

ABBREVIATIONS									
A	AIR	DIA, Ø	DIAMETER	NOSHA	STATE OF NEVADA OCCUPATIONAL	SF	SQUARE FOOT/FEET		
AC	ASPHALT CONCRETE, ACRE	DIP	DUCTILE IRON PIPE		SAFETY AND HEALTH	SHLDR	SHOULDER		
ACP	ASBESTOS CEMENT PIPE	DIST	DISTANCE		ADMINISTRATION	SHT	SHEET		
ADD'L	ADDITIONAL	DR	DRIVE	NPC	NEVADA POWER COMPANY	SIS	SUMMERLIN IMPROVEMENT		
AP	ANGLE POINT	DS	DOWNSPOUT	NTS	NOT TO SCALE		STANDARDS		
APN	ASSESSOR'S PARCEL NUMBER	DTL	DETAIL	NVE	NV ENERGY	SL	STREET LIGHT		
APPROX	APPROXIMATELY	DW	DRIVEWAY	OB	OVERBUILD	SP	SERVICE POINT		
AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS	DWG	DRAWING	OC	ON CENTER	SQ	SQUARE		
		E	EAST	OHC	OVERHEAD COX COMMUNICATION	SR	SEWER RECLAIM MAIN		
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	ECR	END CURB RETURN	OHP	OVERHEAD POWER LINE	SS	SANITARY SEWER		
AVE	AVENUE	ELEC,ELE	ELECTRICAL	P	POWER LINE	SSMH	SANITARY SEWER MANHOLE		
AVAR	AIR VALVE, AIR RELEASE	ELEV	ELEVATION	PAC	PUBLIC ACCESS EASEMENT	STA	STATION		
	ASSEMBLY	EP, EOP	EDGE OF PAVEMENT	PB	PULL BOX	ST	STREET		
AWWA	AMERICAN WATER WORKS ASSOCIATION	ESMT	EASEMENT	PBS	PLANTMIX BITUMINOUS SURFACE	STD	STANDARD		
	BACK OF CURB	EVC	END VERTICAL CURVE	PDE	PUBLIC DRAINAGE EASEMENT	STL	STEEL		
BC	BEGIN CURB RETURN	EVP	END VERTICAL POINT	PLT	PLATE	STRUCT	STRUCTURE		
BCR	BEGIN CURB RETURN	EXP	EXPANSION JOINT	PC	POINT OF CURVE, PRESSURE	SV	SKY VISTA DRIVE		
BLM	BUREAU OF LAND MANAGEMENT	EXP	EXPANSION JOINT	PCC	POINT OF COMPOUND CURVE	SVZ	SIGHT VISIBILITY ZONE		
BLVD	BOULEVARD	FF, FFE	FINISH FLOOR ELEVATION	PE	PROJECT ENGINEER OR	SWG	SOUTHWEST GAS		
BM	BENCHMARK	FF	FINISH GRADE	PE	POLYETHYLENE	TAN	TELEPHONE OR TOP		
BO	BLOW-OFF	FI	FIRE HYDRANT	PED	PEDESTRIAN	TB	TOP OF BRIDGE		
BVCE	BEGIN VERTICAL CURVE ELEVATION	FL	FLOW LINE	PGL	PROFILE GRADE LINE	TC	TOP OF CURB		
BVCS	BEGIN VERTICAL CURVE STATION	FO	FIBER OPTIC	PH	POT	TCE	TEMPORARY CONSTRUCTION ESMT		
BVP	BEGIN VERTICAL POINT	FRP	FIBERGLASS REINFORCED PLASTIC	PI	POINT OF INTERSECTION	TEL, TELE	TELEPHONE		
BW	BACK OF SIDEWALK	FS	FINISH SURFACE	PB	POINT OF BEGINNING	TEMP	TEMPORARY		
C, @	CENTERLINE	FTG	FOOTING	PL, P/L	PROPERTY LINE	TF	TOP OF FOOTING		
C&G	CURB AND GUTTER	FUT	FUTURE	PLCP	POLYURETHANE LINED AND	TG	TOP OF GRATE		
CATV	UNDERGROUND CABLE TV	GAS	GAS	PMF	PAVEMENT MARKING FILM	TMH	TOP OF MANHOLE		
CCSM	CLARK COUNTY BENCH MARK	GAGE, GUY ANCHOR	GAGE, GUY ANCHOR	POB	POINT OF BEGINNING	TOP	TOP OF PIPE		
CCPW	CLARK COUNTY PUBLIC WORKS	GB	GRADE BREAK	POC	POINT ON CURVE, POINT OF	TP	TELEPHONE POLE		
CCWRD	CLOSED-CIRCUIT TELEVISION	GND	GROUND	POT	POINT ON TANGENT	TRANS	TRANSITION		
	CLARK COUNTY WATER RECLAMATION DISTRICT	GRD	GRADE, GROUND	PP	POWER POLE	TRW	TOP OF RETAINING WALL		
CE	COMMON ELEMENT	H, HGT	HEIGHT	PROP	PROPOSED	TS	TEST STATION		
CFS	CUBIC FEET PER SECOND	HDWL	HEADWALL	PRC	POINT OF REVERSE CURVE	TS&V	TAPPING SLEEVE & VALVE		
CIP	CAPITAL IMPROVEMENTS PROJECT, CORRUGATED IRON PIPE	HORIZ	HORIZONTAL	PRVC	POINT OF REVERSE VERTICAL CURVE	TW	TOP OF WALL		
CIPP	CURED-IN-PLACE PIPE	HP	HIGH POINT, HIGH PRESSURE			TYP,(TYP)	TYPICAL		
CIR	CIRCLE	HPS	HIGH PRESSURE SODIUM	PSI	POUNDS PER SQUARE INCH	UDACS	UNIFORM DESIGN AND CONSTRUCTION STANDARDS FOR WATER DISTRIBUTION SYSTEMS (LATEST EDITION)		
CLR	CLEAR OR CLEARANCE	IBC	INTERNATIONAL BUILDING CODE	PUE	PUBLIC UTILITY EASEMENT	UG	UNDERGROUND		
CLSM	CONTROLLED LOW STRENGTH MATERIAL	INV	INVERT	PVC	POLYVINYL CHLORIDE	ULT	ULTIMATE		
CLV	CITY OF LAS VEGAS	INT	INTERIM	PVI	POINT OF VERTICAL INTERSECTION	USDOCA, USD	UNIFORM STD. DRAWINGS FOR PUBLIC WORKS' CONSTRUCTION OFF-SITE IMPROVEMENTS CLARK COUNTY AREA, NEVADA (LATEST EDITION)		
CMP	CORRUGATED METAL PIPE	JT	JOINT	PVM	PAVEMENT	UT	UNDERGROUND TELEPHONE		
CMU	CONCRETE MASONRY UNIT	L	LENGTH	R, RAD	RADIUS	VAR	VARIABLE/VARIES		
CNLV	CITY OF NORTH LAS VEGAS	LT	LEFT	RCB	REINFORCED CONCRETE BOX	VC	VERTICAL CURVE		
CO	CLEANOUT	LIP	LINEAR FEET	RCP	REINFORCED CONCRETE PIPE	VCP	VITRIFIED CLAY PIPE		
CONC	CONCRETE	LP	LOW POINT, LIGHT POLE	RD	ROAD	VERT	VERTICAL		
COND	CONDUIT	LS,LSCP	LANDSCAPE	RDWY	ROADWAY	VG	VALLEY GUTTER		
CONST	CONSTRUCT OR CONSTRUCTION	LVWD	LAS VEGAS VALLEY WATER DISTRICT	REC	RECTANGULAR	VOL	VOLUME		
COORD	COORDINATE	MAX	MAXIMUM	REF	REFERENCE	W	WITH		
COR	CORNER	MH	MANHOLE	REINF	REINFORCED	WMH	WATER MANHOLE		
CPEP	CORRUGATED POLYETHYLENE PIPE	MIN	MINIMUM	REQD	REQUIRED	WS	WATER SUPPLY		
CT	COURT	MLTMCP	MORTAR LINED TAPE & MORTAR COATED PIPE	RIM	TOP OF RIM ELEVATION	WT	WEIGHT		
Δ	CUBIC YARD(S)	MP	MESA PARK	RND	ROUND	WTR	WATER		
DBL	DOUBLE	MOD	MODIFY/MODIFIED	R/W,ROW	RIGHT OF WAY	XING	CROSSING		
DCSWCS	DESIGN AND CONSTRUCTION STANDARDS FOR WASTEWATER COLLECTION SYSTEM (LATEST ED.)	MON	MONUMENT	RP	RADIUS POINT	YD	YARD, YARD DRAIN		
DE	DRAINAGE EASEMENT	MPH	MILES PER HOUR	RPM	RAISED PAVEMENT MARKERS	Z	PRESSURE ZONE		
DEFL	DEFLECTION	N	NORTH	RSQV	RESILIENT SEAT GATE VALVE				
DG	DESIGN GRADE	NAP	NOT A PART	S	SEWER, SOUTH				
DI/D.I.	DROP INLET	NDOT	NEVADA DEPARTMENT OF TRANSPORTATION	SCH	SCHEDULE				
		N.I.C.	NOT IN CONTRACT	SDWK	SIDEWALK				
		No.	NUMBER	SD	STORM DRAIN				
				SDMH	STORM DRAIN MANHOLE				
				SECT	SECTION				

