CITY OF ALBUQUERQUE

Planning Department
Brennon Williams, Director

Mayor Timothy M. Keller

December 31, 2019

Genny Donart, P.E.
Isaacson & Arfman, P.A.
128 Monroe St. N.E
Albuquerque, NM 87108

RE: **Masthead Street Extension**
Masthead St, West of Bartlett
Grading Plan Stamp Date: 12/18/19
Drainage Report Stamp Date: 12/18/19
Hydrology File: D17D109

Dear Ms. Donart:

Based on the submittal received on 12/19/19 the above-referenced submittal is approved for Work Order.

If you have any questions, please contact me at 924-3695 or dpeterson@cabq.gov.

Sincerely,

Dana Peterson, P.E.
Senior Engineer, Planning Dept.
Development Review Services

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

DECEMBER 2019

DRAINAGE REPORT

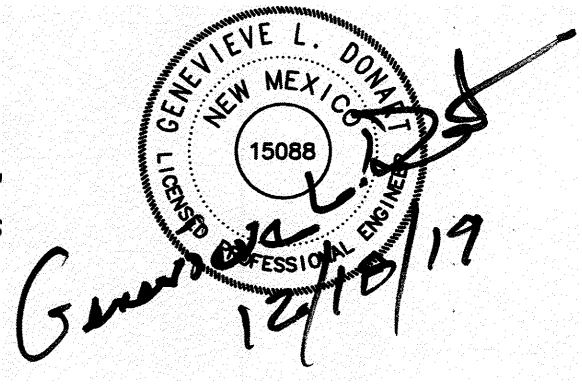
FOR

MASTHEAD ST. EXTENSION

BUILDERS TRUST OF NEW MEXICO

BY

Isaacson & Arfman, Inc.
EST 1980
Civil Engineering Consultants
128 Monroe Street NE
Albuquerque, New Mexico | 505-268-8828 | www.iacivil.com



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The extension of Mashtead St will bring the road about 384 lf west of where it currently ends at Bartlett St. Dedicated right-of-way for this new road crosses AMAFCA-owned land where water from the North Pino Arroyo eddies, and where an existing storm drain south of the road discharges into the arroyo. The new street needs to be built high enough to allow the storm drain to extend under the road, and to lift it above the 100-year water surface elevation in the arroyo.

In the future, the City of Albuquerque has plans to connect Masthead to a new road along the north diversion channel. As part of the preliminary design T.Y. Lin International prepared "Channel Rd Phase 2: Hawkins Street NE to El Pueblo Rd NE, Preliminary Hydrology and Hydraulics Report" dated April 19, 2016. This report was never stamped or approved, but the general concepts were used as a basis for this study.

There was a basin map "Journal Center-Phase 2, Unit II: Drainage Plan & Basin Map" generated by Bruce Stidworthy of Bohannan-Huston, Inc. dated November 8, 2002 which can be found in Appendix C. This map analyzed the drainage basins that contribute to the existing storm drain. Conditions in the field are somewhat different from that proposed design, so a new Basin Map that references the same basin IDs for similar areas is provided in this report to show the proposed basins. The Basin Map can be found in Appendix A.

A HEC-RAS analysis for the North Pino Arroyo was provided to Isaacson & Arfman, Inc. by the City of Albuquerque to detail flow characteristics within the area. This analysis is referenced in this report in Appendix C.

This report calculates the proposed 100-year, 6-hour peak flow quantities using the new basin map; the capacity of the existing storm drain with the new extension using proposed flow quantities; and the capacity of the new storm drain that captures storm water at the proposed low point of Masthead St.

The existing site extends west from the end of Masthead St at Bartlett St, between undeveloped Lots 4-A-1, 6-A, and 7-A of Journal Center Phase 2, Unit 2, and crosses over a drainage discharge path from an existing storm drain south of Masthead St. The North Pino Arroyo is to the north.

Portions of the road have been partially graded for development, while areas to the west have drainage infrastructure that includes a rip-rap lined berm with an earthen bottom. Both the berm and channel bottom have native shrubs and grasses. A maintenance access road runs along the top of the berm, with a branch that runs down the berm for access to the bottom of the arroyo.

To the east and south, existing office buildings within the Journal Center generate storm water that is captured an existing storm drain system (EX SD A & B) with inlets in Bartlett St and Rutledge Rd.

The North Pino Arroyo is an AMAFCA-owned drainage channel that discharges to the North Diversion Channel east of the site.

See Appendix A for the proposed Basin Map, and Grading & Drainage Plan.

See Appendix B for calculations.

See Appendix C for referenced materials, including the City of Albuquerque provided HEC-RAS analysis results.

The proposed extension of the road as shown in the Grading & Drainage Plan will pass between Lots 4-A-1, 6-A, and 7-A and continue west. Once adjacent to AMAFCA-owned land, the road will be elevated both for driveability and to raise it above the 100-year water surface elevation of the North Pino Arroyo. Areas south of the right-of-way will be filled to cover the new pipe. The filled portion will direct storm water either towards new inlets in the road or to the existing inlet west of Lot 8-A.

The existing storm drain will be extended north (SD A), and pass under the proposed portion of the road. Calculations show that a 60" pipe will carry the 100-year flows without affecting the existing capacity of the pipe. Recycled riprap is placed at the outlet of the pipe.

A separate storm drain (SD C) will capture storm water generated within the Road basin at inlets in the sag. This will discharge to the North Pino Arroyo, onto the same riprap as the 60" pipe.

An embankment extends west of the proposed paving, to tie into the existing maintenance road at the top of the berm. A new ramp is designed from the north side of the road that allows maintenance access to the bottom of the arroyo.

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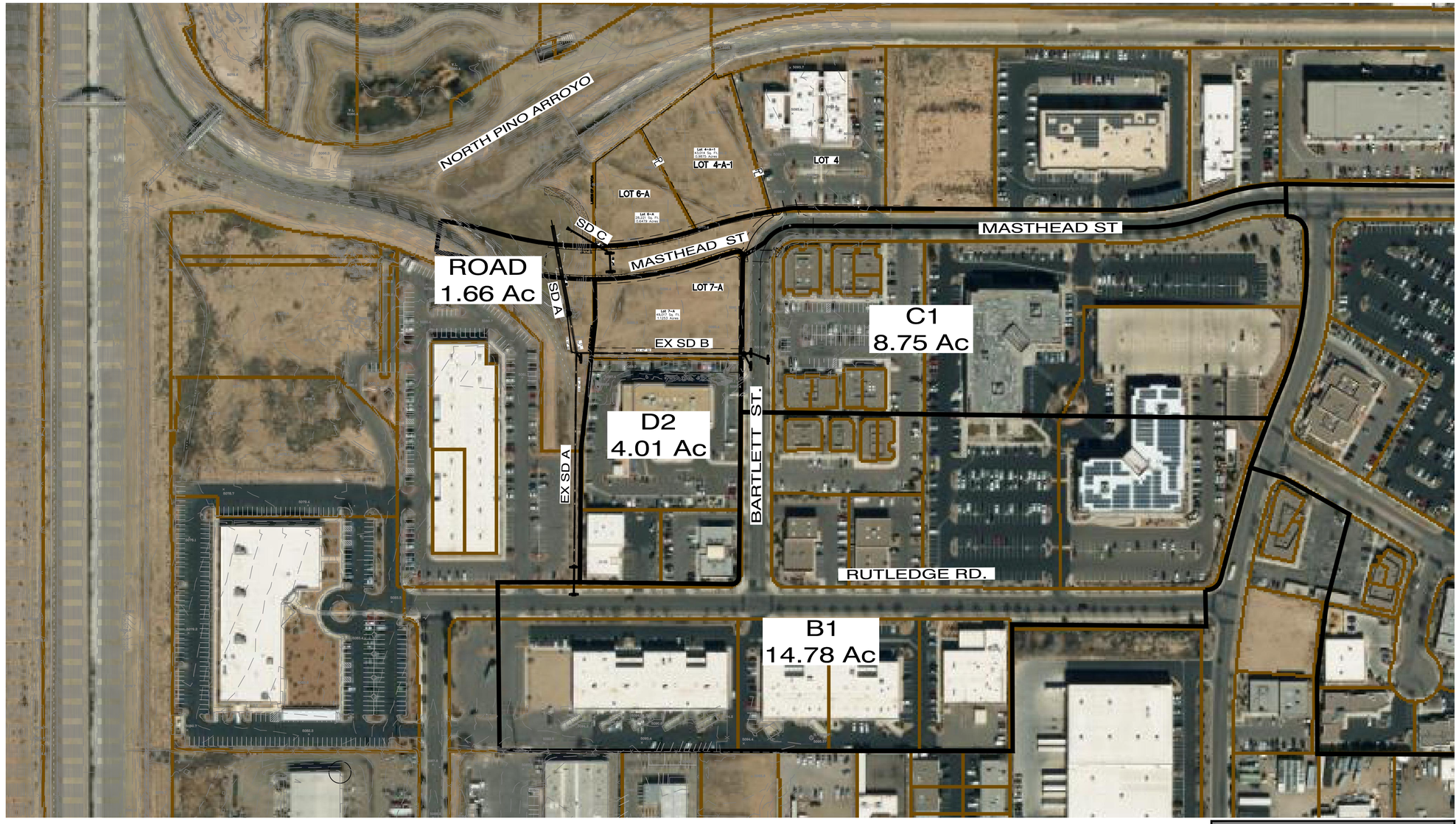
BASIN MAP

GRADING & DRAINAGE PLAN



0 50 100 200 300

SCALE 1"=100'

AS-BUILT INFORMATION

CONTRACTOR

STAKED BY DATE

INSPECTOR'S SIGNATURE BY DATE

FIELD VERIFICATION BY DATE

REVISIONS BY DATE

CORRECTED BY DATE

MICRO-FILM INFORMATION

RECORDED BY DATE

NO.

BENCH MARKS

Albuquerque Control Survey Monument "13-D16"
New Mexico State Plane Coordinates
(Central Zone - NAD 83)
North= 1,518,996.001 feet
East= 1,534,181.325 feet
Elevation= 5073.471 feet (NAVD 1988)
Delta Alpha= -00°12'17.26"
Ground To Grid Factor= 0.99967357

SURVEY INFORMATION

FIELD NOTES

ENGINEER'S SEAL

NO.	DATE	REMARKS	BY
		REVISIONS	
		DESIGN	
		DESIGNED BY FCA DATE 06/18	
		DRAWN BY IA DATE 06/18	
		CHECKED BY FCA DATE 06/18	

ISAACSON & ARFMAN, P.A.
Consulting Engineering Associates
128 Monroe Street N.E.
Albuquerque, New Mexico 87108
Ph. 505-268-8828 www.iacivil.com

2108 C-701-BASIN EXHIBIT.dwg Dec 17,2019

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING DEVELOPMENT GROUP

MASTHEAD STREET

BASIN EXHIBIT

DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL	LAST DESIGN UPDATE	Mo./DAY/YR.	Mo./DAY/YR.

City Project No. 651785 | Zone Map No. D-17 | Sheet 9 Of

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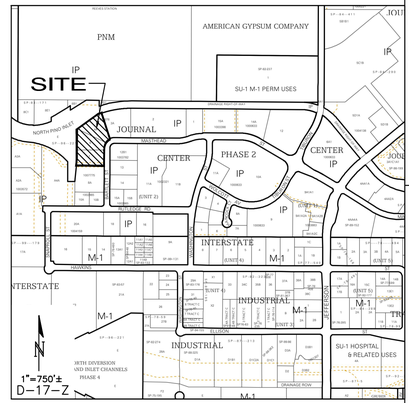
GRADING GENERAL NOTES

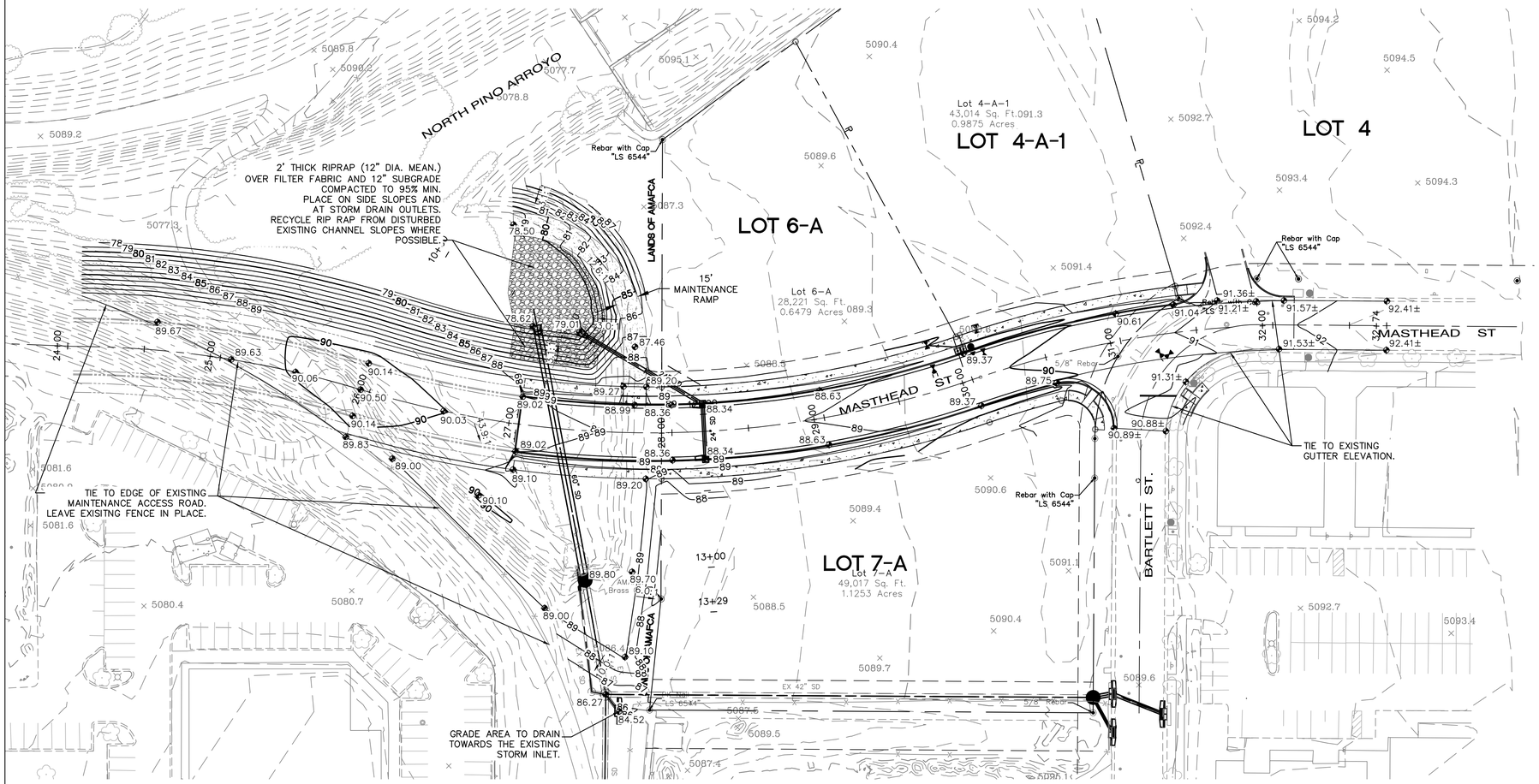
1. ALL TRASH, DEBRIS, & SURFACE VEGETATION SHALL BE CLEARED AND LEGALLY DISPOSED OF OFFSITE.
2. ALL SUBGRADE, OVEREXCAVATION, AND FILL SHALL BE PLACED AND / OR COMPACTED PER THE GEOTECHNICAL REPORT AND CITY OF ALBUQUERQUE SPECIFICATIONS.
3. EXCAVATION IS UNCLASSIFIED AND INCLUDES EXCAVATION TO SUBGRADE ELEVATIONS INDICATED BY GEOTECHNICAL REPORT, REGARDLESS OF CHARACTER OF MATERIALS ENCOUNTERED.
4. PROPOSED SPOT AND CONTOUR ELEVATIONS SHOWN REPRESENT TOP OF FINISH MATERIAL (I.E. TOP OF CONCRETE, TOP OF PAVEMENT MATERIAL, TOP OF LANDSCAPING MATERIAL, ETC.). CONTRACTOR SHALL GRADE, COMPACT SUBGRADE AND DETERMINE EARTHWORK ESTIMATES BASED ON ELEVATIONS SHOWN MINUS MATERIAL THICKNESSES.
5. GRADING SHALL BE PERFORMED AT THE ELEVATIONS AND IN ACCORDANCE WITH THE DETAILS SHOWN ON THIS PLAN.
6. UNIFORMLY GRADE AREAS WITHIN LIMITS OF GRADING AS SHOWN ON PLAN. SMOOTH FINISHED SURFACE WITHIN SPECIFIED TOLERANCE, COMPACT WITH UNIFORM SLOPES BETWEEN POINTS WHERE ELEVATIONS ARE INDICATED.
7. SIDESLOPES STEEPER THAN 3:1 BUT LESS THAN 2:1 MUST HAVE PERMANENT EROSION PROTECTION INSTALLED, TYPICAL. NO SLOPE SHALL BE STEEPER THAN 2:1. MINIMUM SLOPES SHALL BE 1% UNLESS OTHERWISE NOTED.
8. FIVE (5) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT NM811 FOR LOCATION OF EXISTING UTILITIES.
9. IF ANY UTILITY LINES, PIPELINES, OR UNDERGROUND UTILITY LINES ARE SHOWN ON THESE DRAWINGS, THEY ARE SHOWN IN AN APPROXIMATE MANNER ONLY, AND SUCH LINES MAY EXIST WHERE NONE ARE SHOWN. IF ANY SUCH EXISTING LINES ARE SHOWN, THE LOCATION IS BASED UPON INFORMATION PROVIDED BY THE OWNER OF SAID UTILITY, AND THE INFORMATION MAY BE INCOMPLETE, OR MAY BE OBSOLETE BY THE TIME CONSTRUCTION COMMENCES. THE ENGINEER HAS CONDUCTED ONLY PRELIMINARY INVESTIGATION OF THE LOCATION, DEPTH, SIZE OR TYPE OF EXISTING UTILITY LINES, PIPELINES, OR UNDERGROUND UTILITY LINES. THIS INVESTIGATIONS IS NOT CONCLUSIVE, AND MAY NOT BE COMPLETE, THEREFORE, MAKES NO REPRESENTATION PERTAINING THERETO, AND ASSUMES NO RESPONSIBILITY OR LIABILITY THEREFORE. THE CONTRACTOR SHALL CONTACT NM811 FOR LOCATIONS OF ANY UTILITY LINE, PIPELINE, OR UNDERGROUND UTILITY LINE IN OR NEAR THE AREA OF THE WORK IN ADVANCE OF AND DURING EXCAVATION WORK. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE CAUSED BY ITS FAILURE TO CONTACT NM811 AND PROTECT LOCATED UTILITIES. IN PLANNING AND CONDUCTING EXCAVATION, THE CONTRACTOR SHALL COMPLY WITH STATE STATUES, MUNICIPAL AND LOCAL ORDINANCES, RULES AND REGULATIONS, IF ANY, PERTAINING TO THE LOCATION OF THESE LINES AND FACILITIES.
10. OWNER WILL PROVIDE SOIL TESTING AND INSPECTION SERVICES DURING EARTHWORK OPERATIONS. CONTRACTOR SHALL ALLOW TESTING LABS TO INSPECT AND APPROVE COMPACTED SUBGRADES AND FILL LAYERS BEFORE FURTHER CONSTRUCTION WORK IS DONE. SHOULD COMPACTION TESTS INDICATE INADEQUATE DENSITY, CONTRACTOR SHALL PROVIDE ADDITIONAL COMPACTION AND TESTING AT THE CONTRACTOR'S SOLE EXPENSE.
11. CONTRACTOR SHALL PROVIDE ALL OTHER CONSTRUCTION STAKING INCLUDING TRACT CORNERS. CONTRACTOR SHALL LOCATE AND PRESERVE ALL BOUNDARY CORNERS AND REPLACE ANY LOST OR DISTURBED CORNERS AT THE CONTRACTOR'S SOLE EXPENSE.
12. THE ENVIRONMENTAL PROTECTION AGENCY (EPA) AND THE CITY OF ALBUQUERQUE REQUIRE A STORM WATER POLLUTION PREVENTION PLAN (SWPPP), AN NDPES PERMIT, AND AN EROSION AND SEDIMENT CONTROL (ESC) PERMIT FOR PROJECTS WHERE CONSTRUCTION ACTIVITIES MEET THE EPA THRESHOLD. (SWPPP, NPDES PERMIT, AND ESC PLAN BY OTHERS.) A CURRENT CITY-APPROVED ESC PERMIT MUST BE INCLUDED WITH THE CONTRACTOR'S SUBMITTAL FOR A ROUGH GRADING, GRADING, PAVING, BUILDING, OR WORK ORDER PERMIT. CONTRACTOR SHALL COORDINATE WITH OWNER TO DETERMINE WHO WILL PREPARE SWPPP AND INSPECT REQUIRED ELEMENTS..
13. IF THE SITE IS SMALL ENOUGH NOT TO REQUIRE A SWPPP/NPDES PERMIT (LESS THAN ONE ACRE), THE CONTRACTOR SHALL STILL BE RESPONSIBLE FOR USING EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES (BMP'S) TO ENSURE THAT NO SOIL ERODES FROM THE SITE ONTO ADJACENT PUBLIC RIGHT-OF-WAY.
14. MEASURES REQUIRED FOR EROSION AND SEDIMENT CONTROL SHALL BE INCIDENTAL TO THE PROJECT COST.
15. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY EXISTING CONDITIONS PRIOR TO CONSTRUCTION. REPORT ALL DISCREPANCIES TO THE ENGINEER AND VERIFY THE ENGINEER'S INTENT BEFORE PROCEEDING.
16. IF FIELD GRADE ADJUSTMENTS ARE REQUIRED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER.
17. ALL NEW PAVEMENT GRADES ARE SHOWN AS 'MATCH' OR '±', TRANSITIONS SHALL BE SMOOTH AND LEVEL. ANY NEW PAVING SURFACE HOLDING WATER (BIRDBATH) SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S SOLE EXPENSE.
18. SIDESLOPES STEEPER THAN 3:1 BUT LESS THAN 2:1 MUST HAVE PERMANENT EROSION CONTROL (FRACTURED FACE ROCK [F.F. ROCK] OR LANDLOK TRM 450 O.E.) INSTALLED, TYPICAL. NO SLOPE SHALL BE STEEPER THAN 2:1.
19. ALL AREAS DISTURBED BY CONSTRUCTION (OUTSIDE PROPOSED TURF AREA) SHALL BE RESEEDED WITH NATIVE GRASS PER C.O.A. SPECIFICATIONS SECTION 1012 (FOR SANDY SOILS) OR AS SPECIFIED ON THE LANDSCAPE PLAN.
20. OWNER SHALL MAINTAIN EROSION PROTECTION ELEMENTS. OWNER SHALL INSPECT SITE YEARLY AND AFTER EACH RAINFALL TO IDENTIFY NEW AREAS OF EROSION AND INSTALL ADDITIONAL EROSION PROTECTION AS NEEDED BASED ON ACTUAL OCCURANCES.
21. ALL NEW PAVEMENT SURFACES SHALL BE CONSTRUCTED WITH POSITIVE SLOPE AWAY FROM BUILDINGS AND POSITIVE SLOPE TOWARD EXISTING AND/OR PROPOSED DRAINAGE PATHS. PAVING AND ROADWAY GRADES SHALL BE ±0.1' FROM PLAN ELEVATIONS.
22. WHERE GRADES BETWEEN NEW AND EXISTING ARE SHOWN AS 'MATCH' OR '±', TRANSITIONS SHALL BE SMOOTH.
23. FOR ALL ACCESSIBLE ROUTES, MAXIMUM ALLOWABLE CROSS SLOPE IS 2.0% AND MAXIMUM LONGITUDINAL SLOPE WITHOUT RAMP IS 5.0%. FOLLOW ALL ADA ACCESSIBILITY GUIDELINES OR CITY CODES, WHICHEVER IS MORE STRINGENT.
24. FOR ENGINEER'S CERTIFICATION OF SUBSTANTIAL COMPLIANCE (FOR CERTIFICATE OF OCCUPANCY) CONTRACTOR SHALL PROVIDE AN AUTOCAD FORMAT AS-BUILT SURVEY PREPARED BY A LICENSED SURVEYOR WHICH INCLUDES:
    - AS-BUILT SPOT ELEVATIONS AT EACH DESIGN SPOT ELEVATION SHOWN ON THE APPROVED PLAN;
    - ALL CONSTRUCTION, INCLUDING DRAIN INLETS, PIPES AND PONDS SHOWN ON THIS PLAN MUST BE CONSTRUCTED IN SUBSTANTIAL COMPLIANCE WITH THE APPROVED PLAN IN ORDER TO RECEIVE ENGINEER'S CERTIFICATION.

