with the Engineer on the layout of the improvements.
107. Connection requirements from the new water mains to existing water lines are generally detailed on the Drawings. Based upon the type of connection, a unit price is established on the Bid Form. Section 01010 of the Specifications contains a detailed listing of the connections at specific locations corresponding to the unit prices established on the Bid Form. In general, line foot prices shall apply up to the last fitting or main line tee prior to connection to the existing pipeline. The connection price shall include the final fitting or main line tee, the solid sleeve or mechanical coupling required to make connection to the pipeline, any additional required reducers and any short lengths of pipe needed to affect the connection. The cost of the materials and the work shall all be included in the appropriate connection unit price.
108. In general, connections to existing lines are preferred to be undertaken with solid sleeves or wide range couplings as noted on the Drawings. The method of connection shall comply with the Drawings and CSU Water LESS.
109. Any required tree, shrub or bush removal shall be considered incidental to the construction. The work shall be undertaken at no additional compensation by the Owner.
110. The Contractors shall provide sequencing plans detailing their approach to the projects. The general work sequence is provided in Section 01010. The Contractors shall use this general work sequence in preparing their detailed sequencing plan. Alterations to the proposed sequencing approaches are subject to review and approval by the Engineer and Owner.
111. The subgrade underneath all structures and piping shall be adequately stabilized.
112. Mathematical values take precedence over scaled values.
113. The Contractor shall diligently undertake final grading, cleanup and street restoration. Restoration of the street progress will be the work. The Contractor shall provide, install, and maintain the work progress within seven (7) days as required by El Paso County.
114. Close coordination is required between the Contractor, Engineer, Owner and where applicable CSU representatives, for the temporary discontinuation of service from an component of water system that may be impacted by the water project's construction. An approach detailing the time table and duration within which such facilities are proposed to be removed from service shall be submitted by the Contractor and agreed upon by the Engineer/Owner prior to initiating work on these items.
115. All products incorporated into this project that are directly or indirectly in contact with raw or potable water shall be verified by the Contractor to meet National Sanitation Foundation (NSF) standards. See Section 01600 of the Specifications for additional requirements in regard to the NSF Standards.
116. The Contractor shall review existing utility locations with the Engineer and Owner in advance of the initiation of construction. Any adjustments to the new water line alignments shown on the Drawings are subject to the Engineer's approval.
117. Valve boxes shall be set plumb and centered on the operating nut of the new valve.

- 118. In general, water distribution system replacement segments shall be installed parallel to and initially dependent of the material to be replaced. The new water line segment shall be pressure tested, the Engineer will provide clarification of the size of the line and corresponding working pressure. Payment will be made for the actual size and length of pipe installed to make the connection at all unit prices established on the Bid Form.
119. Seeding is required on all areas where topsoil has been stripped, stockpiled and reinstalled. Final grading of topsoil areas is subject to the Engineer's approval.
120. The Contractor shall review the vertical placement of the top of all structures prior to finalization for acceptance by the Engineer.
121. The Contractor is to undertake his work in accordance with OSHA's Confined Space Entry Requirements.
122. The Owner has not secured permission to disrupt any of the private property or improvements adjacent to the street rights-of-way, easements or the Owner's property in which construction will occur outside of the areas of construction shown on the Drawings. The Contractor may at his option make arrangements with adjacent private property owners to temporarily remove and reinstall improvements or encroach upon their property beyond what is shown on the Drawings. No additional compensation will be made for this work.
123. In those installations in which short runs of pipe exist between fittings, no joints will be allowed for sections that are less than 15 feet in length.
124. Final street and right-of-way restoration is subject to the Owner, Engineer and right-of-way owner's review and approval.
125. In the event existing lines to which connections are required vary in size from those shown on the Drawings, the Engineer will provide clarification of the size of the line and corresponding working pressure. Payment will be made for the actual size and length of pipe installed to make the connection at all unit prices established on the Bid Form.
126. All improvements installed under the projects shall have a two year warranty extending from the dates of the Certificate of Substantial Completion.
127. The Drawings contain easement related sheets that delineate the locations where all required easements for construction of the project have been secured. The Contractor's work activities at these locations are to occur within the easements.
128. The Contractor is to temporarily seal the ends of the pipe along the trench prior to installation to preclude joint entry of soil. When the pipe has been installed and is being unattended, it shall be temporarily sealed.
129. Where the directional drilling is shown on the Drawings, the pipe is to be installed at the deeper depths depicted on the associated profiles to maintain the needed grades as required.
130. Casing pipes associated with the bore and cased installations under the two creeks are to receive anodes per CSU Water LESS requirements.
131. All valves are to open right with the exception of the tank drain nonpotable valve and fire hydrant contained on Sheet 16. They both shall open left.
132. All fire hydrants are to be color coded per CSU Water LESS standards as noted on the Drawings.
133. Tracer wire, 1/2 anodes and corresponding test stations are required in all HDPE installations. CSU will provide post mounts for incorporation into the project. The Contractors shall provide and install the post mounts for the test stations and meter terminations and meter connections. Coordination is required with the Engineer on the nature and locations of the test stations.
134. All highly dechlorinated water that will be flushed from the distribution system is to be dechlorinated to minimize environmental impacts on the receiving drainageways.
135. All abandoned water mains are to have the ends cut and capped. The locations of the abandoned lines are to be noted on the Contractors' as-builts.
136. All vertical joints are to be restrained with mechanical joints in compliance with CSU Water LESS.
137. All valves shall have a Class 250 valve body. They shall be flanged for vault installations and mechanical joint for direct bury unless otherwise noted.
138. All HDPE piping is to be DR9. All ductile iron piping is to be Class 350.
139. Reverse anchors are required per the Drawings and CSU Water LESS details for HDPE main line directional drill locations. Reverse anchors are also required for vault installations as detailed on the Drawings and CSU Water LESS drawings.
140. HDPE water mains are to have a minimum of 36 hours of chlorine contact time before being flushed.
141. Ductile iron pipe and copper services DO NOT require tracer wire.
142. Marker tape is NOT required on the water lines.
143. The Contractor is required to install a cathodic protection test stations along the pipeline alignments as shown on the Drawings and at distances not to exceed 1,000 feet. CSU will provide the test stations and the post mounts for interconnection of the meter. These locations generally will be offset from traveled roadway at locations that are not subject to vehicular impact. Coordination with the Engineer and CSU representative is required for the locations at which cathodic protection test stations are to be installed. They shall be installed per CSU Water LESS standards.
144. The Contract 2 Contractor is required to pothole two (2) existing casing pipes that extend under US Highway 24. The casing pipes are generally located at the traffic control light on US Highway 24 and at Rampart Terrace. Both ends of the casing pipes are to be exposed to allow for the removal of both casing pipes. The new mains shall be installed at the crossing of the existing 28-inch steel pipe in such a manner that a full length of pipe is centered on the 28-inch water line crossing.
145. All settings on the pressure regulating valves installed by the Contractor shall be made by a qualified valve adjustment individual. Coordination on the part of the Contractor with the Owner and Engineer is required.
146. On El Paso County roadways, in select locations, 6-inch asphalt curb heads are to be installed. The Drawings contain a CDOT standard for a 4-inch curb head installation. The Contractor shall install a 6-inch curb head in general conformance with the manner of installation and configuration of the detail. Coordination with the Engineer and El Paso County representatives is required with respect to the locations at which the curbing is to be installed.
147. In those locations where existing street striping is impacted by the construction or a complete chip seal surfacing is being installed where striping previously existed, new striping is required. These locations generally will be on Ute Pass Avenue, Fountain Avenue, Chippa Park Road and the Pikes Peak Highway. The Contractor is required to undertake the striping in accordance with the striping shall be installed in accordance with CDOT Section 627, Pavement Marking requirements and the Specifications and paid for at the unit prices established in the Bid Form.
148. The Drawings detail locations within which not only are asphalt patches required on El Paso County road rights-of-way, but complete chip seal overlays of the entire roadway width are required. Close coordination is required to define the extent of these works with the Engineer and El Paso County representatives.
149. The Contractors are required to provide detailed information on all meter appurtenant related improvements. The Specifications contain a form that details the nature of the information required including the seller, manufacturer and material type, pressure regulating valve manufacturer and material type, meter pit depth, diameter and material type and related information. The Inside Meter Data Information Sheet and Outside Meter Pit Assembly Data Information Sheet are contained in an appendix to the Specifications.
150. Access to the cul-de-sac at the end of Aspenlung Lane is through a code activated gate at both ends of the Chippa Park Drive. The access code will be provided to the Contractor by the Engineer as required.
151. All tracer wire on HDPE installations shall terminate in Contractor provided and installed ground level test stations and incorporate 1/2 anodes.
152. Colorado Springs Utilities is installing replacement meters, ARMs, interconnecting wiring and either retrofitting or replacing meter pit lids to accommodate the new meter installations. Close coordination by the Contractor and CSU representatives is required to minimize impacts to property owners. The Contractor is required to undertake the installation of the existing meter appurtenant installations. The tandem meter cooperaters, inlet and outlet valves and pressure reducing water valves are to be replaced with CSU Water LESS. The Contractor will be required to replace them at the supplement unit prices contained on the Bid Form. The completed meter installations including CSU's installation of replacement meters, ARMs and wiring shall be compliant with Water LESS Standards B1-5 and B1-7.
153. This project DOES NOT REQUIRE either Davis-Bacon wages or American Iron and Steel (AIS) provisions.

GENERAL NOTES WATER SYSTEM IMPROVEMENTS CASCADE METROPOLITAN DISTRICT NO. 1

Table with project details: DRAWN BY KLV, DESIGNED BY KLV, CHECKED BY EDM, DATE OCTOBER 2016, PROJECT NO. 15061.300, GMS FILE NO., GMS, INC., CONSULTING ENGINEERS, 611 N WEBER, SUITE 300, COLORADO SPRINGS, COLORADO 80903, SHEET 2 OF 30

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COORDINATE LIST		
PT. NO.	NORTHING	EASTING
500	12412.24	9262.44
501	12396.06	9261.54
502	12301.95	9345.81
503	12635.47	9718.32
504	12263.29	9384.42
505	12142.34	9519.24
506	11695.73	9118.57
507	11934.99	9668.80
508	11821.64	9718.09
509	11734.10	9761.08
510	11508.58	10710.78
511	11519.91	10736.54
512	11495.17	10800.17
513	11419.33	10853.28
514	11399.55	10849.80
515	11366.07	10902.36
516	11361.66	10927.35
517	11388.87	11050.04
518	10589.97	10800.77
519	10567.06	10908.32
520	10565.32	10916.49
521	10574.80	10967.77
522	10567.85	10977.88
523	10464.35	10886.44
524	10421.40	10914.30
525	10418.27	10929.00
526	12335.12	10091.02
527	12339.93	10097.82
528	12375.72	10103.92
529	12541.11	10201.77
530	12536.71	10209.22
531	12701.14	10306.50
532	12867.11	10364.82
533	12956.62	10377.43
534	12146.44	10256.14
535	12177.11	10293.43
536	12281.03	10259.04
537	12440.09	10270.68
538	12493.57	10256.96
539	12520.36	10236.86
540	12567.45	10157.26
541	12647.30	10066.14
542	12658.23	10067.54
543	10596.60	10128.40
544	10582.81	10152.76
545	10571.82	10155.64
546	10477.01	9792.82
547	10396.03	10158.97
548	10381.12	10155.67
549	10489.10	9667.47
550	10278.67	10121.03
551	10039.02	10009.84
552	9744.41	10644.83
553	9800.93	9947.12
554	9693.01	9938.37
555	9749.54	9240.66
556	9602.21	9924.98
557	9582.11	9920.34
558	9494.50	9898.76
559	9374.91	10384.25
560	9443.60	9888.99
561	9374.28	9879.37
562	9022.90	9830.63
563	8926.73	10524.00
564	8726.24	9853.32
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571	7966.95	10156.48
572	10332.72	9915.04
573	10260.21	9830.72
574	10063.92	9867.10
575	9790.59	8392.21
576	9862.75	9890.47
577	9759.64	9895.44
578	9608.08	9897.74
579	9380.87	9831.85
580	9421.72	9800.96
581	9440.86	9766.28
582	9445.42	9713.09
583	9437.14	9689.18
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585	9324.70	9618.42
586	9317.23	9610.82
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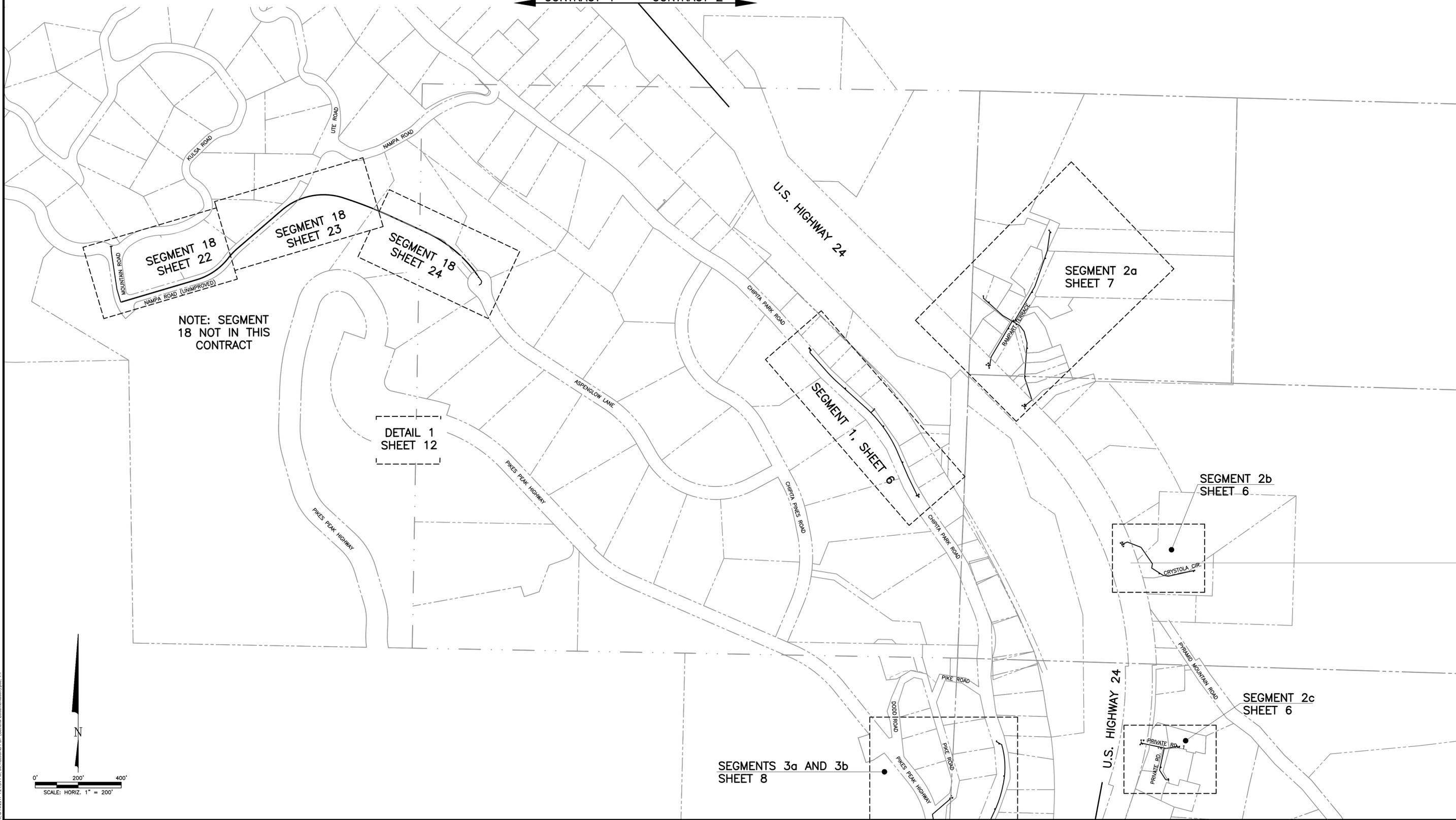
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595	7498.18	11020.02
596	9252.00	9633.14
597	9214.40	9625.15
598	9183.05	9588.28
599	9149.11	9570.89
600	9086.42	9569.75
601	8998.01	9549.01
602	8990.70	9537.18
603	8038.05	10349.79
604	8028.45	10354.78
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606	7646.03	10449.21
607	7569.88	10482.12
608	7453.86	10546.87
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610	7311.21	10657.57
611	7258.35	10720.44
612	7238.61	10722.15
613	7040.44	10957.92
614	7042.91	10986.43
615	6884.89	11188.33
616	6714.69	11377.20
617	6614.65	11446.82
618	6555.49	11469.60
619	6483.33	11486.04
620	6395.04	11509.28
621	6344.10	11538.09
622	6250.66	11601.72
623	6180.56	11647.36
624	6066.66	11721.11
625	6048.46	11717.22
626	6186.59	9742.50
627	6174.75	9748.13
628	6159.08	9737.31
629	6146.09	9731.70
630	6085.18	9705.37
631	6023.01	9575.50
632	7763.67	9387.35
633	7720.91	9342.64
634	7700.78	9294.90
635	7700.35	9268.33
636	7627.66	9197.79
637	7620.01	9182.30
638	7614.84	9171.83
639	7608.86	9121.54
640	7612.10	9082.35
641	7619.20	9042.90
642	7660.51	9033.89
643	7692.49	9039.10
644	7648.13	9255.30
645	8018.69	9377.02
646	7437.80	10191.00
647	8102.42	9443.82
648	8256.46	9580.83
649	8238.25	9601.31
650	8149.09	9724.75
651	7545.02	9217.85
652	7529.12	9239.18
653	7533.35	9262.62
654	7465.14	9356.61
655	9389.13	10817.42
656	9493.78	10774.05
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661	9594.80	10664.49
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677	9508.55	11068.37
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679	9583.25	11171.24
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PT. NO.	NORTHING	EASTING
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689	9748.63	11280.48
690	9793.95	11237.65
691	9830.71	11205.38
692	9840.10	11199.67
693	9859.65	11204.44
694	8347.06	11939.20
695	8348.31	11941.93
696	8345.16	11951.39
697	8375.63	12012.30
698	8397.62	12058.93
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702	8463.71	12605.29
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704	8494.68	12704.18
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706	8558.19	12711.41
707	8584.23	12701.49
708	8612.72	12663.92
709	8676.10	12647.99
710	8760.42	12716.57
711	8811.72	12746.74
712	8870.09	12773.62
713	8921.47	12790.56
714	8978.99	12794.20
715	9032.45	12736.32
716	9068.70	12638.91
717	9107.69	12509.12
718	9135.46	12431.61
719	9172.92	12360.16
720	9202.03	12294.88
721	9234.04	12202.18
722	9258.84	12161.02
723	9467.38	12090.89
724	9490.86	12102.55
725	9505.74	12097.55
726	9468.04	11493.41
727	9172.61	11627.50
728	9244.35	11741.71
729	9197.79	11751.45
730	9389.54	11935.71
731	9499.11	12040.66
732	9507.70	12070.67
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738	7967.15	11013.09
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741	7727.54	10912.31
742	7483.46	11014.26
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748	7680.64	11153.94
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753	7577.60	11542.12
754	7615.25	11579.57
755	7564.65	11665.06
756	7578.20	11695.99
757	8443.65	11218.80
758	8520.50	11275.81
759	7646.86	11742.65
760	7623.11	11768.09
761	7572.23	11803.10
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763	7479.97	11830.52
764	7439.88	11848.50
765	7382.29	11891.87
766	7338.53	11938.22
767	7294.96	11998.47
768	7170.44	12132.73
769	7170.65	12138.29
770	7087.47	12227.95
771	7012.69	12305.18
772	6925.85	12397.19
773	6920.89	12404.15
774	6932.19	12412.28
775	7443.55	12426.41
776	7508.69	12315.55