LEGEND									
	TYPICAL PROPOSED LINEWORK		DETAIL BUBBLE W/ REF.						
	TYPICAL EXISTING LINEWORK		BENCHMARK						
	TYPICAL FUTURE LINEWORK		GATE VALVE						
	EASEMENT LINE		PRESSURE REDUCING VALVE						
	EDGE OF PAVEMENT		BACK WATER VALVE						
	LOTLINE		DROP INLET						
	RIGHT-OF-WAY LINE		FIRE HYDRANT						
	PROPERTY LINE		WATER METER						
	CENTERLINE		WATER RPPA						
	TYPICAL UTILITY LINE 4" - 12" (SINGLE LINE)		WATER RPDA						
	TYPICAL UTILITY LINE > THAN 12" (DOUBLE LINE)		TRAFFIC SIGNAL PULL BOX						
	TYPICAL SEWER LINE W/MH		STREET LIGHT CLARK COUNTY						
	TYPICAL WATER LINE W/GV		STREET LIGHT SUMMERLIN STD						
	TYPICAL STORM LINE W/MH								
	100 YR HYDRAULIC GRADE LINE								
	CONCRETE OR STEEL ENCASEMENT		TRAFFIC SIGNAL/FLASHER						
	TYPICAL STUB & BLOW-OFF		EXISTING TELE POLE						
	EX. GAS LINE		EXISTING POWER POLE						
	EX. ELECTRICAL		EXISTING POLE						
	EX. CABLE TV		EX. ELEC MARKER						
	EX. TELEPHONE		TRANSFORMER PAD						
	EX. OVERHEAD POWER LINES		SERVICE PEDESTAL						
	EX. ELEC & PWR POLES		PULLBOX						
	TYPICAL CURB & GUTTER, SIDEWALK AND RAMP		PROPOSED CONTOUR						
	POST AND CABLE FENCE		EXISTING CONTOUR						
	CHAIN LINK FENCE		PROPOSED SPOT ELEVATION						
	SAWCUT		EXISTING SPOT ELEVATION						
	PAVEMENT RESORATION AREA		PROPOSED SLOPE						
	PROPOSED ABANDONMENT		SLOPE DIRECTION						
	EXISTING ABANDONMENT		FINISH FLOOR ELEVATION						
	CUT LINE LIMITS								
	FILL LINE LIMITS								

SITE IMPROVEMENT QUANTITIES (PRIVATE)	
EXCAVATION	13,500 CY
EMBANKMENT	22,500 CY
NET (FILL)	9,000 CY
RIPRAP T=6"	0 CY
1.5" PEX PIPE	970 LF
2" PEX PIPE	20 LF
6"x8" WET TAP	1 EA
1.5" METER WITH 1.5" RPPA	1 EA
6" DIP PIPE	15 LF
6" CAP WITH 2" BLOWOFF	1 EA
6" GATE VALVE WITH BOX AND COVER	1 EA
4" PVC SEWER	60 LF
4" SEWER CLEANOUT	2 EA
24" RCP STORM DRAIN	100 LF
TYPE "CM2" DROP INLET	1 EA
NDOT TYPE 2 DROP INLET	1 EA
TYPE II AGGREGATE	1,397 CY
TYPE 0" CURB - 6"	25 LF
TYPE "L" CURB - 6"	335 LF
TYPE "A" CURB	460 LF
4" AC PAVEMENT	0 SY
3" AC PAVEMENT	100 SY
4' CROSS GUTTER	545 SF
2' CROSS GUTTER	51 SF
PARKING STRIPING	500 LF
CONCRETE SIDEWALK	26,625 SF
QUANTITIES ARE ESTIMATES ONLY. CONTRACTOR IS TO VERIFY DURING BIDDING PROCESS.	

WALKWAY QUANTITIES (PUBLIC)	
4" SEWER MAIN	40 LF
TYPE II AGGREGATE	3 CY
4" AC PAVEMENT	27 SY
FIRE HYDRANT	1 EA
QUANTITIES ARE ESTIMATES ONLY. CONTRACTOR IS TO VERIFY DURING BIDDING PROCESS.	

CAUTION: HIGH PRESSURE GAS!!
CALL SOUTHWEST GAS AT 702-278-8451 FOR STANDBY WHEN EXCAVATING (INCLUDING SAW CUTTING AND PAVEMENT REMOVAL) OVER OR NEAR HIGH PRESSURE GAS LINES 48 HOURS PRIOR TO CONSTRUCTION.

- SOUTHERN NEVADA - SOUTHWEST GAS CORPORATION GENERAL NOTES**
- IN THE EVENT OF NATURAL GAS EMERGENCIES CALL 911 AND 1-877-860-6020.
 - MINIMUM HORIZONTAL AND VERTICAL CLEARANCES BETWEEN NATURAL GAS FACILITIES AND ANY UNDERGROUND UTILITIES AND/OR STRUCTURES, INCLUDING BUT NOT LIMITED TO WATER, SEWER, STORM DRAIN, COMMUNICATIONS, AND ELECTRIC SHALL BE AT LEAST 12-INCHES OR GREATER AS DICTATED BY LOCAL CODES AND STANDARDS.
o) ANY DEVIATION FROM SPECIFIED MINIMUM CLEARANCES MUST BE APPROVED BY ALL AFFECTED UTILITIES AND/OR MUNICIPALITIES
 - FOR VALVE ADJUSTMENT CONTACT 702-528-7881 14 DAYS PRIOR TO CONSTRUCTION
 - IN THE EVENT OF A NATURAL GAS CONFLICT WITH PROPOSED UTILITIES AND STRUCTURES CONTACT 702-365-2099
 - FOR STANDBY WHEN EXCAVATING (INCLUDING SAW CUTTING AND PAVEMENT REMOVAL) OVER OR NEAR HIGH PRESSURE GAS LINES CONTACT 702-278-8451 48 HOURS PRIOR TO CONSTRUCTION.

SOUTHWEST GAS APPROVAL
SOUTHWEST GAS CORPORATION _____ DATE _____

BASIS OF BEARING AND COORDINATES

GRID NORTH AS DEFINED BY THE CENTRAL MERIDIAN OF THE NEVADA COORDINATE REFERENCE SYSTEM (NCRS). LAS VEGAS HIGH ELEVATION ZONE, NORTH AMERICAN DATUM OF 1983; SAID MERIDIAN BEING COINCIDENT WITH 114°58' WEST OF THE GREENWICH MERIDIAN.

