



623-16-000103-PLNG

# TYPE II APPLICATION (LAND USE) -- 2016

File #: MISC -16 -0 09

**TYPES – PLEASE CHECK ONE:**

- Design review
- Tentative Plan for Partition
- Tentative Plan for Subdivision
- Type II Major Modification
- Variance
- Other: (Explain) \_\_\_\_\_

**APPLICANT INFORMATION:**

APPLICANT: City of Newberg  
 ADDRESS: 414 E First Street, Newberg, OR 97132  
 EMAIL ADDRESS: jason.wuertz@newbergoregon.gov  
 PHONE: 503-554-1631 MOBILE: N/A FAX: N/A  
 OWNER (if different from above): \_\_\_\_\_ PHONE: \_\_\_\_\_  
 ADDRESS: \_\_\_\_\_  
 ENGINEER/SURVEYOR: Murray Smith & Associates PHONE: 503-225-9010  
 ADDRESS: 121 SW Salmon, Suite 900, Portland, OR 97204

**GENERAL INFORMATION:**

PROJECT NAME: Villa Road Improvement Project PH 1 PROJECT LOCATION: Villa Road, between Carol Anne Dr & Trestle  
 PROJECT DESCRIPTION/USE: Installation of two culverts across Villa Road  
 MAP/TAX LOT NO. (i.e. 3200AB-400): R3217BD ZONE: R-1 SITE SIZE: N/A SQ. FT.  ACRE   
 COMP PLAN DESIGNATION: N/A TOPOGRAPHY: \_\_\_\_\_  
 CURRENT USE: City Road  
 SURROUNDING USES:  
 NORTH: Residential SOUTH: Residential  
 EAST: Residential WEST: Residential

**SPECIFIC PROJECT CRITERIA AND REQUIREMENTS ARE ATTACHED**

General Checklist:  Fees  Public Notice Information  Current Title Report  Written Criteria Response  Owner Signature

For detailed checklists, applicable criteria for the written criteria response, and number of copies per application type, turn to:

Design Review .....p. 12  
 Partition Tentative Plat .....p. 14  
 Subdivision Tentative Plat .....p. 17  
 Variance Checklist .....p. 20

The above statements and information herein contained are in all respects true, complete, and correct to the best of my knowledge and belief. Tentative plans must substantially conform to all standards, regulations, and procedures officially adopted by the City of Newberg. All owners must sign the application or submit letters of consent. Incomplete or missing information may delay the approval process.

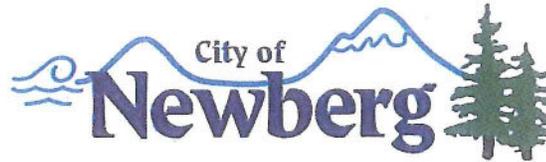
[Signature] 4/1/16  
 Applicant Signature Date  
 Jason Wuertz  
 Print Name

[Signature] 4/1/16  
 Owner/Signature Date  
 Kaaren Hoffmann  
 Print Name

Attachments: General Information, Fee Schedule, Criteria, Checklists

RECEIVED  
APR - 1 2016

Newberg City Hall  
Tel: 503.537.1240  
www.newbergoregon.gov



City Engineer's Office  
Tel: 503.537.1273

## ENGINEERING SERVICES DEPARTMENT

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P.O. Box 970 • 414 E. First Street • Newberg, Oregon 97132 • 503.537.1273 • Fax 503.537.1277

April 1, 2016

City of Newberg  
Planning Department  
414 E First Street  
Newberg, OR 97132

### **RE: Villa Road Improvements Stream Corridor Type II Application**

The City of Newberg is planning to install two culverts across Villa Road in the vicinity of N Carol Ann Drive. The City's Stormwater Master Plan identifies these improvements as necessary improvement and is part of the City's Stormwater Capital Projects. Following the culvert installation, roadway improvements will be completed from Haworth Ave to Park Lane. This application is only for impacts related to the first phase of construction, which is the culvert installation.

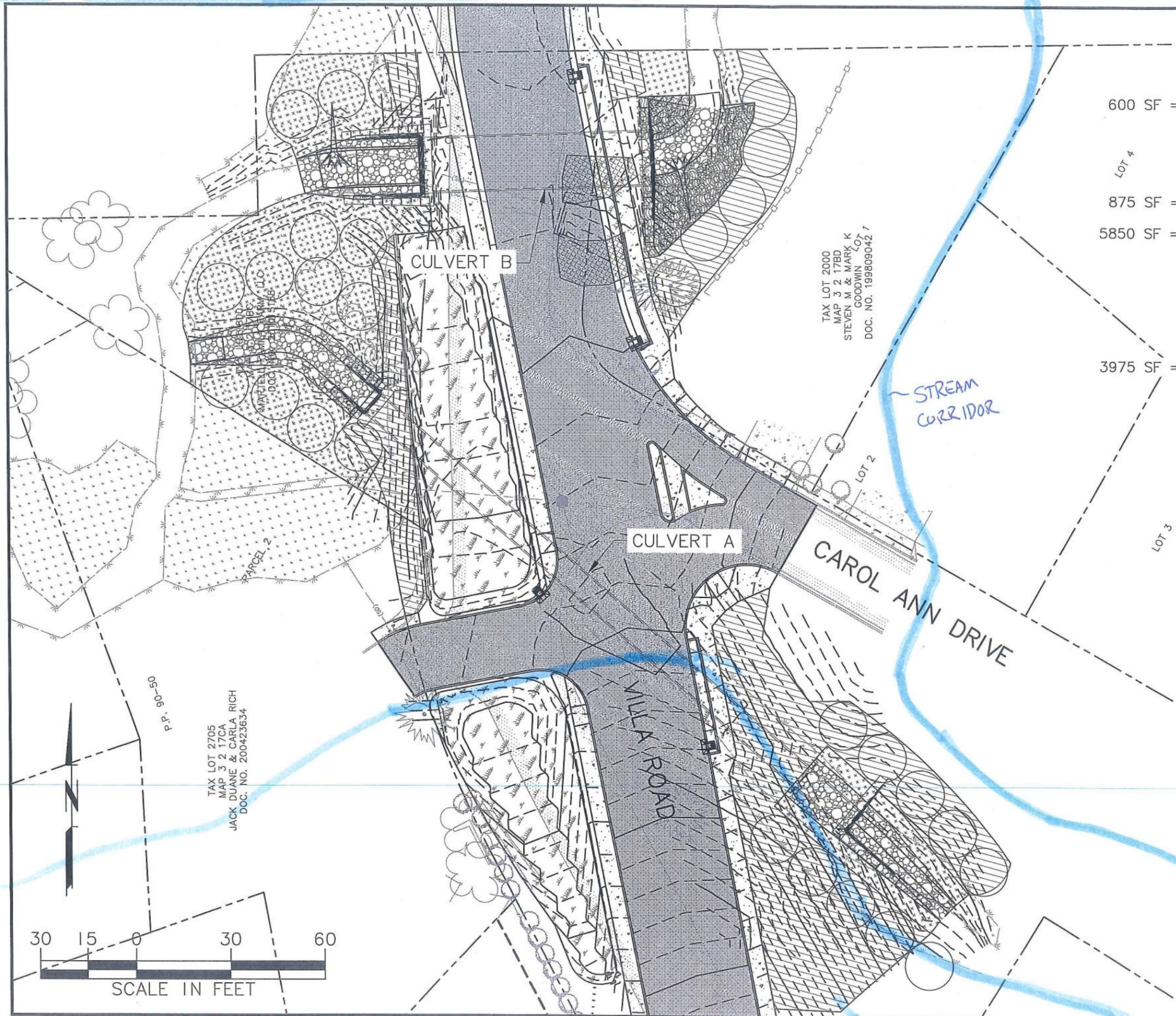
The culvert construction will occur within the stream corridor overlay, and the final length of the culvert will be extended to allow for future roadway improvements. The project will remove 3 trees in the 6-18" diameter category. The project area encompasses approximately 30,000 square feet of land, however, not all of this area will be disturbed. Nine new trees will be planted in compliance with City code. The new trees will have a minimum trunk diameter of 1". A planting plan is included to show restoration plans, which are in compliance with the code.

The City submitted a joint application to the Department of State Lands (DSL) and the Army Corps of Engineers (USACE). Permits from these agencies will be obtained prior to construction.

Sincerely,

A handwritten signature in blue ink, appearing to read "Jason Wuertz", is written over a horizontal line.

Jason Wuertz, Project Manager  
Direct: 503.554.1631  
Email: [jason.wuertz@newbergoregon.gov](mailto:jason.wuertz@newbergoregon.gov)



# LEGEND

- EXISTING WETLAND
- 600 SF = EXISTING RIPRAP
- STREAM BED MATERIAL
- LOT 4 STORMWATER MANAGEMENT AREA
- 875 SF = RIPRAP W/ WILLOWS PER FIGURE 2
- 5850 SF = ZONE 1 (USED IN WETLANDS)\*
  - PHYSOCARPUS CAPITATUS
  - CORNUS SERICEA
  - SPIRAEA DOUGLASII
  - SALIX SCOULERIANA
  - SALIX LASIANDRA
  - WETLAND GRASS SEED MIX
- 3975 SF = ZONE 2 (USED IN UPLANDS)\*
  - BERBERIS AQUIFOLIUM
  - ROSA NUTKANA
  - SYMPHORICARPOS ALBUS
  - UPLAND GRASS SEED MIX
- TREES
  - ALNUS RUBRA
  - THUJA PLICATA
  - FRAXINUS LATIFOLIA
  - min 1" caliper
- WOODY DEBRIS PER FIGURE 3

\*NOTE: PLANTING DENSITY TO BE 1 TREE AND 3 SHRUBS MINIMUM EVERY 500 SF

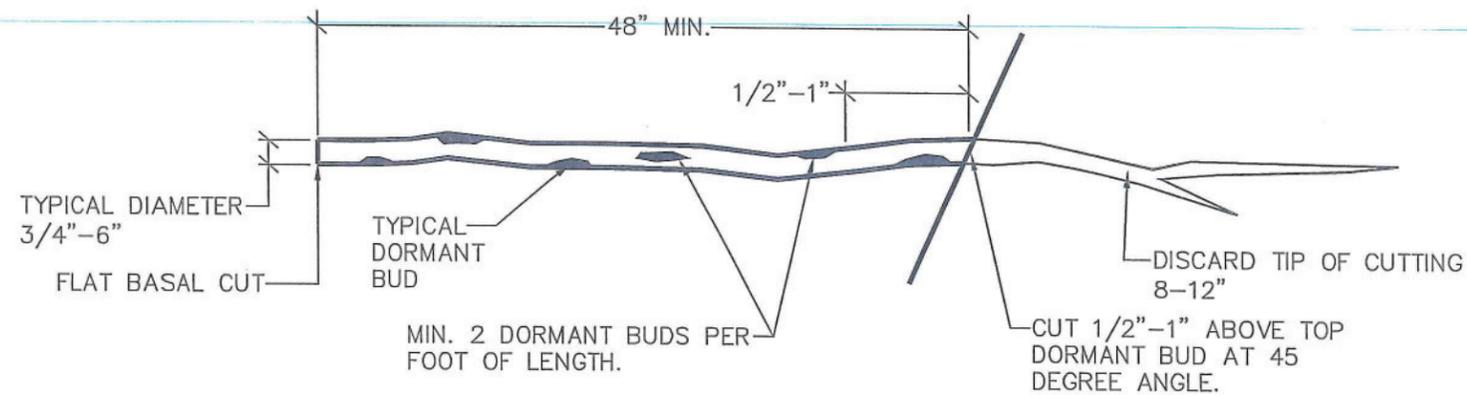


FIGURE 1

Villa Road Improvements Project

**RESTORATION & MITIGATION PLANTING PLAN**

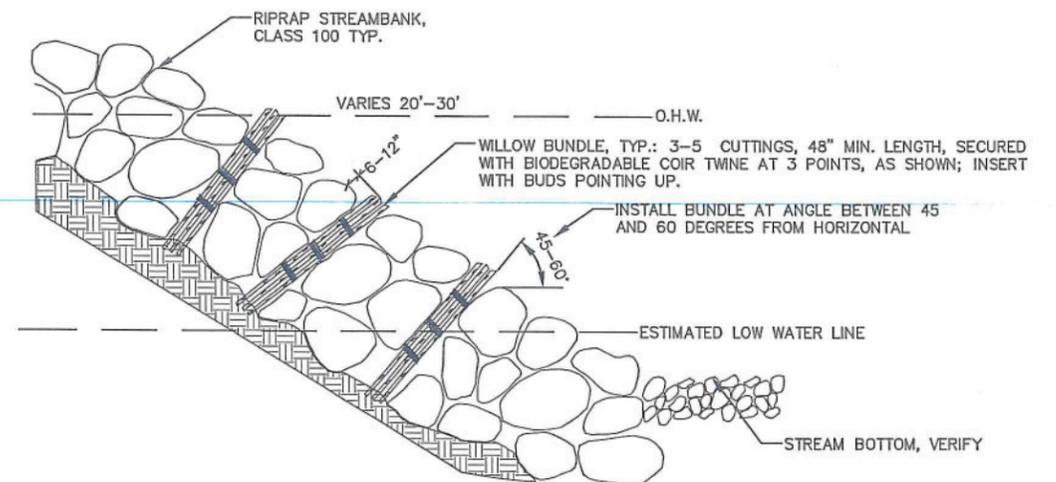
JANUARY 2016 15-1699.0409



NOTES:

1. HARVEST AREA TO BE WITHIN SAME ECOREGION AS PROJECT AREA.
2. CUT FROM VIGOROUS 1-3 YEAR OLD WOOD ON PLANTS GROWING IN FULL SUNLIGHT.
3. IMMEDIATELY REMOVE ALL LATERAL BRANCHES AND CUT LEADER (APICAL STEM) APPROXIMATELY 8-12" DOWN STEM FROM TIP OF LEADER.
4. STORE PROTECTED AT 32-42° FARENHEIT FOR UP TO 4 MONTHS, OR BEFORE DORMANT BUD DEVELOPMENT.
5. SOAK ENTIRE LENGTH OF CUTTINGS FOR 10-12 DAYS PRIOR TO INSTALLATION.

STAKE CUTTING DETAIL  
NTS



NOTES:

1. WILLOW BUNDLES SHALL BE INSTALLED AT TIME OF RIPRAP CONSTRUCTION.
2. SPACING SHALL BE +/- 36" O.C. AS RIPRAP ALLOWS. ADJUST SPACING AS NECESSARY TO ACCOUNT FOR WOODY DEBRIS.
3. APPROXIMATELY 80% OF BUNDLE LENGTH TO BE BELOW SURFACE OF RIPRAP.
4. BURIED ENDS OF BUNDLES SHOULD BE IN CONTACT WITH NATIVE SOIL, STANDING WATER OR MOIST ZONE NEAR BOTTOM OF RIPRAP REVETMENT EXCAVATION.

WILLOW BUNDLE  
INSTALLATION DETAIL  
NTS

FIGURE 2



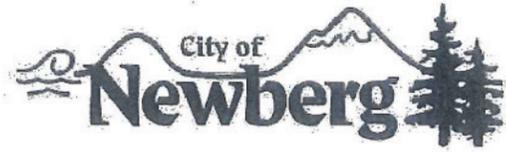
Villa Road Improvements Project

RESTORATION & MITIGATION  
PLANTING DETAILS



JANUARY 2016

15-1699.0409



# VILLA ROAD IMPROVEMENTS, HAWORTH TO CRESTVIEW

## PHASE 1 - CULVERT REPLACEMENTS - PROJECT NO. 702163

### VOLUME 2

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- 3 G-3 SYMBOLS, LEGEND AND ABBREVIATIONS

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- 5 C-2 TEMPORARY WATER MANAGEMENT PLAN
- 6 C-3 CULVERT A PLAN & PROFILE
- 7 C-4 CULVERT A DOWNSTREAM CHANNEL GRADING
- 8 C-5 CULVERT A UPSTREAM CHANNEL GRADING
- 9 C-6 CULVERT B PLAN & PROFILE
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- 17 ESC-1 EROSION CONTROL PLAN

##### TRAFFIC CONTROL

- 18 TC-1 DETOUR PLAN

#### PROJECT CONTACTS

**OWNER:**  
CITY OF NEWBERG  
414 E. FIRST STREET  
PO BOX 970  
NEWBERG, OREGON 97132  
TEL: 503-554-1631  
CONTACT: JASON WUERTZ, PE

**CIVIL ENGINEER:**  
MURRAY, SMITH & ASSOCIATES, INC  
121 SW SALMON STREET, STE 2500  
PORTLAND, OREGON 97204  
TEL: 503-225-9010  
CONTACT: NICK MCMURTREY, PE

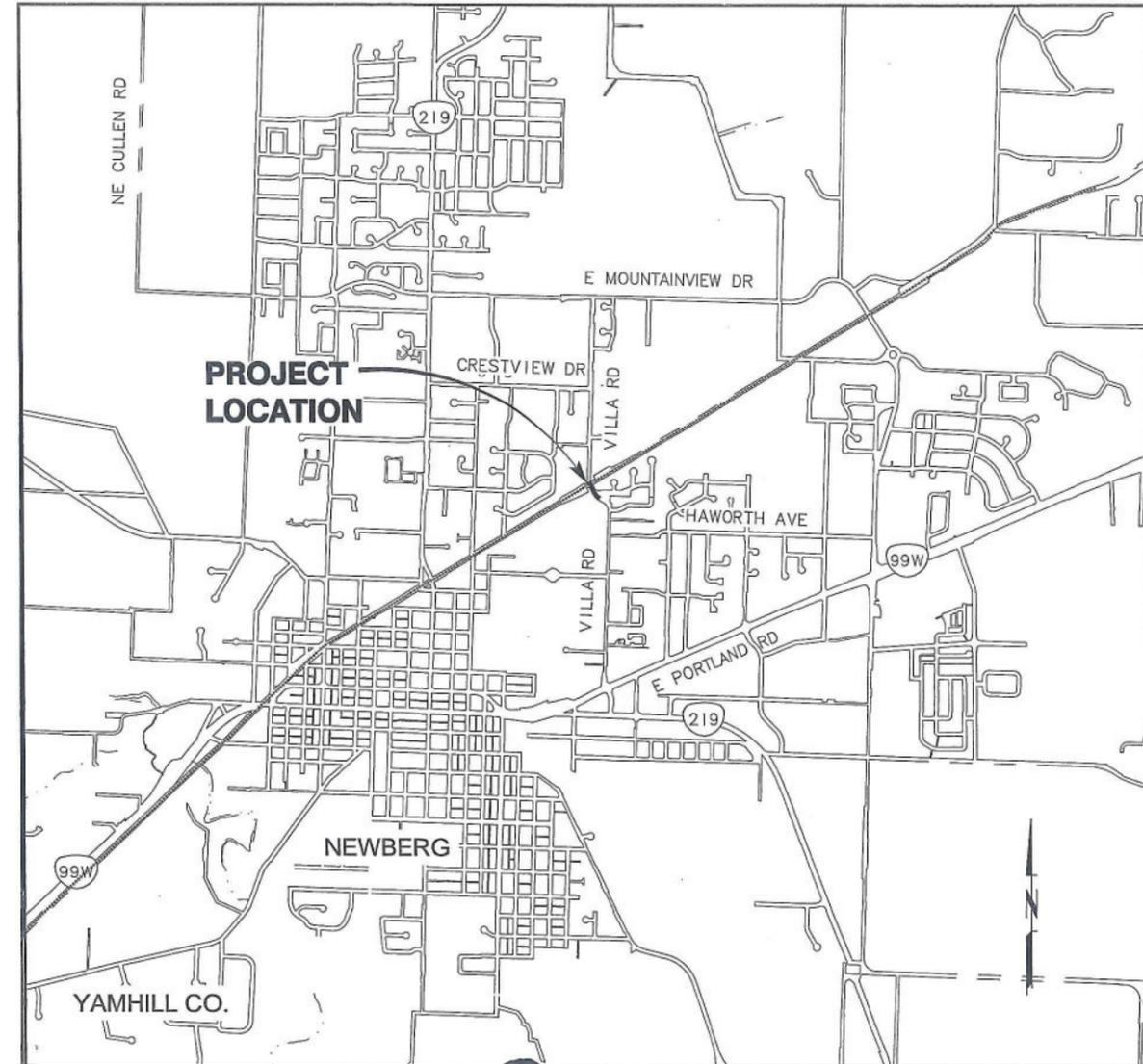
**GAS:**  
NW NATURAL  
20285 SW CIOLE ROAD  
SHERWOOD, OR 97140  
TEL: 503-226-4211 EXT 4376  
CONTACT: ANDREA KUEHNEL, PE

**POWER:**  
PORTLAND GENERAL ELECTRIC  
4245 KALE ST NE  
SALEM, OR 97305  
TEL: 503-463-6184  
CONTACT: RICK SCHIEDLER

**CABLE:**  
COMCAST  
150 LEWISBURG AVENUE  
CORVALLIS, OR 97330  
TEL: 541-230-0079  
CONTACT: RYAN HANSEN

**TELECOM:**  
FRONTIER  
4155 SW CEDAR HILLS BLVD  
BEAVERTON, OR 97005-2016  
TEL: 503-644-7153  
CONTACT: BOB PLANT

**WATER, SEWER, STORM:**  
CITY OF NEWBERG  
414 E. FIRST STREET  
PO BOX 970  
NEWBERG, OREGON 97132  
TEL: 503-554-1631  
CONTACT: JASON WUERTZ, PE



VICINITY MAP  
SCALE: NTS



**VILLA ROAD IMPROVEMENTS, HAWORTH TO  
CRESTVIEW - PH. 1 - CULVERT REPLACEMENTS**  
 PROJECT NO. 702163 - CITY OF NEWBERG, OREGON  
**TITLE SHEET, INDEX OF DRAWINGS AND  
VICINITY MAP**



SCALE:	AS SHOWN	NO.	REVISION	DATE
DATE:	March 17, 2016			
REVIEWED:	NJM			
DESIGNED:	SBB			
APPROVED:	GEC			
DATE:	March 17, 2016			

**SHEET**  
**G-1**  
01 of 18

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Know what's below.  
Call before you dig.

ATTENTION: OREGON LAW REQUIRES THE CONTRACTOR TO FOLLOW THE RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-001-0010 THROUGH OAR 952-001-0090. THE CONTRACTOR MAY OBTAIN COPIES OF THE RULES BY CALLING THE UTILITY NOTIFICATION CENTER. (NOTE: THE TELEPHONE NUMBER FOR THE OREGON UTILITY NOTIFICATION CENTER IS 1-800-332-2344 FOR INFORMATION AND 811 FOR LOCATES.

