

**FIRST AMENDMENT TO
NORTH METRO RAIL LINE INTERGOVERNMENTAL AGREEMENT
(Denver-RTD)**

THIS FIRST AMENDMENT TO THE NORTH METRO RAIL LINE INTERGOVERNMENTAL AGREEMENT (this “First Amendment”) is made and entered, effective as of the date of the last date on signature blocks for this First Amendment (“Effective Date”), between the **CITY AND COUNTY OF DENVER**, a home rule municipal corporation of the State of Colorado, organized pursuant to Article XX of the Colorado Constitution (“Denver”), and the **REGIONAL TRANSPORTATION DISTRICT**, a political subdivision of the State of Colorado organized pursuant to the Regional Transportation District Act, C.R.S. § 32-9-101, *et seq.* (“RTD”). Denver and RTD are sometimes individually referred to as a “Party” and jointly as the “Parties.”

WITNESSETH

WHEREAS, Denver and RTD entered into a North Metro Rail Line Intergovernmental Agreement (the “Agreement” or “IGA”), dated December 20, 2013 (Denver Contract Control # PWADM-201313671-00), which is in full force and effect and shall remain in full force and effect subject to the amendments contained in this First Amendment; and

WHEREAS, certain provisions of the Agreement are in need of revision due to changed circumstances and expectations of the Parties, and certain provisions anticipated that an amendment to the Agreement would be necessary to elaborate or clarify performance requirements, all which changes, elaborations and clarifications are included in this First Amendment; and

WHEREAS, the Parties expect to enter into a North Metro Rail Line and National Western Center Intergovernmental Agreement (Denver-RTD) (the “NWC IGA”) with respect to the funding of certain mutually beneficial infrastructure projects that are described in the IGA, which requires certain amendments to the IGA;

NOW, THEREFORE, in consideration of the foregoing premises and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

1. The 10th recital of the Agreement is hereby amended to read as follows:

WHEREAS, funding opportunities currently enable RTD to construct the North Metro Rail Line to 124th Avenue in Commerce City, including all portions of the North Metro Rail Line Project within the boundaries of Denver; and

2. Section 2 “Definitions” of the Agreement is hereby amended in the following particulars:

a. Sub-section 2.A. is amended to read as follows:

A. **Base Scope of Work** means any work or improvements identified or anticipated in the Light Rail Master Agreement as modified by this Agreement, the FEIS, ROD, and Design Plans (but only to the extent that the elements of the Design Plans are “Project Costs,” as defined in sub-section 2.K. of this Agreement), as well as the work or improvements identified in sub-sections 7.B. and 7.C. of this Agreement (but excluding those Betterments and Enhancements paid for by Denver as identified in sub-sections 7.B. and 7.C.) and any work or improvements made by RTD in satisfaction of 4(f) and/or 6(f) requirements to protect and mitigate impacts to protected trail resources or protected park resources. All such work and improvements shall be designed and constructed in conformance with all regulatory requirements (federal, state and Denver) in effect as of the date of permitting of the Project construction by Denver. This Base Scope of Work is part of the Project Costs to be paid by RTD (subject to Local Agency Contributions as identified in section 3 of this Agreement).

b. Sub-section 2.E. is amended to read as follows:

E. **Design Plans** mean the design plans stamped No Objection and Issued for Construction by Denver for the North Metro Rail Line Project construction.

c. Sub-section 2.K. is amended to read as follows:

K. **Project Costs** mean all costs and fees necessitated or required by the Base Scope of Work along with all necessary costs and fees required to design, locate and construct the Project including: planning; design (including value engineering); design review and approval; plan review and approval; permit and inspection fees and costs; property acquisition, easements, and relocation costs associated with property acquisition; all costs associated with changes to Denver Property of the types specified in Article 10 of the Light Rail Master Agreement or resulting from 4(f) or 6(f) mitigation; construction; construction inspection; utility relocation, including but not limited to Denver utility and infrastructure; utility upgrades required by law; traffic control during construction; traffic signal modification; such other infrastructure changes or improvements as identified in sections 7.B. and 7.C. of this Agreement (but excluding those Betterments and

Enhancements paid for by Denver as identified in sub-sections 7.B. and 7.C.); and all other costs allocable to RTD or reimbursable to Denver under the Light Rail Master Agreement.

3. Section 6 “Surveys, Corridor Monumentation Diagram; ROW Plans; Legal Descriptions” of the Agreement is hereby amended in the following particulars:

a. Sub-section 6.B. is amended to read as follows:

B. Corridor Monumentation Diagram. RTD has provided Denver with a copy of the final Corridor Monumentation Diagram for the North Metro Rail Line Project that Denver has found to be acceptable and in accordance with **Exhibit D** to the Agreement. All land parcel and range line monumentation shall be in place before commencement of Project revenue service. Coordinates will be shown in the Project datum and latitude and longitude, and the RTD datum will be defined and show points of origin listing values held. This document will be updated throughout the construction of the Project.

b. Sub-section 6.C is amended to read as follows:

C. ROW Plans. RTD has provided Denver with a copy of the final Right of Way Plans for the North Metro Rail Line Project that Denver has found to be acceptable. Changes shall not be made to the final ROW Plans except as mutually agreed by the Parties. The form and content of the Final ROW Plans are in substantial conformance with the Colorado Department of Transportation (“CDOT”) Survey and Right of Way Manuals as of June, 2009; shall include toe-of-slope lines; and include the following additional information:

(1) The Right of Way for the Project and any legal descriptions of Land Parcels associated with the Project, including those prepared for the Land Exchange as provided in section 10 of this Agreement, are tied to the Land Parcel and range line monumentation shown in the final Corridor Monumentation Diagram and the final ROW Plan sheets.

(2) Denver’s Public Works-Survey/ROW Section has determined that the final ROW Plans are in conformance to the records of the Denver City Engineer.

(3) All required monuments to be set as shown on the Final ROW Plans and range line monumentation as shown on the final Corridor Monumentation Diagram must be in place at the end of construction and a survey showing all monuments set shall be deposited with the City Surveyor.

4. Sub-section B. “Infrastructure and Utilities” of section 7 “ROD, Infrastructure, Utilities, Right of Way, Access and Staging Areas, and Permits and Fees” of the Agreement is hereby amended in the following particulars:

a. Sub-sub-section (5) is amended to read as follows:

(5) **Drainage**. RTD and Denver will follow the Urban Drainage and Flood Control District (“UDFCD”) “Guidance for Stormwater Best Management Practices in Conjunction with the FasTracks Eagle P3 Project”, produced by UDFCD and dated August 3, 2011.

(A) RTD, CDOT, UDFCD, and Denver have agreed to partner in order to address regional drainage in the area covered by Montclair and Park Hill drainage basins, with consideration of drainage requirements for the North Metro Rail Line Project, CDOT’s proposed I-70 East project, and projects identified under Denver’s *North Denver Cornerstone Collaborative* (collectively, the “Platte to Parkhill Drainage Project (P2P)”). Resolution of the final drainage design for the North Metro Rail Line Project required additional analysis and discussions between Denver, CDOT, UDFCD, and RTD and selected improvements for the North Metro Rail Line were ultimately constructed.

(B) In the interim of participating in the larger comprehensive drainage solution involving RTD, Denver, CDOT, and UDFCD, RTD included, as part of the North Metro Rail Line Project, a scope that provides drainage infrastructure sufficient to convey 300 cfs from the area near the NWSS Station to the South Platte River, referred to herein as the “Adverse Impact System,” as defined in Attachment 2, Option 9, of the Phase 1 Options in the North Metro Rail Line Request for Proposals. The 300 cfs threshold, as conservatively estimated during development of the Design Plans, is sufficient to satisfy the North Metro Rail Line Project’s drainage impacts. RTD completed the Design Plans for the Project and constructed the “Adverse Impact System” to meet the criteria.

(C) As a Project Cost for the North Metro Rail Line Project, RTD escrowed \$5,527,472 to design and construct the Adverse Impact System (“Escrow Funds”). Utilizing \$4,714,454 of the Escrow Funds, RTD constructed and installed a storm water pipe at the location shown on the drawing approved by Denver and attached as **Exhibit I**, and in accordance with the Adverse Impact System scope of work. Prior to initial acceptance of the Adverse Impact System, RTD shall provide Denver a final approved, stamped set of as-built construction drawings for the storm water pipe. The remaining portion of the Escrow Funds, \$813,018, shall

be paid by RTD to Denver within thirty (30) days following Denver's initial acceptance of the Adverse Impact System.

b. A new sub-sub-section (10) is added to read as follows:

(10) **50th and Washington Interceptor Project**: Denver agrees to pay RTD \$2,868,046 within thirty (30) days following the initial acceptance of the project and as the total cost of the project, for RTD to design, construct, and install a new sanitary sewer line at the location shown on the drawing approved by Denver and attached as **Exhibit J**, and in accordance with the scope of work. This project is a Betterment. Prior to initial acceptance of the project, RTD shall provide Denver a final approved, stamped set of as-built construction drawings for the project.

c. A new sub-sub-section (11) is added to read as follows:

(11) **National Western Sanitary Sewer Line Project**: Denver agrees to pay RTD \$1,152,000, within thirty (30) days following initial acceptance of the project and as Denver's total share of this project, for RTD to design, construct and install a new sanitary sewer line at the location shown on the drawing approved by Denver and attached as **Exhibit K**, and in accordance with the scope of work. The Denver contribution to this project is an Enhancement. Prior to initial acceptance of the project, RTD shall provide Denver a final approved, stamped set of as-built construction drawings for the project.

d. A new sub-section (12) is added to read as follows:

(12) **49th Avenue Sanitary Sewer Line Projects**: Denver agrees to pay RTD \$1,160,996, within thirty (30) days of initial acceptance of the project and as the total cost of the project, for RTD to design, construct, and install a new sanitary sewer line at the location shown on the drawing approved by Denver and attached as **Exhibit L**, and in accordance with the scope of work. This project is a Betterment. Prior to initial acceptance of the project, RTD shall provide Denver a final approved, stamped set of as-built construction drawings for the project.

5. Sub-section C.7. "Bridge Structure – North Metro over Future 47th Avenue" of section 7 "ROD, Infrastructure, Utilities, Right of Way, Access and Staging Areas, and Permits and Fees" of the Agreement is hereby deleted. Such provisions are described in the NWC IGA.

6. Sub-section 8.A. is amended to read as follows:

A. **NWSS Station**: RTD and Denver have agreed to a layout and location for the NWSS Station as depicted in the Design Plans. The pertinent pages from the Design Plans for the NWSS Station are attached hereto as **Exhibit F** and are incorporated herein by reference. Any substantive change to the NWSS Station plans shown in **Exhibit F** shall require the mutual written agreement of RTD and Denver.

The final design of the NWSS Station will be one of four rail station typologies (Neighborhood Station, Main Street Station, Town Center Station, or Commuter Station) defined in the “Commuter Rail Urban Design Templates Methodology”, also attached hereto as part of **Exhibit F**, which have been previously found acceptable by Denver and RTD. Denver shall select the final station typology before November 1, 2014. If RTD requires a decision on the station typology prior to November 1, 2014, it will inform Denver of such need and the Parties shall work cooperatively to determine the station typology. RTD will construct the NWSS Station at no cost to Denver, except as agreed to by Denver in the NWC IGA.

7. Section 11 “Betterments and Enhancements” of the Agreement is hereby amended to read as follows:

11. **BETTERMENTS AND ENHANCEMENTS:**

A. Denver, in its sole discretion, may choose to perform work, which is not in the Base Scope of Work or as otherwise set forth herein, concurrently or in coordination with the North Metro Rail Line Project, provided that Denver shall bear all costs for such work if the work is a Betterment or shall share the costs, as separately agreed, for an Enhancement, and shall coordinate with RTD to avoid interference with the Project construction schedule. If Denver requests and RTD agrees to perform concurrent work that is a Betterment, upon entering a written agreement, Denver shall bear the costs, if any, of incorporating Denver’s design into RTD’s design and construction schedule and of any additional work performed by RTD at Denver’s request. If RTD and Denver concur to an Enhancement, Denver and RTD shall enter into a written agreement as to their respective shares of the Enhancement costs.

8. **No Other Changes.** Except as expressly modified by this First Amendment, the IGA remains unmodified and in full force and effect.

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Contract Control Number: DOTI-202054850-01 / 201313671-01
Contractor Name: Regional Transportation District

IN WITNESS WHEREOF, the parties have set their hands and affixed their seals at Denver, Colorado as of:

SEAL

CITY AND COUNTY OF DENVER:

ATTEST:

By:

APPROVED AS TO FORM:

REGISTERED AND COUNTERSIGNED:

Attorney for the City and County of Denver

By:

By:

By:

Contract Control Number:
Contractor Name:

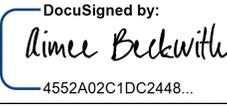
DOTI-202054850-01 / 201313671-01
Regional Transportation District

By:  _____

Name: Henry Seton Camp
(please print)

Title: AGM Capital Programs RTD
(please print)

ATTEST: [if required]

By:  _____

Name: Aimee Beckwith
(please print)

Title: Associate General Counsel
(please print)

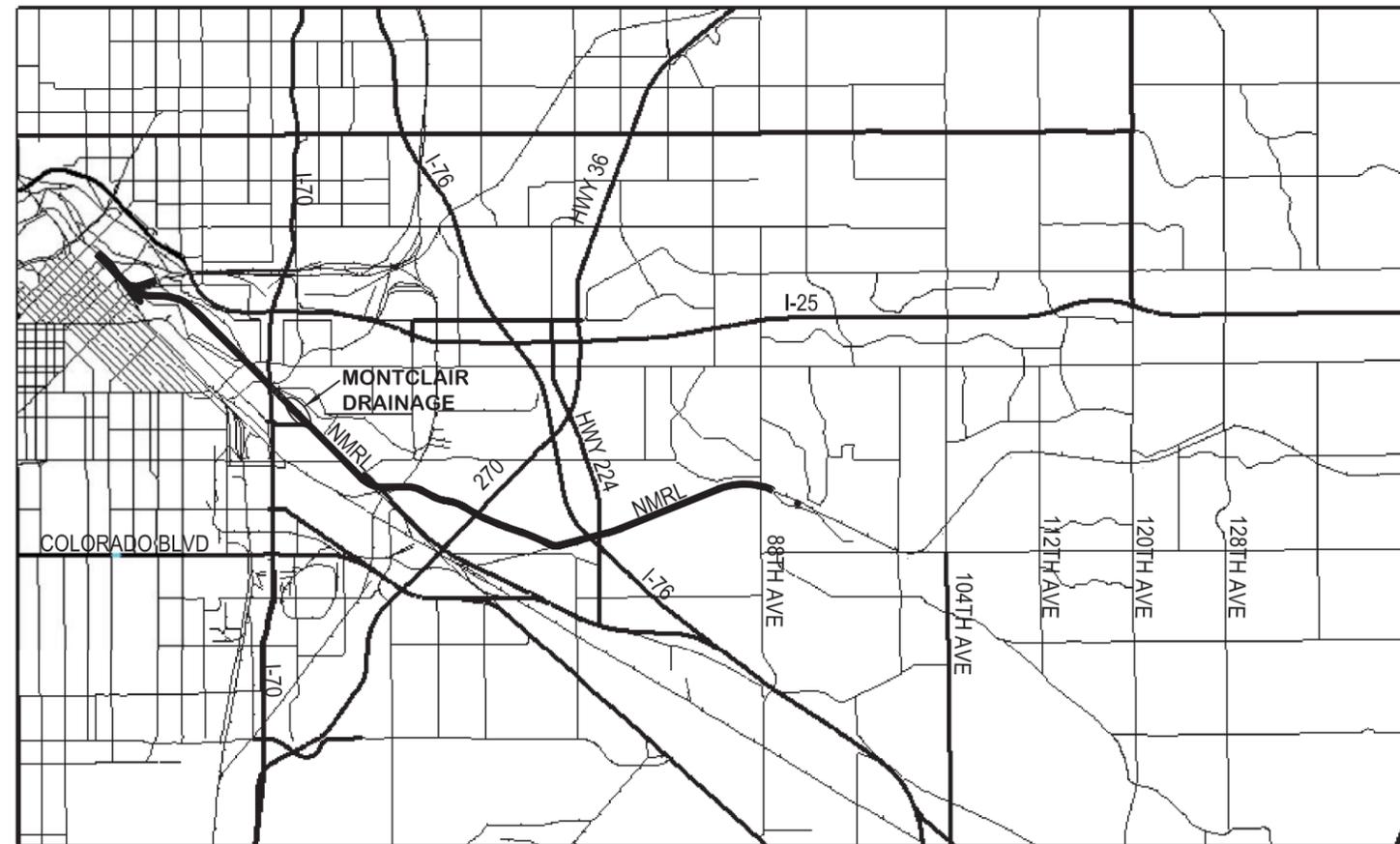
EXHIBIT I

DRAINAGE – ADVERSE IMPACT SYSTEM

(as follows)

RTD- FASTRACKS NORTH METRO PROJECT CONTRACT NO. 13DH008 NORTH METRO RAIL LINE DESIGN PACKAGE DP07 MONTCLAIR DRAINAGE ISSUED FOR CONSTRUCTION

LOCATION MAP



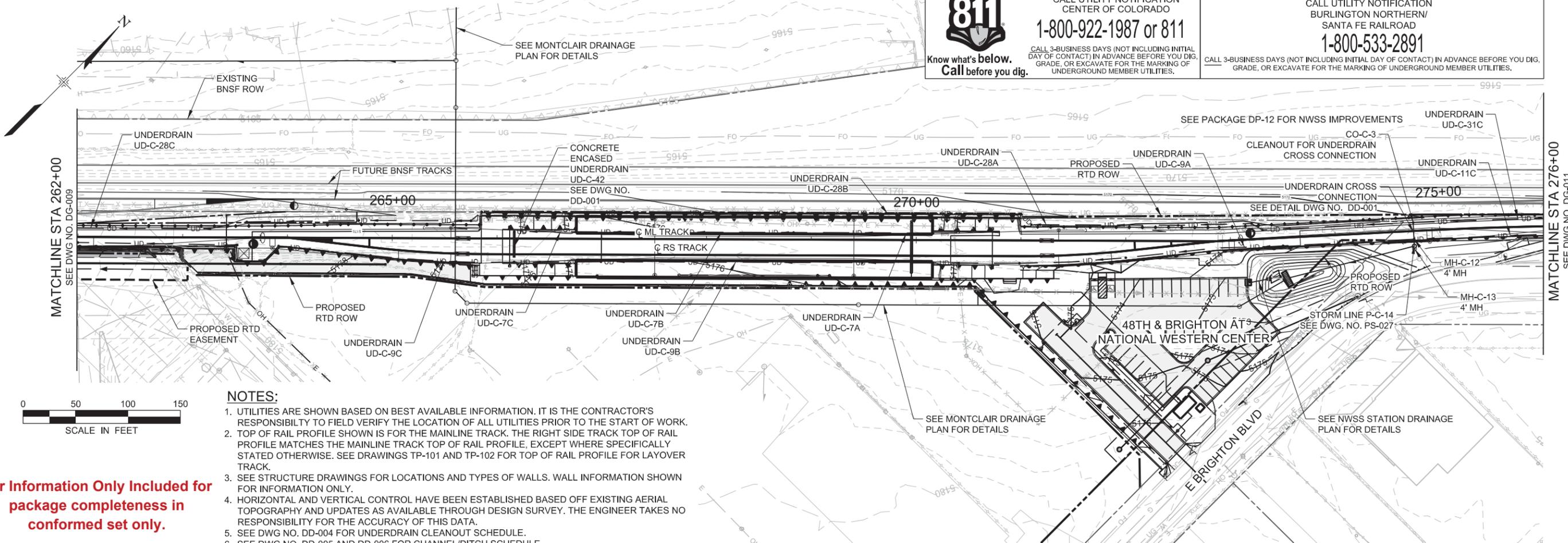
NTS





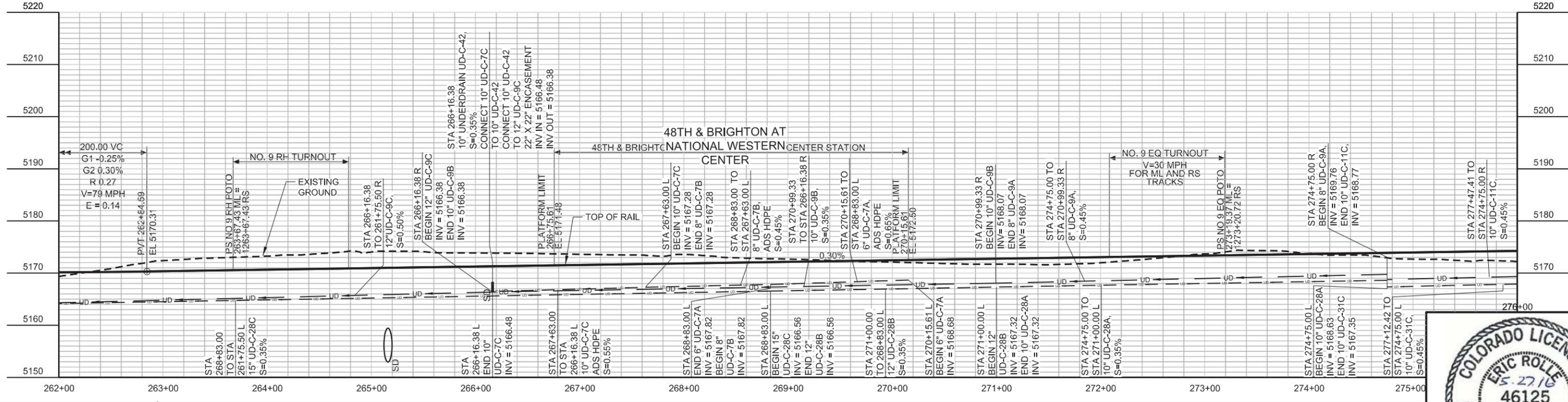
CALL UTILITY NOTIFICATION
CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

CALL UTILITY NOTIFICATION
BURLINGTON NORTHERN/
SANTA FE RAILROAD
1-800-533-2891
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.



- NOTES:**
- UTILITIES ARE SHOWN BASED ON BEST AVAILABLE INFORMATION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO THE START OF WORK.
 - TOP OF RAIL PROFILE SHOWN IS FOR THE MAINLINE TRACK. THE RIGHT SIDE TRACK TOP OF RAIL PROFILE MATCHES THE MAINLINE TRACK TOP OF RAIL PROFILE, EXCEPT WHERE SPECIFICALLY STATED OTHERWISE. SEE DRAWINGS TP-101 AND TP-102 FOR TOP OF RAIL PROFILE FOR LAYOVER TRACK.
 - SEE STRUCTURE DRAWINGS FOR LOCATIONS AND TYPES OF WALLS. WALL INFORMATION SHOWN FOR INFORMATION ONLY.
 - HORIZONTAL AND VERTICAL CONTROL HAVE BEEN ESTABLISHED BASED OFF EXISTING AERIAL TOPOGRAPHY AND UPDATES AS AVAILABLE THROUGH DESIGN SURVEY. THE ENGINEER TAKES NO RESPONSIBILITY FOR THE ACCURACY OF THIS DATA.
 - SEE DWG NO. DD-004 FOR UNDERDRAIN CLEANOUT SCHEDULE.
 - SEE DWG NO. DD-005 AND DD-006 FOR CHANNEL/DITCH SCHEDULE.
 - MH-C-13 WILL OUTLET TO THE PROPOSED OVERFLOW STRUCTURE BEING DESIGNED AS PART OF THE MONTCLAIR BASIN OUTFALL DESIGN.
 - ALL STORM DRAIN SYSTEMS ARE PRIVATE (RTD) UNLESS SPECIFICALLY NOTED OTHERWISE.

For Information Only Included for package completeness in conformed set only.



5/5/2016 11:19:16 AM N:\M-D-DG-010-DmPnP.dgn

DESIGNED BY: SES	DATE: 02/15/2016	CHECKED BY: JSB	DATE: 02/19/2016
DRAWN BY: SES	DATE: 02/15/2016	APPROVED BY: MPG	DATE: 04/25/2016
HORIZ. SCALE: 1"=100'		VERT. SCALE: 1"=20'	
0 ISSUED FOR CONSTRUCTION NO. REVISIONS BY DATE		JSB 04/25/2016 REGIONAL TRANSPORTATION DISTRICT 1600 BLAKE STREET DENVER, COLORADO 80202 (303) 628-9000	

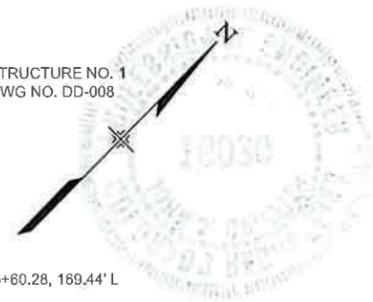
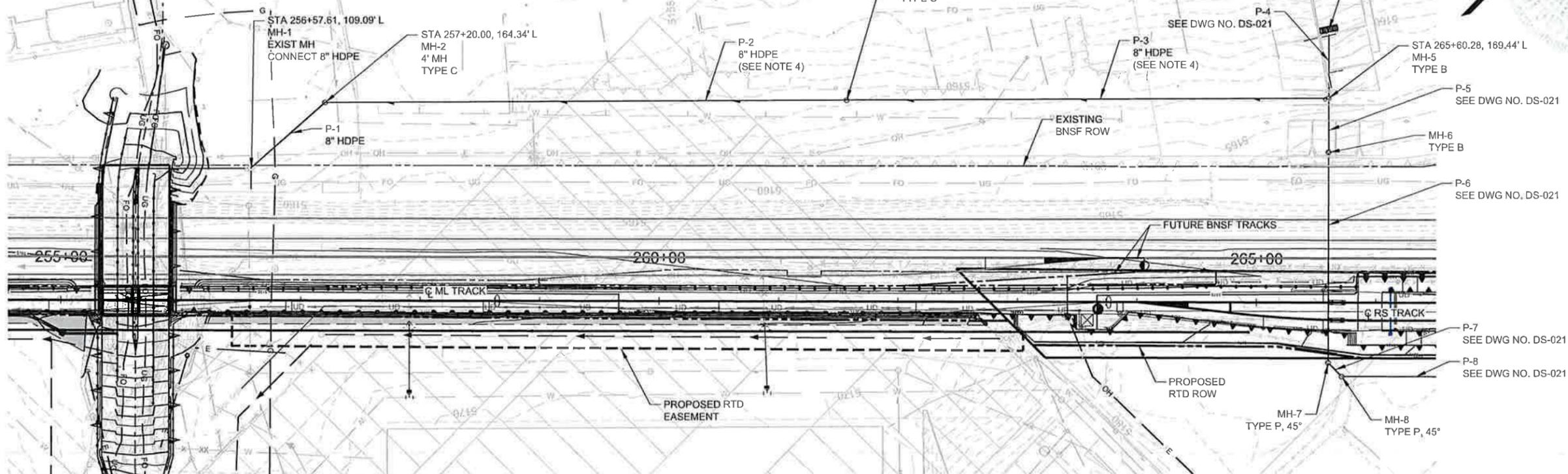
NORTH METRO RAIL LINE
DRAINAGE AND GRADING / TRACK
PLAN AND PROFILE
STA 262+00 TO 276+00



DWG No. DG-010

NOTES:

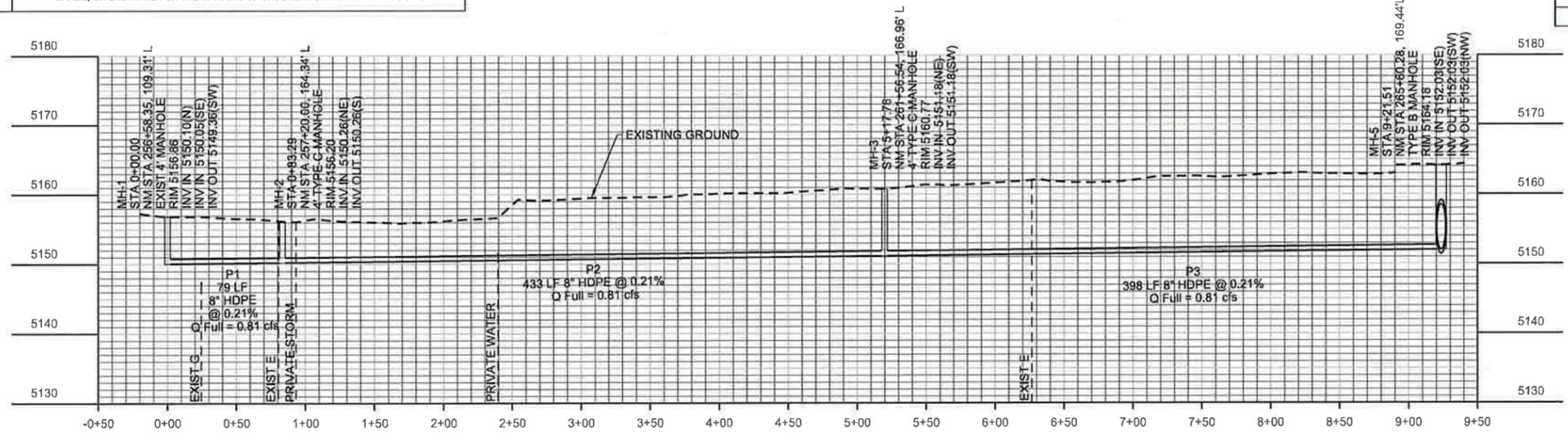
1. UTILITIES ARE SHOWN BASED ON BEST AVAILABLE INFORMATION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO THE START OF WORK.
2. SEE STRUCTURE DRAWINGS FOR LOCATIONS AND TYPES OF WALLS. WALL INFORMATION SHOWN FOR INFORMATION ONLY.
3. HORIZONTAL AND VERTICAL CONTROL HAVE BEEN ESTABLISHED BASED OFF EXISTING AERIAL TOPOGRAPHY AND UPDATES AS AVAILABLE THROUGH DESIGN SURVEY. THE ENGINEER TAKES NO RESPONSIBILITY FOR THE ACCURACY OF THIS DATA.
4. CONTRACTOR SHALL CONSTRUCT OUTLET PIPES P2 AND P3 IN CENTER OF EXISTING DRIVE ISLE.
5. LIVESTOCK PENS AND DRIVE AISLE MATERIALS (i.e. WOOD AND METAL RAILINGS, TROUGHS, CONCRETE PAVERS) AND CONFIGURATION SHALL BE RETURNED TO PRE-PROJECT CONDITION. IF MATERIALS CANNOT BE REPLACED OR ARE DAMAGED DURING REMOVAL, THE ENCLOSURES WILL BE REPLACED IN-KIND (i.e. EXISTING TIMBER REPLACED IN-KIND WITH SIMILAR TIMBER PEN MATERIALS).
6. EXISTING WATER SUPPLY AND DRAINAGE FACILITIES ENCOUNTERED DURING EXCAVATION IN THE LIVESTOCK PENS AND DRIVE AISLES SHALL BE REPLACED IN-KIND.
7. STORM DRAIN SYSTEMS, P-1 THROUGH P-10 AND ASSOCIATED STRUCTURES ARE DENVER WASTEWATER MANAGEMENT FACILITIES.
8. ENSURE COMPLIANCE WITH SHPO MOA WITHIN THE NATIONAL WESTERN HISTORIC DISTRICT FOR POST REVIEW DISCOVERIES.
9. HDPE PIPE SHALL BE INSTALLED PER CDOT STD M-603-4.