LINEAR UNIT: US SURVEY FOOT (FTUS)
DATUM (REFERENCE FRAME): NAD 83 (2011) EPOCH 2010.00
SYSTEM: NEVADA COORDINATE REFERENCE SYSTEM (NCRS)
ZONE: LAS VEGAS HIGH ELEVATION ZONE

PROJECTION: TRANSVERSE MERCATOR
STANDARD PARALLEL (AND LATITUDE OF GRID ORIGIN): 36°15'00"N
LONGITUDE OF CENTRAL MERIDIAN: 114°58'00"W
NORTHING AT GRID ORIGIN: 400,000.00 M (1,312,333.3333 FTUS)
EASTING AT CENTRAL MERIDIAN: 300,000 M (984,250.0000 FTUS)
SCALE FACTOR ON CENTRAL MERIDIAN: 1.000135 (EXACT)

NOTES:
1. ALL DISTANCES AND BEARINGS SHOWN HEREON ARE PROJECTED (GRID) VALUES BASED ON THE PRECEDING PROJECTION DEFINITION. THE PROJECTION WAS DEFINED SUCH THAT PROJECTED (GRID) DISTANCES ARE EQUIVALENT TO "GROUND" DISTANCES IN THE PROJECT AREA.
2. GRID BEARINGS SHOWN HEREON (OR IMPLIED BY GRID COORDINATES) DO NOT EQUAL GEODETIC BEARINGS DUE TO MERIDIAN CONVERGENCE.

BENCHMARK			
BM#	DESCRIPTION	NAVD 83 DATUM	NAVD 85 DATUM
CLV BM No. 8LV0926W6	CITY OF LAS VEGAS RIVET AND PLATE IN TOP OF CURB AT THE SOUTHEAST CORNER OF CARRIAGE HILLS DR. AND FAR HILLS AVE.	3229.22 (FEET)	984.267 (METERS)

APPROVED FOR CONSTRUCTION
LAS VEGAS VALLEY WATER DISTRICT PLANNING AND ENGINEERING SERVICES
PROJECT NO. **####** FIRST APPROVAL DATE: _____

L#: LXX-XXXX-XXXX

CLV#: 107XXXXX

PROJECT NO.	639-660-2
DESIGN: MF/FB	
DRAWING: FB	
CHECK: MF	
PLOT DATE: 11-04-21	
PLOT TIME: 11:10:26	

1555 S. RAINBOW BLVD.
LAS VEGAS, NV 89146
T: 702.804.2000
F: 702.804.2299
gwenengineering.com

THE HOWARD HUGHES COMPANY, LLC
REDPOINT ARROYO - PHASE 2 IMPROVEMENTS
(FOX HILL DRIVE TO DESERT FOOTHILLS DRIVE)

PROJECT DATA

DRAWING

G3

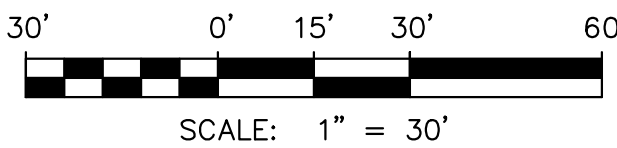
3 OF 15 SHTS

AGENCY REVIEW - NOT FOR CONSTRUCTION



ALL ONSITE STORM DRAIN AND THE ASSOCIATED FACILITIES ARE PRIVATELY OWNED AND TO BE PRIVATELY MAINTAINED BY SUMMERLINE

1	CONSTRUCT TYPE "CM2" DROP INLET (L=10')	(412.1) USD	(421) USD
2	INSTALL 24" RCP STORM DRAIN (CLASS III UNLESS OTHERWISE NOTED)		
3	CONSTRUCT NDOT TYPE 2 DROP INLET	(56-32) NDOT	(421) USD
4	INSTALL LANDSCAPE ROCK (D50=3" TH=6") (SEE LANDSCAPE PLANS)		



1	PROPOSED SIDEWALK (SEE LANDSCAPE PLANS)	
2	INSTALL DECORATIVE/RETAINING WALLS (SEE STRUCTURAL PLANS)	
3	INSTALL GRASS SURFACE (SEE LANDSCAPE PLANS)	
4	INSTALL STAIRS (SEE LANDSCAPE PLANS)	
5	INSTALL ADA RAMP PER	235 USD
6	INSTALL 0" FLUSH CURB (SEE LANDSCAPE PLANS)	
7	INSTALL DECOMPOSED GRANITE PAVING (SEE LANDSCAPE PLANS)	
8	PROTECT EXISTING ARROYO	
9	INSTALL 3" A.C. PAVEMENT PER TYPICAL STREET SECTION	F 10
10	INSTALL 6" PVC PIPE FOR SIDEWALK UNDERDRAIN	
11	INSTALL 24" "L" TYPE CURB & GUTTER	216 USD
12	INSTALL MODIFIED "A" CURB PER	3 10
13	SAW CUT AND APPROXIMATE LIMITS OF PAVEMENT RESTORATION	500.2 USD 503 USD
14	CONSTRUCT CURB OPENING PER DETAIL	4 10
15	INSTALL 4' CROSS GUTTER PER	A 11
16	CONSTRUCT 5' TRANSITION FROM "L" CURB TO "A" CURB PER	xx 10
17	INSTALL 2' CROSS GUTTER PER	B 11

SEE SUMMERLIN VILLAGE 21 - UNIT 3 FINAL MAP BOOK 159 PAGE 50 OF PLATS
BOOK NO. 20190620 FOR PEDESTRIAN ACCESS EASEMENT

SOUTHWEST GAS CORPORATION	SWG UID	DATE
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LAS VEGAS VALLEY WATER DISTRICT PLANNING AND ENGINEERING SERVICES

GRID NORTH AS DEFINED BY THE CENTRAL MERIDIAN OF THE NEVADA COORDINATE REFERENCE SYSTEM (NCRS), LAS VEGAS HIGH ELEVATION ZONE, NORTH AMERICAN DATUM OF 1983; SAID MERIDIAN BEING COINCIDENT WITH 114°58' WEST OF THE GREENWICH MERIDIAN.

LINEAR UNIT: US SURVEY FOOT (FTUS)
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 LONGITUDE OF CENTRAL MERIDIAN: 114°58'00"W
 NORTHING AT GRID ORIGIN: 400,000.00 M (1,312,333.3333 FTUS)
 EASTING AT CENTRAL MERIDIAN: 300,000.00 M (984,250.0000 FTUS)
 SCALE FACTOR ON CENTRAL MERIDIAN: 1.000135 (EXACT)

NOTES:

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BM#	DESCRIPTION	NAVD 88 DATUM	NAVD 88 DATUM
CLV BM No. 5LV0926W6	CITY OF LAS VEGAS RIVET AND PLATE IN TOP OF CURB AT THE SOUTHEAST CORNER OF CARRIAGE HILLS DR. AND FAR HILLS AVE.	3229.22 (FEET)	984.267 (METERS)

1-800-642-2444

FAST
Call **1-702-432-5300**
before you
UnderGround
1-702-432-5300
FREEWAY AND ARTERIAL
SYSTEM OF TRANSPORTATION

1-702-227-2929

[illegible]PROJECT NO.
639-660-2

DESIGN:	MF/PB
AWN:	PB
CK:	MF

OUT DATE: 11-04-2011
T TIME: 11:11:05

1555 S. RAINBOW BLVD.
LAS VEGAS, NV 89146

F: 702.804.2299
gcwengineering.com

-2C03-GD.DWG

\\PROJECTS\600\639-660-2\DWG\PRODUCTION\639-660-2C03-G0.DWG

THE HOWARD HUGHES COMPANY, LLC

REDPOINT ARROYO - PHASE 2 IMPROVEMENTS (FOX HILL DRIVE TO DESERT FOOTHILLS DRIVE)

