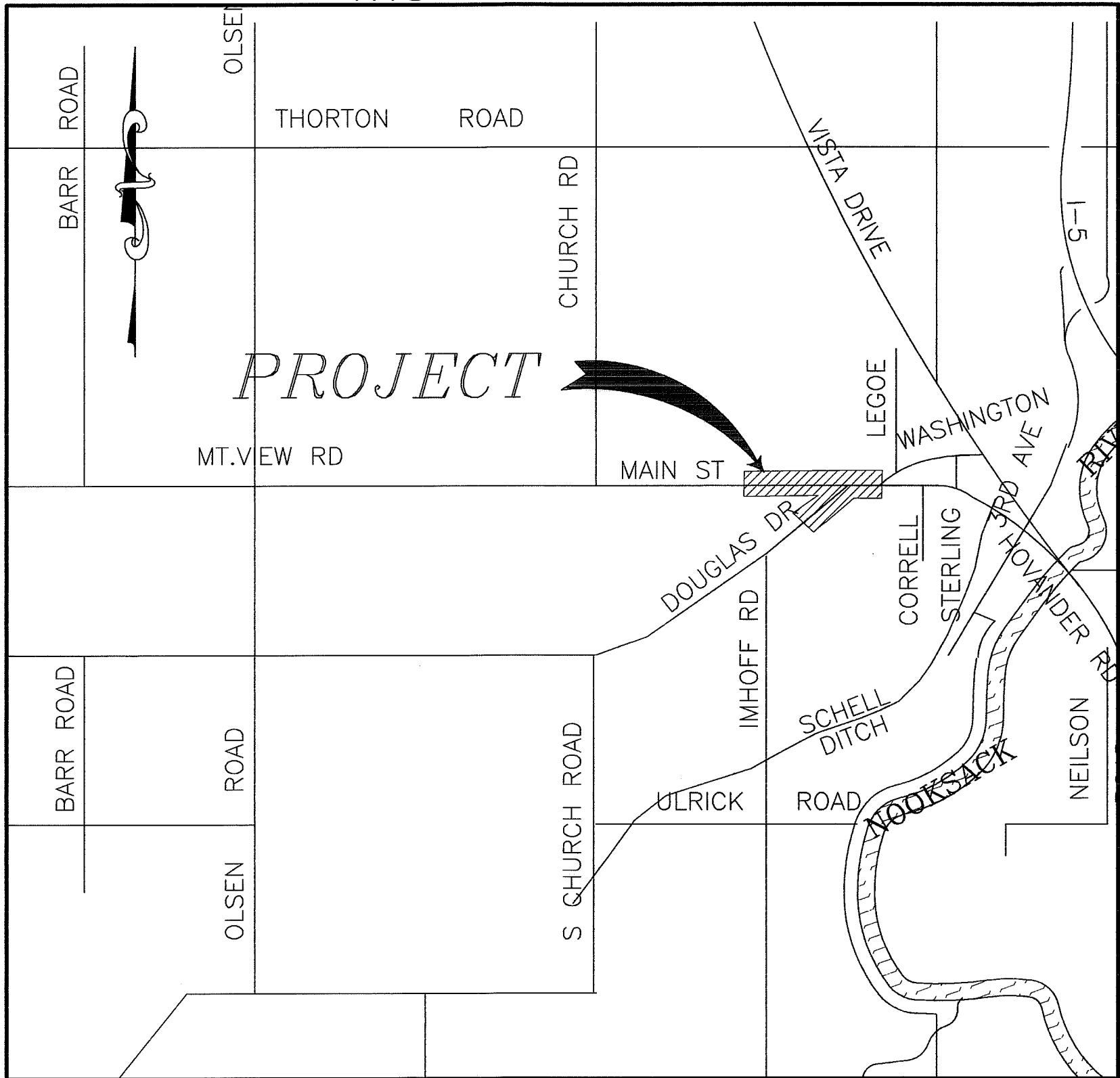


DOUGLAS AND MAIN STREET IMPROVEMENTS

CITY OF FERNDALE
TA 2350
FEDERAL AID No. STPR-8030(003)

00379.001 7-8-09 DD

VICINITY MAP
NTS

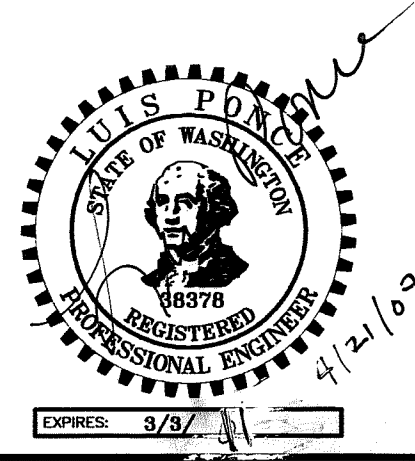


SHEET INDEX

- 1.) COVER SHEET
- 2.) TRAFFIC CONTROL PLAN
- 3.) DEMOLITION PLAN
- 4.) CONSTRUCTION PHASES
- 5.) EXISTING CONDITIONS
- 6.) STREET IMPROVEMENTS
MAIN ST. STA 1+50 TO 6+50
- 7.) STREET IMPROVEMENTS
MAIN ST. STA 6+50 TO 9+50
- 8.) STREET IMPROVEMENTS
DOUGLAS DR. 14+00 TO 17+25
- 9.) RETAINING WALL
DOUGLAS DR. STA 15+25 TO 16+45
- 10.) RETAINING WALL ALTERNATE A1
MAIN ST. STA 5+35 TO 9+08
- 11.) RETAINING WALL, ALTERNATE A2
MAIN ST. STA 5+35 TO 9+08
- 12.) TYPICAL SECTIONS
- 13.) CHANNELIZATION PLAN
- 14.) EROSION CONTROL PLAN
- 15.) DETAIL SHEET
- 16.) DETAIL SHEET
- 17.) DETAIL SHEET
- TS1.) TRAFFIC SIGNAL PLAN
- TS2.) TRAFFIC SIGNAL WIRING DIAGRAM
- TS3.) TRAFFIC SIGNAL STANDARD DETAIL CHART

LEGEND

FM	EX FORCE MAIN	PROPOSED SAWCUT
TV	EX TV LINE	PROP ROCKWALL
FO	EX FIBER OPTICS LINE	PROP STORM DRAIN CATCH BASIN
G	EX GAS MAIN	PROP STORM DRAIN
	EX GAS METER	PROP STORM CLEANOUT
T	EX TELEPHONE LINE	PROP CATCH BASIN TYPE II
W	EX WATER MAIN	PROP SANITARY SEWER
	EX FIRE HYDRANT	PROP SEWER MANHOLE
	EX WATER METER	PROP SEWER CLEANOUT
	EX WATER VALVE	PROP WATERMAIN
	EX UTILITY POLE	PROP HYDRANT
	EX TELEPHONE PEDESTAL	PROP WATER METER
	EX MAIL BOX	PROP WATER VALVE
	EX SIGN	PROP REPAIR COUPLER
	EX TREE	EX CONTOUR
	EX GUY WIRE	PROPOSED CONTOUR
	EX STREET LIGHT	EX IRRIGATION
P	EX POWER VAULT	PROP ROW
	EX JBOX	UTILITY POT HOLE LOCATIONS
SS	EX SANITARY SEWER	
	EX SEWER MANHOLE	
	EX SEWER CLEANOUT	
	EX STORM DRAIN MANHOLE	
SD	EX STORM DRAIN	
	EX STORM CLEANOUT	
	EX SD CATCH BASIN	
X	EX FENCE	
	EX DITCH CL	
	EX CULVERT	
	EX EDGE OF PAVEMENT	
IB	EX TOP OF BANK	
PP	EX POWER LINE	
BB	EX TOE OF BANK	
	EX RIGHT OF WAY	
	EX PROPERTY BOUNDARY	
	EX EASEMENT	
	EX TRAFFIC STRIPING	
	EX CONCRETE	
	EX FLOWLINE	
	EX GRADEBREAK	
	EX GUARDRAIL	
	EX GRAVEL	
	EX ROAD CL	
	EX BLDG	



DATE: 4-21-09
AS-BUILT

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LMC
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Lynden, Washington 98264 Fax (360) 354-0407

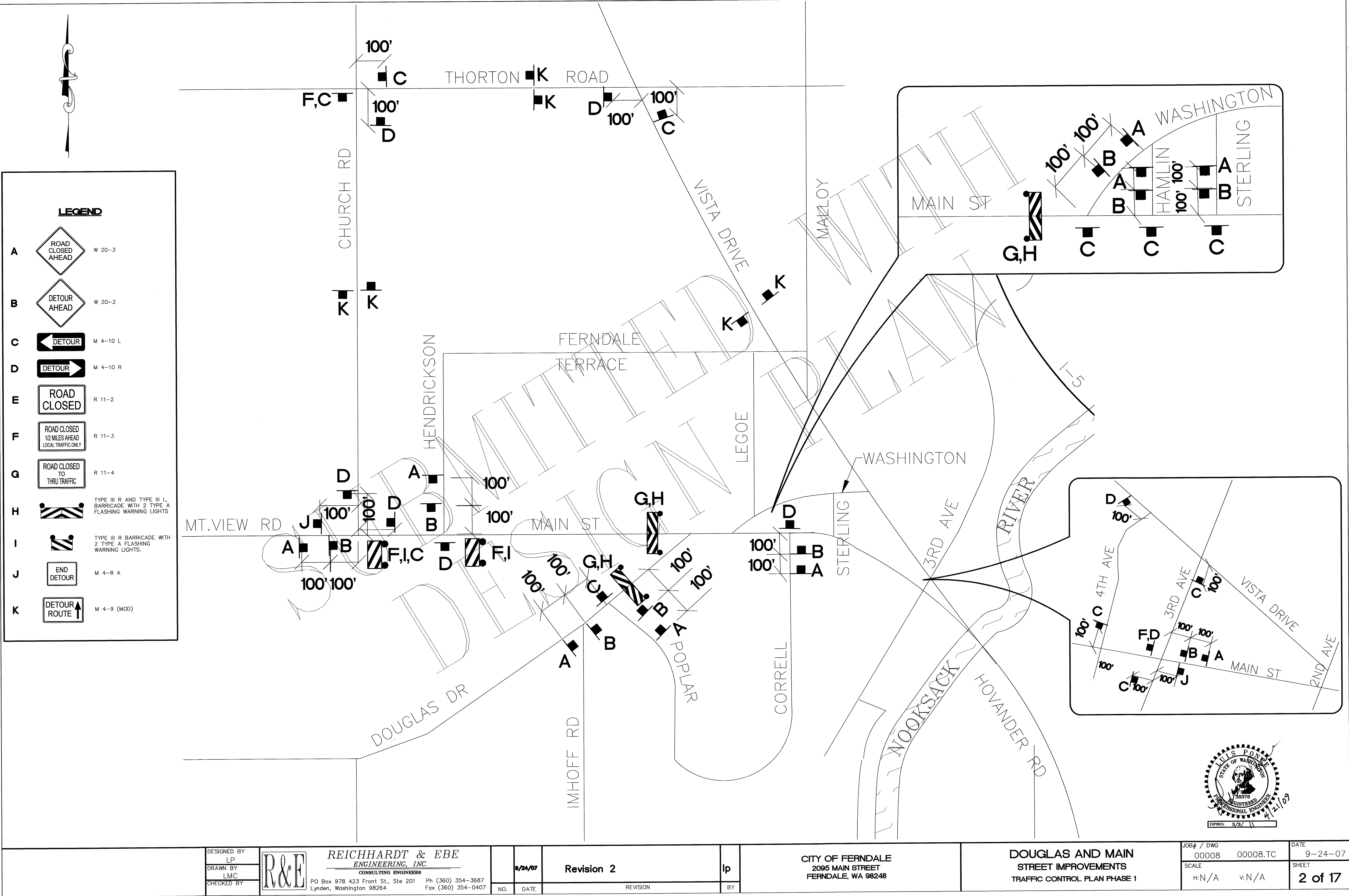
NO.	DATE	REVISION	BY

CITY OF FERNDALE
2095 MAIN STREET
FERNDALE, WA 98248

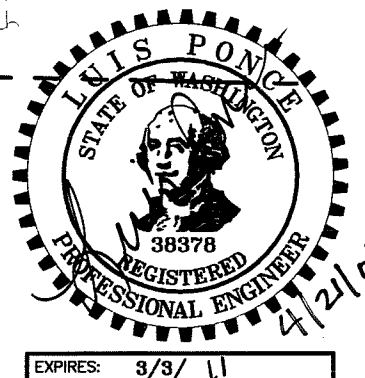
**DOUGLAS AND MAIN
STREET IMPROVEMENTS
COVER SHEET**

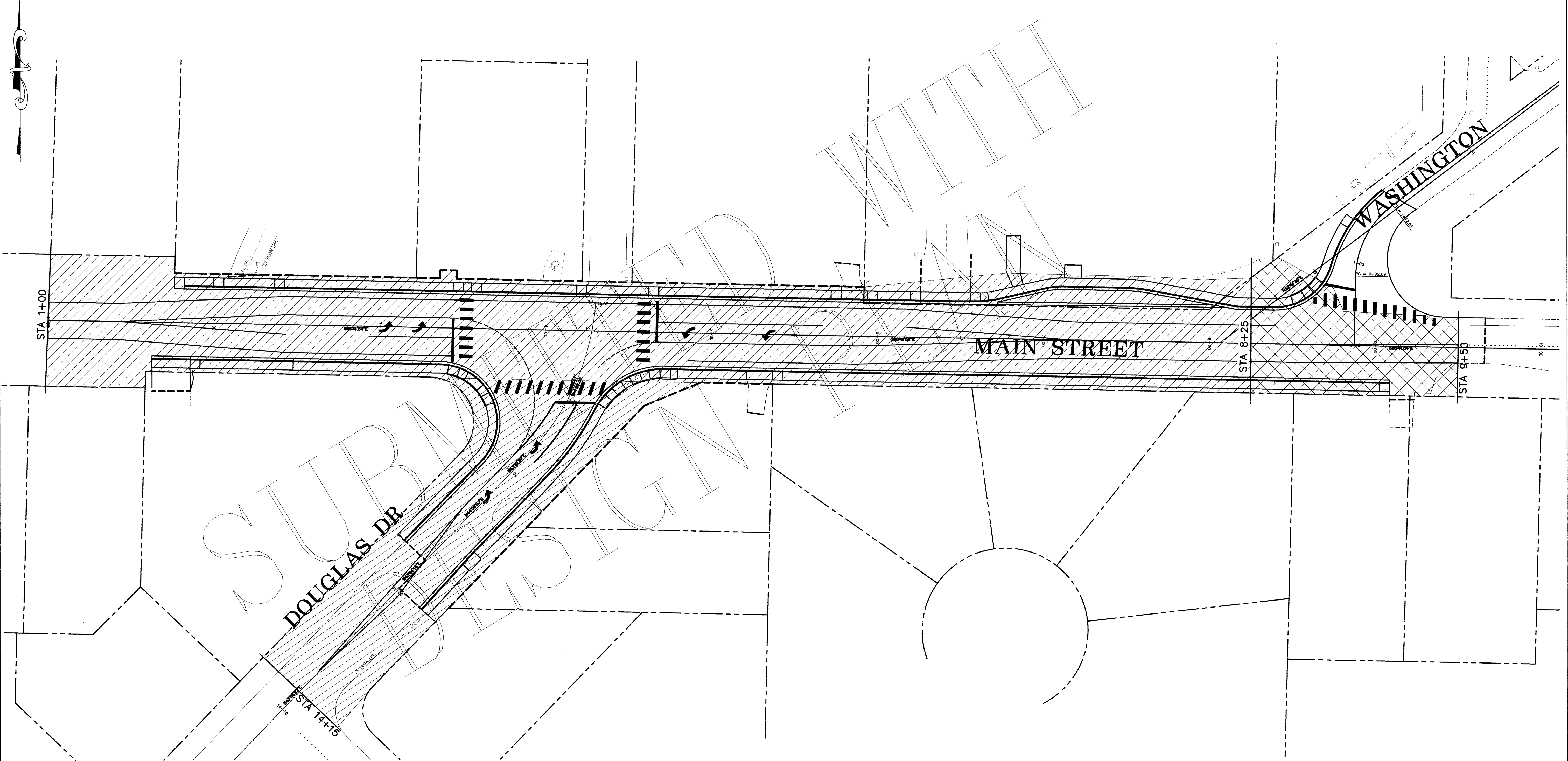
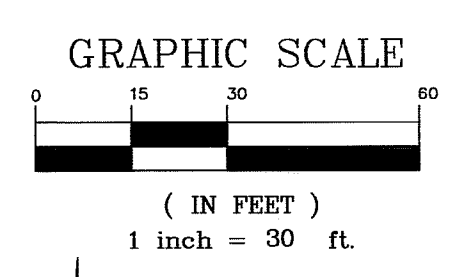
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SCALE H:n/a V:n/a	SHEET 1 of 17

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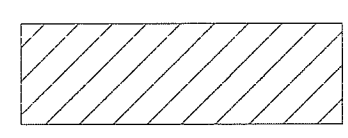
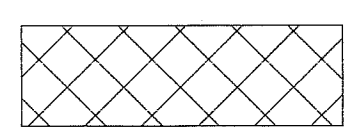


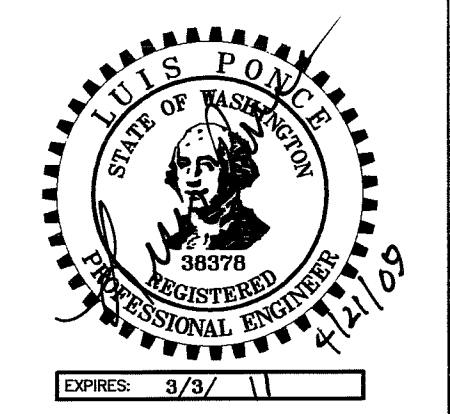
00379.002 7-9-09





LEGEND

-  = PHASE 1
-  = PHASE 2

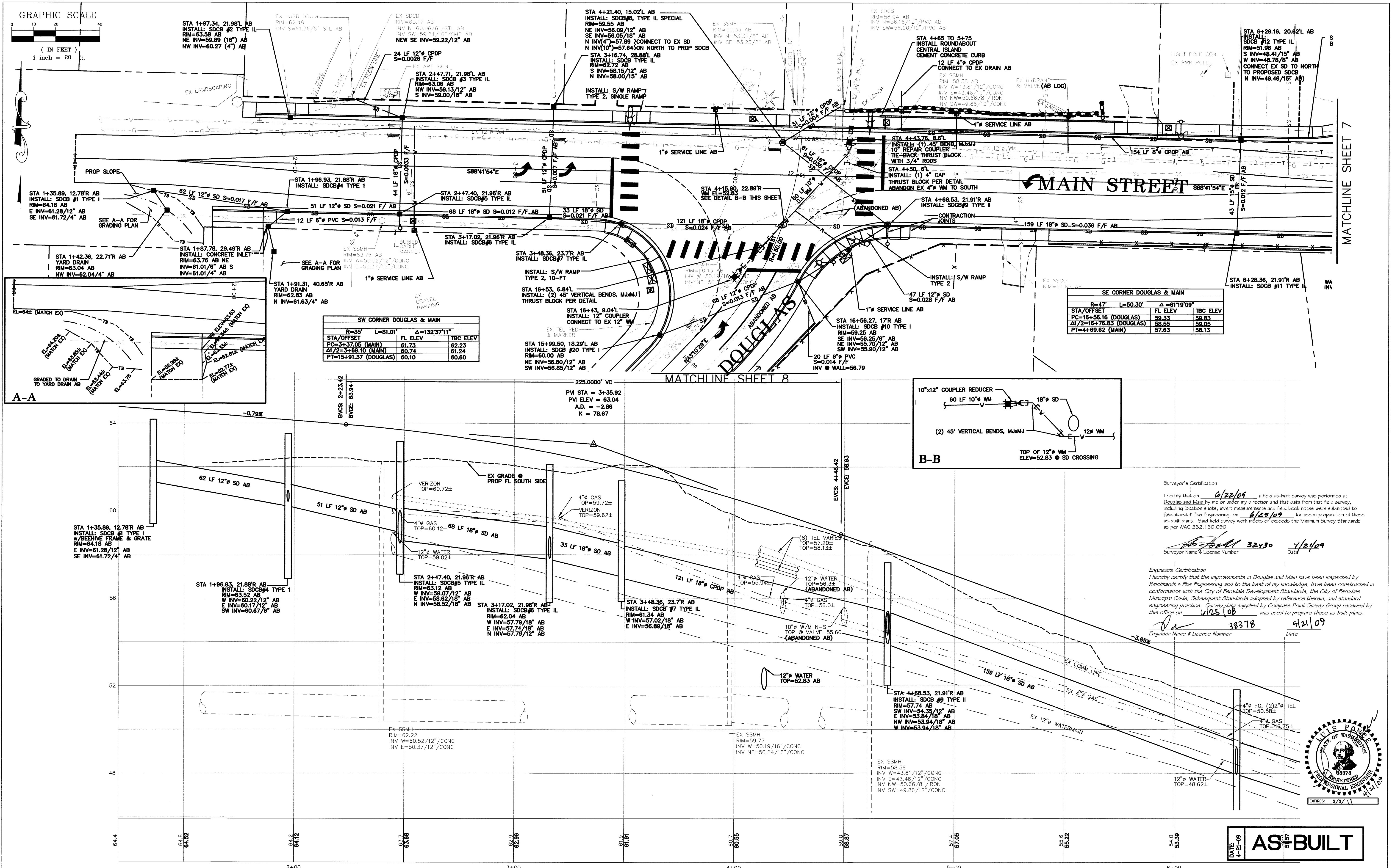


DESIGNED BY LP DRAWN BY LMC CHECKED BY		REICHHARDT & EBE ENGINEERING, INC. CONSULTING ENGINEERS PO Box 978 423 Front St., Ste 201 Lynden, Washington 98264 Ph (360) 354-3687 Fax (360) 354-0407	NO.	DATE	REVISION	BY	CITY OF FERNDALE 2095 MAIN STREET FERNDALE, WA 98248	DOUGLAS AND MAIN STREET IMPROVEMENTS CONSTRUCTION PHASES	JOB# / DWG 00008 00008.SP2.AB SCALE H: 1" = 30' V: N/A	DATE 7-20-07 SHEET 4 of 17
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00379.004 7-8-09 bD