PT. NO.	NORTHING	EASTING	DESCRIPTION
777	7507.87	12312.41	604 SPIKE
778	12887.48	6014.14	604 SPIKE
779	12862.75	6015.38	604 SPIKE
780	12688.30	6041.56	604 SPIKE
781	12628.89	6059.06	604 SPIKE
782	12732.48	6014.64	604 SPIKE
783	13015.45	6327.27	604 SPIKE
784	12834.77	6560.46	604 SPIKE
785	12649.78	6796.64	604 SPIKE
786	12877.45	6601.27	604 SPIKE
787	13053.45	6806.37	604 SPIKE
788	12825.78	7001.73	604 SPIKE
789	13111.60	7092.87	604 SPIKE
790	13027.05	7312.46	604 SPIKE
791	12953.05	7475.36	604 SPIKE
792	12406.77	7227.21	604 SPIKE
793	12755.67	7715.32	604 SPIKE
794	12726.26	7736.29	604 SPIKE
795	12714.53	7734.06	604 SPIKE
796	12708.42	7724.98	604 SPIKE

PT. NO.	NORTHING	EASTING	ELEVATION	DESCRIPTION
115	7456.15	11023.89	7360.89	604 SPIKE
116	7438.00	10774.33	7355.17	PK NAIL
117	9447.78	11661.48	7603.20	604 SPIKE
118	9435.35	11502.21	7585.19	604 SPIKE
119	9408.93	11945.86	7637.91	604 SPIKE
120	9601.07	11355.31	7540.59	604 SPIKE
121	9690.67	11331.88	7541.69	604 SPIKE
122	9822.25	11231.36	7551.	

← CONTRACT 1      CONTRACT 2 →



NOTE: SEGMENT 18 NOT IN THIS CONTRACT

DETAIL 1  
SHEET 12

SEGMENTS 3a AND 3b  
SHEET 8

MATCH LINE

REFER TO SHEET 5

← CONTRACT 1      CONTRACT 2 →

NOTE:  
CONTRACT 1 - WEST SIDE OF HIGHWAY 24  
CONTRACT 2 - EAST SIDE OF HIGHWAY 24

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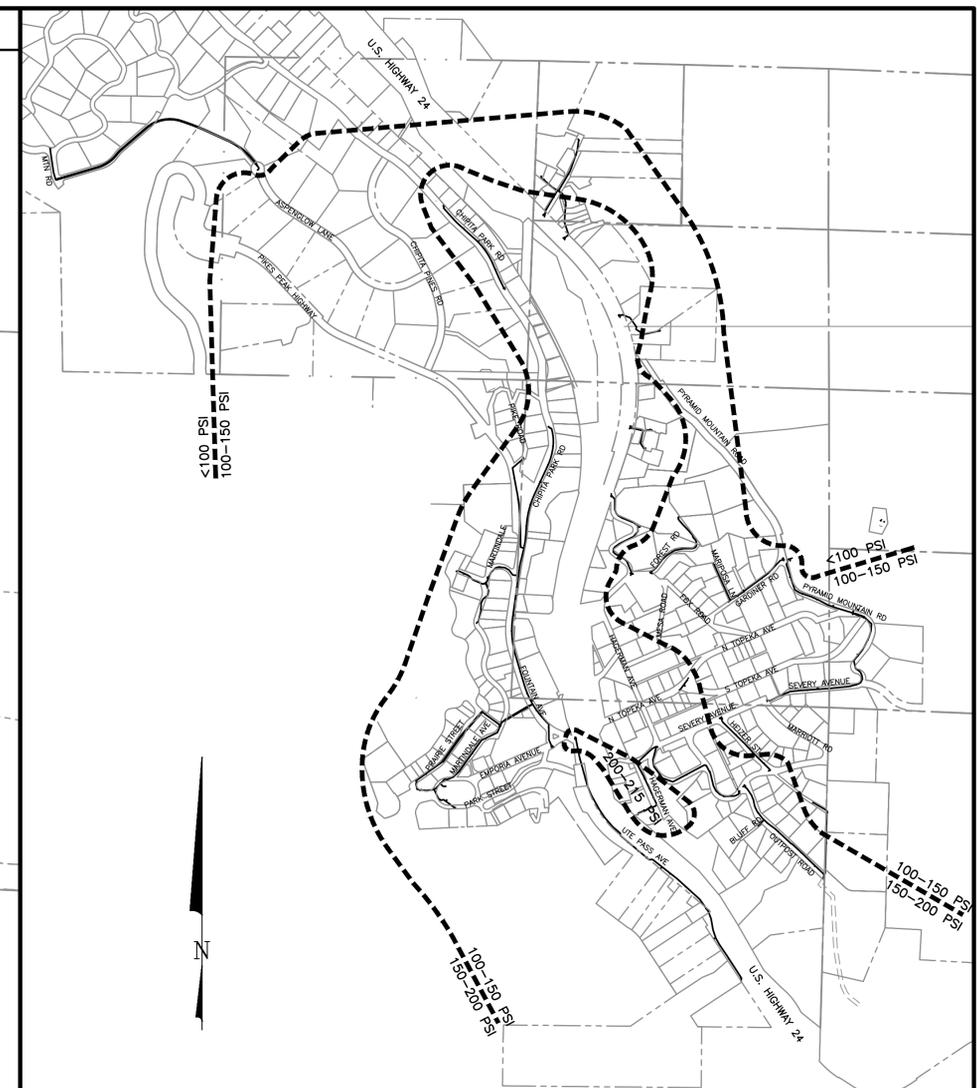
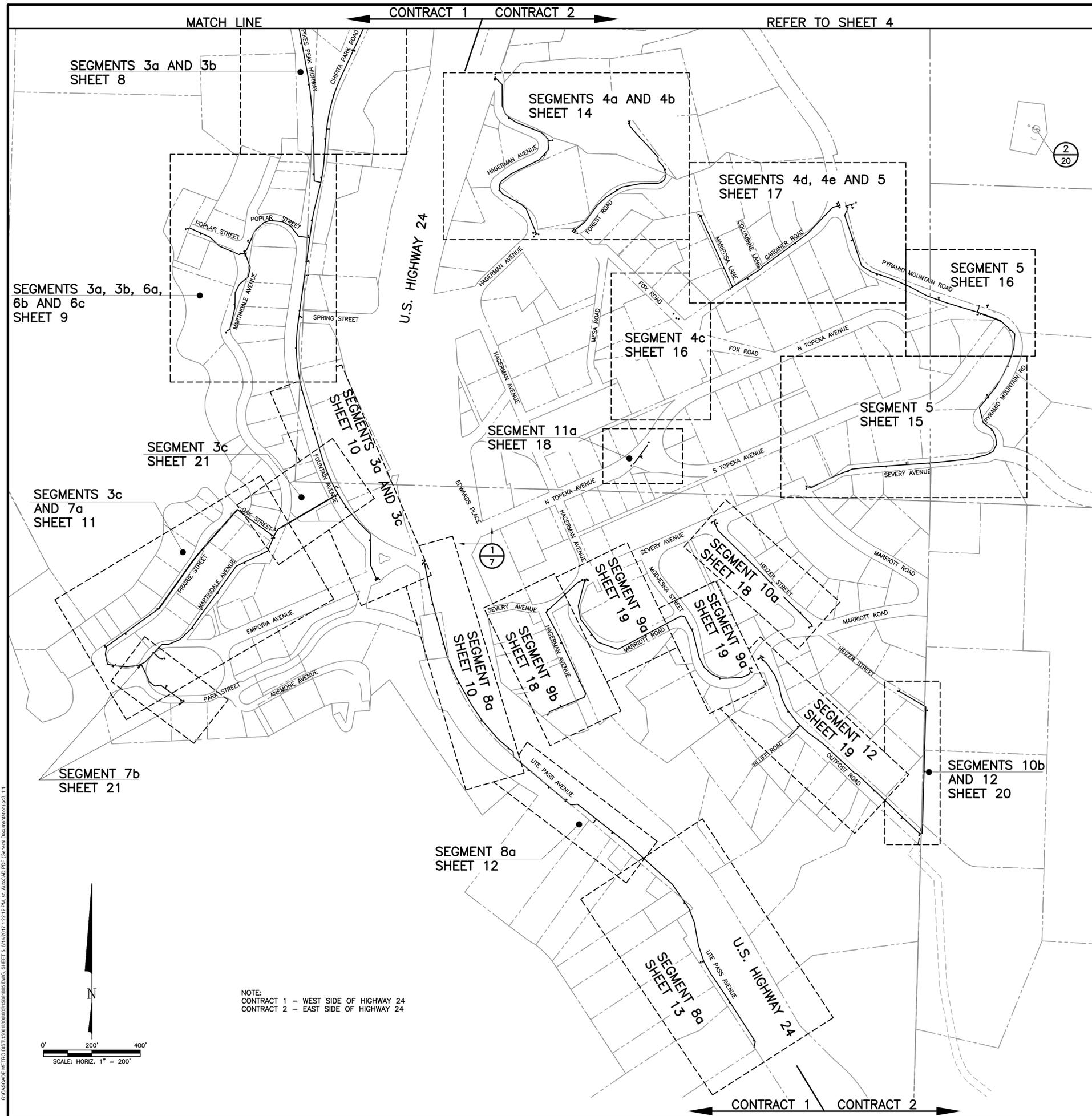
DRAWN: KIW  
DESIGNED: KIW  
CHECKED: EDM  
DATE: FEBRUARY 2017  
PROJECT NO.: 15061.300  
GMS FILE NO.: 2810

**SHEET INDEX MAP 1**  
WATER SYSTEM IMPROVEMENTS  
CASCADE METROPOLITAN DISTRICT NO. 1

**GMS, INC.**  
CONSULTING ENGINEERS  
611 N. WEBER, SUITE 300  
COLORADO SPRINGS, COLORADO 80903

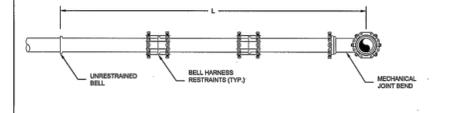
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**4**  
OF  
**30**

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PRESSURE ZONE MAP TO BE USED FOR JOINT RESTRAINT DISTANCE REQUIREMENTS PER CSU TABLE BELOW

PIPE DIAMETER	L = MINIMUM RESTRAINED PIPE LENGTH (FEET)												
	4" BEND				20-42" BEND				15-18" BEND				
MIN. STATIC PRESSURE (PSI)	100	150	200	250	300	350	400	450	500	550	600	650	700
6 INCH	6	9	12	3	5	6	2	3	3	4	4	7	9
8 INCH	8	12	16	4	6	8	2	3	4	4	6	8	10
12 INCH	12	17	23	6	8	11	3	4	5	6	8	10	13
16 INCH	15	22	29	7	11	14	4	5	6	7	8	10	13
20 INCH	18	26	35	8	13	17	4	6	8	9	10	12	15
24 INCH	20	30	40	10	15	20	5	7	10	11	12	14	17
30 INCH	24	35	48	12	18	24	6	9	12	13	14	16	20
36 INCH	28	42	56	14	22	27	7	10	14	15	16	18	23



- NOTES:
- PRESSURE GREATER THAN 200 PSI REQUIRE SPECIAL DESIGN APPROVED BY SPRINGS UTILITIES, APPROVED BY COLORADO SPRINGS UTILITIES.
  - LENGTH IS BASED ON MINIMUM FEET OF BELL END COVER AND BELL COMPARED ACCORDING TO CHAPTER 6 OF THESE WATER LINES. IF THE DEPTH IS LESS THAN 4 FEET RESTRAINED LENGTH MUST BE DESIGNED BY THE DESIGN ENGINEER.
  - APPROVED METHOD OF RESTRAINED PIPE BEYOND INITIAL FITTING SHALL BE IN ACCORDANCE WITH CHAPTER 6.
  - RESTRAINED PIPE LENGTH APPLIES TO CONDITIONS WHERE NO CONCRETE TRAP/REACTOR BLOCK IS PRESENT.
  - CALCULATIONS ARE BASED ON A POOLY SAND, GRAVEL, AND GRAVEL SAND MIXTURE, LITTLE OR NO FINES, TYPE 4 BEDDING CONDITIONS. \*PIPE BEDDED IN SAND, GRAVEL OR CRUSHED STONE TO A DEPTH OF 18 PIPE DIAMETER (IF MIN.) FACTOR OF SAFETY 2.1.
  - FIGURES ARE BASED ON 100% MINIMUM IN PLACE TYPICAL MATERIAL.
  - MEASUREMENTS ARE IN FEET.
  - USE CSU FOR COIN TURNING BENDS.
  - RESTRAINED LENGTH FOR DEAD END MAY BE USED AT THE DISCRETION OF COLORADO SPRINGS UTILITIES.

NOTE: FOR 6" AND 8" FITTINGS WITHIN PRESSURE ZONE 200-215 PSI, ADD TO THE 150-200 PSI TABLE DISTANCE 2 FEET RESTRAINED LENGTH FOR BENDS AND 10 FEET FOR DEAD END, PLUG OR LINE VALVE.

