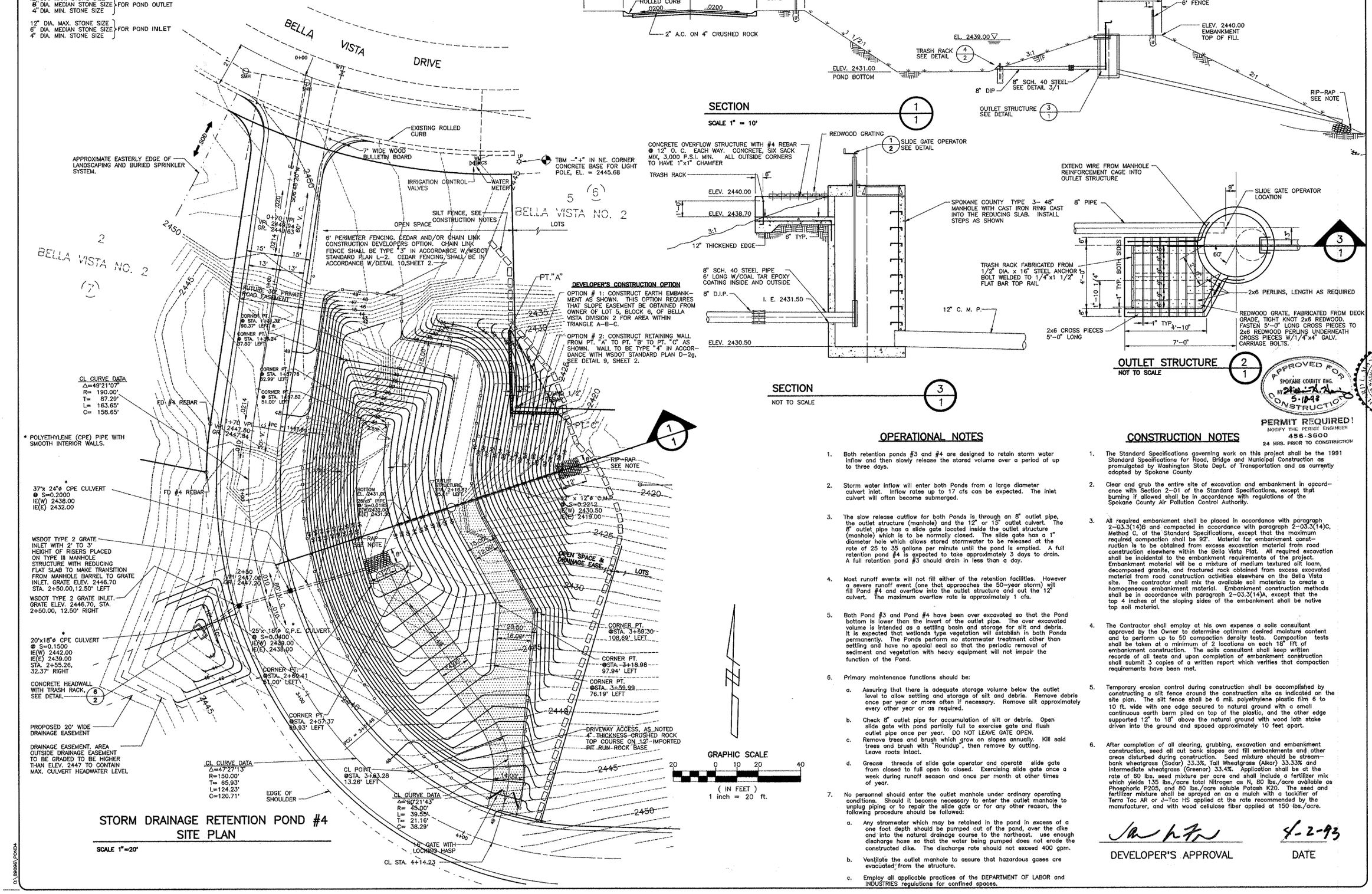
RIP RAP NOTE

OVER EXCAVATE A DEPTH OF 2 FEET BELOW FINISHED GRADE SHOWN AND PLACE ROCK RIP-RAP AT CULVERT OUTLET AS SHOWN. RIP RAP SHALL BE PLACED ON TOP OF FILTER FABRIC ("AMOCO" #4545 OR APPROVED EQUAL.)

RIP RAP SPECIFICATIONS

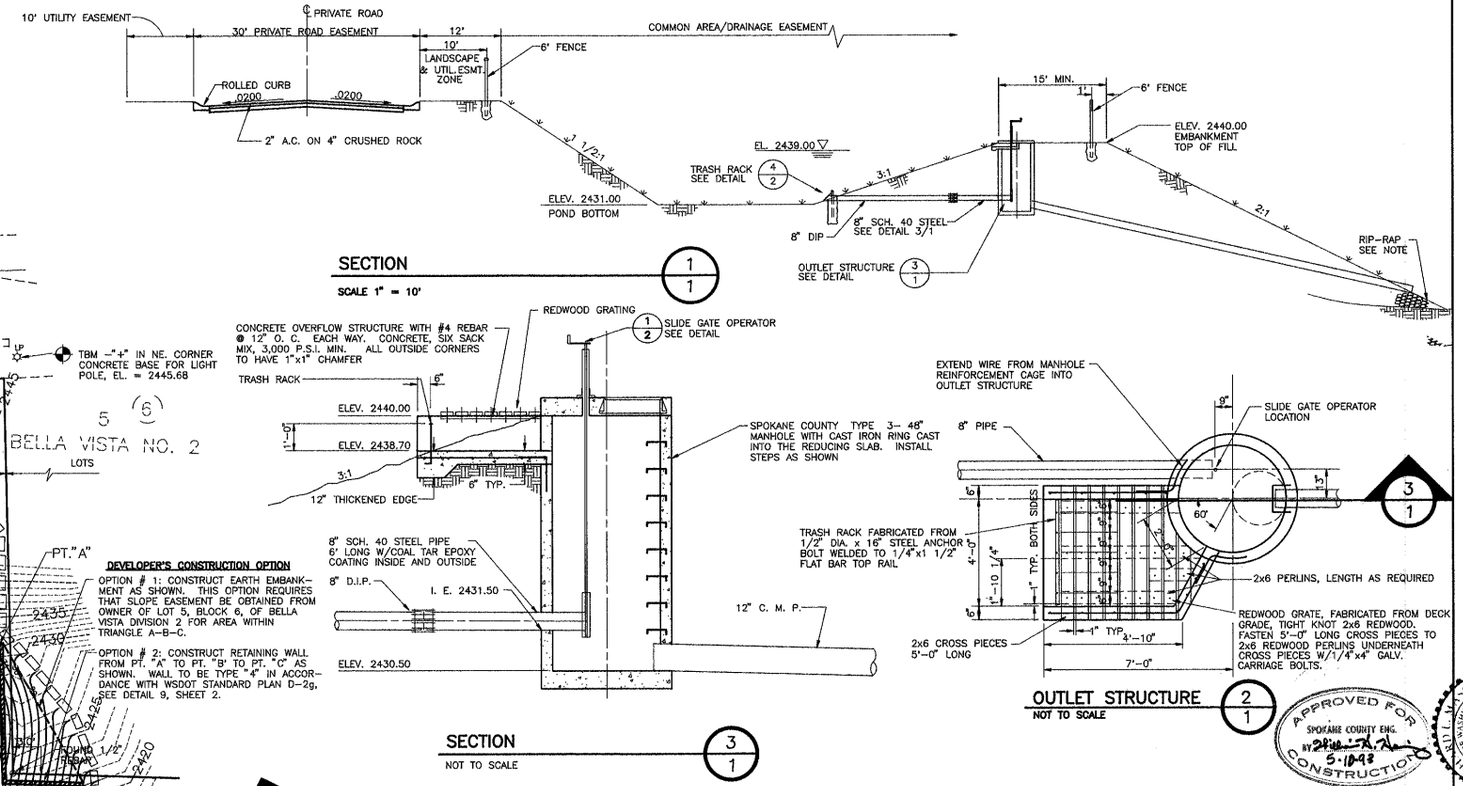
12" DIA. MAX. STONE SIZE
8" DIA. MEDIAN STONE SIZE } FOR POND OUTLET
4" DIA. MIN. STONE SIZE

12" DIA. MAX. STONE SIZE
6" DIA. MEDIAN STONE SIZE } FOR POND INLET
4" DIA. MIN. STONE SIZE



STORM DRAINAGE RETENTION POND #4 SITE PLAN

SCALE 1"=20'



SECTION

SCALE 1" = 10'

1/1

SECTION

NOT TO SCALE

3/1

OUTLET STRUCTURE

NOT TO SCALE

2/1

OPERATIONAL NOTES

1. Both retention ponds #3 and #4 are designed to retain storm water inflow and then slowly release the stored volume over a period of up to three days.
2. Storm water inflow will enter both Ponds from a large diameter culvert inlet. Inflow rates up to 17 cfs can be expected. The inlet culvert will often become submerged.
3. The slow release outflow for both Ponds is through an 8" outlet pipe, the outlet structure (manhole) and the 12" or 15" outlet culvert. The 8" outlet pipe has a slide gate located inside the outlet structure (manhole) which is to be normally closed. The slide gate has a 1" diameter hole which allows stored stormwater to be released at the rate of 25 to 35 gallons per minute until the pond is emptied. A full retention pond #4 is expected to take approximately 3 days to drain. A full retention pond #3 should drain in less than a day.
4. Most runoff events will not fill either of the retention facilities. However a severe runoff event (one that approaches the 50-year storm) will fill Pond #4 and overflow into the outlet structure and out the 12" culvert. The maximum overflow rate is approximately 1 cfs.
5. Both Pond #3 and Pond #4 have been over excavated so that the Pond bottom is lower than the invert of the outlet pipe. The over excavated volume is intended as a settling basin and storage for silt and debris. It is expected that wetlands type vegetation will establish in both Ponds permanently. The Ponds perform no stormwater treatment other than settling and have no special seal so that the periodic removal of sediment and vegetation with heavy equipment will not impair the function of the Pond.
6. Primary maintenance functions should be:
   a. Assuring that there is adequate storage volume below the outlet level to allow settling and storage of silt and debris. Remove debris once per year or more often if necessary. Remove silt approximately every other year or as required.
   b. Check 8" outlet pipe for accumulation of silt or debris. Open slide gate with pond partially full to exercise gate and flush outlet pipe once per year. DO NOT LEAVE GATE OPEN.
   c. Remove trees and brush which grow on slopes annually. Kill said trees and brush with "Roundup", then remove by cutting. Leave roots intact.
   d. Grease threads of slide gate operator and operate slide gate from closed to full open to closed. Exercising slide gate once a week during runoff season and once per month at other times of year.
7. No personnel should enter the outlet manhole under ordinary operating conditions. Should it become necessary to enter the outlet manhole to unplug piping or to repair the slide gate or for any other reason, the following procedure should be followed:
   a. Any stormwater which may be retained in the pond in excess of a one foot depth should be pumped out of the pond, over the dike and into the natural drainage course to the northeast. use enough discharge hose so that the water being pumped does not erode the constructed dike. The discharge rate should not exceed 400 gpm.
   b. Ventilate the outlet manhole to assure that hazardous gases are evacuated from the structure.
   c. Employ all applicable practices of the DEPARTMENT OF LABOR and INDUSTRIES regulations for confined spaces.

CONSTRUCTION NOTES

1. The Standard Specifications governing work on this project shall be the 1991 Standard Specifications for Road, Bridge and Municipal Construction as promulgated by Washington State Dept. of Transportation and as currently adopted by Spokane County
2. Clear and grub the entire site of excavation and embankment in accordance with Section 2-01 of the Standard Specifications, except that burning if allowed shall be in accordance with regulations of the Spokane County Air Pollution Control Authority.
3. All required embankment shall be placed in accordance with paragraph 2-03.3(14)B and compacted in accordance with paragraph 2-03.3(14)C, Method C, of the Standard Specifications, except that the maximum required compaction shall be 92'. Material for embankment construction is to be obtained from excess excavation material from road construction elsewhere within the Bella Vista Plat. All required excavation shall be incidental to the embankment requirements of the project. Embankment material will be a mixture of medium textured silt loam, decomposed granite, and fractured rock obtained from excess excavated material from road construction activities elsewhere on the Bella Vista site. The contractor shall mix the available soil materials to create a homogeneous embankment material. Embankment construction methods shall be in accordance with paragraph 2-03.3(14)A, except that the top 4 inches of the sloping sides of the embankment shall be native top soil material.
4. The Contractor shall employ at his own expense a soils consultant approved by the Owner to determine optimum desired moisture content and to perform up to 50 compaction density tests. Compaction tests shall be taken at a minimum of 2 locations on each 18" lift of embankment construction. The soils consultant shall keep written records of all tests and upon completion of embankment construction shall submit 3 copies of a written report which verifies that compaction requirements have been met.
5. Temporary erosion control during construction shall be accomplished by constructing a silt fence around the construction site as indicated on the site plan. The silt fence shall be 6 mil. polyethylene plastic film 8 to 10 ft. wide with one edge secured to natural ground with a small continuous earth berm piled on top of the plastic, and the other edge supported 12" to 18" above the natural ground with wood lath stake driven into the ground and spaced approximately 10 feet apart.
6. After completion of all clearing, grubbing, excavation and embankment construction, seed all cut bank slopes and fill embankments and other areas disturbed during construction. Seed mixture should be streambank wheatgrass (Sodar) 33.3%, Tall Wheatgrass (Alkar) 33.33% and intermediate wheatgrass (Greenar) 33.4%. Application shall be at the rate of 60 lbs. seed mixture per acre and shall include a fertilizer mix which yields 135 lbs./acre total Nitrogen as N, 80 lbs./acre available as Phosphoric P205, and 80 lbs./acre soluble Potash K20. The seed and fertilizer mixture shall be sprayed on as a mulch with a tackifier of Terra Tac AR or J-Tac HS applied at the rate recommended by the manufacturer, and with wood cellulose fiber applied at 150 lbs./acre.

DEVELOPER'S APPROVAL

4-2-93
DATE

GRAPHIC SCALE
20 0 10 20 40
(IN FEET)
1 inch = 20 ft.

APPROVED FOR CONSTRUCTION
SPOKANE COUNTY ENG.
BY [illegible] 5-10-93

PERMIT REQUIRED!
NOTIFY THE PERMIT ENGINEER
456-3600
24 HRS. PRIOR TO CONSTRUCTION

NO.	DATE	BY	REVISIONS
1	4-16-93		CORRECTIONS TO NOTES

SCALE HORIZONTAL 1"=20' VERTICAL 1"=20'

DATE 04-02-93 DWN. JFC, RM CHK. RLM APP. RLM

INLAND PACIFIC ENGINEERING
South 25 Altamont Spokane,Washington 99202
(509) 535-1410

BELLA VISTA DRAINAGE
POND #4 REPLACEMENT

SHEET 1 OF 2

JOB NUMBER 89096

D:\89096\POND4

INT.	DATE	DWG	ENG.

GRADING
BASE MAP
TOPO
LOT LAYOUT

T24N.R.44E.W.M.

1. ALL DISTURBED AREAS NOT [illegible] SHALL BE FINISHED GRADED AND [illegible] DIRECTED BY THE OWNER. SEE NO. 10 FOR [illegible] TION.
2. CUT/FILL LINE IS FOR [illegible] CONTRACTOR SHALL ESTIMATE HIS OWN CUT/FILL LOCATIONS BASED ON ROAD PROFILE ELEVATIONS AND THE SECTIONS PROVIDED.
3. SITE EARTHWORK IS NOT LIMITED TO [illegible] FILL AREAS SHOWN ON THE PLANS.

