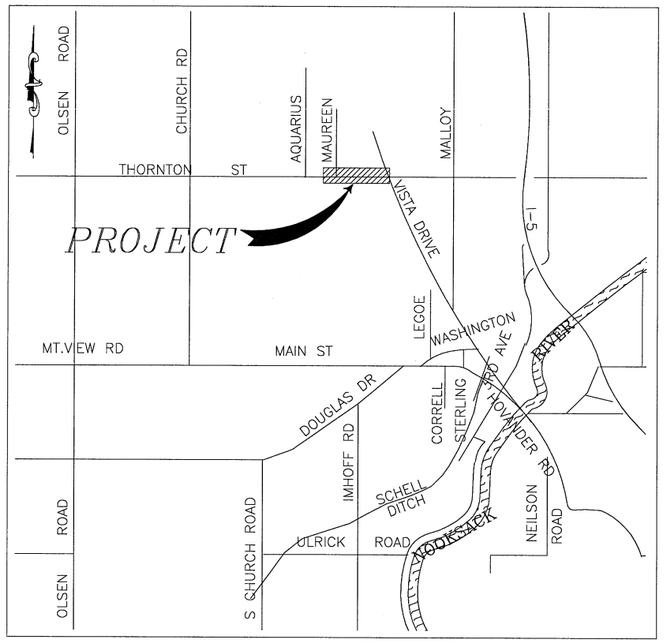
THORNTON STREET IMPROVEMENT PROJECT, MAUREEN to VISTA

CITY OF FERNDALE

FEDERAL AID No: STPUS-8044(002)

VICINITY MAP

NTS



ABBREVIATIONS

AC	= ASBESTOS CEMENT	L	= LENGTH	R&C	= RING AND COVER
ASPH	= ASPHALT	LF	= LINEAR FEET	SSMH	= SANITARY SEWER MANHOLE
BLDG	= BUILDING	LOC	= LOCATION	SCH	= SCHEDULE
CATV	= CABLE TELEVISION	MAX	= MAXIMUM	S	= SOUTH
CL	= CLASS, CENTERLINE	MPOC	= MID-POINT ON CURVE	STD	= STANDARD
COMP	= COMPACTED	MIN	= MINIMUM	SP	= STANDARD PLAN
CONC	= CONCRETE	MOD	= MODIFIED	STA	= STATION
C & G	= CURB & GUTTER	MW	= MONITORING WELL	SDCB	= STORM DRAIN CATCH BASIN
CPDP	= CORRUGATED POLYETHYLENE DRAIN PIPE	MON	= MONUMENT	SDMH	= STORM DRAIN MANHOLE
ø	= DIAMETER	N	= NORTH	TEL	= TELEPHONE
DI	= DUCTILE IRON	OC	= ON CENTER	TL	= TRAFFIC LOOP
E	= EAST	PVMNT	= PAVEMENT	TYP	= TYPICAL
EOP, EP	= EDGE OF PAVEMENT	PED	= PEDESTAL	UP	= UTILITY POLE
EX, EXIST	= EXISTING	PCC	= POINT OF COMPOUND CURVATURE	VAULT	= VAULT
IR	= EXISTING IRRIGATION	PC	= POINT OF CURVATURE	WSDOT	= WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
SN	= EXISTING SIGN	PRC	= POINT OF REVERSE CURVE		
FT	= FEET	PT	= POINT OF TANGENCY	W	= WEST
FL	= FLOW LINE	POC	= POINT ON CURVE	WM	= WATER METER
FF	= FINISHED FLOOR	PVC	= POLYVINYL CHLORIDE		
FG	= FINISHED GRADE	PCC	= PORTLAND CEMENT CONCRETE		
FT/FT	= FEET PER FOOT	POSS	= POSSIBLE		
F&C	= FRAME AND COVER	PROP	= PROPOSED		
F&G	= FRAME AND GRATE	R	= RADIUS		
IW	= INJECTION WELL	ROW	= RIGHT OF WAY		
IE, INV	= INVERT ELEVATION				

SHEET INDEX

1.) COVER SHEET

2.) EXISTING CONDITIONS STA -0+70 TO 5+50

3.) EXISTING CONDITIONS STA 5+50 TO 9+00

4.) EXISTING CONDITIONS STA 9+00 TO 13+00

5.) TRAFFIC CONTROL PLAN

6.) TESC & DEMOLITION PLAN STA -0+70 TO 9+00

7.) TESC & DEMOLITION PLAN STA 9+00 TO 13+00

8.) DEMOLITION PLAN STA -0+70 TO 9+00

9.) DEMOLITION PLAN STA 9+00 TO 13+00

10.) PLAN & PROFILE STA -0+70 TO 5+39

11.) PLAN & PROFILE STA 5+39 TO 9+00

12.) PLAN & PROFILE STA 9+00 TO 13+00

13.) GRADING PLAN

14.) CHANNELIZATION PLAN

15.) LANDSCAPE PLAN

16.) LANDSCAPE DETAIL SHEET

17.) TYPICAL SECTIONS

18.) WATER DETAILS

19.) STORM DETAILS

20.) SEWER DETAILS

21.) MISC DETAILS

LEGEND

EXISTING

- = EX TOE OF BANK
- = EX OVERHEAD POWER
- = EX CONCRETE
- = EX MAJOR CONTOUR
- = EX MINOR CONTOUR
- = EX CULVERT
- = EX DITCH CL
- = EX FENCE
- = EX FIBER OPTICS LINE
- = EX GAS MAIN
- = EX GUARDRAIL
- = EX GRAVEL
- = EX PROPERTY BOUNDARY
- = EX POWER BURIED
- = EX ROAD CL
- = EX EDGE OF PAVEMENT
- = EX RIGHT OF WAY
- = EX TREE LINE
- = EX STORM DRAIN
- = EX TRAFFIC SIGNAL CONDUCTOR
- = EX SANITARY SEWER
- = EX TRAFFIC STRIPING
- = EX PARKING STRIPING
- = EX TOP OF BANK
- = EX TELEPHONE LINE
- = EX OVERHEAD TELEPHONE
- = EX TV LINE
- = EX WATER LINE
- = EX SIDEWALK
- = EX WETLANDS BOUNDARY
- = EX EASEMENT
- = EX GRADE BREAK
- = EX SANITARY SEWER FORCE MAIN
- = EX FLOWLINE
- = EXISTING RR TRACKS
- = EX BUILDING
- = EX CONCRETE
- = EX MONITORING WELL
- = EX SOIL BORING LOCATION
- = EX GUY WIRE
- = EX STORM CLEANOUT
- = EX SEWER CLEANOUT
- = EX JBOX
- = EX STREET LIGHT
- = EX MAIL BOX
- = EX WATER METER
- = EX WATER SPIGOT
- = EX WATER VALVE
- = EX FIRE HYDRANT
- = EX TRAFFIC SIGNAL VAULT
- = EX SEWER MANHOLE
- = EX STORM DRAIN CATCH BASIN TYPE I
- = EX STORM DRAIN CATCH BASIN TYPE II
- = EX UTILITY POLE
- = EX GAS METER
- = EX TRANSFORMER PAD
- = EX POWER VAULT
- = EX SIGN
- = EX TELEPHONE PEDESTAL
- = EX SIGNAL POLE AND ARM W/ LUMINAIRE
- = EX TREE
- = EX VEGETATION

PROPOSED

- = PROPOSED AUTOTURN
- = PROPOSED DITCH CL
- = PROPOSED BUILDING
- = PROPOSED TOE OF BANK
- = PROPOSED CONDUIT
- = PROPOSED TOP OF BANK
- = PROPOSED MAJOR CONTOUR
- = PROPOSED MINOR CONTOUR
- = PROPOSED FENCE
- = PROPOSED HANDRAIL
- = PROPOSED CONSTRUCTION EASEMENT
- = PROPOSED SANITARY SEWER FORCE MAIN
- = PROPOSED FIBER OPTICS
- = PROPOSED GRADE BREAK
- = PROPOSED GUARDRAIL
- = PROPOSED GRAVEL
- = PROPOSED, PATH
- = PROPOSED PARKING STRIPE
- = PROPOSED TRAFFIC STRIPE
- = PROPOSED ROCK WALL
- = PROPOSED BACK OF CURB
- = PROPOSED ROAD CL
- = PROPOSED ROAD EDGE OF PAVEMENT
- = PROPOSED ROAD FACE OF CURB
- = PROPOSED ROAD LIP OF GUTTER
- = PROPOSED RIGHT OF WAY
- = PROPOSED SAWCUT
- = PROPOSED STORM DRAIN
- = PROPOSED FIELD STORM DRAIN
- = PROPOSED TRAFFIC SIGNAL CONDUCTOR
- = PROPOSED SILT FENCE
- = PROPOSED SANITARY SEWER
- = PROPOSED TREE LINE
- = PROPOSED WATERMAIN
- = PROPOSED SIDEWALK
- = PROPOSED PAVEMENT VALLEY
- = PROPOSED TEMPORARY CONSTRUCTION EASEMENT AREA
- = PROPOSED GRIND
- = PROPOSED DEMOLITION AREA
- = PROPOSED ASPHALT APRON
- = PROPOSED RIGHT OF WAY TAKE
- = PROPOSED CONC. SIDEWALK / DRIVEWAY
- = PROPOSED INFILTRATION TRENCH
- = PROPOSED INFILTRATION FILTER MEDIA
- = PROPOSED BUILDING
- = PROPOSED MONITORING WELL
- = PROPOSED STORM DRAIN CATCH BASIN TYPE I
- = PROPOSED STORM DRAIN CATCH BASIN TYPE II
- = PROP STORM CLEANOUT
- = PROPOSED STORM DRAIN INLET
- = PROPOSED SANITARY SEWER MANHOLE
- = PROPOSED SANITARY SEWER MANHOLE
- = PROPOSED SANITARY SEWER CLEAN OUT
- = PROPOSED HYDRANT
- = PROPOSED WATER METER
- = PROPOSED WATER VALVE
- = PROPOSED COUPLER
- = PROPOSED UTILITY POLE
- = PROPOSED SIGN
- = FLOW ARROW
- = PROPOSED TREE

DESIGNED BY LP	R&E Reichhardt & Ebe ENGINEERING INC				
DRAWN BY LMC	423 Front St, Lynden, WA 98264 (360) 354-3687				
CHECKED BY LP	813 Metcalf St, Sedro-Woolley, WA 98284 (360) 855-1713	NO.	DATE	REVISION	BY

CITY OF FERNDALE
2095 MAIN ST
FERNDALE, WA 98248

THORNTON ROAD
COVER SHEET

JOB# / DWG 11037 SP3		DATE 4-15-13
SCALE H: n/a	V: n/a	SHEET 1 of 21

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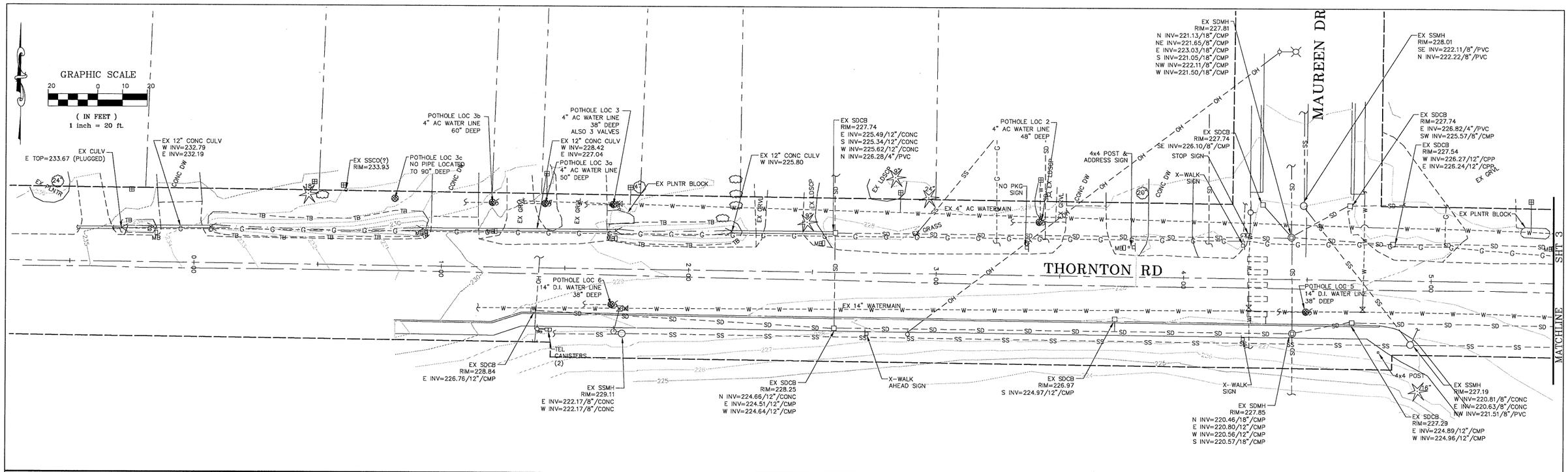

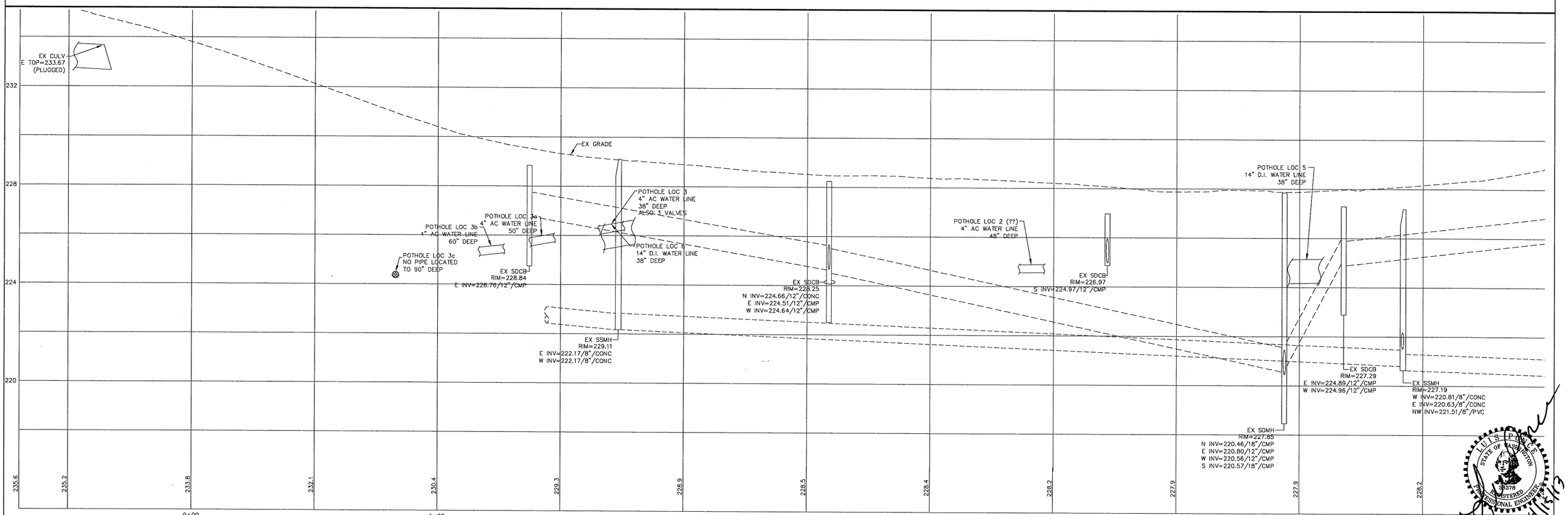

LUIS PONCE
STATE OF WASHINGTON
38378
REGISTERED
PROFESSIONAL ENGINEER
4/15/13

DESIGNED BY LP DRAWN BY LMC CHECKED BY LP	R&E Reichhardt & Ebe ENGINEERING INC 423 Front St., Lynden, WA 98264 (360) 354-3687 813 Metcalf St., Sedro-Woolley, WA 98284 (360) 855-1713	NO. / DATE / REVISION / BY	CITY OF FERNDALE 2095 MAIN ST FERNDALE, WA 98248	THORNTON STREET EXISTING CONDITIONS STA -0+70 TO 5+50	JOB# / DWG 11037 SP3 SCALE H: 1"=20' V: 1"=2'	DATE 4-15-13 SHEET 2 of 21