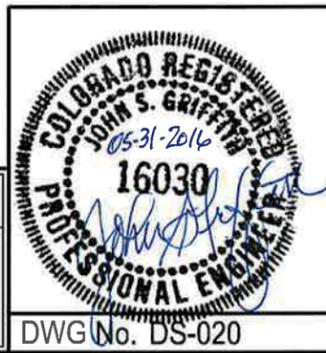
CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987 or 811
 CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

CALL UTILITY NOTIFICATION BURLINGTON NORTHERN/ SANTA FE RAILROAD
1-800-533-2891
 CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

MANHOLE LOCATION		
MANHOLE	NORTHING	EASTING
MH-1 (EXIST)	457030.4018	649469.1122
MH-2	457120.0628	649481.3837
MH-3	457421.8286	649783.8521
MH-5	457706.9908	650069.6783



RFC
John S. Griffith
 03-039.07.02
 Montclair Drainage
 06/27/2016



NO.	REVISIONS	BY	DATE
0	ISSUED FOR CONSTRUCTION	JSG	05/19/2016

DESIGNED BY: SES DATE: 05/12/2016
 DRAWN BY: SES DATE: 05/12/2016
 CHECKED BY: JSG DATE: 05/13/2016
 APPROVED BY: MPG DATE: 05/19/2016

HORIZ. SCALE: 1"=100'
 VERT. SCALE: 1"=20'
 2000 SOUTH COLORADO BOULEVARD
 SUITE 2-300
 DENVER, COLORADO 80222
 (303) 758-4058

RTD FasTracks
 North Metro Rail Line
 REGIONAL TRANSPORTATION DISTRICT
 1600 BLAKE STREET
 DENVER, COLORADO 80202
 (303) 628-9000

NORTH METRO RAIL LINE
DRAINAGE AND GRADING
MONTCLAIR PLAN AND PROFILE
P1 TO P3

DWG No. DS-020

USER: ssheets
 5/23/2016 12:11:44 PM
 N:\D-DS-020-MontclairDrnPlan.dgn

EXHIBIT J

50th AND WASHINGTON INTERCEPTOR PROJECT

(as follows)

CONTROL POINTS

POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
100	407588.55	577064.86	5155.42	CHISELED 'X'
102	407413.61	576916.54	5155.43	CHISELED 'X'
103	407286.12	576812.63	5156.41	CHISELED 'X'
104	407149.70	576690.82	5156.54	CHISELED 'X'
105	407053.20	576490.02	5155.89	CHISELED 'X'
106	406850.29	576341.14	5157.93	CHISELED 'X'
107	406931.08	576547.22	5157.65	CHISELED 'X'
108	406752.08	576313.11	5159.37	CHISELED 'X'
109	406702.88	576370.07	5158.89	PK NAIL
111	406593.03	576137.78	5159.61	#5 REBAR YELLOW CAP STAMPED "DEA"
114	406364.92	575909.77	5160.77	PK NAIL
118	407771.40	576563.33	5151.8	CHISELED 'X'
119	407358.56	577227.71	5157.70	2" ALUMINIUM CAP STAMPED "JACOBS"
120	406578.70	576779.14	5157.49	CHISELED 'X'
121	405889.07	576362.88	5159.96	CHISELED 'X'
122	407664.06	577180.29	5155.73	#5 REBAR WITH BLUE CAP STAMPED "TRUE NORTH LS 35585"
123	407043.88	576637.41	5157.08	#5 REBAR WITH YELLOW CAP STAMPED "FRONTIER SURVEY LS 25953"
125	406639.60	576140.22	5160.29	#5 REBAR WITH BLUE CAP STAMPED "TRUE NORTH LS 35585"
133	407792.27	576933.79	5152.41	CHISELED 'X'
136	407745.37	576900.82	5154.17	#5 REBAR WITH ORANGE CAP
200	406445.15	576985.78	5162.44	CITY COUNTY OF DENVER CONTROL "ELLIS"
201	404365.40	575713.10	5171.34	CITY COUNTY OF DENVER CONTROL "5168"
202	407771.99	575331.35	5153.22	CITY COUNTY OF DENVER CONTROL "601"
203	410367.20	575345.36	5164.38	CITY COUNTY OF DENVER CONTROL "598"

NOTE: CONTROL POINT NUMBERS 119, 201, 202, AND 203 ARE OUTSIDE OF THE LIMITS OF THIS PLAN SHEET.

BENCHMARK

PROJECT BENCHMARK: THE PUBLISHED VALUES OF CITY COUNTY OF DENVER CONTROL POINT "5168" EL=5171.34'

LEGEND

	CONTROL POINT		CONTOUR LINE
	AIR CONDITIONING UNIT		FENCE, CHAIN LINK
	BOULDER		FENCE, PLASTIC
	BIKE RACK		GUARD RAIL
	BOLLARD		METAL GRATE
	BUSH		OVER HEAD ELECTRIC
	CABLE VAULT		RETAINING WALL
	COLUMN		RAIL ROAD RAILS
	ELECTRIC BOX		UNDER GROUND COMMUNICATION
	ELECTRIC OUTLET		UNDER GROUND ELECTRIC
	ELECTRIC METER		UNDER GROUND GAS
	ELECTRIC VAULT		UNDER GROUND SANITARY
	FIRE DEPARTMENT CONNECTION		UNDER GROUND STORM
	FIRE HYDRANT		UNDER GROUND WATER
	GROUND LITE		ASPHALT
	GAS METER		BUILDING
	GRATED INLET		CONCRETE
	GUY WIRE		DECORATIVE BRICK
	GAS METER		GRAVEL
	GAS VALVE		LANDSCAPE AREA
	HANDICAP PARKING		METAL BRIDGE
	MEMORIAL STONE		RIP-RAP
	IRRIGATION VALVE		
	LIGHT POLE		
	MONITORING WELL		
	METAL UNKNOWN VAULT		
	POWER POLE		
	POWER POLE - SAWED OFF AT GROUND		
	ROOF DRAIN		
	SANITARY SEWER CLEANOUT		
	SIGN		
	STORM DRAIN MANHOLE		
	STEEL POST		
	SANITARY SEWER MANHOLE		
	TELEPHONE CABINET		
	TELEPHONE PEDESTAL		
	TRANSFORMER		
	TREE, CONIFEROUS		
	TREE, DECIDUOUS		
	WATER BIB		
	WATER MANHOLE		
	WATER METER PIT		
	WATER VALVE		

NO.	DESCRIPTION OF REVISIONS	DATE	BY
X		X	X

CALL UNCC
 TWO WORKING DAYS
 BEFORE YOU DIG
 1-800-922-0987
 UTILITY SURVEY CENTER OF
 COLORADO

CITY AND COUNTY OF DENVER
 DEPARTMENT OF PUBLIC WORKS
 ENGINEERING DIVISION
 CAPITAL PROJECTS MANAGEMENT
 2000 W. 3RD AVE., DENVER, CO 80223
 TEL.: (303) 446-3617 FAX: (303) 446-3647



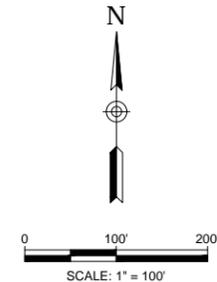
FOR CONSTRUCTION
 January 03, 2017
 DATE PRINTED
 OLSSON ASSOCIATES

50TH AVE AND WASHINGTON ST
 SANITARY SEWER IMPROVEMENTS
 PRO TRACKING NO: PWW2016-021
 PROJECT MASTER NO: 2016-PRJMSTR-0000239
 SURVEY CONTROL

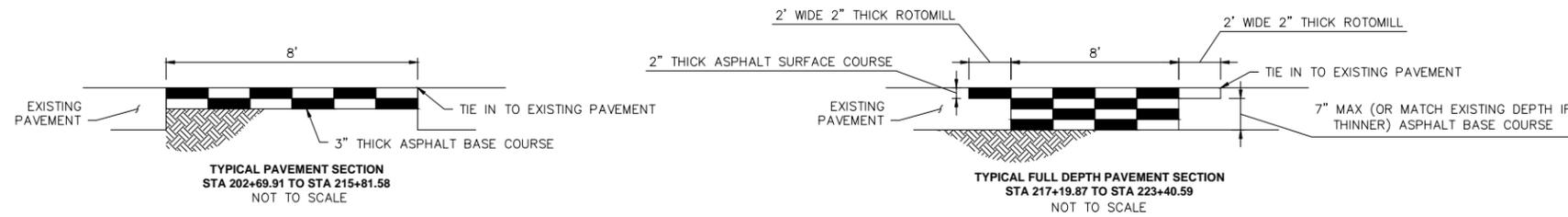
DRAWN BY:	CAU
DESIGNED BY:	CAU/DPK
APPROVED BY:	DPK
DRAWING NAME:	
DATE:	01/03/2017
SHEET NO.:	3 OF 12

NOTES:

- NOTICE: ACCORDING TO COLORADO LAW YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT. IN NO EVENT MAY ANY ACTION BASED UPON ANY DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THE DATE OF THE CERTIFICATION SHOWN HEREON.
- UNDERGROUND UTILITIES HAVE BEEN SHOWN OR LOCATED FROM FIELD SURVEY SURFACE VISIBLE INFORMATION AND CITY AND COUNTY OF DENVER UTILITY MAP #68_03_2701. THE SURVEYOR MAKES NO GUARANTEES THAT THE UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN-SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED, ALTHOUGH THE SURVEYOR DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. THIS INCLUDES PRIVATE AND PUBLIC UTILITIES.
- HORIZONTAL CONTROL IS BASED ON COLORADO CENTRAL ZONE NAD83 USING THE PUBLISHED VALUES OF CITY COUNTY OF DENVER CONTROL POINTS "5168" AND "601". PROJECT COORDINATES ARE A MODIFIED STATE PLANE SYSTEM. TO REDUCE LOCAL GROUND PROJECT COORDINATES TO STATE PLANE, MULTIPLY BY A SCALE FACTOR OF 0.99976866.
- BEARINGS ARE BASED ON A MEASURED LINE FROM THE FOUND CITY AND COUNTY OF DENVER CONTROL POINT "601" BRASS CAP ON THE NORTHWEST END TO THE FOUND CITY COUNTY OF DENVER CONTROL POINT "5168" BRASS CAP ON THE SOUTHEAST END; S06°46'26"E FOR A MEASURED DISTANCE OF 3427.92 FEET.
- CONTROL POINTS NOT LISTED IN THE TABLE WERE TEMPORARY POINTS AND NOT TO BE RELIED UPON BEYOND THIS IMMEDIATE SURVEY.
- SURVEY FIELD WORK COMPLETED: 03-01-2016
- MEASUREMENTS ON THIS SURVEY WERE TAKEN IN U.S. SURVEY FEET.
- THIS EXHIBIT WAS PREPARED WITHOUT THE BENEFIT OF A CURRENT TITLE COMMITMENT AND DOES NOT CONSTITUTE A TITLE SEARCH BY OLSSON ASSOCIATES, INC. TO DETERMINE TITLE OR EASEMENTS OF RECORD. BOUNDARY DETERMINATION IS NOT A PART OF THIS EXHIBIT AND IT IS NOT INTENDED FOR PURPOSES OF TRANSFER OF TITLE OR SUBDIVISIONS OF LAND.



F:\PROJECTS\013-0817_MTR\FINAL_PLANS\30817_SC.DWG PLOT DATE: January 3, 2017



LEGEND

CONCRETE REMOVAL	
9" FULL DEPTH PAVING	
2" ROTOMILL	
REMOVE & REPLACE CONCRETE	
3" ASPHALT BASE COURSE	

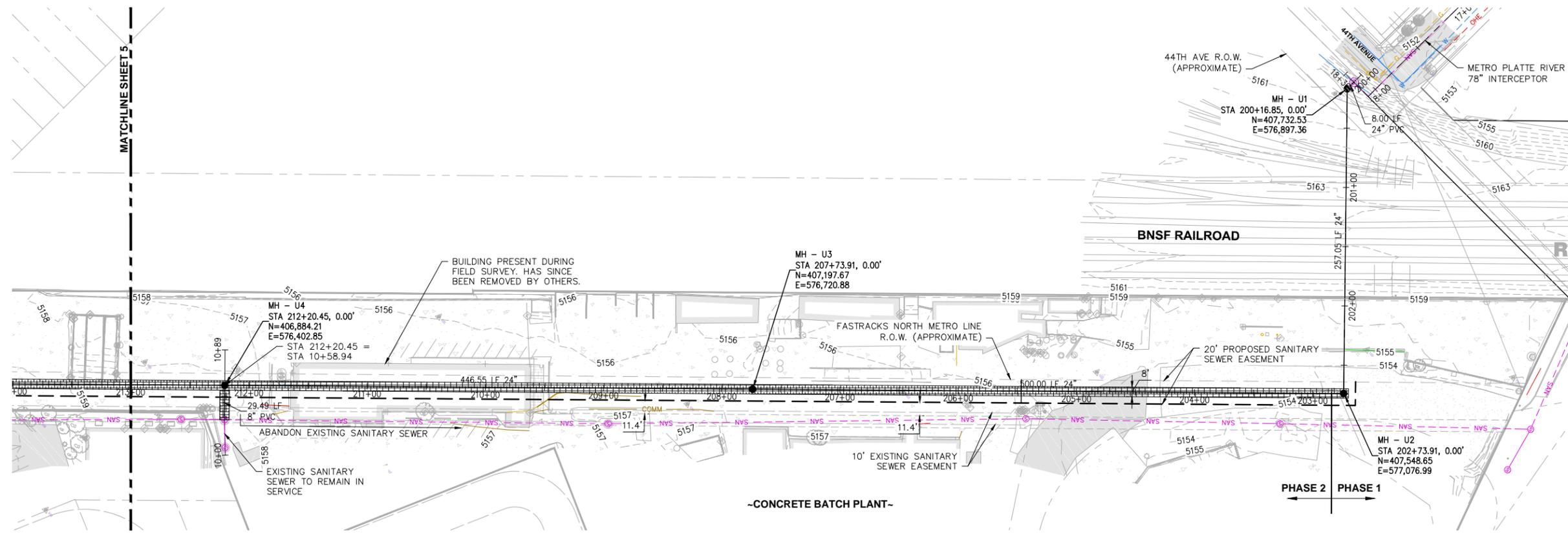
NO.	DESCRIPTION OF REVISIONS	DATE	BY
x			x
x			x

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 TWO WORKING DAYS
 BEFORE YOU DIG
 1-800-922-0987
 UNCC (UNIVERSITY OF COLORADO)

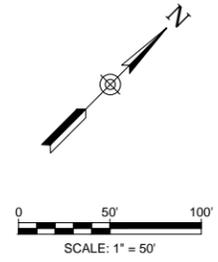
CITY AND COUNTY OF DENVER
 DEPARTMENT OF PUBLIC WORKS
 ENGINEERING DIVISION
 CAPITAL PROJECTS MANAGEMENT
 2000 W. 3RD AVE., DENVER, CO 80223
 TEL.: (303) 446-3617 FAX: (303) 446-3647

50TH AVE AND WASHINGTON ST
 SANITARY SEWER IMPROVEMENTS
 PRO TRACKING NO: PWWW2016-021
 PROJECT MASTER NO: 2016-PRJMSR-0000239
 SITE PREPARATION, PAVING, AND DEMOLITION

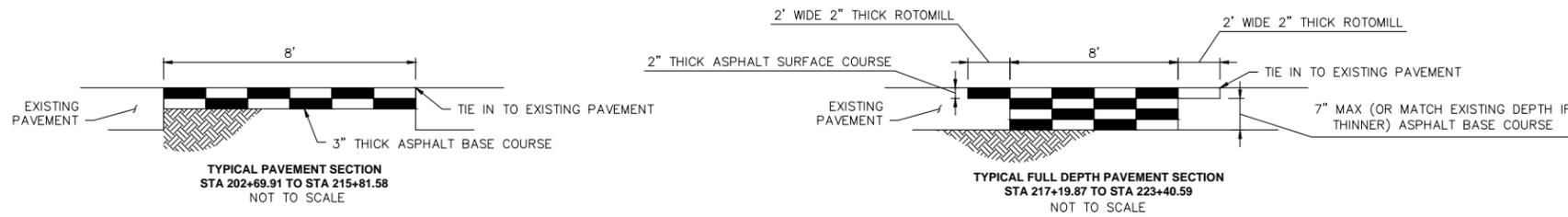
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DESIGNED BY:	CAU/DPK
APPROVED BY:	DPK
DRAWING NAME:	
DATE:	01/03/2017
SHEET NO.:	4 OF 12



FOR CONSTRUCTION
 January 03, 2017
 DATE PRINTED
 OLSSON ASSOCIATES



PLOT DATE: January 3, 2017
 F:\PROJECTS\013-0817\WTRSF\FINAL PLANS\30817_SP.DWG



LEGEND

CONCRETE REMOVAL	
9" FULL DEPTH PAVING	
2" ROTOMILL	
REMOVE & REPLACE CONCRETE	
3" ASPHALT BASE COURSE	

NO.	DESCRIPTION OF REVISIONS	DATE	BY
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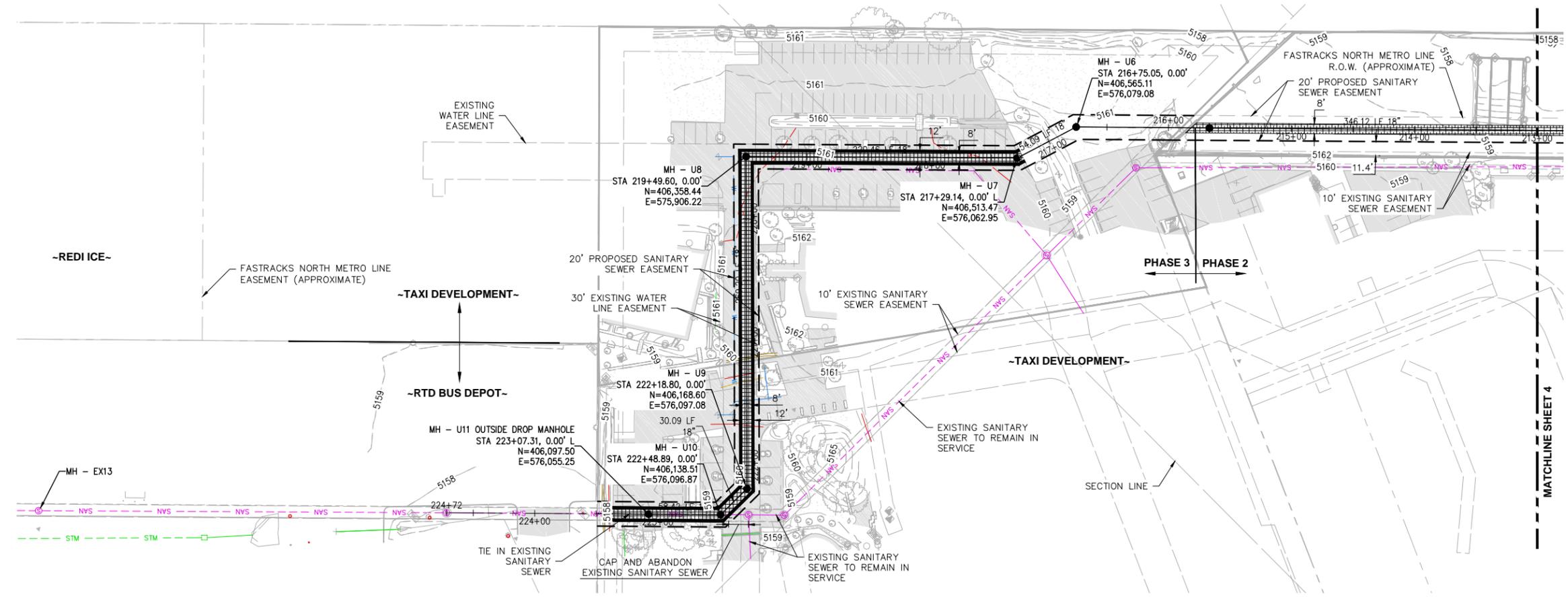
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 2000 W. 3RD AVE., DENVER, CO 80223
 TEL.: (303) 446-3617 FAX: (303) 446-3647

50TH AVE AND WASHINGTON ST
 SANITARY SEWER IMPROVEMENTS
 PRO TRACKING NO: PWWW2016-021
 PROJECT MASTER NO: 2016-PRJMSTR-0000239
 SITE PREPARATION, PAVING, AND DEMOLITION

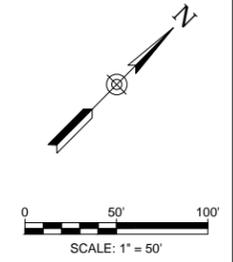
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APPROVED BY:	DPK
DRAWING NAME:	
DATE:	01/03/2017
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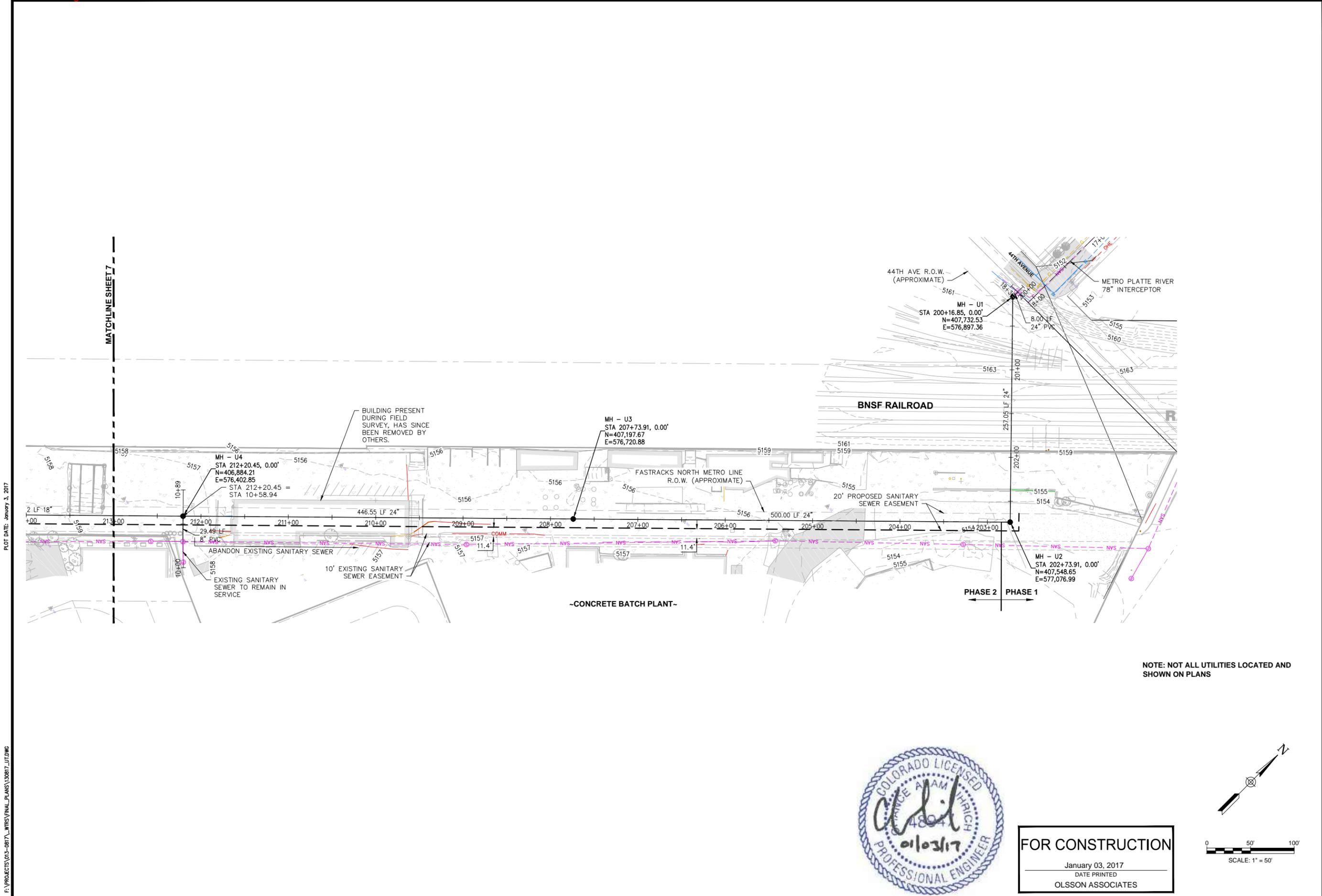
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PLOT DATE: January 3, 2017

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CITY AND COUNTY OF DENVER
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 ENGINEERING DIVISION
 CAPITAL PROJECTS MANAGEMENT
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 TEL.: (303) 446-3617 FAX: (303) 446-3647

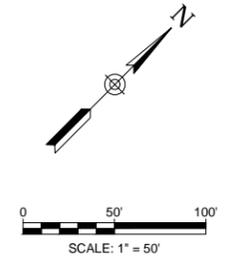
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 SANITARY SEWER IMPROVEMENTS
 PRO TRACKING NO: PWWW2016-021
 PROJECT MASTER NO: 2016-PRJMSTR-0000239

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DESIGNED BY:	CAU/DPK
APPROVED BY:	DPK
DRAWING NAME:	
DATE:	01/03/2017
SHEET NO.:	6 OF 12

NOTE: NOT ALL UTILITIES LOCATED AND SHOWN ON PLANS



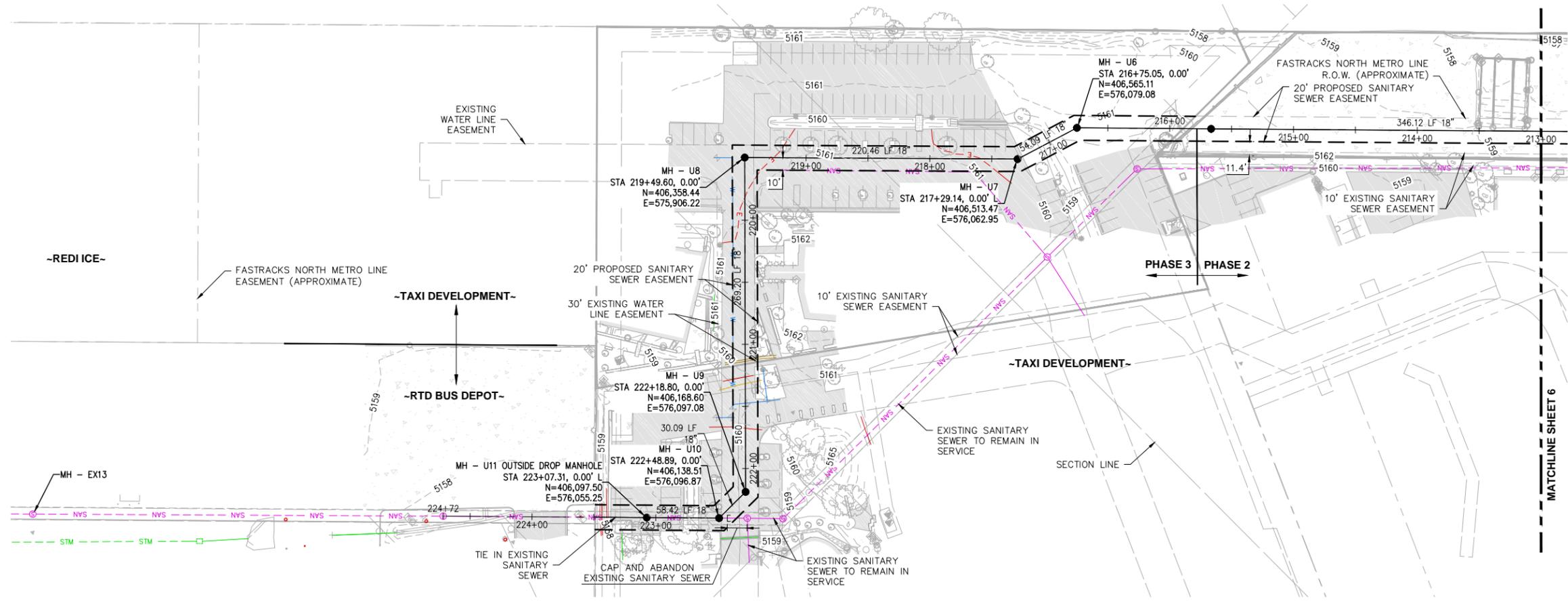
FOR CONSTRUCTION
 January 03, 2017
 DATE PRINTED
 OLSSON ASSOCIATES



UTILITY PLAN

PLOT DATE: January 3, 2017

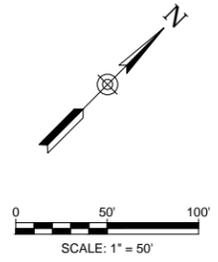
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NOTE: NOT ALL UTILITIES LOCATED AND SHOWN ON PLANS



