

VICINITY MAP  
N.T.S.

NOTE:  
THE QUANTITIES ARE AN ESTIMATE OF THE ENGINEER.  
THE CONTRACTOR SHALL MAKE HIS OWN INDEPENDENT ESTIMATE  
OF QUANTITIES AND BID THEREON.

QUANTITIES				
WATER	ON-SITE	UNIT	OFF-SITE	UNIT
MAIN LINE	N/A	LF	5,902	LF
WATER SERVICE LINE	N/A	LF	216	LF
TAPPING SLEEVE	N/A	EA	N/A	EA
MAIN LINE/LATERAL/FH VALVE	N/A	EA	13	EA
WATER VALVE/MANHOLE/ARV VAULT	N/A	EA	20	EA
FIRE LINE	N/A	LF	N/A	LF
BLOW OFF/TAPPED CAP	N/A	EA	14	EA
METER BOX	N/A	EA	5	EA
BACKFLOW (UP TO 3")	N/A	EA	5	EA
BACKFLOW (3" AND LARGER)	N/A	EA	N/A	EA
WATER LINE CONNECTION	N/A	EA	3	EA
UTILITY ADJUSTMENT	N/A	EA	N/A	EA
FIRE HYDRANTS	N/A	EA	13	EA

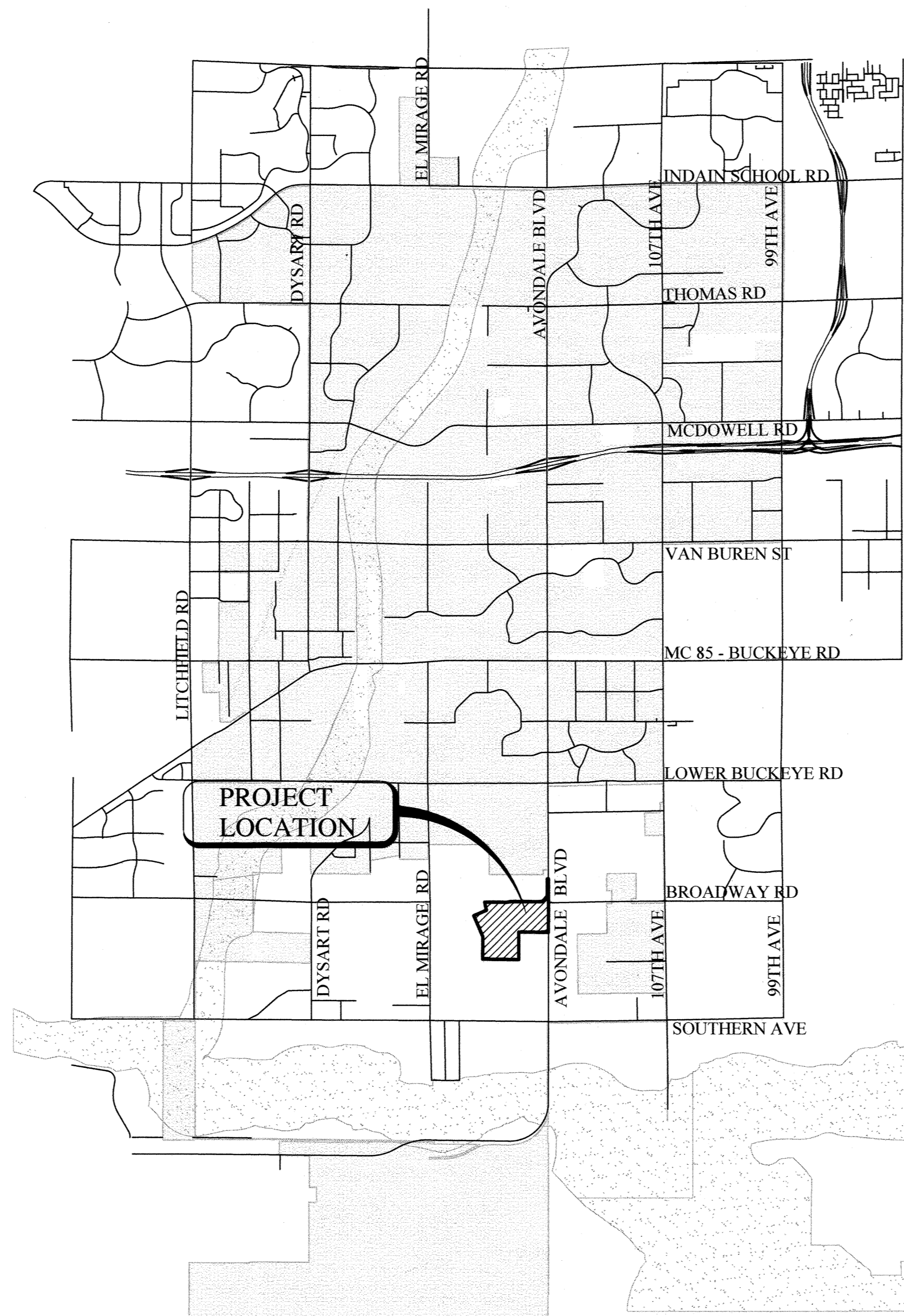
### Utility Conflict Notification Block

THESE PLANS HAVE BEEN SUBMITTED TO THE FOLLOWING UTILITY COMPANIES. WHERE THE WORK TO BE DONE CONFLICTS WITH ANY OF THESE UTILITIES, THE CONFLICTS SHALL BE RESOLVED AS SPECIFIED IN THE SPECIAL NOTES AND/OR AS OTHERWISE NOTED ON THESE PLANS. CONFLICTS ARISING DURING THE COURSE OF CONSTRUCTION FROM UNFORESEEN CIRCUMSTANCES SHALL BE REPORTED TO THE INTERESTED UTILITY COMPANY AND BE RESOLVED BY THEM AND THE DESIGN ENGINEER.

SALT RIVER POWER DISTRICT	COMPANY REPRESENTATIVE	9/1/18
ARIZONA PUBLIC SERVICE	COMPANY REPRESENTATIVE	9/1/18
CENTURY LINK	KATHY HADRICH COMPANY REPRESENTATIVE	9/1/18
COX COMMUNICATIONS	CORY DAY COMPANY REPRESENTATIVE	9/1/18
SOUTHWEST GAS	SCOTT SUASO COMPANY REPRESENTATIVE	9/1/18
SALT RIVER IRRIGATION DISTRICT	COMPANY REPRESENTATIVE	9/1/18
ROOSEVELT IRRIGATION DISTRICT	KEN CRAIG COMPANY REPRESENTATIVE	9/1/18
EL PASO NATURAL GAS	STEVE WEATHERHEAD COMPANY REPRESENTATIVE	9/1/18

# INFRASTRUCTURE WATER PLAN ALAMAR - PHASE 1

A PROPOSED SUBDIVISION OF A PORTION OF THE  
SOUTHEAST QUARTER OF SECTION 24 AND NORTH HALF OF SECTION 25,  
TOWNSHIP 1 NORTH, RANGE 1 WEST, OF THE GILA AND SALT RIVER MERIDIAN,  
MARICOPA COUNTY, ARIZONA



AREA MAP  
NOT TO SCALE

### SHEET INDEX:

- 1 - COVER
- 2 - NOTES AND LEGEND
- 3 - INDEX MAP
- 4-16 - INFRASTRUCTURE WATER LINE PLANS

TOTAL SHEETS - 16

### "AS-BUILT CERTIFICATION"

I HEREBY CERTIFY THAT THE "AS-BUILT" INFORMATION SHOWN HEREON WAS OBTAINED UNDER MY DIRECT SUPERVISION AND IS CORRECT AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

REGISTERED LAND SURVEYOR \_\_\_\_\_ SEAL \_\_\_\_\_  
REGISTRATION NUMBER \_\_\_\_\_ DATE \_\_\_\_\_  
COMPANY NAME: \_\_\_\_\_  
ADDRESS: \_\_\_\_\_  
CITY/STATE/ZIP CODE: \_\_\_\_\_  
PHONE NUMBER: \_\_\_\_\_

### OWNER/ DEVELOPER

BROOKFIELD LAKIN, LLC  
14646 N. KIERLAND BOULEVARD,  
SUITE 165  
SCOTTSDALE, ARIZONA 85254  
PHONE: (602) 903-7509  
CONTACT: ROGER THEIS

### BENCHMARK

NATIONAL GEODETIC SURVEY CONTROL POINT H 395, PID DV0444, LOCATED AT THE NORTHWEST CORNER OF EL MIRAGE ROAD AND BROADWAY ROAD, HAVING AN ELEVATION OF 939.03', NAVD 88 DATUM.

### GEOTECHNICAL REPORT

GEOTECHNICAL INVESTIGATION, LAKIN RANCH PHASE 1  
PROTEX - THE PT Xperts, LLC  
JOB NO. 7649, APRIL 16, 2018.

### ENGINEER & SURVEYOR

WOOD, PATEL & ASSOCIATES, INC.  
2051 WEST NORTHERN AVENUE, SUITE 100  
PHOENIX, ARIZONA 85021  
PHONE: (602) 335-8500  
CONTACT: FRANK KOO, P.E.

### BASIS OF BEARING

GEODETIC "NORTH" BASED ON: MARICOPA COUNTY DEPARTMENT OF TRANSPORTATION (MCDOT) GEODETIC DENSIFICATION AND CADASTRAL SURVEY (GDACS) WEBSITE  
WWW.MCDOT.MARICOPA.GOV, UNDER THE SURVEY INFORMATION LINK ON MARCH 1, 2017.  
PROJECTION: CENTRAL ZONE, NAD 83, (EPOCH 2010) DATUM: GRS-80  
UNITS: INTERNATIONAL FEET  
GEOID MODEL: GEOID 2012A

NATIONAL GEODETIC SURVEY CONTROL POINT: H 395  
PID: DV0444  
LATITUDE: 33°24'22.55252"N  
LONGITUDE: 112°19'25.08998"W  
ELLIPSOID HEIGHT: 255.899 (METERS)  
DESCRIPTION: BRASS DISK IN CONCRETE SLEEVE

MODIFIED TO GROUND AT (GRID) N: 875587.531, E: 575808.124,  
USING A SCALE FACTOR OF 1.0001224277.

HORIZONTAL ADJUSTMENT: NONE  
HORIZONTAL ROTATION: NONE

### CITY OF AVONDALE

#### MAYOR

KENNETH WEISE

#### VICE MAYOR

PAT DENNIS

#### CITY MANGER

CHARLES MONTOYA

#### COUNCIL MEMBERS

CURTIS NIELSON  
VERONICA MALONE  
TINA CONDE  
BRIAN KILGORE  
MIKE PINEDA

#### CITY CLERK

MARCELLA CARRILLO

### APPROVALS

*[Signature]* 2-7-19  
CITY ENGINEERING DEPARTMENT DATE

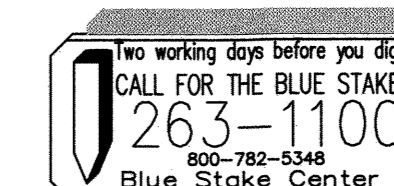
THE CITY APPROVES THESE PLANS FOR CONCEPT ONLY AND ACCEPTS NO LIABILITY FOR ERRORS OR OMISSIONS.

11465 W. CIVIC CENTER DRIVE  
AVONDALE, AZ 85323  
(623) 333-4200

*[Signature]* (water) 10/19/18  
MARICOPA COUNTY ENVIRONMENTAL SERVICES DATE  
DWR-18-00507

ALL POTABLE WATERLINES AND FITTINGS SHALL HAVE A NSF-PW SEAL. ALL MATERIALS AND PRODUCTS USED IN THE POTABLE WATER SYSTEM SHALL CONFORM TO NSF STANDARDS 60 AND 61 IN ACCORDANCE WITH AAC R18-4-119. ALL MATERIALS SHALL BE LEAD FREE AS DEFINED IN AAC R18-5-604 AND R18-4-101.

1101 N CENTRAL #150  
PHOENIX, AZ 85334  
SUSAN HAZELETT (602) 506-6671



### NOTE:

ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE MOST RECENT EDITION OF THE CITY OF AVONDALE'S SUPPLEMENT TO THE M.A.G. SPECIFICATIONS AND STANDARD DETAILS CURRENTLY ON FILE AND AVAILABLE AT THE CITY OF AVONDALE'S ENGINEERING DEPARTMENT OR ONLINE AT THE CITY OF AVONDALE'S WEBSITE.

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(602) 335-8500  
WWW.WOODPATEL.COM

BROOKFIELD LAKIN, LLC  
ALAMAR - PHASE 1  
INFRASTRUCTURE WATER PLAN

SEAL  
REGISTERED PROFESSIONAL ENGINEER  
SINCE 1988  
FRANK MINGFENG KOO  
AZ 00000000  
EXPIRES 12-31-18

PLAN DATE  
11/08/2018  
LATEST REVISION DATE

SHEET NUMBER  
1 OF 16  
PROJECT NUMBER  
174612.04

**ENGINEER'S NOTES**

- MARICOPA ASSOCIATION OF GOVERNMENTS (M.A.G.) UNIFORM STANDARD SPECIFICATIONS AND DETAILS FOR PUBLIC WORKS CONSTRUCTION (LATEST EDITION INCLUDING LATEST REVISION AND CURRENT SUPPLEMENTALS THEREOF PER THE LOCAL TOWN OR CITY) ARE INCORPORATED INTO THIS PLAN IN THEIR ENTIRETY.
- ALL WORK REQUIRED TO COMPLETE THE CONSTRUCTION COVERED BY THIS PLAN SHALL BE IN ACCORDANCE WITH THE M.A.G. STANDARD SPECIFICATIONS AND DETAILS AND CURRENT SUPPLEMENTS THEREOF PER THE LOCAL CITY OR TOWN UNLESS SPECIFIED OTHERWISE IN THESE PLANS OR ELSEWHERE IN THE CONTRACT DOCUMENTS. CONTRACTORS SHALL FAMILIARIZE THEMSELVES WITH ALL REQUIRED STANDARD SPECIFICATIONS, DETAILS AND SUPPLEMENTS PRIOR TO BIDDING THE WORK FOR THE CONSTRUCTION COVERED BY THIS PLAN.
- THE CONTRACTOR IS RESPONSIBLE FOR ALL METHODS, SEQUENCING, AND SAFETY CONCERNS ASSOCIATED WITH THIS PROJECT DURING CONSTRUCTION, UNLESS SPECIFICALLY ADDRESSED OTHERWISE IN THIS PLAN OR ELSEWHERE IN THE CONTRACT.
- THE CONTRACTOR IS TO COMPLY WITH ALL LOCAL, STATE, AND FEDERAL LAWS AND REGULATIONS APPLICABLE TO THE CONSTRUCTION COVERED BY THIS PLAN.
- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND COMPLYING WITH ALL PERMITS REQUIRED TO COMPLETE ALL WORK COVERED BY THIS PLAN.
- THE QUANTITIES AND SITE CONDITIONS DEPICTED IN THESE PLANS ARE FOR INFORMATIONAL PURPOSES ONLY AND ARE SUBJECT TO ERROR AND OMISSION. CONTRACTORS SHALL SATISFY THEMSELVES AS TO ACTUAL QUANTITIES AND SITE CONDITIONS PRIOR TO BIDDING THE WORK FOR THE CONSTRUCTION COVERED BY THIS PLAN.
- A REASONABLE EFFORT HAS BEEN MADE TO SHOW THE LOCATIONS OF EXISTING UNDERGROUND FACILITIES AND UTILITIES IN THE CONSTRUCTION AREA. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO UTILITIES AND/OR FACILITIES CAUSED DURING THEIR CONSTRUCTION OPERATIONS. THE CONTRACTOR SHALL CALL 48 HOURS IN ADVANCE FOR BLUE STAKE (1-800-STAKE-IT) PRIOR TO ANY EXCAVATION.
- THE CONTRACTOR IS RESPONSIBLE FOR ALL COORDINATION OF CONSTRUCTION AFFECTING UTILITIES AND THE COORDINATION OF ANY NECESSARY UTILITY RELOCATION WORK.
- ALL PAVING, GRADING, EXCAVATION, TRENCHING, PIPE BEDDING, CUT FILL AND BACKFILL SHALL COMPLY WITH THE RECOMMENDATIONS SET FORTH IN THE SOILS (GEOTECHNICAL) REPORT FOR THIS PROJECT IN ADDITION TO THE REFERENCED REQUIRED SPECIFICATIONS AND DETAILS. THE CONTRACTOR SHALL BE AWARE THAT CERTAIN UTILITIES REQUIRE PROPER ATTENTION AND CAREFUL PLANNING DURING SITE CONSTRUCTION. PLEASE NOTE THAT UTILITIES ON THESE PLANS MAY NOT EXHIBIT THE FULL PROTECTIVE COVER REQUIRED DURING THE SUBGRADE PREPARATION PHASE OF THE CONSTRUCTION. IN SUCH INSTANCES, THE CONTRACTOR SHALL PROVIDE ADDITIONAL PROTECTION (SUCH AS RAMPING) OR INCREASED PIPE STRENGTH TO PROVIDE THE NECESSARY PROTECTION REQUIRED TO PREVENT DAMAGE DURING THE CONSTRUCTION OF THIS PROJECT. THE CONTRACTOR SHALL HOLD THE ENGINEER HARMLESS IN ALL CASES FOR DAMAGES TO UTILITIES WHERE INADEQUATE PROTECTIVE MEASURES OCCUR.
- THE CONTRACTOR IS TO VERIFY THE LOCATION AND THE ELEVATIONS OF ALL EXISTING UTILITIES AT POINTS OF TIE-IN PRIOR TO COMMENCING ANY NEW CONSTRUCTION. SHOULD ANY LOCATION OR ELEVATION DIFFER FROM THAT SHOWN ON THESE PLANS, THE CONTRACTOR SHALL CONTACT THE OWNER'S AGENT.
- CONTRACTOR TO VERIFY AND COORDINATE ALL DIMENSIONS AND SITE LAYOUT WITH ARCHITECT'S FINAL SITE PLAN AND FINAL BUILDING DIMENSIONS BEFORE STARTING WORK. REPORT DISCREPANCIES TO OWNER'S AGENT.
- COORDINATION BETWEEN ALL PARTIES IS ESSENTIAL PART OF CONTRACT.
- CONTRACTOR IS RESPONSIBLE FOR PROJECT AND SITE CONDITIONS, AND TO WORK WITH WEATHER CONDITIONS AS THE PROJECT SITE MAY BE LOCATED IN A FLOOD PRONE AREA AND SUBJECT TO FLOODING AND ITS HAZARDS.
- THE CONTRACTOR IS TO VERIFY THE LOCATION, ELEVATION, CONDITION, AND PAVEMENT CROSS-SLOPE OF ALL EXISTING SURFACES AT POINTS OF TIE-IN AND MATCHING, PRIOR TO COMMENCEMENT OF GRADING, PAVING, CURB AND GUTTER, OR OTHER SURFACE CONSTRUCTION. SHOULD EXISTING LOCATIONS, ELEVATIONS, CONDITION, OR PAVEMENT CROSS-SLOPE DIFFER FROM THAT SHOWN ON THESE PLANS, RESULTING IN THE DESIGN INTENT REFLECTED ON THESE PLANS NOT ABLE TO BE CONSTRUCTED, THE CONTRACTOR SHALL NOTIFY THE OWNER'S AGENT IMMEDIATELY FOR DIRECTION ON HOW TO PROCEED PRIOR TO COMMENCEMENT OF CONSTRUCTION. THE CONTRACTOR ACCEPTS RESPONSIBILITY FOR ALL COSTS ASSOCIATED WITH CORRECTIVE ACTION IF THESE PROCEDURES ARE NOT FOLLOWED.
- CONTRACTOR IS RESPONSIBLE TO COORDINATE UTILITY CROSSINGS AT CULVERT CROSSINGS BEFORE STARTING WORK ON CULVERT. COORDINATE WITH OWNER REPRESENTATIVE. VERIFY UTILITY LINES AND/OR CONDUITS ARE IN PLACE BEFORE STARTING CULVERT WORK.
- CONSTRUCT RETENTION BASIN AS SHOWN. CONTRACTOR TO SCARIFY BOTTOM OF BASIN TWO FEET DEEP AND NOT ALLOW COMPACTION OVER 80%.
- THIS PROJECT REQUIRES A REGULAR ONGOING MAINTENANCE PROGRAM FOR THE DESIGNED DRAINAGE SYSTEM(S) TO PRESERVE THE DESIGN INTEGRITY AND THE ABILITY TO PERFORM ITS OPERATIONAL INTENT. FAILURE TO PROVIDE MAINTENANCE WILL JEOPARDIZE THE DRAINAGE SYSTEM(S) PERFORMANCE AND MAY LEAD TO ITS INABILITY TO PERFORM PROPERLY AND/OR CAUSE DAMAGE ELSEWHERE IN THE PROJECT.

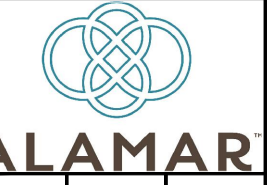
- SEWER LINES DESIGNED IN PROFILE AND PUBLIC WATER LINES ARE REQUIRED TO BE ASBUILT AND THE INSTALLATION AND TESTING WITNESSED BY A PROFESSIONAL ENGINEER IN ACCORDANCE WITH ARIZONA ADMINISTRATIVE CODES R18-9-E301 "4.01 GENERAL PERMIT: SEWAGE COLLECTIONS SYSTEMS" AND R18-5-507 AND 508 "APPROVAL OF CONSTRUCTION" AND "RECORD DRAWINGS", RESPECTIVELY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY OWNER 72 HOURS IN ADVANCE WHEN THOSE SYSTEMS ARE READY TO BE WITNESSED.
- THE WORK PRODUCT PRESENTED IS BELIEVED TO BE COMPLIANT WITH THE INTENT OF THE CURRENT AMERICANS DISABILITIES ACT (ADA) REQUIREMENTS AS INTERPRETED BY THE REVIEWING AGENCY(S). IF CONSTRUCTION OF THE PROJECT IS DELAYED, THIS WORK PRODUCT SHOULD BE UPDATED TO ACCOUNT FOR ANY RELEVANT ADA UPDATES BEFORE CONSTRUCTION BEGINS.
- LOWEST FLOOR (LF) REFERS TO EITHER FLOOR/SLAB ELEVATION OR TOP OF BASEMENT SLAB. LF ELEVATIONS ON THE GRADING AND DRAINAGE PLANS FOR RESIDENTIAL UNITS REFLECT SLAB ON GRADE CONDITIONS AND CANNOT BE LOWERED WITHOUT AGENCY APPROVAL IN LOCATIONS WHERE 'SPECIAL FLOOD HAZARD AREAS' EXIST. IN NON-FLOOD HAZARD LOCATIONS, TO ENSURE THAT ADEQUATE RESIDENTIAL LOT DRAINAGE CAN BE ACHIEVED, A PROFESSIONAL ENGINEER SHOULD BE CONSULTED IF THE LF FOR THE SLAB IS PROPOSED TO BE LOWERED, OR IF A BASEMENT IS TO BE CONSTRUCTED.