**BID SET**



## GENERAL NOTES

1. SURVEY PROVIDED BY HDJ DESIGN GROUP, PLLC, DATED AUGUST 28, 2015. ELEVATIONS ARE BASED ON CITY OF NEWBERG VERTICAL DATUM ESTABLISHED PER BENCH MARK NUMBER 89 LOCATED BY A BRASS CAP IN THE TOP OF CURB ON THE WEST SIDE OF VILLA ROAD AT THE WESTERLY PROJECTION OF THE CENTERLINE OF EASTBOUND FULTON STREET, HAVING AN ELEVATION OF 201.98 (NAVD88).
2. CONSTRUCTION LAYOUT (ALL ACTUAL LINES AND GRADES) SHALL BE STAKED BY A PROFESSIONAL SURVEYOR, REGISTERED IN THE STATE OF OREGON, BASED ON COORDINATES, DIMENSIONS, BEARINGS, AND ELEVATIONS AS SHOWN ON THE PLANS.
3. PROJECT CONTROL SHALL BE FIELD VERIFIED AND CHECKED FOR RELATIVE HORIZONTAL POSITION AND VERTICAL POSITION BASED ON THE BENCHMARK STATED HEREON PRIOR TO BEGINNING CONSTRUCTION LAYOUT.
4. WHEN DIMENSIONS AND COORDINATE LOCATIONS ARE REPRESENTED - DIMENSIONS SHALL HOLD OVER COORDINATE LOCATION. NOTIFY THE CIVIL ENGINEER OF RECORD IMMEDIATELY UPON DISCOVERY OF ANY DISCREPANCIES BETWEEN DIMENSIONS AND COORDINATE LOCATIONS.
5. CONTRACTOR SHALL PRESERVE AND PROTECT FROM DAMAGE ALL EXISTING MONUMENTATION DURING CONSTRUCTION. NEW MONUMENTS SHALL BE REESTABLISHED BY A LICENSED SURVEYOR TO REPLACE EXISTING MONUMENTS DAMAGED DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING AND PAYING FOR THE REPLACEMENT OF ANY MONUMENTS DAMAGED OR REMOVED DURING CONSTRUCTION.
6. CONTRACTOR SHALL REFERENCE SOILS REPORT FOR THE VILLA ROAD IMPROVEMENTS PROJECT BY SHANNON AND WILSON, INC, FOR THE SITE SOILS CONDITIONS.
7. ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO THESE PLANS, THE PROJECT SPECIFICATIONS AND THE APPLICABLE REQUIREMENTS OF THE 2015 OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION, 2014 OREGON PLUMBING SPECIALTY CODE AND REQUIREMENTS OF THE CITY OF NEWBERG.
8. THE COMPLETED INSTALLATION SHALL CONFORM TO ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES, ORDINANCES AND REGULATIONS. ALL PERMITS, LICENSES AND INSPECTIONS REQUIRED BY THE GOVERNING AUTHORITIES FOR THE EXECUTION AND COMPLETION OF WORK SHALL BE SECURED BY THE CONTRACTOR PRIOR TO COMMENCING CONSTRUCTION.
9. ATTENTION: OREGON LAW REQUIRES YOU TO FOLLOW RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-001-0010 THROUGH OAR 952-001-0090. YOU MAY OBTAIN COPIES OF THE RULES BY CALLING THE CENTER. (NOTE: THE TELEPHONE NUMBER FOR THE OREGON UTILITY NOTIFICATION CENTER IS (503) 232-1987). EXCAVATORS MUST NOTIFY ALL PERTINENT COMPANIES OR AGENCIES WITH UNDERGROUND UTILITIES IN THE PROJECT AREA AT LEAST 48 BUSINESS-DAY HOURS, BUT NOT MORE THAN 10 BUSINESS DAYS PRIOR TO COMMENCING AN EXCAVATION, SO UTILITIES MAY BE ACCURATELY LOCATED.
10. THE CONTRACTOR SHALL POTHOLE AND VERIFY LOCATIONS, ELEVATIONS, TYPES AND SIZES OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTING NEW PIPING FAR ENOUGH IN ADVANCE TO ALLOW NECESSARY ADJUSTMENTS IN GRADE AND SHALL NOTIFY ENGINEER OF NEED TO ADJUST PIPING INSTALLATION ACCORDINGLY. POTHOLING SHALL SUFFICIENTLY PRECEDE LAYING OF PIPE TO ALLOW REQUIRED ELEVATION ADJUSTMENTS TO BE ACCOMPLISHED WITHOUT REWORK. ELEVATION ADJUSTMENTS SHALL BE EXPECTED AND ARE INCIDENTAL TO THE WORK. DEFLECT PIPE AS REQUIRED AND WITHIN MANUFACTURER'S TOLERANCES TO AVOID EXISTING UTILITIES AND COMPLETE TIE-INS.
11. THE LOCATION OF EXISTING UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE FOR INFORMATION ONLY AND ARE NOT GUARANTEED TO BE COMPLETE OR ACCURATE. CONTRACTOR SHALL VERIFY ELEVATIONS, PIPE SIZE, AND MATERIAL TYPES OF ALL UNDERGROUND UTILITIES PRIOR TO COMMENCING WITH CONSTRUCTION AND SHALL BRING ANY DISCREPANCIES TO THE ATTENTION OF THE ENGINEER, 72 HOURS PRIOR TO START OF CONSTRUCTION TO PREVENT GRADE AND ALIGNMENT CONFLICTS.
12. CONNECTIONS TO EXISTING WATERLINES MAY REQUIRE TEMPORARY SHUTDOWNS OF EXISTING FACILITIES. THE CONTRACTOR SHALL COORDINATE THIS WORK WITH THE CITY OF NEWBERG AND PROVIDE A MINIMUM OF 72 HOURS ADVANCE NOTICE PRIOR TO PERFORMING WATERLINE TIE-IN WORK. CONTRACTOR TO VERIFY WITH THE CITY OF NEWBERG IF EXISTING LINES ARE TO BE DEPRESSURIZED PRIOR TO PERFORMING THIS WORK. SEE SPECIFICATIONS FOR SEQUENCE OF CONSTRUCTION REQUIREMENTS. OPERATION OF EXISTING VALVES SHALL BE BY CITY PERSONNEL ONLY.
13. THE ENGINEER OR OWNER IS NOT RESPONSIBLE FOR THE SAFETY OF THE CONTRACTOR OR HIS CREW. ALL OSHA REGULATIONS SHALL BE STRICTLY ADHERED TO IN THE PERFORMANCE OF THE WORK. CONTRACTOR TO NOTIFY CITY 72 HOURS PRIOR TO CUTTING ANY WATERLINES.
14. TEMPORARY AND PERMANENT EROSION CONTROL MEASURES SHALL BE IMPLEMENTED. THE CONTRACTOR SHALL ADHERE TO THE REQUIREMENTS OF THE CITY OF NEWBERG FOR MINIMUM EROSION CONTROL MEASURES. THE ESC FACILITIES SHOWN IN THESE PLANS ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, ESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DO NOT LEAVE THE SITE.
15. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL ROADWAYS, KEEPING THEM CLEAN AND FREE OF CONSTRUCTION MATERIALS AND DEBRIS, AND PROVIDING DUST CONTROL AS REQUIRED.
16. TRAFFIC CONTROL SHALL BE PROVIDED BY THE CONTRACTOR THROUGHOUT CONSTRUCTION. CONTRACTOR SHALL PROVIDE A TRAFFIC CONTROL PLAN TO THE CITY OF NEWBERG FOR REVIEW AND APPROVAL PRIOR TO COMMENCING CONSTRUCTION.
17. CONTRACTOR SHALL MAINTAIN ALL DRIVEWAYS, UTILITIES AND SERVICES AT ALL TIMES DURING CONSTRUCTION, UNLESS OTHERWISE APPROVED BY THE CITY OF NEWBERG.
18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND SCHEDULING ALL WORK WITH THE CITY OF NEWBERG.
19. NOTIFY THE CITY OF NEWBERG'S INSPECTOR 72 HOURS BEFORE STARTING WORK. A PRECONSTRUCTION MEETING WITH THE CITY OF NEWBERG AND THE CONTRACTOR'S REPRESENTATIVE SHALL BE REQUIRED.

## SEPARATION STATEMENT

ALL WATER MAIN CROSSINGS SHALL CONFORM TO THE OREGON STATE HEALTH DEPARTMENT, CHAPTER 333. WATER MAINS SHALL CROSS OVER SANITARY SEWERS WITH A 18" MINIMUM CLEARANCE BETWEEN OUTSIDE DIAMETERS OF PIPE WITH ALL PIPE JOINTS EQUIDISTANT FROM CROSSING. HORIZONTAL SEPARATION BETWEEN WATER MAINS AND SANITARY SEWERS IN PARALLEL INSTALLATIONS SHALL BE 10' MINIMUM. MAINTAIN 12" MINIMUM VERTICAL DISTANCE FOR ALL OTHER UTILITY CROSSINGS AND 12" HORIZONTAL PARALLEL DISTANCE. IN CASES WHERE IT IS NOT POSSIBLE TO MAINTAIN THE MINIMUM 10' HORIZONTAL SEPARATION, THE WATER MAIN SHALL BE LAID ON A SEPARATE SHELF IN THE TRENCH 18" INCHES ABOVE THE SEWER.

## MATERIAL NOTES

1. MATERIALS SHALL BE NEW. THE USE OF MANUFACTURER'S NAMES, MODELS, AND NUMBERS IS REQUIRED AND INTENDED TO ESTABLISH STYLE, QUALITY, APPEARANCE, AND USEFULNESS. PROPOSED SUBSTITUTIONS WILL REQUIRE WRITTEN APPROVAL FROM THE CITY OF NEWBERG PRIOR TO INSTALLATION.
2. STORM SEWER PIPING SHALL BE DUCTILE IRON, 3034 PVC OR C900 PIPE CONFORMING TO THE PROJECT SPECIFICATIONS. WHERE PIPE MATERIALS ARE SPECIFICALLY INDICATED IN THE PLANS, ALTERNATIVE MATERIALS WILL NOT BE ALLOWED.
3. SANITARY SEWER PIPING SHALL BE PVC PIPE OR DUCTILE IRON PIPE CONFORMING TO THE PROJECT SPECIFICATIONS.
4. PUBLIC WATER MAINS SHALL BE DUCTILE IRON PIPE, CLASS 52 CONFORMING TO THE PROJECT SPECIFICATIONS.
5. PRIVATE WATER LINES 2-INCH DIAMETER AND SMALLER SHALL BE TYPE K COPPER TUBING. CONFORMING TO THE PROJECT SPECIFICATIONS. WHEN A CORROSIVE POTENTIAL CONDITION IS ENCOUNTERED AND THE COPPER SERVICE PASSES OVER OR UNDER AN ACTIVE CATHODIC PROTECTION SYSTEM, THE SERVICE SHALL BE INSTALLED IN A SCHEDULE 40 PVC CONDUIT FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE ACTIVE SYSTEM. ALL CONDUIT PLACEMENTS MUST BE PROVIDED WITH AS-BUILT RECORDS.
6. CONCRETE FOR CURBS, SIDEWALK AND DRIVEWAYS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,300 PSI AT 28 DAYS.

## CONSTRUCTION NOTES

### GENERAL

1. SUBGRADE AND TRENCH BACKFILL SHALL BE COMPACTED TO AT LEAST 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-698. FLOODING OR JETTING THE BACKFILLED TRENCHES WITH WATER IS NOT PERMITTED.

### DEMOLITION

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEMOLITION AND DISPOSAL OF EXISTING AC, CURBS, SIDEWALKS AND OTHER SITE ELEMENTS WITHIN THE SITE AREA TO ALLOW FOR EXECUTION OF THE WORK.
2. EXCEPT FOR MATERIALS INDICATED TO BE STOCKPILED OR TO REMAIN THE PROPERTY OF THE CITY OF NEWBERG, CLEARED MATERIALS SHALL BECOME CONTRACTOR'S PROPERTY, REMOVED FROM THE SITE, AND DISPOSED OF PROPERLY.
3. ITEMS INDICATED TO BE SALVAGED SHALL BE CAREFULLY REMOVED AND DELIVERED OR STORED AT THE PROJECT SITE AS DIRECTED BY THE CITY OF NEWBERG.
4. ALL LANDSCAPING, PAVEMENT, CURBS AND SIDEWALKS, BEYOND THE IDENTIFIED SITE AREA, DAMAGED DURING THE CONSTRUCTION SHALL BE REPLACED TO THEIR ORIGINAL CONDITION OR BETTER AT NOT ADDITIONAL COST.
5. CONCRETE SIDEWALKS SHOWN FOR DEMOLITION SHALL BE REMOVED TO THE NEAREST EXISTING CONSTRUCTION JOINT.
6. SAWCUT STRAIGHT MATCHLINES TO CREATE A BUTT JOINT BETWEEN THE EXISTING AND NEW PAVEMENT.

### UTILITIES

1. ADJUST ALL INCIDENTAL STRUCTURES, MANHOLES, VALVE BOXES, CATCH BASINS, FRAMES AND COVERS, ET CETERA TO FINISHED GRADE.
2. CONTRACTOR SHALL ADJUST ALL EXISTING AND/OR NEW FLEXIBLE UTILITIES (WATER, GAS, TV, TELEPHONE, ELECTRIC, ET CETERA) TO CLEAR ANY EXISTING OR NEW GRAVITY DRAIN UTILITIES (STORM DRAIN, SANITARY SEWER, ET CETERA) IF CONFLICT OCCURS.
3. CONTRACTOR SHALL COORDINATE WITH PRIVATE UTILITY COMPANIES FOR THE INSTALLATION OR RELOCATION OF GAS, ELECTRICAL, POWER AND TELEPHONE SERVICE AS NECESSARY TO CONSTRUCT THE PROJECT.
4. THE CITY OF NEWBERG SHALL INSPECT AND APPROVE ANY SUBGRADE UTILITY IMPROVEMENTS BEFORE BACKFILLING IS ALLOWED. CONTRACTOR SHALL VERIFY AND RECORD MEASUREMENTS OF EXACT LOCATION AND DEPTH BEFORE BACKFILLING IMPROVEMENTS AND SUBMIT DOCUMENTATION TO THE CITY OF NEWBERG.

### STORM AND SANITARY

1. CONNECTIONS TO EXISTING STORM AND SANITARY SEWERS SHALL CONFORM TO THE 2015 OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION, SECTION 00490, "WORK ON EXISTING SEWERS AND STRUCTURES".
2. BEGIN LAYING STORM DRAIN AND SANITARY SEWER PIPE AT THE LOW POINT OF THE SYSTEM, TRUE TO GRADE AND ALIGNMENT INDICATED WITH UNBROKEN CONTINUITY OF INVERT. THE CONTRACTOR SHALL ESTABLISH LINE AND GRADE FOR THE STORM AND SANITARY SEWER PIPE USING A LASER.
3. ALL AREA DRAIN LEADERS SHALL HAVE A MINIMUM SLOPE OF 1 PERCENT UNLESS NOTED OTHERWISE IN THE PLANS.

### WATER

1. ALL WATER AND FIRE PROTECTION PIPE SHALL HAVE A MINIMUM 36-INCH COVER TO THE FINISH GRADE. PRESSURE TESTING OF PIPE SHALL BE COMPLETED WITH A MINIMUM 36-INCH COVER.
2. ALL WATER AND FIRE PRESSURE FITTINGS SHALL BE PROPERLY RESTRAINED WITH MJ FITTINGS (EBBA IRON MEGA LUG ONLY).
3. ALL WATER MAIN 10-INCH DIAMETER AND SMALLER SHALL BE RESTRAINED DUCTILE IRON, CLASS 52, CONFORMING TO THE LATEST REVISION OF ANSI/AWWA C151/A21.51.
4. ALL DUCTILE IRON WATER MAIN ENCASED IN CLSM SHALL FIRST BE WRAPPED IN POLYETHYLENE.
5. ALL WATER MAIN / SANITARY SEWER CROSSINGS SHALL CONFORM TO THE OREGON STATE HEALTH DEPARTMENT REGULATIONS, CHAPTER 333.



**VILLA ROAD IMPROVEMENTS, HAWORTH TO CRESTVIEW - PH. 1 - CULVERT REPLACEMENTS**  
 PROJECT NO. 702163 - CITY OF NEWBERG, OREGON

**GENERAL NOTES**



SCALE:	AS SHOWN	NO.	REVISION	DATE
DATE:	March 17, 2016			
REVIEWED:	NJM			
DESIGNED:	SBB			
APPROVED:	GEC			

**SHEET**

**G-2**

**02 of 18**

**BID SET**



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 FAX 503-235-0122

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# LEGEND

	EXISTING	PROPOSED
WETLANDS DELINEATION		
BARBED WIRE FENCE		
CHAIN LINK FENCE		
WOOD FENCE		
COMMUNICATIONS LINE		
GAS LINE		
POWER/SIGNAL LINE		
STORM DRAINAGE LINE		
SANITARY SEWER LINE		
WATER LINE		
ABANDON OR REMOVE PIPE		
CENTERLINE		
RIGHT-OF-WAY / PROPERTY LINE		
EASEMENT		
EDGE OF PAVEMENT/AC		
EDGE OF GRAVEL		
CURB		
SAWCUT LINE		
JERSEY BARRIER		
WATER QUALITY FEATURE		
SIDEWALK/CONCRETE SURFACE		
STRUCTURE OR FACILITY		
CONTOUR MINOR		
CONTOUR MAJOR		
STORM AREA DRAINAGE BASIN		
STORM DRAINAGE CATCH BASIN		
STORM DRAINAGE CURB INLET		
STORM DRAINAGE VAULT		
STORM DRAINAGE MANHOLE		
DITCH INLET @ FLOW LINE		
STORM DRAINAGE CLEANOUT		
ROOF DRAIN		
SANITARY SEWER MANHOLE		
SANITARY SEWER CLEANOUT		
WATER METER		
WATER MANHOLE		
WATER VALVE		
WATER VAULT		
WATER WELL HOUSE		
WATER BLOW OFF VALVE		
WATER SPIGOT		
FIRE DEPT CONNECTION		
FIRE HYDRANT		
SPRINKLER VALVE		
SPRINKLER HEAD		
PIPE SPOOL/LONG SLEEVE		
COLLAR THRUST BLOCK		
TEE		
BLOW-OFF ASSY		
BENDS (90°, 45°, 22½°)		
RESTRAINED JOINT PIPE		
CLSM PIPE TRENCH BACKFILL		

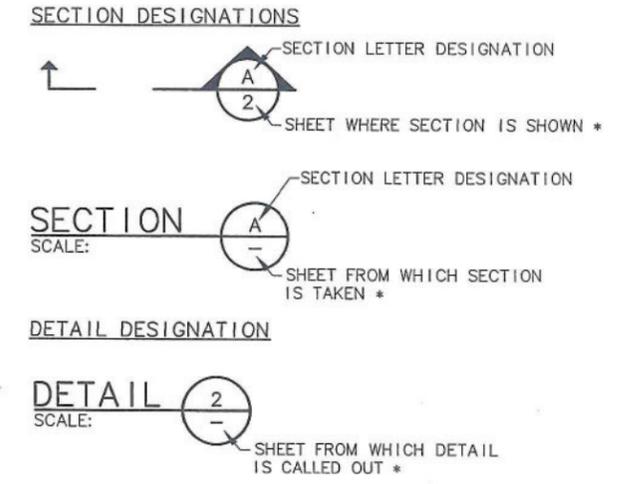
GRANULAR PIPE TRENCH BACKFILL
GAS VALVE
GAS METER
GAS RISER/GAS FINK
POWER/ELECTRICAL VAULT
POWER/ELECTRICAL TRANSFORMER
POWER/ELECTRIC MANHOLE
POWER JUNCTION BOX
POWER METER
POWER RISER
POWER POLE
POWER POLE W/ LIGHT
GUY WIRE/ANCHOR
STREET LIGHT/LIGHT POLE
GROUND LIGHT
TRAFFIC/SIGNAL JUNCTION BOX
TRAFFIC SIGNAL POLE
TRAFFIC SIGNAL CROSSING POLE
COMMUNICATIONS RISER AS NOTED
COMMUNICATIONS MANHOLE AS NOTED
COMMUNICATIONS VAULT
UTILITY CABINET AS NOTED
UNKNOWN UTILITY MANHOLE
UNKNOWN UTILITY VAULT
UNKNOWN UTILITY RISER/STANDPIPE
UNKNOWN UTILITY CLEANOUT
MONITOR WELL
BOLLARD
MAILBOX
SIGN
TEST PIT
BUILDING COLUMN
GATE POST
WETLAND FLAGGING
BUSH/SHRUB
CONIFEROUS TREE
DECIDUOUS TREE
FISH LOG
100-YEAR FLOODPLAIN
STREAM CENTERLINE
TWMF DIVERSION BARRIER/DAM
TWMF TEMP BYPASS PIPE
STRUCTURAL PLATE ARCH CULVERT
STREAMBED MATERIAL
WILLOW BUNDLES IN RIPRAP

EXISTING	PROPOSED

# ABBREVIATIONS

AB	ANCHOR BOLT	MATL	MATERIAL
AC	ASPHALTIC CONCRETE	MAX	MAXIMUM
ANC	ANCHOR	MFR	MANUFACTURER
APPROX	APPROXIMATE	MH	MANHOLE
APPVD	APPROVED	MIN	MINIMUM
ASSY	ASSEMBLY	MJ	MECHANICAL JOINT
BFV	BUTTERFLY VALVE	NIC	NOT IN CONTRACT
BLDG	BUILDING	NC	NORMALLY CLOSED
BO	BLOW-OFF	NO	NORMALLY OPEN
BV	BALL VALVE	NO.	NUMBER
CHKV	CHECK VALVE	NTS	NOT TO SCALE
CL	CENTER LINE	OC	ON CENTER
CLSM	CONTROLLED LOW STRENGTH MATL	OD	OUTSIDE DIAMETER
CO	CLEANOUT	OPNG	OPENING
CONC	CONCRETE	OSD	OREGON STANDARD DRAWING
CONST	CONSTRUCT(ION)	PCMS	PORTABLE CHANGEABLE MESSAGE SIGN
CORP	CORPORATION	PERF	PERFORATED
CPLG	COUPLING	PERP	PERPENDICULAR
CR	CRUSHED ROCK	PGE	PORTLAND GENERAL ELECTRIC
CSP	CONCRETE SEWER PIPE	PROP	PROPOSED
DET	DETAIL	PSF	POUNDS PER SQUARE FOOT
DI	DUCTILE IRON	PSI	POUNDS PER SQUARE INCH
DIA	DIAMETER	RDCR	REDUCER
DIM	DIMENSION	REINF	REINFORCE(D)(ING)(MENT)
DWG	DRAWING	REQ'D	REQUIRED
DWY	DRIVEWAY	RESTR	RESTRAINED
EA	EACH	R/W	RIGHT-OF-WAY
EL	ELEVATION	SCHED	SCHEDULE
E/ELEC	ELECTRIC(AL)	SD	STORM DRAIN
EOP	EDGE OF PAVEMENT	SHT	SHEET
ESMT	EASEMENT	SLP	SLOPE
EW	EACH WAY	SPL	SPOOL
EXIST	EXISTING	SS	SANITARY SEWER
FAB	FABRICATE	SST	STAINLESS STEEL
FD	FLOOR DRAIN	STA	STATION
FIN	FINISH	STD	STANDARD
FITG	FITTING	STL	STEEL
FL	FLOWLINE	SQ	SQUARE
FLEX	FLEXIBLE	S/W	SIDEWALK
FLG	FLANGE	T	TELEPHONE
FLR	FLOOR	THK	THICKNESS
GA	GAGE	THRD	THREADED
GALV	GALVANIZED	TELM	TELEMETRY
GR	GRADE	TEMP	TEMPORARY
GRVL	GRAVEL	TWMF	TEMPORARY WATER MANAGEMENT FACILITY
GV	GATE VALVE	TYP	TYPICAL
HORIZ	HORIZONTAL	VERT	VERTICAL
ID	INSIDE DIAMETER	W	WATER
IE	INVERT ELEVATION	W/	WITH
J-BOX	JUNCTION BOX	XFMR	TRANSFORMER
JT	JOINT		
LTF	LENGTH TO FIT		
LVAP	LOWER VERTICAL ADJUSTMENT PROFILE		

# SECTION AND DETAIL DESIGNATIONS



\* NOTE: IF PLAN AND SECTION FOR DETAIL CALL-OUT AND DETAIL ARE SHOWN ON THE SAME DRAWING, DRAWING NUMBER IS REPLACED WITH A DASH. IF MULTIPLE REFERENCES ARE MADE TO THE SAME DETAIL, THE SHEET WHERE THE FIRST REFERENCE IS MADE IS LISTED.