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 PLOT STYLE FILE: 15055.CTb  
 FILENAME: G:\CASCADE METRO DIST\15061\300\005\15061005.DWG

NOTE:  
 CONTRACT 1 - WEST SIDE OF HIGHWAY 24  
 CONTRACT 2 - EAST SIDE OF HIGHWAY 24

**SHEET INDEX MAP 2 AND PRESSURE ZONE MAP**  
 WATER SYSTEM IMPROVEMENTS  
 CASCADE METROPOLITAN DISTRICT NO. 1

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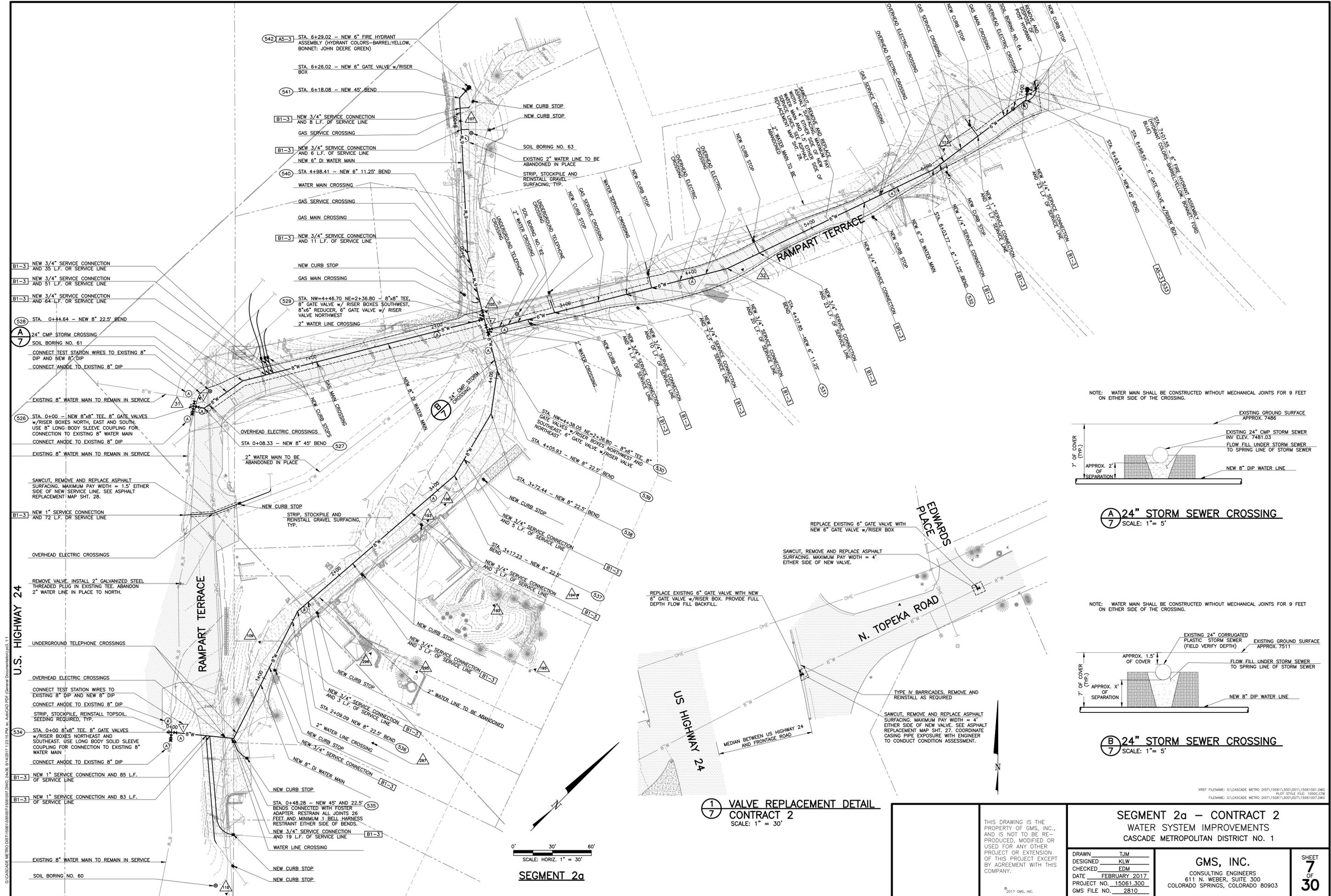
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 DATE: FEBRUARY 2017  
 PROJECT NO.: 15061.300  
 GMS FILE NO.: 2810

**GMS, INC.**  
 CONSULTING ENGINEERS  
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 COLORADO SPRINGS, COLORADO 80903

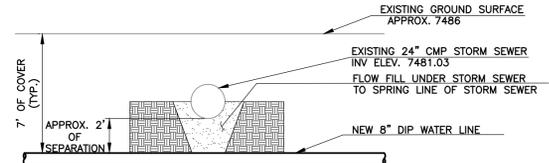
SHEET **5** OF **30**

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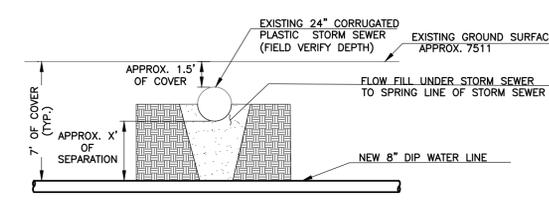


NOTE: WATER MAIN SHALL BE CONSTRUCTED WITHOUT MECHANICAL JOINTS FOR 9 FEET ON EITHER SIDE OF THE CROSSING.



**(A) 24" STORM SEWER CROSSING**  
SCALE: 1" = 5'

NOTE: WATER MAIN SHALL BE CONSTRUCTED WITHOUT MECHANICAL JOINTS FOR 9 FEET ON EITHER SIDE OF THE CROSSING.



**(B) 24" STORM SEWER CROSSING**  
SCALE: 1" = 5'

**(1) VALVE REPLACEMENT DETAIL**  
CONTRACT 2  
SCALE: 1" = 30'

**SEGMENT 2a**  
SCALE: HORIZ. 1" = 30'

U.S. HIGHWAY 24

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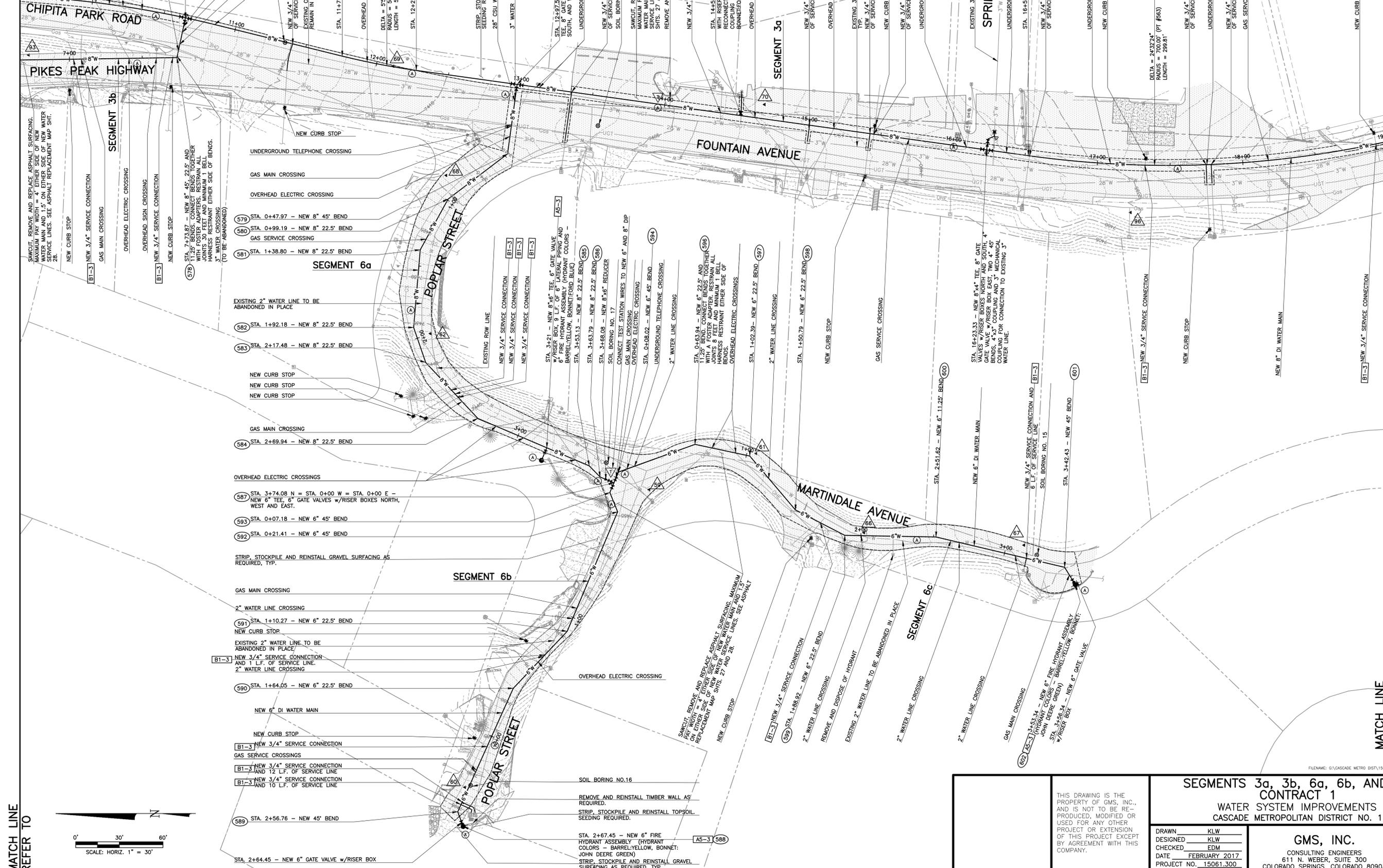
**SEGMENT 2a - CONTRACT 2**  
WATER SYSTEM IMPROVEMENTS  
CASCADE METROPOLITAN DISTRICT NO. 1

**GMS, INC.**  
CONSULTING ENGINEERS  
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COLORADO SPRINGS, COLORADO 80903

SHEET  
**7**  
OF  
**30**

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MATCH LINE REFER TO

MATCH LINE REFER TO

SEGMENTS 3a, 3b, 6a, 6b, AND 6c  
CONTRACT 1  
WATER SYSTEM IMPROVEMENTS  
CASCADE METROPOLITAN DISTRICT NO. 1

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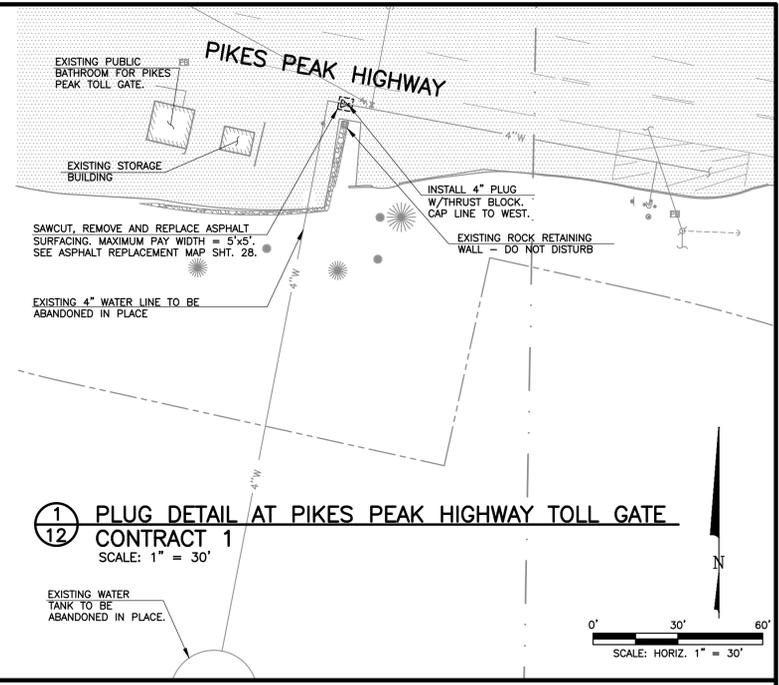
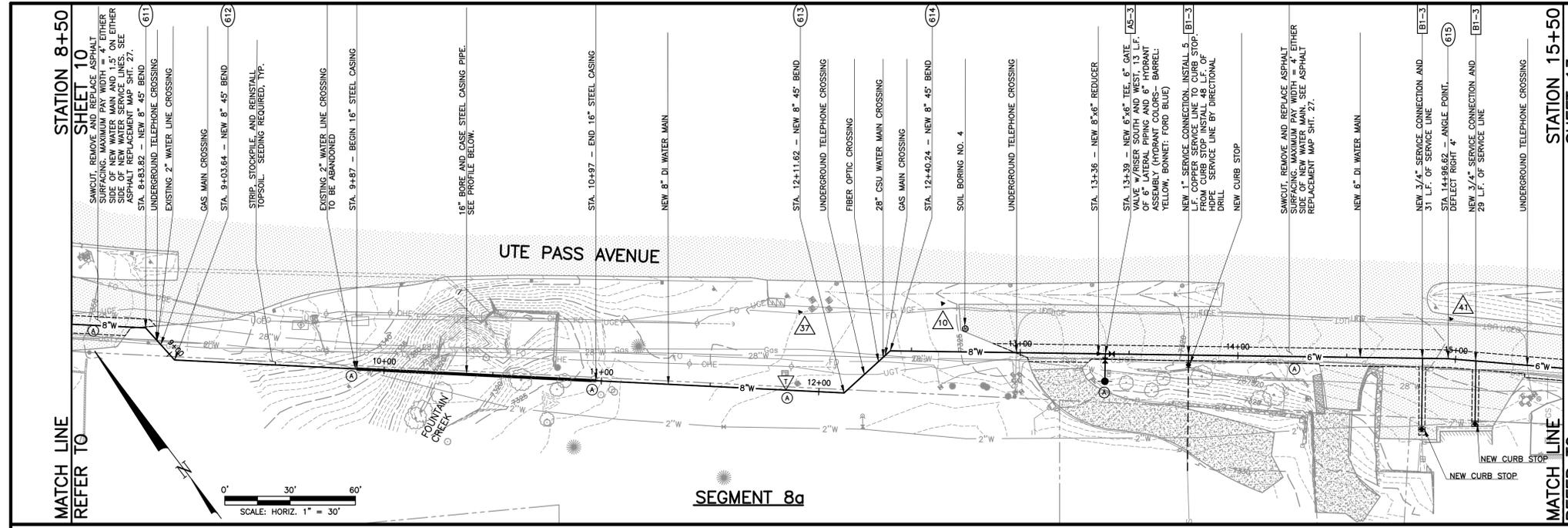
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PROJECT NO.: 15061.300  
GMS FILE NO.: 2810

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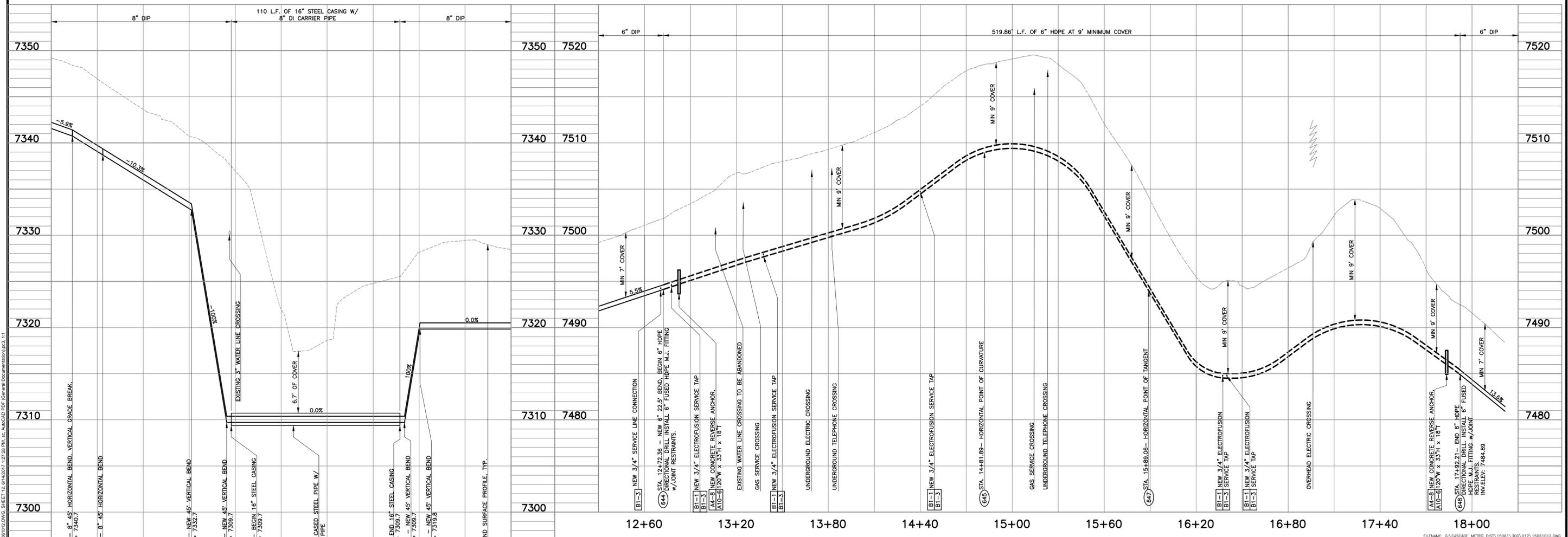
SHEET 9 OF 30