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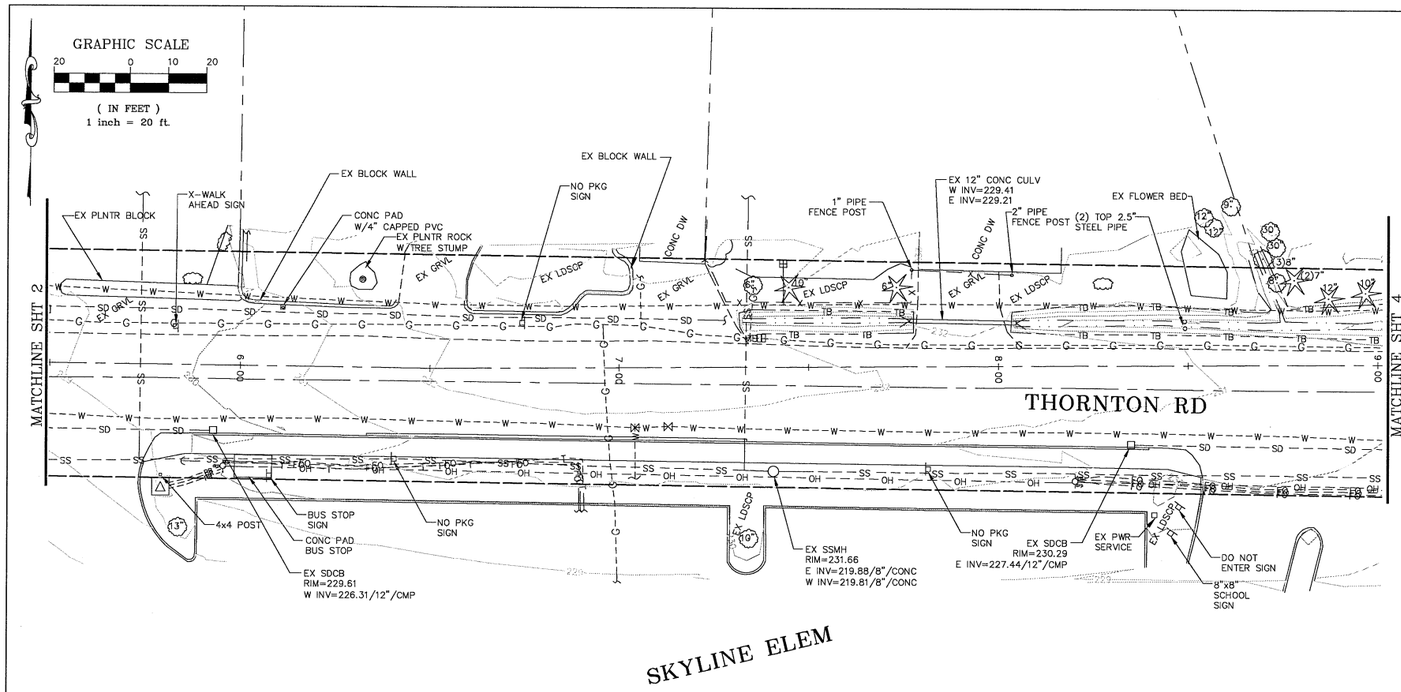

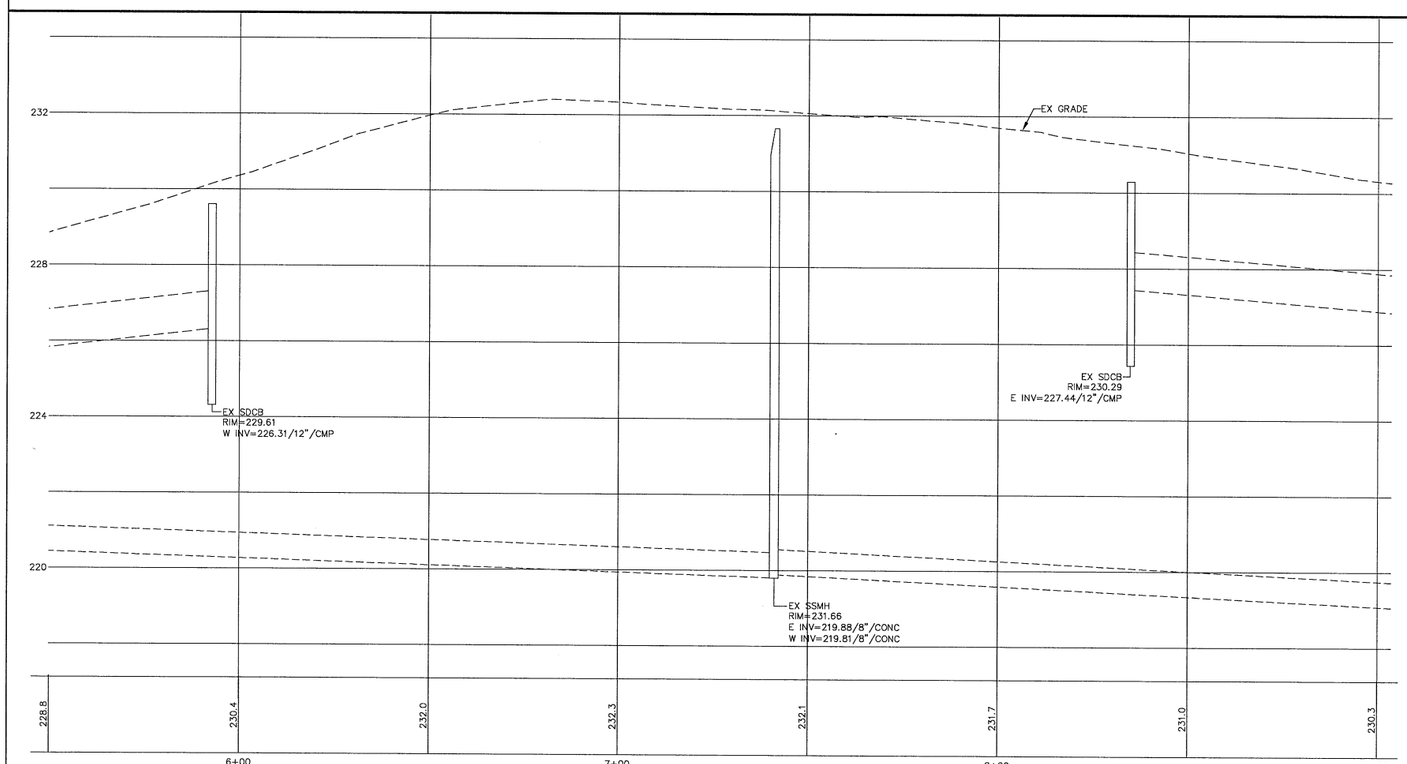

DESIGNED BY LP	R&E Reichhardt & Ebe ENGINEERING INC	NO.	DATE	REVISION	BY	CITY OF FERNDALE 2095 MAIN ST FERNDALE, WA 98248	THORNTON STREET EXISTING CONDITIONS STA 5+50 TO 9+00	JOB# / DWG 11037 SP3	DATE 4-15-13
DRAWN BY LMC	423 Front St., Lynden, WA 98264 (360) 354-3687							SCALE H: 1"=20' V: 1"=2'	SHEET 3 of 21
CHECKED BY LP	813 Metcalf St., Sedro-Woolley, WA 98284 (360) 855-1713								

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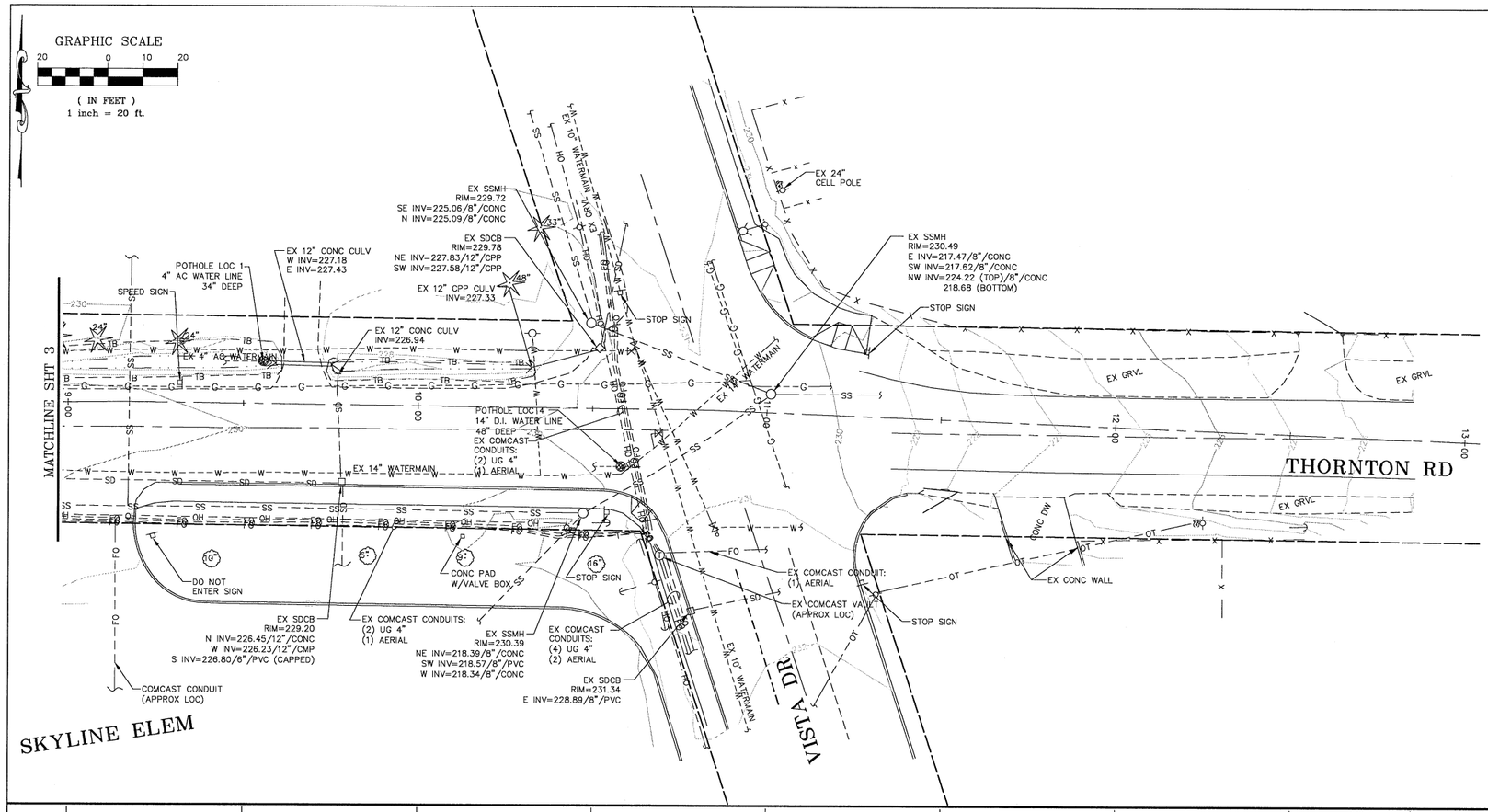

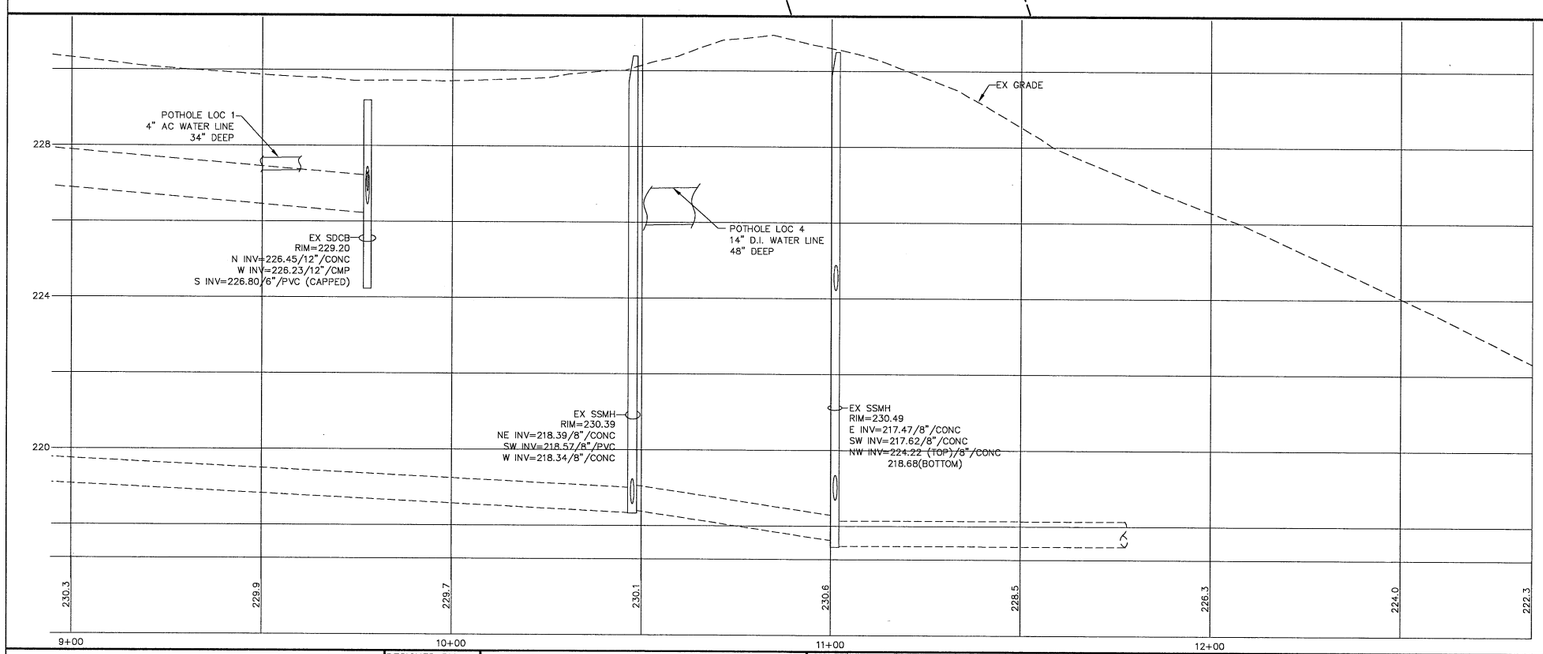

DESIGNED BY LP DRAWN BY LMC CHECKED BY LP	R&E Reichhardt & Ebe ENGINEERING INC 423 Front St., Lynden, WA 98264 (360) 354-3687 813 Metcalf St., Sedro-Woolley, WA 98284 (360) 855-1713	NO.	DATE	REVISION	BY	CITY OF FERNDALE 2095 MAIN ST FERNDALE, WA 98248	THORNTON STREET EXISTING CONDITIONS STA 9+00 TO 13+00

JOB# / DWG		DATE
11037	SP3	4-15-13
SCALE H: 1"=20'	V: 1"=2'	SHEET 4 of 21

LUIS A. POLK STATE OF WASHINGTON 38576 REGISTERED PROFESSIONAL ENGINEER 4/15/13

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SIGN SPACING = X (1)		
RURAL ROADS	45/55 MPH	500'±
URBAN ARTERIALS & RURAL ROADS	35/40 MPH	350'±
RURAL ROADS, URBAN ARTERIALS, RESIDENTIAL & BUSINESS DISTRICTS	25/30 MPH	200'± (2)
URBAN STREETS	25 MPH OR LESS	100'± (2)
ALL SIGNS ARE BLACK ON ORANGE UNLESS DESIGNATED OTHERWISE		

(1) ALL SPACING MAY BE ADJUSTED TO ACCOMODATE AT-GRADE INTERSECTIONS AND DRIVEWAYS.

(2) THIS SIGN SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.

LEGEND

= DIRECTION OF TRAFFIC

= SIGN (SHOWN FACING LEFT)

= PROPOSED WORK AREA

A — DETOUR — M4-10L

B — DETOUR — M4-10R

C — ROAD CLOSED LOCAL TRAFFIC ONLY — R 11-3

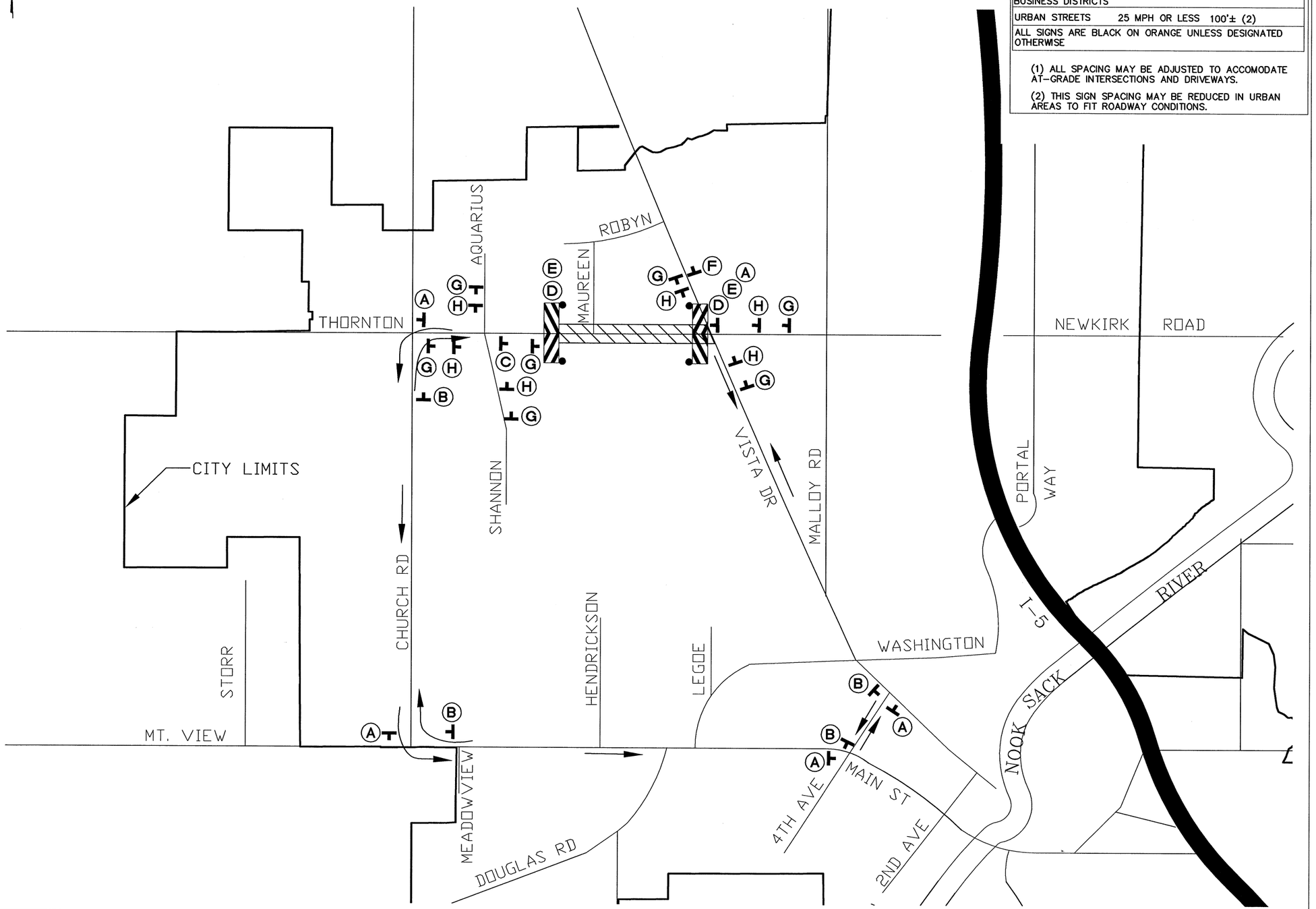
D — ROAD CLOSED TO THRU TRAFFIC — R 11-4