**LEGEND**

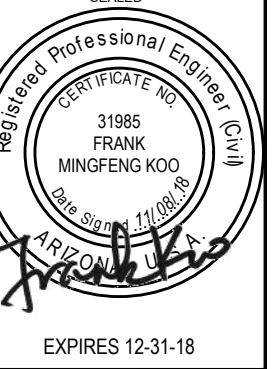
	BNDRY	PROJECT BOUNDARY
	C/L	CENTER LINE
	S/L	SECTION LINE
	R/W	RIGHT OF WAY
		EASEMENT LINE
		PROPOSED CONTOUR w/ ELEVATION
		EXISTING CONTOUR w/ ELEVATION
		POTABLE WATER PIPE & VALVE
		SANITARY SEWER PIPE & MANHOLE
		STORM DRAIN PIPE
	S.V.T.	SIGHT VISIBILITY TRIANGLE
	P.U.E.	PUBLIC UTILITY EASEMENT
	A.E.	ACCESS EASEMENT
	W.E.	WATER EASEMENT
	E.E.	ELECTRICAL EASEMENT
	V.N.A.E.	VEHICULAR NON-ACCESS EASEMENT
	W.P.E.	WATER PIPE EASEMENT
	S.E.	SEWER EASEMENT
	T.D.E.	TEMPORARY DRAINAGE EASEMENT
	S.W.E.	SIDEWALK EASEMENT
	F.S.L.	FRONT SETBACK LINE
	R.S.L.	REAR SETBACK LINE
	S.S.L.	SIDE SETBACK LINE
	B.P.	BOLLARD PROTECTION
	R/W	RIGHT-OF-WAY
	FF	FINISHED FLOOR ELEVATION
	PAD	PAD ELEVATION
	B.C.H.H.	BRASS CAP IN HANDHOLE
		HIGH POINT
		LOW POINT
		SURVEY MONUMENT
		FLOW ARROW
		GRADE BREAK
	OHU	EXISTING OVERHEAD UTILITY
	COMM	COMMUNICATION LINE
		PULLBOX
		EXISTING SEWER MANHOLE
		FIRE HYDRANT
		SANITARY SEWER MANHOLE
		WATER VALVE
	S	PROPOSED SEWER LINE
	W	PROPOSED WATER LINE
		PROPOSED SCUPPER WITH RIPRAP
		CATCH BASIN
		STORM DRAIN PIPE
		RIP-RAP

SCALE (HORIZ)	20'
SCALE (VERT)	2'

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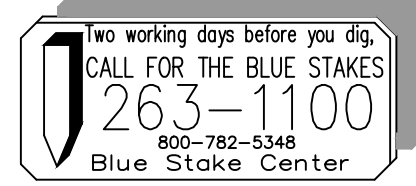


DISTRICT OWNER: **BROOKFIELD LAKIN, LLC**  
PROJECT NAME: **ALAMAR - PHASE 1**  
PLANTYPE: **INFRASTRUCTURE WATER PLAN**

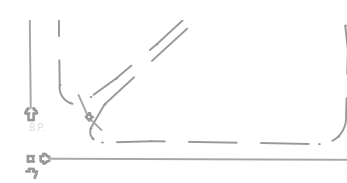
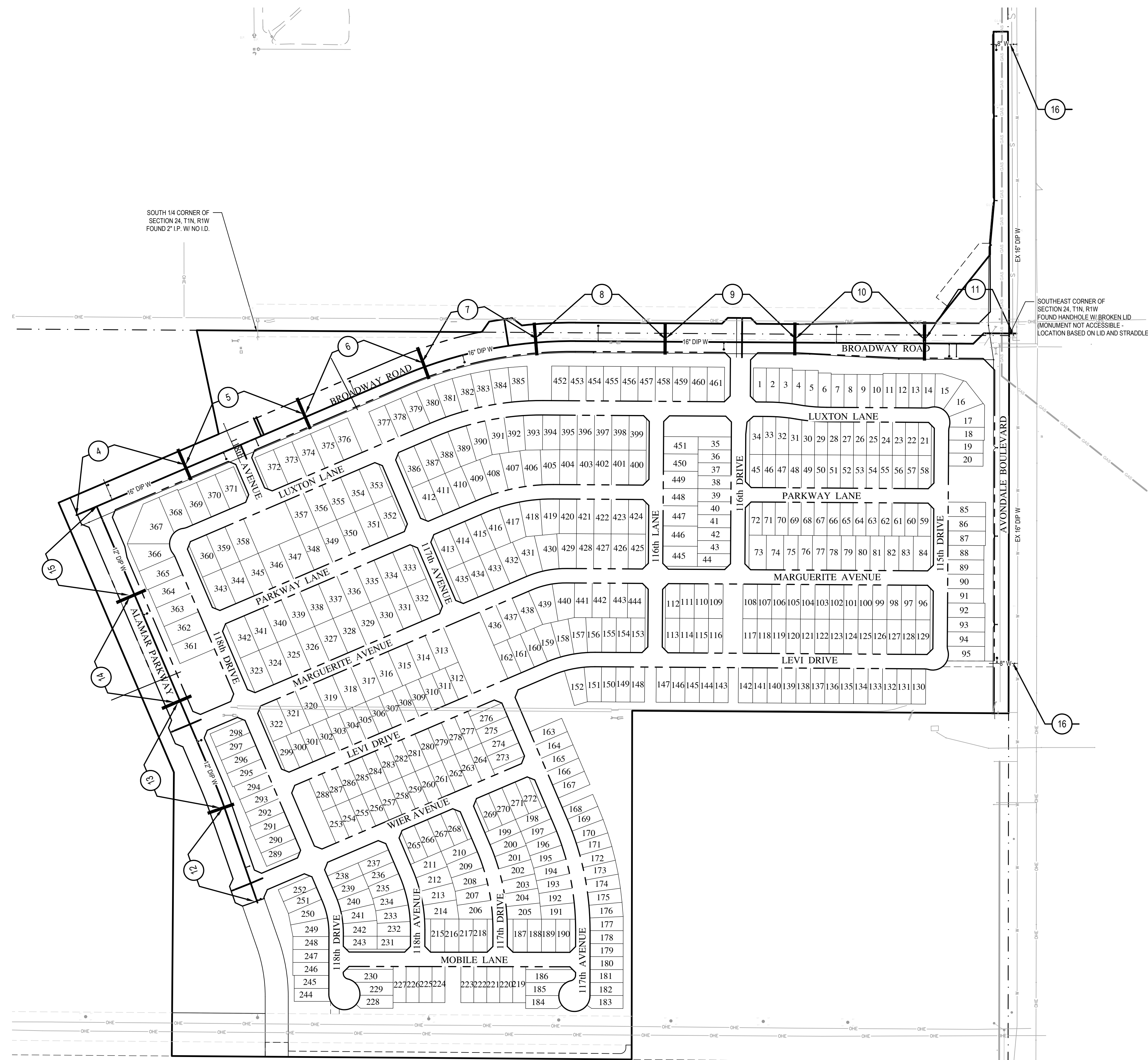


EXPIRES 12-31-18  
PLAN DATE: 11/08/2018  
LATEST REVISION DATE:

SHEET NUMBER: 2 OF 16  
PROJECT NUMBER: 174612.04

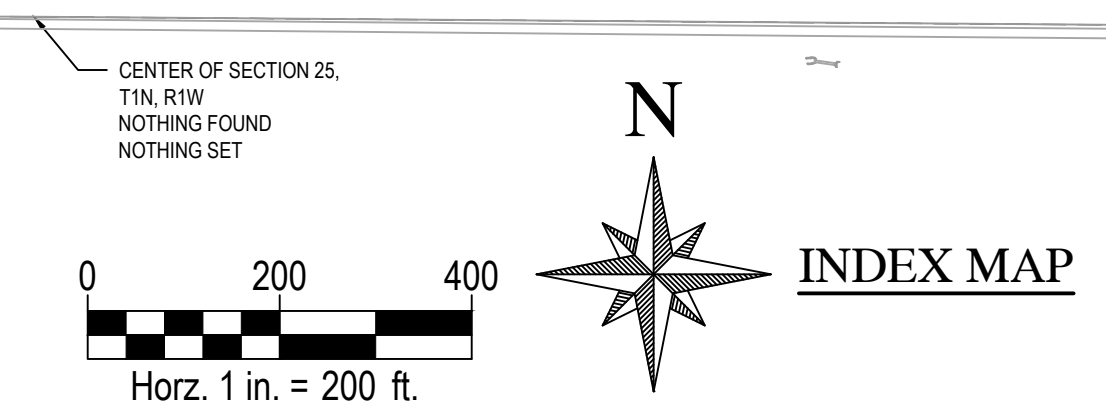


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SOUTH 1/4 CORNER OF SECTION 24, T1N, R1W FOUND 2" I.P. W/ NO LID.

SOUTHEAST CORNER OF SECTION 24, T1N, R1W FOUND HANDHOLE W/ BROKEN LID (MONUMENT NOT ACCESSIBLE - LOCATION BASED ON LID AND STRADDLERS)



EAST 1/4 CORNER OF SECTION 25, T1N, R1W FOUND 3" M.C.D.O.T. B.C.H.H. STAMPED T1N R1W S25 S30 RLS 3310

**SHEET INDEX LEGEND**

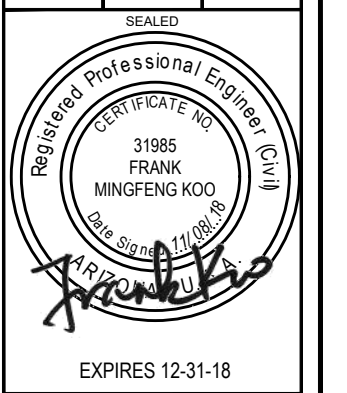
- 1 WATER PLAN & PROFILE SHEET NUMBER
- WATER PLAN & PROFILE MATCHLINE

SCALE (HORIZ.)	1" = 200'
SCALE (VERT.)	2"

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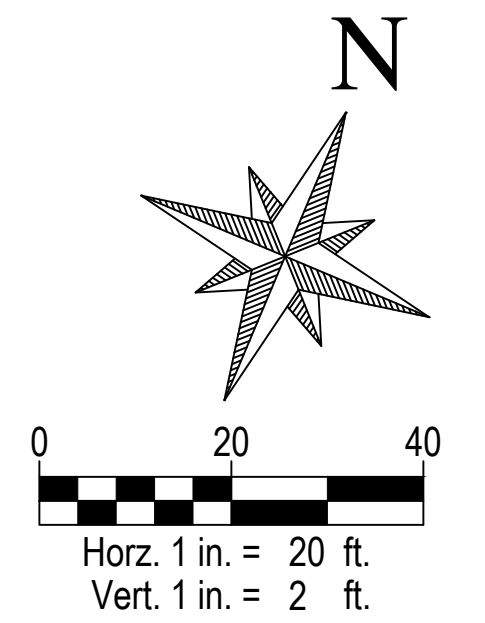
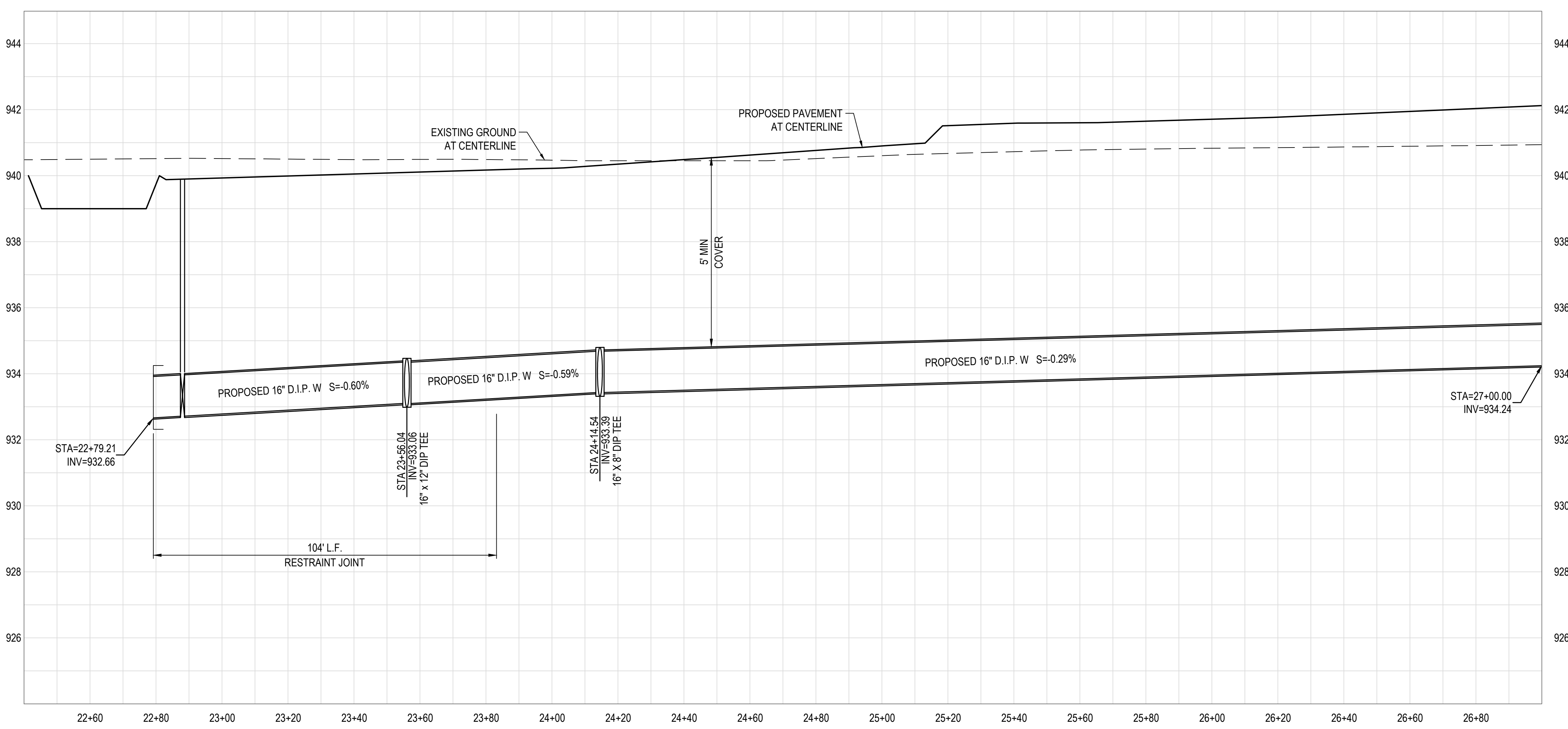
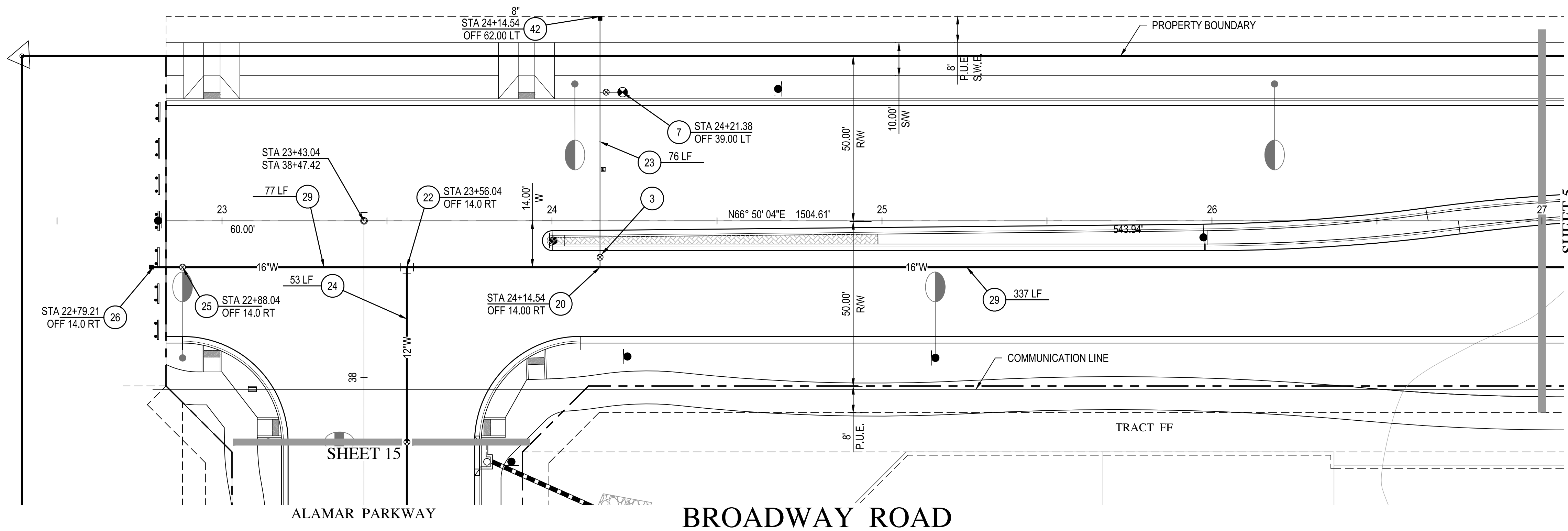
DEVELOPER  
**BROOKFIELD LAKIN, LLC**  
PROJECT NAME  
**ALAMAR - PHASE 1**  
PLAN TYPE  
**INFRASTRUCTURE WATER PLAN**



EXPIRES	12-31-18
PLAN DATE	11/08/2018
LATEST REVISION DATE	
SHEET NUMBER	3 OF 16
PROJECT NUMBER	174612.04



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**WATER NOTES**

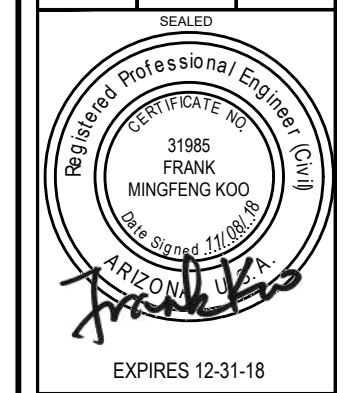
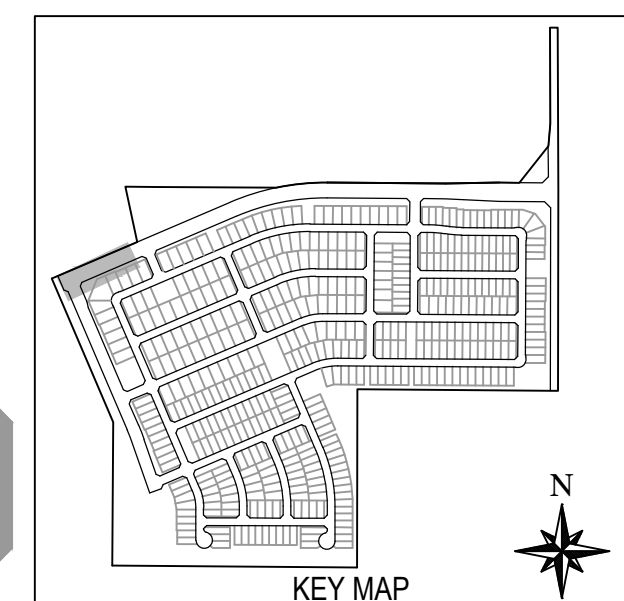
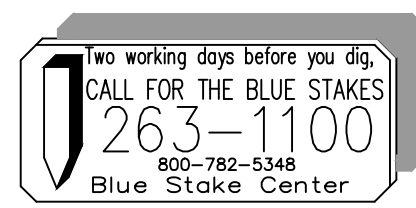
- 3 INSTALL 8" GATE VALVE, BOX AND COVER PER C.O.A. STANDARD DETAIL A1391, & M.A.G. STANDARD DETAIL 301. USE RESILIENT SEAT/WEDGE GATE VALVE, EPOXY COATED INSIDER PER AWWA C-550.
- 7 INSTALL COMPLETE FIRE HYDRANT ASSEMBLY PER M.A.G. STANDARD DETAIL 360-2. LOCATED PER C.O.A. STANDARD DETAIL A1362.
- 20 INSTALL 16"x8" DIP TEE OR CROSS WITH THRUST BLOCKING PER M.A.G. STANDARD DETAIL 380 OR APPROVED EQUAL. INSTALL BLUE MARKER BALL WHERE A VALVE IS NOT PRESENT.
- 22 INSTALL 16"x12" DIP TEE OR CROSS WITH THRUST BLOCKING PER M.A.G. STANDARD DETAIL 380 OR APPROVED EQUAL. INSTALL BLUE MARKER BALL WHERE A VALVE IS NOT PRESENT.
- 23 INSTALL 8" DUCTILE IRON PIPE, CLASS 350 CEMENT MORTAR LINED AND SEAL COATED, POLY WRAPPED PER M.A.G. SECTION 610.6. MINIMUM 4' COVER. TRENCHING PER C.O.A. STANDARD DETAIL A1130.
- 24 INSTALL 12" DUCTILE IRON PIPE, CLASS 350 CEMENT MORTAR LINED AND SEAL COATED, POLY WRAPPED PER M.A.G. SECTION 610.6 AND. MINIMUM 5' COVER WITH FIELD LOCK GASKETS. TRENCHING PER C.O.A. STANDARD DETAIL A1130.
- 25 INSTALL 16" GATE VALVE, BOX AND COVER PER C.O.A. STANDARD DETAIL A1391, & M.A.G. STANDARD DETAIL 301. USE RESILIENT SEAT/WEDGE GATE VALVE, EPOXY COATED INSIDER PER AWWA C-550.
- 26 INSTALL CURB STOP WITH FLUSHING PIPE PER M.A.G. STANDARD DETAIL 390, TYPE 'A'.
- 29 INSTALL 16" DUCTILE IRON PIPE, CLASS 350 CEMENT MORTAR LINED AND SEAL COATED, POLY WRAPPED PER M.A.G. SECTION 610.6. MINIMUM 5' COVER WITH FIELD LOCK GASKETS. TRENCHING PER C.O.A. STANDARD DETAIL A1130.
- 42 INSTALL DUCTILE IRON CAP. SIZE PER PLAN.