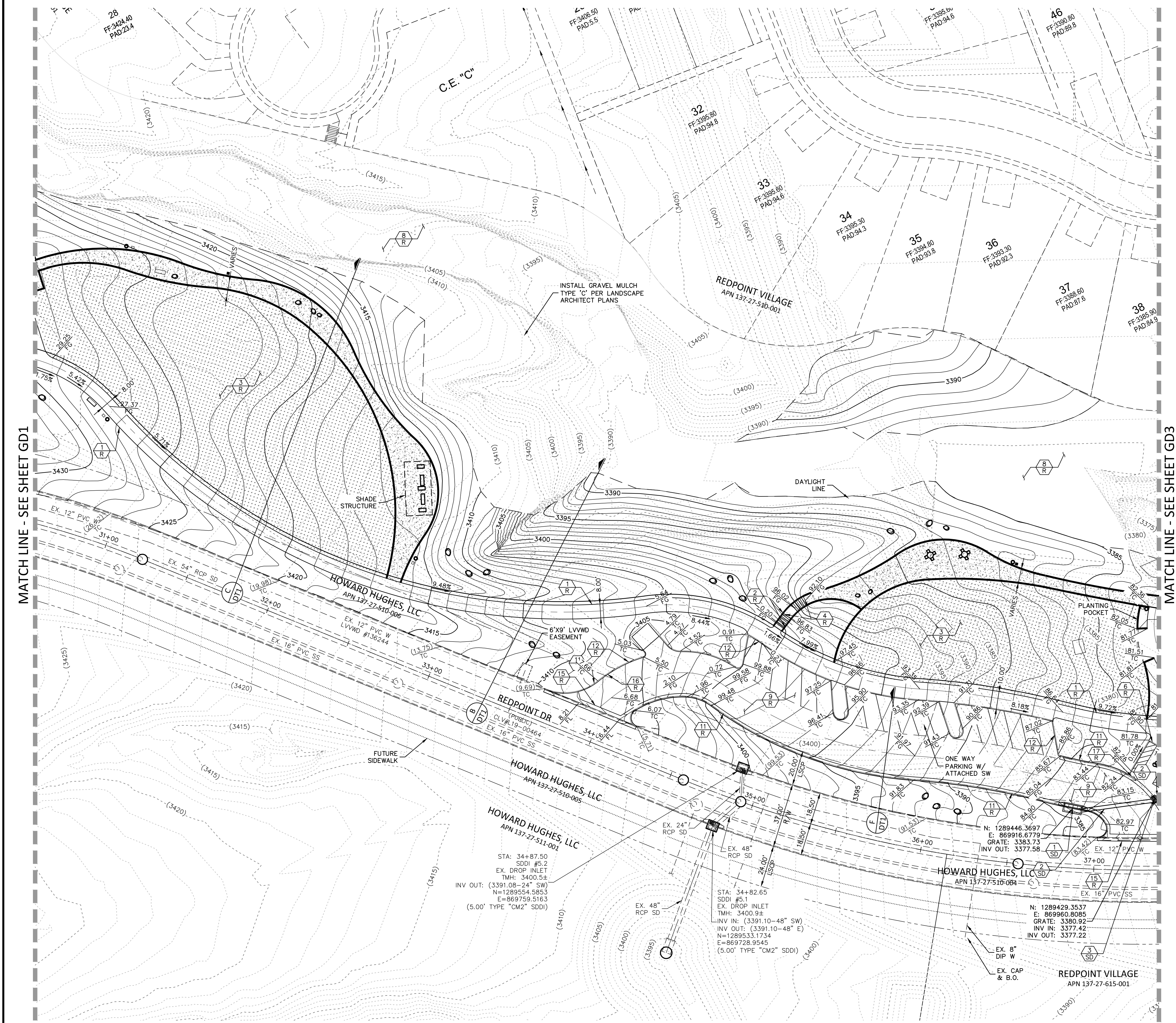
GRADING PLAN 1

DRAWING
GD1

7 OF 15 SHTS
HTE: 00-00000

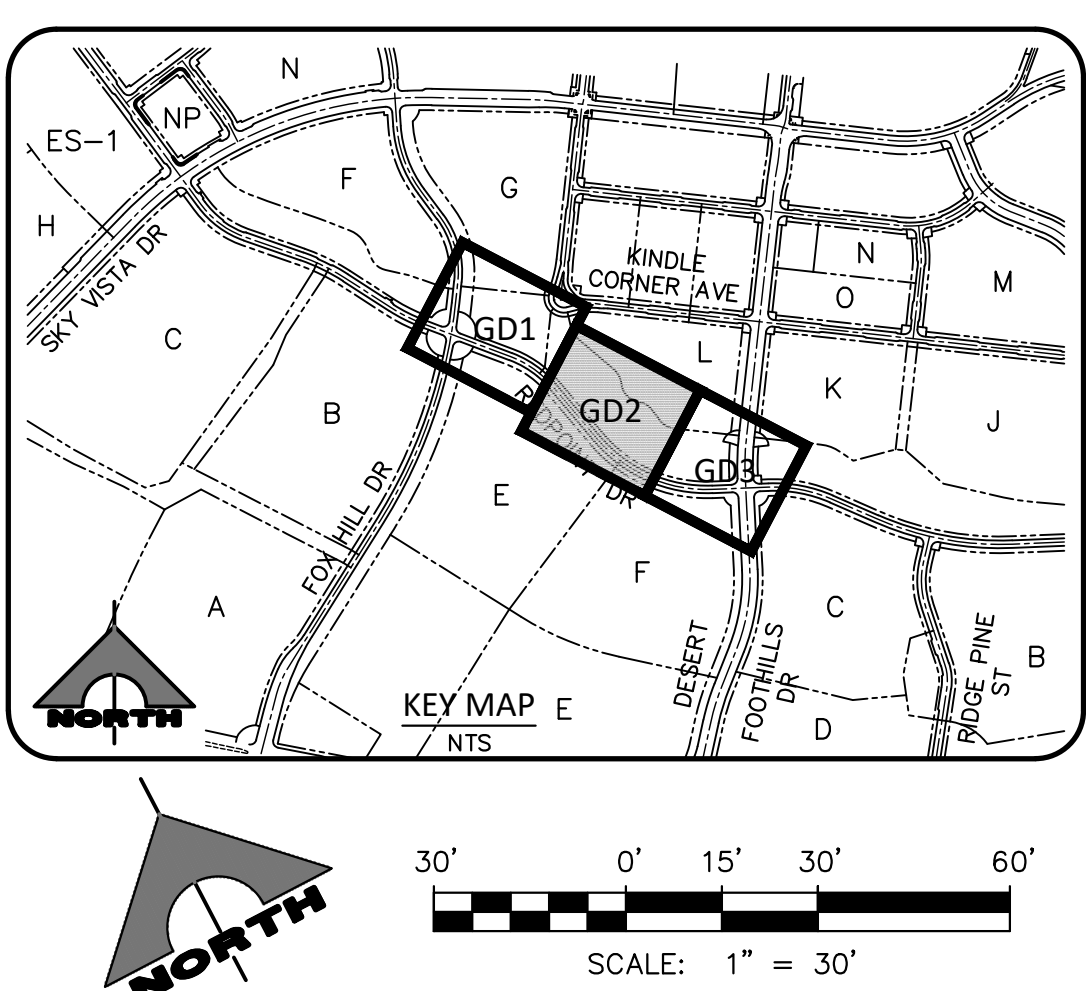
MATCH LINE - SEE SHEET GD1

MATCH LINE - SEE SHEET GD3



NOTE
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STORM DRAIN CONSTRUCTION NOTES
1. CONSTRUCT TYPE "CM2" DROP INLET (L=10')
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3. CONSTRUCT NDOT TYPE 2 DROP INLET
4. INSTALL LANDSCAPE ROCK (D50=3" TH=6") (SEE LANDSCAPE PLANS)



- ROADWAY CONSTRUCTION NOTES**
- PROPOSED SIDEWALK (SEE LANDSCAPE PLANS)
 - INSTALL DECORATIVE/RETAINING WALLS (SEE STRUCTURAL PLANS)
 - INSTALL GRASS SURFACE (SEE LANDSCAPE PLANS)
 - INSTALL STAIRS (SEE LANDSCAPE PLANS)
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NOTE
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SOUTHWEST GAS APPROVAL
SOUTHWEST GAS CORPORATION SWG UID DATE

APPROVED FOR CONSTRUCTION
LAS VEGAS VALLEY WATER DISTRICT PLANNING AND ENGINEERING SERVICES
PROJECT NO. FIRST APPROVAL DATE:

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Call before you Dig
Avoid hitting underground utility lines. It's costly.

Call before you UnderGround
1-702-432-5300
FREEMAN AND ARTERIAL SYSTEM OF TRANSPORTATION

Call before you Overhead
1-702-227-2929
AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY.