E — TYPE III R AND TYPE III L, BARRICADE WITH 2 TYPE A FLASHING WARNING LIGHTS

F — END DETOUR — M4-8A

G — ROAD CLOSED AHEAD — W 20-3

H — DETOUR AHEAD — W20-2



DESIGNED BY LP	R&E Reichhardt & Ebe ENGINEERING INC				CITY OF FERNDALE 2095 MAIN ST FERNDALE, WA 98248	THORNTON STREET TRAFFIC CONTROL PLAN	JOB# / DWG 11037 TC	DATE 4-15-13
DRAWN BY LMC	423 Front St, Lynden, WA 98264 (360) 354-3687						SCALE H: n/a V: n/a	SHEET 5 of 21
CHECKED BY LP	813 Metcalf St, Sedro-Woolley, WA 98284 (360) 855-1713	NO.	DATE	REVISION	BY			

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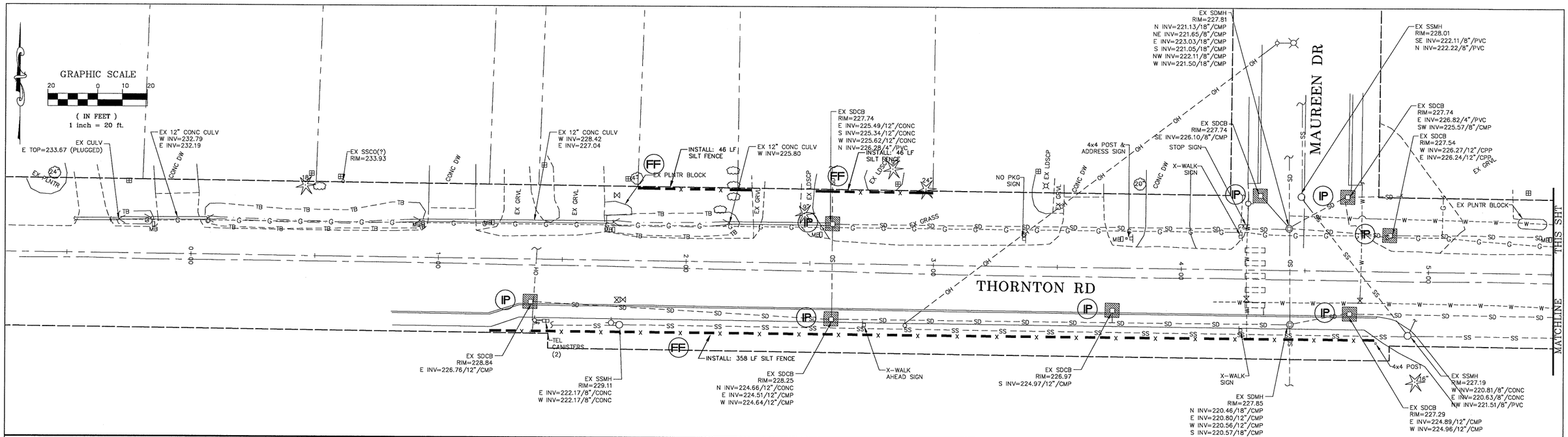
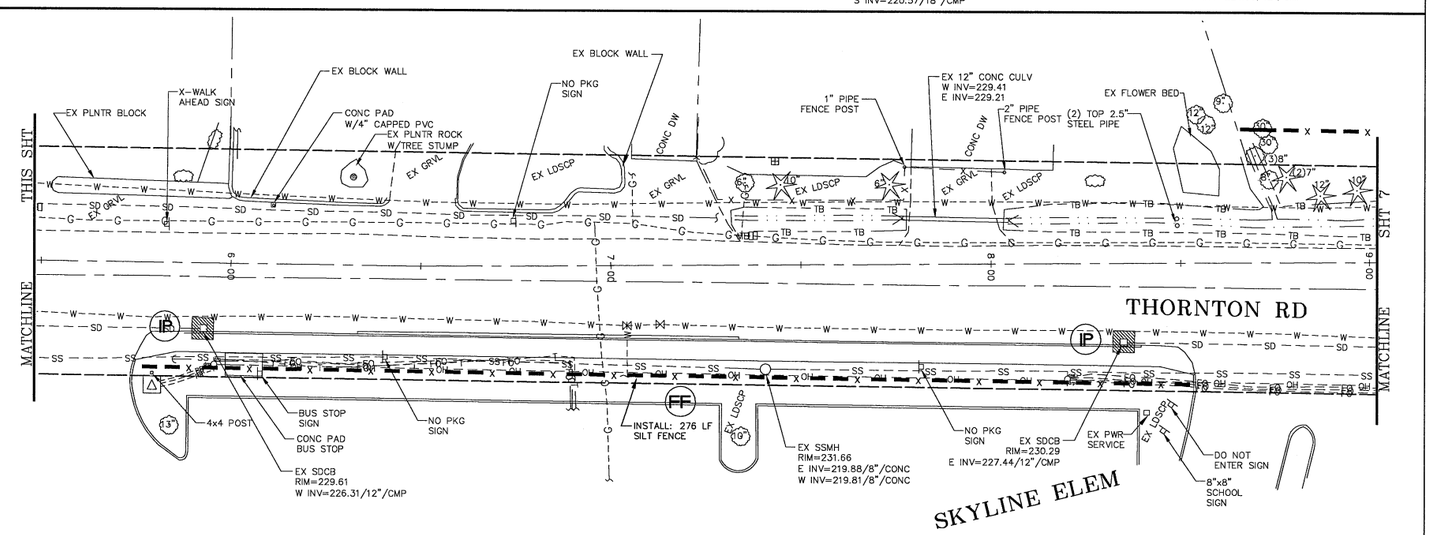
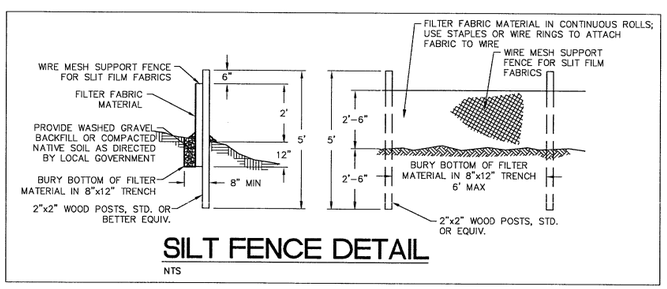




LEGEND

FF — = SILT FENCE

IP — = INLET PROTECTION



SILT FENCE DETAIL

NTS

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JOB# / DWG		DATE
11037	SP3	4-15-13
SCALE H: 1"=20'	V: n/a	SHEET 6 of 21

LOIS E. PAYNE STATE OF WASHINGTON 36376 REGISTERED PROFESSIONAL ENGINEER 4/15/13

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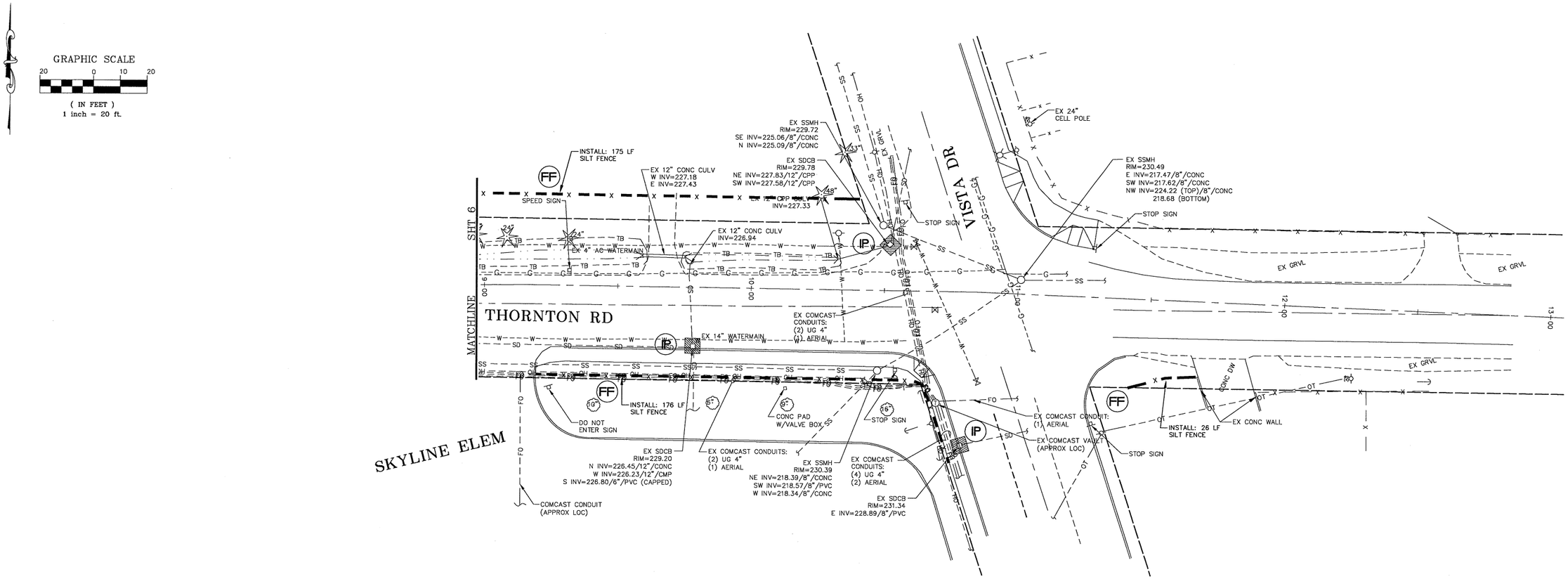

DESIGNED BY LP	R&E Reichhardt & Ebe ENGINEERING INC				CITY OF FERNDALE	THORNTON STREET	JOB# / DWG 11037 SP3	DATE 4-15-13
DRAWN BY LMC	423 Front St., Lynden, WA 98264 (360) 354-3687				2095 MAIN ST	TESC PLAN	SCALE H: 1"=20' V: n/a	SHEET 7 of 21
CHECKED BY LP	813 Metcalf St., Sedro-Woolley, WA 98284 (360) 855-1713	NO.	DATE	REVISION BY	FERNDALE, WA 98248	STA 9+00 TO 13+00		

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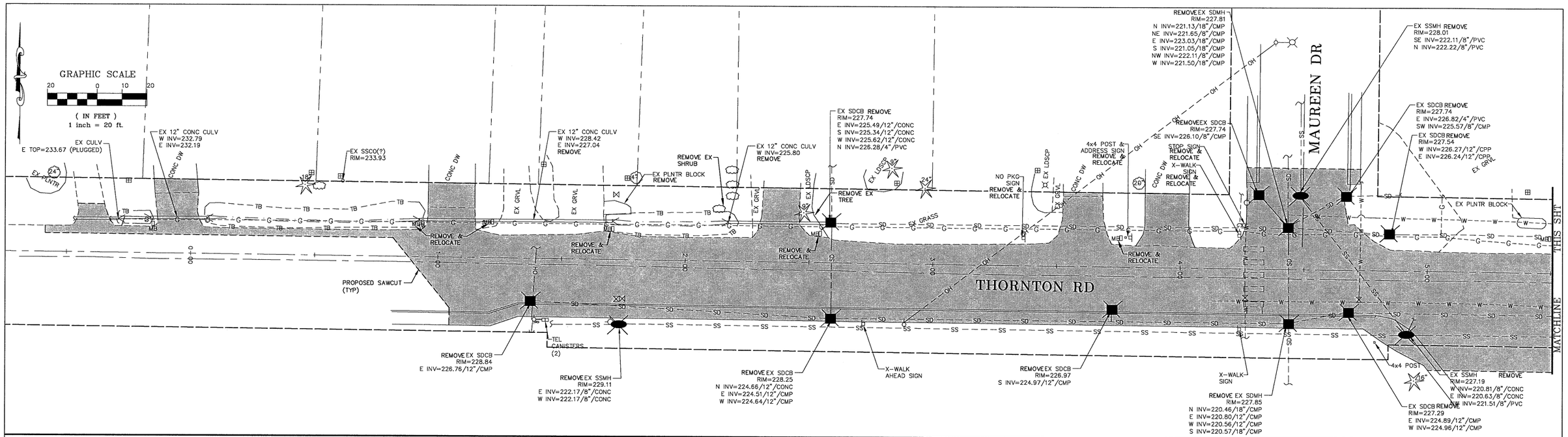

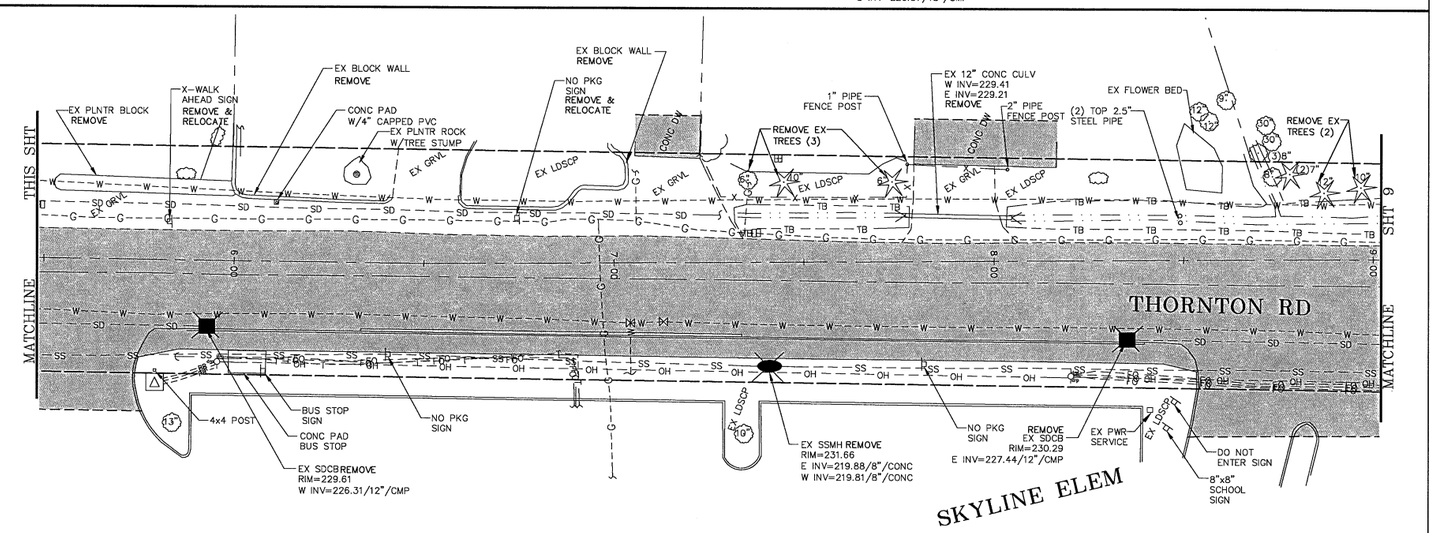

LEGEND

= REMOVE EX SDCB OR SDMH

= REMOVE EX SSMH

DESIGNED BY LP DRAWN BY LMC CHECKED BY LP	R&E Reichhardt & Ebe ENGINEERING INC 423 Front St., Lynden, WA 98264 (360) 354-3687 813 Metcalf St., Sedro-Woolley, WA 98284 (360) 855-1713	NO.	DATE	REVISION	BY	CITY OF FERNDALE 2095 MAIN ST FERNDALE, WA 98248	THORNTON STREET DEMOLITION PLAN STA -0+70 TO 9+00

