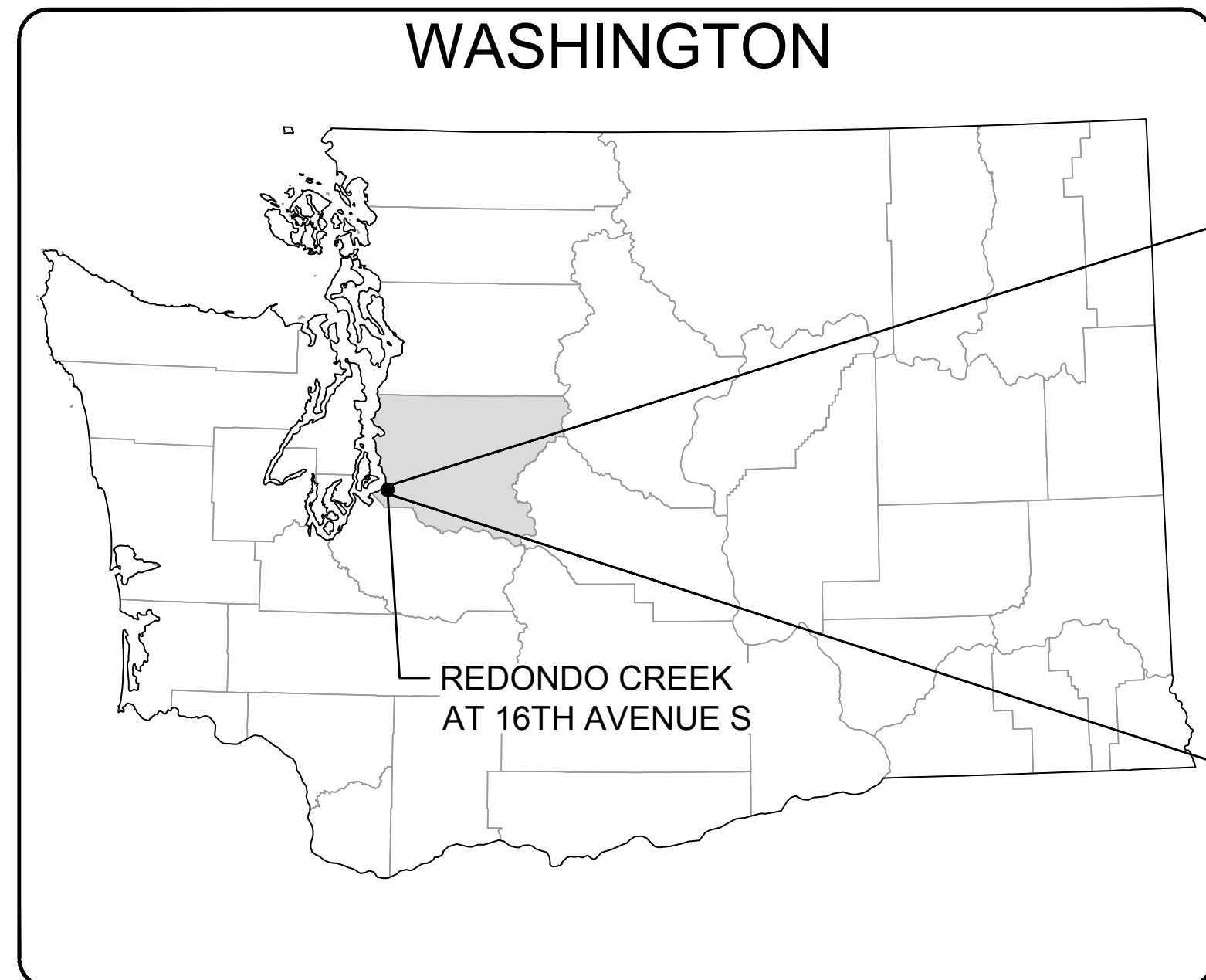


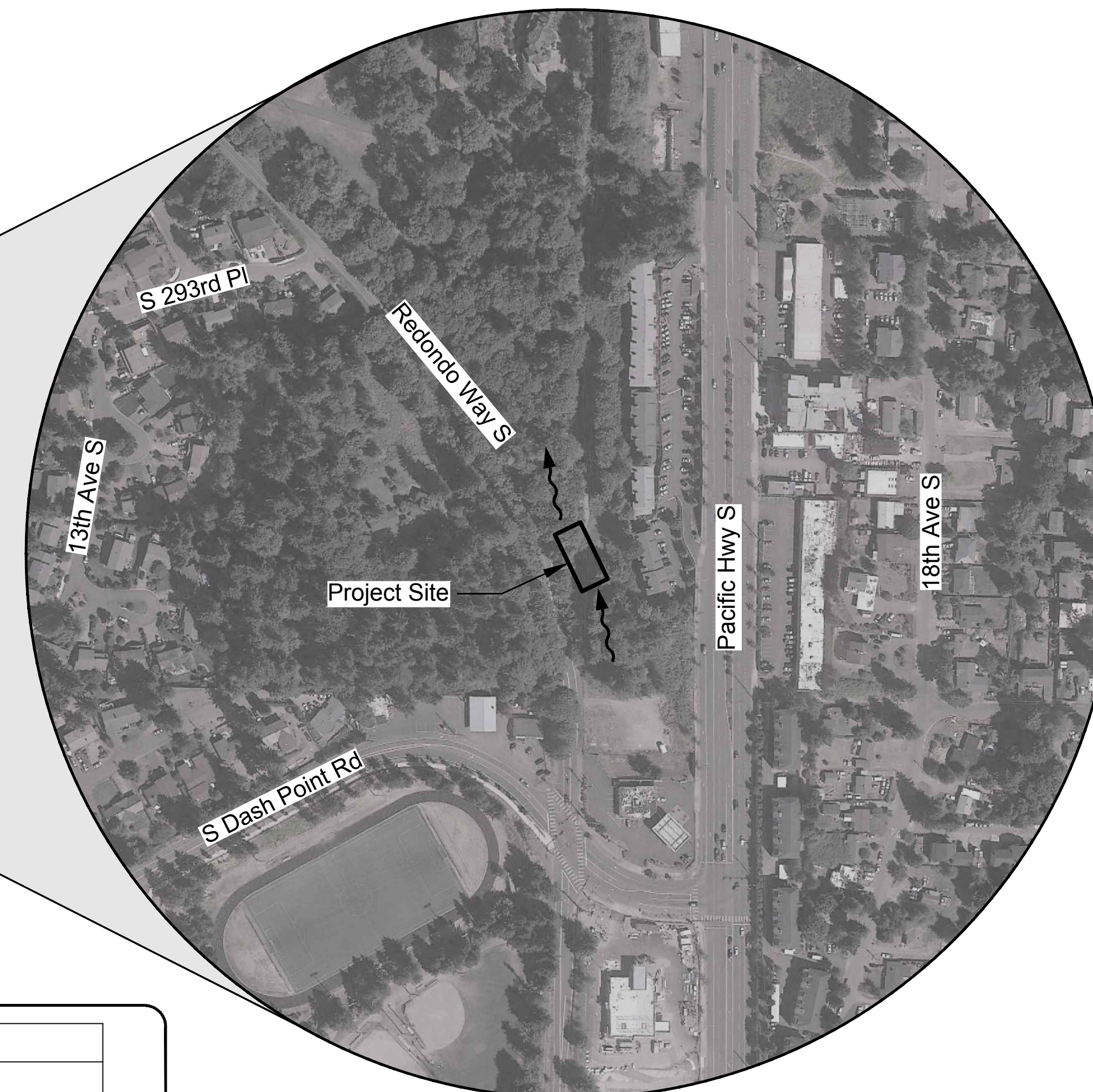
REDONDO CREEK AT 16TH AVENUE S CULVERT REPLACEMENT PROJECT 100% DESIGN PROJECT #34293 FEDERAL WAY, WASHINGTON



PROJECT LOCATION



NOT TO SCALE



NOT TO SCALE

SHEET INDEX

Sheet Number	Drawing Number	Sheet Title
1	G-1	Cover Sheet
2	G-2	Survey Control and Alignment Data
3	C-1	Existing Conditions Plan
4	C-2	TESC General Notes and Details
5	C-3	Temporary Erosion and Sediment Control Plan
6	C-4	Site Preparation Plan
7	C-5	Grading Plan
8	C-6	Stream Profile
9	C-7	Sections
10	C-8	Stream Details 1
11	C-9	Stream Details 2
12	C-10	Surface Restoration & Utility Plan
13	C-11	Typical Surface Restoration Sections & Details
14	C-12	Landscape Restoration Plan & Details

15	S-1	Precast Concrete Culvert With Soldier Pile Walls
16	S-2	Culvert Section
17	S-3	Elevations
18	S-4	Wingwall Details
19	T-1	Traffic Control General Notes
20	T-2	Traffic Control Plan

NOTE: WORK SHOWN HEREIN IS PER BID FORM SCHEDULE A - ROADWAY IMPROVEMENTS EXCEPT WHERE NOTED AS BEING PER BID FORM SCHEDULE B - LAKEHAVEN WATER AND SEWER DISTRICT IMPROVEMENTS (SEE APPENDIX B OF PROJECT MANUAL).

APPROVED FOR CONSTRUCTION	
<i>Desiree S. Winkler</i>	5/30/24
Desiree S. Winkler, P.E.	Date
Deputy Public Works Director	



RFB #24-008



DRAFTED: Michael Woods
DESIGNED: Evan Deal
REVIEWED: Ken Fellows
APPROVED: Joe Callaghan



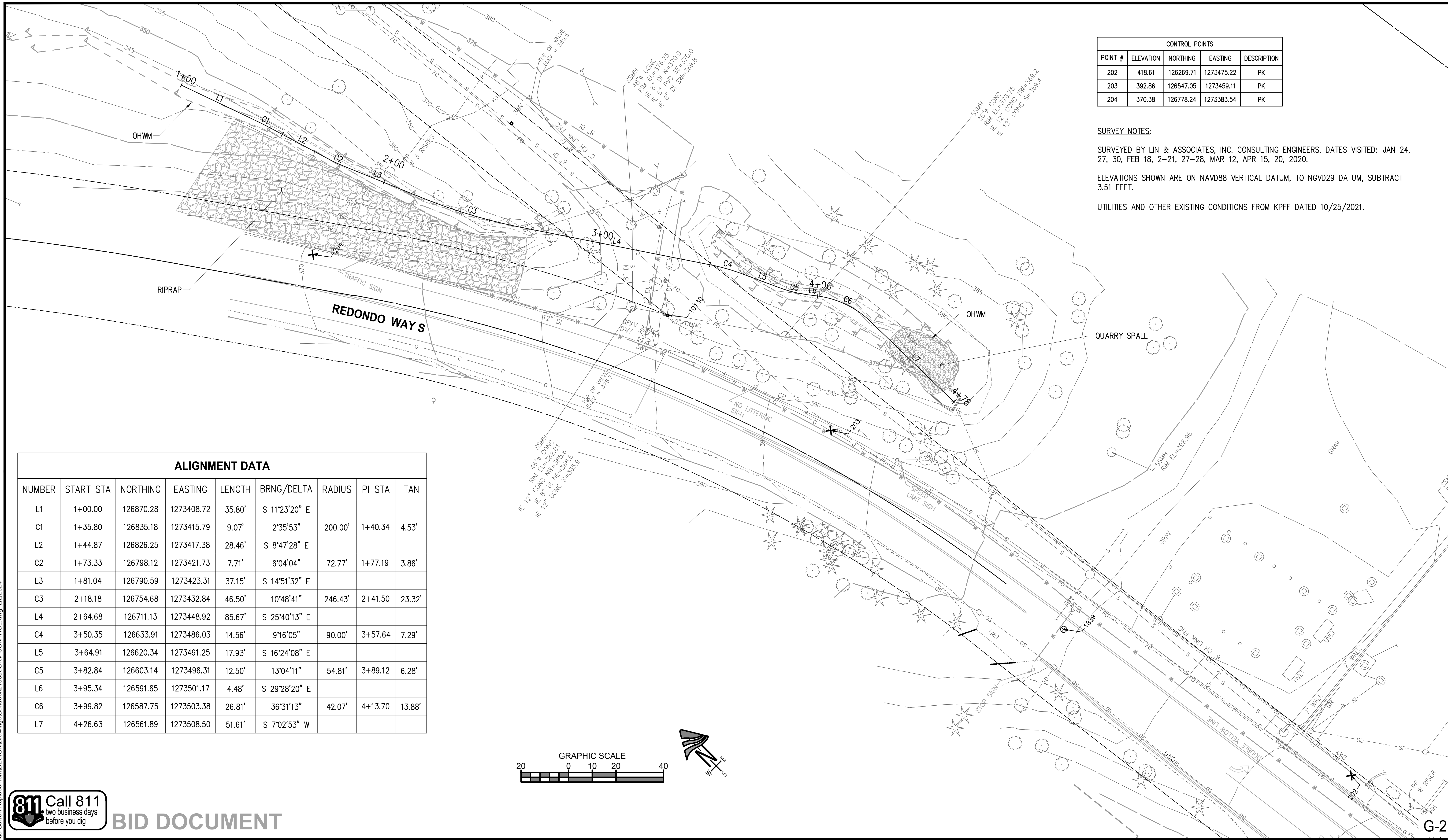
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CULVERT REPLACEMENT PROJECT REDONDO CREEK AT 16TH AVENUE S

COVER SHEET

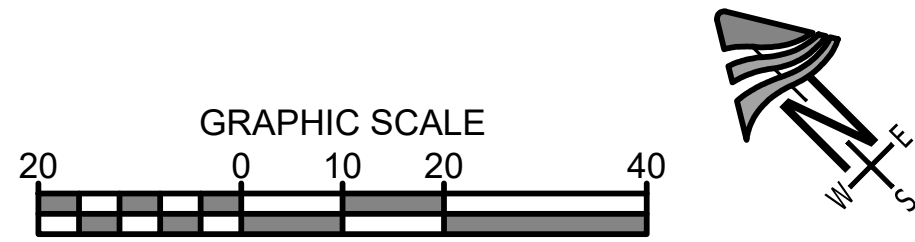
SHT. 1
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34293



CONTROL POINTS				
POINT #	ELEVATION	NORTHING	EASTING	DESCRIPTION
202	418.61	126269.71	1273475.22	PK
203	392.86	126547.05	1273459.11	PK
204	370.38	126778.24	1273383.54	PK

SURVEY NOTES:
 SURVEYED BY LIN & ASSOCIATES, INC. CONSULTING ENGINEERS. DATES VISITED: JAN 24, 27, 30, FEB 18, 2-21, 27-28, MAR 12, APR 15, 20, 2020.
 ELEVATIONS SHOWN ARE ON NAVD88 VERTICAL DATUM, TO NGVD29 DATUM, SUBTRACT 3.51 FEET.
 UTILITIES AND OTHER EXISTING CONDITIONS FROM KPFF DATED 10/25/2021.

ALIGNMENT DATA								
NUMBER	START STA	NORTHING	EASTING	LENGTH	BRNG/DELTA	RADIUS	PI STA	TAN
L1	1+00.00	126870.28	1273408.72	35.80'	S 11°23'20" E			
C1	1+35.80	126835.18	1273415.79	9.07'	2°35'53"	200.00'	1+40.34	4.53'
L2	1+44.87	126826.25	1273417.38	28.46'	S 8°47'28" E			
C2	1+73.33	126798.12	1273421.73	7.71'	6°04'04"	72.77'	1+77.19	3.86'
L3	1+81.04	126790.59	1273423.31	37.15'	S 14°51'32" E			
C3	2+18.18	126754.68	1273432.84	46.50'	10°48'41"	246.43'	2+41.50	23.32'
L4	2+64.68	126711.13	1273448.92	85.67'	S 25°40'13" E			
C4	3+50.35	126633.91	1273486.03	14.56'	9°16'05"	90.00'	3+57.64	7.29'
L5	3+64.91	126620.34	1273491.25	17.93'	S 16°24'08" E			
C5	3+82.84	126603.14	1273496.31	12.50'	13°04'11"	54.81'	3+89.12	6.28'
L6	3+95.34	126591.65	1273501.17	4.48'	S 29°28'20" E			
C6	3+99.82	126587.75	1273503.38	26.81'	36°31'13"	42.07'	4+13.70	13.88'
L7	4+26.63	126561.89	1273508.50	51.61'	S 7°02'53" W			



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DRAFTED:	
DESIGNED:	
REVIEWED:	
APPROVED:	

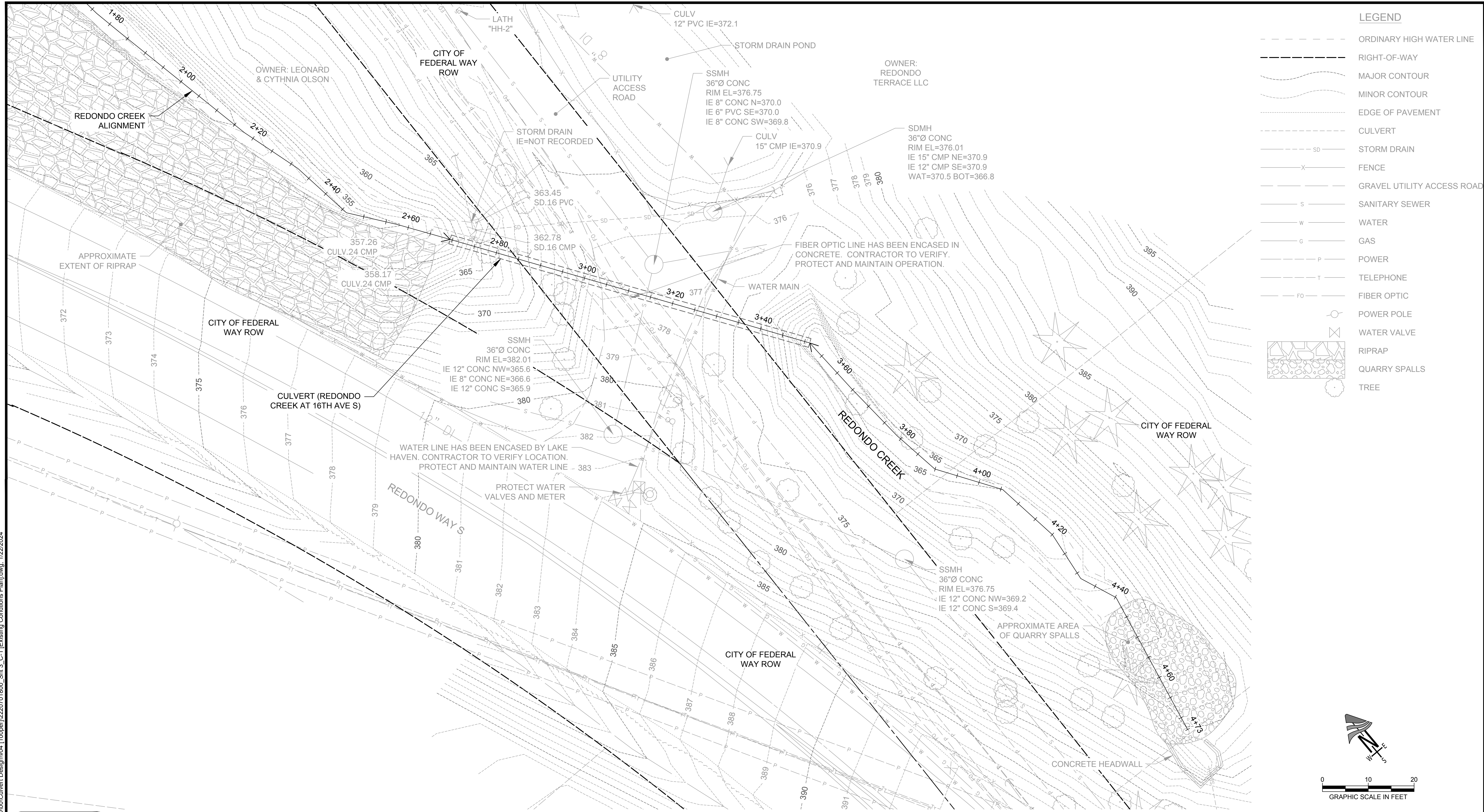


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CULVERT REPLACEMENT PROJECT
 REDONDO CREEK AT 16TH AVENUE S

SURVEY CONTROL AND ALIGNMENT DATA

SHT. 2
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CITY PROJECT #: 34293



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C-1

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GeoENGINEERS

DRAFTED: Michael Woods
 DESIGNED: Evan Deal
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 APPROVED: Joe Callaghan



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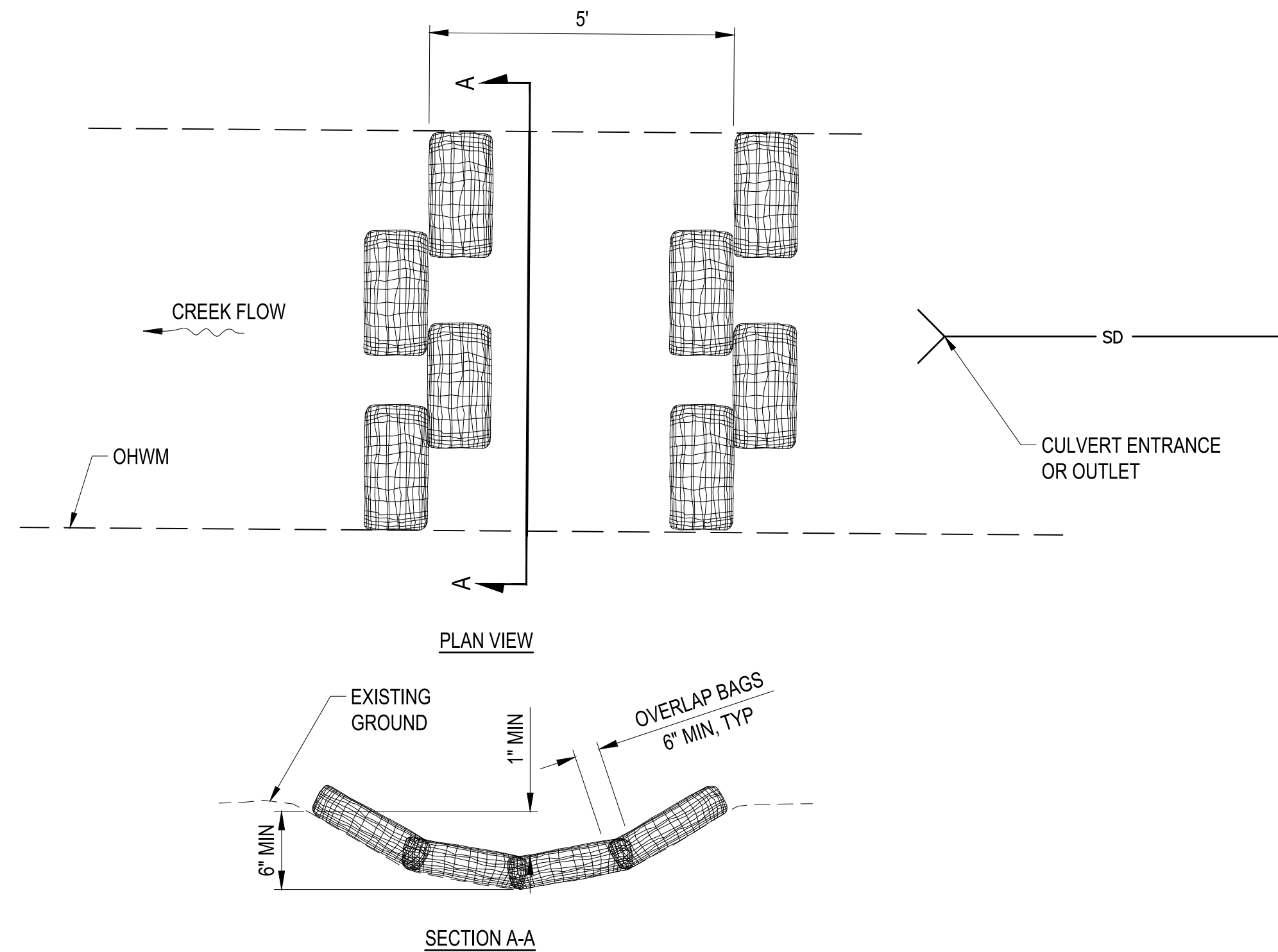
CULVERT REPLACEMENT PROJECT
 REDONDO CREEK AT 16TH AVENUE S
EXISTING CONDITIONS PLAN