FOR CONSTRUCTION
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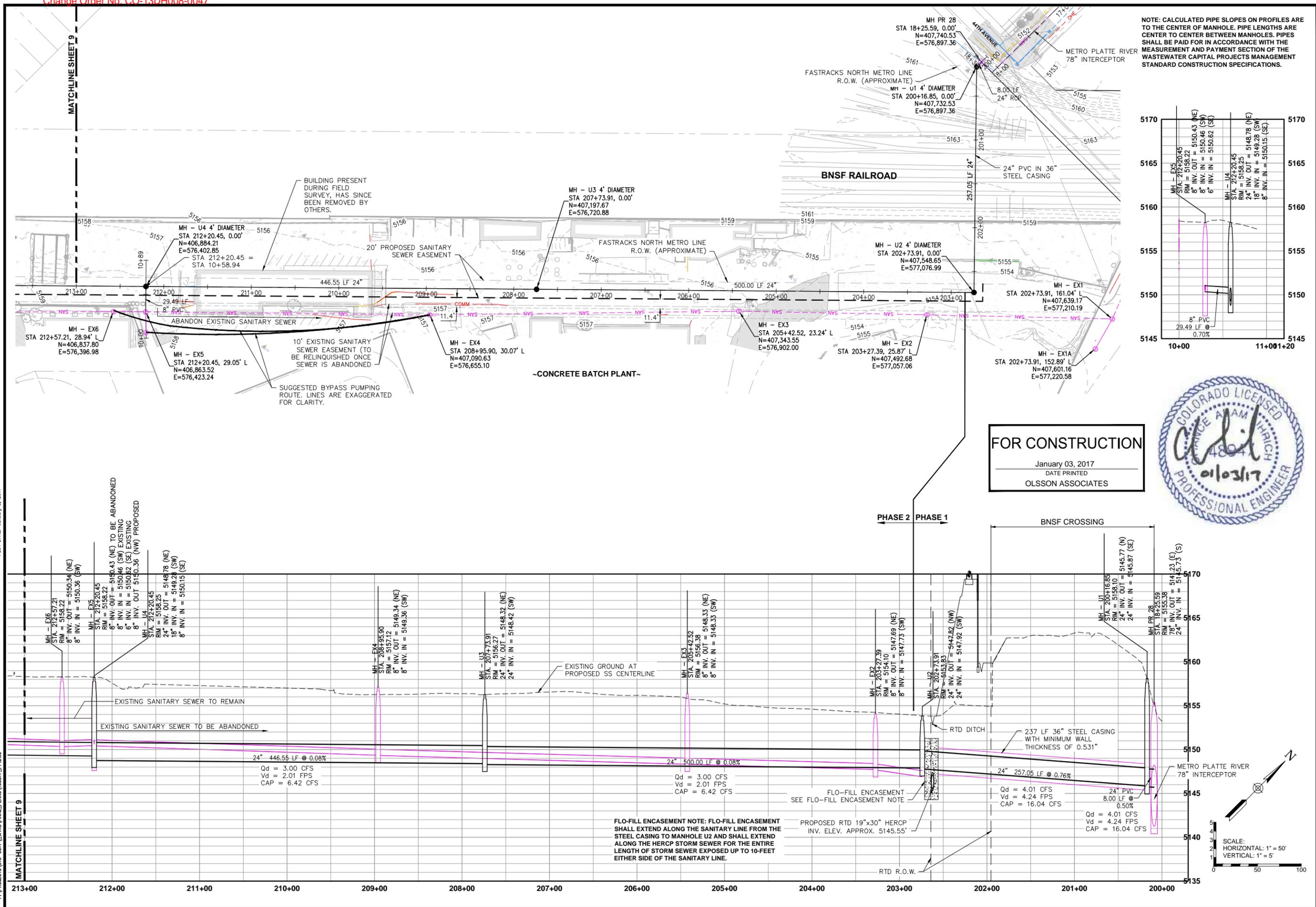
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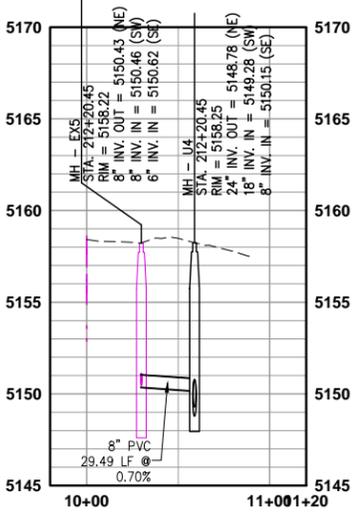
CITY AND COUNTY OF DENVER
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50TH AVE AND WASHINGTON ST
 SANITARY SEWER IMPROVEMENTS
 PRO TRACKING NO: PWWW2016-021
 PROJECT MASTER NO: 2016-PRJMSTR-0000239
 UTILITY PLAN

DRAWN BY:	CAU
DESIGNED BY:	CAU/DPK
APPROVED BY:	DPK
DRAWING NAME:	
DATE:	01/03/2017
SHEET NO.:	7 OF 12



NOTE: CALCULATED PIPE SLOPES ON PROFILES ARE TO THE CENTER OF MANHOLE. PIPE LENGTHS ARE CENTER TO CENTER BETWEEN MANHOLES. PIPES SHALL BE PAID FOR IN ACCORDANCE WITH THE MEASUREMENT AND PAYMENT SECTION OF THE WASTEWATER CAPITAL PROJECTS MANAGEMENT STANDARD CONSTRUCTION SPECIFICATIONS.



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X			X
X			X

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CITY AND COUNTY OF DENVER DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION CAPITAL PROJECTS MANAGEMENT 2000 W. 3RD AVE. DENVER, CO 80223 TEL.: (303) 446-3617 FAX: (303) 446-3647

50TH AVE AND WASHINGTON ST SANITARY SEWER IMPROVEMENTS
PRO TRACKING NO: PWWW2016-021
PROJECT MASTER NO: 2016-PRJMSTR-0000239
PLAN AND PROFILE

DRAWN BY: CAU
DESIGNED BY: CAU/DPK
APPROVED BY: DPK
DRAWING NAME:
DATE: 01/03/2017
SHEET NO.: 8 OF 12

LEGEND

- SEDIMENT CONTROL LOG
- CONCRETE WASHOUT AREA

NOTES

1. SEDIMENT CONTROL LOG TO BE PLACED IN 500-FT INCREMENTS AND MOVED AS NECESSARY BY CONTRACTOR AS CONSTRUCTION PROGRESSES.
2. CONCRETE WASHOUT AREA TO BE MOVED AS NECESSARY BY CONTRACTOR AS CONSTRUCTION PROGRESSES.

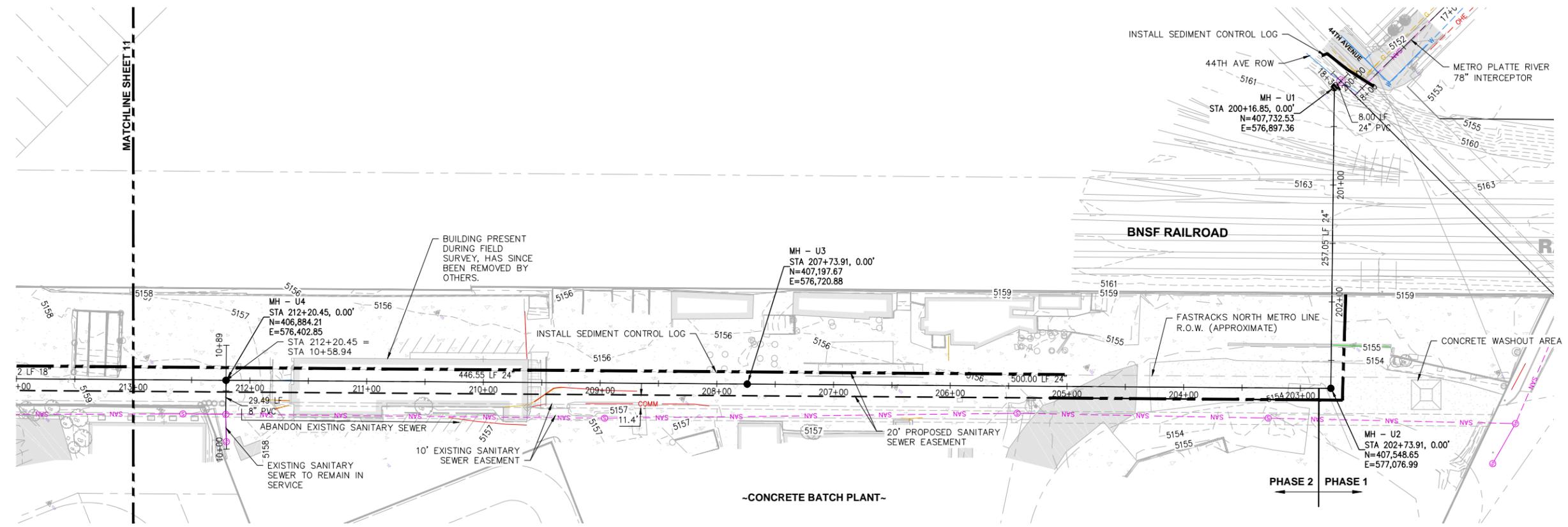
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 TEL.: (303) 446-3617 FAX: (303) 446-3647

**50TH AVE AND WASHINGTON ST
 SANITARY SEWER IMPROVEMENTS**
 PRO TRACKING NO: PWWW2016-021
 PROJECT MASTER NO: 2016-PRJMSTR-0000239
 STORMWATER MANAGEMENT PLAN

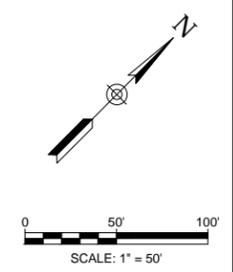
DRAWN BY: CAU
 DESIGNED BY: CAU/DPK
 APPROVED BY: DPK
 DRAWING NAME:
 DATE: 01/03/2017
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**THIS PLAN IS A SUGGESTED EROSION CONTROL PLAN.
 CONTRACTOR RESPONSIBLE FOR SUBMITTING AND
 OBTAINING CASDP FROM THE CITY AND COUNTY OF DENVER.**



FOR CONSTRUCTION
 January 03, 2017
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 OLSSON ASSOCIATES



PLOT DATE: January 3, 2017
 F:\PROJECTS\013-0817\WTRSFINAL\PLANS\30817_EC.DWG

LEGEND

- SEDIMENT CONTROL LOG
- CONCRETE WASHOUT AREA

NOTES

1. SEDIMENT CONTROL LOG TO BE PLACED IN 500-FT INCREMENTS AND MOVED AS NECESSARY BY CONTRACTOR AS CONSTRUCTION PROGRESSES.
2. CONCRETE WASHOUT AREA TO BE MOVED AS NECESSARY BY CONTRACTOR AS CONSTRUCTION PROGRESSES.

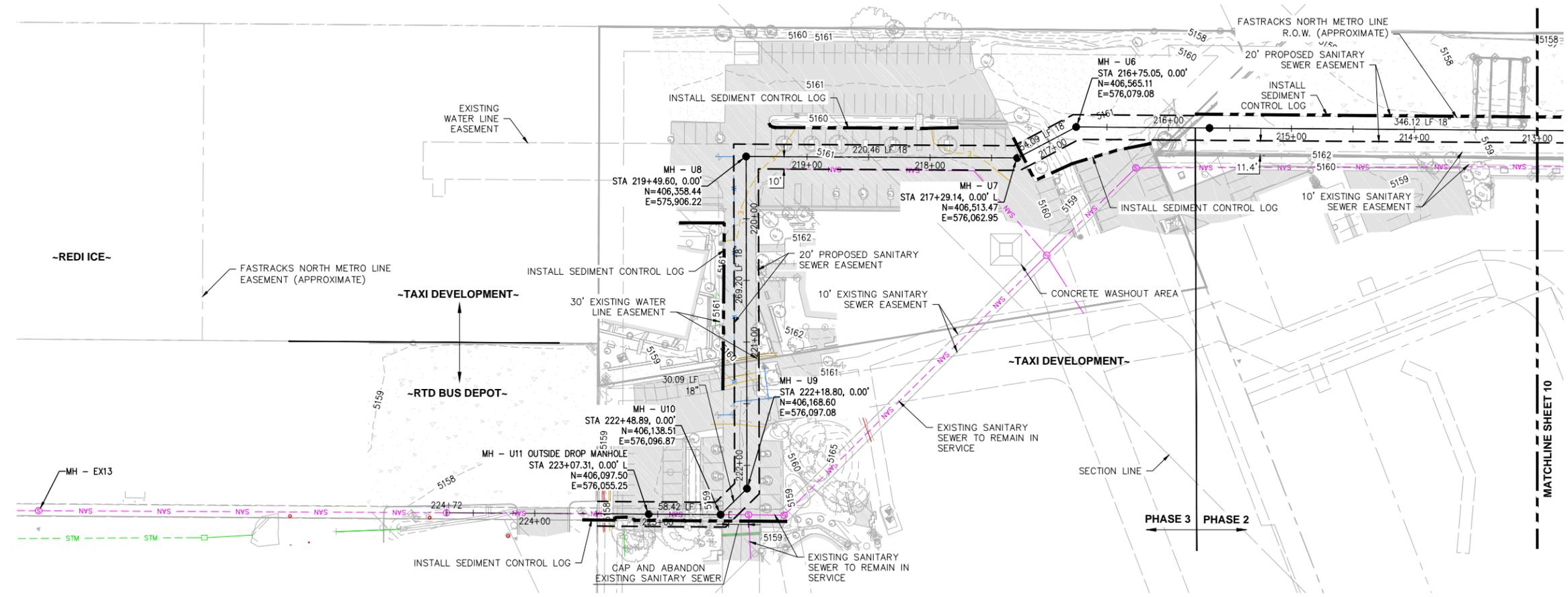
NO.	DESCRIPTION OF REVISIONS	DATE	BY
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 2000 W. 3RD AVE., DENVER, CO 80223
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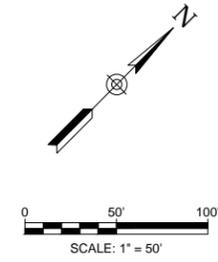
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 SANITARY SEWER IMPROVEMENTS
 PRO TRACKING NO: PWWW2016-021
 PROJECT MASTER NO: 2016-PRJMSTR-0000239
 STORMWATER MANAGEMENT PLAN

DRAWN BY:	CAU
DESIGNED BY:	CAU/DPK
APPROVED BY:	DPK
DRAWING NAME:	
DATE:	01/03/2017
SHEET NO.:	11 OF 12

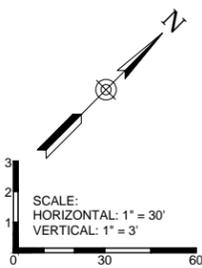
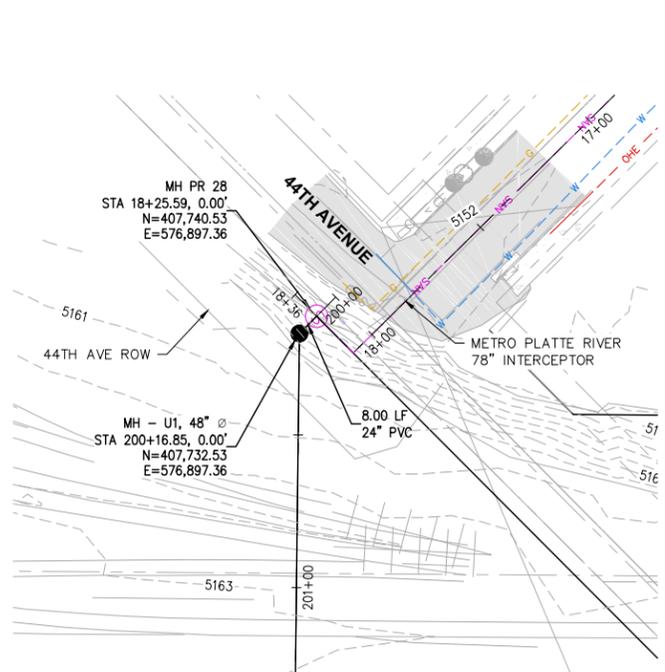


**THIS PLAN IS A SUGGESTED EROSION CONTROL PLAN.
 CONTRACTOR RESPONSIBLE FOR SUBMITTING AND
 OBTAINING CASDP FROM THE CITY AND COUNTY OF DENVER.**

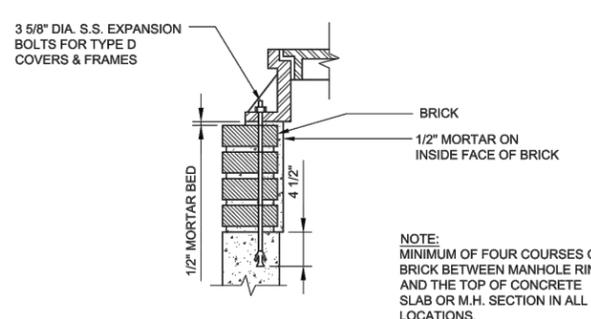
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 PLOT DATE: January 3, 2017



- NOTES:**
- METRO WASTEWATER RECLAMATION DISTRICT MUST BE NOTIFIED AT LEAST 48 HOURS PRIOR TO CONSTRUCTION ON METRO FACILITIES IN ORDER FOR A DISTRICT INSPECTOR TO BE PRESENT DURING CONSTRUCTION. CONTRACTOR MUST CONTACT MARC FLATT AT 303-286-3203 TO SCHEDULE THE INSPECTION.
 - METRO WASTEWATER MANHOLE MH PR 28 HAS SPECTRASHIELD INSTALLED. ANY DAMAGES TO THE SPECTRASHIELD OCCURRING DURING THE PROJECT MUST BE REPAIRED BY AN APPROVED CONTRACTOR, CCI SPECTRUM INC., OR APPROVED OTHER. REPAIRS MUST BE COORDINATED WITH DAVID OWENS OF METRO WASTEWATER.



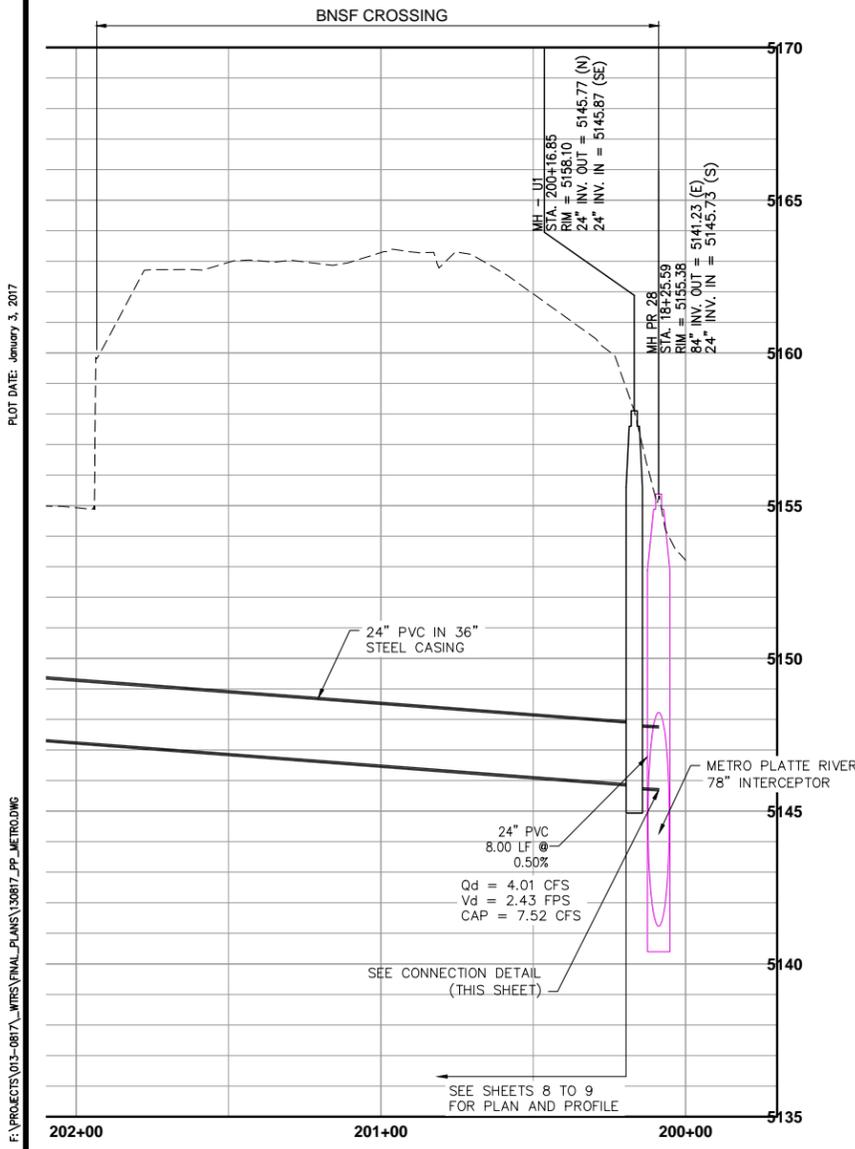
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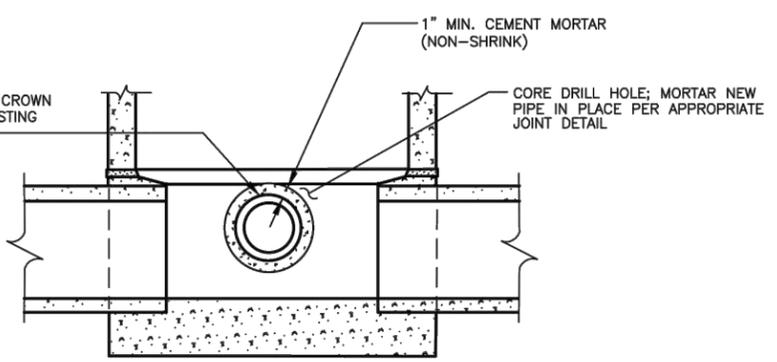
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3			X

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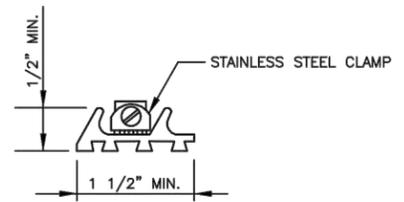
CITY AND COUNTY OF DENVER
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 CAPITAL PROJECTS MANAGEMENT
 2000 W. 3RD AVE., DENVER, CO 80223
 TEL.: (303) 446-3617 FAX: (303) 446-3647



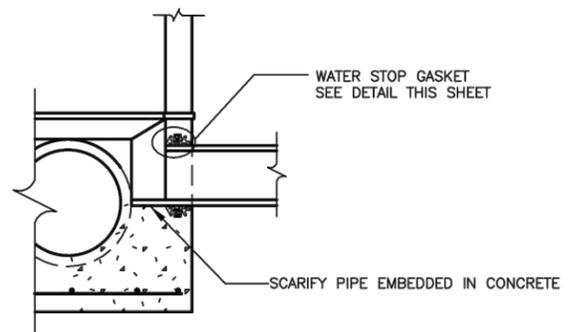
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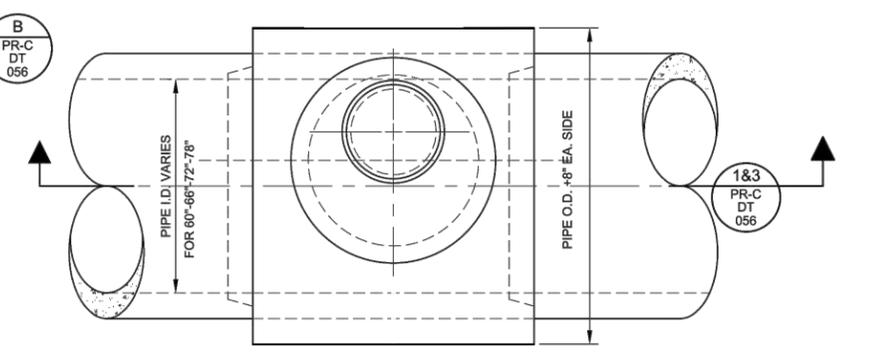
SECTION EXISTING MANHOLES



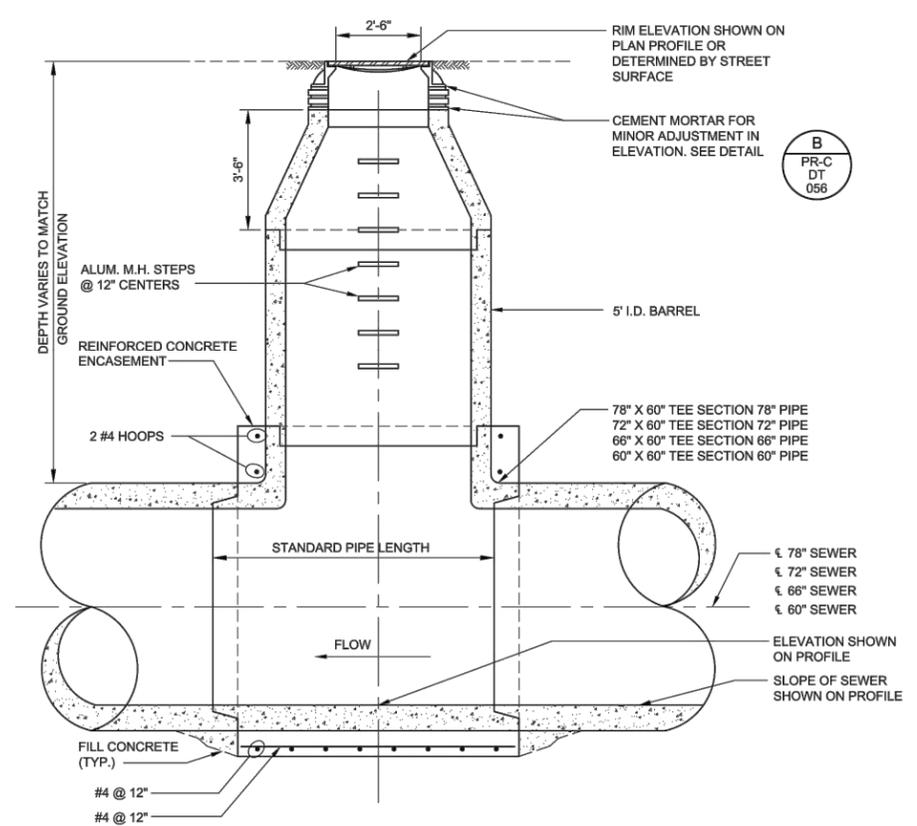
WATER STOP GASKET



SMOOTH-WALL PIPE CONNECTION DETAIL



TYPICAL MANHOLE PLAN



SECTION 3
 60", 66", 72" & 78" PIPE
 SCALE: 3/8"=1'-0"

EXISTING PLATTE RIVER INTERCEPTOR MANHOLE DETAILS
 NOTE: DETAILS SHOWN ARE TYPICAL AND MAY DIFFER IN THE FIELD.

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 PRO TRACKING NO: PWWW2016-021
 PROJECT MASTER NO: 2016-PRJMSTR-0000239
 INTERCEPTOR CONNECTION

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APPROVED BY:	DPK
DRAWING NAME:	
DATE:	01/03/2017
SHEET NO.:	12 OF 12

EXHIBIT K

NATIONAL WESTERN SANITARY SEWER LINE PROJECT

(as follows)

RTD-FASTRACKS NORTH METRO PROJECT

CONTRACT NO. 13DH008

NORTH METRO RAIL LINE

DESIGN PACKAGE DP07C WET UTILITIES

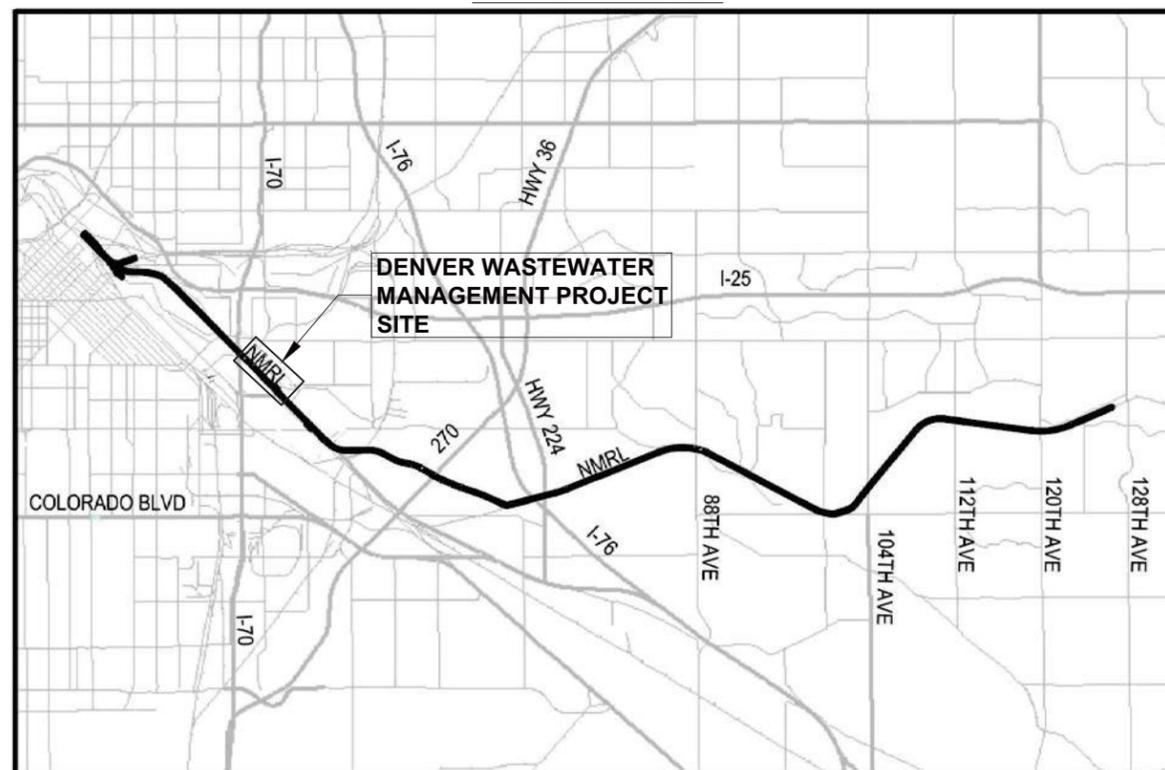
CITY AND COUNTY OF DENVER-

DEPARTMENT OF PUBLIC WORKS

WASTEWATER MANAGEMENT DIVISION

CONSTRUCTION PLANS

LOCATION MAP



NTS



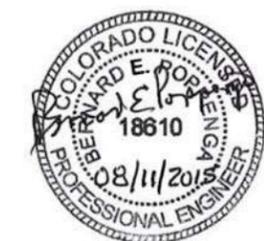
CALL UTILITY NOTIFICATION
BURLINGTON NORTHERN/
SANTA FE RAILROAD
1-800-533-2891

CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.