REVISED JULY 1989

Inland Pacific Engineering
South 25 Altamont 509 535-1410 Spokane, Washington 99202

Developer's Approval Date

LEGEND:

CUT / FILL LINE

APPROXIMATE LOCATIONS OF AREAS TO BE GRADED TO PROVIDE FUTURE ACCESS.

A / B C CROSS SECTION AS SHOWN ON SHEET B. SEE DETAIL A, SHEET C.

APPROVED FOR CONSTRUCTION
R. S. TURNER SPOKANE COUNTY ENGINEER
BY [signature] DATE 10-2-86
PERMIT REQUIRED! NOTIFY THE COUNTY ENGINEER 455 3600 24 HRS. PRIOR TO CONSTRUCTION

per July '89 revision

DEVELOPER APPROVAL
DATE 10-7-86

SCREEN		Yes		
OVLY	G1	B1	T1	C1
CODE	G1	B1	T1	C1
DATE				

No.	Date	By	Ckd.	Appr.	Revision
A	9-89	MJB			REVISED LOT LINES AND PLAT BOUNDARY
3	9-86	STV			REVISED PER SPOKANE COUNTY REVIEW
1	9-85	GLR			REVISED PER SPOKANE COUNTY REVIEW

JOHN T. BANNON STATE OF WASHINGTON REGISTERED PROFESSIONAL ENGINEER

LEONARD KONG STATE OF WASHINGTON REGISTERED PROFESSIONAL ENGINEER

Approved By:

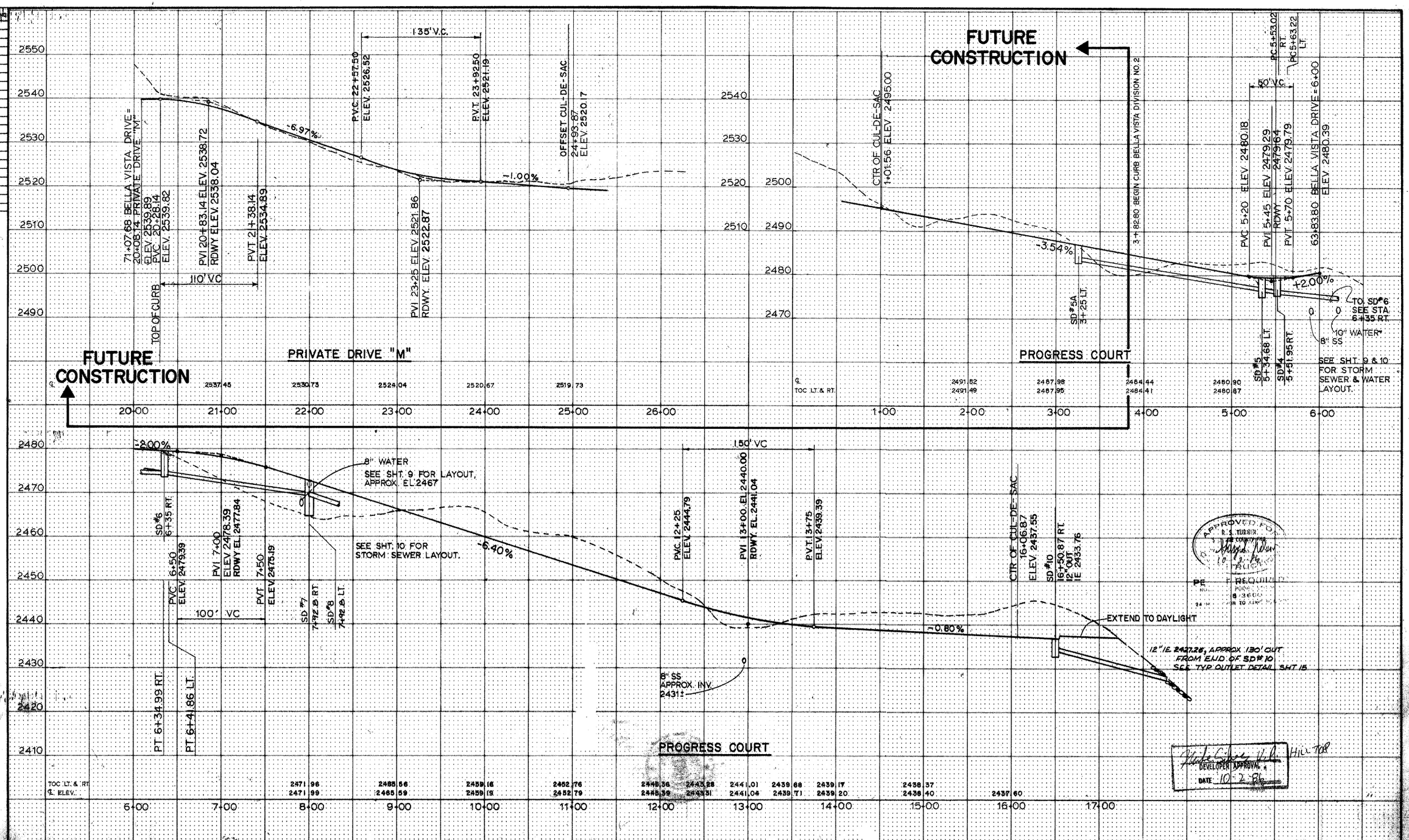
Drawn By: Beckman Date 6-1-85
Designed By: E.S.K. 6-1-85
Checked By: RB Jamison 7-15-85
Approved By:

ENTRANCO Engineers
ENVIRONMENTAL AND TRANSPORTATION CONSULTANTS
BELLEVUE WASHINGTON

Scale: Horiz 1"=100' Vert. N.A.
Job No: 85034

HILL-TOP ENTERPRISES, INC
BELLA VISTA DIVISION 2
GRADING PLAN

Sheet 4 of 17



No.	Date	By	Chk.	Appr.	Revision
4	9-86	LSK			COUNTY REVIEW
3	9-86	STV			REVISED PER SPOKANE COUNTY REVIEW
2	7-86	PDH			REVISED PROGRESS COURT PER SPOKANE COUNTY
1	9-85	GLR			REVISED PRIVATE DRIVE "M" PER SPOKANE COUNTY
1	9-85	GLR			REVISED PER SPOKANE COUNTY REVIEW

JOHN T. BANNON — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER

LEONARD KONG — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER

Approved By:

Drawn By: [illegible] Date: 6-1-85
Designed By: LSK 6-1-85
Checked By: [illegible] 7-15-85
Approved By:

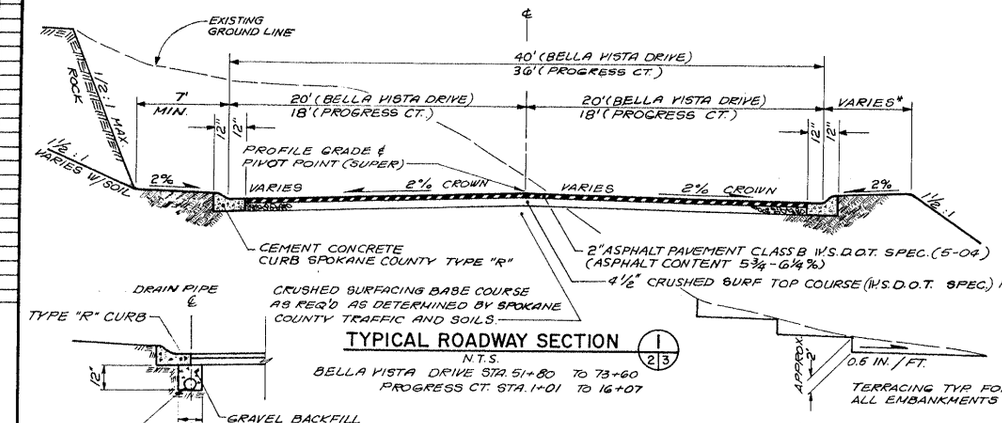
ENTRANCO Engineers
ENVIRONMENTAL AND TRANSPORTATION CONSULTANTS
BELLEVUE WASHINGTON

Scale: Horiz. 1" = 50' Vert. 1" = 10'
Job No.: 85034-65

HILL-TOP ENTERPRISES, INC
BELLA VISTA DIVISION 2
PROGRESS COURT STA. 1+00 TO STA. 16+50,
ROADWAY PROFILES

Sheet 6 of 17
SEP 30 1986

INT.	DATE	DWG	ENG

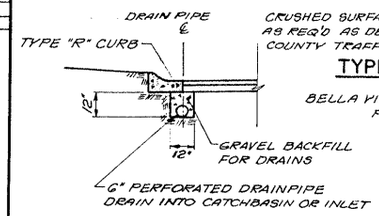


TYPICAL ROADWAY SECTION (1 | 2|3)

N.T.S.

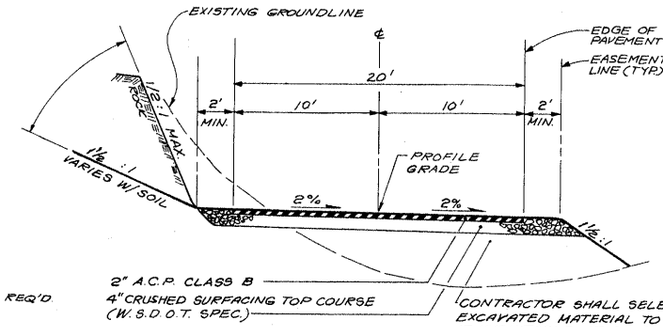
BELLA VISTA DRIVE STA. 51+80 TO 73+60
PROGRESS CT. STA. 1+01 TO 16+07

* SHOULDER WIDTH 10' FROM STA. 54+00 RT. TO 62+00 RT. ELSEWHERE, 7' TYPICAL



UNDERDRAIN (WHERE REQUIRED)

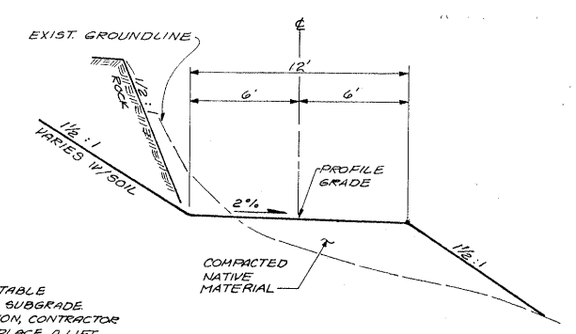
N.T.S.



PAVED PRIVATE ROAD SECTION (2 | 2|3)

N.T.S.

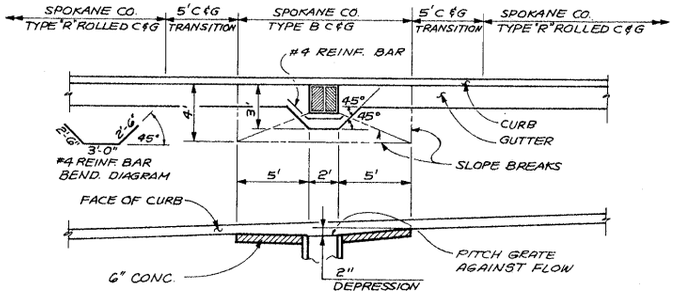
PINNACLE LANE
AURORA LANE



ACCESS CONNECTION (3 | 2|3)

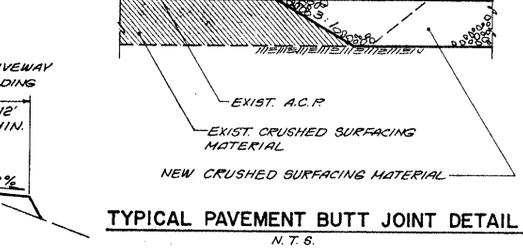
N.T.S.

CONNECTION TO MORROW PARK ROAD
NOTE: CONNECTION TO FOLLOW EXISTING JEEP TRAIL



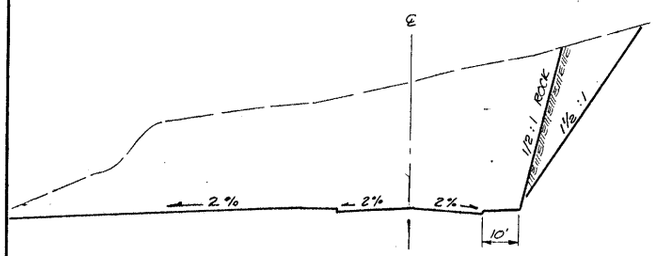
TYPICAL GUTTER DEPRESSION DETAIL

N.T.S.



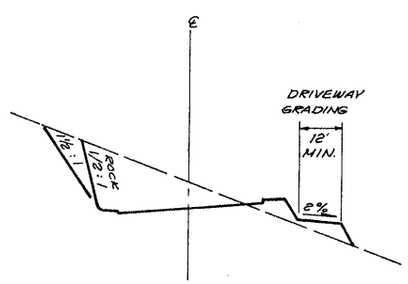
TYPICAL PAVEMENT BUTT JOINT DETAIL (8 | 2|3)

N.T.S.



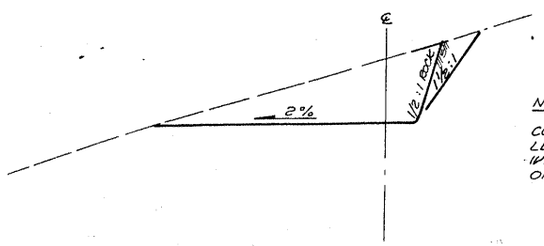
SPECIAL GRADING SECTION (4 | 4|3)

SCALE: 1" = 10' VERT., 1" = 20' HORIZ.



SPECIAL GRADING SECTION (5 | 4|3)

SCALE: 1" = 10' VERT., 1" = 20' HORIZ.

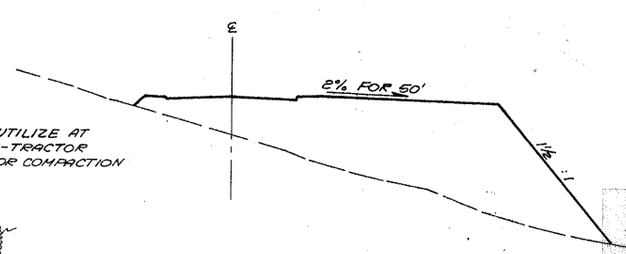


SPECIAL GRADING SECTION (6 | 4|3)

SCALE: 1" = 10' VERT., 1" = 20' HORIZ.

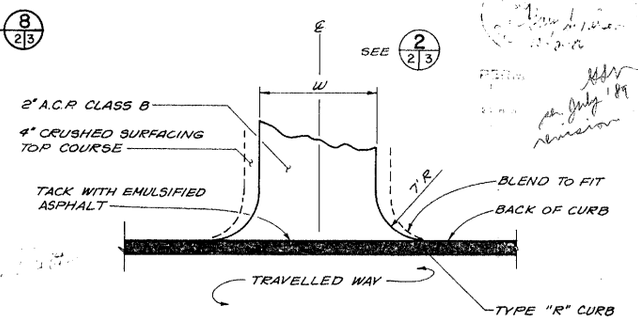
NOTE:

CONTRACTOR SHALL UTILIZE AT LEAST ONE CRAWLER-TRACTOR WITH GRID ROLLER FOR COMPACTION OF ALL FILL AREAS.



SPECIAL GRADING SECTION (7 | 4|3)

SCALE: 1" = 10' VERT., 1" = 20' HORIZ.



TYPICAL PRIVATE ROAD CONNECTION

N.T.S.

