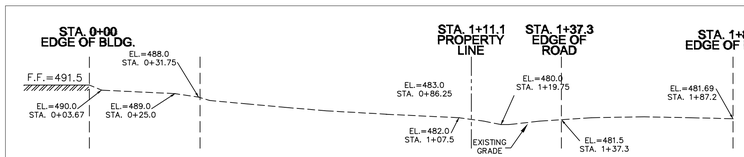
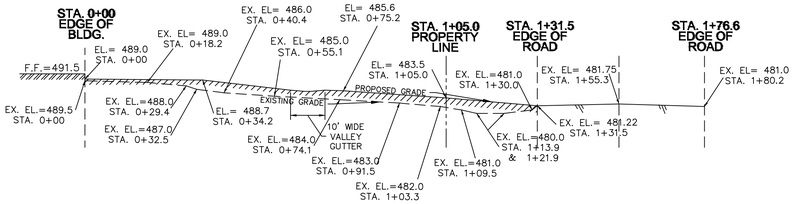
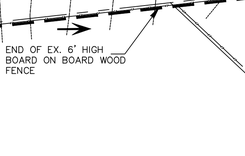


SECTION 2194



① CROSS SECTION



② SWALE CROSS SECTION
N.T.S.

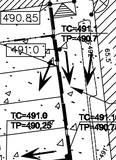
CAPACITY OF SWALE CROSS SECTION ② (TYP.)

$Q = (1.49/n)\,AR^{(2/3)}S^{(1/2)}$

$= (1.49/0.035)\,[(3.0)(0.2308)^{(2/3)}]\,(0.0217)^{(1/2)}$

$= 7.04$ CFS > 2.835 CFS (OK);

$V = 2.35$ FPS



③ DETENTION/PARKING AREA DISCHARGE OUTLET
N.T.S.

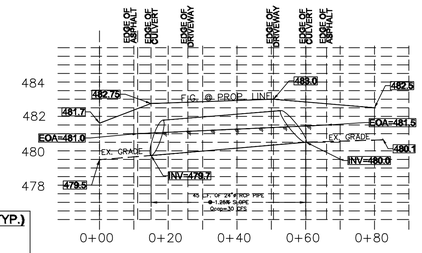
CAPACITY OF DETENTION AREA GUTTER SEC. ③ (TYP.)

$Q = (1.49/n)\,AR^{(2/3)}S^{(1/2)}$

$= (1.49/0.013)\,[(0.495)(0.2475)^{(2/3)}]\,(0.0416)^{(1/2)}$

$= 4.5$ CFS $= 4.5$ CFS ALLOWED(OK);

$V = 9.2$ FPS



④ CULVERT CROSS SECTION

SITE DATA	
EXISTING PAVED AREA	3,945 SQ.FT.
EXISTING BLDG AREA	4,157 SQ.FT.
EXISTING LANDSCAPE AREA	46,011 SQ.FT.
PROPOSED PAVED AREA	9,985 SQ.FT.
PROPOSED LANDSCAPE AREA	36,026 SQ.FT.
TOTAL IMPERVIOUS AREA	18,087 SQ.FT.
TOTAL SITE AREA	54,113 SQ.FT.

1. DRAINAGE PLAN HAS BEEN PREPARED WITH PERMISSION TO USE "C" OF 0.5 FOR EXISTING CONDITION AND "C" OF 0.9 FOR ONLY THE NEW PAVED AREA, THEREBY GIVING A WEIGHTED RUNOFF COEFFICIENT OF APPROXIMATELY 0.534.
2. CONTRACTOR TO GRADE LOT TO ENSURE THAT ALL RUNOFF DRAINS AS PROPOSED ON THE PLAN, AND INTO THE DETENTION POND, WHICH APPROXIMATELY IS NINETY PERCENT OF THE SITE.