CALL UTILITY NOTIFICATION
CENTER OF COLORADO
1-800-922-1987 or 811

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9:47 AM

2015-08-11

USER: Hoover, Stu

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0	ISSUED FOR CONSTRUCTION	PS	08/11/15

DESIGNED BY: **BEP** DATE: 10/01/14
 DRAWN BY: **MAO** DATE: 10/01/14

CHECKED BY: **PS** DATE: 08/11/15
 APPROVED BY: **BEP** DATE: 08/11/15

HORZ. SCALE: AS SHOWN
 VERT. SCALE: N/A

2000 SOUTH COLORADO BOULEVARD
 SUITE 2-300
 DENVER, COLORADO 80222
 (303) 758-4058

REGIONAL TRANSPORTATION DISTRICT
 1600 BLAKE STREET
 DENVER, COLORADO 80202
 (303) 628-9000

NORTH METRO RAIL LINE

COVER SHEET

DWG No. UG-200

UTILITY CONTACT LIST

DENVER WASTEWATER MANAGEMENT DIVISION	FRANK KEMME	720-865-3032	FRANK.KEMME@DENVERGOV.ORG	201 W. COLFAX, 5C5-6 DENVER, CO 80202
---------------------------------------	-------------	--------------	---------------------------	---------------------------------------

STANDARD SYMBOLS

EXISTING	UTILITIES	PROPOSED
	UNDERGROUND ELECTRIC LINE	
	OVERHEAD ELECTRIC LINE	
	GAS LINE	
	SANITARY SEWER LINE	
	STORM SEWER LINE	
	UNDERGROUND TELEPHONE LINE	
	OVERHEAD TELEPHONE LINE	
	WATER LINE	
	BEND FITTINGS	
	TEE & CROSS FITTINGS	
	6" WATER LINE	
	8" WATER LINE	
	12" WATER LINE	
	UNDERGROUND CABLE TELEVISION	
	OVERHEAD CABLE TELEVISION	
	UNDERGROUND FIBER OPTICS CABLE	
	OVERHEAD FIBER OPTICS CABLE	
	LIGHT POLE	
	WATER VALVE	
	FIRE HYDRANT	
	WELL	
	UTILITY POLE	
	TRANSMISSION TOWER	
	ELECTRIC VAULT, JUNCTION BOX	
	GUY WIRE	
	HIGH MAST LIGHT	
	DECORATIVE LIGHT	
	GAS METER, VAULT, VALVE	
	TELEPHONE VAULT, JUNCTION BOX, PEDESTAL	

ABBREVIATIONS

AC	ASPHALTIC CONCRETE	LS	LANDSCAPE
APPROX	APPROXIMATE	MATL	MATERIAL
BM	BENCHMARK	MAX	MAXIMUM
BW	BOTTOM OF WALL	MH	MANHOLE
CLR	CLEAR	MIN	MINIMUM
CL	CENTER LINE	ML	MAIN LINE
CONC	CONCRETE	MWRD	METRO WASTEWATER RECLAMATION DISTRICT
CP	CONTROL POINT	NO	NUMBER
DIA	DIAMETER	NWSS	NATIONAL WESTERN STOCK SHOW
D/S	DOWNSTREAM	OCS	OVERHEAD CATENARY SYSTEM
DW	DENVER WATER	OD	OUTSIDE DIAMETER
DWG	DRAWING	PVC	POLYVINYL CHLORIDE PIPE
DWM	DENVER WASTEWATER MANAGEMENT	R	RADIUS
E	ELECTRIC	RCP	REINFORCED CONCRETE PIPE
EL	ELEVATION	RL	RIDGELINE
EQ	EQUAL	RR	RAILROAD
EXIST	EXISTING	SAN	SANITARY
FF	FINISHED FLOOR	SF	SQUARE FOOT
FG	FINISHED GRADE	STM	STORM
FH	FIRE HYDRANT	T	TELEPHONE
FL	FLOW LINE	TC	TOP OF CURB
FO	FIBER OPTIC	TF	TOP OF FOOTING
G	GAS	TG	TOP OF GRATE
GB	GRADE BREAK	TW	TOP OF WALL
HORIZ	HORIZONTAL	TYP	TYPICAL
HP	HIGH POINT	UG	UNDERGROUND
ID	INSIDE DIAMETER	U/S	UPSTREAM
INV	INVERT	VERT	VERTICAL
JT	JOINT TRENCH	W	WATER
LF	LINEAR FEET	W/	WITH

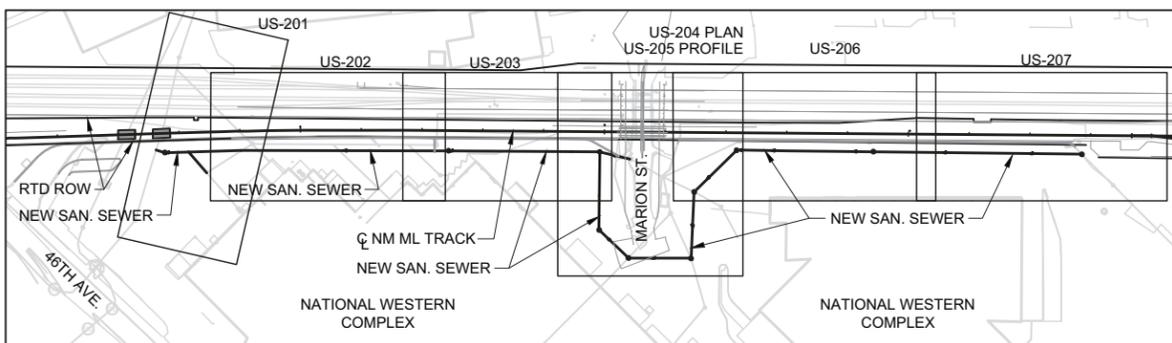
INDEX OF DRAWINGS

UG-200	COVER SHEET
UG-201	GENERAL PROJECT INFORMATION, INDEX
UG-202	SANITARY SEWERS GENERAL NOTES
US-201	SANITARY SEWER PLAN AND PROFILE, TRACK STA. 247+60 TO 249+20 (NM-03-03-SS)
US-202	SANITARY SEWER PLAN AND PROFILE, TRACK STA. 249+20 TO 252+20 (NM-03-22-SS)
US-203	SANITARY SEWER PLAN AND PROFILE, TRACK STA. 252+20 TO 255+50 (NM-03-04-SS)
US-204	SANITARY SEWER PLAN TRACK STA. 255+00 TO 257+00 (NM-03-21-SS)
US-205	SANITARY SEWER PROFILE, TRACK STA. 255+00 TO 257+00 (NM-03-21-SS)
US-206	SANITARY SEWER PLAN AND PROFILE, TRACK STA. 257+00 TO 262+90 (NM-03-06-SS), SHEET 1 OF 2
US-207	SANITARY SEWER PLAN AND PROFILE, TRACK STA. 257+00 TO 262+90 (NM-03-06-SS), SHEET 2 OF 2
UD-201	SANITARY SEWER DETAILS

MAPPING PROJECTION AND BENCHMARK

MAPPING PROJECTION:
 MAPPING PROJECTION FOR RTD COORDINATE SYSTEM
 GEODETIC COORDINATES ARE BASED ON NAD 83 (1992)
 ORTHOMETRIC HEIGHTS ARE BASED ON NAVD 88
 COORDINATES ARE BASED ON THE UNIVERSAL TRANSVERSE MERCATOR (UTM) NORTH ZONE (13)
 UNITS ARE US SURVEY FEET (SFT)
 PROJECT (GROUND) COORDINATES ARE MODIFIED AS FOLLOWS:
 1. UTM COORDINATES ARE CONVERTED FROM GRID TO GROUND.
 2. MULTIPLIED BY SCALE FACTOR = 1.000650402
 3. TRUNCATION APPLIED TO COORDINATES:
 NORTHING - 14,000,000 SFT
 EASTING - 1,000,000 SFT
 PROJECT COORDINATES WERE MODIFIED TO GROUND AT NGS B ORDER
 HORIZONTAL CONTROL STATION "MCDONNELL"
 DESIGNATION = MCDONNELL
 NGS PID = KK2099
 NAD 83 (1992) COORDINATES
 LATITUDE = 39°44'34.68938" (N)
 LONGITUDE = 105°00'03.94511" (W)
 ELLP. HEIGHT = 1570.58 MT
 NAVD 88 ELEVATION = 1587.6 MT

BENCHMARK:
 REFER TO RTD FASTTRACKS NORTH METRO RAIL LINE PROJECT SURVEY CONTROL AND MONUMENTATION FOR ADDITIONAL CONTROL.
 POINT DESCRIPTIONS AND LOCATION INFORMATION:
 RTD FASTTRACKS NORTH METRO RAIL LINE CONTROL POINT NUMBER 240, AT MARION STREET/47TH AVENUE, A 1" COPPER PLUG IN CONCRETE STAMPED "105 WEST" ELEVATION = 5184.32', NAVD 88.



DRAWING LOCATION KEY MAP



CALL UTILITY NOTIFICATION
 BURLINGTON NORTHERN/
 SANTA FE RAILROAD
1-800-533-2891
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

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 Know what's below. Call before you dig.



DENVER WASTEWATER MANAGEMENT

NO.	REVISIONS	BY	DATE
0	ISSUED FOR CONSTRUCTION	PS	08/11/15

DESIGNED BY: **BEP** DATE: 10/01/14
 DRAWN BY: **MAO** DATE: 10/01/14

CHECKED BY: **PS** DATE: 08/11/15
 APPROVED BY: **BEP** DATE: 08/11/15

2000 SOUTH COLORADO BOULEVARD
 SUITE 2-300
 DENVER, COLORADO 80222
 (303) 758-4058

RTD FasTracks
 North Metro
 Rail Line

REGIONAL TRANSPORTATION DISTRICT
 1600 BLAKE STREET
 DENVER, COLORADO 80202
 (303) 628-9000

NORTH METRO RAIL LINE

UTILITIES
 GENERAL PROJECT INFORMATION, INDEX

DWG No. UG-201

V:\52876\active\187608624 - North Metro Rail Line\06_Design\Civil\Phase 1_North\Utilities\Denver Waste Mgmt. Files\NM-U-UG-201.dwg 9:53 AM 2015-08-11 USER: Hoover, Stu

CITY AND COUNTY OF DENVER - DEPARTMENT OF PUBLIC WORKS WASTEWATER MANAGEMENT DIVISION SANITARY SEWER - GENERAL NOTES:

1. THE PUBLIC WORKS, WASTEWATER MANAGEMENT DIVISION'S STANDARD DETAILS AND TECHNICAL SPECIFICATIONS FOR SANITARY & STORM SEWERS APPLY TO THIS WORK. THE PUBLIC WORKS, WASTEWATER MANAGEMENT DIVISION'S STANDARD DETAILS (DRAWINGS, MOST RECENT EDITION, SHALL BE USED AS A MINIMUM. THIS BOOKLET IS AVAILABLE IN A REDUCED SIZE BOOKLET FORM AND IS AVAILABLE AT THE PUBLIC WORKS PERMITS OPERATIONS (PWPO) DURING NORMAL BUSINESS HOURS. THE TECHNICAL SPECIFICATIONS ARE AVAILABLE FROM THE PW/DES. BOTH SETS MUST BE IN POSSESSION OF THE CONTRACTOR AT THE PRE CONSTRUCTION CONFERENCE AND MUST REMAIN ON THE JOB SITE AT ALL TIMES DURING CONSTRUCTION. THE STANDARD DETAILS CAN BE VIEWED AT THE FOLLOWING WEBSITE ADDRESS: WWW.DENVERGOV.ORG.
2. CONTRACTOR SHALL CONFORM TO ALL FEDERAL, STATE AND LOCAL HEALTH AND SAFETY RULES AND REGULATIONS.
3. ONE SET OF THE APPROVED SEWER CONSTRUCTION DRAWINGS MUST BE ON-SITE AT ALL TIMES OF CONSTRUCTION.
4. ALL SEWER PIPES SHALL BE INSTALLED WITH CLASS B BEDDING AS A MINIMUM.
5. ANY MODIFICATIONS, ADJUSTMENTS, CONSTRUCTION OR RECONSTRUCTION OF PUBLIC WORKS, WASTEWATER DIVISION FACILITIES MUST BE INSPECTED BY A PW/DES CONSTRUCTION ENGINEERING INSPECTOR. PLEASE SCHEDULE AN APPOINTMENT AT (303) 446-3722; A MINIMUM OF 48 HOURS IN ADVANCE OF THE WORK TO SCHEDULE AN INSPECTOR.
6. PIPE MATERIAL, FITTINGS, TRENCHING, BEDDING, CONNECTIONS, AND SEWER INSTALLATION MUST BE INSPECTED BY PW/DES CONSTRUCTION ENGINEERING INSPECTOR PRIOR TO ANY TRENCH BACKFILL. PLEASE SCHEDULE AN APPOINTMENT AT (303) 446-3722; A MINIMUM OF 48 HOURS IN ADVANCE OF THE WORK TO SCHEDULE AN INSPECTOR. MONITORING OF THE PROJECT BY PW/DES SHALL BE FOR THE PURPOSE OF ASSURING GENERAL COMPLIANCE WITH THE APPROVED PLANS, STANDARDS, DETAILS, AND SPECIFICATIONS AS WELL AS THE RULES & REGULATIONS. STORM AND SANITARY INSPECTIONS SHALL NOT TAKE THE PLACE OF CONSTRUCTION INSPECTION AND MATERIALS TESTING, WHICH IS THE OWNER'S RESPONSIBILITY.
7. SANITARY SEWER PIPES SHALL BE PVC AND CONFORM TO ASTM D3034 SDR 35 FOR SIZES 8 INCHES TO 16 INCHES IN DIAMETER (SOLID WALL), ASTM F789 FOR 18 INCHES (SOLID WALL), ASTM F679 FOR SIZES 18 TO 36 INCHES (SOLID WALL), ASTM F949 FOR SIZES 8 TO 38 INCHES (PVC PROFILE WALL), ASTM F794 FOR SIZES 8 TO 48 INCHES (PROFILE WALL), OR ASTM F 1803 FOR SIZES 18 TO 60 INCHES (CLOSED PROFILE GRAVITY PIPE).
8. STORM SEWER PIPES SHALL BE CLASS III REINFORCED CONCRETE CONFORMING TO ASTM C-76, JOINTS SHALL BE RUBBER GASKET O-RING TYPE.
9. ANY QUESTIONS REGARDING PUBLIC WORKS STORM AND SANITARY FACILITIES THAT ARISE DURING CONSTRUCTION SHOULD BE BROUGHT TO THE ATTENTION OF THE PW/DES CONSTRUCTION ENGINEERING INSPECTOR AT: (303) 446-3722.
10. BACKFILL IN PUBLIC RIGHT OF WAY MUST MEET THE REQUIREMENTS OF DENVER PUBLIC WORKS DEPARTMENT. A STREET CUT PERMIT AND INSPECTION OF A BACKFILL AND PAVEMENT REPAIR BY PUBLIC WORKS IS REQUIRED FOR ALL WORK IN THE PUBLIC RIGHT OF WAY. THE CONTRACTOR AND/OR DEVELOPER IS ADVISED TO CONTACT CONSTRUCTION ENGINEERING RIGHT-OF-WAY INSPECTION AT: (303) 448-3469 OR PWPO AT: (303) 448-3759 TO OBTAIN INFORMATION REGARDING FEES AND PROCEDURES FOR OBTAINING THE REQUIRED PERMIT(S). CONTRACTOR MUST OBTAIN A STREET CUT PERMIT AND NOTIFY THE DISTRICT INSPECTOR AT: (303) 446-3469, 48-HOURS PRIOR TO START OF JOB, COMPACTION TESTING IS REQUIRED.
11. THE CONTRACTOR PERFORMING WORK ON ANY PUBLIC OR PRIVATE STORM SEWER FACILITY OR APPURTENANCE MUST BE PROPERLY TRADE LICENSED AS A COMPANY AND HAVE A LICENSED PLUMBER OR CERTIFIED JOURNEYMAN DRAINLAYER ON SITE DURING THE WORK.
12. ACCESS MUST BE MAINTAINED FOR ALL SEWER MANHOLES DURING CONSTRUCTION. ANY DESIGN CHANGES TO NEW OR EXISTING PUBLIC STORM OR SANITARY SEWER MUST INCLUDE PERMANENT ACCESS TO THE PUBLIC STORM AND SANITARY SEWER MANHOLES AND COULD REQUIRE ROLL-OVER CURB, COMMERCIAL DRIVE, REINFORCED CONCRETE SIDEWALK, RITTER RINGS OR CONCRETE PAD. MINIMUM ACCESS TO EACH MANHOLE IS A 20' WIDE LANE FROM THE NEAREST PUBLIC RIGHT OF WAY, CENTERED AT THE MANHOLE INCLUDING A 10' RADIUS AROUND THE MANHOLE AND 22.0' VERTICAL CLEARANCE.
13. THE CONNECTION OF A NEW SANITARY/STORM SEWER TO AN EXISTING MANHOLE MAY REQUIRE MANHOLE RECONSTRUCTION AT THE DISCRETION OF THE PW/DES CONSTRUCTION ENGINEERING FIELD INSPECTOR AND/OR THE PW/DES CONSTRUCTION ENGINEERING ENGINEER.
14. CHANGES IN THE ELEVATION OF AN EXISTING BRICK MANHOLE MAY REQUIRE THE USE OF A PRE-CAST CONCRETE MANHOLE OR MANHOLE RECONSTRUCTION AT THE DISCRETION OF THE PW/DES CONSTRUCTION ENGINEERING FIELD INSPECTOR AND/OR PW/DES CONSTRUCTION ENGINEERING ENGINEER.
15. CHANGES IN ELEVATION OR MODIFICATION TO EXISTING INLETS MAY REQUIRE RECONSTRUCTION AT THE DISCRETION OF THE PW/DES CONSTRUCTION ENGINEERING FIELD INSPECTOR AND/OR PW/DES CONSTRUCTION ENGINEERING ENGINEER.
16. THE CONTRACTOR SHALL BE AWARE THAT WHEN DEBRIS IS DROPPED INTO PUBLIC MANHOLES AND OTHER PUBLIC STRUCTURES, HE IS TO IMMEDIATELY REMOVE THIS TO ELIMINATE THE POSSIBILITY OF PROPERTY DAMAGE DUE TO THE DEBRIS CAUSING BACKUP INTO PRIVATE PROPERTIES. IF IT IS DETERMINED THAT DEBRIS CAUSED A BACKUP, THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR DAMAGES.
17. THE CONTRACTOR SHALL MAKE SURE THAT ALL MANHOLES AND OTHER STRUCTURES ARE BUILT TO FINISHED GRADE.
18. NO TREES SHALL BE PLANTED WITHIN ANY SEWER EASEMENT OR WITHIN TEN(10) FEET OF ANY PUBLIC MANHOLES, PIPES OR INLETS.
19. "AS-BUILT" ELEVATIONS ARE TO BE ON THE 1988 NAVD MYLAR DRAWINGS AND PRINTS ARE TO BE SUBMITTED TO PWPRS AT COMPLETION OF THE PROJECT. "AS-BUILT" MYLAR DRAWINGS ARE TO BE REPRODUCIBLE COPIES (OR ORIGINALS) OF THE APPROVED CONSTRUCTION DRAWINGS. ANY FIELD CHANGES ARE TO BE NOTED. THE DRAWINGS WILL STATE "AS-BUILT" IN LARGE BLOCK LETTERS. THE "AS-BUILT" MYLARS AND/OR PRINTS ARE TO BE SIGNED, DATED AND STAMPED BY A COLORADO REGISTERED ENGINEER.
20. "AS-BUILT" FIELD NOTES, FROM WHICH THE AS-BUILT DRAWINGS ARE PREPARED, ARE TO BE PROVIDED AND STAMPED/SIGNED AND DATED BY THE COLORADO REGISTERED PROFESSIONAL LAND SURVEYOR. THESE NOTES WILL INCLUDE THE STATIONING OF ANY BUILDING SEWER STUBS INSTALLED.
21. UPON COMPLETION OF SITE GRADING AND SEWER CONSTRUCTION, THE OWNER OR DEVELOPER SHALL BE RESPONSIBLE FOR FURNISHING THE PWPRS A CERTIFICATE OF INSPECTION PREPARED BY THE COLORADO REGISTERED ENGINEER WHO PERFORMED OR SUPERVISED CONSTRUCTION INSPECTION, CERTIFYING THAT: 1) A CONSTRUCTION INSPECTOR WAS ON THE JOB SITE AT ALL TIMES SEWER OR DRAINAGE FACILITY WORK WAS PERFORMED, 2) ALL STORM AND SANITARY SEWER FACILITIES, SITE GRADING, DETENTION OND GRADING AND OUTLET WORKS (IF ANY) WERE CONSTRUCTED IN COMPLIANCE WITH PLANS AND SPECIFICATIONS APPROVED BY THE DEPARTMENT OF PUBLIC WORKS, AND 3) THE AS-BUILT DRAWINGS INCLUDED ACCURATELY DEPICT THE FINAL INSTALLATION OF THE STORM DRAINAGE AND/OR SEWER SYSTEM. THIS CERTIFICATION SHALL BE REQUIRED FOR ALL STORM AND SANITARY SEWER FACILITIES IN ADDITION TO ANY INSPECTIONS MADE BY THE DIVISION OR THE DEPARTMENT OF PUBLIC WORKS.
22. DENVER WATER DEPARTMENT NOTE: ALL PERSONS AND ENTITIES INVOLVED IN THIS PROJECT SHALL HAVE THE RESPONSIBILITY TO TAKE WHATEVER STEPS NECESSARY TO PROTECT ALL WATER FACILITIES. IF ANY WATER FACILITY CANNOT BE ADEQUATELY PROTECTED, THEN SAID WATER FACILITIES SHALL BE RELOCATED OR REMOVED IN ACCORDANCE WITH DENVER WATER DEPARTMENT REQUIREMENTS.

CITY AND COUNTY OF DENVER - FURTHER GENERAL NOTES:

1. PRECONSTRUCTION MEETING SHALL BE HELD PRIOR TO COMMENCING CONSTRUCTION. INVITE REPRESENTATIVES FROM THE CITY AND COUNTY OF DENVER (CCD).
2. SEWER USE AND DRAINAGE PERMIT MUST BE PULLED FOR ALL CONNECTIONS AND DISCONNECTIONS OF SERVICE LINES.
3. ANY FILL MATERIAL OR SOILS TO BE MOVED TO AND PLACED ON CCD-OWNED PROPERTY OR PLACED ON REAL PROPERTY TO BE TRANSFERRED TO THE CCD MUST BE FREE OF KNOWN CONTAMINATION (OBSERVED OR PREVIOUSLY DOCUMENTED) AND BE ACCEPTABLE FOR UNRESTRICTED RESIDENTIAL USE. CONTACT DAVE ERICKSON, DENVER ENVIRONMENTAL HEALTH (720-865-5433) FOR CLARIFICATION, IF NEEDED, REGARDING THIS CCD REQUIREMENT.
4. NOISE CONTROL. EXEMPTED HOURS FOR CONSTRUCTION IN THE CITY AND COUNTY OF DENVER ARE FROM 7 A.M. TO 9 P.M. MONDAY THROUGH FRIDAY AND 8 A.M. TO 5 P.M. ON SATURDAYS AND SUNDAYS PER SECTION 36-6.(B)(7) AND 36-7.(5)A., B. AND C. OF DENVER'S NOISE ORDINANCE, CHAPTER 36 "NOISE CONTROL," DENVER REVISED MUNICIPAL CODE (DRMC). IF THERE IS AN ANTICIPATED NEED TO WORK OUTSIDE OF THE EXEMPTED HOURS FOR CONSTRUCTION:
 - A. THE CONTRACTOR WILL NEED TO MAKE A REQUEST FOR A NIGHTTIME NOISE VARIANCE AS ALLOWED FOR IN SECTION 36-7.(5)C. OF THE DRMC.
 - B. THE VARIANCE PROCESS NEEDS TO BE STARTED A MINIMUM OF TWO TO THREE MONTHS PRIOR TO THE DESIRED START DATE OF ANY WORK NEEDING TO OCCUR OUTSIDE OF THE EXEMPTED HOURS.
 - C. ANY NOISE VARIANCE QUESTIONS SHOULD BE DIRECTED TO PAUL RIEDESEL, DEPARTMENT OF ENVIRONMENTAL HEALTH, DENVER COMMUNITY NOISE PROGRAM, (PHONE 720-865-5410; FAX 720-865-5532) A MINIMUM OF THREE MONTHS PRIOR TO THE START OF THE PROJECT.

PROJECT - UTILITY GENERAL NOTES:

1. EXISTING UTILITIES AS SHOWN ON THE DRAWINGS ARE FROM THE BEST AVAILABLE INFORMATION. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL UTILITIES THAT MAY BE IMPACTED BY THE PROJECT. THIS MAY INCLUDE POTHOLING.
2. UTILITY LOCATIONS SHOWN ON THE DRAWINGS ARE BASED ON FIELD SURVEY, POT HOLE INFORMATION, OR AGENCY PROVIDED INFORMATION.
3. NOT ALL SERVICE LINES ARE SHOWN ON THE DRAWINGS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO RECONNECT ALL EXISTING SERVICES FOR RELOCATED WATER AND SANITARY LINES.
4. NOT ALL REQUIRED WATER AND SANITARY APPURTENANCES (MANHOLES, VALVE BOXES, METERS, ETC.) FOR PROPOSED RELOCATIONS ARE SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL PERFORM ALL REQUIRED UTILITY ADJUSTMENTS ON SANITARY AND WATER LINE APPURTENANCES REQUIRED BY PROJECT IMPROVEMENTS. THE CONTRACTOR SHALL RESET, ADJUST, AND/OR REPLACE ANY APPURTENANCES IMPACTED BY CONSTRUCTION METHODS AND SHALL ADJUST APPURTENANCES TO MEET FINAL GRADES.
5. THE CONTRACTOR IS REQUIRED TO CONSTRUCT WATER AND SANITARY RELOCATIONS AND SHALL DO SO PER THE RELEVANT UTILITY OWNER'S STANDARDS. UNLESS OTHERWISE NOTED, DRY UTILITY CONFLICT RELOCATIONS SHALL BE DESIGNED AND CONSTRUCTED BY THE UTILITY OWNER. THE CONTRACTOR SHALL COORDINATE ALL UTILITY WORK, BOTH WET AND DRY.
6. NOT ALL REQUIRED APPURTENANCES (POLES, PEDESTALS, MARKERS, ETC.) ARE SHOWN ON THE DRAWINGS FOR PROPOSED 'OWNER RELOCATED UTILITIES' (GAS, ELECTRIC, TELEPHONE, CABLE, ETC.).
7. EXISTING CASINGS ON WATER AND SEWER LINES ARE INDICATED ON THE DRAWINGS, BUT NOT ALL SIZES OR EXACT LIMITS OF THE CASINGS ARE KNOWN. THE CONTRACTOR IS REQUIRED TO DETERMINE THE LIMITS OF EXISTING CASINGS AND EXTEND PER RTD STANDARDS AS APPLICABLE.
8. THE CONTRACTOR SHALL BE RESPONSIBLE TO CORRECT DAMAGE TO ANY NON-CONFLICT UTILITY CAUSED BY CONSTRUCTION METHODS INSIDE AND OUTSIDE THE CONSTRUCTION AREA UNLESS SPECIFICALLY NOTED ON THE PLANS.
9. THE CONTRACTOR SHALL COMPLY WITH ARTICLE 1.5 OF TITLE 9, CRS ("EXCAVATION REQUIREMENTS") WHEN EXCAVATING OR GRADING IS PLANNED IN THE AREA OF UNDERGROUND UTILITY FACILITIES. THE CONTRACTOR SHALL NOTIFY ALL AFFECTED UTILITIES AT LEAST THREE (3) BUSINESS DAYS, NOT INCLUDING THE ACTUAL DAY OF NOTICE, PRIOR TO COMMENCING SUCH OPERATIONS. THE CONTRACTOR SHALL COOPERATE AND COORDINATE ALL UTILITY WORK WITH THE CONCERNED UTILITY COMPANY OR AGENCY. THE CONTRACTOR SHALL CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC) AT 1-800-922-1987 OR 811, AT LEAST THREE (3) BUSINESS DAYS, NOT INCLUDING THE ACTUAL DAY OF NOTICE, PRIOR TO DIGGING, TO HAVE LOCATIONS OF UNCC REGISTERED LINES MARKED BY MEMBER COMPANIES. ALL OTHER UNDERGROUND FACILITIES SHALL BE LOCATED BY CONTACTING THE RESPECTIVE OWNER. UTILITY SERVICE LATERALS SHALL ALSO BE LOCATED PRIOR TO BEGINNING EXCAVATION OR GRADING.
10. ALL PERMITS AND/OR BONDS REQUIRED BY UTILITY OWNERS FOR CONSTRUCTION PERFORMED BY THE CONTRACTOR WILL BE OBTAINED AND PAID FOR BY THE CONTRACTOR.
11. THE UPRR AND BNSF OWN UTILITIES ALONG THE CORRIDOR. NOT ALL OF THEIR UTILITIES ARE SHOWN ON THE DRAWINGS. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE ALL UPRR AND BNSF UTILITIES, INCLUDING, BUT NOT LIMITED TO, BURIED LINES, OVERHEAD LINES, AND SIGNAL HOUSES. THE CONTRACTOR SHALL PROTECT-IN-PLACE ALL UPRR AND BNSF OWNED UTILITIES NOT BEING RELOCATED AND SHALL TREAT ALL RELOCATED UTILITIES AS 'UNIDENTIFIED UTILITIES' AS DEFINED IN THE CONTRACT. ANY RELOCATIONS SHALL BE DONE PER UPRR AND BNSF APPROVED LOCATIONS AND STANDARDS AND BNSF UTILITY ACCOMODATION POLICY.
12. THE CONTRACTOR SHALL CALL THE UPRR AT 1-800-336-9193 AND THE BNSF AT 1-800-533-2891 FOR DIGGING ON UPRR OR BNSF PROPERTY. RELOCATION OF UTILITIES OR COMMUNICATION LINES NOT OWNED BY THE UPRR OR BNSF SHALL BE COORDINATED WITH THE UTILITY OWNERS.
13. ALL LENGTHS OF SANITARY SEWER PIPE SHOWN ARE FROM CENTER OF MANHOLE TO CENTER OF MANHOLE UNLESS OTHERWISE NOTED.
14. THE CONTRACTOR SHALL PROVIDE DETAILED SANITARY SEWER BYPASS PLAN(S) IN ACCORDANCE WITH THE CITY AND COUNTY OF DENVER PUBLIC WORKS WASTEWATER MANAGEMENT DIVISION'S REQUIREMENTS.