JOB# / DWG		DATE
11037	SP3	4-15-13
SCALE H: 1"=20'	V: n/a	SHEET 8 of 21

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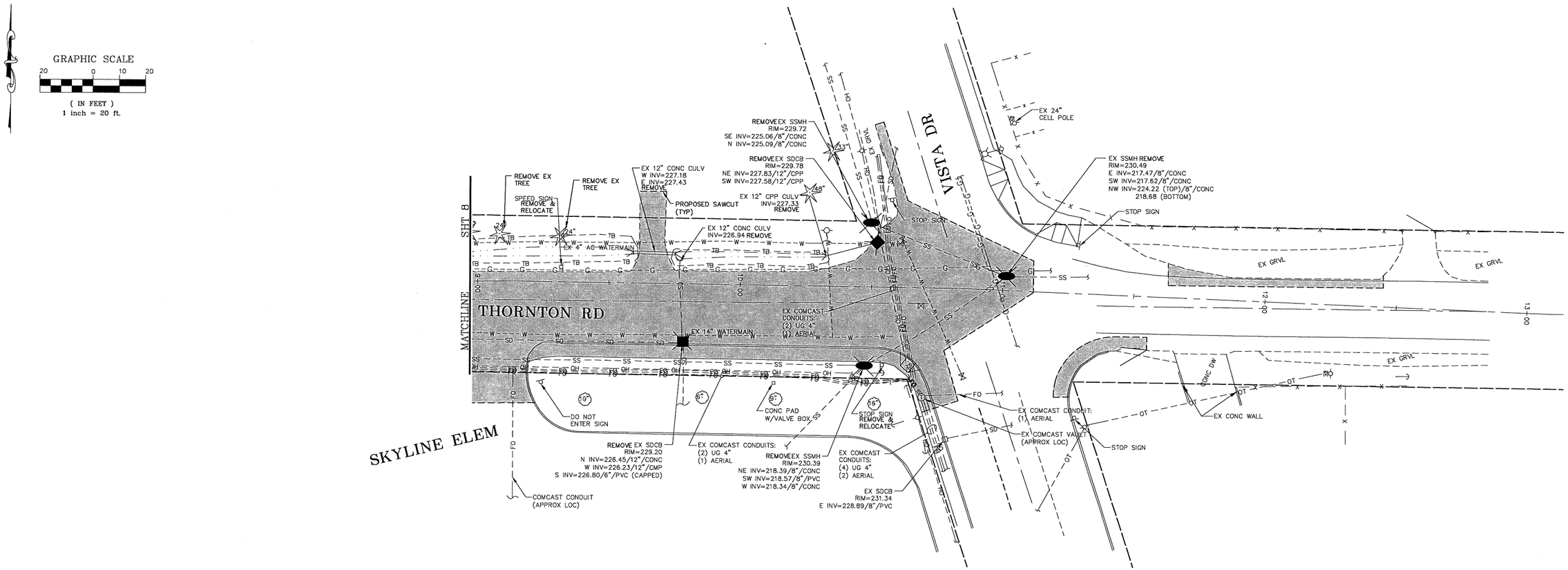

DESIGNED BY LP DRAWN BY LMC CHECKED BY LP	R&E Reichhardt & Ebe ENGINEERING INC 423 Front St, Lynden, WA 98264 (360) 354-3687 813 Metcalf St, Sedro-Woolley, WA 98284 (360) 855-1713	NO.	DATE	REVISION	BY	CITY OF FERNDALE 2095 MAIN ST FERNDALE, WA 98248	THORNTON STREET DEMOLITION PLAN STA 9+00 TO 13+00	JOB# / DWG 11037 SP3 SCALE H: 1"=20' V: n/a DATE 4-15-13 SHEET 9 of 21

4/15/13

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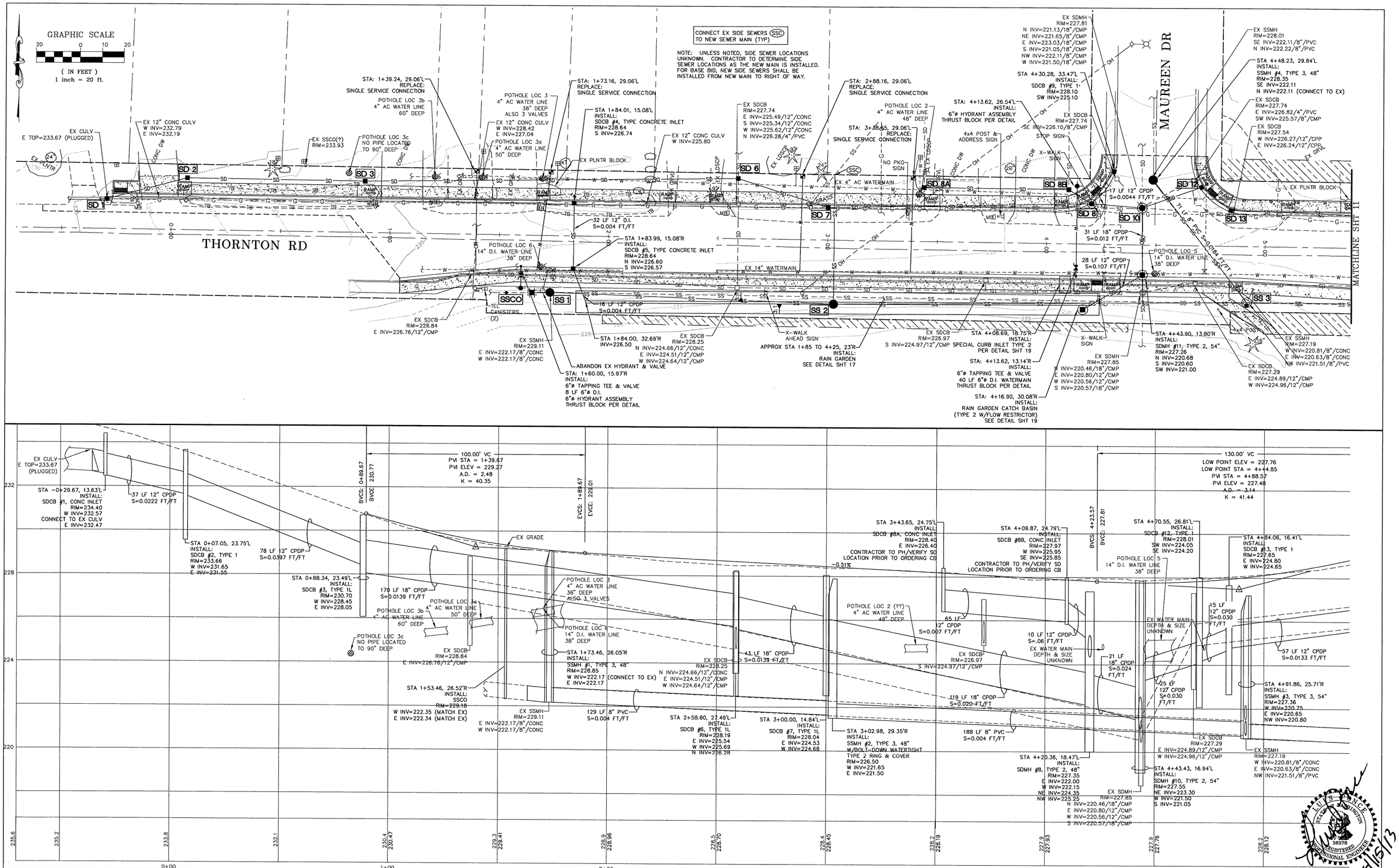

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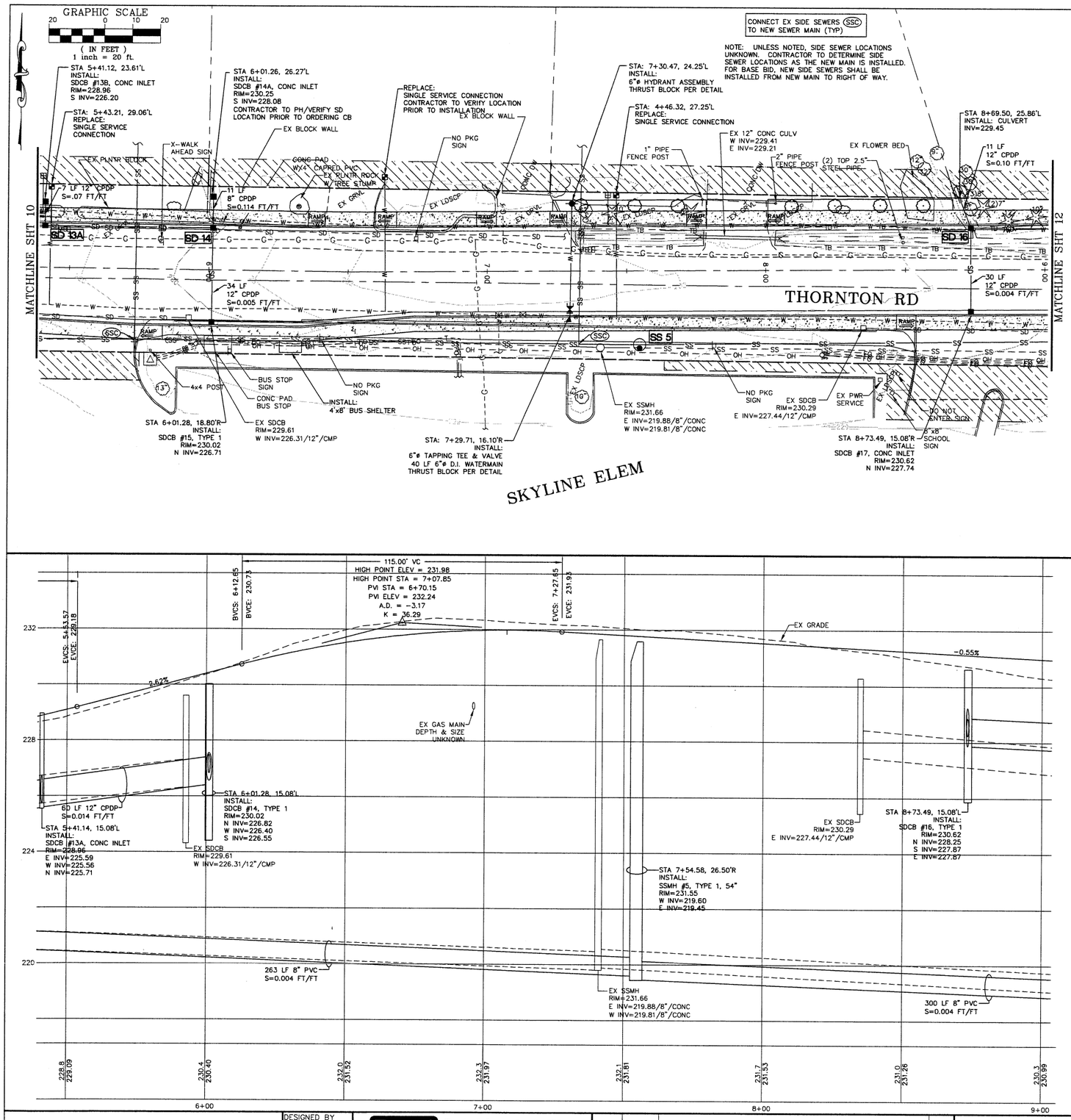

DESIGNED BY LP DRAWN BY LMC CHECKED BY LP	R&E Reichhardt & Ebe ENGINEERING INC 423 Front St., Lynden, WA 98264 (360) 354-3687 813 Metcalf St., Sedro-Woolley, WA 98284 (360) 855-1713	NO.	DATE	REVISION	BY	CITY OF FERNDALE 2095 MAIN ST FERNDALE, WA 98248	THORNTON STREET PLAN AND PROFILE STA 5+39 TO 9+00

JOB# / DWG: 11037 SP3
DATE: 4-15-13
SCALE: H: 1"=20' V: 1"=2'
SHEET: 11 of 21

LUIS BONCE
STATE OF WASHINGTON
38376
REGISTERED PROFESSIONAL ENGINEER
4/15/13

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

STA: 10+32.37, 23.75'L
INSTALL:
6"ø HYDRANT ASSEMBLY
THRUST BLOCK PER DETAIL

REMOVE EX HYDRANT & VALVE

STA: 10+33.26, 11.61'L
INSTALL:
(1) 6"ø COUPLER OR FITTINGS AS REQUIRED
10 LF 6"ø D.I.

STA 9+56.01, 24.34'L
INSTALL:
SDCB #18A, TYPE DRIVEWAY
CATCHBASIN
RIM=229.55
E INV=228.05

STA 9+97.51, 15.08'L
INSTALL:
SDCB #18B, TYPE DRIVEWAY
CATCHBASIN
RIM=228.87
W INV=227.37
S INV=227.37

EX SSMH
RIM=229.72
SE INV=225.06/8"/CONC
N INV=225.09/8"/CONC

EX SDCB
RIM=229.73
NE INV=227.83/12"/CPP
SW INV=227.58/12"/CPP

EX 12" CONC CULV
W INV=227.18
E INV=227.43

POTHOLE LOC 1
4" AC WATER LINE
34" DEEP

SPEED SIGN

EX 12" CPP CULV
INV=227.33

EX 12" CPDP
INV=226.14

9 LF 8" CPDP
S=.0075 FT/FT

41 LF 6" CPDP
S=.016

EX 4" AC WATER

SD 18 SD 19 SD 20 SD 21

STOP SIGN

80 LF 6" PVC
S=.0012 FT/FT

EX 14" WATERMAIN

EX 10" WATERMAIN

SS 7 SS 6

POTHOLE LOC 4
14" D.I. WATER LINE
48" DEEP

EX COMCAST
CONDUITS:
(2) UG 4"
(1) AERIAL

39 LF 12" DPP
S=.0054 FT/FT

EX 14" WATERMAIN

MATCHLINE SHT 11

STA 9+78.81, 26.08'R
INSTALL:
SDCB #22, TYPE 1
RIM=229.81
E INV=226.80
S INV=226.80
CONNECT TO EXISTING

DO NOT
ENTER SIGN

EX SDCB
RIM=229.20
N INV=226.45/12"/CONC
W INV=226.23/12"/CMP
S INV=226.80/6"/PVC (CAPPED)

COMCAST CONDUIT
(APPROX LOC)

48 LF 12" CPDP
S=.0051 FT/FT

CONC PAD
W/VALVE BOX

STOP SIGN

EX COMCAST CONDUITS:
(2) UG 4"
(1) AERIAL

EX SSMH
RIM=230.39
NE INV=218.39/8"/CONC
SW INV=218.57/8"/PVC
W INV=218.34/8"/CONC

EX COMCAST
CONDUITS:
(4) UG 4"
(2) AERIAL

EX SDCB
RIM=231.34
E INV=228.89/8"/PVC

STA 10+26.99, 26.08'R
INSTALL:
SDCB #23, TYPE 1
RIM=229.60
N INV=227.04
W INV=227.04

STA: 10+41.48, 19.36'R
INSTALL:
(1) 14" COUPLER OR FITTINGS
AS REQUIRED

STA: 10+51.36, 16.01'R
INSTALL:
(2) 14"ø 45° BENDS, MJxMJ
34 LF 14"ø D.I.
THRUST BLOCK PER DETAIL

STA: 10+80.84, 42.95'R
INSTALL:
36 LF 10" D.I.
(1) 10" COUPLER OR FITTINGS
AS REQUIRED

STA: 10+54.11, 46.38'L
INSTALL:
56 LF 10" D.I.
(1) 10" COUPLER OR FITTINGS
AS REQUIRED

STA 10+47.67, 31.50'L
INSTALL:
SSMH #8, TYPE 3, 48"
RIM=230.86
SE INV=225.09
NW INV=225.19 (CONNECT TO EX)

EX 24"
CELL POLE

STA: 10+94.80, 14.48'L
INSTALL:
(1) 14" COUPLER OR FITTINGS
AS REQUIRED

EX SSMH
RIM=230.49
E INV=217.47/8"/CONC
SW INV=217.62/8"/CONC
NW INV=224.22 (TOP)/8"/CONC
218.68 (BOTTOM)

STOP SIGN

CONNECT EX SIDE SEWERS (SSC)
TO NEW SEWER MAIN (TYP)

NOTE: UNLESS NOTED, SIDE SEWER LOCATIONS UNKNOWN. CONTRACTOR TO DETERMINE SIDE SEWER LOCATIONS AS THE NEW MAIN IS INSTALLED. FOR BASE BID, NEW SIDE SEWERS SHALL BE INSTALLED FROM NEW MAIN TO RIGHT OF WAY.