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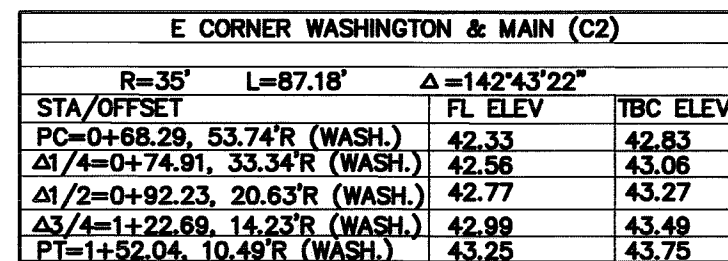




DESIGNED BY LP	REICHARDT & EBE ENGINEERING, INC. CONSULTING ENGINEERS PO Box 978 423 Front St., Ste 201 Lynden, Washington 98264 Ph (360) 354-3687 Fax (360) 354-0407	3	10-12-07	REVISE STORM	LP
DRAWN BY LMC		2	10-10-07	REVISE WATERMAIN	LP
CHECKED BY		1	10-8-07	REVISE STORM	LP
		NO.	DATE	REVISION	BY
		3	10-12-07	REVISE STORM	LP
		2	10-10-07	REVISE WATERMAIN	LP
		1	10-8-07	REVISE STORM	LP
		NO.	DATE	REVISION	BY

CITY OF FERNDALE 2095 MAIN STREET FERNDALE, WA 98248	DOUGLAS AND MAIN STREET IMPROVEMENTS MAIN STA 1+50 TO 6+50	JOB# / DWG 00008 00008.SP2.AB	DATE 7-20-07
		SCALE H: 1"=20' V: 1"=2'	SHEET 6 of 17

00379.006 78.09 DD

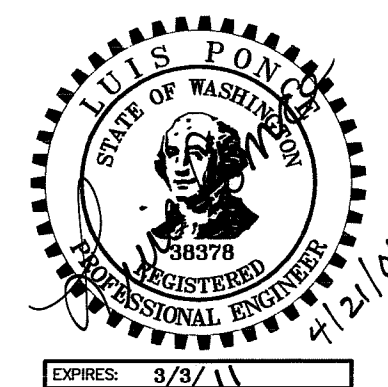


I certify that on 6/22/09 a field as-built survey was performed at Douglas and Main by me and/or under my direction and that data from that field survey, including location shots, invert measurements and field book notes were submitted to Reichhardt & Pile Engineering on 6/25/09 for use in preparation of these as-built plans. Said field survey work meets or exceeds the Minimum Survey Standards as per WAC 352.130.090.

Surveyor Name & License Number 32430 Date 4/2/09

Engineers Certification
I hereby certify that the improvements in Douglas and Main have been inspected by Reichhardt & Ebe Engineering and to the best of my knowledge, have been constructed in conformance with the City of Ferndale Development Standards, the City of Ferndale Municipal Code, Subsequent Standards adopted by reference therein, and standard engineering practice. Survey data supplied by Compass Point Survey Group received by this office on 12/25/08 was used to prepare these as-built plans.

Engineer Name & License Number 38378 Date 4/21/09



DATE: 4-21-09	AS-BUILT
------------------	----------

DESIGNED BY	LP
DRAWN BY	LMC
CHECKED BY	



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ENGINEERING, INC.
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Lynden, Washington 98264 Fax (360) 354-0407

1	10-8-07	REVISE STORM
NO.	DATE	

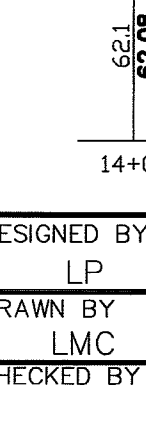
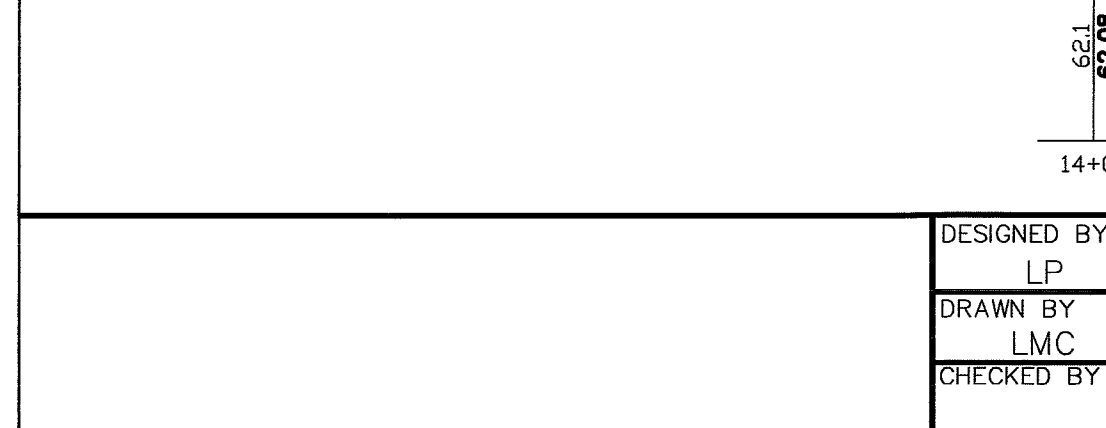
	LP
	BY

CITY OF FERNDALE
2095 MAIN STREET
FERNDALE, WA 98248

DOUGLAS AND MAIN STREET IMPROVEMENTS MAIN STA 6+50 TO 9+50

JOB# / DWG	DATE
00008 00008.SP2.AB	7-20-07

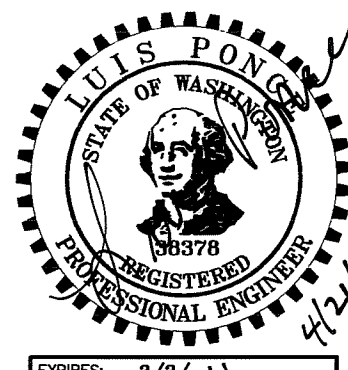
SCALE	SHEET
H: 1"=20' V: 1"=2'	7 of 17



Engineers Certification

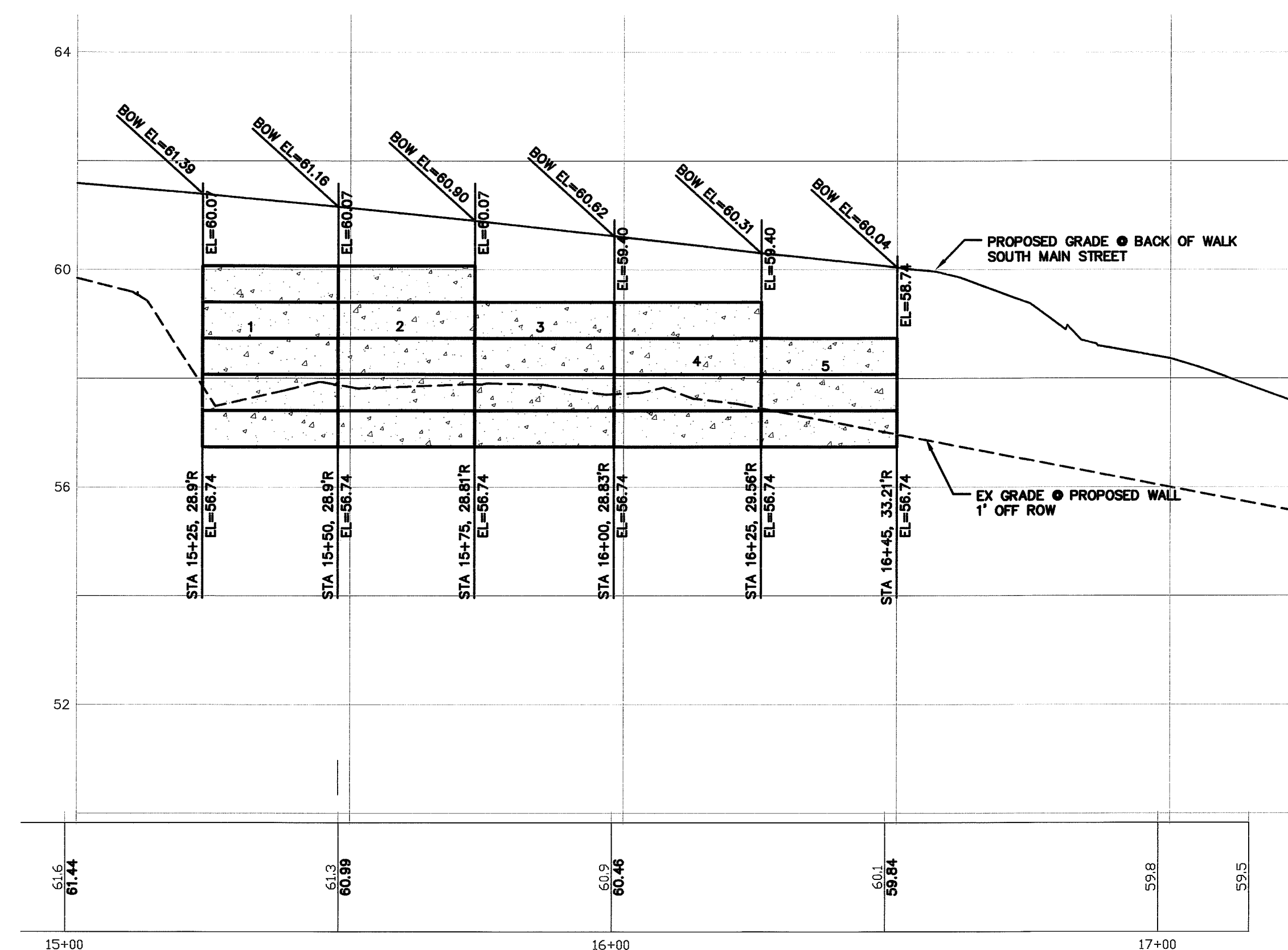
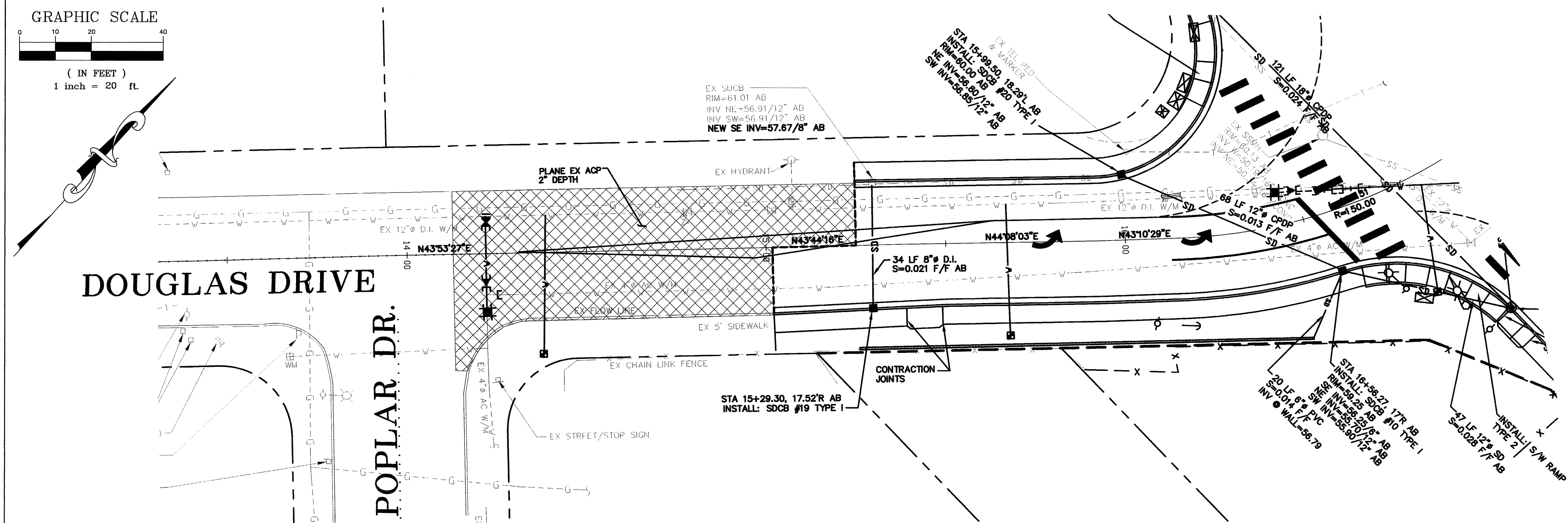
I hereby certify that the improvements in Douglas and Main have been inspected by Reichardt & Ebe Engineering and to the best of my knowledge, have been constructed in conformance with the City of Ferndale Development Standards, the City of Ferndale Municipal Code, Subsequent Standards adopted by reference therein, and standard engineering practice. Survey data supplied by Compass Point Survey Group received by this office on 10.25.06 was used to prepare these as-built plans.

Professional Engineer Seal for Luis Ponce, State of Washington, No. 38378, Exp. 12/31/09.



JOB# / DWG 00008 00008.SP2.AB	DATE 7-2
SCALE H: 1"=20' V: 1"=2'	SHEET 8 of

DESIGNED BY LP DRAWN BY LMC CHECKED BY	 REICHARDT & EBE ENGINEERING, INC. CONSULTING ENGINEERS PO Box 978 423 Front St., Ste 201 Lynden, Washington 98264 Ph (360) 354-3687 Fax (360) 354-0407	1	10-8-07	REVISE STORM	LP	CITY OF FERNDAL 2095 MAIN STREET FERNDAL, WA 98248	DOUGLAS AND MAIN STREET IMPROVEMENTS DOUGLAS STA 14+00 TO 17+25	JOB# / DWG	DATE
			8-10-07	ADDENDUM 1	LP			00008 00008.SP2.AB	7-20-07
		NO.	DATE	REVISION	BY			SCALE	SHEET
								H: 1"=20' V: 1"=2'	8 of 17



BLOCK WALL RETAINING WALL
DOUGLAS STA 15+25 TO 16+45

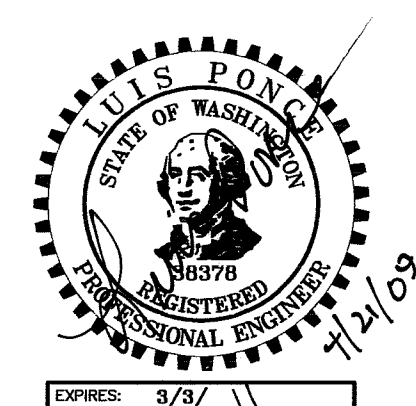
Surveyor's Certification

I certify that on 6/22/09 a field as-built survey was performed at Douglas and Main by me or under my direction and that data from that field survey, including location shots, invert measurements and field book notes were submitted to Reichhardt & Pae Engineering on 6/25/09 for use in preparation of these as-built plans. Said field survey work meets or exceeds the Minimum Survey Standards as per WAC 332.130.090.

Surveyor Name & License Number 32430 Date 4/21/09

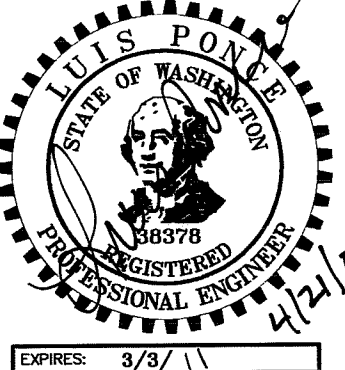
Engineers Certification
I hereby certify that the improvements in Douglas and Main have been inspected by Reichardt & Ebe Engineering and to the best of my knowledge, have been constructed in conformance with the City of Ferndale Development Standards, the City of Ferndale Municipal Code, Subsequent Standards adopted by reference therein, and standard engineering practice. Survey data supplied by Compass Point Survey Group received by this office on 10/25/08 was used to prepare these as-built plans.


38378
4/21/09
 Engineer Name & License Number Date



DATE: 4-21-09	AS-BUILT
------------------	----------

DESIGNED BY LP	 REICHHARDT & EBE <i>ENGINEERING, INC.</i> CONSULTING ENGINEERS PO Box 978 423 Front St., Ste 201 Ph (360) 354-3687 Lynden, Washington 98264 Fax (360) 354-0407					CITY OF FERNDALE 2095 MAIN STREET FERNDAL, WA 98248	DOUGLAS AND MAIN RETAINING WALL DOUGLAS STA 15+25 - 16+45	JOB# / DWG 00008 00008.SP2.AB	DATE 7-20-07
DRAWN BY LMC								SCALE H: 1"=20' V: 1"=2'	SHEET
CHECKED BY			NO.	DATE	REVISION	BY			9 of 17



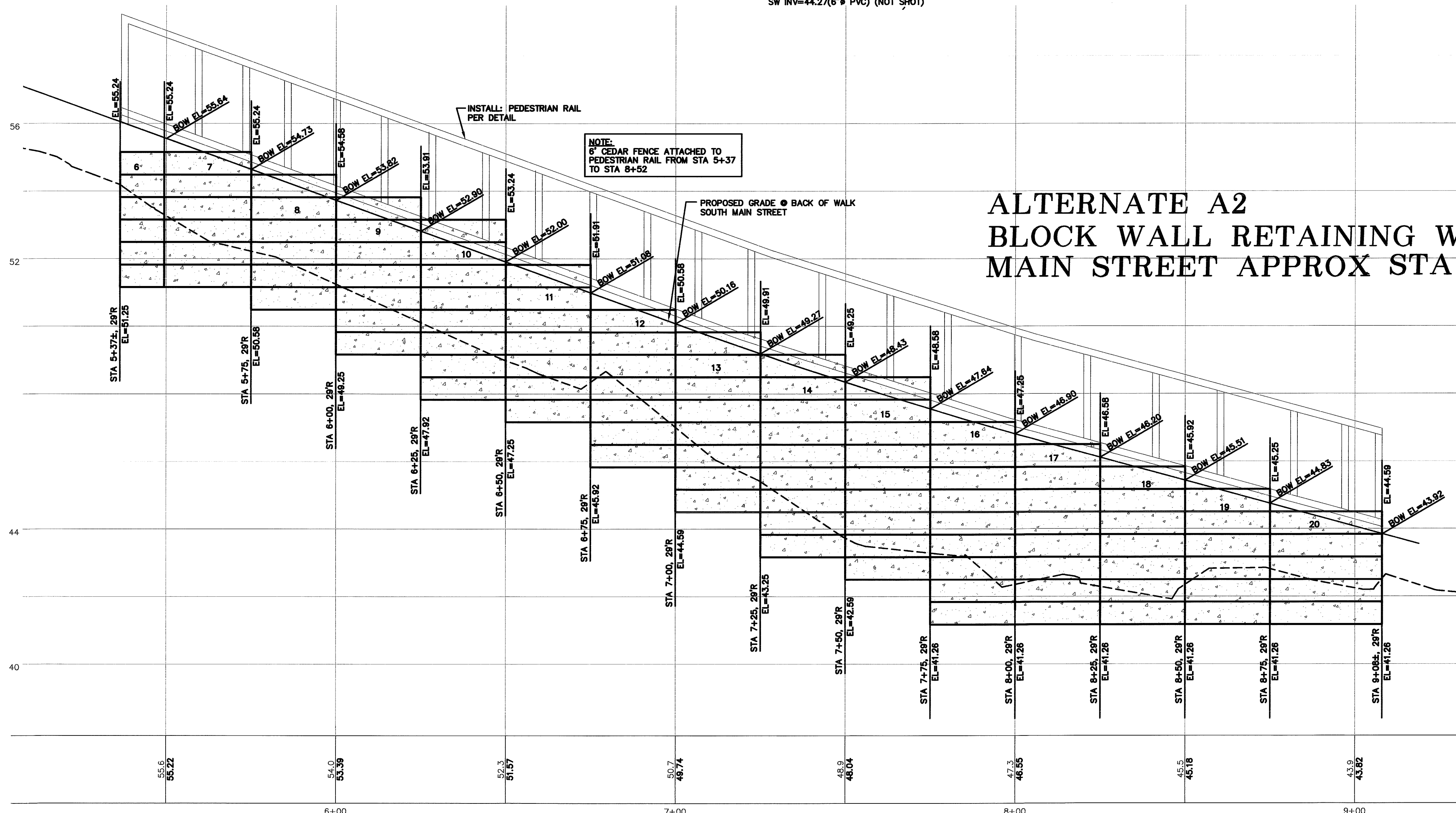
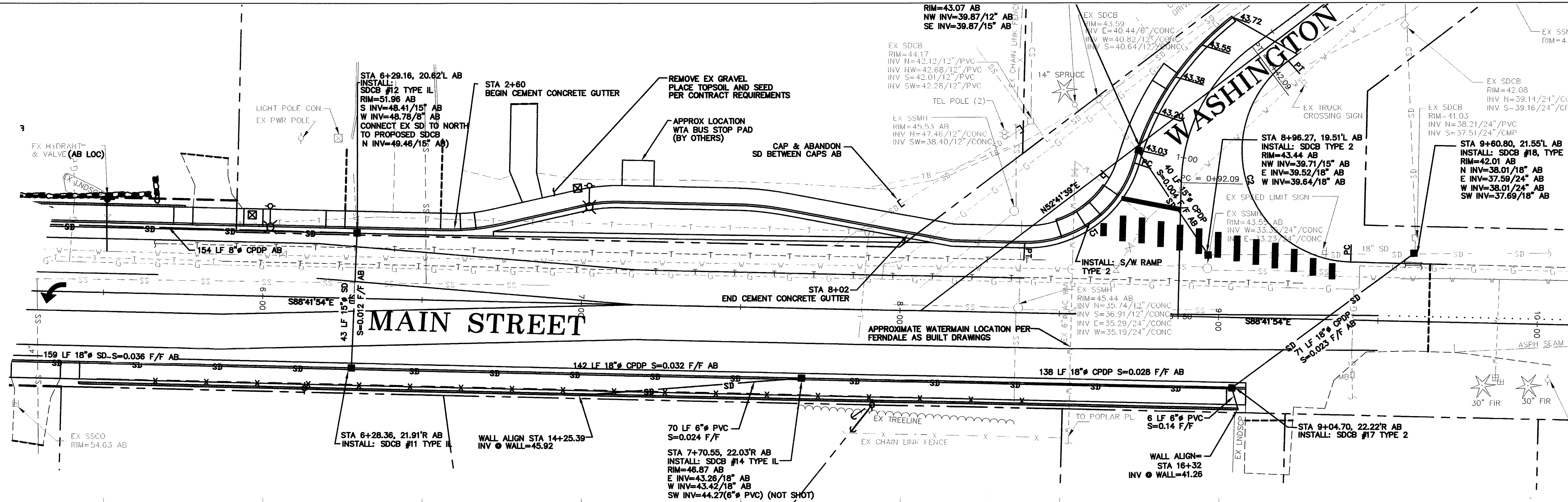
DATE: 4-21-09

AS-BUILT

	DESIGNED BY LP		REICHHARDT & EBE ENGINEERING, INC. CONSULTING ENGINEERS PO Box 978 423 Front St., Ste 201 Ph (360) 354-3687 Lynden, Washington 98264 Fax (360) 354-0407							CITY OF FERDALE 2095 MAIN STREET FERDALE, WA 98248	DOUGLAS AND MAIN RETAINING WALL MAIN STA 5+35 - 9+08		JOB# / DWG 00008 00008.SP2.AB	SHEET NO. 7-20-07
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	CHECKED BY		NO.	DATE	REVISION		BY							

GRAPHIC SCALE

(IN FEET)
1 inch = 20 ft.