DENVER WASTEWATER MANAGEMENT

0	ISSUED FOR CONSTRUCTION	PS	08/11/15
NO.	REVISIONS	BY	DATE

DESIGNED BY: **BEP** DATE: 10/01/14
 DRAWN BY: **MAO** DATE: 10/01/14



REGIONAL RAIL PARTNERS
 A Ballour Beatty / GRAHAM JOINT VENTURE

CHECKED BY: **PS** DATE: 08/11/15
 APPROVED BY: **BEP** DATE: 08/11/15



2000 SOUTH COLORADO BOULEVARD
 SUITE 2-300
 DENVER, COLORADO 80222
 (303) 758-4058



REGIONAL TRANSPORTATION DISTRICT
 1600 BLAKE STREET
 DENVER, COLORADO 80202
 (303) 628-9000

NORTH METRO RAIL LINE

SANITARY SEWERS GENERAL NOTES

CALL UTILITY NOTIFICATION
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08/11/2015

DWG No. UG-202

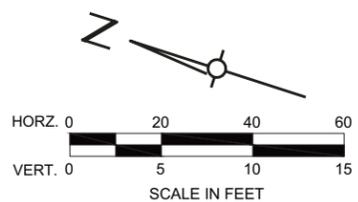
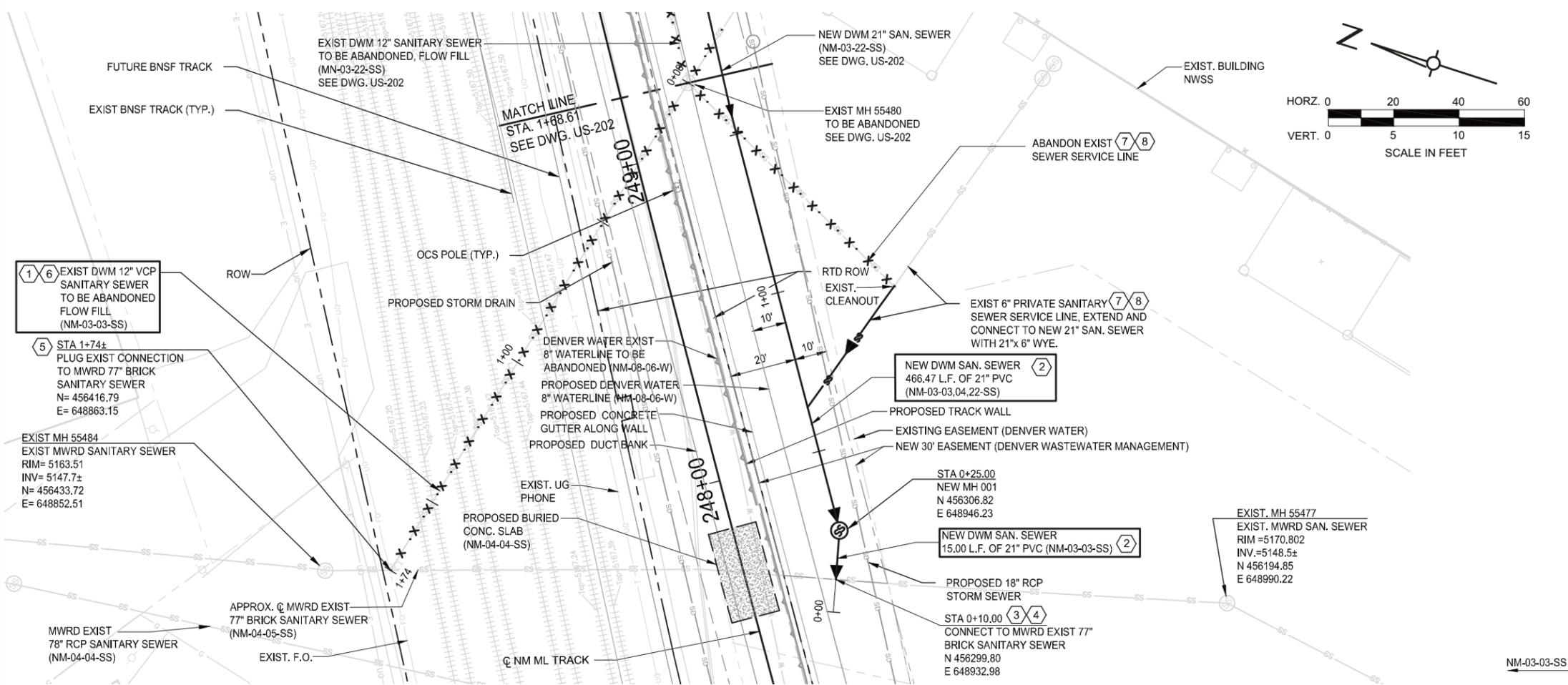
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T. Williams

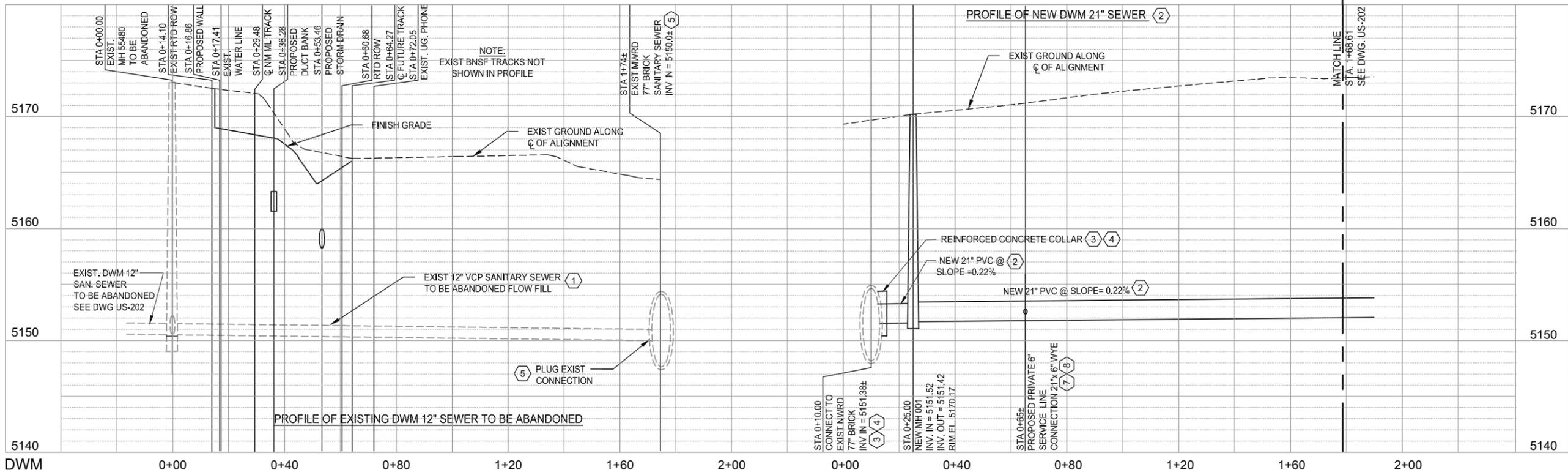
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- KEYED NOTES:**
- 1 ABANDON (FLOW FILL) EXIST 12" SANITARY SEWER. EXIST SEWER SHALL REMAIN IN SERVICE UNTIL NEW 21" SEWER CONSTRUCTION SHOWN HEREIN IS COMPLETED / TESTED / APPROVED. REFERENCE KEYED NOTE 2.
 - 2 NEW 21" SEWER CONSTRUCTION SHALL BE COMPLETE / TESTED / APPROVED BEFORE TAKING EXISTING SEWER SHOWN HEREIN OUT OF SERVICE. REFERENCE KEYED NOTE 1.
 - 3 CORE DRILL INTO EXIST 77" BRICK SANITARY SEWER. NOTIFY MARK HOFMEISTER OF MWRD (303-286-3229) MIN. ONE WEEK IN ADVANCE FOR COORDINATION OF SCHEDULE AND REQUIREMENTS OF MWRD.
 - 4 CONSTRUCT REINFORCED CONCRETE COLLAR WHERE NEW 21" SEWER PENETRATES EXIST 77" BRICK SEWER. BACKFILL WITHIN 10 FEET MINIMUM OF EXIST BRICK SEWER SHALL BE FLOWFILL. SEE DETAIL DWG UD-201.
 - 5 CONSTRUCT GROUT PLUG WHERE EXIST 12" VCP SEWER PENETRATES EXIST 77" BRICK SEWER. NOTIFY MARK HOFMEISTER OF MWRD (303-286-3229) MIN. ONE WEEK IN ADVANCE FOR COORDINATION ON SCHEDULE AND REQUIREMENTS OF MWRD. SEE DETAIL DWG. UD-201.
 - 6 COORDINATE WITH BNSF. REF. GENERAL NOTE NO. 2 THIS DRAWING.
 - 7 PRIVATE SANITARY SEWER SERVICE LINE. SEWER DEPTH TO BE DETERMINED DURING CONSTRUCTION OF NEW SANITARY SEWER. NOTE: CCD SEWER USE AND DRAINAGE PERMIT IS REQUIRED FOR MODIFICATIONS TO EXISTING SERVICE LINE CONNECTION.
 - 8 EXIST SANITARY SEWER SERVICE LINE THAT OUTLETS TO MH 55480 IS TO BE CONNECTED TO NEW 21" SANITARY SEWER PER DWM STANDARD DETAIL REF. LIST OF STANDARD DETAILS ON DWG UD-201. EXIST SEWER TO MH 55480 IS TO BE ABANDONED IN PLACE, OR REMOVED IF IMPACTS NEW 21" SEWER CONSTRUCTION. SCHEDULE WORK TO LIMIT INTERRUPTION OF SEWER OPERATION. COORDINATE INTERRUPTIONS OF SEWER OPERATION WITH THE SEWER OWNER. PROVIDE TEMPORARY PIPING AS REQUIRED TO MAINTAIN SEWER OPERATION.
- GENERAL NOTES:**
1. REFERENCE GENERAL NOTES ON DWG. UG-202.
 2. COORDINATE WITH BNSF FOR ANY WORK WITHIN BNSF TRACK AREA OR WITHIN 25 FEET OF ANY OPERATIONAL TRACK. REF. GENERAL NOTES ON DWG. UG-202.
 3. RESTORE EXIST. GRADE, REPLACE EXIST ASPHALT PAVING AND CONCRETE DISTURBED BY CONSTRUCTION. COORDINATE WITH NMRL DESIGN PACKAGE 07 FOR PROPOSED NMRL, TRACK AND CIVIL IMPROVEMENTS.
 4. COORDINATE CONSTRUCTION SCHEDULE PER SPECIFICATIONS.
 5. PROVIDE TRAFFIC CONTROL PER CCD REQUIREMENTS AND SPECIFICATIONS.
 6. REFERENCE NMRL DESIGN PACKAGE 07 FOR EROSION CONTROL NOTES.



CALL UTILITY NOTIFICATION
BURLINGTON NORTHERN/
SANTA FE RAILROAD
1-800-533-2891

CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG. GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

811 CALL UTILITY NOTIFICATION
CENTER OF COLORADO
1-800-922-1987 or 811

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Know what's below.
Call before you dig.



NO.	REVISIONS	BY	DATE
0	ISSUED FOR CONSTRUCTION	PS	08/11/15

DESIGNED BY: **BEP** DATE: 09/23/14
 DRAWN BY: **RLM** DATE: 09/23/14

CHECKED BY: **PS** DATE: 08/11/15
 APPROVED BY: **BEP** DATE: 08/11/15

REGIONAL RAIL PARTNERS
 A Balfour Beatty / GRAHAM JOINT VENTURE

Stantec
 2000 SOUTH COLORADO BOULEVARD
 SUITE 2-300
 DENVER, COLORADO 80222
 (303) 758-4058

RTD FasTracks
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 Rail Line

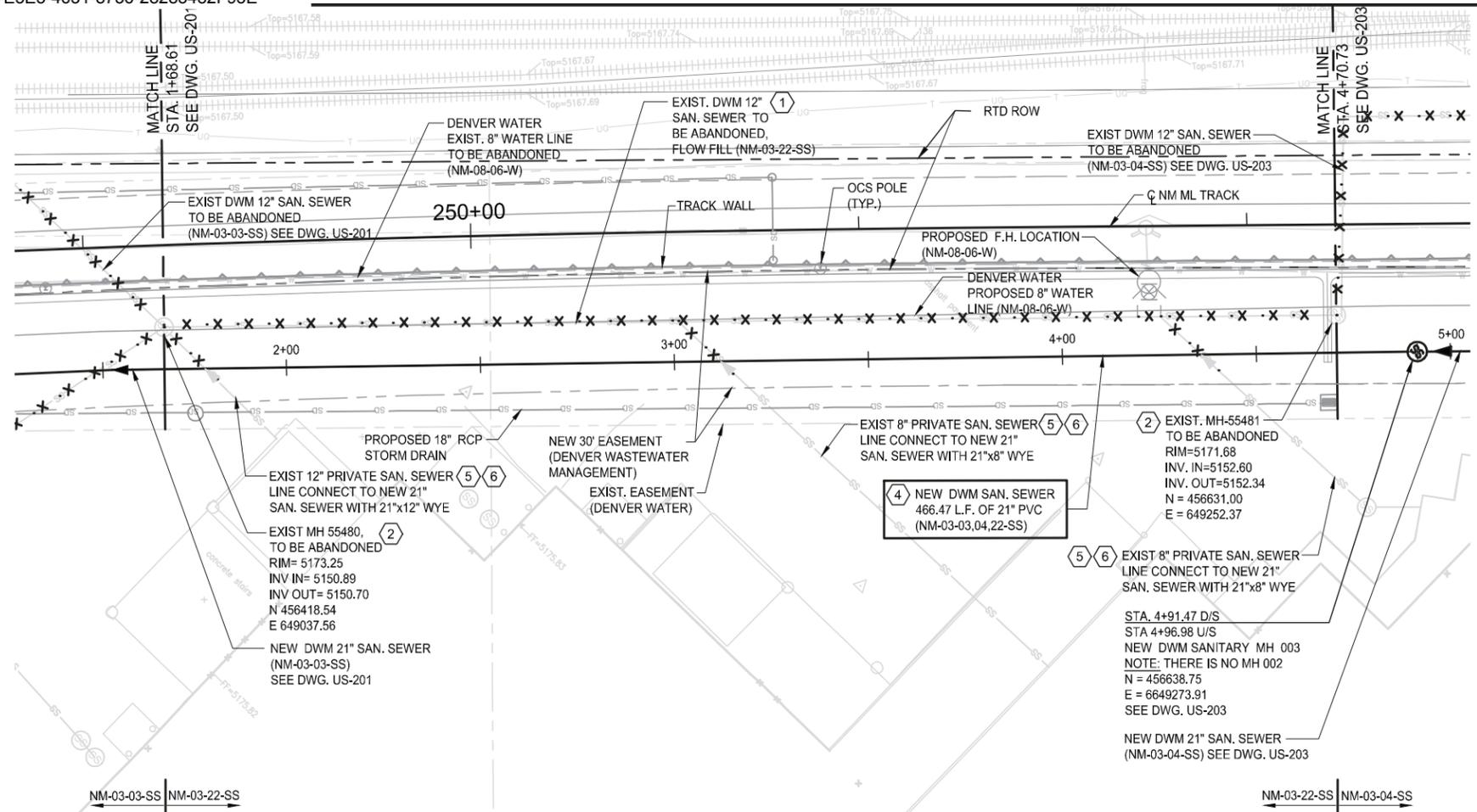
REGIONAL TRANSPORTATION DISTRICT
 1600 BLAKE STREET
 DENVER, COLORADO 80202
 (303) 628-9000

NORTH METRO RAIL LINE

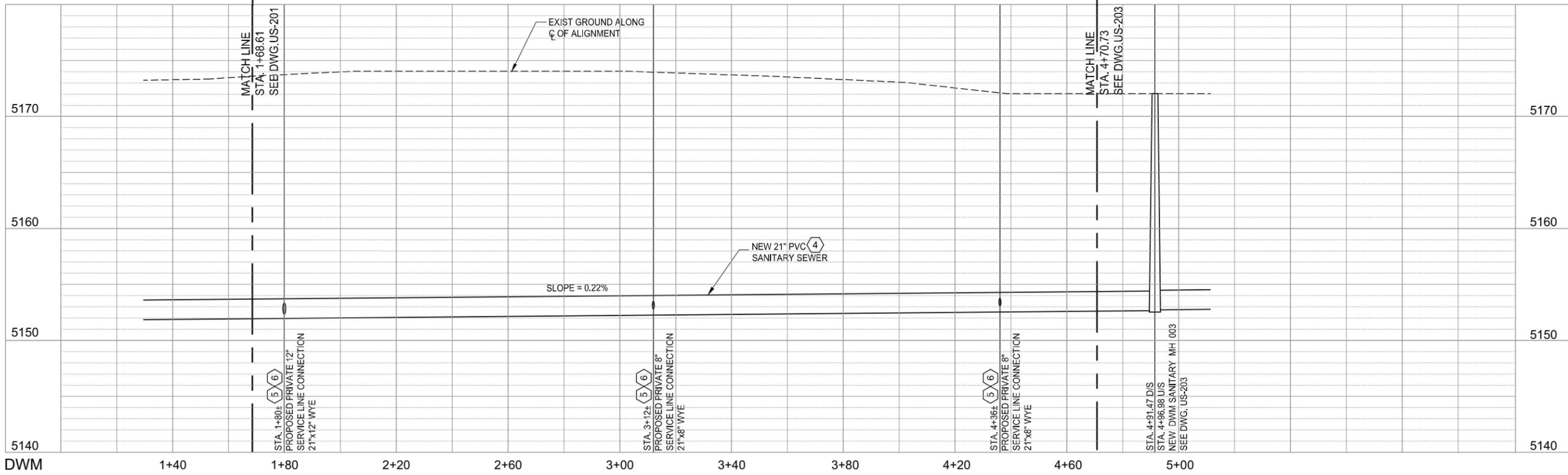
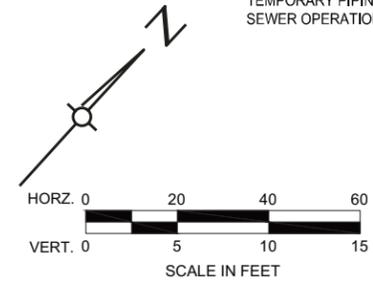
SANITARY SEWER PLAN AND PROFILE
 TRACK STA. 247+60 TO 249+20
 (NM-03-03-SS)

DWG No. US-201

V:\52876\active\187608624 - North Metro Rail Line\06_Design\Civil Phase 1_North\Utilities\Denver Waste Mgmt (DWM)\Sheet Files\staddendum-drawings\NM-U-US-202.dwg 10:27 AM 2015-08-11 USER: Hoover, Stu



- KEYED NOTES:**
- ABANDON (FLOW FILL) EXIST 12" SANITARY SEWER. EXIST SEWER SHALL REMAIN IN SERVICE UNTIL NEW SEWER CONSTRUCTION SHOWN HEREIN IS COMPLETE / TESTED / APPROVED.
 - REMOVE TOP 6 FEET MINIMUM OF MANHOLE AND BACKFILL WITH NATIVE SOIL. PLACE AND COMPACT MAX. 12" LIFTS.
 - NOT USED
 - NEW SEWER CONSTRUCTION SHALL BE COMPLETE / TESTED / APPROVED BEFORE TAKING EXISTING SEWER SHOWN HEREIN OUT OF SERVICE.
 - PRIVATE SANITARY SEWER SERVICE LINE, SEWER DEPTH TO BE DETERMINED DURING CONSTRUCTION OF NEW SANITARY SEWER. NOTE: CCD SEWER USE AND DRAINAGE PERMIT IS REQUIRED FOR MODIFICATIONS TO EXISTING SERVICE LINE CONNECTION.
 - EXIST SANITARY SEWER SERVICE LINE IS TO BE CONNECTED TO NEW 21" SANITARY SEWER PER DWM STANDARD DETAIL REF. LIST OF STANDARD DETAILS ON DWG UD-201. EXIST SEWER SERVICE LINE SEGMENT BETWEEN EXISTING 12" SEWER AND NEW 21" SEWER IS TO BE ABANDONED IN PLACE, OR REMOVED. SCHEDULE WORK TO LIMIT INTERRUPTION OF SEWER OPERATION. COORDINATE INTERRUPTIONS OF SEWER OPERATION WITH THE SEWER OWNER. PROVIDE TEMPORARY PIPING AS REQUIRED TO MAINTAIN SEWER OPERATION.
- GENERAL NOTES:**
- REFERENCE GENERAL NOTES ON DWG. UG-202.
 - COORDINATE WITH BNSF FOR ANY WORK WITHIN BNSF TRACK AREA OR WITHIN 25 FEET OF ANY OPERATIONAL TRACK. REF. GENERAL NOTES ON DWG. UG-202.
 - RESTORE EXIST. GRADE, REPLACE EXIST ASPHALT PAVING AND CONCRETE DISTURBED BY CONSTRUCTION, COORDINATE WITH NMRL DESIGN PACKAGE 07 FOR PROPOSED NMRL, TRACK AND CIVIL IMPROVEMENTS.
 - COORDINATE CONSTRUCTION SCHEDULE PER SPECIFICATIONS.
 - PROVIDE TRAFFIC CONTROL PER CCD REQUIREMENTS AND SPECIFICATIONS.
 - REFERENCE NMRL DESIGN PACKAGE 07 FOR EROSION CONTROL NOTES.



CALL UTILITY NOTIFICATION
BURLINGTON NORTHERN/
SANTA FE RAILROAD
1-800-533-2891

811 CALL UTILITY NOTIFICATION
CENTER OF COLORADO
1-800-922-1987 or 811



NO.	REVISIONS	BY	DATE
0	ISSUED FOR CONSTRUCTION	PS	08/11/15

DESIGNED BY: BEP	DATE: 05/05/15	CHECKED BY: PS	DATE: 08/11/15
DRAWN BY: RLM	DATE: 05/05/15	APPROVED BY: BEP	DATE: 08/11/15

RTD FasTracks
North Metro Rail Line

Stantec
2000 SOUTH COLORADO BOULEVARD
SUITE 2-300
DENVER, COLORADO 80222
(303) 758-4058

REGIONAL RAIL PARTNERS
A Ballour Beatty / GRAHAM JOINT VENTURE

RTD FasTracks
North Metro Rail Line

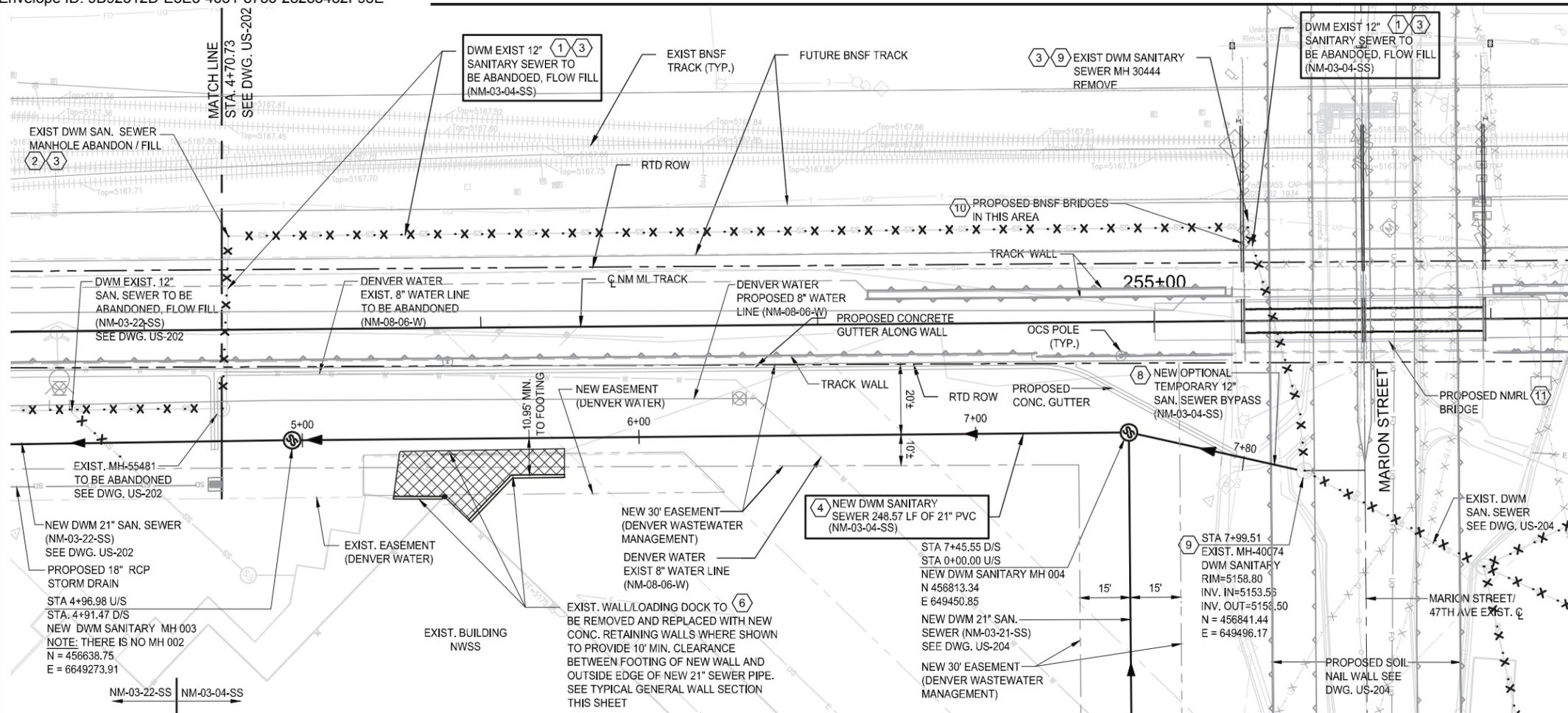
REGIONAL TRANSPORTATION DISTRICT
1600 BLAKE STREET
DENVER, COLORADO 80202
(303) 628-9000

NORTH METRO RAIL LINE

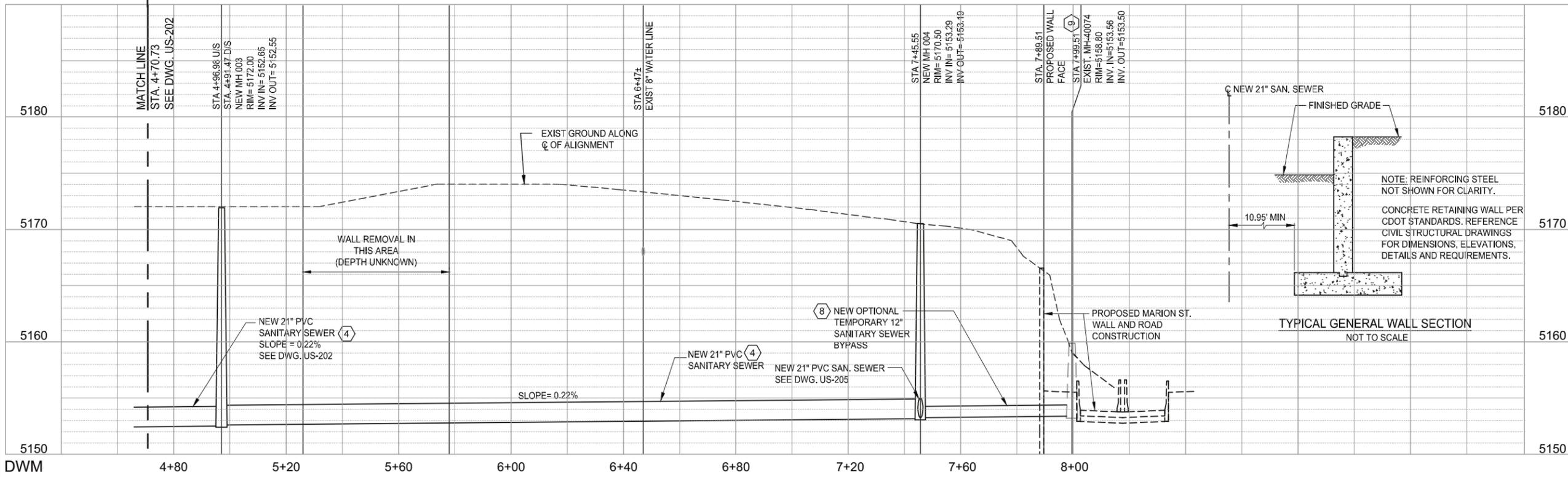
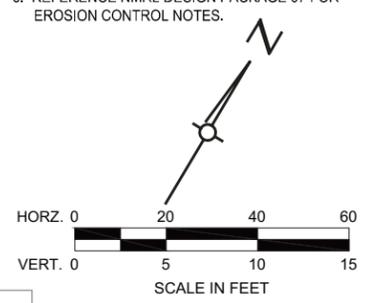
SANITARY SEWER PLAN AND PROFILE
TRACK STA. 249+20 TO 252+20
(NM-03-22-SS)

DWG No. US-202

USER: Hoover, Stu
 2015-08-11 9:58 AM
 V:\52876\active\187608624 - North Metro Rail Line\06_Design\Civil Phase 1_North Metro Rail Line\DWG\Sheet Files\staddendum-drawings\NM-U-203.dwg



- KEYED NOTES:**
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 - 2 REMOVE TOP 6 FEET MINIMUM OF MANHOLE AND BACKFILL WITH NATIVE SOIL. PLACE AND COMPACT MAX. 12" LIFTS.
 - 3 COORDINATE WITH BNSF. REF. GENERAL NOTE NO.2 THIS DRAWING.
 - 4 NEW SEWER CONSTRUCTION SHALL BE COMPLETE / TESTED / APPROVED BEFORE TAKING EXISTING SEWER SHOWN HEREIN OUT OF SERVICE.
 - 5 NOT USED
 - 6 NEW RETAINING WALLS TO BE CAST-IN-PLACE REINFORCED CONCRETE PER CDOT STANDARDS. REFERENCE CIVIL STRUCTURAL DRAWINGS FOR LOCATION, DIMENSIONS, ELEVATIONS, DETAILS AND REQUIREMENTS.
 - 7 NOT USED
 - 8 NEW OPTIONAL TEMPORARY SEWER IF REQUIRED BY CONTRACTOR FOR PHASING OF SEWER CONSTRUCTION. MATERIALS AND INSTALLATION SHALL BE EQUAL TO OR BETTER THAN NEW PERMANENT SEWER CONSTRUCTION SPECIFIED. TEMPORARY SEWER SHALL BE REMOVED OR FLOW FILLED AT COMPLETION OF USE; SEAL OPENING IN NEW MANHOLE WALL WITH CONCRETE FOR WATER TIGHT CLOSURE. COORDINATE SEWER CONSTRUCTION SCHEDULE WITH CONSTRUCTION SCHEDULE FOR PROPOSED WALL.
 - 9 REMOVE MANHOLE WHEN NO LONGER REQUIRED FOR SEWER OPERATION.
 - 10 PROPOSED BNSF BRIDGES OVER MARION STREET IN THIS AREA ARE NOT FULLY SHOWN. REFERENCE STRUCTURAL DRAWINGS. COORDINATE SEWER CONSTRUCTION SCHEDULE WITH CONSTRUCTION SCHEDULE FOR BRIDGES.
 - 11 PROPOSED NMRL BRIDGE OVER MARION STREET. COORDINATE SEWER CONSTRUCTION SCHEDULE WITH CONSTRUCTION SCHEDULE FOR BRIDGE.
- GENERAL NOTES:**
1. REFERENCE GENERAL NOTES ON DWG UG-202.
 2. COORDINATE WITH BNSF FOR ANY WORK WITHIN BNSF TRACK AREA OR WITHIN 25 FEET OF ANY OPERATIONAL TRACK. REF. GENERAL NOTES ON DWG. UG-202.
 3. RESTORE EXIST GRADE, REPLACE EXIST ASPHALT PAVING AND CONCRETE DISTURBED BY CONSTRUCTION. COORDINATE WITH NMRL DESIGN PACKAGE 07 FOR PROPOSED NMRL, TRACK AND CIVIL IMPROVEMENTS.
 4. COORDINATE CONSTRUCTION SCHEDULE PER SPECIFICATIONS.
 5. PROVIDE TRAFFIC CONTROL PER CCD REQUIREMENTS AND SPECIFICATIONS.
 6. REFERENCE NMRL DESIGN PACKAGE 07 FOR EROSION CONTROL NOTES.



