

**STORM IMPROVEMENTS  
SUMMARY OF APPROXIMATE QUANTITIES**


ITEM NO.	DESCRIPTION	UNIT	STORM IMPROVEMENTS		EROSION CONTROL		TOTAL	
			PLAN	AS CONST.	PLAN	AS CONST.	PLAN	AS CONST.
106	TESTING AND QUALITY CONTROL	LS	1				1.0	
201	CLEARING AND GRUBBING	AC	0.3				0.3	
202	REMOVE AND REPLACE ASPHALT	SY	1,203				1,203	
202	REMOVE ASPHALT AND REPLACE W/ CONCRETE	SY	67				67	
202	REMOVE AND REPLACE CONCRETE	SY	246				246	
202	REMOVE AND REPLACE CURB AND GUTTER	LF	1,155				1,155	
202	STORM REMOVAL	LF	240				240	
202	15' TYPE-R INLET REMOVAL	EA	1				1	
202	30' TYPE-R INLET REMOVAL	EA	1				1	
202	CUSTOM AREA INLET REMOVAL	EA	1				1	
202	MANHOLE REMOVAL	EA	2				2	
202	TREE REMOVAL	EA	8				8	
202	SHRUB REMOVAL	EA	22				22	
202	REMOVE AND REPLACE SIGN	EA	2				2	
203	EARTHWORK (CUT)	CY	56				56	
203	EARTHWORK (FILL)	CY	282				282	
203	UNSUITABLE MATERIALS	CY	513				513	
206	STRUCTURE EXCAVATION (OVEREXCAVATION)	CY	2,172				2,172	
206	STRUCTURE BACKFILL (OVEREXCAVATION)	CY	892				892	
207	STOCKPILE TOPSOIL	CY	250				250	
208	STABILIZED STAGING	EA			1		1	
208	SILT FENCE	LF			779		779	
208	INLET PROTECTION	EA			10		10	
208	VEHICLE TRACKING CONTROL	EA			2		2	
208	CONCRETE WASHOUT	EA			1		1	
208	ROCK SOCK	EA			13		13	
208	ROCK CHECK DAM	EA			1		1	
208	1 YEAR BMP MAINTENANCE (SOUTH OF 88TH AVENUE)	LS			1		1	
212	REPAIR LANDSCAPE (SOD)	SF			13,867		13,867	
212	NATIVE SEED AT OUTFALL	SF			4,910		4,910	
213	REPAIR LANDSCAPE (MULCH)	SF			4,910		4,910	
214	NEW TREES-2" CAL.	EA	7				7	
214	NEW SHRUBS	EA	41				41	
214	WINTER WATERINGS	EA	5				5	
250	DEWATERING	LS	1				1	
304	AGGREGATE BASE COURSE (CLASS 6) (OVER EXCAVATION)	CY	1,469				1,050	
506	SOIL REPAIR, TYPE M	LY	108				108	
514	PEDESTRIAN RAILING	LF	72				72	
601	CONCRETE HEADWALL/WINGWALL	EA	1				1	
603	5 FOOT X 7 FOOT CONCRETE BOX CULVERT (PRECAST)	LF	430				430	
603	5 FOOT X 16 FOOT CONCRETE BOX CULVERT (PRECAST)	LF	84				84	
603	8" SANITARY ENCASEMENT (STEEL)	LF	17				17	
603	SANITARY BYPASS PUMPING	LS	1				1	
604	INLET, TYPE-R SPECIAL L5	EA	2				2	
604	INLET, TYPE-R SPECIAL L15	EA	3				3	
604	INLET, TYPE-R L15	EA	2				2	
604	INLET, TYPE-R SPECIAL L30	EA	1				1	
604	INLET SPECIAL	EA	1				1	
604	MANHOLE BOX BASE SPECIAL	EA	1				1	
604	SANITARY DROP MANHOLE	EA	1				1	
619	24" PVC (C900) RESTRAINED	LF	128				128	
619	24" PVC (C900) UNRESTRAINED	LF	566				566	
623	IRRIGATION RESTORATION	SF	20,000				20,000	
624	15" RCP (CLASS III)	LF	23				23	
624	18" RCP (CLASS III)	LF	14				14	
624	24" RCP (CLASS III)	LF	23				23	
624	36" RCP (CLASS III)	LF	14				14	
624	72" RCP (CLASS III)	LF	23				23	
624	8" PVC (SDR 35)	LF	80				80	
625	CONSTRUCTION SURVEYING	LS	1				1	
626	MOBILIZATION	LS	1				1	
627	PAVEMENT MARKINGS	SF	170				170	
630	TRAFFIC CONTROL	LS	1				1	