THE HOWARD HUGHES COMPANY, LLC
REDPOINT ARROYO - PHASE 2 IMPROVEMENTS
(FOX HILL DRIVE TO DESERT FOOTHILLS DRIVE)

GRADING PLAN 2

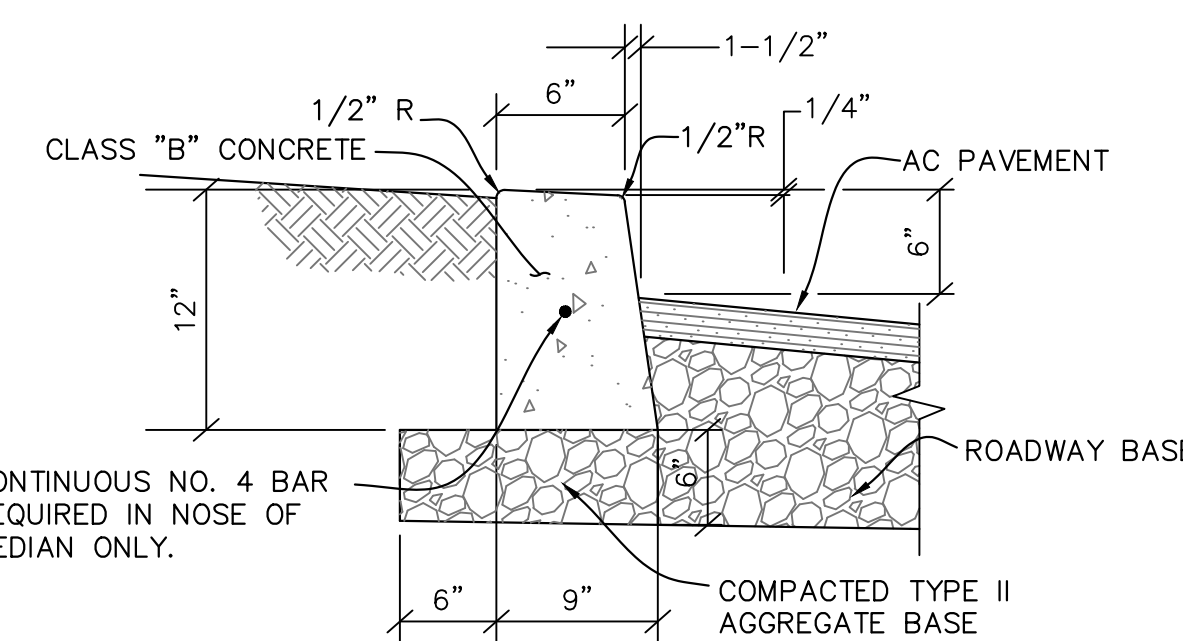
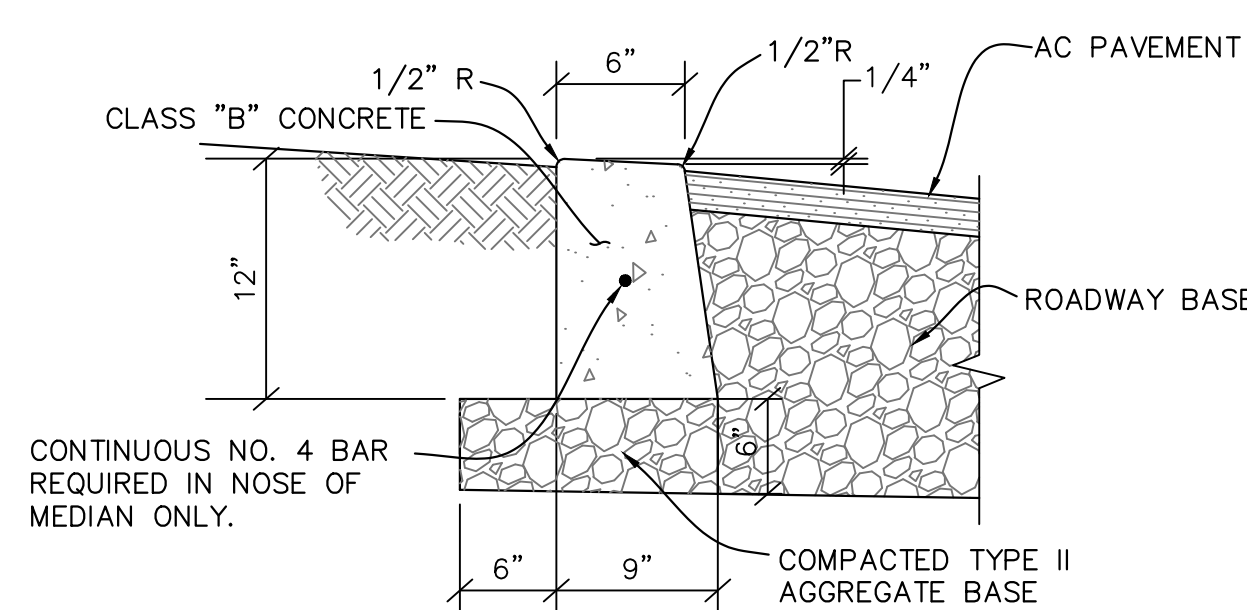