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 CITY PROJECT #:
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TESC GENERAL NOTES:

1. THE IMPLEMENTATION OF THESE ESC PLANS AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE ESC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS APPROVED.
2. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE CLEARLY FLAGGED IN THE FIELD PRIOR TO CONSTRUCTION. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE FLAGGED CLEARING LIMITS SHALL BE PERMITTED. THE FLAGGING SHALL BE MAINTAINED BY THE APPLICANT/CONTRACTOR FOR THE DURATION OF CONSTRUCTION.
3. THE ESC FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED IN CONJUNCTION WITH ALL CLEARING AND GRADING ACTIVITIES, AND IN SUCH A MANNER AS TO INSURE THAT SEDIMENT LADEN WATER DOES NOT ENTER THE DRAINAGE SYSTEM OR VIOLATE APPLICABLE WATER STANDARDS.
4. THE ESC FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE ESC FACILITIES SHALL BE UPGRADED (I.E. ADDITIONAL SUMPS, RELOCATION OF DITCHES AND SILT FENCES, ETC.) AS NEEDED FOR UNEXPECTED STORM EVENTS.
5. THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE APPLICANT/CONTRACTOR AND MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTIONING.
6. ANY AREA STRIPPED OF VEGETATION, INCLUDING ROADWAY EMBANKMENTS, WHERE NO FURTHER WORK IS ANTICIPATED OR A PERIOD OF 2 DAYS (WET SEASON) OR 7 DAYS (DRY SEASON), SHALL BE IMMEDIATELY STABILIZED WITH THE APPROVED ESC METHODS (I.E. SEEDING, MULCHING, NETTING, EROSION BLANKETS, ETC.)
8. ANY AREA NEEDING ESC MEASURES, NOT REQUIRING IMMEDIATE ATTENTION, SHALL BE ADDRESSED WITHIN 15 DAYS.
9. THE ESC FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A MONTH OR WITHIN THE 24 HOURS FOLLOWING A STORM EVENT.
10. AT NO TIME SHALL MORE THAN ONE FOOT OF SEDIMENT BE ALLOWED TO ACCUMULATE WITHIN A CATCH BASIN. ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED PRIOR TO PAVING. THE CLEANING OPERATION SHALL NOT FLUSH SEDIMENT-LADEN WATER INTO THE DOWNSTREAM SYSTEM.
11. STABILIZED CONSTRUCTION ENTRANCES AND WASH PADS SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES MAY BE REQUIRED TO INSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.
12. WET SEASON REQUIREMENTS AS DESCRIBED IN APPENDIX D, SECTION D.2.4.2 OF THE KCSWDM ARE IN EFFECT BEGINNING OCTOBER 1 THROUGH APRIL 30.
13. ANY PERMANENT RETENTION/DETENTION FACILITY USED AS A TEMPORARY SETTLING BASIN SHALL BE MODIFIED WITH THE NECESSARY EROSION CONTROL MEASURES AND SHALL PROVIDE ADEQUATE STORAGE CAPACITY. IF THE PERMANENT FACILITY IS TO FUNCTION ULTIMATELY AS AN INFILTRATION OR DISPERSION SYSTEM, THE FACILITY SHALL NOT BE USED AS A TEMPORARY SETTLING BASIN. NO UNDERGROUND DETENTION TANKS OR VAULTS SHALL BE USED AS A TEMPORARY SETTLING BASIN.
14. WHERE SEEDING FOR TEMPORARY EROSION CONTROL IS REQUIRED, FAST GERMINATING GRASSES SHALL BE APPLIED AT AN APPROPRIATE RATE (I.E. ANNUAL OR PERENNIAL RYE APPLIED AT APPROXIMATELY 80 POUNDS PER ACRE).
15. WHERE STRAW MULCH FOR TEMPORARY EROSION CONTROL IS REQUIRED, IT SHALL BE APPLIED AT A MINIMUM THICKNESS OF TWO INCHES.
16. MANAGEMENT PRACTICES PROVIDING SIGNIFICANT TREE PROTECTION SHALL BE PROVIDED PER SECTION 19.120 OF FWRC.
17. THE CONTRACTOR SHALL PREPARE AND SUBMIT A PROJECT SPECIFIC TEMPORARY EROSION AND SEDIMENT CONTROL (TESC) PLAN BASED ON THE PROPOSED METHOD AND SCHEDULE OF CONSTRUCTION. AT A MINIMUM, THE TESC PLAN FOR THIS PROJECT IS ANTICIPATED TO INCLUDE HIGH VISIBILITY SILT FENCE (LOCATION SHOWN ON SITE PREPARATION PLANS), INLET PROTECTION AT ALL EXISTING CATCH BASINS WITHIN 200' AND DOWN GRADIENT OF ALL WORK ZONES, COVER MEASURES, STREET SWEEPING AND CLEANING, TEMPORARY MEASURES TO MAINTAIN SURFACE WATER FLOWS ADJACENT TO TRENCHES AND PREVENT FLOWS FROM ENTERING TRENCHES, AND EROSION AND POLLUTION CONTROL FOR STOCKPILED MATERIALS.
18. THE CONTRACTOR SHALL IDENTIFY AN EROSION AND SEDIMENT CONTROL (ESC) LEAD. THE ESC LEAD SHALL HAVE A CURRENT CERTIFICATE OF TRAINING IN CONSTRUCTION SITE EROSION AND SEDIMENT CONTROL FROM A COURSE APPROVED BY THE DEPARTMENT OF ECOLOGY. THE ESC LEAD WILL BE RESPONSIBLE FOR INSTALLING AND MAINTAINING ALL TESC BEST MANAGEMENT PRACTICES (BMPs) AND UPDATING THE TESC PLAN TO REFLECT CURRENT FIELD CONDITIONS.



NOTES:

1. STAKING OF BAGS MAY BE REQUIRED USING (2) 1"x2" WOOD STAKES OR APPROVED EQUAL PER BAG.
2. BAG FILLING SHALL BE BIODEGRADABLE PLANT MATERIAL PER WSDOT STD SPEC 9-14.5(5)
3. STREAM AND CULVERT PROTECTION SHALL BE INSTALLED WHERE SHOWN ON PLANS PRIOR TO BEGINNING CONSTRUCTION AND SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.

BIOFILTER BAGS FOR STREAM AND CULVERT PROTECTION

NTS



BID DOCUMENT

C-2

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DRAFTED:	JA
DESIGNED:	MKE
REVIEWED:	SOD
APPROVED:	SOD



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NO.	DATE	REVISION

CULVERT REPLACEMENT PROJECT

REDONDO CREEK AT 16TH AVENUE S

TESC GENERAL NOTES AND DETAILS

SHT.	4
OF	20
CITY PROJECT #:	34293

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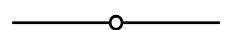
TESC GENERAL NOTES

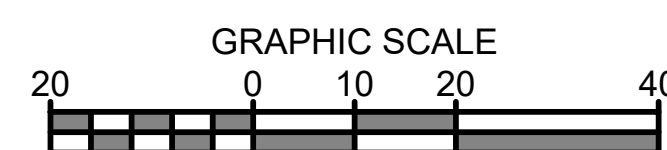
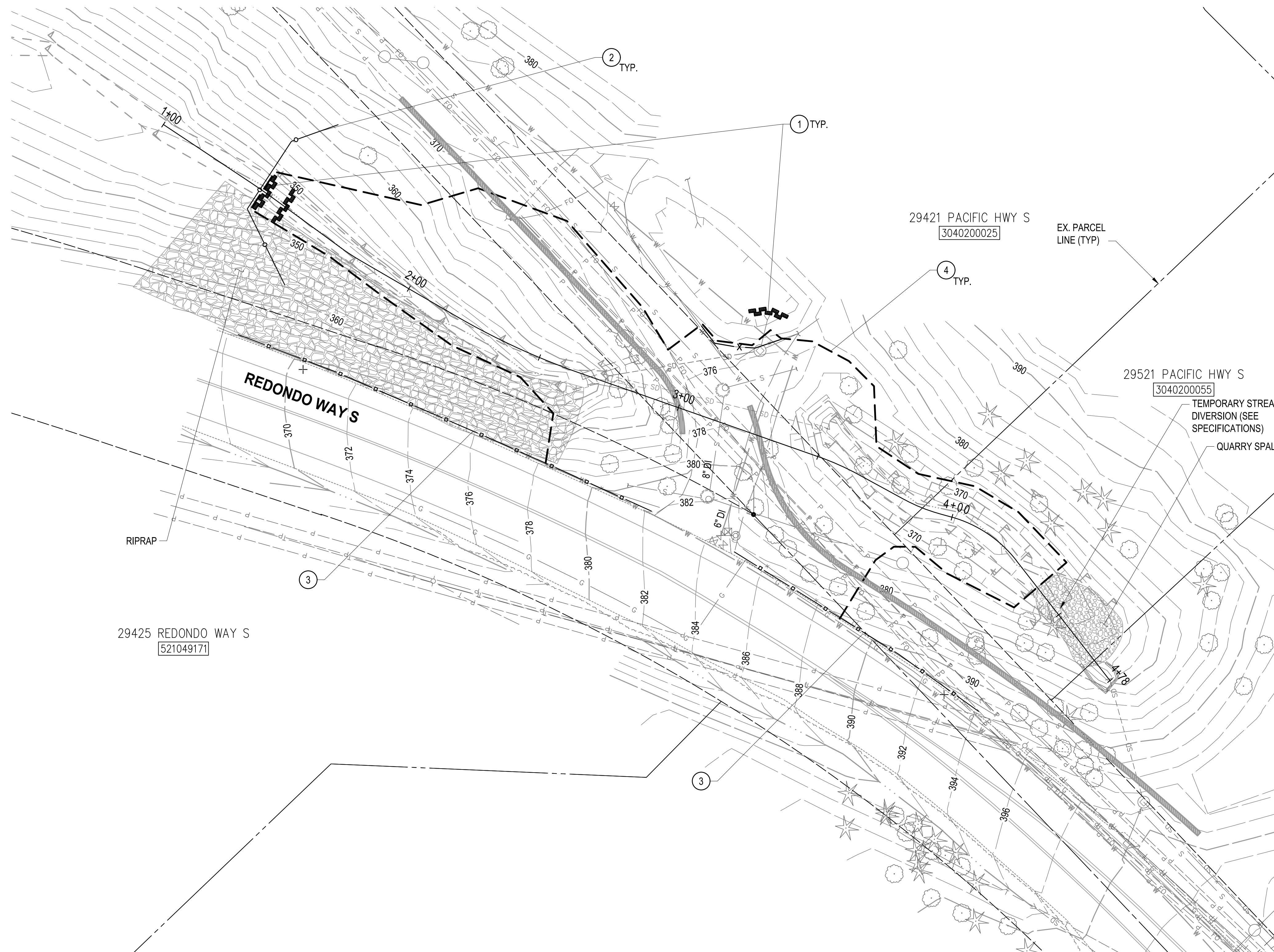
- FOR TESC GENERAL NOTES AND DETAILS, SEE SHEET 4.
- APPROXIMATE CLEARING LIMITS ARE SHOWN ON THE PLAN. ACTUAL CLEARING LIMITS SHALL BE STAKED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER. TREES SHOWN ARE FOR INFORMATIONAL PURPOSES ONLY; FILED CONDITIONS MAY VARY. TREES WITHIN THE CLEARING LIMITS SHALL BE REMOVED ONLY AFTER APPROVAL BY THE ENGINEER.

TESC NOTES

- INSTALL BIOFILTER BAGS.
- INSTALL SILT FENCE.
- INSTALL HIGH VISIBILITY FENCE.
- CLEARING LIMITS.

TESC LEGEND

-  SILT FENCE
-  HIGH VISIBILITY FENCE
-  CLEARING LIMITS
-  BIOFILTER BAGS



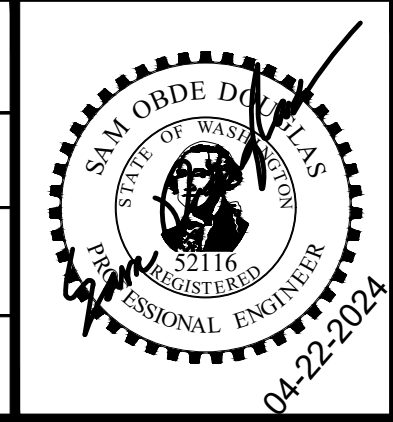
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C-3

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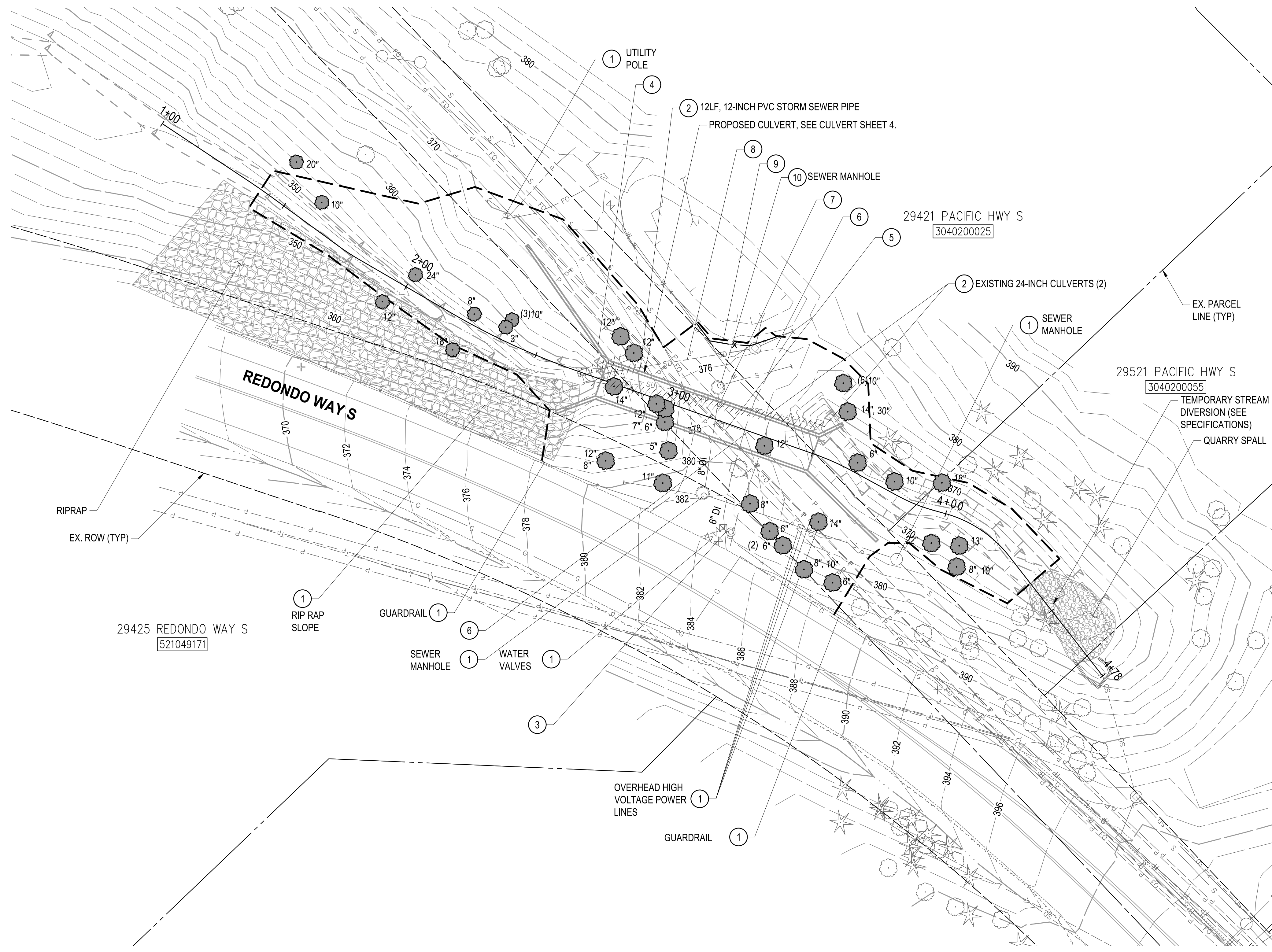
CULVERT REPLACEMENT PROJECT
REDONDO CREEK AT 16TH AVENUE S

TEMPORARY EROSION AND SEDIMENT CONTROL PLAN

SHT.	5
OF	20
CITY PROJECT #:	34293

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SITE PREPARATION GENERAL NOTES

1. THIS PLAN HAS BEEN PREPARED FOR THE CONTRACTOR'S CONVENIENCE IN LOCATING, PROTECTING, AND AVOIDING CONFLICTS WITH EXISTING UTILITIES. IT IS BASED UPON BEST AVAILABLE INFORMATION AND IS NOT NECESSARILY ACCURATE OR COMPLETE.
2. PRESERVE AND PROTECT ALL ABOVE AND BELOW GRADE IMPROVEMENTS THAT ARE TO REMAIN IN PLACE UNTIL NEW FACILITIES ARE COMPLETE AND OPERATIONAL.
3. CONTRACTOR SHALL PRESERVE AND PROTECT ALL PLANT MATERIAL OUTSIDE OF CLEARING LIMITS.
4. REMOVALS SHALL BE SEQUENCED WITH CONSTRUCTION TO MINIMIZE TRAFFIC IMPACTS.

SITE PREPARATION NOTES

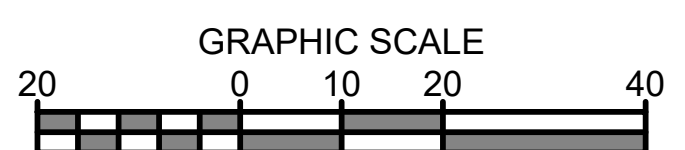
- 1 PRESERVE AND PROTECT.
- 2 REMOVE.
- 3 REMOVE AND PROTECT EXISTING CAMERA, POLE, FOUNDATION, AND ASSOCIATED JUNCTION BOX AND WIRING. CONTRACTOR SHALL RESET PRE-EMPTIVE DETECTOR TO PRE-CONSTRUCTION CONDITION ONCE CONSTRUCTION IS SUBSTANTIALLY COMPLETE.
- 4 ABANDON STORM PIPE. CUT DOWNSTREAM AND EXPOSED END OF PIPE OFF AT 2.0' BELOW FINAL GRADE. FILL PIPE WITH CDF AND ABANDON IN PLACE.
- 5 FIBER OPTIC LINE TO BE STRUCTURALLY SUPPORTED DURING CONSTRUCTION (BY OTHERS).
- 6 WATER MAIN TO BE SUPPORTED AND RELOCATED, SEE SHEET B5.
- 7 SANITARY SEWER MAIN TO BE SUPPORTED, SEE SHEET B7.
- 8 FILL ABANDONED 12" STORM SEWER PIPE WITH CDF, 38 LF.
- 9 REMOVE AND RESET CHAIN LINK FENCE AS NEEDED TO INSTALL PROPOSED IMPROVEMENTS.
- 10 REMOVE SANITARY SEWER MANHOLE, SEE SHEET B7.