**VILLA ROAD IMPROVEMENTS, HAWORTH TO CRESTVIEW - PH. 1 - CULVERT REPLACEMENTS**  
PROJECT NO. 702163 - CITY OF NEWBERG, OREGON

**SYMBOLS, LEGEND AND ABBREVIATIONS**

REGISTERED PROFESSIONAL ENGINEER  
STATE OF OREGON  
NO. 127106  
MICHAEL S. J. JENSEN  
REVIEWS 12-31-16

DATE	REVISION	NO.	AS SHOWN	NO.
March 17, 2016	NJM	1		
	SBB	2		
	GEC	3		

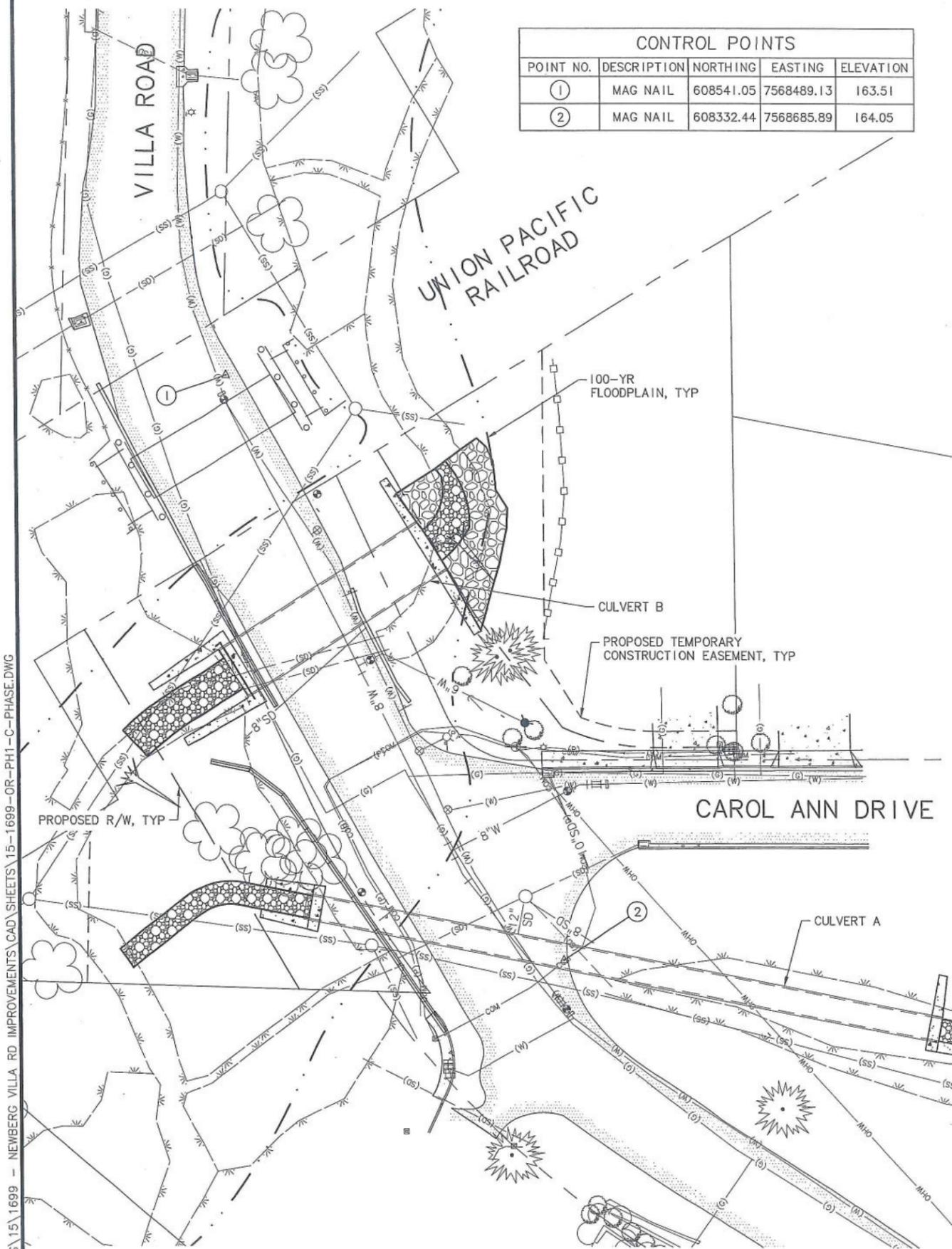
**SHEET**

**G-3**

**03 of 18**

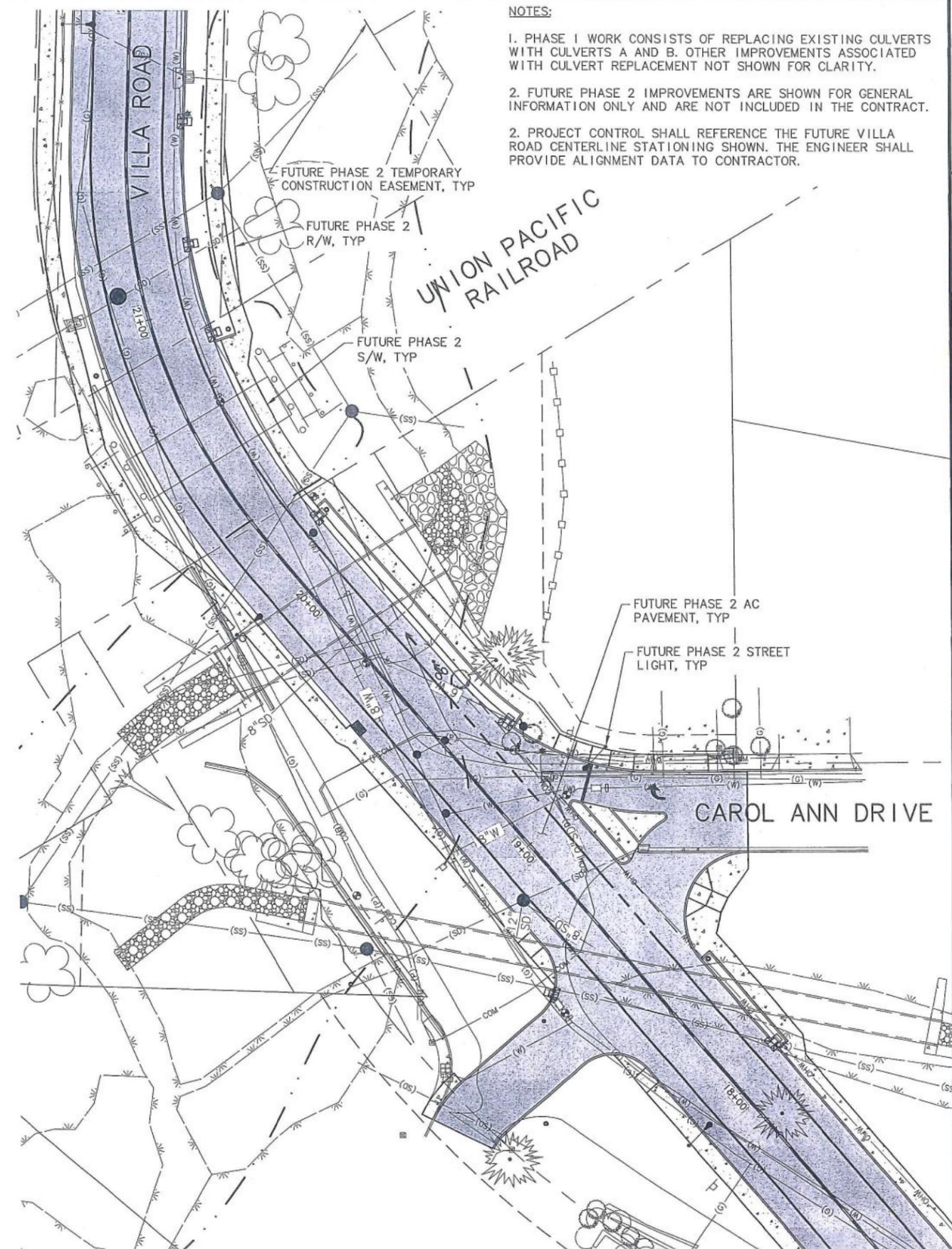
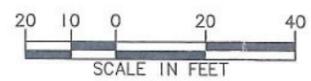
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CONTROL POINTS				
POINT NO.	DESCRIPTION	NORTHING	EASTING	ELEVATION
①	MAG NAIL	608541.05	7568489.13	163.51
②	MAG NAIL	608332.44	7568685.89	164.05

PHASE 1 - CULVERT REPLACEMENT (THIS PROJECT)  
SCALE: 1"=20'



PHASE 2 - FUTURE CONDITIONS PLAN  
SCALE: 1"=20'

- NOTES:
1. PHASE 1 WORK CONSISTS OF REPLACING EXISTING CULVERTS WITH CULVERTS A AND B. OTHER IMPROVEMENTS ASSOCIATED WITH CULVERT REPLACEMENT NOT SHOWN FOR CLARITY.
  2. FUTURE PHASE 2 IMPROVEMENTS ARE SHOWN FOR GENERAL INFORMATION ONLY AND ARE NOT INCLUDED IN THE CONTRACT.
  2. PROJECT CONTROL SHALL REFERENCE THE FUTURE VILLA ROAD CENTERLINE STATIONING SHOWN. THE ENGINEER SHALL PROVIDE ALIGNMENT DATA TO CONTRACTOR.

**VILLA ROAD IMPROVEMENTS, HAWORTH TO CRESTVIEW - PH. 1 - CULVERT REPLACEMENTS**  
PROJECT NO. 702163 - CITY OF NEWBERG, OREGON



SCALE	AS SHOWN	NO.	REVISION	DATE
DATE:	March 17, 2016			
REVIEWED:	NJM			
DESIGNED:	SBB			
APPROVED:	GEC			
DATE:	March 18, 2016			

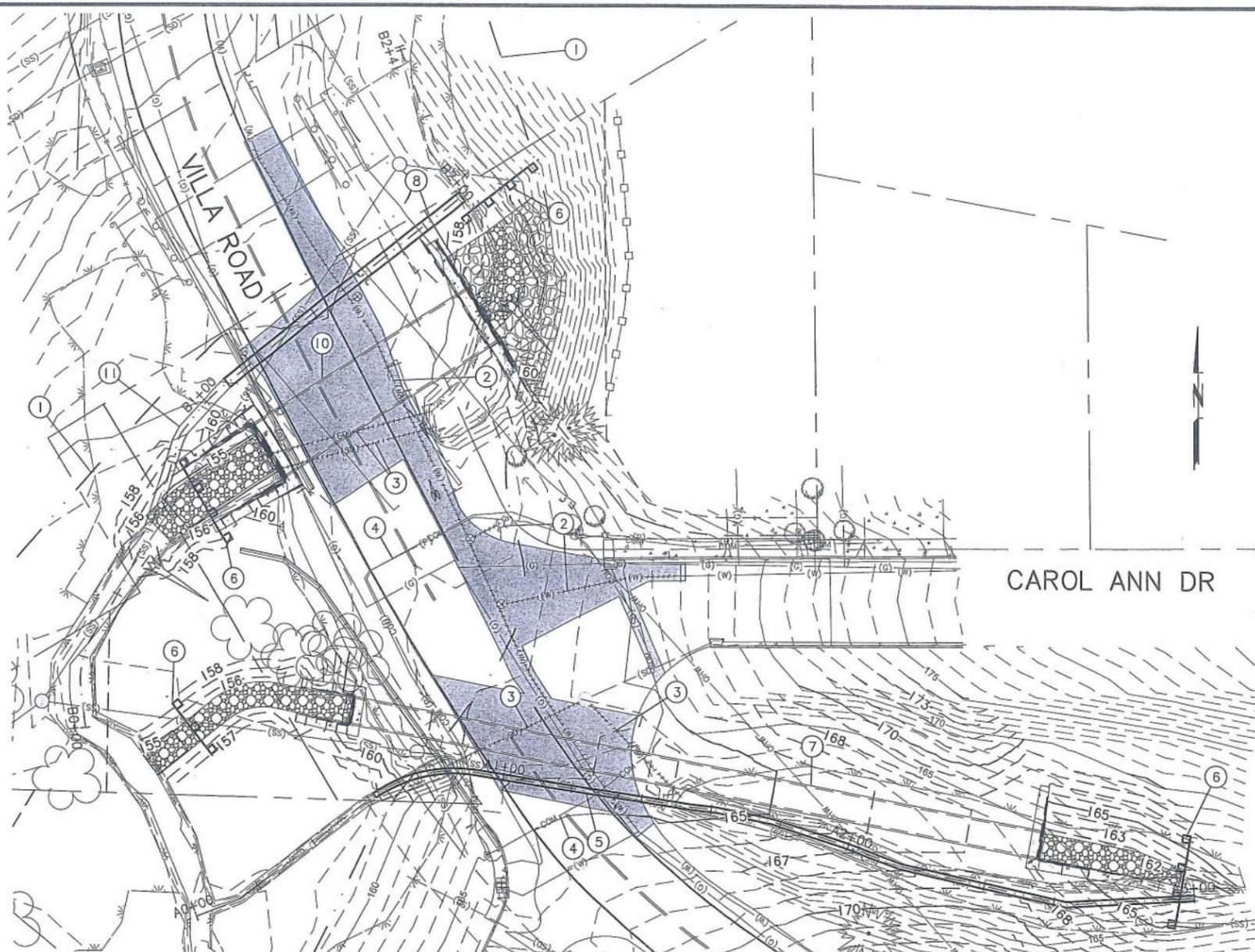
**SHEET C-1**  
9 of 18

**BID SET** Murray Smith & Associates, Inc. Engineers/Planners  
124 N.W. Salmon, Suite 500 Portland, Oregon 97204 PHONE 503-225-9100 FAX 503-225-9122

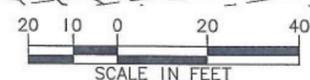


**PHASING PLAN**

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**PLAN**  
SCALE: 1"=20'

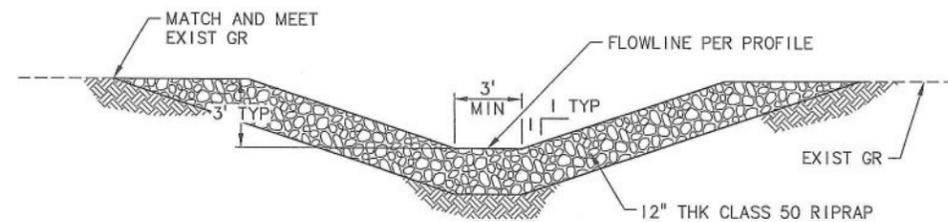


**CONSTRUCTION NOTES**

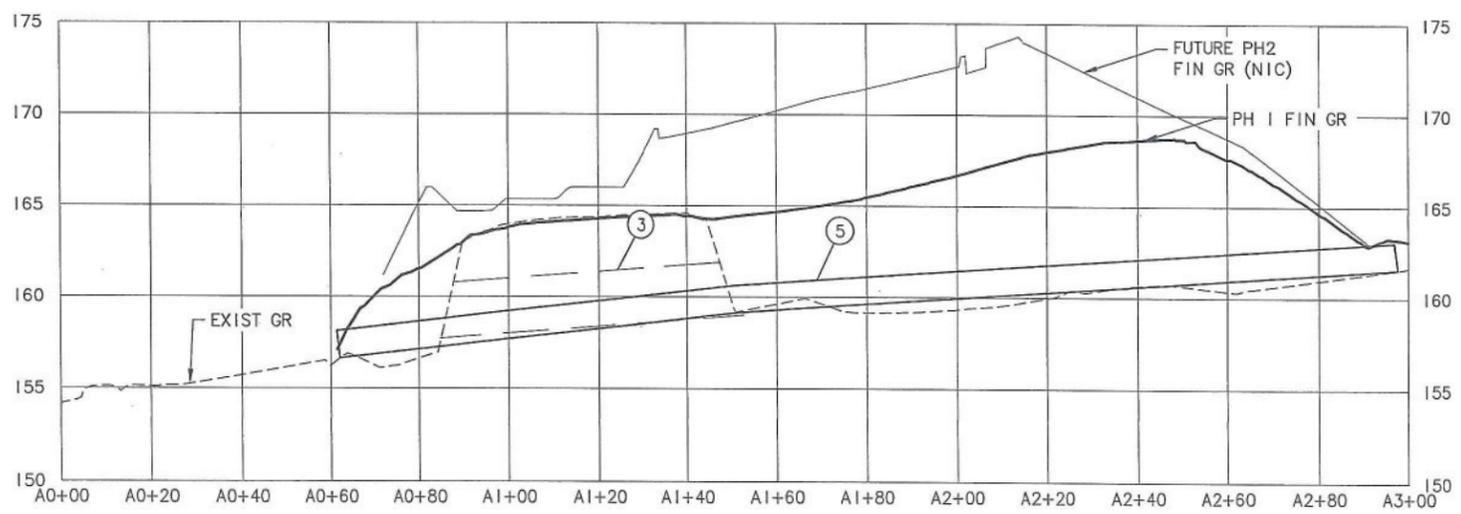
- ① FEMA 100-YR HIGH WATER LINE
- ② REMOVE EXIST WATER MAIN PER SHT C-9
- ③ REMOVE EXIST STORM DRAIN OR CULVERT PER SHT C-9
- ④ RELOCATE UTILITY (BY OTHERS)
- ⑤ CONST TWMF 18" FLEXIBLE BYPASS PIPE
- ⑥ CONST TWMF DIVERSION BARRIER/DAM
- ⑦ CONST CULVERT A PER SHT C-3
- ⑧ CONST TWMF 36" BYPASS PIPE
- ⑨ NOT USED
- ⑩ CONST CULVERT B PER SHT C-6
- ⑪ CONST TWMF OUTLET CHANNEL PER DET 1, THIS SHT

**NOTES:**

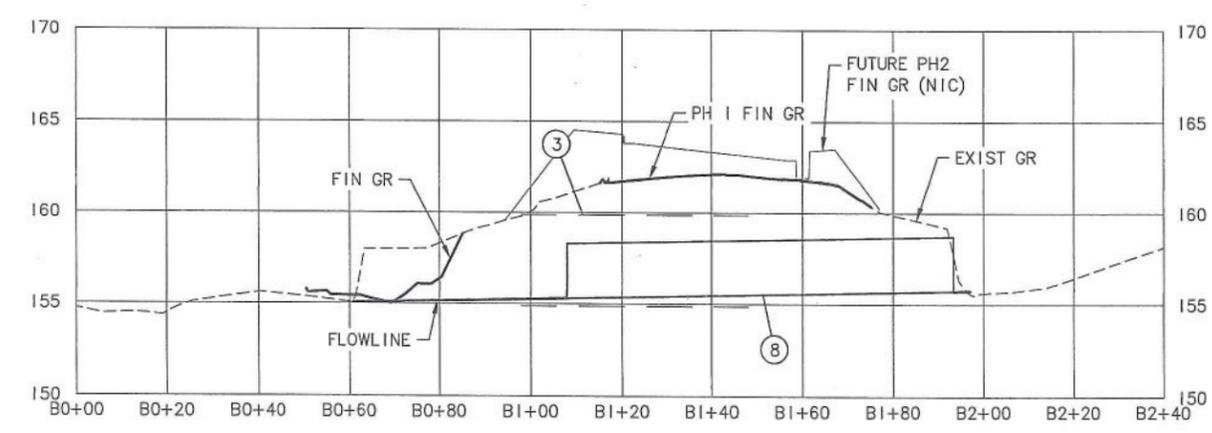
- 1. CONCEPTUAL BYPASS BARRIER/DAM AND PIPING CONFIGURATION SHOWN. CONTRACTOR SHALL PREPARE AND SUBMIT A TEMPORARY WATER MANAGEMENT PLAN FOR REVIEW & APPROVAL BY CITY OF NEWBERG.
- 2. CONSTRUCTION FOR CULVERTS A AND B SHALL OCCUR WITHIN THE PERMITTED IN-WATER WORK WINDOW.



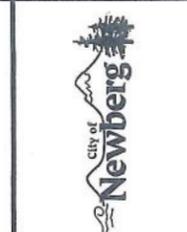
**TWMF OUTLET CHANNEL DETAIL ①**  
SCALE: NTS



**PROFILE - TEMP BYPASS PIPE A**  
SCALE: 1"=20' HORIZ, 1"=10' VERT



**PROFILE - TEMP BYPASS PIPE B**  
SCALE: 1"=20' HORIZ, 1"=10' VERT



**VILLA ROAD IMPROVEMENTS, HAWORTH TO CRESTVIEW - PH. 1 - CULVERT REPLACEMENTS**  
PROJECT NO. 702163 - CITY OF NEWBERG, OREGON  
**TEMPORARY WATER MANAGEMENT PLAN**



SCALE:	AS SHOWN	NO.	REVISION	DATE
DATE:	March 16, 2016			
REVIEWED:	NJM			
DESIGNED:	ARC			
APPROVED:	GEC			
FILE:	PLOT DATE: March 16, 2016			

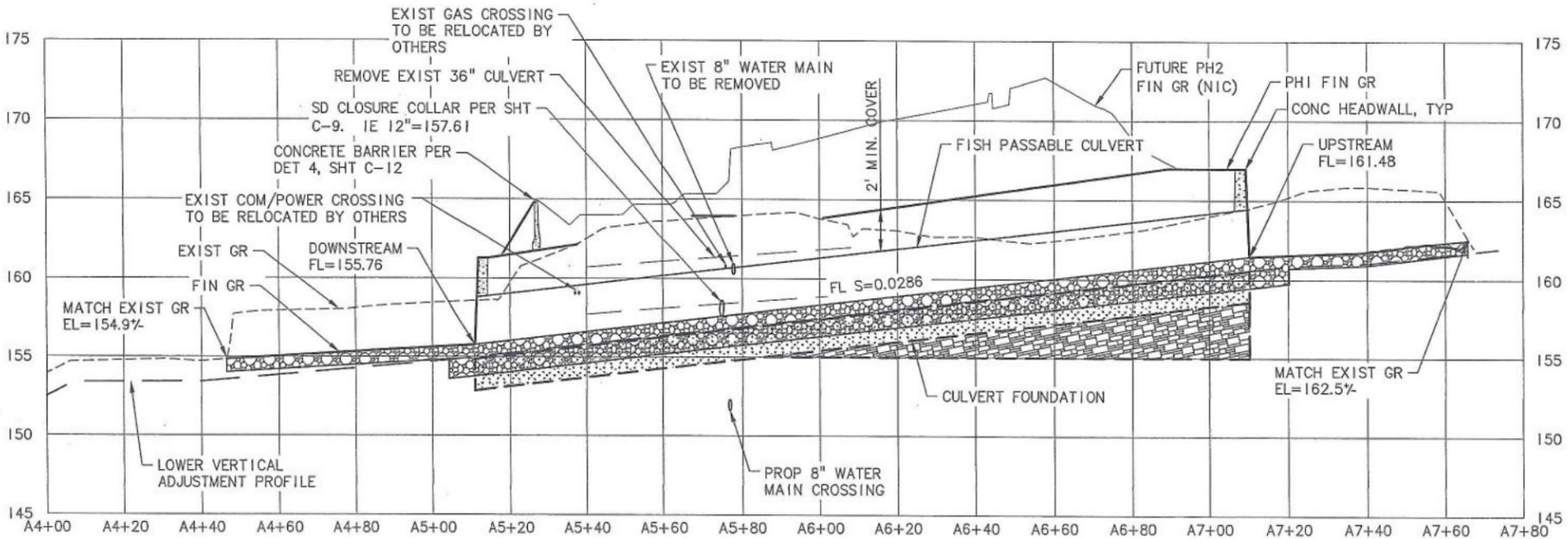
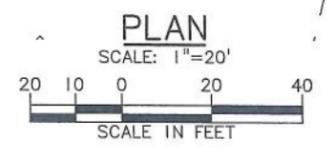
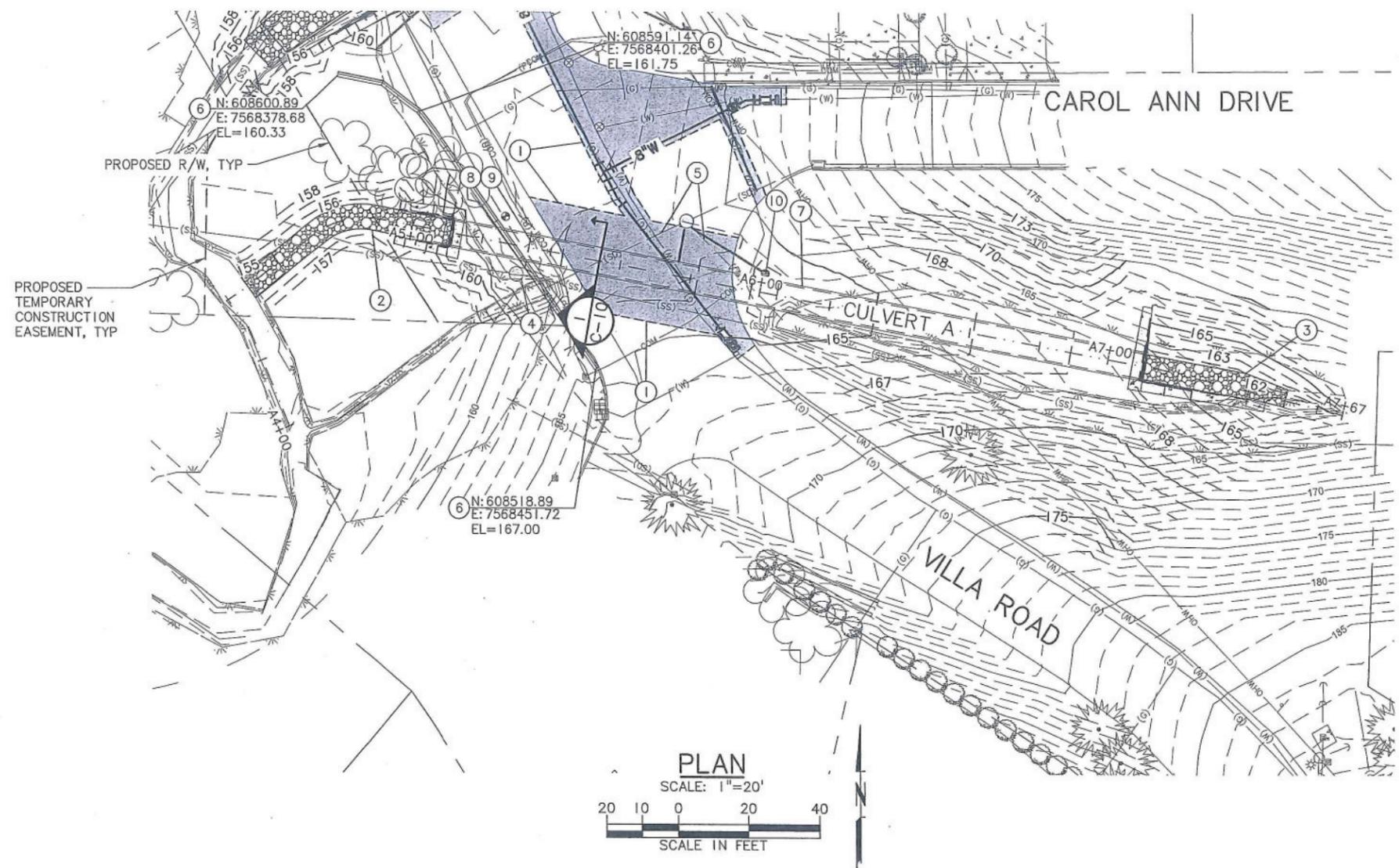


**VILLA ROAD IMPROVEMENTS, HAWORTH TO CRESTVIEW - PH. 1 - CULVERT REPLACEMENTS**  
 PROJECT NO. 702163 - CITY OF NEWBERG, OREGON  
**CULVERT A PLAN & PROFILE**



SCALE:	AS SHOWN	NO.	DATE	REVISION	DATE
REVIEWED:	March 17, 2016	NJM			
DESIGNED:		ARC			
APPROVED:		GEC			
PLOT DATE: March 16, 2016					

**SHEET C-3**  
06 of 18



**PROFILE - CULVERT A**  
SCALE: 1"=20' HORIZ, 1"=5' VERT

- NOTES:**
1. REMOVE ALL STREAMBED SEDIMENT AND REGRADE CHANNEL TO THE UPSTREAM AND DOWNSTREAM LIMITS SHOWN.
  2. PROFILE INFORMATION FOR EXISTING UTILITIES IS SHOWN AT ASSUMED 3 FEET OF COVER. CONTRACTOR SHALL FIELD VERIFY ACTUAL LOCATIONS.
  3. LOWER VERTICAL ADJUSTMENT PROFILE (LVAP) PROVIDED FOR PERMITTING PURPOSES ONLY.