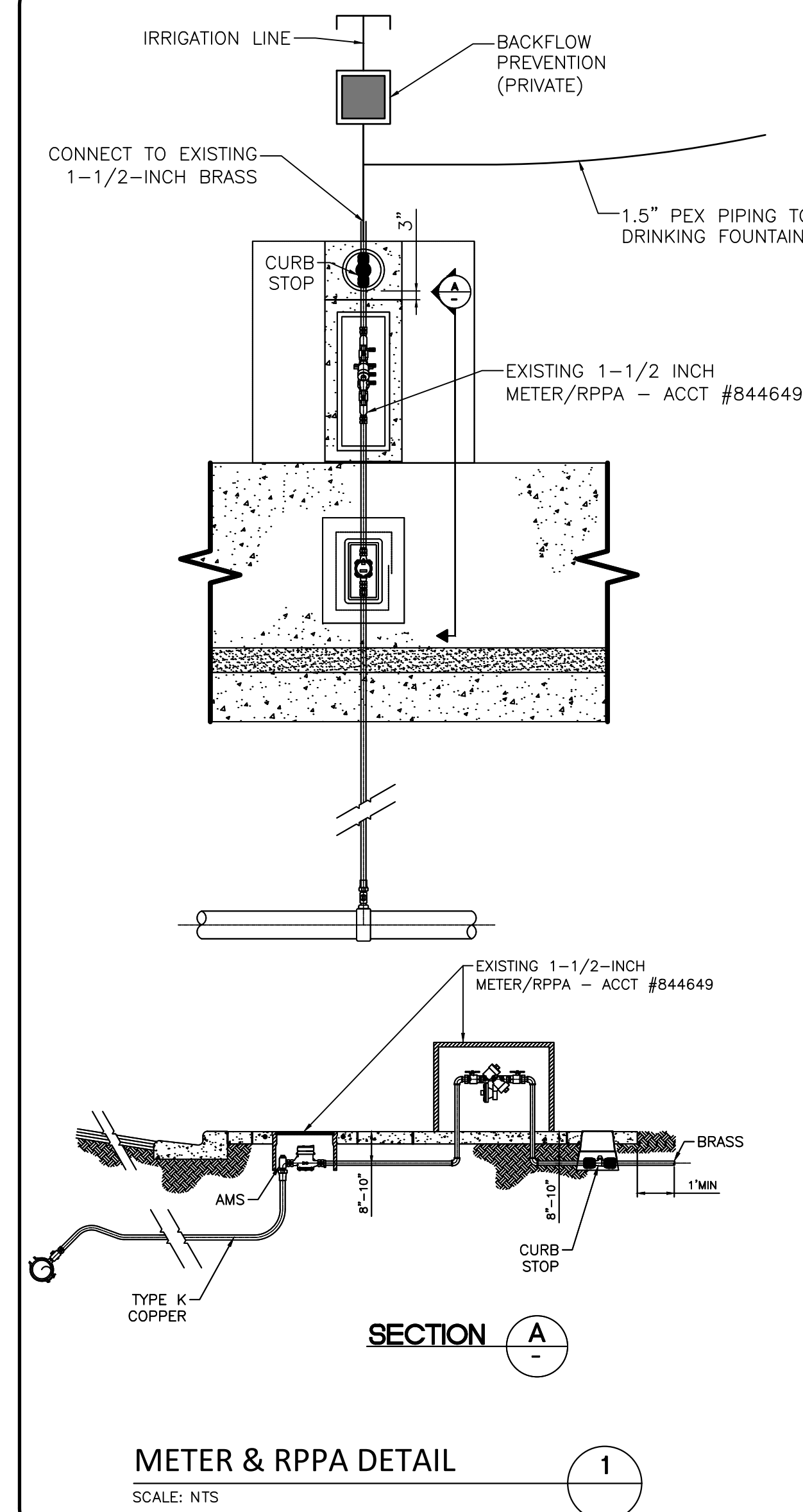
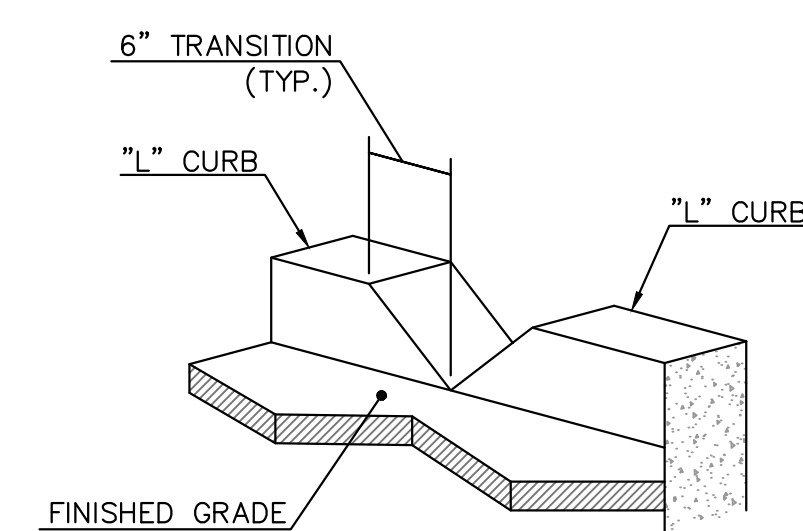
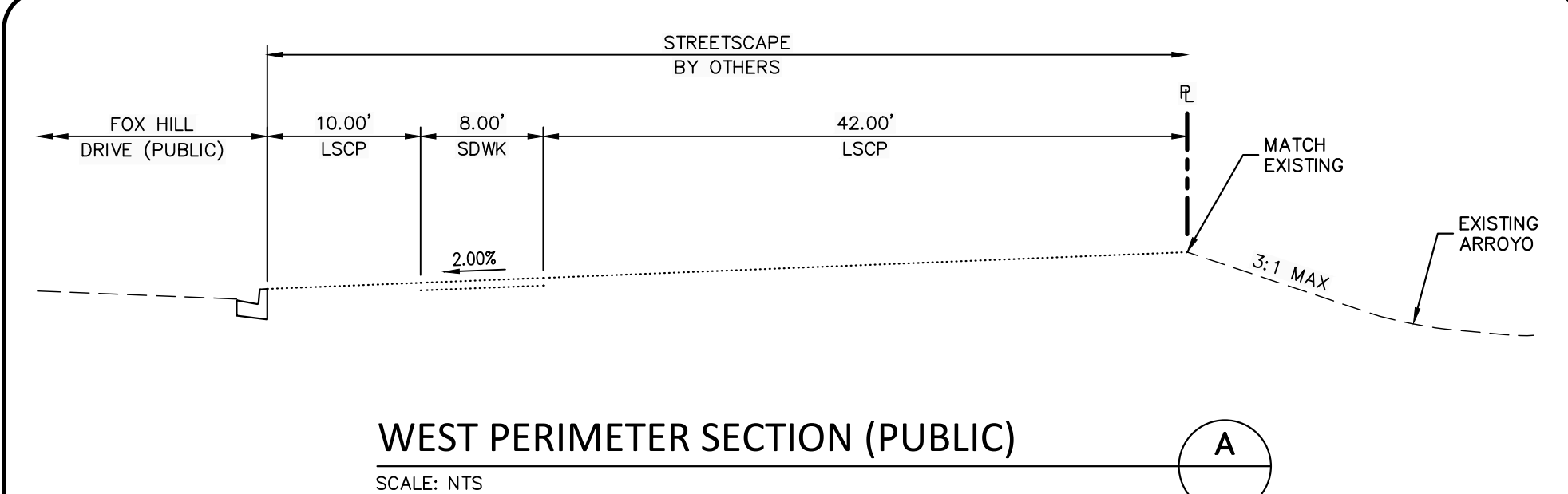
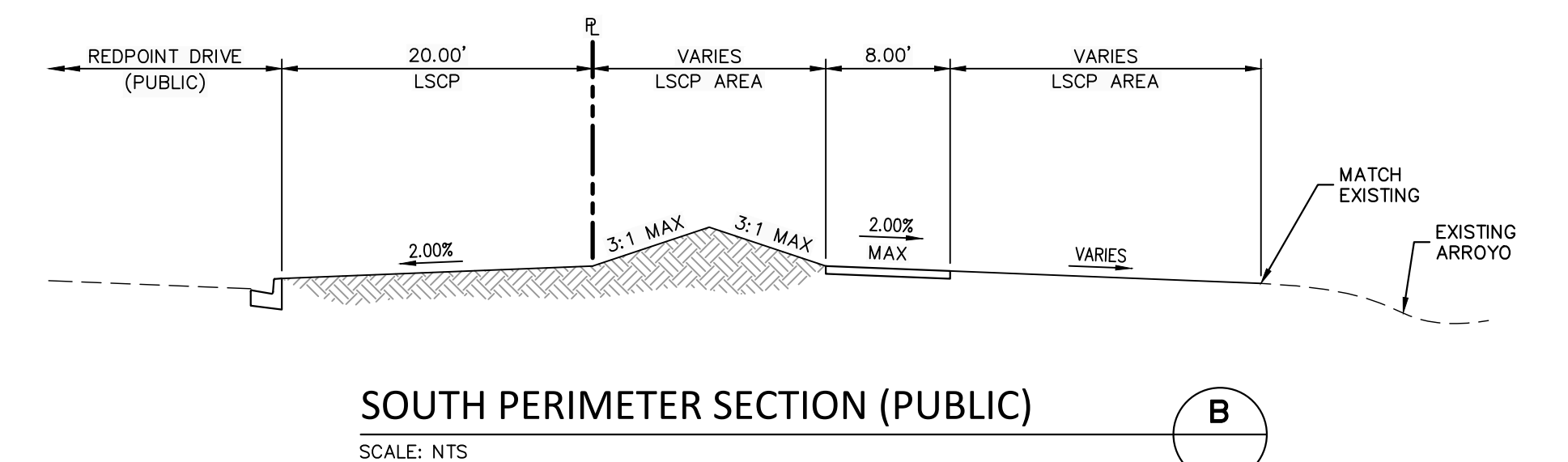
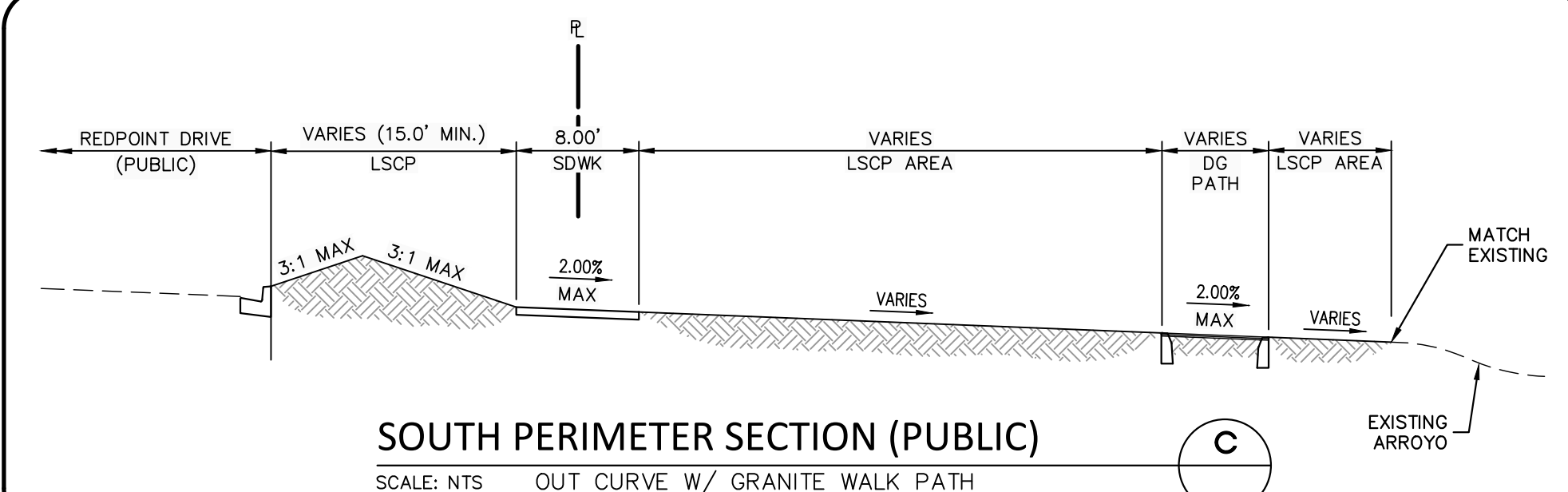