SITE PREPARATION LEGEND

- +++++ PIPE REMOVAL
- (QTY) DIAM" REMOVE CONIFEROUS TREE
- (QTY) DIAM" REMOVE DECIDUOUS TREE
- CLEARING LIMITS



BID DOCUMENT

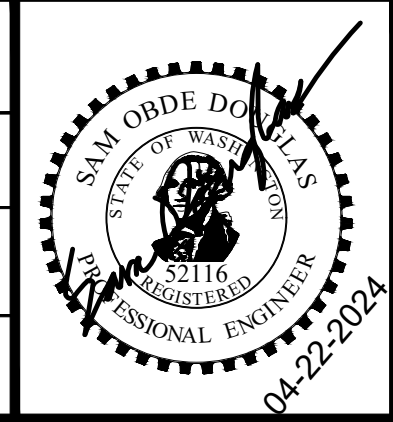


C-4

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REVIEWED:	SOD
APPROVED:	SOD



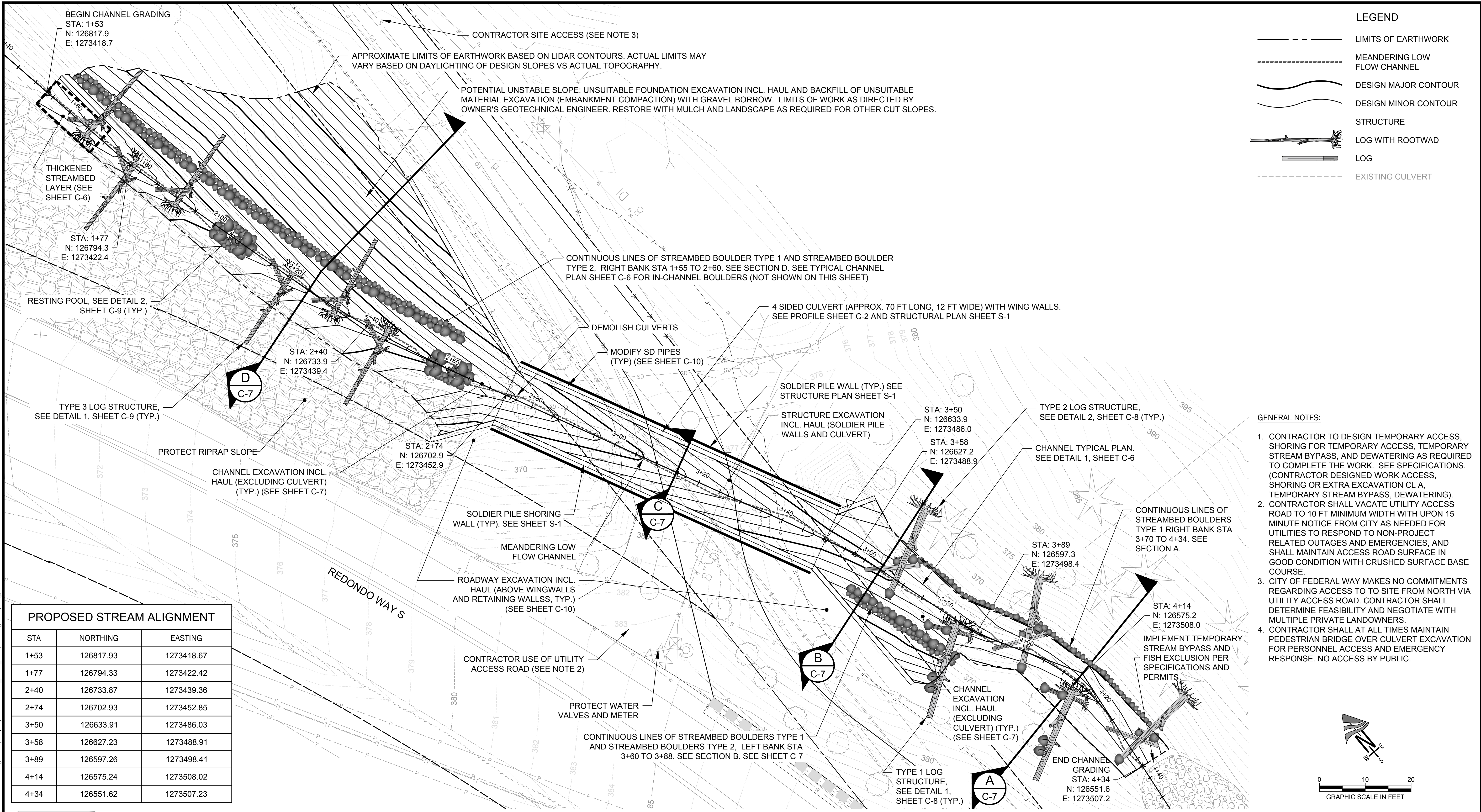
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CULVERT REPLACEMENT PROJECT
 REDONDO CREEK AT 16TH AVENUE S
 SITE PREPARATION PLAN

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LEGEND

- LIMITS OF EARTHWORK
- - - MEANDERING LOW FLOW CHANNEL
- ~ DESIGN MAJOR CONTOUR
- ~ DESIGN MINOR CONTOUR
- STRUCTURE
- LOG WITH ROOTWAD
- LOG
- - - EXISTING CULVERT

- GENERAL NOTES:**
- CONTRACTOR TO DESIGN TEMPORARY ACCESS, SHORING FOR TEMPORARY ACCESS, TEMPORARY STREAM BYPASS, AND DEWATERING AS REQUIRED TO COMPLETE THE WORK. SEE SPECIFICATIONS. (CONTRACTOR DESIGNED WORK ACCESS, SHORING OR EXTRA EXCAVATION CL A, TEMPORARY STREAM BYPASS, DEWATERING).
 - CONTRACTOR SHALL VACATE UTILITY ACCESS ROAD TO 10 FT MINIMUM WIDTH WITH UPON 15 MINUTE NOTICE FROM CITY AS NEEDED FOR UTILITIES TO RESPOND TO NON-PROJECT RELATED OUTAGES AND EMERGENCIES, AND SHALL MAINTAIN ACCESS ROAD SURFACE IN GOOD CONDITION WITH CRUSHED SURFACE BASE COURSE.
 - CITY OF FEDERAL WAY MAKES NO COMMITMENTS REGARDING ACCESS TO TO SITE FROM NORTH VIA UTILITY ACCESS ROAD. CONTRACTOR SHALL DETERMINE FEASIBILITY AND NEGOTIATE WITH MULTIPLE PRIVATE LANDOWNERS.
 - CONTRACTOR SHALL AT ALL TIMES MAINTAIN PEDESTRIAN BRIDGE OVER CULVERT EXCAVATION FOR PERSONNEL ACCESS AND EMERGENCY RESPONSE. NO ACCESS BY PUBLIC.

PROPOSED STREAM ALIGNMENT

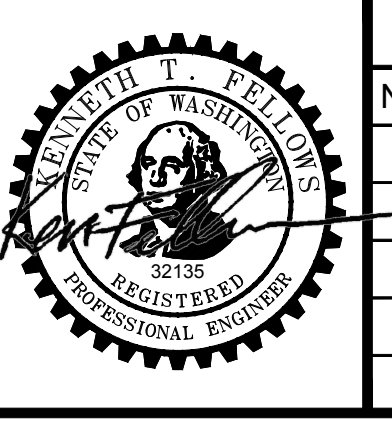
STA	NORTHING	EASTING
1+53	126817.93	1273418.67
1+77	126794.33	1273422.42
2+40	126733.87	1273439.36
2+74	126702.93	1273452.85
3+50	126633.91	1273486.03
3+58	126627.23	1273488.91
3+89	126597.26	1273498.41
4+14	126575.24	1273508.02
4+34	126551.62	1273507.23



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GEOENGINEERS

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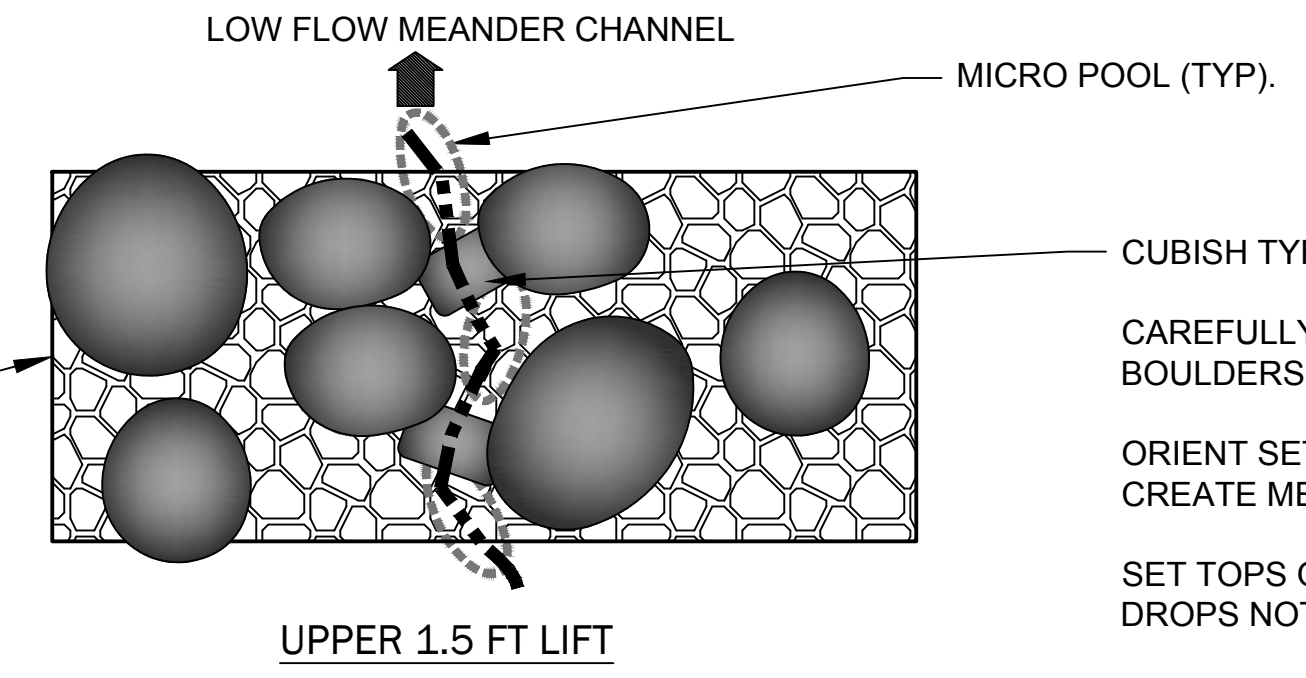
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CULVERT REPLACEMENT PROJECT
 REDONDO CREEK AT 16TH AVENUE S
GRADING PLAN

SHT. 7
 OF 20
 CITY PROJECT #:
 34293

PLACE BOULDERS TYPE 2 AND 3 TO CREATE LOW FLOW CHANNEL AND DROPS, AND PLACE REMAINING BOULDERS RANDOMLY, THEN FILL SECOND 1.5 FT LIFT OF BLENDED STREAMBED MIX 2 COMPONENTS (SEE SPECIFICATION SECTION 8-30).

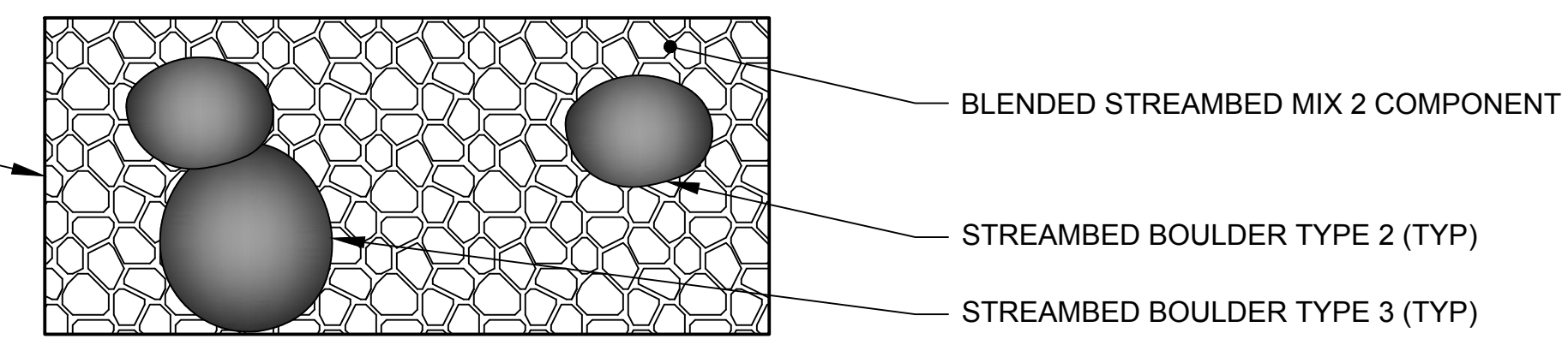


CAREFULLY WEDGE A SMALLER CUBISH STREAMBED BOULDER TYPE 1 OR TYPE 2 UPSTREAM BETWEEN LARGER BOULDERS ON EACH SIDE OF THE EFFECTIVE FLOW CHANNEL.

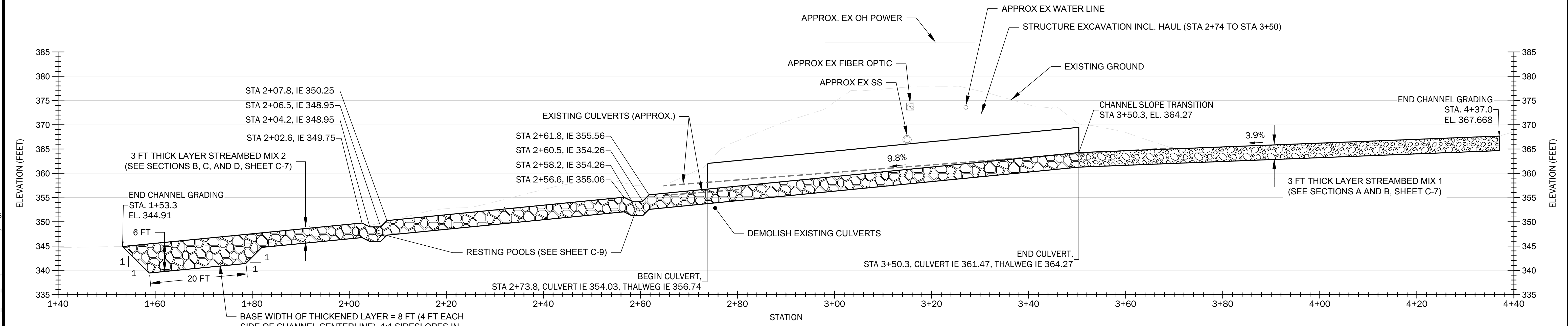
ORIENT SETS OF BOULDERS AT VARYING ANGLES TO STREAM ALIGNMENT (-30 DEGREES TO + 30 DEGREES) TO CREATE MEANDERING LOW FLOW CHANNEL.

SET TOPS OF CUBISH BOULDERS AT CHANNEL THALWEG ELEVATION TO PROVIDE A CONTINUAL SEQUENCE OF DROPS NOT TO EXCEED 0.5 FT VERTICALLY ALONG LOW FLOW CHANNEL.

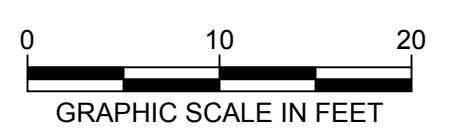
PLACE BOULDERS TYPES 2 AND 3 RANDOMLY AND FILL INITIAL 1.5 FT LIFT OF BLENDED STREAMBED MIX 2 COMPONENTS (SEE SPECIFICATION SECTION 8-30).



LOWER 1.5 FT LIFT
TYPICAL CHANNEL PLAN IN 9.8% SLOPE SECTION
NOT TO SCALE



NOTES:
1. 4-SIDE CULVERT: PROVIDE FOR MINIMUM 3 FT OF STREAM SUBSTRATE BELOW THALWEG ELEVATION WITHIN CULVERT. PER SPECIFICATIONS AND PERMITS.



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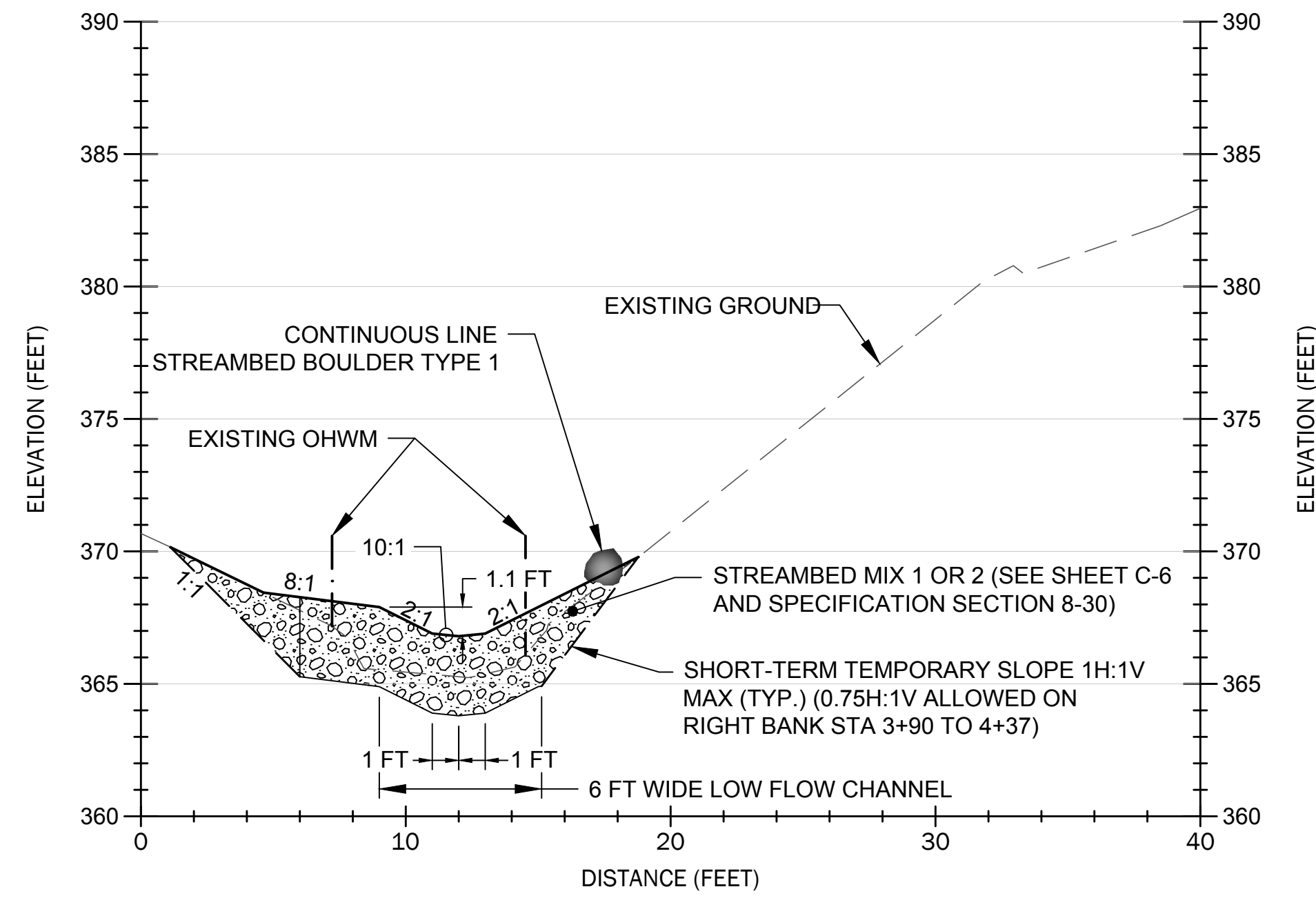


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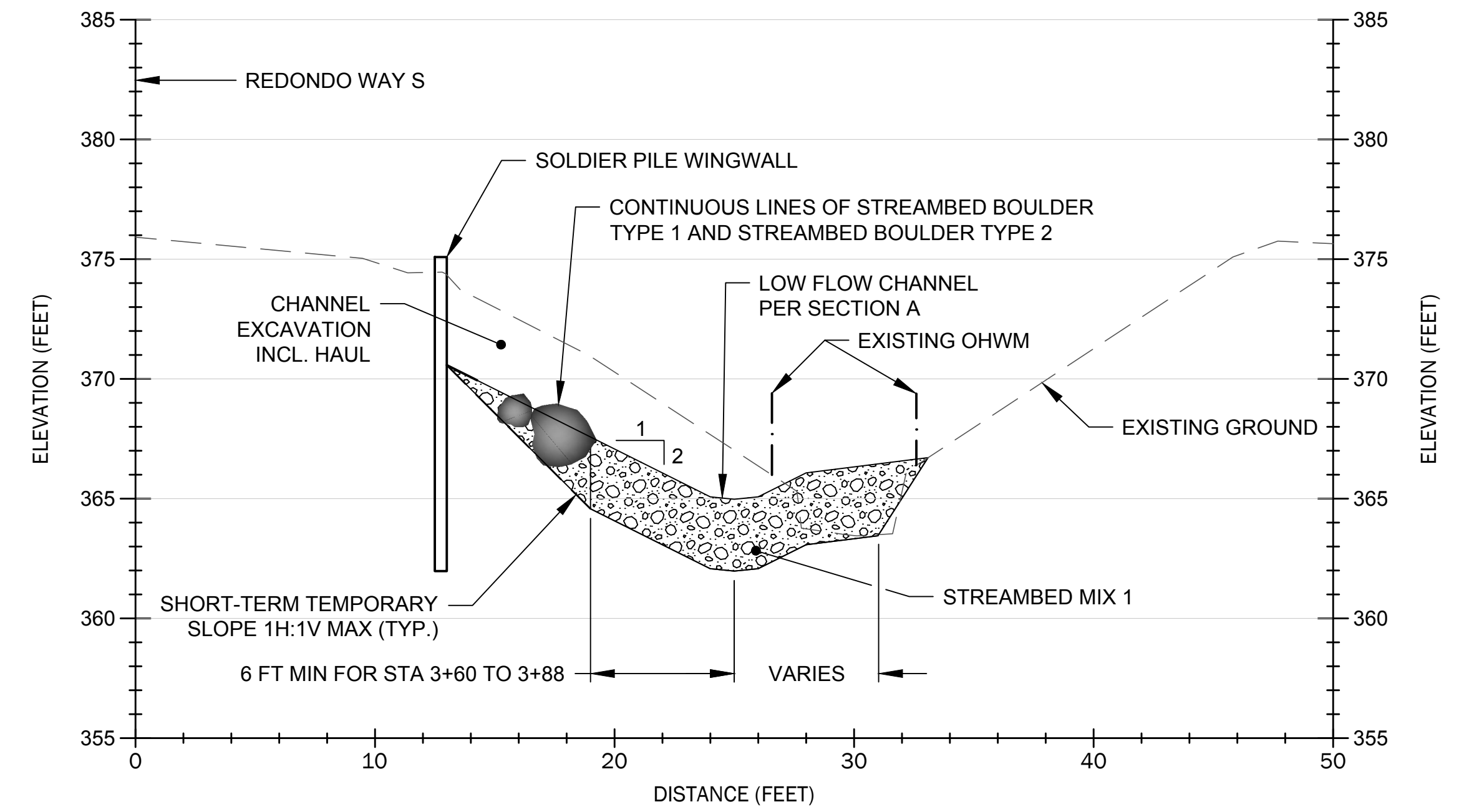
CULVERT REPLACEMENT PROJECT
REDONDO CREEK AT 16TH AVENUE S