SCALE (HORIZ.) 1" = 20'  
SCALE (VERT.) 1" = 2'

**WOOD/PATEL**  
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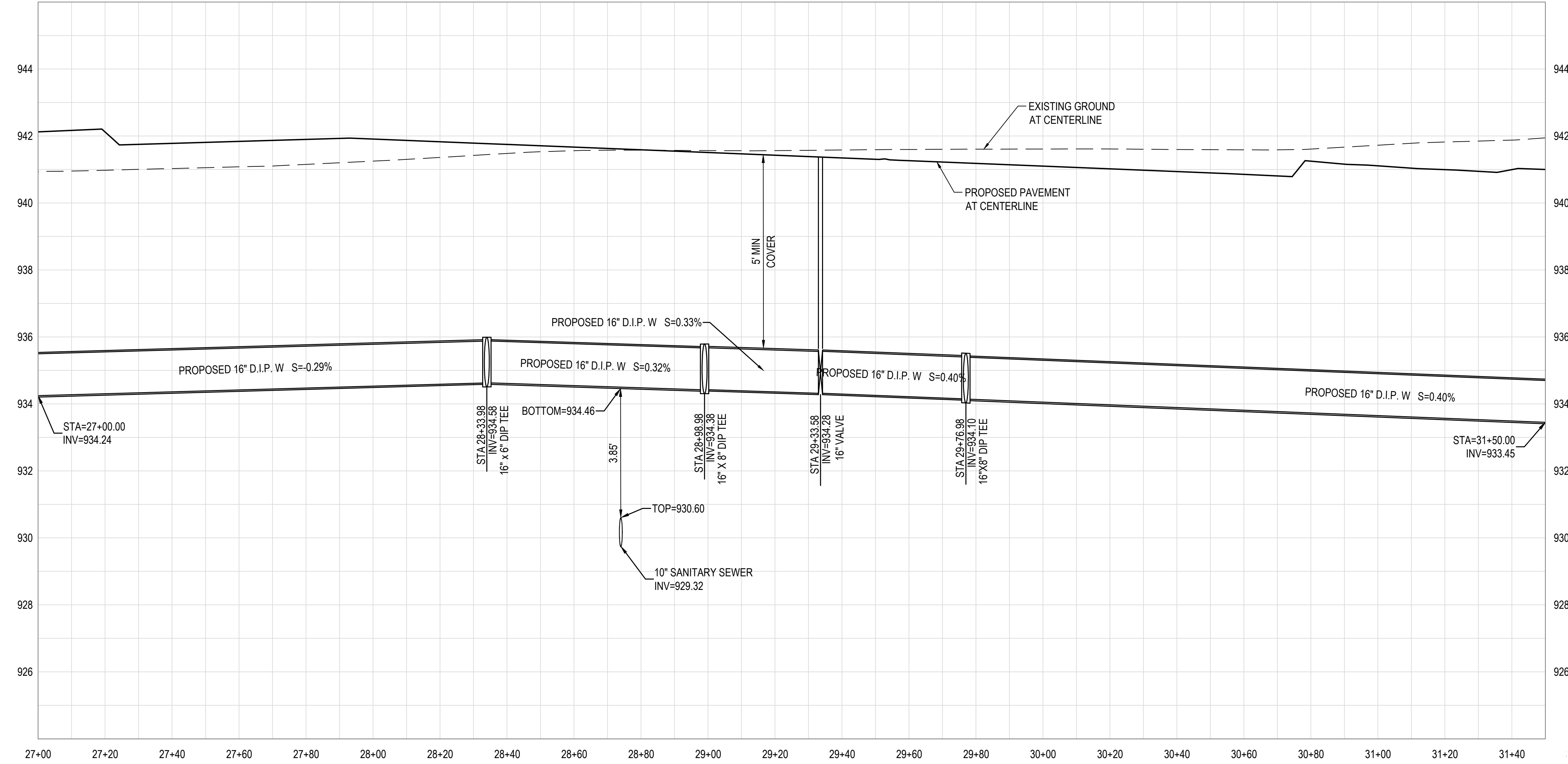
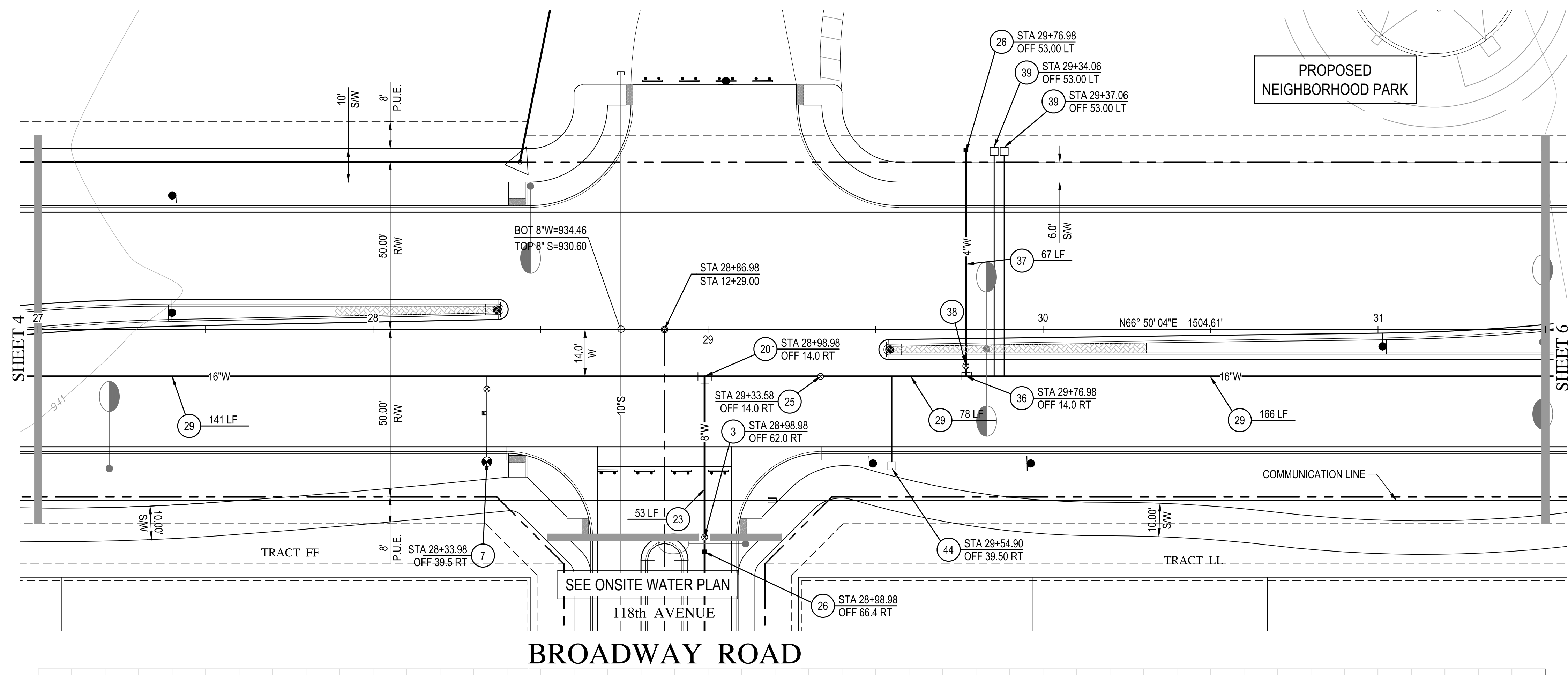
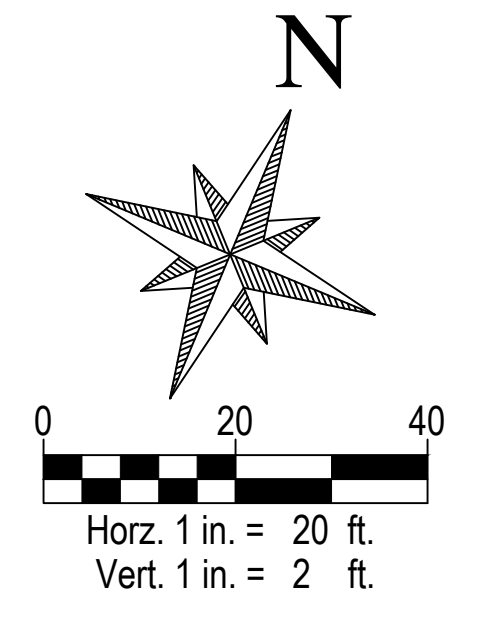


DEVELOPER/BROOKFIELD LAKIN, LLC  
PROJECT NAME/ALAMAR - PHASE 1  
PLAN TYPE/INFRASTRUCTURE WATER PLAN



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PLAN DATE/11/08/2018  
LATEST REVISION DATE/  
SHEET NUMBER/4 OF 16  
PROJECT NUMBER/174612.04



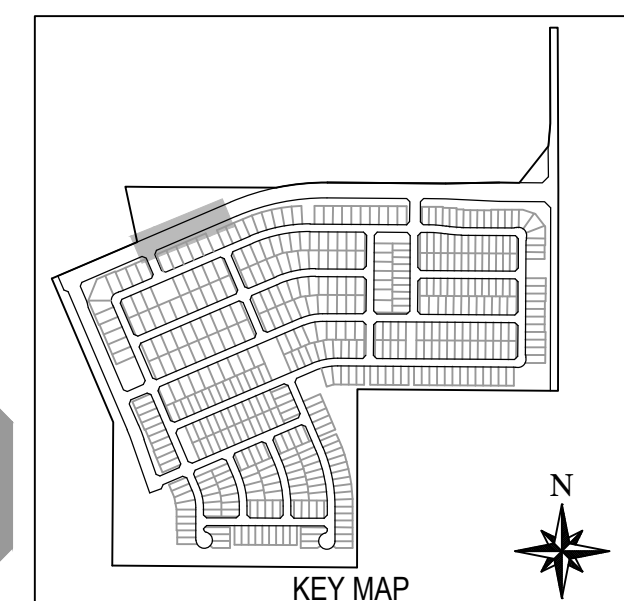
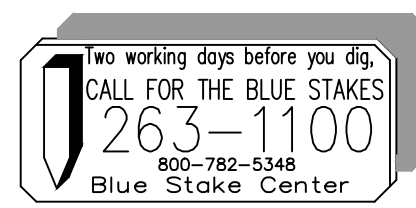
- WATER NOTES**
- 3 INSTALL 8" GATE VALVE, BOX AND COVER PER C.O.A. STANDARD DETAIL A1391, & M.A.G. STANDARD DETAIL 301, USE RESILIENT SEAT/WEDGE GATE VALVE, EPOXY COATED INSIDER PER AWWA C-550.
  - 7 INSTALL COMPLETE FIRE HYDRANT ASSEMBLY PER M.A.G. STANDARD DETAIL 360-2, LOCATED PER C.O.A. STANDARD DETAIL A1362.
  - 20 INSTALL 16"x8" DIP TEE OR CROSS WITH THRUST BLOCKING PER M.A.G. STANDARD DETAIL 380 OR APPROVED EQUAL. INSTALL BLUE MARKER BALL WHERE A VALVE IS NOT PRESENT.
  - 23 INSTALL 8" DUCTILE IRON PIPE, CLASS 350 CEMENT MORTAR LINED AND SEAL COATED, POLY WRAPPED PER M.A.G. SECTION 610.6. MINIMUM 4' COVER. TRENCHING PER C.O.A. STANDARD DETAIL A1130.
  - 25 INSTALL 16" GATE VALVE, BOX AND COVER PER C.O.A. STANDARD DETAIL A1391, & M.A.G. STANDARD DETAIL 301, USE RESILIENT SEAT/WEDGE GATE VALVE, EPOXY COATED INSIDER PER AWWA C-550.
  - 26 INSTALL CURB STOP WITH FLUSHING PIPE PER M.A.G. STANDARD DETAIL 390, TYPE 'A'.
  - 29 INSTALL 16" DUCTILE IRON PIPE, CLASS 350 CEMENT MORTAR LINED AND SEAL COATED, POLY WRAPPED PER M.A.G. SECTION 610.6. MINIMUM 5' COVER WITH FIELD LOCK GASKETS. TRENCHING PER C.O.A. STANDARD DETAIL A1130.
  - 36 INSTALL 16"x4" DIP TEE OR CROSS WITH THRUST BLOCKING PER M.A.G. STANDARD DETAIL 380 OR APPROVED EQUAL. INSTALL BLUE MARKER BALL WHERE A VALVE IS NOT PRESENT.
  - 37 INSTALL 4" DUCTILE IRON PIPE, CLASS 350 CEMENT MORTAR LINED AND SEAL COATED, POLY WRAPPED PER M.A.G. SECTION 610.6. MINIMUM 4' COVER. TRENCHING PER C.O.A. STANDARD DETAIL A1130.
  - 38 INSTALL 4" GATE VALVE, BOX AND COVER PER C.O.A. STANDARD DETAIL A1391, & M.A.G. STANDARD DETAIL 301, USE RESILIENT SEAT/WEDGE GATE VALVE, EPOXY COATED INSIDER PER AWWA C-550.
  - 39 INSTALL 2" WATER SERVICE AND METER BOX PER C.O.A. STANDARD DETAILS A1300 & A1302.
  - 44 INSTALL 2" WATER SERVICE AND 2" METER BOX PER C.O.A. STANDARD DETAIL A1300 & A1302. INSTALL 2" BACKFLOW PREVENTOR PER C.O.A. STANDARD DETAIL A1326.

SCALE (HORIZ.) 1" = 20'  
SCALE (VERT.) 1" = 2'

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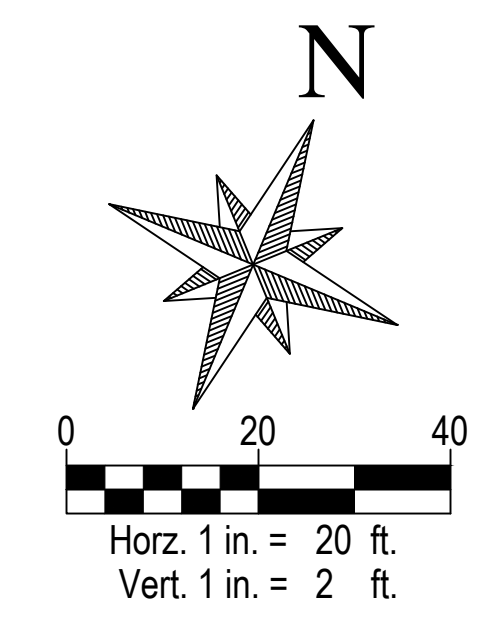
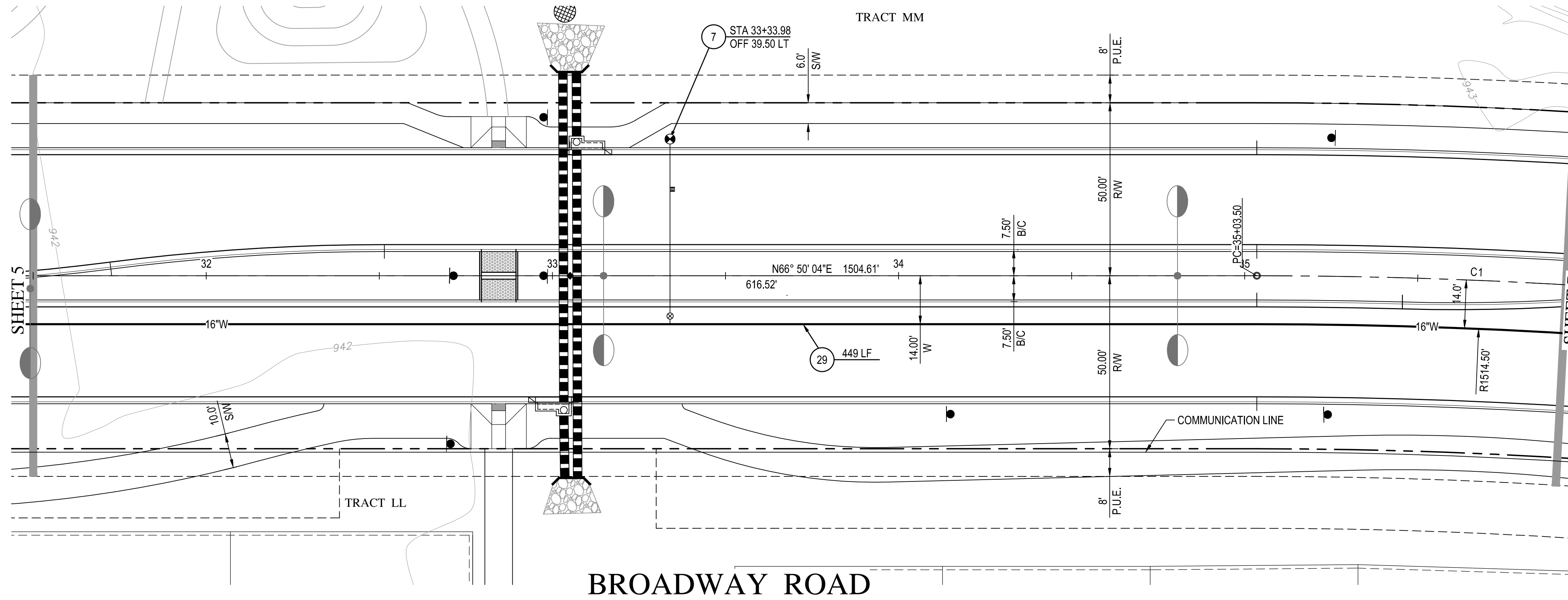


DEVELOPER/BROOKFIELD LAKIN, LLC  
PROJECT NAME: ALAMAR - PHASE 1  
PLAN TYPE: INFRASTRUCTURE WATER PLAN



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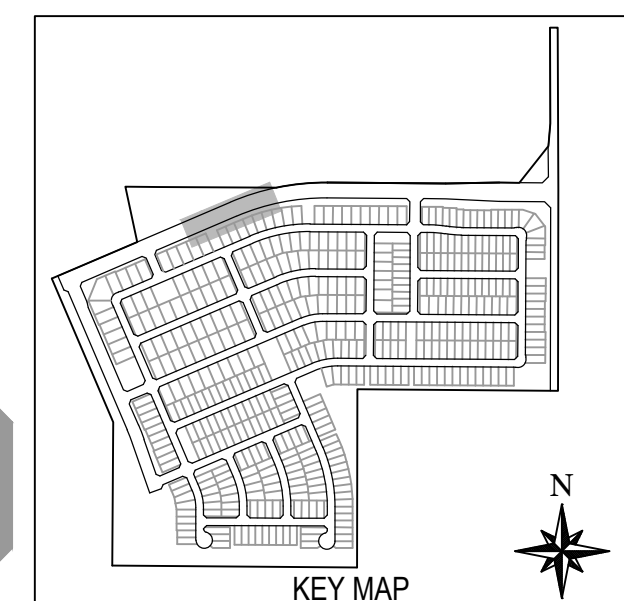
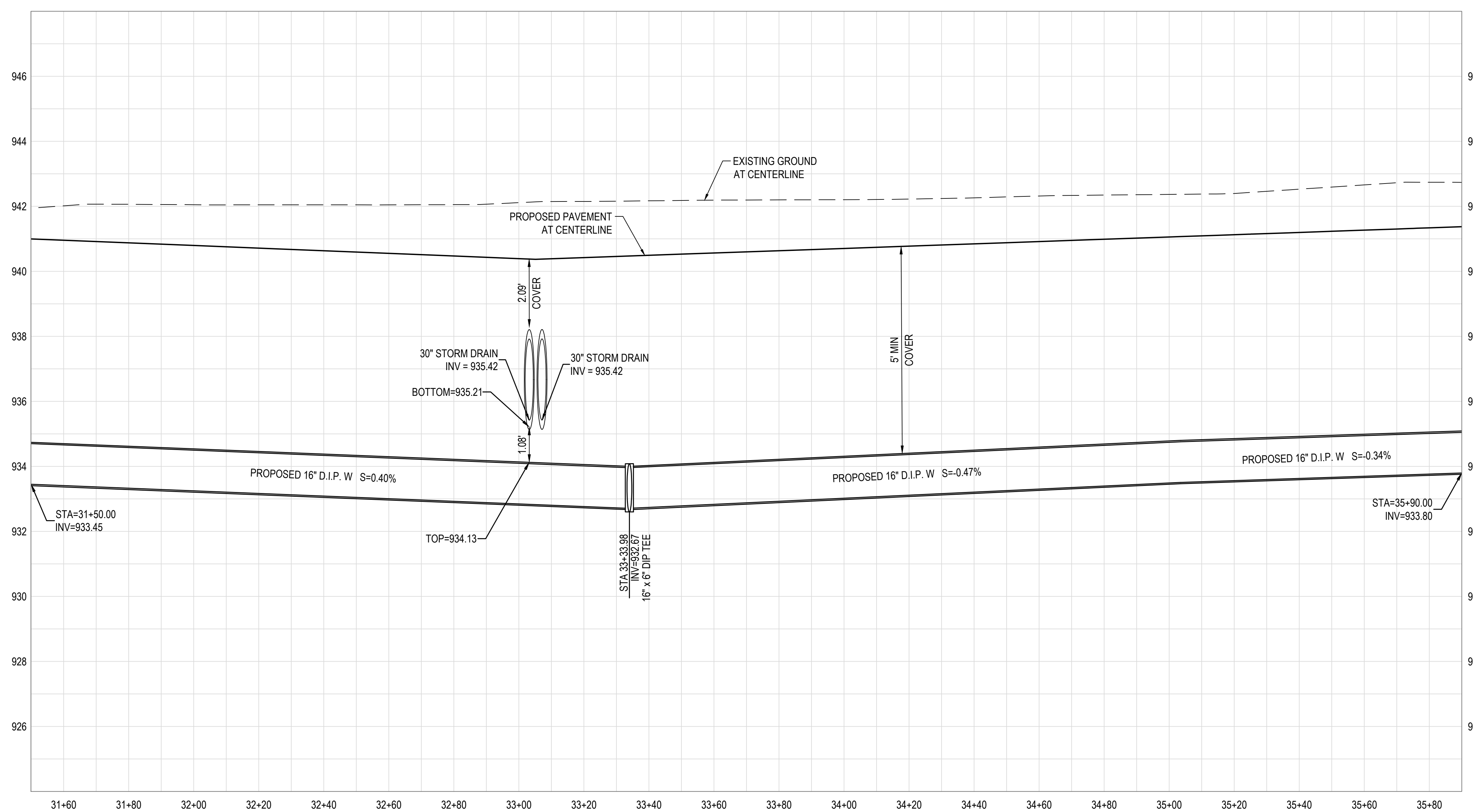
PLAN DATE: 11/08/2018  
LATEST REVISION DATE:  
SHEET NUMBER: 5 OF 16  
PROJECT NUMBER: 174612.04



**WATER NOTES**

- 7 INSTALL COMPLETE FIRE HYDRANT ASSEMBLY PER M.A.G. STANDARD DETAIL 360-2. LOCATED PER C.O.A. STANDARD DETAIL A1362.
- 29 INSTALL 16" DUCTILE IRON PIPE, CLASS 350 CEMENT MORTAR LINED AND SEAL COATED, POLY WRAPPED PER M.A.G. SECTION 610.6. MINIMUM 5' COVER WITH FIELD LOCK GASKETS. TRENCHING PER C.O.A. STANDARD DETAIL A1130.

