



EXTERNAL MEMORANDUM

To: Town of Monument
Planning Department
645 Beacon Lite Rd.
Monument, CO 80132

From: Nick Harris (on behalf of Forest Lakes Metropolitan District)
Project Engineer
RESPEC
5540 Tech Center Drive, Suite 100
Colorado Springs, CO 80919

Date: March 9, 2022

Subject: Falcon Commerce Center Filing No. 2 - Civil Construction Plans

We have reviewed the Falcon Commerce Center Filing No. 2 - Civil Construction Plans as they relate to potable water, sanitary sewer, and stormwater and have the following comments. Also attached are redlined Civil Construction Plans, Sheets C100, C301, C302, C501, C502, C511, C512, and C513

POTABLE WATER

See drawing sheets for comment responses

/ In general, the developer may want to consider water stubs off the 12-inch in Terrazzo Dr for future adjacent property use.

/ On Sheet C501, the northern 8-inch water stub meant to connect to the Eagle Rock parcel has been removed by Eagle Rock. Consider removing that connection.

/ On sheet C501, a note at the end of the 12-inch water line refers to sheet CXXX for design. Update CXXX to the correct sheet.

/ On Sheet C511, remove the southern half of the water lowering at Station 16+92. Realign the vertical profile to provide a maximum of 0% slope going south to north up to the crossing. See attached redline drawing.

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- / On Sheet C512, remove the southern half of the water lowering at Station 31+81. Realign the vertical profile to provide a maximum of 0% slope going south to north up to the crossing. See attached redline drawing.
- / On Sheet 512, the double water line lowering at Station 25+00 creates a high spot in the main which could collect air. Either an air relief valve needs to be installed at Station 25+30 or remove the southern half of the water lowering at Station 25+25. Realign the vertical profile to provide a maximum of 0% slope going south to north up to the crossing. See attached redline drawing.
- / On Sheet C512, Could the double lowering be converted to a larger single lowering using a 22.5° or 11.25° bend as shown in the attached redline drawings?

SANITARY SEWER

- / On Sheet C301, C302, and C513, the required drop through a sanitary sewer manhole is 0.2-feet
- / On Sheet 302, when multiple sewer pipes enter the same manhole, the crowns of the influent pipes match in elevation.
- / ON Sheet C501, the sanitary sewer connection in the cul-de-sac on the south end of Terrazzo Dr. does not match the Eagle Rock design. Coordinate with Eagle Rock to ensure both FCC and Eagle Rock designs match at the connection point between the two plan sets.

STORM SEWER

- / On Sheet C502, it appears that there is a significant drop through the manhole at Station 18+59. Could the drop through this manhole be reduced? This reduction could allow the depth of the water line lowering under the proposed storm sewer to be reduced as well.

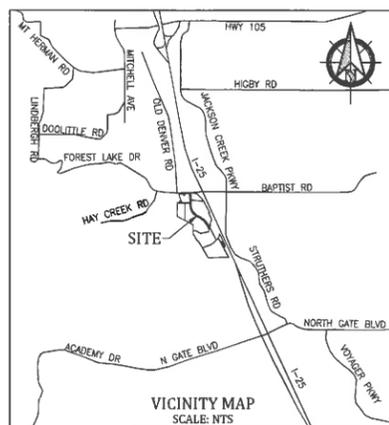
JDS Comments
3/9/22

FALCON COMMERCE CENTER FILING NO. 2

CIVIL CONSTRUCTION PLANS

TERRAZZO DRIVE EXTENSION AND UTILITY IMPROVEMENTS

MONUMENT, COLORADO



INDEX OF SHEETS	
C100	COVER SHEET
C101	NOTES SHEET
C201	OVERALL EXISTING CONDITIONS/DEMOLITION PLAN
C202	CIVIL SITE PLAN
C301-C302	TERRAZZO DRIVE PLAN AND PROFILE
C303	STRIPING AND SIGNAGE PLAN
C304	DETAIL SHEETS
C400	COVER SHEET - GRADING AND EROSION CONTROL PLAN
C401-C402	GRADING AND EROSION CONTROL PLAN
C411-C413	DETAIL SHEET - EROSION CONTROL PLAN
C501	UTILITY PLAN
C502-C504	STORM SEWER PLAN AND PROFILES
C505-C506	DETAIL SHEET - DRAINAGE
C511-C512	WATERLINE PLAN & PROFILES
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LEGEND	
	PROPERTY OR ROW LINE
	EXISTING ROW LINE
	EXISTING EASEMENT
	PROPOSED EASEMENT
	EXISTING WATER LINE
	EXISTING SANITARY SEWER AND FLOW DIRECTION
	EXISTING STORM SEWER
	EXISTING UNDERGROUND ELECTRIC LINE
	EXISTING OVERHEAD ELECTRIC LINE
	EXISTING UNDERGROUND TELEPHONE LINE
	EXISTING FIBER OPTIC LINE
	EXISTING GAS LINE
	EXISTING 100 YEAR FLOODPLAIN
	PROPOSED CURB AND GUTTER
	PROPOSED SIDEWALK
	CURB RAMP TYPICAL - REFER TO DETAILS
	EXISTING FIRE HYDRANT
	EXISTING WATER VALVE
	EXISTING WATER METER
	EXISTING GAS VALVE
	EXISTING SANITARY SEWER MANHOLE
	EXISTING SANITARY SEWER CLEAN OUT
	EXISTING STORM SEWER MANHOLE
	EXISTING WATER MANHOLE
	PROPOSED WATER LINE OR SERVICE AND VALVE
	PROPOSED WATER LINE, THRUST BLOCK & MJ RSTNS
	PROPOSED FIRE HYDRANT
	UTILITY CAP/PLUG OR INTERFACE
	PROPOSED SANITARY SEWER AND MANHOLE
	PROPOSED STORM CURB INLET
	EXISTING FENCE
	EXISTING STREET LIGHT
	EXISTING CONTOURS
	PROPOSED CONTOURS
	EXISTING SPOT ELEVATION
	PROPOSED SPOT ELEVATION
	EXISTING FLOW DIRECTION AND SLOPE
	PROPOSED FLOW DIRECTION AND SLOPE

TOWN OF MONUMENT ACCEPTANCE:
These plans have been reviewed by the Town of Monument staff and found to be in general compliance with Town of Monument and Triview standards. It is the responsibility of the site engineer and general contractor to ensure construction is in compliance with these plans and in conformance with the Town of Monument Design Criteria & Construction Specifications, Regulations, Triview Metropolitan District Design Criteria Construction Specifications, and the City of Colorado Springs Drainage Criteria manuals Volumes 1 and 2 shall prevail in any instances where these plans differ with those requirements. The Development Services department shall be notified if any changes need to be made.

Town of Monument _____ Date _____

FOREST LAKES METROPOLITAN DISTRICT ACCEPTANCE:
These plans have been reviewed by Forest Lakes Metropolitan District and found to be in general compliance with the Town of Monument and Forest Lakes standards. It is the responsibility of the site engineer and general contractor to ensure construction is in compliance with these plans and specifications.