12 PLUG DETAIL AT PIKES PEAK HIGHWAY TOLL GATE  
 CONTRACT 1  
 SCALE: 1" = 30'

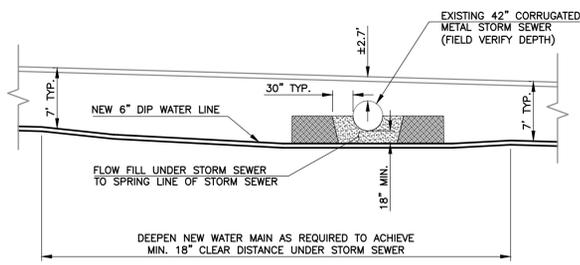
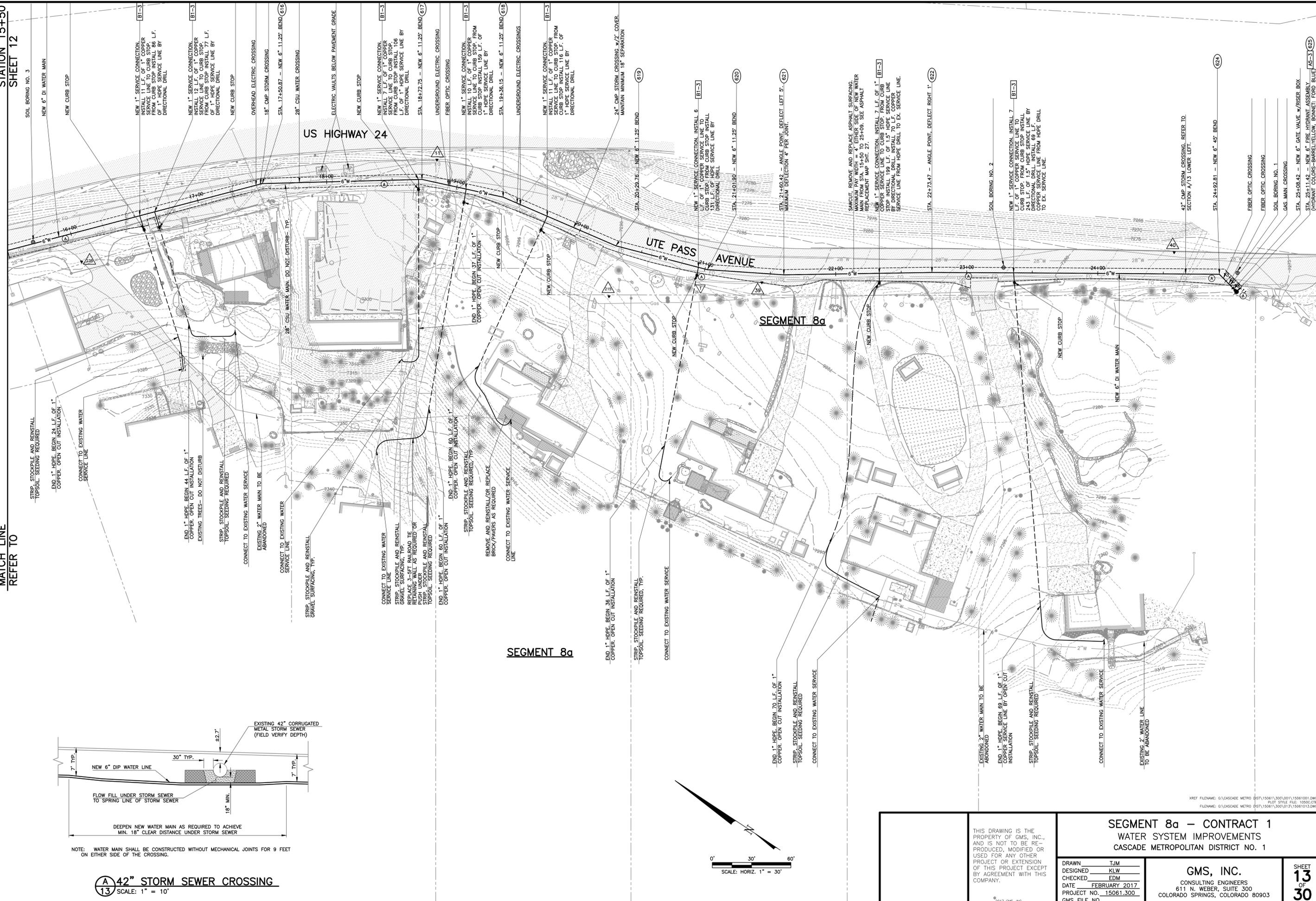


B PRAIRIE STREET PROFILE - SEGMENT 7a  
 12 SCALE: 1" = 30' HORIZ., 1" = 5' VERT.  
 REFER TO SHEET 11

A PROFILE - SEGMENT 8a  
 12 SCALE: 1" = 30' HORIZ., 1" = 5' VERT.

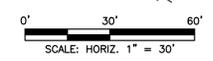
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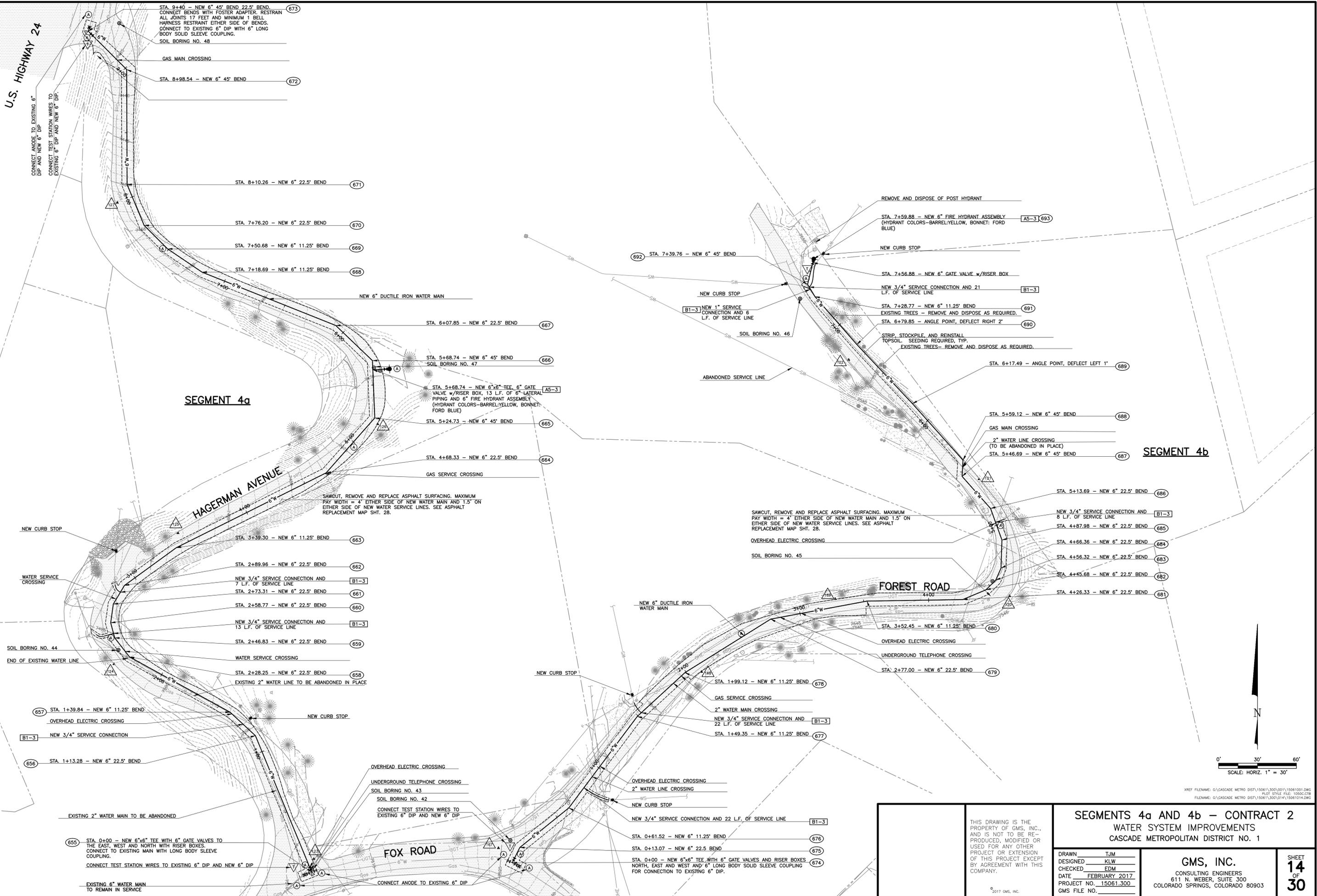
NOTE: WATER MAIN SHALL BE CONSTRUCTED WITHOUT MECHANICAL JOINTS FOR 9 FEET ON EITHER SIDE OF THE CROSSING.

**A 42" STORM SEWER CROSSING**  
SCALE: 1" = 10'



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DRAWN: <u>TJM</u> DESIGNED: <u>KLW</u> CHECKED: <u>EDM</u> DATE: <u>FEBRUARY 2017</u> PROJECT NO.: <u>15061.300</u> GMS FILE NO.: _____	<b>GMS, INC.</b> CONSULTING ENGINEERS 611 N. WEBER, SUITE 300 COLORADO SPRINGS, COLORADO 80903		SHEET <b>13</b> OF <b>30</b>

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**SEGMENT 4a**

**SEGMENT 4b**

STA. 9+40 - NEW 6" 45' BEND 22.5' BEND.  
 CONNECT BENDS WITH FOSTER ADAPTER. RESTRAIN ALL JOINTS 17 FEET AND MINIMUM 1 BELL HARNESS RESTRAINT EITHER SIDE OF BENDS. CONNECT TO EXISTING 6" DIP WITH 6" LONG BODY SOLID SLEEVE COUPLING.  
 SOIL BORING NO. 48

GAS MAIN CROSSING  
 STA. 8+98.54 - NEW 6" 45' BEND

STA. 8+10.26 - NEW 6" 22.5' BEND

STA. 7+76.20 - NEW 6" 22.5' BEND

STA. 7+50.68 - NEW 6" 11.25' BEND

STA. 7+18.69 - NEW 6" 11.25' BEND

NEW 6" DUCTILE IRON WATER MAIN

STA. 6+07.85 - NEW 6" 22.5' BEND

STA. 5+68.74 - NEW 6" 45' BEND  
 SOIL BORING NO. 47

STA. 5+68.74 - NEW 6"x6" TEE, 6" GATE VALVE w/ RISER BOX, 13 L.F. OF 6" LATERAL PIPING AND 6" FIRE HYDRANT ASSEMBLY (HYDRANT COLORS-BARREL:YELLOW, BONNET: FORD BLUE)

STA. 5+24.73 - NEW 6" 45' BEND

STA. 4+68.33 - NEW 6" 22.5' BEND

GAS SERVICE CROSSING

SAWCUT, REMOVE AND REPLACE ASPHALT SURFACING. MAXIMUM PAY WIDTH = 4' EITHER SIDE OF NEW WATER MAIN AND 1.5' ON EITHER SIDE OF NEW WATER SERVICE LINES. SEE ASPHALT REPLACEMENT MAP SHT. 28.

STA. 3+39.30 - NEW 6" 11.25' BEND

STA. 2+89.96 - NEW 6" 22.5' BEND

NEW 3/4" SERVICE CONNECTION AND 7 L.F. OF SERVICE LINE

STA. 2+73.31 - NEW 6" 22.5' BEND

STA. 2+58.77 - NEW 6" 22.5' BEND

NEW 3/4" SERVICE CONNECTION AND 13 L.F. OF SERVICE LINE

STA. 2+46.83 - NEW 6" 22.5' BEND

WATER SERVICE CROSSING

STA. 2+28.25 - NEW 6" 22.5' BEND

EXISTING 2" WATER LINE TO BE ABANDONED IN PLACE

STA. 1+39.84 - NEW 6" 11.25' BEND

OVERHEAD ELECTRIC CROSSING

NEW 3/4" SERVICE CONNECTION

STA. 1+13.28 - NEW 6" 22.5' BEND

OVERHEAD ELECTRIC CROSSING

UNDERGROUND TELEPHONE CROSSING

SOIL BORING NO. 43

SOIL BORING NO. 42

CONNECT TEST STATION WIRES TO EXISTING 6" DIP AND NEW 6" DIP

CONNECT ANODE TO EXISTING 6" DIP

EXISTING 6" WATER MAIN TO REMAIN IN SERVICE

REMOVE AND DISPOSE OF POST HYDRANT

STA. 7+58.88 - NEW 6" FIRE HYDRANT ASSEMBLY (HYDRANT COLORS-BARREL:YELLOW, BONNET: FORD BLUE)

NEW CURB STOP

STA. 7+56.88 - NEW 6" GATE VALVE w/ RISER BOX

NEW 3/4" SERVICE CONNECTION AND 21 L.F. OF SERVICE LINE

STA. 7+28.77 - NEW 6" 11.25' BEND

EXISTING TREES - REMOVE AND DISPOSE AS REQUIRED.

STA. 6+79.85 - ANGLE POINT, DEFLECT RIGHT 2'

STRIP, STOCKPILE, AND REINSTALL TOPSOIL. SEEDING REQUIRED, TYP. EXISTING TREES - REMOVE AND DISPOSE AS REQUIRED.

STA. 6+17.49 - ANGLE POINT, DEFLECT LEFT 1'

STA. 5+59.12 - NEW 6" 45' BEND

GAS MAIN CROSSING

2" WATER LINE CROSSING (TO BE ABANDONED IN PLACE)

STA. 5+46.69 - NEW 6" 45' BEND

STA. 5+13.69 - NEW 6" 22.5' BEND

NEW 3/4" SERVICE CONNECTION AND 8 L.F. OF SERVICE LINE

STA. 4+87.98 - NEW 6" 22.5' BEND

STA. 4+66.36 - NEW 6" 22.5' BEND

STA. 4+56.32 - NEW 6" 22.5' BEND

STA. 4+45.68 - NEW 6" 22.5' BEND

STA. 4+26.33 - NEW 6" 22.5' BEND

SAWCUT, REMOVE AND REPLACE ASPHALT SURFACING. MAXIMUM PAY WIDTH = 4' EITHER SIDE OF NEW WATER MAIN AND 1.5' ON EITHER SIDE OF NEW WATER SERVICE LINES. SEE ASPHALT REPLACEMENT MAP SHT. 28.

OVERHEAD ELECTRIC CROSSING

SOIL BORING NO. 45

FOREST ROAD

STA. 3+52.45 - NEW 6" 11.25' BEND

OVERHEAD ELECTRIC CROSSING

UNDERGROUND TELEPHONE CROSSING

STA. 2+77.00 - NEW 6" 22.5' BEND

NEW 6" DUCTILE IRON WATER MAIN

NEW CURB STOP

STA. 1+99.12 - NEW 6" 11.25' BEND

GAS SERVICE CROSSING

2" WATER MAIN CROSSING

NEW 3/4" SERVICE CONNECTION AND 22 L.F. OF SERVICE LINE

STA. 1+49.35 - NEW 6" 11.25' BEND

OVERHEAD ELECTRIC CROSSING

2" WATER LINE CROSSING

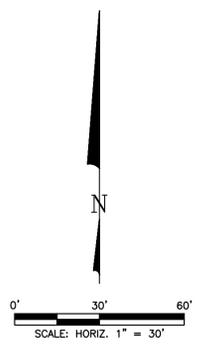
NEW CURB STOP

NEW 3/4" SERVICE CONNECTION AND 22 L.F. OF SERVICE LINE

STA. 0+61.52 - NEW 6" 11.25' BEND

STA. 0+13.07 - NEW 6" 22.5' BEND

STA. 0+00 - NEW 6"x6" TEE WITH 6" GATE VALVES AND RISER BOXES NORTH, EAST AND WEST AND 6" LONG BODY SOLID SLEEVE COUPLING FOR CONNECTION TO EXISTING 6" DIP.



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**SEGMENTS 4a AND 4b - CONTRACT 2**  
**WATER SYSTEM IMPROVEMENTS**  
**CASCADE METROPOLITAN DISTRICT NO. 1**

DRAWN: TJM  
 DESIGNED: KLV  
 CHECKED: EDM  
 DATE: FEBRUARY 2017  
 PROJECT NO.: 15061.300  
 GMS FILE NO.:

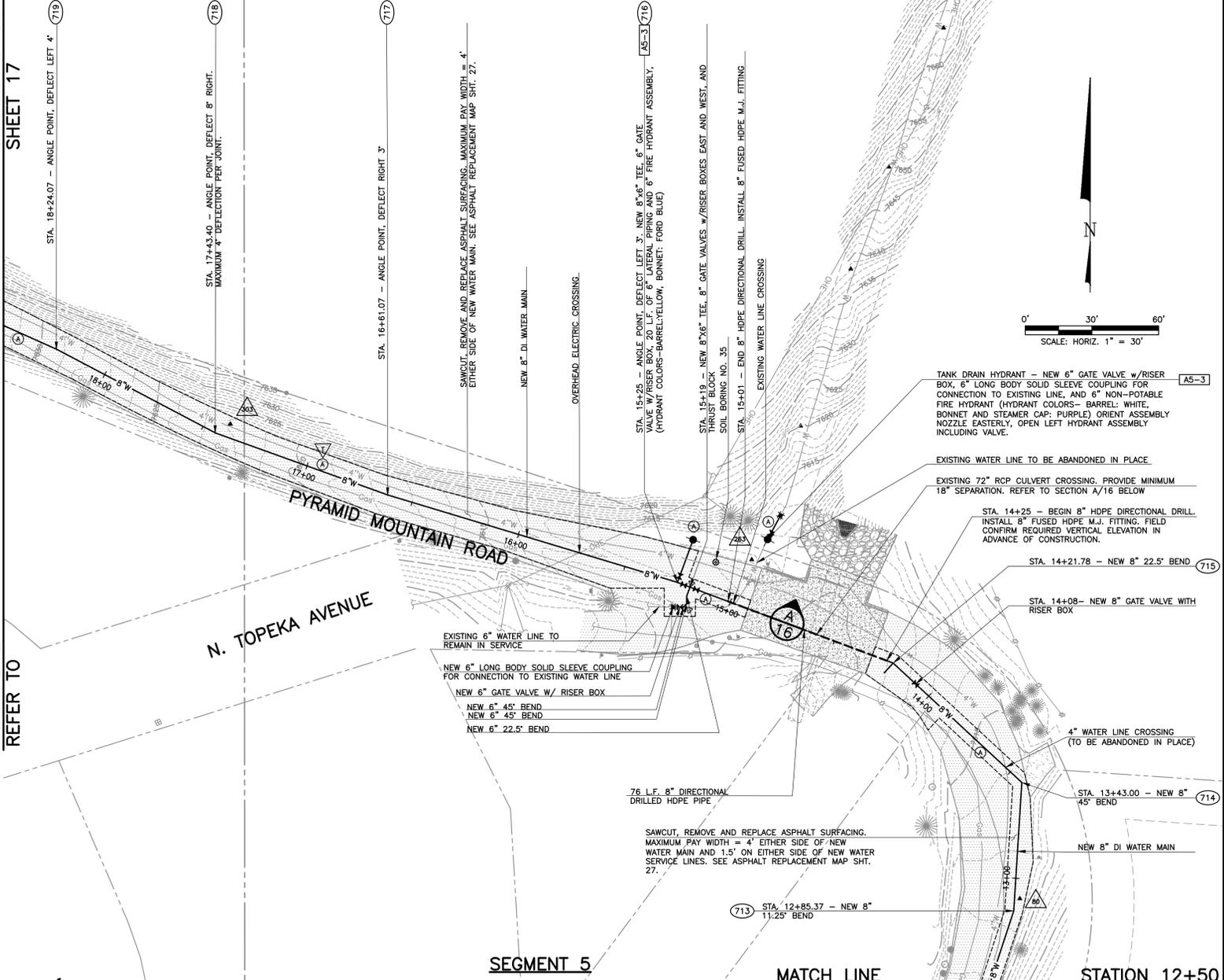
**GMS, INC.**  
 CONSULTING ENGINEERS  
 611 N. WEBER, SUITE 300  
 COLORADO SPRINGS, COLORADO 80903