STREAM PROFILE

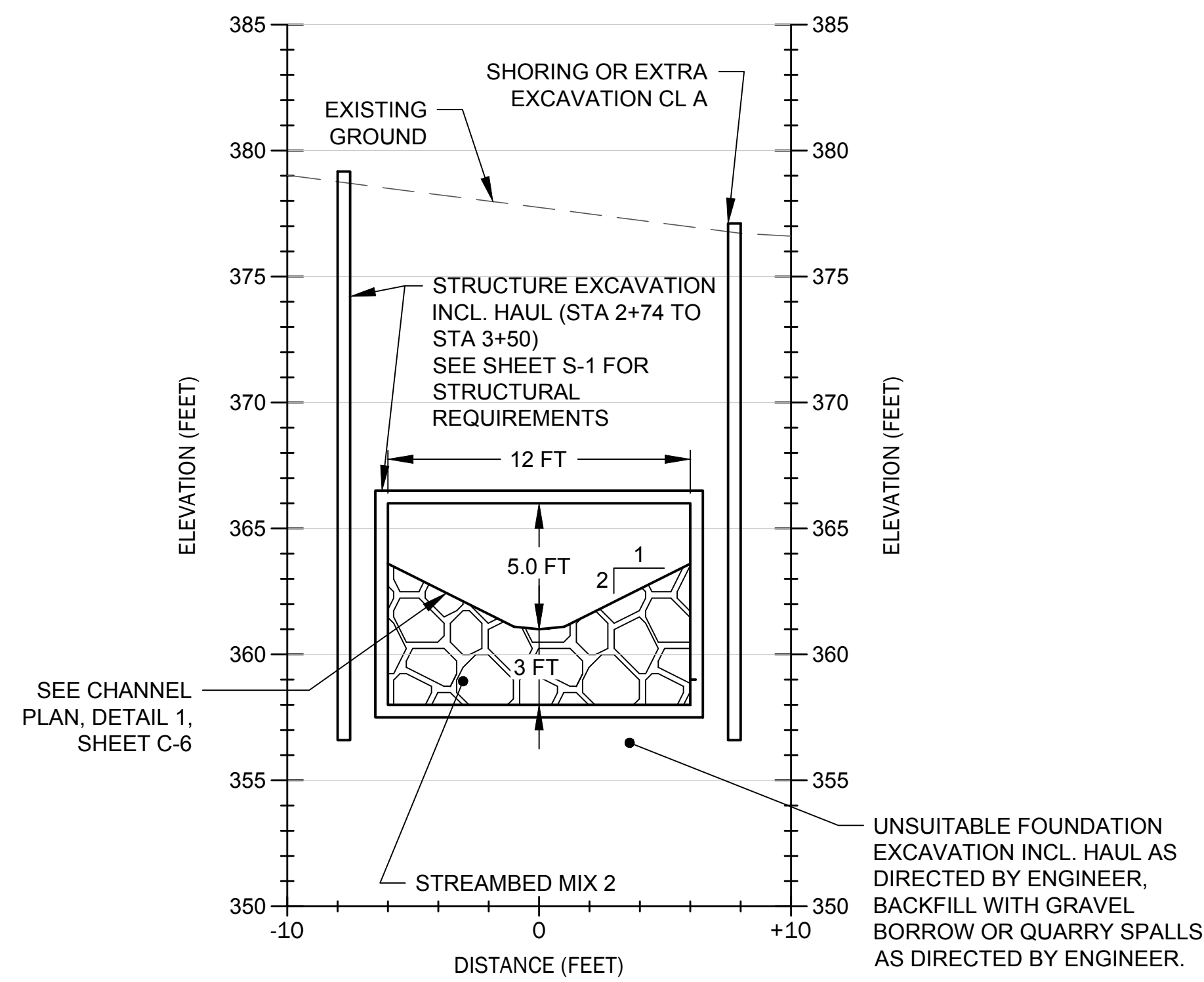
SHT. 8
OF 20
CITY PROJECT #:
34293



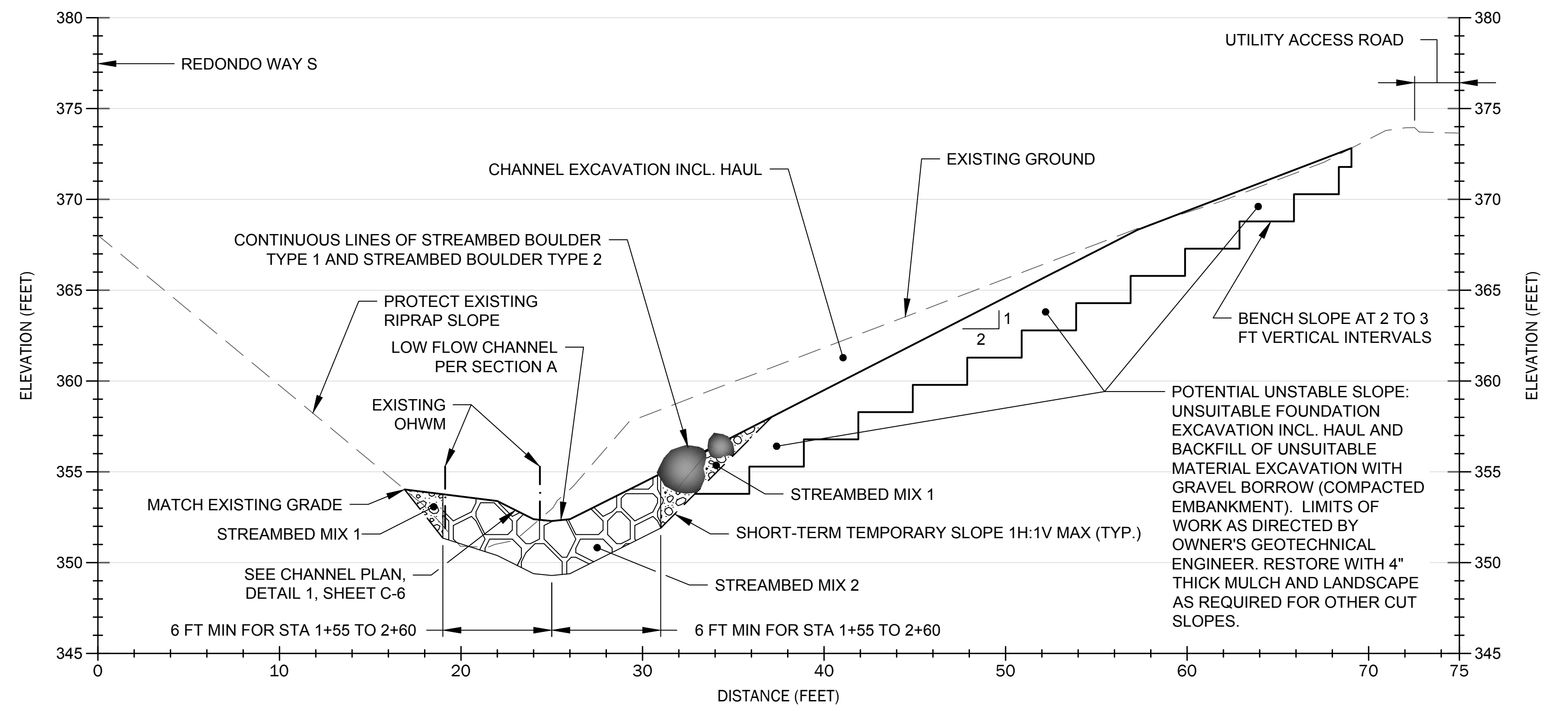
TYPICAL CHANNEL SECTION A
SCALE: 1" = 4'
C-5



UPSTREAM SECTION B
SCALE: 1" = 10'
C-5



MID-CROSSING C
SCALE: 1" = 10'
C-5



DOWNSTREAM SECTION D
SCALE: 1" = 10'
C-5



DRAFTED: Michael Woods
DESIGNED: Evan Deal
REVIEWED: Ken Fellows
APPROVED: Joe Callaghan

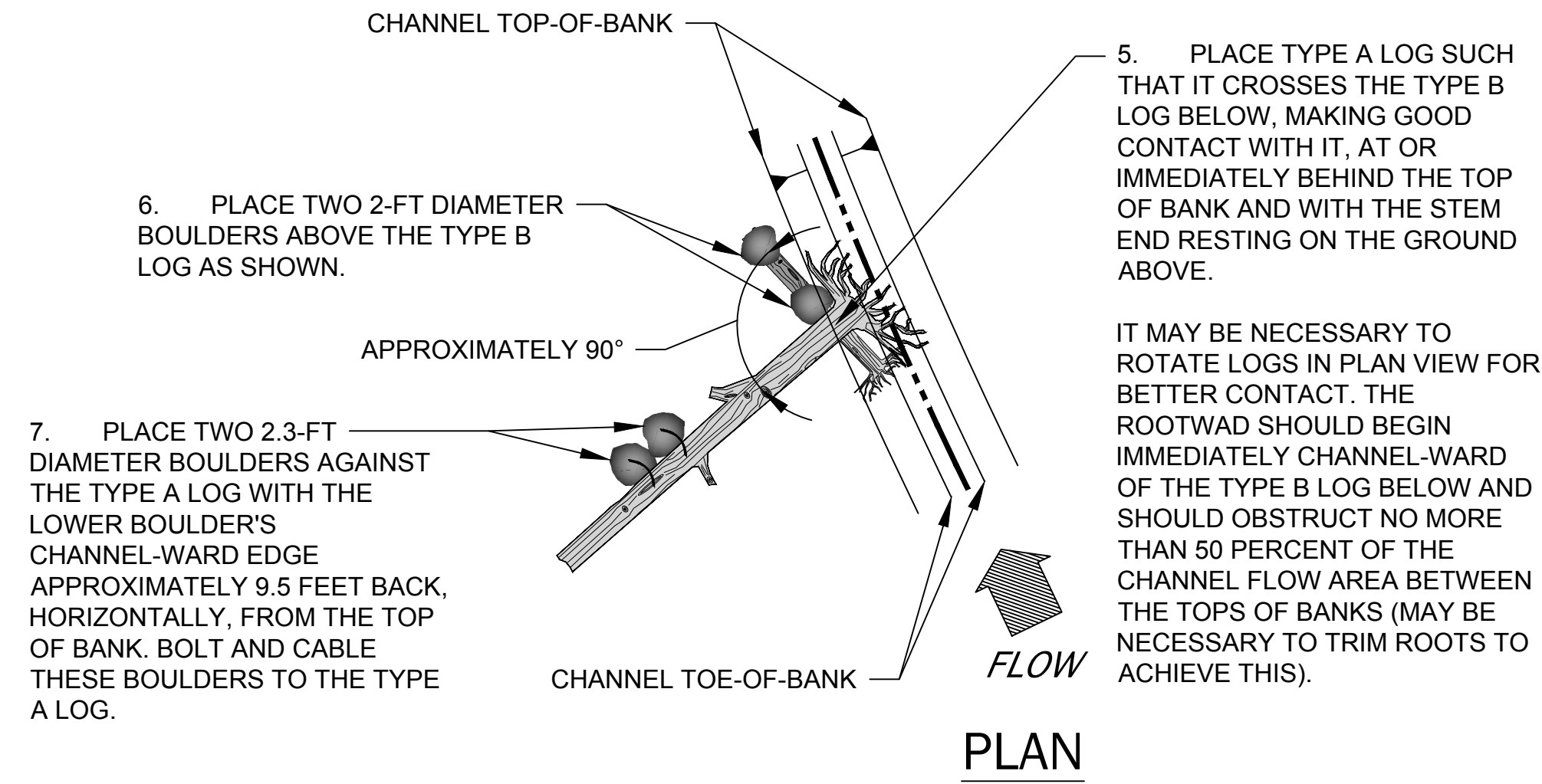
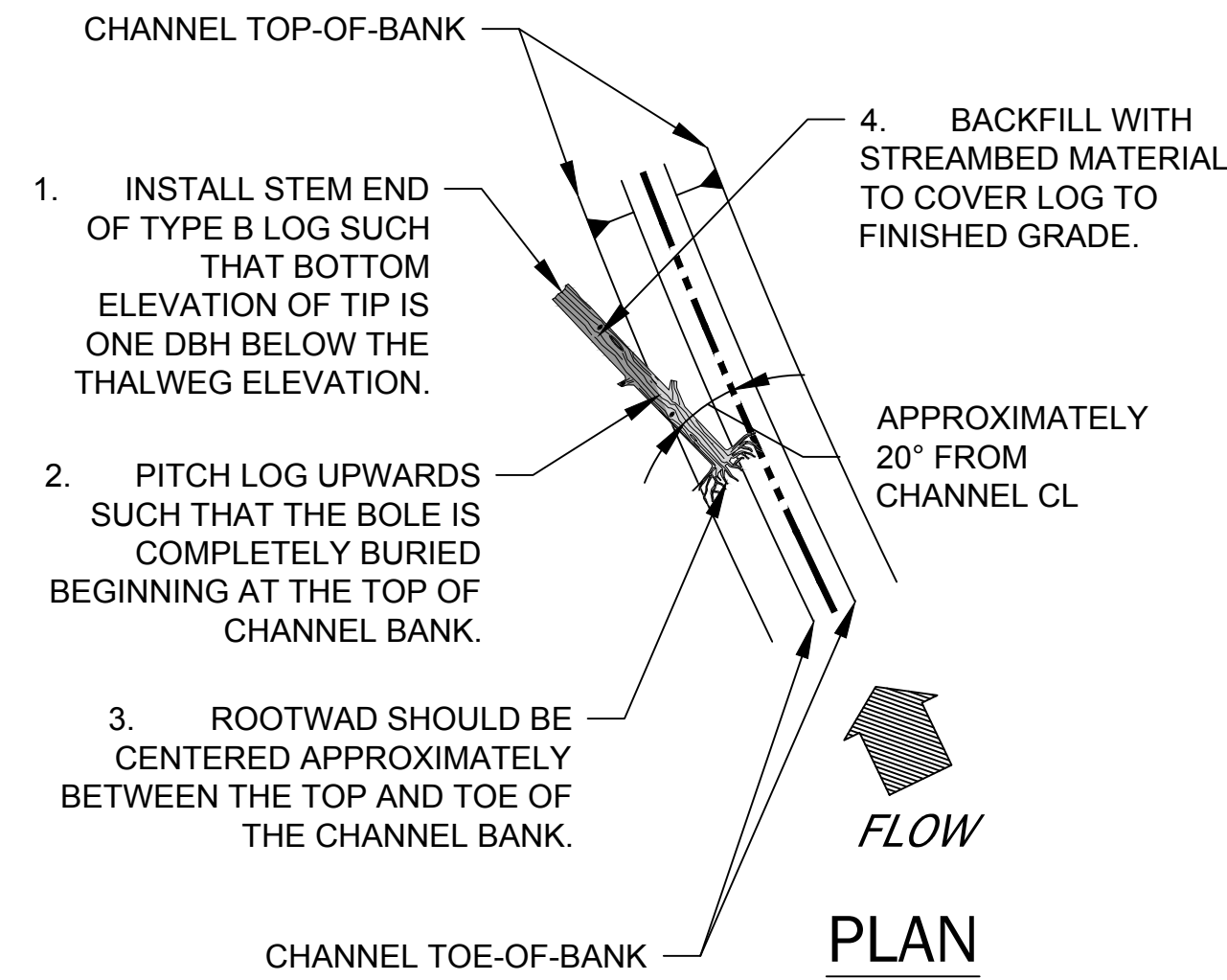


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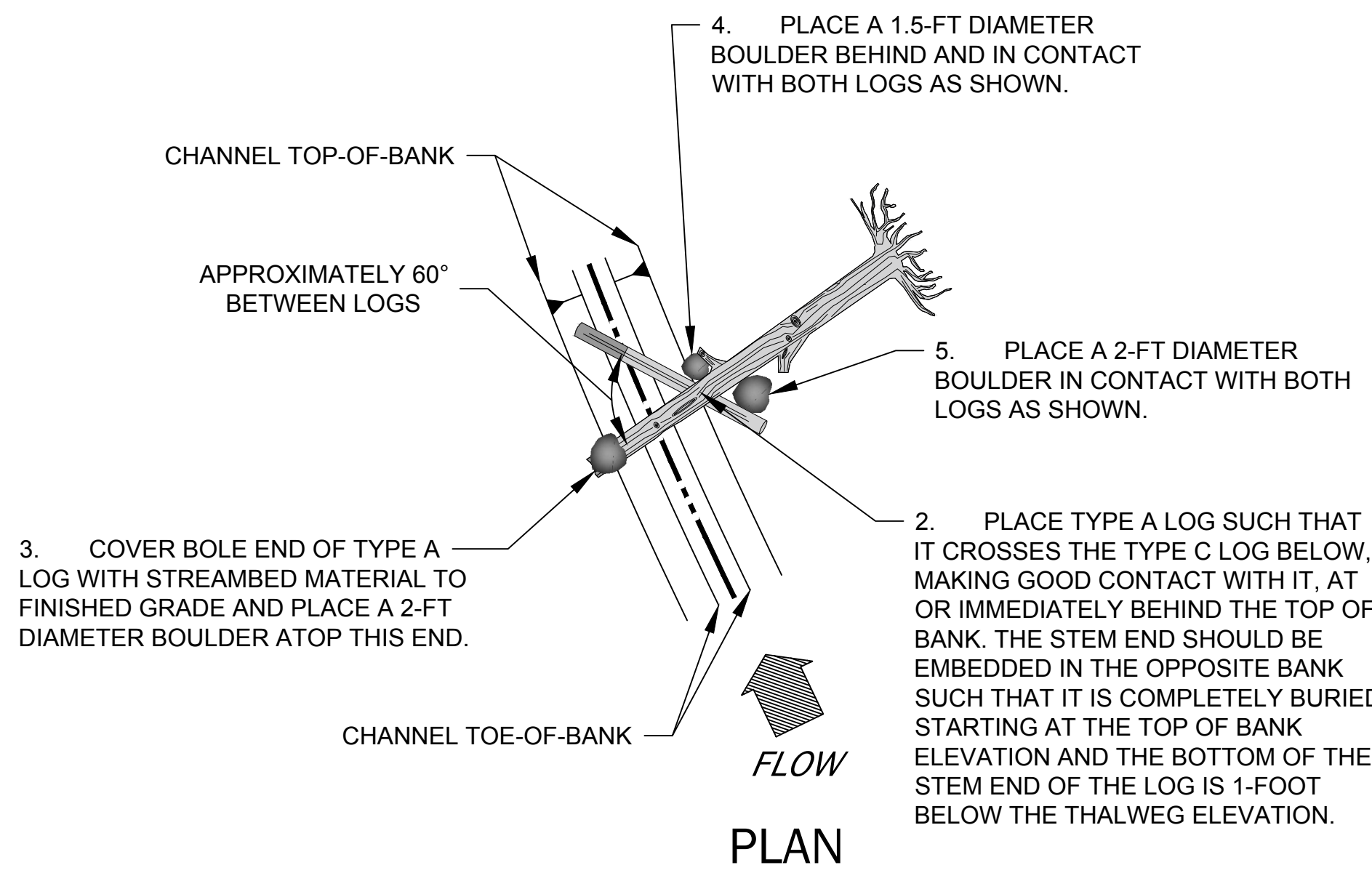
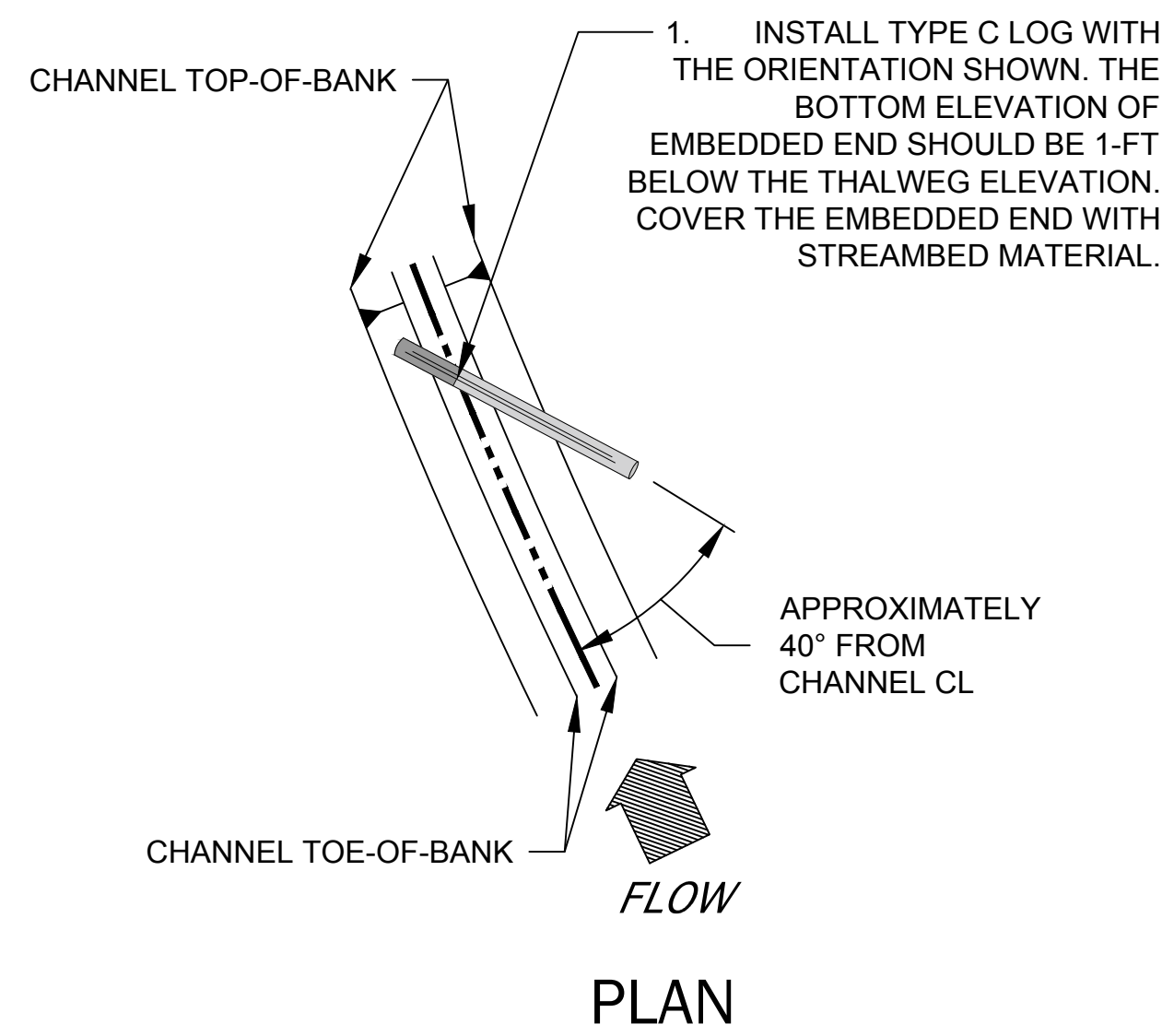
CULVERT REPLACEMENT PROJECT
REDONDO CREEK AT 16TH AVENUE S

SECTIONS



TYPICAL TYPE 1 LOG STRUCTURE DETAIL

NOT TO SCALE



TYPICAL TYPE 2 LOG STRUCTURE DETAIL

NOT TO SCALE

TYPE 1 STRUCTURE QUANTITIES				
LOG TYPE A - LARGE ROOTWAD	LOG TYPE B - MEDIUM ROOTWAD	2.3-FT DIAMETER BOULDERS (EACH)	2.0-FT DIAMETER BOULDERS (EACH)	BOLTED CABLE CONNECTIONS (EACH)
20' MIN. LOG WITH ROOTWAD 16" TO 20" DBH	10' MIN. LOG WITH ROOTWAD 10" TO 14" DBH			
1	1	2	2	2

TYPE 2 STRUCTURE QUANTITIES			
LOG TYPE A - LARGE ROOTWAD	LOG TYPE C - NO ROOTWAD	2.0-FT DIAMETER BOULDERS (EACH)	1.5-FT DIAMETER BOULDERS
20' MIN. LOG WITH ROOTWAD 16" TO 20" DBH	12' MIN. LOG 8" TO 12" DBH		
1	1	2	1

TOTAL STRUCTURE QUANTITIES (FOR STRUCTURE TYPES 1 - 3)							
LOG TYPE A - LARGE ROOTWAD	LOG TYPE B - MEDIUM ROOTWAD	LOG TYPE C - NO ROOTWAD	LOG TYPE D - SMALL ROOTWAD	2.3-FT DIAMETER BOULDERS	2.0-FT DIAMETER BOULDERS	1.5-FT DIAMETER BOULDERS	BOLTED CABLE CONNECTIONS
11	2	3	6	4	10	3	4

NOTES:
1. DBH = DIAMETER AT BREAST HEIGHT (BASED ON ORIGINAL LIVE CONDITION).