ALL PAVED PRIVATE ROADS

Developer's Approval Date

REVISED JULY 1989

No.	Date	By	Ckd.	Appr.	Revision
4	7-89	EWL			PRIVATE & ACCESS CONNECTION TO MORROW PARK RD.
3	9-86	STV			REVISED PER SPOKANE COUNTY REVIEW
1	9-85	GLR			REVISED PER SPOKANE COUNTY REVIEW

RICHARD L. MASON — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER
8/21/89
For 7-89 Revisions

JOHN T. BANNON — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER

LEONARD KONG — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER

Approved By:

Drawn By	Date	6-1-85
Designed By		6-1-85
Checked By		7-15-85
Approved By		

Inland Pacific Engineering — South 25 Altamont, 509 535-1410 — Spokane, Washington 99202

ENTRANCO Engineers
ENVIRONMENTAL AND TRANSPORTATION CONSULTANTS
BELLEVUE WASHINGTON

Scale: Horiz. NA Vert. NA
Job No.: 85034-65

HILL-TOP ENTERPRISES, INC
BELLA VISTA DIVISION 2
TYPICAL ROADWAY SECTIONS & DETAILS

Sheet 3 of 17

8262

Int.	Date	Dwg.	Eng.

CURB RETURN ELEVATIONS	
P.C. 6+43.54 LT.	2480.26
1/4 Δ	2480.95
1/2 Δ	2481.81
3/4 Δ	2482.78
P.T. 64+25.51 RT.	2483.68

Δ= 95°05'32"
R= 20'
T= 21.86'
L= 33.19'

CURB RETURN ELEVATIONS	
P.C. 63+53.08 RT.	2477.68
1/4 Δ	2478.27
1/2 Δ	2478.93
3/4 Δ	2479.38
P.T. 64+34.99	2479.57

Δ= 79°02'33"
R= 20'
T= 16.50'
L= 27.59'

CURB RETURN ELEVATIONS	
P.C. 5+63.22	2480.87
1/4 Δ	2481.45
1/2 Δ	2482.09
3/4 Δ	2482.72
P.T. 64+18.39 LT.	2483.36

Δ= 84°54'28"
R= 20'
T= 18.30'
L= 29.64'

CURB RETURN ELEVATIONS	
P.C. 5+53.02 RT.	2479.58
1/4 Δ	2478.72
1/2 Δ	2477.86
3/4 Δ	2476.99
P.T. 63+35.10 LT.	2476.13

Δ= 104°23'34"
R= 20'
T= 25.78'
L= 36.44'

65 B.V. DRIVE
64+50
64+25.51
64+18.39
64
6+00 PROGRESS CT. =
63+83.80 BELLA VISTA DR.
63+50
63+53.08
63+35.10
63
62+50
PROGRESS COURT
5+60
2480.66
5+50
2480.17
5+40
2479.92
5+30
2479.91
5+20
2480.15
5+63.22
5+53.02
5+50
5
6+65
2479.01
6+60
2479.40
6+50
2479.84
6+43.54
6+34.99
6+40.67
2479.55
64+50
2486.01
64+40
2485.11
64+30
2484.13
R=20'
N 8550
E 11250

TOP OF CURB
ELEV. 2493.10
R=80'
Δ=54-13-27
TOP OF CURB
ELEV. 2493.51
PROGRESS COURT
L 54.30
T 50
TOP OF CURB
ELEV. 2493.10
R=20'
Δ=54-13-27
TOP OF CURB
ELEV. 2493.51
STA. 1+01.56 45' LT.
TOP OF CURB
ELEV. 2494.43
R=45'
Δ=288-26-54
STA. 1+01.56
CTR. OF CUL-DE-SAC
STA. 1+01.56 45' RT.
TOP OF CURB
ELEV. 2494.43
45°
45°
TYPE R CURB TYP.
TOP OF CURB
ELEV. 2495.82
TOP OF CURB
ELEV. 2495.82
STA. 0+56.56
TOP OF CURB
ELEV. 2496.87

PRIVATE DRIVE "M"
20'
20' RADIUS
R=40'
R=30'
70+50
71+00
B.V. DRIVE
71+50
STA. 71+07.68 B.V. DRIVE =
STA. 20+08.14 PRIVATE DRIVE "M"

PROGRESS CT.
15+89
15+95.40
15+50
15+59.56
TOP OF CURB
ELEV. 2438.01
R=20'
Δ=66 49 14
TOP OF CURB
ELEV. 2437.77
28.73' RT.
TOP OF CURB
ELEV. 2437.89
R=20'
Δ=45 42 03
TOP OF CURB 24.62' LT.
ELEV. 2437.76
STA. 16+06.87 45' RT.
TOP OF CURB
ELEV. 2437.43
16+00
63°46'22"
R=45'
43°20'27"
45°
45°45'
STA. 16+06.87
CTR. OF CUL-DE-SAC
STA. 16+06.87 45' LT.
TOP OF CURB
ELEV. 2437.36
TOP OF CURB
ELEV. 2437.07
TOP OF CURB
ELEV. 2437.08
STA 16+51.87
TOP OF CURB
ELEV. 2436.80
SD#10
STA 16+50.87 5' RT.
TOP OF CURB
ELEV. 2436.76

APPROVED FOR CONSTRUCTION
R. S. TURNER
SPOKANE COUNTY ENG.
BY Gary A. Nelson
10-4-86
PERMIT REQUIRED!
NOTIFY THE PERMIT ENGINEER
455-3600
24 HRS. PRIOR TO CONSTRUCTION

Hilde Silker V.P. Hill-Top
DEVELOPER APPROVAL
DATE 10-2-86

B.V. DRIVE
TOP OF CURB
ELEV. 2552.16
R=20'*
TOP OF CURB
ELEV. 2553.26
72
50
72+61.87
72+77.63
TOP OF CURB
ELEV. 2552.16
R=20'*
TOP OF CURB
EL. 2555.76
TOP OF CURB
EL. 2553.26
73
00
* Δ=52-01-12
TOP OF CURB
EL. 2558.93
R=45'
Δ=104-02-24
STA. 73+13.10
CTR. OF CUL-DE-SAC
℄ TOP OF CURB
EL. 2555.76
R=20'*
73+48.57
73+60
TOP OF CURB
ELEV. 2560.36
RELOCATED TRAFFIC
BARRIER FROM BEGIN
STATION ~ CONSTRUCT
TO SPOKANE CO. STD.
END OF PAVEMENT
73+64.33
ACCESS
CONNECTION
12'
R=20'
TOP OF CURB
ELEV. 2558.93
TOP OF CURB
ELEV. 2560.36

No.	Date	By	Ckd.	Appr.	Revision
4	9-86	LSIC			COUNTY REVIEW!
3	9-86	STV			REVISED PER SPOKANE COUNTY REVIEW
2	7-86	PDH			REVISED PROGRESS COURT PER SPOKANE COUNTY
1	9-85	GLR			REVISED PER SPOKANE COUNTY REVIEW

JOHN T. BANNON STATE OF WASHINGTON REGISTERED PROFESSIONAL ENGINEER

LEONARD KONG STATE OF WASHINGTON REGISTERED PROFESSIONAL ENGINEER

Approved By:

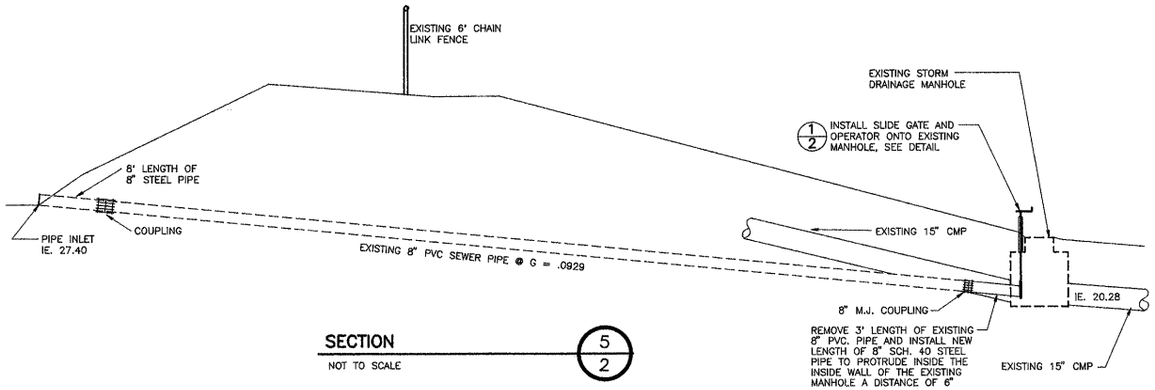
Drawn By: Date: 6-1-85
Designed By: 6-1-85
Checked By: RBJ 7-15-85
Approved By:

ENTRANCO Engineers
ENVIRONMENTAL AND TRANSPORTATION CONSULTANTS
BELLEVUE WASHINGTON

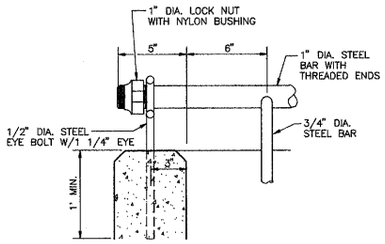
Scale: Horiz. 1"=20' Vert. NA
Job No.: 85034-65

HILL-TOP ENTERPRISES, INC
BELLA VISTA DIVISION 2
CURB DETAILS

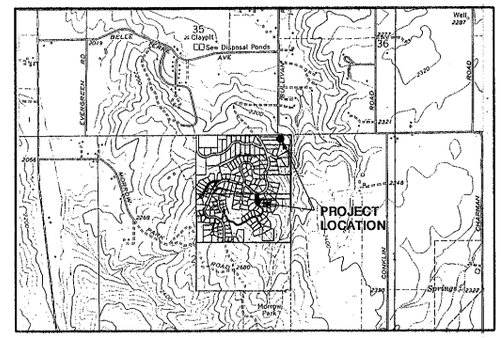
Sheet 8
Of 17
SEP 30 1986



SECTION 5/2
NOT TO SCALE



TRASH RACK


PROJECT LOCATION
Well 2287
Well 2287
Well 2320
Well 2321
Well 2248
Well 2320
Well 2320
Well 2320

INT.	DATE	DWG	ENG

FS FULL SUPER
C NORMAL CROWN
L LEVEL
CS CROWN SLOPE

51+50 MATCH EXIST. SUPER

52+96.72 53+46.72 53+94.72 54+42.72

4% RT
0%
4% LT
2.00% LT. & RT.
TO 60+39.68

FS CS C

SUPERELEVATION DIAGRAM
NTS (TYP.)

TOC RT.	2402.64	2406.09	2409.55	2413.01
℄ ELEV.	2401.56	2405.40	2409.24	2413.08
TOC LT.	2401.10	2405.33	2409.17	2413.01

PVC 51+50
EXIST. ELEV. 2389.78

100' VC

PVI 52+00
ELEV. 2393.66
RDWY. 2393.69
SD#1 52.25 LT.

PVT 52+50
ELEV 2397.66

SD#1A 53+25 LT.

SD#3 54+00 LT.

SD#2 54+50 RT.

+7.76%

+8.00%

8" SS & 10" W, APPROX. EL. 2403±
SEE SHTS. 9 & 10

8" SS
APPROX. EL. 2396.6±
SEE SHT. 11

12" OUTFALL, 40' FT LT. IE 2386.4
(SEE TYP. DETAIL SHT. 15)

BELLA VISTA DRIVE

TOC RT.	2394.77		2402.74				2417.59		2425.59		2433.59		2441.28		2448.78		2450.45		2456.26		2464.51		2473.11		
℄ ELEV.	2393.69		2401.66				2417.66		2425.66		2433.66		2441.35		2448.85		2450.52		2456.33		2464.58		2473.18		
TOC LT.	2393.23		2401.20				2417.59		2425.59		2433.59		2442.04		2448.78		2450.45		2456.26		2464.51		2473.11		

50+00 51+00 52+00 53+00 54+00 55+00 56+00 57+00 58+00 59+00 60+00 61+00 62+00 63+00

2550 2540 2530 2520 2510 2500 2490 2480 2470 2460 2450 2440 2430 2420 2410 2400 2390 2380

18" EXIST. CULVERT
APPROX. ℄ INV. 2374±

100' VC

PVC 57+50
ELEV. 2437.66

PVI 58+50
ELEV. 2445.66
RDWY. 2441.41

200' VC

PVRC 59+50
ELEV. 2448.67

61+29.39
PRIVATE DRIVE "K"

PVI 60+50
ELEV. 2451.68
RDWY. 2453.08

PVT 61+50
ELEV. 2460.28

+3.01%

+8.60%

61+28.99
PRIVATE DRIVE "B"

200' VC

63+35.10 PC LT.
63+53.08 PC RT.

℄ INTERSECTION
63+83.80

64+18.39 PT LT.
64+23.60 PT. RT.

SD#2
64+47.38 RT.

SD#13
64+90 LT.

65+61.48
PRIVATE DRIVE "H"

PVC 66+00

PVI 66+50
ELEV. 2503.28
RDWY. 2503.21

PVT 67+00

SD#14
67+75.41

+8.00%

+8.60%

0 8" SS
0 10" W

SEE SHT. 9 & 10
FOR UTILITY LAYOUT
AND CROSSING.
APPROX. WATER INV. EL.
2478±, APPROX. SS INV. EL. 2480±

TO SD#6
SEE STA. 6+35 RT.

BELLA VISTA DRIVE

72+46.59
PRIVATE DRIVE "G"

72+61.07 PC LT. & RT.

72+77.63 PRC LT. & RT.

73+60
END OF PAVING

TYPICAL ACCESS CONNECTION, 8%
MAX. GRADE TO STA. 84+63.72

+5.76%

PVC 73+20
ELEV 2556.88

PVI 73+70
ELEV. 2560.88
RDWY 2560.60

PVT 74+20
ELEV 2563.76

100' VC

71+07.68
PRIVATE DRIVE "M"

BELLA VISTA DRIVE

TOC RT.		2481.71		2490.32		2498.92		2507.21		2515.21		2523.21		2531.21		2539.21		2547.21		2555.21		2562.50			
℄ ELEV.		2481.78		2490.38		2498.98		2507.28		2515.28		2523.28		2531.28		2539.28		2547.28		2555.28		2562.57			
TOC LT.		2481.71		2490.32		2498.92		2507.21		2515.21		2523.21		2531.21		2539.21		2547.21		2555.21		2562.50			

64+00 65+00 66+00 67+00 68+00 69+00 70+00 71+00 72+00 73+00 74+00 75+00 76+00 77+00

2580 2570 2560 2550 2540 2530 2520 2510 2500 2490 2480

APPROVED FOR
R. F. TURNER
SPO. COUNTY DIR.
BY Roy L. Tulen
10-2-86
DATE
PERMIT REQUIRED
NOTIFY 24 HRS. BEFORE
3000
TO CONSTRUCTION

Mike Gibson V.P. HILL-TOP
DEVELOPER APPROVAL
DATE 10-2-86

No.	Date	By	Ckd.	Appr.	Revision
5	9-86	LSK			COUNTY REVIEW
4	9-86	LSK			ADD STRUCTURE 1A & CONNECT SD 3 TO SD 1
3	9-86	STV			REVISED PER SPOKANE COUNTY REVIEW
1	9-85	GLR			REVISED PER SPOKANE COUNTY REVIEW

JOHN T. BANNON — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER

LEONARD KONG — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER

Approved By:

Drawn By RBalmer Date 6-1-85
Designed By LSK 6-1-85
Checked By RBalmer 7-15-85
Approved By

ENTRANCO Engineers
ENVIRONMENTAL AND TRANSPORTATION CONSULTANTS
BELLEVUE WASHINGTON

Scale: Horiz. 1"=50' Vert. 1"=10'
Job No.: 85034-65

HILL-TOP ENTERPRISES, INC
BELLA VISTA DIVISION 2
BELLA VISTA DRIVE STA. 52+00 TO STA. 73+60
ROADWAY PROFILES

Sheet 5 Of 17

SEP 30 1986

Int.	Date	Dwg.	Eng.

LOT LAYOUT

BASE MAP

T24 N. R. 44 E. W. M.