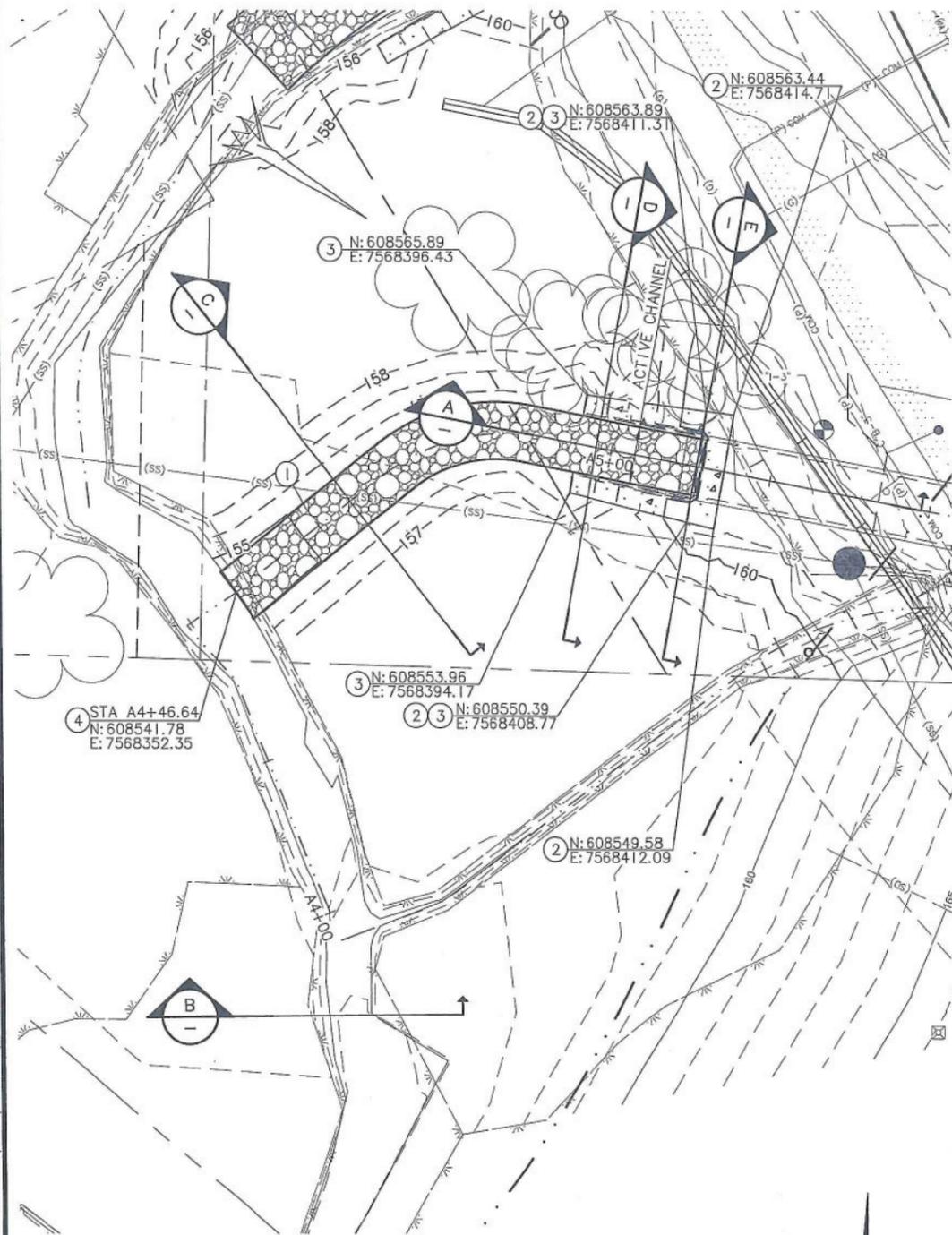
- CONSTRUCTION NOTES**
- 1 MATCH AND MEET EXIST ROADWAY SURFACE. PROVIDE ACP SURFACE RESTORATION TO EXIST GR PER DETAIL 5, SHT C-11.
  - 2 CONSTRUCT DOWNSTREAM CHANNEL GRADING PER SHEET C-4
  - 3 CONSTRUCT UPSTREAM CHANNEL GRADING PER SHEET C-9
  - 4 ADJUST MH PER SHEET C-9
  - 5 REMOVE AND RECONNECT SD PER SHT C-9
  - 6 FURNISH AND INSTALL 75 FEET OF CONCRETE BARRIER AND REINSTALL 40 FEET OF EXISTING BARRIER. SEE SHT C-6 AND DET 4, SHT C-12
  - 7 INSTALL CULVERT A PER DET 1, SHT C-10
  - 8 REMOVE AND SALVAGE EXIST SIGN AND 2" PERF STL SQ POST.
  - 9 INSTALL 2-1/4" PERF STL SQ TUBE SIGN SUPPORT PER OSD TM681 AT A LOCATION APPROVED BY ENGINEER. REINSTALL EXIST SIGN AND 2" PERF STL SQ POST.
  - 10 INSTALL AREA DRAIN PER SHEET C-9

ITEM	ORDINARY HIGH WATER	DESIGN FLOOD	MAX. PROBABLE FLOOD
DISCHARGE (CFS)	6.63	57.52	65.9
RECURRENCE INTERVAL (YEARS)	< 2	100	500
WATER SURFACE ELEVATION AT UPSTREAM CULVERT FACE (FT)	159.84	160.80	160.92
WATER SURFACE ELEVATION AT DOWNSTREAM CULVERT FACE (FT)	157.66	158.56	158.72
VELOCITY (FPS)	1.0	4.5	4.8

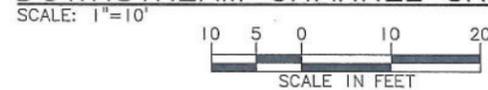
- LEGEND**
- STREAMBED MATERIAL
  - CONC FOOTING, HEADWALL, OR MODULAR RETAINING WALL
  - STRUCTURE EXCAVATION AND BACKFILL BELOW ELEVATIONS SHOWN

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**DOWNSTREAM CHANNEL GRADING - PLAN**

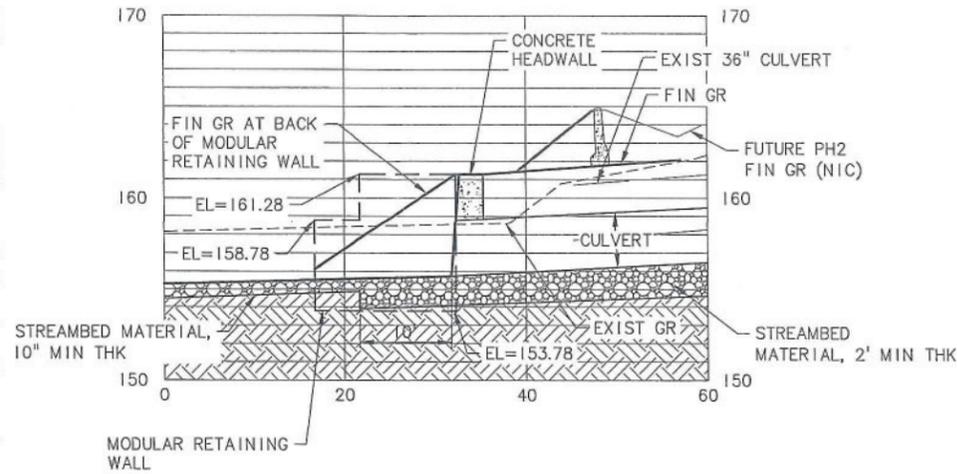


**CONSTRUCTION NOTES**

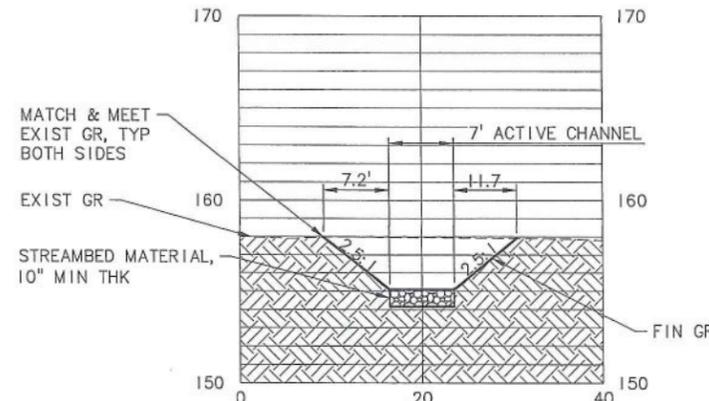
- ① REGRADE CHANNEL PER DET 3, SHT C-10
- ② CONSTRUCT CONCRETE HEADWALL PER DET 5, SHT C-13
- ③ CONSTRUCT MODULAR RETAINING WALL PER DET 5, SHT C-12
- ④ ACTIVE CHANNEL WIDTH = 7'; BEGIN STREAMBED GRAVEL

**LEGEND**

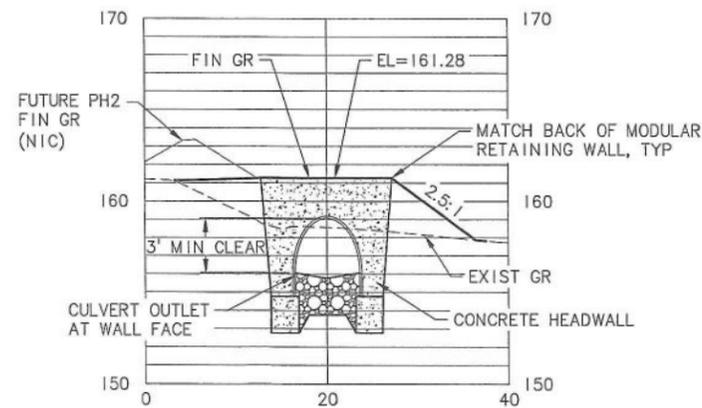
- STREAMBED MATERIAL - PLAN
- STREAMBED MATERIAL - PROFILE
- CONC FOOTING, HEADWALL, OR MODULAR RETAINING WALL - PLAN
- CONC FOOTING, HEADWALL, OR MODULAR RETAINING WALL - PROFILE



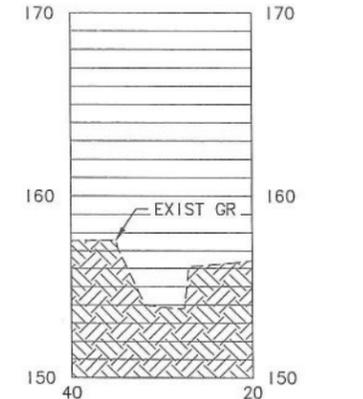
**SECTION A**  
SCALE: 1"=10' HORIZ, 1"=5' VERT



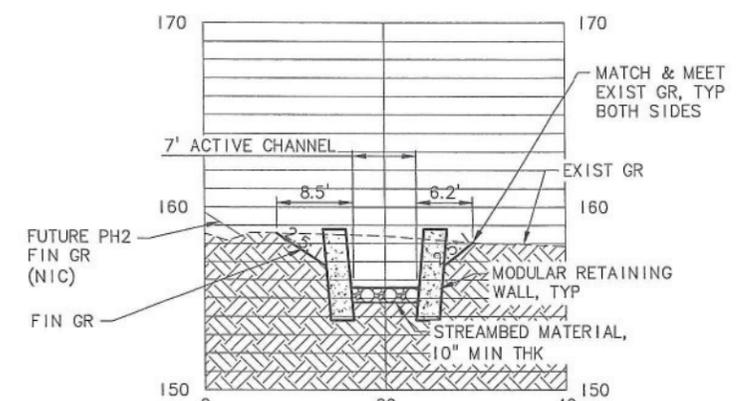
**SECTION B**  
SCALE: 1"=10' HORIZ, 1"=5' VERT



**SECTION C**  
SCALE: 1"=10' HORIZ, 1"=5' VERT



**SECTION D**  
SCALE: 1"=10' HORIZ, 1"=5' VERT



**SECTION E**  
SCALE: 1"=10' HORIZ, 1"=5' VERT



**VILLA ROAD IMPROVEMENTS, HAWORTH TO CRESTVIEW - PH. 1 - CULVERT REPLACEMENTS**  
PROJECT NO. 702163 - CITY OF NEWBERG, OREGON  
**CULVERT A DOWNSTREAM CHANNEL GRADING**



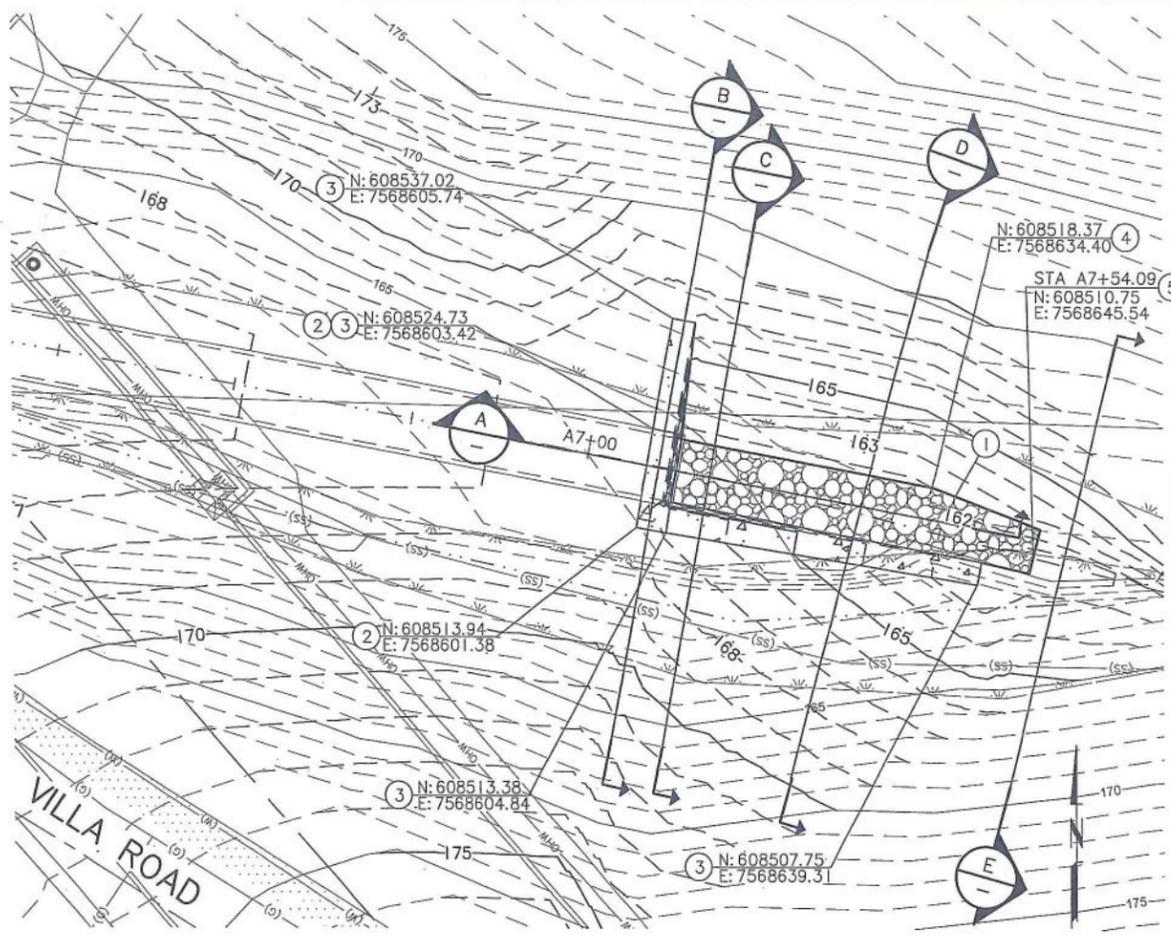
SCALE:	AS SHOWN	NO.	REVISION	DATE
DATE:	March 17, 2016			
REVIEWED:	NJM			
DESIGNED:	ARC			
APPROVED:	GEC			
PLOT DATE:	March 17, 2016			

**SHEET**

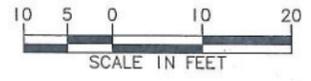
**C-4**

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**UPSTREAM CHANNEL GRADING - PLAN**  
SCALE: 1"=10'

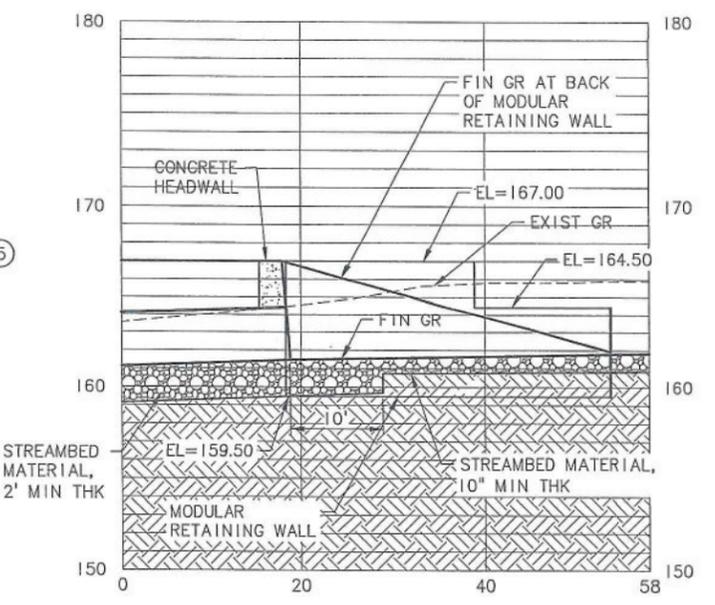


**CONSTRUCTION NOTES**

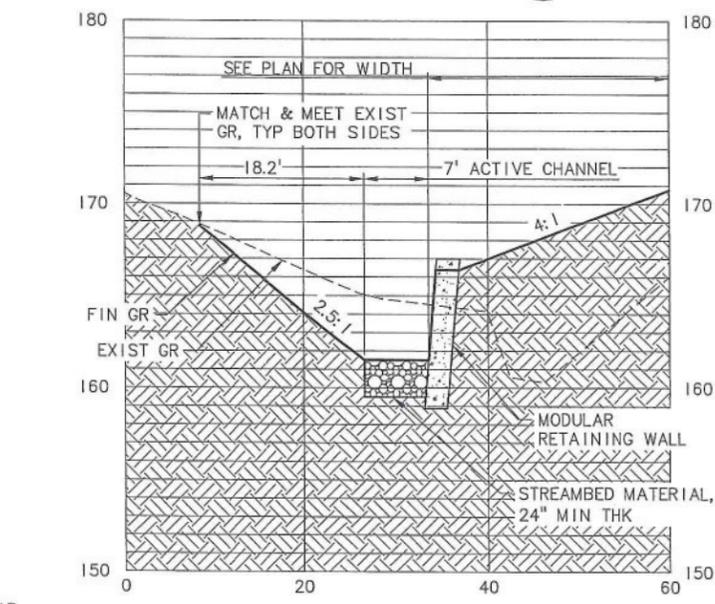
- ① REGRADE CHANNEL PER DET 3, SHT C-10
- ② CONSTRUCT CONCRETE HEADWALL PER DET 5, SHT C-13
- ③ CONSTRUCT MODULAR RETAINING WALL PER DET 5, SHT C-12
- ④ ACTIVE CHANNEL WIDTH = 7'; BEGIN STREAMBED GRAVEL WIDTH TAPER
- ⑤ ACTIVE CHANNEL WIDTH = 5'; END STREAMBED GRAVEL WIDTH TAPER

**LEGEND**

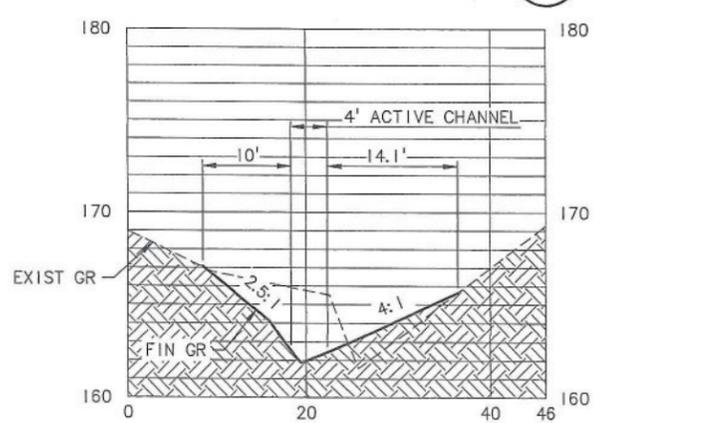
- STREAMBED MATERIAL - PLAN
- STREAMBED MATERIAL - PROFILE
- CONC FOOTING, HEADWALL, OR MODULAR RETAINING WALL - PLAN
- CONC FOOTING, HEADWALL, OR MODULAR RETAINING WALL - PROFILE



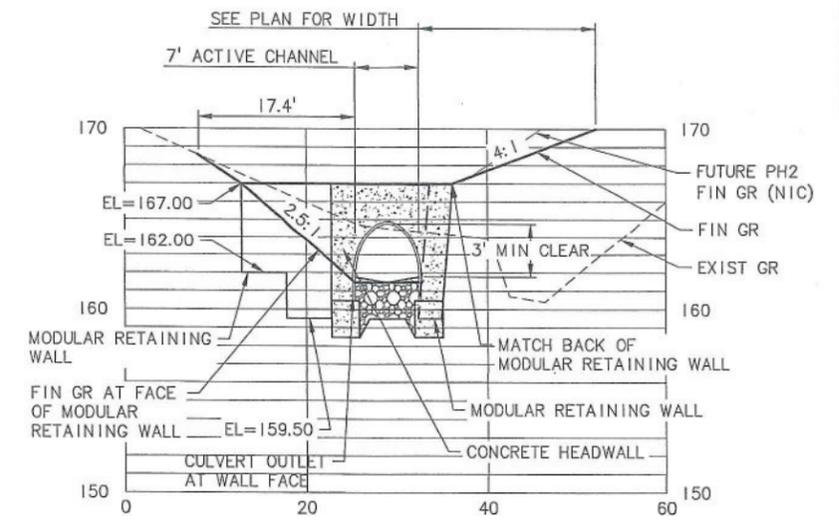
**SECTION A**  
SCALE: 1"=10' HORIZ, 1"=5' VERT



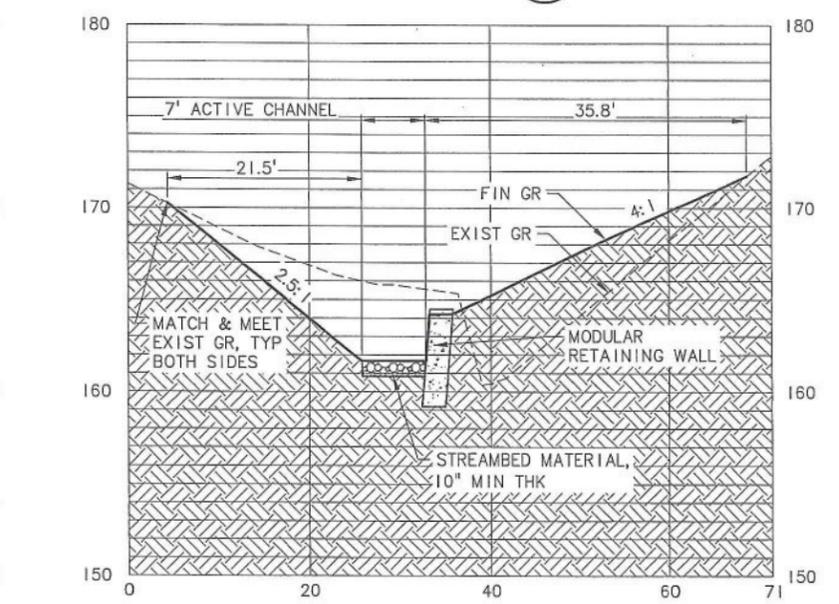
**SECTION B**  
SCALE: 1"=10' HORIZ, 1"=5' VERT



**SECTION C**  
SCALE: 1"=10' HORIZ, 1"=5' VERT



**SECTION D**  
SCALE: 1"=10' HORIZ, 1"=5' VERT



**SECTION E**  
SCALE: 1"=10' HORIZ, 1"=5' VERT

**VILLA ROAD IMPROVEMENTS, HAWORTH TO CRESTVIEW - PH. 1 - CULVERT REPLACEMENTS**  
 PROJECT NO. 702163 - CITY OF NEWBERG, OREGON  
**CULVERT A UPSTREAM CHANNEL GRADING**