Forest Lakes Metropolitan District _____ Date _____

Kiowa
Engineering Corporation
1604 South 21st Street
Colorado Springs, Colorado 80904
(719) 630-7342

FALCON COMMERCE CENTER FILING NO. 2
CIVIL CONSTRUCTION PLANS
COVER SHEET
MONUMENT, COLORADO

Project No: 21057
Date: February 4, 2022
Design: MWE/MTR
Drawn: MTR
Check: MWE

SHEET
C100

OF 26 SHEETS

PRE-EXCAVATION CHECKLIST

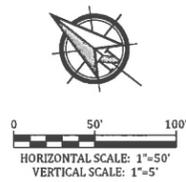
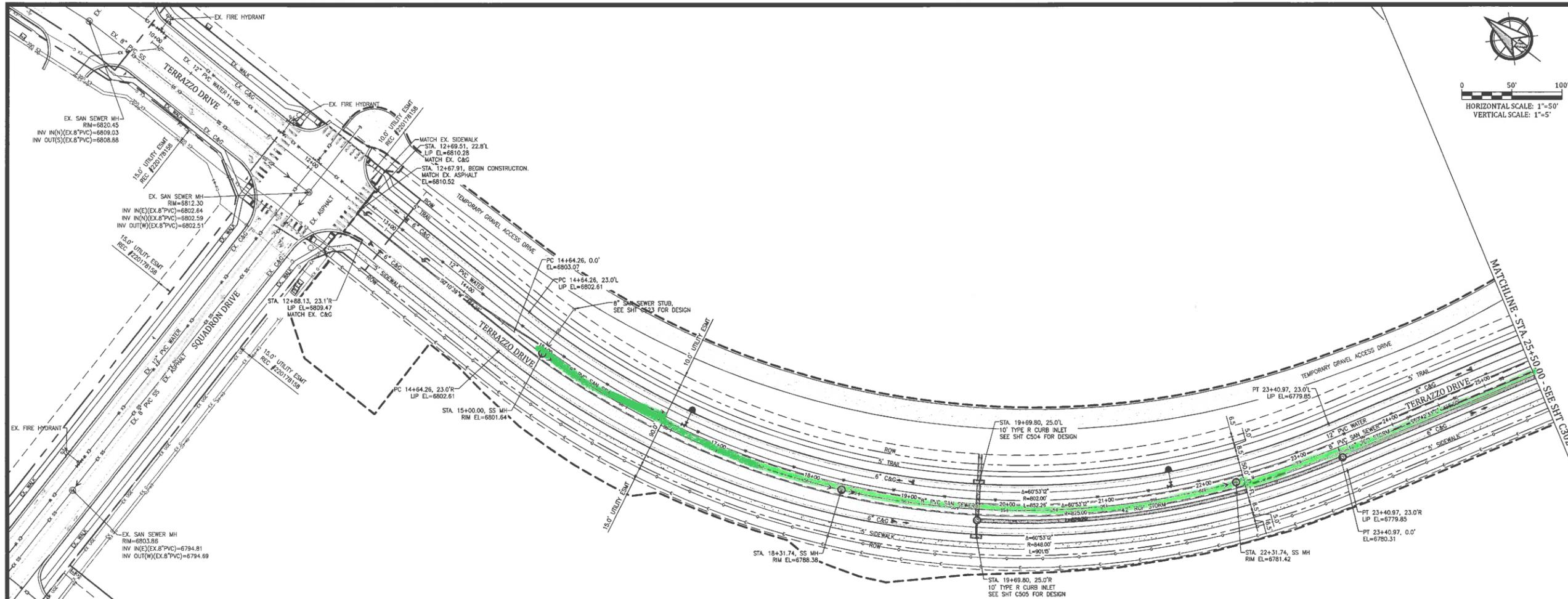
- GAS AND OTHER UTILITY LINES OF RECORD SHOWN ON PLANS.
- UTILITIES CENTRAL LOCATING CALLED AT LEAST 2 BUSINESS DAYS AHEAD.
- UTILITIES LOCATED AND MARKED.
- EMPLOYEES BRIEFED ON MARKING AND COLOR CODES.*
- EMPLOYEES TRAINED ON EXCAVATION AND SAFETY PROCEDURES FOR NATURAL GAS LINES.
- WHEN EXCAVATION APPROACHES GAS LINES, EMPLOYEES EXPOSE LINES BY CAREFUL PROBING AND HAND DIGGING.

*A.G.A.P.W.A. STANDARD UTILITY MARKING COLOR CODE
NATURAL GAS YELLOW WATER BLUE
ELECTRIC RED WASTEWATER GREEN

Know what's below.
Call before you dig.