VICINITY MAP



LEGEND

———	EXISTING CONTOUR
———	PROPOSED CONTOUR
78.3	PROPOSED SPOT ELEVATION
——→	FLOW ARROW
FL=81.4	FLOWLINE ELEVATION
INV=72.5	INVERT ELEVATION
	STORM DRAIN MANHOLE



0 20 40 80 120

SCALE 1"=40'

SURVEY INFORMATION	BENCH MARKS	AS-BUILT INFORMATION
FIELD NOTES	Albuquerque Control Survey Monument "13-D16"	CONTRACTOR
	New Mexico State Plane Coordinates	STAKED BY DATE
	(Central Zone - NAD 83)	INSPECTOR'S ACCEPTANCE BY DATE
	North= 1,518,996.001 feet	FIELD VERIFICATION BY DATE
	East= 1,534,181.325 feet	REVISIONS CORRECTED BY DATE
	Elevation= 5073.471 feet (NAVD 1988)	MICRO-FILM INFORMATION
	Delta Alpha= -0012'17.26"	RECORDED BY DATE
	Ground To Grid Factor= 0.9996357	NO.

ENGINEER'S SEAL

GENEVIEVE L. DONAHUE
NEW MEXICO
15088
PROFESSIONAL ENGINEER
12/18/19

NO.	REMARKS	BY	DATE
	DESIGN	FCA	06/18
	DESIGNED BY	FCA	DATE 06/18
	DRAWN BY	IA	DATE 06/18
	CHECKED BY	FCA	DATE 06/18

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2108 CG-101.dwg Dec 18,2019

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING DEVELOPMENT GROUP

MASTHEAD STREET

GRADING PLAN

DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL	LAST DESIGN UPDATE	Mo./DAY/YR.	Mo./DAY/YR.

City Project No.	Zone Map No.	Sheet	Of
651785	D-17	5	10

100 YEAR-6 HOUR HYDROLOGY CALCULATIONS PER DPM

STORM DRAIN CAPACITY CALCULATIONS

- STORM DRAIN A & B
- STORM DRAIN C

NORTH PINO ARROYO HEC-RAS ANALYSIS PROVIDED BY CITY OF ALBUQUERQUE FOR REFERENCE

CALCULATIONS: 2108 MASTHEAD :

Based on Drainage Design Criteria for City of Albuquerque Section 22.2, DPM, Vol 2, dated Jan., 1993

100-YEAR, 6-HOUR CALCULATIONS

AREA OF SITE: 1271966 SF = 29.20 ACRE

100-year, 6-hour

HISTORIC FLOWS:		Treatment SF	%
Area A	=	1271966	100%
Area B	=	0	0%
Area C	=	0	0%
Area D	=	0	0%
Total Area	=	1271966	100%

DEVELOPED FLOWS:		Treatment SF	%
Area A	=	0	0%
Area B	=	63598	5%
Area C	=	127197	10%
Area D	=	1081171	85%
Total Area	=	1271966	100%

EXCESS PRECIP:

Precip. Zone 2

E_A = 0.53

E_B = 0.78

E_C = 1.13

E_D = 2.12

On-Site Weighted Excess Precipitation (100-Year, 6-Hour Storm)

$$\text{Weighted E} = \frac{E_A A_A + E_B A_B + E_C A_C + E_D A_D}{A_A + A_B + A_C + A_D}$$

Historic E	=	0.53	in.	Developed E	=	1.95	in.

On-Site Volume of Runoff: V360 = E*A / 12

Historic V_{360}	=	56178	CF	Developed V_{360}	=	207118	CF

On-Site Peak Discharge Rate: $Qp = Q_{pA}A_A + Q_{pB}A_B + Q_{pC}A_C + Q_{pD}A_D / 43{,}560$

For Precipitation Zone 2

Q_{pA}	=	1.56	Q_{pC}	=	3.14
Q_{pB}	=	2.28	Q_{pD}	=	4.70

Historic Q_p	=	45.6	CFS	Developed Q_p	=	129.2	CFS

BASIN NO. B1		**DESCRIPTION**	Sheriff's Dept and adjacent road
Area of basin flows =	643867 SF	=	14.78 Ac.
The following calculations are based on Treatment %'s as shown in table to the right			LAND TREATMENT
Sub-basin Weighted Excess Precipitation:			A = 0%
Weighted E =	1.95 in.		B = 5%
Sub-basin Volume of Runoff:			C = 10%
V_{360} =	104843 CF		D = 85%
Sub-basin Peak Discharge Rate:			FIRST FLUSH VOL.
Q_P =	65.4 cfs		15506 CF

BASIN NO. C1		**DESCRIPTION**	
Area of basin flows =	381065 SF	=	8.7 Ac.
The following calculations are based on Treatment %'s as shown in table to the right			LAND TREATMENT
Sub-basin Weighted Excess Precipitation:			A = 0%
Weighted E =	1.95 in.		B = 5%
Sub-basin Volume of Runoff:			C = 10%
V_{360} =	62050 CF		D = 85%
Sub-basin Peak Discharge Rate:			FIRST FLUSH VOL.
Q_P =	38.7 cfs		9177 CF

BASIN NO. D2		**DESCRIPTION**	
Area of basin flows =	174827 SF	=	4.0 Ac.
The following calculations are based on Treatment %'s as shown in table to the right			LAND TREATMENT
Sub-basin Weighted Excess Precipitation:			A = 0%
Weighted E =	1.95 in.		B = 5%
Sub-basin Volume of Runoff:			C = 10%
V_{360} =	28468 CF		D = 85%
Sub-basin Peak Discharge Rate:			FIRST FLUSH VOL.
Q_P =	17.8 cfs		4210 CF

BASIN NO. ROAD		**DESCRIPTION**	
Area of basin flows =	72207 SF	=	1.7 Ac.
The following calculatio S			LAND TREATMENT
Sub-basin Weighted Excess Precipitation:			A = 0%
Weighted E =	1.95 in.		B = 5%
Sub-basin Volume of Runoff:			C = 10%
V_{360} =	11758 CF		D = 85%
Sub-basin Peak Discharge Rate:			FIRST FLUSH VOL.
Q_P =	7.3 cfs		1739 CF

Plan View

Stormwater Studio 2019 v 3.0.0.15

Project Name: Enter Project Name...

12-18-2019

Project File: 2108 SD-C.sws

GLD Report

Stormwater Studio 2019 v 3.0.0.15

Project Name: Enter Project Name...

12-18-2019

Line No.	Line No.	Line ID	Line Size (in)	Defl. Angle (Deg)	Known Q (cfs)	Flow Rate (cfs)	Vel Ave (ft/s)	n-value Pipe	Line Length (ft)	Invert Dn (ft)	Invert Up (ft)	Line Slope (ft/ft)	HGL Dn (ft)	HGL Up (ft)	Grnd/Rim Elev Dn (ft)	Grnd/Rim Elev Up (ft)	EGL Dn (ft)	
1	1	24in SD C	24	30.35	3.70	7.40	3.65	0.013	93.28	5078.60	5080.30	0.0182	5080.60	5081.26	5080.60	5088.31	5080.69	
2	2	18in SD C	18	56.60	3.70	3.70	4.61	0.013	38.17	5080.80	5081.18	0.01	5081.46	5081.92	5088.31	5088.31	5081.82	

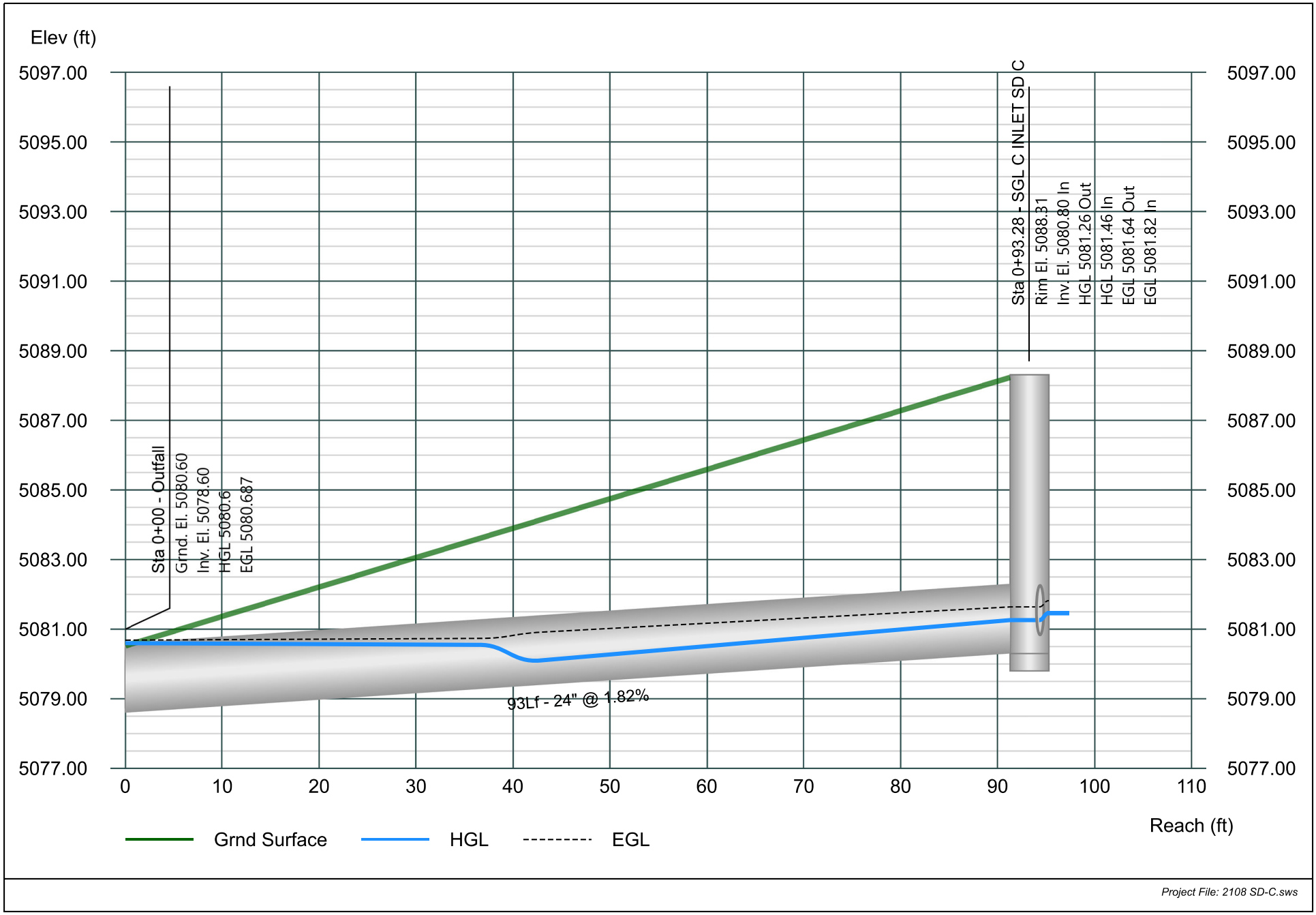
Notes:

Line 1 - 24in SD C

Stormwater Studio 2019 v 3.0.0.15

Project Name: Enter Project Name...