SCALE:	DATE:	REVIEWED:	DESIGNED:	APPROVED:
AS SHOWN	March 17, 2016	NJH	ARC	GEC
NO.				
REVISION				
DATE				

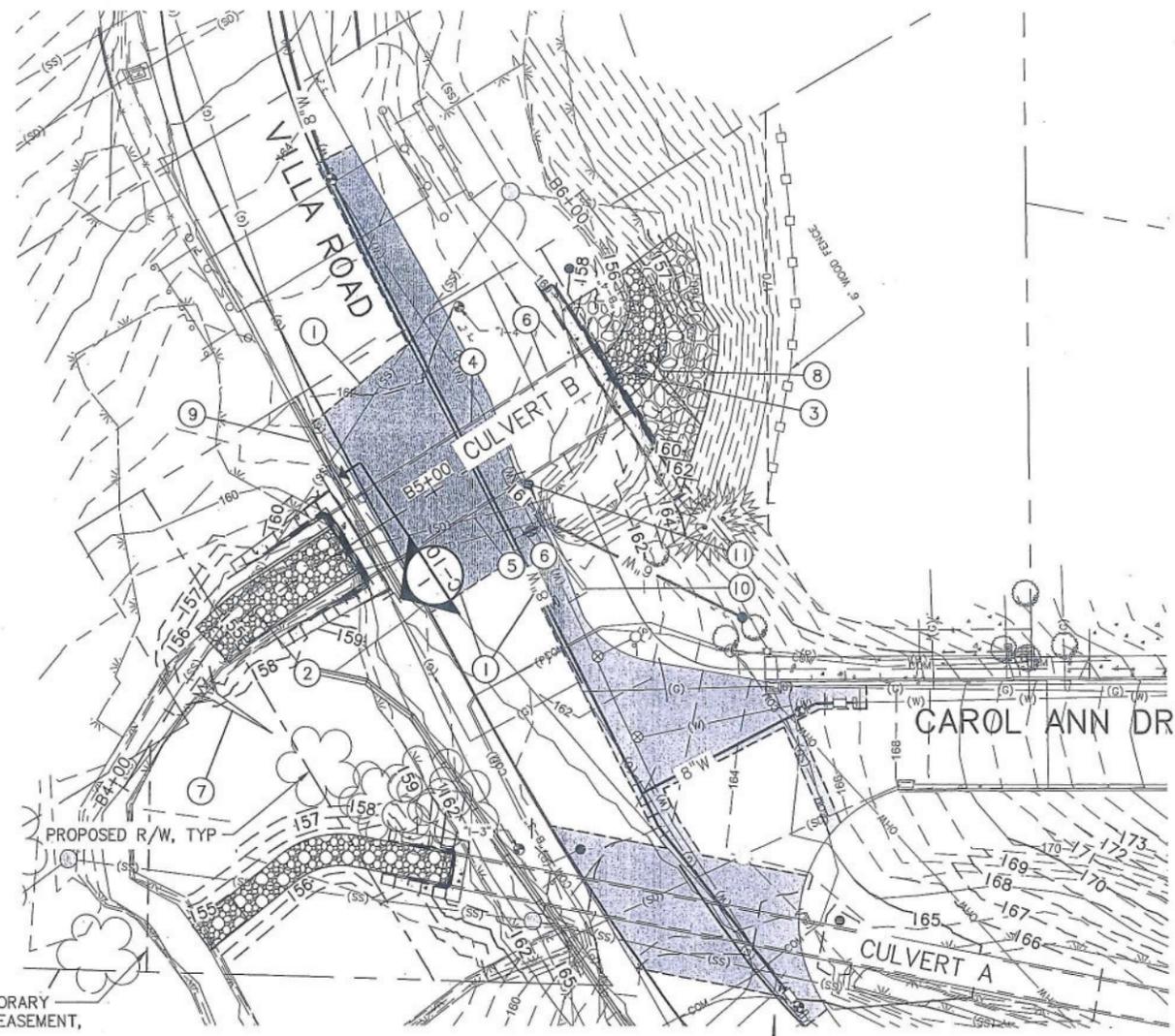
**SHEET**

**C-5**  
08 of 18

**BID SET**

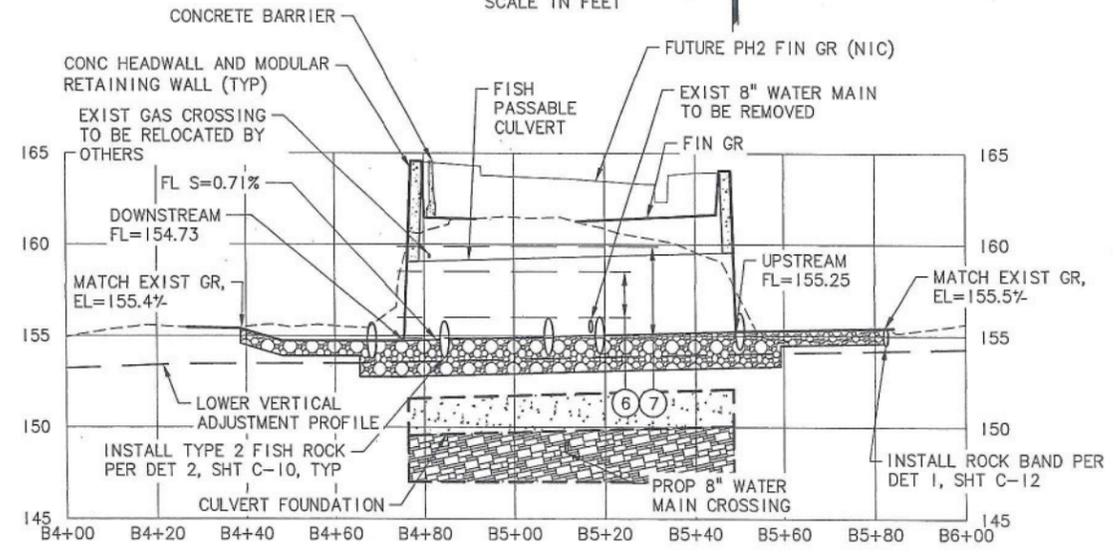
**Murray Smith & Associates, Inc.**  
Engineers/Planners  
121 SW Salmon, Suite 600  
Portland, Oregon 97204  
PHONE 503-255-9100  
FAX 503-255-9102

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PLAN

SCALE: 1"=20'



PROFILE - CULVERT B

SCALE: 1"=20' HORIZ, 1"=5' VERT

NOTES:

1. REMOVE ALL STREAMBED SEDIMENT AND REGRADE CHANNEL TO THE UPSTREAM AND DOWNSTREAM LIMITS SHOWN.
2. PROFILE INFORMATION FOR EXISTING UTILITIES IS SHOWN AT ASSUMED 3 FEET OF COVER. CONTRACTOR SHALL FIELD VERIFY ACTUAL LOCATIONS.
3. LOWER VERTICAL ADJUSTMENT PROFILE (LVAP) SHOWN FOR PERMITTING PURPOSES ONLY.

CONSTRUCTION NOTES

- ① MATCH AND MEET EXIST ROADWAY SURFACE, PROVIDE AC PVMT SURFACE RESTORATION TO EXIST GR PER DET 5, SHT C-11
- ② CONSTRUCT DOWNSTREAM CHANNEL GRADING PER SHT C-7
- ③ CONSTRUCT UPSTREAM CHANNEL GRADING PER SHT C-8
- ④ INSTALL CULVERT B PER DET 1, SHT C-10
- ⑤ REMOVE EXTG 30" CULVERT
- ⑥ REMOVE EXTG 60" CULVERT
- ⑦ INSTALL FISH LOG IN NATIVE BANK PER DET 1, SHT C-13
- ⑧ INSTALL FISH LOG IN RIPRAP PER DET 2, SHT C-13
- ⑨ FURNISH AND INSTALL 50 LF CONCRETE BARRIER. CONNECT TO EXIST BARRIER.
- ⑩ SALVAGE AND MOVE EXISTING BARRIER. SEE SHT C-3 AND DET 4, SHT C-12.
- ⑪ INSTALL AREA DRAIN PER SHEET C-9

HYDRAULIC DATA

ITEM	ORDINARY HIGH WATER	DESIGN FLOOD	MAX. PROBABLE FLOOD
DISCHARGE (CFS)	35.87	426	494
RECURRENCE INTERVAL (YEARS)	< 2	100	500
WATER SURFACE ELEVATION AT UPSTREAM CULVERT FACE (FT)	156.92	160.90	161.26
WATER SURFACE ELEVATION AT DOWNSTREAM CULVERT FACE (FT)	156.89	160.44	160.69
VELOCITY (FPS)	1.1	4.5	4.9

SHEET LEGEND

- CONCRETE HEADWALL/MODULAR RETAINING WALL
- STREAMBED MATERIAL
- WILLOW BUNDLES IN RIPRAP PER DET 3, SHT C-13
- STRUCTURE EXCAVATION AND BACKFILL BELOW ELEVATIONS SHOWN



VILLA ROAD IMPROVEMENTS, HAWORTH TO CRESTVIEW - PH. 1 - CULVERT REPLACEMENTS  
PROJECT NO. 702163 - CITY OF NEWBERG, OREGON



DATE	REVISION	NO.	AS SHOWN	DATE	REVIEWED	DESIGNED	APPROVED
				March 17, 2016	NJM	ARC	GEC

SHEET

C-6

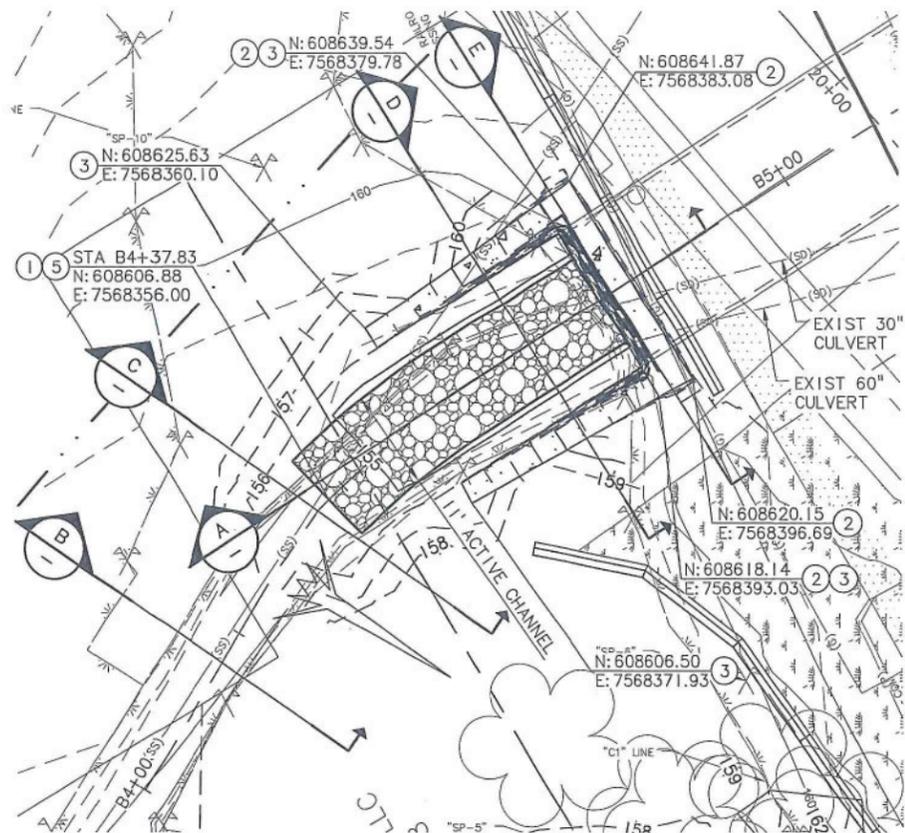
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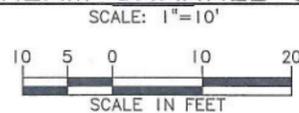


Murray Smith & Associates, Inc.  
Engineers/Planners  
121 S.W. Salmon, Suite 510  
Portland, Oregon 97204  
PHONE 503-255-2010  
FAX 503-255-4922

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**DOWNSTREAM CHANNEL GRADING**

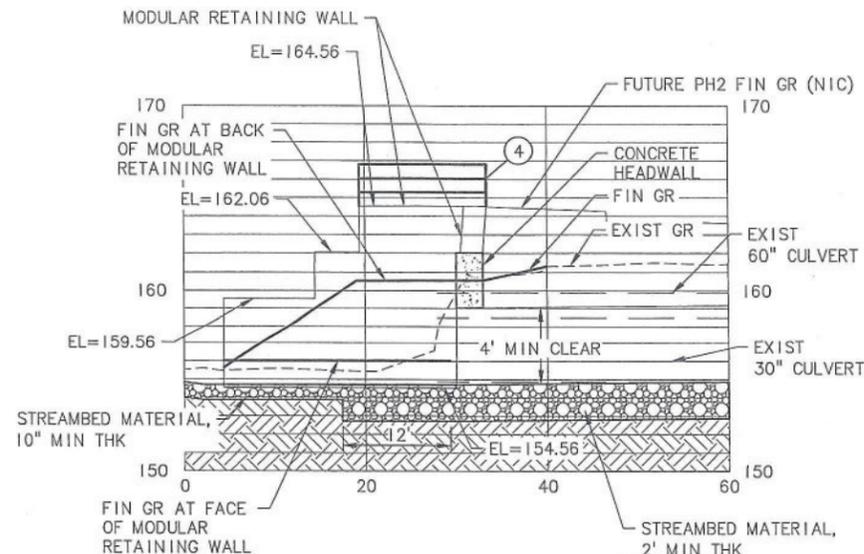


**CONSTRUCTION NOTES**

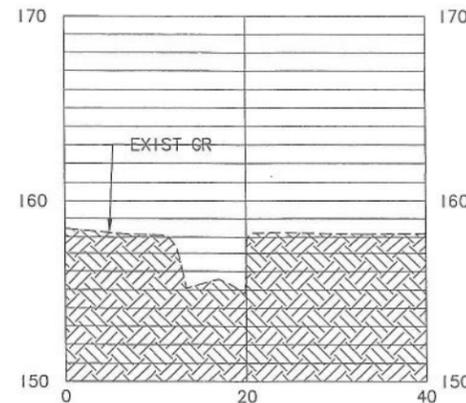
- ① REGRADE CHANNEL PER DET 3, SHT C-10
- ② CONSTRUCT CONCRETE HEADWALL PER DET 5, SHT C-13
- ③ CONSTRUCT MODULAR RETAINING WALL PER DET 5, SHT C-12
- ④ INSTALL BOLT-DOWN PEDESTRIAN THREE RAIL HANDRAIL PER OSD RD770 & RD771
- ⑤ ACTIVE CHANNEL WIDTH = 11'; BEGIN STREAMBED GRAVEL

**LEGEND**

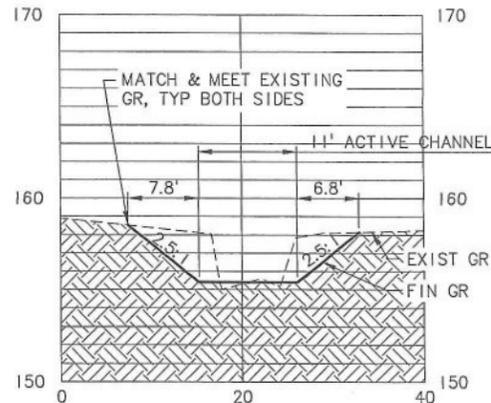
- STREAMBED MATERIAL - PLAN
- STREAMBED MATERIAL - PROFILE
- CONC FOOTING, HEADWALL, OR MODULAR RETAINING WALL - PLAN
- CONC FOOTING, HEADWALL, OR MODULAR RETAINING WALL - PROFILE



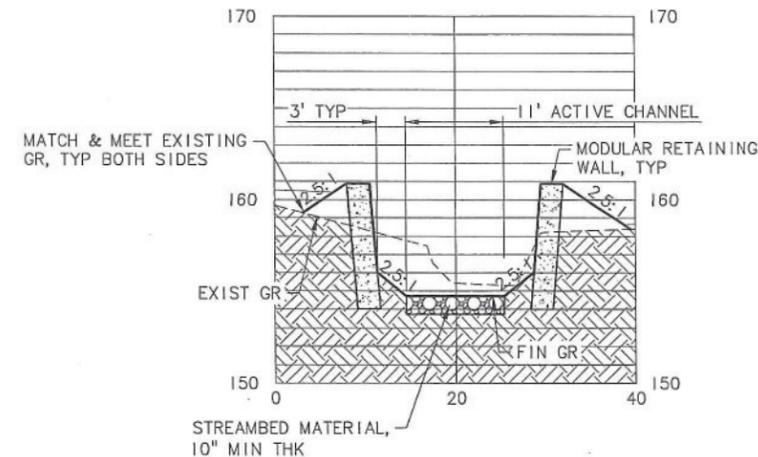
**SECTION A-A**  
SCALE: 1"=10' HORIZ, 1"=5' VERT



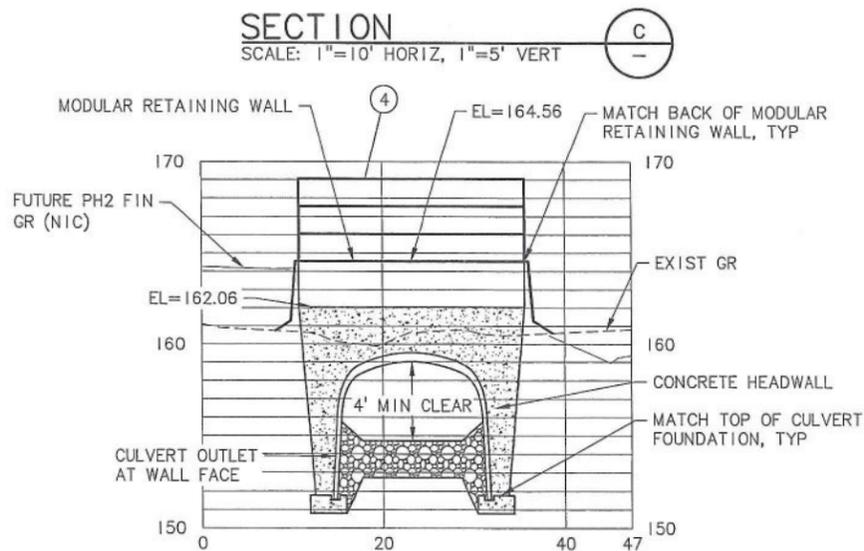
**SECTION B-B**  
SCALE: 1"=10' HORIZ, 1"=5' VERT



**SECTION C-C**  
SCALE: 1"=10' HORIZ, 1"=5' VERT



**SECTION D-D**  
SCALE: 1"=10' HORIZ, 1"=5' VERT



**SECTION E-E**  
SCALE: 1"=10' HORIZ, 1"=5' VERT

**VILLA ROAD IMPROVEMENTS, HAWORTH TO CRESTVIEW - PH. 1 - CULVERT REPLACEMENTS**  
 PROJECT NO. 702163 - CITY OF NEWBERG, OREGON  
**CULVERT B DOWNSTREAM CHANNEL GRADING**



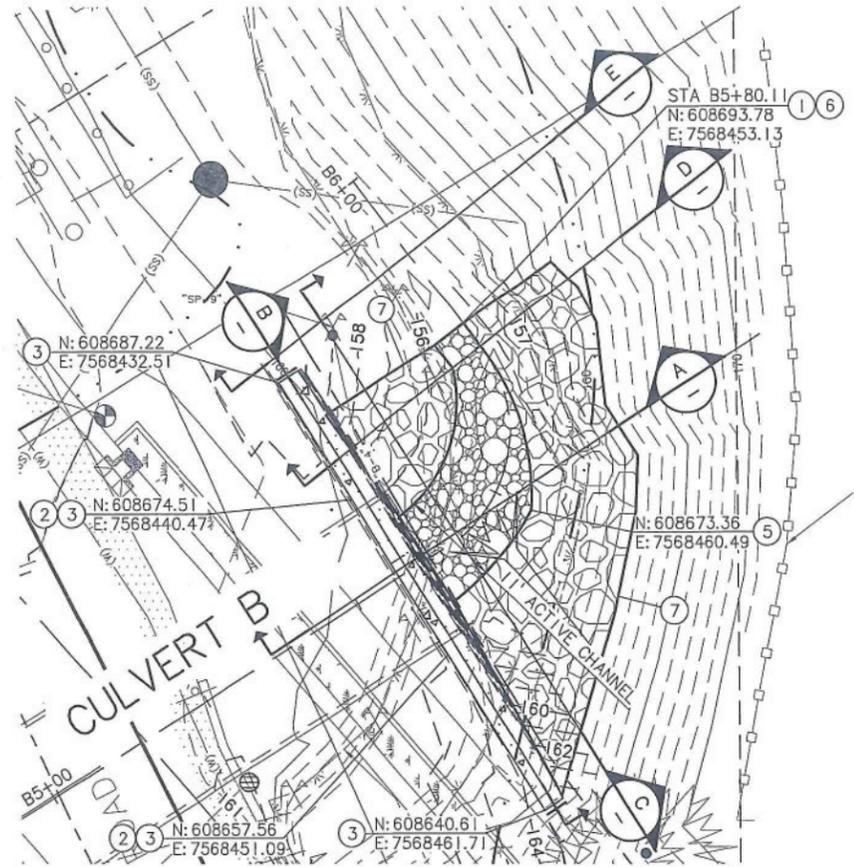
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AS SHOWN	March 17, 2016	NJM	ARC	GEC
NO.	REVISION	DATE		

**SHEET**

**C-7**

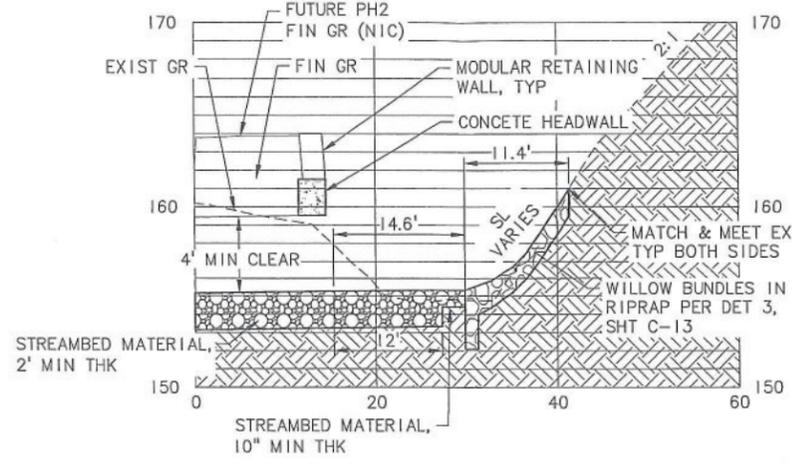
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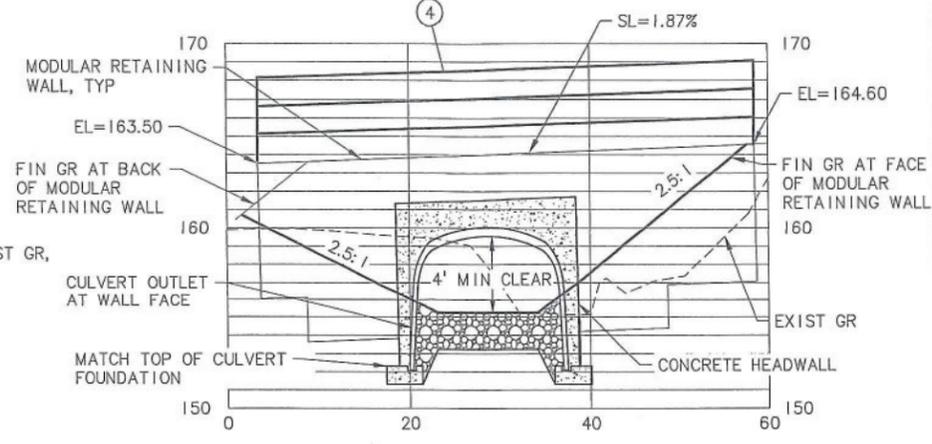


**UPSTREAM CHANNEL GRADING**

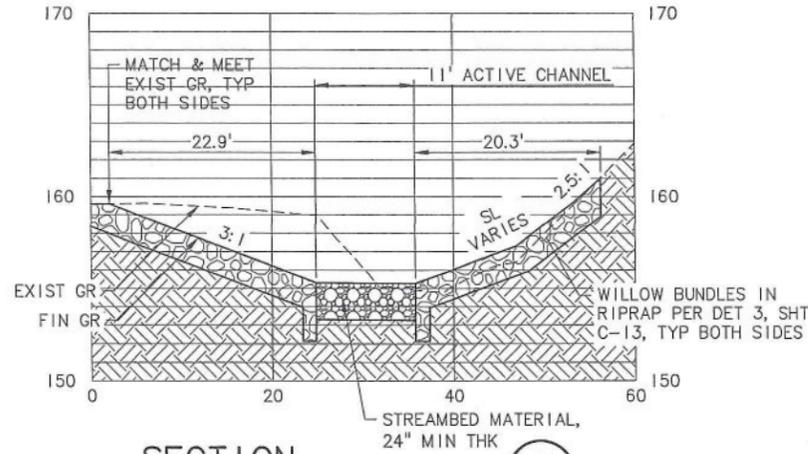
SCALE: 1"=10'



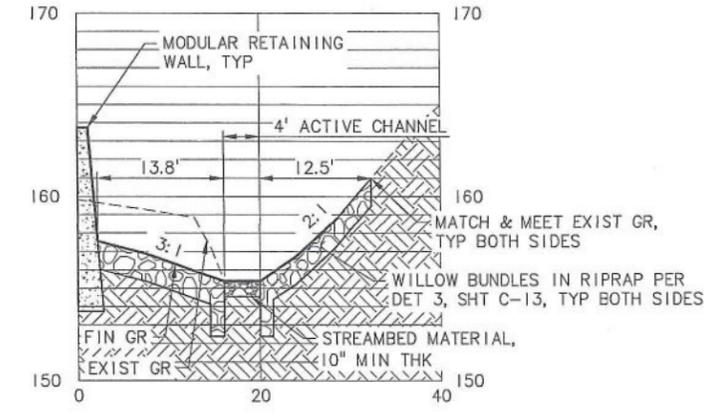
**SECTION A**  
SCALE: 1"=10' HORIZ, 1"=5' VERT