EX GRVL

THORNTON RD

CONC DIV

EX CONC WALL

STA: 10+81.89, 0.41'R
INSTALL:
(1) 14"ø 45° BEND, MJxMJ
(1) 14"ø 22.5° BEND, MJxMJ
35 LF 14"ø D.I.
THRUST BLOCKS PER DETAIL

EX COMCAST CONDUIT:
(1) AERIAL

EX COMCAST VAULT
(APPROX LOC)

STOP SIGN

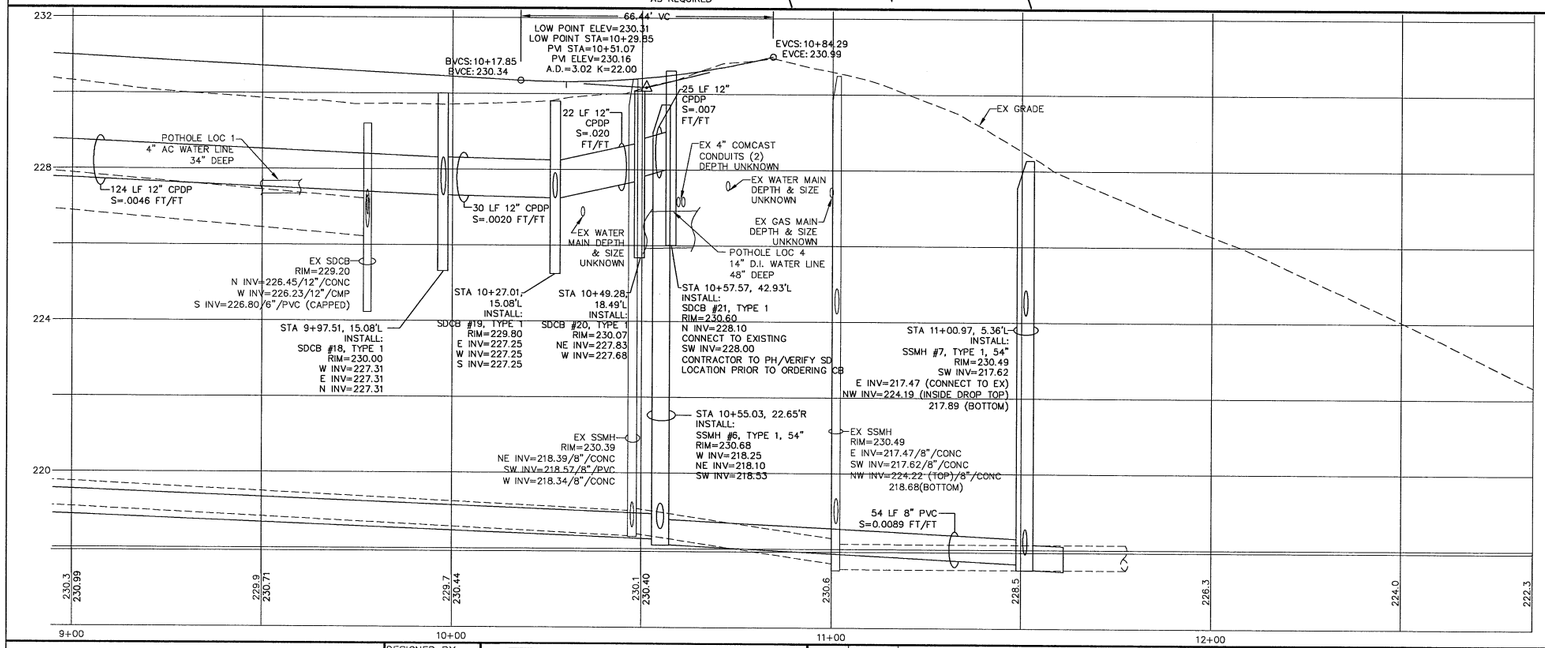
CONTRACTOR MUST VERIFY EXISTING WATERMAIN LAYOUT AT VISTA AND THORNTON INTERSECTION 5 WORKING DAYS PRIOR TO BEGINNING WORK AT THIS LOCATION. MATERIALS SHALL NOT BE ORDERED UNTIL EXISTING LAYOUT HAS BEEN VERIFIED.

STA: 10+70.30, 7.78'R
INSTALL:
(1) 14"x10" CROSS, FLxFL
(1) 14" GV, FLxMJ
(2) 10" GV, FLxMJ
THRUST BLOCKS PER DETAIL

VISTA DR

EX 10" WATERMAIN

SKYLINE ELEM



DESIGNED BY	DRAWN BY	CHECKED BY
LP	LMC	LP

R&E Reichhardt & Ebe ENGINEERING INC
423 Front St., Lynden, WA 98264 (360) 354-3687
813 Metcalf St., Sedro-Woolley, WA 98284 (360) 855-1713

NO.	DATE	REVISION	BY

CITY OF FERNDALE
2095 MAIN ST
FERNDALE, WA 98248

THORNTON STREET
PLAN AND PROFILE
STA 9+00 TO 13+00

JOB# / DWG		DATE
11037	SP3	4-15-13
SCALE H: 1"=20'	V: 1"=2'	SHEET 12 of 21

LUKE PONDLE
STATE OF WASHINGTON
38378
REGISTERED PROFESSIONAL ENGINEER
4/15/13

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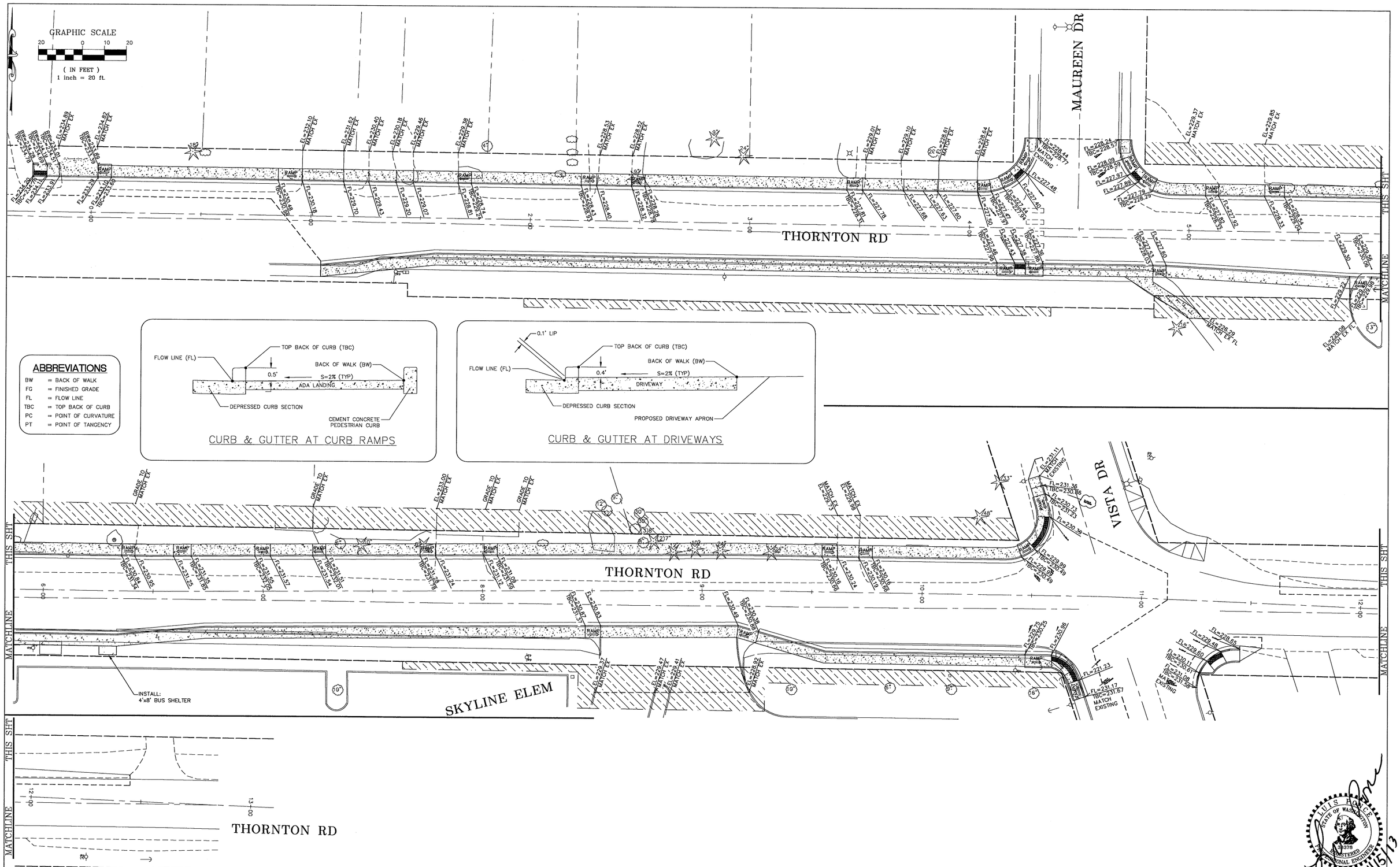

ABBREVIATIONS

BW	=	BACK OF WALK
FG	=	FINISHED GRADE
FL	=	FLOW LINE
TBC	=	TOP BACK OF CURB
PC	=	POINT OF CURVATURE
PT	=	POINT OF TANGENCY

DESIGNED BY LP	R&E Reichardt & Ebe ENGINEERING INC			CITY OF FERNDALE	THORNTON STREET	JOB# / DWG 11037 SP3	DATE 4-15-13
DRAWN BY LMC	423 Front St., Lynden, WA 98264 (360) 354-3687	NO.	DATE	2095 MAIN ST	GRADING PLAN	SCALE H: 1"=20' V: n/a	SHEET 13 of 21
CHECKED BY LP	813 Metcalf St., Sedro-Woolley, WA 98284 (360) 855-1713		REVISION	FERNDALE, WA 98248			

LUIS POMCE STATE OF WASHINGTON 39378 REGISTERED PROFESSIONAL ENGINEER 4/15/13

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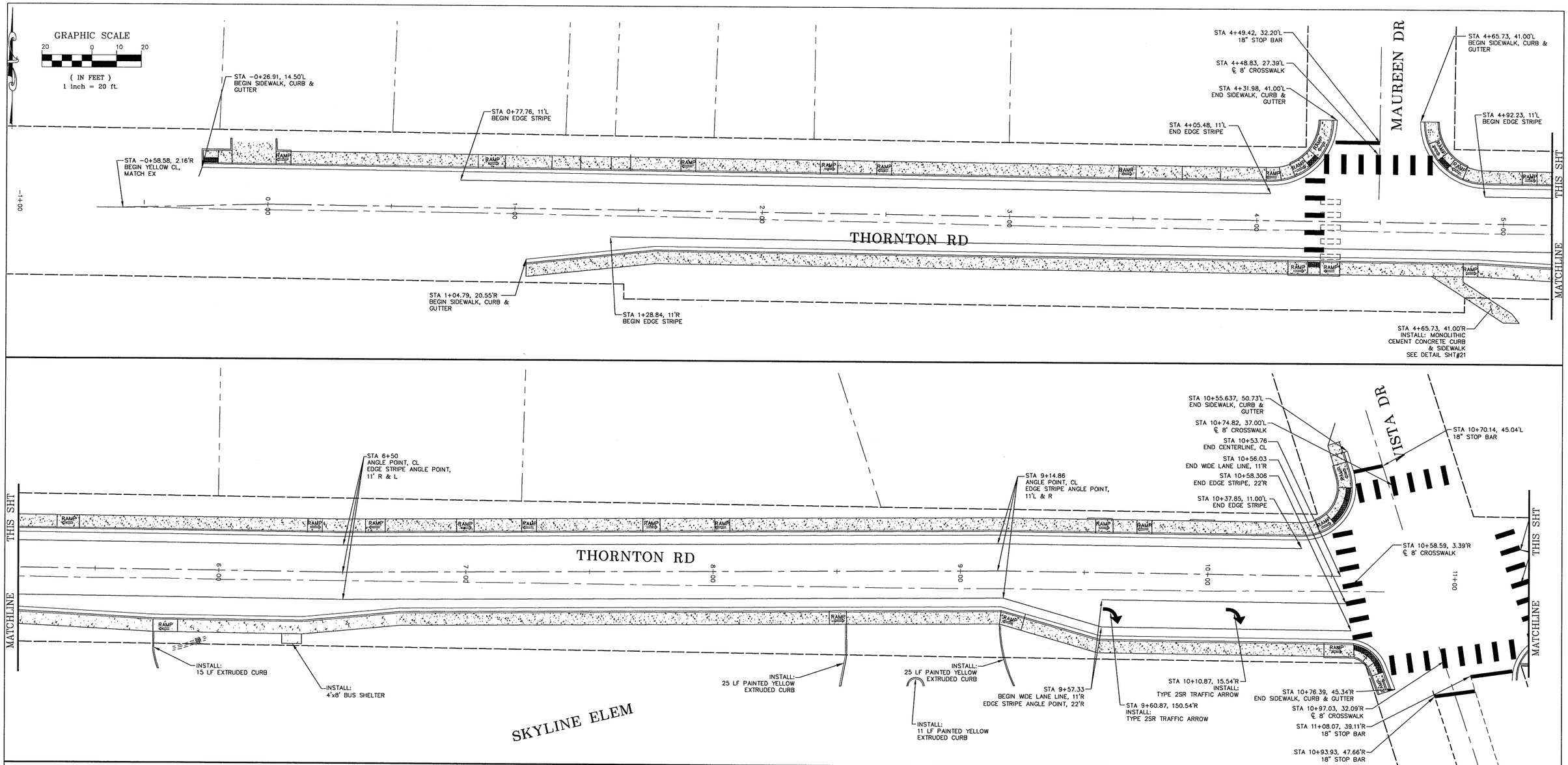

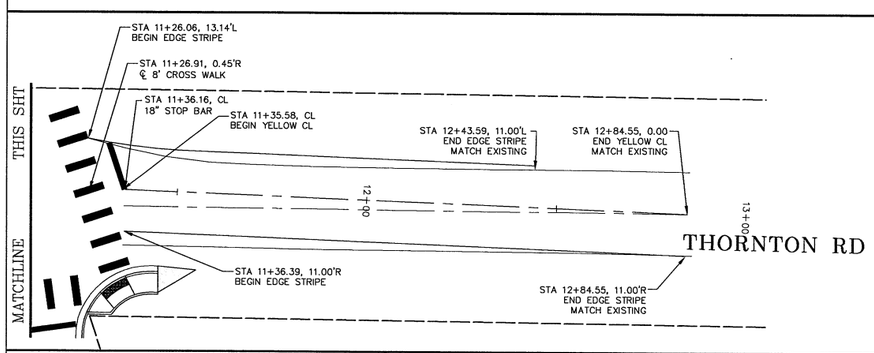

STATE OF WASHINGTON
LUCAS PHANCE
38376
REGISTERED
PROFESSIONAL ENGINEER
4/15/13

DESIGNED BY LP	R&E Reichhardt & Ebe ENGINEERING INC				CITY OF FERNDALE	THORNTON STREET	JOB# / DWG 11037 SP3	DATE 4-15-13
DRAWN BY LMC	423 Front St., Lynden, WA 98264 (360) 354-3687	NO.	DATE	REVISION	2095 MAIN ST	CHANNELIZATION PLAN	SCALE H: 1"=20' V: n/a	SHEET 14 of 21
CHECKED BY LP	813 Metcalf St., Sedro-Woolley, WA 98284 (360) 855-1713			BY	FERNDALE, WA 98248			

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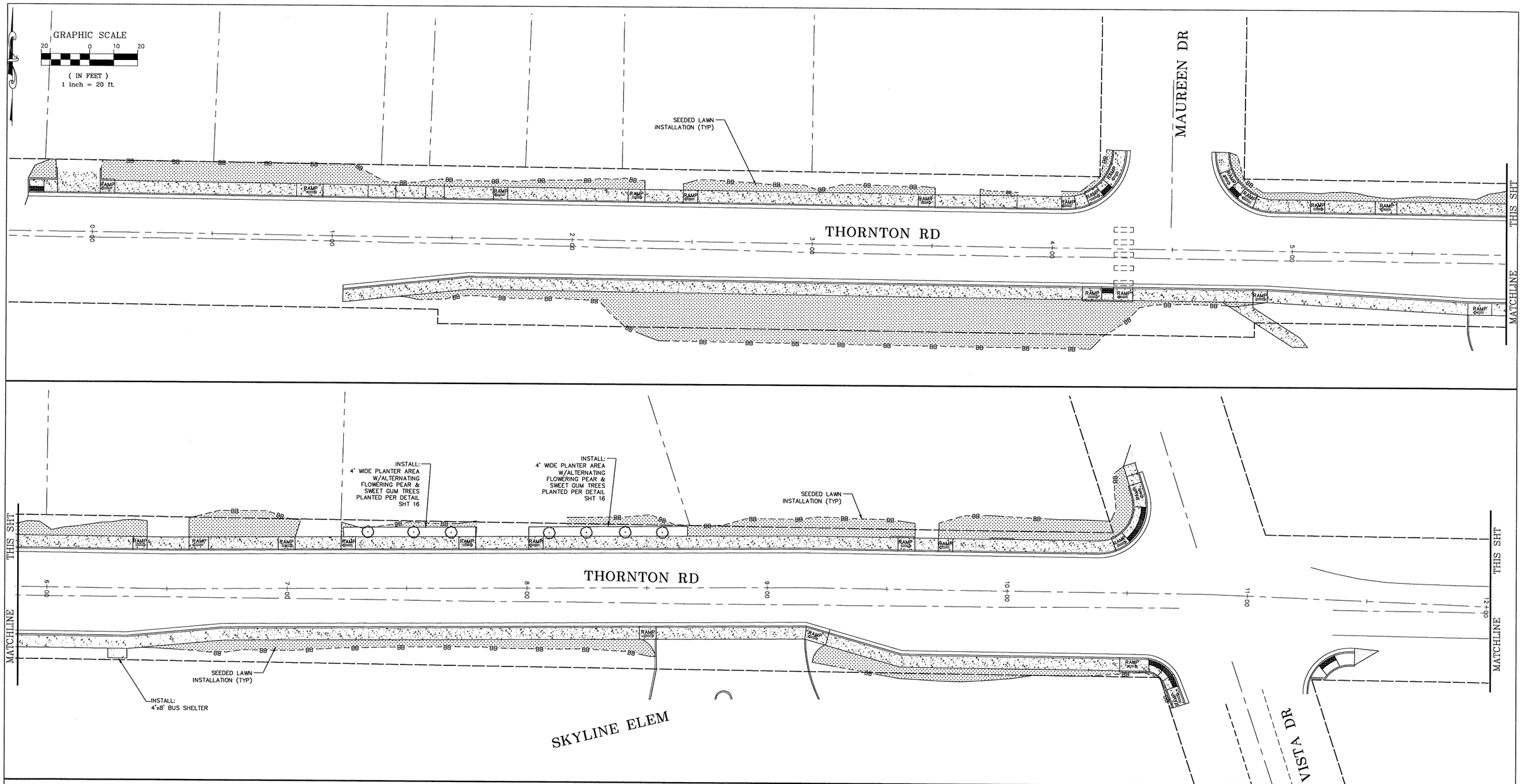