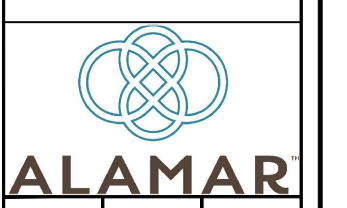
CENTERLINE CURVE TABLE					
CURVE	DELTA	RADIUS	ARC	TANGENT	CHORD
C1	23°32'28"	1528.53'	628.01'	318.50	623.61



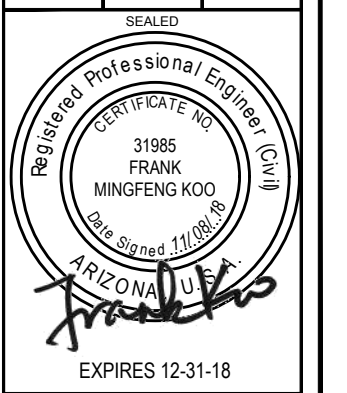
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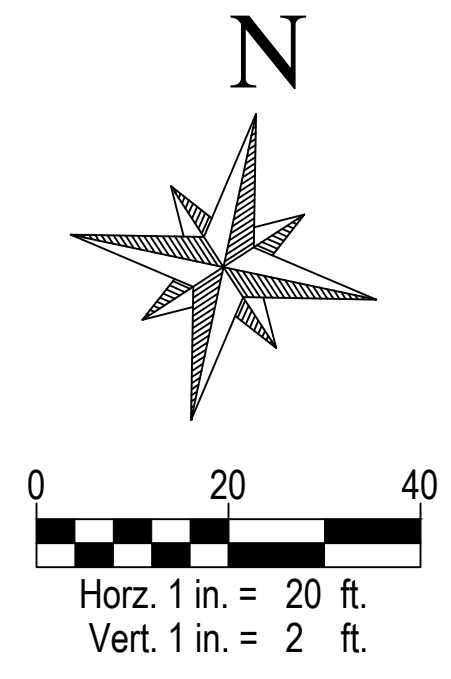
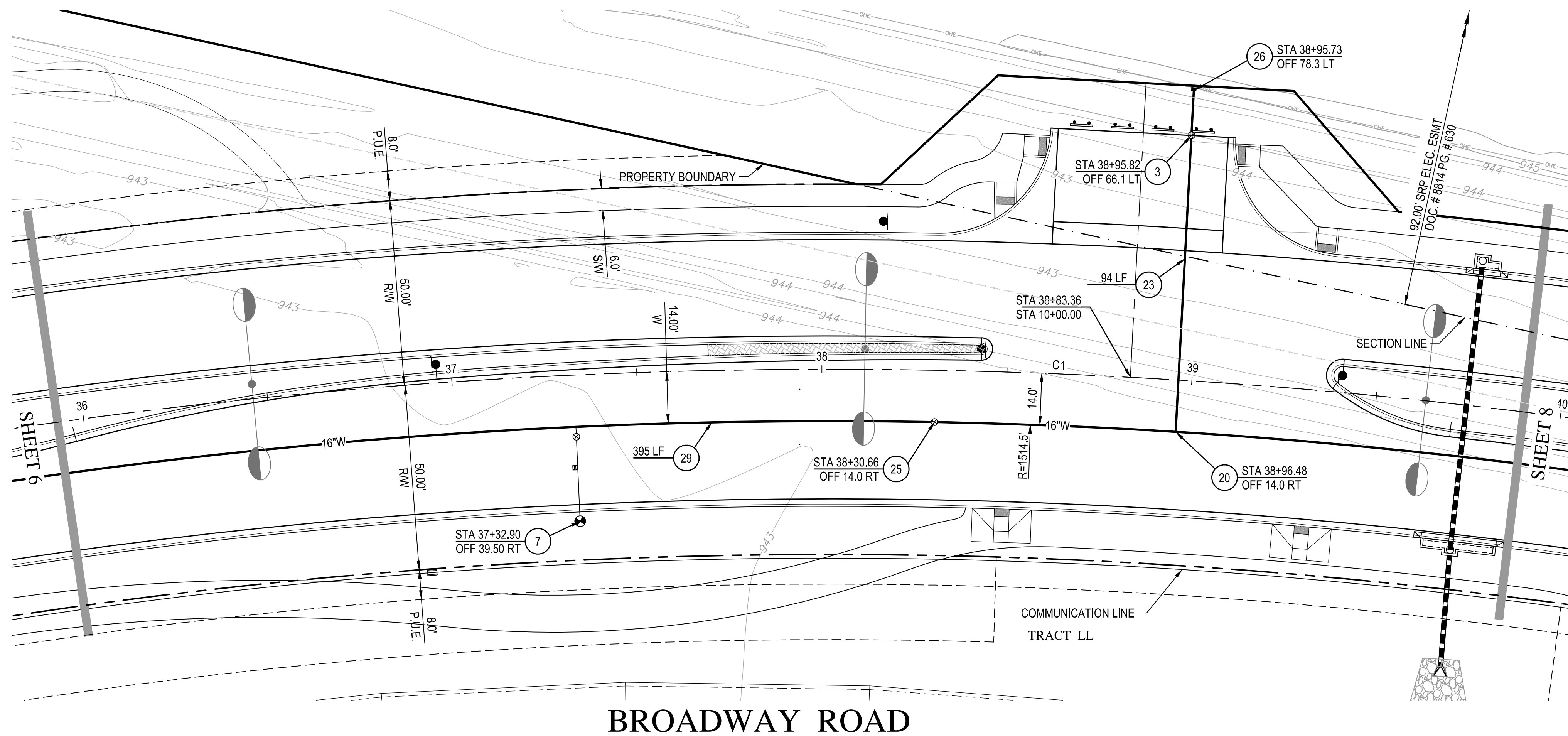


DEVELOPER/BROOKFIELD LAKIN, LLC  
 PROJECT NAME: ALAMAR - PHASE 1  
 PLAN TYPE: INFRASTRUCTURE WATER PLAN



DATE: 11/08/2018  
 SHEET NUMBER: 6 OF 16  
 PROJECT NUMBER: 174612.04

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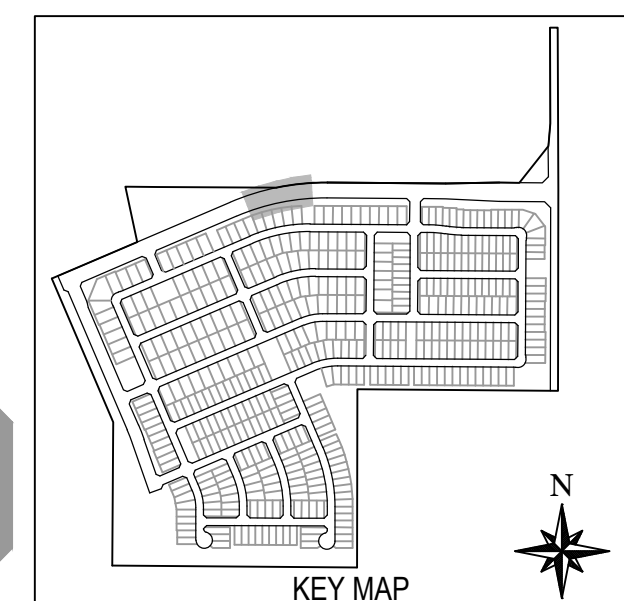
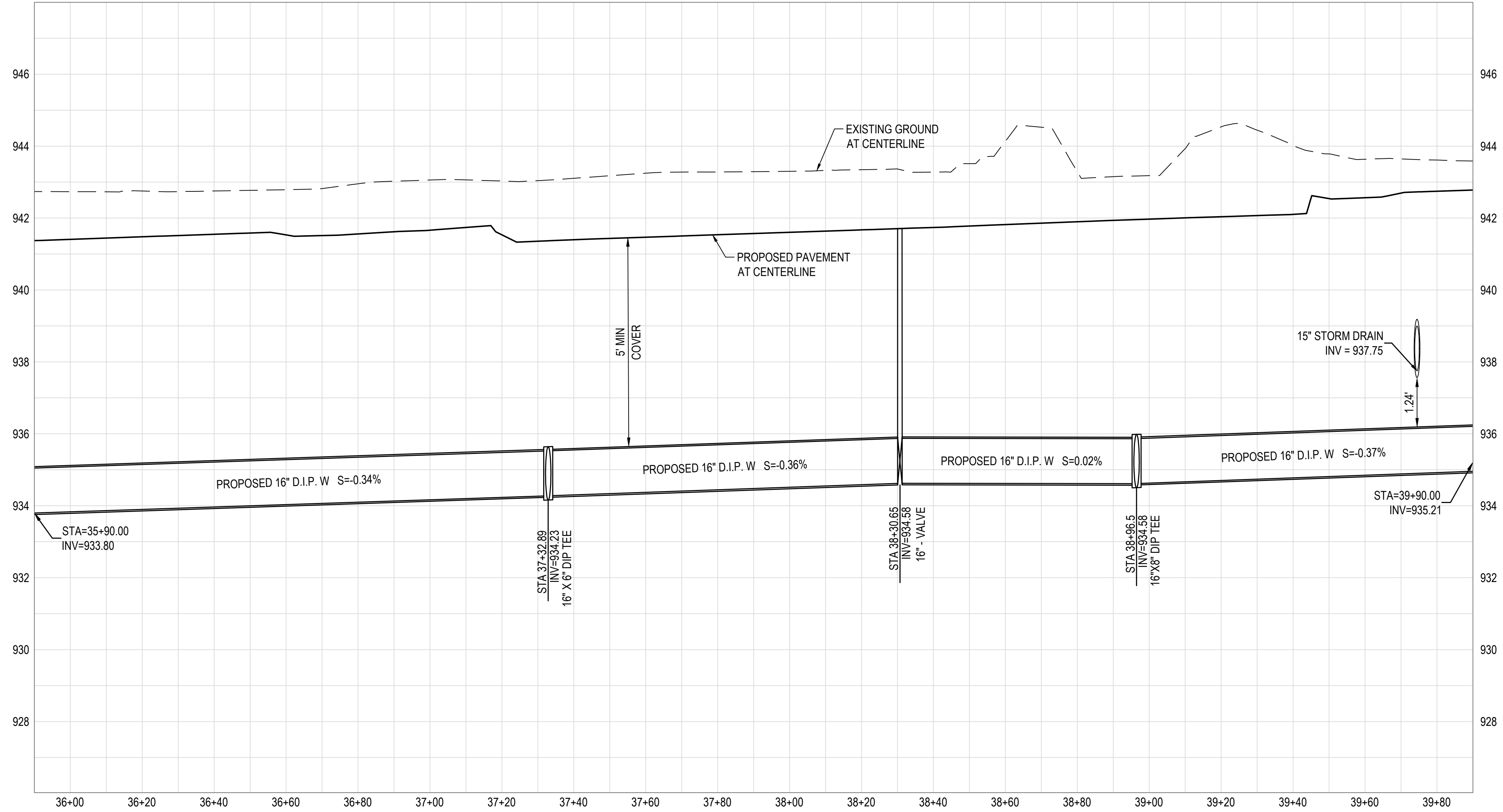
- WATER NOTES**
- ③ INSTALL 8" GATE VALVE, BOX AND COVER PER C.O.A. STANDARD DETAIL A1391, & M.A.G. STANDARD DETAIL 301. USE RESILIENT SEAT/WEDGE GATE VALVE, EPOXY COATED INSIDER PER AWWA C-550.
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  - ②① INSTALL 16"x8" DIP TEE OR CROSS WITH THRUST BLOCKING PER M.A.G. STANDARD DETAIL 380 OR APPROVED EQUAL. INSTALL BLUE MARKER BALL WHERE A VALVE IS NOT PRESENT.
  - ②③ INSTALL 8" DUCTILE IRON PIPE, CLASS 350 CEMENT MORTAR LINED AND SEAL COATED, POLY WRAPPED PER M.A.G. SECTION 610.6. MINIMUM 4' COVER. TRENCHING PER C.O.A. STANDARD DETAIL A1130.
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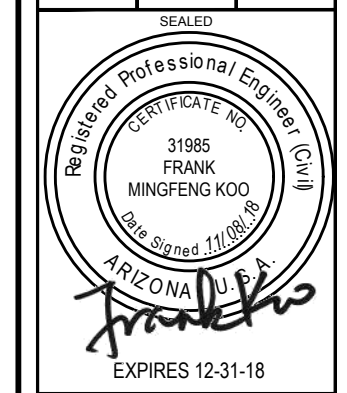


BROOKFIELD LAKIN, LLC  
ALAMAR - PHASE 1  
INFRASTRUCTURE WATER PLAN

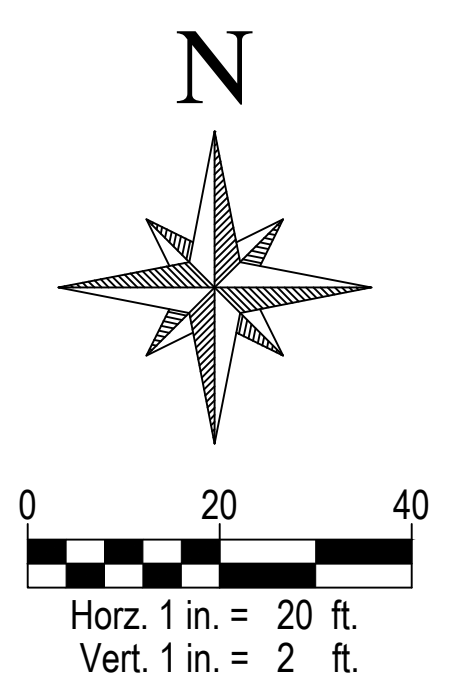
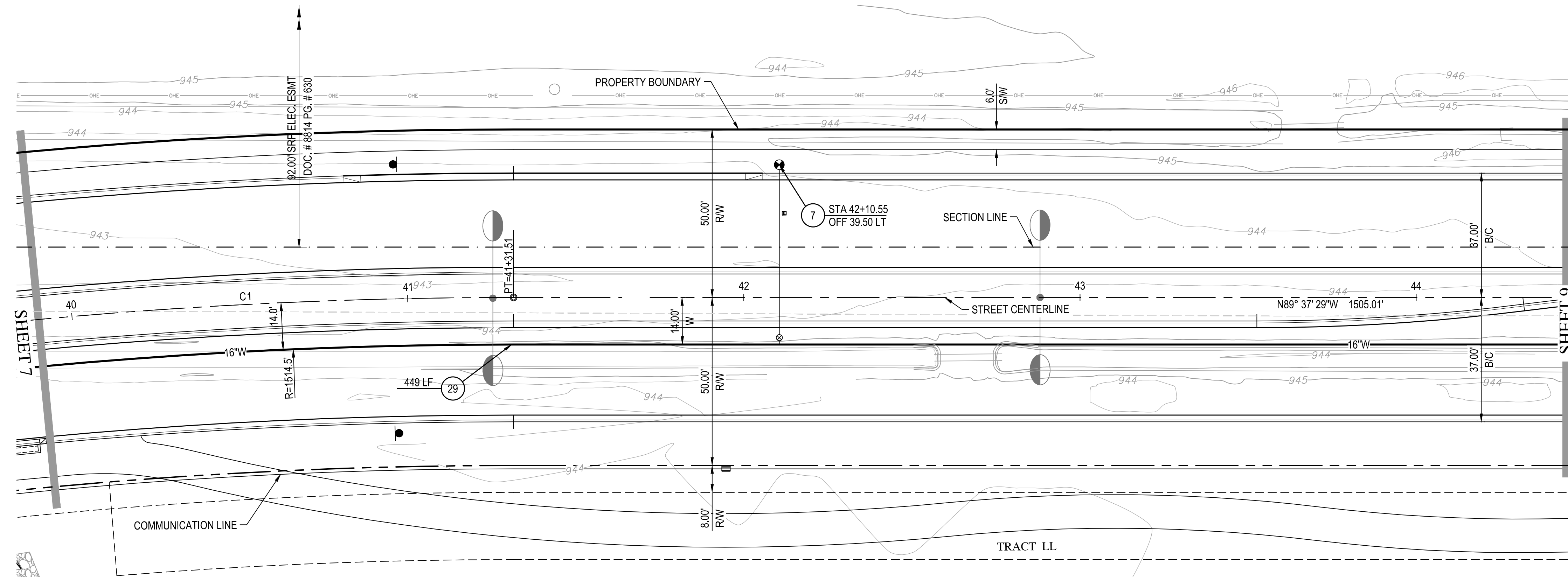
CENTERLINE CURVE TABLE				
CURVE	DELTA	RADIUS	ARC TANGENT	CHORD
C1	23°32'26"	1528.53'	628.01'	318.50



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DATE: 11/08/2018  
SHEET NUMBER: 7 OF 16  
PROJECT NUMBER: 174612.04

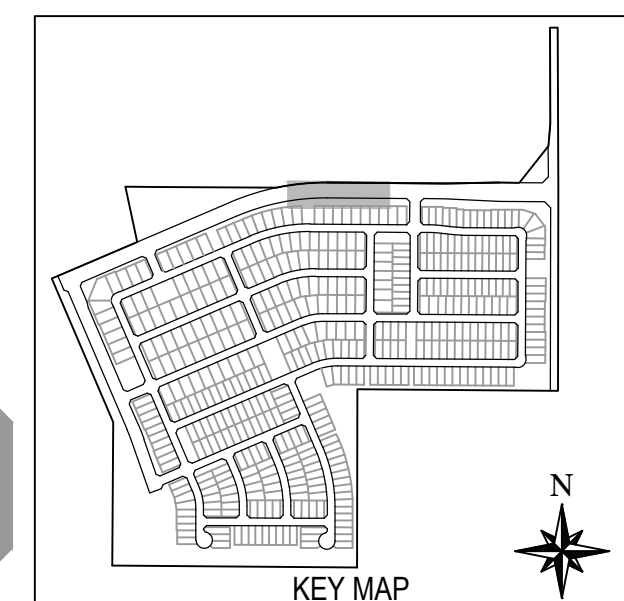
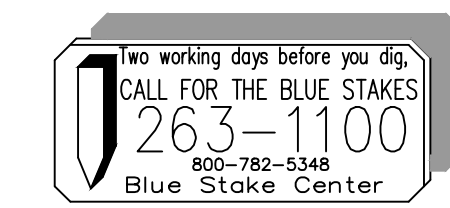
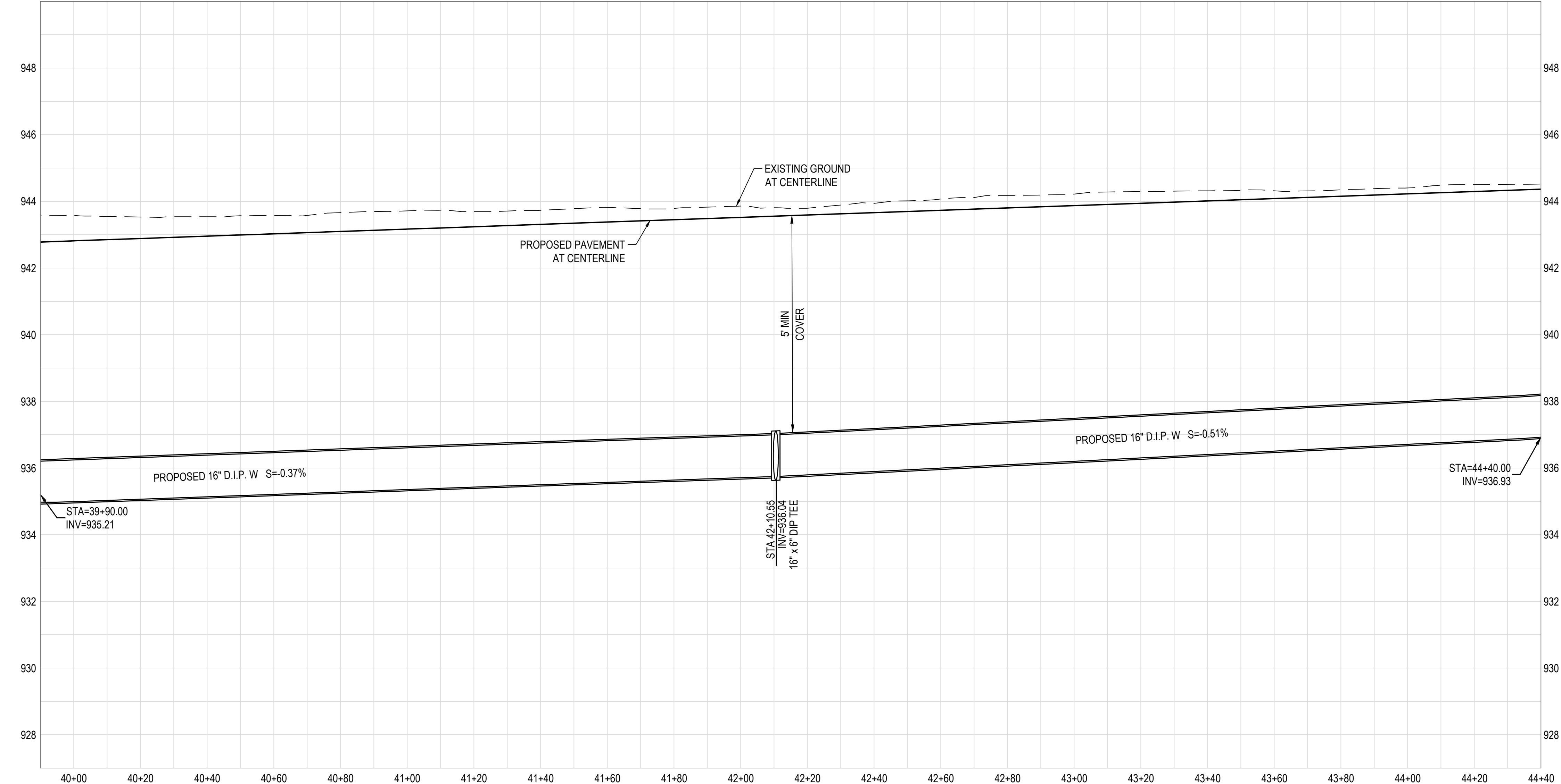


**WATER NOTES**

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**BROADWAY ROAD**



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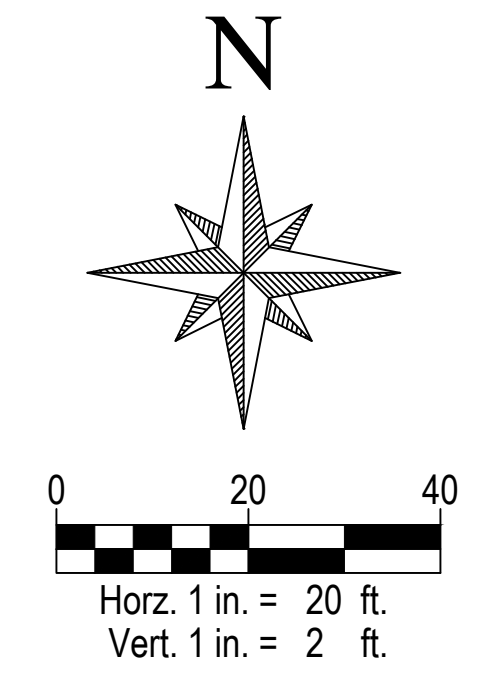
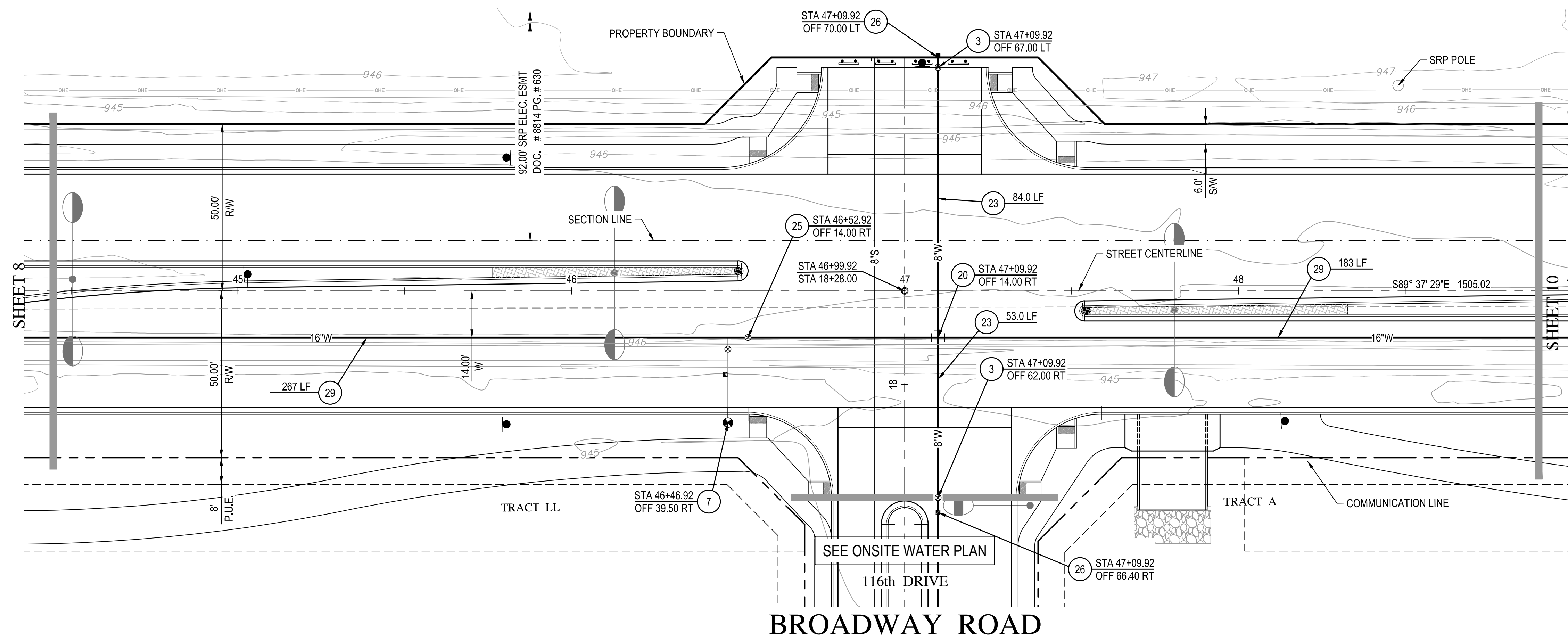