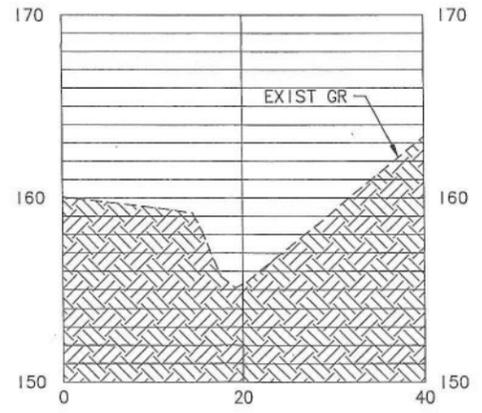
**SECTION B**  
SCALE: 1"=10' HORIZ, 1"=5' VERT



**SECTION C**  
SCALE: 1"=10' HORIZ, 1"=5' VERT



**SECTION D**  
SCALE: 1"=10' HORIZ, 1"=5' VERT

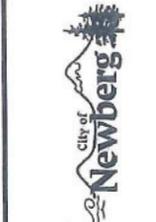


**SECTION E**  
SCALE: 1"=10' HORIZ, 1"=5' VERT

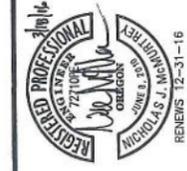
**CONSTRUCTION NOTES**

- ① REGRADE CHANNEL PER DET 3, SHT C-10
- ② CONSTRUCT CONCRETE HEADWALL PER DET 5, SHT C-13
- ③ CONSTRUCT MODULAR RETAINING WALL PER DET 5, SHT C-12
- ④ INSTALL BOLT-DOWN PEDESTRIAN THREE RAIL HANDRAIL PER OSD RD770 & RD771
- ⑤ ACTIVE CHANNEL WIDTH = 11'; BEGIN STREAMBED GRAVEL WIDTH TAPER
- ⑥ ACTIVE CHANNEL WIDTH = 4'; END STREAMBED GRAVEL WIDTH TAPER
- ⑦ PROVIDE WILLOW BUNDLES IN RIPRAP PER DET 3, SHT C-13

- STREAMBED MATERIAL - PLAN
- STREAMBED MATERIAL - PROFILE
- WILLOW BUNDLES IN RIPRAP - PLAN
- WILLOW BUNDLES IN RIPRAP - PROFILE
- CONC FOOTING, HEADWALL, OR MODULAR RETAINING WALL - PLAN
- CONC FOOTING, HEADWALL, OR MODULAR RETAINING WALL - PROFILE



**VILLA ROAD IMPROVEMENTS, HAWORTH TO CRESTVIEW - PH. 1 - CULVERT REPLACEMENTS**  
PROJECT NO. 702163 - CITY OF NEWBERG, OREGON  
**CULVERT B UPSTREAM CHANNEL GRADING**



SCALE:	DATE:	REVISION:	NO.:	AS SHOWN:	DATE:	REVIEWED:	DESIGNED:	APPROVED:	FILE:
	March 17, 2016					NJM	ARC	GEC	

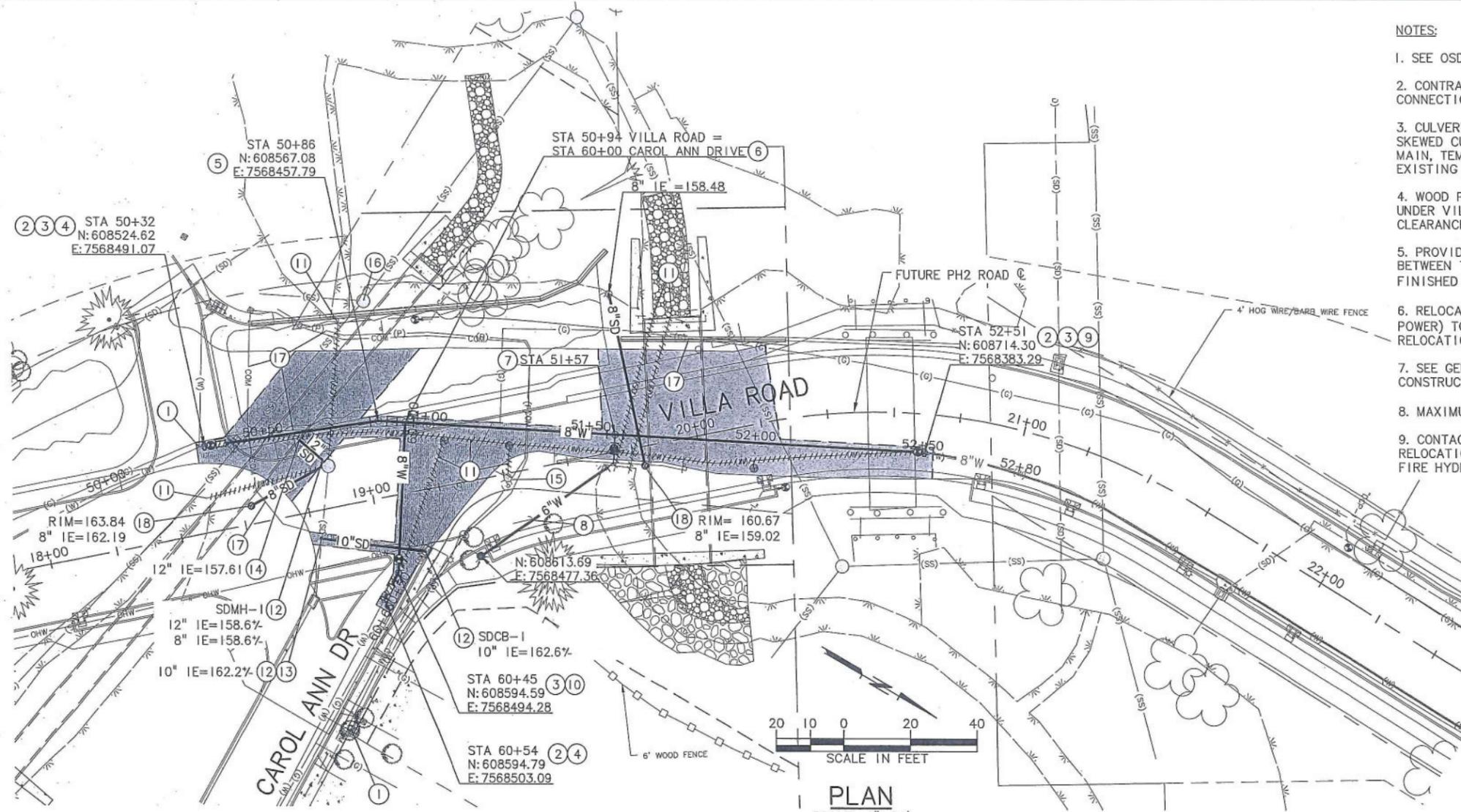
**SHEET**

**C-8**

**11 of 18**

**BID SET** Murray Smith & Associates, Inc.  
Engineers/Planners  
121 S.W. Salmon, Suite 910 Portland, Oregon 97204 PHONE: 503-235-9910 FAX: 503-235-9922

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**NOTES:**

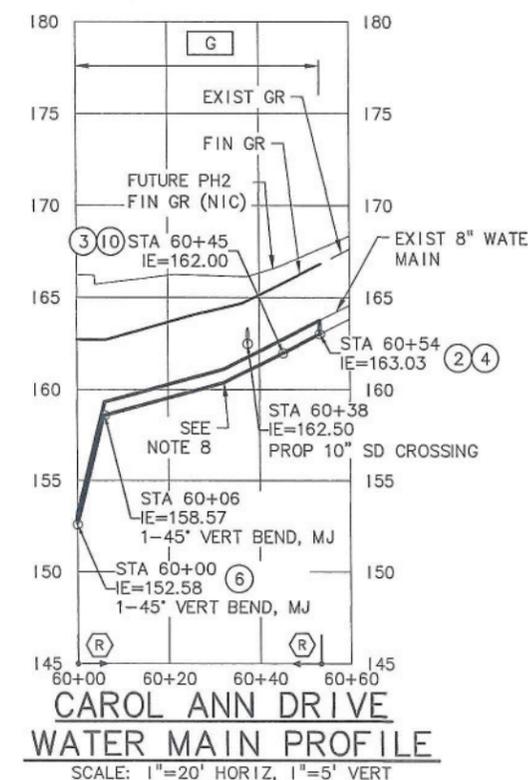
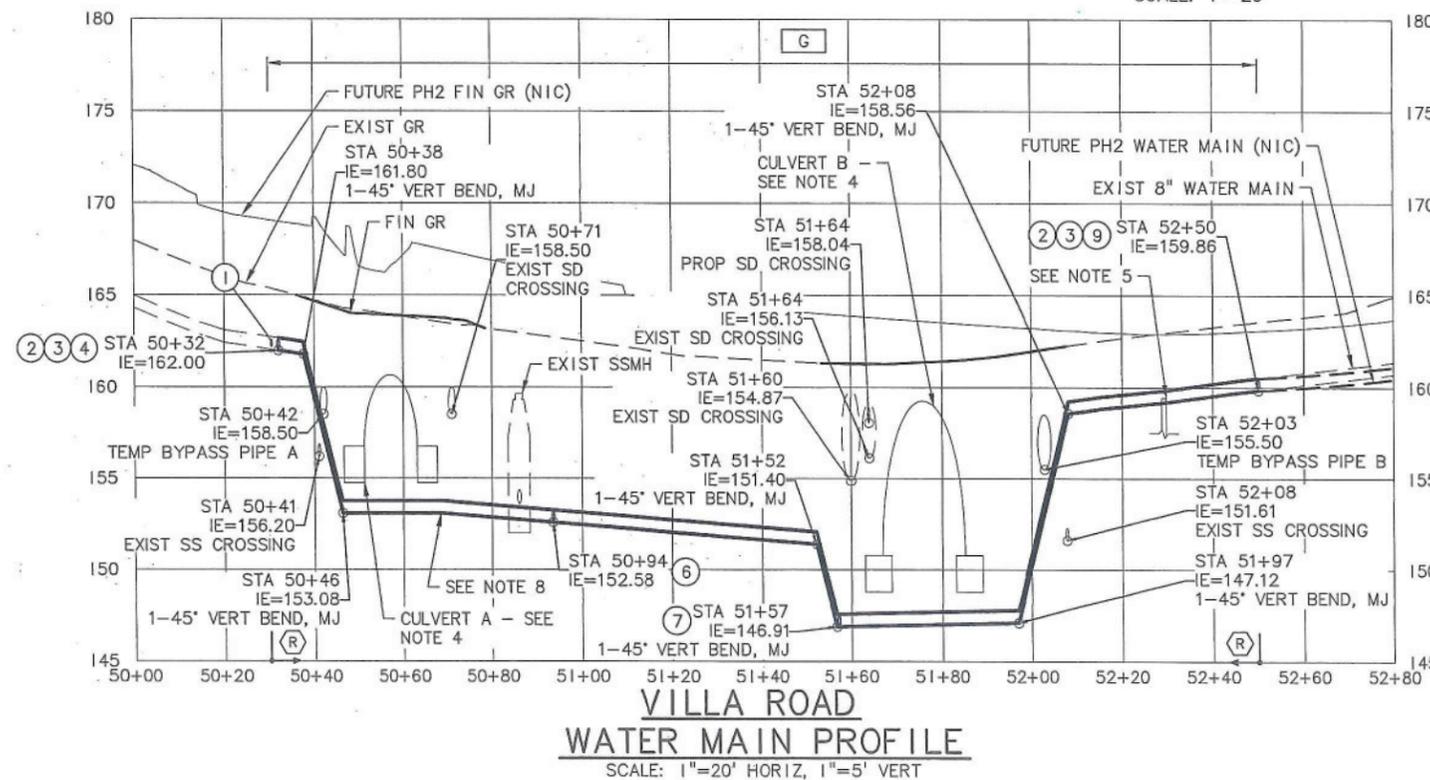
1. SEE OSD RD300 FOR TRENCH BACKFILL AND PIPE BEDDING DETAILS.
2. CONTRACTOR SHALL REMOVE EXISTING WATER MAIN BETWEEN POINTS OF CONNECTION TO EXISTING MAIN.
3. CULVERTS DEPICTED ON PROFILE AT WATER MAIN CENTERLINE STATIONING. SKEWED CULVERT ENDS ARE NOT SHOWN. CONTRACTOR SHALL FIELD VERIFY WATER MAIN, TEMPORARY WATER MANAGEMENT BYPASS PIPING, CULVERT FOUNDATION AND EXISTING SANITARY SEWER CONFLICTS PRIOR TO CONSTRUCTION.
4. WOOD PILES ABANDONED DURING PREVIOUS TRESTLE CONSTRUCTION MAY REMAIN UNDER VILLA ROAD. CONTRACTOR SHALL FIELD VERIFY WATER MAIN ALIGNMENT FOR CLEARANCE PRIOR TO CONSTRUCTION.
5. PROVIDE SST OPERATOR NUT AND EXTENSION FOR GATE VALVES WHEN DISTANCE BETWEEN TOP OF WATER MAIN ELEVATION AND FINISHED GRADE OR FUTURE PHASE 2 FINISHED GRADE EXCEEDS 3'.
6. RELOCATION OF FRANCHISE UTILITIES (GAS, COMMUNICATION, AND UNDERGROUND POWER) TO BE PROVIDED BY OTHERS AND COMPLETED PRIOR TO CONSTRUCTION. RELOCATION PLANS AVAILABLE UPON REQUEST.
7. SEE GENERAL NOTES, SEPARATION STATEMENT, MATERIAL NOTES, AND CONSTRUCTION NOTES ON SHEET G-2 FOR ADDITIONAL INFORMATION.
8. MAXIMUM ALLOWABLE 8" DIA PIPE DEFLECTION SHALL BE 2.5°, TYP ALL JOINTS.
9. CONTACT PGE BEFORE EXCAVATING FIRE HYDRANT ASSEMBLY WATER MAIN. RELOCATION OR TEMPORARY SUPPORT FOR POLE ANCHOR SHALL BE INCIDENTAL TO FIRE HYDRANT ASSEMBLY.

**LEGEND**

- ACP TRENCH RESURFACING PER DET 5, SHT C-11
- ▨ EXIST WATER OR STORM MAIN TO BE REMOVED

**CONSTRUCTION NOTES**

- 1 MAINTAIN EXIST WATER SERVICE/SUPPLY DURING CONSTRUCTION
- 2 8" CONNECTION TO EXIST 8" WATER MAIN. FURNISH & INSTALL COLLAR THRUST BLOCK PER DET 3, SHT C-11 & 1-8" LONG SLEEVE, MJ
- 3 FURNISH & INSTALL 1-8" GATE VALVE, MJ PER OSD RD258. SEE NOTE 5.
- 4 FURNISH & INSTALL 1-8" DI SPOOL
- 5 FURNISH & INSTALL 1-8" 11¼° HORIZ BEND, MJ
- 6 FURNISH & INSTALL 1-8" TEE, MJ
- 7 FURNISH & INSTALL 1-8"x6" TEE, MJxMJxFLG, 1-6" 45° HORIZ BEND, FL, & 1-FH ASSY PER DET 4, SHT C-11
- 8 PGE POLE ANCHOR. SEE NOTE 9.
- 9 FUTURE PHASE 2 POINT OF CONNECTION
- 10 FURNISH & INSTALL 1-8" HORIZ 22½° BEND, MJ
- 11 REMOVE EXIST WATER OR STORM MAIN
- 12 CONNECT TO EXIST SD STRUCTURE OR PIPE
- 13 FURNISH & INSTALL 1-12"x10" SD PIPE TEE
- 14 CONNECT 12" SD TO CULVERT A W/ CONC CLOSURE COLLAR PER DET 2, SHT C-11
- 15 REMOVE EXIST FH ASSY & RETURN TO CITY MAINTENANCE YARD
- 16 ADJUST SS MANHOLE TO FIN GR PER DET 4, SHT C-12
- 17 RELOCATION OF FRANCHISE UTILITIES BY OTHERS (NIC). SEE NOTE 6.
- 18 FURNISH & INSTALL AREA DRAINAGE BASIN PER OSSD RD374.
- 19 FURNISH & INSTALL AREA DRAINAGE BASIN PER OSSD RD374.



**CITY OF NEWBERG**

**VILLA ROAD IMPROVEMENTS, HAWORTH TO CRESTVIEW - PH. 1 - CULVERT REPLACEMENTS**

PROJECT NO. 702163 - CITY OF NEWBERG, OREGON

**COMPOSITE UTILITY PLAN**

**REGISTERED PROFESSIONAL ENGINEER**  
NICHOLAS J. M. ASH  
STATE OF OREGON  
REVISION 12-31-16

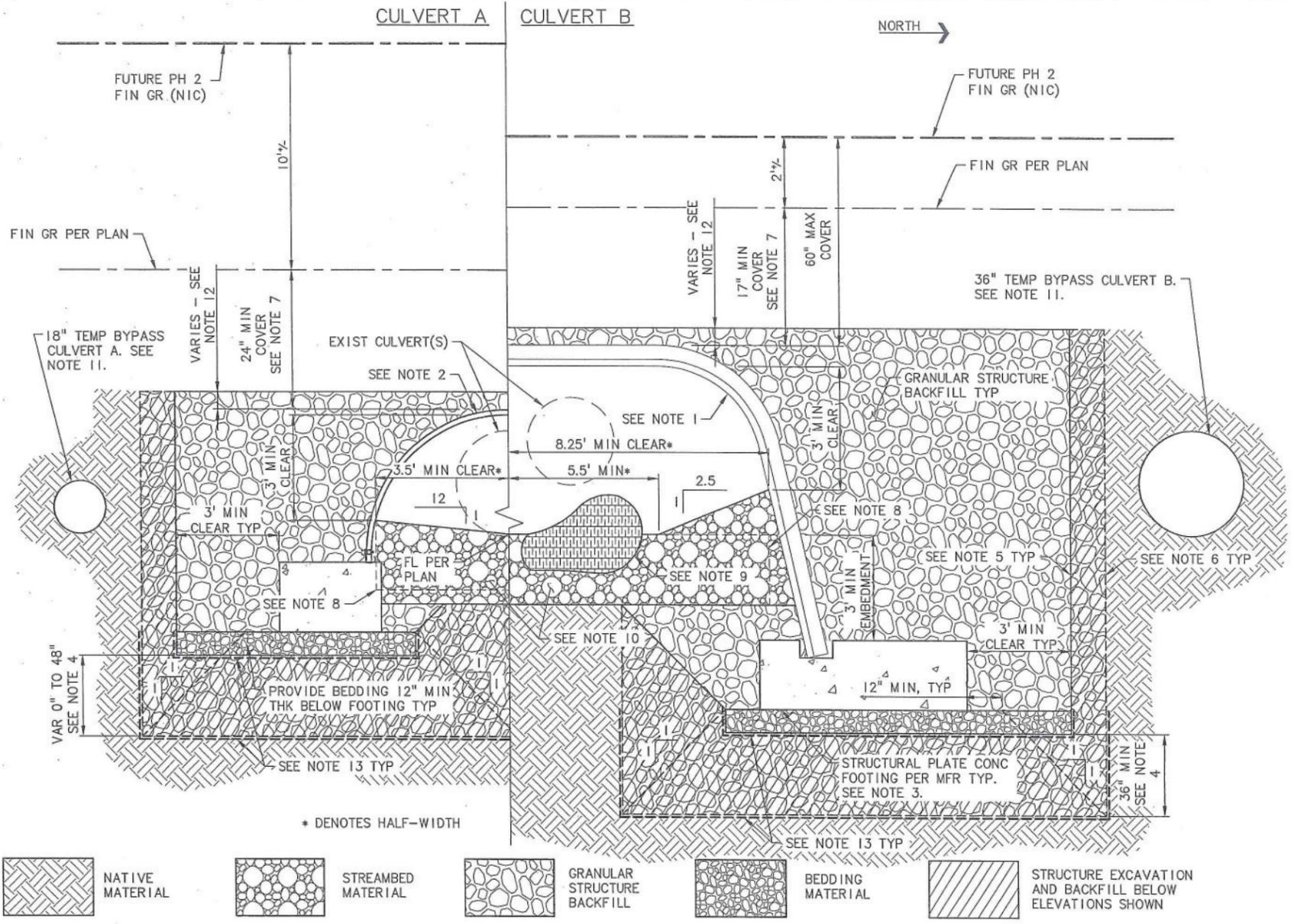
SCALE:	DATE:	REVISION:	NO.	AS SHOWN	NJM	SBB	GEC
	March 17, 2016						

DATE: \_\_\_\_\_  
REVISION: \_\_\_\_\_  
NO.: \_\_\_\_\_  
AS SHOWN: \_\_\_\_\_  
NJM: \_\_\_\_\_  
SBB: \_\_\_\_\_  
GEC: \_\_\_\_\_  
APPROVED: \_\_\_\_\_  
PLOT DATE: March 18, 2016  
FILE:

**SHEET C-9**

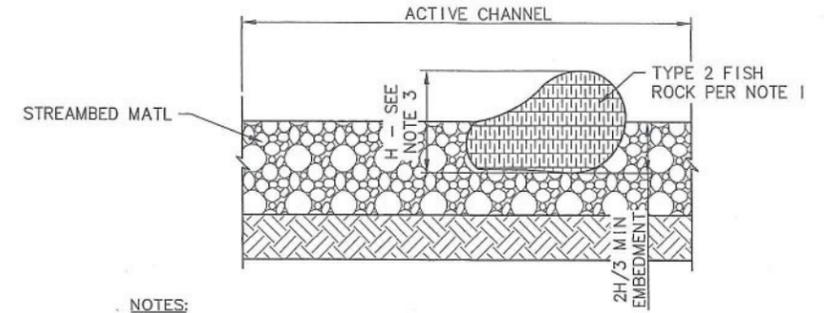
**12 of 18**

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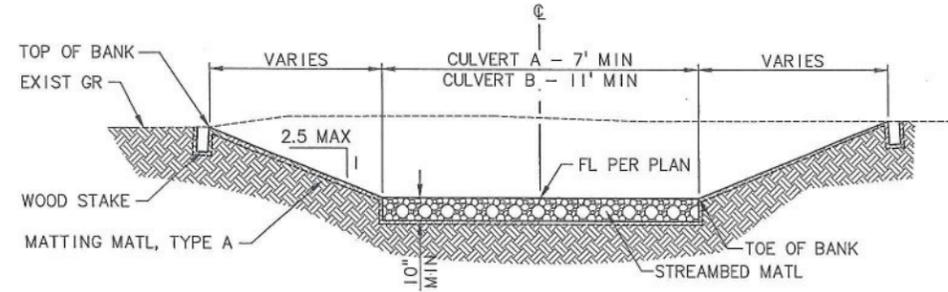
- NOTES:**
1. PROVIDE 200 INCH X 90 INCH STRUCTURAL PLATE ARCH - TYPE B6 ALUMINUM BOX CULVERT, STRUCTURE NO. 38 BY CONTECH OR APPROVED EQUAL.
  2. PROVIDE 84 INCH X 44 INCH STRUCTURAL PLATE ARCH - 0.125" THK ALUMINUM BY CONTECH OR APPROVED EQUAL.
  3. CULVERT FOUNDATIONS SHALL BE DESIGNED FOR A SERVICE BEARING RESISTANCE OF 2,000 PSF. COORDINATE WITH THE ENGINEER TO APPROVE PREPARED SUBGRADE PRIOR TO PLACEMENT OF CONC FOOTINGS.
  4. COORDINATE WITH ENGINEER TO FIELD INSPECT FOUNDATION SOIL CONDITIONS PRIOR TO COMPLETING STRUCTURE EXCAVATION AND BACKFILL BELOW ELEVATIONS SHOWN.
  5. VERTICAL TRENCH IDENTIFIED DEFINES PAY LIMITS OF STRUCTURE EXCAVATION, GRANULAR STRUCTURE BACKFILL AND TRENCH RESURFACING. USE OF LAYBACK SLOPE OR SHORING SHALL BE INCIDENTAL TO STRUCTURE EXCAVATION.
  6. VERTICAL TRENCH IDENTIFIED DEFINES PAY LIMITS OF STRUCTURE EXCAVATION AND BACKFILL BELOW ELEVATIONS SHOWN. SEE SPECIFICATIONS FOR OTHER INCIDENTAL WORK.
  7. PROVIDE GRANULAR STRUCTURE BACKFILL AND ACP TRENCH RESURFACING COVER MATERIAL WITHIN EXISTING PAVED ROADWAYS. PROVIDE GRANULAR STRUCTURE BACKFILL TO FINISH GRADE WITHIN FUTURE PHASE 2 PAVED AREAS.
  8. SCOUR PRISM SHOWN FOR REFERENCE ONLY.
  9. PROVIDE FISH ROCK PER DETAIL 2, THIS SHEET.
  10. STREAMBED MATERIAL COMPOSITION VARIES FOR CULVERTS A AND B. SEE SPECIFICATIONS.
  11. PROVIDE PIPE SUPPORT, SHORING AND/OR ANCHORS AS REQUIRED FOR STRUCTURE EXCAVATION BELOW ELEVATIONS SHOWN.
  12. PROVIDE 6" MIN THK GRANULAR STRUCTURE BACKFILL OVER STRUCTURAL PLATE ARCH. PROVIDE ADDITIONAL VARIABLE THK AS REQUIRED TO MEET THE BASE ELEVATION OF ACP TRENCH RESURFACING PAVEMENT SECTION PER DET 5, SHT C-11.
  13. PROVIDE A SINGLE LAYER OF NON-WOVEN SUBGRADE GEOTEXTILE BETWEEN UNDISTURBED NATIVE SOIL AND BEDDING OR GRANULAR STRUCTURE BACKFILL. EXTEND GEOTEXTILE VERTICALLY FROM NATIVE SOIL TO BOTTOM OF FOOTING ELEVATION.