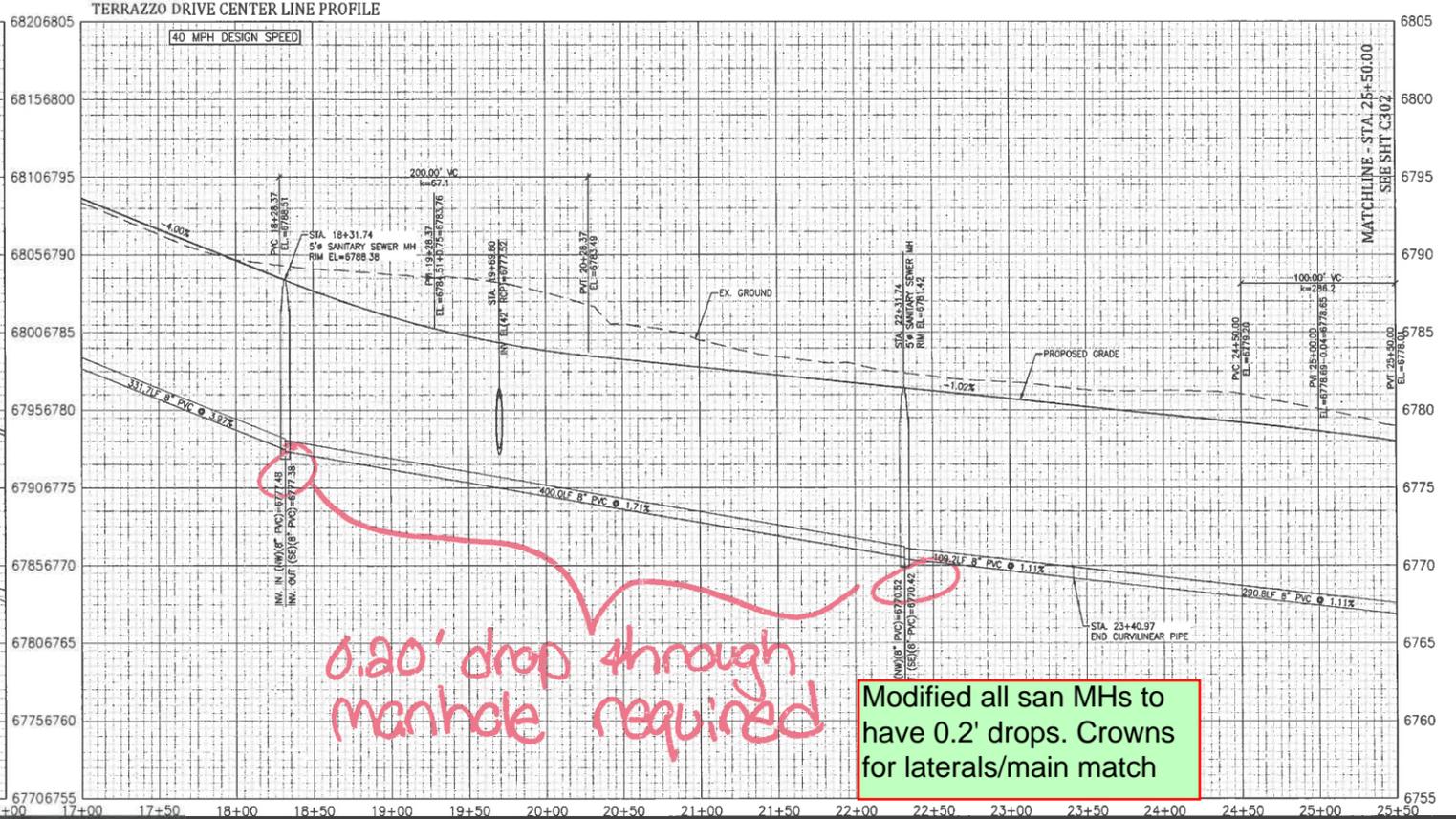
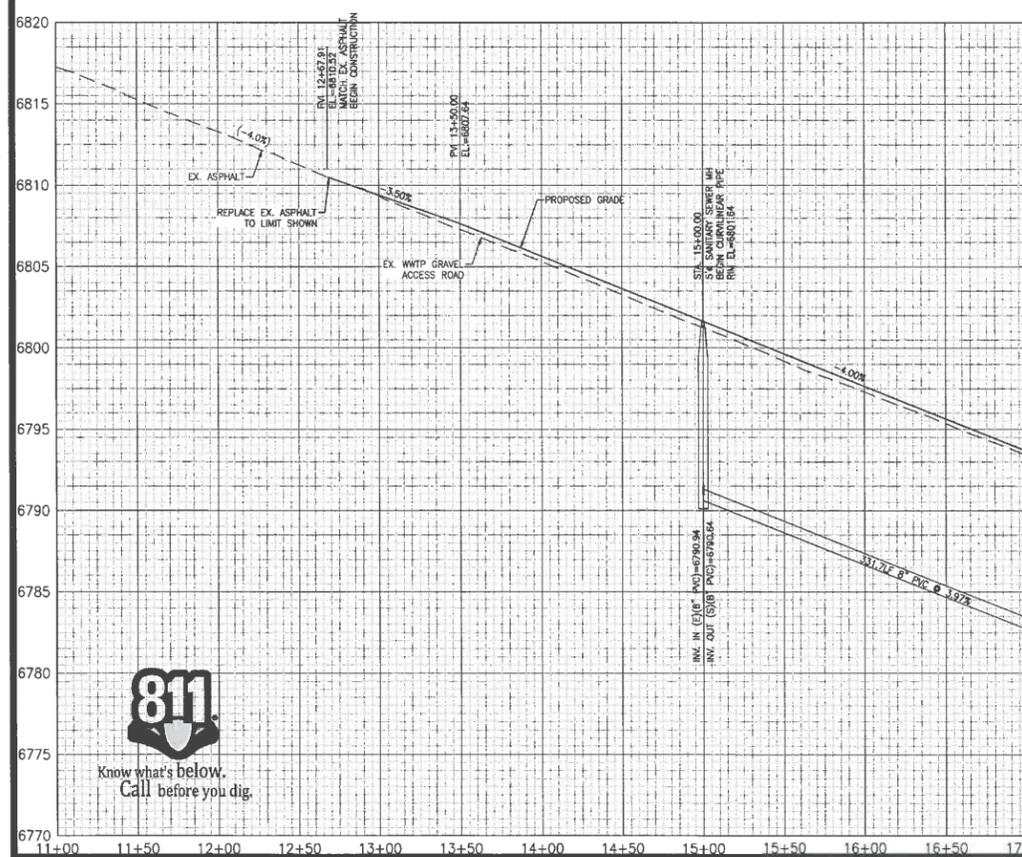
ABBREVIATIONS	
ASSY = ASSEMBLY	NTS = NOT TO SCALE
BNDR = BOUNDARY	OD = OUTSIDE DIAMETER
BOP = BOTTOM OF PIPE	PC = POINT OF HORIZONTAL CURVATURE
C&G = CURB & GUTTER	PLBG = PLUMBING
CL = CENTERLINE	POC = POINT OF CONNECTION
CO = CLEAN OUT	PP = PROPOSED
CRA = CONCRETE REVERSE ANCHOR	PRC = POINT OF REVERSE CURVE
CR = POINT OF CURB RETURN	PROP = PROPERTY
CS = CROSS SLOPE	PT = POINT OF HORIZONTAL TANGENCY
CTB = CONCRETE THRUST BLOCK	PVC = POLY VINYL CHLORIDE PIPE
DIP = DUCTILE IRON PIPE	PVC = POINT OF VERTICAL CURVATURE
DTL = DETAIL	PVI = POINT OF VERTICAL INTERSECTION
EL = ELEVATION	PVT = POINT OF VERTICAL TANGENCY
EQA = EDGE OF ASPHALT	R = RADIUS
ESMT = EASEMENT	R = RIGHT
EX = EXISTING	RCP = REINFORCED CONCRETE PIPE
FC = FACE OF CURB	RD = ROOF DRAIN (STORM LINE)
FES = FLARED END SECTION	ROW = RIGHT OF WAY
FLG = FLANGE	RT = RIGHT
FL = FLOWLINE	QL = QUALITY LEVEL
GB = GRADE BREAK	SHT = SHEET
GI = GREASE INTERCEPTOR	SOI = SAND OIL INTERCEPTOR
HP = HIGH POINT	SS = SANITARY SEWER
HORZ = HORIZONTAL	STA = STATION
HYD = HYDRANT	STD = STANDARD
ID = INSIDE DIAMETER	TA = TOP OF ASPHALT
L = LEFT	TB = THRUST BLOCK
LT = LEFT	TC = TOP OF CURB
LF = LINEAR FEET	TOA = TOP OF ASPHALT
LP = LOW POINT	TOC = TOP OF CONCRETE
MAX = MAXIMUM	TOP = TOP OF PIPE
MH = MANHOLE	TYP = TYPICAL
MIN = MINIMUM	VC = VERTICAL CURVE

CONTACTS		
SERVICE	ENTITY	POINT OF CONTACT
DEVELOPER/OWNER	Forest Lakes LLC	Tom Blunk 847-905-0085
CIVIL ENGINEER	Kiowa Engineering Corporation 7175 West Jefferson Ave, #2200 Lakewood, CO 80235	Matthew Erichsen, PE (303) 692-0369
COMMUNITY: DRAINAGE, STREET	Town of Monument	Tom Martinez 719-884-8036
WASTEWATER & WATER:	Forest Lakes Metro District District Engineer: JDS Hydro	Nick Harris 719-227-0072
FIRE:	Tri-Lakes Monument Fire Protection District	Jamey Bumgarner 719-484-0911
GAS:	Block Hills Energy	Bob Swatek 719-332-5856
ELECTRIC:	Mountain View Electric Association	Les Ulfers 719-494-2682
PHONE:	CenturyLink	Andrew Hekkers 719-355-7346
	Comcast	Scott Delaney 720-202-4734



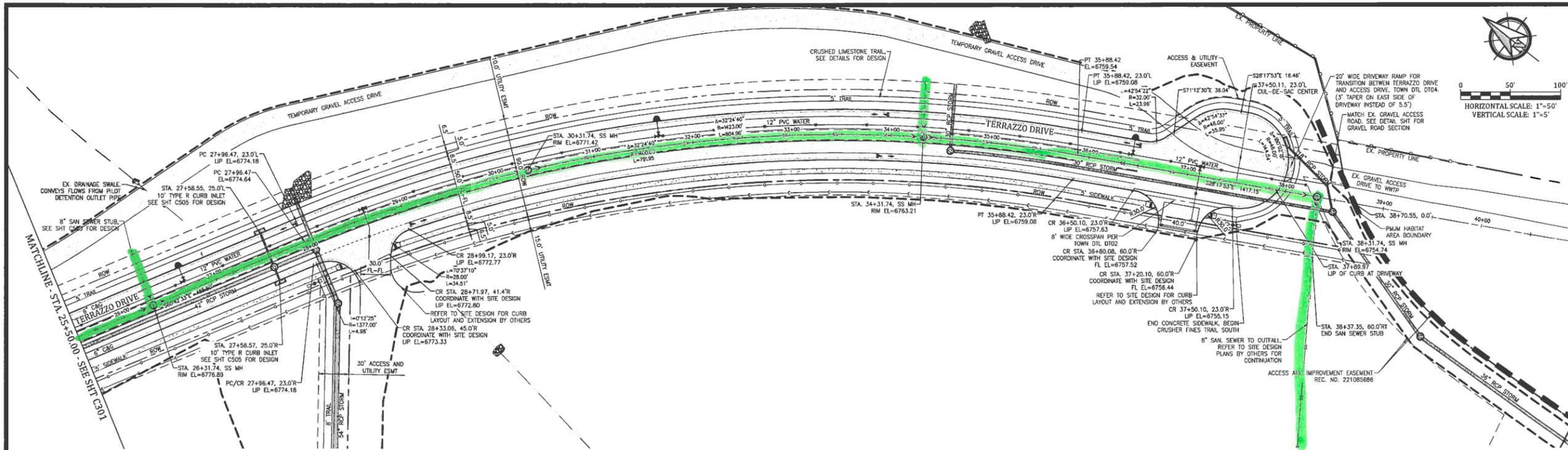
Kiowa
Engineering Corporation
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FALCON COMMERCE CENTER FILING NO. 2
CIVIL CONSTRUCTION PLANS
TERRAZZO DRIVE PLAN AND PROFILE
MONUMENT, COLORADO