SHEET **14** OF **30**

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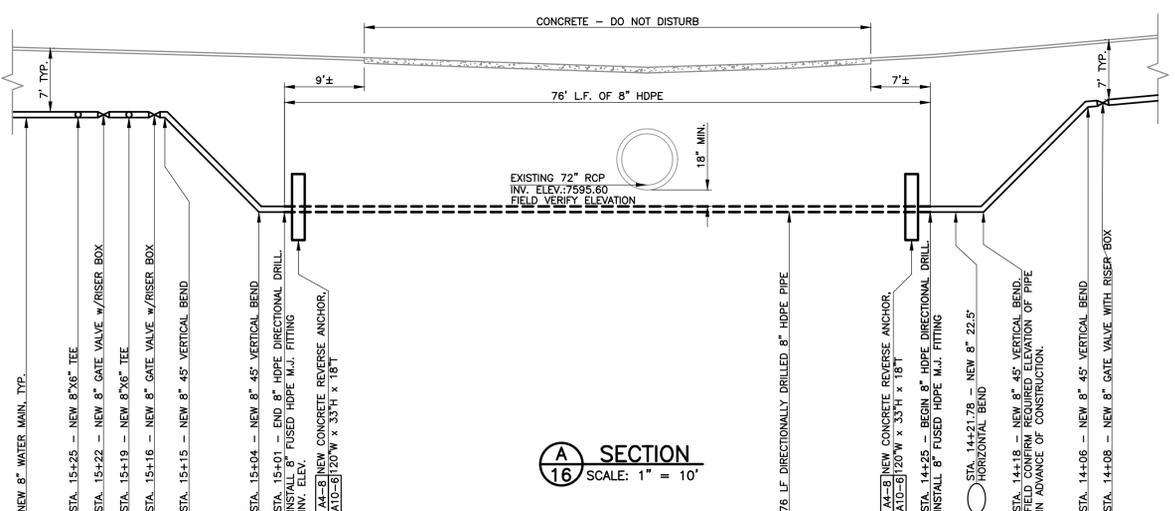
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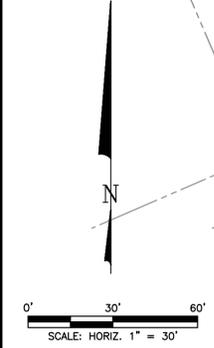
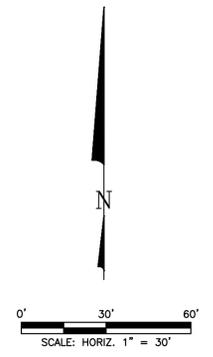
SEGMENT 5

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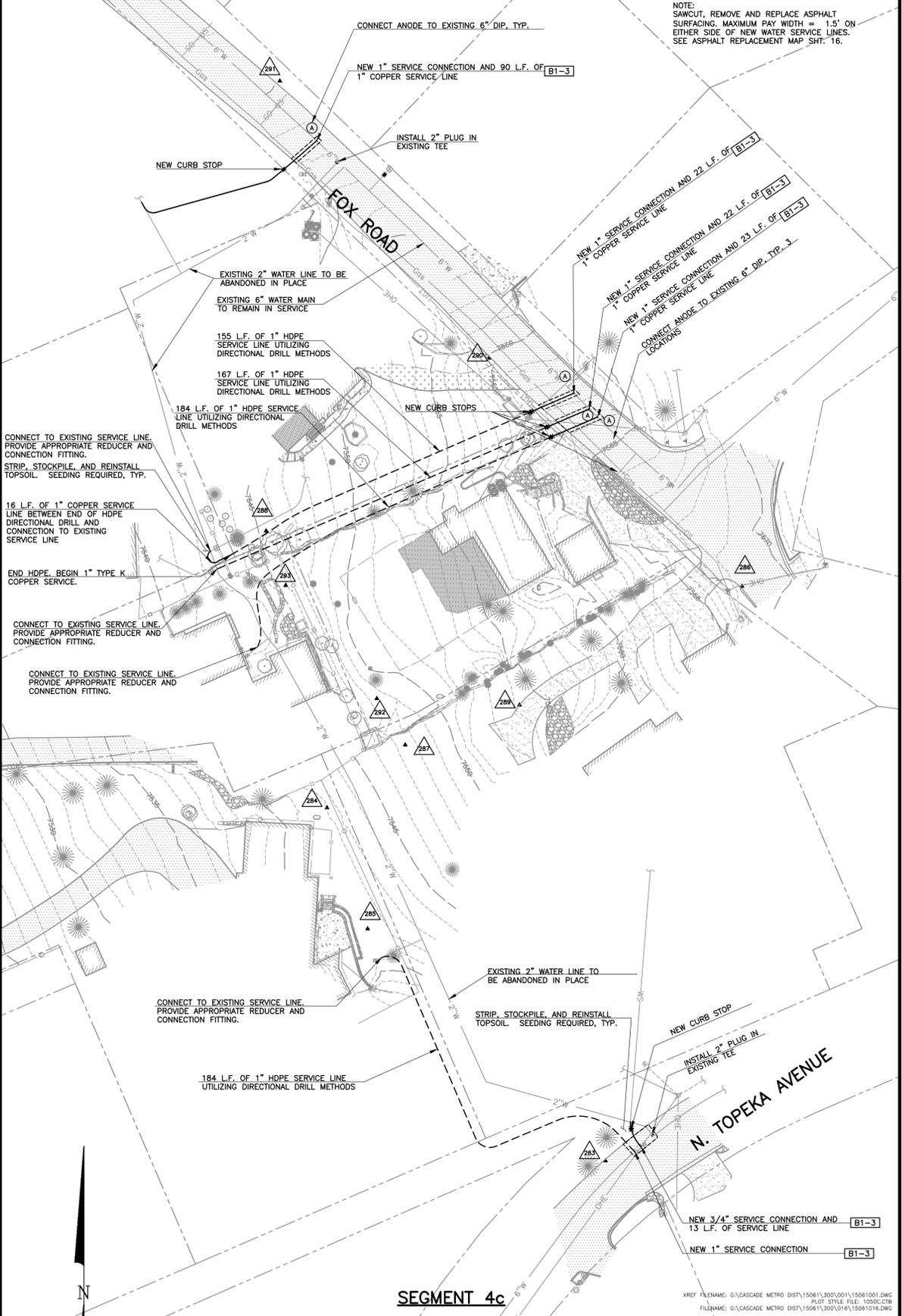
STATION 12+50  
SHEET 15



**A** SECTION  
SCALE: 1" = 10'



SEGMENT 4c

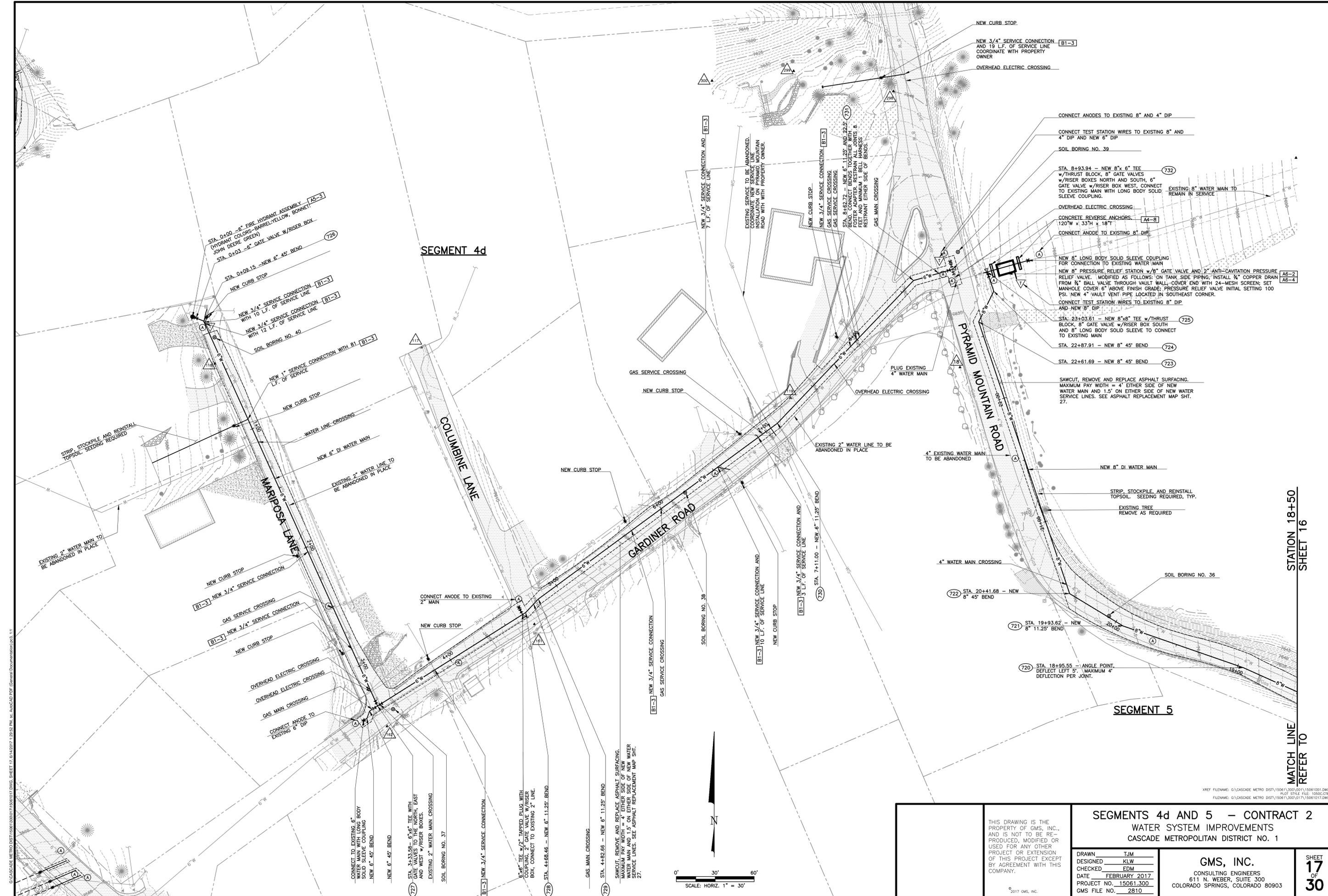


NOTE:  
SAWCUT, REMOVE AND REPLACE ASPHALT SURFACING. MAXIMUM PAY WIDTH = 1.5' ON EITHER SIDE OF NEW WATER SERVICE LINES. SEE ASPHALT REPLACEMENT MAP SHT. 16.

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**SEGMENTS 5 AND 4c- CONTRACT 2**  
WATER SYSTEM IMPROVEMENTS  
CASCADE METROPOLITAN DISTRICT NO. 1

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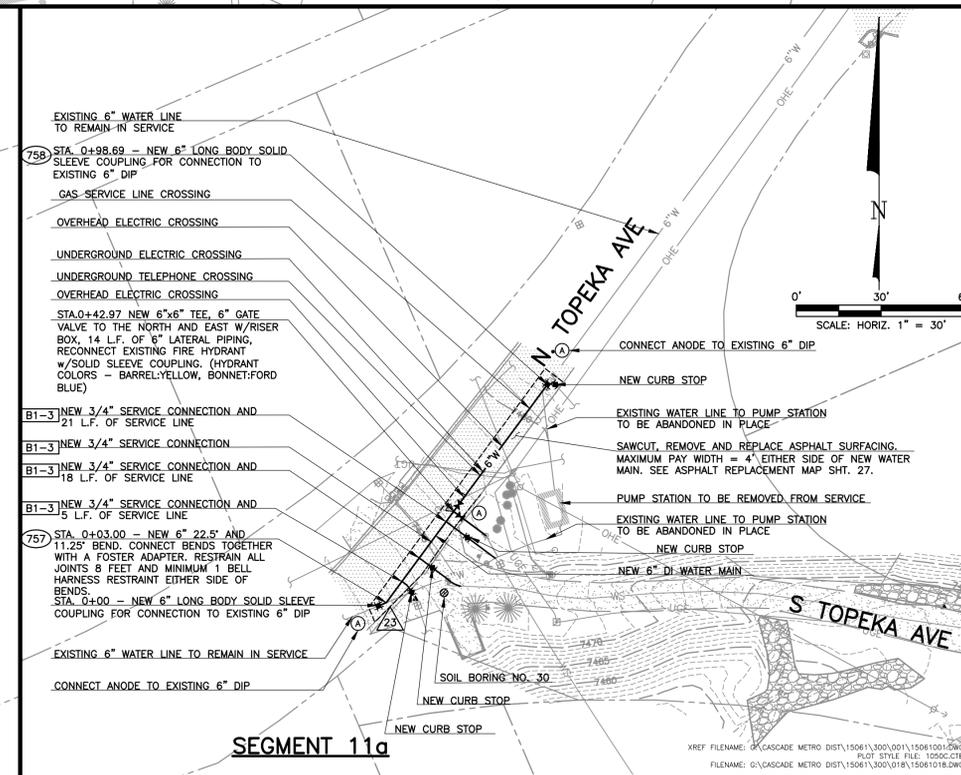
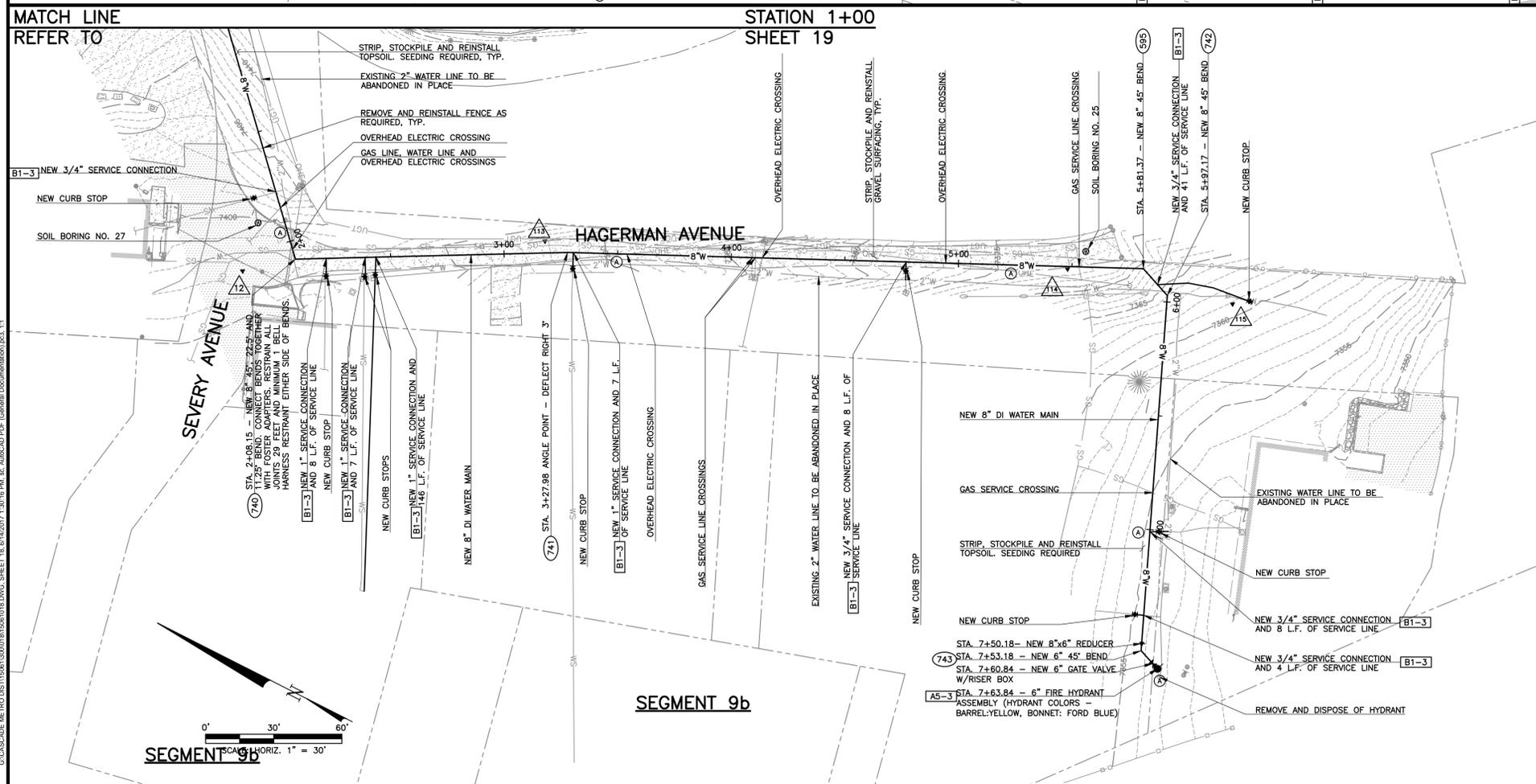
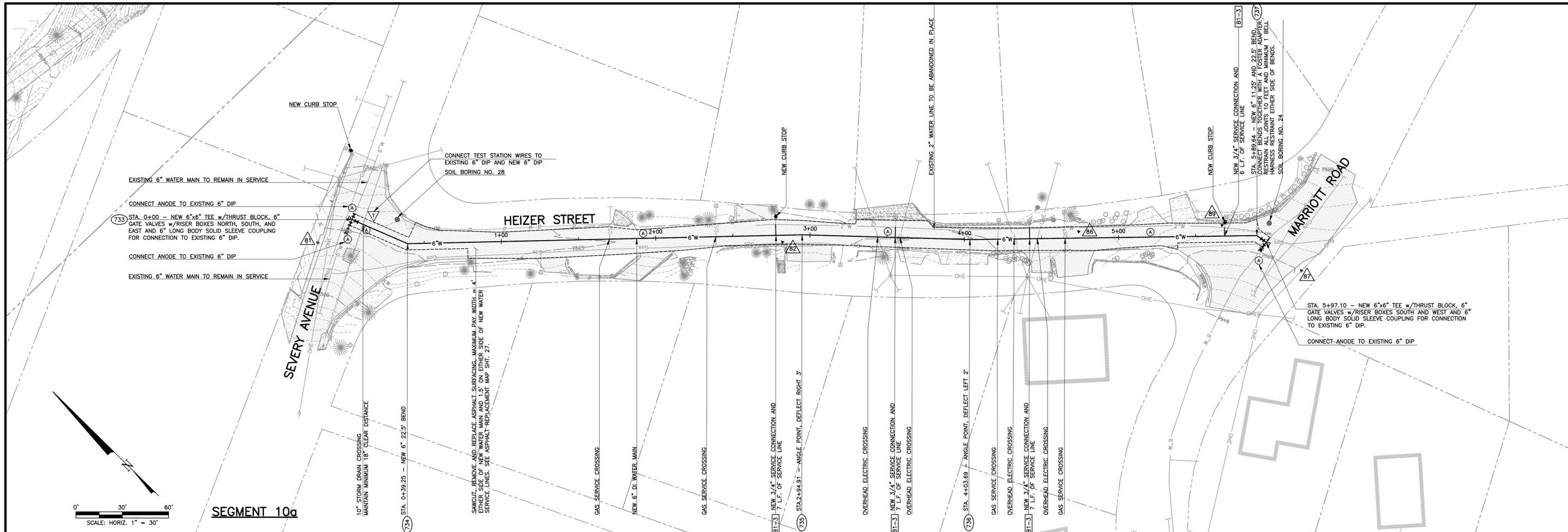
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STATION 18+50  
 SHEET 16  
 MATCH LINE  
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<b>SEGMENTS 4d AND 5 – CONTRACT 2</b> <b>WATER SYSTEM IMPROVEMENTS</b> <b>CASCADE METROPOLITAN DISTRICT NO. 1</b>	
DRAWN: TJM DESIGNED: KIW CHECKED: EDM DATE: FEBRUARY 2017 PROJECT NO.: 15061300 GMS FILE NO.: 2810	<b>GMS, INC.</b> CONSULTING ENGINEERS 611 N. WEBER, SUITE 300 COLORADO SPRINGS, COLORADO 80903
<b>SHEET 17 OF 30</b>	