ALTERNATE A2 BLOCK WALL RETAINING WALL MAIN STREET APPROX STA 5+35 TO 9+08

Surveyor's Certification

I certify that on 6/22/09 a field as-built survey was performed at Douglas and Main by me or under my direction and that data from this field survey, including location shots, invert measurements and field book notes were submitted to Reichhardt & EBE Engineering, on 6/25/09 for use in preparation of these as-built plans. Said field survey work meets or exceeds the Minimum Survey Standards as per WAC 332.130(1)(a).

Chris Pomeroy 32730
Surveyor Name & License Number

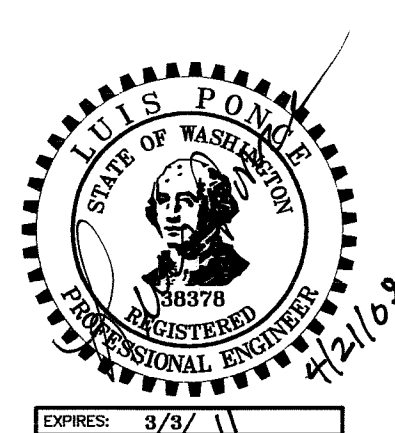
4/21/09
Date

Engineers Certification

I hereby certify that the improvements in Douglas and Main have been inspected by Reichhardt & EBE Engineering and to the best of my knowledge, have been constructed in conformance with the City of Ferndale Development Standards, the City of Ferndale Municipal Code, Subsequent Standards adopted by reference therein, and standard engineering practice. Survey data supplied by Compass Point Survey Group received by this office on 6/25/09 was used to prepare these as-built plans.

Chris Pomeroy 38378
Engineer Name & License Number

4/21/09
Date



DATE: 4-21-09
AS-BUILT

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LP
DRAWN BY
LMC
CHECKED BY



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CONSULTING ENGINEERS
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Fax (360) 354-0407

NO. DATE REVISION BY

CITY OF FERDALE
2095 MAIN STREET
FERDALE, WA 98248

DOUGLAS AND MAIN
RETAINING WALL MAIN STA 5+35 - 9+08

JOB# / DWG
00008 00008.SP2.AB

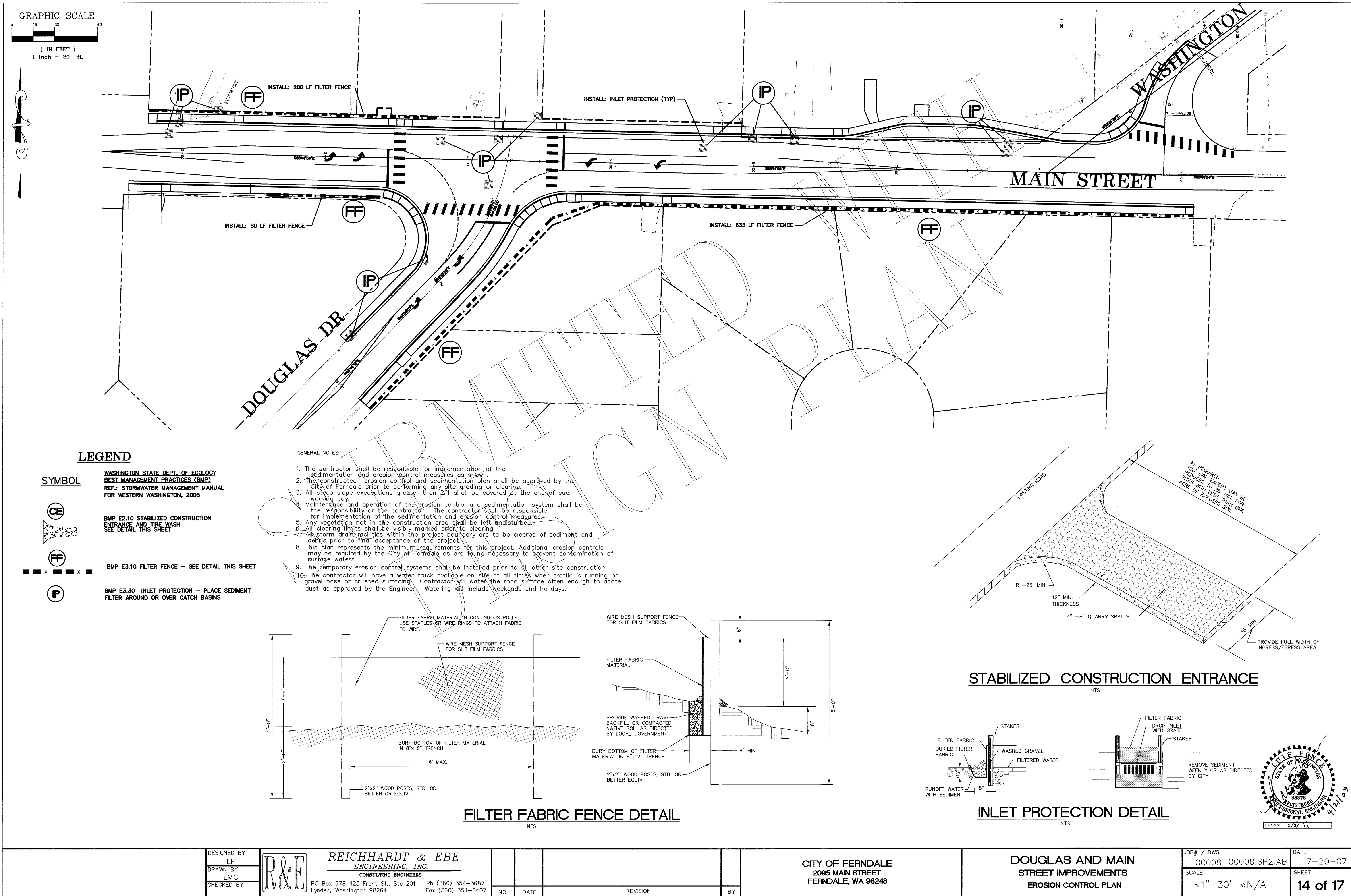
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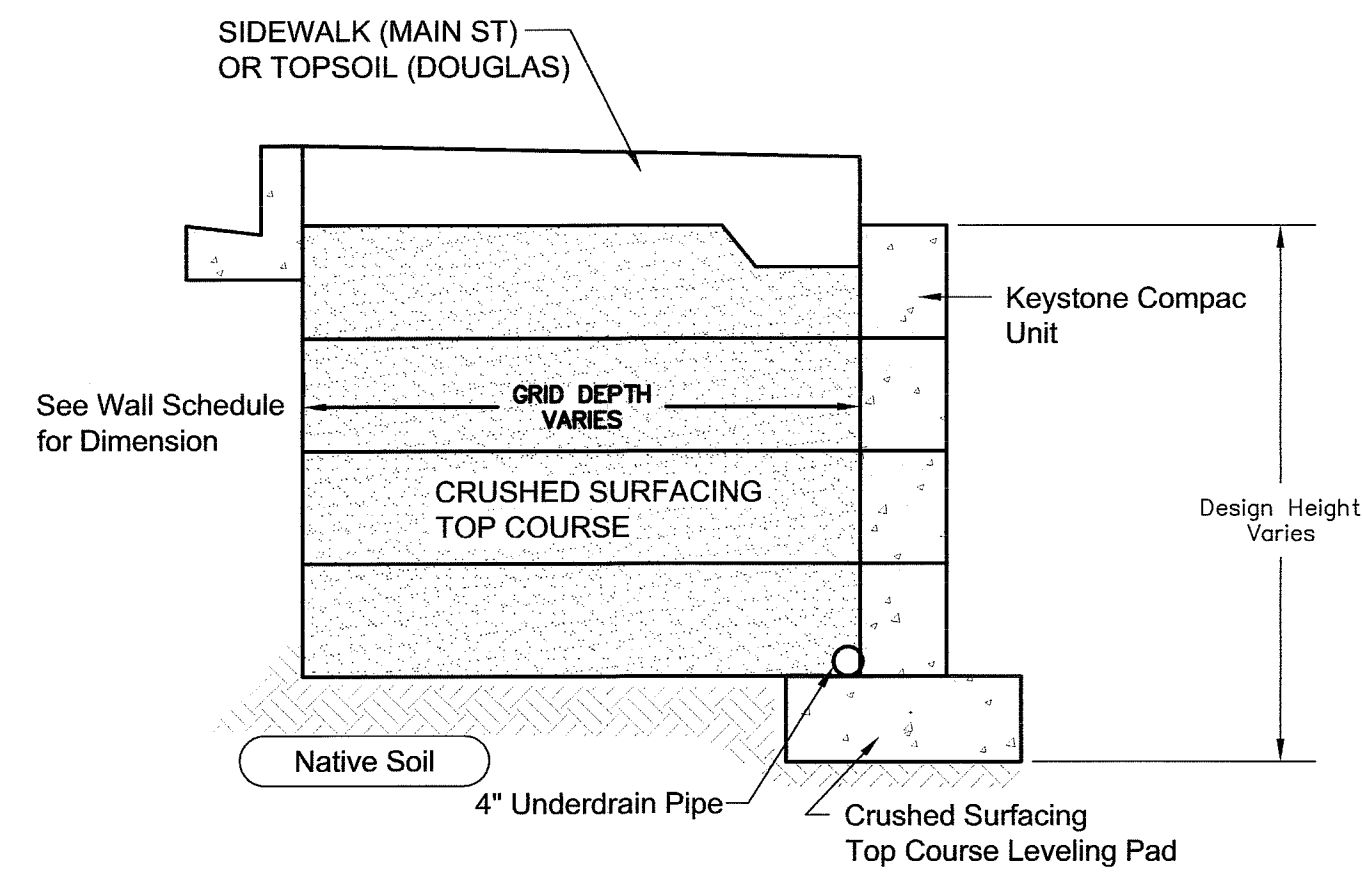
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7-20-07

SHEET
11 of 17

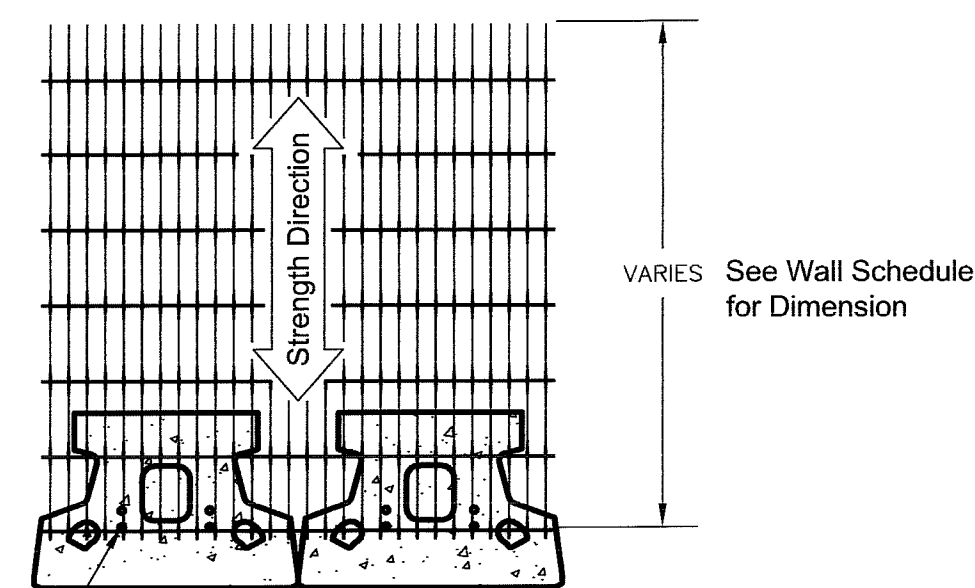


00379.014 7-8-09 DD

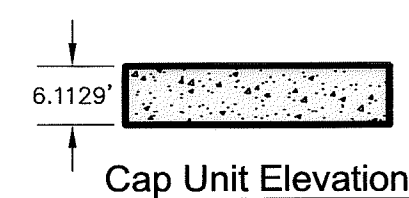




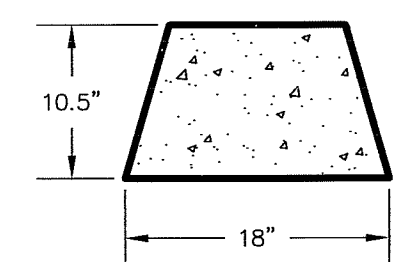
Typical Reinforced Wall Section
Compac Unit



Grid & Pin Connection

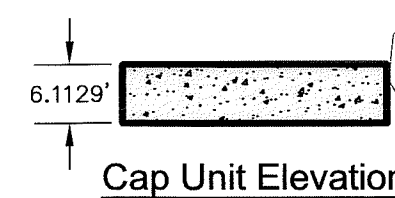


Cap Unit Elevation

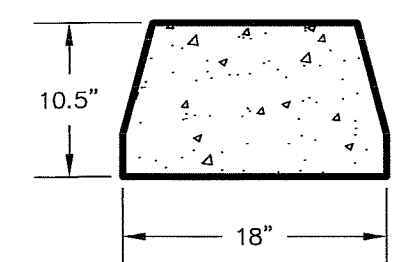


Cap Unit Plan

Universal Cap Unit Option
* Dimensions & Availability Will Vary by Region



Cap Unit Elevation

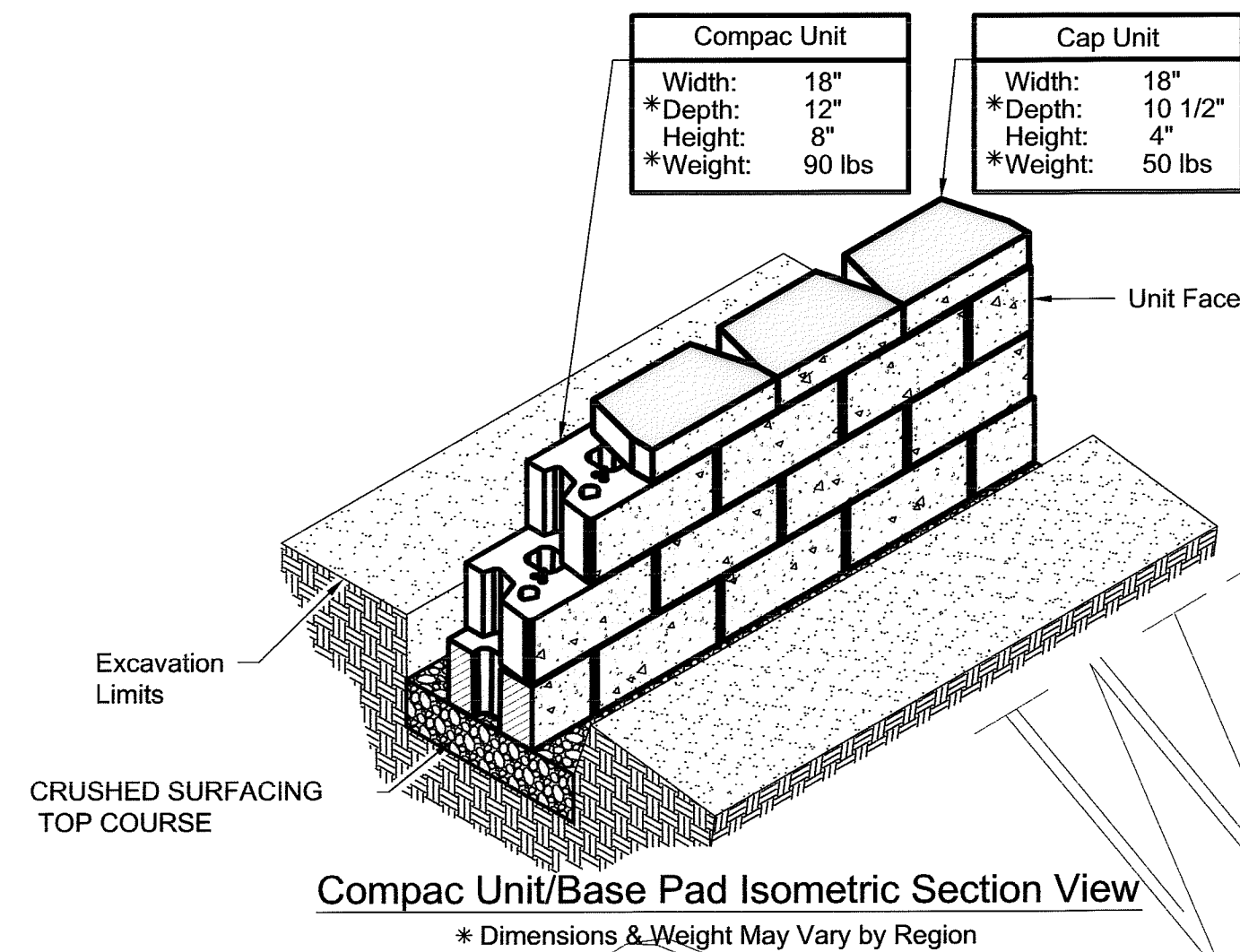


Cap Unit Plan

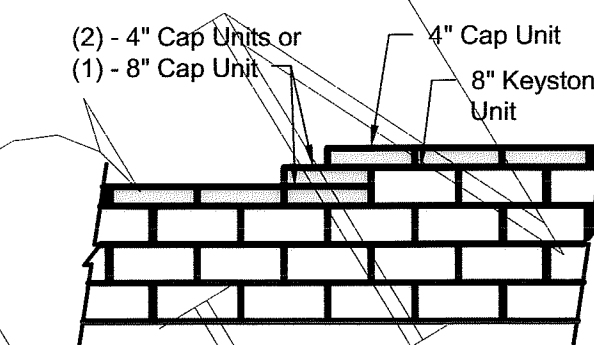
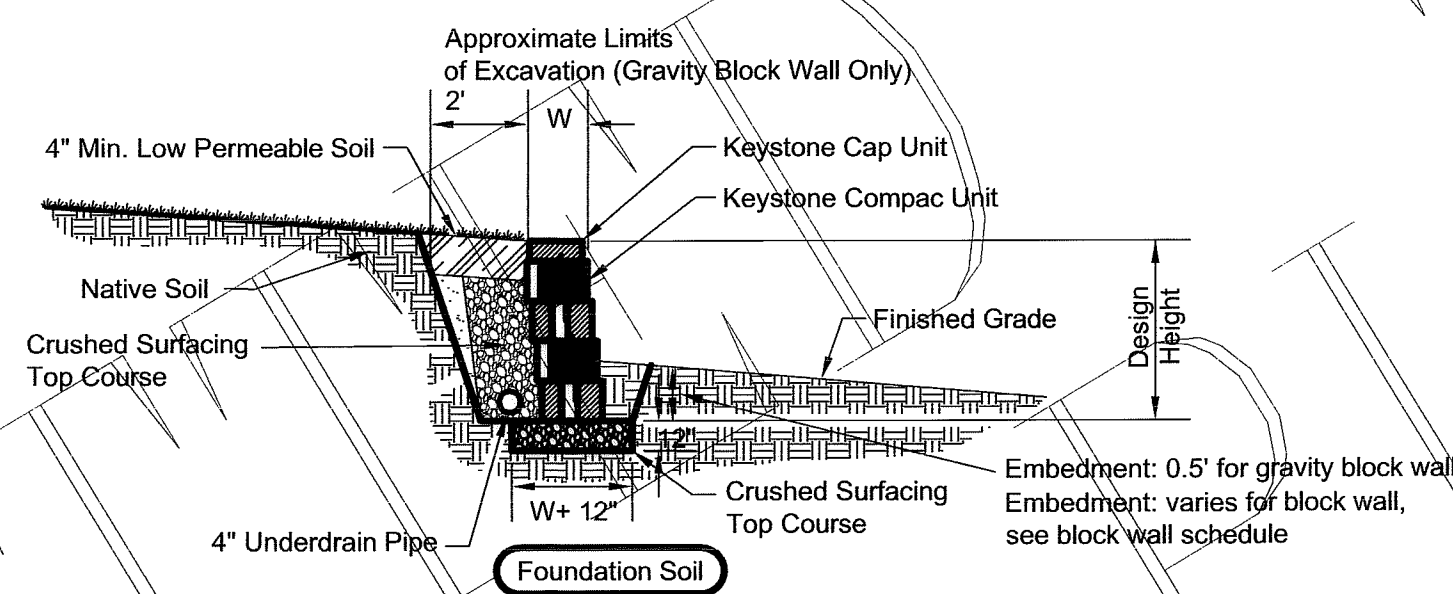
Straight Split Cap Unit Option
* Dimensions & Availability Will Vary by Region