12-18-2019



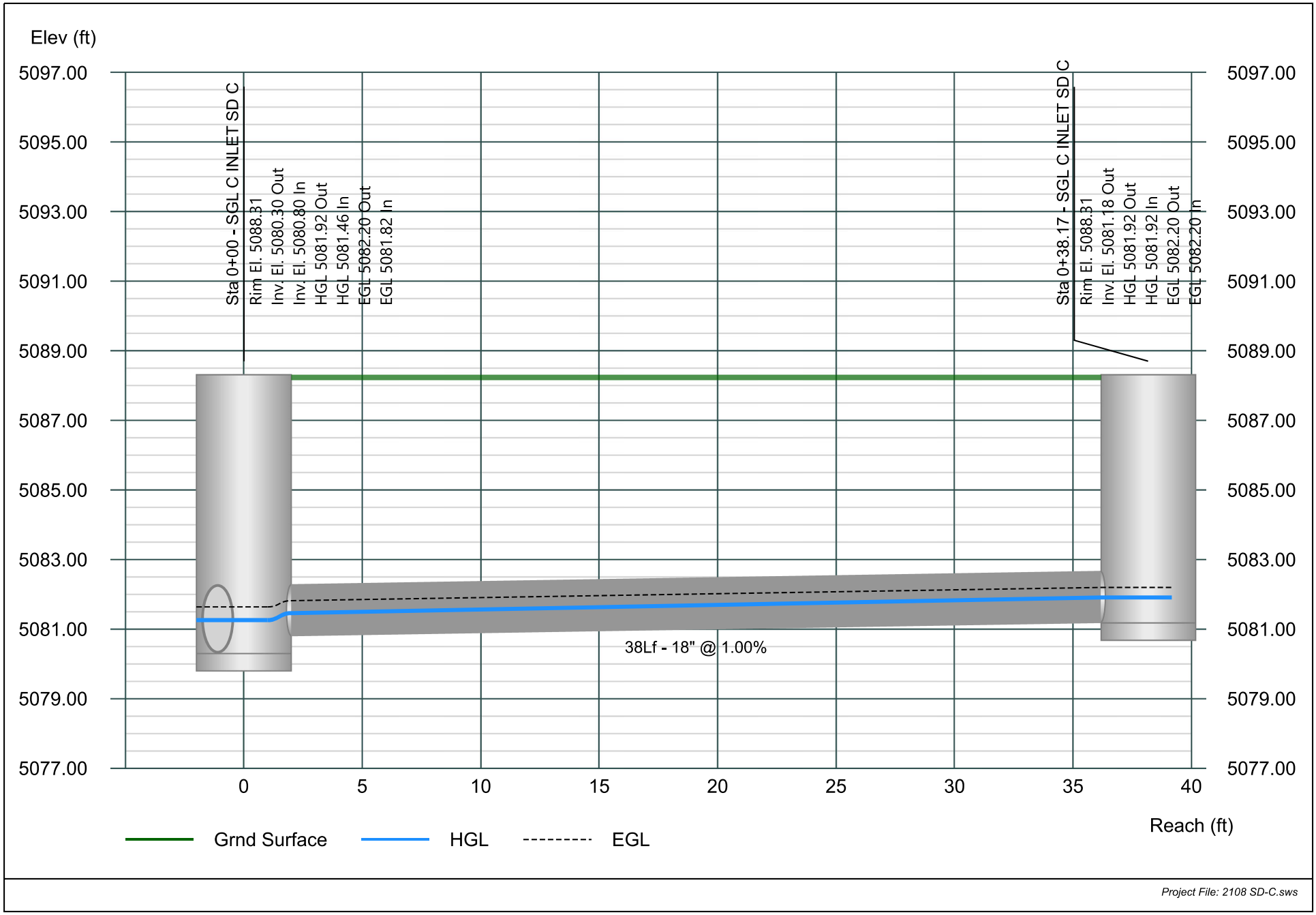
Project File: 2108 SD-C.sws

Line 2 - 18in SD C

Stormwater Studio 2019 v 3.0.0.15

Project Name: Enter Project Name...

12-18-2019



Project File: 2108 SD-C.sws

Plan View

Stormwater Studio 2019 v 3.0.0.15

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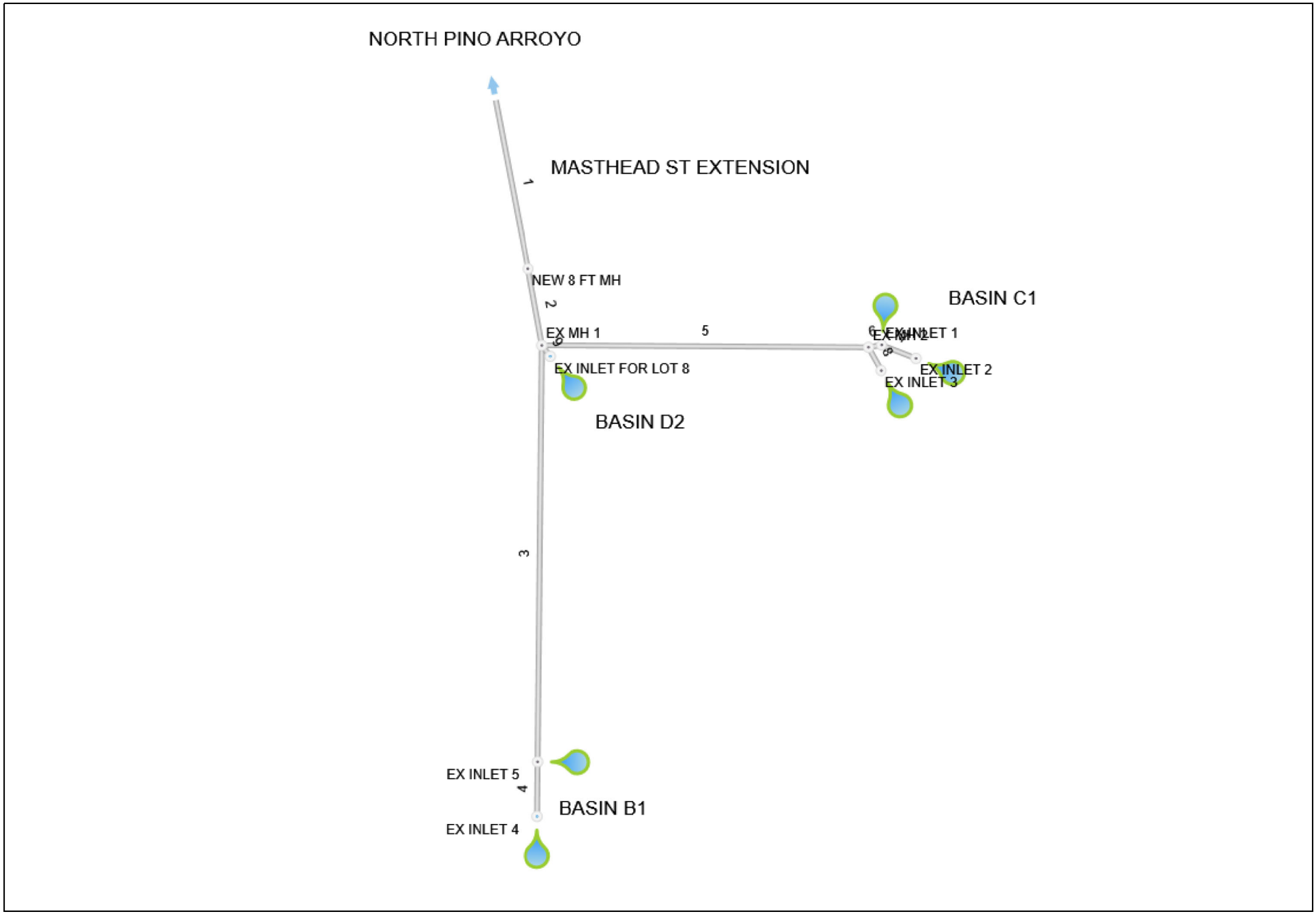
11-18-2019



GLD Report

Project Name: Enter Project Name...

Stormwater Studio 2019 v 3.0.0.15

11-18-2019

Line No.	Line No.	Line ID	Line Size (in)	Defl. Angle (Deg)	Known Q (cfs)	Flow Rate (cfs)	Vel Ave (ft/s)	n-value Pipe	Line Length (ft)	Invert Dn (ft)	Invert Up (ft)	Line Slope (ft/ft)	HGL Dn (ft)	HGL Up (ft)	Grnd/Rim Elev Dn (ft)	Grnd/Rim Elev Up (ft)	EGL Dn (ft)	
1	1	NEW SD	60	79.25	0.00	121.90	7.71	0.013	165.77	5078.71	5079.41	0.0042	5082.75	5082.93	5088.00	5088.00	5083.55	
2	2	EX 54-IN	54	0.52	0.00	121.90	8.35	0.013	75.83	5079.66	5080.11	0.0059	5083.72	5083.84	5088.00	5086.61	5084.74	
3	3	EX 42-IN SD A	42	10.80	32.70	65.40	6.80	0.013	405.24	5080.21	5082.74	0.0062	5085.58	5087.30	5086.61	5088.04	5086.30	
4	4	EX INLETS SD A	24	0.00	32.70	32.70	10.41	0.013	53.16	5082.84	5084.37	0.0288	5087.15	5088.26	5088.04	5088.07	5088.83	
5	5	EX 42-IN SD B	42	-79.42	0.00	38.70	4.02	0.013	318.15	5080.21	5082.14	0.0061	5085.86	5086.33	5086.61	5089.22	5086.11	
6	6	EX INLET 1 SD B	30	-10.70	12.90	25.80	5.26	0.013	12.90	5082.24	5082.78	0.0414	5086.43	5086.48	5089.22	5089.13	5086.86	
7	7	EX INLET 2 SD B	24	31.92	12.90	12.90	4.11	0.013	35.81	5082.87	5083.60	0.0204	5086.89	5087.01	5089.13	5089.06	5087.16	
8	8	EX INLET 3 SD B	24	61.11	12.90	12.90	4.11	0.013	25.80	5082.24	5083.77	0.0593	5086.53	5086.62	5089.22	5089.14	5086.79	
9	9	EX LOT 8 INLET	18	-27.05	17.80	17.80	10.07	0.013	13.38	5080.21	5080.48	0.0202	5085.07	5085.45	5086.61	5084.40	5086.64	

Notes:

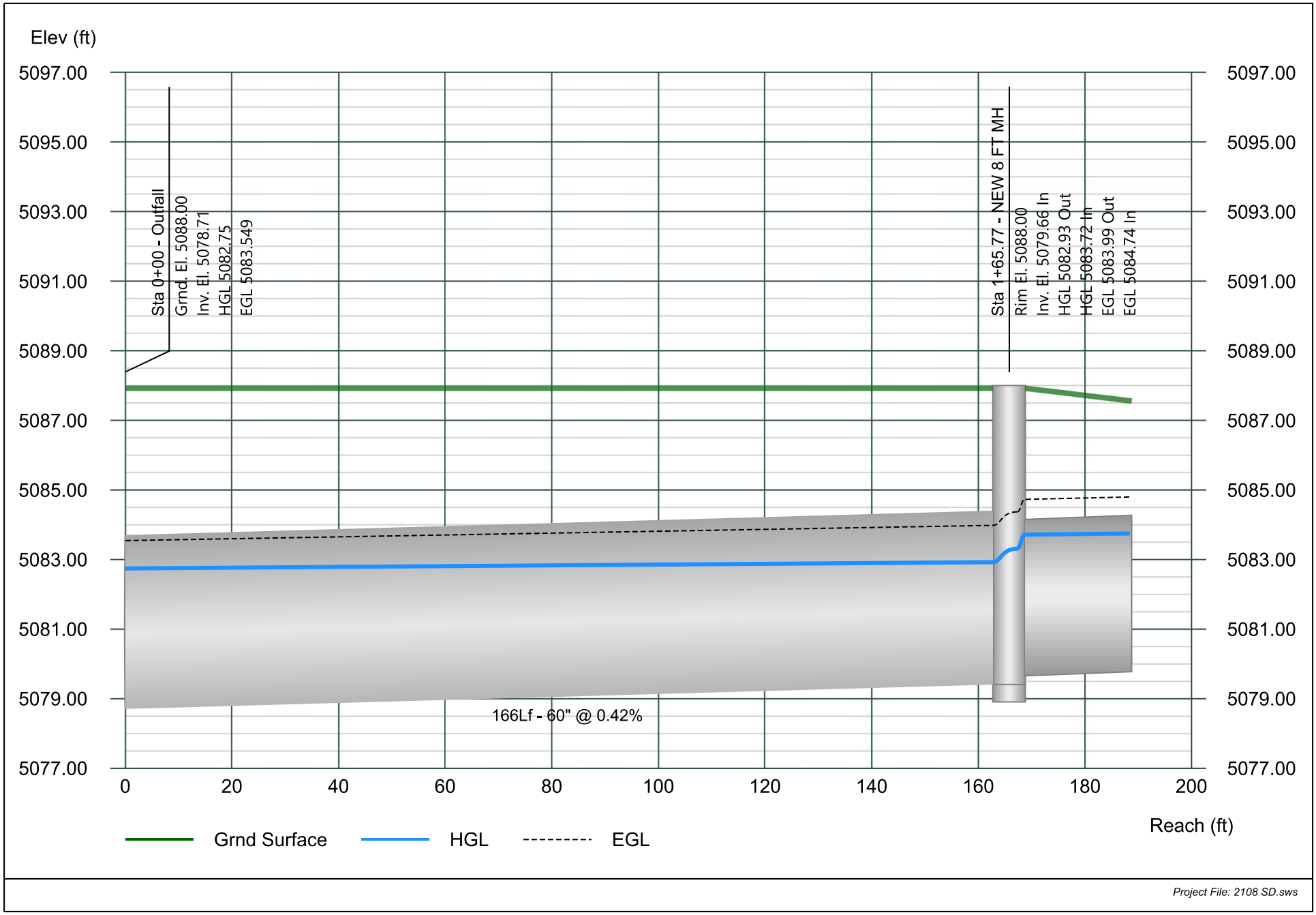
Project File: 2108 SD.sws

Line 1 - NEW SD

Stormwater Studio 2019 v 3.0.0.15

Project Name: Enter Project Name...

11-18-2019



Line 2 - EX 54-IN

Stormwater Studio 2019 v 3.0.0.15

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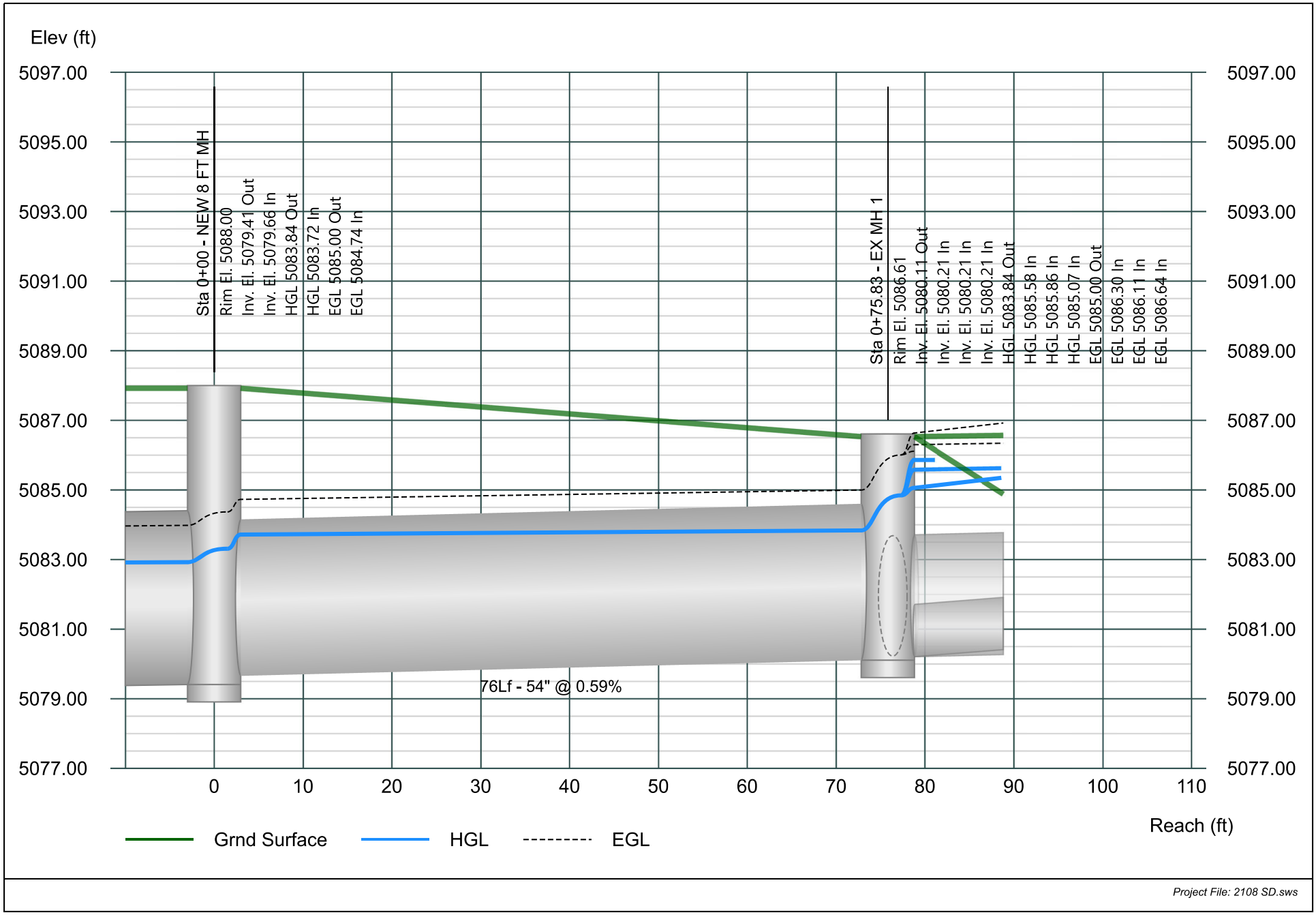
11-18-2019



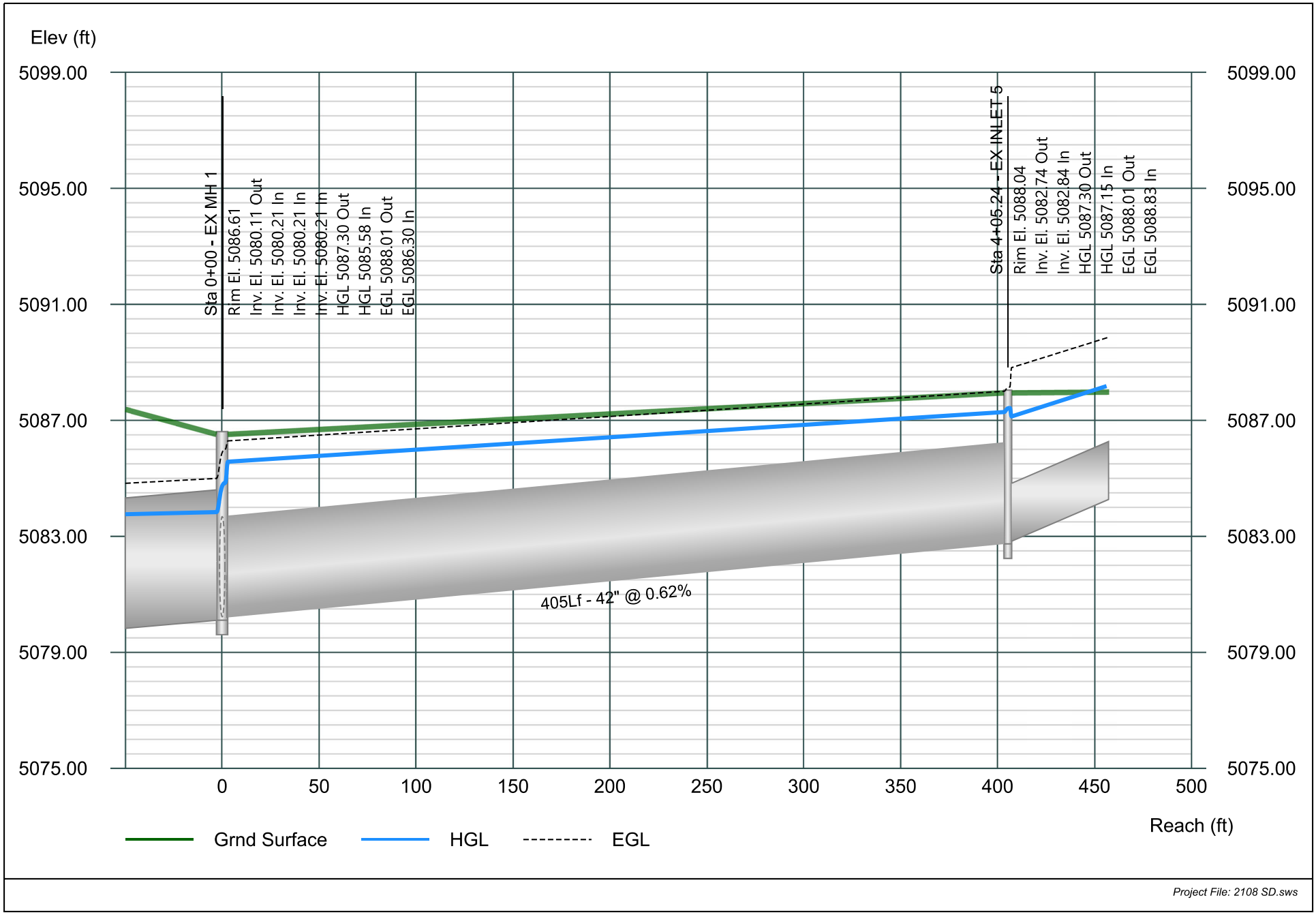
Project File: 2108 SD.sws

Line 3 - EX 42-IN SD A

Stormwater Studio 2019 v 3.0.0.15

Project Name: Enter Project Name...