RFC

T.Will

08/14/2015

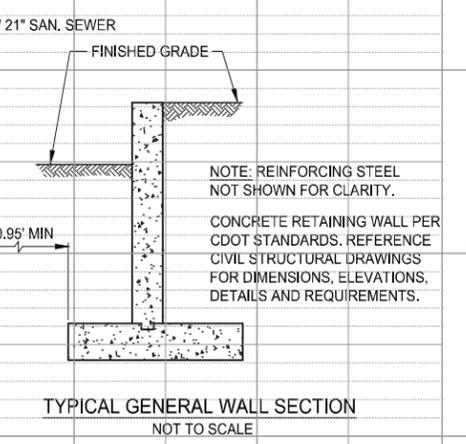
CALL UTILITY NOTIFICATION
 BURLINGTON NORTHERN
 SANTA FE RAILROAD
1-800-533-2891

CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

811 CALL UTILITY NOTIFICATION
 CENTER OF COLORADO
1-800-922-1987 or 811

CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

Know what's below.
 Call before you dig.



NO.	REVISIONS	BY	DATE
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DESIGNED BY: BEP DATE: 07/21/14 DRAWN BY: RLM DATE: 07/21/14	CHECKED BY: PS DATE: 08/11/15 APPROVED BY: BEP DATE: 08/11/15	HORZ. SCALE: 1"=40' VERT. SCALE: 1"=10'
-------------------------------------------------------------------------------	--------------------------------------------------------------------------------	--------------------------------------------

Balfour Beatty / GRAHAM JOINT VENTURE

2000 SOUTH COLORADO BOULEVARD
 SUITE 2-300
 DENVER, COLORADO 80222
 (303) 758-4058

North Metro
 Rail Line

REGIONAL TRANSPORTATION DISTRICT
 1600 BLAKE STREET
 DENVER, COLORADO 80202
 (303) 628-9000

NORTH METRO RAIL LINE

SANITARY SEWER PLAN AND PROFILE

TRACK STA. 252+20 TO 255+50

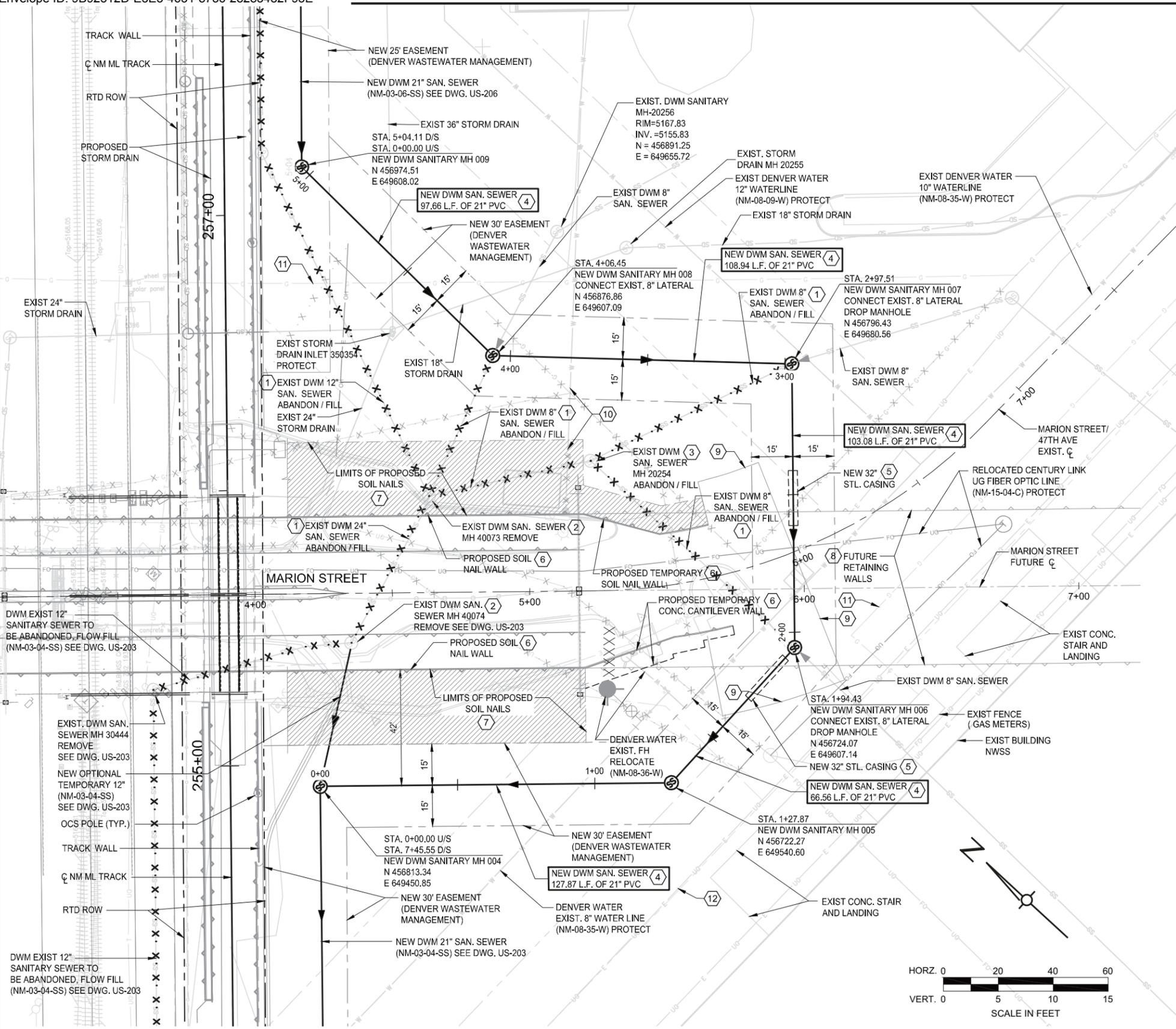
(NM-03-04-SS)

DWG No. US-203

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USER: Hoover, Stu

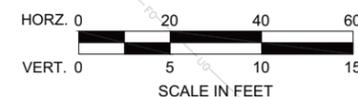


KEYED NOTES:

- 1 ABANDON (FLOW FILL) EXIST SANITARY SEWER. EXIST. SEWER SHALL REMAIN IN SERVICE UNTIL NEW SEWER CONSTRUCTION SHOWN HEREIN IS COMPLETE / TESTED / APPROVED.
- 2 REMOVE MANHOLE AND BACKFILL WITH NATIVE SOIL. PLACE AND COMPACT MAX. 12" LIFTS.
- 3 REMOVE TOP 6 FEET MINIMUM OF MANHOLE AND BACKFILL WITH NATIVE SOIL. PLACE AND COMPACT MAX. 12" LIFTS.
- 4 NEW SEWER CONSTRUCTION SHALL BE COMPLETE / TESTED / APPROVED BEFORE TAKING EXISTING SEWER SHOWN HEREIN OUT OR SERVICE. NOTE: PROFILE OF NEW SEWER ON DWG. US-205.
- 5 NEW SEWER IN CASING FOR PURPOSE OF FUTURE MAINTENANCE ACCESS. INSTALL CASING USING OPEN TRENCH METHOD. SEE CASING DETAIL DWG. UD-201.
- 6 PROPOSED WALLS AND ROADWAY IMPROVEMENTS FOR MARION STREET ARE NOT FULLY SHOWN. REFERENCE CIVIL AND STRUCTURAL DRAWINGS. COORDINATE SEWER CONSTRUCTION SCHEDULE WITH CONSTRUCTION SCHEDULE FOR MARION STREET WALLS AND ROADWAY IMPROVEMENTS.
- 7 NO EXCAVATION MORE THAN 1.0 FEET BELOW FINISHED GRADE ALLOWED WITHIN LIMITS OF SOIL NAILS ONCE CONSTRUCTION OF SOIL NAILS COMMENCES.
- 8 FUTURE RETAINING WALL BY OTHERS NOTE: FUTURE RETAINING WALL ACROSS DWM SAN. SEWER EASEMENT TO BE CAST IN PLACE CONCRETE WALL ONLY. SOIL NAIL OR MSE TYPE WALL NOT ALLOWED.
- 9 LIMITS OF PROPOSED STREET IMPROVEMENTS. REF. GENERAL NOTE NO. 3 THIS DRAWING.
- 10 EXISTING PRIVATE WATER SERVICE LINE. COORDINATE INTERRUPTIONS OF WATER SERVICE LINE OPERATION WITH WATER SERVICE LINE OWNER. REMOVE WATER SERVICE LINE IN AREA OF PROPOSED SOIL NAIL WALL AND RESET WATER SPIGOT AT END OF LINE. NOTE: LOCATION OF SPIGOT TO BE FIELD DETERMINED. COORDINATE WITH WATER SERVICE LINE OWNER.
- 11 EXISTING GAS LINE (PROTECT).
- 12 EXISTING UNDERGROUND ELECTRICAL LINE (PROTECT).

GENERAL NOTES:

1. REFERENCE GENERAL NOTES ON DWG UG-202.
2. COORDINATE WITH BNSF FOR ANY WORK WITHIN BNSF TRACK AREA OR WITHIN 25 FEET OF ANY OPERATIONAL TRACK. REF. GENERAL NOTES ON DWG. UG-202.
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CALL UTILITY NOTIFICATION
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1-800-533-2891



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DESIGNED BY: BEP	DATE: 05/06/15	CHECKED BY: PS	DATE: 08/11/15	HORZ. SCALE: 1"=40'
DRAWN BY: RLM	DATE: 05/06/15	APPROVED BY: BEP	DATE: 08/11/15	VERT. SCALE: 1"=10'

2000 SOUTH COLORADO BOULEVARD
SUITE 2-300
DENVER, COLORADO 80222
(303) 758-4058

RTD FasTracks
North Metro
Rail Line

REGIONAL TRANSPORTATION DISTRICT
1600 BLAKE STREET
DENVER, COLORADO 80202
(303) 628-9000

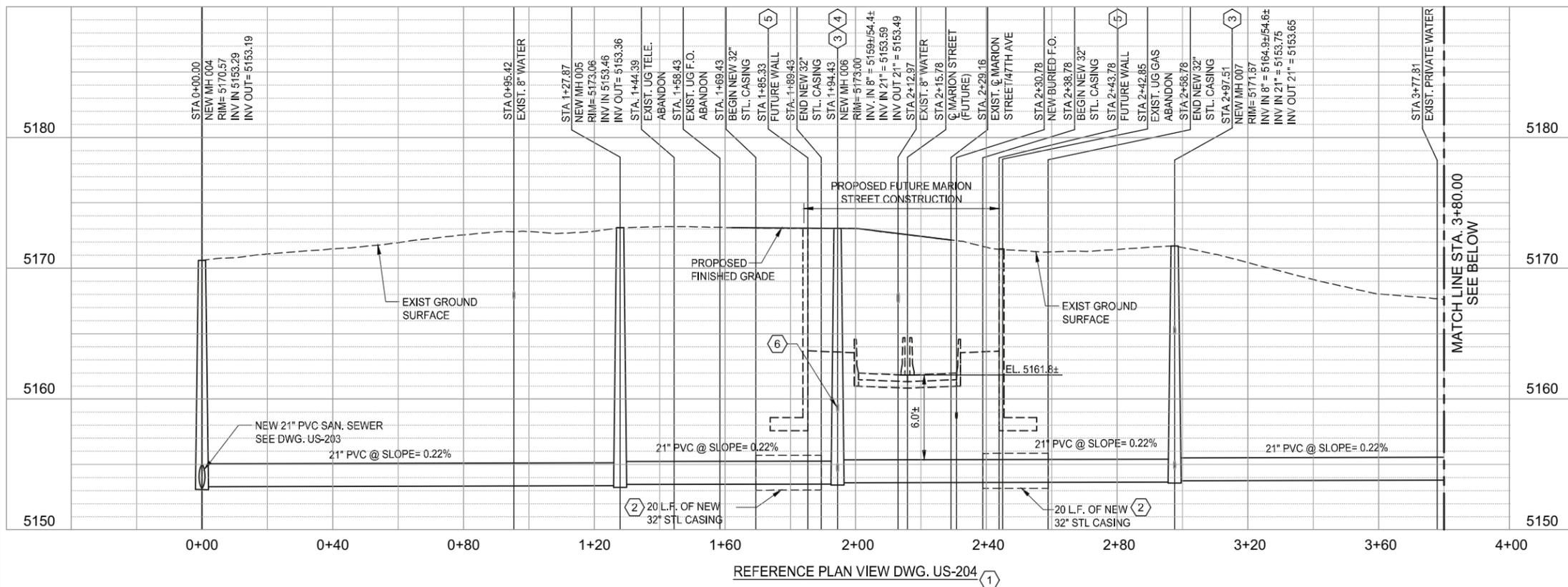
NORTH METRO RAIL LINE
SANITARY SEWER PLAN
TRACK STA. 255+00 TO 257+00
(NM-03-21-SS)

DWG No. US-204

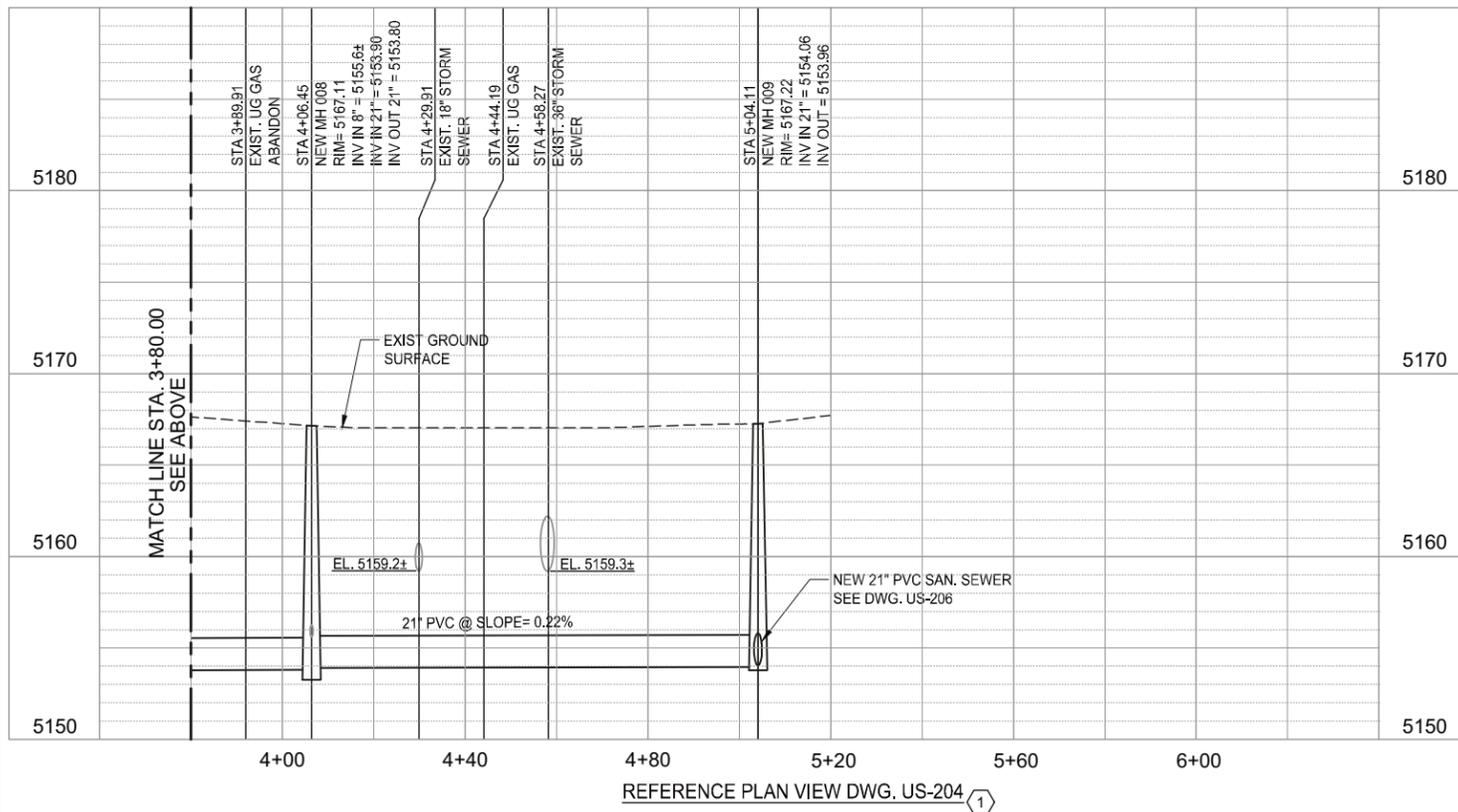
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USER: Hoover, Stu



REFERENCE PLAN VIEW DWG. US-204 (1)



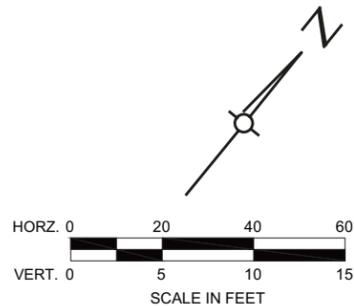
REFERENCE PLAN VIEW DWG. US-204 (1)

KEYED NOTES:

- 1 NEW SEWER CONSTRUCTION SHALL BE COMPLETE / TESTED / APPROVED BEFORE TAKING EXISTING SEWER OUT OR SERVICE.
- 2 NEW SEWER IN CASING FOR PURPOSE OF FUTURE PROTECTION AND FUTURE MAINTENANCE ACCESS. INSTALL CASING USING OPEN TRENCH METHOD. SEE CASING DETAIL DWG. UD-201.
- 3 DROP MANHOLE. REFERENCE DETAIL S-530.
- 4 TOP OF MANHOLE TO BE LOWERED TO FUTURE MARION STREET GRADE IN FUTURE BY OTHERS.
- 5 NOTE: FUTURE RETAINING WALL BY OTHERS ACROSS DWM SAN. SEWER EASEMENT TO BE CAST IN PLACE CONCRETE ONLY. SOIL NAIL OR MSE TYPE WALL NOT ALLOWED.
- 6 NOTE: EXISTING 8" SEWER TO PENETRATE FUTURE RETAINING WALL BY OTHERS IN FUTURE.

GENERAL NOTES:

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DWM

DESIGNED BY: BEP	DATE: 05/06/15	CHECKED BY: PS	DATE: 08/11/15	HORIZ. SCALE: 1"=40'
DRAWN BY: RLM	DATE: 05/06/15	APPROVED BY: BEP	DATE: 08/11/15	VERT. SCALE: 1"=10'
				2000 SOUTH COLORADO BOULEVARD SUITE 2-300 DENVER, COLORADO 80222 (303) 758-4058
				REGIONAL TRANSPORTATION DISTRICT 1600 BLAKE STREET DENVER, COLORADO 80202 (303) 628-9000
NORTH METRO RAIL LINE SANITARY SEWER PROFILE TRACK STA. 255+00 TO 257+00 (NM-03-21-SS)				
DWG No. US-205				

0	ISSUED FOR CONSTRUCTION	PS	08/11/15
NO.	REVISIONS	BY	DATE

CALL UTILITY NOTIFICATION
BURLINGTON NORTHERN/
SANTA FE RAILROAD
1-800-533-2891

CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

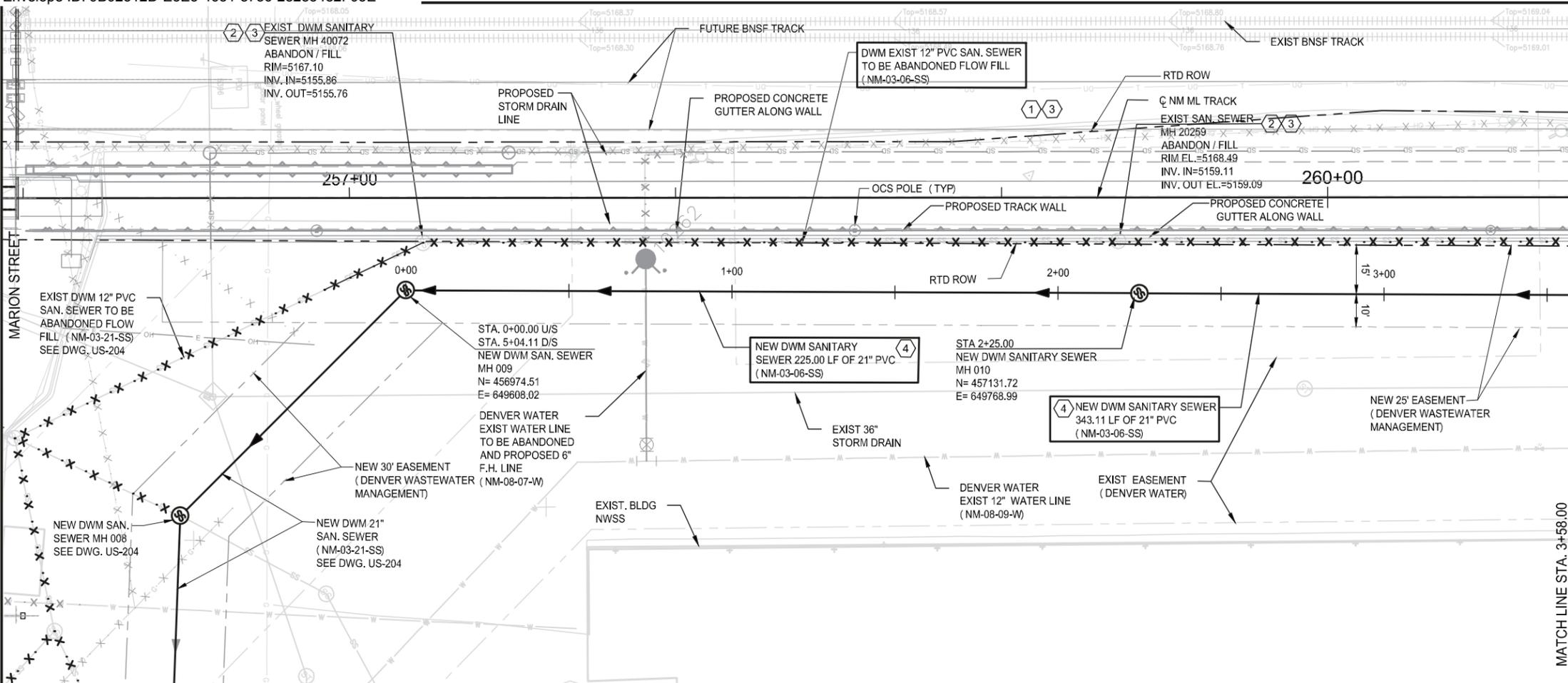
811 CALL UTILITY NOTIFICATION
CENTER OF COLORADO
1-800-922-1987 or 811

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2015-07-30

USER: Hoover, Stu



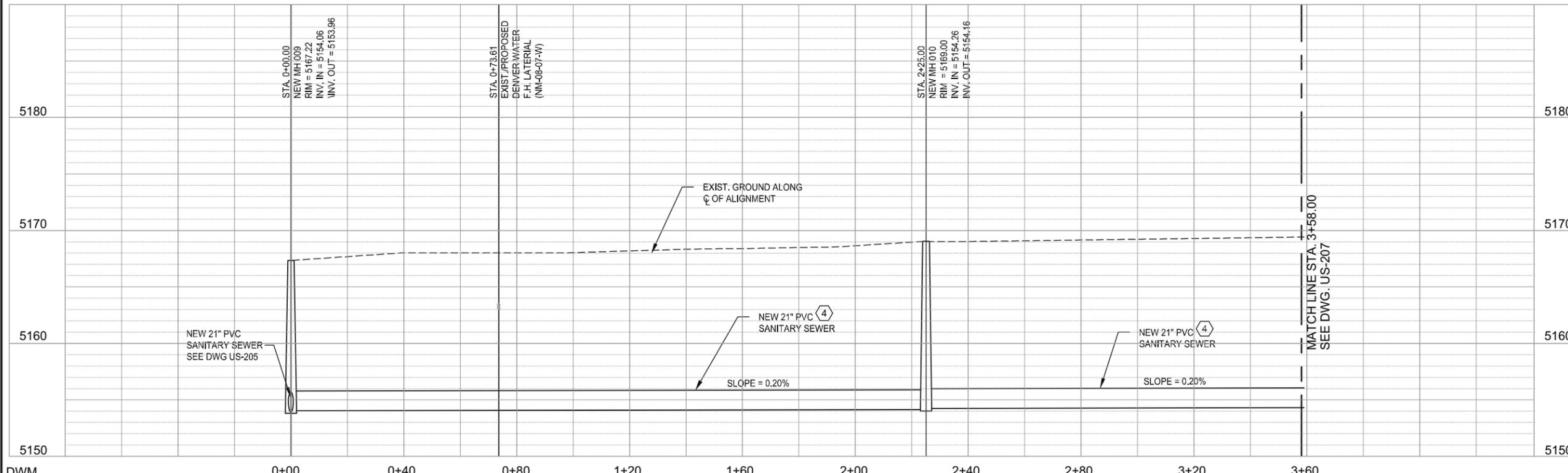
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MATCH LINE STA. 3+58.00
SEE DWG. US-207



RFC
I. Will
08/14/2015

CALL UTILITY NOTIFICATION
BURLINGTON NORTHERN/
SANTA FE RAILROAD
1-800-533-2891

CALL UTILITY NOTIFICATION
CENTER OF COLORADO
1-800-922-1987 or 811

Know what's below.
Call before you dig.