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APPROVED: Joe Callaghan



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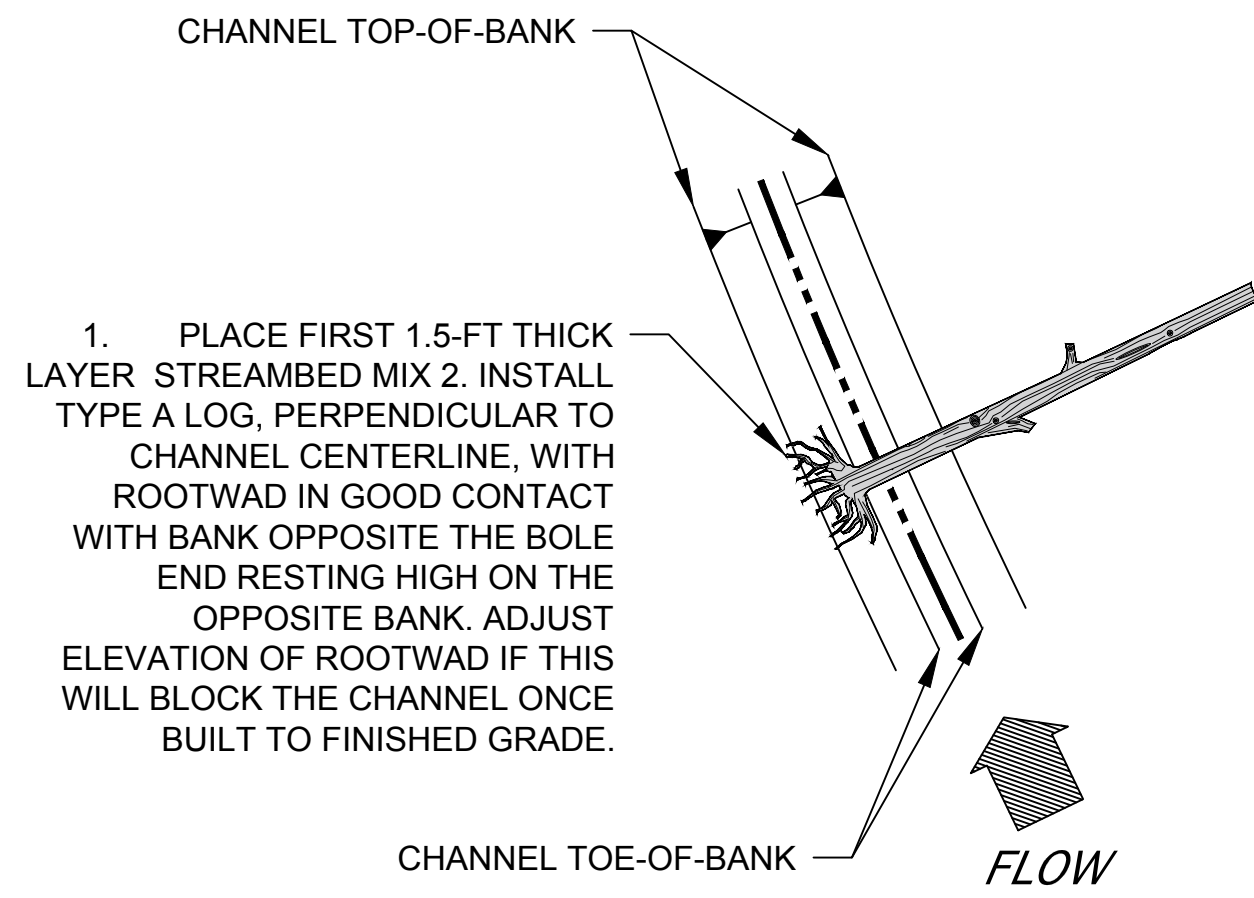
CULVERT REPLACEMENT PROJECT
REDONDO CREEK AT 16TH AVENUE S

STREAM DETAILS 1

C-8

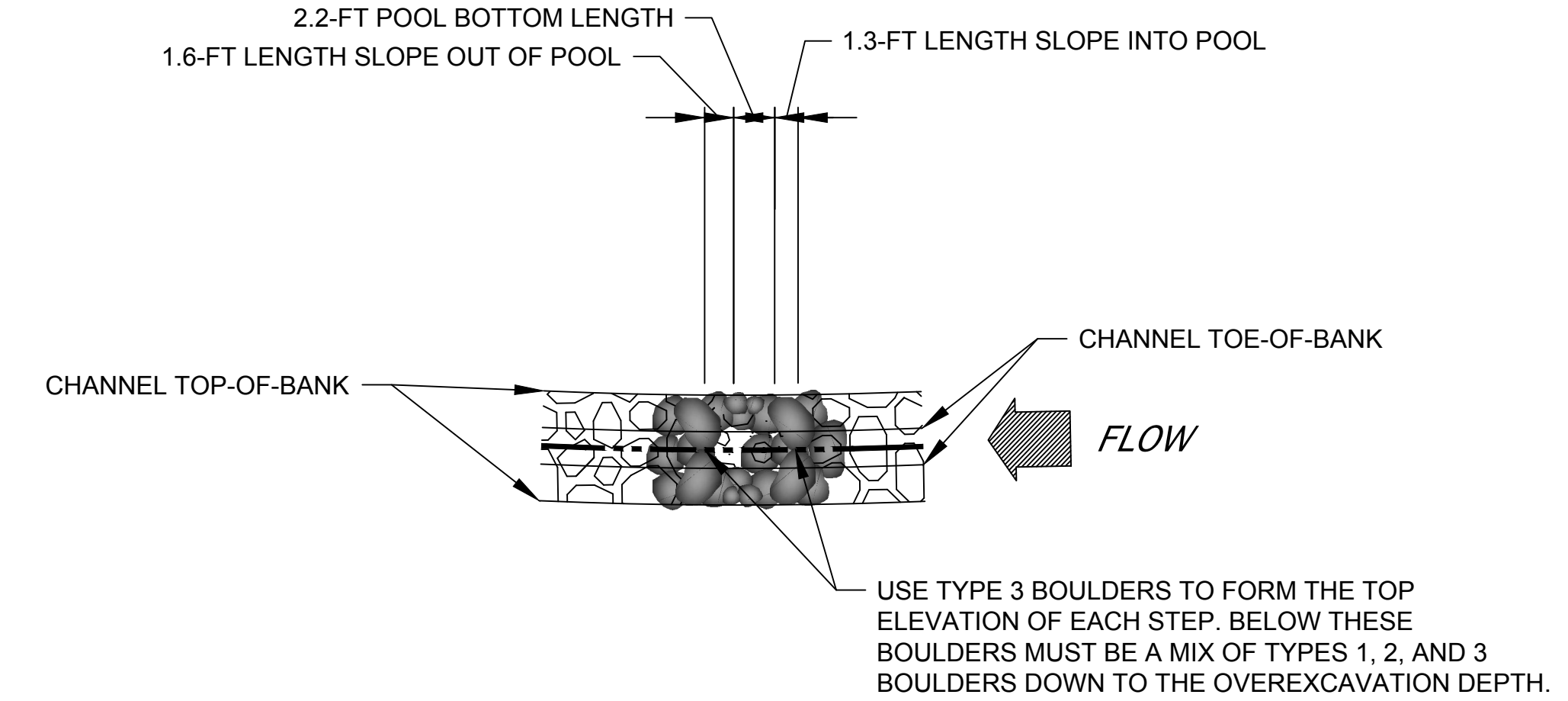
SHT. 10
OF 20

CITY PROJECT #:
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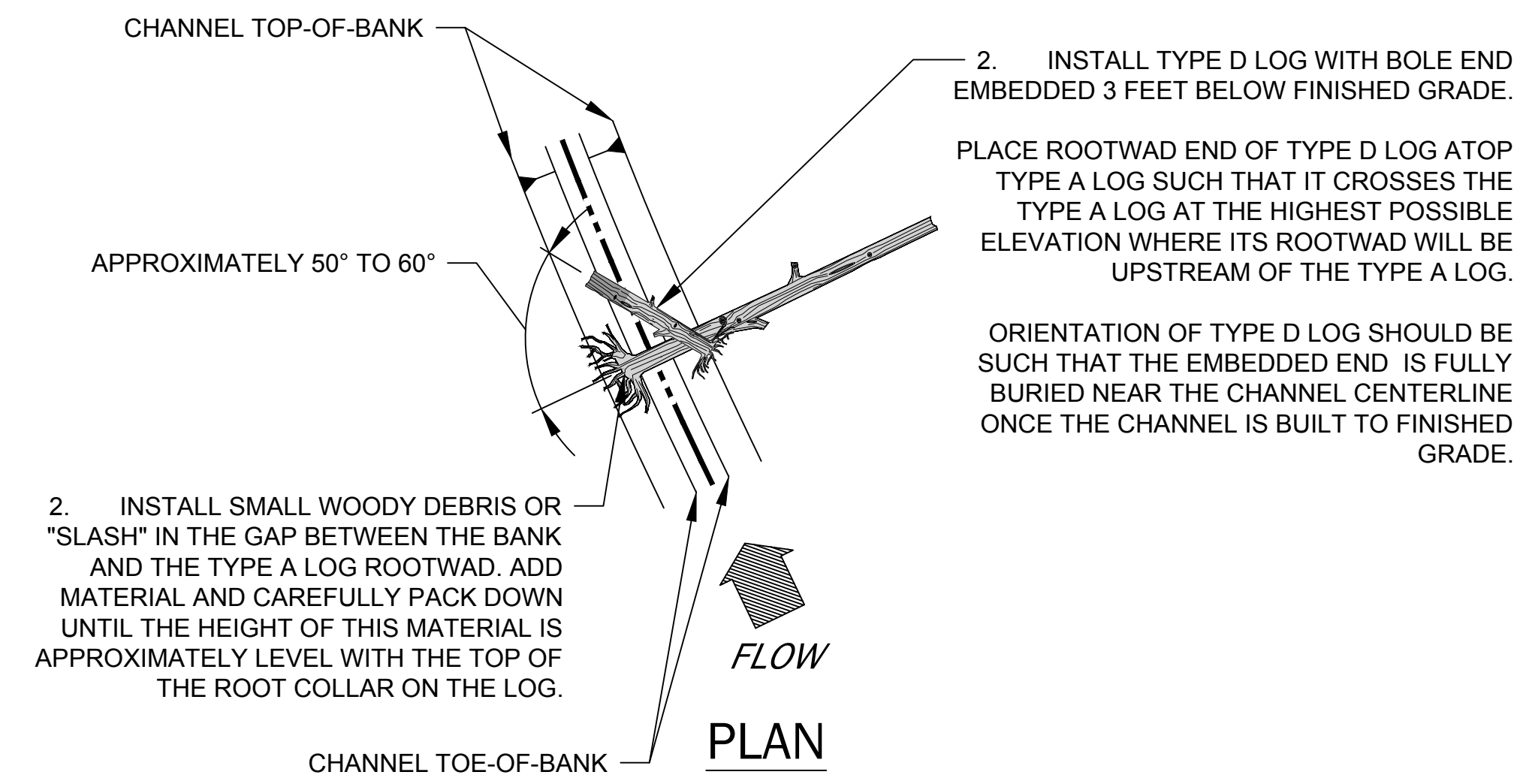


PLAN

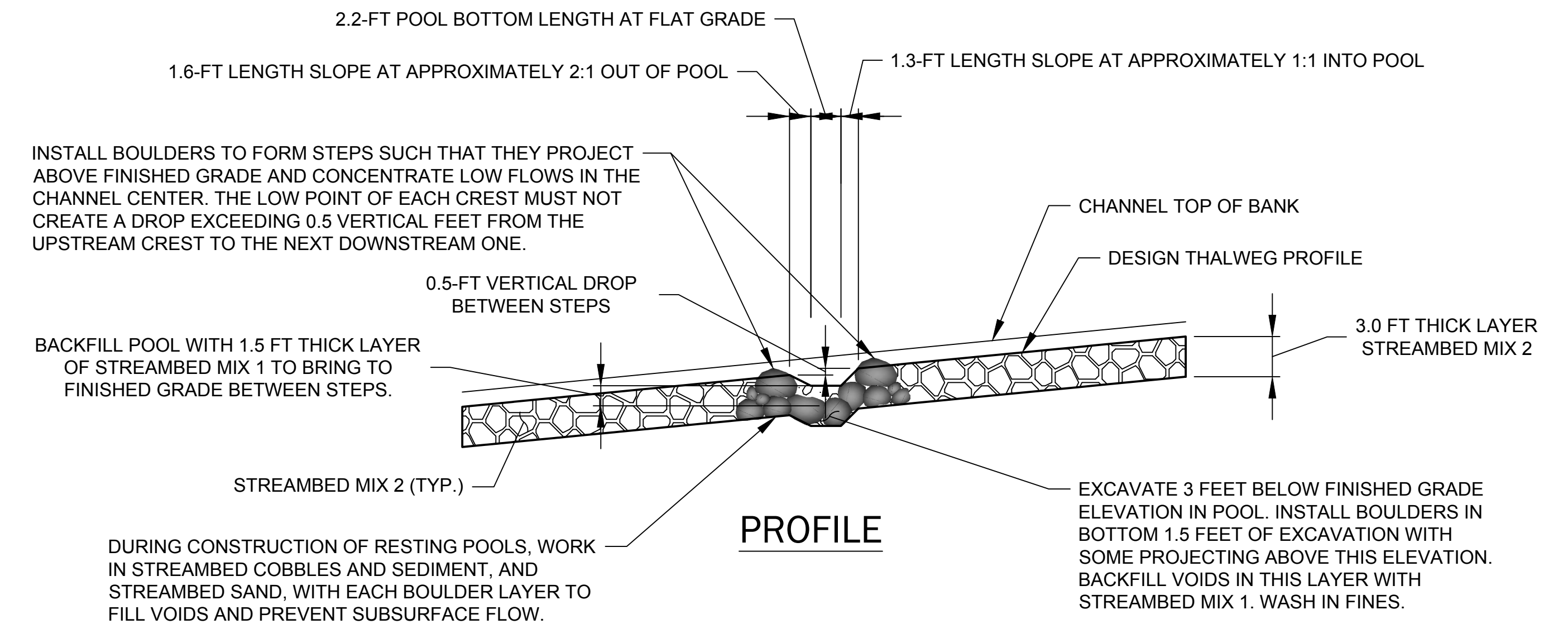
TYPE 3 STRUCTURE QUANTITIES	
LOG TYPE A - LARGE ROOTWAD	LOG TYPE D - SMALL ROOTWAD
20' MIN. LOG WITH ROOTWAD 16" TO 20" DBH	12' MIN. LOG WITH ROOTWAD 8" TO 12" DBH
1	1



PLAN



TYPICAL TYPE 3 LOG STRUCTURE DETAIL
NOT TO SCALE



TYPICAL RESTING POOL DETAIL
NOT TO SCALE

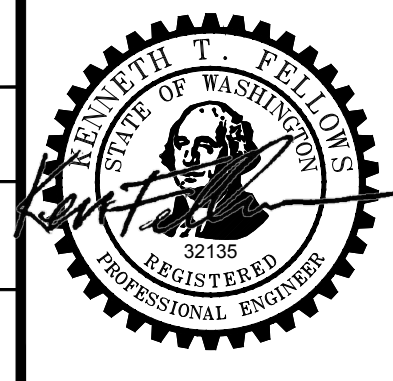
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DESIGNED: Evan Deal
REVIEWED: Ken Fellows
APPROVED: Joe Callaghan



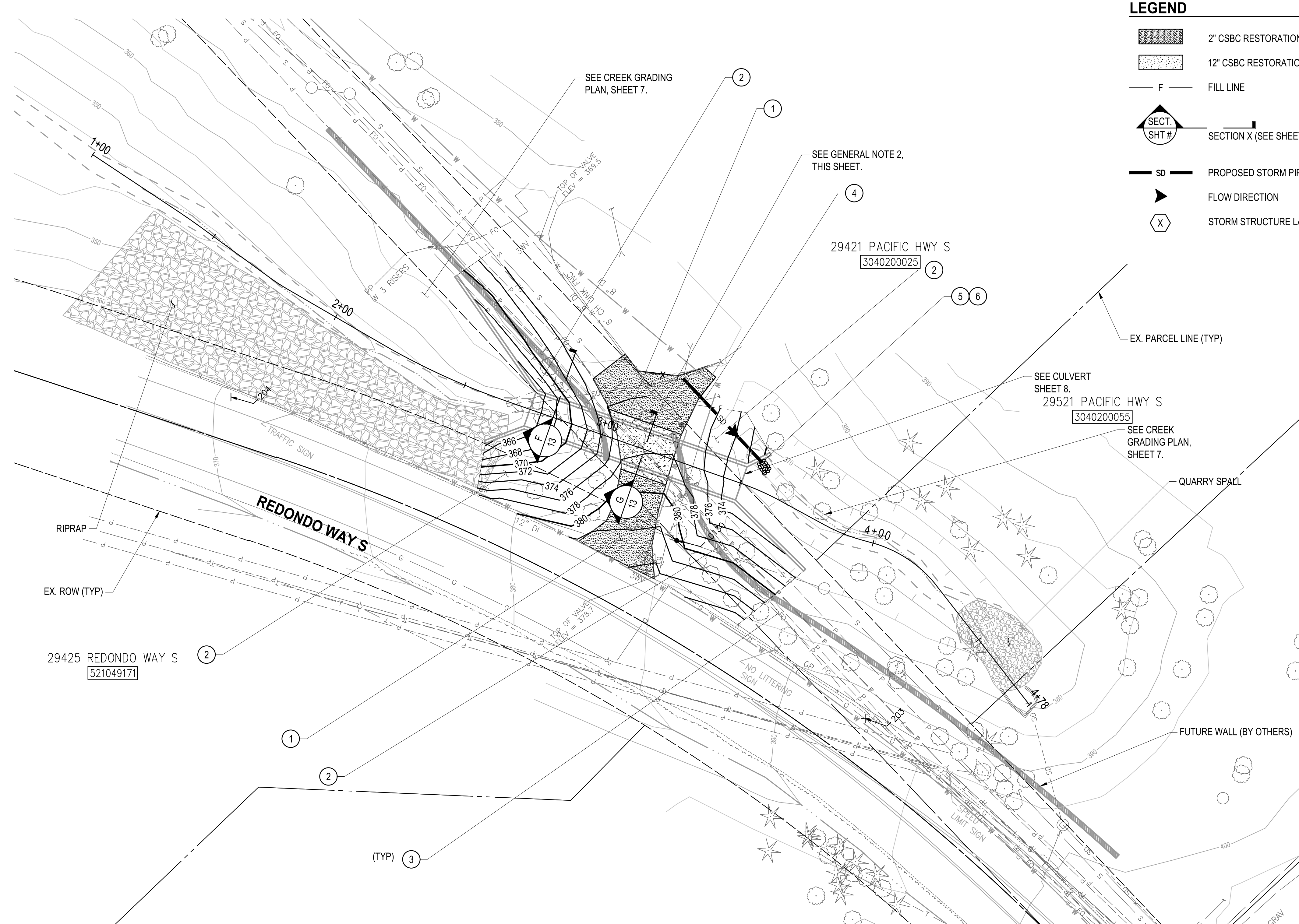
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NO.	DATE	REVISION

CULVERT REPLACEMENT PROJECT
REDONDO CREEK AT 16TH AVENUE S

STREAM DETAILS 2

C-9
SHT. 11
OF 20
CITY PROJECT #:
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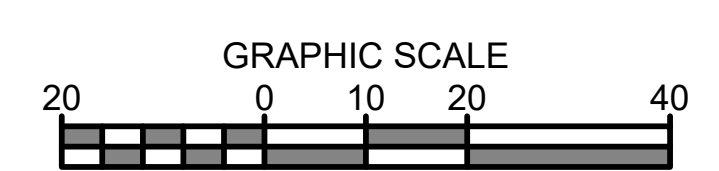
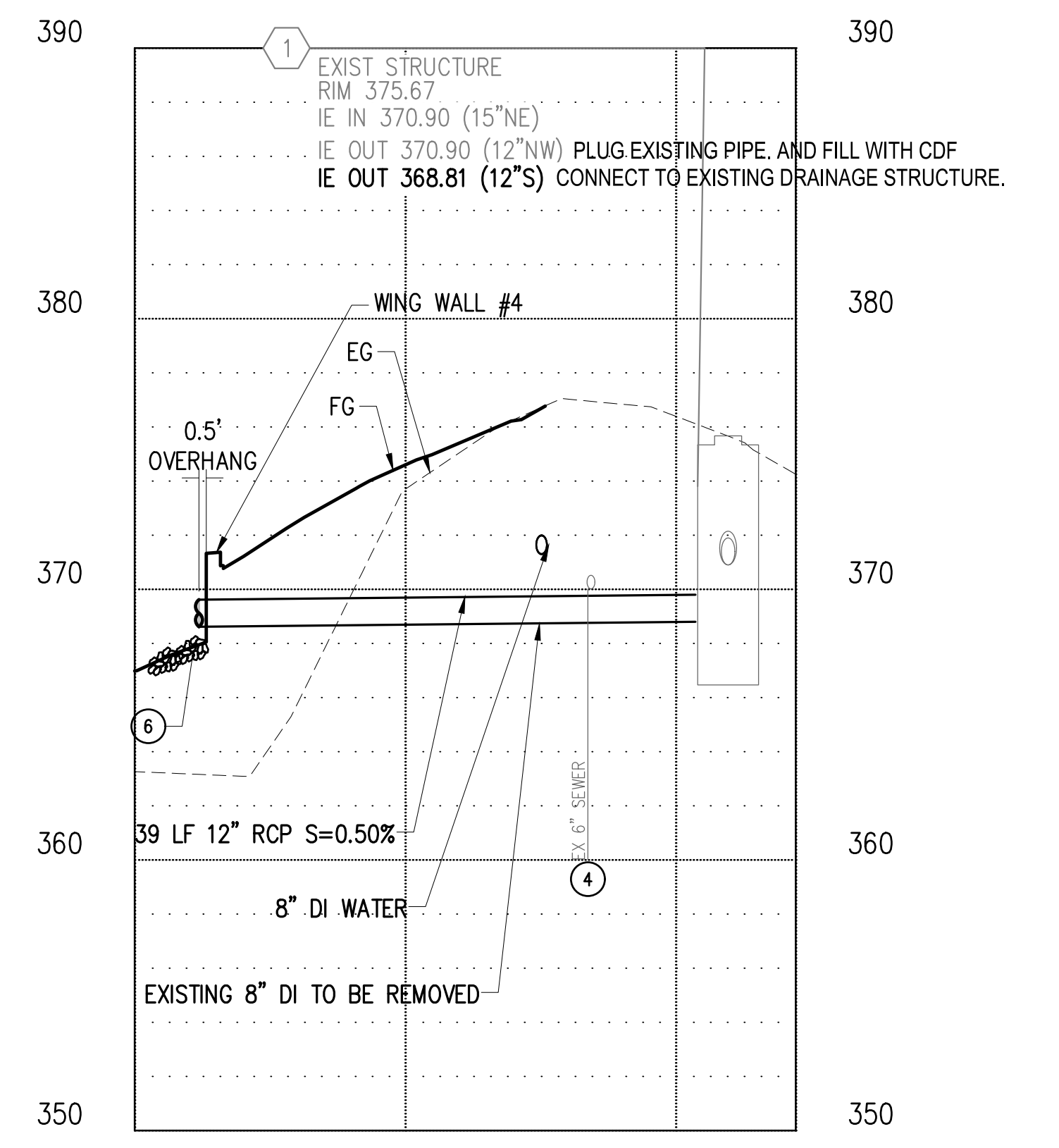


LEGEND

- 2" CSBC RESTORATION
- 12" CSBC RESTORATION
- F FILL LINE
- SECTION X (SEE SHEET 13)
- PROPOSED STORM PIPE
- FLOW DIRECTION
- STORM STRUCTURE LABEL

- GENERAL NOTES**
- THE MAXIMUM CUT/FILL SLOPE SHALL NOT EXCEED 2 FT HORIZONTAL TO 1 FT VERTICAL, UNLESS OTHERWISE APPROVED BY THE CITY.
 - CONSTRUCTION TEMPORARY AND PERMANENT MODIFICATIONS TO SEWER AND WATER UTILITIES (SEE APPENDIX B FOR WORK PER BID FORM SCHEDULE B - LAKEHAVEN WATER AND SEWER DISTRICT IMPROVEMENTS). COORDINATE WITH OTHER UTILITY PROVIDERS PER SP 1-07.17 (WORK PER BID FORM SCHEDULE A - ROADWAY IMPROVEMENTS), REGARDING RELOCATIONS, FACILITY PROTECTION OR SUPPORT OR OUTAGES.
 - ACCESS TO ADJACENT PROPERTY MUST BE MAINTAINED AT ALL TIMES UNLESS PRIOR ARRANGEMENTS HAVE BEEN MADE AND APPROVED BY THE ENGINEER.
 - THE WORK AREA SHALL BE LIMITED TO THE EXTENTS OF THE EXISTING AND ACQUIRED ROW AND EASEMENTS.