NOTES:

1. SANITARY SEWER SHALL BE CONSTRUCTED IN ACCORDANCE WITH SPOKANE COUNTY STANDARDS AND THE 1984 STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION, SECTION 7-17.
2. A TRACE TAPE SHALL BE PLACED OVER ALL SANITARY AND STORM SEWERS.
3. SEE SHEETS 11 THROUGH 14 FOR SANITARY SEWER PROFILES AND LOCATIONS AND SERVICE LATERALS.
4. STORM SEWER PIPE SHALL BE PER WSDOT SECT 9-05 (1984).
5. COMPACTION OF PIPE BACKFILL SHALL BE IN ACCORDANCE WITH WSDOT STANDARD PLAN NO. B-11, METHOD C AND SECTION 2-03.3(14)C OF THE WSDOT 1984 STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION.
6. ~~NEENAH F1G (NOTE 8) SHALL BE 19.83 FT FROM CTRLINE OF B.V. DRIVE TO FAR EDGE OF GRATE. THE OFFSET SHALL BE 17.83 FT ON PROGRESS.~~ (DELETED)
7. SEE TYP. GUTTER DEPRESSION DETAIL SHT 3
8. FRAME & GRATE SHALL BE NEENAH TYPE R-3591 OR APPROVED EQUAL
9. EXACT AMOUNT OF UDP SHALL BE FIELD DETERMINED BY COUNTY REPRESENTATIVE AND CONTRACTOR. (UDP = UNDERDRAIN PIPE)

DIV 2 PHASE 2
DIV 2 PHASE 1
TRACT "B"
TRACT "A"
TRACT "C"
BLOCK 5
+ E 10,000
SAN. M.H. #25
SAN. M.H. #24
SAN. M.H. #23
SAN. M.H. #26
SAN. M.H. #28
SAN. M.H. #22
SAN. M.H. #27
SAN. M.H. #16
SAN. M.H. #17
SAN. M.H. #15
SAN. M.H. #21
SAN. M.H. #13
SAN. M.H. #14
SAN. M.H. #18
SAN. M.H. #19
SAN. M.H. #20
SAN. M.H. #12
SAN. M.H. #11
SAN. M.H. #10
SAN. M.H. #9
SAN. M.H. #8
EXIST. SAN. M.H. #7
PRIVATE DRIVE "D"
PRIVATE DRIVE "A"
PRIVATE DRIVE "B"
PRIVATE DRIVE "C"
PRIVATE DRIVE "H"
PRIVATE DRIVE "K"
PROGRESS CT
B.V. DRIVE
FUTURE B.V. DRIVE
SD #1
SD #2
SD #3
SD #4
SD #5
SD #5A
SD #6
SD #7
SD #8
SD #10 NOTE 7
SD #12
SD #14
SD M.H. #13
S.D. #12
SD #1A
SD #20 SEE SHT 16 STA 54+09.73 467.05' LT.
NOTE: USE WSDOT GRATE INLET TYPE II
STA. 700+00 = B.V. DRIVE STA. 54+32.87 540.76' LT.
12" OUTLET IE 2386 SEE OUTFALL DETAIL SHT 15.
EXIST 18" OUTFALL =52+49 LT IE 2350.93 SEE OUTFALL DETAIL SHT 15.
18" CMP
6"x15"
SEE OUTFALL DETAIL SHEET 15
SEE SHEET 14 FOR GRADING TO SAN. M.H. #21A
DISSIPATOR TRENCH DETAIL SEE SHT. 15
15" IE 2454±
SS INV. 2480±
SS INV. 2471±
SS INV. 2403±
1-1/2" FULLY PORTED GATEVALVE W/ VALVE BOX
1-1/2" ø CLASS 160 PVC
1-1/2" FULLY PORTED GATEVALVE W/ VALVE BOX
9.1% FM
11.7% FM
14.0% FM
N 14° 27' 00" E
N 9° 21' 28" W
10+00
15+00
5+00
1+00
55+00
60+00

LEGEND:

- UDP — 6" UNDERDRAIN
- S — SANITARY SEWER
- SD — STORM DRAIN SEWER
- FM — SANITARY FORCE MAIN
- TRENCH DETAIL, SHT. 15
- APWA MANHOLE TYPE I - 48"
- APWA MANHOLE TYPE III - 48"
- SANITARY CLEANOUT
- EXIST. MANHOLE
- ~~APWA CATCH BASIN TYPE II-C (DELETED)~~
- WSDOT GRATE INLET TYPE 2 (STD. PLAN B-4c)
- SPOKANE CO. CONCRETE INLET W/ TYPE 2 FRAME & GRATE
- (XX) LOT NUMBER

SD	STATION		SIZE	INV.	G.E.	LENGTH	SLOPE	SD
14	67+75	LT	12"	2509.42	2512.70	285	0.08	13
13	64+90	LT	12"	2486.62	2488.95	58.5	0.096	12
12	64+47.38	RT	12"	2481.00	2485.28	83.4	0.081	6
5A	3+25	LT	12"	2483.56	2486.56	220	0.031	5
5	5+34.68	LT	12"	2476.69	2479.42	40	0.012	4
4	5+51.95	RT	12"	2476.21	2479.08	83	0.024	6
6	6+33	RT	12"	2474.25				
			15"	2474.00	2479.16	158	0.038	7
8	7+92.8	LT	12"	2468.96	2471.92	36	0.013	7
7	7+92.8	RT	12"	2468.5				
			15"	2468.0	2471.92	90	0.156	
					15" OUTFALL IE 2454+/-			
2	54+50	RT	12"	2410.0	2413.09	40	0.129	3
3	54+00	LT	12"	2404.84	2409.09	75	0.077	1A
1A	53+25	LT	12"	2399.04	2402.91	100	0.094	1
1	52+25	LT	12"	2389.69	2394.69	20	0.184	
					12" OUTFALL IE 2386+/-			
10	16+50.87							
	(5' RT)		12"	2433.76	2436.09	130	0.05	
					12" OUTFALL IE 2427.26			

EXISTING 18" CULVERT:
52+38 46.88' RT EL. 2384.95
52+49 93.7' LT EL. 2350.93
20 54+09.73 467.05 FT LT - SEE SHT 16 OF 17

Mike Sibley V.P. HILLTOP
DEVELOPER/APPROVAL
DATE 10-2-86

APPROVED FOR CONSTRUCTION
R. S. TURNER
SPOKANE COUNTY ENG.
BY Mary S. Nelson
10-2-86

PERMIT REQUIRED!
NOTIFY THE PERMIT ENGINEER
456-2600
24 HRS. PRIOR TO CONSTRUCTION

SCREEN | OVLY | CODE | DATE
C1
B1

No.	Date	By	Ckd.	Appr.	Revision
5	9-86	LSK			COUNTY REVIEW.
4	9-86	LSK			REVISE PIPE Ø, ADD SD 1A
3	9-86	STV			REVISED PER SPOKANE COUNTY REVIEW
2	7-86	PDH			REVISED PER SPOKANE COUNTY REVIEW
1	9-85	GLR			REVISED PER SPOKANE COUNTY REVIEW

JOHN T. BANNON — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER

LEONARD KONG — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER

Approved By:

	Date:
Drawn By: Baelkun	6-1-85
Designed By: KAB	6-1-85
Checked By: RBJamison	7-15-85
Approved By:	

ENTRANCO Engineers
ENVIRONMENTAL AND TRANSPORTATION CONSULTANTS
BELLEVUE WASHINGTON

Scale: Horiz. 1"=100' Vert. NA
Job No.: 85034-65

HILL-TOP ENTERPRISES, INC.
BELLA VISTA DIVISION 2
SANITARY & STORM SEWER PLAN

Sheet 10 Of 17

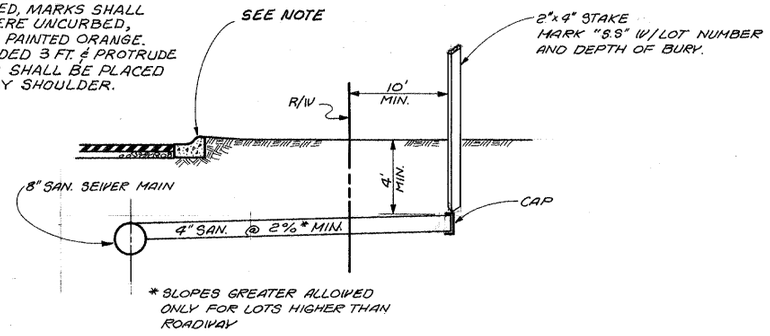
SEP 30 1986

Int.	Date	Dwg.	Eng.

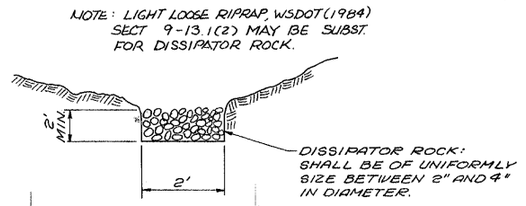
NOTE:
1) ALL 4" SEWERS TO HAVE CAPPED ENDS REFERENCED TO TWO MARKS ON ROADWAY. WHERE ROADWAY IS CLOSED, MARKS SHALL BE PLACED ON CURB, WHERE UNCURBED, MARKS SHALL BE REBAR PAINTED ORANGE. REBAR SHALL BE EMBEDDED 3 FT. & PROTRUDE FROM GROUND 6". REBAR SHALL BE PLACED 3 FT. OUTSIDE OF ROADWAY SHOULDER.

2) CONTRACTOR SHALL AS-BUILT ALL SEWER STUBS & INDICATE LOCATION OF MARKS ON AS-BUILT PLANS

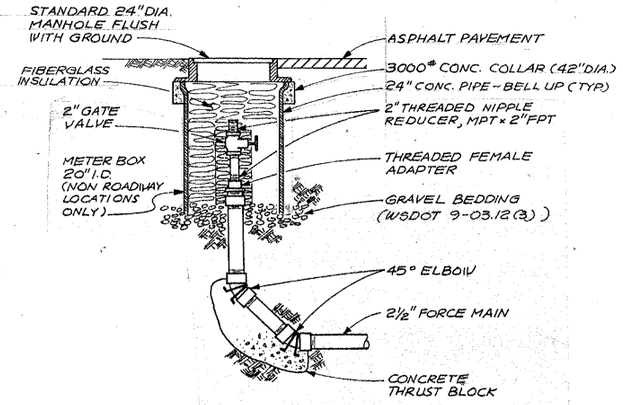
3) CERTIFIED AS-BUILTS SHALL BE REQUIRED PRIOR TO FINAL ACCEPTANCE BY SPOKANE COUNTY UTILITIES DEPT.

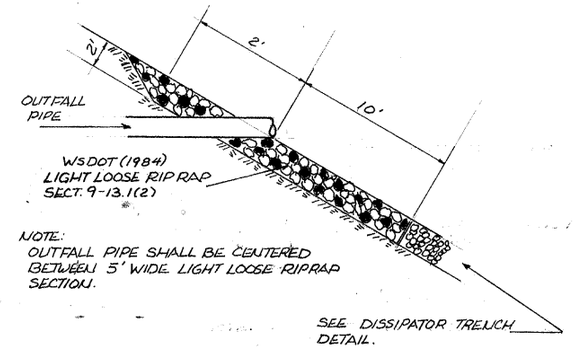


TYPICAL SANITARY SERVICE CONNECTION STUB
N.T.S.

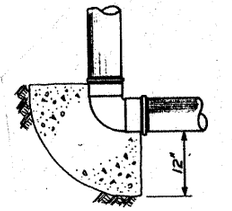


DISSIPATOR TRENCH DETAIL
N.T.S.





STORM OUTFALL
N.T.S.

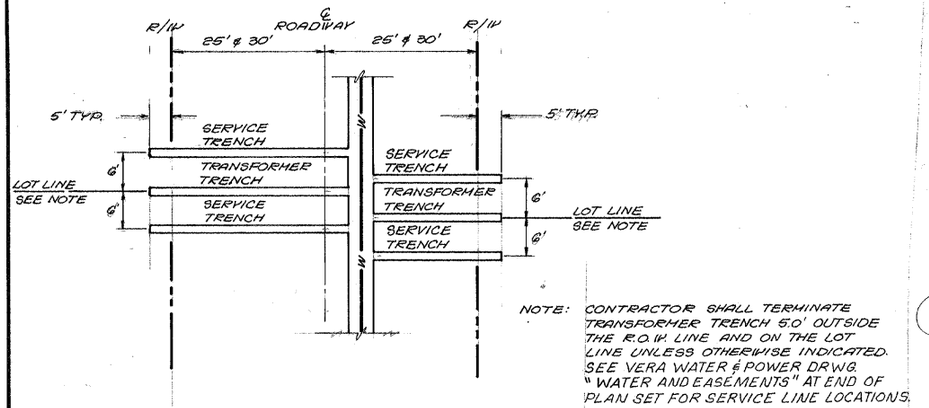


MINIMUM BEARING AREA, SQ. FT.

PIPE DIA	TEE OR WYE	90° ELL	45° ELL	22½° ELL	11½° ELL
1½" & 2"	0.3	0.5	0.3	0.2	-
2½"	0.5	0.7	0.4	0.2	-
3"	0.7	1.0	0.6	0.3	0.2
4"	1.3	1.8	1.0	0.5	0.3
6"	2.9	4.0	2.2	1.2	0.6
8"	5.0	7.3	3.8	2.0	1.0
10"	7.9	11.0	6.0	3.1	1.6
12"	11.3	16.0	8.7	4.5	2.3

1500 PSI = SOIL BEARING VALUE
150 PSI = LINE PRESSURE
VERT. BEND THRUST BLOCKING PER APWA STANDARD PLAN 738

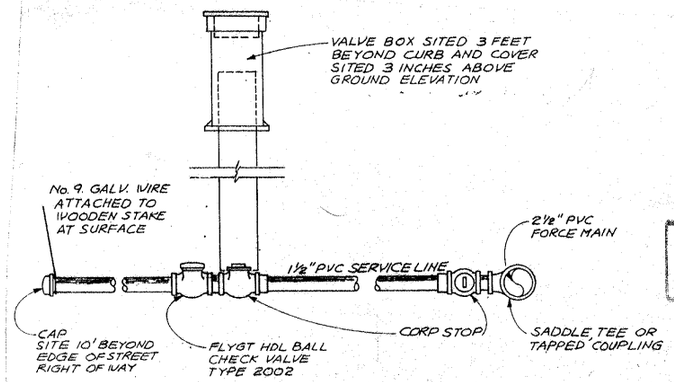
HORIZONTAL THRUST BLOCK DETAIL
N.T.S.



NOTE: CONTRACTOR SHALL TERMINATE TRANSFORMER TRENCH 5.0' OUTSIDE THE R.O.W. LINE AND ON THE LOT LINE UNLESS OTHERWISE INDICATED. SEE VERA WATER & POWER DRWG. "WATER AND EASEMENTS" AT END OF PLAN SET FOR SERVICE LINE LOCATIONS.

TYPICAL WATER AND POWER TRENCH CONFIGURATION
N.T.S.

FORCE MAIN CLEANOUT DETAIL
N.T.S



SERVICE CONNECTION TO FORCE MAIN DETAIL
N.T.S.

NOTE: CONTRACTOR SHALL PROVIDE ON AS-BUILT DRAWINGS BEARING AND DISTANCE FROM TWO ADJACENT LOT CORNERS FOR EACH SERVICE CONNECTION CAP.

APPROVED FOR CONSTRUCTION
R. S. TURNER
SPOKANE COUNTY ENG.
BY Gary L. Nelson
10-03-86

PERMIT REQUIRED!
NOTIFY THE PERMIT ENGINEER
456-3600
24 HRS. PRIOR TO CONSTRUCTION

DEVELOPER APPROVAL
DATE 10-2-86

SEEDING SPECIFICATION

GRASS SEED SPECIFIED BELOW SHALL BE APPLIED AT RATE OF 60 POUNDS/ACRE AND INCLUDE A VISIBLE TRACER.