DEVELOPER/BROOKFIELD LAKIN, LLC  
 PROJECT NAME: ALAMAR - PHASE 1  
 PLAN TYPE: INFRASTRUCTURE WATER PLAN

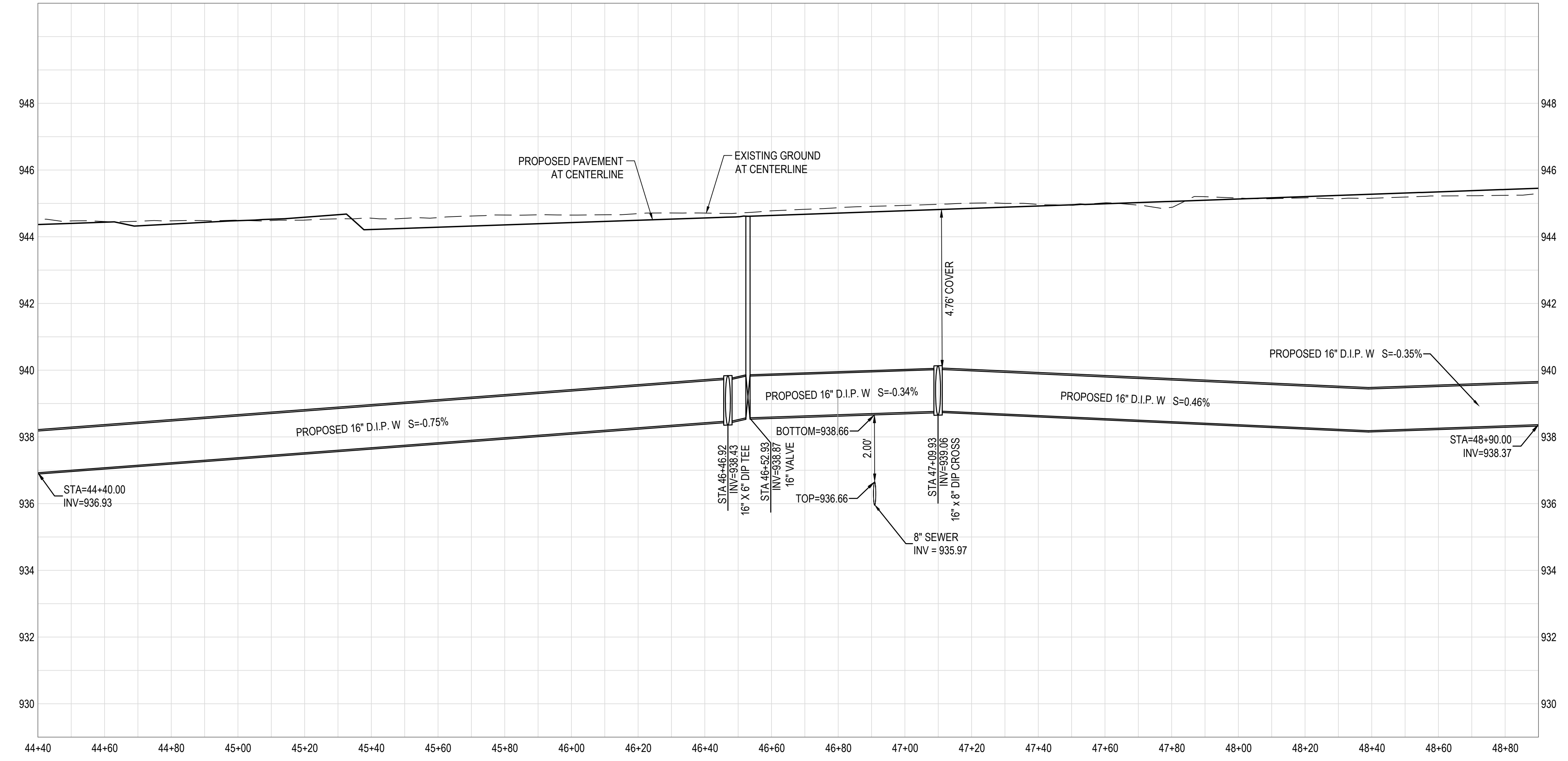


PLAN DATE: 11/08/2018  
 SHEET NUMBER: 8 OF 16  
 PROJECT NUMBER: 174612.04

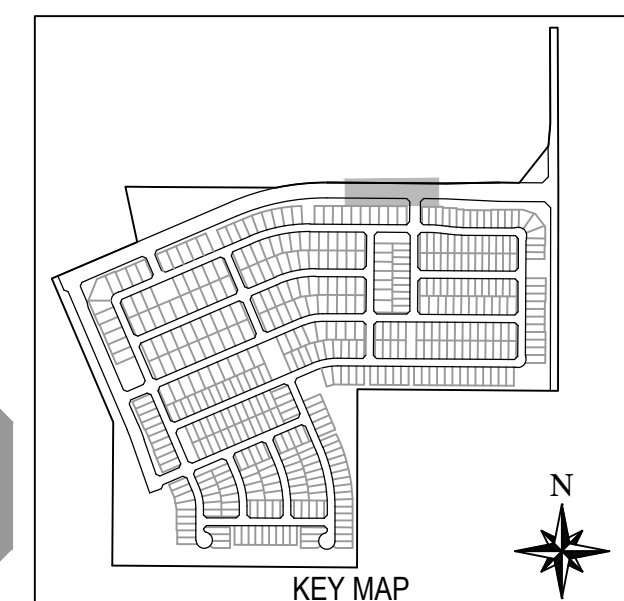




- WATER NOTES**
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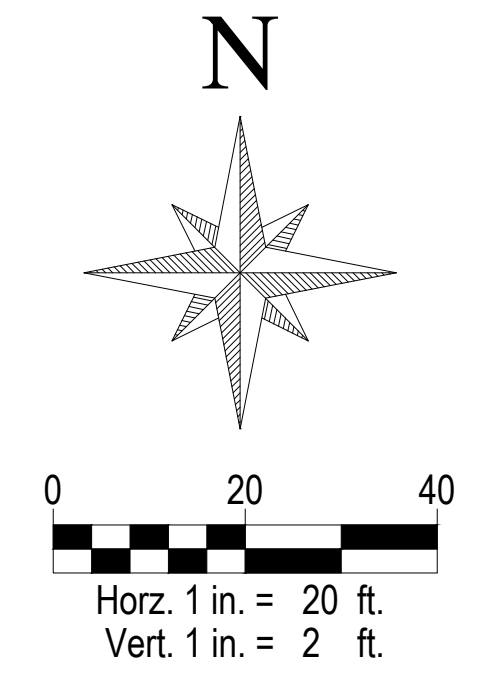
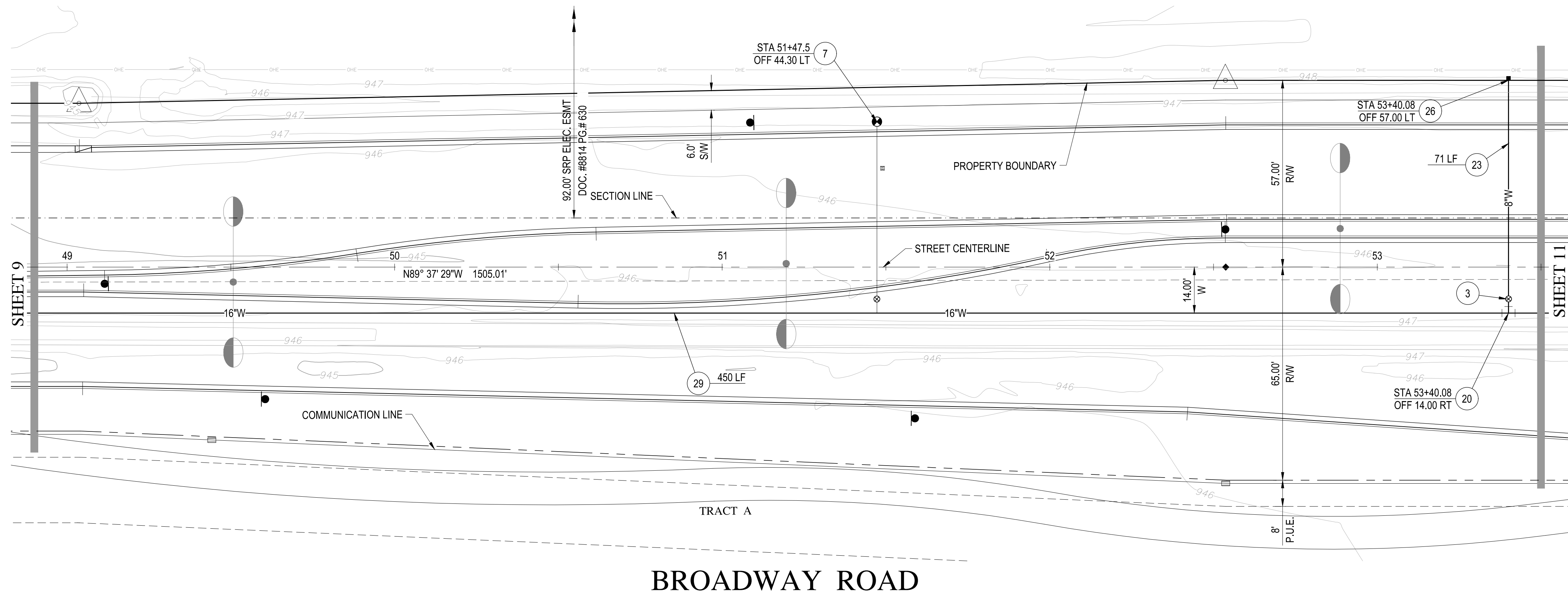


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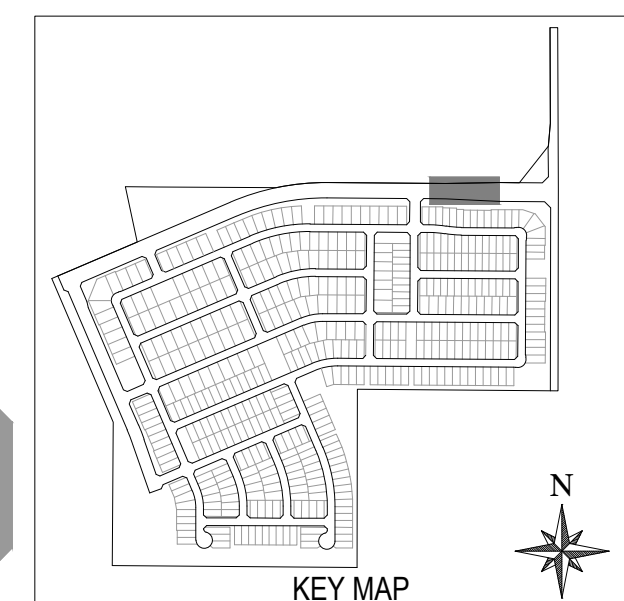
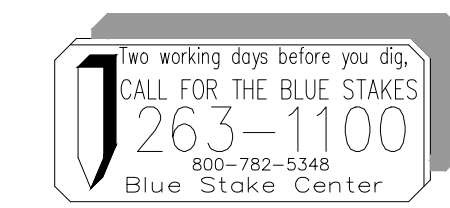
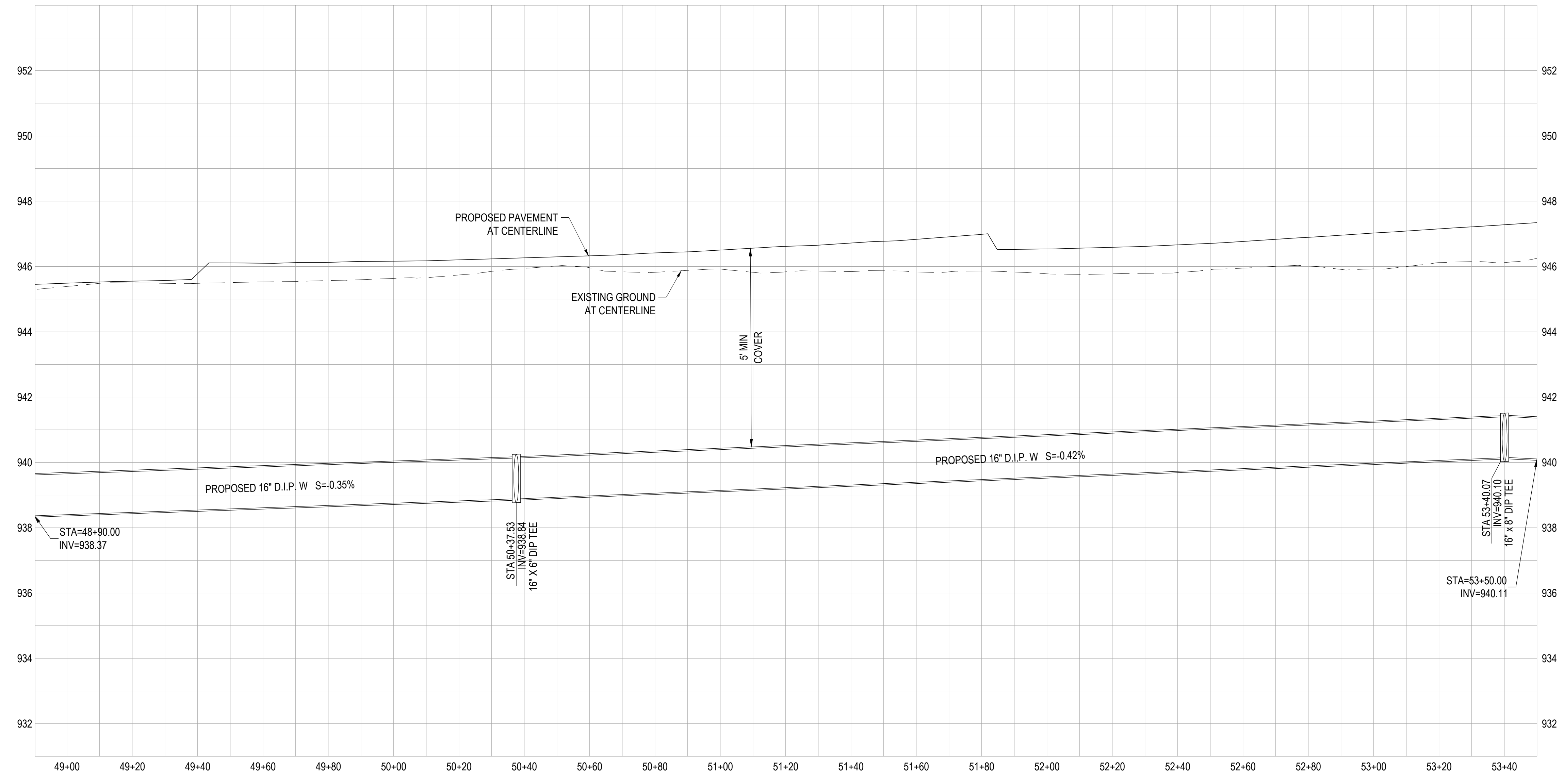
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<p><b>ALAMAR</b></p>	
<p>DEVELOPER <b>BROOKFIELD LAKIN, LLC</b></p>	<p>PROJECT NAME <b>ALAMAR - PHASE 1</b></p>
<p>PLAN TYPE <b>INFRASTRUCTURE WATER PLAN</b></p>	
<p>SEAL Professional Engineer 31985 FRANK MINGFENG WOO Arizona Expires 11/30/2018</p>	
<p>PLAN DATE <b>11/08/2018</b></p>	
<p>LATEST REVISION DATE</p>	
<p>SHEET NUMBER <b>9 OF 16</b></p>	
<p>PROJECT NUMBER <b>174612.04</b></p>	



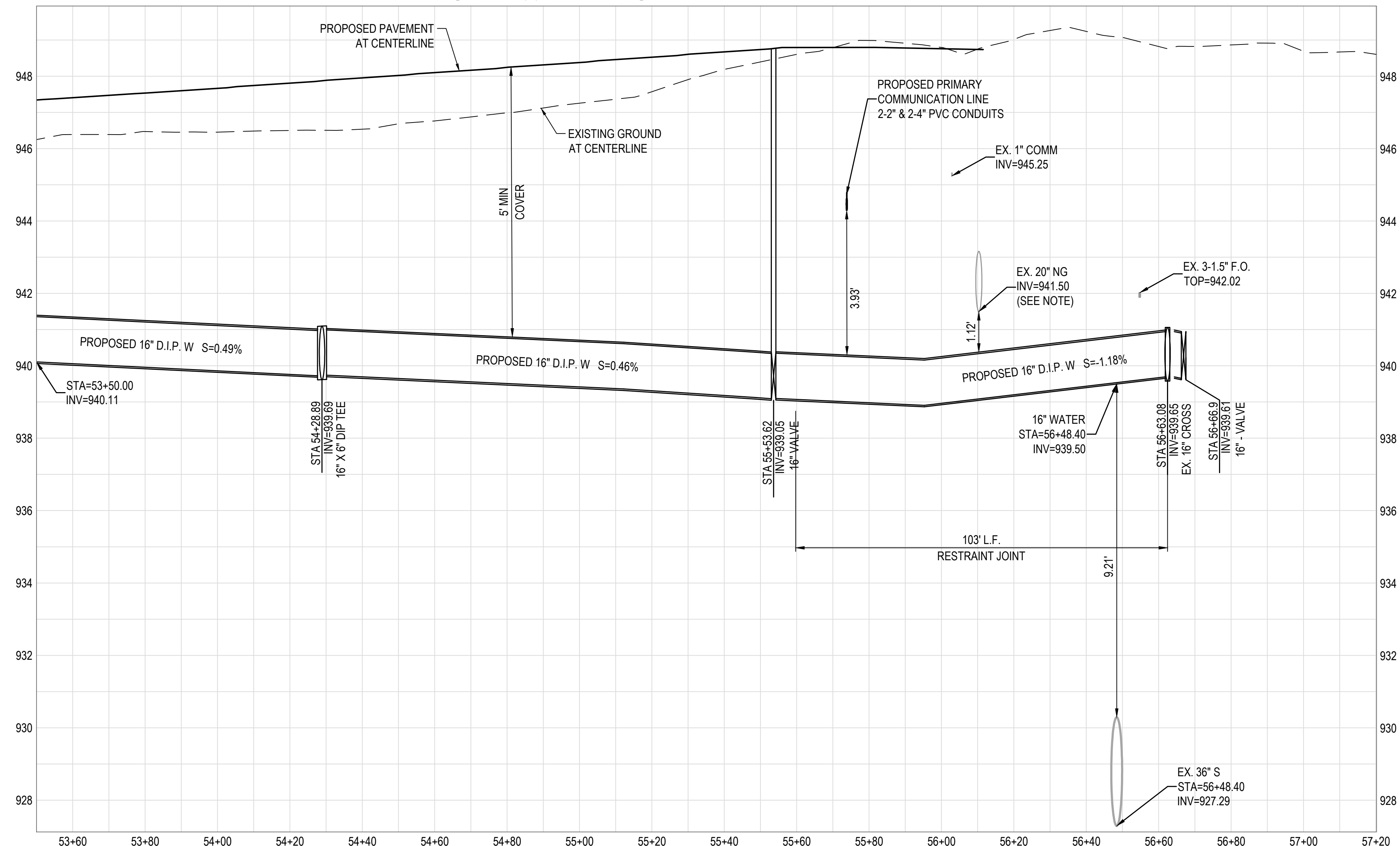
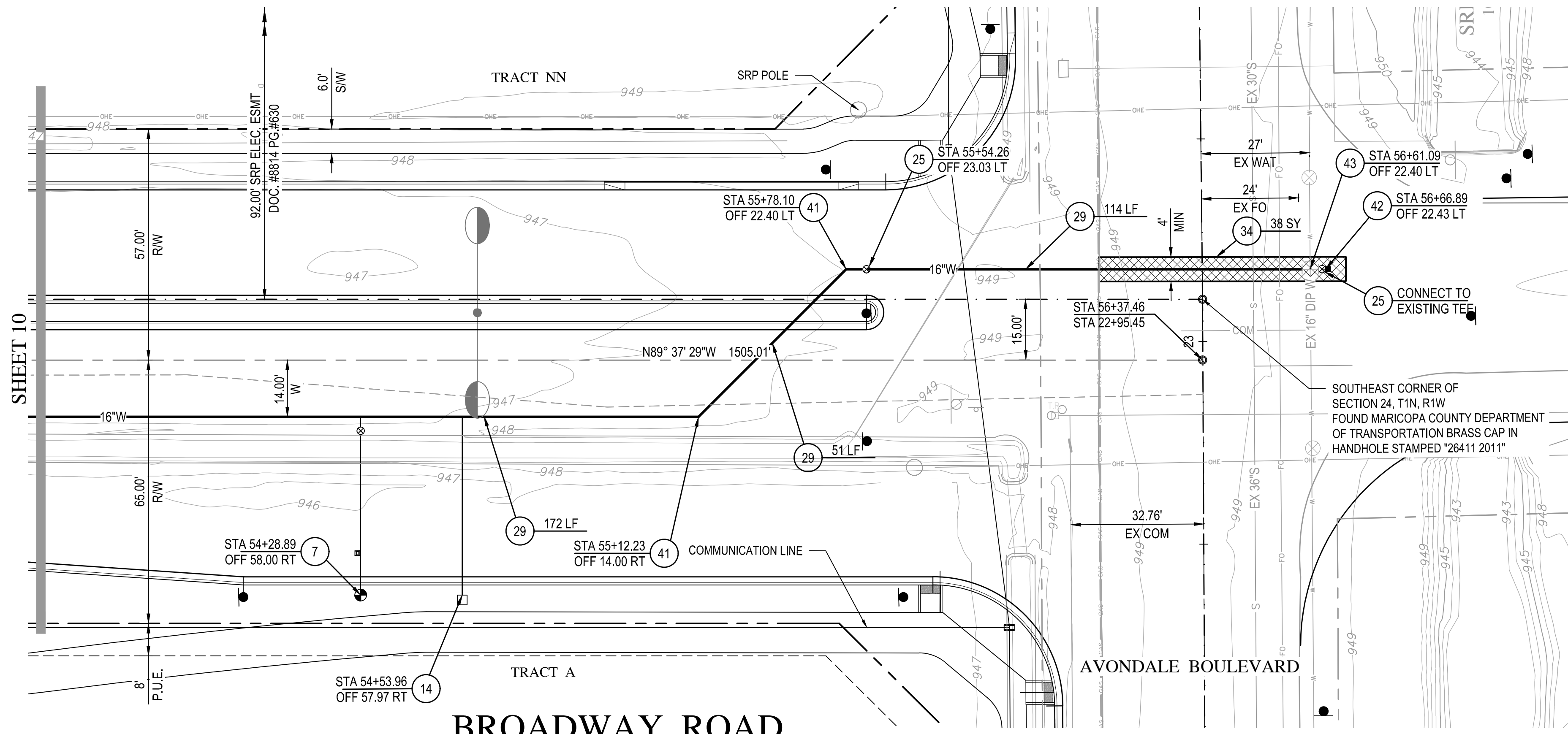
**WATER NOTES**