- CONSTRUCTION NOTES**
- SCARIFY SURFACE AND INSTALL 2" CSBC TO RESTORE ACCESS ROAD OUTSIDE OF CULVERT EXTENTS.
 - RESTORE AT A MAXIMUM 2:1 SLOPE. SEE TYPICAL SECTIONS AND LANDSCAPE PLANS FOR RESTORATION TYPE. COMPACT EMBANKMENT PER SPECIFICATION SECTION 2-03.3(14)C METHOD B.
 - LANDSCAPE RESTORATION, SEE SHEET 14 FOR LANDSCAPING PLANT SELECTION SCHEDULE.
 - SIDE SEWER LOCATION APPROXIMATE. CONTRACTOR TO POTHOLE.
 - PROPOSED 12" RCP TO PENETRATE WING WALL AND OVERHANG 0.5'.
 - 12" STREAMBED COBBLES FOR SPLASH PAD, SEE DETAIL SHEET 13.



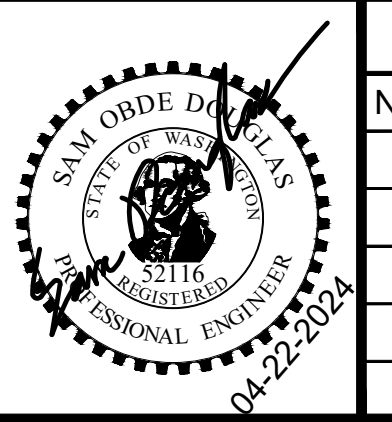
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two business days before you dig

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DRAFTED:	JA
DESIGNED:	MKE
REVIEWED:	SOD
APPROVED:	SOD



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NO.	DATE	REVISION

CULVERT REPLACEMENT PROJECT
REDONDO CREEK AT 16TH AVENUE S

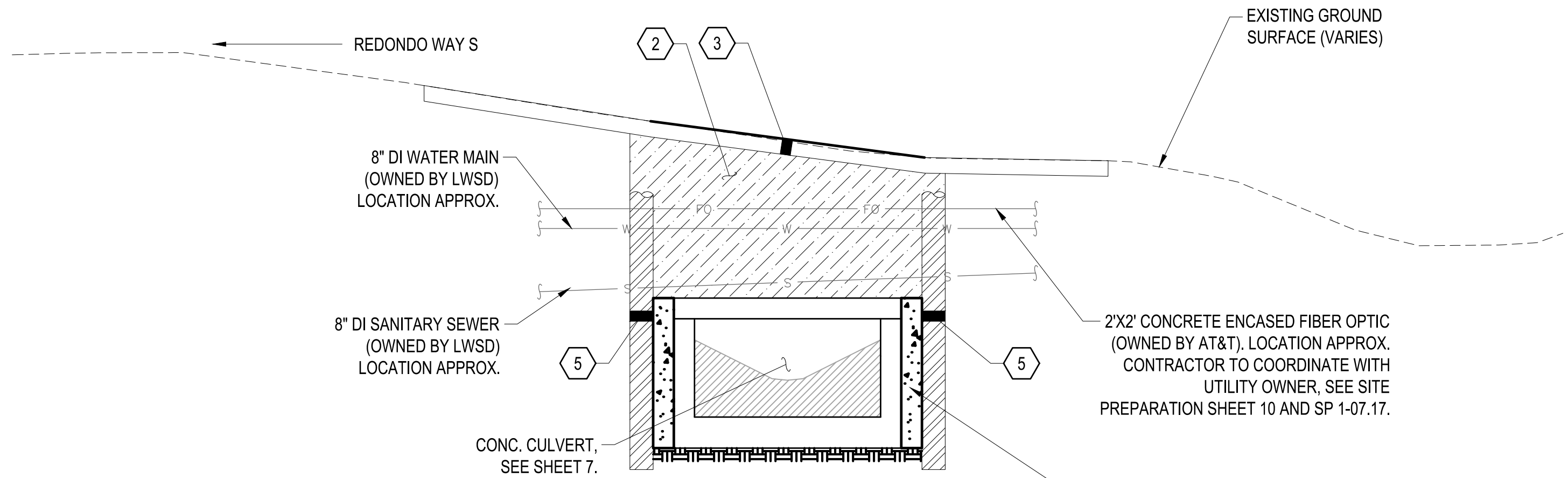
SURFACE RESTORATION & UTILITY PLAN

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OF 20
CITY PROJECT #:
34293

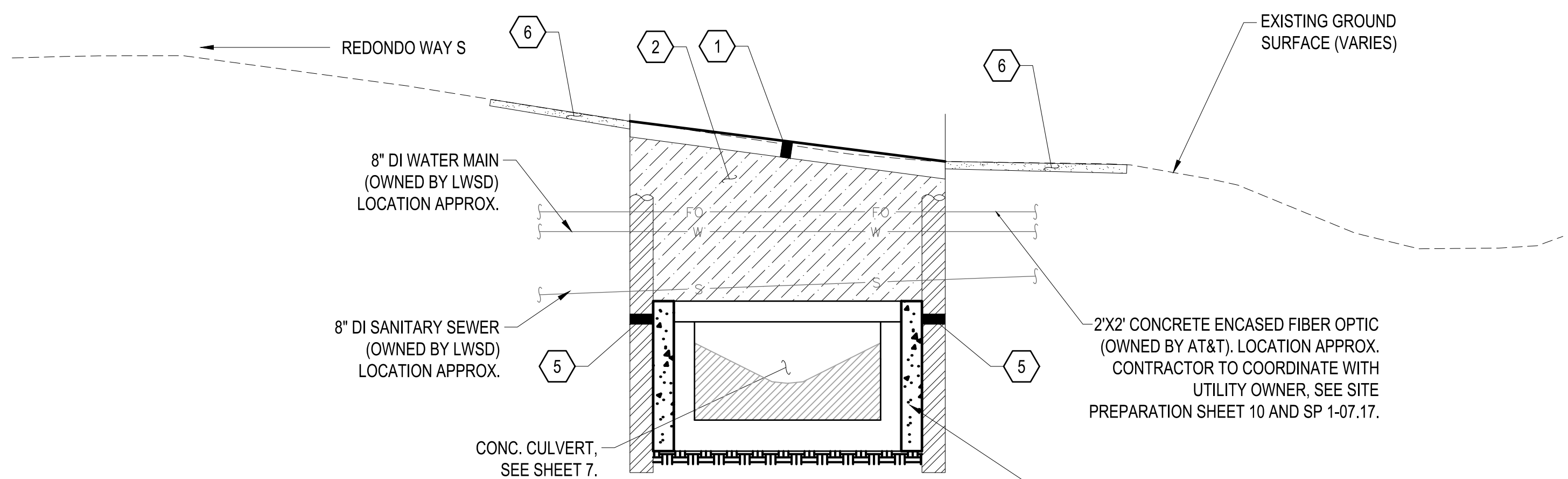
TYPICAL SECTION GENERAL NOTES:

1. SUBGRADE PREPARATION SHALL BE IN ACCORDANCE WITH SECTION 2-06 OF THE STANDARD SPECIFICATIONS.
2. ADDITIONAL FILL MATERIAL REQUIRED FOR CONSTRUCTION SHALL BE APPROVED GRAVEL BORROW WHEN REQUIRED BY ENGINEER. COMPACT GRAVEL BORROW PER SPECIFICATION SECTION 2-03.3(14)C METHOD C.
3. COMPACT EMBANKMENT PER SPECIFICATION SECTION 2-03.3(14)C METHOD B.
4. SEE GEOTECHNICAL ASSESSMENT FOR REQUIRED EARTHWORK PARAMETERS.

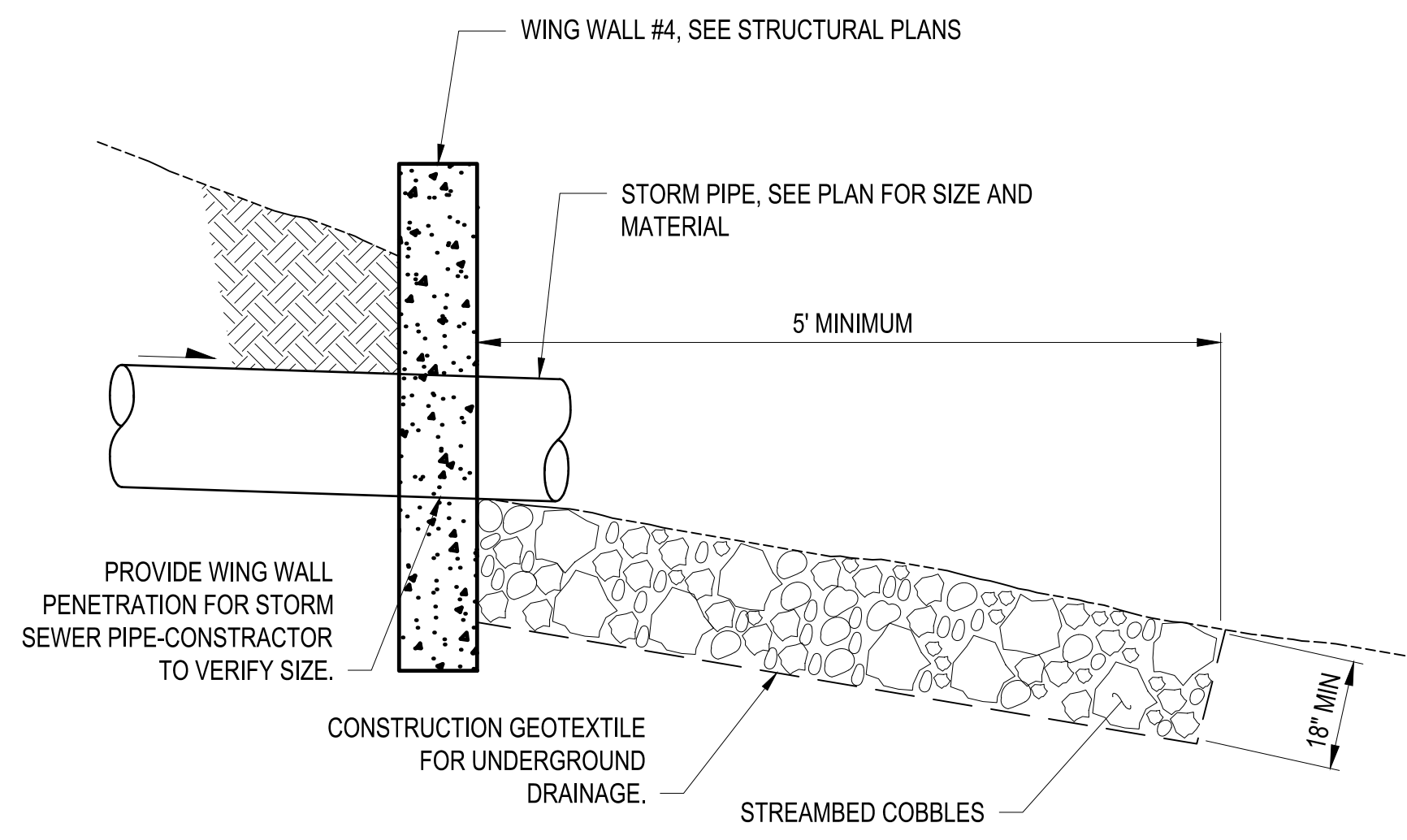
MATERIAL CODE	
#	DESCRIPTION
1	12" CRUSHED SURFACING BASE COURSE
2	GRAVEL BORROW FOR STRUCTURAL EARTH FILL.
3	SEE LANDSCAPE RESTORATION PLAN SHEET 14.
4	STREAMBED MIX 1.
5	STEEL PILES AND LAGGING, SEE STRUCTURAL PLANS.
6	2" CRUSHED SURFACING BASE COURSE



TYPICAL SECTION F
 CULVERT CROSS SECTION
 APPROX. STA 2+70 TO STA 3+00 AND STA 3+30 TO STA 3+50, LOOKING N
 NTS



TYPICAL SECTION G
 CULVERT CROSS SECTION
 APPROX. STA 3+00-3+30, LOOKING N
 NTS



SPLASH PAD DETAIL
 NTS
 NOTES:
 1. WIDTH SHALL BE 3' MINIMUM.

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C-11

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APPROVED:	SOD

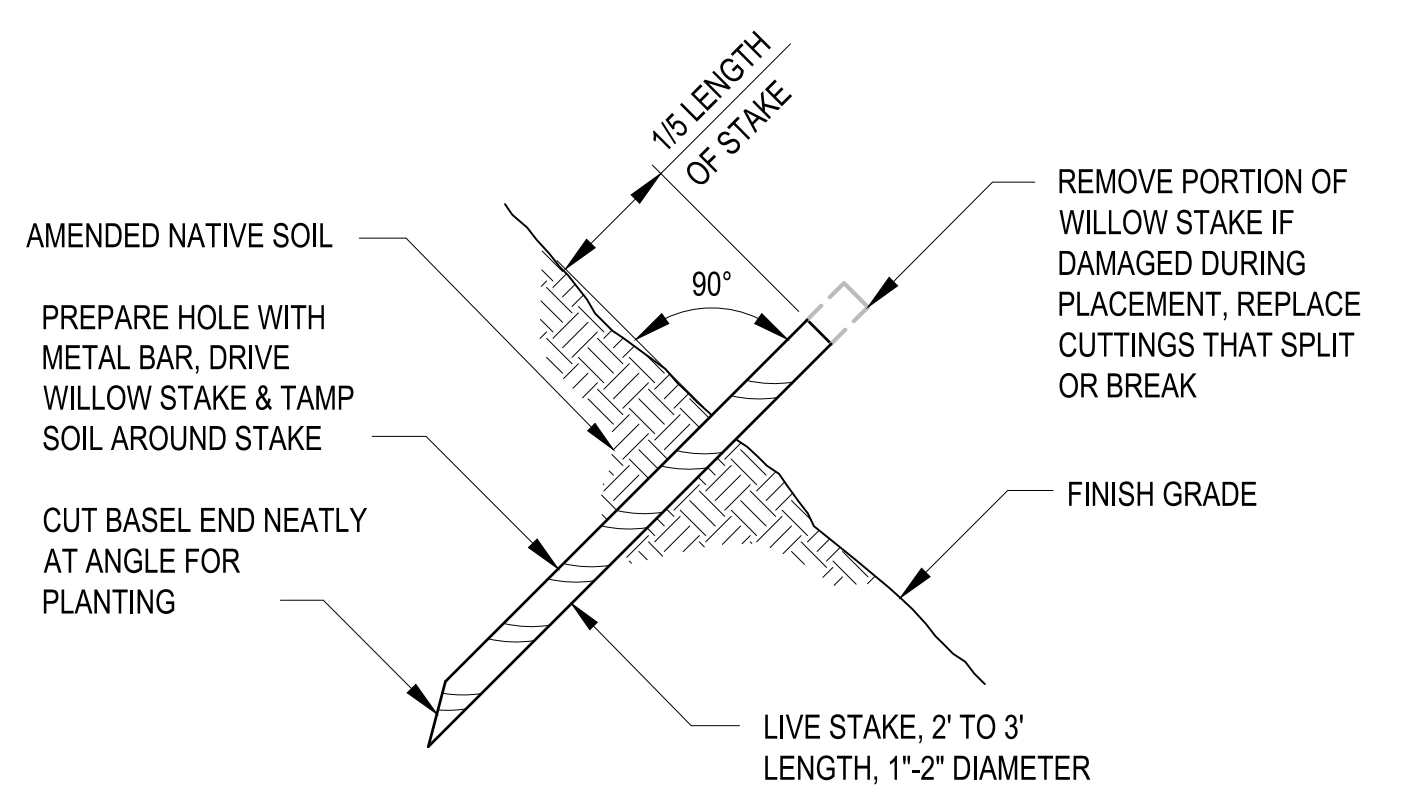
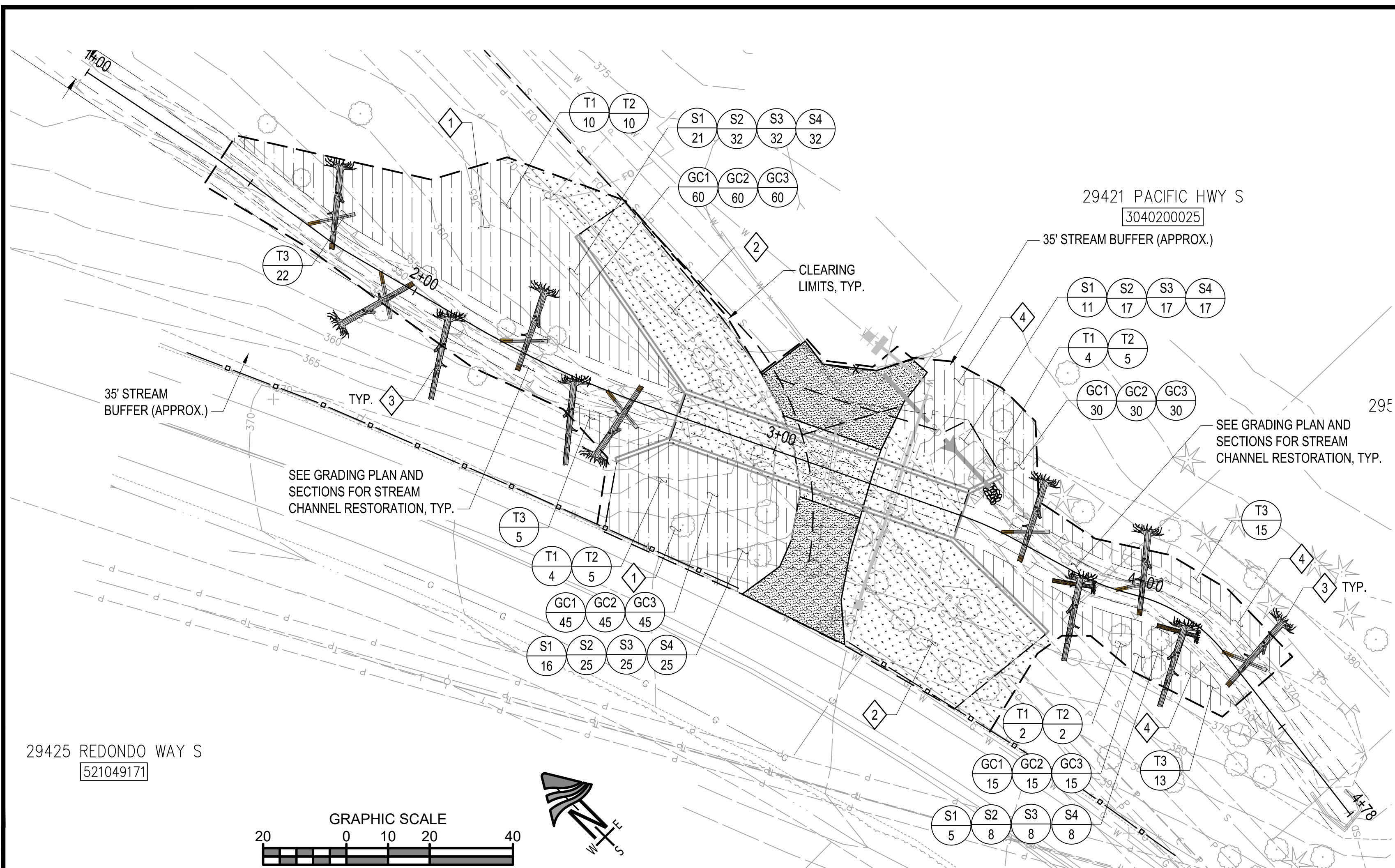


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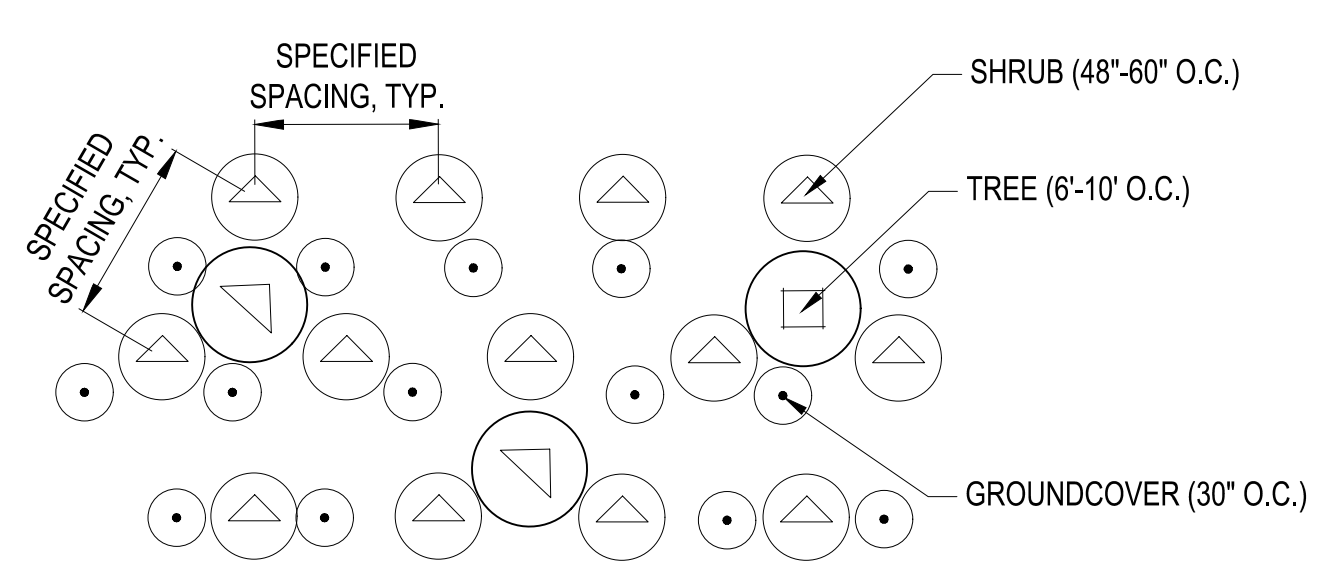
CULVERT REPLACEMENT PROJECT
 REDONDO CREEK AT 16TH AVENUE S
 TYPICAL SURFACE RESTORATION SECTIONS & DETAILS

SHT.	13
OF	20
CITY PROJECT #:	34293

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LIVE STAKE PLANTING DETAIL
NTS



TYPICAL RESTORATION PLANTING LAYOUT DETAIL
NTS

- NOTES:**
- INTERMIX PLANTS IN GROUPS OF 3-5 MIN. PER SPECIES.
 - LAYOUT OF SHRUBS IS CONTINUOUS THROUGH TREES; ADJUST SHRUBS AS NECESSARY TO PROVIDE MIN. 18" OFFSET FROM TREES.
 - LAYOUT OF GROUNDCOVERS IS CONTINUOUS THROUGH SHRUBS; ADJUST GROUNDCOVERS AS NECESSARY TO PROVIDE MIN. 12" OFFSET FROM SHRUBS AND 24" OFFSET FROM TREES.