KIND OR VARIETY	PERCENT BY WEIGHT	MIN. PERCENT PURE SEED	MIN. PERCENT OF GERMINATION
SODAR STREAMBANK WHEAT GRASS	35	33.5	80
DURAR HARD FESCUE	30	28.75	85
SHERRMAN BIG BLUEGRASS	35	31.75	75
PERCENT WEED SEED		0.25% MAX.	
PERCENT INERT, ET AL		5.75% MAX.	
TOTAL		100.00%	

FERTILIZER SPECIFIED AS FOLLOWS:

TOTAL NITROGEN AS N	135 POUNDS/ACRE
AVAILABLE PHOSPHORIC ACID, P_2O_5	80 POUNDS/ACRE
SOLUBLE POTASH AS K_2O	80 POUNDS/ACRE

NINETY-FIVE (95) POUNDS MINIMUM OF NITROGEN APPLIED PER ACRE SHALL BE FROM UREAFORM OR UREAFORMALDEHYDE.

MULCH SHALL BE PURE STRAW APPLIED AT 4,000 POUNDS/ACRE, SHALL USE A TACKIFIER:

1. ASPHALT EMULSION AT 400 GAL./ACRE SPRAYED WITH MULCH, OR
2. AR OR VC TACK AT RATES RECOMMENDED BY MANUFACTURER SPRAYED AFTER MULCH BUT WITH 150 POUNDS WOOD CELLULOSE TRACER.

3	9-86	STV			REVISED PER SPOKANE COUNTY REVIEW
4	9-86	LSK			COUNTY REVIEW

JOHN T. BANNON — STATE OF WASHINGTON — REGISTERED ENGR.
LEONARD KONG — STATE OF WASHINGTON — REGISTERED ENGR.

Approved By:

Drawn By: Date:
Designed By: LSK 6-1-85
Checked By: RB Jamison 7-15-85
Approved By:

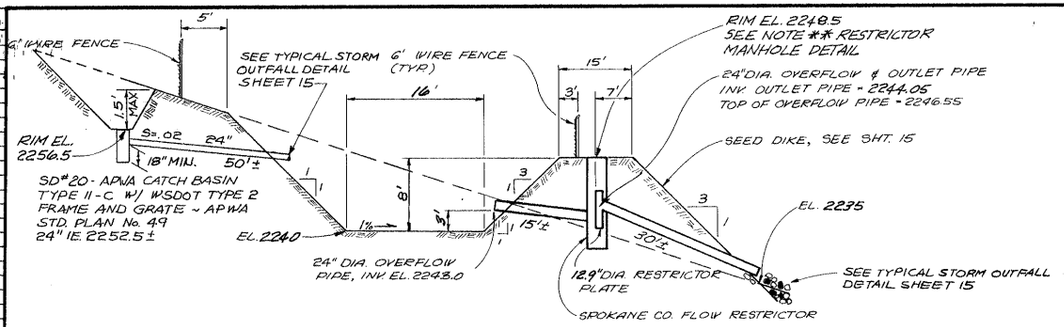
ENTRANCO Engineers
ENVIRONMENTAL AND TRANSPORTATION CONSULTANTS
BELLEVUE WASHINGTON

Scale: Horiz. NA Vert. NA
Job No.: 85034

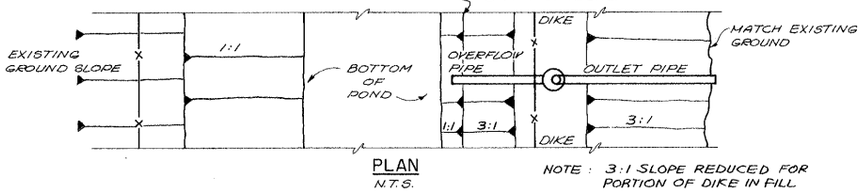
HILL-TOP ENTERPRISES, INC
BELLA VISTA DIVISION 2

Sheet 15 Of 17

Int.	Date	Dwg.	Eng.



SECTION
N.T.S.

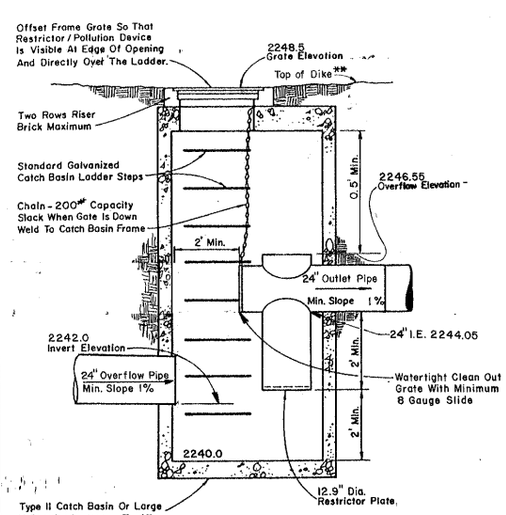


PLAN
N.T.S.

NOTE : 3:1 SLOPE REDUCED FOR PORTION OF DIKE IN FILL

BASIN DETAIL

NOTE * * NOMINAL TOP OF DIKE TO BE EL 2248 TRANSITION 20' ON EACH SIDE OF RESTRICTOR MANHOLE STRUCTURE TO ELEVATION 2248.5



Note: All Metal Parts And Surfaces Must Be Made Of Corrosion Resistant Material Or Galvanized. Complete Corrosion Protection Must Be Assured.

* Grate Not Allowed On Restrictor Manhole. Must Be Round, Self-locking Lid.

RESTRICTOR MANHOLE DETAIL

N.T.S.

BASIN "E"

VERTICAL DATA		
STA.	DES.	SURFACE ELEV.
701+70	BEGIN	2247.00
704+30	BVC	2242.60
704+80	VPI	2240.85
705+30	EVC	2237.60
708+00	BVC	2210.00
708+50	VPI	2213.25
709+00	EVC	2213.00
712+20	VAP	2219.40

BEARING TABLE		
	BEARING	DIST.
A	N 49°18'16" W	65.94'
B	N 20° 51'04" E	74.06
C	N 21°23'28" E	119.32
D	N 2° 50'22" W	460.95'
E	N62° 25' 53" W	217.90'

CURVE DATA					
PT.	STA.	R	Δ	L	T
44	702+79.32	100'	33°34'29"	58.60'	30.17'
46	704+09.58	184.83	57°42'19"	186.15'	101.83'
49	710+17.80	110'	59°35'31"	114.41'	62.99'

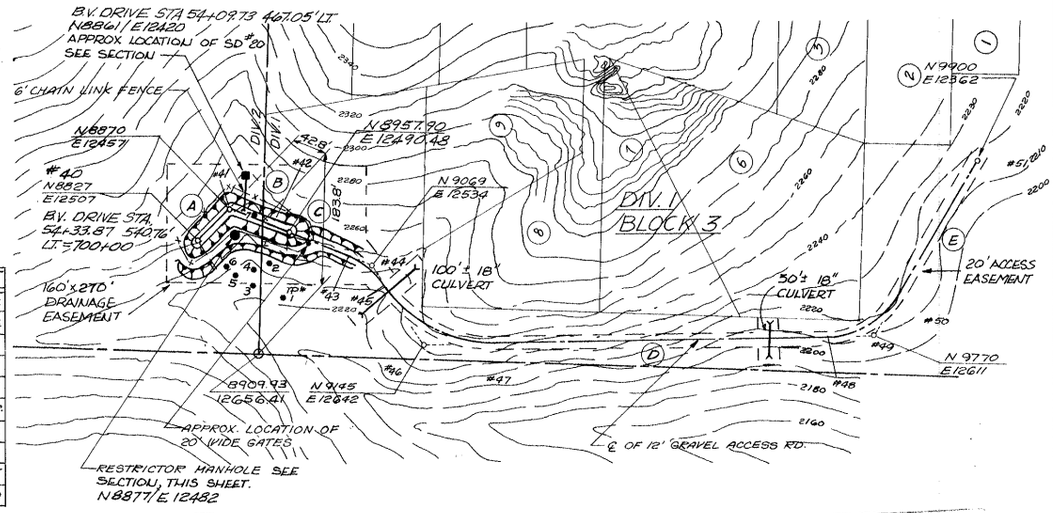
NOTE:
1. ACCESS ROAD SHALL BE CONSTRUCTED IN ACCORDANCE W/ SPOKANE COUNTY CRITERIA. THE MAXIMUM GRADE SHALL BE 8%. CONTRACTOR SHALL PLACE A MIN OF 4" CRUSHED SURFACING ON ROADWAY. SEE DETAIL 2 SHT 3 FOR SPEC.
2. POND DESIGN ASSUMES 3"/HR PERC. RATE. FINAL AS-BUILT POND SHALL BE TESTED TO ASSURE ASSUMED RATE IS ACHIEVED PRIOR TO ACCEPTANCE BY COUNTY.
3. ● : TEST PIT NO.

PT. DESCRIPT.		
NO.	STA.	DES.
40	700+00	BEG.
41	700+65.94	A.P.
42	701+60.00	A.P.
43	702+49.15	P.C.
45	703+07.75	P.C.C.
47	704+93.90	P.T.
48	709+54.85	P.C.
50	710+69.26	P.T.
51	712+87.16	END

● TP#	STA	DIST. LEFT
1	52+77.07	643.19
2	52+60.78	595.70
3	52+41.68	620.53
4	52+39.41	596.45
5	52+08.36	613.36
6	51+98.06	598.31
7	52+36.28	528.39

BASIS OF BEARINGS:

THE BEARING OF N 89°47'08" E ON THE 6TH STANDARD PARALLEL BETWEEN THE QUARTER CORNER OF SECTION 2, TOWNSHIP 24 NORTH, RANGE 44 EAST, W.M., AND THE SOUTHEAST CORNER OF SECTION 35, TOWNSHIP 25 NORTH, RANGE 44 EAST, W.M., AS PER PLAT OF SULLIVAN HEIGHTS ADDITION, WAS USED AS THE BASIS OF BEARING FOR THIS PLAT.



DETENTION BASIN "E" & ACCESS ROAD

SCALE: 1" = 100'

APPROVED FOR R.S. [illegible] SPOKANE COUNTY BY [illegible] DATE 10-2-85

Mint & Site Dev. Div. APPROVAL DATE 10-2-85

No.	Date	By	Ckd.	Appr.	Revision
3	9-86	STV			REVISED PER SPOKANE COUNTY REVIEW
4	9-86	LSK			COUNTY REVIEW
1	7-86	PDH			REVISED PER SPOKANE COUNTY REVIEW

JOHN T. BANNON — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER

LEONARD KONG — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER

Approved By:

Drawn By: Badeau Date: 6-1-85
Designed By: LSK 6-1-85
Checked By: R.B.Jamison 7-15-85
Approved By:

ENTRANCO Engineers
ENVIRONMENTAL AND TRANSPORTATION CONSULTANTS
BELLEVUE WASHINGTON

Scale: Horiz. NA Vert. NA
Job No.: 85034-65

HILL-TOP ENTERPRISES, INC.
BELLA VISTA DIVISION 2
OFFSITE WATER & DETENSION POND

Sheet 16 Of 17
SEP 1986

INT.	DATE	DWG	ENG

PRIVATE DRIVE "M"

71+07.68 BELLA VISTA DRIVE = 20+08.14 PRIVATE DRIVE "M"
ELEV. 2539.89
PVC 20+28.14
ELEV. 2539.82
TOP OF CURB
110' VC
PVI 20+83.14 ELEV. 2538.72
RDWY ELEV. 2538.04
PVT 21+38.14
ELEV. 2534.89
-6.97%
P.V.C. 22+57.50
ELEV. 2526.52
135' V.C.
P.V.T. 23+92.50
ELEV. 2521.19
-1.00%
PVI 23+25 ELEV. 2521.86
RDWY ELEV. 2522.87
OFFSET CUL-DE-SAC
24+93.87
ELEV. 2520.17

℄	2537.45	2530.73	2524.04	2520.67	2519.73
	20+00	21+00	22+00	23+00	24+00	25+00	26+00

PROGRESS COURT

CTR OF CUL-DE-SAC
1+01.56 ELEV 2495.00
-3.54%
SD#5A
3+25 LT.
PVC 5+20 ELEV 2480.18
PVI 5+45 ELEV 2479.29
RDWY 2479.64
PVT 5+70 ELEV 2479.79
50' V.C.
PC 5+53.02 RT.
PC 6+63.22 LT.
63+83.80 BELLA VISTA DRIVE = 6+00
ELEV 2480.39
+2.00%
TO SD#6 SEE STA. 6+35 RT.
10" WATER
8" SS
SEE SHT. 9 & 10 FOR STORM SEWER & WATER LAYOUT.
SD#5 5+34.68 LT.
SD#4 5+51.95 RT.

℄ TOC LT. & RT.	2491.82	2487.98	2484.44	2480.90
	2491.49	2487.95	2484.41	2480.87
	1+00	2+00	3+00	4+00	5+00	6+00

PROGRESS COURT

-2.00%
8" WATER
SEE SHT. 9 FOR LAYOUT.
APPROX. EL. 2467
SD#6 6+35 RT.
PVC 6+50 ELEV. 2479.39
100' VC
PVI 7+00 ELEV 2478.39 RDWY EL. 2477.84
PVT 7+50 ELEV. 2475.19
SD#7 7+92.8 RT.
SD#8 7+92.8 LT.
SEE SHT. 10 FOR STORM SEWER LAYOUT.
-6.40%
PVC 12+25 ELEV. 2444.79
150' VC
PVI 13+00 EL. 2440.00
RDWY. EL. 2441.04
P.V.T. 13+75 ELEV. 2439.39
CTR OF CUL-DE-SAC 16+06.87 ELEV. 2437.55
SD#10 16+50.87 RT. 12" OUT I.E. 2433.76
-0.80%
EXTEND TO DAYLIGHT
12" I.E. 2427.26, APPROX. 130' OUT FROM END OF SD# 10
SEE TYP. OUTLET DETAIL SHT. 15
PT 6+34.99 RT.
PT 6+41.86 LT.
8" SS APPROX. INV. 2431±
11+15.33 PRIVATE DRIVE "D"

TOC LT. & RT. ℄ ELEV.	2471.96	2485.56	2459.16	2452.76	2446.36	2443.28	2441.01	2439.68	2439.17	2438.37	2437.60
	2471.99	2465.59	2459.19	2452.79	2446.39	2443.31	2441.04	2439.71	2439.20	2438.40	
	6+00	7+00	8+00	9+00	10+00	11+00	12+00	13+00	14+00	15+00	16+00	17+00

APPROVED FOR CONSTRUCTION
R. S. TURNER
THE COUNTY ENGINEER
10-2-86
PE REQUIRED PRIOR TO CONSTRUCTION

Hill Top DEVELOPER APPROVAL DATE 10-2-86

No.	Date	By	Ckd.	Appr.	Revision
4	9-86	LSK			COUNTY REVIEW
3	9-86	STV			REVISED PER SPOKANE COUNTY REVIEW
2	7-86	PDH			REVISED PROGRESS COURT PER SPOKANE COUNTY
1	9-86	GLR			REVISED PRIVATE DRIVE "M" PER SPOKANE COUNTY
1	9-86	GLR			REVISED PER SPOKANE COUNTY REVIEW

JOHN T. BANNON — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER
LEONARD KONG — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER

Approved By:

Drawn By BCB Date 6-1-85
Designed By LSK 6-1-85
Checked By RBJamison 7-15-85
Approved By