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**2** **EARTHWORK DISCLAIMER:**  
EARTHWORK QUANTITIES ARE RAW NUMBERS AND HAVE NOT BEEN ADJUSTED TO ACCOUNT FOR SHRINK, SWELL, COMPACTION, PAVING, UTILITY SPOILS, ETC. IN ADDITION, SHORING HAS BEEN ASSUMED IN THE EARTHWORK QUANTITIES PROVIDED. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY ALL EARTHWORK AND SHORING REQUIREMENTS BASED ON PROPOSED MEANS AND METHODS. PER THE PROJECT MANUAL, ALL EARTHWORK SHALL BE PAID AT BID QUANTITIES UNLESS A CHANGE IS SUBSTANTIATED THROUGH A CHANGE ORDER.

Print Date: \_\_\_\_\_  
 File Name: SUMMARY OF APPROXIMATE QUANTITIES.dwg  
 Horiz. Scale: \_\_\_\_\_ Vert. Scale: \_\_\_\_\_  
 Unit Information: \_\_\_\_\_ Unit Leader: \_\_\_\_\_  
  
 12499 WEST COLFAX AVENUE,  
 LAKEWOOD, COLORADO 80215  
 MAIN 303.431.6100  
 MARTINMARTIN.COM

Sheet Revisions		
Date	Comments	Init.
04-01-22	FOR BID	M/M
06-29-22	REISSUE SHEETS 6 & 12	M/M



No Revisions:	
Revised:	
Void:	