COLORADO LICENSE
BOARD E. BOBINSKI
18610
08/11/2015
PROFESSIONAL ENGINEER

NO.	REVISIONS	BY	DATE
0	ISSUED FOR CONSTRUCTION	PS	08/11/15

DESIGNED BY: BEP DATE: 07/21/14
DRAWN BY: MAO DATE: 07/21/14

CHECKED BY: PS DATE: 08/11/15
APPROVED BY: BEP DATE: 08/11/15

R-P REGIONAL RAIL PARTNERS
A Balfour Beatty / GRAHAM JOINT VENTURE

Stantec
2000 SOUTH COLORADO BOULEVARD
SUITE 2-300
DENVER, COLORADO 80222
(303) 758-4058

RTD FasTracks
North Metro
Rail Line

REGIONAL TRANSPORTATION DISTRICT
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DENVER, COLORADO 80202
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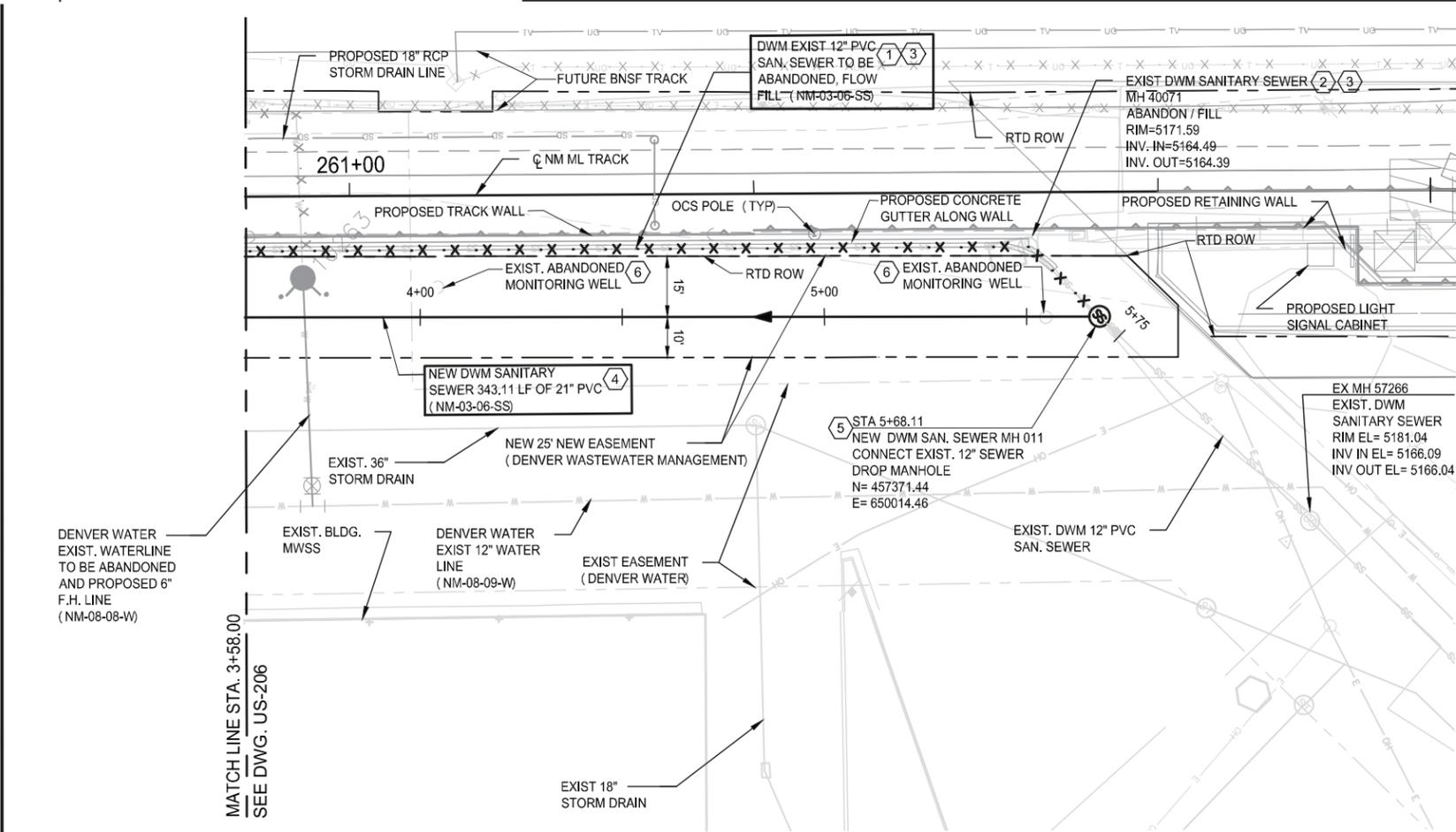
NORTH METRO RAIL LINE
SANITARY SEWER PLAN & PROFILE
TRACK STA. 257+00 TO 262+90
(NM-03-06-SS) SHEET 1 OF 2

DWG No. US-206

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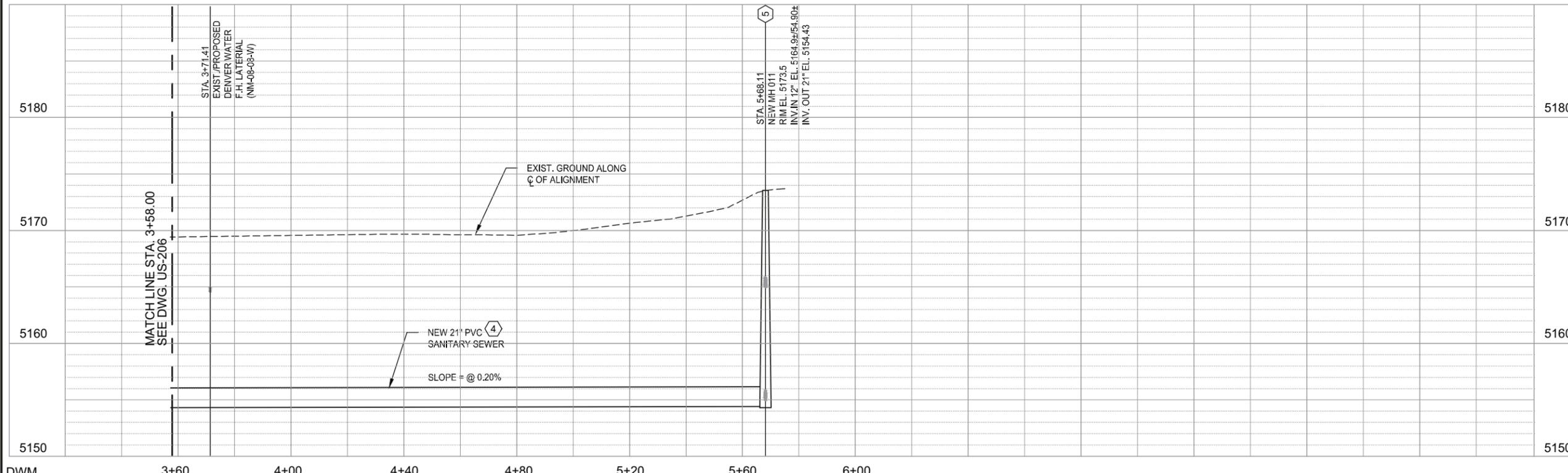
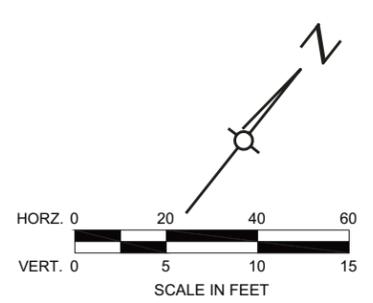
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2015-08-11



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 - 5 DROP MANHOLE REFERENCE DETAIL S-530.
 - 6 EXISTING ABANDONED MONITORING WELL. REMOVE ANY PORTIONS OF SUCH THAT ARE ENCOUNTERED BY SEWER TRENCH EXCAVATION.

- GENERAL NOTES:**
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RTD FasTracks
North Metro
Rail Line

REGIONAL TRANSPORTATION DISTRICT
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NORTH METRO RAIL LINE

SANITARY SEWER PLAN & PROFILE
TRACK STA. 257+00 TO 262+90
(NM-03-06-SS) SHEET 2 OF 2

DWG No. US-207

EXHIBIT L

49TH AVENUE SANITARY SEWER LINE PROJECT

(as follows)



NORTH METRO RAIL LINE PROJECT

RECORD DRAWINGS

for CDRL 03-039.07C.01 - Area A-C - Wet Utilities: Denver
Wastewater - 21" Sanitary Sewer

CDRL ID No. 03-008.02

Rev. 00

April 9, 2020

Prepared by:

Regional Rail Partners

For:

North Metro Rail Line Project

RTD CONTRACT No. 13DH008

Having checked this item of Contract Data, I hereby certify that it conforms to the requirements of the Agreement in all respects, except as specifically indicated.

A handwritten signature in blue ink, appearing to read "Tim Springer", is located below the certification text.

Tim Springer, RRP Project Director

RTD - FASTRACKS NORTH METRO PROJECT
SUB-CONTRACT NO. 154-800
48TH/49TH AVENUE
21" SANITARY SEWER IMPROVEMENTS - PHASE 1
CITY AND COUNTY OF DENVER
DEPARTMENT OF PUBLIC WORKS
WASTEWATER MANAGEMENT DIVISION

NOTE:
 I, THE UNDERSIGNED PROFESSIONAL ENGINEER/ARCHITECT, IN RELIANCE ON THE ACCURACY AND COMPLETENESS OF THE INFORMATION FURNISHED BY THE CONTRACTOR, REGIONAL RAIL PARTNERS (RRP), HEREBY CERTIFY THAT THIS CONTRACT RECORD DOCUMENT INCORPORATES TO THE BEST OF MY KNOWLEDGE THE AS-BUILT MODIFICATIONS, CHANGES AND FIELD CONDITIONS AS RECORDED BY RRP.

**DENVER WASTEWATER
 MANAGEMENT PROJECT
 SITE**



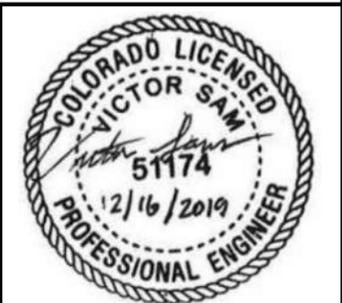
LOCATION MAP

RECORD DRAWING

CALL UTILITY NOTIFICATION
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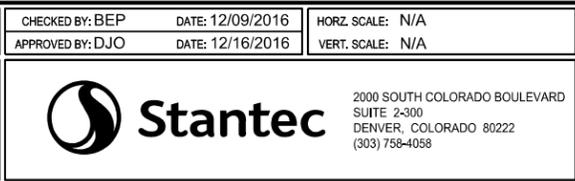
811
 Know what's below.
 Call before you dig.

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DESIGNED BY: DJO	DATE: 10/18/2016	CHECKED BY: BEP	DATE: 12/09/2016	HORZ. SCALE: N/A
DRAWN BY: JRB	DATE: 10/18/2016	APPROVED BY: DJO	DATE: 12/16/2016	VERT. SCALE: N/A
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NORTH METRO RAIL LINE
**48TH/49TH AVENUE 21" SANITARY
 SEWER IMPROVEMENTS - PHASE 1
 COVER SHEET**

DWG No. UG-204

UTILITY CONTACT

DENVER WASTEWATER MANAGEMENT DIVISION
 ANDREW BASTASCH
 303-446-3593
 andrew.bastasch@denvergov.org
 201 W. COLFAX, 5C5-6 DENVER, CO 80202

ABBREVIATIONS

AC	ASPHALTIC CONCRETE	LS	LANDSCAPE
APPROX	APPROXIMATE	MATL	MATERIAL
BM	BENCHMARK	MAX	MAXIMUM
BOP	BOTTOM OF PIPE	MH	MANHOLE
BW	BOTTOM OF WALL	MIN	MINIMUM
CLR	CLEAR	ML	MAIN LINE
CL	CENTER LINE	MWRD	METRO WASTEWATER RECLAMATION DISTRICT
CONC	CONCRETE	NO	NUMBER
CP	CONTROL POINT	NWC	NATIONAL WESTERN CENTER
DIA	DIAMETER	NWSS	NATIONAL WESTERN STOCK SHOW
D/S	DOWNSTREAM	OCS	OVERHEAD CATENARY SYSTEM
DRS	DRIVER RELIEF STATION	OD	OUTSIDE DIAMETER
DW	DENVER WATER	PVC	POLYVINYL CHLORIDE PIPE
DWG	DRAWING	R	RADIUS
DWM	DENVER WASTEWATER MANAGEMENT	RCP	REINFORCED CONCRETE PIPE
E	ELECTRIC	RL	RIDGELINE
EL	ELEVATION	RR	RAILROAD
EQ	EQUAL	SAN	SANITARY
EXIST	EXISTING	SF	SQUARE FOOT
FF	FINISHED FLOOR	STM	STORM
FG	FINISHED GRADE	T	TELEPHONE
FH	FIRE HYDRANT	TC	TOP OF CURB
FL	FLOW LINE	TF	TOP OF FOOTING
FO	FIBER OPTIC	TG	TOP OF GRATE
G	GAS	TW	TOP OF WALL
GB	GRADE BREAK	TYP	TYPICAL
HBP	HOT BITUMINOUS PAVEMENT	UG	UNDERGROUND
HORIZ	HORIZONTAL	U/S	UPSTREAM
HP	HIGH POINT	VERT	VERTICAL
ID	INSIDE DIAMETER	W	WATER
INV	INVERT	W/	WITH
JT	JOINT TRENCH		
LF	LINEAR FEET		

INDEX OF DRAWINGS

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UG-205	GENERAL PROJECT INFORMATION
UG-206	GENERAL NOTES
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US-209	SANITARY SEWER PLAN AND PROFILE
US-210	SANITARY SEWER PLAN AND PROFILE
US-211	SANITARY SEWER PLAN AND PROFILE - NWC LATERAL

MAPPING PROJECTION AND BENCHMARK

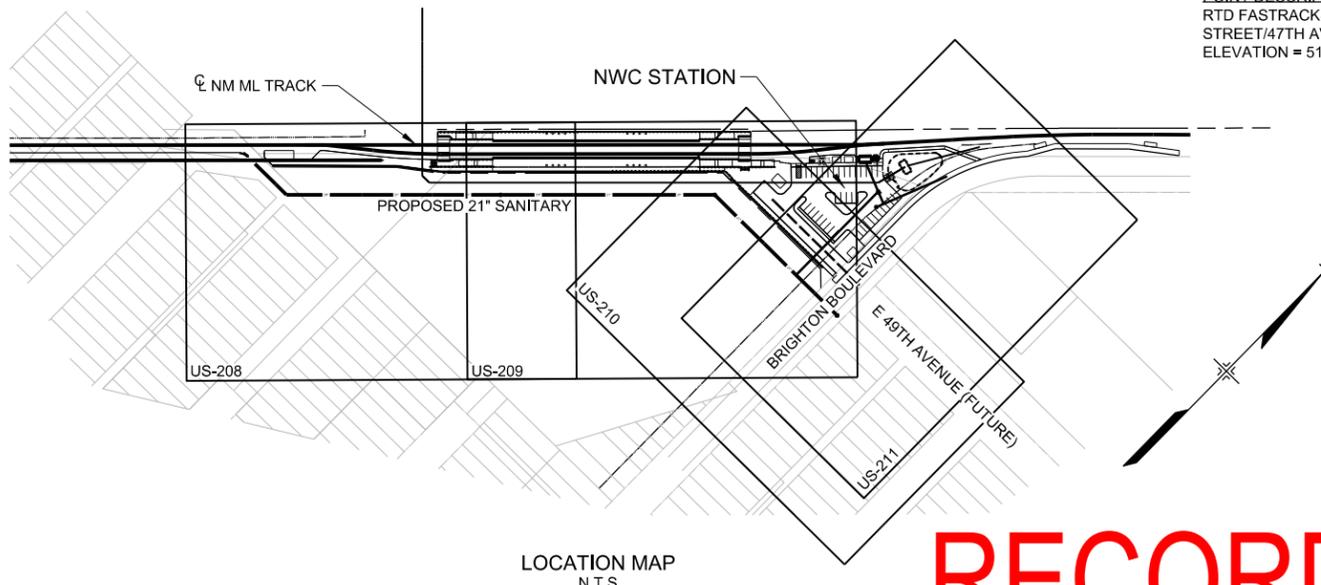
MAPPING PROJECTION:
 MAPPING PROJECTION FOR RTD COORDINATE SYSTEM
 GEODETIC COORDINATES ARE BASED ON NAD 83 (1992)
 ORTHOMETRIC HEIGHTS ARE BASED ON NAVD 88
 COORDINATES ARE BASED ON THE UNIVERSAL TRANSVERSE MERCATOR
 (UTM) NORTH ZONE (13)
 UNITS ARE US SURVEY FEET (SFT)
 PROJECT (GROUND) COORDINATES ARE MODIFIED AS FOLLOWS:
 1. UTM COORDINATES ARE CONVERTED FROM GRID TO GROUND.
 2. MULTIPLIED BY SCALE FACTOR = 1.000650402
 3. TRUNCATION APPLIED TO COORDINATES:
 NORTHING - 14,000,000 SFT
 EASTING - 1,000,000 SFT
 PROJECT COORDINATES WERE MODIFIED TO GROUND AT NGS B ORDER
 HORIZONTAL CONTROL STATION *MCDONNELL.

DESIGNATION = MCDONNELL
 NGS PID = KK2099
 NAD 83 (1992) COORDINATES
 LATITUDE = 39°44'34.68938"(N)
 LONGITUDE = 105°00'03.94511"(W)
 ELLP. HEIGHT = 1570.58 MT
 NAVD 88 ELEVATION = 1587.6 MT

BENCHMARK:
 REFER TO RTD FASTTRACKS NORTH METRO RAIL LINE PROJECT SURVEY CONTROL
 AND MONUMENTATION FOR ADDITIONAL CONTROL.

POINT DESCRIPTIONS AND LOCATION INFORMATION:
 RTD FASTTRACKS NORTH METRO RAIL LINE CONTROL POINT NUMBER 240, AT MARION
 STREET/47TH AVENUE, A 1" COPPER PLUG IN CONCRETE STAMPED "105 WEST"
 ELEVATION = 5184.32', NAVD 88.

EXISTING	UTILITIES	PROPOSED
---	UNDERGROUND ELECTRIC LINE	--- E --- UG ---
---	OVERHEAD ELECTRIC LINE	--- E --- OH ---
---	GAS LINE	---
SS	SANITARY SEWER LINE W/ MANHOLE	SS
ST	STORM SEWER LINE W/ MANHOLE	ST
---	UNDERGROUND TELEPHONE LINE	--- T --- UG ---
---	OVERHEAD TELEPHONE LINE	--- T --- OH ---
---	WATER LINE	---
---	UNDERGROUND CABLE TELEVISION	--- TV --- UG ---
---	OVERHEAD CABLE TELEVISION	--- TV --- OH ---
---	UNDERGROUND FIBER OPTICS CABLE	--- FO --- UG ---
---	OVERHEAD FIBER OPTICS CABLE	--- FO --- OH ---
○	LIGHT POLE	○
⊗	WATER VALVE	⊗
●	FIRE HYDRANT	●
○	WELL	○
○	UTILITY POLE	○
⊠	TRANSMISSION TOWER	⊠
E E	ELECTRIC VAULT, JUNCTION BOX	E E
↓	GUY WIRE	↓
☼	HIGH MAST LIGHT	☼
☼	DECORATIVE LIGHT	☼
G V	GAS METER, VAULT, VALVE	G V
T T	TELEPHONE VAULT, JUNCTION BOX, PEDESTAL	T T
TV	TV	TV



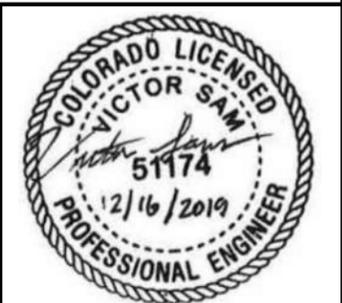
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 BY THE CONTRACTOR, REGIONAL RAIL PARTNERS (RRP), HEREBY CERTIFY
 THAT THIS CONTRACT RECORD DOCUMENT INCORPORATES TO THE BEST
 OF MY KNOWLEDGE THE AS-BUILT MODIFICATIONS, CHANGES AND
 FIELD CONDITIONS AS RECORDED BY RRP.

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Stantec
 2000 SOUTH COLORADO BOULEVARD
 SUITE 2-300
 DENVER, COLORADO 80222
 (303) 758-4058

RTD FasTracks
 North Metro
 Rail Line
 REGIONAL TRANSPORTATION DISTRICT
 1600 BLAKE STREET
 DENVER, COLORADO 80202
 (303) 628-9000

NORTH METRO RAIL LINE
 48TH/49TH AVENUE 21" SANITARY
 SEWER IMPROVEMENTS - PHASE 1
 GENERAL PROJECT INFORMATION

DWG No. UG-205

CITY AND COUNTY OF DENVER - DEPARTMENT OF PUBLIC WORKS GENERAL NOTES

WASTEWATER CAPITAL PROJECTS MANAGEMENT GENERAL NOTES 07-2016:

1. CONTRACTORS PERFORMING WORK ON ANY WASTEWATER FACILITY OR APPURTENANCE MUST BE PROPERLY LICENSED AND HAVE A LICENSED PLUMBER OR DRAINLAYER ON SITE DURING THE WORK.
2. THE CURRENT EDITION OF THE WASTEWATER MANAGEMENT DIVISION STANDARD DETAILS SHALL APPLY TO ALL WORK AND WILL BE THE EDITION CURRENT AS OF THE ADVERTISEMENT DATE. THE CONTRACTOR MUST BE IN POSSESSION OF THE STANDARD DETAILS AT THE PRE-CONSTRUCTION CONFERENCE AND A COPY MUST REMAIN ON THE JOB SITE AT ALL TIMES DURING CONSTRUCTION. WASTEWATER MANAGEMENT DIVISION STANDARD DETAILS CAN BE OBTAINED AT WWW.DENVERGOV.ORG
3. THE CONTRACT SPECIFIED EDITION OF THE CITY AND COUNTY OF DENVER'S TRANSPORTATION STANDARDS AND DETAILS FOR THE ENGINEERING DIVISION SHALL BE FOLLOWED FOR ALL ROADWAY WORK IN THE PLAN SET AND WILL BE THE EDITION CURRENT AS OF THE ADVERTISEMENT DATE. THESE STANDARDS AND DETAILS CAN BE OBTAINED AT WWW.DENVERGOV.ORG
4. THE CONSTRUCTION ACTIVITIES STORMWATER DISCHARGE PERMITS (STATE AND LOCAL FLOODPLAIN PERMITS), STREET-CUT PERMIT, AND STREET OCCUPANCY PERMIT (INCLUDING THE ASSOCIATED TRAFFIC CONTROL PLANS) MAY BE REQUIRED AND IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL OF THESE PERMITS. APPROVED COPIES OF ALL REQUIRED PERMITS MUST BE SUBMITTED TO THE CITY CONSTRUCTION PROJECT MANAGER PRIOR TO THE START OF CONSTRUCTION.
5. A PARKS PERMIT WILL BE REQUIRED FOR ANY WORK OR OCCUPANCY OF PARK LAND, THIS INCLUDES BUT IS NOT LIMITED TO: DESIGNATED CITY PARKS, PARKWAYS, OPEN SPACE, TRAILS AND BIKE PATHS.
6. ALL DESIGN DRAWINGS PROVIDED AS PART OF THIS CONTRACT ARE FORMATTED FOR PRINTING FULL SIZE, ON STANDARD 22 X 34 INCH (ANSI D) PAPER SIZE AND TO HALF-SIZE (AND SCALE WHERE APPROPRIATE) ON STANDARD 11 X 17 PAPER SIZE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT HARD COPIES OF PLANS UTILIZED FOR BIDDING OR CONSTRUCTION ARE PRINTED ON THE PROPER MEDIA SIZE AND THAT SCALES PROVIDED WITHIN THE DRAWINGS ARE CORRECTLY INTERPRETED.
7. "RED-LINED" DRAWINGS AND PRINTS ARE TO BE MAINTAINED BY THE CONTRACTOR AND SUBMITTED TO THE CITY CONSTRUCTION PROJECT MANAGER AT THE COMPLETION OF THE PROJECT. ANY AND ALL FIELD CHANGES MADE DURING CONSTRUCTION MUST BE NOTED. THE DRAWINGS WILL STATE "RED LINES" IN LARGE BLOCK LETTERS. THE RED-LINED DRAWINGS MUST BE RECEIVED AND ACCEPTED BY THE CITY CONSTRUCTION PROJECT MANAGER PRIOR TO FINAL ACCEPTANCE AND SETTLEMENT.
8. THE CONTRACTOR SHALL NOTIFY THE CITY CONSTRUCTION PROJECT MANAGER IMMEDIATELY OF "ANY" DISCREPANCIES OR VARIATIONS IN DRAWINGS & SPECIFICATIONS THAT EFFECT PRICING OR THAT COULD REQUIRE MODIFICATION TO THE DESIGN. (G.C.C.1103)
9. THE CITY AND COUNTY OF DENVER ASSUMES NO RESPONSIBILITY FOR UTILITY LOCATIONS. THE UTILITIES SHOWN ON THESE DRAWINGS HAVE BEEN PLOTTED FROM THE BEST AVAILABLE INFORMATION. ALL UTILITIES MUST BE LOCATED BY THE CONTRACTOR. ALL COSTS ASSOCIATED WITH FIELD VERIFICATION OF LOCATION AND DEPTHS OF UTILITIES SHALL BE BORNE BY THE CONTRACTOR AND SHALL BE COMPLETED PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION.
10. ALL RANGE POINTS OR OTHER SURVEY MONUMENTS WHICH MAY BE DAMAGED OR DESTROYED DURING CONSTRUCTION SHALL BE TIED OUT AND RESET PER CITY SURVEYING STANDARDS.
11. ALL ELEVATIONS SHOWN ARE NAVD88 DATUM, UNLESS OTHERWISE NOTED.
12. INLETS AND MANHOLES ARE NOT SHOWN TO SCALE ON THE PLAN AND PROFILE SHEETS.
13. INVERT ELEVATIONS AND CALCULATED PIPE SLOPES ON STORM AND SANITARY PROFILES ARE TO THE CENTER OF MANHOLES OR STRUCTURES. PIPE LENGTHS ARE TWO DIMENSIONAL LENGTHS AND ARE CENTER TO CENTER BETWEEN MANHOLES AND TO THE INSIDE EDGE OF INLETS.
14. NORTHING AND EASTING CALLOUTS ON TYPE 16 AND TYPE 14 INLETS ARE TO THE CENTER OF THE STRUCTURE AT THE FLOWLINE. NORTHING AND EASTING CALLOUTS ON MANHOLES ARE TO THE CENTER OF THE MANHOLES.
15. LOCATION OF INLETS AND/OR INLET CONNECTORS MAY BE ADJUSTED IN THE FIELD AT THE DIRECTION OF THE CITY CONSTRUCTION PROJECT MANAGER IN CONJUNCTION WITH DESIGN INTENTION. ALL INLET CONNECTIONS SHOWN IN PLAN AND PROFILE ARE APPROXIMATE LOCATIONS AND DEPTHS.
16. DEPTHS OR BOTTOM OF STRUCTURE ELEVATIONS WILL NOT BE PROVIDED FOR INLETS WITHIN THE PROJECT SCOPE, AS THESE ARE REQUIRED TO BE DETERMINED BASED ON FIELD CONDITIONS IN ACCORDANCE WITH APPLICABLE STANDARD DETAIL DRAWINGS. IT SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO ESTABLISH INLET DEPTHS AND COMPLETE CONSTRUCTION IN CONFORMANCE WITH APPLICABLE STANDARD DETAIL DRAWINGS. THIS IS BASED ON CLEARANCES OF ADJACENT UTILITIES WHILE MAINTAINING MINIMUM REQUIRED GRADES ON LATERAL CONNECTIONS.
17. ALL SEWER MANHOLES MUST BE MAINTAINED AND ACCESSIBLE DURING CONSTRUCTION.
18. ALL SANITARY MANHOLES ARE 4' DIAMETER WITH "A" BASE AND CONCENTRIC CONE UNLESS NOTED OTHERWISE.
19. ALL MANHOLES BUILT WITHIN THIS PROJECT SHALL INCLUDE EITHER A 4" OR 8" CAST IRON RISER WITH 3" STEEL ADJUSTING RINGS.
20. SANITARY OR STORM PIPES, OR MANHOLES DISCOVERED DURING THE CONSTRUCTION OF THE PROPOSED 21" SANITARY WILL NEED TO BE VERIFIED AS ABANDONED AND EITHER REMOVED OR ABANDONED IN PLACE PER CCD STANDARDS.
21. PLATFORMS ARE REQUIRED FOR MANHOLES WHOSE RIM TO INVERT DEPTH OF "Y" EXCEEDS 20' PER OSHA 1910.27(d)(2). SEE NOTE 2 ON WASTEWATER STANDARD DRAWING S-503 FOR SHOP DRAWING REQUIREMENT.

DENVER WATER

22. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO TAKE WHATEVER STEPS NECESSARY TO PROTECT ALL WATER FACILITIES. IF ANY WATER FACILITIES CANNOT BE ADEQUATELY PROTECTED, THEN SAID WATER FACILITIES SHALL BE RELOCATED OR REMOVED IN ACCORDANCE WITH THE DENVER WATER DEPARTMENT REQUIREMENTS, BY A DENVER WATER PREQUALIFIED CONTRACTOR.
23. CONSTRUCTION ACTIVITIES BY ANY PARTY THAT DISTURB, RELOCATE, SEVER, OR IN ANY OTHER WAY IMPACT A SERVICE LINE SHALL BE REQUIRED TO MEET CURRENT DENVER WATER REQUIREMENTS FOR SERVICE LINES AS SPECIFIED IN CHAPTER 3 OF THE LATEST DENVER WATER STANDARDS. IN THE EVENT LEAD WATER LINES ARE ENCOUNTERED, DO NOT DISTURB, IMMEDIATELY STOP WORK, AND NOTIFY THE CITY CONSTRUCTION PROJECT MANAGER.

TREE PROTECTION

24. IF EXISTING TREES ARE TO BE REMOVED THEY MUST FIRST BE EVALUATED BY THE CITY AND COUNTY OF DENVER FORESTRY (PARKS) DEPARTMENT AND A PERMIT MUST BE OBTAINED. EXISTING TREES TO REMAIN MUST HAVE FORESTRY APPROVED TREE PROTECTION SET UP AROUND THEM DURING THE CONSTRUCTION AS SHOWN IN THE "INDIVIDUAL TREE PROTECTION DETAIL" IN THE DENVER PARKS DEPARTMENT STANDARD PLANS. THE CONTRACTOR MUST FOLLOW ALL OF THE CITY AND COUNTY OF DENVER TREE RETENTION AND PROTECTION GUIDELINES. REFER TO DENVER PARKS DEPARTMENT SPECIFICATION 01 56 39.