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<p>DRAWN: DMK          DESIGNED: KLV          CHECKED: EDM          DATE: FEBRUARY 2017          PROJECT NO.: 15061_300          GMS FILE NO.: 2810</p>	<p><b>GMS, INC.</b>          CONSULTING ENGINEERS          611 N. WEBER, SUITE 300          COLORADO SPRINGS, COLORADO 80903</p>		

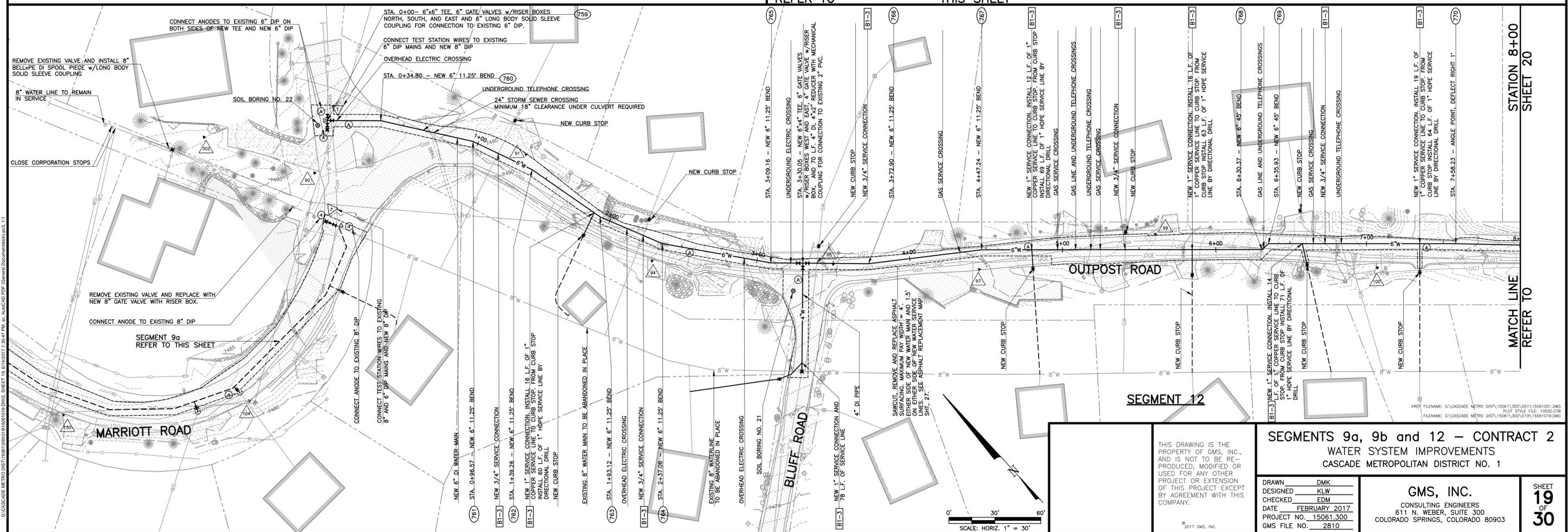
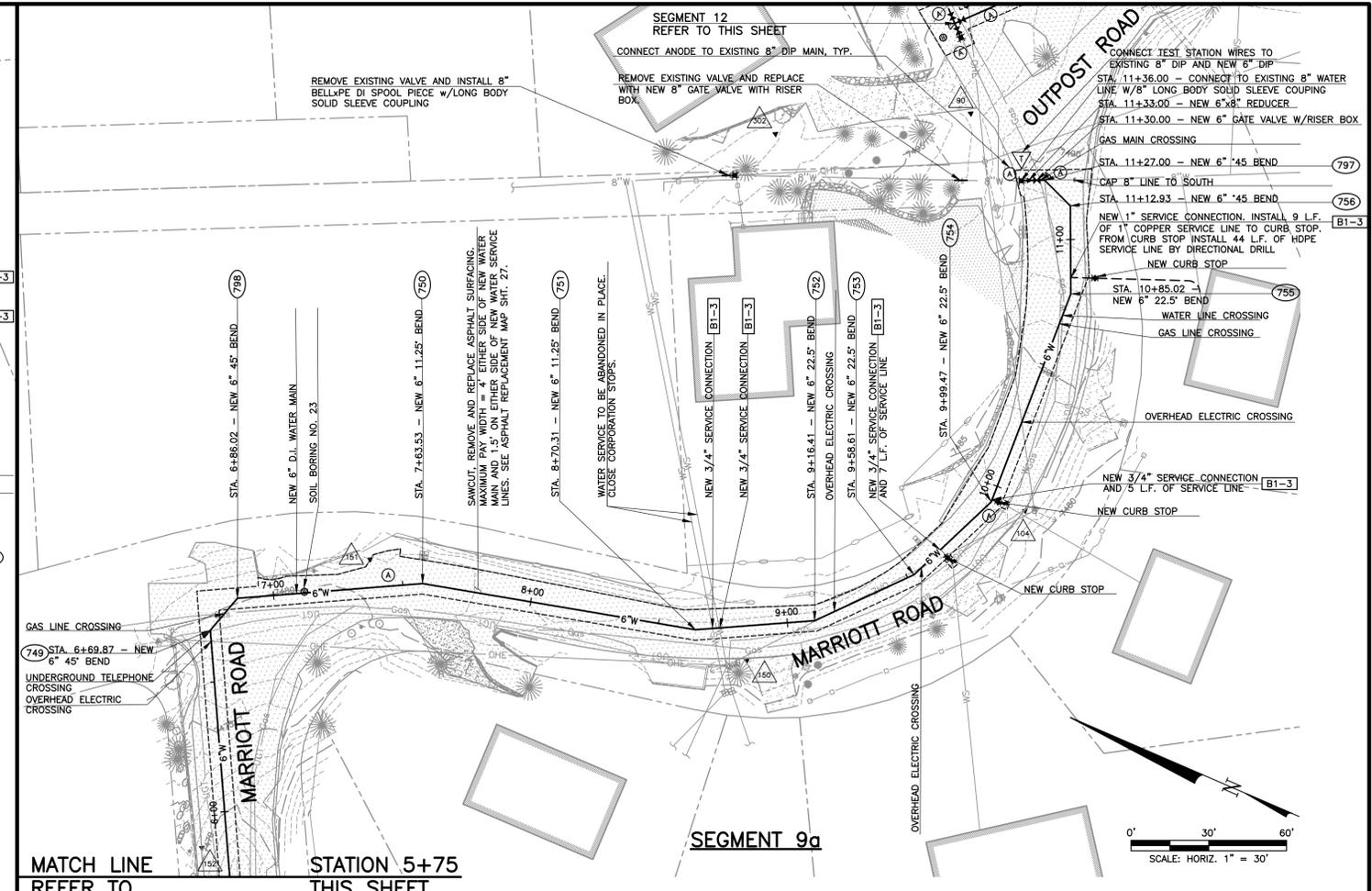
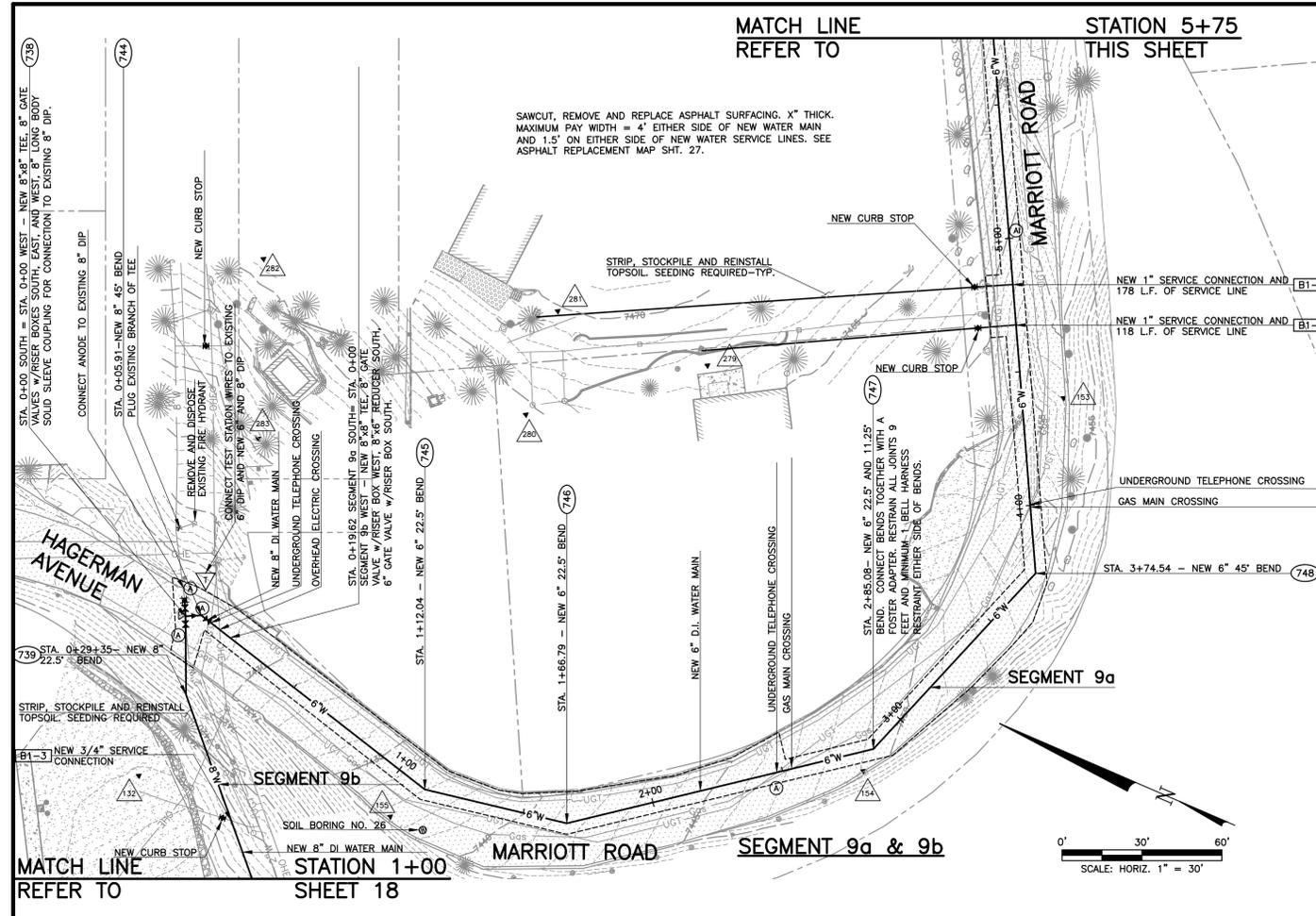
**SEGMENT 11a**

**SEGMENT 9b**

**SEGMENT 10a**

**STATION 1+00 SHEET 19**

**MATCH LINE REFER TO**



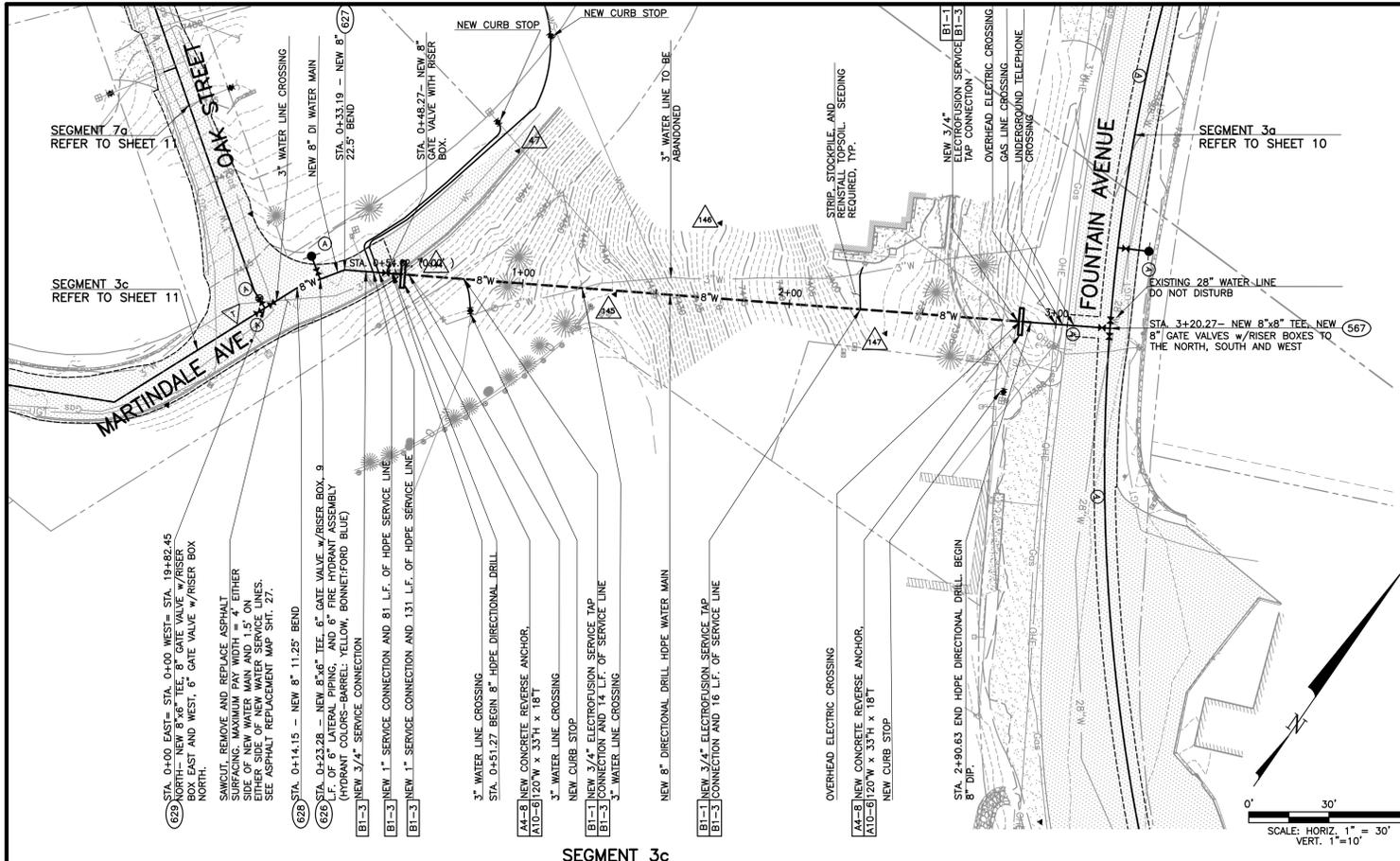
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<p>DRAWN: DMK          DESIGNED: KLV          CHECKED: EDM</p>	<p>DATE: FEBRUARY 2017          PROJECT NO.: 15061300          GMS FILE NO.: 2810</p>	<p><b>GMS, INC.</b>          CONSULTING ENGINEERS          611 N. WEBER, SUITE 300          COLORADO SPRINGS, COLORADO 80903</p>	