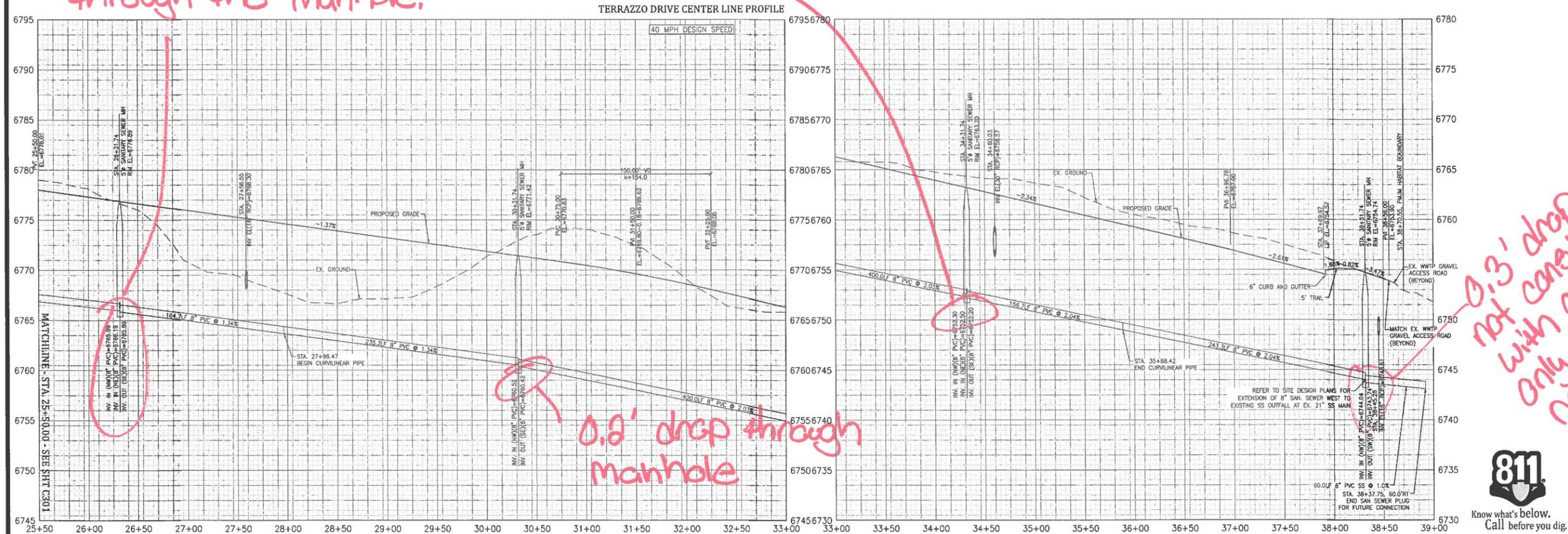
Project No:	21057
Date:	February 4, 2022
Design:	MWE/MTR
Drawn:	MTR
Check:	MWE
Revisions:	

SHEET
C301
OF 26 SHEETS



Typically all sewers into a manhole have the same crown of pipe elevation, the a minimum 0.2' drop through the manhole.

Modified all san MHs to have 0.2' drops. Crows for laterals/main match



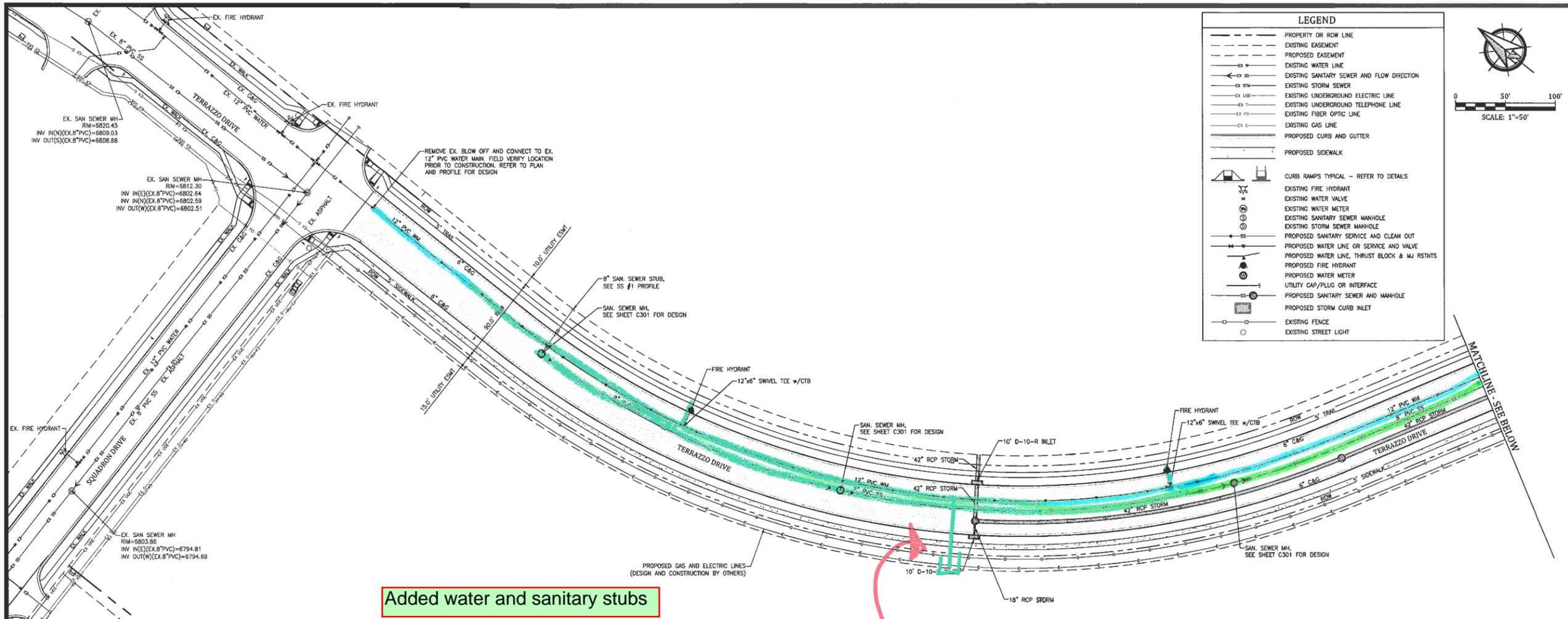
0.3' drop not consistent with others only