DETENTION AREA IS WITHIN A 3,500 SF AREA OF THE AVERAGE DETAINED WATER DEPTH = 4'. REQUIRED STORAGE VOLUME PER DETENTION POND CALCULATION IS 1,052.7 CFS. PROVIDED DETENTION POND STORAGE = 1,166.7 CFS

RUNOFF CALCULATIONS POST-DEVELOPMENT CONDITIONS

AREA DRAINED											
DRAINAGE ID	AREA (ACRES)	C	$T_{C\,BEHIND}$ DESIGN	I_{10} (INCH/HR)	Q_{10} (CFS)	I_{25} (INCH/HR)	Q_{25} (CFS)	I_{50} (INCH/HR)	Q_{50} (CFS)	I_{100} (INCH/HR)	Q_{100} (CFS)
A	0.6973	0.543*	10	6.10	2.31	7.10	2.69	8.30	3.14	9.80	3.71
B	0.5151	0.543*	10	6.10	1.71	7.10	1.98	8.30	2.33	9.80	2.74
C	0.0299	0.543*	10	6.10	0.10	7.10	0.12	8.30	0.13	9.80	0.16
TOTAL	1.2423				4.12		4.79		5.60		6.61
O-1 (OFFSITE)	0.13385	0.5	10	6.10	0.41	7.10	0.475	8.30	0.555	9.80	0.655
O-2 (OFFSITE)	0.13385	0.5	10	6.10	0.41	7.10	0.475	8.30	0.555	9.80	0.655
TOTAL (WITH OFFSITE)	1.51				4.94		5.74		6.71		7.92

$Q_{CK} = C_{OH}A$

EXAMPLE RUNOFF CALCULATIONS FOR:

DRAINAGE AREA "A": Q100 = (0.543)*(0.6619)*(9.80)= 3.52 CFS

INCREASE BETWEEN PRE & POST DEVELOPMENT RUNOFF = 6.61 - 6.09 = 0.52 CFS

SITE WEIGHTED RUNOFF COEFFICIENT CALCULATION			
AREA DESCRIPTION	AREA (Ac.)	C	(C)*(AREA)
EX. BLDG. AREA	0.0954	0.5	0.0477
NEW PAVED AREA	0.1343	0.9	0.12087
LANDSCAPE AREA	1.0126	0.5	0.5063
	1.2423		0.67487

WEIGHTED RUNOFF COEFFICIENT

*Cw = 0.67487/1.2423 = 0.543

LEGEND

- 436 — EXISTING CONTOUR LINE
- DRAINAGE / GRADING DIRECTION
- + 437.00 EXISTING SPOT ELEVATION
- 655.35 PROPOSED SPOT ELEVATION
- DRAINAGE DIVIDE LINE
- B DRAINAGE AREA NO.
- 436 PROPOSED CONTOUR LINE
- NEW CONCRETE PAVEMENT
- EXISTING CONCRETE PAVEMENT
- ASPHALT PAVEMENT
- LANSCAPE AREA
- 6"ø(MIN.) RIP-RAP OVER 5'x6' AREA
- EXISTING CHAIN LINKED FENCE
- EXISTING WOODEN FENCE
- PROPERTY LINE
- T.O.C. TOP OF CURB ELEVATION
- TELEPHONE PEDESTAL
- POWER POLE
- SIGN
- EXISTING SAN. SEWER MANHOLE
- FIRE HYDRANT
- T.O.W. TOP OF WALL
- B.O.W. BOTTOM OF WALL

OWNER/APPLICANT NAME:
LIZARDO OEMENO
816 COURTLAND DRIVE
MESQUITE, TX 75150
(214) 475-5144

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REVISIONS		
	Date	Description

STATE OF TEXAS
OLUSHOLA K. MOROHUNFOLA
88387
LICENSED
PROFESSIONAL ENGINEER
07/12/17

Project Name & Address:
PROPOSED OFFICE (REAL ESTATE)
1201 N. GOLIAD STREET
LIZARDO OEMENO ADDITION
LOT 1, BLOCK A
ROCKWALL, TX 75087

Sheet Title:
DRAINAGE & GRADING PLAN

Date:
AUGUST 30, 2017

Scale: 1" = 20'

Sheet No.: C-3

OKM Project No.: 17-150

Owner's Project No.: N/A