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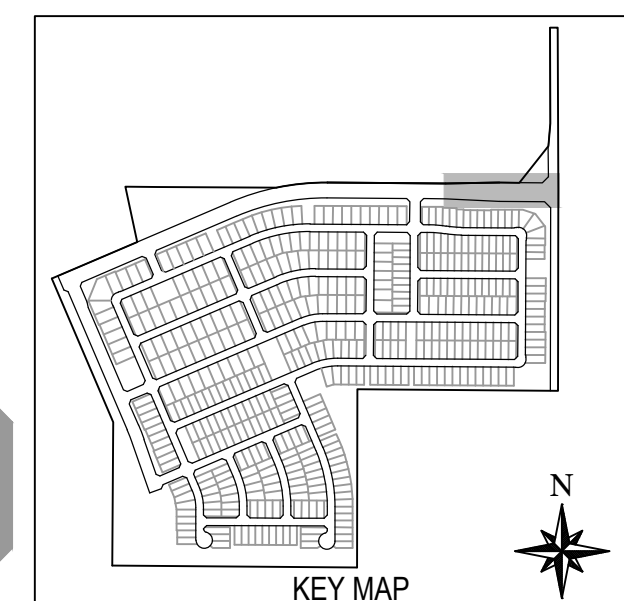
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 <b>WOOD/PATEL</b> MISSION: CLIENT SERVICE (602) 335-8500 WWW.WOODPATEL.COM	 <b>ALAMAR</b>	DEVELOPER <b>BROOKFIELD LAKIN, LLC</b> PROJECT NAME <b>ALAMAR - PHASE 1</b> PLAN TYPE <b>INFRASTRUCTURE WATER PLAN</b>
SCALE (HORIZ.) 1" = 20' SCALE (VERT.) 1" = 2'	SEAL  <b>Frank Mingengoo</b> REGISTERED PROFESSIONAL ENGINEER No. 31985 FRANK MINGENGOO (Expires 12/31/18) PLAN DATE <b>11/08/2018</b> LATEST REVISION DATE	SHEET NUMBER <b>10 OF 16</b> PROJECT NUMBER <b>174612.04</b>



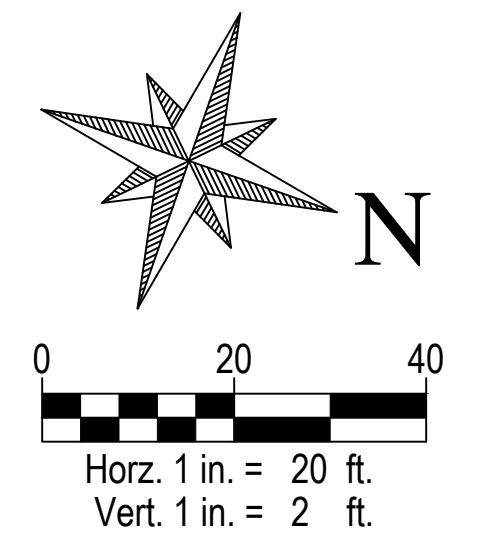
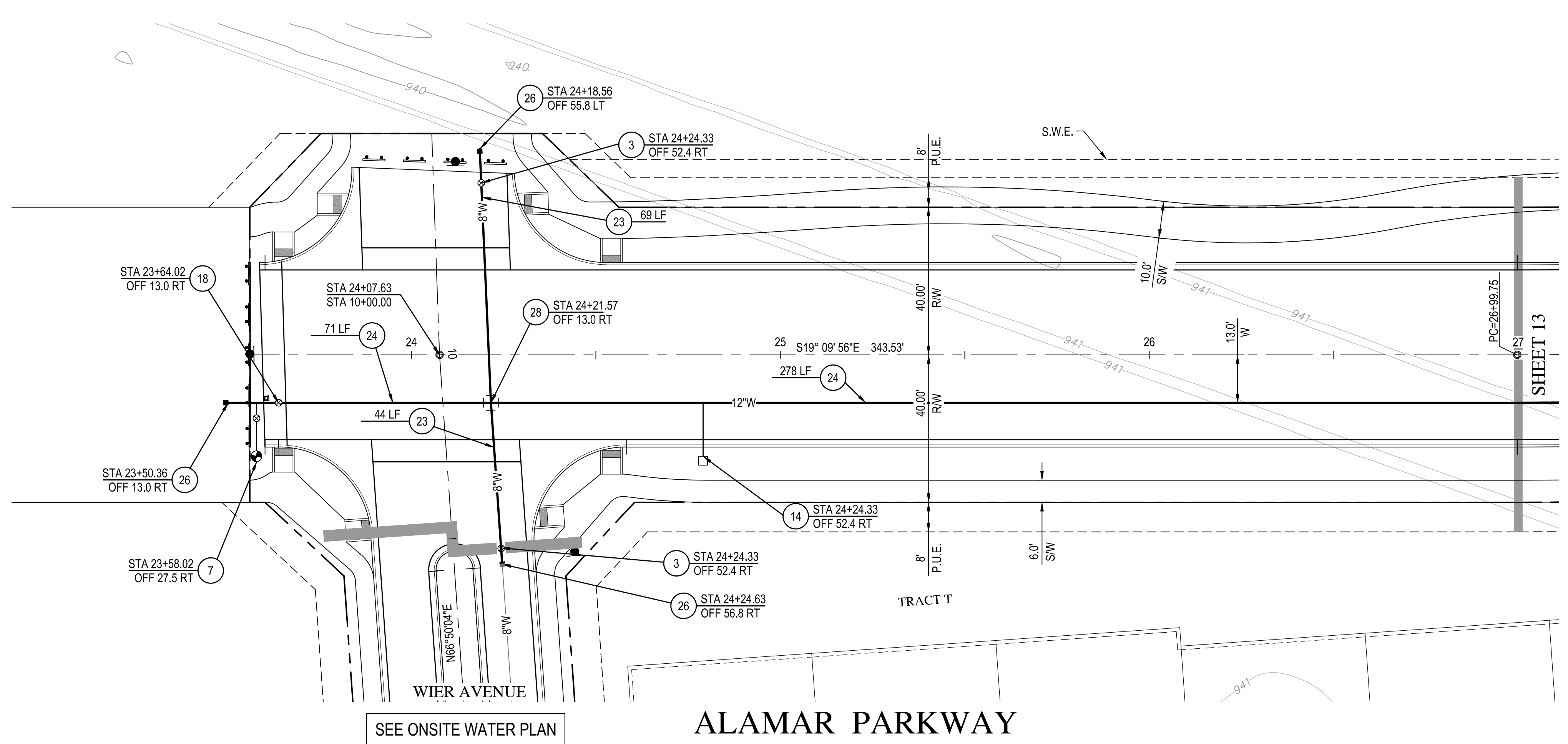
- WATER NOTES**
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  - 14 INSTALL 2" WATER SERVICE AND 1-1/2" METER BOX PER C.O.A. STANDARD DETAIL A1300 & A1302. INSTALL 2" BACKFLOW PREVENTOR PER C.O.A. STANDARD DETAIL A1326.
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  - 34 SAWCUT AND REMOVE & REPLACE EXISTING PAVEMENT PER M.A.G. SPECIFICATIONS SECTIONS 310 AND 321. PAVEMENT TO BE 5" AC IN 2 LIFTS. BACKFILL TRENCH UNDER PAVEMENT WITH 1/2 SACK CLSM.
  - 41 INSTALL 16" DIP - 45° BEND WITH RESTRAINED JOINT WITH FIELD LOCK GASKETS. INSTALL BLUE MARKER BALL WHERE A VALVE IS NOT PRESENT.
  - 42 INSTALL DUCTILE IRON CAP. SIZE PER PLAN.
  - 43 CONTRACTOR TO LOCATE EXISTING 16" WATER CROSS. NOTIFY OWNER'S AGENT OF ANY DISCREPANCY. CONNECT NEW WATERLINE TO EXISTING CROSS.

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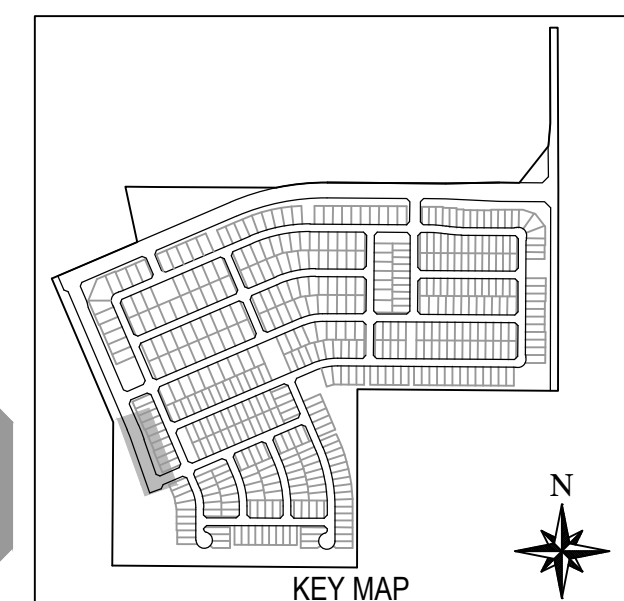
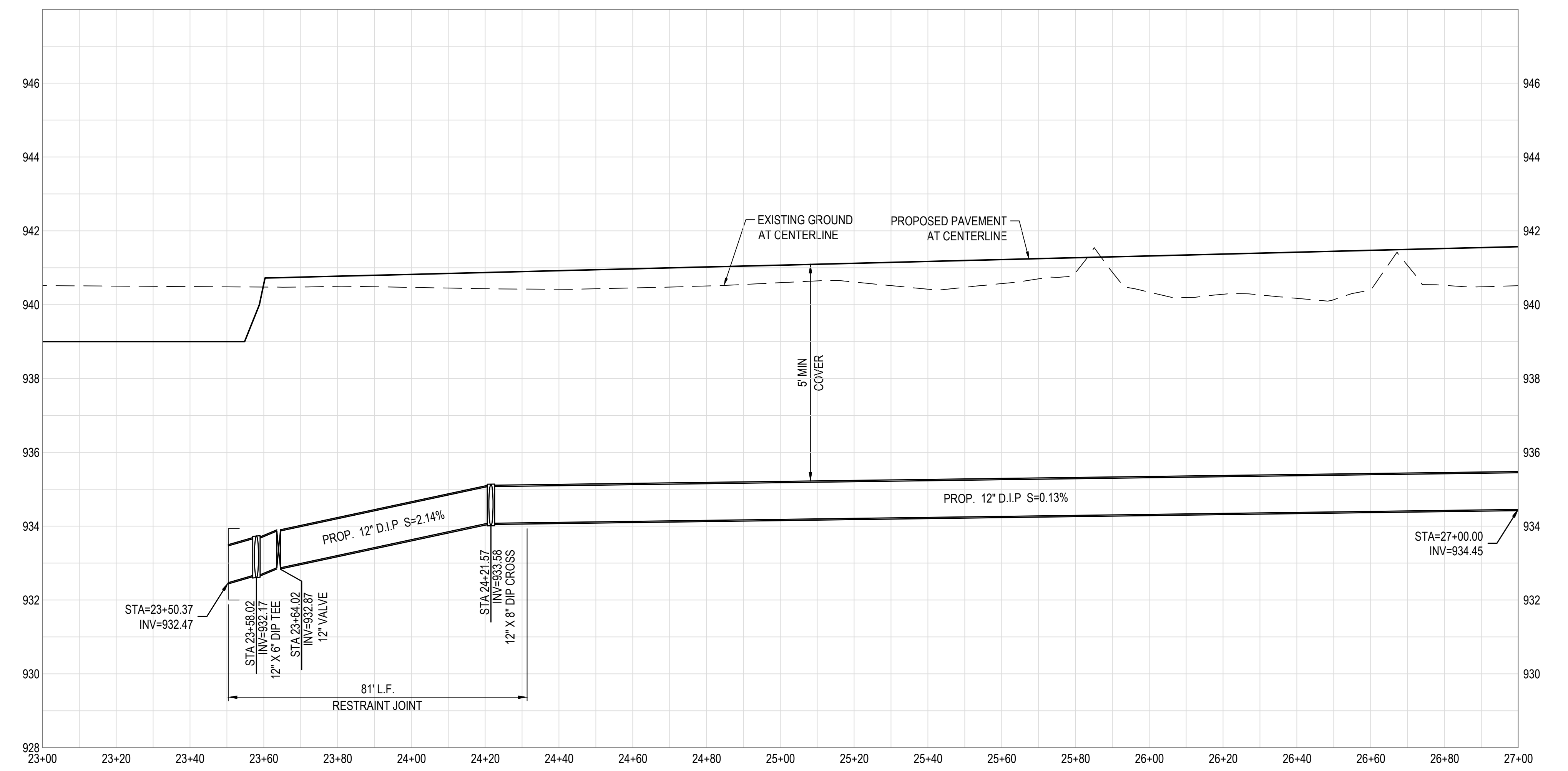


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ALAMAR	
DEVELOPER BROOKFIELD LAKIN, LLC	OWNER ALAMAR - PHASE 1
DESIGNER WOOD/PATEL	PROJECT TYPE INFRASTRUCTURE WATER PLAN
PLAN DATE 11/08/2018	LATEST REVISION DATE
SHEET NUMBER 11 OF 16	PROJECT NUMBER 174612.04



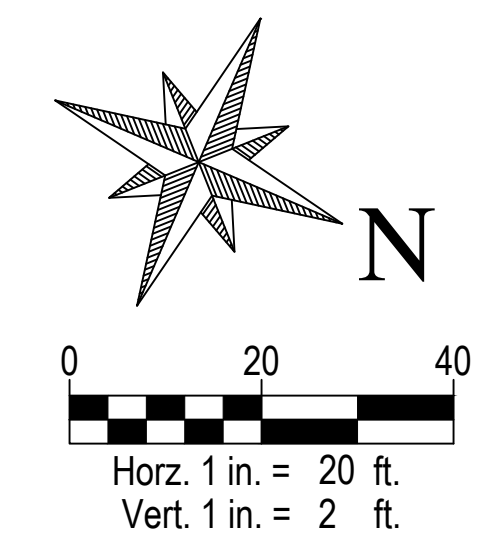
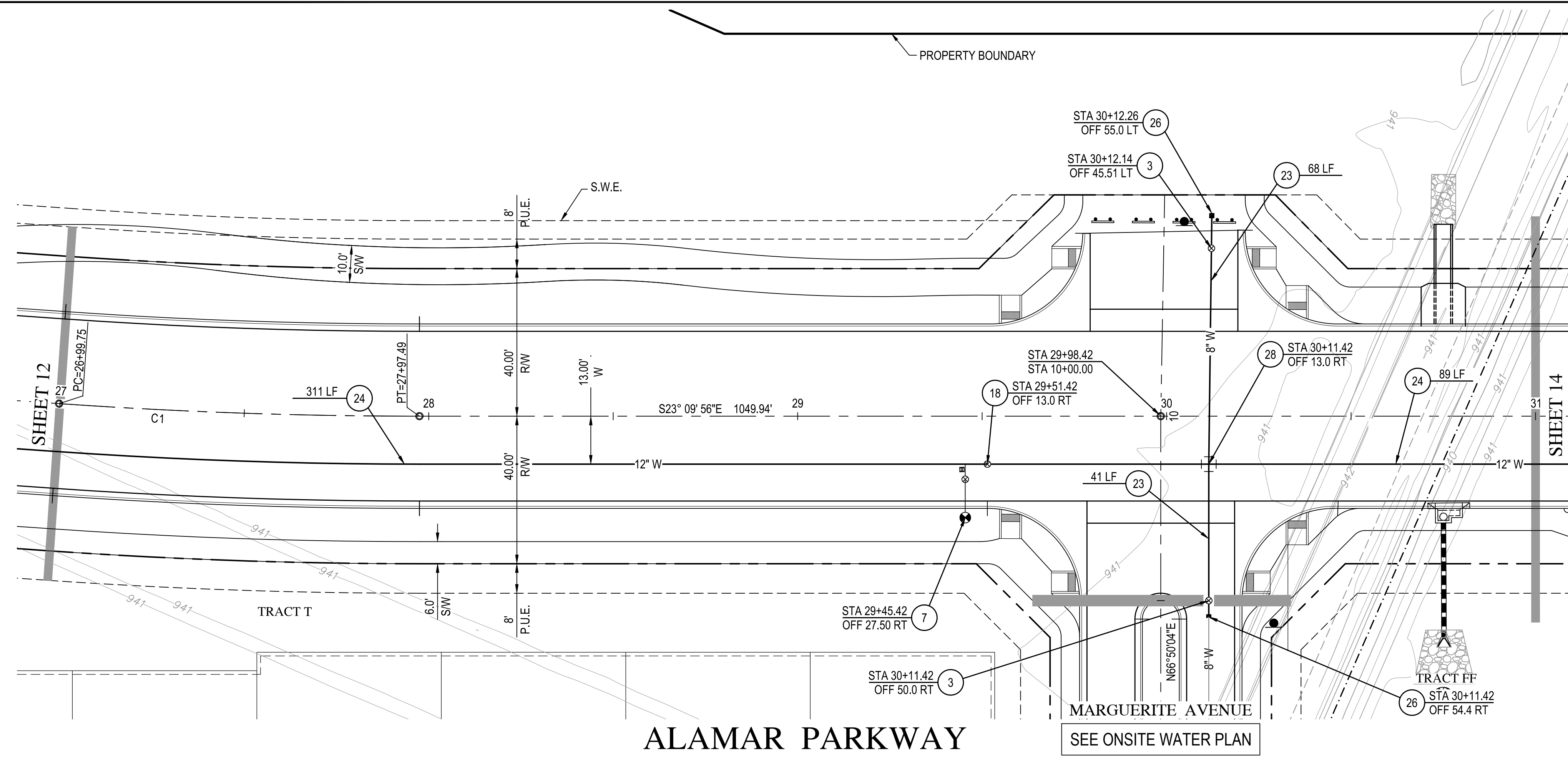
- WATER NOTES**
- 3 INSTALL 8" GATE VALVE, BOX AND COVER PER C.O.A. STANDARD DETAIL A1391, & M.A.G. STANDARD DETAIL 301, USE RESILIENT SEAT/WEDGE GATE VALVE, EPOXY COATED INSIDER PER AWWA C-550.
  - 7 INSTALL COMPLETE FIRE HYDRANT ASSEMBLY PER M.A.G. STANDARD DETAIL 360-2. LOCATED PER C.O.A. STANDARD DETAIL A1362.
  - 14 INSTALL 2" WATER SERVICE AND 1-1/2" METER BOX PER C.O.A. STANDARD DETAIL A1300 & A1302. INSTALL 2" BACKFLOW PREVENTOR PER C.O.A. STANDARD DETAIL A1326.
  - 18 INSTALL 12" GATE VALVE, BOX AND COVER PER C.O.A. STANDARD DETAIL A1391, & M.A.G. STANDARD DETAIL 301, USE RESILIENT SEAT/WEDGE GATE VALVE, EPOXY COATED INSIDER PER AWWA C-550.
  - 23 INSTALL 8" DUCTILE IRON PIPE, CLASS 350 CEMENT MORTAR LINED AND SEAL COATED, POLY WRAPPED PER M.A.G. SECTION 610.6. MINIMUM 4' COVER. TRENCHING PER C.O.A. STANDARD DETAIL A1130.
  - 24 INSTALL 12" DUCTILE IRON PIPE, CLASS 350 CEMENT MORTAR LINED AND SEAL COATED, POLY WRAPPED PER M.A.G. SECTION 610.6 AND. MINIMUM 5' COVER WITH FIELD LOCK GASKETS. TRENCHING PER C.O.A. STANDARD DETAIL A1130.
  - 26 INSTALL CURB STOP WITH FLUSHING PIPE PER M.A.G. STANDARD DETAIL 390, TYPE 'A'.
  - 28 INSTALL 12"x8" DIP TEE OR CROSS WITH THRUST BLOCKING PER M.A.G. STANDARD DETAIL 380 OR APPROVED EQUAL. INSTALL BLUE MARKER BALL WHERE A VALVE IS NOT PRESENT.



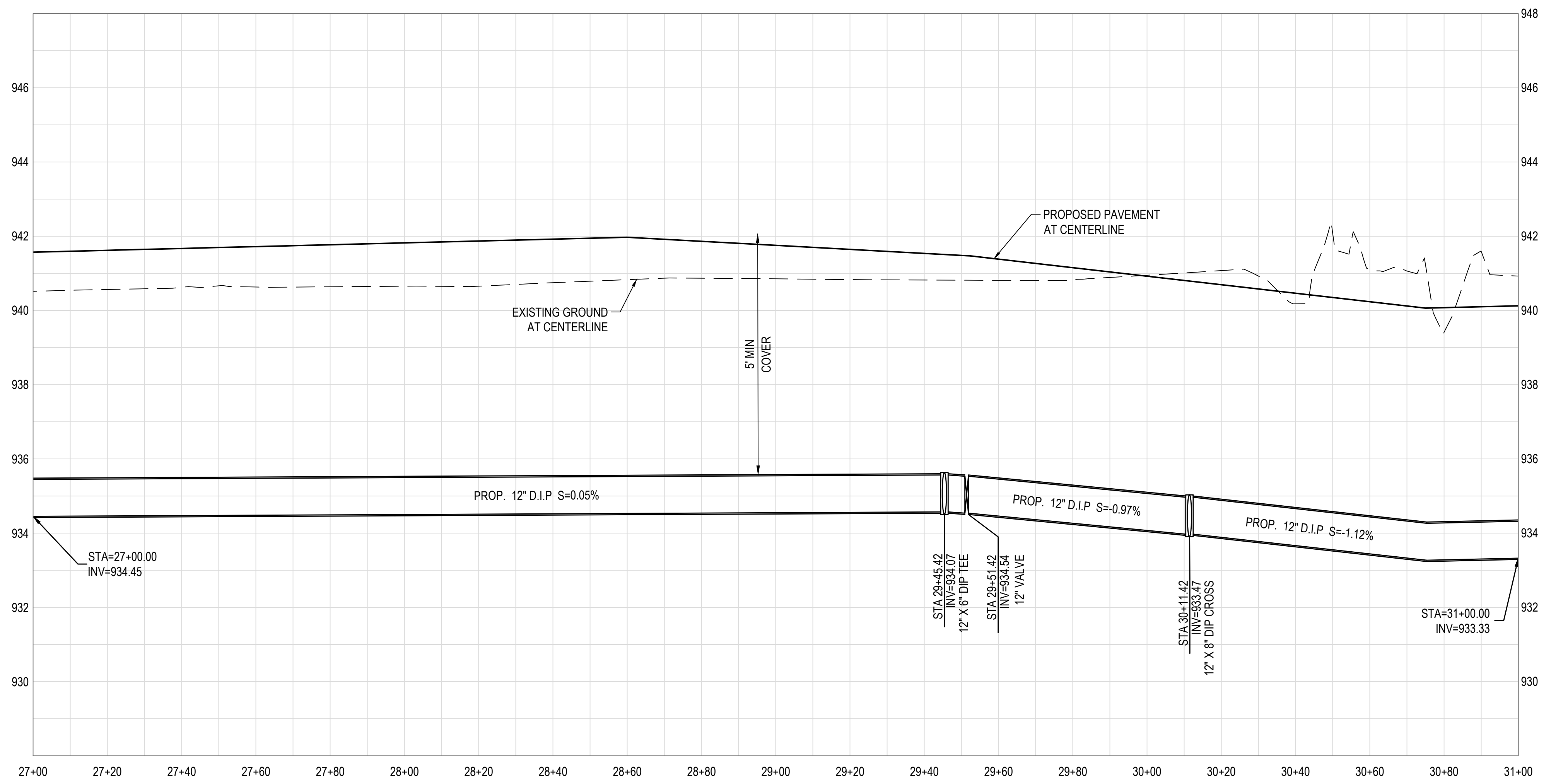
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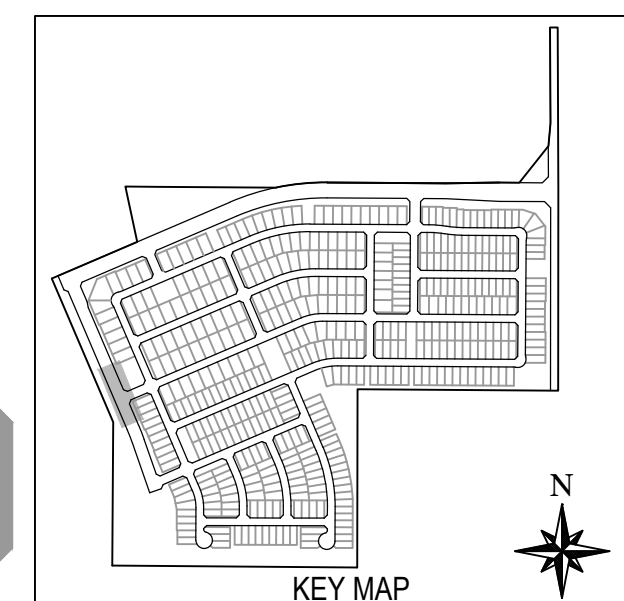
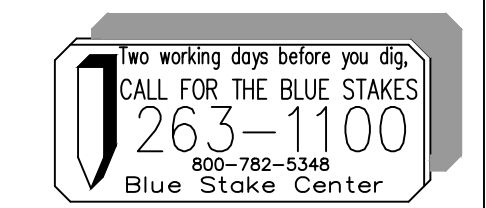
<p><b>WOOD/PATEL</b> MISSION: CLIENT SERVICE® (602) 335-8500 WWW.WOODPATEL.COM</p>	<p>SCALE (HORIZ.) 20' SCALE (VERT.) 2'</p>
<p><b>ALAMAR</b></p>	
<p>DEVELOPER <b>BROOKFIELD LAKIN, LLC</b></p>	<p>PROJECT NAME <b>ALAMAR - PHASE 1</b></p>
<p>PLAN TYPE <b>INFRASTRUCTURE WATER PLAN</b></p>	
<p>SEAL Professional Engineer 31985 FRANK MINGENGOO Arizona EXPIRES 12-31-18</p>	
<p>PLAN DATE <b>11/08/2018</b></p>	
<p>LATEST REVISION DATE</p>	
<p>SHEET NUMBER <b>12 OF 16</b></p>	
<p>PROJECT NUMBER <b>174612.04</b></p>	