0.2' drop through manhole

FALCON COMMERCE CENTER FILING NO. 2
CIVIL CONSTRUCTION PLANS
TERRAZZO DRIVE PLAN AND PROFILE
MONUMENT, COLORADO

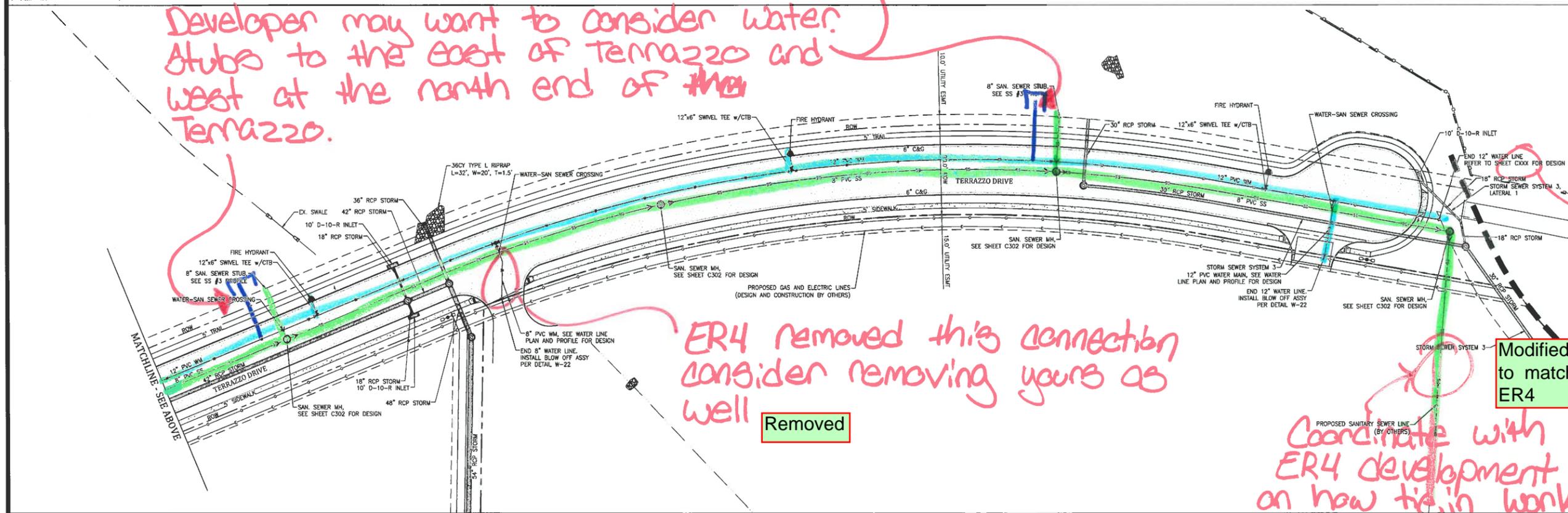
Project No.	21057
Date:	February 4, 2022
Design:	MWE/MTR
Drawn:	MTR
Check:	MWE
Revisions:	





Added water and sanitary stubs

Developer may want to consider water stubs to the east of Terrazzo and west at the north end of the Terrazzo.



ER4 removed this connection consider removing yours as well

Removed

Modified to match ER4

Coordinate with ER4 development on how tie-in work and where it is.

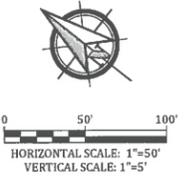
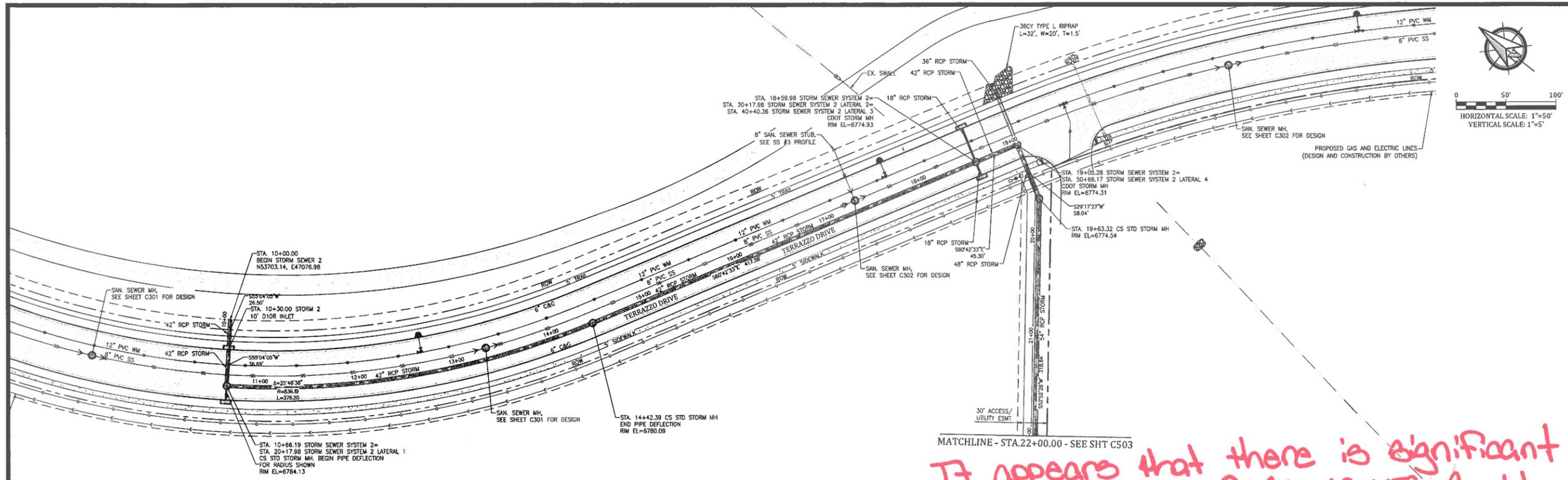
Added what sheet

FALCON COMMERCE CENTER FILING NO. 2
 CIVIL CONSTRUCTION PLANS
 UTILITY PLAN
 MONUMENT, COLORADO

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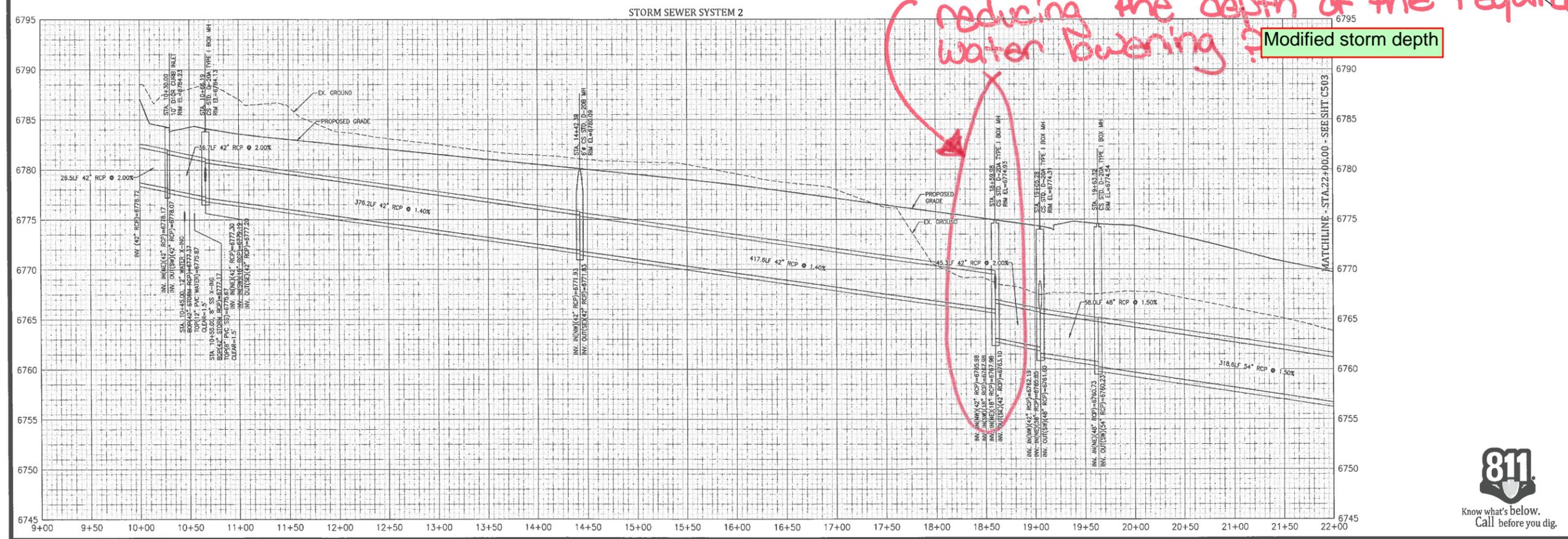
Project No.:	21057
Date:	February 4, 2022
Design:	MWE/MTR
Drawn:	MTR
Check:	MWE
Revisions:	

SHEET
C501
 OF 26 SHEETS



It appears that there is significant fall through MH @ Sta 18+59. Could the fall be reduced to reduce the depth of the storm sewer thus reducing the depth of the required water lowering?