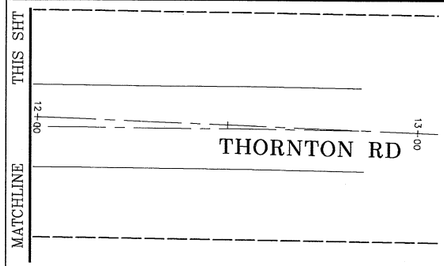

4/15/13

DESIGNED BY LP DRAWN BY LMC CHECKED BY LP	**R&E Reichhardt & Ebe ENGINEERING INC** 423 Front St., Lynden, WA 98264 (360) 354-3687 813 Metcalf St., Sedro-Woolley, WA 98284 (360) 855-1713	NO.	DATE	REVISION	BY	CITY OF FERNDALE 2095 MAIN ST FERNDALE, WA 98248	THORNTON STREET LANDSCAPE PLAN

JOB# / DWG		DATE
11037	SP3	4-15-13
SCALE H: 1"=20'	V: n/a	SHEET 15 of 21

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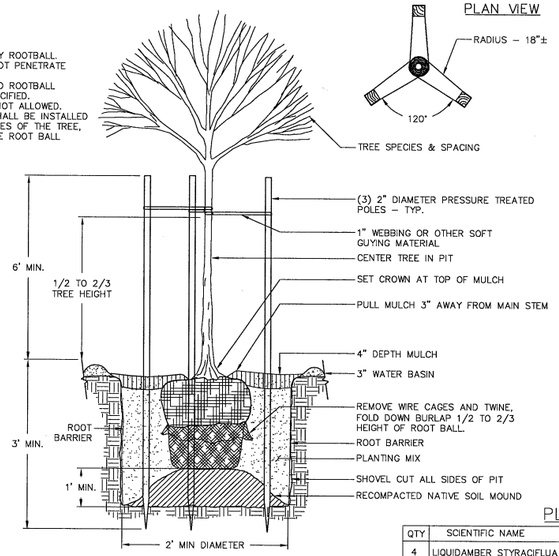
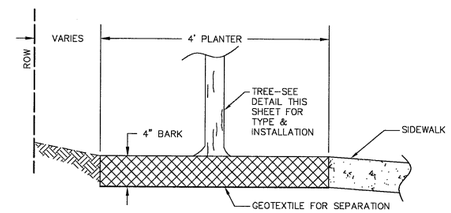
NOTES:
1. HANDLE TREES BY ROOTBALL.
2. STAKES SHALL NOT PENETRATE ROOT BALL.
3. AVOID DAMAGE TO ROOTBALL
4. FERTILIZE AS SPECIFIED.
5. WIRE GUYING IS NOT ALLOWED.
6. ROOT BARRIER SHALL BE INSTALLED ON ALL FOUR SIDES OF THE TREE, SURROUNDING THE ROOT BALL



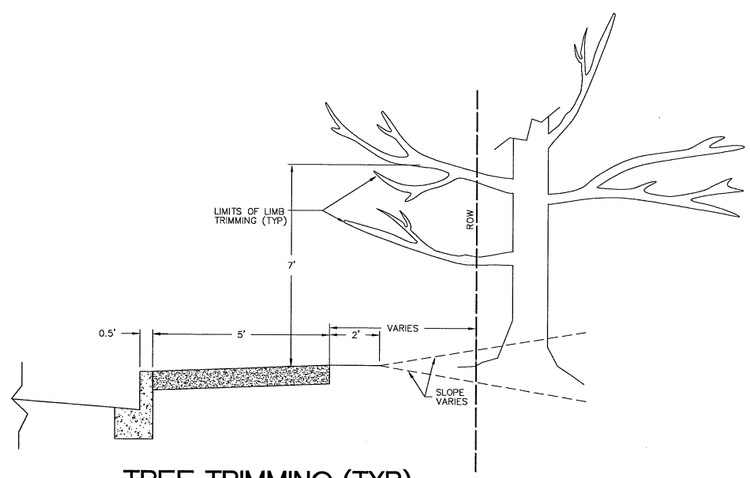
PLANT LIST

QTY	SCIENTIFIC NAME	COMMON NAME	SIZE
4	LIQUIDAMBER STYRACIFLUA	SWEET GUM	15 GAL, 1" TRUNK, 8' TALL
3	PYRUS CALLERYANA	CALLERY 'BRADFORD' FLOWERING PEAR	15 GAL, 1" TRUNK, 8' TALL

TREE PLANTING DETAIL
STA 7+24(LT) TO 8+67(LT)
NTS



PLANTING DETAIL
STA 7+24 LT TO 8+67 LT
NTS



TREE TRIMMING (TYP)
NTS

4/18/13

DESIGNED BY LP DRAWN BY LMC CHECKED BY LP	R&E Reichhardt & Ebe ENGINEERING INC 423 Front St, Lynden, WA 98264 (360) 354-3687 813 Metcalf St, Sedro-Woolley, WA 98284 (360) 855-1713	NO.	DATE	REVISION	BY	CITY OF FERNDALE 2095 MAIN ST FERNDALE, WA 98248	THORNTON STREET LANDSCAPE PLAN DETAILS	JOB# / DWG 11037 SP3 SCALE H: n/a V: n/a	DATE 4–15–13 SHEET 16 of 21

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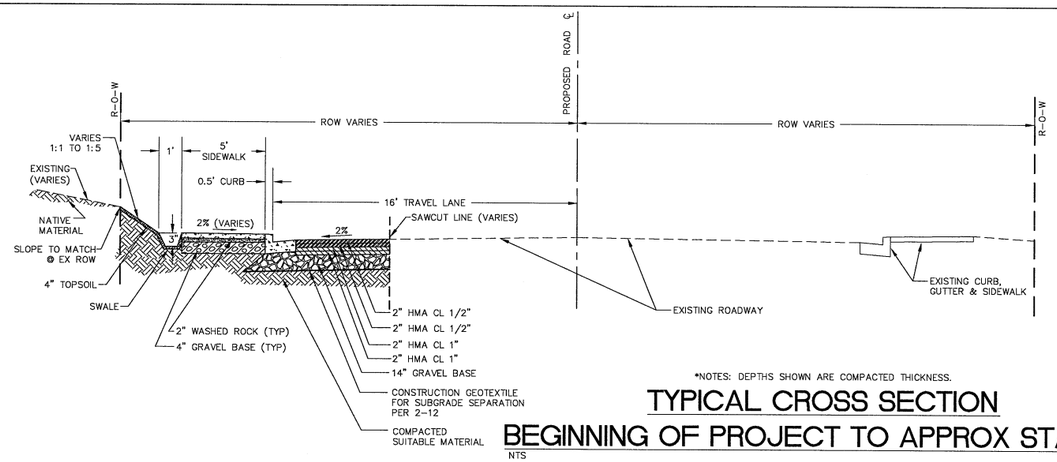
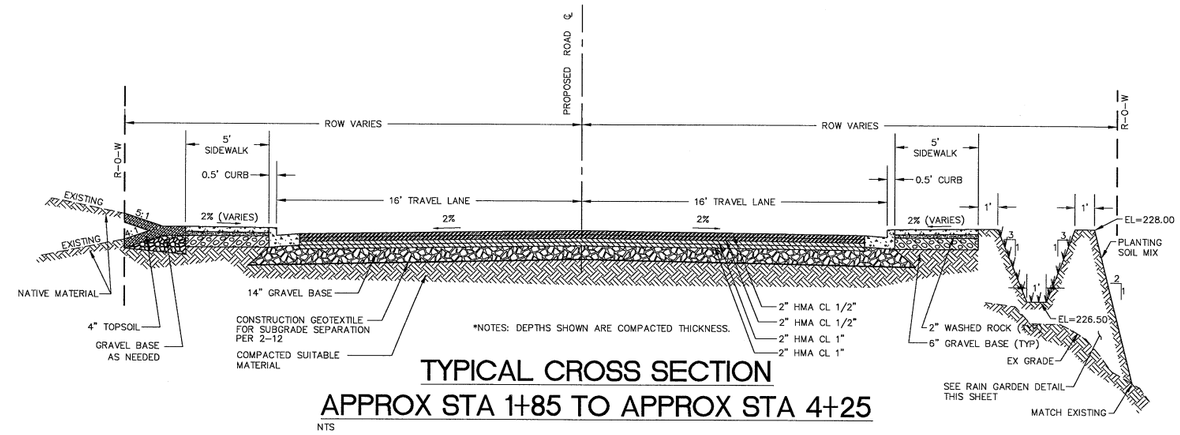


*NOTES: DEPTHS SHOWN ARE COMPACTED THICKNESS.

TYPICAL CROSS SECTION
BEGINNING OF PROJECT TO APPROX STA 1+04

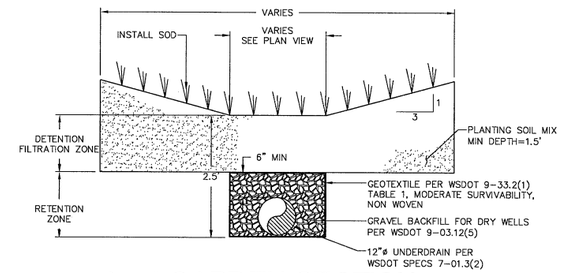
NTS



*NOTES: DEPTHS SHOWN ARE COMPACTED THICKNESS.

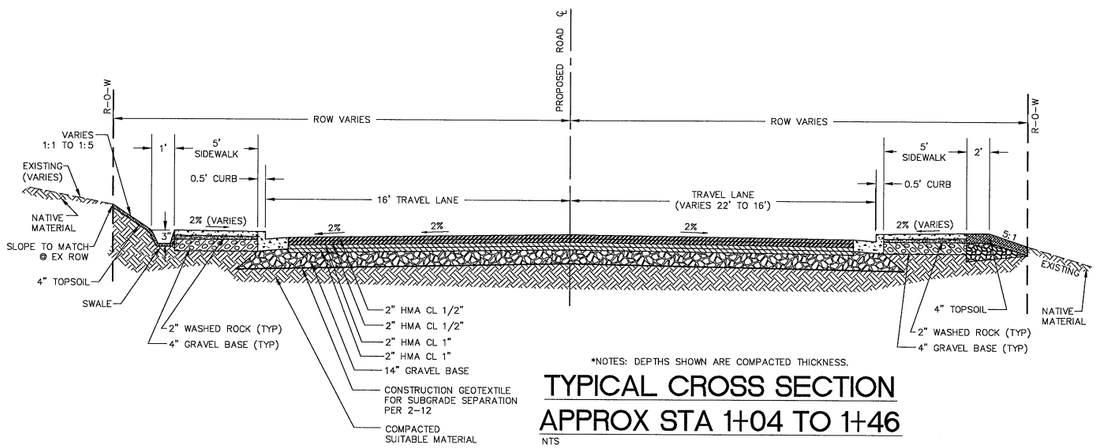
TYPICAL CROSS SECTION
APPROX STA 1+85 TO APPROX STA 4+25

NTS



RAIN GARDEN SECTION

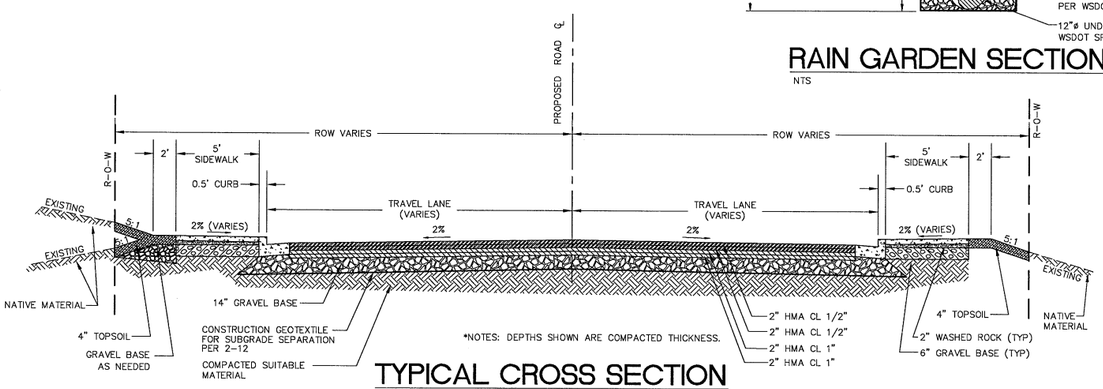
NTS



*NOTES: DEPTHS SHOWN ARE COMPACTED THICKNESS.

TYPICAL CROSS SECTION
APPROX STA 1+04 TO 1+46

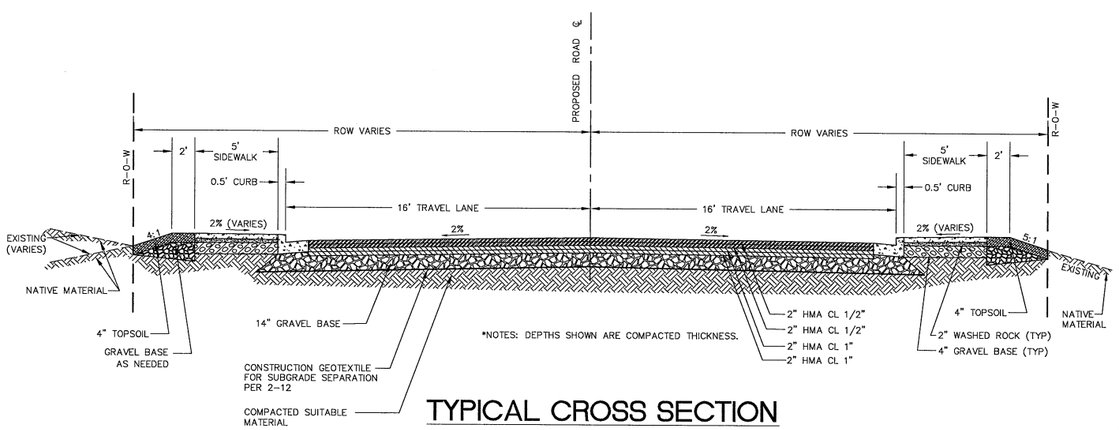
NTS



*NOTES: DEPTHS SHOWN ARE COMPACTED THICKNESS.

TYPICAL CROSS SECTION
APPROX STA 4+25 TO END OF PROJECT

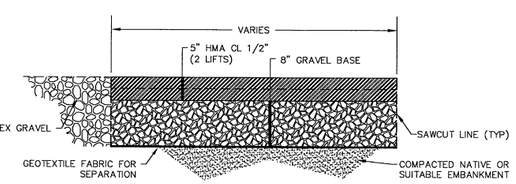
NTS



*NOTES: DEPTHS SHOWN ARE COMPACTED THICKNESS.

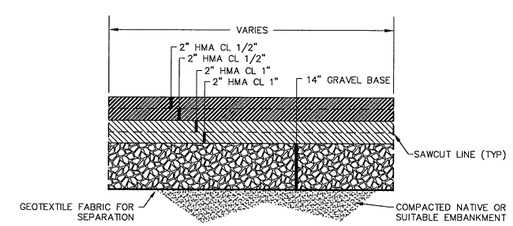
TYPICAL CROSS SECTION
APPROX STA 1+46 TO APPROX STA 1+85

NTS



ROADWAY WIDENING SECTION
APPROX STA 11+62 TO APPROX STA 12+45

NTS



ROADWAY SECTION
VISTA/THORNTON INTERSECTION

NTS

LUKE PRICE
STATE OF WASHINGTON
18378
REGISTERED PROFESSIONAL ENGINEER
4/15/13

DESIGNED BY LP DRAWN BY LMC CHECKED BY LP	R&E Reichhardt & Ebe ENGINEERING INC 423 Front St., Lynden, WA 98264 (360) 354-3687 813 Metcalf St., Sedro-Woolley, WA 98284 (360) 855-1713	NO.	DATE	REVISION	BY	CITY OF FERNDALE 2095 MAIN ST FERNDALE, WA 98248

THORNTON STREET
TYPICAL SECTIONS

JOB# / DWG		DATE
11037	DET	4-15-13
SCALE H: n/a	V: n/a	SHEET 17 of 21

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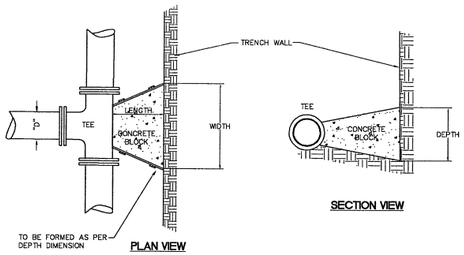
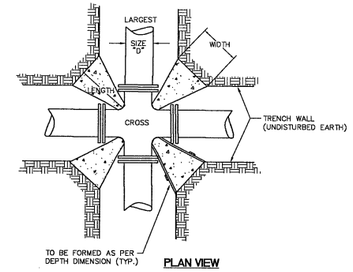


"D"	WIDTH	DEPTH	LENGTH	VOL.
6"	1'-6"	1'-6"	12"	3.0
8"	2'-0"	2'-0"	12"	4.5
10"	2'-6"	2'-6"	12"	7.0
12"	3'-0"	3'-0"	18"	14.0

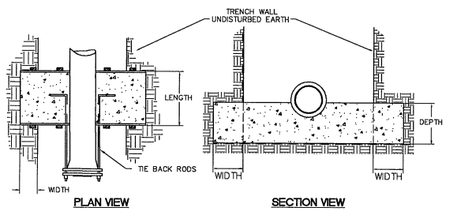
VOL. = Approx. Volume of Blocking Material Required in cu. ft.