11-18-2019



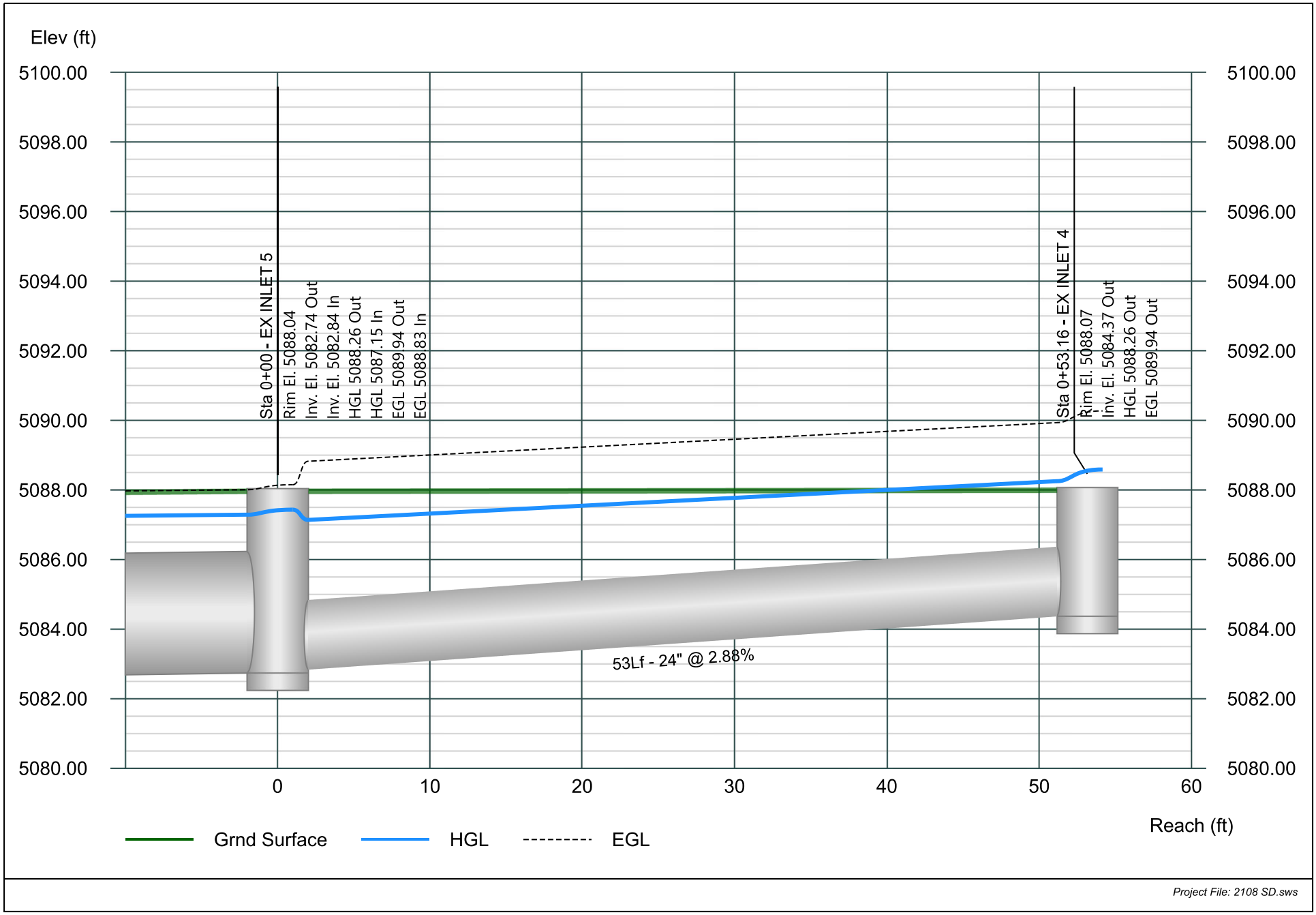
Project File: 2108 SD.sws

Line 4 - EX INLETS SD A

Stormwater Studio 2019 v 3.0.0.15

Project Name: Enter Project Name...

11-18-2019



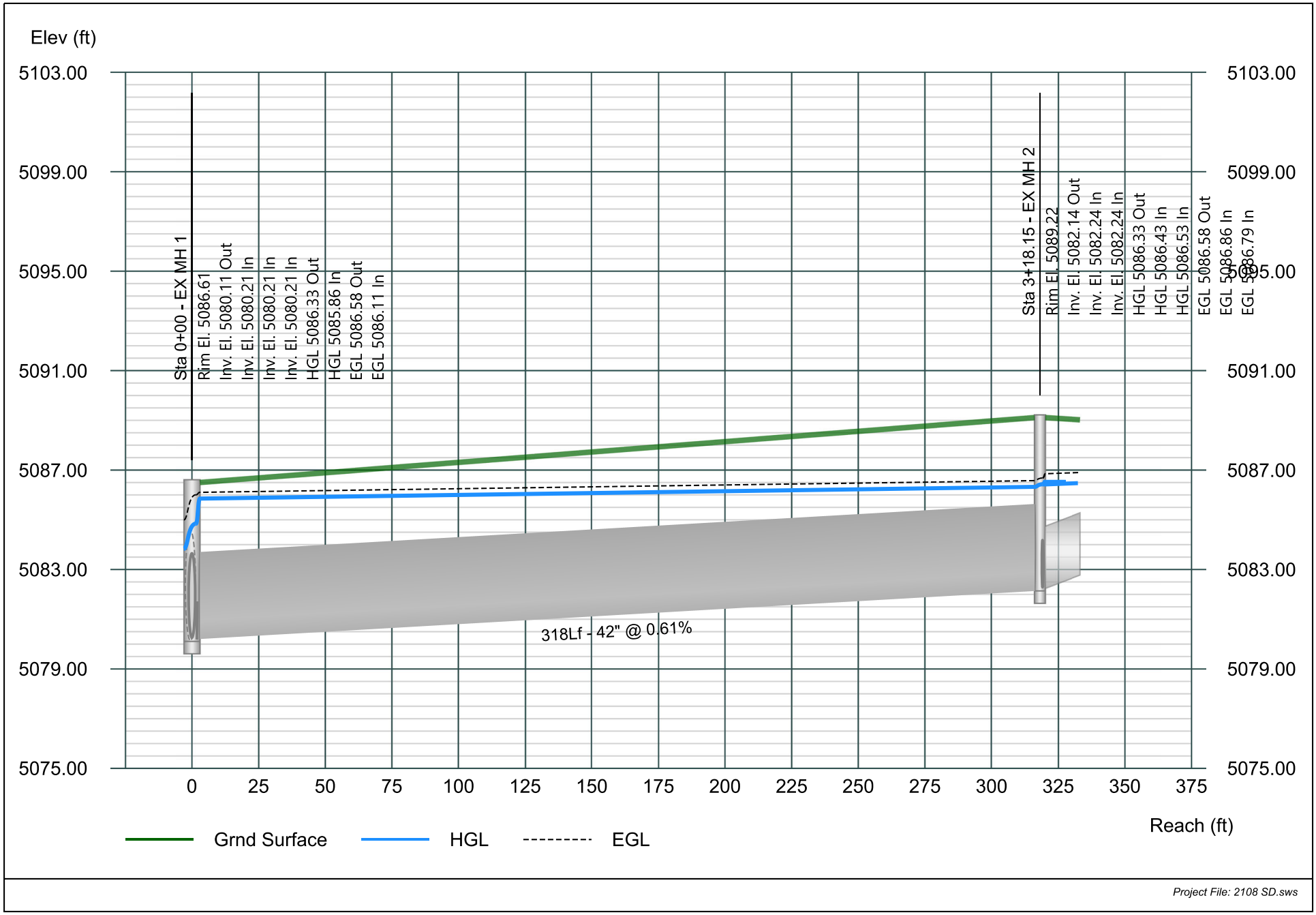
Project File: 2108 SD.sws

Line 5 - EX 42-IN SD B

Stormwater Studio 2019 v 3.0.0.15

Project Name: Enter Project Name...

11-18-2019



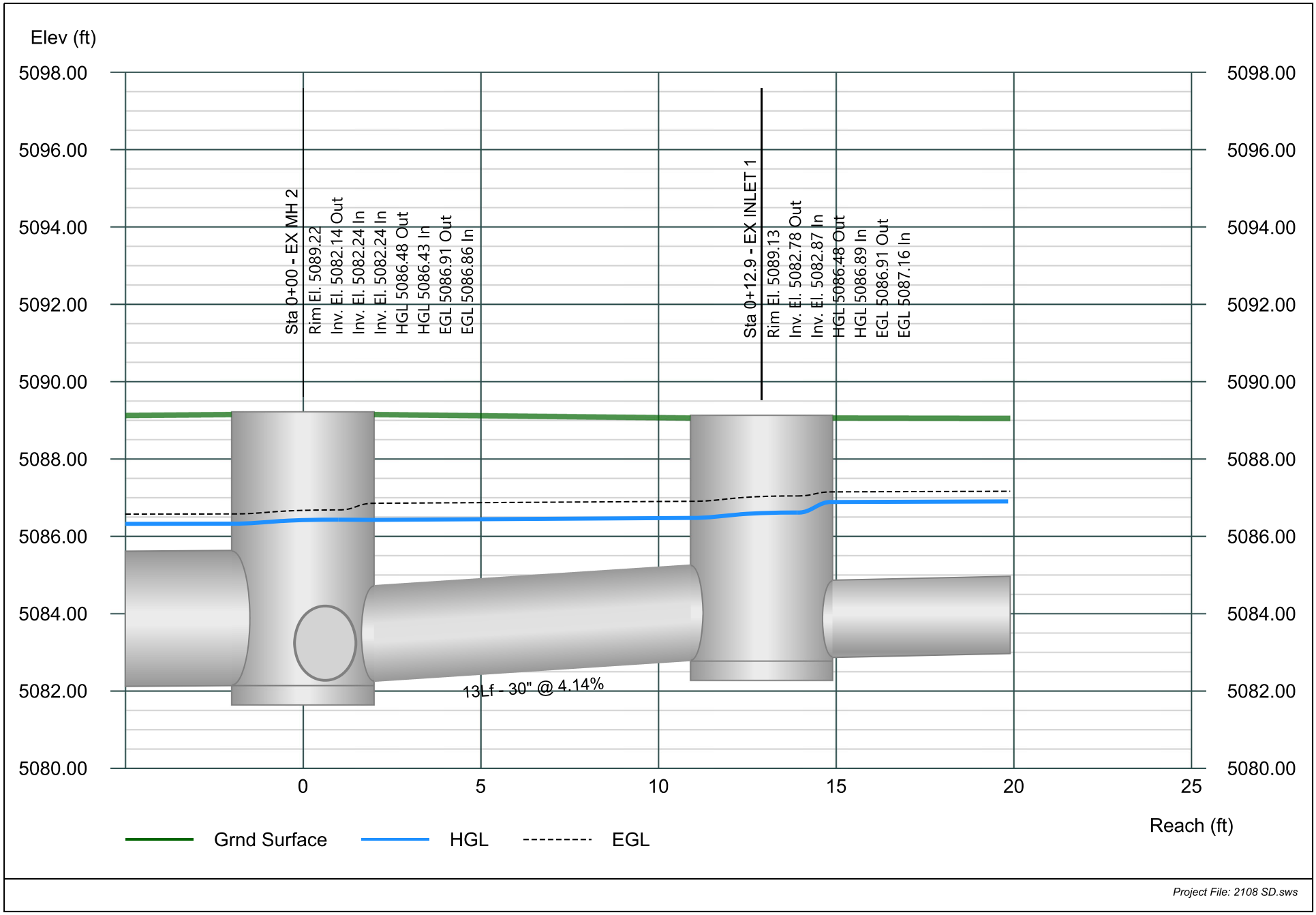
Project File: 2108 SD.sws

Line 6 - EX INLET 1 SD B

Project Name: Enter Project Name...

Stormwater Studio 2019 v 3.0.0.15

11-18-2019



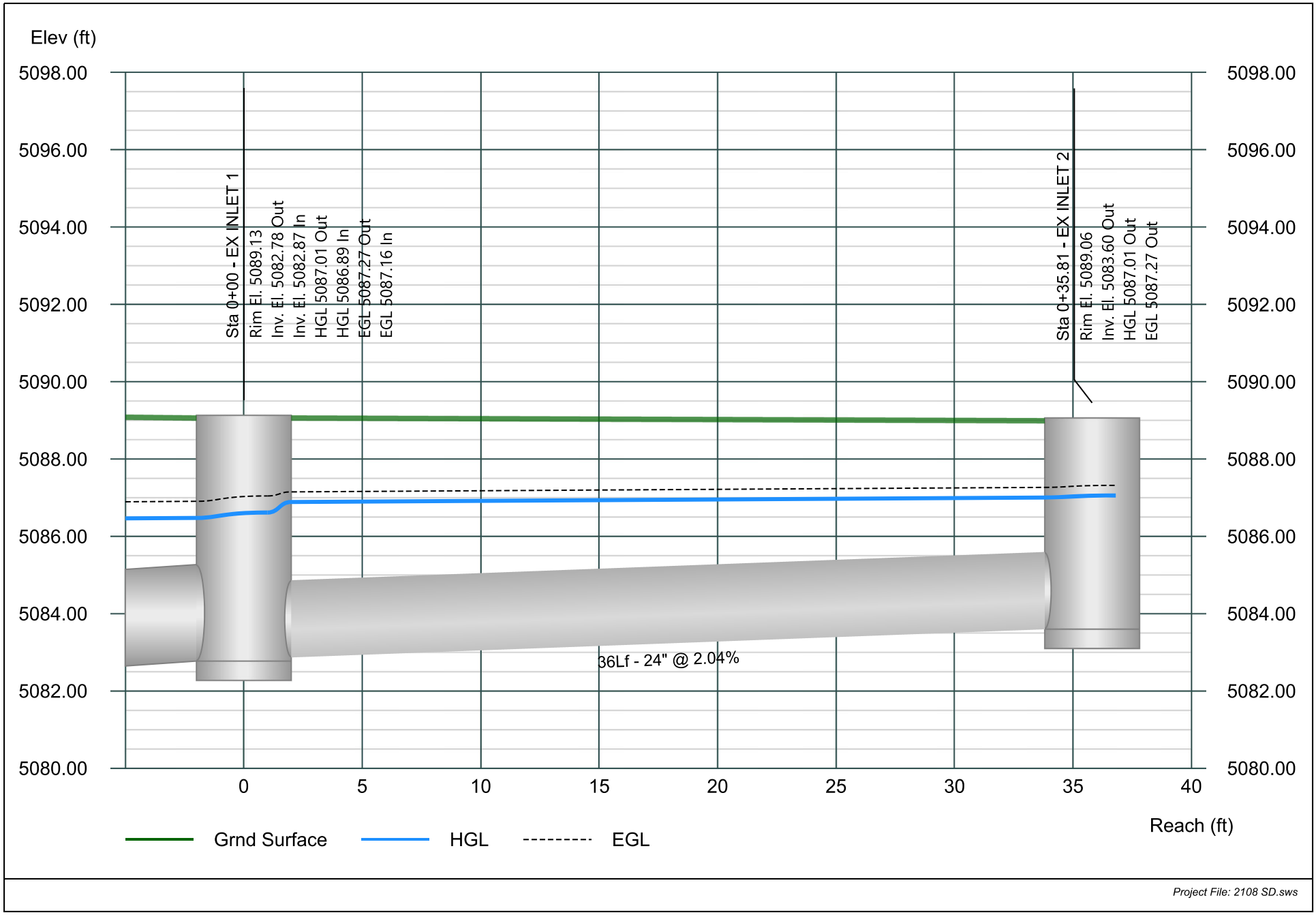
Project File: 2108 SD.sws

Line 7 - EX INLET 2 SD B

Stormwater Studio 2019 v 3.0.0.15

Project Name: Enter Project Name...