Modified storm depth



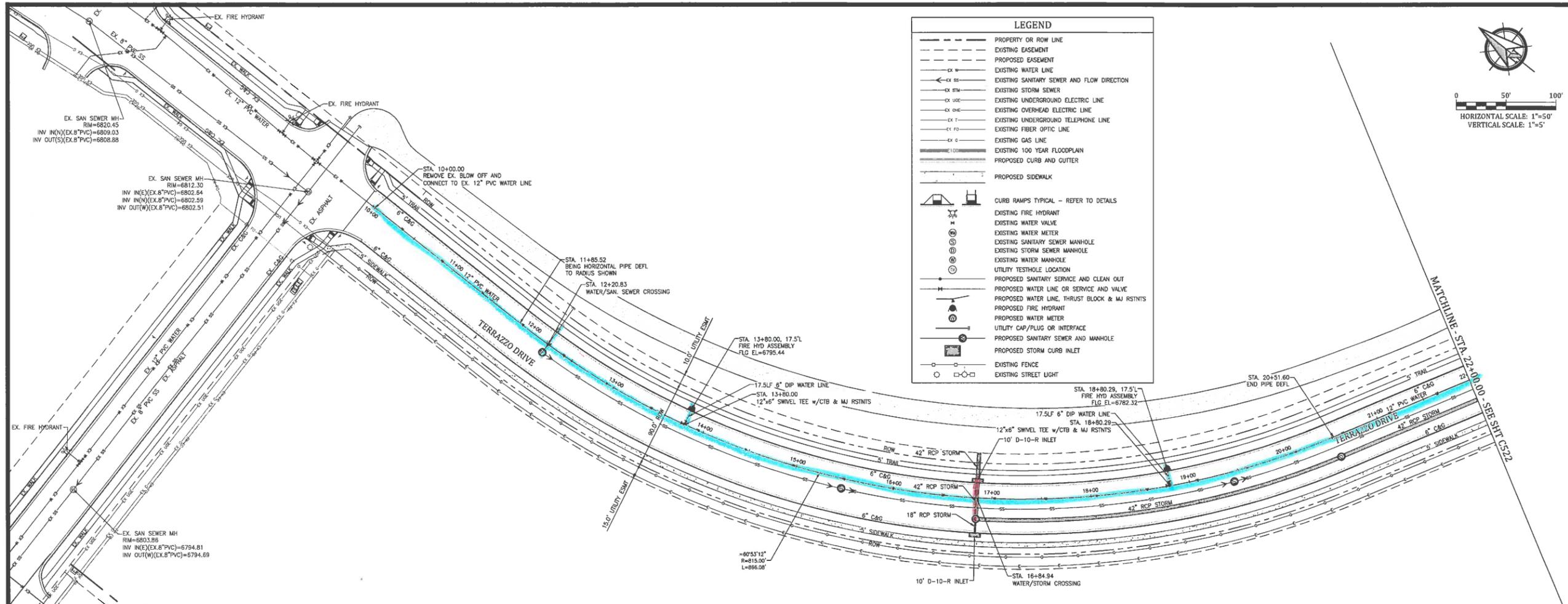
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FALCON COMMERCE CENTER FILING NO. 2
CIVIL CONSTRUCTION PLANS
STORM SEWER PLAN AND PROFILE
MONUMENT, COLORADO

Project No.:	21057
Date:	February 4, 2022
Design:	MWE/MTR
Drawn:	MTR
Check:	MWE
Revisions:	

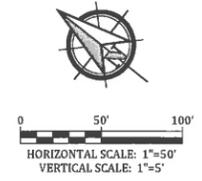
SHEET
C502
OF 26 SHEETS





LEGEND

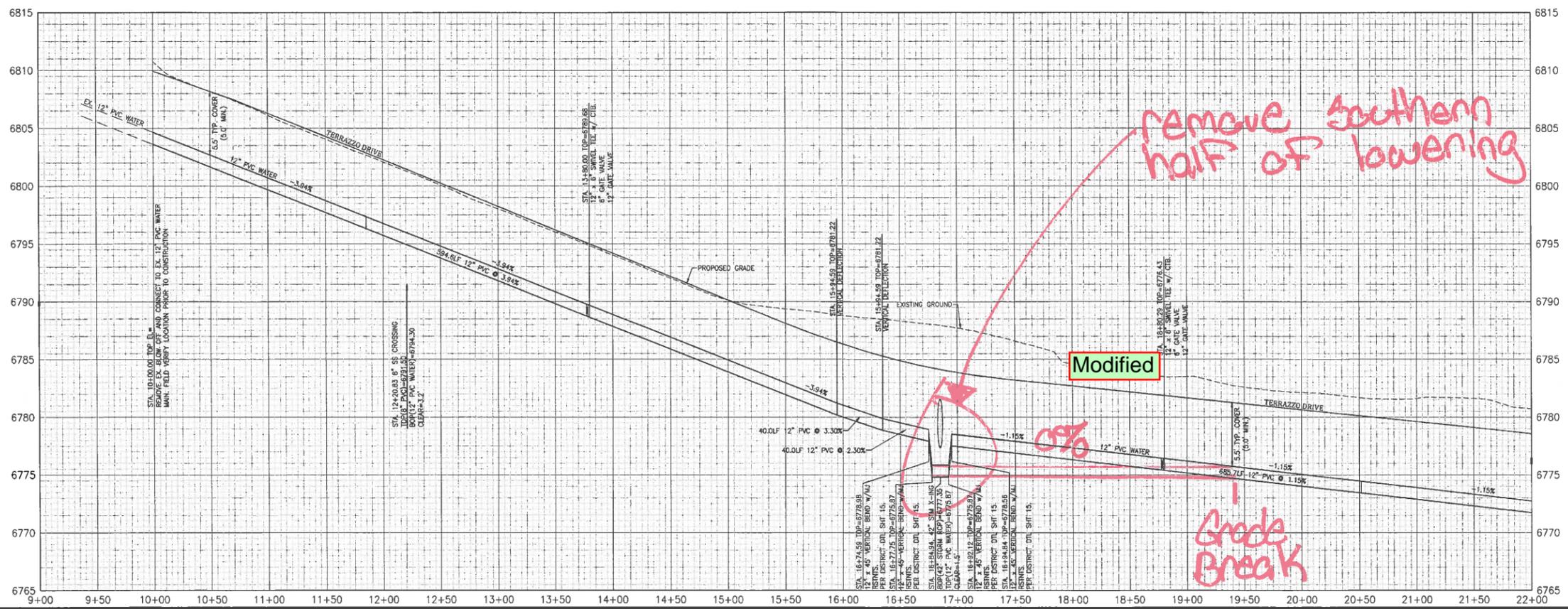
- PROPERTY OR ROW LINE
- EXISTING EASEMENT
- PROPOSED EASEMENT
- EXISTING WATER LINE
- EXISTING SANITARY SEWER AND FLOW DIRECTION
- EXISTING STORM SEWER
- EXISTING UNDERGROUND ELECTRIC LINE
- EXISTING OVERHEAD ELECTRIC LINE
- EXISTING UNDERGROUND TELEPHONE LINE
- EXISTING FIBER OPTIC LINE
- EXISTING GAS LINE
- EXISTING 100 YEAR FLOODPLAIN
- PROPOSED CURB AND GUTTER
- PROPOSED SIDEWALK
- CURB RAMPS TYPICAL - REFER TO DETAILS
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING WATER METER
- EXISTING SANITARY SEWER MANHOLE
- EXISTING STORM SEWER MANHOLE
- EXISTING WATER MANHOLE
- UTILITY TESTHOLE LOCATION
- PROPOSED SANITARY SERVICE AND CLEAN OUT
- PROPOSED WATER LINE OR SERVICE AND VALVE
- PROPOSED WATER LINE, THRUST BLOCK & MJ RSTNITS
- PROPOSED FIRE HYDRANT
- PROPOSED WATER METER
- UTILITY CAP/PLUG OR INTERFACE
- PROPOSED SANITARY SEWER AND MANHOLE
- PROPOSED STORM CURB INLET
- EXISTING FENCE
- EXISTING STREET LIGHT