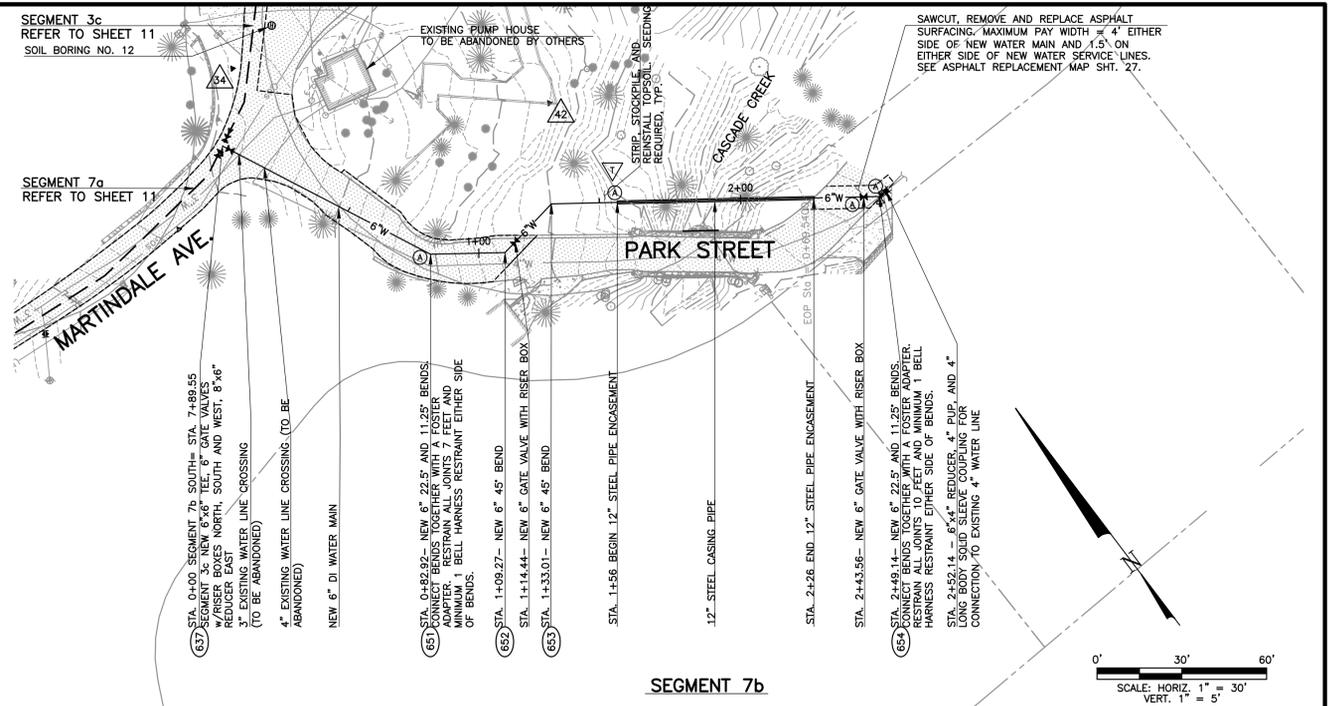
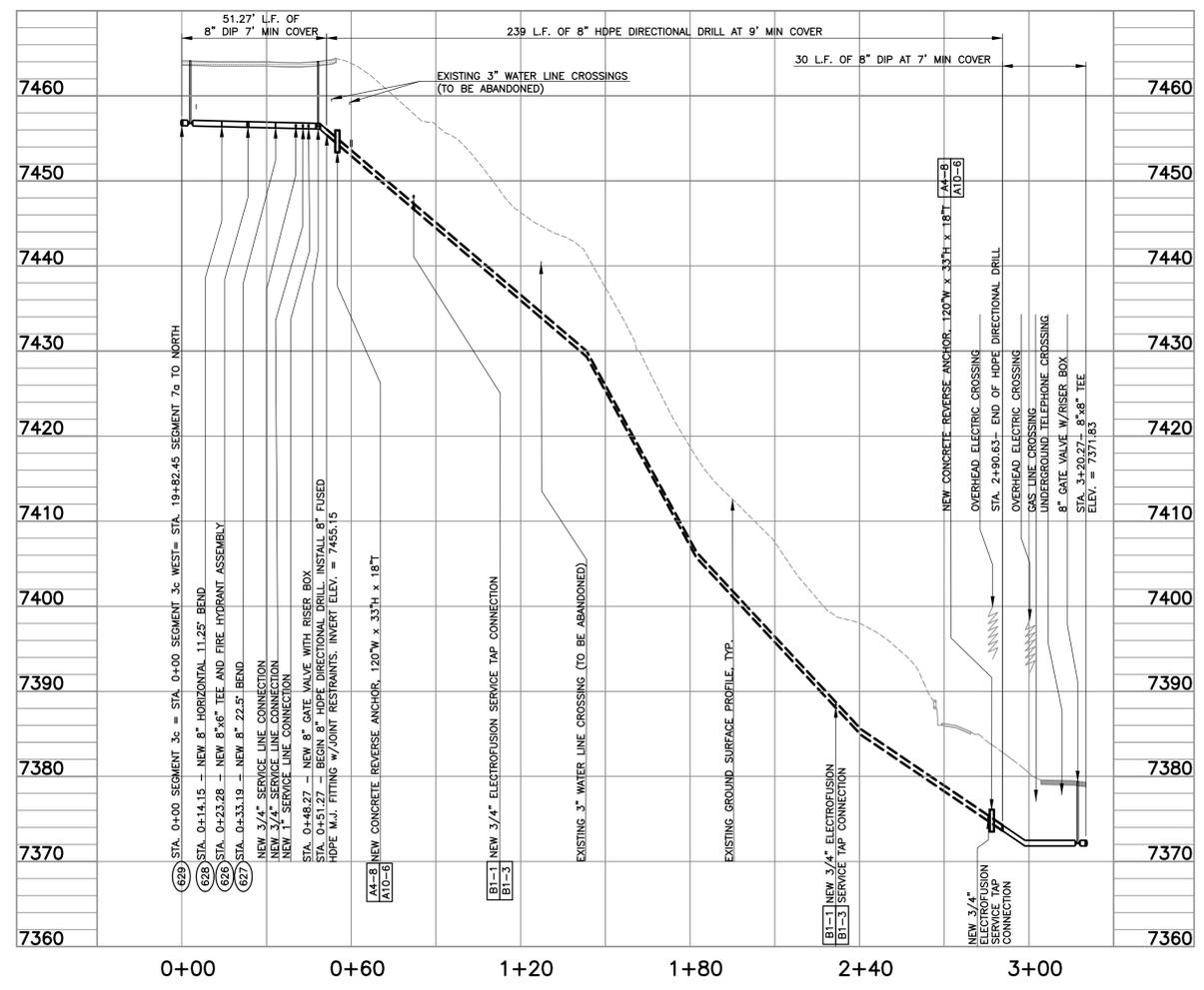
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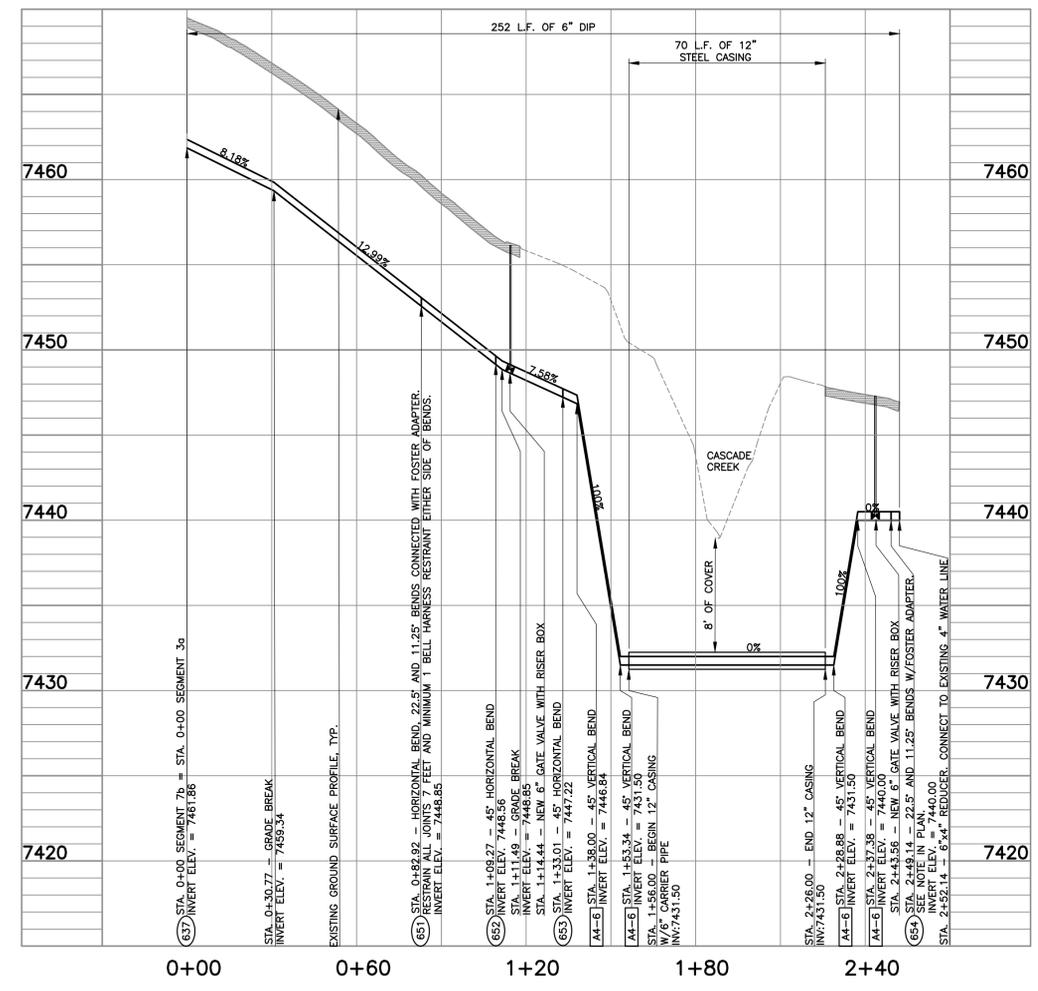
G:\CASCADE METRO DIST\15061300\DWG\SEGMENT 3c - WEST - STA. 19+82.45 SEGMENT 7b TO NORTH



SEGMENT 3c



SEGMENT 7b



**SEGMENTS 3c AND 7b - CONTRACT 1**  
**WATER SYSTEM IMPROVEMENTS**  
**CASCADE METROPOLITAN DISTRICT NO. 1**

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DRAWN: DMK  
 DESIGNED: KIW  
 CHECKED: EDM  
 DATE: FEBRUARY 2017  
 PROJECT NO.: 15061.300  
 GMS FILE NO.: 2810

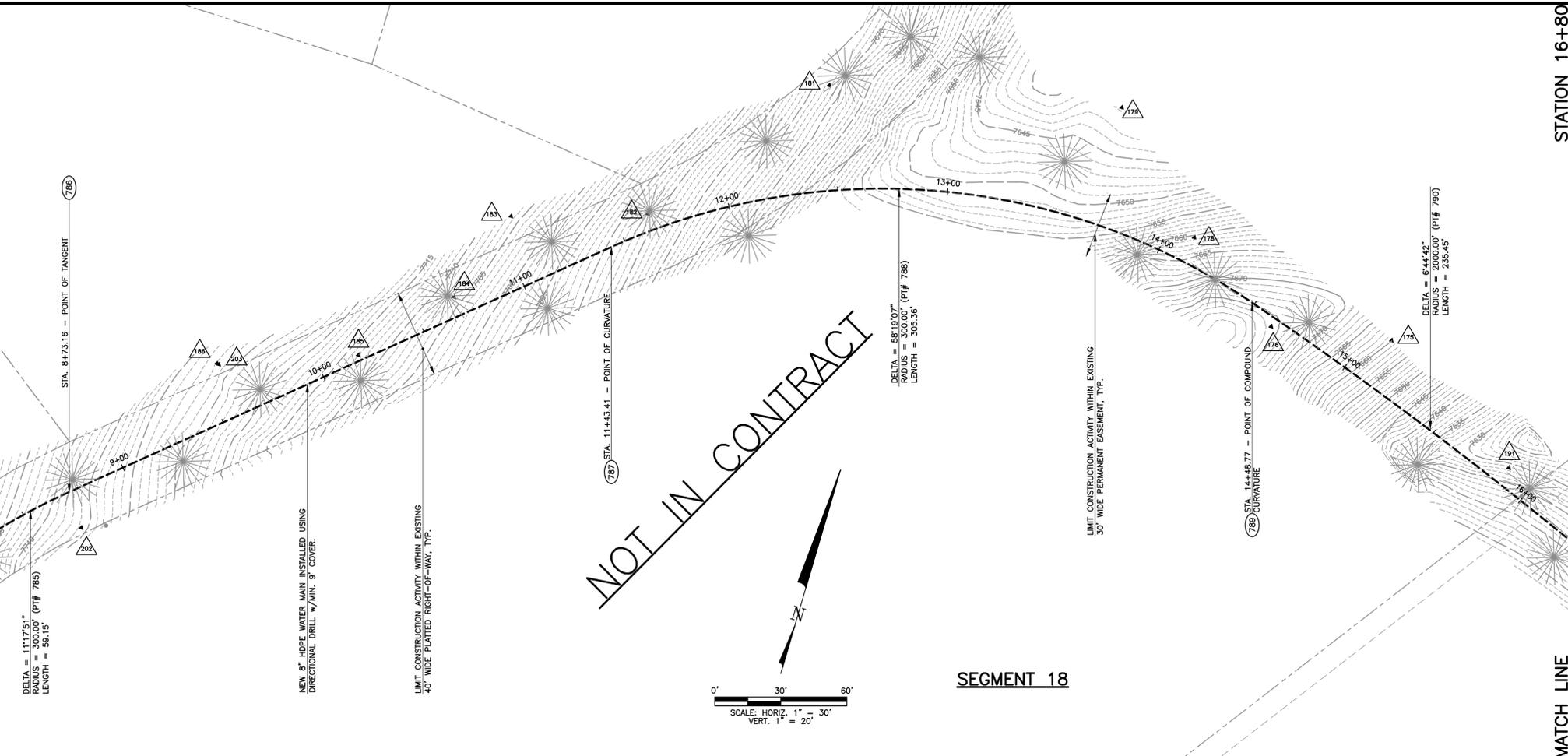
**GMS, INC.**  
 CONSULTING ENGINEERS  
 611 N. WEBER, SUITE 300  
 COLORADO SPRINGS, COLORADO 80903

SHEET  
**21**  
 OF  
**30**



STATION 8+40  
SHEET 22

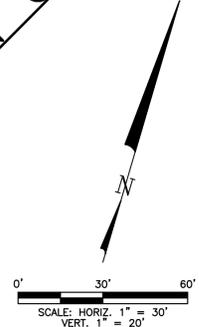
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REFER TO



STATION 16+80  
SHEET 24

MATCH LINE  
REFER TO

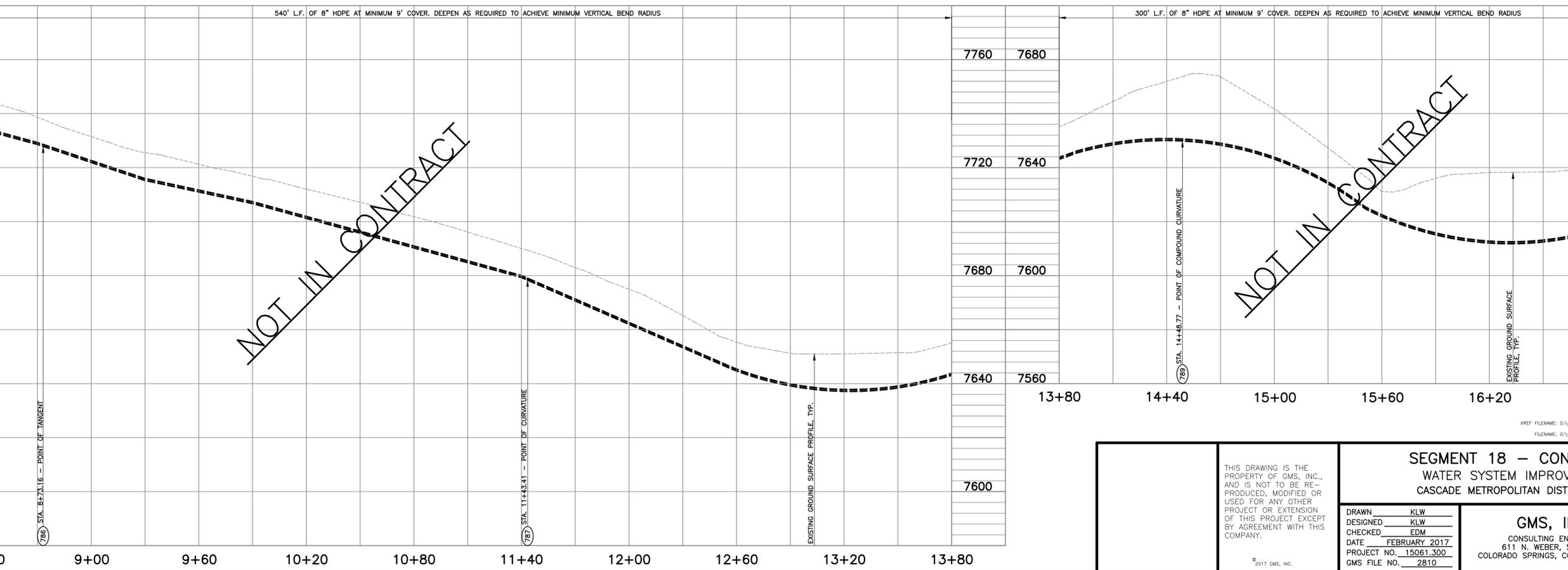
NOT IN CONTRACT



SEGMENT 18

STATION 8+40  
SHEET 22

MATCH LINE  
REFER TO



STATION 16+80  
SHEET 24

MATCH LINE  
REFER TO

NOT IN CONTRACT

NOT IN CONTRACT

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DRAWN: KIW  
DESIGNED: KIW  
CHECKED: EDM  
DATE: FEBRUARY 2017  
PROJECT NO.: 15061\_300  
GMS FILE NO.: 2810