11-18-2019

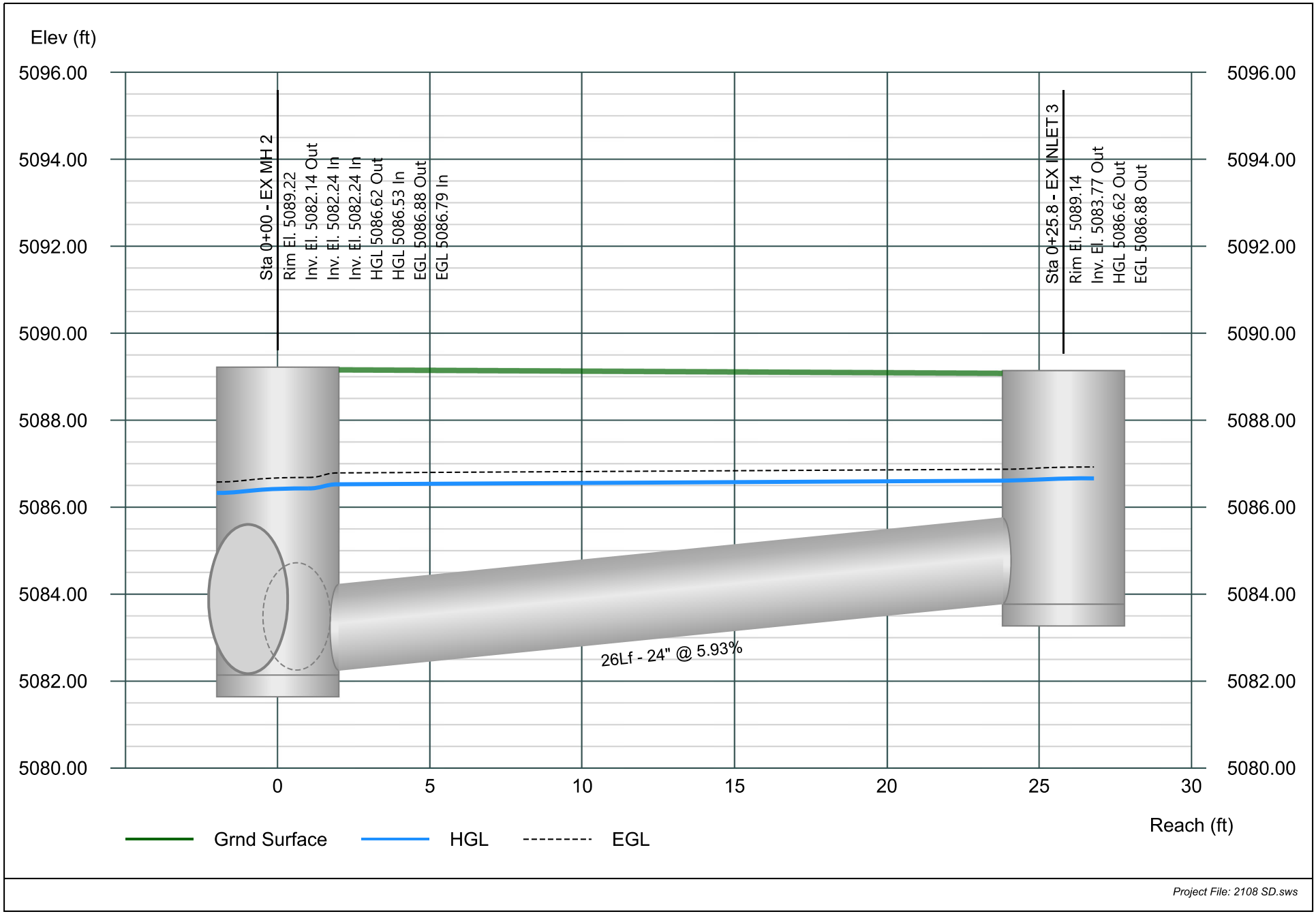


Line 8 - EX INLET 3 SD B

Project Name: Enter Project Name...

Stormwater Studio 2019 v 3.0.0.15

11-18-2019



Project File: 2108 SD.sws

Line 9 - EX LOT 8 INLET

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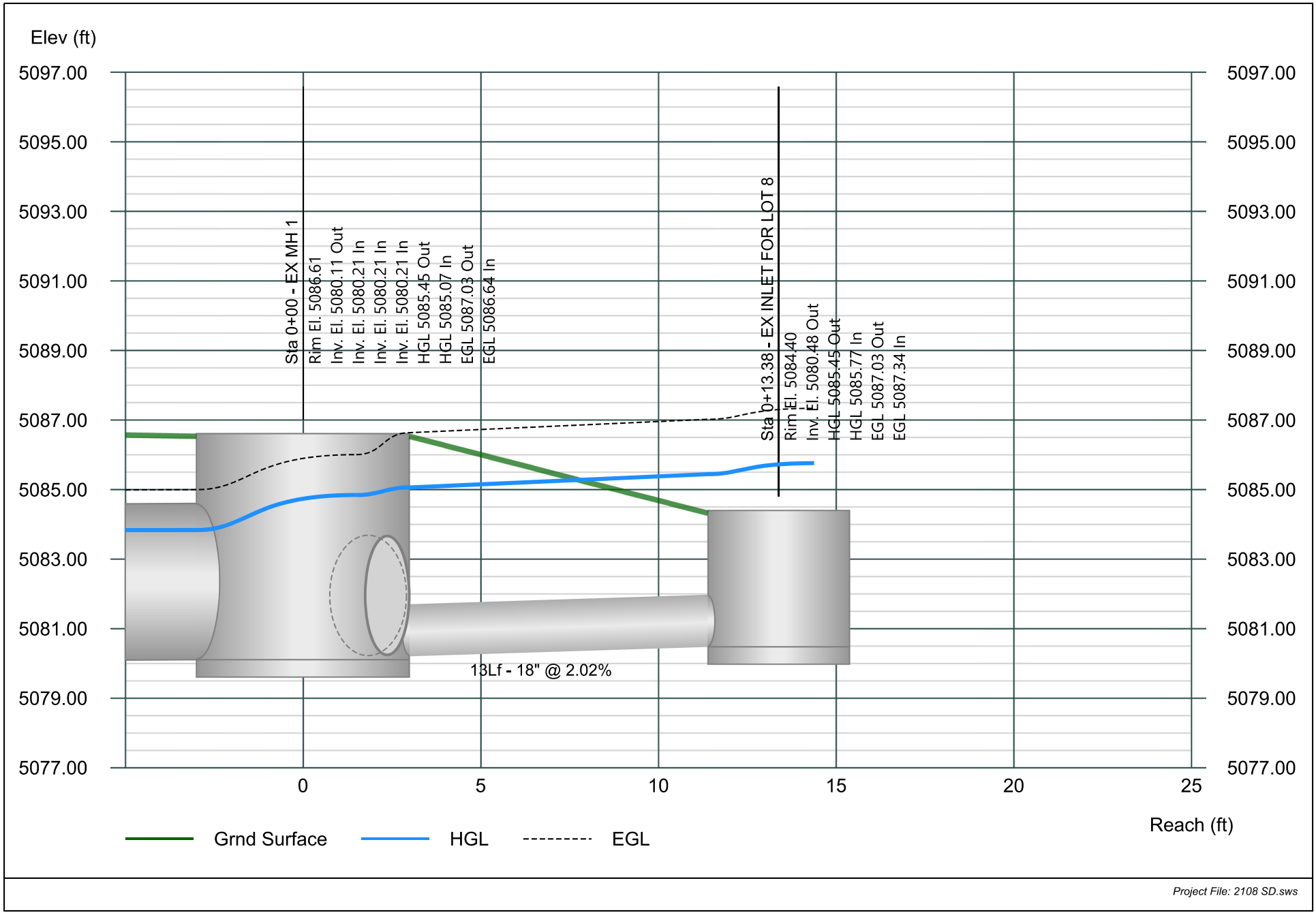
Stormwater Studio 2019 v 3.0.0.15

11-18-2019

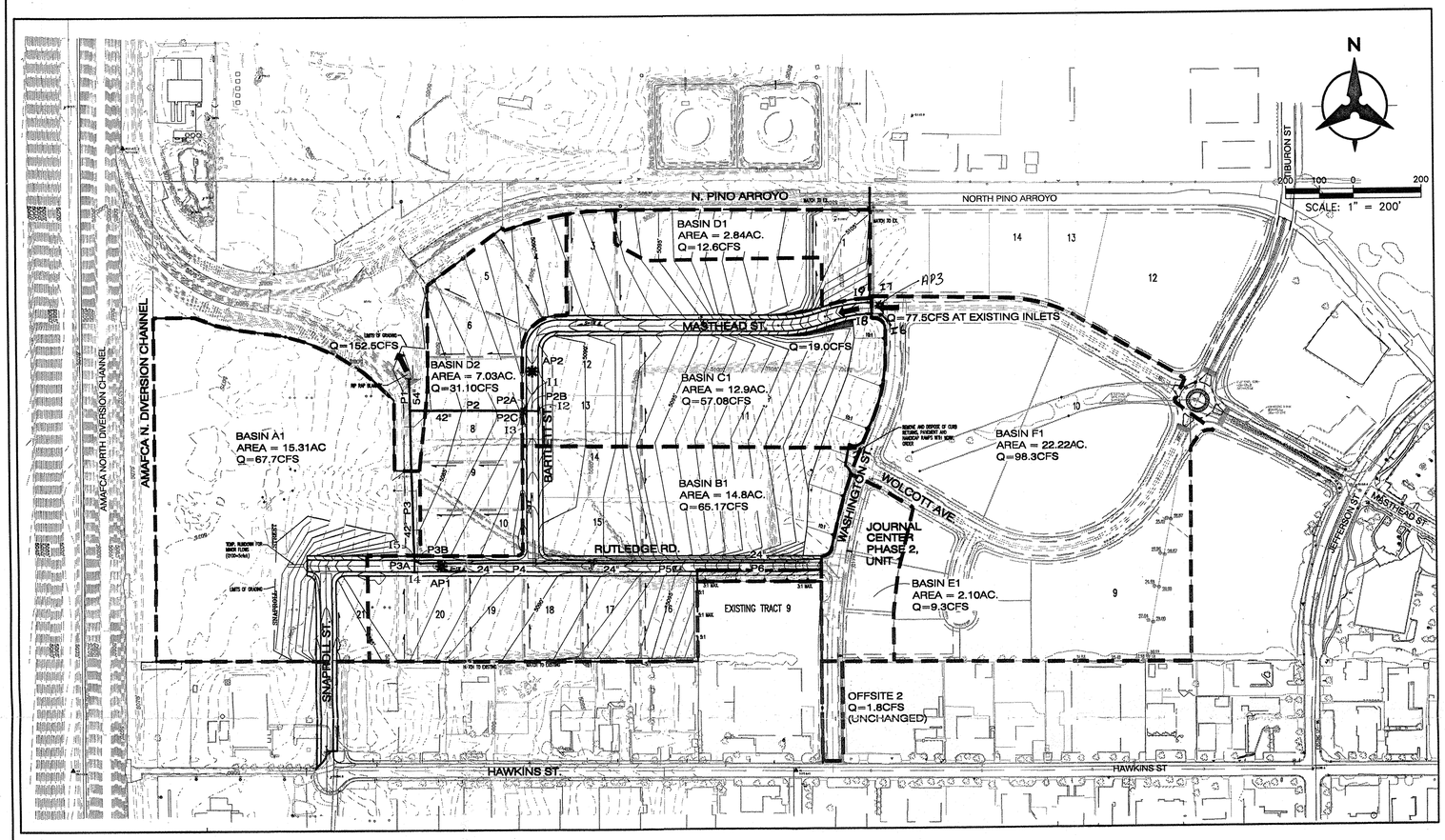


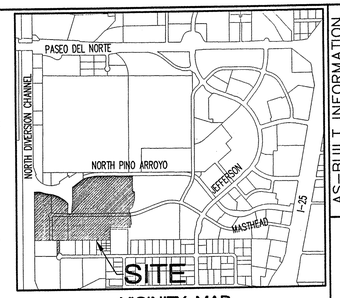
Project File: 2108 SD.sws

BHI BASIN MAP

AS-BUILT DRAWINGS OF EXISTING STORM DRAIN

NORTH PINO ARROYO HEC-RAS ANALYSIS PROVIDED BY CITY OF ALBUQUERQUE FOR REFERENCE





VICINITY MAP
ZONE ATLAS ZONE INDEX MAP NO. D-17-Z

LEGAL DESCRIPTION

TRACT 8A-1, JOURNAL CENTER PHASE 2

Journal Center Phase - 2 Unit - 2
Drainage Management Plan

Purpose

The purpose of this plan is to amend the approved drainage report for Journal Center Phase 2 Units 1&2 (ref. hydrology file # D17/D3AA). Unit 1 has been constructed and this plan amends Unit 2, for the purpose of obtaining preliminary plat approval of Unit 2.

Site Location and Background Information

Journal Center Phase - 2 Unit - 2 is located southwest of Journal Center Phase 1, west of the intersection of Masthead and Jefferson in northeast Albuquerque. This site is bounded on the east by Washington , on the north by the North Pino Arroyo, on the west by the AMAFCA North Diversion Channel and on the south by commercial development to along Hawkins St. The site is in precipitation zone 2 as defined by Figure A-1 of the DPM section 22.2.A.1. The existing legal description of the site is Tract 8A-1 Journal Center Phase - 2. Please see the vicinity map on this sheet for a graphic depiction of the site location.

The most recent drainage report to address drainage of this site and the surrounding area is entitled *"Drainage Report for Journal Center – Phase 2 "*, dated August 25, 2000, and prepared by Bohannan Huston. That drainage report has been approved (see letter dated 10/3/00 from Brad Bingham to Kerry Davis) and can be found in hydrology file # D17/D3AA. This submittal is in full compliance with the guidance and recommendations set forth in that report.

Existing Conditions

The existing conditions of this site are substantially unchanged from the description in the approved drainage report. Some earthwork/borrow was performed for the construction of Unit 1, however existing drainage patterns remain essentially unchanged.

Proposed Conditions

Under proposed conditions the site is 85% land treatment D, with 5% and 10% land treatment B and C respectively. The following changes to basins in the approved drainage report have been made. Please reference the Proposed Basin Map in the approved drainage report:

Basin F in Unit 1 is now Basin F1 where the lots on the west side of Washington are now included in Unit 2 Basin C1 . The flow has been decreased from Q=109.1 cfs to Q= 98.3 cfs. The sump condition proposed in Unit 1 to capture the flow from Basin F has been modified in this plan. Inlets are proposed west of the existing inlets in Masthead, this portion of the street would be considered "on grade" and the residual flow passing from basin F1 to basin C1 is 19.0 cfs Basin E in Unit 1 is now Basin E1 where the lots on the west side of Washington are now included in Unit 2, Basin B1. The flow has been decreased from Q=12.8 cfs to Q= 11.1 cfs. All of the previously approved basins in Unit 2 have been modified to accommodate earthwork and grading, see this sheet.

Flows from Basins D1 & D2 flow into the North Pino Arroyo (and/or the AMAFCA de-silting basin) and Basin A1 flows to the AMAFCA North Diversion Channel. These flows do not impact flows in any streets.

The residual flow from Basin F1 of 19.0 cfs combines with Basin C1(Q=57.1 cfs) which flows in the street to inlets in sump condition(AP2) for a total flow of 76.1 cfs. The hydraulic capacity of the street, inlets and pipes are shown in tables on this sheet

Basins E1 and Offsite 2 (total Q= 11.1 cfs) in Unit 1 flow in Washington to existing inlets in sump. A proposed 24" storm drain will tie to the existing 24" storm drain in Rutledge, and convey the 11.1 cfs to the 48" SD at the low point in Rutledge (AP1).

Basin B1 (Q=65.36 cfs) flows in the street to inlets in sump condition (AP1). In the storm drain this flow combines with the 11.1 cfs in the 24" SD for a total flow in the 48" SD of 76.4 cfs. Flows at AP1 and AP2 combine (Q= 152.5 cfs) and outfall from the 54" SD to the AMAFCA disiltation basin west of basin D2.

Hydraulic capacity calculations for the streets, inlets and pipes are provided on this sheet. The storm drains are designed to operate as gravity systems, without pressure flow.

Conclusions

This drainage submittal has been prepared in accordance with City of Albuquerque requirements, and complies with the previously approved drainage report for the area. This plan clearly demonstrates the proposed grading and drainage concepts. The implementation of these concepts will result in the safe passage of the 100 year storm event.

With this submittal we request hydrology department approval of this Grading and Drainage Plan for preliminary plat approval.

JOURNAL CENTER - PHASE 2

Ultimate Development Conditions Basin Data Table

BASIN ID	Area (SQ. FT)	Area (AC.)	This table is based on the DPM Section 22.2, Zone: 2 — Land Treatment Percentages A	B	C	D	Q(100) (cfs/ac.)	Q(100) (csf)	WT E (inches)	$V(100)_{360}$ (CF)
UNIT1										
F1	967907	22.22	0.0%	5.0%	10.0%	85.0%	4.42	98.28	*1.95*	*157608*
E1	91622	2.10	0.0%	5.0%	10.0%	85.0%	4.42	9.30	*1.95*	*14919*
UNIT2										
C1	562195	12.91	0.0%	5.0%	10.0%	85.0%	4.42	57.08	*1.95*	*91544*
B1	643724	14.78	0.0%	5.0%	10.0%	85.0%	4.42	65.36	*1.95*	*104820*
D1	123807	2.84	0.0%	5.0%	10.0%	85.0%	4.42	12.57	*1.95*	*20160*
D2	306295	7.03	0.0%	5.0%	10.0%	85.0%	4.42	31.10	*1.95*	*49875*
A1	667021	15.31	0.0%	5.0%	10.0%	85.0%	4.42	67.73	*1.95*	*108613*

INLET TABLE

INLET #	CONTRIBUTING BASIN	INLET TYPE	INLET CONDITION	ACTUAL FLOW cfs	AVAIL HEAD ft	CAPACITY	Notes
I1	1/3 C1 & BYPASS FROM F1	DBL A, DBL WING	sump	25.36	0.85	37.57	INCLUDES A 50% CLOGGING FACTOR
I2	1/3 C1 & BYPASS FROM F1	DBL A, DBL WING	sump	25.36	0.85	37.57	INCLUDES A 50% CLOGGING FACTOR
I3	1/3 C1 & BYPASS FROM F1	DBL A, DBL WING	sump	25.36	0.85	37.57	INCLUDES A 50% CLOGGING FACTOR
I4	1/2 B1	DBL A, DBL WING	sump	32.68	1.00	47.94	INCLUDES A 50% CLOGGING FACTOR
I5	1/2 B1	DBL A, DBL WING	sump	32.68	1.00	47.94	INCLUDES A 50% CLOGGING FACTOR
I6	BASIN F1	EXISTING. DBL A, S WING	on grade	FROM NOMOGRAPH d=1.0', s=0.2%		17.5	FLOW AT INLET = 38.75 CFS
I7	BASIN F1	EXISTING. DBL A, S WING	on grade	FROM NOMOGRAPH d=1.0', s=0.2%		17.5	FLOW AT INLET = 38.75 CFS
I8	BASIN F1	DBL C	on grade	FROM NOMOGRAPH d=.79', s=0.2%		11.75	BYPASS FLOW FROM BASIN F1= 9.50
I9	BASIN F1	DBL C	on grade	FROM NOMOGRAPH d=.79', s=0.2%		11.75	BYPASS FLOW FROM BASIN F1= 9.50

Street Capacity Table
ASSUMES 36' F-F, 2% CROSS-SLOPE, AND STD. CURB AND GUTTER

	ANALYSIS POINT	FLOW IN STREET cfs	STREET SLOPE	EGL	DEPTH ABOVE FL
Rutledge	AP1	65.2	1.10%	0.98	0.65
Bartlett	AP2	76.1	1.00%	1.04	0.71
Masthead	AP3	42.5	0.20%	0.85	0.79

STORM DRAIN PIPE TABLE

PIPE #	Size in.	Slope	PIPE Capacity	ACTUAL FLOW	LENGTH	INVERT IN	INVERT OUT
P6	24	0.0100	22.62	11.08	357.00	92.30	88.73
P5	24	0.0100	22.62	11.08	400.00	88.63	84.63
P4	24	0.0100	22.62	11.08	383.00	84.53	80.70
P3B	24	0.0100	22.62	11.08	20.00	80.60	80.40
P3A	24	0.0210	32.78	32.68	32.00	81.07	80.40
P3	42	0.0060	77.93	76.44	450.00	80.40	77.70
P2C	24	0.0130	25.79	25.36	18.00	80.05	79.81
P2B	24	0.0150	27.71	25.36	46.00	80.50	79.81
P2A	24	0.0130	25.79	25.36	18.00	80.05	79.81
P2	42	0.0060	77.93	76.08	336.00	79.71	77.70
P1	54	0.0065	158.54	152.53	92.00	77.60	77.00

PIPE CAPACITIES ARE BASED ON GRAVITY FLOW USING MANNING'S EQN. WHERE n=0.013

LEGEND

- 5470 — EXISTING CONTOUR
- PROPOSED CONTOUR
- 52.4 SPOT ELEVATION
- DIRECTION OF FLOW
- DRAINAGE CONTROL BERM SEE SECTION THIS SHEET
- SLOPE
- STORM DRAIN INLET
- TEMPORARY GRADING LIMIT
- UNIT BOUNDAY
- DRAINAGE BASIN BOUNDARY

BENCH MARKS

SURVEY INFORMATION
FIELD NOTES BY:

NO.	BY	DATE

AS-BUILT INFORMATION

CONTRACTOR DATE

WORK STARTED BY DATE

INSPECTORS

ACCEPTANCE BY DATE

SURVEY VERIFICATION BY DATE

DRAWINGS REVISED BY DATE

MICRO-FILM INFORMATION

RECORDED BY DATE

NO.