- WATER NOTES**
- (3) INSTALL 8" GATE VALVE, BOX AND COVER PER C.O.A. STANDARD DETAIL A1391, & M.A.G. STANDARD DETAIL 301 USE RESILIENT SEAT/WEDGE GATE VALVE, EPOXY COATED INSIDER PER AWWA C-550.
  - (7) INSTALL COMPLETE FIRE HYDRANT ASSEMBLY PER M.A.G. STANDARD DETAIL 360-2. LOCATED PER C.O.A. STANDARD DETAIL A1362.
  - (18) INSTALL 12" GATE VALVE, BOX AND COVER PER C.O.A. STANDARD DETAIL A1391, & M.A.G. STANDARD DETAIL 301 USE RESILIENT SEAT/WEDGE GATE VALVE, EPOXY COATED INSIDER PER AWWA C-550.
  - (23) INSTALL 8" DUCTILE IRON PIPE, CLASS 350 CEMENT MORTAR LINED AND SEAL COATED, POLY WRAPPED PER M.A.G. SECTION 610.6. MINIMUM 4' COVER. TRENCHING PER C.O.A. STANDARD DETAIL A1130.
  - (24) INSTALL 12" DUCTILE IRON PIPE, CLASS 350 CEMENT MORTAR LINED AND SEAL COATED, POLY WRAPPED PER M.A.G. SECTION 610.6 AND. MINIMUM 5' COVER WITH FIELD LOCK GASKETS. TRENCHING PER C.O.A. STANDARD DETAIL A1130.
  - (26) INSTALL CURB STOP WITH FLUSHING PIPE PER M.A.G. STANDARD DETAIL 390, TYPE 'A'.
  - (28) INSTALL 12"x8" DIP TEE OR CROSS WITH THRUST BLOCKING PER M.A.G. STANDARD DETAIL 380 OR APPROVED EQUAL. INSTALL BLUE MARKER BALL WHERE A VALVE IS NOT PRESENT.



CENTERLINE CURVE TABLE					
CURVE	DELTA	RADIUS	ARC	TANGENT	CHORD
C1	4°00'00"	1400.00'	97.74'	48.89	97.72



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SCALE (HORIZ.) 20'

SCALE (VERT.) 2'

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BROOKFIELD LAKIN, LLC  
 ALAMAR - PHASE 1  
 INFRASTRUCTURE WATER PLAN

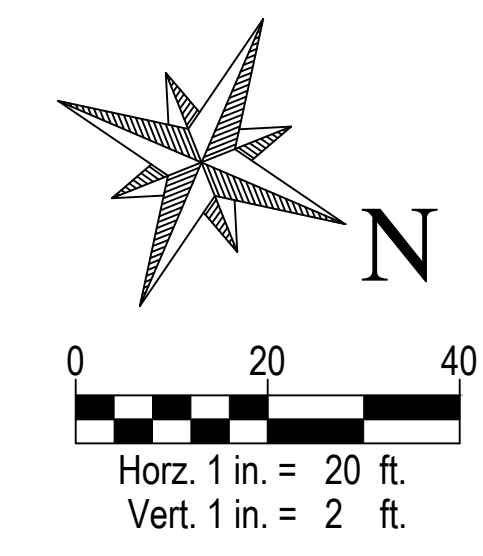
EXPIRES 12-31-18

PLAN DATE  
11/08/2018

LATEST REVISION DATE

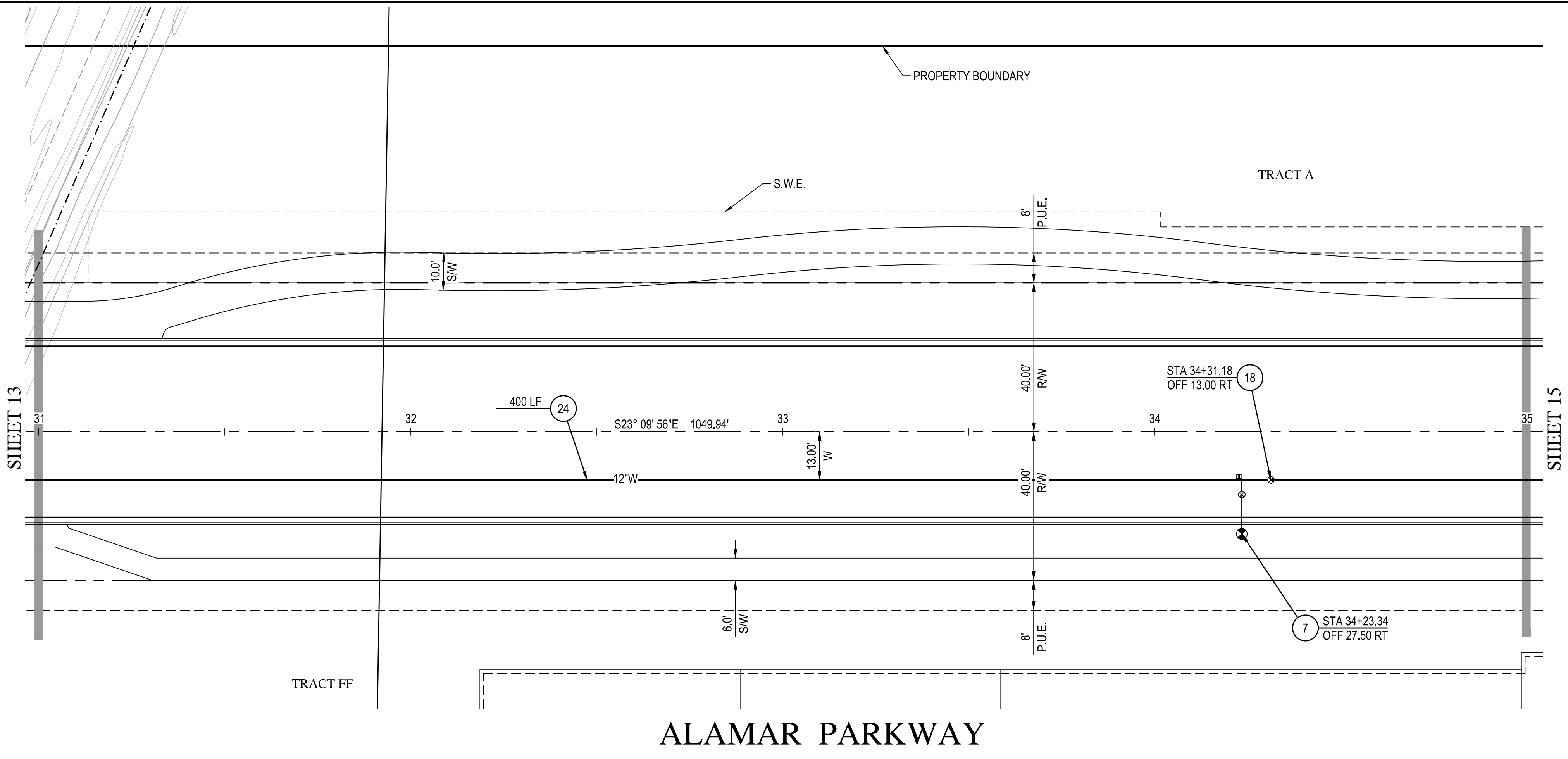
SHEET NUMBER  
13 OF 16

PROJECT NUMBER  
174612.04

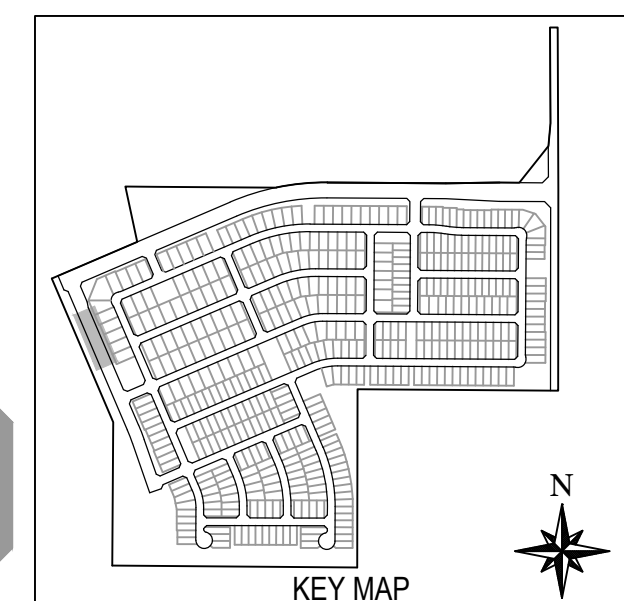
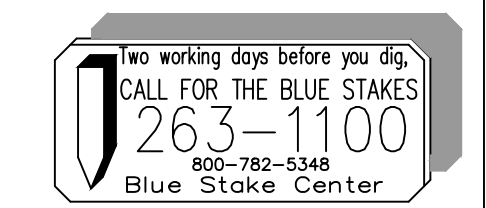
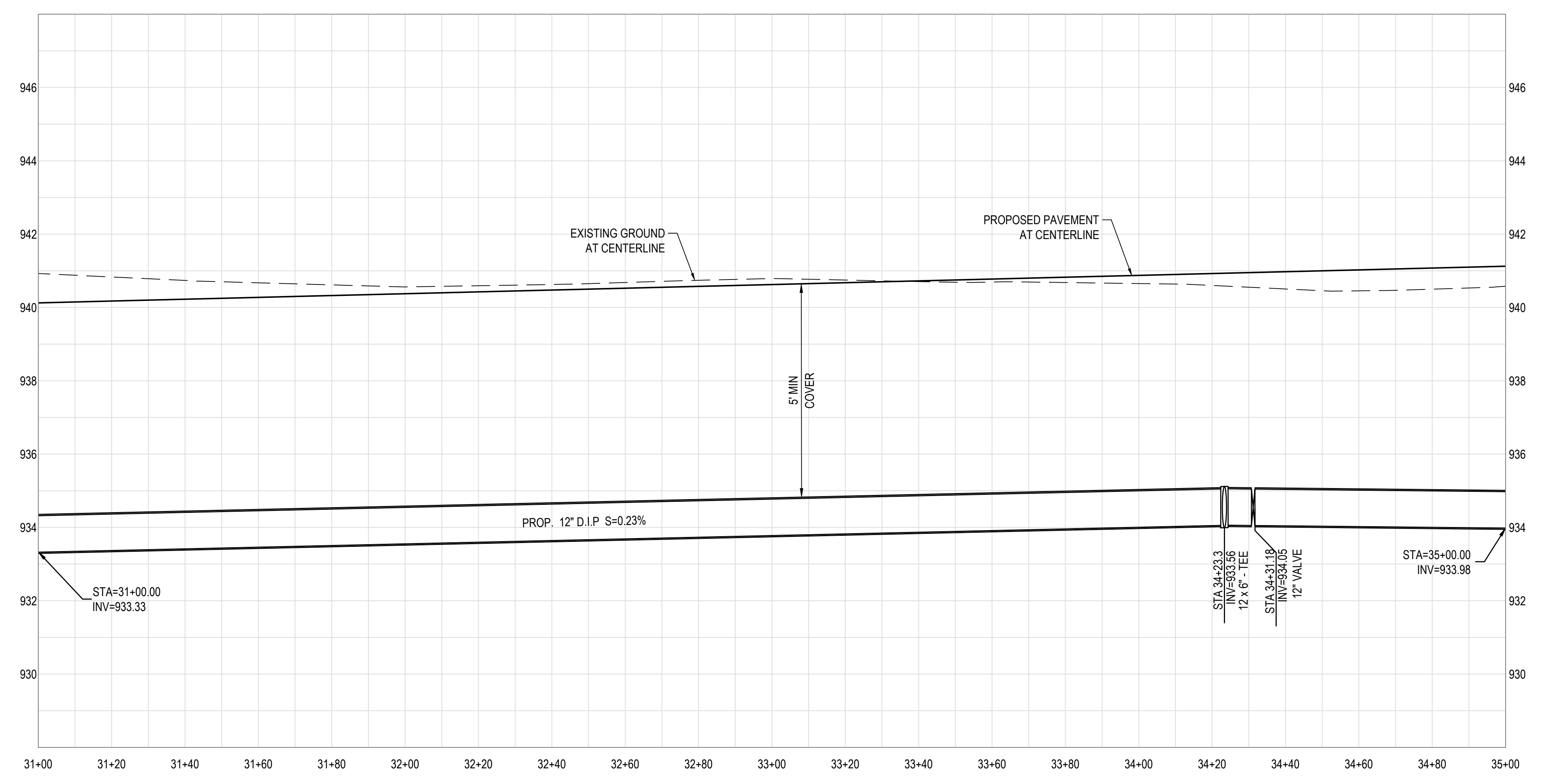


**WATER NOTES**

- ⑦ INSTALL COMPLETE FIRE HYDRANT ASSEMBLY PER M.A.G. STANDARD DETAIL 360-2. LOCATED PER C.O.A. STANDARD DETAIL A1362.
- ⑮ INSTALL 12" GATE VALVE, BOX AND COVER PER C.O.A. STANDARD DETAIL A1391, & M.A.G. STANDARD DETAIL 301. USE RESILIENT SEAT/WEDGE GATE VALVE, EPOXY COATED INSIDER PER AWWA C-550.
- ⑳ INSTALL 12" DUCTILE IRON PIPE, CLASS 350 CEMENT MORTAR LINED AND SEAL COATED, POLY WRAPPED PER M.A.G. SECTION 610.6 AND, MINIMUM 5' COVER WITH FIELD LOCK GASKETS. TRENCHING PER C.O.A. STANDARD DETAIL A1130.

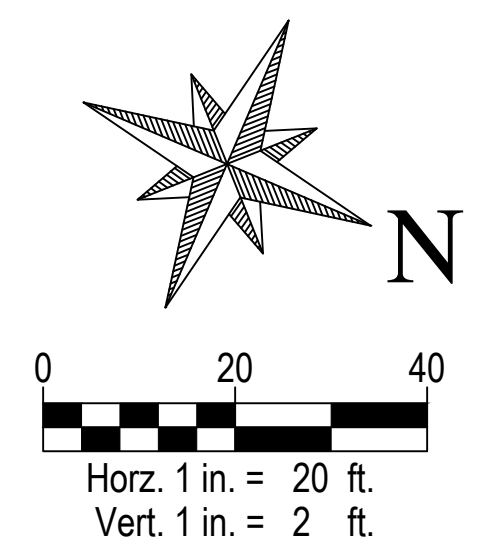
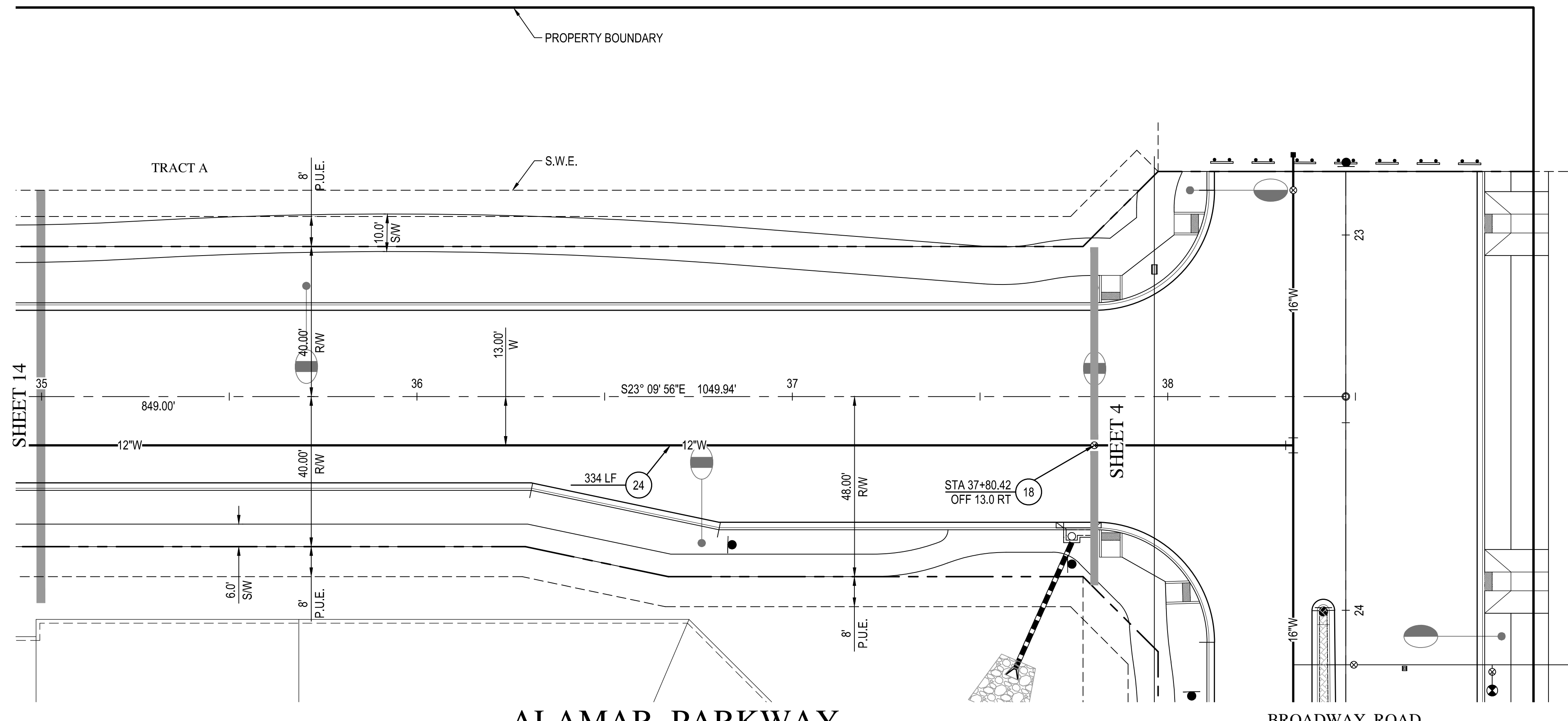


**ALAMAR PARKWAY**



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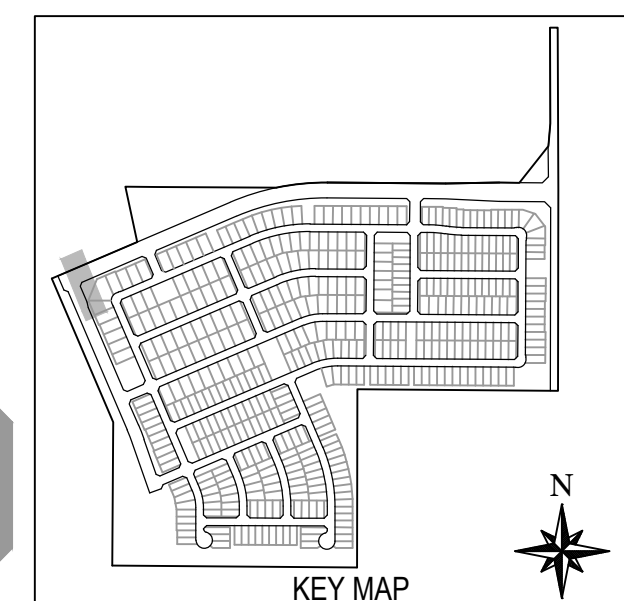
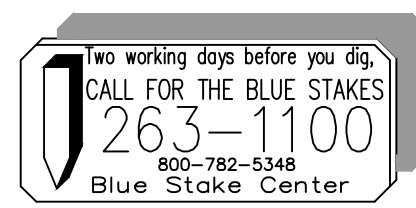
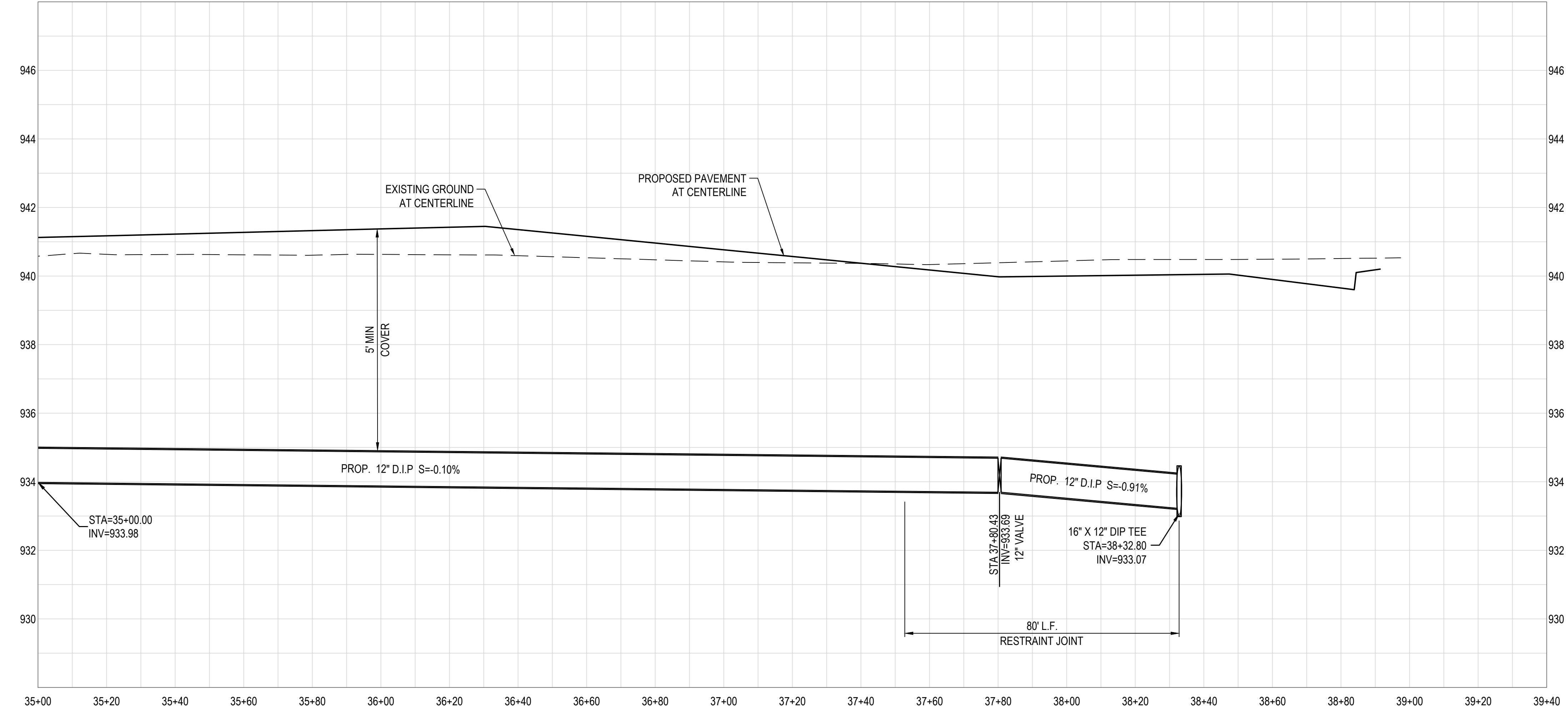
<p><b>WOOD/PATEL</b>          MISSION: CLIENT SERVICE          (602) 335-8500          WWW.WOODPATEL.COM</p>	<p>SCALE (HORIZ) 20'          SCALE (VERT) 2'</p>
<p><b>BROOKFIELD LAKIN, LLC</b>          PROJECT NAME  <b>ALAMAR - PHASE 1</b>          PLAN TYPE  <b>INFRASTRUCTURE WATER PLAN</b></p>	
<p>PLAN DATE  <b>11/08/2018</b></p>	
<p>SHEET NUMBER  <b>14 OF 16</b></p>	
<p>PROJECT NUMBER  <b>174612.04</b></p>	



- WATER NOTES**
- (18) INSTALL 12" GATE VALVE, BOX AND COVER PER C.O.A. STANDARD DETAIL A1391, & M.A.G. STANDARD DETAIL 301. USE RESILIENT SEAT/WEDGE GATE VALVE, EPOXY COATED INSIDER PER AWWA C-550.
  - (24) INSTALL 12" DUCTILE IRON PIPE, CLASS 350 CEMENT MORTAR LINED AND SEAL COATED, POLY WRAPPED PER M.A.G. SECTION 610.6 AND, MINIMUM 5' COVER WITH FIELD LOCK GASKETS. TRENCHING PER C.O.A. STANDARD DETAIL A1130.