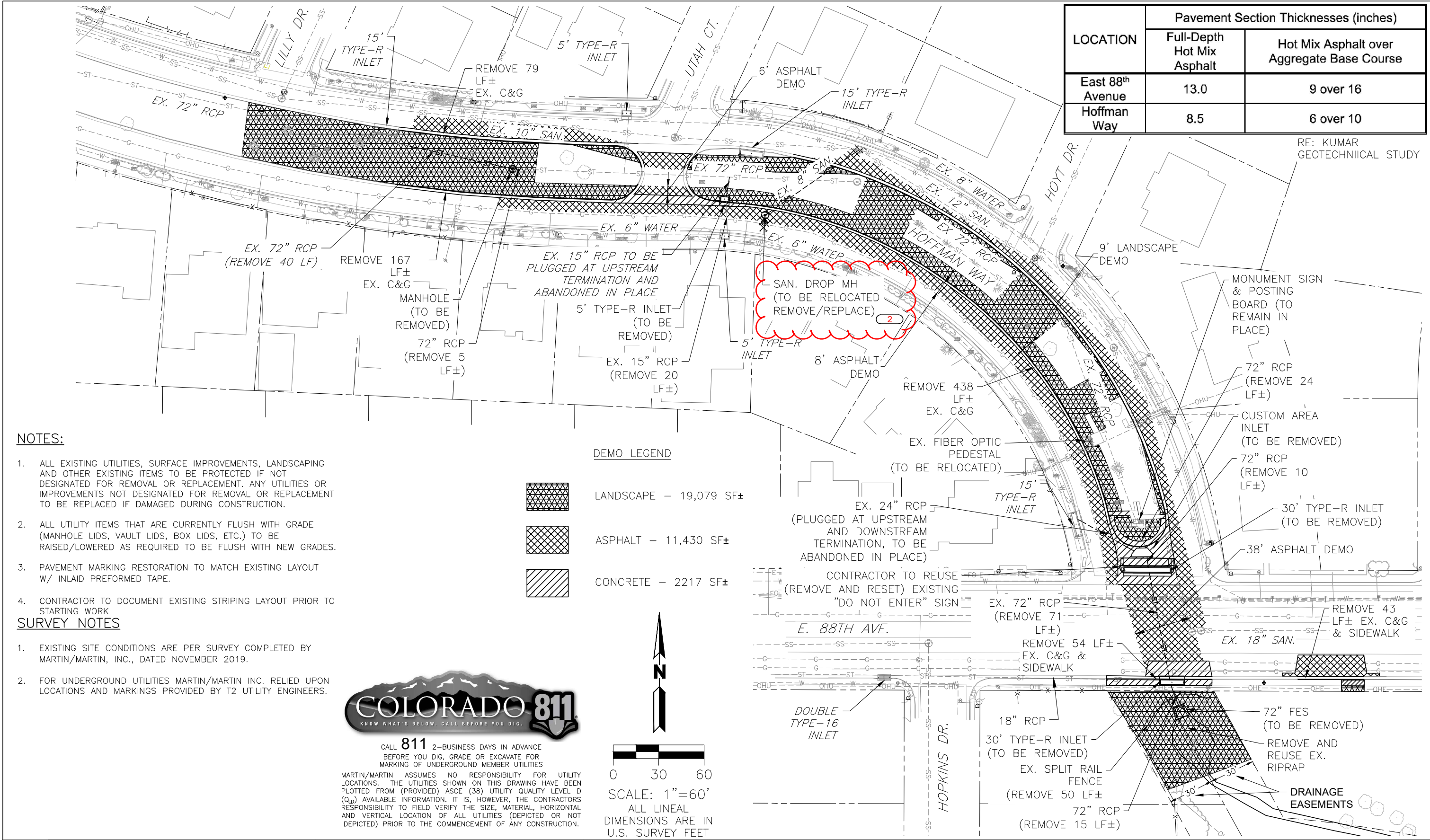
**HOFFMAN WAY  
DRAINAGE IMPROVEMENTS  
SUMMARY OF APPROX QUANTITIES**

Designer: R. BYRNE  
 Detailer: E. BEDNAR  
 Sheet Subset: ----- Subset Sheet: -----

Project No./Code	19.1187
FINAL DESIGN	
SHEET NO.	06

LOCATION	Pavement Section Thicknesses (inches)	
	Full-Depth Hot Mix Asphalt	Hot Mix Asphalt over Aggregate Base Course
East 88 <sup>th</sup> Avenue	13.0	9 over 16
Hoffman Way	8.5	6 over 10

RE: KUMAR GEOTECHNICAL STUDY



**NOTES:**

- ALL EXISTING UTILITIES, SURFACE IMPROVEMENTS, LANDSCAPING AND OTHER EXISTING ITEMS TO BE PROTECTED IF NOT DESIGNATED FOR REMOVAL OR REPLACEMENT. ANY UTILITIES OR IMPROVEMENTS NOT DESIGNATED FOR REMOVAL OR REPLACEMENT TO BE REPLACED IF DAMAGED DURING CONSTRUCTION.
- ALL UTILITY ITEMS THAT ARE CURRENTLY FLUSH WITH GRADE (MANHOLE LIDS, VAULT LIDS, BOX LIDS, ETC.) TO BE RAISED/LOWERED AS REQUIRED TO BE FLUSH WITH NEW GRADES.
- PAVEMENT MARKING RESTORATION TO MATCH EXISTING LAYOUT W/ INLAID PREFORMED TAPE.
- CONTRACTOR TO DOCUMENT EXISTING STRIPING LAYOUT PRIOR TO STARTING WORK

**SURVEY NOTES**

- EXISTING SITE CONDITIONS ARE PER SURVEY COMPLETED BY MARTIN/MARTIN, INC., DATED NOVEMBER 2019.
- FOR UNDERGROUND UTILITIES MARTIN/MARTIN INC. RELIED UPON LOCATIONS AND MARKINGS PROVIDED BY T2 UTILITY ENGINEERS.

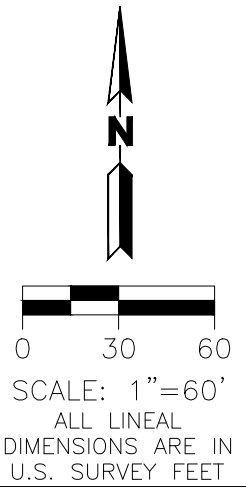
**DEMO LEGEND**

	LANDSCAPE - 19,079 SF±
	ASPHALT - 11,430 SF±
	CONCRETE - 2217 SF±



CALL 811 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE OR EXCAVATE FOR MARKING OF UNDERGROUND MEMBER UTILITIES

MARTIN/MARTIN ASSUMES NO RESPONSIBILITY FOR UTILITY LOCATIONS. THE UTILITIES SHOWN ON THIS DRAWING HAVE BEEN PLOTTED FROM (PROVIDED) ASCE (38) UTILITY QUALITY LEVEL D (Q<sub>u</sub>) AVAILABLE INFORMATION. IT IS, HOWEVER, THE CONTRACTORS RESPONSIBILITY TO FIELD VERIFY THE SIZE, MATERIAL, HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES (DEPICTED OR NOT DEPICTED) PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION.