ENGINEER'S SEAL

BRUCE J. STIDWORTHY
NEW MEXICO
14985
REGISTERED PROFESSIONAL ENGINEER
11/8/02

No.	Date	By	REMARKS
			REVISIONS
			DESIGN

DATE: 10/2002
DATE: 10/2002
DATE: 10/2002

Designed By: BJS
Drawn By: KJW
Checked By: BJS

Bohannan ▲ Huston INC.
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING DEVELOPMENT GROUP

JOURNAL CENTER-PHASE 2
UNIT II: DRAINAGE PLAN & BASIN MAP

Design Review Committee	City Engineer Approval	Last Design Update	Mo./Day/Yr.	Mo./Day/Yr.

City Project No. | Zone Map No. D-17 | Sheet | Of

DRB#

BHI JOB NO. 020075

P:\020075\cdp\general\020075BASIN.dwg
November 08, 2002 - 10:35 AM
Layout1

CONSTRUCTION PLANS FOR
JOURNAL CENTER PHASE 2, UNIT 2
ALBUQUERQUE, NEW MEXICO

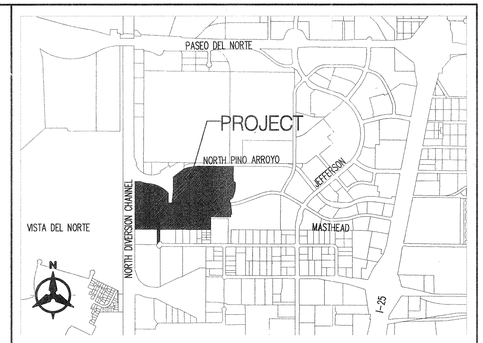
CERTIFICATE OF SUBSTANTIAL COMPLIANCE ON PLANS

I, William L. Vreeke, P.E. of the firm of Bohannan Huston, Inc., a Registered Professional Engineer in the State of New Mexico, do hereby certify, to the best of my knowledge and belief, that the infrastructure installed as part of this project (Journal Center Phase 2, Unit 2 - City Project No. 651783) has been inspected by me or by a qualified person under my direct supervision and has been constructed in accordance with the plans and specifications approved by the City Engineer and that the original design intent of the approved plans has been met, except as noted by me on the as-built construction drawings. This Certification is based on site inspections by me or personnel under my direction and survey information provided by the contractor, Franklins Earthmoving Co., Inc. and their surveyor, Tim Aldrich, NMPS 7719.

Engineers Seal & Signature

WILLIAM L. VREEKE 8131 REGISTERED PROFESSIONAL ENGINEER 12/2/03

INDEX



VICINITY MAP
ZONE MAP NO. D-17

CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL ABIDE BY ALL LOCAL, STATE, AND FEDERAL LAWS, RULES AND REGULATIONS WHICH APPLY TO THE CONSTRUCTION OF THESE IMPROVEMENTS.

2. PRIOR TO CONSTRUCTION CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL POTENTIAL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OR CONSTRUCTION OBSERVER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.

3. ALL ELECTRICAL, TELEPHONE, CABLE TV, GAS AND OTHER UTILITY LINES, CABLES AND APPURTENANCES ENCOUNTERED DURING CONSTRUCTION THAT REQUIRE RELOCATION, SHALL BE COORDINATED WITH THAT UTILITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF ALL NECESSARY UTILITY ADJUSTMENTS. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR DELAYS OR INCONVENIENCES CAUSED BY UTILITY COMPANY WORK CREWS. THE CONTRACTOR MAY BE REQUIRED TO RESCHEDULE HIS ACTIVITIES TO ALLOW UTILITY CREWS TO PERFORM THEIR REQUIRED WORK.

4. DISPOSAL SITE FOR ALL EXCESS EXCAVATION MATERIAL, AND UNSUITABLE MATERIAL SHALL BE OBTAINED BY THE CONTRACTOR IN COMPLIANCE WITH APPLICABLE ENVIRONMENTAL REGULATIONS AND APPROVED BY THE CONSTRUCTION OBSERVER. ALL COSTS INCURRED IN OBTAINING A DISPOSAL SITE AND HAUL THERETO SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT AND NO SEPARATE MEASUREMENT OR PAYMENT SHALL BE MADE.

5. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING THE EXISTING UTILITY LINES WITHIN THE CONSTRUCTION AREA. ANY DAMAGE TO EXISTING FACILITIES CAUSED BY CONSTRUCTION ACTIVITY SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE AND APPROVED BY THE CONSTRUCTION OBSERVER.

6. CONSTRUCTION ACTIVITY SHALL BE LIMITED TO THE PROPERTY AND/OR PROJECT LIMITS. ANY DAMAGE TO ADJACENT PROPERTIES RESULTING FROM THE CONSTRUCTION PROCESS IS THE RESPONSIBILITY OF THE CONTRACTOR. ANY COSTS INCURRED FOR REPAIRS SHALL BE THE COST OF THE CONTRACTOR.

7. OVERNIGHT PARKING OF CONSTRUCTION EQUIPMENT SHALL NOT OBSTRUCT DRIVEWAYS OR DESIGNATED TRAFFIC LANES. THE CONTRACTOR SHALL NOT STORE ANY EQUIPMENT OR MATERIAL WITHIN THE PUBLIC RIGHT-OF-WAY.

8. THE CONTRACTOR SHALL OBTAIN ALL THE NECESSARY PERMITS FOR THE PROJECT PRIOR TO COMMENCING CONSTRUCTION (I.E. BARRICADING, SURFACE DISTURBANCE)

9. THE CONTRACTOR SHALL BE RESPONSIBLE TO REPLACE AT HIS EXPENSE ANY AND ALL PROPERTY CORNERS DESTROYED DURING CONSTRUCTION. ALL PROPERTY CORNERS MUST BE RESET BY A REGISTERED LAND SURVEYOR.

10. ALL PERMANENT PAVEMENT MARKING AND TRAFFIC SIGNING SHALL BE FURNISHED BY THE CONTRACTOR PER PLAN.

11. THE CONTRACTOR SHALL FOLLOW THE CONSTRUCTION TRAFFIC CONTROL AND SIGNING PLAN PROVIDED HEREIN. THE CONTRACTOR SHALL COORDINATE WITH THE CITY OF ALBUQUERQUE, TRAFFIC ENGINEERING DEPARTMENT, PRIOR TO BEGINNING ANY CONSTRUCTION WORK ON ADJACENT TO EXISTING STREETS.

12. ALL BARRICADES AND CONSTRUCTION SIGNING SHALL CONFORM TO APPLICABLE SECTIONS OF THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD), U.S. DEPARTMENT OF TRANSPORTATION, LATEST EDITION.

13. THE CONTRACTOR SHALL MAINTAIN ALL CONSTRUCTION BARRICADES AND SIGNING AT ALL TIMES. THE CONTRACTOR SHALL VERIFY THE PROPER LOCATION OF ALL BARRICADING AT THE END AND BEGINNING OF EACH DAY.

14. ALL SAW CUT PAVEMENT SHALL HAVE A UNIFORM EDGE AND BE SPRAYED WITH TACK.

15. WHEN ABUTTING NEW CURB AND GUTTER TO EXISTING PAVEMENT, A 1' WIDE SECTION OF EXISTING PAVEMENT ADJACENT TO THE CURB AND GUTTER SHALL BE SAW CUT, REMOVED, AND REPLACED AS PER THE STANDARD SPECIFICATIONS.

16. THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR ANY DAMAGE TO EXISTING PAVEMENTS, PAVEMENT MARKINGS, CURB & GUTTER, DRIVE PADS, WHEELCHAIR RAMPS, AND SIDEWALK DURING CONSTRUCTION, APART FROM THOSE SECTIONS INDICATED FOR REMOVAL ON THE PLANS AND SHALL REPAIR OR REPLACE PER COA STANDARDS, AT HIS OWN EXPENSE.

NOTICE TO CONTRACTORS

1. AN EXCAVATION/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN THE CITY RIGHT-OF-WAY.

2. ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED UNDER CONTRACT SHALL, EXCEPT AS OTHERWISE STATED OR PROVIDED FOR HEREON, BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1986 EDITION AS REVISED THROUGH UPDATE #6.

3. TWO WORKING DAYS PRIOR TO ANY EXCAVATION, THE CONTRACTOR MUST CONTACT NEW MEXICO ONE CALL SYSTEM (260-1990) FOR LOCATION OF EXISTING UTILITIES.

4. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL OBSTRUCTIONS, SHOULD A CONFLICT EXIST. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.

5. FIVE (5) WORKING DAYS PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT TO CONSTRUCTION COORDINATION DIVISION A DETAILED CONSTRUCTION SCHEDULED. TWO (2) WORKING DAYS PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL OBTAIN A BARRICADING PERMIT FROM THE CONSTRUCTION COORDINATION DIVISION, CONTRACTOR SHALL NOTIFY THE CONSTRUCTION COORDINATION ENGINEER (924-3400) PRIOR TO OCCUPYING AN INTERSECTION. REFER TO SECTION 19 OF THE GENERAL CONDITIONS OF THE STANDARD SPECIFICATIONS.

6. ALL WORK EFFECTING ARTERIAL ROADWAYS REQUIRES TWENTY-FOUR HOUR CONSTRUCTION.

7. ALL STREET STRIPING ALTERED OR DESTROYED SHALL BE REPLACED WITH PLASTIC REFLECTORIZED PAVEMENT MARKING BY CONTRACTOR TO THE SAME LOCATION AS WAS EXISTING, OR AS INDICATED BY THIS PLAN SET.

8. CONTRACTOR SHALL NOTIFY THE ENGINEER NOT LESS THAN SEVEN (7) DAYS PRIOR TO STARTING WORK IN ORDER THAT THE CITY SURVEYOR MAY TAKE NECESSARY MEASURES TO INSURE THE PRESERVATION OF SURVEY MONUMENTS. CONTRACTOR SHALL NOT DISTURB PERMANENT SURVEY MONUMENTS WITHOUT THE CONSENT OF THE CITY SURVEYOR AND SHALL NOTIFY THE CITY SURVEYOR AND BEAR THE EXPENSE OF REPLACING ANY THAT MAY BE DISTURBED WITHOUT PERMISSION. REPLACEMENT SHALL BE DONE ONLY BY THE CITY SURVEYOR. WHEN A CHANGE IS MADE IN THE FINISHED ELEVATIONS OF THE PAVEMENT OF ANY ROADWAY IN WHICH A PERMANENT SURVEY MONUMENT IS LOCATED, CONTRACTOR SHALL, AT HIS OWN EXPENSE, ADJUST THE MONUMENT COVER TO THE NEW GRADE UNLESS OTHERWISE SPECIFIED. REFER TO SECTION 4.4 OF THE GENERAL CONDITIONS OF THE STANDARD SPECIFICATIONS.

9. CONTRACTOR SHALL RECORD DATA ON ALL UTILITY LINES AND ACCESSORIES AS REQUIRED BY THE CITY OF ALBUQUERQUE FOR THE PREPARATION OF "AS CONSTRUCTED" DRAWINGS. CONTRACTOR SHALL NOT COVER UTILITY LINES AND ACCESSORIES UNTIL ALL DATA HAS BEEN RECORDED.

10. CONTRACTOR SHALL MAINTAIN A GRAFFITI-FREE WORK SITE. CONTRACTOR SHALL PROMPTLY REMOVE ANY GRAFFITI FROM ALL EQUIPMENT, WHETHER PERMANENT OR TEMPORARY.

11. CONTRACTOR SHALL COORDINATE WITH THE CITY OF ALBUQUERQUE WATER SYSTEMS DIVISION (857-8200) SEVEN (7) WORKING DAYS IN ADVANCE OF ANY WORK THAT MAY AFFECT EXISTING PUBLIC WATER OR SEWER UTILITIES. EXISTING VALVES TO BE OPERATED BY CITY PERSONNEL ONLY. CONTRACTOR SHALL CONTACT THE WATER SYSTEMS DIVISION SEVEN (7) WORKING DAYS PRIOR TO NEEDING VALVES TURNED ON OR OFF.

THE FOLLOWING NOTES ALSO APPLY WHEN CHECKED

- [ ] ALL UTILITIES AND UTILITY SERVICE LINES SHALL BE INSTALLED PRIOR TO PAVING.
- [X] BACKFILL COMPACTION SHALL BE ACCORDING TO SPECIFIED STREET USE.
- [X] TACK COAT REQUIREMENTS SHALL BE DETERMINED BY THE ENGINEER.
- [X] SIDEWALKS AND WHEELCHAIR RAMPS WITHIN THE CURB RETURNS SHALL BE CONSTRUCTED WHEREVER A NEW CURB RETURN IS CONSTRUCTED.
- [ ] IF CURB IS DEPRESSED FOR A DRIVE PAD, THE DRIVE PAD SHALL BE CONSTRUCTED PRIOR TO ACCEPTANCE OF CURB AND GUTTER.
- [ ] ALL STORM DRAINAGE FACILITIES SHALL BE COMPLETED PRIOR TO FINAL ACCEPTANCE.
- [X] THE REQUESTER OR DEVELOPER SHALL BE RESPONSIBLE FOR REPAIR OR REPLACEMENT OF ALL CURB AND GUTTER OR SIDEWALK DAMAGED AFTER APPROVAL BY THE CITY ENGINEER OF WORK COMPLETED BY THE CONTRACTOR.

APPROVED AS RECORD DRAWINGS
DESIGN REVIEW SECTION
CITY CONSTRUCTION ENGINEER
1-12-04

SURVEYOR'S CERTIFICATION

"I, Timothy Aldrich, a duly qualified Registered Professional Land Surveyor under the laws of the State of New Mexico, do hereby certify that the 'as-built' information shown on these drawings was obtained from field construction and 'as-built' surveys performed by me or under my supervision, that the 'as-built' information shown on these drawings was added by me or under my supervision, and that this 'as-built' information is true and correct to the best of my knowledge and belief." Aldrich Land Surveying is not responsible for any of the design concepts, calculations, engineering or intent of the record drawings.

Timothy Aldrich N.M.P.S. No. 7719 — 10-13-03 Date

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
26 65 17 83 64

DRB # 1002321

Bohannan ▲ Huston Inc.
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

REV.	SHEETS	CITY ENGINEER	DATE	USER DEPARTMENT	DATE	USER DEPARTMENT	DATE

ENGINEERS STAMP & SIGNATURE	APPROVALS	ENGINEER	DATE
GRUCE J. STIDWORTHY NEW MEXICO 14523 REGISTERED PROFESSIONAL ENGINEER 3/17/03	DRC Chairman		4-22-03
	Transportation		3/27/03
	Water/Wastewater		3/27/03
	Hydrology		4-15-03
	Parks		
	Const. ~~Mngmt.~~ Cert.		4-22-03
	A.M.A.F.C.A.		4/13/03