ENTRANCO Engineers
ENVIRONMENTAL AND TRANSPORTATION CONSULTANTS
BELLEVUE WASHINGTON

Scale: Horiz. 1" = 50' Vert. 1" = 10'
Job No.: 85034-65

HILL-TOP ENTERPRISES, INC
BELLA VISTA DIVISION 2
PROGRESS COURT STA. 1+00 TO STA. 16+50, ROADWAY PROFILES

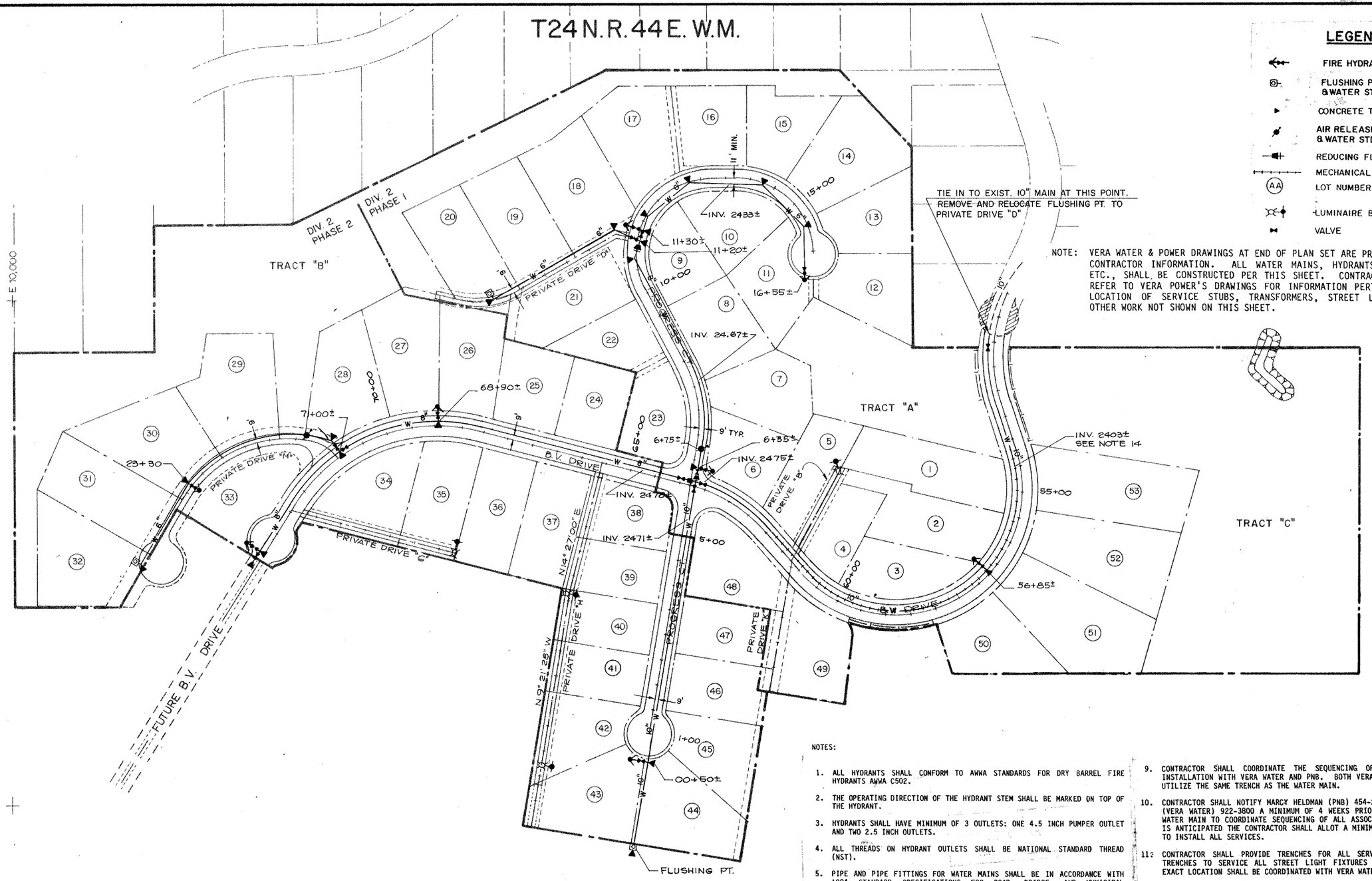
Sheet 6 Of 17
SEP 30 1986

82621

Int.	Date	Dwg.	Eng.

WATER BASE MAP — LOT LAYOUT

T24 N. R. 44 E. W.M.



LEGEND:

- FIRE HYDRANT ASSEMBLY
- FLUSHING PT STD. - SEE VERA POWER & WATER STD. DETAIL
- CONCRETE THRUST BLOCKING
- AIR RELEASE VALVE - SEE VERA POWER & WATER STD. DETAIL
- REDUCING FLANGE
- MECHANICAL JOINT PIPE REQUIRED
- (AA) LOT NUMBER
- LUMINAIRE BY OTHERS
- VALVE

NOTE: VERA WATER & POWER DRAWINGS AT END OF PLAN SET ARE PROVIDED FOR CONTRACTOR INFORMATION. ALL WATER MAINS, HYDRANTS, VALVES, ETC., SHALL BE CONSTRUCTED PER THIS SHEET. CONTRACTOR SHALL REFER TO VERA POWER'S DRAWINGS FOR INFORMATION PERTAINING TO LOCATION OF SERVICE STUBS, TRANSFORMERS, STREET LIGHTS AND OTHER WORK NOT SHOWN ON THIS SHEET.

NOTES:

1. ALL HYDRANTS SHALL CONFORM TO AWWA STANDARDS FOR DRY BARREL FIRE HYDRANTS AWWA C502.
2. THE OPERATING DIRECTION OF THE HYDRANT STEM SHALL BE MARKED ON TOP OF THE HYDRANT.
3. HYDRANTS SHALL HAVE MINIMUM OF 3 OUTLETS: ONE 4.5 INCH PUMPER OUTLET AND TWO 2.5 INCH OUTLETS.
4. ALL THREADS ON HYDRANT OUTLETS SHALL BE NATIONAL STANDARD THREAD (NST).
5. PIPE AND PIPE FITTINGS FOR WATER MAINS SHALL BE IN ACCORDANCE WITH 1984 STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION, SECTION 7-09 THROUGH 7-15. ALL MAINS SHALL BE CLASS 150 C900 PVC UNLESS OTHERWISE INDICATED.
6. MINIMUM DEPTH OF COVER SHALL BE 4'0".
7. CONTRACTOR SHALL NOT DEFLECT PIPE GREATER THAN RECOMMENDED BY THE PIPE MANUFACTURER.
8. CONTRACTOR SHALL INSTALL TRACER TAPES OVER ALL NON-METALIC WATER AND SERVICE LINES.
9. CONTRACTOR SHALL COORDINATE THE SEQUENCING OF THE SERVICE STUB INSTALLATION WITH VERA WATER AND PNB. BOTH VERA WATER AND PNB WILL UTILIZE THE SAME TRENCH AS THE WATER MAIN.
10. CONTRACTOR SHALL NOTIFY MARCY HELDMAN (PNB) 454-2740 AND KEVIN WELLS (VERA WATER) 922-3800 A MINIMUM OF 4 WEEKS PRIOR TO INSTALLATION OF WATER MAIN TO COORDINATE SEQUENCING OF ALL ASSOCIATED UTILITIES. IT IS ANTICIPATED THE CONTRACTOR SHALL ALLOT A MINIMUM OF 8 WORKING DAYS TO INSTALL ALL SERVICES.
11. CONTRACTOR SHALL PROVIDE TRENCHES FOR ALL SERVICE CONNECTIONS AND TRENCHES TO SERVICE ALL STREET LIGHT FIXTURES INDICATED ON PLANS. EXACT LOCATION SHALL BE COORDINATED WITH VERA WATER.
12. ALL THRUST BLOCKING SHALL BE IN ACCORDANCE TO AWWA STANDARDS FOR INSTALLING THE TYPE OF PIPE USED.
13. WHERE WATER AND SANITARY SEWER LINES CROSS, A MINIMUM OF 18" VERTICAL CLEARANCE BETWEEN PIPES IS REQUIRED. WHERE THE SANITARY SEWER IS ABOVE THE WATER LINE, THE SANITARY SEWER SHALL BE CONCRETE ENCASED A MINIMUM OF 10' EACH SIDE OF MAIN, WITH 6" MIN. THICKNESS.
14. APPROXIMATE INVERT ELEVATION OF WATER MAIN, UNDER STORM SEWER, SEE SHEET 10.

SCREEN	3	B1	C1
OVLY	3	B1	C1
CODE			
DATE			

No.	Date	By	Ckd.	Appr.	Revision
3	9-86	STV			REVISED PER SPOKANE COUNTY REVIEW
1	9-85	GLR			REVISED PER SPOKANE COUNTY REVIEW

JOHN T. BANNON — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER

LEONARD KONG — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER

Approved By:

Drawn By: Reedeman Date: 6-1-85
Designed By: LSK 6-1-85
Checked By: BB Jamison 7-15-85
Approved By:

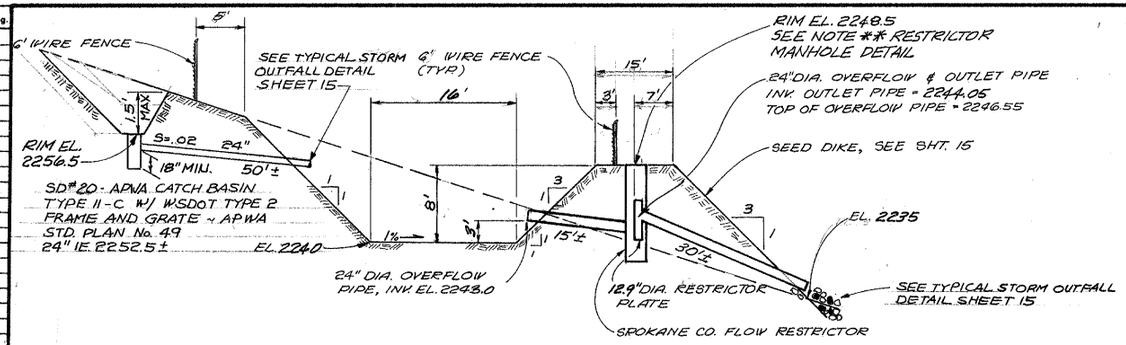
ENTRANCO Engineers
ENVIRONMENTAL AND TRANSPORTATION CONSULTANTS
BELLEVUE WASHINGTON

Scale: Horiz. 1"=100' Vert. NA
Job No.: 85034-65

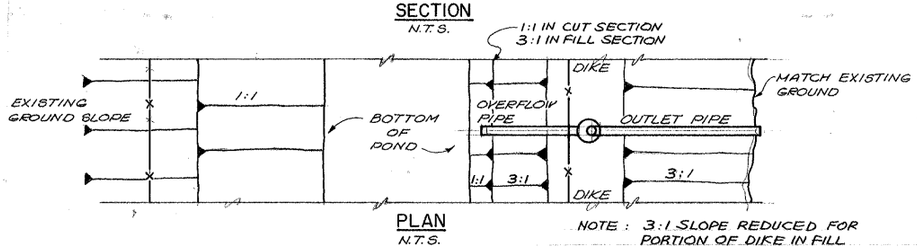
HILL-TOP ENTERPRISES, INC
BELLA VISTA DIVISION 2
WATER DISTRIBUTION PLAN

Sheet 9 Of 17
SEP 30 1986

Int.	Date	Dwg.	Eng.



SECTION
N.T.S.

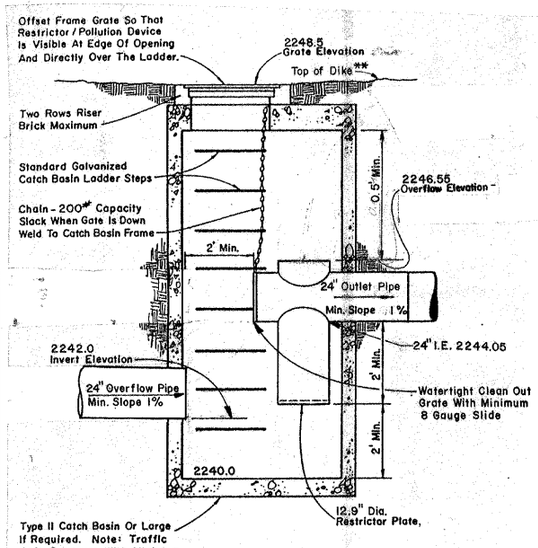


PLAN
N.T.S.

NOTE : 3:1 SLOPE REDUCED FOR PORTION OF DIKE IN FILL

BASIN DETAIL

NOTE * * NOMINAL TOP OF DIKE TO BE EL 2248 TRANSITION 20' ON EACH SIDE OF RESTRICTOR MANHOLE STRUCTURE TO ELEVATION 2248.5



Note: All Metal Parts And Surfaces Must Be Made Of Corrosion Resistant Material Or Galvanized. Complete Corrosion Protection Must Be Assured.

* Grate Not Allowed On Restrictor Manhole. Must Be Round, Self-locking Lid.

RESTRICTOR MANHOLE DETAIL
N.T.S.

BASIN "E"

VERTICAL DATA		
STA.	DES.	SURFACE ELEV.
701+70	BEGIN	2247.00
704+30	BVC	2242.60
704+80	VPI	2240.85
705+30	EVC	2237.60
708+00	BVC	2210.00
708+50	VPI	2213.25
709+00	EVC	2213.00
712+20	VAP	2219.40

BEARING TABLE		
	BEARING	DIST.
A	N 49°18'16" W	65.94'
B	N 20° 51'04" E	74.06
C	N 21°23'28" E	119.32
D	N 2° 50'22" W	460.95'
E	N 62° 25'53" W	217.90'

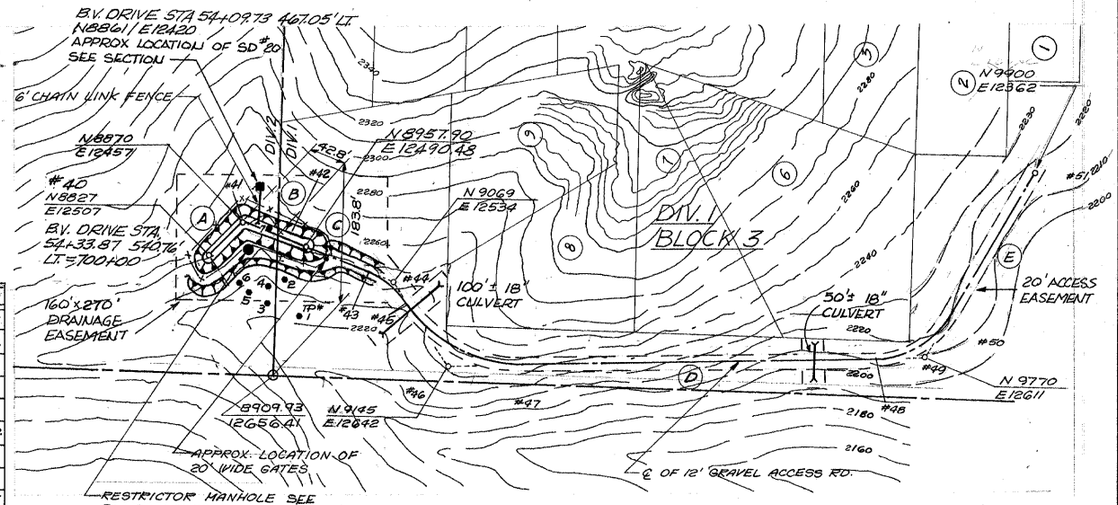
NOTE:
1. ACCESS ROAD SHALL BE CONSTRUCTED IN ACCORDANCE W/ SPOKANE COUNTY CRITERIA. THE MAXIMUM GRADE SHALL BE 8%. CONTRACTOR SHALL PLACE A MIN OF 4" CRUSHED SURFACING ON ROADWAY. SEE DETAIL 2 SHT 3 FOR SPEC.
2. POND DESIGN ASSUMES 3"/HR PERC. RATE. FINAL AS-BUILT POND SHALL BE TESTED TO ASSURE ASSUMED RATE IS ACHIEVED PRIOR TO ACCEPTANCE BY COUNTY.
3. ● : TEST PIT NO.