SOIL BEARING CAPACITY 1500 PSF MINIMUM
100 P.S.I. OPERATING PRESSURE



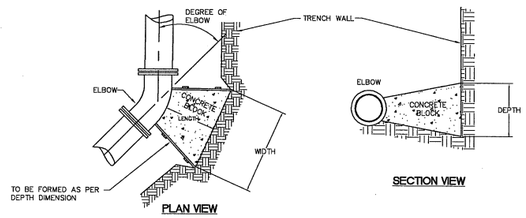
"D"	WIDTH	DEPTH	LENGTH	VOL.	X4 blocks/joint
6"	1'-0"	1'-0"	12"	0.63	2.50 cu ft
8"	1'-3"	1'-3"	12"	1.00	4.01 cu ft
10"	1'-6"	1'-6"	12"	1.63	6.50 cu ft
12"	1'-9"	1'-9"	18"	3.05	12.19 cu ft

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



"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	5/8"
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

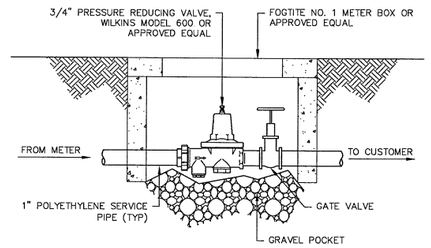


SIZE	LENGTH	11 1/4°			22 1/2°			45°			90°		
		WIDTH	DEPTH	VOL.	WIDTH	DEPTH	VOL.	WIDTH	DEPTH	VOL.	WIDTH	DEPTH	VOL.
6"	12"	1'-0"	1'-0"	0.63	1'-0"	1'-0"	0.63	1'-6"	1'-6"	1.25	2'-3"	1'-6"	1.88
8"	12"	1'-3"	1'-3"	1.00	1'-3"	1'-3"	1.00	1'-9"	1'-9"	1.75	3'-0"	2'-0"	3.33
10"	12"	1'-9	1'-6"	1.72	1'-9"	1'-6"	1.72	2'-3"	2'-3"	2.88	3'-6"	2'-6"	4.861
12"	18"	2'-0"	1'-9"	3.48	2'-0"	1'-9"	3.48	2'-9"	2'-6"	5.98	4'-0"	3'-0"	10.00

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

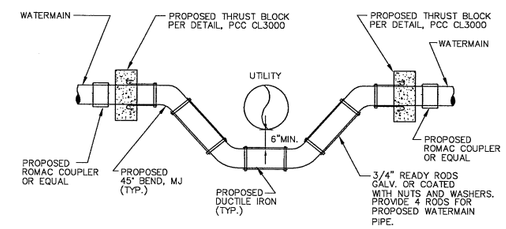
THRUST BLOCKING

NTS



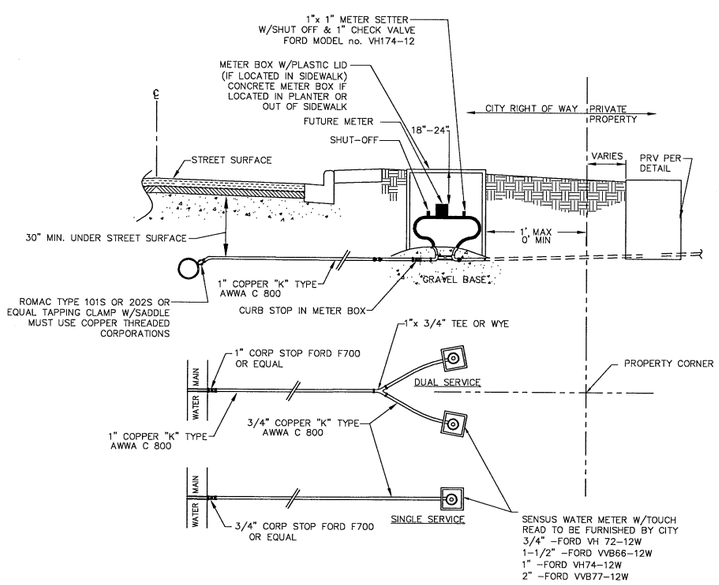
PRV DETAIL

NTS



WATERMAIN STOVEPIPE

NTS

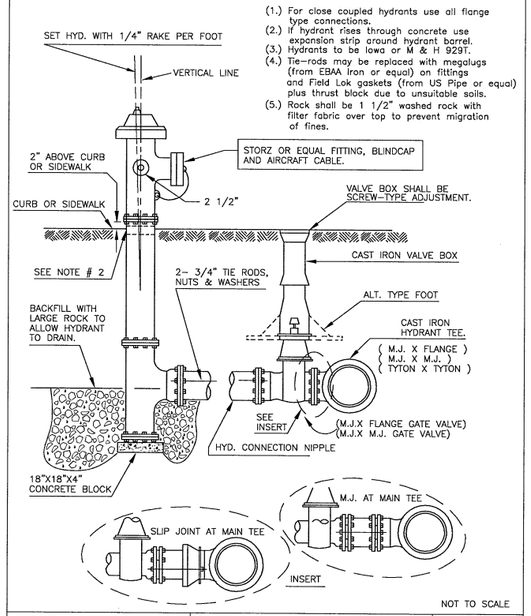


WATER SERVICE CONNECTION DETAIL

NTS

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 929T.
(4.) Tie-rods may be replaced with megalugs (from EBAA 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.



NOT TO SCALE

APPROVED		CITY OF FERNDALE	DRAWING
Public Works Director	Date	FIRE HYDRANT ASSEMBLY	W-1

JULY 2001

DESIGNED BY LP	R&E Reichhardt & Ebe ENGINEERING INC				CITY OF FERNDALE 2095 MAIN ST FERNDALE, WA 98248	THORNTON STREET WATER DETAIL SHEET	JOB# / DWG 11037 DET	DATE 4-15-13
DRAWN BY LMC	423 Front St, Lynden, WA 98264 (360) 354-3687						SCALE H: n/a V: n/a	SHEET 18 of 21
CHECKED BY LP	813 Metcalf St., Sedro-Woolley, WA 98284 (360) 855-1713	NO.	DATE	REVISION	BY			

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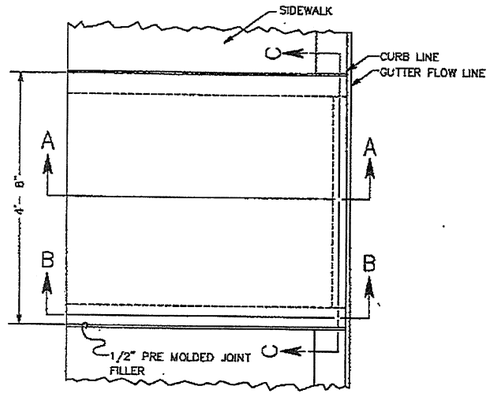
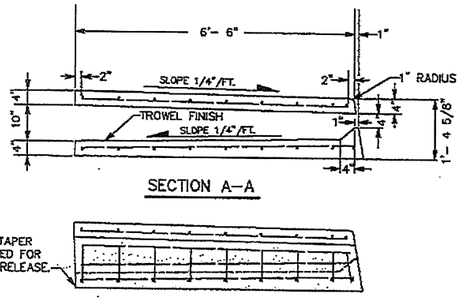


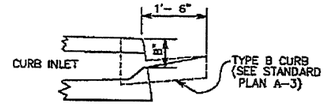
PLAN



SECTION A-A

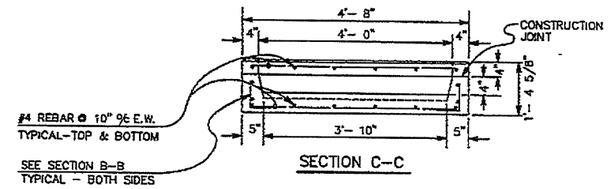
SECTION B-B
REBAR PLACEMENT

CURB INLET

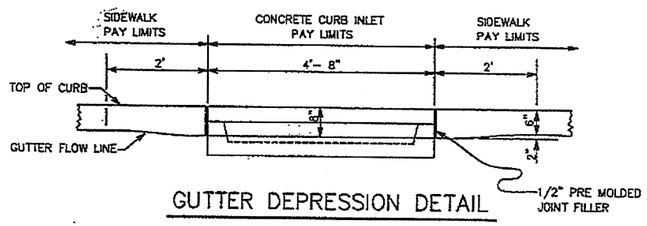


GENERAL NOTES

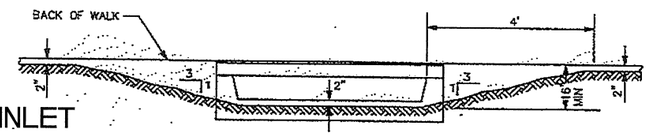
1. CURB INLET SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C 478 (AASHTO M 199) & ASTM C 890 UNLESS OTHERWISE SHOWN ON PLANS OR NOTED IN THE PROJECT SPECIAL PROVISIONS.
2. TOP SURFACE TO BE BROOM FINISHED.
3. ALL EXTERNAL EDGES NOT LABELED SHALL BE TROWELLED WITH 1/4" RADIUS EDGER.



SECTION C-C



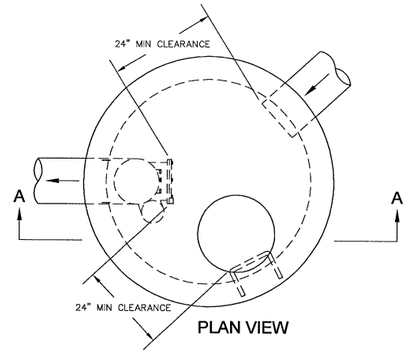
GUTTER DEPRESSION DETAIL



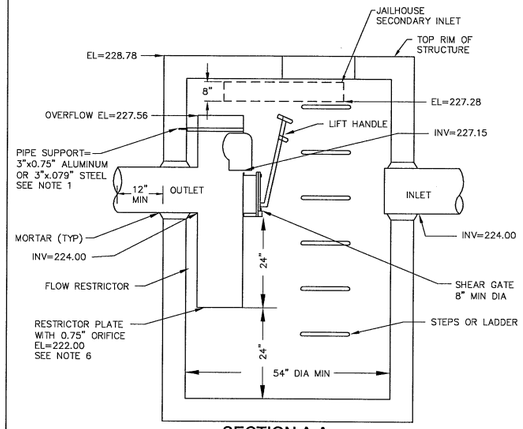
OUTLET SWALE GRADING DETAIL

SPECIAL CURB INLET TYPE 2

NTS



PLAN VIEW



SECTION A-A

NOTES:

1. PIPE SUPPORTS AND FLOW RESTRICTOR SHALL BE CONSTRUCTED OF THE SAME MATERIAL AND BE ANCHORED AT A MAXIMUM SPACING OF 36". ATTACH PIPE SUPPORTS TO MANHOLE WITH 5/8" STAINLESS STEEL EXPANSION BOLTS OR EMBED SUPPORTS INTO MANHOLE WALL 2".

2. THE VERTICAL RISER STEM OF THE FLOW RESTRICTOR SHALL BE THE SAME DIAMETER AS THE HORIZONTAL OUTLET PIPE WITH A MINIMUM DIAMETER OF 8".

3. THE FLOW RESTRICTOR SHALL BE FABRICATED FROM ONE OF THE FOLLOWING MATERIALS:
0.60" CORRUGATED ALUMINUM ALLOY DRAIN PIPE
0.64" CORRUGATED GALVANIZED STEEL DRAIN PIPE WITH TREATMENT 1.
0.64" CORRUGATED ALUMINIZED STEEL DRAIN PIPE.
0.60" ALUMINUM ALLOY FLAT SHEET, IN ACCORDANCE WITH ASTM B 209, 5052 H32 OR EPS HIGH DENSITY POLYETHYLENE STORM SEWER PIPE.

4. FRAME AND LADDER OR STEPS ARE TO BE OFFSET SO THAT: SHEAR GATE IS VISIBLE FROM THE TOP; CLIMB-DOWN SPACE IS CLEAR OF RISER AND GATE; FRAME IS CLEAR OF CURB.

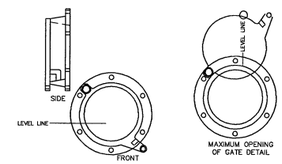
5. MULTI-ORIFICE ELBOWS MAY BE LOCATED AS SHOWN OR ALL ON ONE SIDE OF RISER TO ASSURE LADDER CLEARANCE. SIZE OF ELBOWS AND PLACEMENT TO BE SPECIFIED IN THE CONTRACT.

6. RESTRICTOR PLATE WITH ORIFICE AS SPECIFIED IN THE CONTRACT. OPENING IS TO BE CUT ROUND AND SMOOTH.

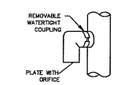
7. SHEAR GATE SHALL BE MADE OF ALUMINUM ALLOY IN ACCORDANCE WITH ASTM B 26 AND ASTM B 275, DESIGNATION ZG32A OR CAST IRON IN ACCORDANCE WITH ASTM A 48, CLASS 30B. LIFT HANDLE SHALL BE MADE OF A SMILIAR METAL TO THE GATE (TO PREVENT GALVANIC CORROSION). IT MAY BE OF SOLID ROD OR HOLLOW TUBING WITH ADJUSTABLE HOOK AS REQUIRED. MATING SURFACES OF LID AND BODY SHALL BE MACHINED FOR PROPER FIT. ALL SHEAR GATE BOLTS SHALL BE STAINLESS STEEL.

8. SHEAR GATE MAXIMUM OPENING SHALL BE CONTROLLED BY LIMITED HINGE MOVEMENT, STOP TAB OR SOME OTHER DEVICE.

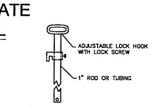
9. ALTERNATE SHEAR GATE DESIGNS ARE ACCEPTABLE, IF MATERIAL SPECIFICATIONS ARE MET AND FLANGE BOLT PATTERN MATCHES.



SHEAR GATE DETAIL



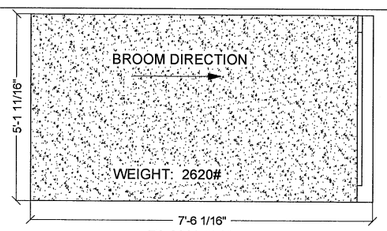
ELBOW DETAIL



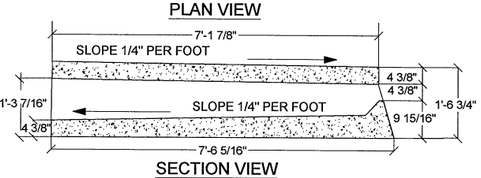
LIFT HANDLE DETAIL

CATCH BASIN TYPE 2 WITH FLOW RESTRICTOR

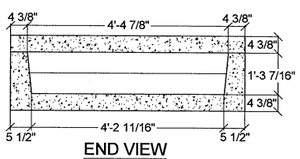
NTS



PLAN VIEW



SECTION VIEW

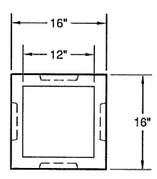


END VIEW

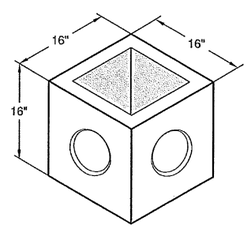
NOTES:
1. REINFORCEMENT.
#4 REBAR @ 10" O.C.E.W

SPECIAL CURB INLET TYPE 2

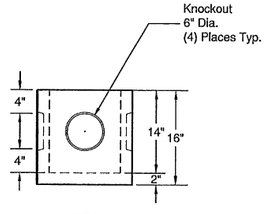
NTS



PLAN



ISO VIEW



SIDE

WEIGHT:
BASE: 200 lbs

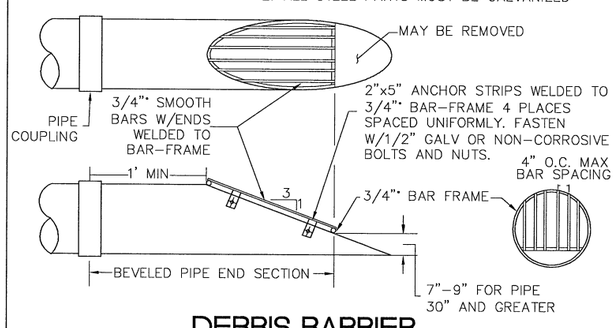
CONCRETE:
Fc= 4,000 psi @ 28 Days

PIPE PENETRATIONS:
Standard Knockouts (4)

DRIVEWAY CATCH BASIN

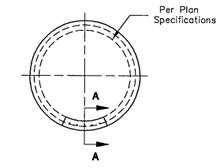
NTS

NOTES:
1. CMP OR LCPE PIPE END-SECTION SHOWN
2. ALL STEEL PARTS MUST BE GALVANIZED

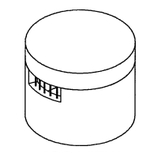


DEBRIS BARRIER

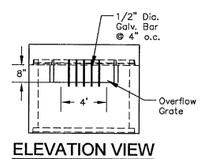
NTS



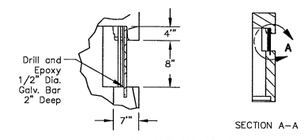
PLAN VIEW



ISO VIEW



ELEVATION VIEW



SECTION A-A

NOTES:
REINFORCING SHALL BE WELDED WIRE FABRIC: ASTM A497
REBAR ASTM A625 GRADE 60

JAILHOUSE WINDOW INLET

NTS

LUIS A. CRUZ
STATE OF WASHINGTON
28378
REGISTERED PROFESSIONAL ENGINEER
4/15/13

DESIGNED BY LP DRAWN BY LMC CHECKED BY LP	R&E Reichhardt & Ebe ENGINEERING INC 423 Front St., Lynden, WA 98264 (360) 354-3687 813 Metcalf St., Sedro-Woolley, WA 98284 (360) 855-1713	NO.	DATE	REVISION	BY	CITY OF FERNDALE 2095 MAIN ST FERNDALE, WA 98248

THORNTON STREET
STORM DRAIN DETAIL SHEET

JOB# / DWG 11037 DET
SCALE H: n/a V: n/a
DATE 4-15-13
SHEET 19 of 21

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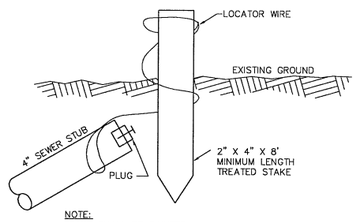
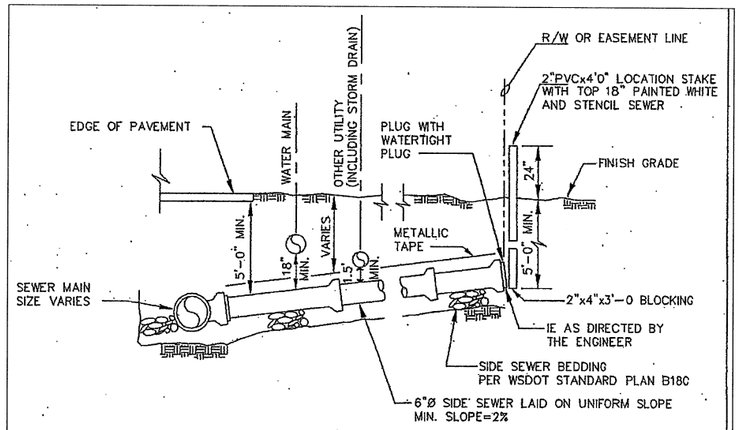


NOTE:
STAKE SHALL BE PAINTED GREEN WITH DEPTH TO INVERT LABELED IN WHITE PAINT.