GENERAL NOTES

- ALL PLANT MATERIALS SHALL MEET THE AMERICAN STANDARD FOR NURSERY STOCK, ANSI Z60.1 MOST CURRENT VERSION.
- PLANT, MAINTAIN AND WARRANTY PER SECTION 8-02 OF THE SPECIAL PROVISIONS.
- DO NOT SUBSTITUTE SPECIES WITHOUT THE APPROVAL OF ENGINEER.
- INSTALL 3" ARBORIST MULCH OVER ALL DISTURBED AREAS NOT BEING PLANTED OR SEEDED, UNLESS OTHERWISE NOTED.
- PROPERTY RESTORATION TO BE DONE AS DIRECTED BY THE PROJECT ENGINEER.

RESTORATION PLANTING NOTES

- PLACE FINE COMPOST PER THE CONSTRUCTION NOTES.
- TOPDRESS ALL PLANTED AREAS WITH 3" ARBORIST MULCH, TYP.
- INSTALL BIODEGRADABLE EROSION CONTROL BLANKET PER WSDOT STD PLAN I-60.10-01 AND COMPOST SOCK PER WSDOT STD PLAN I-30.40-02 WHERE EMBANKMENT SLOPE GRADES MEET OR EXCEED 3:1.
- CUT SMALL OPENINGS IN EROSION CONTROL MATTING AS NECESSARY TO ALLOW PIT PLANTING PER PLANT SCHEDULE AND DETAILS, THIS SHEET.
- PLANT MATERIAL SHALL BE WATERED THOROUGHLY AT TIME OF PLANTING AND AS REQUIRED TO MAINTAIN PLANT HEALTH UNTIL FINAL ACCEPTANCE.

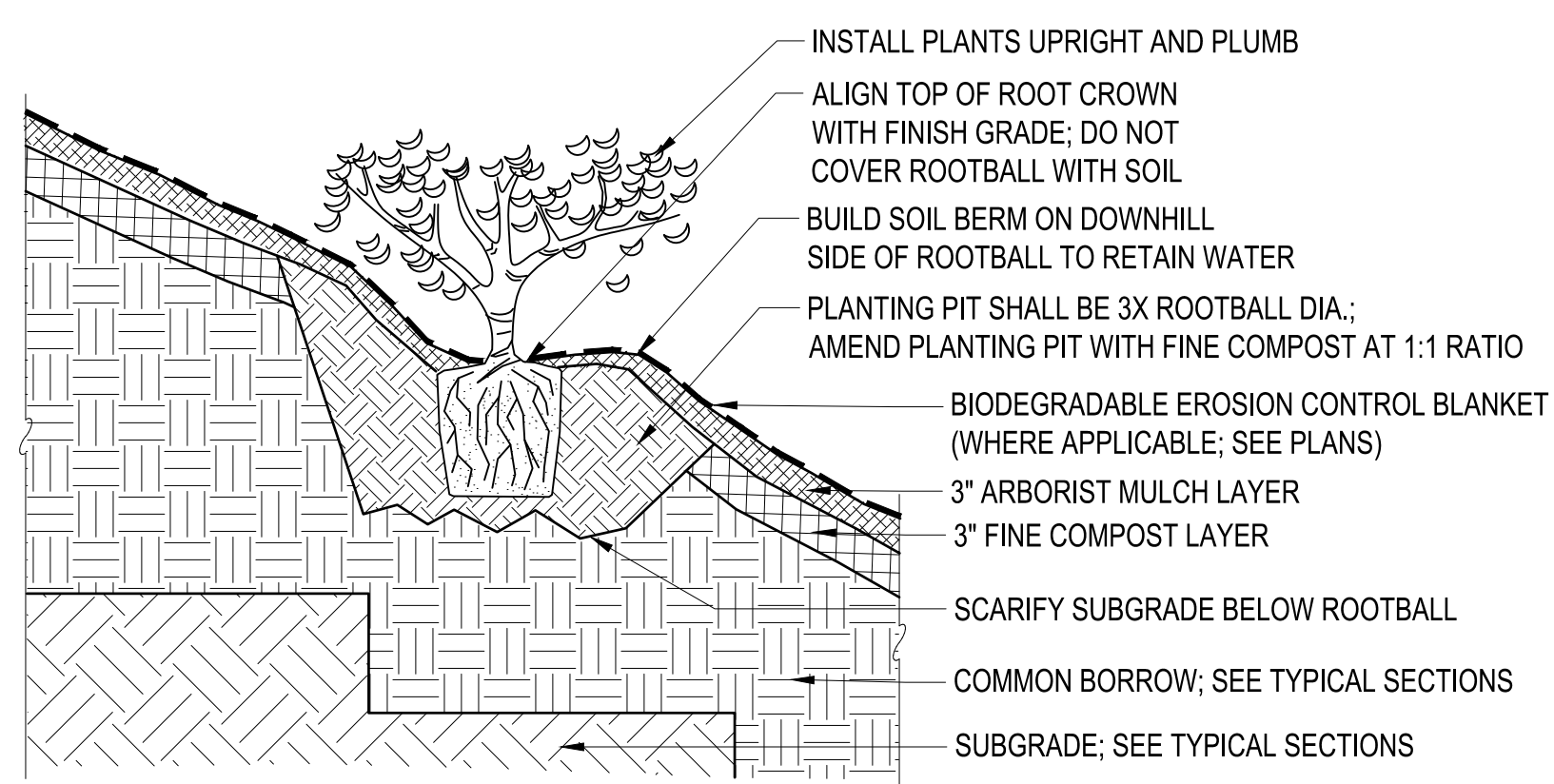
CONSTRUCTION NOTES

- RESTORATION PLANTING AREA TYPE 1; INSTALL 3" LAYER OF FINE COMPOST, NO TILLING REQUIRED. SEE RESTORATION PLANTING NOTES FOR ADDITIONAL REQUIREMENTS. PLANT PER RESTORATION PLANTING DETAIL TYPE 1, THIS SHEET.
- RESTORATION SEEDING AREA; INSTALL 3" FINE COMPOST AND TILL INTO TOP 6" OF SUBGRADE. HYDROSEED WITH RESTORATION SEED MIX.
- LOG STRUCTURE; SEE GRADING PLAN AND DETAILS.
- RESTORATION PLANTING AREA TYPE 2; INSTALL 3" FINE COMPOST AND TILL INTO TOP 6" OF SUBGRADE. SEE RESTORATION PLANTING NOTES FOR ADDITIONAL REQUIREMENTS. PLANT PER RESTORATION PLANTING DETAIL TYPE 2, THIS SHEET.

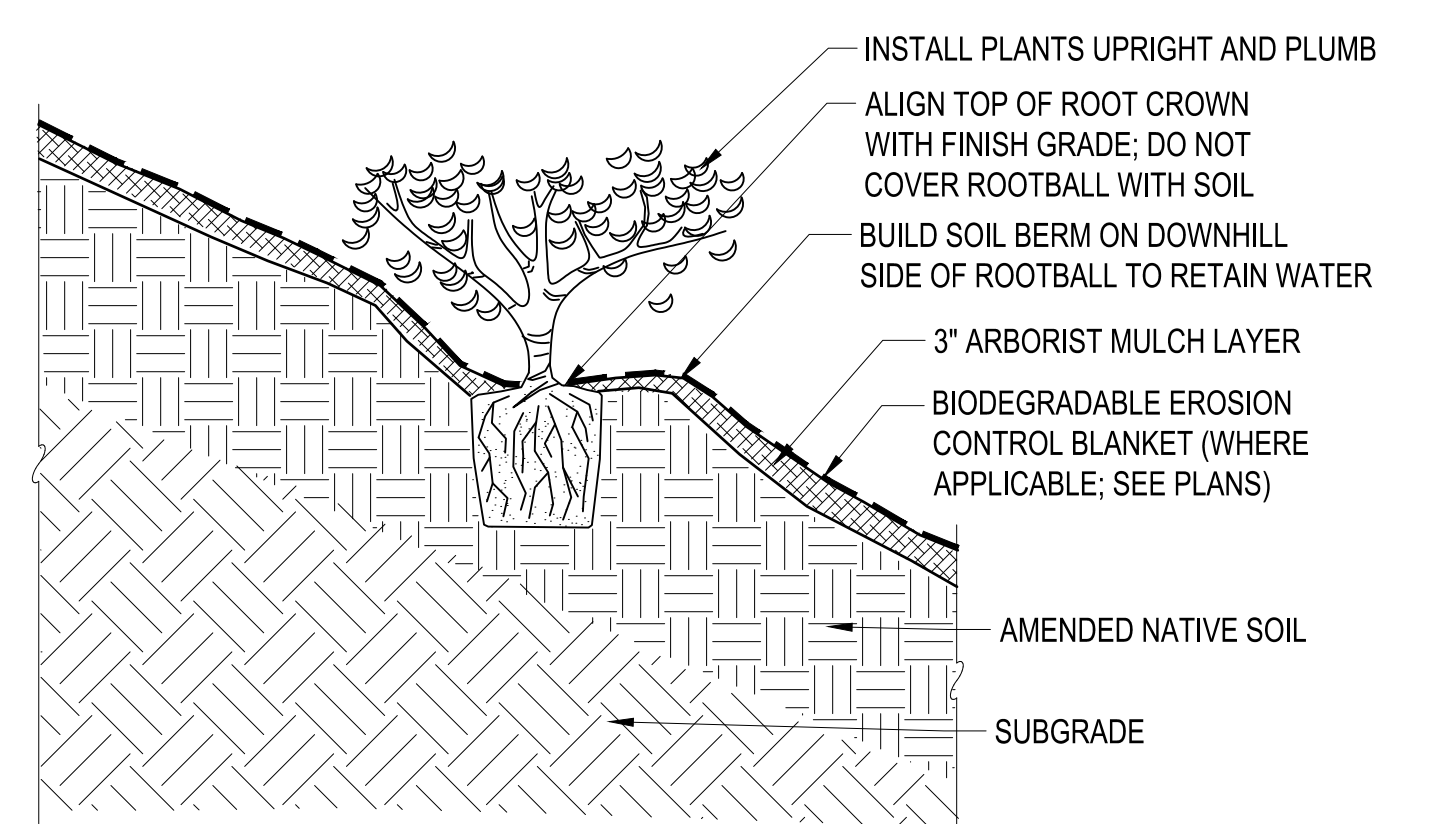
RESTORATION PLANT SCHEDULE

SYMBOL	BOTANICAL NAME/COMMON NAME	QTY	SIZE	REMARKS
T1	ACER MACROPHYLLUM/ BIG-LEAF MAPLE ¹	20	5 GAL. CONT.	10' O.C. TRI. SP. TYP.
T2	THUJA PLICATA/ WESTERN RED CEDAR ¹	22	5 GAL. CONT.	10' O.C. TRI. SP. TYP.
T3	SALIX SITCHENSIS/ SITKA WILLOW ¹	55	LIVE STAKE	6' O.C. TRI. SP. TYP.
S1	HALODISCUS DISCOLOR/ OCEANSPRAY	53	1 GAL. CONT.	60" O.C. TRI. SP. TYP.
S2	SYMPHORICARPOS ALBUS/ SNOWBERRY	82	1 GAL. CONT.	48" O.C. TRI. SP. TYP.
S3	RUBUS PARVIFLORUS/ THIMBLEBERRY	82	1 GAL. CONT.	48" O.C. TRI. SP. TYP.
S4	RUBUS SPECTABILIS/ SALMONBERRY	82	1 GAL. CONT.	48" O.C. TRI. SP. TYP.
GC1	POLYSTICHUM MUNITUM/ SWORDFERN	150	1 GAL. CONT.	30" O.C. TRI. SP. TYP.
GC2	GAULTHERIA SHALLOW/ SALAL	150	1 GAL. CONT.	30" O.C. TRI. SP. TYP.
GC3	FRAGARIA VESCA/ WOODLAND STRAWBERRY	150	1 GAL. CONT.	30" O.C. TRI. SP. TYP.
	RESTORATION SEED MIX	450 SY		

¹ SALIX LIVE STAKES SHALL BE PLANTED IN A SINGLE ROW ALONG THE EDGE OF THE STREAMBED; ACER AND THUJA SHALL BE INTERMIXED WITHIN REMAINING RESTORATION PLANTING AREA. NO TREES SHALL BE PLANTED WITHIN 10' OF ROADWAY EDGE.



RESTORATION PLANTING DETAIL TYPE 1
NTS



RESTORATION PLANTING DETAIL TYPE 2
NTS

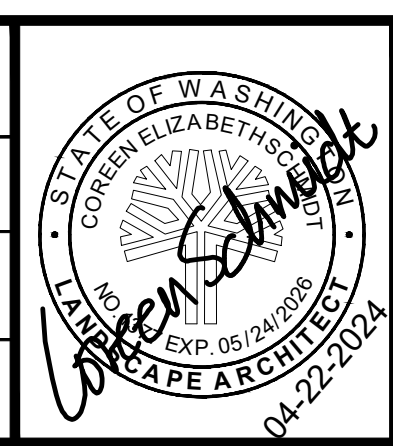


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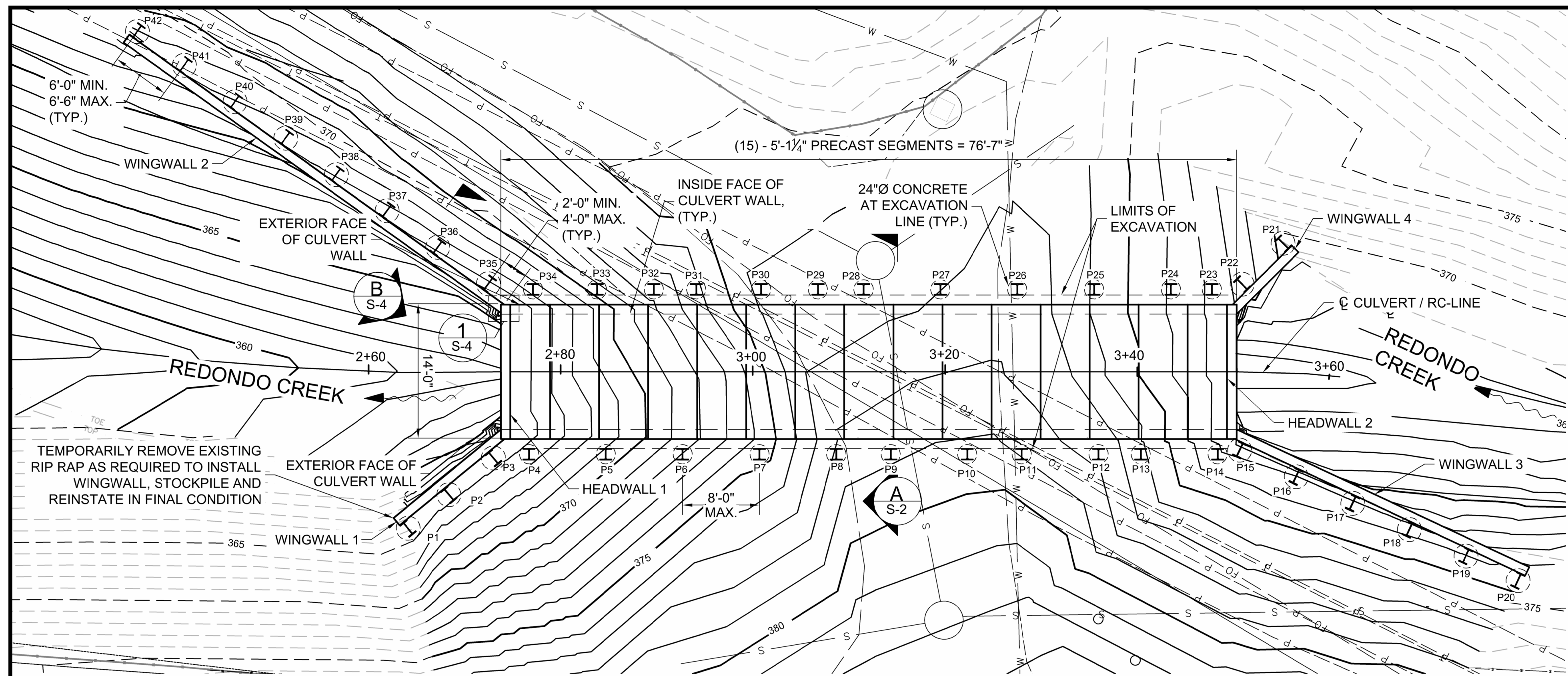
DRAFTED:	CS
DESIGNED:	CS
REVIEWED:	CS
APPROVED:	LG



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CULVERT REPLACEMENT PROJECT
REDONDO CREEK AT 16TH AVENUE S
LANDSCAPE RESTORATION PLAN & DETAILS

SHT.	14
OF	20
CITY PROJECT #:	34293



LAYOUT - PLAN

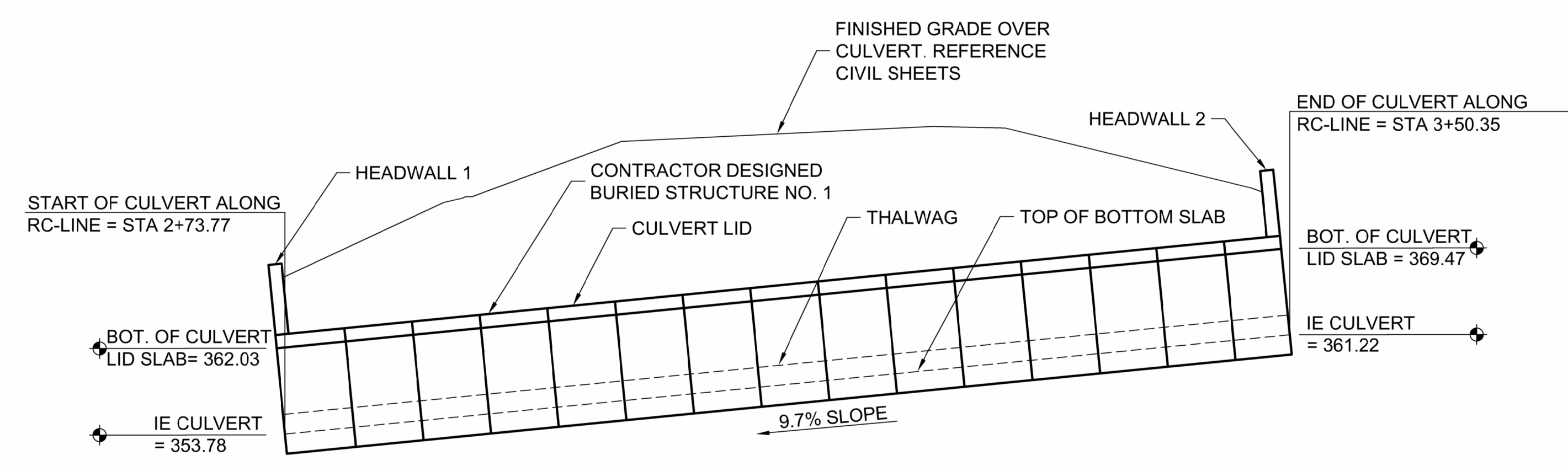
- GENERAL NOTES:**
- ALL MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION DATED 2024.
 - SITE RETAINING WALLS, INCLUDING SOLDIER PILE WALL WITH CONCRETE FACING HAVE BEEN DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS 9TH EDITION 2020 AND INTERIMS THROUGH 2021.
 - THE BURIED STRUCTURE NO. 1 SHALL BE CONTRACTOR DESIGNED. THE CULVERT TO BE DESIGNED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AASHTO LRFD BRIDGE SPECIFICATIONS 9TH EDITION 2020 AND INTERIMS THROUGH 2021, THE WSDOT BRIDGE DESIGN MANUAL LRFD M23-50, AND WSDOT STANDARD SPECIFICATION SECTION 6-20.
 - THE TEMPORARY SOLDIER PILE WALLS SHALL BE CONTRACTOR DESIGNED. STEEL SECTIONS REFERENCED ARE A MINIMUM SECTION FOR THE PURPOSE OF BIDDING. CONTRACTOR TO SUBMIT TYPE 2E WORKING DRAWINGS FOR THE PILES. TEMPORARY SOLDIER PILE WALLS SHALL MEET THE REQUIREMENTS OF WSDOT STANDARD SPECIFICATION 6-16.
 - THE SEISMIC DESIGN OF THIS STRUCTURE TO BE DESIGNED IN ACCORDANCE TO PUBLICATION NO. FHWA-NHI-10-034 NOVEMBER 2008 EDITION "TECHNICAL MANUAL FOR DESIGN AND CONSTRUCTION OF ROAD TUNNELS - CIVIL ELEMENTS" WITH THE SEISMIC PEAK GROUND ACCELERATION OF 0.42g PER GEOTECHNICAL REPORT BY GEOENGINEERS DATED 12/28/2022.
 - THE PRECAST CONCRETE SHALL BE CLASS 5000, OR 6000 SELF CONSOLIDATING CONCRETE (SCC). OTHER CONCRETE SHALL BE CLASS 4000.
 - THE PRECAST CULVERT FABRICATOR SHALL DESIGN LIFTING AND TRANSPORTING FOR SUBMITTAL TO THE ENGINEER FOR APPROVAL..
 - ALL PERMANENT STEEL PLATES AND SHAPES SHALL BE ASTM A36 OR ASTM A992. ALL BOLTS, NUTS AND WASHERS (UNLESS NOTED OTHERWISE) SHALL BE ASTM A307 AND COMPLY WITH STD. SPEC. SECT. 9-16.3(4), AND RESIN BONDED ANCHORS SHALL BE ASTM A193 GRADE B7, OR ASTM A449. ALL STEEL PLATES SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111 AFTER FABRICATION. BOLTS AND HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M232.
 - UNLESS NOTED OTHERWISE ON THE PLANS, CONCRETE COVER MEASURED FROM THE FACE OF CONCRETE TO THE FACE OF ANY REINFORCING STEEL SHALL BE 2" AT THE TOP OF THE CULVERT DECK, 1 1/2" AT THE BOTTOM TO THE CULVERT DECK, 3" AT THE BOTTOM OF BOTTOM SLAB, AND 2" AT ALL OTHER LOCATIONS.
 - CONTRACTOR TO VERIFY LOCATION OF UTILITIES PRIOR TO PLACEMENT OF PILES.