Print Date:	
File Name: DEMO PLAN.dwg	
Horiz. Scale:	Vert. Scale:
Unit Information	Unit Leader
	MARTIN/MARTIN CONSULTING ENGINEERS
	12499 WEST COLFAX AVENUE, LAKEWOOD, COLORADO 80215 MAIN 303.431.6100 MARTINMARTIN.COM

Sheet Revisions		
Date:	Comments	Init.
04-01-22	FOR BID	M/M
06-29-22	BID ADDENDUM	M/M

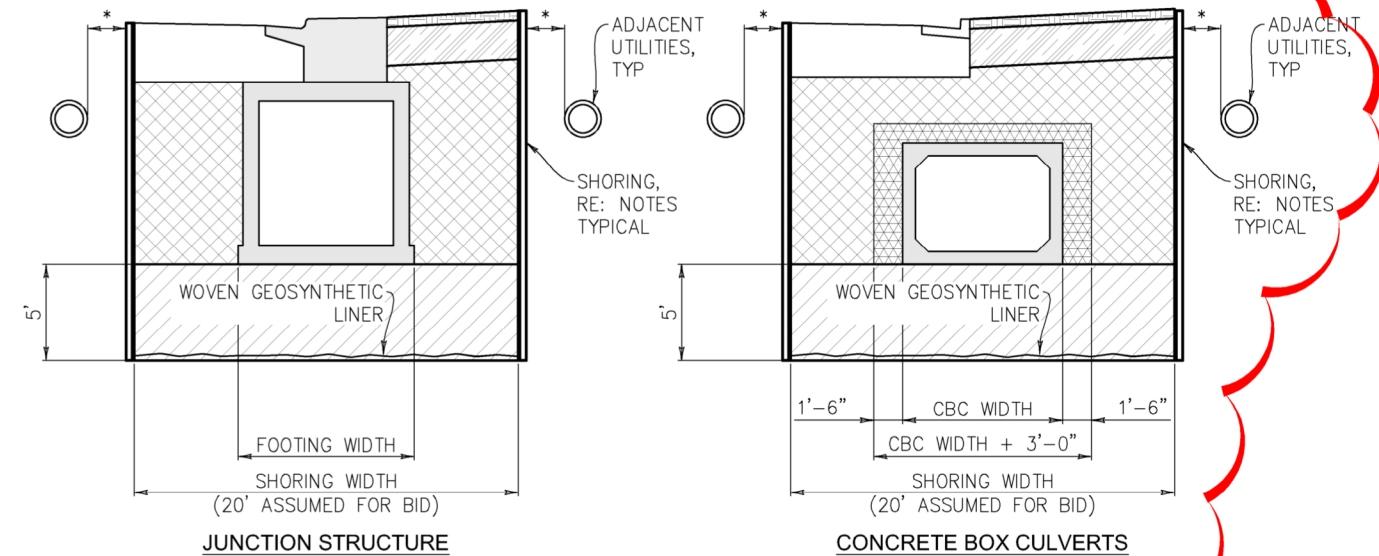
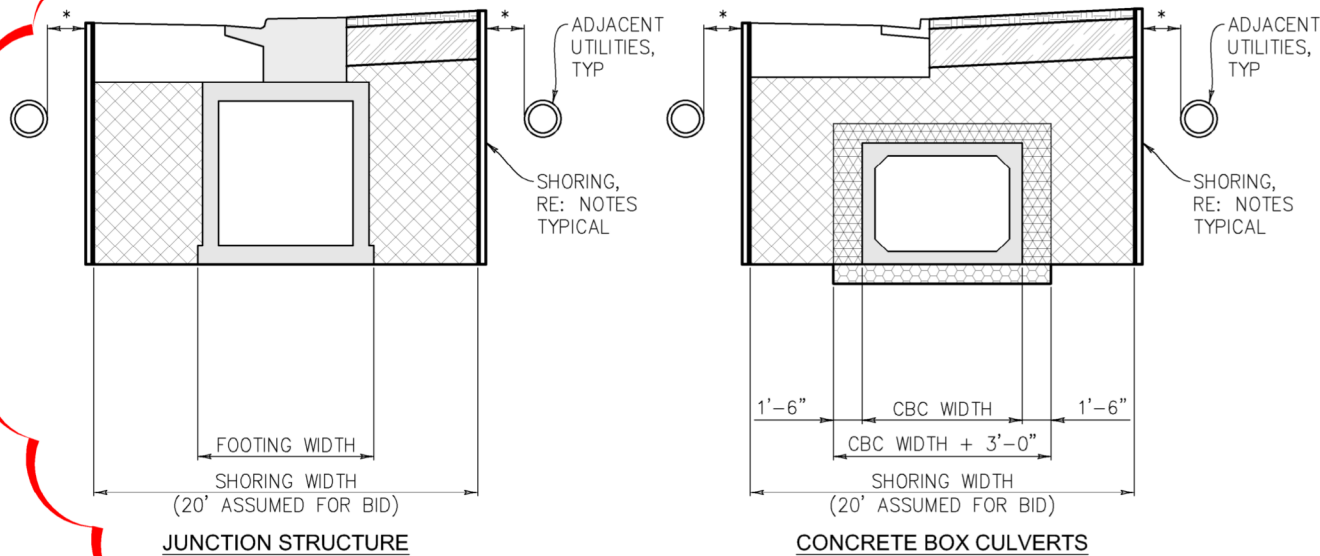
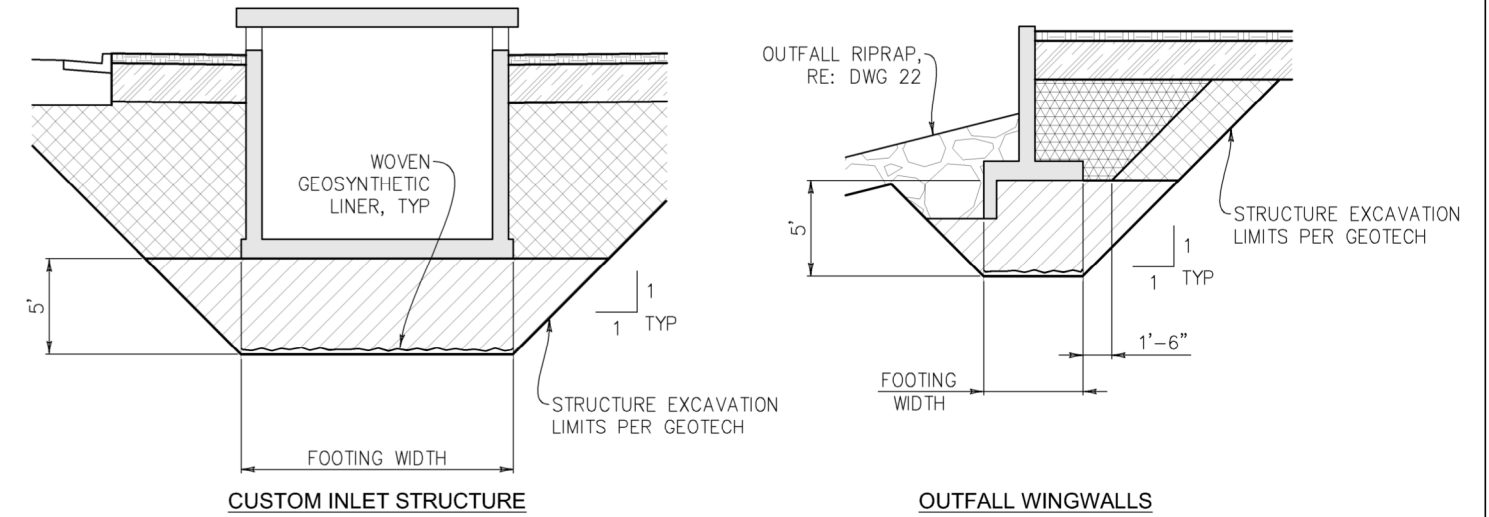
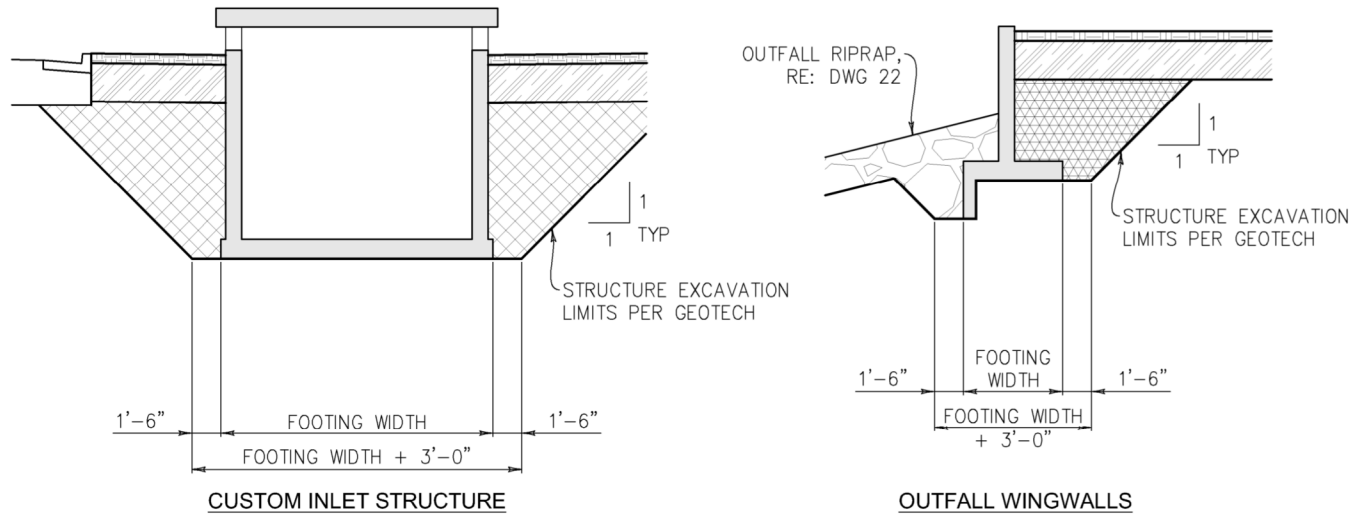