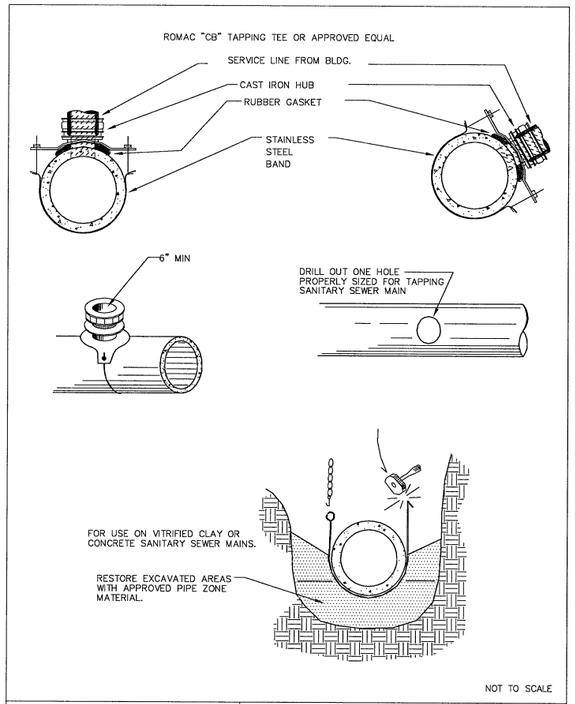
SEWER SERVICE STAKE

NTS



15" AND SMALLER SEWER INSTALLATION

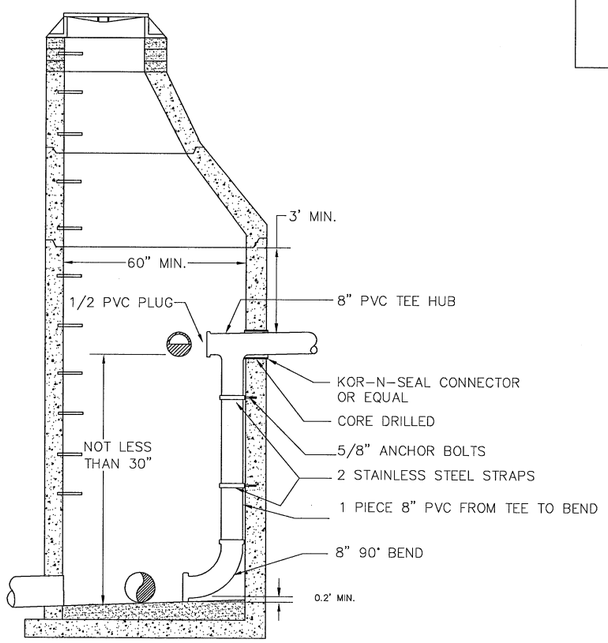
NTS



NOT TO SCALE

APPROVED	CITY OF FERNDALE SANITARY SEWER BANDED TAPPING TEE	DRAWING SS-12
Public Works Director Date		

JULY 2001

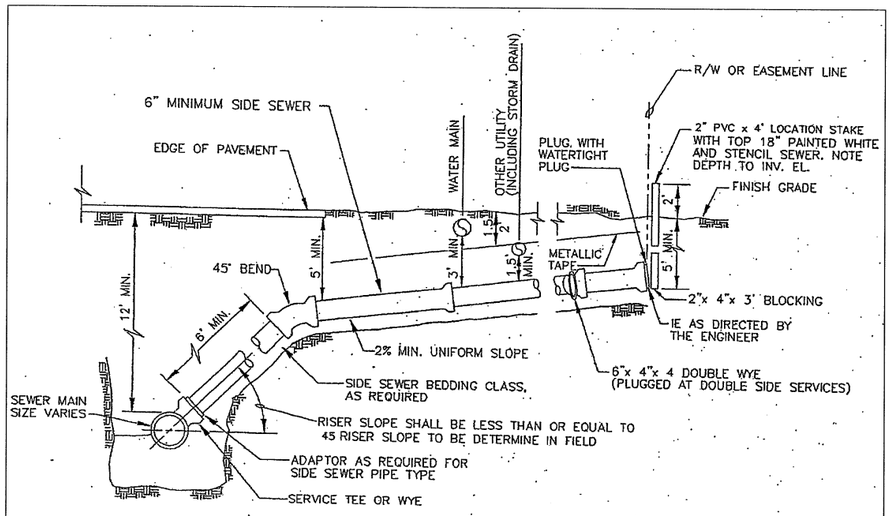


NOTES:

1. DROP TEE TO BE INSTALLED MINIMUM OF 3' BELOW CONE SECTION.
2. INSIDE DROP MANHOLE SHALL BE INSTALLED ONLY WHERE APPROVED BY THE CITY.
3. SIZE OF MANHOLE WILL INCREASE WITH LARGER DIAMETER PIPE AND SHALL BE APPROVED BY THE ENGINEER.
4. CHANNEL TO OUTLET.

INSIDE DROP SEWER MANHOLE CONNECTION

NTS



SANITARY SEWER SIDE SERVICE INSTALLATION, DEEP MAINS

NTS

4/15/13

DESIGNED BY LP	DRAWN BY LMC	CHECKED BY LP	R&E Reichhardt & Ebe ENGINEERING INC 423 Front St., Lynden, WA 98264 (360) 354-3687 813 Metcalf St., Sedro-Woolley, WA 98284 (360) 855-1713	NO.	DATE	REVISION	BY	CITY OF FERNDALE 2095 MAIN ST FERNDALE, WA 98248	THORNTON STREET SEWER DETAIL SHEET	JOB# / DWG 11037 DET	DATE 4-15-13	SCALE H: n/a V: n/a	SHEET 20 of 21

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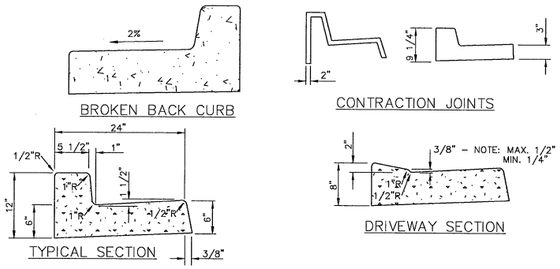
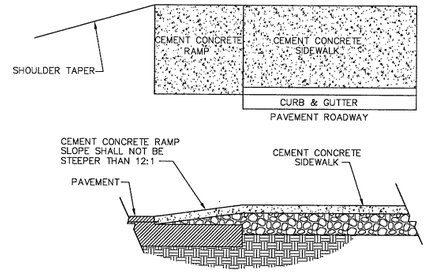


NOTES:
CONTRACTION JOINTS OF ONE OF THE TYPES SHOWN ABOVE TO BE PLACED 10' C/C. JOINTS COMPLETELY SEVER THE STRUCTURE TO THE POINTS SHOWN. JOINTS MAY BE MADE BY INSERTING MIN. 3/16" BITUMINOUS FILLER DUMMY JOINTS. JOINTS SHALL BE CLEANED AND EDGED

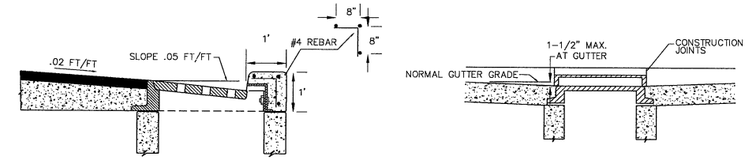
3/4" EXPANSION JOINTS TO BE PLACED AT DRIVEWAY SECTIONS, CURB RETURNS, CURB RAMPS AND COLD JOINTS OR A MAX. OF 80' C/C. EXPANSION JOINTS SHALL PROTRUDE 1" BELOW THE BOTTOM OF THE GUTTER.

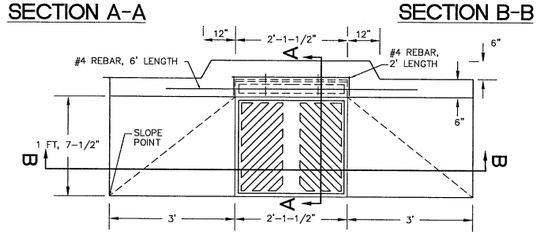
CURB DRAINS SHALL BE CONSTRUCTED OF 2" PVC PIPE OR OTHER MATERIAL SUBJECT TO APPROVAL OF THE ENGINEER, CUT TO LENGTH TO PASS FROM THE BACK OF CURB THROUGH THE CURB TO THE FACE OF THE CURB AT THE GUTTER LINE. SPACING WILL BE MAXIMUM OF 50 FEET, CENTER TO CENTER, AND/OR EACH SIDE OF THE DRIVEWAYS AND AT SUCH LOCATIONS AS DESIGNATED BY THE ENGINEER.

CURB AND GUTTER DETAILS
NTS

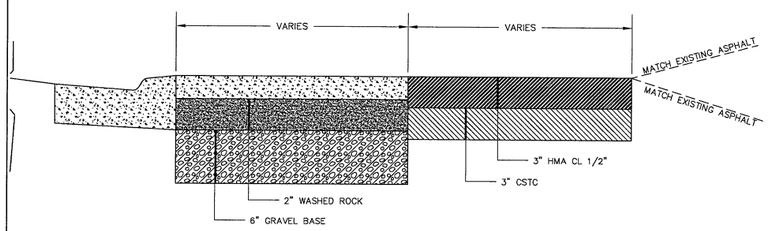


CEMENT CONCRETE SIDEWALK RAMP DETAIL
NTS

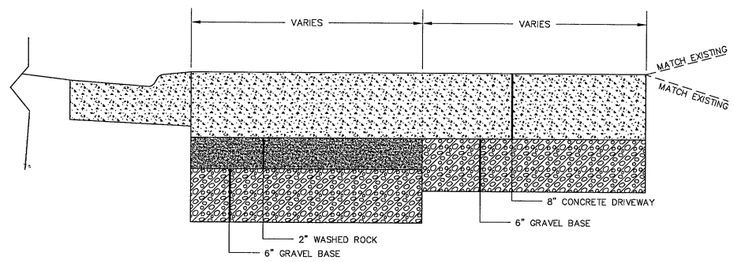




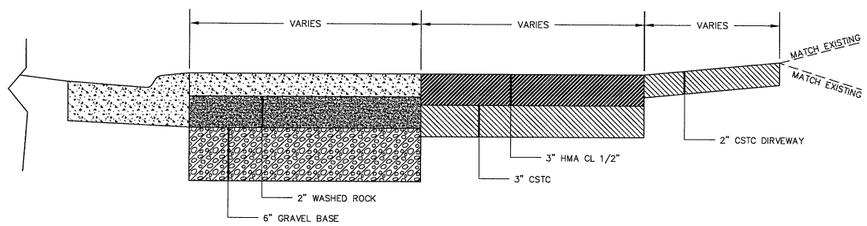
THRU CURB INLET DETAIL
NTS



PROPOSED ASPHALT APRON AND ASPHALT SECTION
NTS



PROPOSED CONCRETE DRIVEWAY SECTION
NTS



PROPOSED ASPHALT APRON AND GRAVEL SECTION
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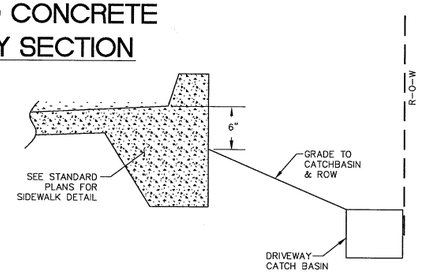
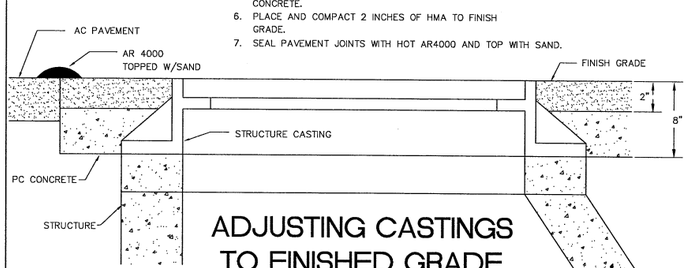
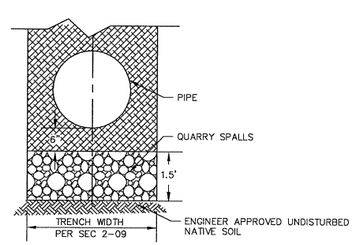


MONOLITHIC CEMENT CONCRETE CURB AND SIDEWALK W/RAISED EDGE APPROX STA 9+51 TO 9+61, 9+92 TO 10+02
NTS

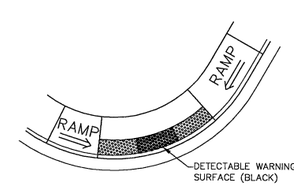
NOTES:
ALL FRAMES, COVERS AND VALVE BOXES SHALL BE ADJUSTED TO FINISHED GRADE AFTER THE FINAL LIFT OF PAVING HAS BEEN COMPLETED. THE FOLLOWING PROCEDURE SHALL BE USED:
1. CUT THE ASPHALT IN AN EVEN CIRCLE AROUND THE STRUCTURE CASTING TO BE ADJUSTED.
2. REMOVE THE FILL MATERIAL WITHIN THE CUT PAVEMENT AREA TO 8 INCHES MIN. BELOW FINISH GRADE.
3. PLACE THE CASTING AT FINISH GRADE.
4. PLACE PORTLAND CEMENT CONCRETE TO WITHIN THE TOP 2 INCHES OF FINISH GRADE.
5. APPLY TACK TO THE STRUCTURE CASTING, CUT PAVEMENT, AND PC CONCRETE.
6. PLACE AND COMPACT 2 INCHES OF HMA TO FINISH GRADE.
7. SEAL PAVEMENT JOINTS WITH HOT AR4000 AND TOP WITH SAND.



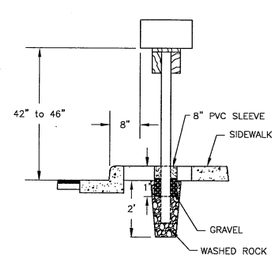
ADJUSTING CASTINGS TO FINISHED GRADE
NTS



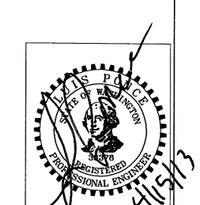
REMOVAL OF UNSUITABLE MATERIAL INCLUDING HAUL, TYPICAL SECTION
NTS



SIDEWALK RAMP TYPE PARALLEL A (MODIFIED)
NTS



MAILBOX POST IN SIDEWALK DETAIL
NTS



DESIGNED BY LP DRAWN BY LMC CHECKED BY LP	R&E Reichhardt & Ebe ENGINEERING INC 423 Front St, Lynden, WA 98264 (360) 354-3687 813 Metcalf St, Sedro-Woolley, WA 98284 (360) 855-1713	NO.	DATE	REVISION	BY	CITY OF FERNDALE 2095 MAIN ST FERNDALE, WA 98248	THORNTON STREET MISC DETAIL SHEET

JOB# / DWG		DATE
11037	DET	4-15-13
SCALE H: n/a	V: n/a	SHEET 21 of 21

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