SEGMENT 18 - CONTRACT 1  
WATER SYSTEM IMPROVEMENTS  
CASCADE METROPOLITAN DISTRICT NO. 1

GMS, INC.  
CONSULTING ENGINEERS  
611 N. WEBER, SUITE 300  
COLORADO SPRINGS, COLORADO 80903

SHEET  
23  
OF  
30

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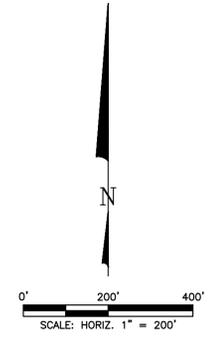
**LEGEND**

- OUTDOOR METER w/INSTALLATION OF NEW CURB STOP – CONTRACTOR TO VERIFY IF A CURB STOP EXISTS AND IS OPERATIONAL. IF NEITHER CASE IS VALIDATED, INSTALL NEW 1" OR 3/4" CURB STOP AS DIRECTED BY ENGINEER PER CSU STANDARD B1-3 IN LOCATION DIRECTED BY OWNER/ENGINEER.  
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**WATER SERVICE DATA MINIMUM REQUIRED IMPROVEMENTS**

1. SERVICE DATA CARDS:
  - A. ALL ADDRESSES SERVED BY THE CASCADE METROPOLITAN DISTRICT NO. 1 (CMD) WATER SYSTEM MUST HAVE A COMPLETED SERVICE LINE CARD BY THE CONTRACTOR. THE SERVICE LINE CARD SHALL PROVIDE THE METER PIT LOCATION, CURB STOP LOCATION, SERVICE LINE SIZE AND TYPE AND A SMALL MAP WITH ALL AVAILABLE DIMENSIONS. AN EXAMPLE SERVICE LINE CARD IS INCLUDED IN THE SPECIFICATIONS.
  - B. FOR ALL OUTSIDE METER PIT ASSEMBLIES, THE CONTRACTOR SHALL COMPIL AND SUBMIT TO THE ENGINEER THE OUTSIDE METER PIT ASSEMBLY DATA INFORMATION SHEET.
  - C. FOR ALL INSIDE METER INSTALLATIONS, THE CONTRACTOR SHALL COMPIL AND SUBMIT TO THE ENGINEER THE INSIDE METER DATA INFORMATION SHEET.
  - D. THE COST OF COMPIING THE REQUIRED METER DATA WILL BE PAID FOR AT THE UNIT PRICE ESTABLISHED ON THE BID FORM.
2. CURB STOPS:
 

THE CONTRACTOR SHALL LOCATE CURB STOPS FOR ALL SERVICE LINES. IF A CURB STOP DOES NOT EXIST, THE CONTRACTOR SHALL INSTALL ONE FOR THAT SERVICE LINE. ALL CURB STOPS MUST BE OPERABLE. NEW CURB STOPS WILL BE PAID FOR AT THE UNIT PRICE ESTABLISHED ON THE BID FORM.
3. METER PITS:
  - A. METER PIT LOCATIONS SHALL BE IDENTIFIED ON THE SERVICE CARDS COMPILED BY THE CONTRACTOR WITH LOCATION AND DIMENSIONS, PIT SIZE, LID SIZE, METER SETTER TYPE, TYPE OF PIT (MANUFACTURED/ RING, BLOCK/BRICK, FROST PROOF, ETC.), AND METER WITH CSU ESTABLISHED METER MANHOLE.
  - B. THE CONTRACTOR SHALL EXERCISE INLET AND OULET VALVES ON ALL METER LOOPS. VALVES FOUND TO BE INOPERABLE SHALL BE REPLACED AT THE SUPPLEMENTAL UNIT PRICE CONTAINED ON THE BID FORM.
  - C. THE CONTRACTOR SHALL INSPECT THE TANDEM COPPER SETTER. ANY SETTER FOUND TO BE IN AN UNACCEPTABLE CONDITION SHALL BE REPLACE BY THE CONTRACTOR AT THE SUPPLEMENTAL UNIT PRICE CONTAINED ON THE BID FORM.
  - D. THE CONTRACTOR SHALL INSPECT ALL PRESSURE REDUCING VALVES. PRESSURE REDUCING VALVES FOUND TO BE INOPERABLE OR IN POOR CONDITION SHALL BE REPLACED AT THE SUPPLEMENTAL UNIT PRICE CONTAINED IN THE BID FORM.
4. INDOOR METERS:
  - A. SERVICE CARDS SHALL IDENTIFY THE LOCATION OF THE METER AND THE CSU ESTABLISHED METER NUMBER.
  - B. THE CONTRACTOR SHALL EXERCISE THE INLET AND OULET VALVES ON THE METER LOOP. VALVES FOUND TO BE INOPERABLE SHALL BE REPLACED AT THE SUPPLEMENTAL UNIT PRICE CONTAINED ON THE BID FORM.
  - C. A GROUNDING STRAP SHALL BE INSTALLED ON ALL METER LOOPS WHERE NONE CURRENTLY EXIST. THE WORK WILL BE PAID AT THE SUPPLEMENTAL UNIT PRICE CONTAINED IN THE BID FORM.
  - D. ALL SERVICE CARDS NEED TO IDENTIFY IF A DRAIN EXISTS INSIDE THE BUILDING NEAR THE METER.
  - E. CSU WILL INSTALL AMR WIRES ON ALL INDOOR METERS RUNNING TO THE EXTERIOR TO ALLOW FOR CSU'S INSTALLATION OF AMR DEVICE.
  - F. THE CONTRACTOR SHALL INSPECT ALL PRESSURE REDUCING VALVES. PRESSURE REDUCING VALVES FOUND TO BE INOPERABLE OR IN POOR CONDITION SHALL BE REPLACED AT THE SUPPLEMENTAL UNIT PRICE CONTAINED IN THE BID FORM.



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	DRAWN: TJM/KLW DESIGNED: KLW CHECKED: EDM DATE: DECEMBER 2016 PROJECT NO.: 15061_300 GMS FILE NO.: 2810			

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**LEGEND**

- 220** OUTDOOR METER w/INSTALLATION OF NEW CURB STOP - CONTRACTOR TO VERIFY IF A CURB STOP EXISTS AND IS OPERATIONAL. IF NEITHER CASE IS VALIDATED, INSTALL NEW 1" OR 3/4" CURB STOP AS DIRECTED BY ENGINEER PER CSU STANDARD B1-3 IN LOCATION DIRECTED BY OWNER/ENGINEER.

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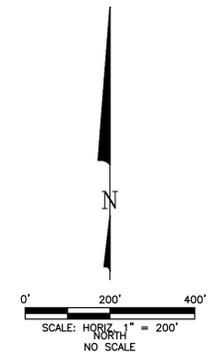
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<p><b>METERS AND CURB STOPS MAP 2</b>          WATER SYSTEM IMPROVEMENTS          CASCADE METROPOLITAN DISTRICT NO. 1</p>		<p><b>GMS, INC.</b>          CONSULTING ENGINEERS          611 N. WEBER, SUITE 300          COLORADO SPRINGS, COLORADO 80903</p>	<p>SHEET  <b>26</b>          OF  <b>30</b></p>										
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DESIGNED	KLW												
CHECKED	EDM												
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PROJECT NO.	15061300												
GMS FILE NO.	2810												

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METER NO.	OWNER	SCHEDULE NO.	LOCATION ADDRESS
17,504	GILBERT TAMMY J	8322102024	8620 and 8670 ASPENGLW LN
38	LYLE HUGH H, HEATHER M	8322402008	8290 POPLAR ST
42	SISTERS OF CHARITY OF CINCINNATI	8322403005	4630 FOUNTAIN AVE
43	SISTERS OF CHARITY OF CINCINNATI	8322403006	4620 FOUNTAIN AVE
47	SMART ROBBIN	8322403017	4660 FOUNTAIN
48	CRAWFORD LINDA A	8322403018	4690 FOUNTAIN AVE
51	BROWN ANDREW	8322404024	4650 MARTINDALE AV
58	MCMASTER BRIAN S	8323201001	5370 RAMPART TERRACE RD
71	BERRYMAN GEORGE C & GLENDA S	8323300029	7914, 7920 FOREST RD
72	LE VAR PETER H, SEGER LINDA	8323300032	4705 HAGERMAN AVE
77	MONGELLOW JAMES	8323300054	4615 FOUNTAIN AVE
78	BIRMINGHAM BILLIE J, CHARLES L	8323300060	
80	PIKES PEAK TRADING POST LLC	8323300078	4670 FOUNTAIN AVE
109	SHAFFER LIVING TRUST	8323305001	7705 N TOPEKA AVE
124	SCHULTZ BARRY S & THERESA C	8323306018	7780 SEVERY AVE
125	EMLIN LODGE PARTNERSHIP	8323306020	7790 SEVERY AVE
133	ZIMMERMAN LIVING TRUST	8323308003	4575 FOUNTAIN AVE
139	SPOOKALOONEY LLC	8326101002	4325 HEIZER ST
147	GARRISON PEGGY L LIVING TRUST	8326200014	4330 HEIZER ST
157	LICHAJ ALICIA K	8326200045	7885 W HIGHWAY 24
159	WINERY AT PIKES PEAK LLC	8326200054	8045 W HIGHWAY 24
184	DENNIS MICHAEL, MELINDA	8326204003	7960 MARRIOTT RD
188	GJOVIG ELINORE H REVOCABLE TRUST	8326200076	
190	PARLIAMENT MARVIN A AND FRANCINE R	8326207001	4455 FOUNTAIN AVE
201	FREDERICK ALAN, CARY S	8327102015	4356 PRAIRIE ST
202	FULOP GEORGE, TAMMY	8327102010	4362 PRAIRIE ST
203	SOLSBERY DAN DOUGLAS, MORROW DEBBI KAY	8327102019	4390 PRAIRIE ST
208	STEPHENS DAVID, AMY	8327103003	4414 MARTINDALE AVE
212	NEWMAN VIRGINIA B	8327103006	8290 PARK ST
318	BOLINGER RONALD J & BONNIE J	8323200006	5334 RAMPART TERR
319	ROMANO DANIEL L, C/O AUTUMN ROMANO	8323200007	5338 RAMPART TERR
320	RAKES PATRICK W	8323200012	8190 W HIGHWAY 24
321	STULTS GEORGE R & KATHRYN S	8323200013	8182 W HIGHWAY 24
322	GUTHRIE ROBIN	8323200015	8176 W HIGHWAY 24
328	MYERS RONALD L	8323200027	5320 RAMPART TERRACE RD
329	BINGHAM JASON W	8323200029	5330 RAMPART TERRACE RD
330	HEINTZ JAMES A & JULIANNA M	8323200030	5306 RAMPART TERR
331	CHANDLER DOROTHY I	8323200031	5310 RAMPART TERRACE RD
333	HUNTER TIMOTHY L	8323201004	8238 W HIGHWAY 24
334	SUUCK MATTHIAS & NICOLE	8323201005	8240 W HIGHWAY 24
335	PB13 LLC	8323201006	8236 W HIGHWAY 24
336	MAIN DEBORAH L	8323201007	8234 W HIGHWAY 24
337	FUHRMAN TROY L & ALLISON	8323201008	8232 W HIGHWAY 24
338	BILLINGIERE Y JEAN	8323201009	8230 W HIGHWAY 24
344	DRK FAMILY PARTNERSHIP LLC	8323300034	7940 FOREST RD
346	US BANK	8323300045	7850 GARDINER RD
347	DAVIS SCOTT R, CHRISTIE J	8323300046	4645 COLUMBINE LN
348	DUDLEY BOB L, TERESA L	8323300047	7820 GARDINER RD
349	MCCLAIN ALLYSON	8323300048	7810 GARDINER RD
351	BERSON JORDY, REBECCA	8323300057	7870 GARDINER RD
354	DURBEN CHRIS E	8323300065	8138 W HIGHWAY 24
359	MURDOCK ROGER & CAROL S	8323300106	
360	IVES BRIAN K AND WEARS BERRIE L	8323300107	
363	SPALDING STEPHEN J OR ROBIN ELLEN REISER TRUST	8323300113	4680 MARIPOSA LN
364	SLAVEN LOIS E	8323300114	8122 W HIGHWAY 24
365	GUIER LORETHA	8323300115	8126 W HIGHWAY 24
367	BORDEN JAMES D	8323300117	4640 MARIPOSA LN
381	OTIS EDWARD A JR	8326101001	4215 OUTPOST RD
384	MCCLOSKEY DAVID J, DEBRA L	8326200015	4255 OUTPOST RD
414	CUTHBERTSON-DAWSON KATHLEEN & DAWSON HOWARD W	8326203012	7860 MARRIOTT RD
418	LOWDER INVESTMENTS LLC	8326206006	8006 W HIGHWAY 24
420	WOOD GEORGE W, M LYNN	8326206024	HAGERMAN AVE
421	DIOCESE OF COLORADO SPRINGS	8326208002	FOUNTAIN AVE
423	ENGLE GLEN E	8326208005	4510 FOUNTAIN AVE
428	ALBERTS KEASTON	8327102009	4370 PRAIRIE ST
435	FLATHERS HAROLD L & BRENDA J	8327103001	4475 PRAIRIE ST
439	KONDRATOW CHERYL	8323300053	4645 FOUNTAIN AVE
440	CHILDS ZACHARY, OHMES ALEXANDRIA	8323201010	8228 W HWY 24
442	SMITH & SMITH CASCADE PROP LLC	8326200079	8025 W HIGHWAY 24
500	CASCADE COLORADO PARK ASSOC INC	8327105001	8295 PARK ST
501	BEISEL STEVE, WENDY A, HAROL R, WILMA J	8323300076	FOUNTAIN AVE
502	BEISEL STEPHEN R, WENDY A	8323300085	FOUNTAIN AVE
503	RAYER RICHARD S, JUDITH A	8323300086	CHIPITA PARK RD
505	ROBERSON ROBERT D, MARSHA D	8322206002	8665 ASPENGLW LN
506	JENSEN DARLENE Z	8322200014	9005 MOUNTAIN RD
507	BLUE MESA LIMITED PARTNERSHIP	8326204004	7980 MARRIOTT RD
508	SHAFFER LIVING TRUST	8323306011	S TOPEKA AVE
509	CASCADE METRO DISTRICT NO. 1 509	8323300033	FOREST RD
510	CASCADE METRO DISTRICT NO. 1 510	8323300031	HAGERMAN AVE

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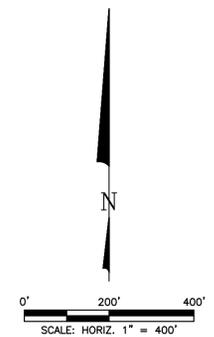
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**EASEMENT MAP 1**  
**WATER SYSTEM IMPROVEMENTS**  
**CASCADE METROPOLITAN DISTRICT NO. 1**

DRAWN \_\_\_\_\_  
 DESIGNED \_\_\_\_\_  
 CHECKED \_\_\_\_\_  
 DATE OCTOBER 2016  
 PROJECT NO. 15061\_300  
 GMS FILE NO. 2810

**GMS, INC.**  
 CONSULTING ENGINEERS  
 611 N. WEBER, SUITE 300  
 COLORADO SPRINGS, COLORADO 80903

SHEET  
**29**  
 OF  
**30**



- LEGEND**
- ⑨③ INDOOR METER SET
  - ②②① OUTDOOR METER PIT
  - ⑤①⑦ NON-METERED UNDEVELOPED GROUND

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 PLOT STYLE FILE: 15061300.ctb  
 FILENAME: G:\CASCADE METRO DIST\15061300\15061300.dwg

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**EASEMENT MAP 2**  
**WATER SYSTEM IMPROVEMENTS**  
**CASCADE METROPOLITAN DISTRICT NO. 1**

DRAWN KLW  
 DESIGNED KLW  
 CHECKED EDM  
 DATE DECEMBER 2016  
 PROJECT NO. 15061300  
 GMS FILE NO. 2810

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 OF **30**