**CULVERT SECTION 1**  
SCALE: NTS C-3



- NOTES:**
1. FISH ROCKS SHALL BE RANDOMLY PLACED WITHIN THE ACTIVE CHANNEL OF CULVERT B AND ITS UPSTREAM/DOWNSTREAM CHANNEL.
  2. PROVIDE UP TO 5 FISH ROCKS AT LOCATIONS APPROVED BY THE ENGINEER.
  3. DIMENSION 'H' IS TYPICAL FISH ROCK HEIGHT. FISH ROCK TO BE EMBEDDED IN STREAMBED MATERIAL TO 2/3 OF 'H'.

**FISH ROCK DETAIL 2**  
SCALE: NTS C-6

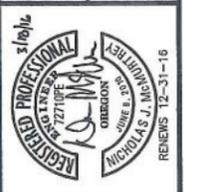


**CHANNEL DETAIL 3**  
SCALE: NTS C-4

**CITY OF Newberg**

**VILLA ROAD IMPROVEMENTS, HAWORTH TO CRESTVIEW - PH. 1 - CULVERT REPLACEMENTS**  
PROJECT NO. 702163 - CITY OF NEWBERG, OREGON

**DETAILS**



NO.	AS SHOWN	DATE	REVISION
1	AS SHOWN	March 17, 2016	
2	REVIEWED:	NJM	
3	DESIGNED:	SBB	
4	APPROVED:	GEC	

PLOT DATE: March 18, 2016  
FILE:

**SHEET**  
**C-10**  
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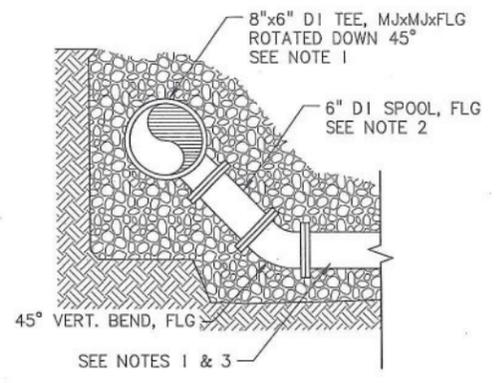


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AS SHOWN	March 17, 2016			
REVIEWED:			NJM	
DESIGNED:			SBB	
APPROVED:			GEC	

**SHEET**

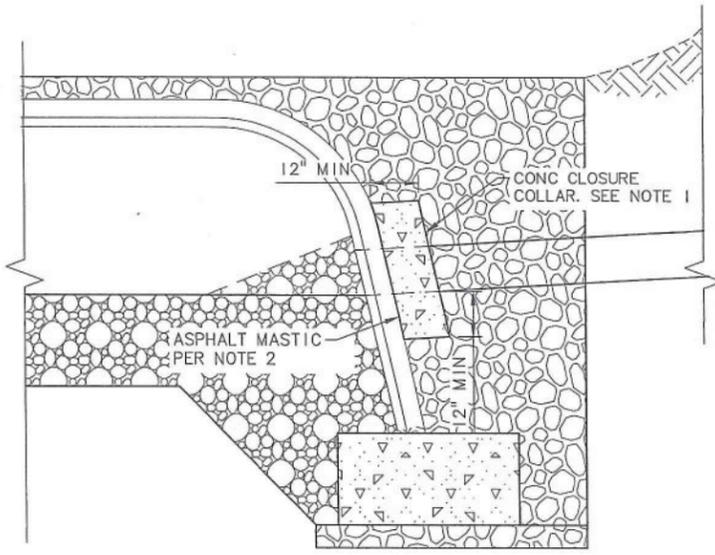
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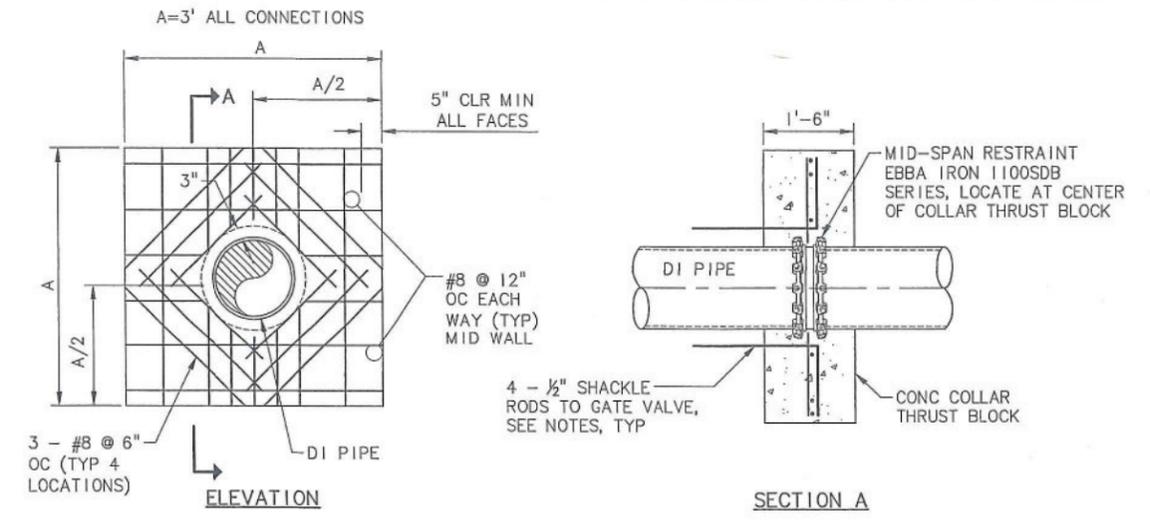
- NOTES:**
1. ALL PIPING AND FITTINGS TO BE RESTRAINED JOINT.
  2. PROVIDE SPOOL IF NECESSARY FOR INVERT ADJUSTMENTS.
  3. SEE DETAIL 4, THIS SHEET FOR CONTINUATION.

**6" HYDRANT BLOW-OFF FITTING** (1)  
SCALE: NTS



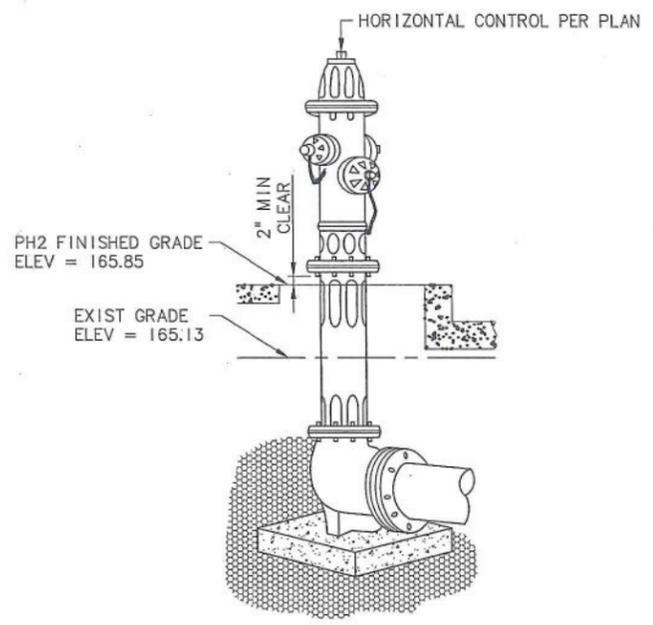
- NOTES:**
1. PROVIDE 1/3 CUBIC YARD OF CONCRETE AT 12-INCHES MINIMUM THK SURROUNDING SD PENETRATION INTO CULVERT.
  2. PROVIDE ASPHALT MASTIC BETWEEN CONC AND ALUMINUM CULVERT.

**CONCRETE CLOSURE COLLAR** (2)  
SCALE: NTS



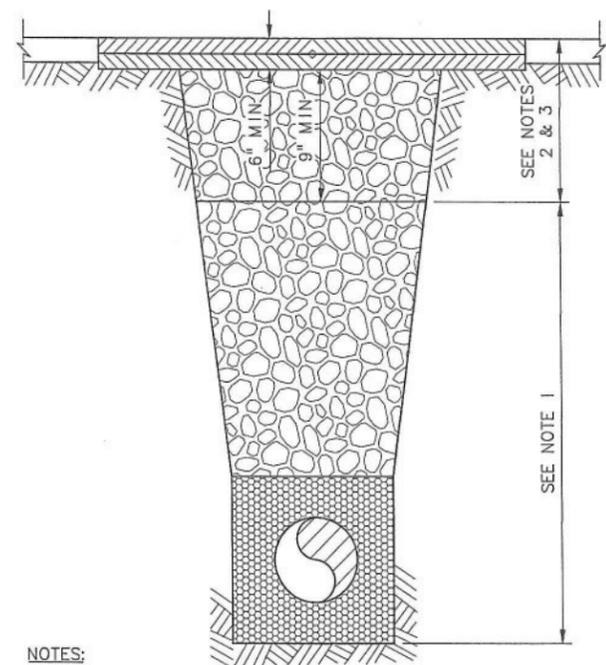
- NOTES:**
1. THRUST BLOCK TO BE POURED AGAINST UNDISTURBED EARTH (ALL SIDES); IF NOT POSSIBLE, THE SOIL BETWEEN THE BEARING SURFACE AND UNDISTURBED EARTH SHALL BE COMPACTED TO 95% MODIFIED PROCTOR.
  2. REBAR TO BE ASTM A615, GR 60.
  3. CONCRETE SHALL BE HIGH EARLY STRENGTH CONCRETE AND SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI IN 24 HOURS.
  4. SHACKLE RODS SHALL BE 1/2-INCH DIAMETER COR-TEN ASTM A242, 4 EQUALLY SPACED PER BLOCK, COATED WITH 2 COATS OF COAL TAR EPOXY.
  5. ATTACH SHACKLE RODS TO FITTINGS WITH TIE BOLTS, EQUAL TO STAR NATIONAL PRODUCTS.
  6. COLLAR THRUST BLOCKS ARE INCIDENTAL TO WATER PIPE CONSTRUCTION.

**COLLAR THRUST BLOCK** (3)  
SCALE: NTS



- NOTES:**
1. FURNISH & INSTALL FIRE HYDRANT ASSEMBLY PER CITY OF NEWBERG STD DWG NO. 312. SEE SPECIFICATIONS FOR INCIDENTAL ITEMS TO FIRE HYDRANT ASSEMBLY (GATE VALVE, VALVE BOX, ETC).
  2. FURNISH & INSTALL 6" HYDRANT BLOW-OFF FITTING PER DETAIL 1, THIS SHEET.

**FIRE HYDRANT ASSEMBLY** (4)  
SCALE: NTS

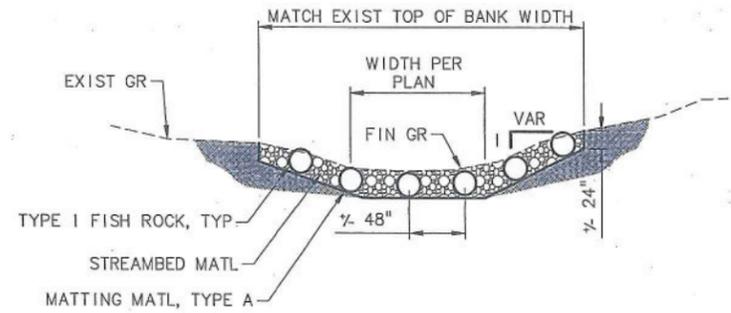


- NOTES:**
1. PIPE BEDDING AND BACKFILL PER OSD NO. RD300.
  2. ACP TRENCH RESURFACING PER OSD NO. RD302. PLACE ACP IN TWO EQUAL LIFTS.
  3. PROVIDE 9" MIN THK 3/4"-0 AGGREGATE BASE. AGGREGATE BASE IS INCIDENTAL TO TRENCH RESURFACING.

**ACP TRENCH RESURFACING** (5)  
SCALE: NTS

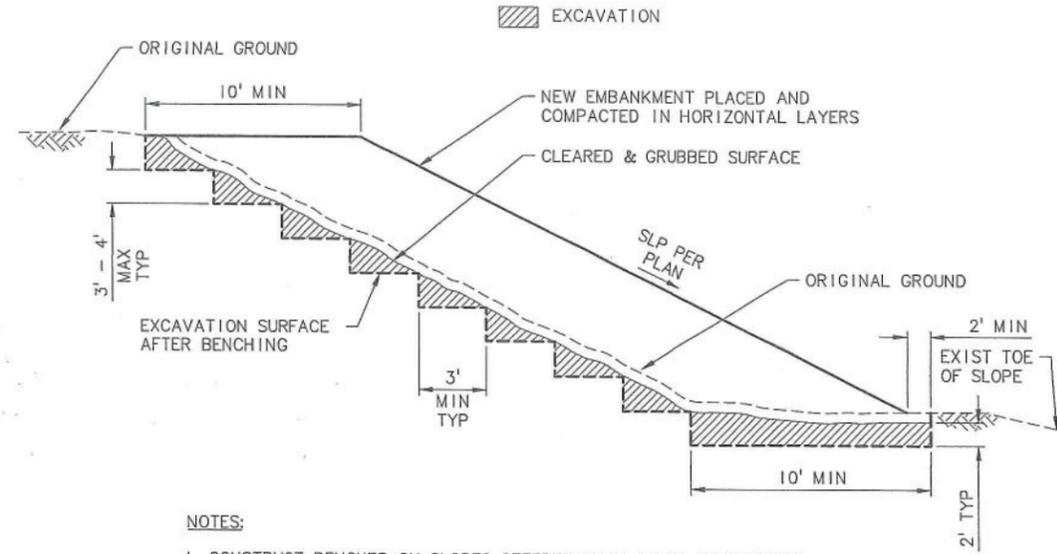
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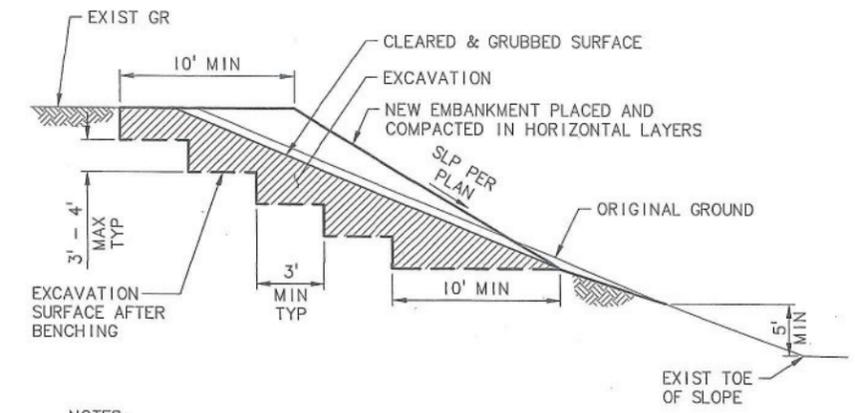
- NOTE:**
1. FINAL PLACEMENT AND ELEVATIONS OF FISH ROCKS TO BE DETERMINED BY CITY REPRESENTATIVE IN THE FIELD.
  2. ROCK BAND IS INCIDENTAL TO STREAM ENHANCEMENT.

**ROCK BAND**  
SCALE: NTS



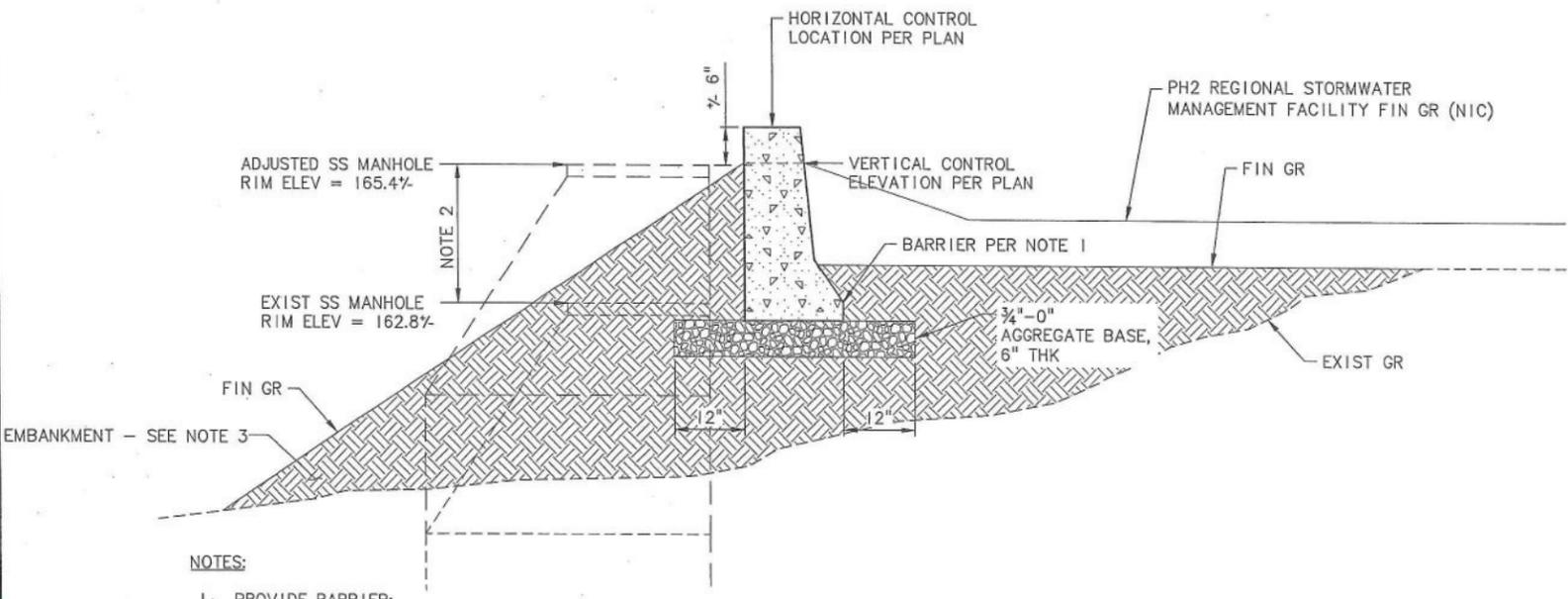
- NOTES:**
1. CONSTRUCT BENCHES ON SLOPES STEEPER THAN 1V:5H TO PROVIDE POSITIVE BOND WITH EXISTING GROUND.
  2. BENCHING WORK IS INCIDENTAL TO EMBANKMENT CONSTRUCTION.
  3. FOR EMBANKMENTS WHICH TOE OUT GREATER THAN 5' ABOVE THE EXISTING TOE OF SLOPE, SEE SLIVER FILL BENCHING DETAIL, THIS SHEET.

**STANDARD EMBANKMENT CONSTRUCTION**  
SCALE: NTS



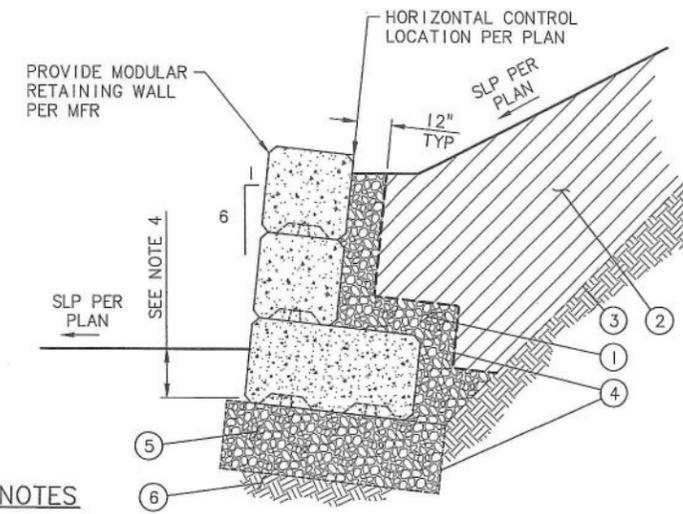
- NOTES:**
1. CONSTRUCT BENCHES ON SLOPES STEEPER THAN 1V:5H TO PROVIDE POSITIVE BOND WITH EXISTING GROUND.
  2. BENCHING WORK IS INCIDENTAL TO EMBANKMENT CONSTRUCTION.
  3. FOR EMBANKMENTS WHICH TOE OUT AT A HEIGHT OF 5' OR LESS ABOVE THE EXISTING TOE OF SLOPE, SEE STANDARD EMBANKMENT DETAIL, THIS SHEET.

**SLIVER FILL BENCHING**  
SCALE: NTS



- NOTES:**
1. PROVIDE BARRIER:
    - 1.1 SALVAGE AND MOVE APPROXIMATELY 40 LF OF EXISTING BARRIER AT HESS CREEK TO LOCATION INDICATED ON PLAN.
    - 1.2 EXISTING BARRIER INCLUDES TWO SLOPED END SECTIONS. PLACE EXISTING END SECTIONS AT EACH END OF NEW BARRIER LOCATION.
    - 1.3 PROVIDE NEW BARRIER MATCHING EXISTING BARRIER TYPE FOR REMAINDER OF LENGTH INDICATED ON PLAN.
  2. CONSTRUCT MAJOR ADJUSTMENT OF EXISTING SS MANHOLE.
  3. CONSTRUCT STANDARD EMBANKMENT PER DETAIL, THIS SHEET.

**BARRIER DETAIL**  
SCALE: NTS



- KEY NOTES**
- ① PIPE DRAIN BACKFILL
  - ② GRANULAR STRUCTURE BACKFILL
  - ③ STABLE, TEMP 1:1 CUT SLOPE WHERE REQUIRED
  - ④ GEOTEXTILE
  - ⑤ GRAVEL OR CAST-IN-PLACE CONC LEVELING PAD
  - ⑥ COMPACTED SUBGRADE SOILS AS APPVD BY ENGINEER

- NOTES:**
1. PREFABRICATED MODULAR RETAINING WALLS SHALL BE GRAVITY WALLS. USE OF MECHANICALLY STABILIZED EARTH (MSE) WALLS OR TIE-BACKS WILL NOT BE ALLOWED.
  2. PREFABRICATED MODULAR RETAINING WALLS SHALL BE DESIGNED TO ACCOMMODATE FUTURE PHASE 2 EARTHWORK LOADING, INCLUDING FREE STANDING CONDITIONS FOLLOWING PHASE 1.
  3. PROVIDE PERF DRAIN PIPE (NOT SHOWN) PER WALL MFR'S REQUIREMENTS.
  4. CONSTRUCT FOOTING BURY DEPTH PER MFR REQUIREMENTS.

**PREFABRICATED MODULAR RETAINING WALL DETAIL**  
SCALE: NTS

**VILLA ROAD IMPROVEMENTS, HAWORTH TO CRESTVIEW - PH. 1 - CULVERT REPLACEMENTS**  
PROJECT NO. 702163 - CITY OF NEWBERG, OREGON

**DETAILS**

REGISTERED PROFESSIONAL ENGINEER  
NICHOLAS J. MURRAY  
NO. 72106  
STATE OF OREGON  
REVISED 12-31-16

NO.	AS SHOWN	DATE	REVISION	DATE
5	March 17, 2016			
	DESIGNED:			
	REVIEWED:			
	APPROVED:			

**SHEET**

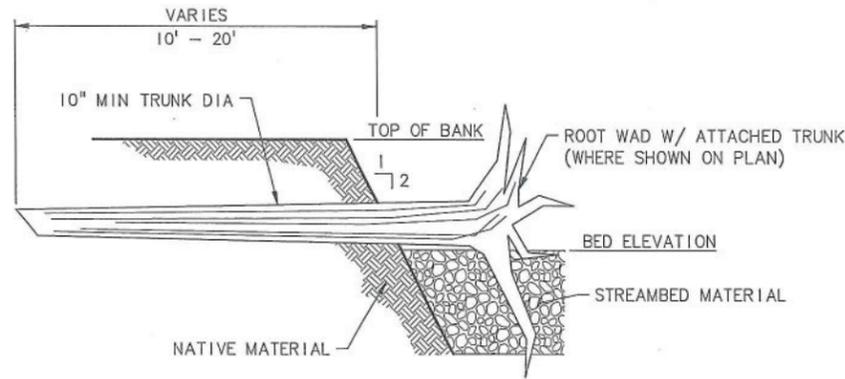
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**BID SET**

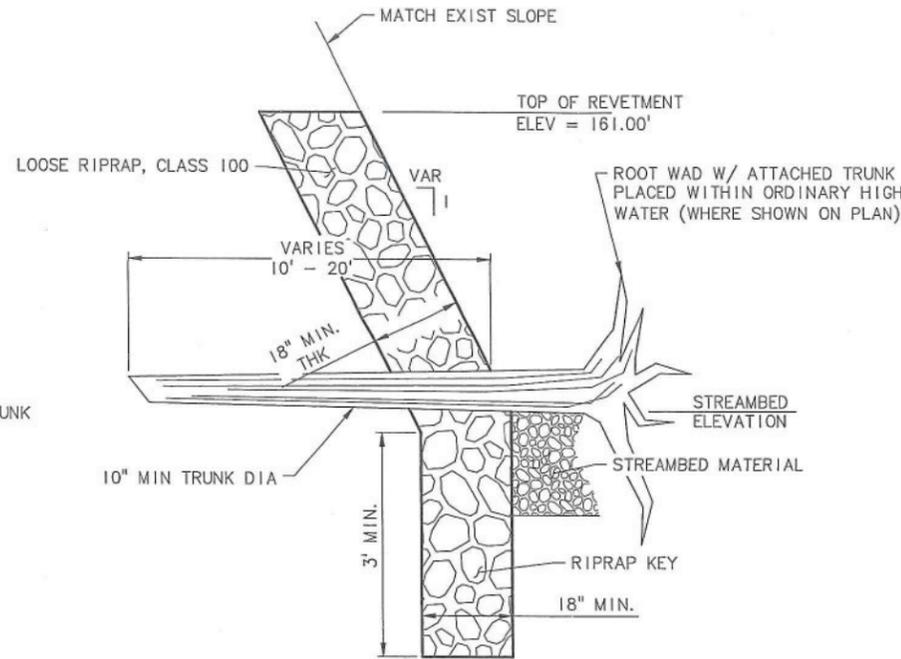
Murray Smith & Associates, Inc.  
Engineers/Planners  
124 S.W. Salmon, Suite 600 PORTLAND, OREGON 97204  
PHONE 503-252-8010 FAX 503-252-9122

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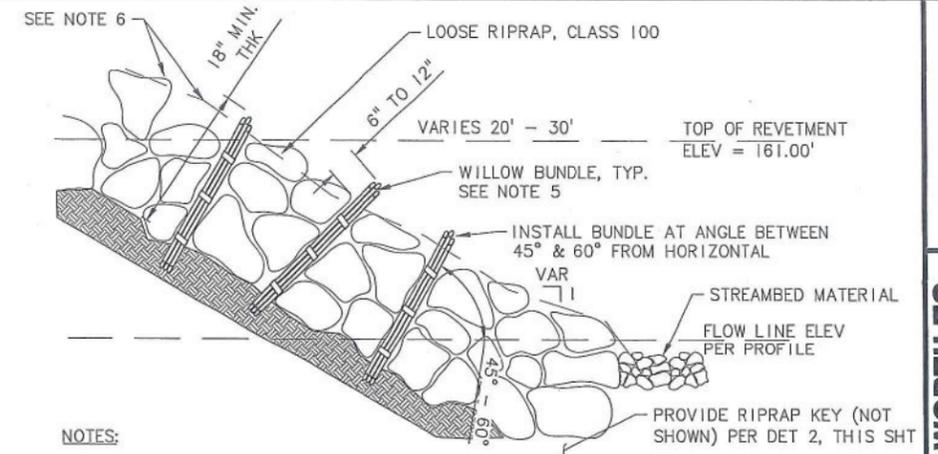
- NOTE:**
1. FINAL PLACEMENT FISH LOG TO BE DETERMINED BY CITY REPRESENTATIVE IN THE FIELD.
  2. FISH LOG IS INCIDENTAL TO STREAM ENHANCEMENT.