METRO WASTEWATER RECLAMATION DISTRICT

25. METRO WASTEWATER RECLAMATION DISTRICT MUST BE NOTIFIED AT LEAST 48 HOURS PRIOR TO CONSTRUCTION ON METRO FACILITIES IN ORDER FOR A DISTRICT INSPECTOR TO BE PRESENT DURING CONSTRUCTION. CONTRACTOR MUST CONTACT METRO WASTEWATER RECLAMATION DISTRICT TO SCHEDULE THE INSPECTION 303-286-6000.

GENERAL UTILITY

26. THE CONTRACTOR SHALL COMPLY WITH ARTICLE 1.5 OF TITLE 9, CRS ("EXCAVATION REQUIREMENTS") WHEN EXCAVATING OR GRADING IS PLANNED IN THE AREA OF UNDERGROUND UTILITY FACILITIES. THE CONTRACTOR SHALL NOTIFY ALL AFFECTED UTILITIES AT LEAST THREE (3) BUSINESS DAYS, NOT INCLUDING THE ACTUAL DAY OF NOTICE, PRIOR TO COMMENCING SUCH OPERATIONS. THE CONTRACTOR SHALL COOPERATE AND COORDINATE ALL UTILITY WORK WITH THE CONCERNED UTILITY COMPANY OR AGENCY. THE CONTRACTOR SHALL CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC) AT 1-800-922-1987 OR 811, AT LEAST THREE (3) BUSINESS DAYS, NOT INCLUDING THE ACTUAL DAY OF NOTICE, PRIOR TO DIGGING, TO HAVE LOCATIONS OF UNCC REGISTERED LINES MARKED BY MEMBER COMPANIES. ALL OTHER UNDERGROUND FACILITIES SHALL BE LOCATED BY CONTACTING THE RESPECTIVE OWNER. UTILITY SERVICE LATERALS SHALL ALSO BE LOCATED PRIOR TO BEGINNING EXCAVATION OR GRADING.
27. THE CONTRACTOR SHALL PROVIDE DETAILED SANITARY SEWER BYPASS PLAN(S) IN ACCORDANCE WITH THE CITY AND COUNTY OF DENVER PUBLIC WORKS WASTEWATER MANAGEMENT DIVISION'S REQUIREMENTS.

NOTE:

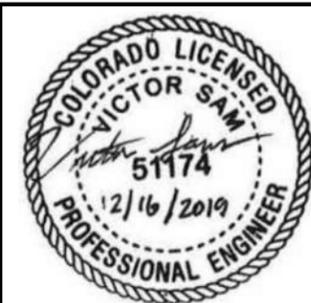
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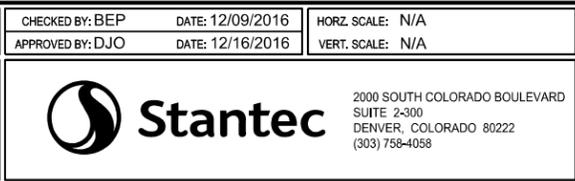


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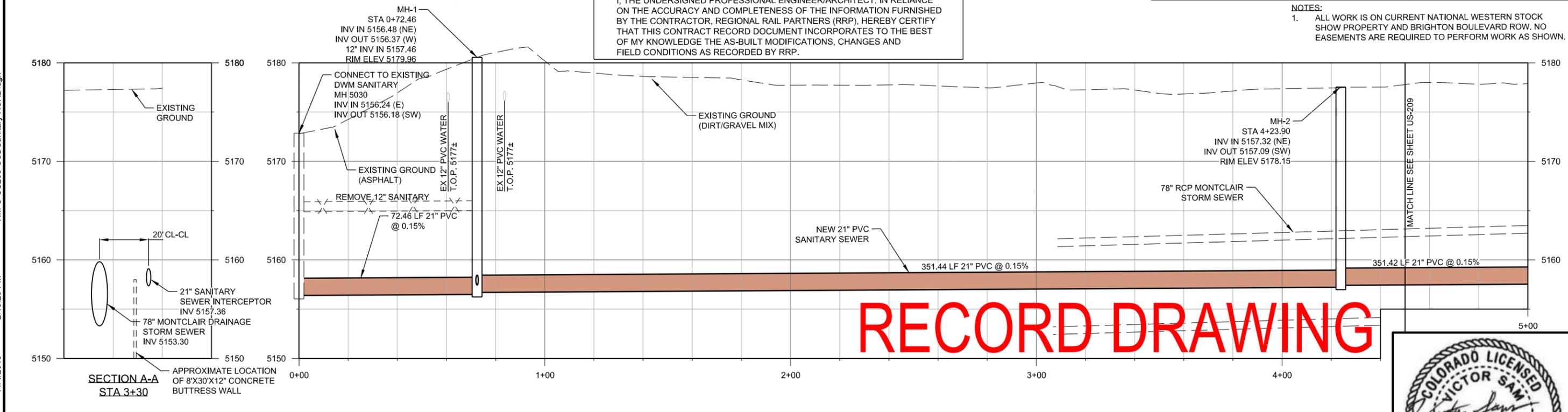
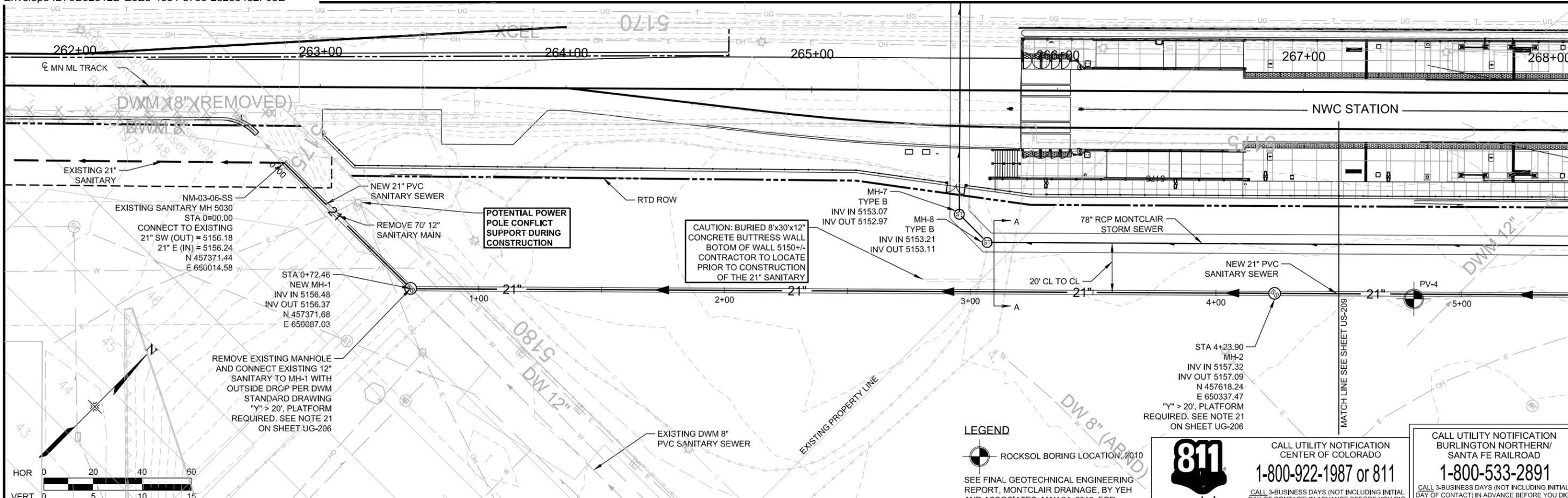
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NORTH METRO RAIL LINE
48TH/49TH AVENUE 21" SANITARY
SEWER IMPROVEMENTS - PHASE 1
GENERAL NOTES

DWG No. UG-206



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LEGEND
 ROCKSOL BORING LOCATION, 2010
 SEE FINAL GEOTECHNICAL ENGINEERING REPORT, MONTCLAIR DRAINAGE, BY YEH AND ASSOCIATES, MAY 24, 2016, FOR BORING INFORMATION



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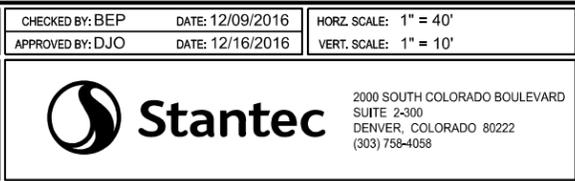
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NOTES:
 1. ALL WORK IS ON CURRENT NATIONAL WESTERN STOCK SHOW PROPERTY AND BRIGHTON BOULEVARD ROW. NO EASEMENTS ARE REQUIRED TO PERFORM WORK AS SHOWN.

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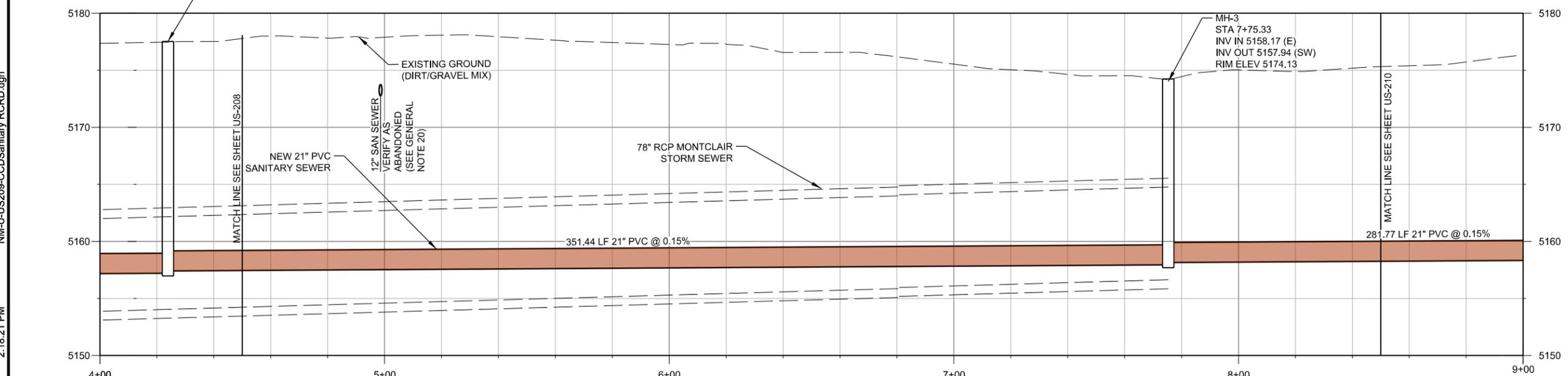
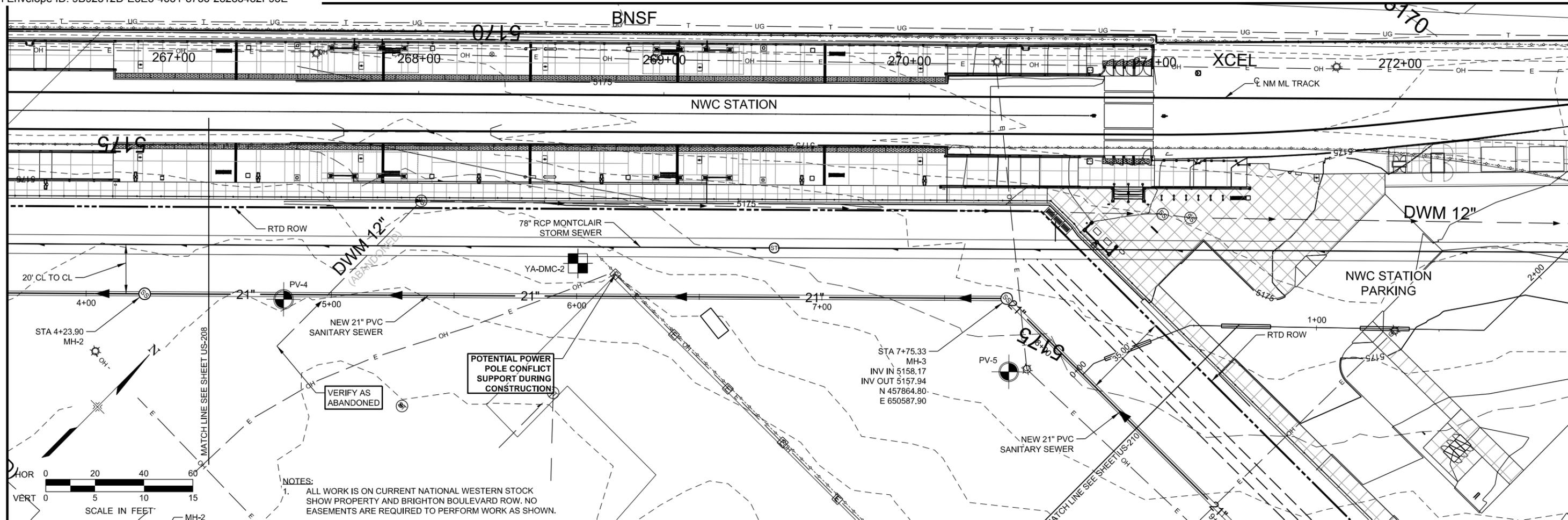


NORTH METRO RAIL LINE
 48TH/49TH AVE 21" SANITARY SEWER IMPROVEMENTS - PHASE 1
 SANITARY SEWER PLAN AND PROFILE

DWG No. US-208

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LEGEND

- YEH BORING LOCATION, 2014
- ROCKSOL BORING LOCATION, 2010

SEE FINAL GEOTECHNICAL ENGINEERING REPORT, MONTCLAIR DRAINAGE, BY YEH AND ASSOCIATES, MAY 24, 2016, FOR BORING INFORMATION

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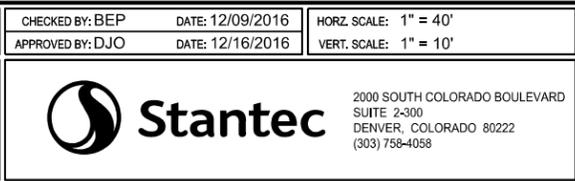
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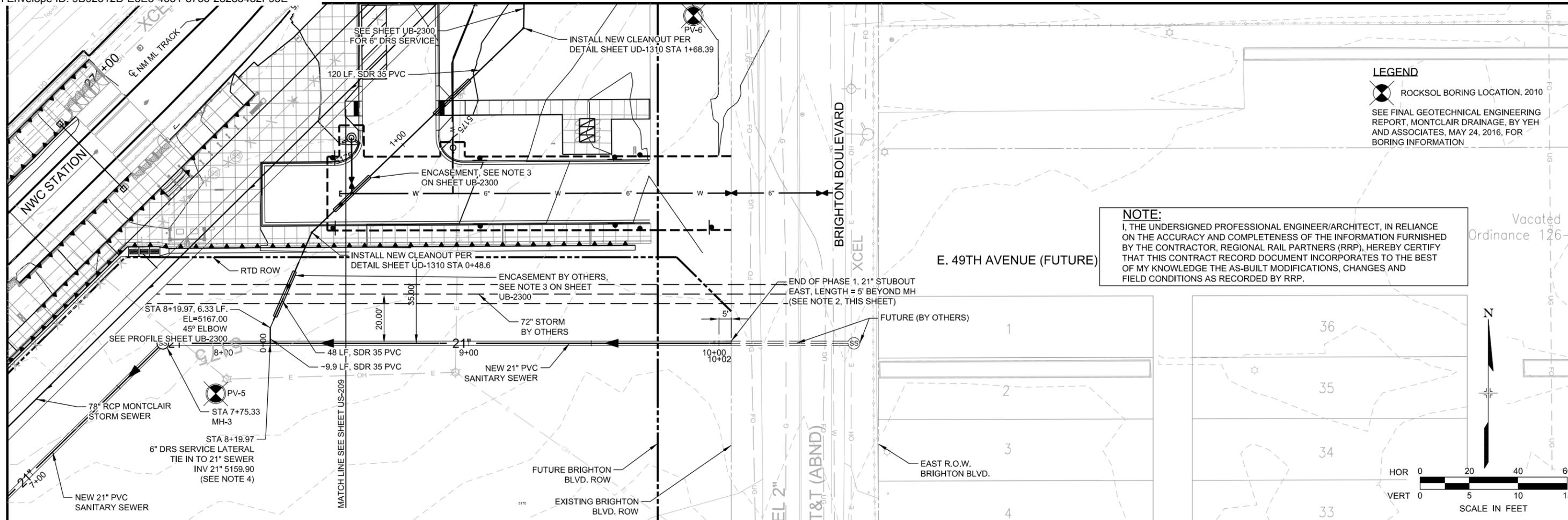


NORTH METRO RAIL LINE

48TH/49TH AVE 21" SANITARY SEWER IMPROVEMENTS - PHASE 1
SANITARY SEWER PLAN AND PROFILE

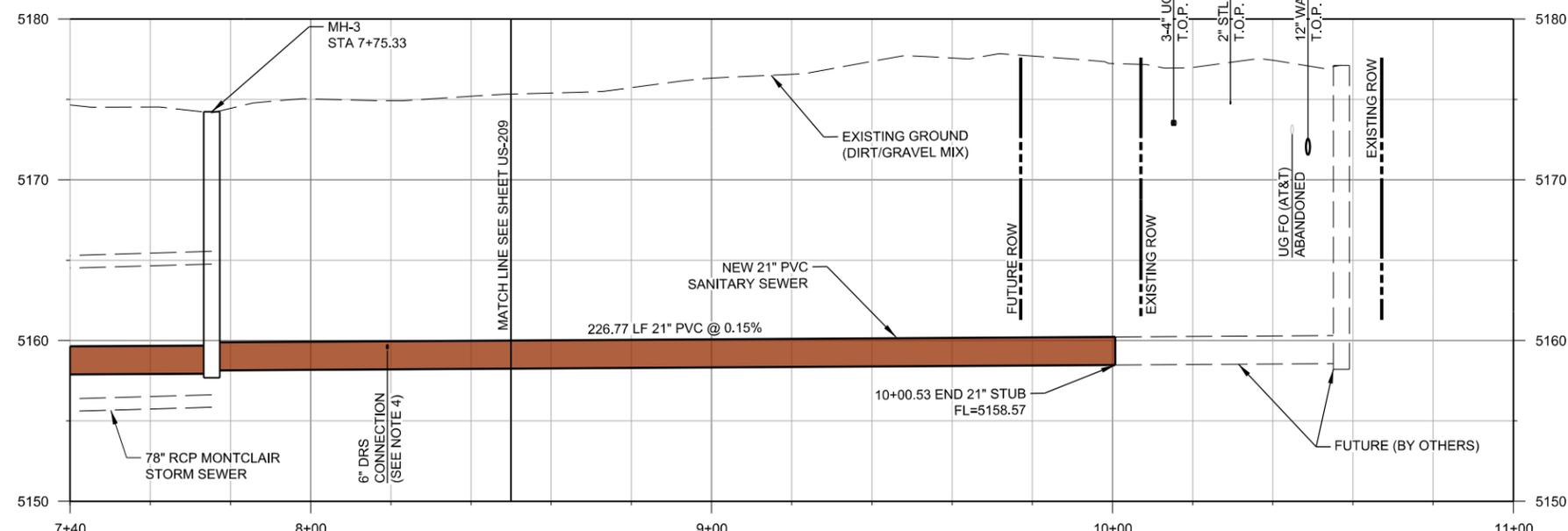
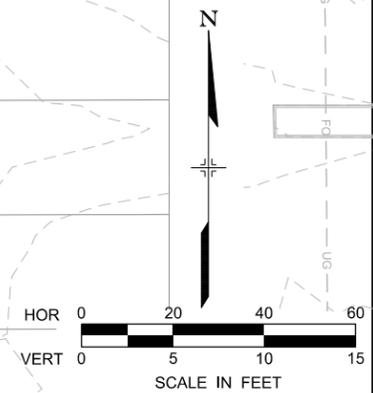
DWG No. US-209

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LEGEND
 ROCKSOL BORING LOCATION, 2010
 SEE FINAL GEOTECHNICAL ENGINEERING REPORT, MONTCLAIR DRAINAGE, BY YEH AND ASSOCIATES, MAY 24, 2016, FOR BORING INFORMATION

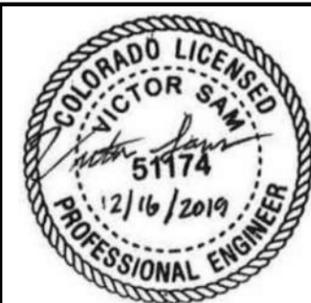
NOTE:
 I, THE UNDERSIGNED PROFESSIONAL ENGINEER/ARCHITECT, IN RELIANCE ON THE ACCURACY AND COMPLETENESS OF THE INFORMATION FURNISHED BY THE CONTRACTOR, REGIONAL RAIL PARTNERS (RRP), HEREBY CERTIFY THAT THIS CONTRACT RECORD DOCUMENT INCORPORATES TO THE BEST OF MY KNOWLEDGE THE AS-BUILT MODIFICATIONS, CHANGES AND FIELD CONDITIONS AS RECORDED BY RRP.



- NOTES:**
- ALL WORK IS ON CURRENT NATIONAL WESTERN STOCK SHOW PROPERTY AND BRIGHTON BOULEVARD ROW. NO EASEMENTS ARE REQUIRED TO PERFORM WORK AS SHOWN.
 - USE A STANDARD MANUFACTURED PVC PIPE PLUG WITH END CAP. PROVIDE CONCRETE THRUST BLOCK.
 - CONTRACTOR MAY BE REQUIRED TO PROVIDE A METHOD OF HANDLING TRAFFIC (MHT) PLAN TO CITY TRAFFIC ENGINEER FOR APPROVAL PRIOR TO STARTING WORK OR MOBILIZATION OF EQUIPMENT IN BRIGHTON BOULEVARD RIGHT OF WAY.
 - QWIK SEAL CONNECTION @ 45 DEG ANGLE ON TOP OF 21" PVC SANITARY SEWER.

CALL UTILITY NOTIFICATION
 BURLINGTON NORTHERN/
 SANTA FE RAILROAD
1-800-533-2891
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.

811
 Know what's below.
 Call before you dig.
 CALL UTILITY NOTIFICATION
 CENTER OF COLORADO
1-800-922-1987 or 811
CALL 3-BUSINESS DAYS (NOT INCLUDING INITIAL DAY OF CONTACT) IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.



RECORD DRAWING

NO.	REVISIONS	BY	DATE
	RECORD DRAWING		05/2019
1	NMC-DCN-000125; NWS DRS SANITARY SEWER	VCS	04/20/2018
1	NMC-DCN000071 CHANGE LIMITS OF CONSTRUCTION	BP	01/27/2017
0	ISSUED FOR CONSTRUCTION	DJO	12/16/2016

DESIGNED BY: DJO	DATE: 10/18/2016	CHECKED BY: BEP	DATE: 12/09/2016	HORZ. SCALE: 1" = 40'
DRAWN BY: JRB	DATE: 10/18/2016	APPROVED BY: DJO	DATE: 12/16/2016	VERT. SCALE: 1" = 10'

RRP
 REGIONAL RAIL PARTNERS
 Balfour Beatty / GRAHAM JOINT VENTURE

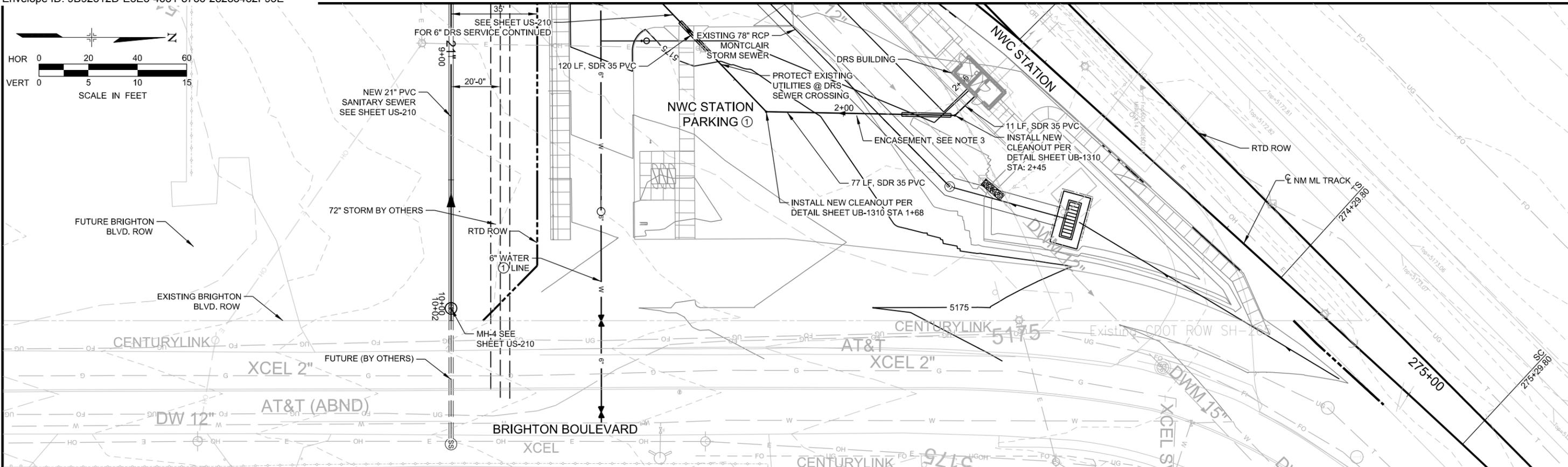
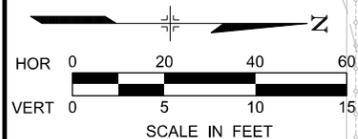
Stantec
 2000 SOUTH COLORADO BOULEVARD
 SUITE 2-300
 DENVER, COLORADO 80222
 (303) 758-4058

RTD FasTracks
 North Metro
 Rail Line
 REGIONAL TRANSPORTATION DISTRICT
 1600 BLAKE STREET
 DENVER, COLORADO 80202
 (303) 626-9000

NORTH METRO RAIL LINE
 48TH/49TH AVE 21" SANITARY
 SEWER IMPROVEMENTS - PHASE 1
 SANITARY SEWER PLAN AND PROFILE

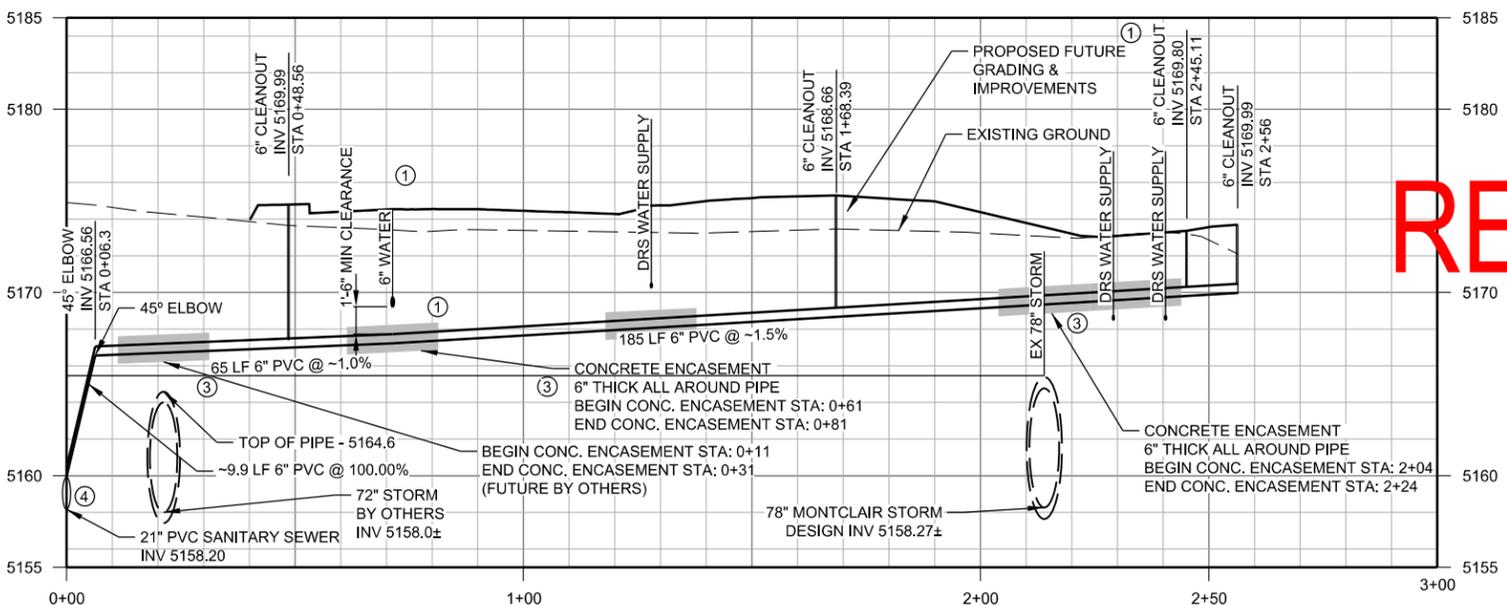
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NOTE:
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- KEY NOTES:**
- IMPROVEMENTS SHOWN FOR NWC STATION ARE BASED ON FINAL CONSTRUCTION PLANS, RTD - FASTTRACKS NORTH METRO PROJECT, CONTRACT NO 13DH008 DESIGN PACKAGE 12, SCHEDULE FOR COMPLETION 2017-2018. CONDITIONS, REMOVALS, AND REPLACEMENTS MAY VARY BASED ON TIMING OF 21" SANITARY CONSTRUCTION.
 - SEE SANITARY SERVICE AND RISER CONNECTION DETAIL PAGE 28-29 CCD SANITARY SEWER DESIGN AND TECHNICAL CRITERIA MANUAL.
 - CONCRETE ENCASUREMENT PER CCD ENGINEERING DIVISION CONCRETE ENCASUREMENT DETAIL S-350.
 - QWIK SEAL CONNECTION @ 45 DEG ANGLE ON TOP OF 21" PVC SANITARY SEWER.



RECORD DRAWING

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BURLINGTON NORTHERN/
SANTA FE RAILROAD
1-800-533-2891
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REGIONAL RAIL PARTNERS
Balfour Beatty / GRAHAM JOINT VENTURE

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NORTH METRO RAIL LINE

48TH/49TH AVE 21" SANITARY
SEWER IMPROVEMENTS - PHASE 1
SANITARY SEWER PLAN AND PROFILE - NWC LATERAL

DWG No. US-211

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