No Revisions:	
Revised:	
Void:	

HOFFMAN WAY DRAINAGE IMPROVEMENTS DEMOLITION PLAN	
Designer:	R. BYRNE
Detailer:	E. BEDNAR
Sheet Subset:	--- Subset Sheet:

Project No./Code	19.1187
	FINAL DESIGN
SHEET NO.	12

PLOT DATE: Wednesday, June 29, 2022 12:18 PM LAST SAVED BY: MGEIGER  
DRAWING LOCATION: G:\HORN\19.1187-Hoffman Way - Parallel Drainage System\PLANS\STRUCT\55 SPECIAL STRUCTURE EXCAVATION AND STRUCTURE BACKFILL DETAILS.dwg 55 STRUCTURE EXCAVATION AND STRUCTURE BACKFILL DETAILS



**STANDARD STRUCTURE EXCAVATION AND STRUCTURE BACKFILL DETAILS**

**NOTE:**  
 COST FOR SHORING, STANDARD STRUCTURE EXCAVATION, AND STRUCTURE BACKFILL SHALL BE INCLUDED IN ITEMS 601, 603 AND 604 FOR EACH STRUCTURE.

**SPECIAL STRUCTURE EXCAVATION AND STRUCTURE BACKFILL DETAILS**

- NOTES:**
- COST FOR SHORING, ADDITIONAL SPECIAL STRUCTURE EXCAVATION, AND STRUCTURE BACKFILL OVER AND ABOVE THE STANDARD STRUCTURE EXCAVATION AND STRUCTURE BACKFILL SHALL BE PAID FOR SEPARATELY UNDER THE ITEMS 206 STRUCTURE EXCAVATION (OVEREXCAVATION) AND 206 STRUCTURE BACKFILL (OVEREXCAVATION).
  - WOVEN GEOSYNTHETIC LINER SHALL BE MIRAFI RS580i OR GEOTECHNICAL APPROVED EQUAL. COST FOR WOVEN GEOSYNTHETIC LINER SHALL BE INCLUDED IN THE COST FOR ITEM 304 AGGREGATE BASE COURSE (CLASS 6) (OVEREXCAVATION).