****
APPROVED FOR CONSTRUCTION
4/25/03
City Engineer Date

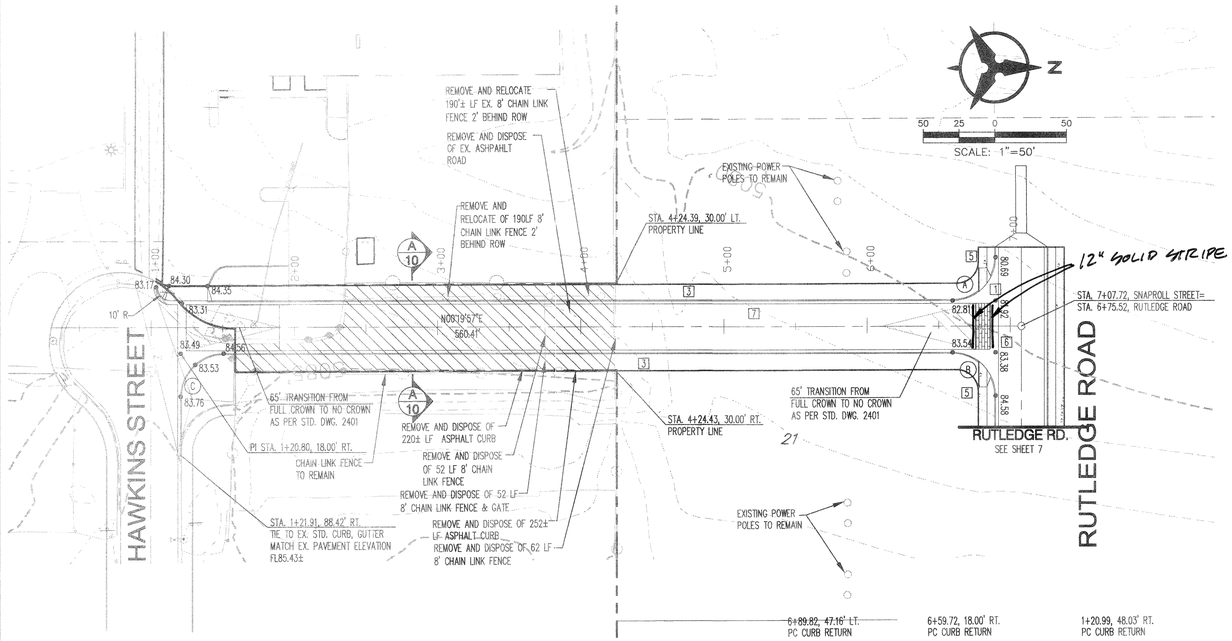
City Project No. 651783

Sheet 1 Of 24

BHI JOB NO. 020075

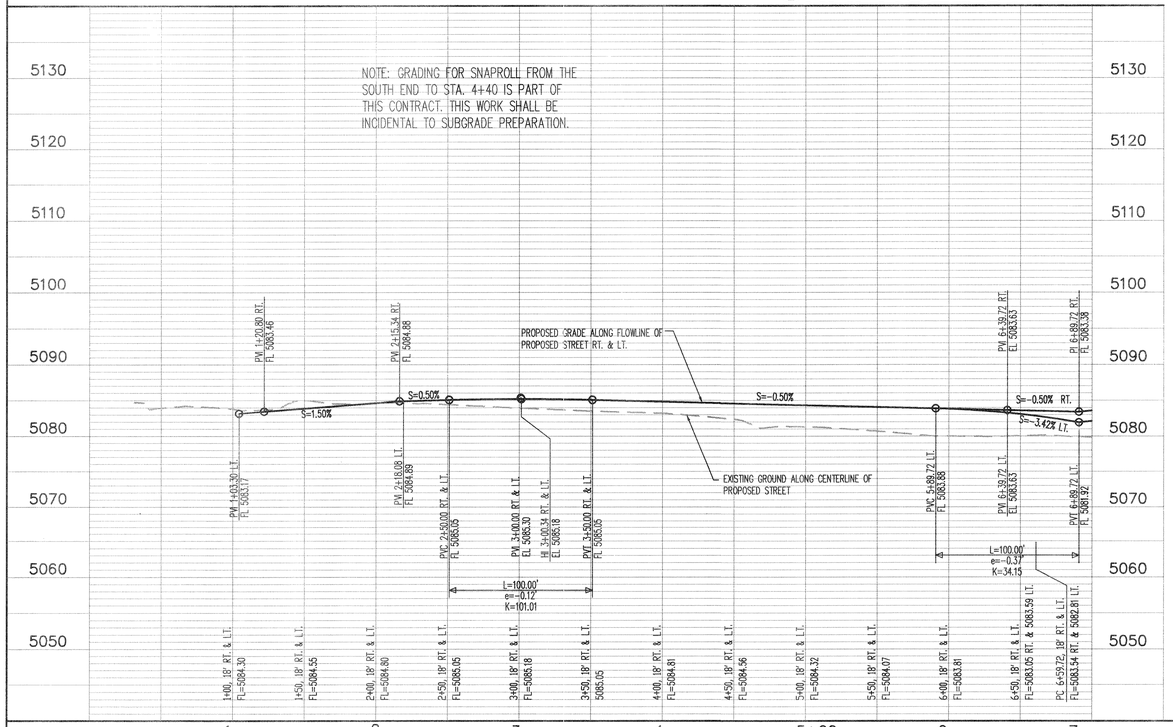
DATE: OCTOBER, 2002

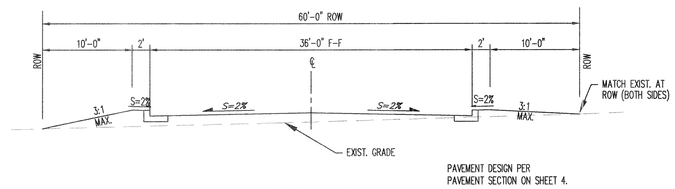
P:\01135\CDP\GENERAL\01164TITLE.DWG



SCANNED BY MESA REPRO

SNAPROLL STREET





SECTION "A"
STA. 1+60 TO 4+24.40

NOTES

1. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LOCATIONS AND NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.
2. ALL CURB RETURN RADII SHALL BE 30' UNLESS OTHERWISE SPECIFIED.
3. ALL CURVE DATA AND DIMENSIONS REFER TO FACE OF CURB UNLESS OTHERWISE SPECIFIED.
4. CONTRACTOR IS TO INSTALL A 4"x 4"x 5' POST AT THE END OF EACH SANITARY SEWER SERVICE LATERAL.
5. CONTRACTOR IS RESPONSIBLE FOR REPAIR AND/OR REPLACEMENT OF ALL UTILITY CONDUITS AND EXISTING LINES.
6. ANY ADDITIONAL GRADING REQUIRED TO MATCH PROPOSED STREET GRADES SHALL BE INCIDENTAL TO PAVING ITEMS.
7. CONTRACTOR SHALL PROVIDE THE INSPECTORS, (CITY AND PRIVATE) WITH THE PROPOSED HYDROSTATIC TESTING PLAN. THE PLAN MUST BE APPROVED BEFORE TESTING OPERATIONS BEGIN.
8. CONTRACTOR SHALL PARK EQUIPMENT AND VEHICLES AS NOT TO INTERFERE WITH NORMAL ACTIVITIES OF RESIDENTS OR OTHER CONTRACTORS ON SITE.
9. ANY DAMAGE TO THE EXISTING FACILITIES (CURB & GUTTER, PAVEMENT, CONDUITS, LANDSCAPING, UTILITY LINES ETC.) DURING CONSTRUCTION SHALL BE REPLACED AT THE CONTRACTORS' EXPENSE.
10. REMOVAL OF THE EXISTING CURB & GUTTER SHALL BE AS PER COA STD. DWG. 2415 (SAWCUT ONLY).
11. WHEELCHAIR RAMPS SHALL BE CONSTRUCTED PRIOR TO ACCEPTANCE OF CURB & GUTTER.

KEYED NOTES

[1] INSTALL 6' CONCRETE VALLEY GUTTER AS PER STD. DWG. 2420
* [2] BUILD WHEELCHAIR RAMP AS PER DETAIL SHEET 4
[3] STD. CURB & GUTTER AS PER COA STD. DWG. 2415
* [4] DEFERRED 6' SIDEWALK
[5] BUILD UNI-DIRECTIONAL WHEELCHAIR RAMP PER DETAIL SHEET 4
[6] BRICK PAVER CROSS WALK PAVEMENT. SEE DETAIL SHEET 4
[7] ASPHALT PAVEMENT PER SECTION SHEET 4
* [8] 6' SIDEWALK

* NOT APPLICABLE THIS SHEET

AS-BUILT INFORMATION
CONTRACTOR FRANKLINS DATE 12/03
WORK STAKED BY AIS DATE 03
BHI RUTLEDGE
ACCEPTANCE BY DATE 12/03
FIELD VERIFICATION BY AIS DATE 03
DRAWINGS CORRECTED BY AIS DATE 1/03
MICRO-FILM INFORMATION
RECORDED BY DATE
NO.

BENCH MARKS
ACS MONUMENT "NAA-9"
Y=1,519,209.317, X=394,263.317
C-C=0.999867793081574
ΔA = -00°12'15", CENTRAL ZONE
(NAD 1927)
ELEVATION=5069.23
LOCATED IN SOUTHEAST QUADRANT OF PASEO DEL NORTE & NORTH
DIVERSION CHANNEL INTERSECTION

SURVEY INFORMATION
FIELD NOTES
NO. BY DATE

ENGINEER'S SEAL
BRUCE J. STIDWORTHY NEW MEXICO 14623 REGISTERED PROFESSIONAL ENGINEER
3/17/03

No.	Date	REMARKS	By
		REVISIONS	
		DESIGN	

DATE: 10/2002
DATE: 10/2002
DATE: 10/2002
Designed By: BJS
Drawn By: KJW
Checked By: BJS

Bohannan ▲ Huston INC.
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING DEVELOPMENT GROUP

JOURNAL CENTER PHASE 2, UNIT2
PAVING PLAN & PROFILE
SNAPROLL STREET

Design Review Committee	City Engineer Approval	Last Design Update	Mo./Day/Yr.	Mo./Day/Yr.
APPROVED DESIGN REVIEW COMMITTEE				

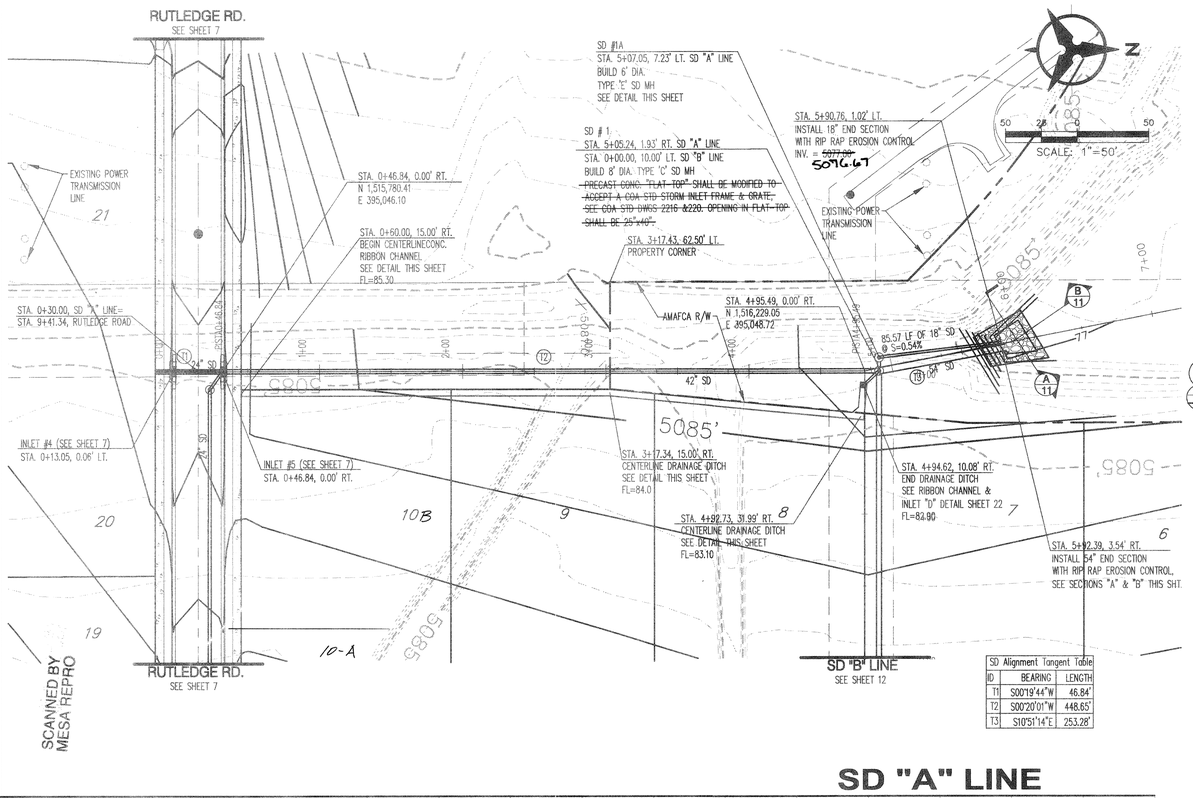
SCALE: 1" = 50' (HORIZ.)
1" = 10' (VERT.)

City Project No. 651783 | Zone Map No. D-17 | Sheet 10 Of 24

P:\020075\edp\pnp\020075Ppnp05.dwg

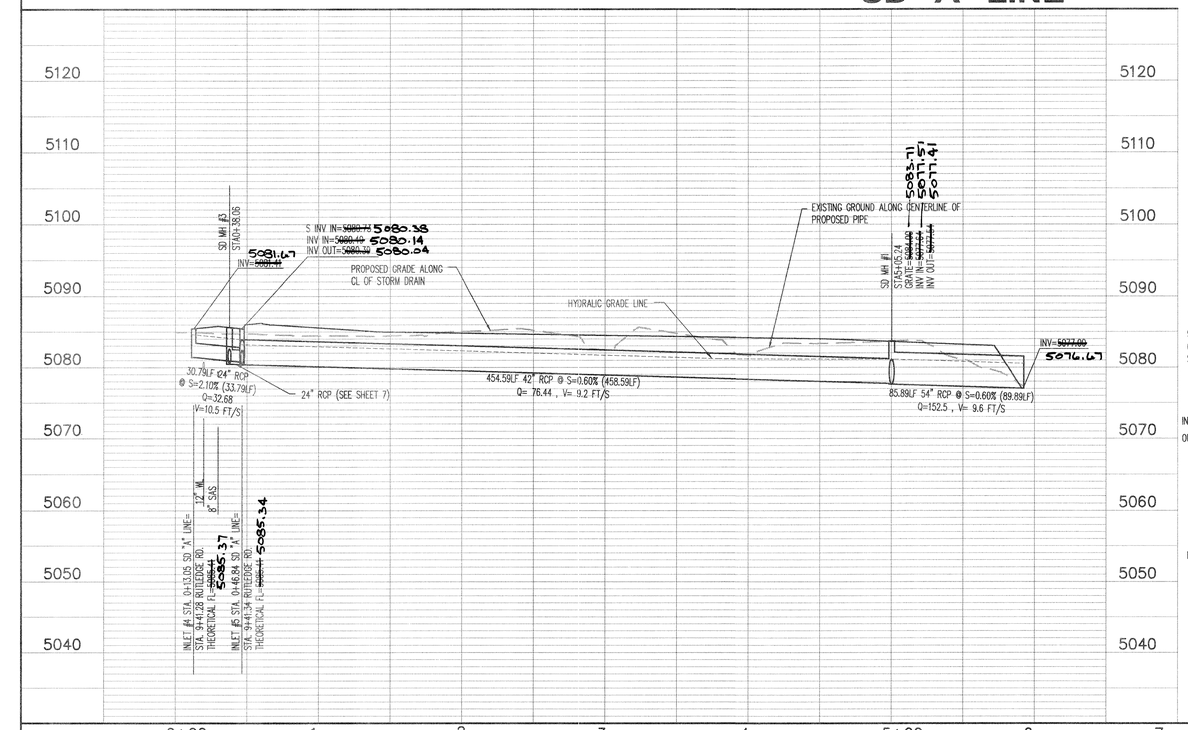
BHI JOB NO. 020075

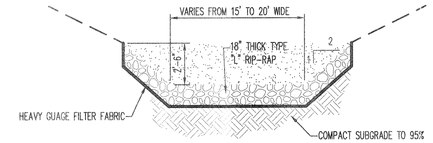
Date: FEBRUARY, 2003



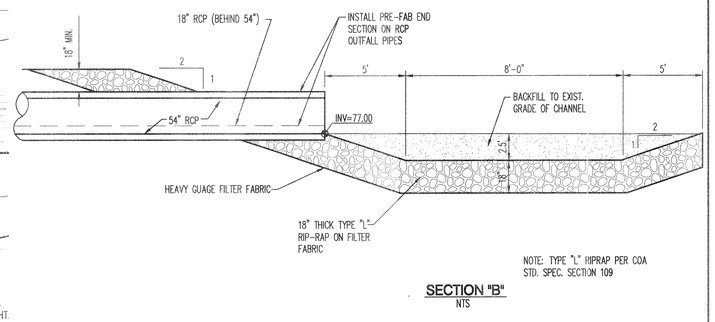
SD Alignment Tangent Table		
ID	BEARING	LENGTH
T1	S00°19'44"W	46.84'
T2	S00°20'01"W	448.65'
T3	S10°51'14"E	253.28'

SD "A" LINE





SECTION "A"
NTS



NOTE: TYPE "L" RIPRAP PER COA STD. SPEC. SECTION 109

SECTION "B"
NTS

NOTES

1. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LOCATIONS AND NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.

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11. WHEELCHAIR RAMPS SHALL BE CONSTRUCTED PRIOR TO ACCEPTANCE OF CURB & GUTTER.

AMAFCA NOTES

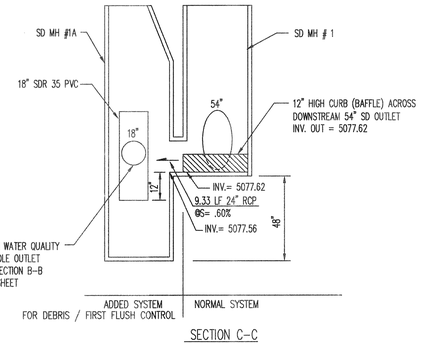
1. AMAFCA FIELD ENGINEER SHALL BE NOTIFIED 48 HOURS PRIOR TO ANY WORK WITHIN THE AMAFCA R/W. TELEPHONE NUMBER 884-2215, JERRY LOVATO.

2. NO WORK WILL BE PERFORMED IN THE AMAFCA R/W BETWEEN MAY 15 AND OCTOBER 15 WITHOUT WRITTEN PERMISSION FROM AMAFCA.

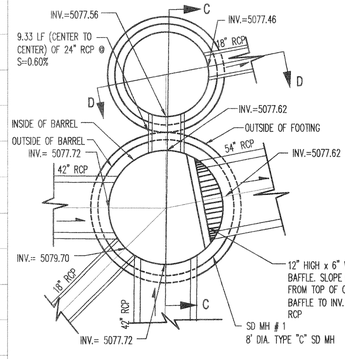
3. ALL SUBGRADE, BACK FILL AND EMBANKMENT SHALL BE COMPACTED TO 95% (MODIFIED PROCTOR) WITHIN THE AMAFCA R/W. TESTING REPORTS SHALL BE PROVIDED TO AMAFCA FIELD ENGINEER.

4. AMAFCA FIELD ENGINEER WILL BE NOTIFIED 48 HOURS PRIOR TO FINAL INSPECTION OF ANY FACILITIES WITHIN THE AMAFCA R/W.

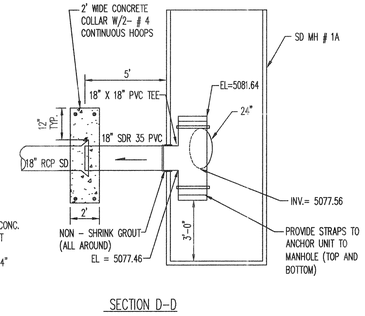
5. ALL DISTURBED GROUND AREAS SHALL BE REVEGETATED IN ACCORDANCE WITH CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION SECTION 1012 NATIVE SEEDING AS CURRENTLY UPDATED.



SECTION C-C



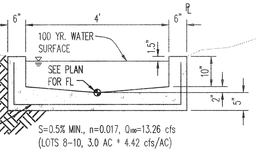
PLAN



SECTION D-D

MANHOLE SYSTEM DEBRIS / FIRST FLUSH TREATMENT

NOT TO SCALE



CONCRETE RIBBON CHANNEL DETAIL
NTS

JOINTS SHALL BE IN ACCORDANCE WITH SECTION 340.5 AND 340.6.2.2 OF CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.

SCALE: 1" = 50' (HORIZ.)
1" = 10' (VERT.)

AS-BUILT INFORMATION
CONTRACTOR Franklins DATE 12/03
WORK STAKED BY DATE
FIELD VERIFICATION BY Bill Rutledge DATE 12/03
ACCEPTANCE BY DATE
FIELD VERIFICATION BY AIS DATE 03
DRAWINGS CORRECTED BY AIS DATE 9/03
MICRO-FILM INFORMATION
RECORDED BY DATE
NO.