ALTERNATE A2 BLOCK WALL RETAINING WALL

NTS

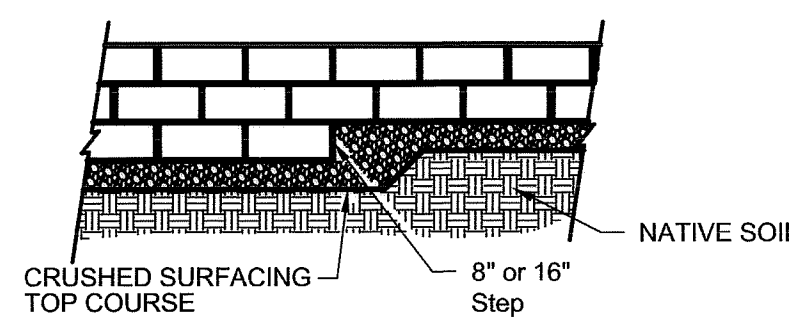


Compac Unit/Base Pad Isometric Section View
* Dimensions & Weight May Vary by Region

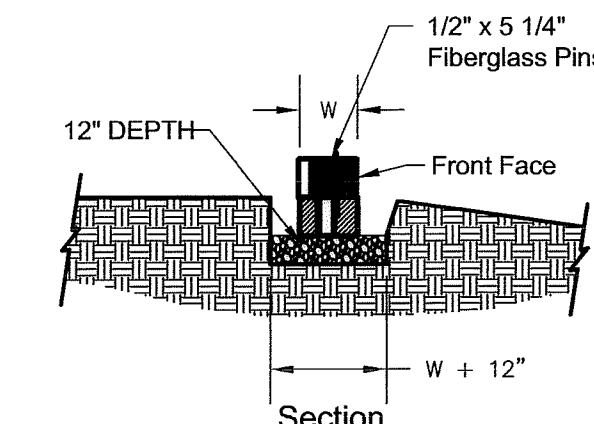


Note:
1. Secure all cap units with Keystone Kapsel or equal.

Top of Gravity and Block Wall Steps



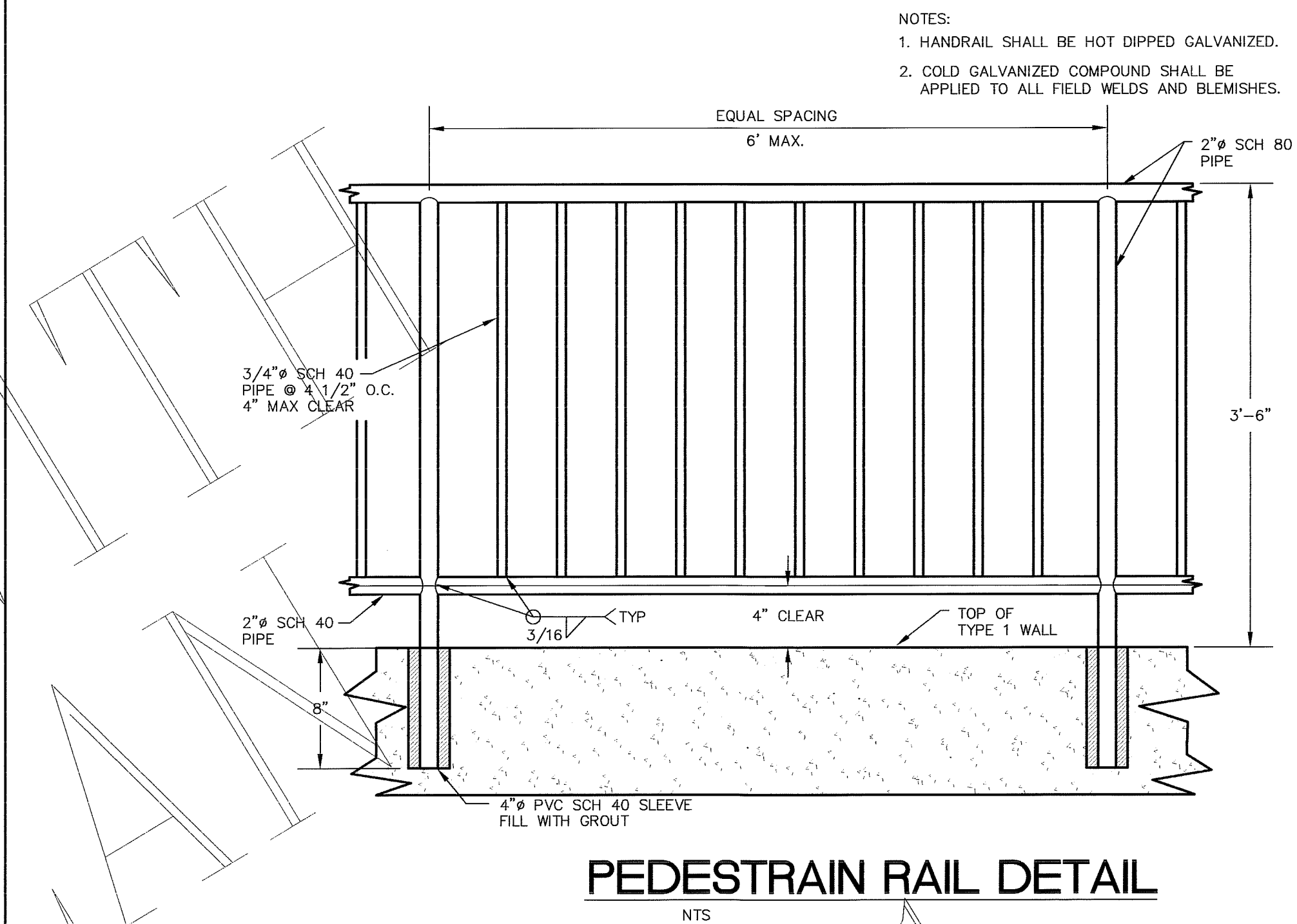
**Elevation
TYPICAL GRAVITY AND BLOCK WALL**



Leveling Pad Detail

TYPICAL GRAVITY AND BLOCK WALL

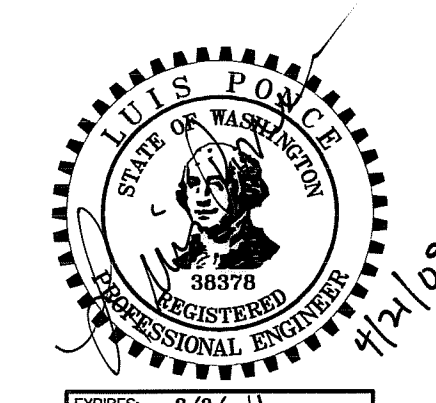
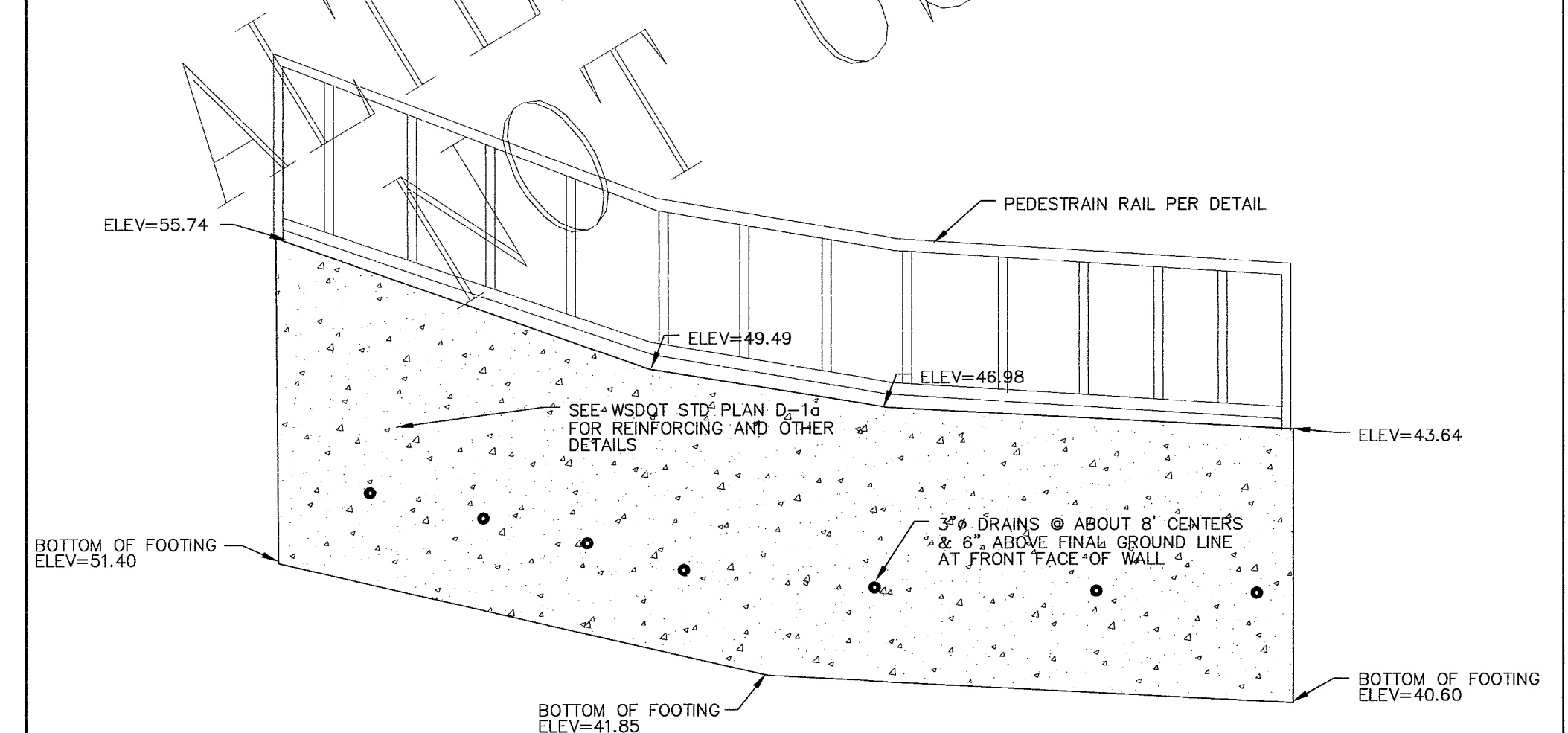
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PEDESTRAIN RAIL DETAIL
NTS

ALTERNATE A1 RETAINING WALL TYPE 1

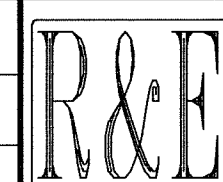
NTS



RETAINING WALL MAIN STREET APPROX STA 5+35 TO 9+08 RT

NTS

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LP
DRAWN BY
LMC
CHECKED BY



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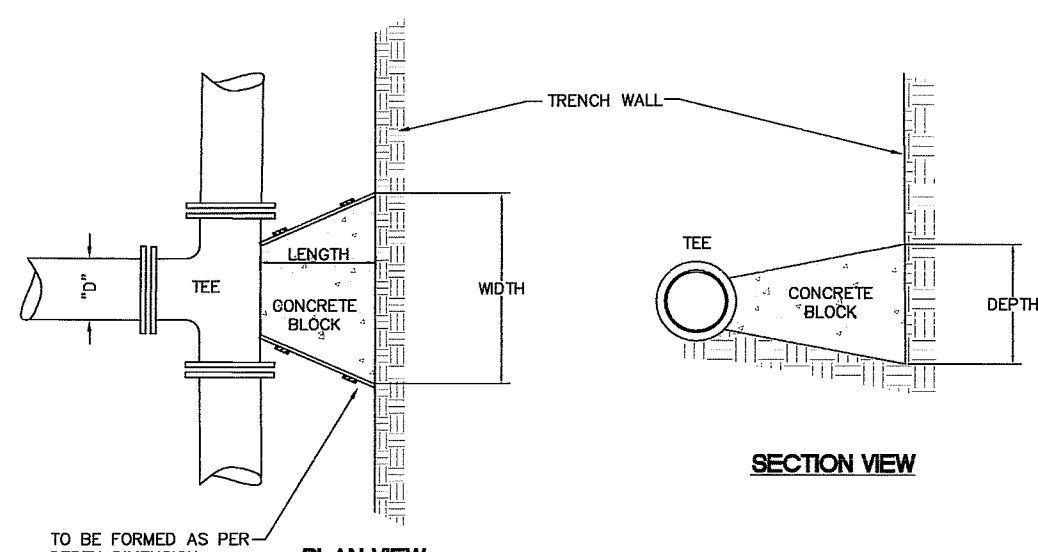
NO.	DATE	REVISION	BY
8-10-07	ADDENDUM 1		LP

CITY OF FERNDAL
2095 MAIN STREET
FERNDAL, WA 98248

**DOUGLAS AND MAIN
STREET IMPROVEMENTS
DETAILS**

JOB# / DWG 00008 00008.DET	DATE 7-20-07
SCALE H: n/a V: n/a	SHEET 15 of 17

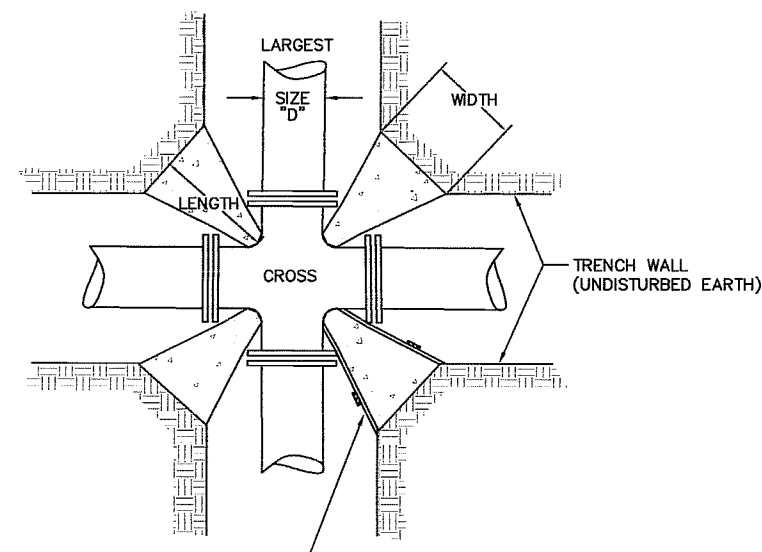
00319.013 7-8-09 DD



PLAN VIEW

"D"	WIDTH	DEPTH	LENGTH	VOL.
6"	1'-6"	1'-6"	12'	3.0
8"	2'-0"	2'-0"	12'	4.5
10"	2'-6"	2'-6"	12'	7.0
12"	3'-0"	3'-0"	18'	14.0

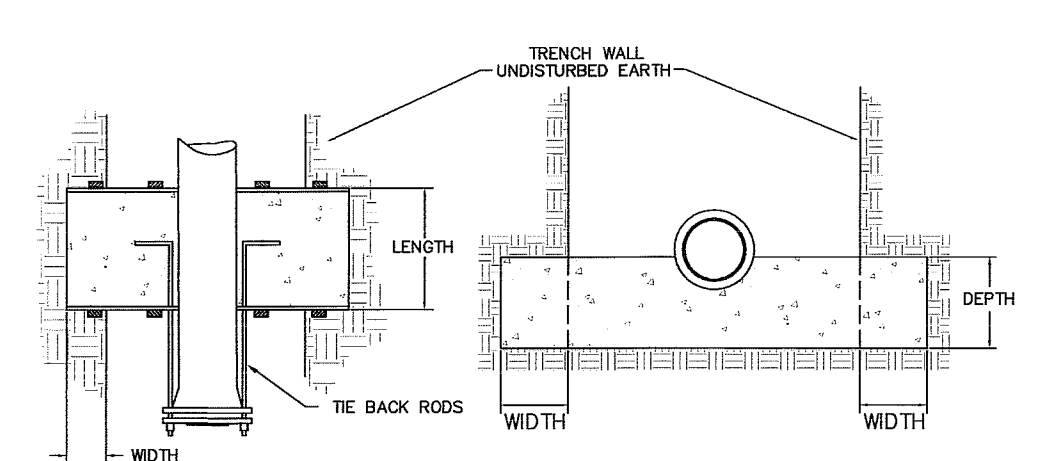
VOL. = Approx. Volume of Blocking Material Required in cu. ft.
SOIL BEARING CAPACITY 1500 PSF MINIMUM
100 P.S.I. OPERATING PRESSURE



PLAN VIEW

"D"	WIDTH	DEPTH	LENGTH	VOL.	X4 blocks/point
6"	1'-0"	1'-0"	12'	0.63	2.50 cu ft
8"	1'-3"	1'-3"	12'	1.00	4.01 cu ft
10"	1'-6"	1'-6"	12'	1.63	6.50 cu ft
12"	1'-9"	1'-9"	18'	3.05	12.19 cu ft

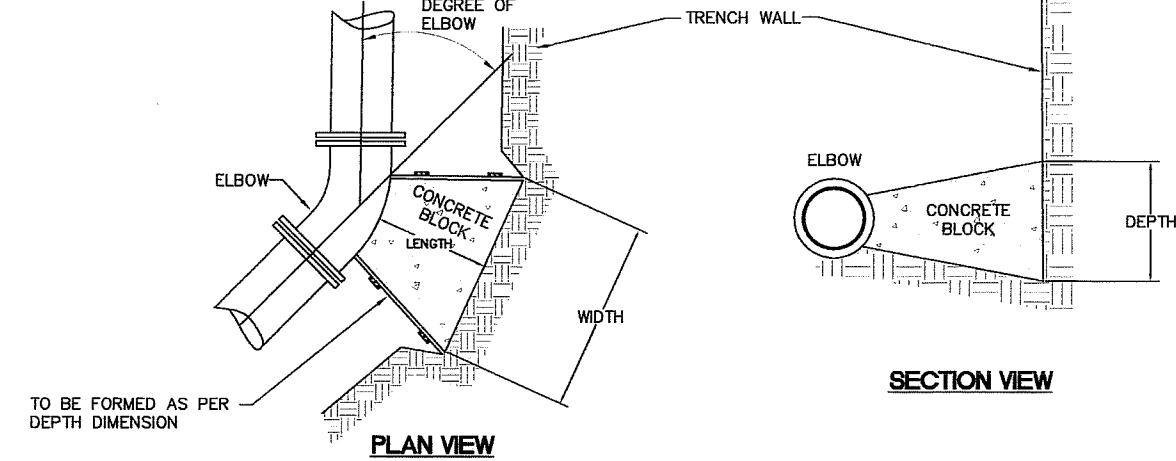
VOL. = Approx. Volume of Blocking Material Required in cu. ft.