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FALCON COMMERCE CENTER FILING NO. 2
CIVIL CONSTRUCTION PLANS
WATER LINE PLAN AND PROFILE
MONUMENT, COLORADO

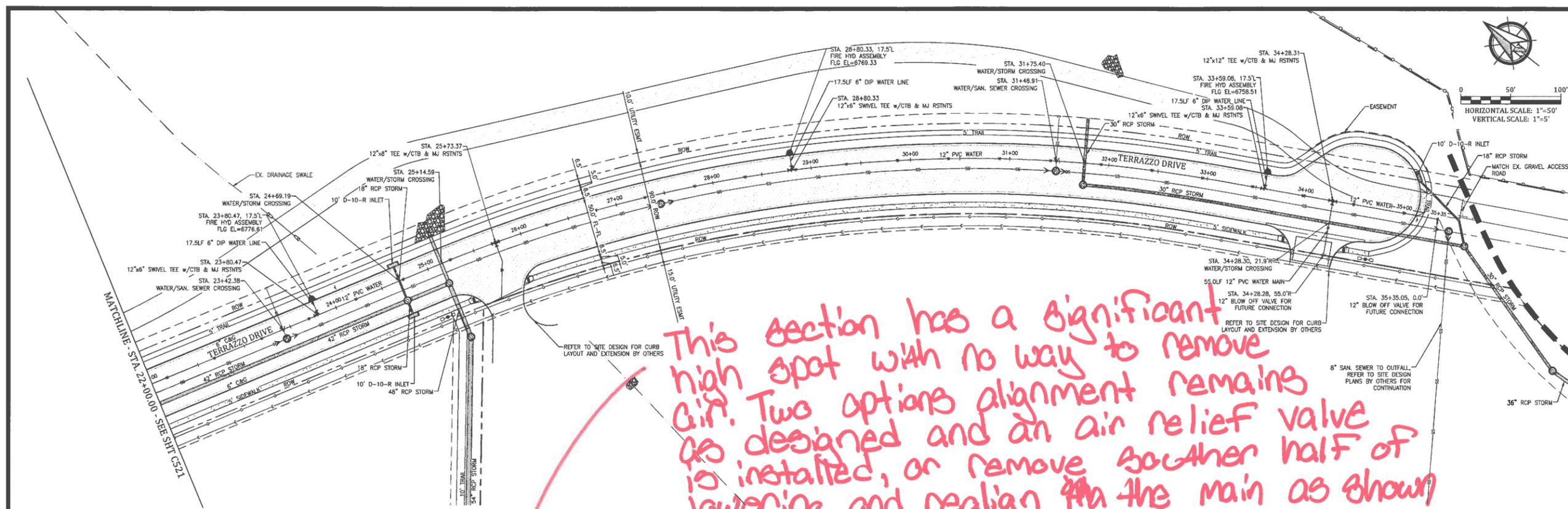
Project No: 21057
Date: February 4, 2022
Design: MWE/MTR
Drawn: MTR
Check: MWE
Revisions:



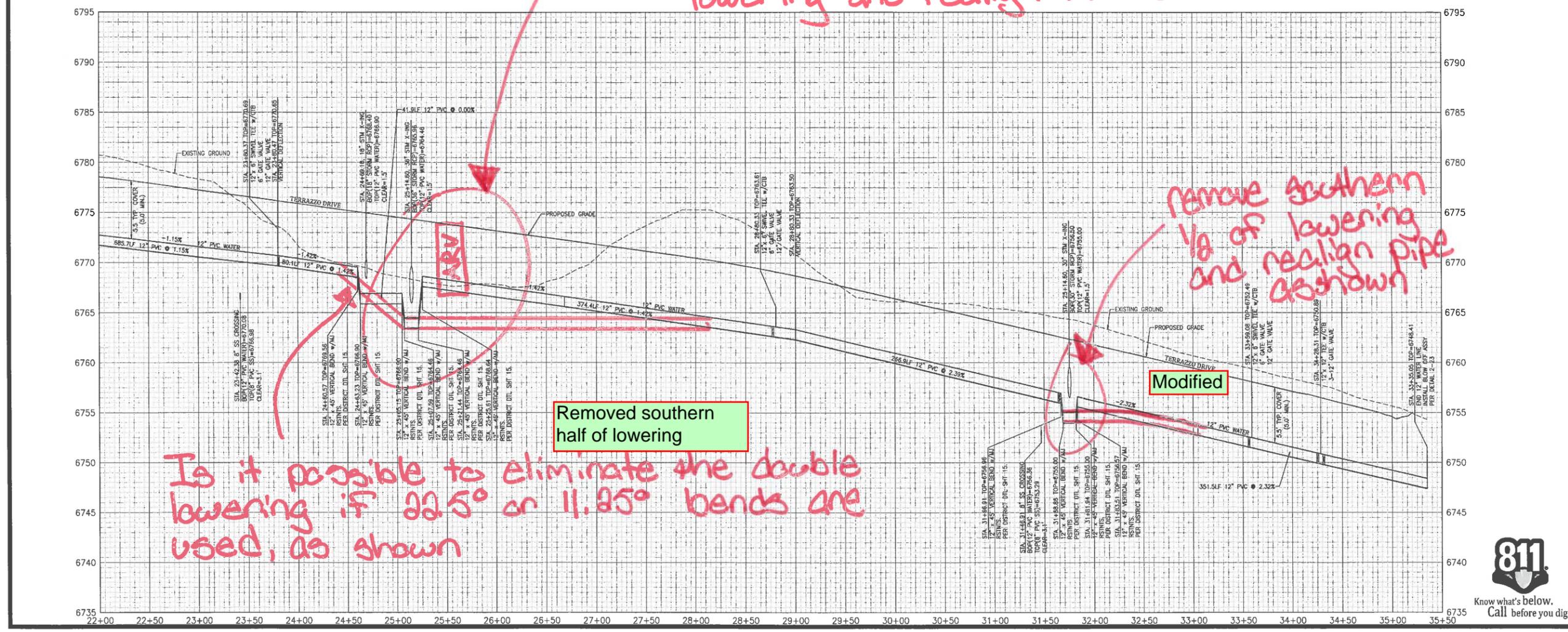
SHEET
C511
OF 26 SHEETS

FALCON COMMERCE CENTER FILING NO. 2
CIVIL CONSTRUCTION PLANS
WATER LINE PLAN AND PROFILE
MONUMENT, COLORADO

Project No.:	21057
Date:	February 4, 2022
Design:	MWE/MTR
Drawn:	MTR
Check:	MWE
Revisions:	