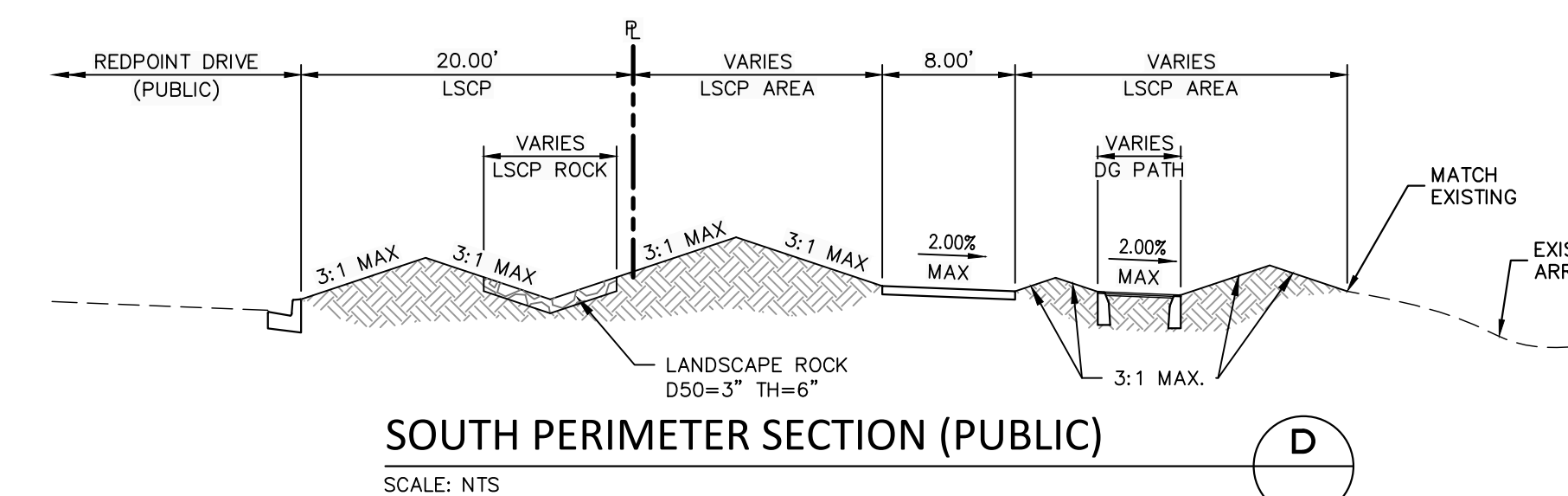
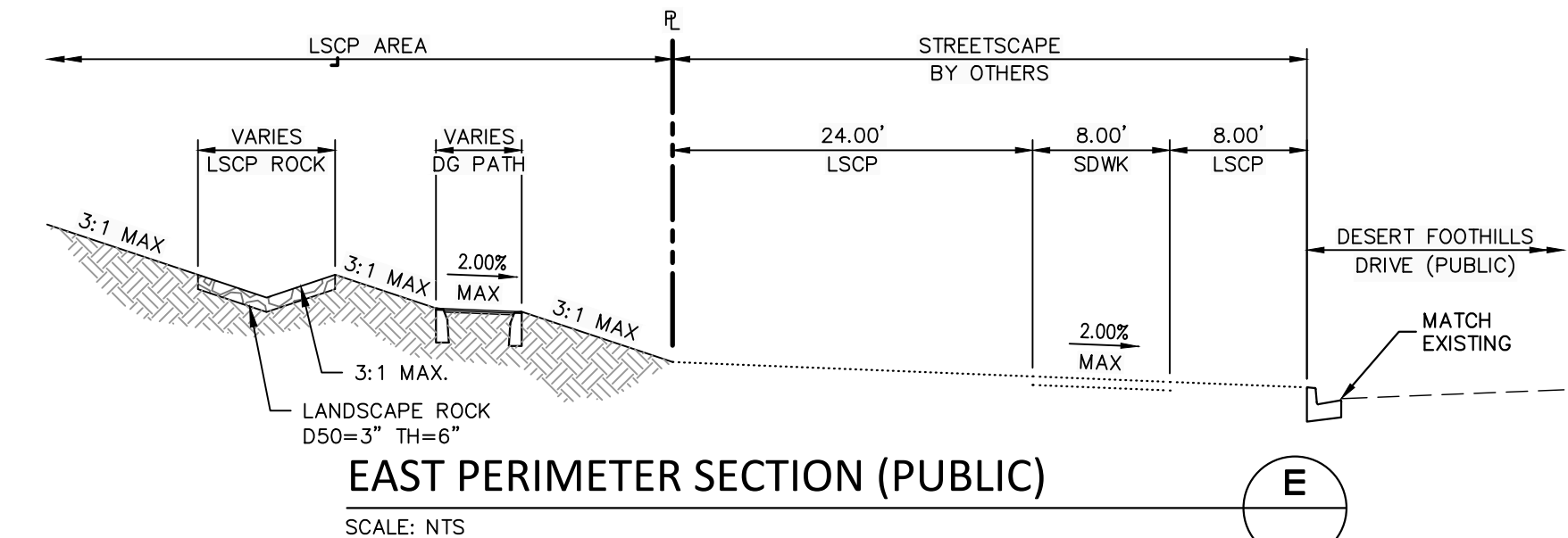
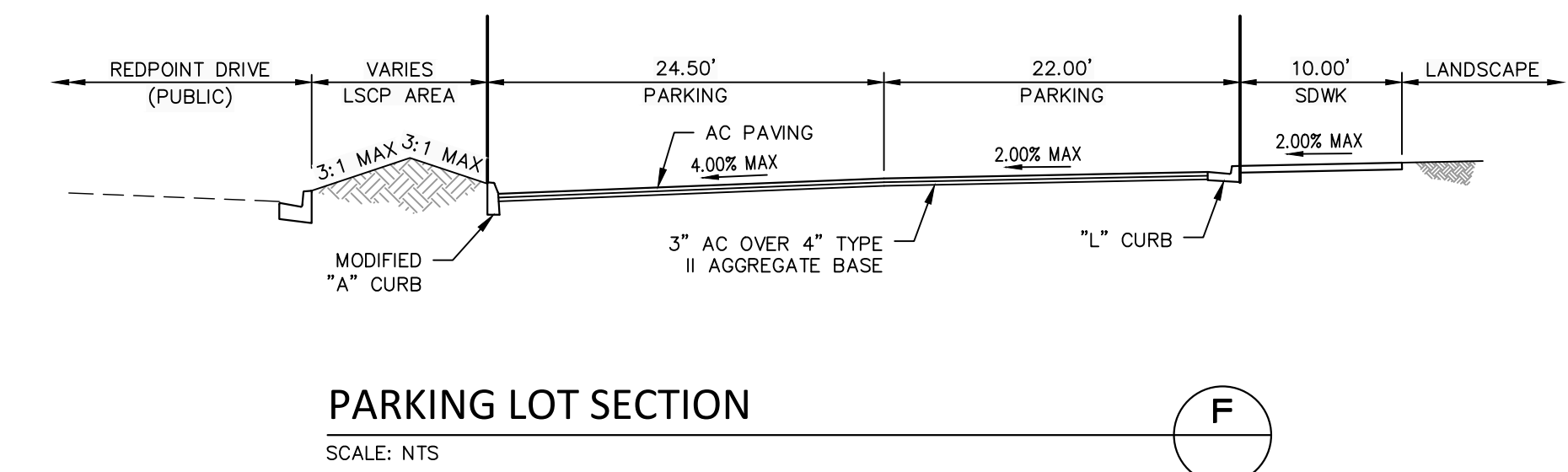
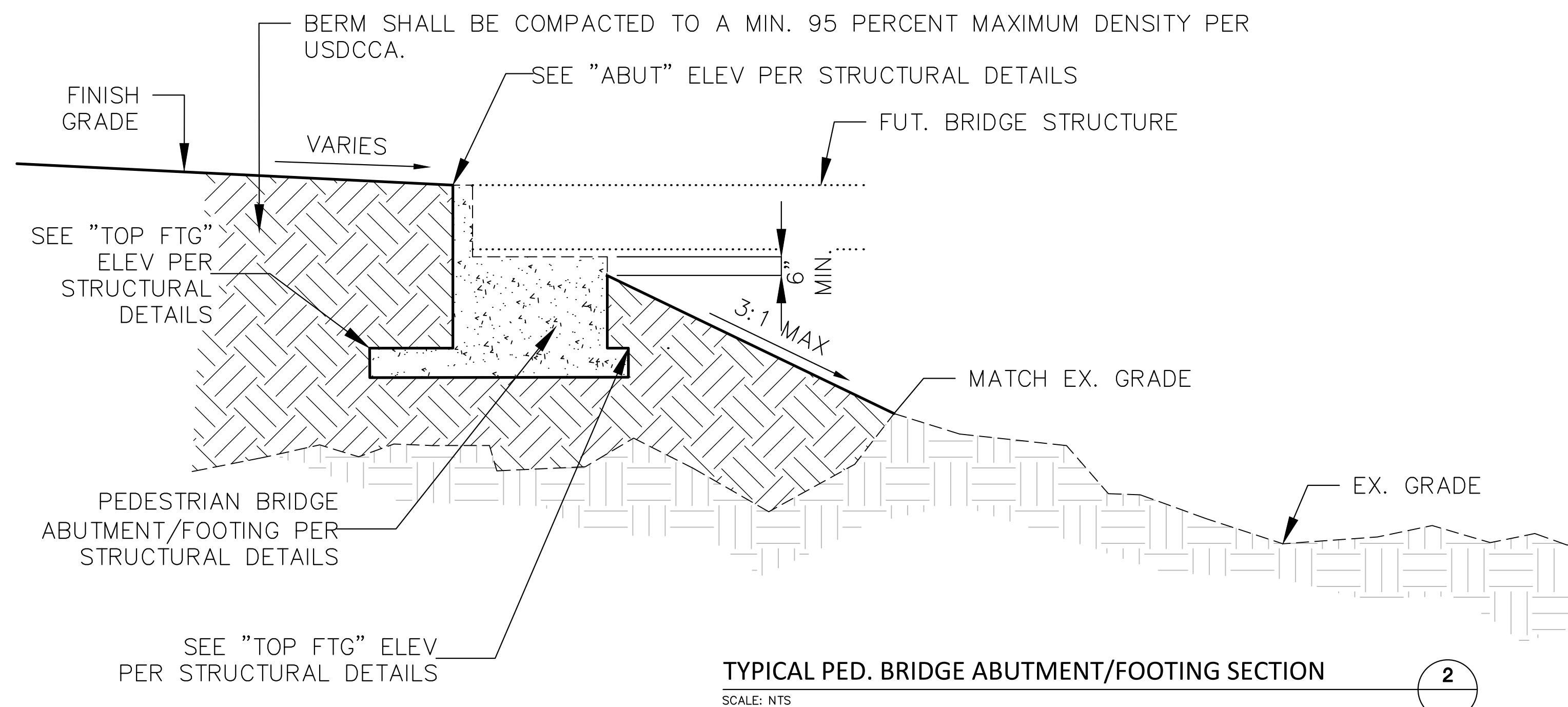
GD2
8 OF 15 SHTS
HTE: 00-00000