BENCH MARKS
ACS MONUMENT "NAA-9"
Y=1,519,209.317, X=394,263.317
G-I-G=0.99986717930815174
(NAD 1927)
ELEVATION=5069.23
LOCATED IN SOUTHEAST QUADRANT OF PASEO DEL NORTE & NORTH
DIVERSION CHANNEL INTERSECTION

SURVEY INFORMATION
FIELD NOTES
NO. BY DATE

ENGINEER'S SEAL
BRUCE J. STIDWORTHY
NEW MEXICO
14459
REGISTERED PROFESSIONAL ENGINEER
4/1/03

No.	Date	REMARKS	By
		REVISIONS	
		DESIGN	
		Designed By: BJS	DATE: 11/2002
		Drawn By: KJW	DATE: 11/2002
		Checked By: BJS	DATE: 11/2002

Bohannan ▲ Huston INC.
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING ▲ SPATIAL DATA ▲ ADVANCED TECHNOLOGIES

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING DEVELOPMENT GROUP

JOURNAL CENTER PHASE 2, UNIT2
STORM DRAIN PLAN & PROFILE
SD "A" LINE

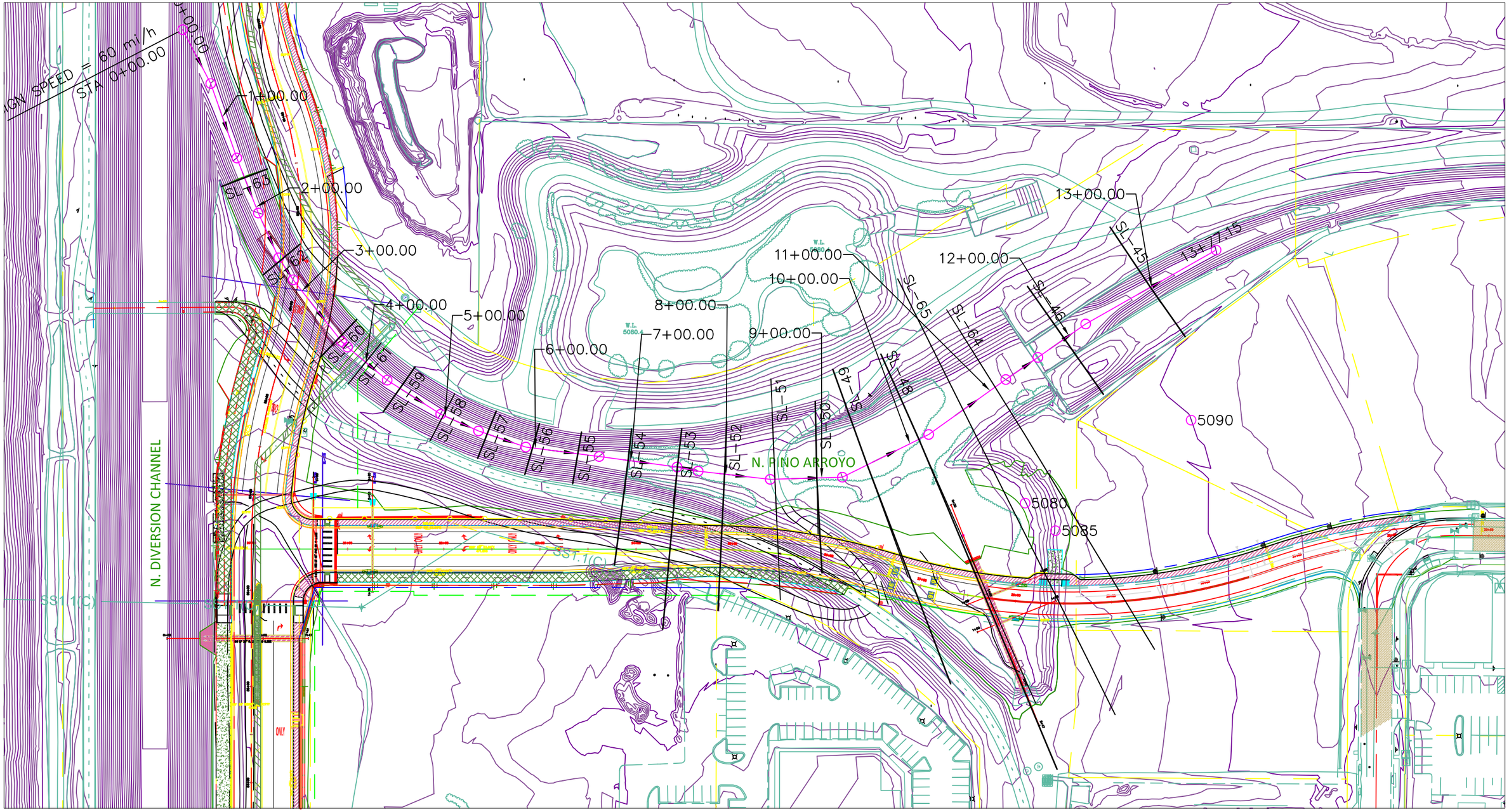
Design Review Committee	City Engineer Approval	Last Design Update	Mo./Day/Yr.	Mo./Day/Yr.
APPROVED DESIGN REVIEW COMMITTEE				

City Project No.	Zone Map No.	Sheet	Of
651783	D-17	11	24

P:\020075\cdp\pnp\020075Ppnp06.dwg

BHI JOB NO. 020075

Date: FEBRUARY, 2003



SCALE 1:100

N

CITY OF ALBUQUERQUE
DEPARTMENT OF MUNICIPAL DEVELOPMENT
ENGINEERING DIVISION

TITLE: **North Pino Cross Sections**

NOT FOR CONSTRUCTION

DESIGNED BY:

REVIEWED BY:

LAST DESIGN UPDATE	Mo./Day/Yr.
	6/25/19

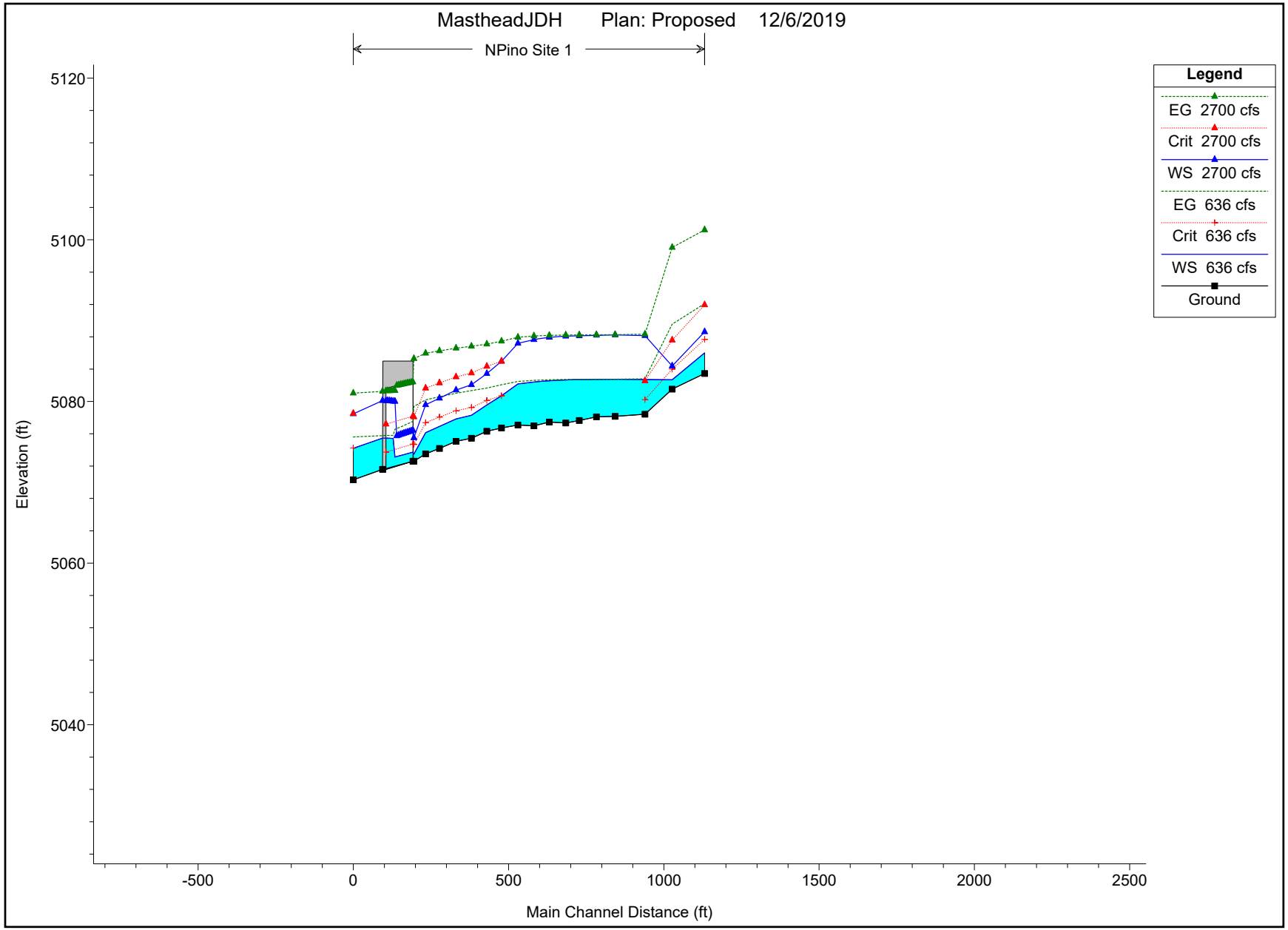
City Project No.	Zone Map No.	Sheet	Of
	X -XXX	1	1

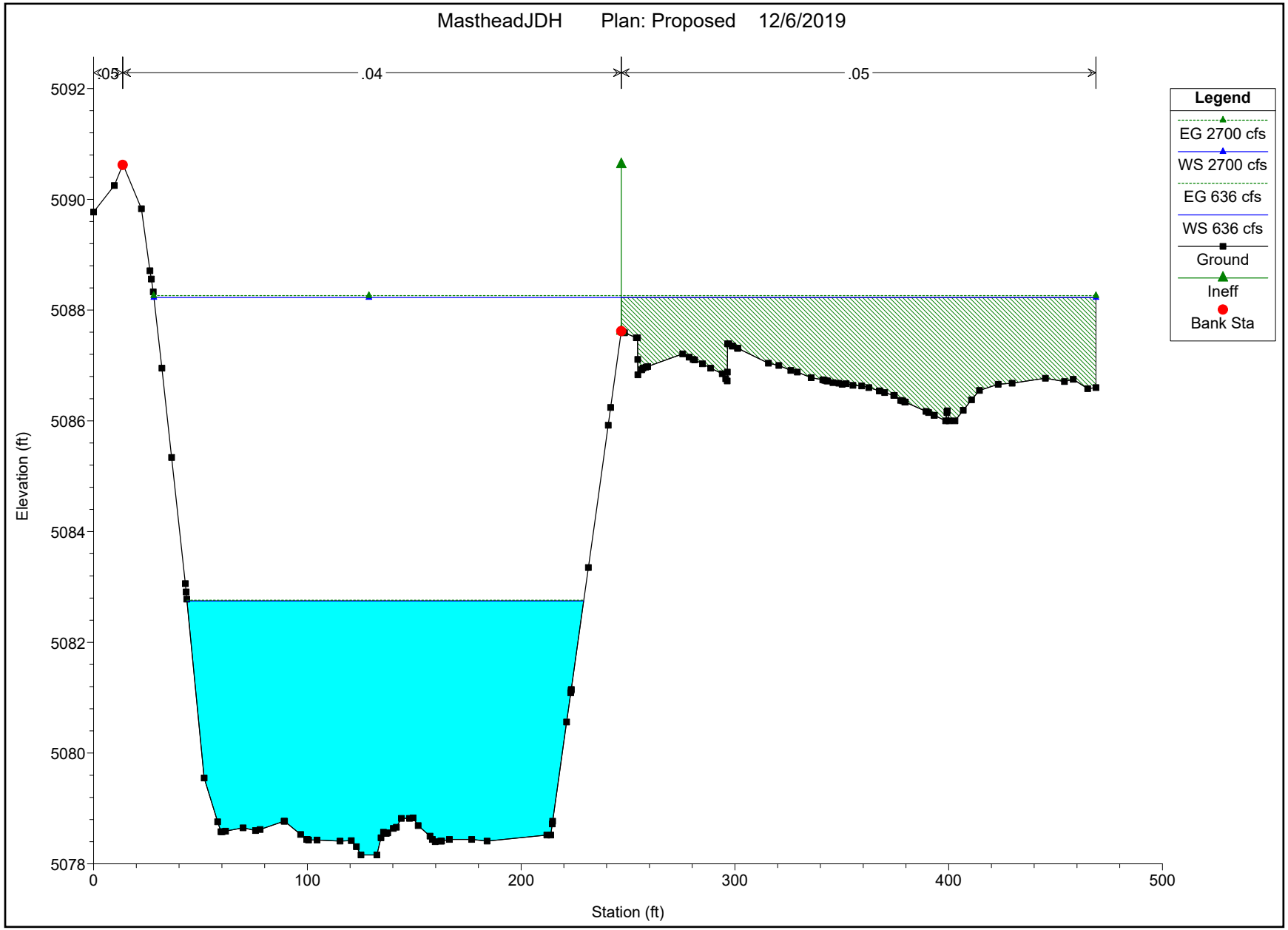
HEC-RAS Plan: Proposed River: NPino Reach: Site 1

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Site 1	1298.65	636 cfs	636.00	5083.45	5086.00	5087.68	5092.10	0.015009	19.82	32.09	17.89	2.61
Site 1	1298.65	2700 cfs	2700.00	5083.45	5088.61	5091.96	5101.23	0.015023	28.49	94.76	30.44	2.85
Site 1	1194.3	636 cfs	636.00	5081.53	5082.68	5084.00	5089.56	0.042140	21.03	30.24	33.98	3.93
Site 1	1194.3	2700 cfs	2700.00	5081.53	5084.38	5087.59	5099.05	0.024480	30.73	87.87	34.05	3.37
Site 1	1106.48	636 cfs	636.00	5078.42	5082.72	5080.23	5082.80	0.000769	2.33	273.48	79.47	0.22
Site 1	1106.48	2700 cfs	2700.00	5078.42	5088.15	5082.55	5088.32	0.000679	3.33	810.94	243.92	0.23
Site 1	1010.32	636 cfs	636.00	5078.16	5082.75		5082.76	0.000090	0.87	728.45	185.59	0.08
Site 1	1010.32	2700 cfs	2700.00	5078.16	5088.23		5088.26	0.000093	1.47	1840.62	440.69	0.09
Site 1	950.3	636 cfs	636.00	5078.09	5082.73		5082.75	0.000151	1.16	548.08	133.72	0.10
Site 1	950.3	2700 cfs	2700.00	5078.09	5088.19		5088.25	0.000174	2.01	1341.29	255.83	0.12
Site 1	894.93	636 cfs	636.00	5077.64	5082.70		5082.74	0.000292	1.63	390.14	92.86	0.14
Site 1	894.93	2700 cfs	2700.00	5077.64	5088.12		5088.23	0.000338	2.70	1009.94	131.53	0.17
Site 1	851.32	636 cfs	636.00	5077.34	5082.67		5082.72	0.000387	1.79	354.77	91.03	0.16
Site 1	851.32	2700 cfs	2700.00	5077.34	5088.08		5088.21	0.000417	2.97	908.68	127.05	0.19
Site 1	798.56	636 cfs	636.00	5077.45	5082.57		5082.69	0.001096	2.68	237.45	83.22	0.26
Site 1	798.56	2700 cfs	2700.00	5077.45	5087.94		5088.17	0.000842	3.91	690.39	122.74	0.26
Site 1	748.96	636 cfs	636.00	5076.99	5082.40		5082.61	0.001927	3.62	175.68	86.19	0.35
Site 1	748.96	2700 cfs	2700.00	5076.99	5087.64		5088.09	0.001736	5.41	499.24	186.53	0.36
Site 1	697.25	636 cfs	636.00	5077.08	5082.16		5082.48	0.002790	4.48	141.96	38.91	0.41
Site 1	697.25	2700 cfs	2700.00	5077.08	5087.19		5087.95	0.003170	6.96	387.70	113.04	0.48
Site 1	644.46	636 cfs	636.00	5076.72	5080.70	5080.70	5082.06	0.018666	9.36	67.92	25.25	1.01
Site 1	644.46	2700 cfs	2700.00	5076.72	5084.97	5084.97	5087.46	0.015344	12.65	213.48	43.05	1.00
Site 1	596.99	636 cfs	636.00	5076.31	5079.57	5080.12	5081.66	0.003609	11.60	54.83	23.43	1.34
Site 1	596.99	2700 cfs	2700.00	5076.31	5083.44	5084.33	5087.09	0.002696	15.32	176.29	39.17	1.27
Site 1	547.57	636 cfs	636.00	5075.45	5078.29	5079.26	5081.34	0.006015	14.01	45.41	21.48	1.70
Site 1	547.57	2700 cfs	2700.00	5075.45	5082.07	5083.52	5086.83	0.003818	17.50	154.29	36.37	1.50

HEC-RAS Plan: Proposed River: NPino Reach: Site 1 (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Site 1	497.99	636 cfs	636.00	5075.07	5077.84	5078.85	5081.02	0.006497	14.30	44.48	21.71	1.76
Site 1	497.99	2700 cfs	2700.00	5075.07	5081.41	5083.04	5086.59	0.004336	18.26	147.87	36.18	1.59
Site 1	444.75	636 cfs	636.00	5074.19	5076.91	5078.07	5080.59	0.007845	15.39	41.33	20.79	1.92
Site 1	444.75	2700 cfs	2700.00	5074.19	5080.40	5082.29	5086.26	0.005129	19.43	138.99	35.15	1.72
Site 1	399.87	636 cfs	636.00	5073.51	5076.13	5077.39	5080.18	0.008919	16.15	39.39	20.27	2.04
Site 1	399.87	2700 cfs	2700.00	5073.51	5079.59	5081.64	5085.97	0.005700	20.26	133.29	34.17	1.81
Site 1	362.32	636 cfs	636.00	5072.60	5073.48	5074.68	5079.39	0.036661	19.50	32.61	37.00	3.66
Site 1	362.32	2700 cfs	2700.00	5072.60	5075.51	5078.08	5085.31	0.014142	25.11	107.51	37.00	2.60
Site 1	262		Culvert									
Site 1	261.24	636 cfs	636.00	5071.60	5075.47		5075.77	0.000321	4.44	143.09	37.00	0.40
Site 1	261.24	2700 cfs	2700.00	5071.60	5080.11		5081.25	0.000537	8.58	314.79	37.00	0.52
Site 1	167.31	636 cfs	636.00	5070.30	5074.21	5074.24	5075.61	0.002040	9.50	66.97	25.00	1.02
Site 1	167.31	2700 cfs	2700.00	5070.30	5078.47	5078.51	5081.03	0.001675	12.85	210.19	42.36	1.02


MastheadJDH Plan: Proposed 12/6/2019
NPino Site 1
Legend
EG 2700 cfs
Crit 2700 cfs
WS 2700 cfs
EG 636 cfs
Crit 636 cfs
WS 636 cfs
Ground
Elevation (ft)
5120
5100
5080
5060
5040
-500
0
500
1000
1500
2000
2500
Main Channel Distance (ft)


MastheadJDH Plan: Proposed 12/6/2019
.05
.04
.05
Legend
EG 2700 cfs
WS 2700 cfs
EG 636 cfs
WS 636 cfs
Ground
Ineff
Bank Sta
Elevation (ft)
5092
5090
5088
5086
5084
5082
5080
5078
0
100
200
300
400
500
Station (ft)