**FISH LOG IN NATIVE BANK**  
SCALE: NTS



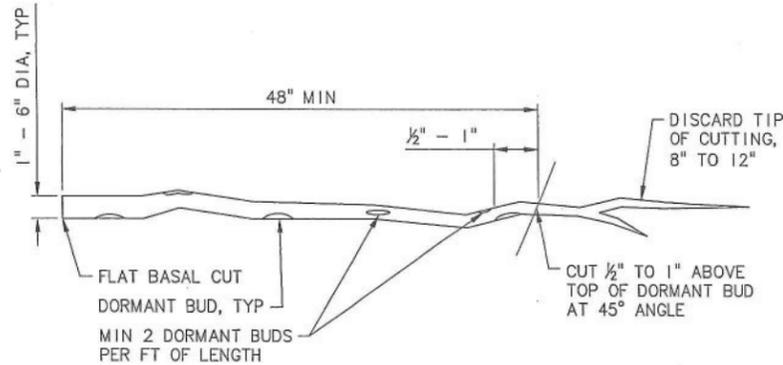
- NOTE:**
1. FINAL PLACEMENT FISH LOG TO BE DETERMINED BY CITY REPRESENTATIVE IN THE FIELD.
  2. FISH LOG IS INCIDENTAL TO STREAM ENHANCEMENT.

**FISH LOG IN RIPRAP**  
SCALE: NTS



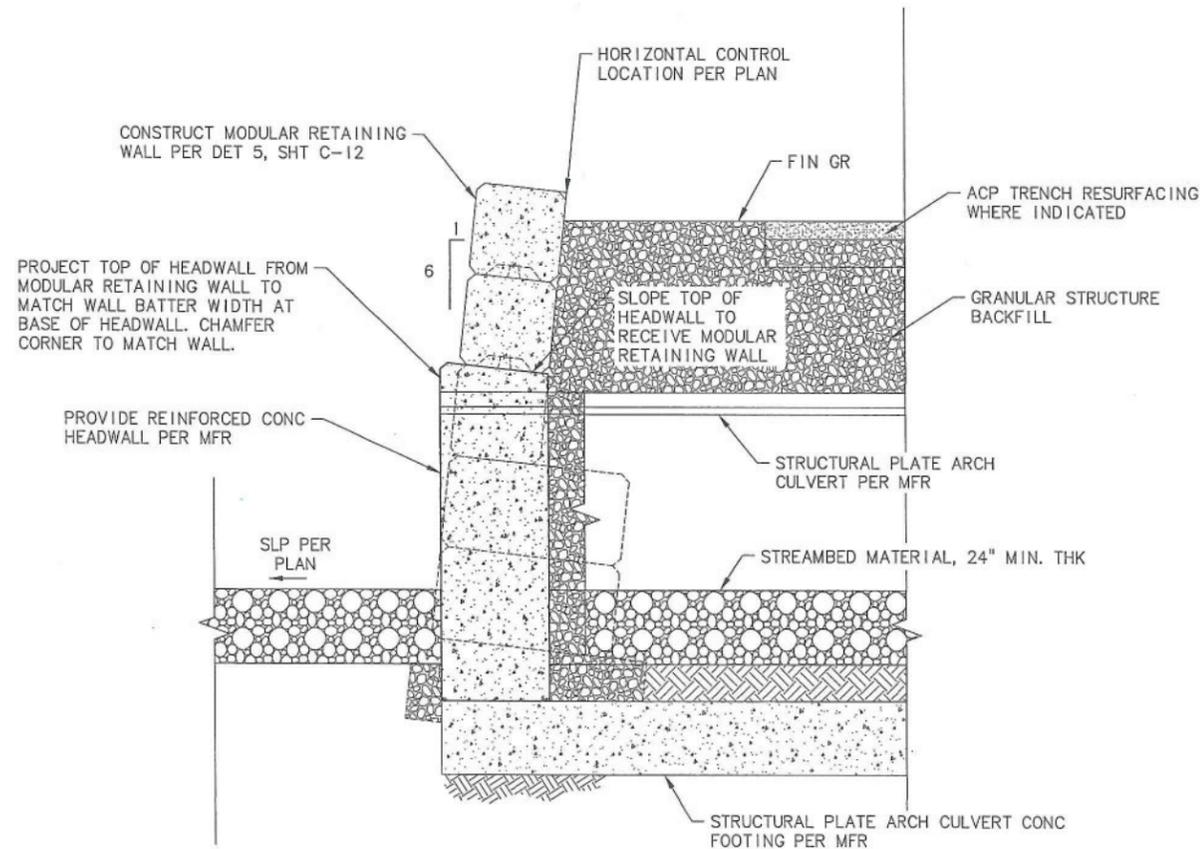
- NOTES:**
1. WILLOW BUNDLES SHALL BE INSTALLED AT TIME OF RIPRAP CONSTRUCTION.
  2. SPACING SHALL BE APPROXIMATELY 36" ON CENTER AS RIPRAP ALLOWS. ADJUST SPACING AS NECESSARY TO ACCOUNT FOR WOODY DEBRIS.
  3. APPROXIMATELY 80% OF BUNDLE LENGTH TO BE BELOW SURFACE OF RIPRAP.
  4. BURIED ENDS OF BUNDLES SHOULD BE IN CONTACT WITH NATIVE SOIL, STANDING WATER OR MOIST ZONE NEAR BOTTOM OF RIPRAP REVETMENT EXCAVATION.
  5. PROVIDE 3 TO 5 STAKE CUTTINGS PER BUNDLE, SECURED W/ BIODEGRADABLE COIR TWINE AT 3 POINTS, AS SHOWN, INSERT W/ BUDS POINTING UP. PROVIDE STAKE CUTTINGS PER DET 4, THIS SHT.
  6. FINISH GRADE OF RIPRAP SHALL GENERALLY MATCH EXISTING GRADE AND SLOPE OUTSIDE OF FINISH GRADE CONTOURS. EXCAVATE BELOW EXISTING GRADE 18" MIN. AND BACKFILL WITH RIPRAP. EXCAVATION IS INCIDENTAL TO RIPRAP.

**WILLOW BUNDLES IN RIPRAP**  
SCALE: NTS



- NOTES:**
1. HARVEST AREA TO BE WITHIN SAME ECO-REGION AS PROJECT AREA.
  2. CUT FROM VIGOROUS 1 - 3 YEAR OLD WOOD ON PLANTS GROWING IN FULL SUNLIGHT.
  3. IMMEDIATELY REMOVE ALL LATERAL BRANCHES AND CUT LEADER (APICAL STEM) APPROXIMATELY 8" - 12" DOWN STEM FROM TIP LEADER.
  4. STORE PROTECTED AT 32° - 42° FAHRENHEIT FOR UP TO 4 MONTHS, OR BEFORE DORMANT BUD DEVELOPMENT.

**STAKE CUTTING**  
SCALE: NTS



**CONCRETE HEADWALL DETAIL**  
SCALE: NTS



**VILLA ROAD IMPROVEMENTS, HAWORTH TO CRESTVIEW - PH. 1 - CULVERT REPLACEMENTS**  
PROJECT NO. 702163 - CITY OF NEWBERG, OREGON



NO.	REVISION	DATE
AS SHOWN		
1	March 17, 2016	
DESIGNED:	NJM	
REVIEWED:	SBB	
APPROVED:	GEC	

SCALE: AS SHOWN  
DATE: March 17, 2016  
REVIEWED: NJM  
DESIGNED: SBB  
APPROVED: GEC  
PLOT DATE: March 17, 2016  
FILE:

**SHEET**  
**C-13**  
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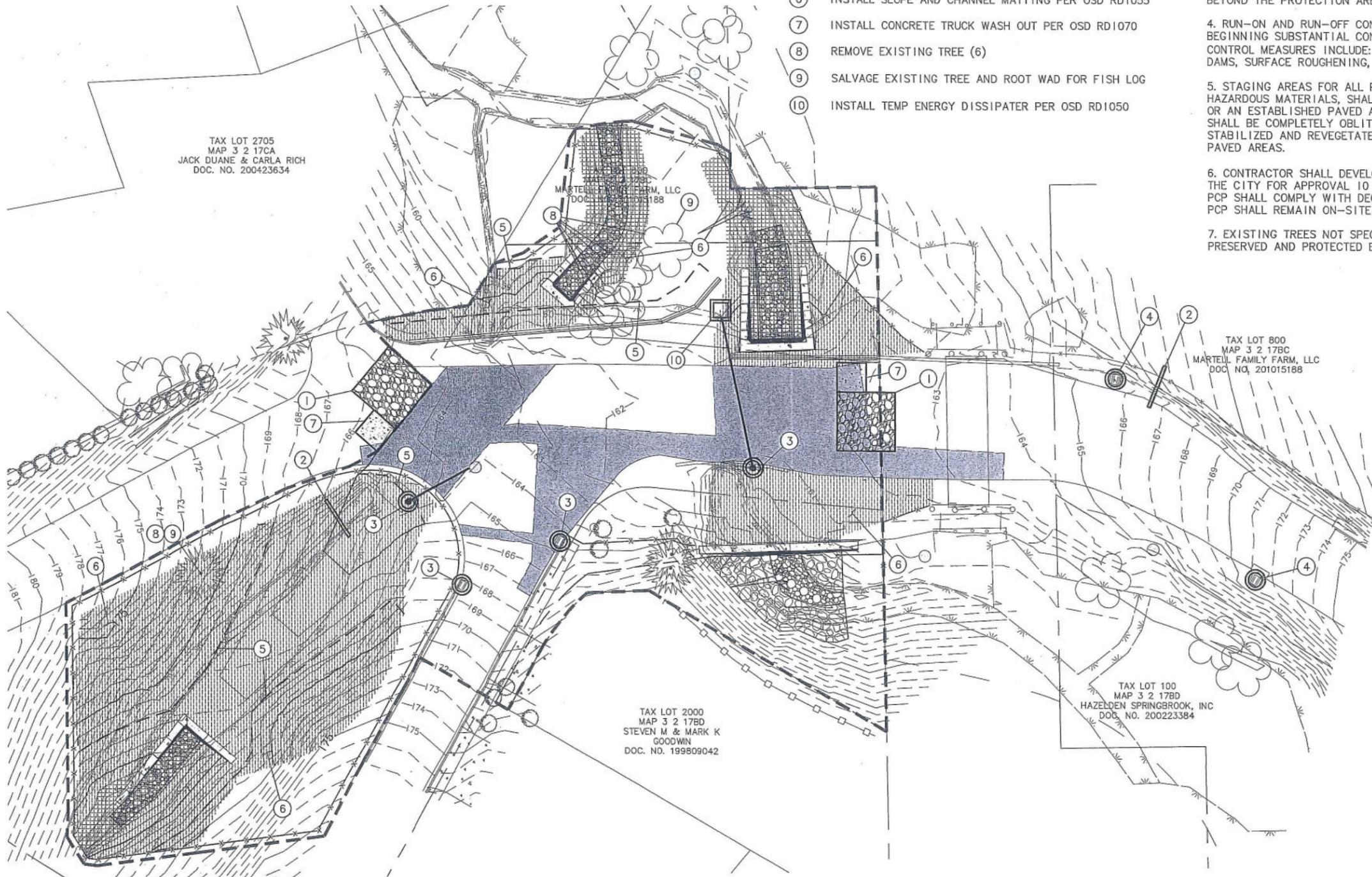
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**CONSTRUCTION NOTES**

- ① INSTALL TYPE 1 CONSTRUCTION ENTRANCE PER OSD RD1000
- ② INSTALL TYPE 2 OR 6 CHECK DAM PER OSD RD1006
- ③ INSTALL TYPE 3 INLET PROTECTION PER OSD RD1010
- ④ INSTALL TYPE 4 INLET PROTECTION PER OSD RD1015
- ⑤ INSTALL TYPE 8 SEDIMENT BARRIER PER OSD RD1032
- ⑥ INSTALL SLOPE AND CHANNEL MATTING PER OSD RD1055
- ⑦ INSTALL CONCRETE TRUCK WASH OUT PER OSD RD1070
- ⑧ REMOVE EXISTING TREE (6)
- ⑨ SALVAGE EXISTING TREE AND ROOT WAD FOR FISH LOG
- ⑩ INSTALL TEMP ENERGY DISSIPATER PER OSD RD1050

**NOTES:**

- 1. CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES INCLUDING, BUT NOT LIMITED TO, STREET SWEEPING, AND VACUUMING, MAY BE REQUIRED TO ENSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.
- 2. CONSTRUCTION ENTRANCES AND CONCRETE TRUCK WASH OUT LOCATIONS SHOWN ARE FOR BIDDING PURPOSES ONLY. CONTRACTOR SHALL LOCATE THESE BEST MANAGEMENT PRACTICES AS NEEDED TO FACILITATE CONSTRUCTION STAGING AND SEQUENCING.
- 3. SENSITIVE RESOURCES INCLUDING, BUT NOT LIMITED TO, TREES, WETLANDS, AND RIPARIAN PROTECTION AREAS SHALL BE CLEARLY DELINEATED WITH ORANGE CONSTRUCTION FENCING OR CHAIN LINK FENCING IN A MANNER THAT IS CLEARLY VISIBLE TO ANYONE IN THE AREA. NO ACTIVITIES ARE PERMITTED TO OCCUR BEYOND THE PROTECTION AREAS.
- 4. RUN-ON AND RUN-OFF CONTROLS SHALL BE IN PLACE AND FUNCTIONING PRIOR TO BEGINNING SUBSTANTIAL CONSTRUCTION ACTIVITIES. RUN-ON AND RUN-OFF CONTROL MEASURES INCLUDE: SLOPE DRAINS (WITH OUTLET PROTECTION), CHECK DAMS, SURFACE ROUGHENING, AND BANK STABILIZATION.
- 5. STAGING AREAS FOR ALL PROJECT EQUIPMENT AND MATERIALS, INCLUSIVE OF HAZARDOUS MATERIALS, SHALL BE ESTABLISHED AT LEAST 150 FEET FROM THE CREEKS OR AN ESTABLISHED PAVED AREA. ALL STAGING, STORAGE, OR STOCKPILE AREAS SHALL BE COMPLETELY OBLITERATED AFTER CONSTRUCTION. THESE AREAS SHALL BE STABILIZED AND REVEGETATED IF THEY ARE NOT ESTABLISHED WITHIN EXISTING PAVED AREAS.
- 6. CONTRACTOR SHALL DEVELOP AND SUBMIT A POLLUTION CONTROL PLAN (PCP) TO THE CITY FOR APPROVAL 10 DAYS BEFORE THE PRECONSTRUCTION CONFERENCE. THE PCP SHALL COMPLY WITH DEQ REQUIREMENTS. A SPILL CONTAINMENT KIT AND THE PCP SHALL REMAIN ON-SITE AT ALL TIMES DURING CONSTRUCTION.
- 7. EXISTING TREES NOT SPECIFICALLY CALLED OUT TO BE REMOVED SHALL BE PRESERVED AND PROTECTED BY THE CONTRACTOR.



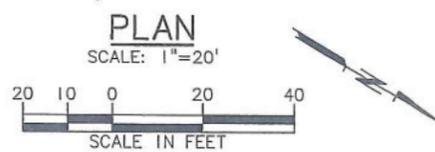
TAX LOT 2705  
MAP 3 2 17CA  
JACK DUANE & CARLA RICH  
DOC. NO. 200423634

MARTELL FAMILY FARM, LLC  
DOC. NO. 201015188

TAX LOT 800  
MAP 3 2 17BC  
MARTELL FAMILY FARM, LLC  
DOC. NO. 201015188

TAX LOT 2000  
MAP 3 2 17BD  
STEVEN M & MARK K  
GOODWIN  
DOC. NO. 199809042

TAX LOT 100  
MAP 3 2 17BD  
HAZELDEN SPRINGBROOK, INC  
DOC. NO. 200223384



**SHEET LEGEND**

WEED CONTROL LIMITS	---
HIGH VISIBILITY ORANGE FENCE	xx
EXISTING CONTOURS (1')	---
EXISTING CONTOURS (5')	---180---
PROPOSED CONTOURS (1')	---
PROPOSED CONTOURS (5')	---180---
AC PAVEMENT SURFACE RESTORATION	■
LIMITS OF EMBANKMENT	—F—
LIMITS OF EXCAVATION	—C—
SEDIMENT BARRIER	---
CHANNEL/SLOPE MATTING W/ SEED MIX NO. 1	▨
CHANNEL/SLOPE MATTING W/ SEED MIX NO. 2	▩
CONSTRUCTION ENTRANCE	▨
CONCRETE TRUCK WASH OUT	▨
CHECK DAM	▬
INLET PROTECTION	○

**VILLA ROAD IMPROVEMENTS, HAWORTH TO CRESTVIEW - PH. 1 - CULVERT REPLACEMENTS**  
 PROJECT NO. 702163 - CITY OF NEWBERG, OREGON  
**EROSION CONTROL PLAN**

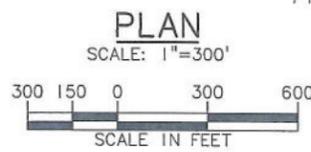
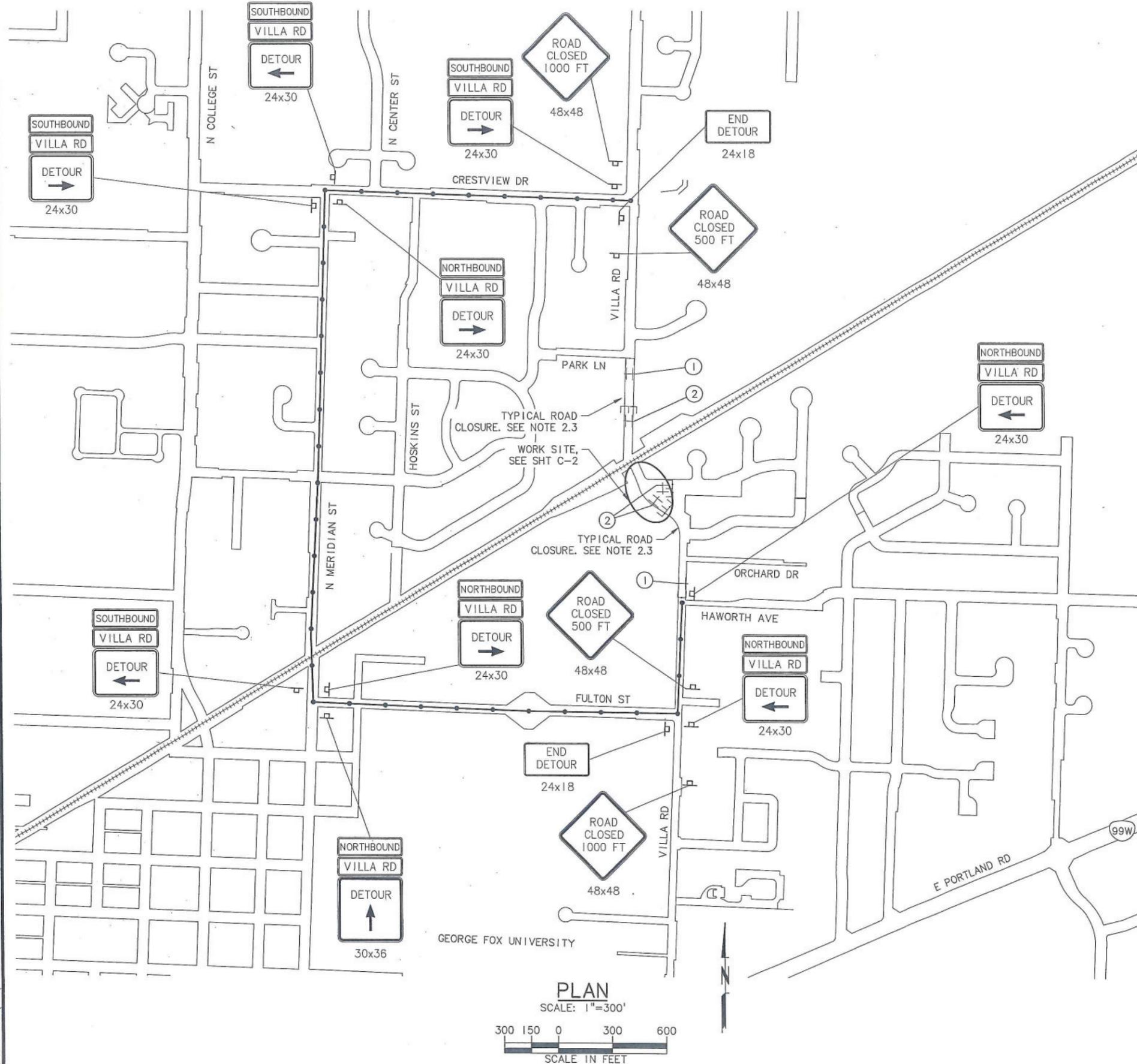


SCALE:	AS SHOWN	NO.	REVISION	DATE
DATE:	March 17, 2016			
REVIEWED:	NJM			
DESIGNED:	SDB			
APPROVED:	GEC			
FILE:	March 16, 2016			

**SHEET**  
**ESC-1**  
17 of 18

**BID SET** **MSA** Murray Smith & Associates, Inc.  
Engineers/Planners  
121 S.W. Salmon, Suite 900 PORTLAND, OREGON 97204  
PHONE 503-225-4100 FAX 503-225-1022

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- NOTES:**
1. TRAFFIC CONTROL SHALL BE PROVIDED BY THE CONTRACTOR THROUGHOUT CONSTRUCTION.
  2. TRAFFIC CONTROL PLAN IS CONCEPTUAL AND FOR REFERENCE ONLY. CONTRACTOR SHALL PROVIDE A TRAFFIC CONTROL PLAN TO THE CITY OF NEWBERG FOR REVIEW AND APPROVAL PRIOR TO COMMENCING CONSTRUCTION.
  3. TRAFFIC CONTROL PLANS SHALL BE ACCOMPANIED BY OREGON STANDARD DRAWINGS (OSD).
    - 3.1. BARRICADES SHALL BE PLACED ON ROADWAY PER OSD TM820.
    - 3.2. SIGNS SHALL BE INSTALLED PER OSD TM821.
    - 3.3. ROAD CLOSURES SHALL BE PROVIDED PER OSD TM840.
  4. CONTRACTOR SHALL SUPPLY TWO PCMS FOR THE PROJECT AND PLACE AT LOCATIONS DIRECTED BY THE CITY OF NEWBERG. CONTRACTOR SHALL OPERATE AND MANAGE OPERATION OF PCMS FOR THE DURATION OF THE PROJECT.

- LEGEND**
- DETOUR ROUTE
  - TYPE 3 BARRICADE
  - ⊕⊕ TRAFFIC CONTROL SIGNAGE

- KEYNOTES**
- ① ROAD CLOSED TO THRU TRAFFIC  
60x30
  - ② ROAD CLOSED  
48x30

  
**VILLA ROAD IMPROVEMENTS, HAWORTH TO CRESTVIEW - PH. 1 - CULVERT REPLACEMENTS**  
 PROJECT NO. 702163 - CITY OF NEWBERG, OREGON  
**DETOUR PLAN**



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