AGENCY REVIEW - NOT FOR CONSTRUCTION

PROJECT NO. 639-660-2
DESIGN: MF/FB
DRAWING: FB
CHECK: MF
PLOT DATE: 11-04-21
PLOT TIME: 11:11:14
JAY GUZMAN

ENGINEER'S SURVEYORS
1555 S. RAINBOW BLVD.
LAS VEGAS, NV 89146
T: 702.804.2000
F: 702.804.2299
gwenengineering.com

AGENCY REVIEW - NOT FOR CONSTRUCTION



\\PROJECTS\600\639-660-2\DWG\PRODUCTION\639-660-2C04-DT.DWG

REDPOINT ARROYO - PHASE 2 IMPROVEMENTS
(FOX HILL DRIVE TO DESERT FOOTHILLS DRIVE)

DRAWING
DT2
OF 15 SHTS

SPEC. #
609

DETAIL
NUMBER
DS-32

* THE CONCRETE AND REINFORCING QUANTITIES ARE BASED ON THE H MIN. SHOWN. INCREASE THE CONCRETE AND REINFORCING BASE QUANTITY BY THE CORRESPONDING ADD RATE, PER FOOT OF INCREASED H, IF THE H SPECIFIED IS LARGER THAN H MIN

A cross-sectional diagram of a road shoulder. It shows a vertical wall on the left with a height dimension of 5'. To the right of the wall is a sloped area representing the shoulder. A line with an arrow indicates a 10:1 slope ratio. The sloped area is filled with a pattern of small circles, representing aggregate or gravel. The top of the shoulder is a horizontal line. To the right of the shoulder is a vertical line representing the edge of the road or a curb.



- NOTES:**
1. All concrete shall be class A or AA.
 2. Reinforcing steel shall be No. 4 bars with maximum spacing at 18-inches on center, wired tightly at all intersections and embedded 2-inches clear of all concrete surfaces.
 3. Exposed edges of concrete shall be chamfered 1-inch.
 4. Dimensions may be varied to fit local conditions if ordered by the Engineer. If a D.I. is to be precast, contractor shall verify actual "H" value prior to casting, to account for varying field conditions. This will then be approved by the Engineer.
 5. Commercial prefabricated gratings approved by the bridge division may be used in lieu of the field-welded grating shown.
 6. Extreme low cover situations to be reviewed by hydraulics engineer.
 7. Slope catch basin floors 10:1 from all directions toward outlet pipe. If basin is used as a junction, shape flow line(s) to outlet pipe and provide a 10:1 slope to flow line(s).
 8. See detail DS-27 for details if connecting HDPE pipe.
 9. A single Type 2 drop inlet shall be constructed unless a double or triple is specified.
 10. Single grate configuration shown for clarity. Outside dimensions of each grate shall measure 2-feet by A + 4 ¾-inches.
 11. Run rebar continuously through construction joint. Joint must be a minimum of 3-inches from horizontal bars.
 12. Weld one tab on $\bar{C}$ of grate and remaining two tabs 6-inches from edge of frame. Six tabs per inlet, three tabs on each side.
 13. Weld tabs 6-inches from edge of frame. Four tabs per grate, two on each side.
 14. For multiple grate installations, the station/offset is to the center of the concrete drop inlet structure.
 15. Grate is to fit in the frame and be easily removed. If the gap between the grate and frame is greater than ¼-inches on each side of the grate, the grate and frame shall be removed and reconstructed to the tolerances specified, or with approval of the Engineer, a filler strip up to ¼-inches in thickness may be welded flush to the top of the frame to reduce the gap to a maximum of ¼-inches.
 16. Additional pipe penetrations may be placed in any wall. Pipe penetrations are to be to the center of the structure wall unless specified otherwise.
 17. "A" dimension is parallel to the flow or edge of pavement/shoulder dike or barrier rail, and "L" is perpendicular to the flow or edge of pavement/shoulder dike or barrier rail.
 18. "L" dimension can be less than 2-feet. If less than 2-feet, bar spacing shall not exceed 2 ½-inches.