PLAN VIEW

"D"	WIDTH	DEPTH	LENGTH	VOL.	# OF RODS	ROD DIA.
6"	1'-6"	1'-6"	12'	7.5	2	1/2"
8"	2'-0"	2'-0"	18'	20.0	2	3/8"
10"	2'-6"	2'-6"	24'	37.5	2	3/4"
12"	2'-9"	2'-9"	24'	44.0	4	3/4"

*VOL. = Approx. Volume of Blocking Material Required in cu. ft.
RODS: A36 STEEL MINIMUM

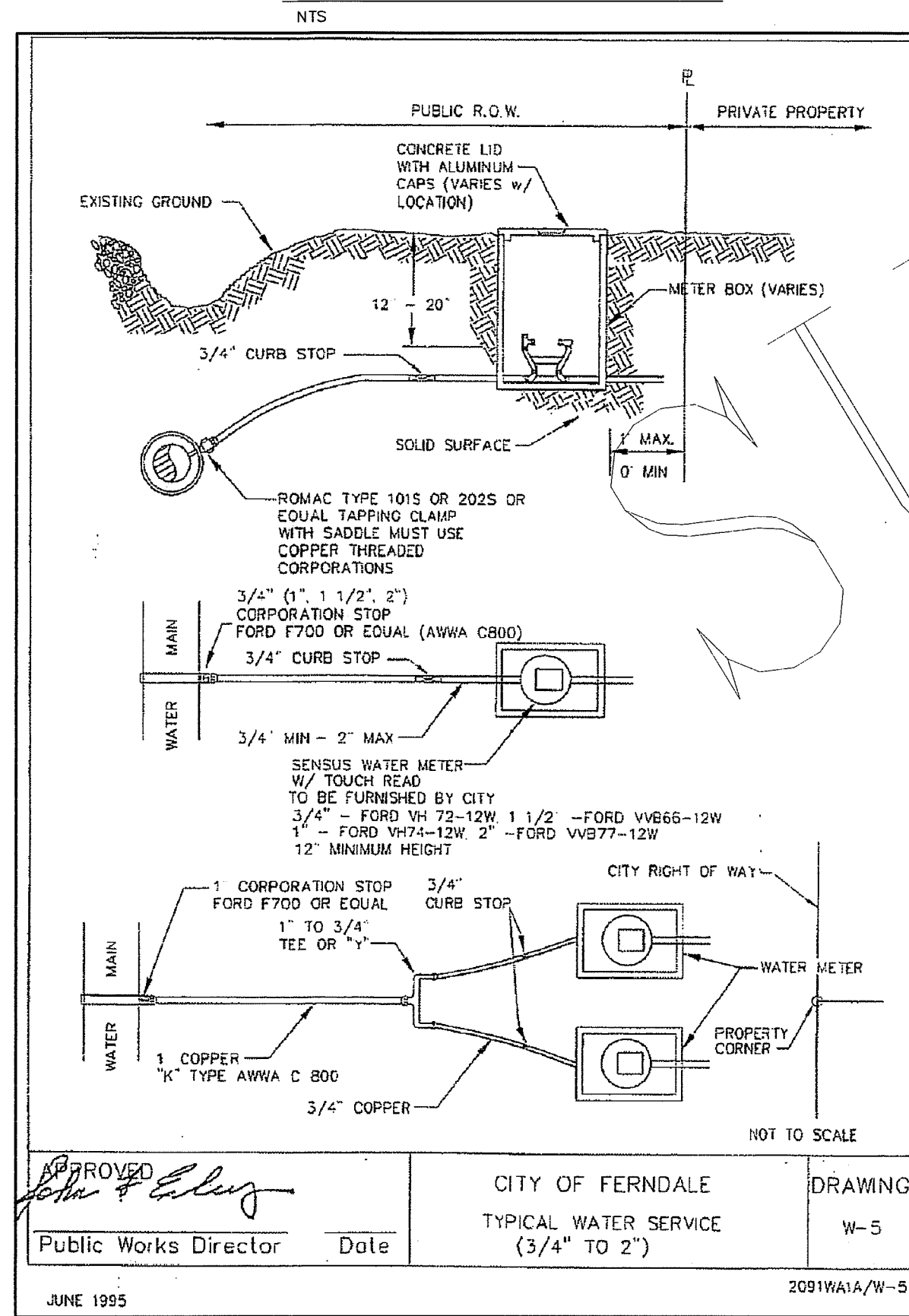


PLAN VIEW

SIZE	LENGTH	11 1/4"	22 1/2"	45"	90"
6"	12'	1'-0"	1'-0"	1'-0"	1'-0"
8"	12'	1'-3"	1'-3"	1'-3"	1'-3"
10"	12'	1'-6"	1'-6"	1'-6"	1'-6"
12"	18'	2'-0"	2'-0"	2'-0"	2'-0"

VOL. = Approx. Volume of Blocking Material Required in cu. ft.

THRUST BLOCKING

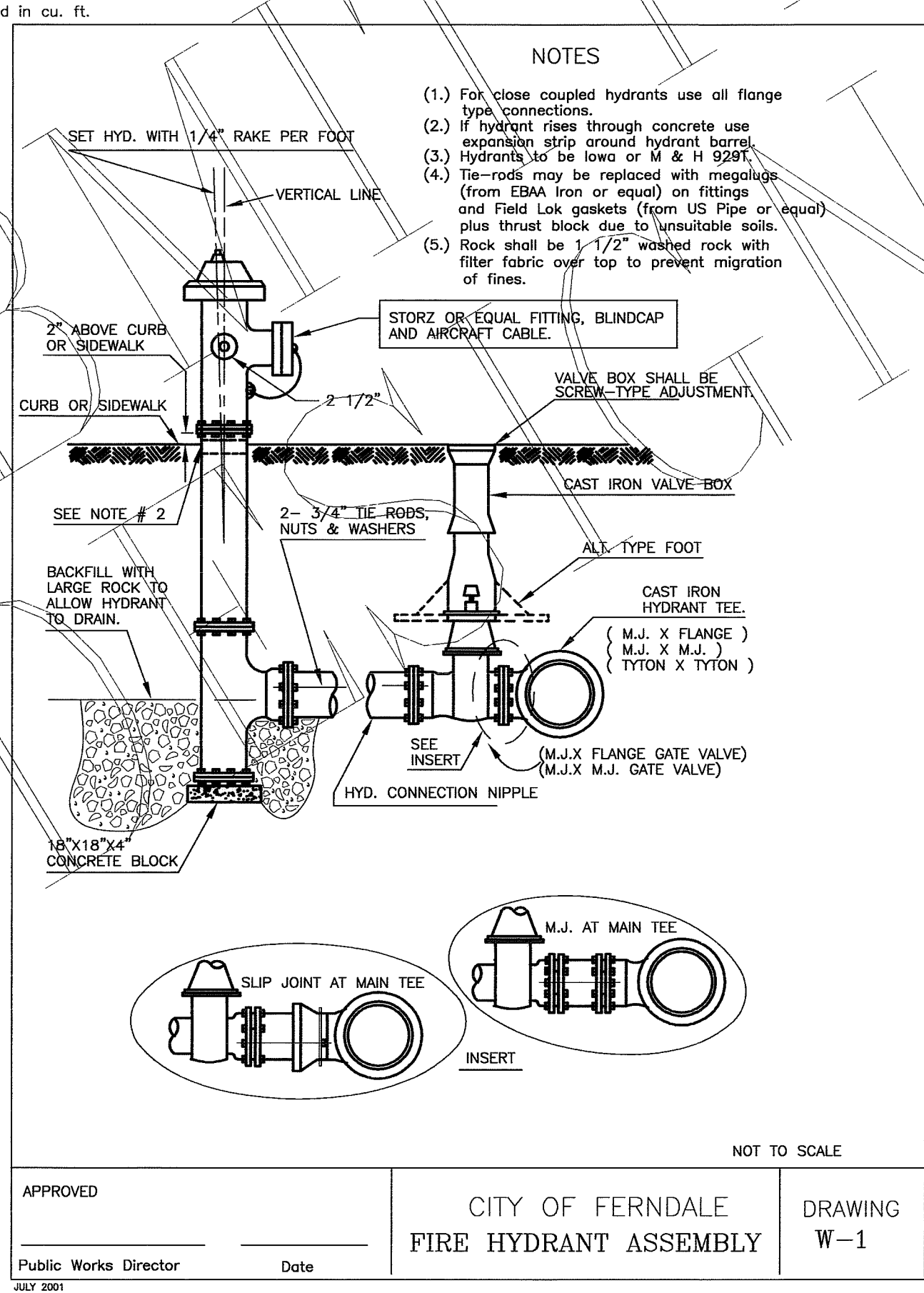


APPROVED: *[Signature]*
Public Works Director Date

CITY OF FERNDALE
TYPICAL WATER SERVICE
(3/4" TO 2")

DRAWING
W-5

JUNE 1995 2091WA1A/W-5



APPROVED: _____
Public Works Director Date

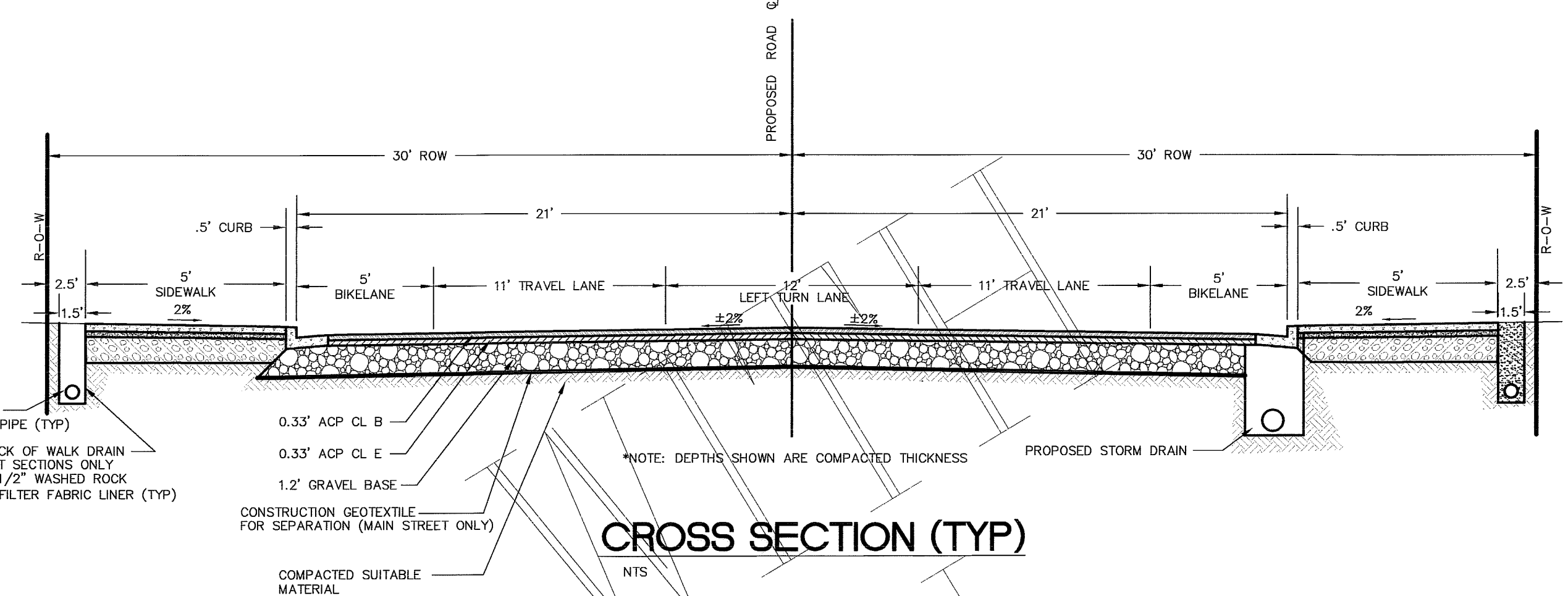
CITY OF FERNDALE
FIRE HYDRANT ASSEMBLY

DRAWING
W-1

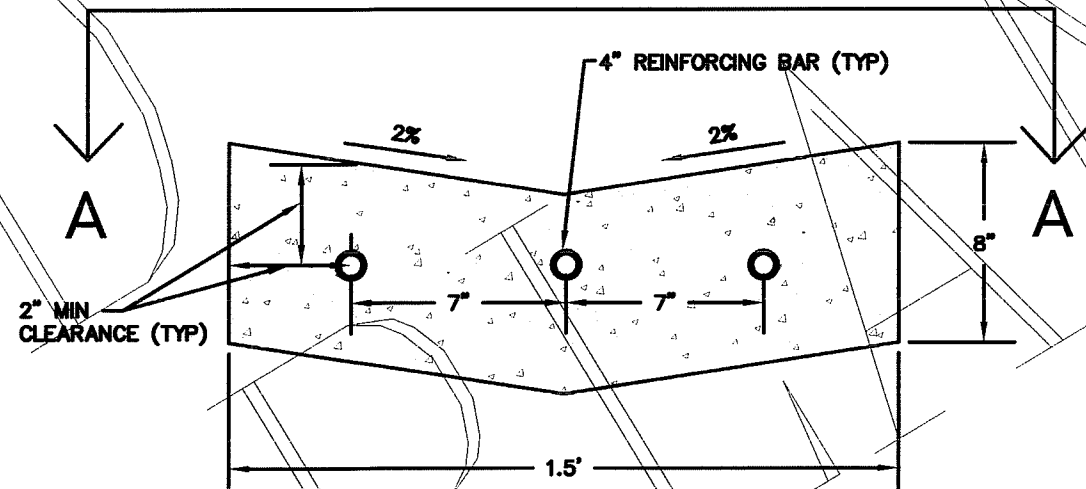
JULY 2001

NOTES

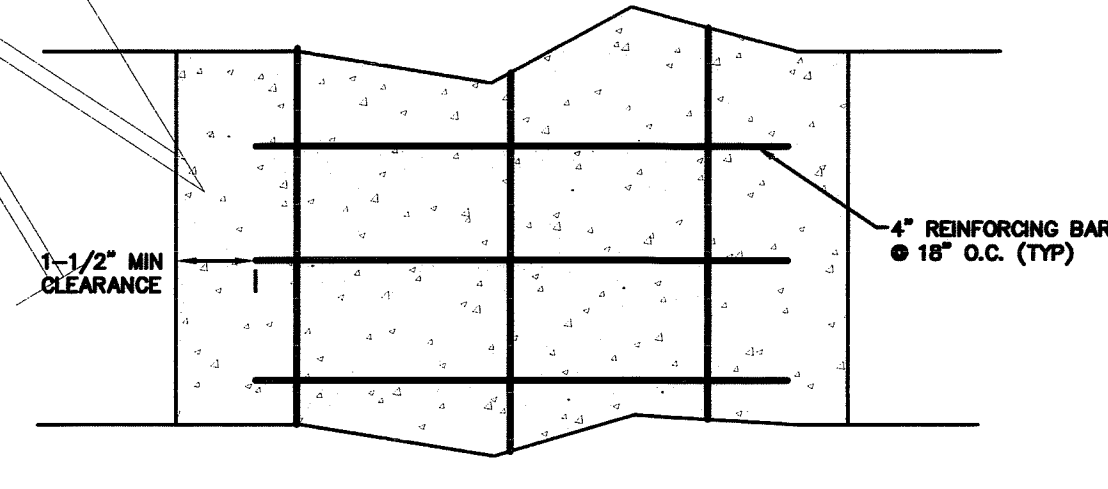
- (1) For close coupled hydrants use all flange type connections.
- (2) If hydrant rises through concrete use expansion strip around hydrant barrel.
- (3) Hydrants to be Iowa or M & H 528T.
- (4) Tie-rods may be replaced with megalugs (from EBM Iron or equal) on fittings and Field Lok gaskets (from US Pipe or equal) plus thrust block due to unsuitable soils.
- (5) Rock shall be 1-1/2" washed rock with filter fabric over top to prevent migration of fines.



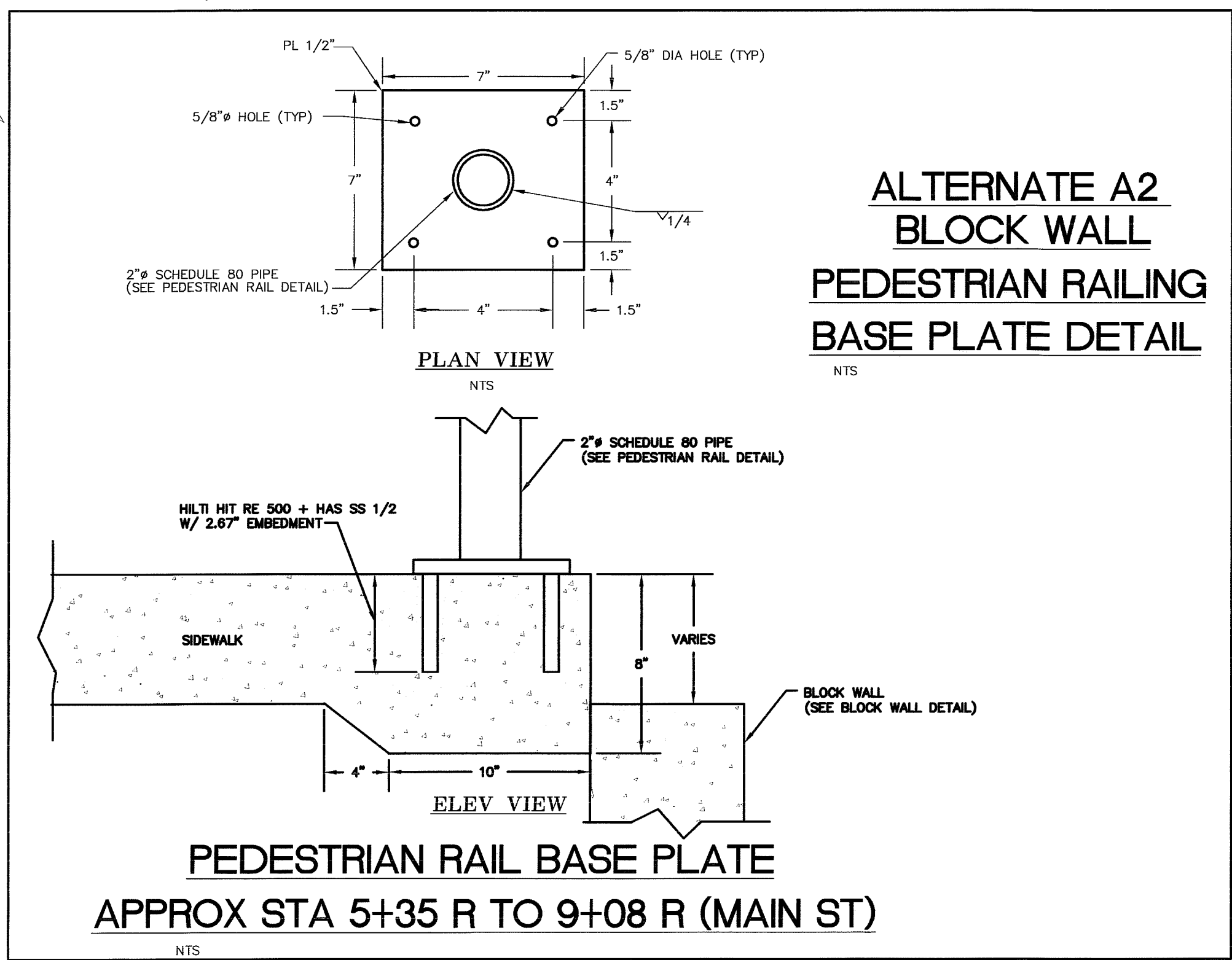
CROSS SECTION (TYP)



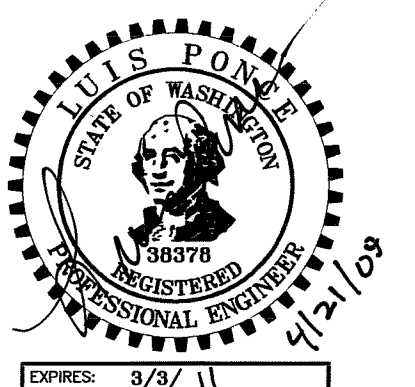
CEMENT CONCRETE GUTTER STA 6+72 L TO 8+01 L (MAIN ST)



CEMENT CONCRETE GUTTER SECTION A-A



ALTERNATE A2 BLOCK WALL PEDESTRIAN RAILING BASE PLATE DETAIL



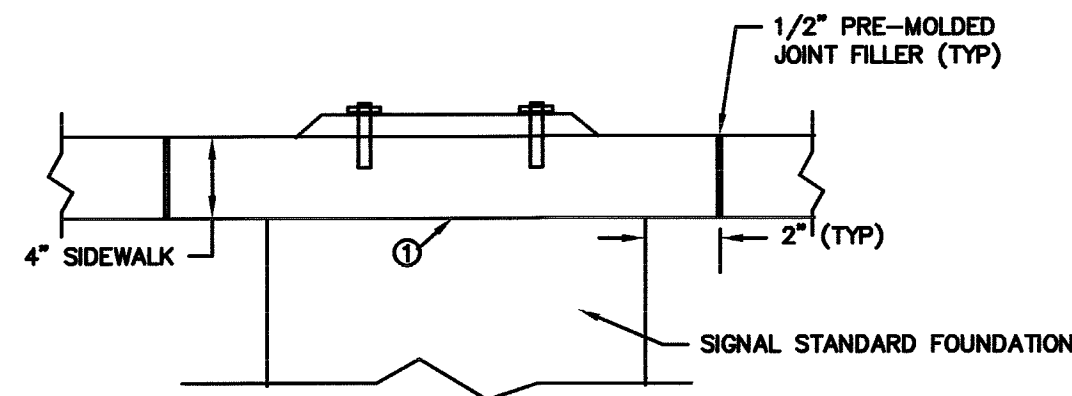
DESIGNED BY LP	REICHARDT & EBE ENGINEERING, INC. CONSULTING ENGINEERS PO Box 978 423 Front St., Ste 201 Ph (360) 354-3687 Lynden, Washington 98264 Fax (360) 354-0407	8-10-07	ADDENDUM 1	LP	
DRAWN BY LMC		NO.	DATE	REVISION	BY
CHECKED BY					

CITY OF FERNDALE 2095 MAIN STREET FERNDALE, WA 98248	DOUGLAS AND MAIN STREET IMPROVEMENTS DETAILS	JOB# / DWG 00008 00008.DET	DATE 7-20-07
		SCALE H:n/a v:n/a	SHEET 16 of 17