**2 TYPICAL SHORING NOTES:**

- SHORING PROVIDED BY CONTRACTOR. LOCATION AND EXTENTS OF SHORING IS A MEANS AND METHODS FOR CONSTRUCTION. SHORING SHOWN FOR BID PURPOSES ONLY. SHORING LOCATION ASSUMPTIONS FOR BIDDING ARE INDICATED ON SHEET NO 56. SHORING SYSTEM TO PROVIDE TEMPORARY SUPPORT FOR EXISTING UTILITIES DURING CONSTRUCTION. CONTRACTOR OPTION TO PROVIDE ALTERNATE UTILITY SUPPORT, PROVIDED UTILITY SERVICES ARE NOT INTERRUPTED, DAMAGED, OR DISTURBED.
- THE MAXIMUM SHORING DIMENSION TO BE VERIFIED IN FIELD AND CONFIRMED TO MAINTAIN AT LEAST 2'-0" OFFSET FROM UTILITIES (AS NOTED THUS "\*") OR MINIMUM OFFSET REQUIRED BY UTILITY COMPANY, WHICHEVER IS GREATER.

**LEGEND**

	6" TOPSOIL (TO BE PAID FOR AS PART OF LANDSCAPING)		CDOT STRUCTURE BACKFILL (CLASS 1)
	IMPERMEABLE MATERIAL (2' MINIMUM)		CDOT STRUCTURE BACKFILL (CLASS 6 AGGREGATE BASE COURSE)
	STRUCTURE BACKFILL MATERIAL, RE: STRUCTURAL NOTES AND GEOTECH		BEDDING MATERIAL

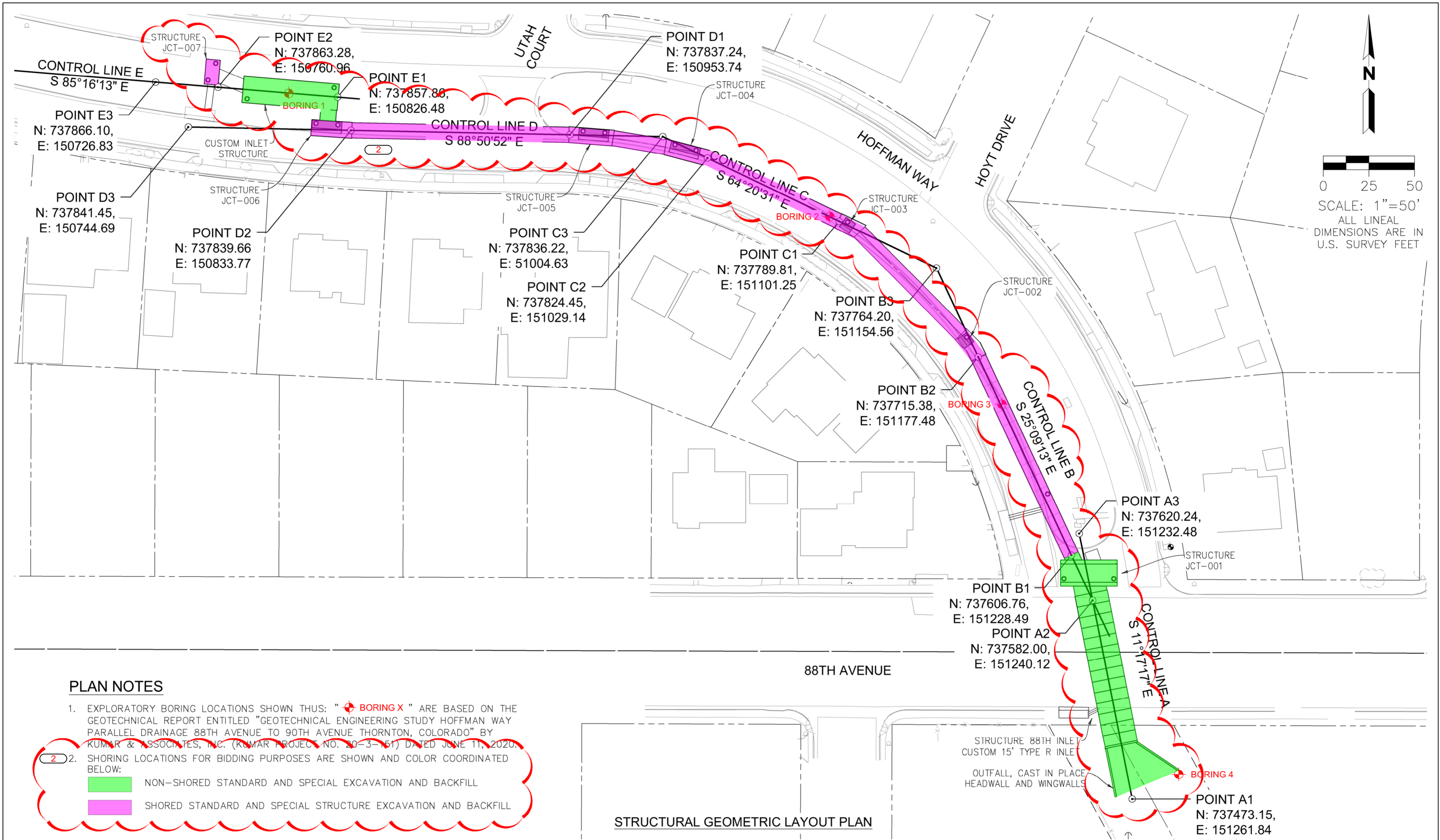
Print Date:	
File Name:	55 SPECIAL STRUCTURE EXCAVATION AND STRUCTURE BACKFILL DETAILS.dwg
Horiz. Scale:	Vert. Scale:
Unit Information:	Unit Leader:
	<b>MARTIN/MARTIN</b> CONSULTING ENGINEERS
	12499 WEST COLFAX AVENUE, LAKEWOOD, COLORADO 80215 MAIN 303.431.6100 MARTINMARTIN.COM