P.T. DESCRIPT.		
NO.	STA.	DES.
40	700+00	BEG.
41	700+65.94	A.P.
42	701+60.00	A.R.
43	702+49.15	P.C.
45	703+07.76	P.C.C.
47	704+93.90	P.T.
48	709+54.85	P.C.
50	710+69.06	P.T.
51	712+87.16	END

CURVE DATA					
P.T.	STA.	R	Δ	L	T
44	702+79.32	100'	33°34'29"	58.60'	30.17'
46	704+09.58	184.83	57°42'19"	186.15'	101.83'
49	710+17.84	110'	59°35'31"	114.41'	62.99'

● TP#	STA	DIST. LEFT.
1	52+77.07	643.19
2	52+60.78	595.70
3	52+41.68	620.53
4	52+39.41	596.45
5	52+08.36	613.36
6	51+98.06	598.31
7	52+36.28	528.39

BASIS OF BEARINGS:
THE BEARING OF N 89°47'08" E ON THE 6TH STANDARD PARALLEL BETWEEN THE QUARTER CORNER OF SECTION 2, TOWNSHIP 24 NORTH, RANGE 44 EAST, W.M., AND THE SOUTHEAST CORNER OF SECTION 35, TOWNSHIP 25 NORTH, RANGE 44 EAST, W.M., AS PER PLAT OF SULLIVAN HEIGHTS ADDITION, WAS USED AS THE BASIS OF BEARING FOR THIS PLAT.



APPROVED FOR CONSTRUCTION
R. S. TURNER
SPOKANE COUNTY ENG.
BY John R. Nelson
10-2-86

PERMIT REQUIRED!
NOTIFY THE PERMIT ENGINEER
455-3600
24 HRS. PRIOR TO CONSTRUCTION

DETENTION BASIN "E" & ACCESS ROAD
SCALE: 1" = 100'

Mike Silvey V.P. Hilltop
DEVELOPER APPROVAL
DATE 10-2-86

No.	Date	By	Ckd.	Appr.	Revision
3	9-86	STV			REVISED PER SPOKANE COUNTY REVIEW
4	9-86	LSK			COUNTY REVIEW
1	7-86	PDH			REVISED PER SPOKANE COUNTY REVIEW

JOHN T. BANNON — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER

LEONARD KONG — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER

Approved By:

Drawn By: Baldwin Date: 6-1-85
Designed By: LSK 6-1-85
Checked By: R.B.Jamison 7-15-85
Approved By:

ENTRANCO Engineers
ENVIRONMENTAL AND TRANSPORTATION CONSULTANTS
BELLEVUE WASHINGTON

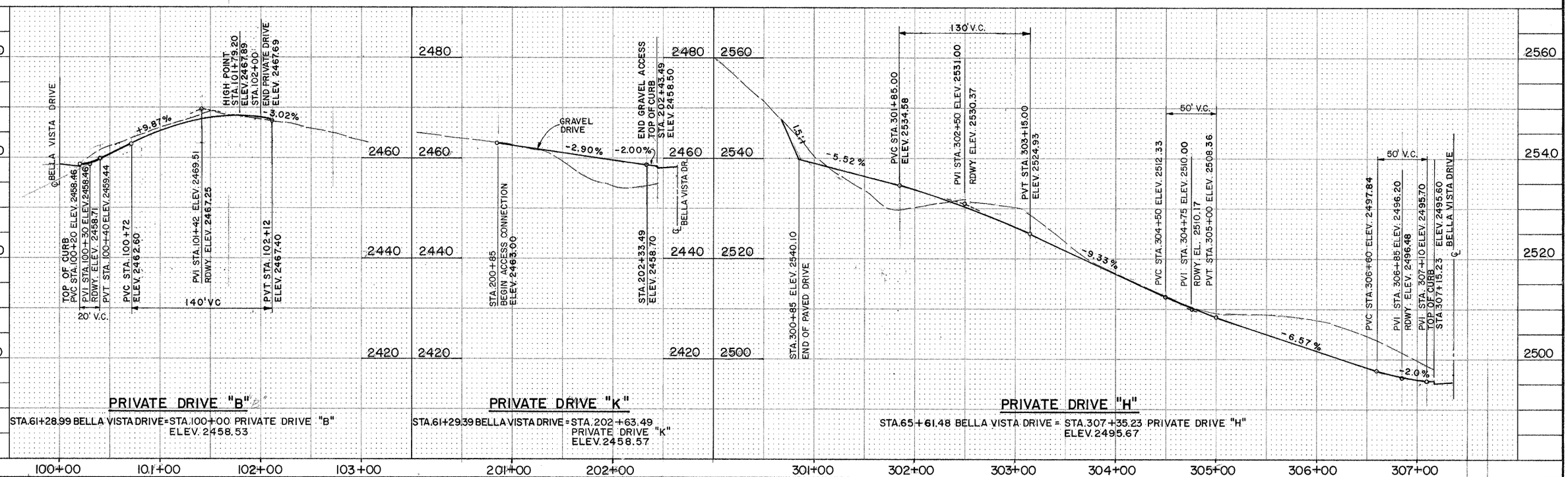
Scale: Horiz. NA Vert. NA
Job No.: 85034-65

HILL-TOP ENTERPRISES, INC.
BELLA VISTA DIVISION 2
OFFSITE WATER & DETENSION POND

Sheet 16 Of 17

SEP 30 1986

INT.	DATE	DWG	ENG



PRIVATE DRIVE "B"

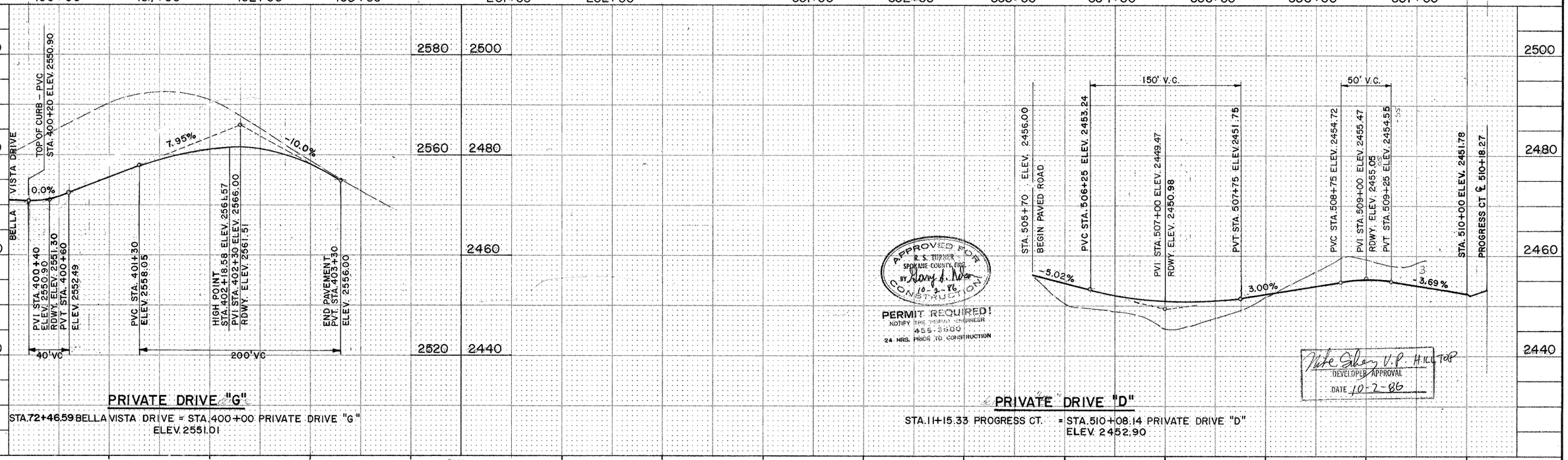
STA.61+28.99 BELLA VISTA DRIVE = STA.100+00 PRIVATE DRIVE "B"
ELEV. 2458.53

PRIVATE DRIVE "K"

STA.61+29.39 BELLA VISTA DRIVE = STA. 202+63.49 PRIVATE DRIVE "K"
ELEV. 2458.57

PRIVATE DRIVE "H"

STA.65+61.48 BELLA VISTA DRIVE = STA. 307+35.23 PRIVATE DRIVE "H"
ELEV. 2495.67



PRIVATE DRIVE "G"

STA.72+46.59 BELLA VISTA DRIVE = STA.400+00 PRIVATE DRIVE "G"
ELEV. 2551.01

APPROVED FOR CONSTRUCTION
R. S. TURNER
SPOKANE COUNTY, ENG.
BY Rory J. Mc
10-2-86

PERMIT REQUIRED!
NOTIFY THE PUBLIC ENGINEER
456-3600
24 HRS. PRIOR TO CONSTRUCTION

Pete Silvey V.P. HILLTOP
DEVELOPER APPROVAL
DATE 10-2-86

PRIVATE DRIVE "D"

STA.11+15.33 PROGRESS CT. = STA.510+08.14 PRIVATE DRIVE "D"
ELEV. 2452.90

No.	Date	By	Ckd.	Appr.	Revision
3	9-86	STV			REVISED PER SPOKANE COUNTY REVIEW
2	9-85	GLR			REVISED STA. 509+00 PER SPOKANE COUNTY
1	9-85	GLR			REVISED PER SPOKANE COUNTY REVIEW

JOHN T. BANNON — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER

LEONARD KONG — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER

Approved By:

Drawn By	TEAM	Date 6-1-85
Designed By	KMB	6-1-85
Checked By	RBJamison	7-15-85
Approved By		

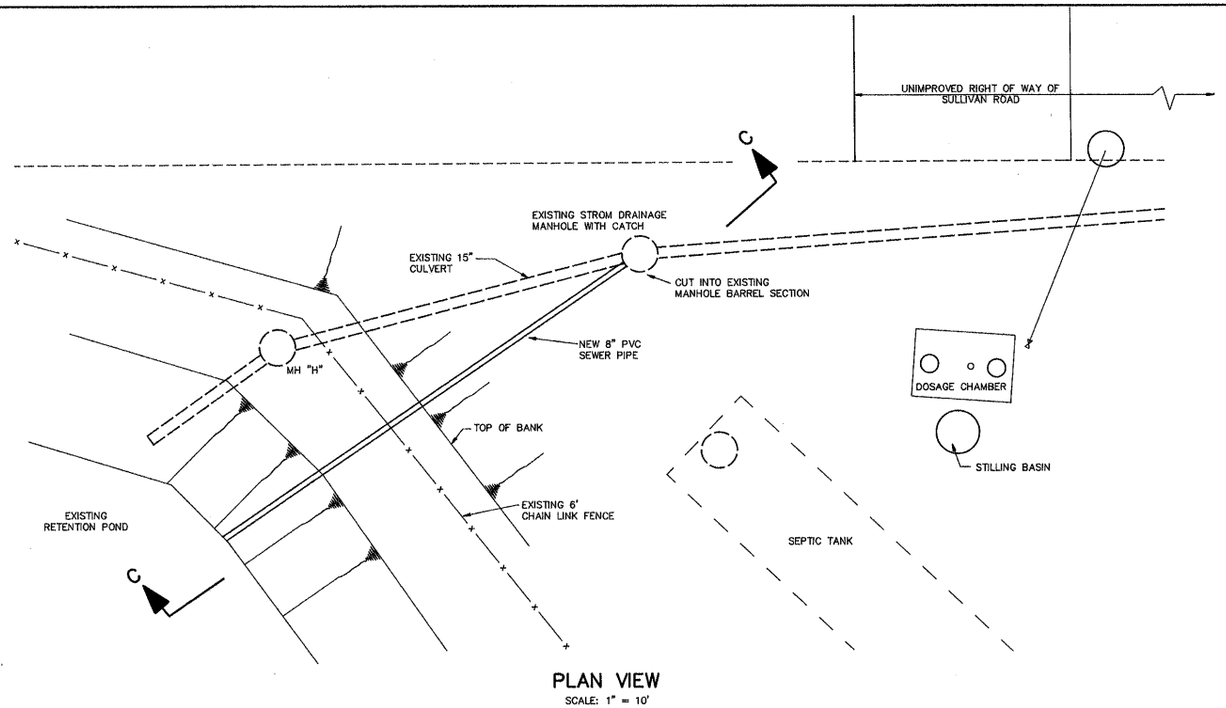
ENTRANCO Engineers
ENVIRONMENTAL AND TRANSPORTATION CONSULTANTS
BELLEVUE WASHINGTON

Scale: Horiz 1"=50' Vert. 1"=10'
Job No.: 85034-65

HILL-TOP ENTERPRISES, INC.
BELLA VISTA DIVISION 2
PRIVATE DRIVE PROFILES

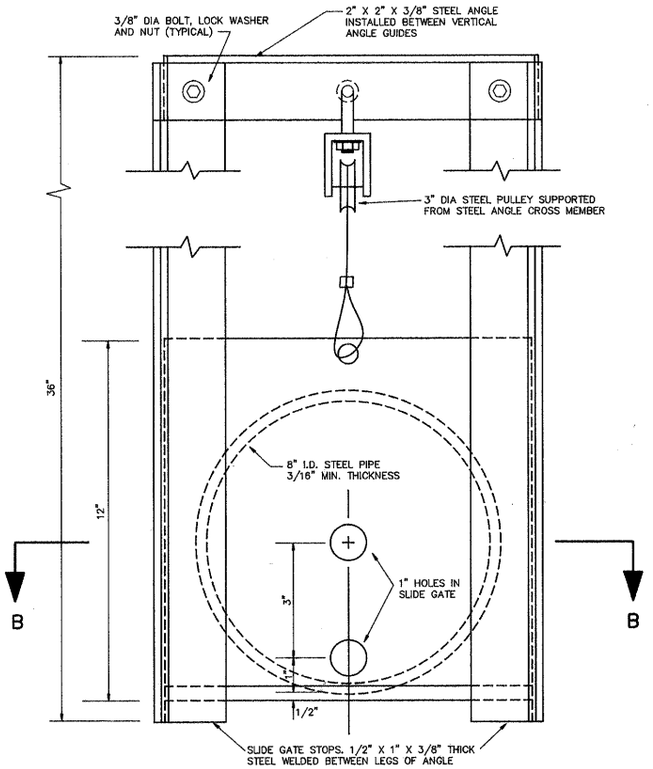
Sheet 7 Of 17

SEP 30 1986

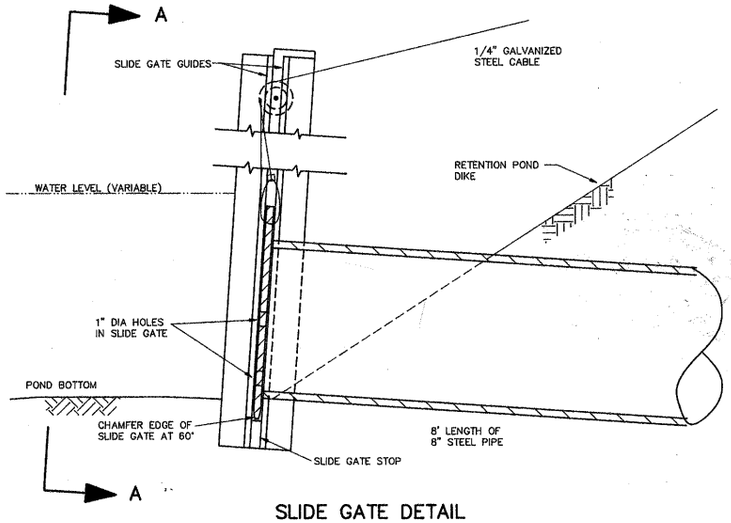


PLAN VIEW
SCALE: 1" = 10'