00379.016 7-8-09 DD

ORDER OF WORK

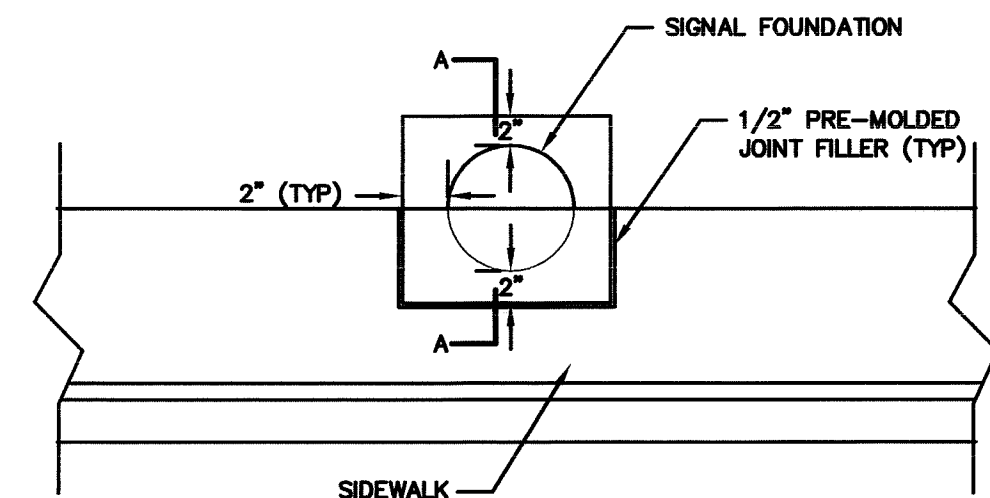
- ① CONSTRUCT FOUNDATION TO BOTTOM OF SIDEWALK ELEVATION, ROUGHEN SURFACE
- ② CONSTRUCT SIDEWALK OVER FOUNDATION, BLOCK OUT AROUND FOUNDATION AS SHOWN



**LIGHT FOUNDATION AND
SIGNAL FOUNDATION AT SIDEWALK**

NTS

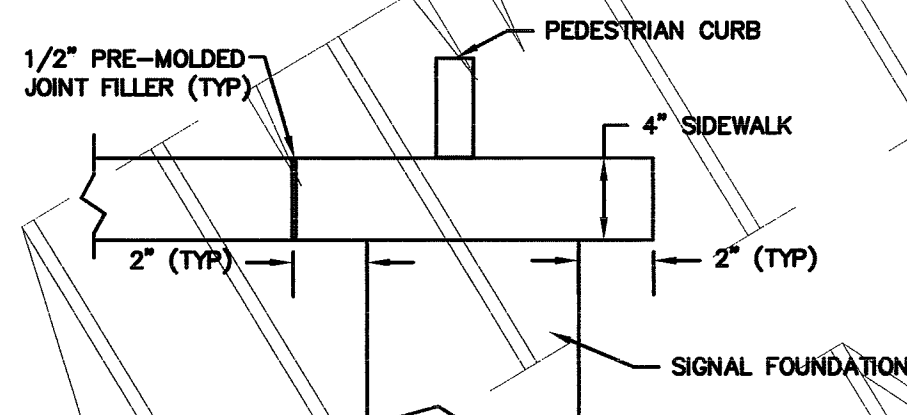
NOTE: SIGNAL FOUNDATION DETAILS NOT SHOWN FOR CLARITY



**LIGHT FOUNDATION AND
SIGNAL FOUNDATION AT SIDEWALK**

NTS

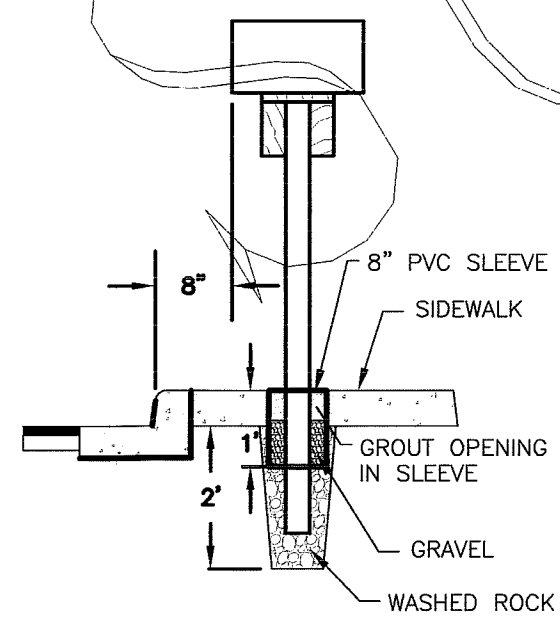
NOTE: SIGNAL FOUNDATION DETAILS NOT SHOWN FOR CLARITY



SECTION A-A

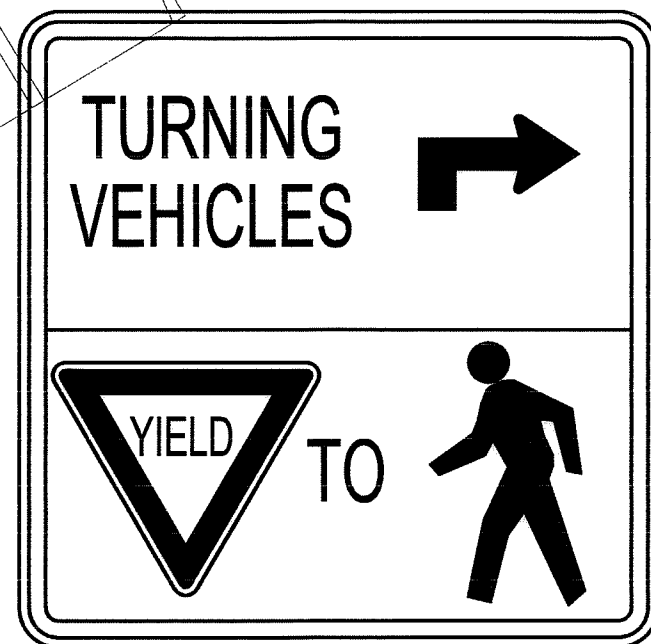
NTS

NOTE: SIGNAL FOUNDATION DETAILS NOT SHOWN FOR CLARITY



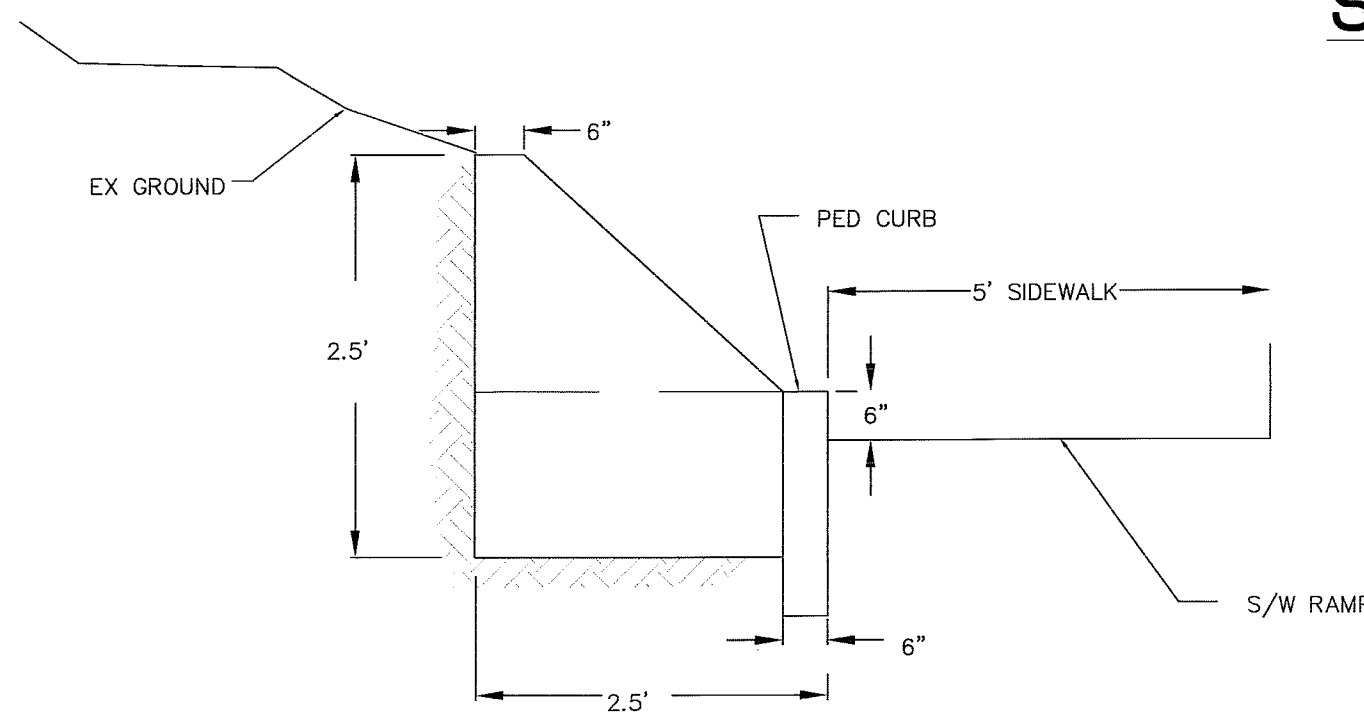
MAILBOX POST DETAIL

NTS



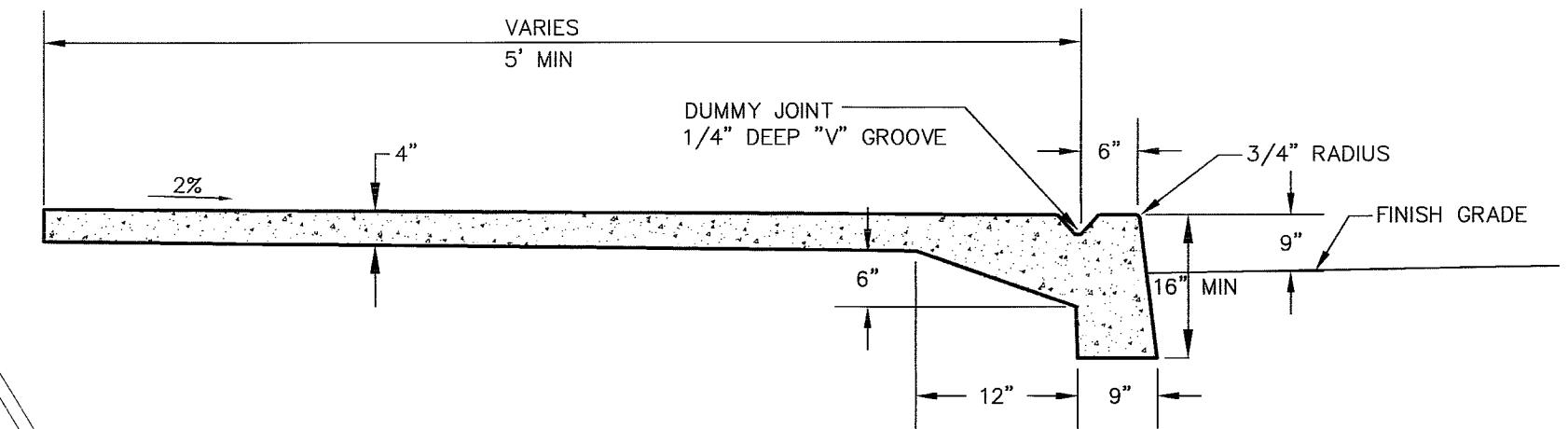
SIGN DETAIL

NTS



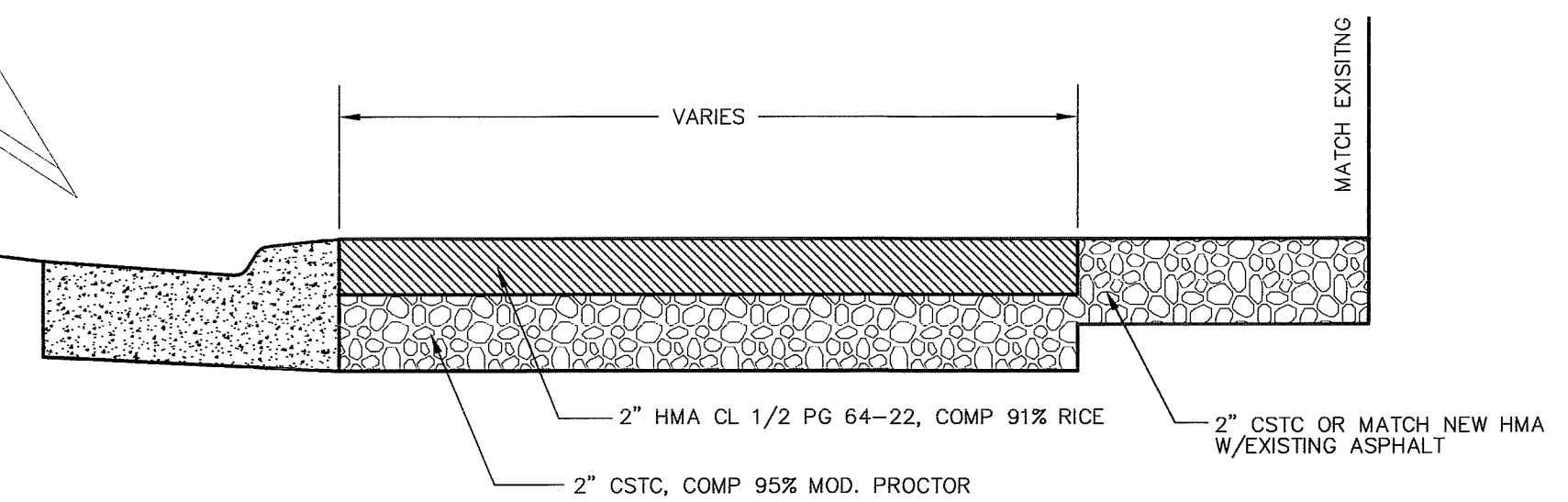
SECTION A-A

NTS



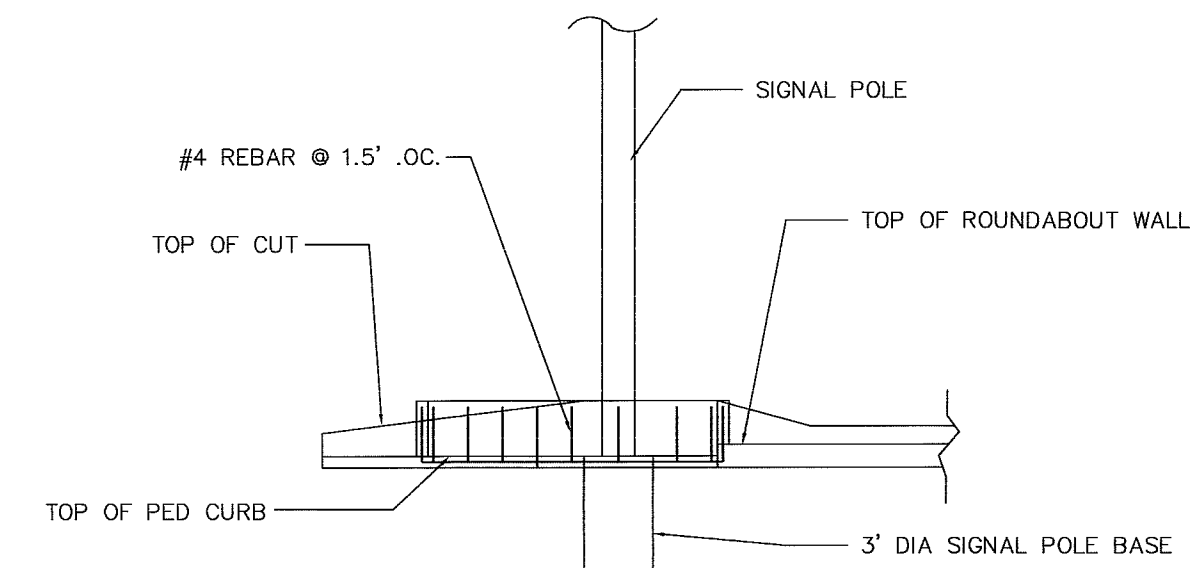
**MONOLITHIC CEMENT CONCRETE
CURB AND SIDEWALK
MAIN STREET STA 2+50 TO 3+00 L**

NTS



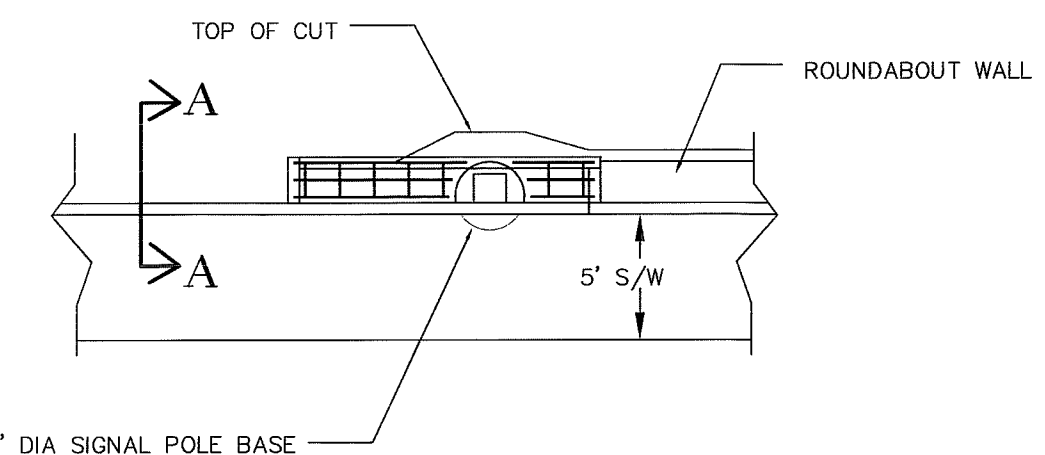
PROPOSED DRIVEWAY SECTION

NTS



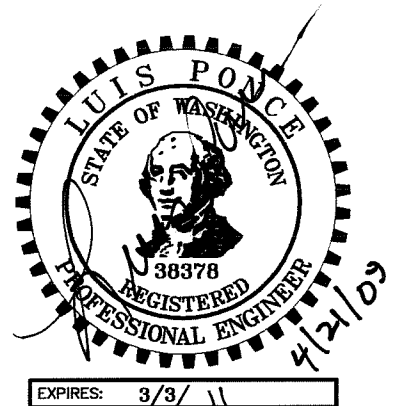
**RETAINING WALL
STA 4+48.92, 27.55'L TO 4+64.99, 27.58'L**

NTS

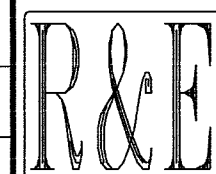


**RETAINING WALL (PLAN VIEW)
STA 4+48.92, 27.55'L TO 4+64.99, 27.58'L**

NTS



DESIGNED BY
LP
DRAWN BY
LMC
CHECKED BY



REICHHARDT & EBE
ENGINEERING, INC.
CONSULTING ENGINEERS

PO Box 978 423 Front St., Ste 201
Lynden, Washington 98264
Ph (360) 354-3687
Fax (360) 354-0407

NO.	DATE	REVISION	BY

CITY OF FERDALE
2095 MAIN STREET
FERDALE, WA 98248

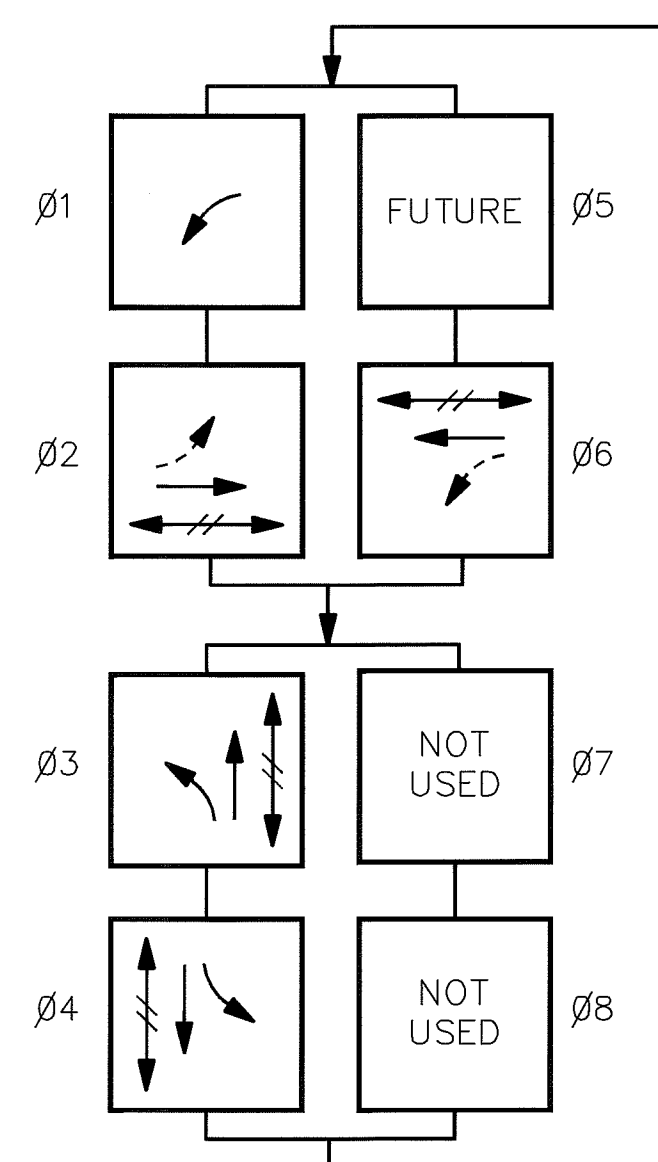
DOUGLAS AND MAIN
STREET IMPROVEMENTS
DETAILS