This section has a significant high spot with no way to remove air. Two options alignment remains as designed and an air relief valve is installed, or remove southern half of lowering and realign the main as shown

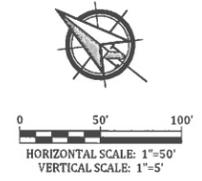
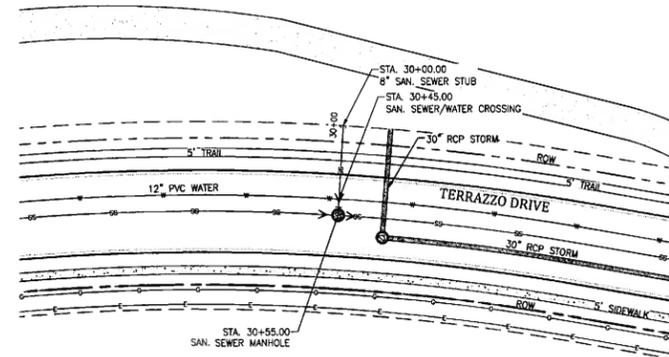
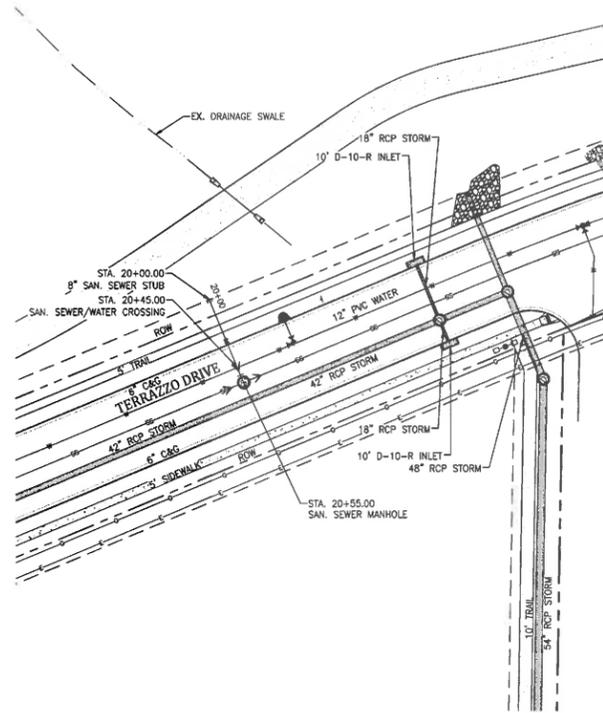
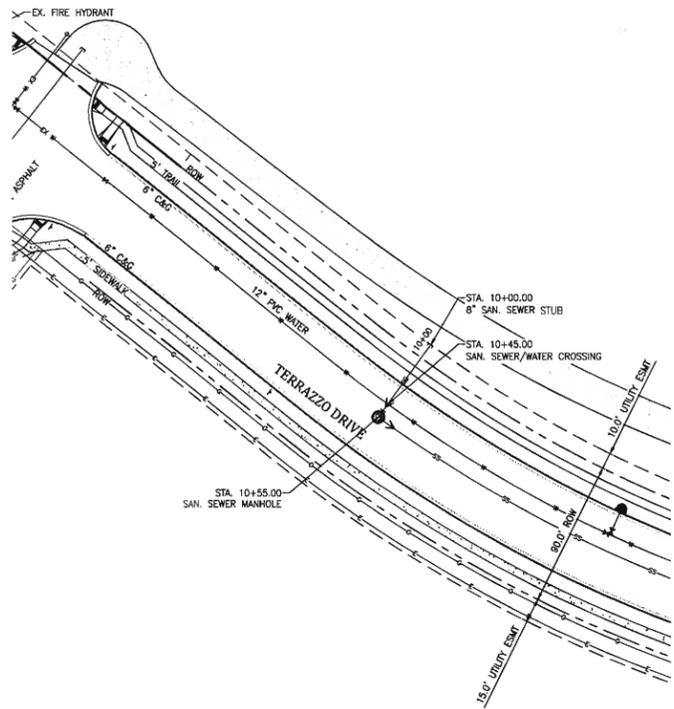


Remove southern 1/8 of lowering and realign pipe as shown

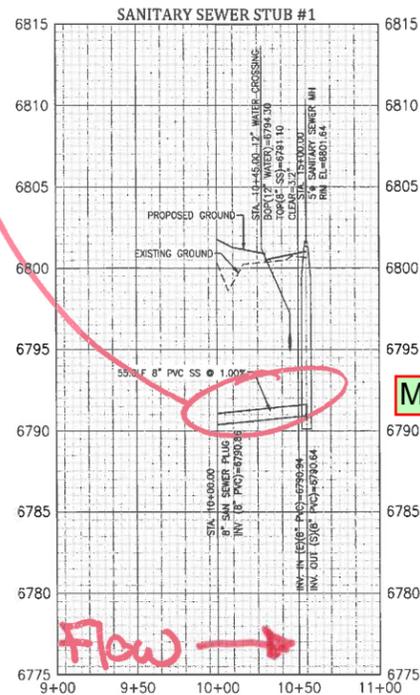
Removed southern half of lowering

Is it possible to eliminate the double lowering if 22.5° or 11.25° bends are used, as shown



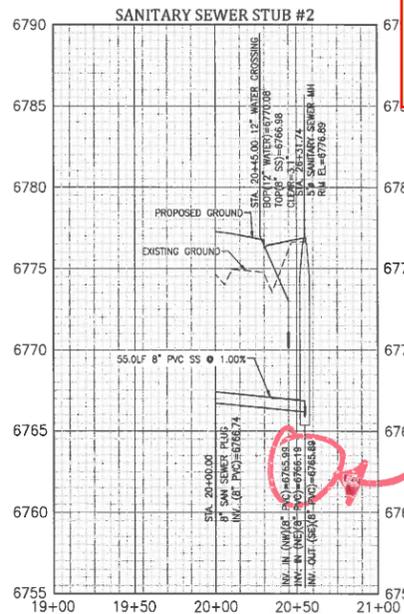


Sewer is sloped the wrong direction



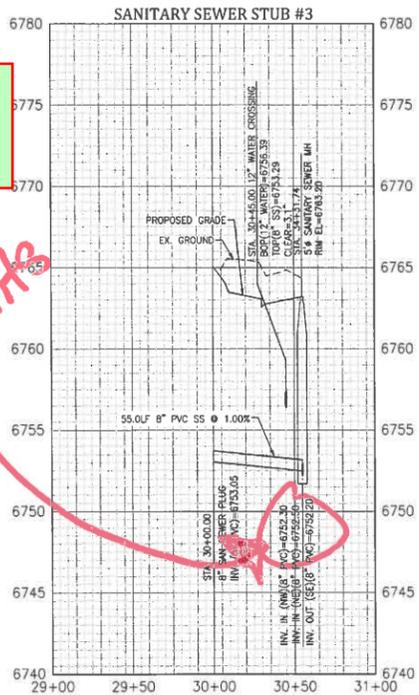
Modified

Flow →



Modified all san MHs to have 0.2' drops. Crows for laterals/main match

See previous comments invent



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Colorado Springs, Colorado 80904
(719) 530-7342

FALCON COMMERCE CENTER FILING NO. 2
CIVIL CONSTRUCTION PLANS
SANITARY SEWER STUB PLAN AND PROFILES
MONUMENT, COLORADO

Project No: 21057
Date: February 4, 2022
Design: MWE/MTR
Drawn: MTR
Check: MWE
Revisions:

SHEET
C513
OF 26 SHEETS