SCALE 1" = 10'



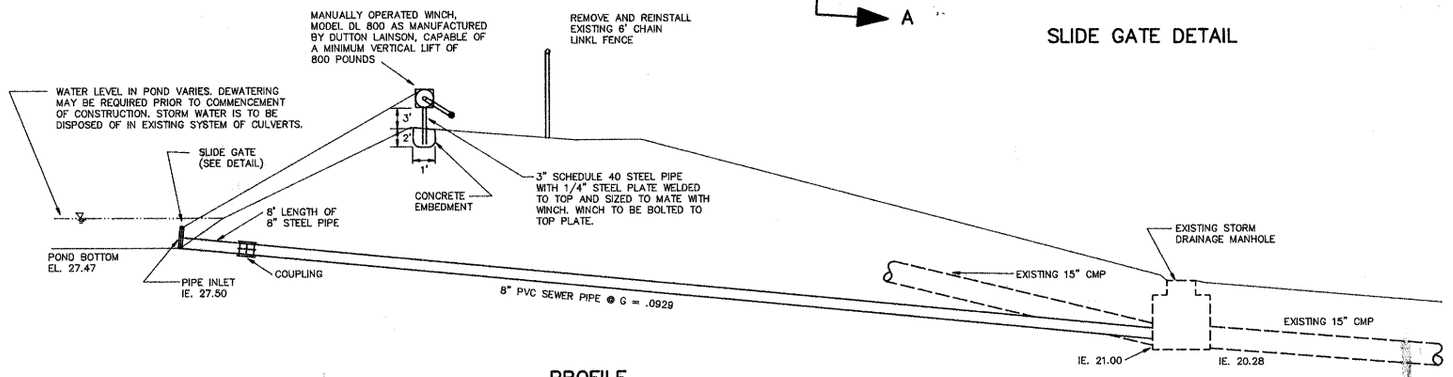
SECTION A–A



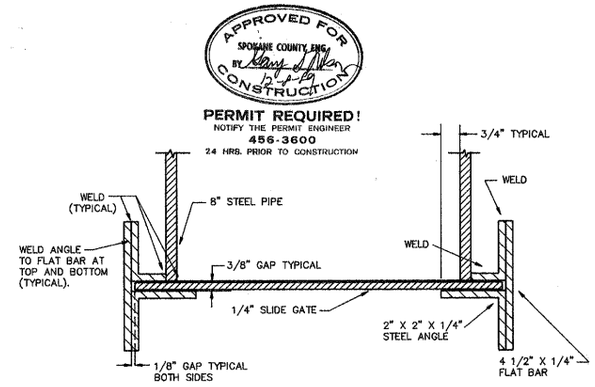
SLIDE GATE DETAIL

Note: All site work construction for the installation of sewer, water, streets, building pads and storm drainage facilities shall be in accordance with the 1984 Standard Specifications for Road, Bridge and Municipal Construction as jointly promulgated by the Washington State Department of Transportation and the Washington State Chapter of the American Public Works Association.

Paint – All fabricated steel parts shall be shop primed with 1 coat of Koppers Inertol Rust Inhibitive 621 primer and 2 coats of Green Torex 800 Enamel.



PROFILE
SECTION C–C
SCALE: 1" = 5'



SECTION B–B

CALL BEFORE YOU DIG 456–8000

SCALE: HORIZONTAL 1/10 VERTICAL N/S

DATE 3/25/99 DWN. SPS CHK. RLM APP. RLM

NO.	DATE	BY	REVISIONS

INLAND PACIFIC ENGINEERING
South 25 Altamont Spokane, Washington 99202
(509) 535-1410

BELLA VISTA DIVISION NO. 2
RETENTION POND " " REVISIONS

SHEET 1 OF 1
JOB NUMBER 88065

INT.	DATE	DWG.	ENG.

FS FULL SUPER
C NORMAL CROWN
L LEVEL
CS CROWN SLOPE

51+50 MATCH EXIST. SUPER.

SUPERELEVATION DIAGRAM
NTS (TYP)

	52+98.72	53+46.72	53+94.72	54+42.72
TOC RT.	2402.64	2406.09	2409.55	2413.01
℄	2401.56	2405.40	2409.24	2413.08
TOC LT.	2401.10	2405.33	2409.17	2413.01

4% RT, 0%, -%, 4% LT, 2.00% LT. & RT., TO 60+89.68, FS, CS, ℄

PVC 51+50 EXIST. ELEV. 2389.78
100' VC
PVI 52+00 ELEV. 2393.66 RDWY. 2393.69
PVT 52+50 ELEV. 2397.66
+7.76%
SD #1 52+25 LT
SD #1A 53+25 LT
SD #3 54+06 LT.
SD #2 54+50 RT.
+8.00%
PVC 57+50 ELEV 2437.66
200' VC
PVI 58+50 ELEV 2445.66 RDWY 2441.41
PVI 60+50 ELEV 2451.68 RDWY 2453.08
PVT 61+50 ELEV 2460.28
+3.01%
+8.60%
PVRC 59+50 ELEV 2448.67

8" SS & 10" W, APPROX. EL. 2403± SEE SHT. 9 & 10

8" SS APPROX. EL. 2396.6± SEE SHT. 11

12" OUTFALL, 40' FT LT IE 2386± (SEE TYP DETAIL SHT 15)

BELLA VISTA DRIVE

	50+00	51+00	52+00	53+00	54+00	55+00	56+00	57+00	58+00	59+00	60+00	61+00	62+00	63+00
TOC RT.	2394.77	2402.74	2417.59	2425.59	2433.59	2441.28	2446.78	2450.45	2456.26	2464.51	2473.11
℄ ELEV.	2393.69	2401.66	2417.66	2425.66	2433.66	2441.35	2446.88	2450.52	2456.53	2464.58	2473.18
TOC LT.	2393.23	2401.20	2417.59	2425.59	2433.59	2442.04	2446.78	2450.45	2456.26	2464.51	2473.11

18" EXIST. CULVERT APPROX ℄ INV. 2374±

63+35.10 PC LT.
63+53.08 PC RT.
℄ INTERSECTION 63+83.80
64+18.39 PT LT.
64+23.60 PT RT.
SD #12 64+47.38 RT
SD #13 64+90 LT
65+26.85 END CONSTRUCTION BELLA VISTA DIVISION NO. 2
65+61.48 PRIVATE DRIVE "H"
PVC 66+00
PVI 66+50 ELEV 2503.28 RDWY 2503.21
PVT 67+00
SD #14 67+75 LT
100' VC
+8.00%
+8.60%
TO SD #6 SEE STA. 6+35 RT.
8" SS
10" W
SEE SHT. 9 & 10 FOR UTILITY LAYOUT AND CROSSING. APPROX. WATER INV. EL. 2478±, APPROX. SS INV. EL. 2480±

FUTURE CONSTRUCTION

BELLA VISTA DRIVE

72+46.59 PRIVATE DRIVE "G"
72+61.07 PC LT. & RT.
72+77.63 PRC LT. & RT.
73+60 END OF PAVING
PVC 73+20 ELEV 2556.88
PVI 73+70 ELEV 2560.88 RDWY 2560.60
PVT 74+20 ELEV 2563.76
100' VC
+8.00%
+5.76%
71+07.68 PRIVATE DRIVE "M"
TYPICAL ACCESS CONNECTION, 8% MAX. GRADE TO STA. 84+63.72

FUTURE CONSTRUCTION

BELLA VISTA DRIVE

	64+00	65+00	66+00	67+00	68+00	69+00	70+00	71+00	72+00	73+00	74+00	75+00	76+00	77+00
TOC RT.	2481.71	2490.32	2498.92	2507.21	2515.21	2523.21	2531.21	2539.21	2547.21	2555.21	2562.50
℄ ELEV.	2481.78	2490.38	2498.98	2507.28	2515.28	2523.28	2531.28	2539.28	2547.28	2555.28	2562.57
TOC LT.	2481.71	2490.32	2498.92	2507.21	2515.21	2523.21	2531.21	2539.21	2547.21	2555.21	2562.50

No.	Date	By	Ckd.	Appr.	Revision
5	9-86	LSK			COUNTY REVIEW
4	9-86	LSK			ADD STRUCTURE 1A & CONNECT SD 3 TO SD 1
3	9-86	STV			REVISED PER SPOKANE COUNTY REVIEW
2	9-85	GLR			REVISED PER SPOKANE COUNTY REVIEW
1					

JOHN T. BANNON, STATE OF WASHINGTON, REGISTERED PROFESSIONAL ENGINEER

LEONARD KONG, STATE OF WASHINGTON, REGISTERED PROFESSIONAL ENGINEER

Approved By:

Drawn By: Parkhurst, Date: 6-1-85
Designed By: LSK, 6-1-85
Checked By: RBJohnson, 7-15-85
Approved By:

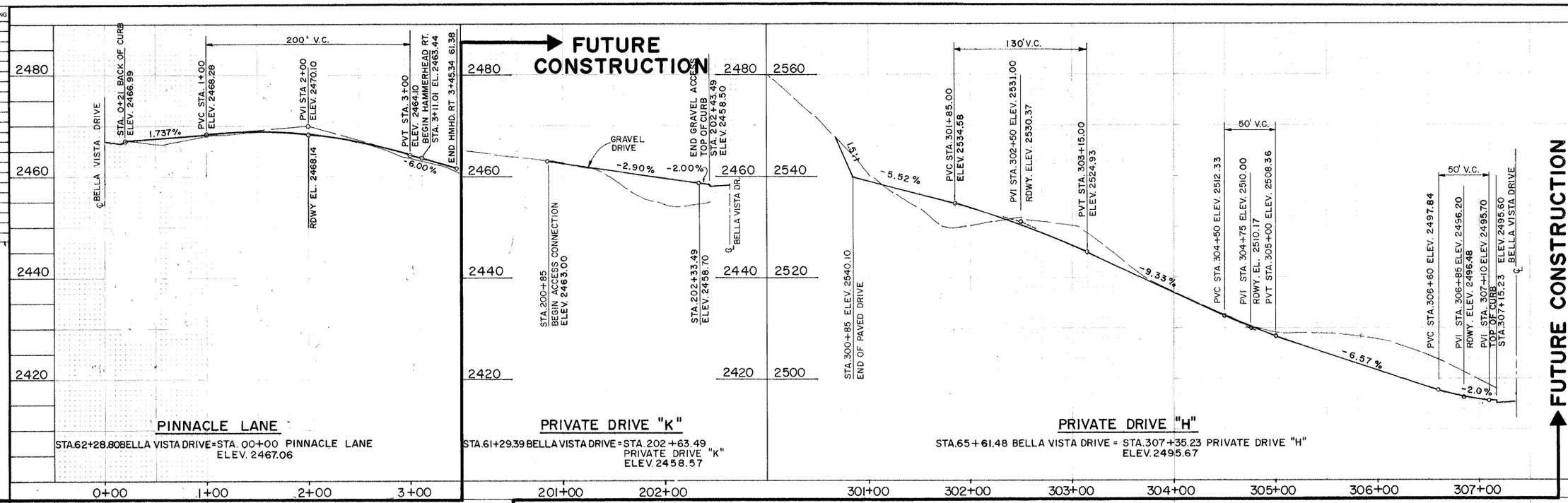
ENTRANCO Engineers
ENVIRONMENTAL AND TRANSPORTATION CONSULTANTS
BELLEVUE WASHINGTON

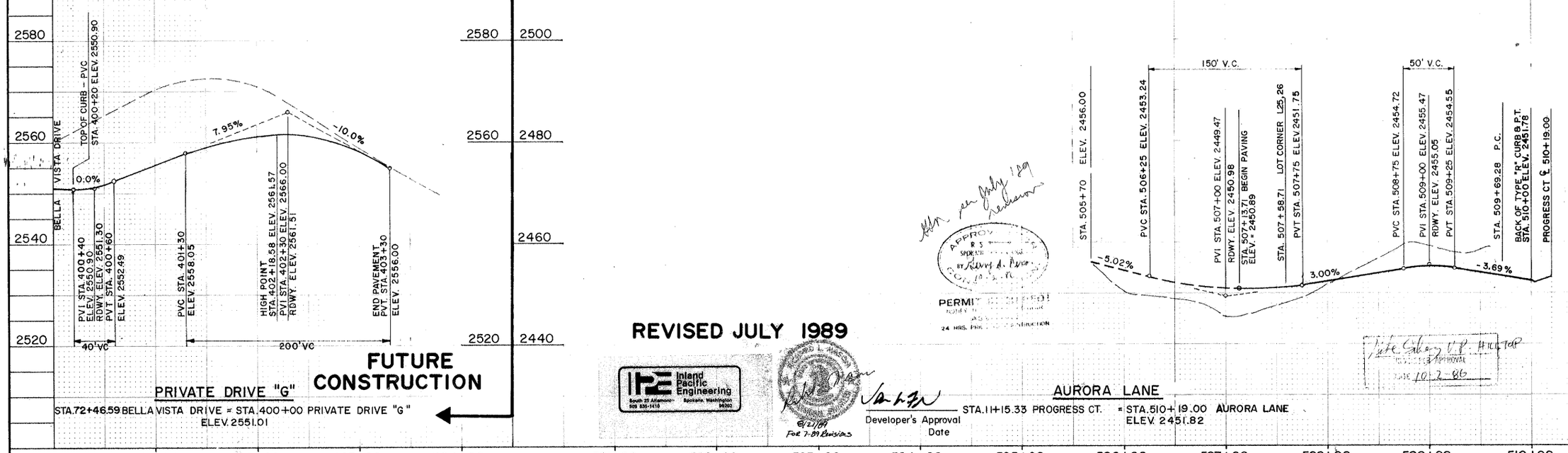
Scale: Horiz. 1"=50', Vert. 1"=10'
Job No.: 85034-65

HILL-TOP ENTERPRISES, INC
BELLA VISTA DIVISION 2
BELLA VISTA DRIVE STA. 52+00 TO STA. 73+60
ROADWAY PROFILES

Sheet 5 Of 17
SEP 30 1986

INT	DATE	DWG	ENG





No.	Date	By	Ckd.	Appr.	Revision
4	7-89	EWC			REVISE PINNACLE & AURORA LANES
3	9-86	STV			REVISED PER SPOKANE COUNTY REVIEW
2	9-85	GLR			REVISED STA. 505+00 PER SPOKANE COUNTY
1	9-85	GLR			REVISED PER SPOKANE COUNTY REVIEW

JOHN T. BANNON — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER

LEONARD KONG — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER

Approved By:

Drawn By	TEAM	Date 6-1-85
Designed By	KAS	6-1-85
Checked By	RBJamison	7-15-85
Approved By		

Inland Pacific Engineering — South 25 Altamont — Spokane, Washington 99202 — 509 535-1410

8/21/89 For 7-89 Revisions

PERMIT ISSUED — NOTICE TO CONTRACTOR — 24 HRS. PRIOR TO CONSTRUCTION

APPROVED — R.S. SPENCER — BY Robert A. Price — CITY OF SPOKANE

Kfh per July 189 Jackson

Pete Sikes U.P. Hill Top — APPROVAL — DATE 10-2-86

ENTRANCO Engineers
ENVIRONMENTAL AND TRANSPORTATION CONSULTANTS
BELLEVUE WASHINGTON

Scale: Horiz. 1"=50' Vert. 1"=10'

Job No.: 85034-65

HILL-TOP ENTERPRISES, INC.

BELLA VISTA DIVISION 2

PRIVATE DRIVE PROFILES

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SEP 20 1989