JOB# / DWG 00008 00008.DET	DATE 7-20-07
SCALE H: n/a V: n/a	SHEET 17 of 17

LEGEND

- VEHICLE SIGNAL HEAD
- PEDESTRIAN SIGNAL HEAD
- LIGHT STANDARD AND LUMINAIRE
- MAST ARM AND LUMINAIRE
- SIGNAL STANDARD, TYPE III OR SD
- TYPE 1 JUNCTION BOX, J-11a
- TYPE 2 JUNCTION BOX, J-11a
- 30"x60" JUNCTION BOX, COB EL-452
- PREEMPTION DETECTOR
- VIDEO DETECTION CAMERA
- CONDUIT
- 6" TYPE 2 INDUCTION LOOP, WSDOT J-8a, COB EL-462
- VIDEO DETECTION ZONE
- CONTROLLER CABINET
- SERVICE CABINET, COB EL-444
- SIGNAL STANDARD-MOUNTED SIGN SEE SHEET TS3
- SIGNAL STANDARD NO.
- CONSTRUCTION NOTE
- WIRE NOTE

SIGNAL PHASING DIAGRAM



- PEDESTRIAN MOVEMENT
- PROTECTED VEHICLE MOVEMENT
- PERMISSIVE VEHICLE MOVEMENT

DISPLAY NOTES:

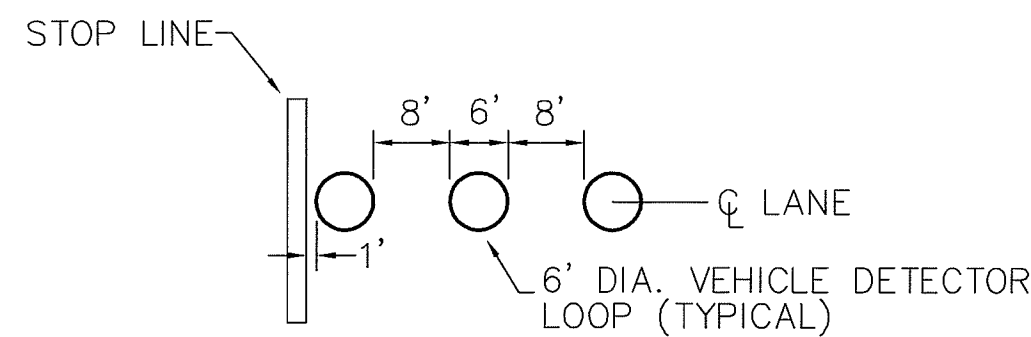
- ALL VEHICLE SIGNAL HEADS SHALL BE CONVENTIONAL TYPE, POWDER COATED DARK OLIVE GREEN, WITH SQUARE DOORS, ALL LED INDICATIONS, VISORS AND 5" BACKPLATES. HEADS 11/61, 33, 41, 42, 62 SHALL USE TUNNEL VISORS. HEADS 21, 22, 31, 32 SHALL USE ANGLED VISORS. ALL HEADS SHALL USE MOUNTING TYPE M WITH PLUMBIZERS LOCATED BETWEEN THE RED AND YELLOW SECTIONS, EXCEPT HEAD 33 WHICH SHALL USE MOUNTING TYPE D. USE STANDARD PLANS J-6f, J-6g AND J-6h.
- ALL PEDESTRIAN SIGNAL HEADS SHALL HAVE LED SYMBOLIC LEGENDS AND "Z" CRATE VISORS. ALL HEADS SHALL USE MOUNTING TYPE E, EXCEPT HEAD 68 WHICH SHALL USE MOUNTING TYPE D. USE STANDARD PLAN J-6f.

BREAKER SCHEDULE

SINGLE PHASE 120/240 VOLT SERVICE				
SERVICE/CIRCUITS	MAIN BREAKER	BRANCH BREAKER	CONTACTOR	VOLTAGE
MAIN	100 AMPS			
PE CONTROL		15 AMPS		120
RECEPTACLE		20 AMPS		120
SIGNAL		50 AMPS		120
ILLUM. A		40 AMPS	60 AMPS	240
ILLUM. (SPARE)		40 AMPS	60 AMPS	240

STOP LINE LOOP LAYOUT DETAIL

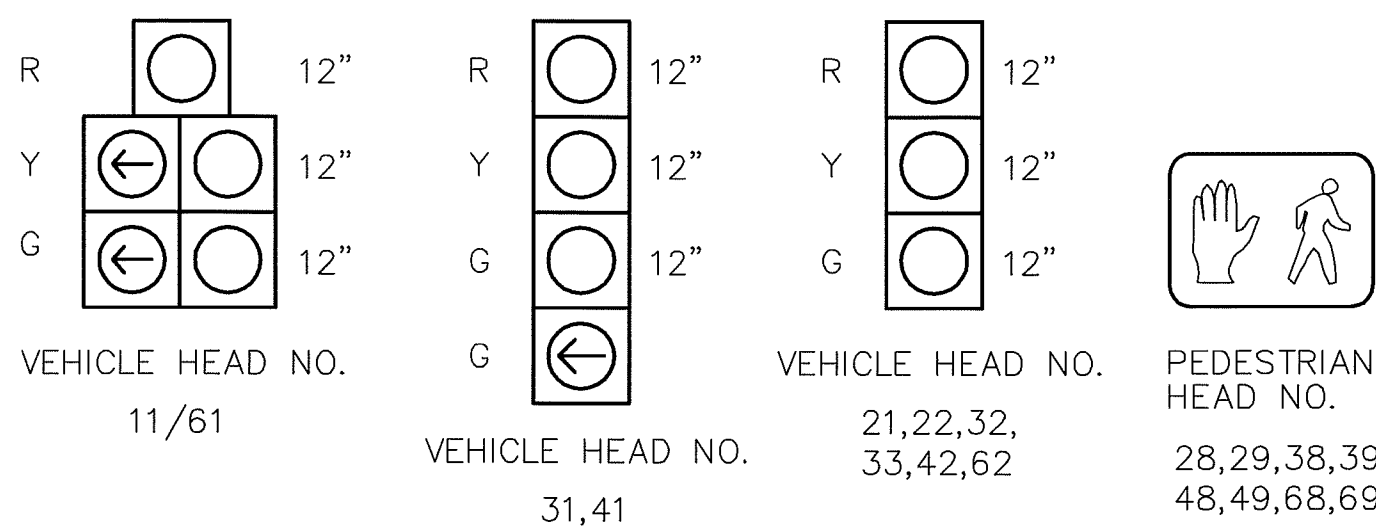
NOTE: THE THREE LOOPS IN EACH LANE SHALL BE SERIES CONNECTED IN THE JUNCTION BOX. L81B SHALL BE PROGRAMMED IN THE CONTROLLER TO CALL PHASE 3. L51B SHALL CALL PHASE 2.



PREEMPTION SCHEDULE

CIRCUIT	PHASES
A	1+6
B	2+6
C	3
D	4

SIGNAL DISPLAY SCHEDULE



WIRE NOTES

CONDUCTORS

RUN NO	CITY OF BELLINGHAM 200C (920 IN ²)	IMSA 10C (290 IN ²)	IMSA 5C (140 IN ²)	3M 55SH EPE (140 IN ²)	IMSA 25SH (#14) (106 IN ²)	NO. 8 BARE GRND (100 IN ²)	NO. 2 USE/RUP (132 IN ²)	5C 100C CABLE (100 IN ²)	CONDUIT SIZE	CONDUIT X-SECTION (IN ²)	CONDUIT FILL @ 25% OCC. (IN ²)	ACTUAL CONDUIT FILL (IN ²)	COMMENTS
1									2"	3.36	0.87	0.17	
2									2"	3.36	0.87	0.17	
3	1		1						3"	7.38	1.92	0.69	SIGNAL STANDARD NO. 4
4	1		1	3					2"	3.36	0.87	0.17	
5			1						2"	3.36	0.87	0.24	SIGNAL STANDARD NO. 3
6	1		1	4					3"	7.38	1.92	1.31	
7	1		1	1					3"	7.38	1.92	0.98	SIGNAL STANDARD NO. 2
8	2		2	3					2"	3.36	0.87	0.17	
9									2"	3.36	0.87	0.17	
10	1	2	2	1					3"	7.38	1.92	1.11	SIGNAL STANDARD NO. 5
11			2	1					2"	3.36	0.87	0.17	SIGNAL STANDARD NO. 6
12	1			2	2				4"	12.72	3.31	1.30	
13		1			2	1			2"	3.36	0.87	0.17	
14	1	1							4"	12.72	3.31	1.21	
15	2			2	4				4"	12.72	3.31	1.49	
16									4"	12.72	3.31	1.00	
17									2"	3.36	0.87	0.17	CONTROLLER POWER SERVICE

AS-BUILT

LUMINAIRE SCHEDULE*

LUM. NO.	LIGHT STANDARD LOCATION	CIRCUIT	WATTAGE	MAST ARM LENGTH	BASE TYPE
1	MAIN, STA. 2+49, 29' RT.	A	200	8'	UTILITY POLE
2	MAIN, STA. 3+52, 28.5' LT.	A	200	8'	SIGNAL POLE
3	MAIN, STA. 3+55.5, 37' RT.	A	200	10'	FIXED
4	DOUGLAS, STA. 15+81.5, 24.5' RT.	A	200	8'	UTILITY POLE
5	MAIN, STA. 4+60.5, 28.5' LT.	A	200	10'	SIGNAL POLE
6	MAIN, STA. 4+61, 31' RT.	A	200	10'	SIGNAL POLE
7	MAIN, STA. 6+02, 28.5' LT.	A	200	8'	FIXED
8	MAIN, STA. 7+02, 38' LT.	A	200	16'	FIXED

* ALL LUMINAIRES SHALL BE 240V, HPS, M-C-III WITH A 30' MOUNTING HEIGHT. USE COB ARTERIAL STREET SIGNAL AND LUMINAIRE POLES AND EL-400, EL-404 AND EL-432. ALL LUMINAIRE ARMS ON LIGHT AND SIGNAL STANDARDS SHALL MATCH.

CONSTRUCTION NOTES

- CONSTRUCT FOUNDATION AND INSTALL TYPE III SIGNAL STANDARD WITH RECESSED TERMINAL COMPARTMENT, SIGNAL HEADS, EVPE DETECTOR, PPB-M(S), LUMINAIRE AND TRAFFIC SIGNS.
- CONSTRUCT FOUNDATION AND INSTALL TYPE SD SIGNAL STANDARD WITH RECESSED TERMINAL COMPARTMENT, SIGNAL HEADS, EVPE DETECTORS, PPB-M AND TRAFFIC SIGNS.
- CONSTRUCT FOUNDATION AND INSTALL TYPE I SIGNAL STANDARD, SIGNAL HEADS AND PPB-M.
- CONSTRUCT FOUNDATION AND INSTALL TYPE PS SIGNAL STANDARD, SIGNAL HEAD AND PPB-M.
- CONSTRUCT FOUNDATION AND INSTALL LIGHT STANDARD, LUMINAIRE, SIGNAL HEADS AND PPB-M'S.
- CONSTRUCT FOUNDATION AND INSTALL LIGHT STANDARD AND LUMINAIRE.
- INSTALL 6' DIAMETER TYPE 2 INDUCTION LOOP. USE WSDOT J-8a, COB EL-462 AND STOP LINE LOOP LAYOUT DETAIL ON THIS SHEET.
- INSTALL VIDEO DETECTION CAMERA AND ARTICULATED ARM ON SIGNAL MAST ARM PER MANUFACTURER'S RECOMMENDATIONS.
- CONSTRUCT FOUNDATION/PAD AND INSTALL EIGHT PHASE NEMA SIGNAL CONTROLLER AND TYPE P CABINET (AGENCY-SUPPLIED) WITH DOOR FACING WEST. USE COB EL-436. INSTALL EVP AND VIDEO DETECTION EQUIPMENT IN CONTROLLER CABINET
- CONSTRUCT FOUNDATION AND INSTALL 120/240 VOLT SINGLE PHASE ELECTRICAL SERVICE CABINET WITH DOOR FACING WEST. USE COB EL-444 AND BREAKER SCHEDULE ON THIS SHEET.
- COORDINATE FOR INSTALLATION OF MAST ARM AND LUMINAIRE ON RELOCATED UTILITY POLE PER LUMINAIRE SCHEDULE BY UTILITY COMPANY.
- ROUTE SERVICE ENTRANCE CONDUIT AND CONDUCTORS TO AND UP RELOCATED UTILITY POLE PER UTILITY COMPANY REQUIREMENTS. COORDINATE POWER CONNECTION WITH THE UTILITY COMPANY THROUGH THE ENGINEER.

	7/11/07	5/17/07 CITY COMMENTS AND CHANGED TO VIDEO DETECTION ON SB APPROACH	RMH	
DRAWN	RMH	7/20/07 REVISIONS FOR ADDED EBLT POCKET	RMH	
DESIGNED	RMH	SHIFTED LUMINAIRE #7 & JUNCTION BOX		
CHECKED	5/3/07 RMH	BID ADDENDUM #1:	RMH	
PROJ. ENGR.		PROTECTED/PERMISSIVE WBLT PHASING		
DRAWING FILE	10/17/08	RECORD DOCUMENT	RMH	
TS1aVideoBA1Record_Drawing.DWG	DATE	REVISION	BY	APP'D



CITY OF FERNDALE
2095 Main Street
Ferndale, Washington 98248



HIE HERMAN TRAFFIC ENGINEERING
15324 Southeast 133rd Court, Renton, Washington 98059
425-277-1740 tel. 425-277-5718 fax hte@comcast.net

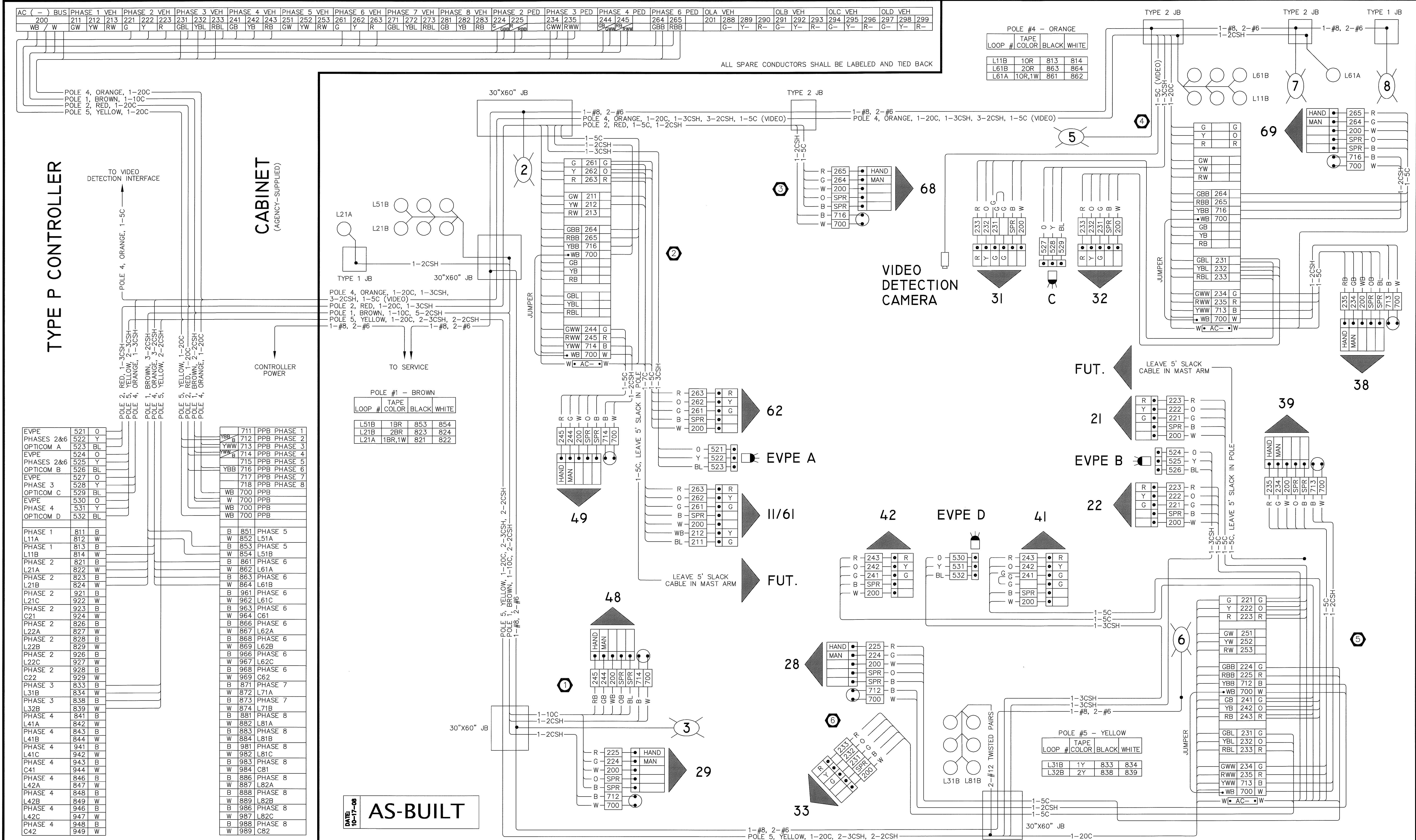
MAIN STREET / DOUGLAS ROAD IMPROVEMENTS
CITY OF FERNDALE

TRAFFIC SIGNAL PLAN

TS1

SHEET
OF
SHEETS

00379.018 7-8-09 DD



DRAWN RMH		7/11/07	5/17/07 CITY COMMENTS AND CHANGED	RMH
DESIGNED RMH		7/20/07	TO VIDEO DETECTION ON SB APPROACH	RMH
CHECKED 5/3/07 RMH			REVISED FOR ADDED EBLT POCKET	RMH
PROJ. ENGR.		8/10/07	BID ADDENDUM #1:	RMH
DRAWING FILE		10/17/08	PROTECTED/PERMISSIVE WBLT PHASING	RMH
TS1aVideoBA1Record Drawing.DWG		DATE	RECORD DOCUMENT	BY APP'D
			REVISION	