Sheet Revisions		
Date:	Comments	Init.
11/20/20	FINAL DESIGN REVIEW	M/M
02/03/21	FOR REVIEW	M/M
5/14/21	FOR BID	M/M
6/29/22	BID ADDENDUM	M/M



NOT FOR CONSTRUCTION	HOFFMAN WAY DRAINAGE IMPROVEMENTS STRUCTURE EXCAVATION AND STRUCTURE BACKFILL DETAILS	Project No./Code 19.1187
No Revisions:	Designer: LE/TNS	
Revised:	Detailer: MNG	
Void:	Sheet Subset: STRUCT	Subset Sheet: SHEET NO. 55

PLOT DATE: Wednesday, June 29, 2022 11:23 PM LAST SAVED BY: MGEIGER  
 DRAWING LOCATION: G:\HORN\19.1187-Hoffman Way - Parallel Drainage System\PLANS\CDs\STRUCT\56 STRUCTURAL GEOMETRIC LAYOUT.dwg 56 STRUCTURAL GEOMETRIC LAYOUT



**PLAN NOTES**

- EXPLORATORY BORING LOCATIONS SHOWN THUS: "BORING X" ARE BASED ON THE GEOTECHNICAL REPORT ENTITLED "GEOTECHNICAL ENGINEERING STUDY HOFFMAN WAY PARALLEL DRAINAGE 88TH AVENUE TO 90TH AVENUE THORNTON, COLORADO" BY KUMAR & ASSOCIATES, INC. (KUMAR PROJECT NO. 20-3-151) DATED JUNE 11, 2020.
- SHORING LOCATIONS FOR BIDDING PURPOSES ARE SHOWN AND COLOR COORDINATED BELOW:
  - NON-SHORED STANDARD AND SPECIAL EXCAVATION AND BACKFILL
  - SHORED STANDARD AND SPECIAL STRUCTURE EXCAVATION AND BACKFILL

**STRUCTURAL GEOMETRIC LAYOUT PLAN**



Print Date:	
File Name:	56 STRUCTURAL GEOMETRIC LAYOUT.dwg
Horiz. Scale:	Vert. Scale:
Unit Information:	Unit Leader:
12499 WEST COLFAX AVENUE, LAKEWOOD, COLORADO 80215 MAIN 303.431.6100 MARTINMARTIN.COM	

Sheet Revisions		
Date:	Comments	Init.
11/20/20	FINAL DESIGN REVIEW	M/M
02/03/21	FOR REVIEW	M/M
5/14/21	FOR BID	M/M
6/29/22	BID ADDENDUM	M/M

NOT FOR CONSTRUCTION	HOFFMAN WAY DRAINAGE IMPROVEMENTS		Project No./Code
No Revisions:	STRUCTURAL GEOMETRIC LAYOUT		
Revised:	Designer:	LE/TNS	
Void:	Detailer:	MNG	
	Sheet Subset:	STRUCT	Subset Sheet:
			SHEET NO. 56