ALAMAR PARKWAY

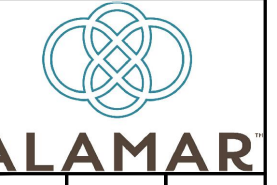
BROADWAY ROAD



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SCALE (HORIZ.)	20'
SCALE (VERT.)	2'

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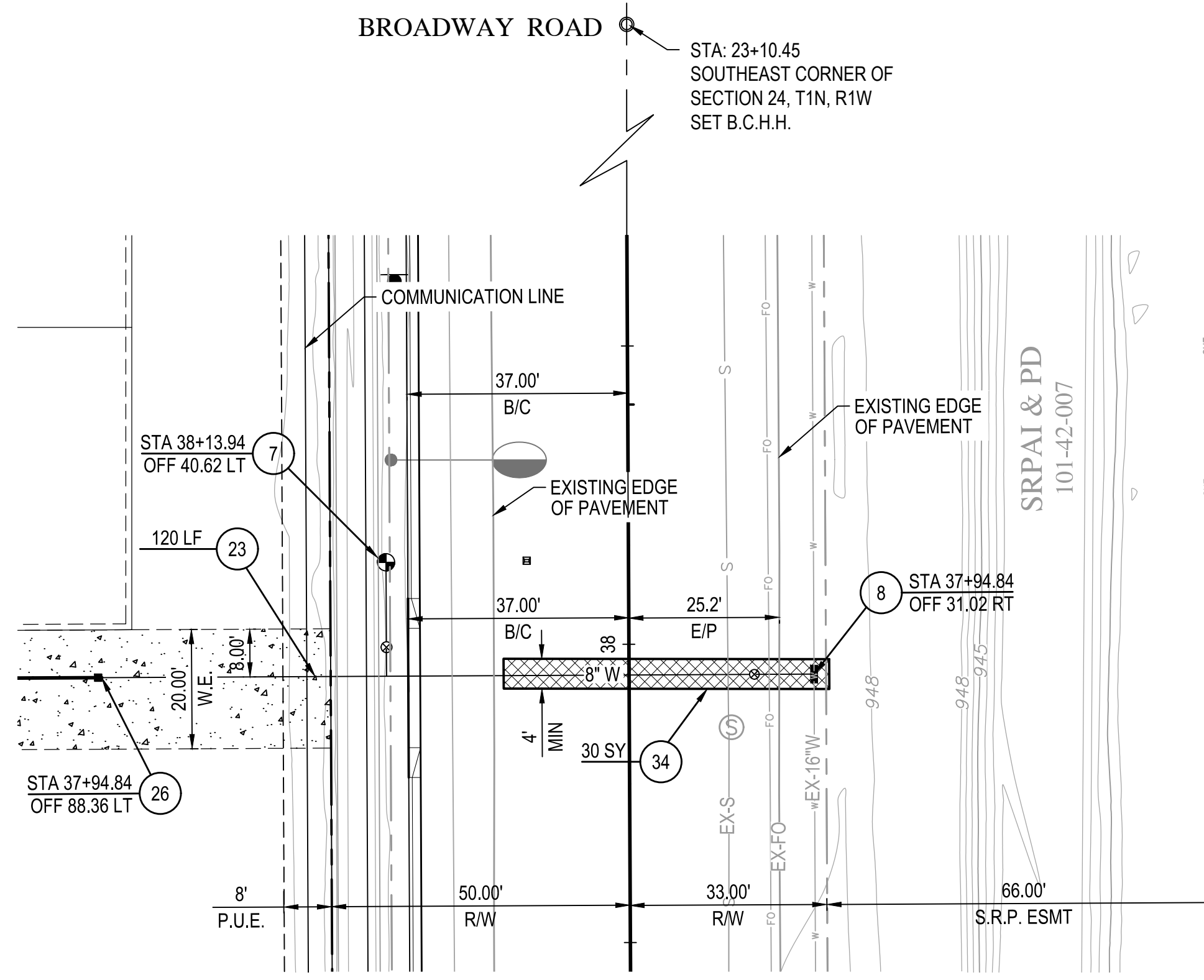


DEVELOPER  
 BROOKFIELD LAKIN, LLC  
 PROJECT NAME  
 ALAMAR - PHASE 1  
 PLAN TYPE  
 INFRASTRUCTURE WATER PLAN

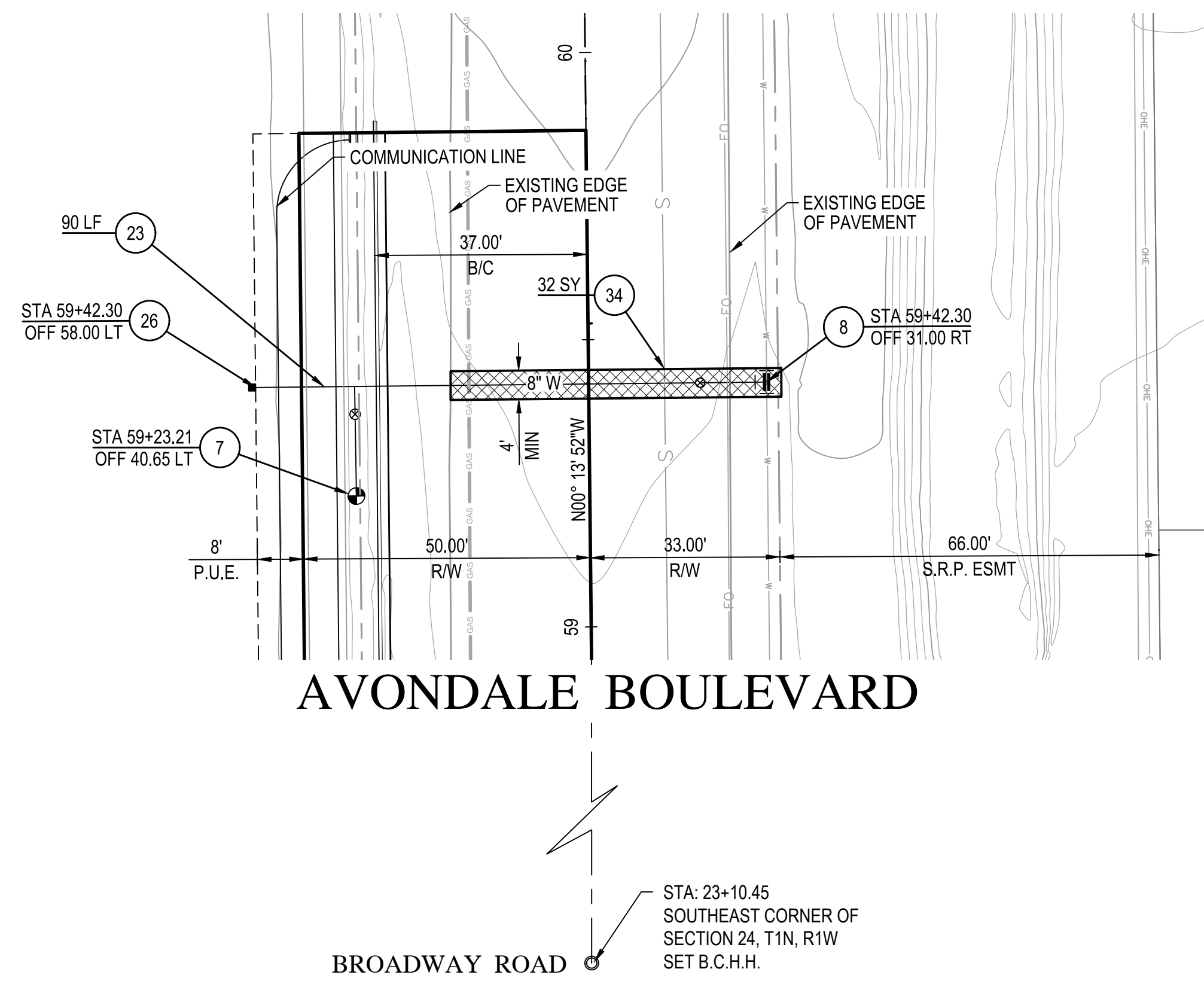


PLAN DATE  
 11/08/2018  
 LATEST REVISION DATE  
 SHEET NUMBER  
 15 OF 16  
 PROJECT NUMBER  
 174612.04

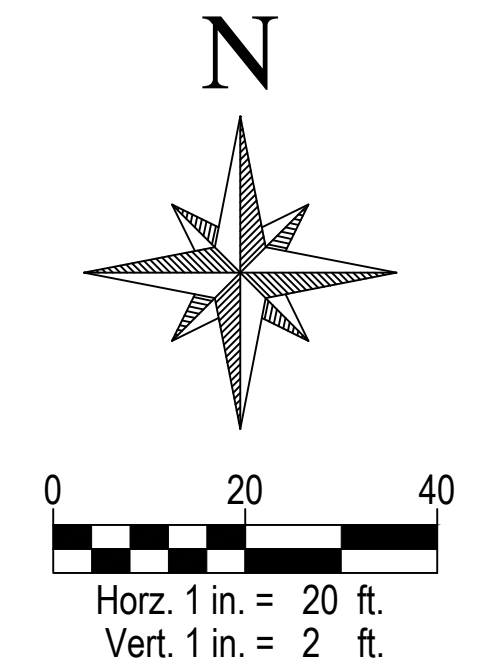
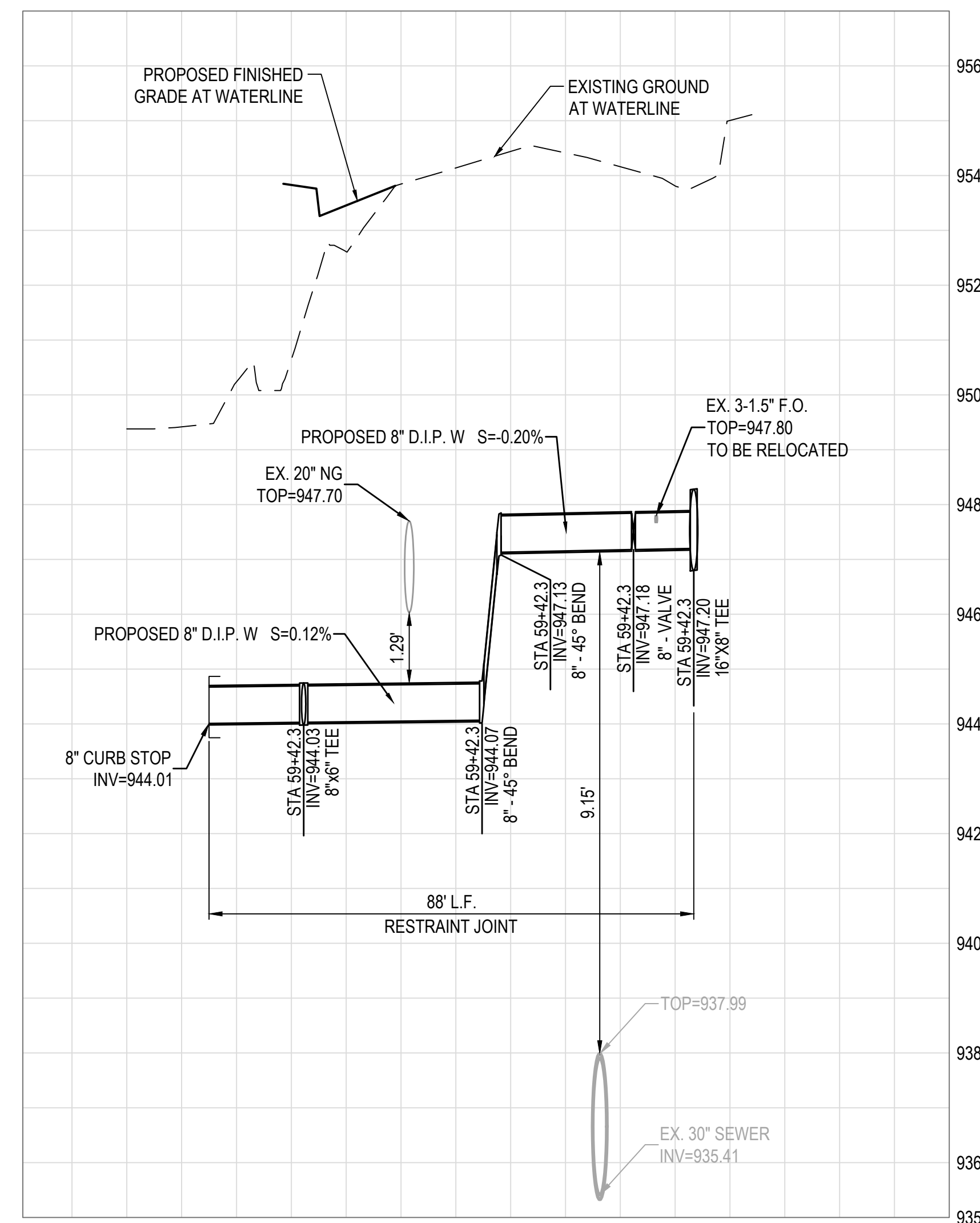
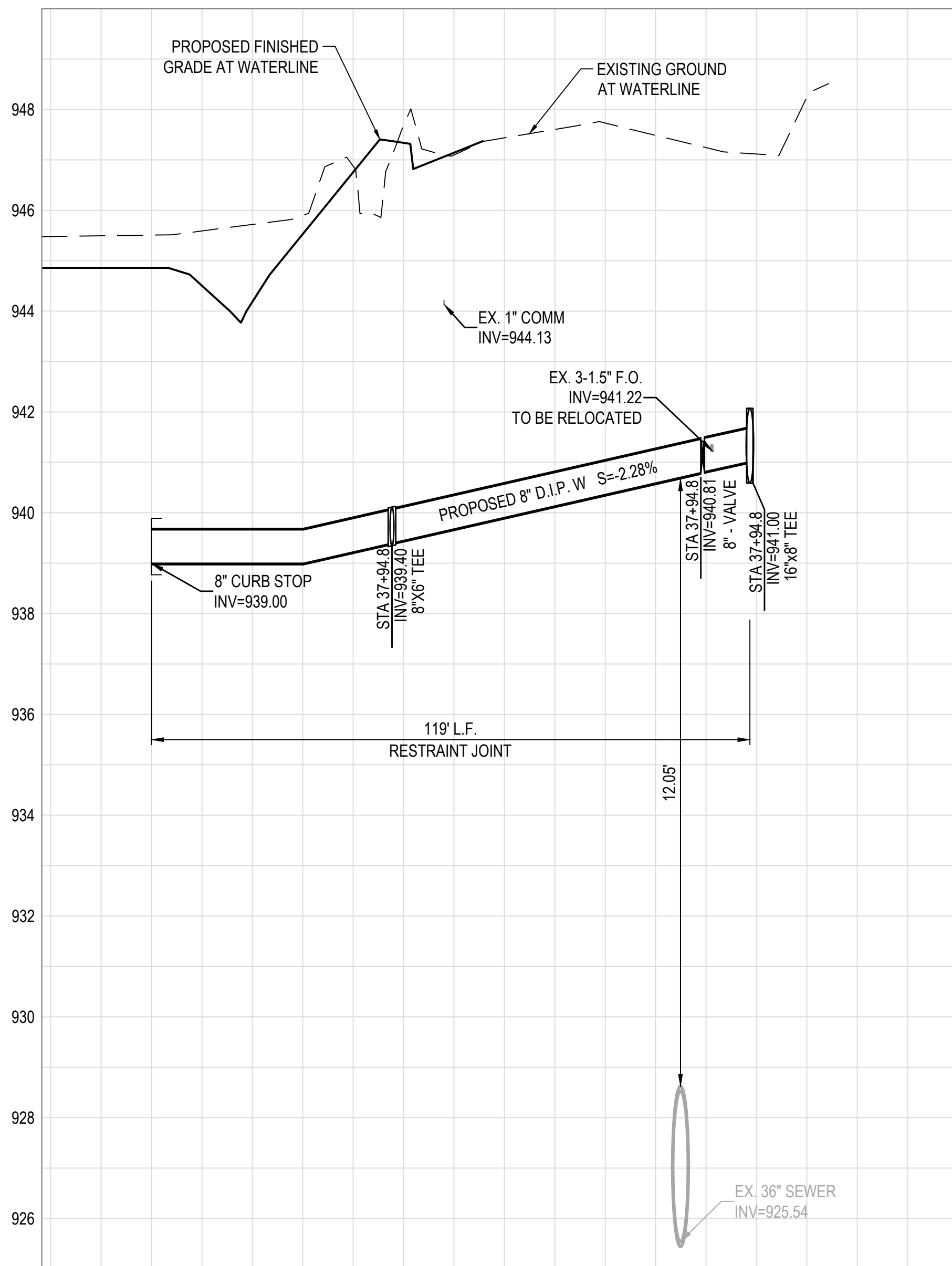
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**AVONDALE BOULEVARD**



**AVONDALE BOULEVARD**



**WATER NOTES**

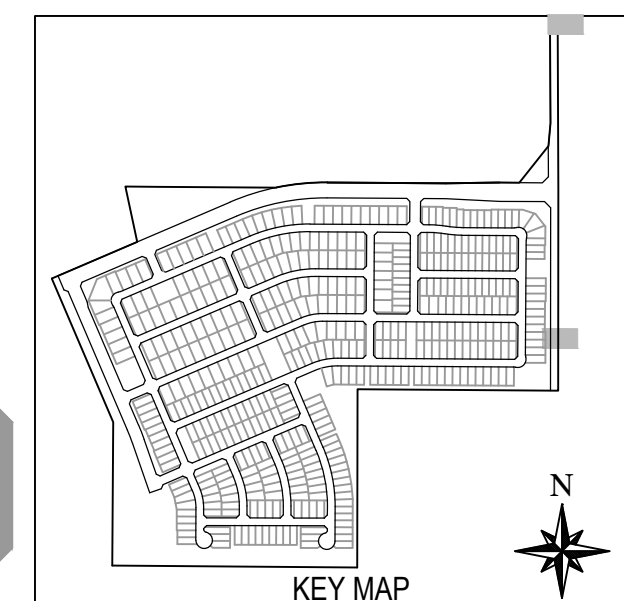
- ⑦ INSTALL COMPLETE FIRE HYDRANT ASSEMBLY PER M.A.G. STANDARD DETAIL 360-2. LOCATED PER C.O.A. STANDARD DETAIL A1362.
- ⑧ INSTALL 16" X 8" TAPPING SLEEVE AND VALVE PER M.A.G. STANDARD DETAIL 340 & C.O.A. STANDARD DETAIL A1391, TYPE A. SIZE PER PLAN. USE RESILIENT SEAT/WEDGE GATE VALVE, EPOXY COATED INSIDER PER AWWA C-550.
- ⑬ INSTALL 8" DUCTILE IRON PIPE, CLASS 350 CEMENT MORTAR LINED AND SEAL COATED, POLY WRAPPED PER M.A.G. SECTION 610.6. MINIMUM 4" COVER. TRENCHING PER C.O.A. STANDARD DETAIL A1130.
- ⑮ INSTALL CURB STOP WITH FLUSHING PIPE PER M.A.G. STANDARD DETAIL 390, TYPE 'A'.
- ⑰ SAWCUT AND REMOVE & REPLACE EXISTING PAVEMENT PER M.A.G. SPECIFICATIONS SECTIONS 310 AND 321. PAVEMENT TO BE 5" AC IN 2 LIFTS. BACKFILL TRENCH UNDER PAVEMENT WITH 3/4 SACK CLSM.

SCALE (HORIZ.)	1" = 20'
SCALE (VERT.)	1" = 2'

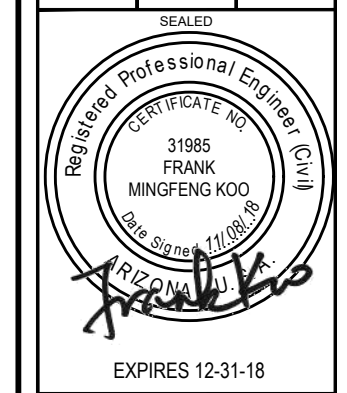
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ALAMAR - PHASE 1  
INFRASTRUCTURE WATER PLAN



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DATE	11/08/2018
PLAN DATE	11/08/2018
LATEST REVISION DATE	
SHEET NUMBER	16 OF 16
PROJECT NUMBER	174612.04