CITY OF FERNDAL
2095 Main Street
Ferndale, Washington 98248

ROBERT MARTIN HERDMAN
PROFESSIONAL ENGINEER
EXPIRES 01/31/08

HTE HERMAN TRAFFIC ENGINEERING

15324 Southeast 133rd Court, Renton, Washington 98059
425-277-1740 tel. 425-277-5718 fax hte@comcast.net

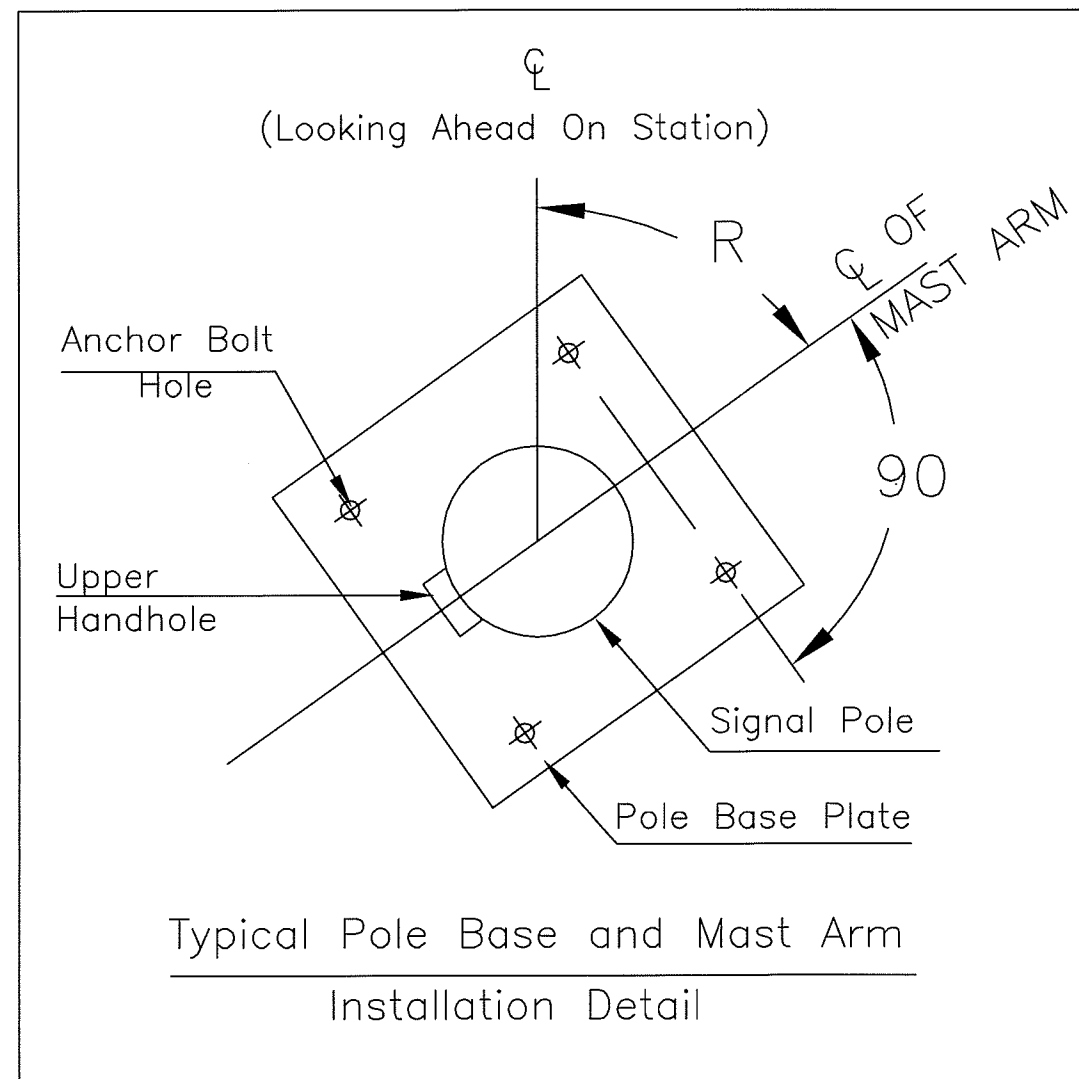
MAIN STREET / DOUGLAS ROAD IMPROVEMENTS
CITY OF FERNDAL

TRAFFIC SIGNAL WIRING DIAGRAM

TS2

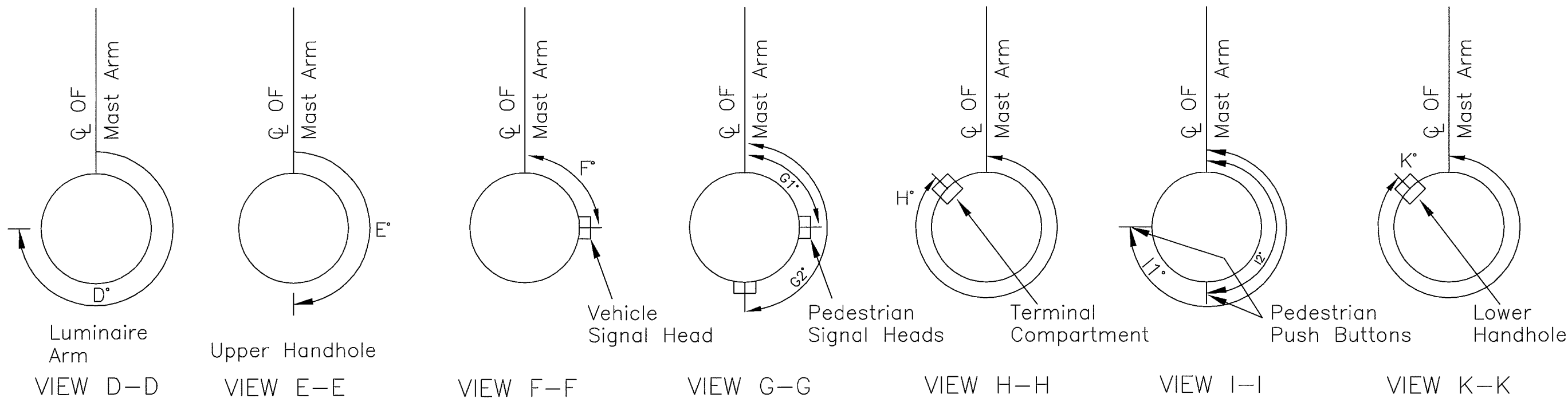
SHEET OF SHEETS

00379.019 7.8.09 DD



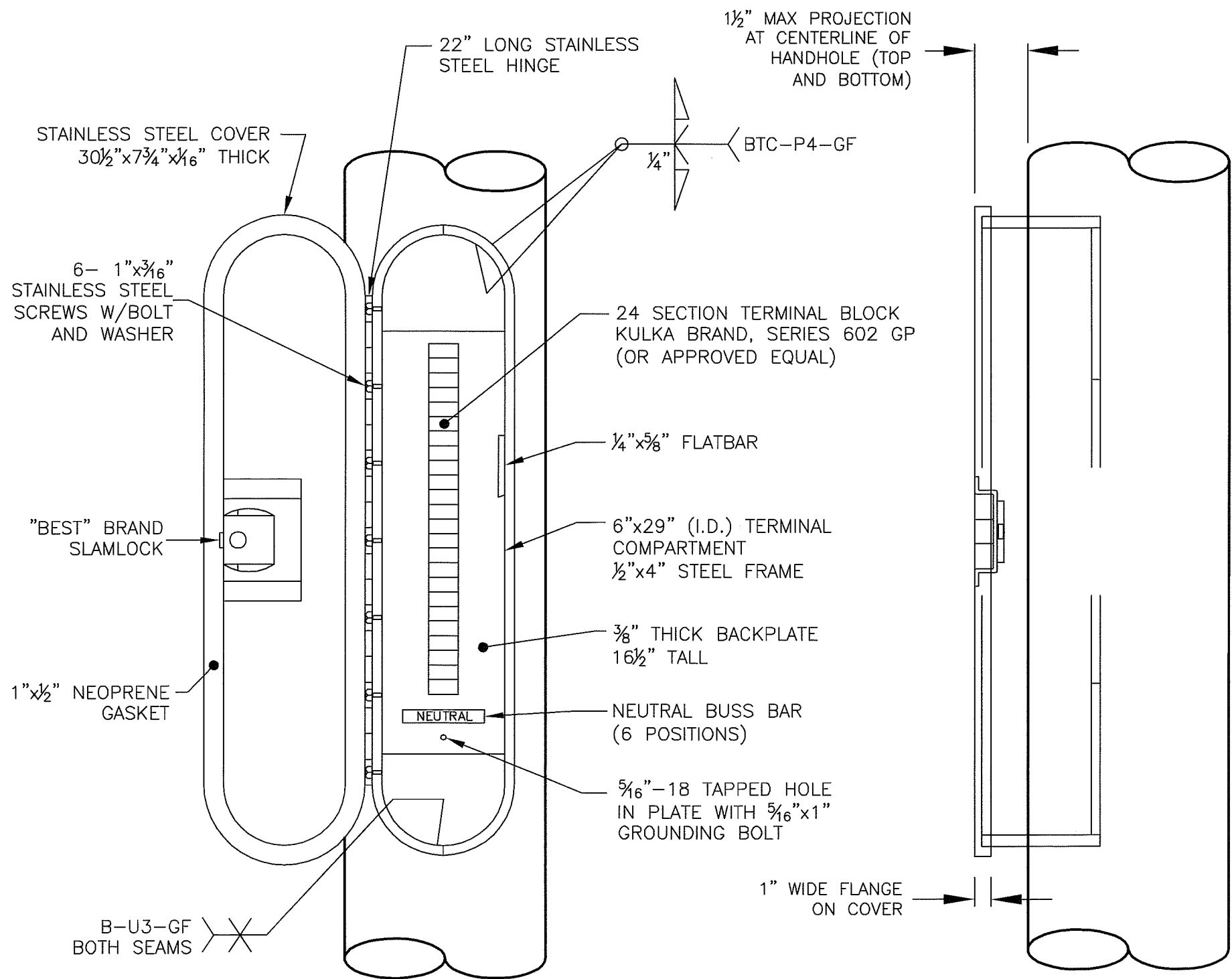
POLE NOTES

- POLE IDENTIFICATION NUMBER, AS SHOWN ON THIS SHEET, SHALL BE PERMANENTLY STAMPED ON RESPECTIVE POLE BASE PLATE AND MAST ARMS.
- ALL DIMENSIONS SHOWN ARE APPROXIMATE. FINAL VALUES SHALL BE FIELD VERIFIED PRIOR TO SUBMITTAL OF SHOP DRAWINGS TO THE AGENCY.
- CONTRACTOR SHALL ENSURE THAT THE SIGNAL POLE FOUNDATION IS SQUARE WITH THE RESPECTIVE POLE BASE PLATE.
- EACH MAST SIGNAL POLE SHALL INCORPORATE A RECESSED TERMINAL COMPARTMENT PER THE DETAIL ON THIS SHEET.



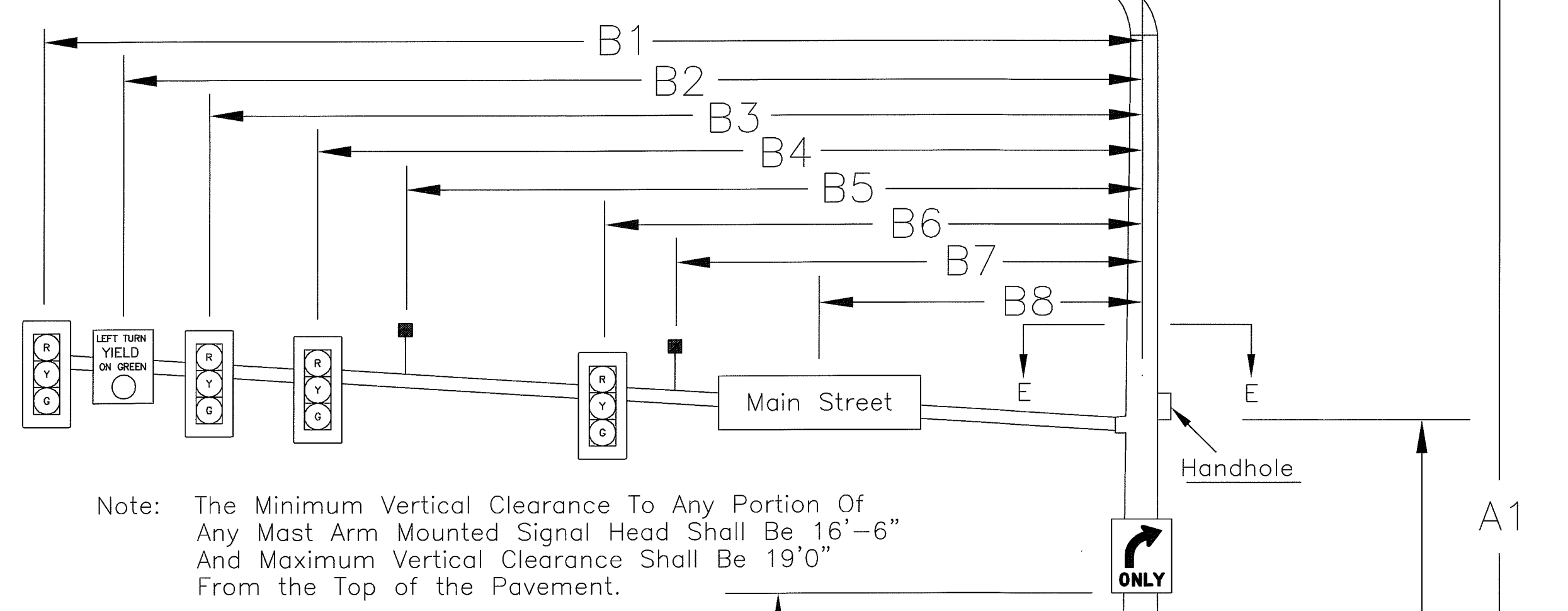
ANGLES TO ATTACHMENT POINTS OF POLE APPURTENANCES

POLE NO.	REFERENCE STREET	STATION	OFFSET	ARM ROTATION	POLE TYPE	POLE ATTACHMENT HEIGHT (FT.)							MAST ARM ATTACHMENT OFFSET (FT.)														LUMINAIRE ARM (FT.)	ATTACHMENT ANGLE CLOCKWISE FROM MAST ARM ϕ											XYZ (FT ³)	FOUNDATION DEPTH (FT.)		REMARKS
				R		A1	A2	A3	A4	A5	A6	A7	B1	Area S.F.	B2	Area S.F.	B3	Area S.F.	B4	Area S.F.	B5	B6	Area S.F.	B7	B8	Area S.F.	C	D	E	F	G1	G2	H	I1	I2	K		3' RND.	4' RND.			
#1	MAIN	3+55.5	37' RT.	0	LIGHT STANDARD	30			3	*8																	10	0			90	180		0	270	0		4.5		LIGHT STANDARD		
#2	MAIN	3+52	28.5' LT.	90	III	30	19	*4	3	*8			**26.5	8.7	24.5	5	22.5	14.4	**18.5	8.7	20.5	10.5	8.7		5	10.5	8	0	180		90		0	0		0	591	10		26.5' MAST ARM		
#3	MAIN	4+16	28.8' LT.	0	PS				3	*8																					TOP			0		90		USE J-7a				
#4	MAIN	4+60.5	28.5' LT.	180	III	30	19.5	*4	3	*8			25	11.0			17	8.7			2				5	7.5	10	0	180		180	270	270	0	270	270	461	10		25' MAST ARM		
#5	MAIN	4+61	31' RT.	270	SD	30	18.5	*4	3	*8			**29	8.7	27	5	**25	14.4	21	8.7	23	13	8.7		5	10.5	10	0	180		90		0	0		0	***661	10		29' MAST ARM		
				180			18.5						33.5	11.0			25.5	8.7			29.5				5	7.5											650			33.5' MAST ARM		
#6	MAIN	4+45	40.5' RT.	180	I				3	*8	*10																			TOP	90			0	0			USE J-7a				

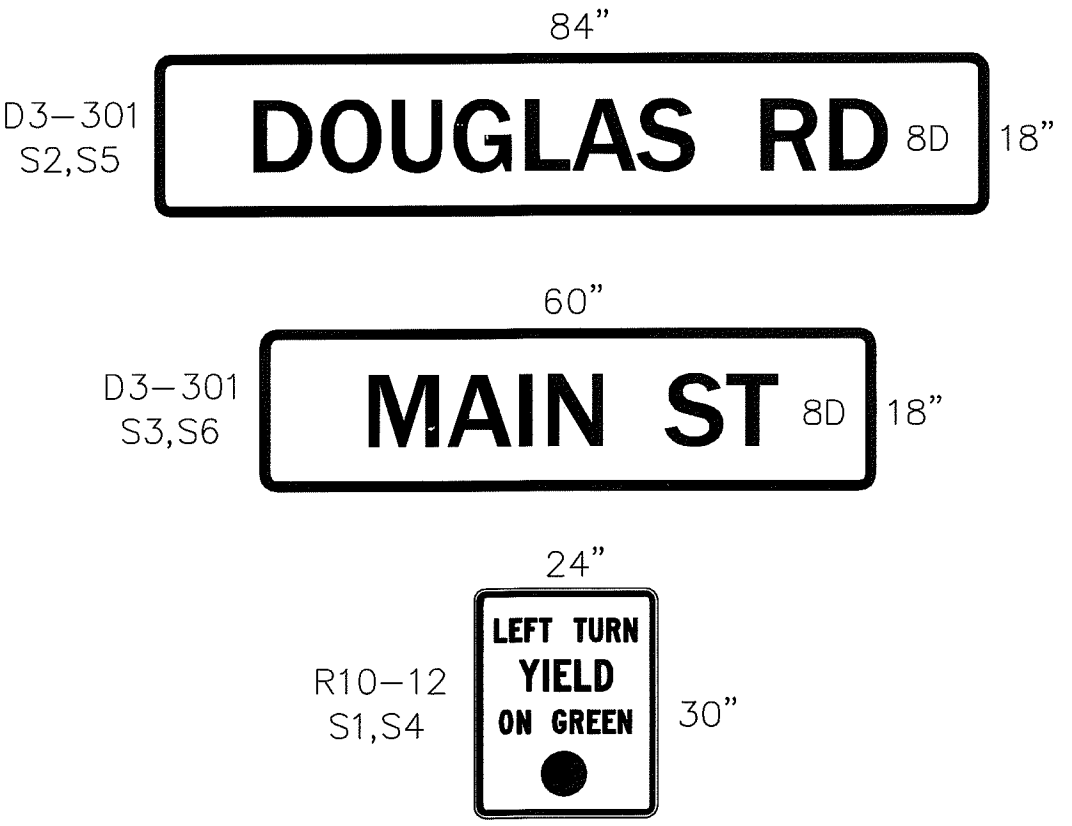


RECESSED TERMINAL COMPARTMENT

CONTRACTOR SHALL FIELD DRILL HOLE IN SIGNAL MAST ARM FOR VIDEO DETECTION CABLE ENTRANCE PER MANUFACTURER'S RECOMMENDATIONS. INSTALL PLASTIC SPLIT BUSHING FOR CABLE ENTRANCE.



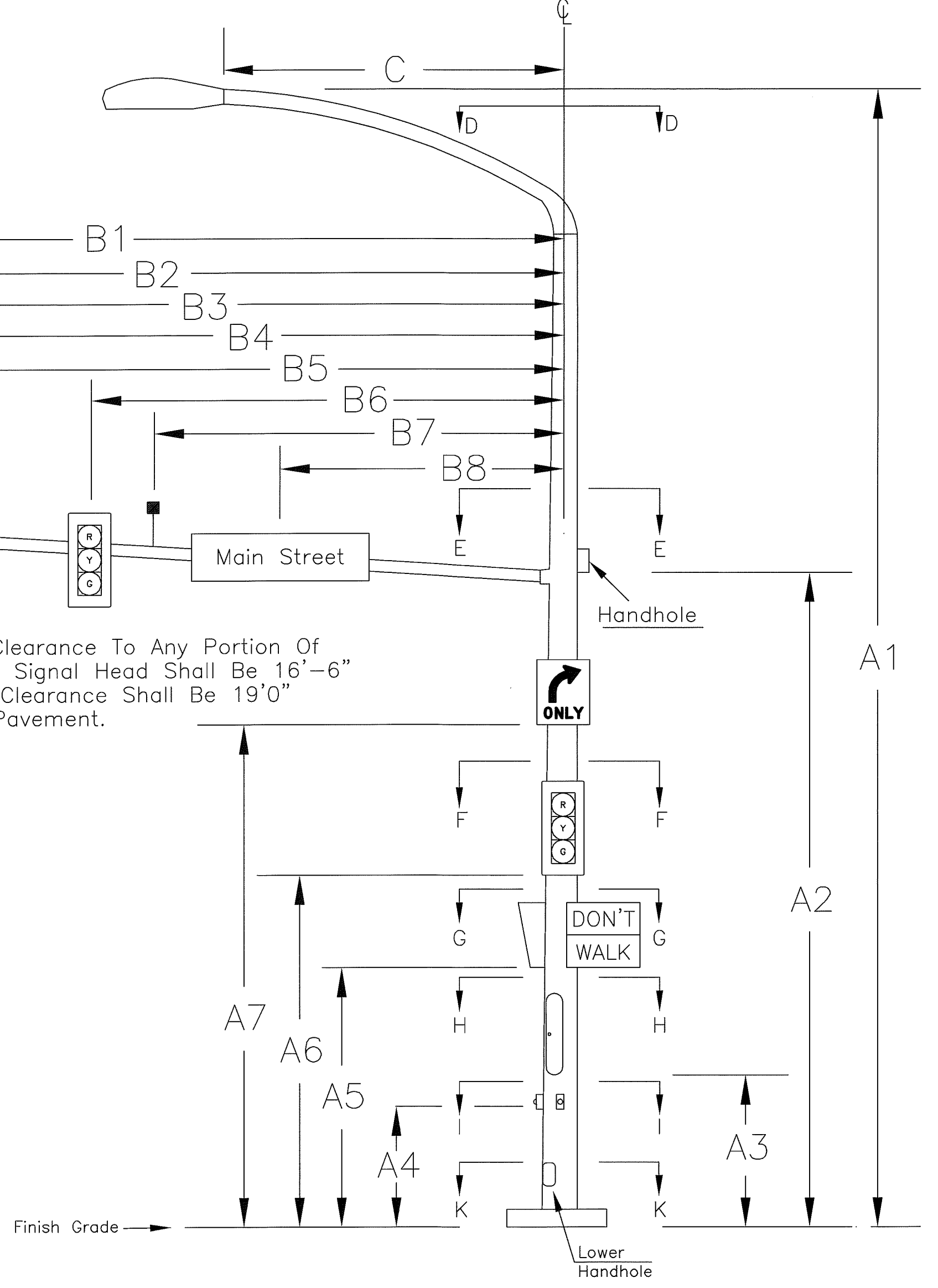
SIGNAL-MOUNTED SIGNING DETAILS



SIGN NOTES:

- ALL SIGNS SHALL CONFORM TO THE WSDOT SIGN FABRICATION MANUAL.
- ALL SIGNS SHALL HAVE 3M VIP REFLECTIVE GRADE SHEETING.

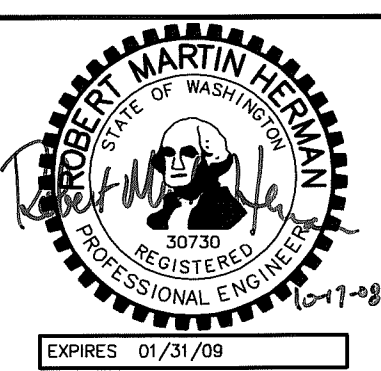
MAST ARM SIGNAL POLE



AS-BUILT

- * MEASURED TO THE BOTTOM OF THE ATTACHMENT
- ** CAP TENON FOR FUTURE USE
- *** FUTURE SCENARIO GOVERNS

	7/11/07	5/17/07 CITY COMMENTS AND CHANGED TO VIDEO DETECTION ON SB APPROACH	RMH	
DRAWN	RMH	7/20/07 REVISIONS FOR ADDED EBLT POCKET	RMH	
DESIGNED	RMH	SHIFTED LUMINAIRE #7 & JUNCTION BOX		
CHECKED	5/3/07 RMH	BID ADDENDUM #1:	RMH	
PROJ. ENGR.		PROTECTED/PERMISSIVE WBLT PHASING		
DRAWING FILE	10/17/08	RECORD DOCUMENT	RMH	
TS1aVideoBA1Record Drawing.DWG	DATE	REVISION	BY	APP'D



MAIN STREET / DOUGLAS ROAD IMPROVEMENTS	TS3
CITY OF FERDALE	
TRAFFIC SIGNAL STANDARD DETAIL CHART	SHEET OF SHEETS