- LEGEND**
- S — EXISTING SEWER LINE
 - W — EXISTING WATER LINE
 - P — EXISTING POWER LINE
 - FO — EXISTING FIBER OPTIC CABLE
 - T — EXISTING TELEPHONE LINE

PILE NUMBER	PILE SECTION
P1	W18x130
P2	W18x130
P3	W18x130
*P4	HP14x102
*P5	HP14x102
*P6	HP14x102
*P7	HP14x102
*P8	HP14x102
*P9	HP14x102
*P10	HP14x102
*P11	HP14x102
*P12	HP14x102
*P13	HP14x102
*P14	HP14x102
P15	W18x130
P16	W18x130
P17	W18x130
P18	W18x97
P19	W18x97
P20	W18x97
P21	W18x130

PILE NUMBER	PILE SECTION
P22	W18x130
*P23	HP14x102
*P24	HP14x102
*P25	HP14x102
*P26	HP14x102
*P27	HP14x102
*P28	HP14x102
*P29	HP14x102
*P30	HP14x102
*P31	HP14x102
*P32	HP14x102
*P33	HP14x102
*P34	HP14x102
P35	W18x130
P36	W18x130
P37	W18x130
P38	W18x97
P39	W18x97
P40	W18x97
P41	W18x97
P42	W18x97

* DENOTES TEMPORARY SOLDIER PILE



ELEVATION

- LEGEND**
- A — IDENTIFIES SECTION OR VIEW
 - 5 — TAKEN OR SHOWN ON BRIDGE SHEET 5
 - 1 — IDENTIFIES DETAIL
 - — TAKEN OR SHOWN ON THE SAME SHEET
 - 1 — FLAGNOTE: IDENTIFIES NOTE REFERENCE ON THE SAME SHEET

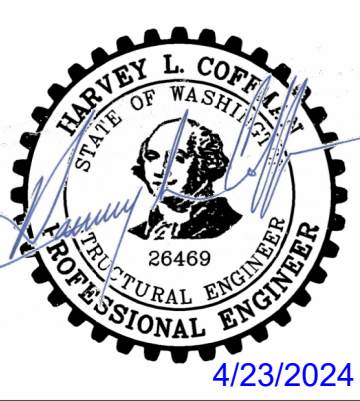
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DRAFTED:	DFP
DESIGNED:	JRV
REVIEWED:	DMS
APPROVED:	HLC



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NO.	DATE	REVISION

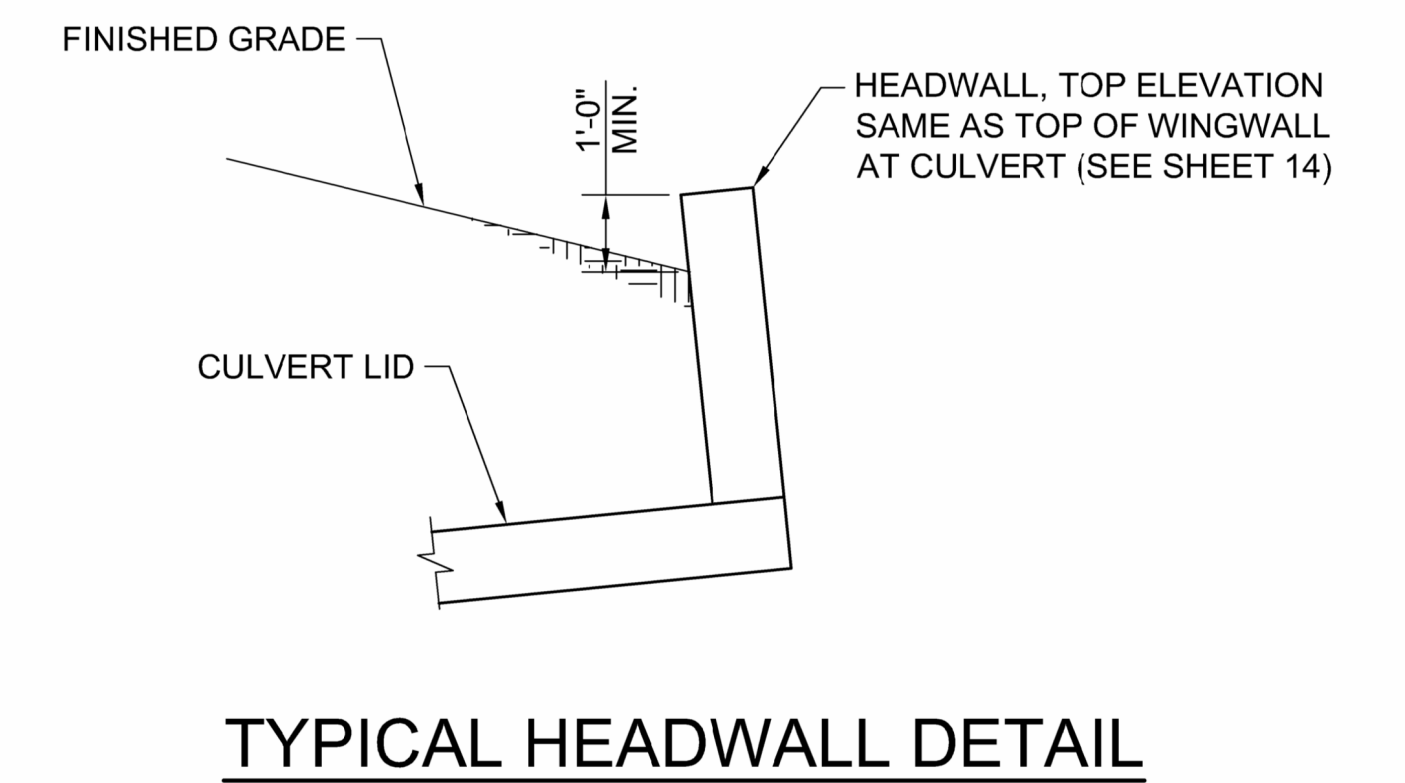
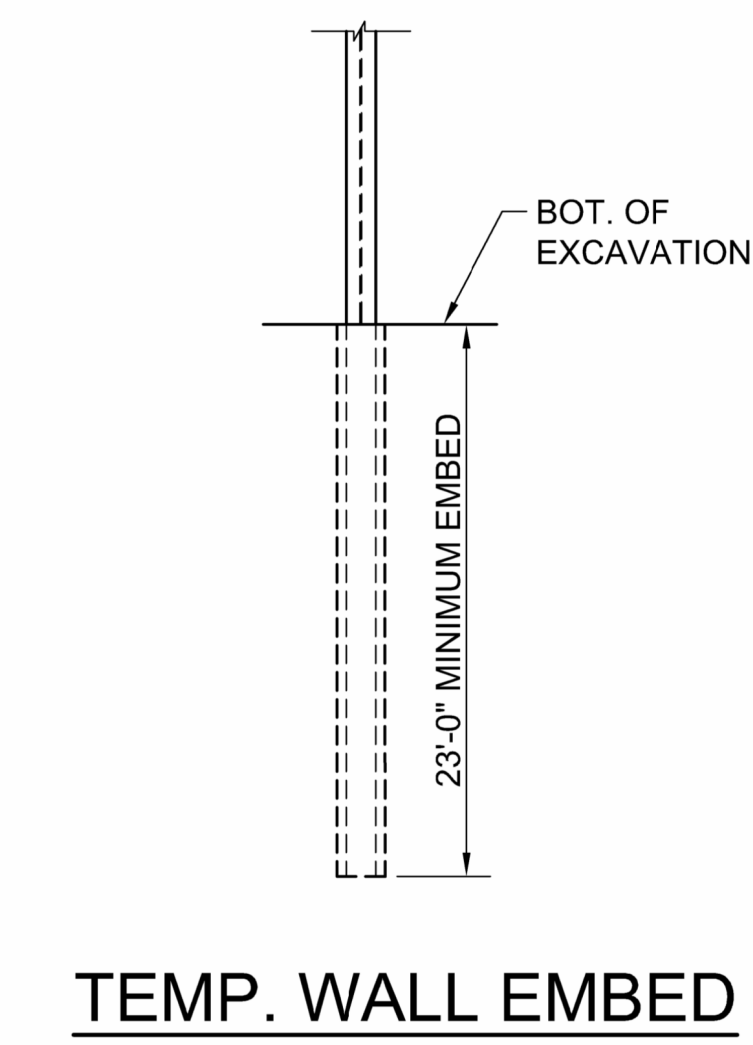
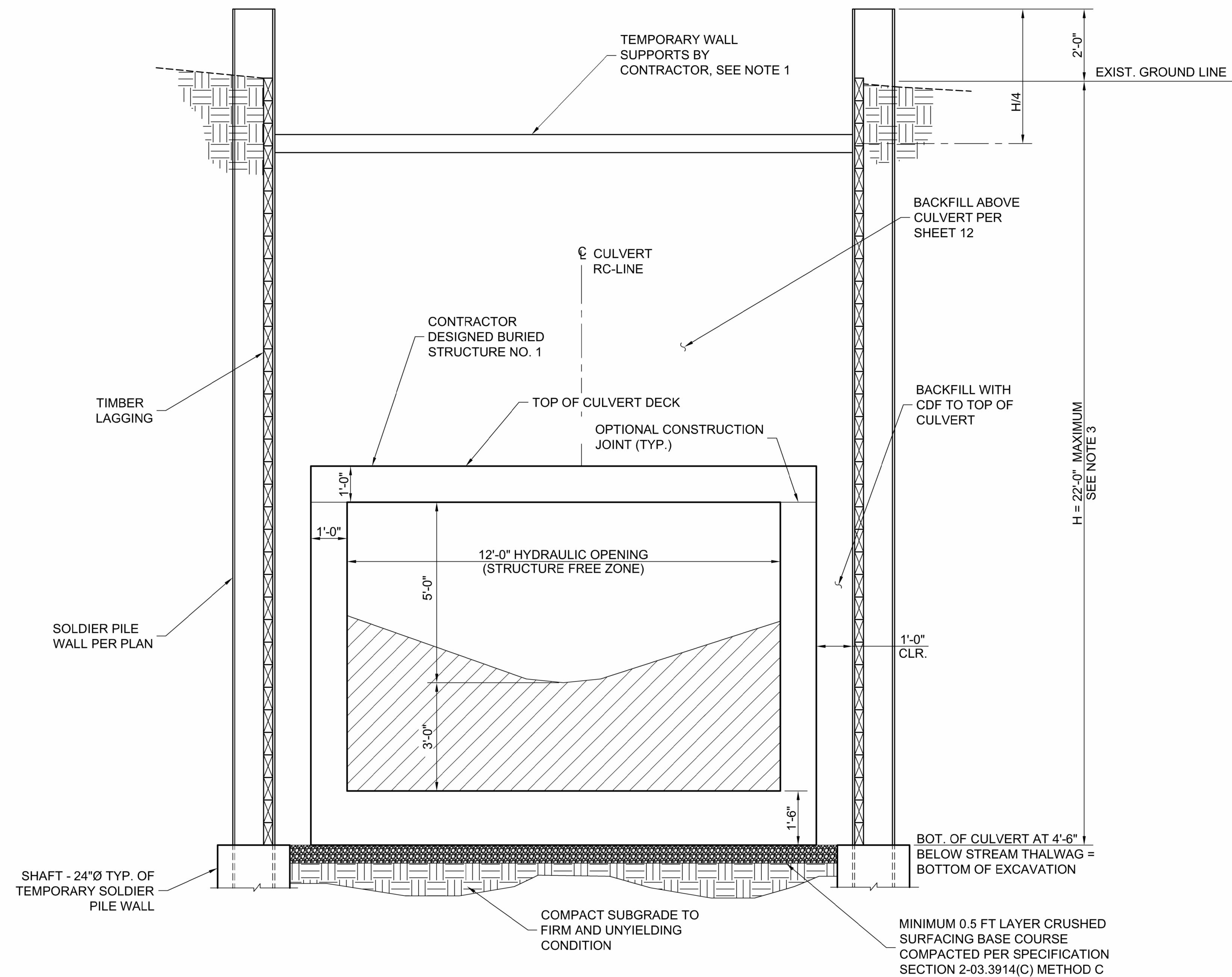
CULVERT REPLACEMENT PROJECT
 REDONDO CREEK AT 16TH AVENUE S
PRECAST CONCRETE CULVERT WITH SOLDIER PILE WALLS

SHT.	15
OF	20
CITY PROJECT #:	34293

*** Official bid documents, plan holder's list, and addenda (if applicable) are available on BXWA.com ***

NOTES

- BRACING SHALL BE CONTRACTOR DESIGNED FOR A MINIMUM NOMINAL FORCE OF 14.0 KIPS/FT OF FORCE.
- UPON INSTALLATION AND BACKFILLING OF CULVERT SECTION, STEEL PILES FROM TEMPORARY SOLDIER PILE WALL SHALL EITHER BE REMOVED OR FIELD TRIMMED TO 6'-0" FEET BELOW FINISHED GRADE OR TOP OF CULVERT.
- TEMPORARY SOLDIER PILE WALL DESIGN IS BASED OFF MAX RETAINED HEIGHT OF 22'-0" FOR THE PURPOSES OF BIDDING. CONTRACTOR MAY SUGGEST OTHER CONFIGURATION IN TYPE 2E WORKING DRAWINGS FOR TEMPORARY SOLDIER PILE WALL. CONTRACTOR TO VERIFY DIMENSIONS.
- TIMBER LAGGING SHALL BE DESIGNED PER WSDOT STANDARD SPEC SECTION 6-16. SOIL CLASSIFICATION SHALL BE CONSIDERED SOIL TYPE 1. TEMPORARY LAGGING SHALL HAVE A MINIMUM THICKNESS (ROUGH CUT) OF 3 INCHES.



4-SIDED CONCRETE CULVERT SECTION A
S-1

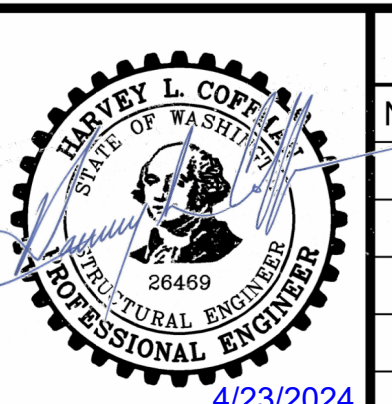
P:\Sps\22\jobs\22084\Redondo Creek Culvert Replacement\0.0 DWGS\S\22084 - S-2.dwg, 2/2/2024



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CULVERT REPLACEMENT PROJECT
REDONDO CREEK AT 16TH AVENUE S

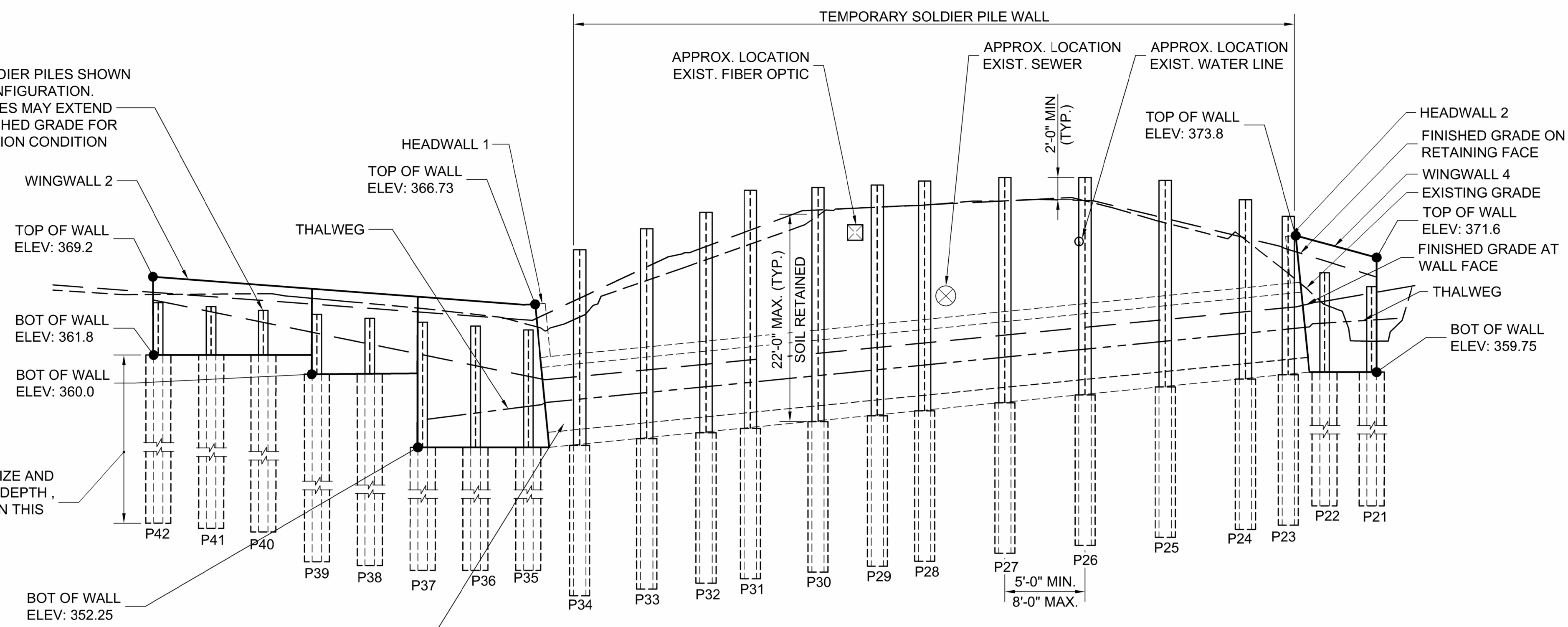
CULVERT SECTION

SHT.	16
OF	20
CITY PROJECT #:	34293

S-2

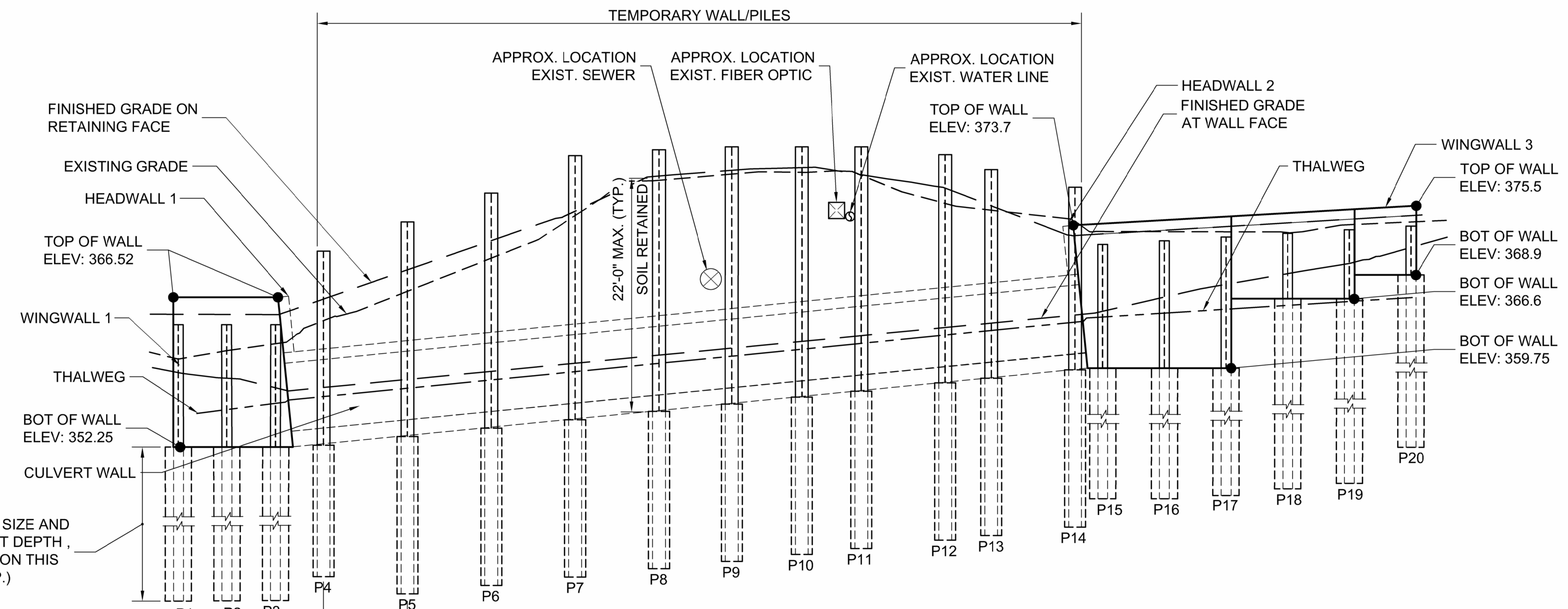
TOP OF SOLDIER PILES SHOWN IN FINAL CONFIGURATION. TOPS OF PILES MAY EXTEND ABOVE FINISHED GRADE FOR CONSTRUCTION CONVENIENCE

FOR SHAFT SIZE AND EMBEDMENT DEPTH, SEE TABLE ON THIS SHEET (TYP.)



EAST WALL DEVELOPED ELEVATION

LOOKING EAST



WEST WALL DEVELOPED ELEVATION

LOOKING EAST

NOTES

1. CONTRACTOR WILL ADJUST PILE SPACING TO AVOID CONFLICTS WITH EXISTING UTILITIES.
2. PAY ITEM SHAFT - 24" DIAMETER INCLUDES ALL SHAFT EXCAVATION.
3. PAY ITEM SHAFT - 30" DIAMETER INCLUDES ALL SHAFT EXCAVATION.
4. STARTING AT EACH CORNER OF THE CULVERT, WING WALLS SHALL BE A MINIMUM OF 4'-6" BELOW THE THALWEG ELEVATION FOR A LENGTH OF 10'-0".
5. SOLDIER PILE WALLS SHALL BE EMBEDDED IN CLASS 4000P CONCRETE.
6. SHAFT BACKFILLING MATERIAL ABOVE TOP OF EMBEDDED SHAFT SHALL BE CONTROLLED DENSITY FILL (CDF).

NAME	SHAFT SIZE (INCHES)	REQUIRED SHAFT EMBEDMENT (FEET)	ESTIMATED TOTAL SHAFT LENGTH (FEET)*
P1	30"	30'	43'
P2	30"	30'	43'
P3	30"	30'	43'
P4	24"	23'	37'
P5	24"	23'	38'
P6	24"	23'	41'
P7	24"	23'	42'
P8	24"	23'	45'
P9	24"	23'	45'
P10	24"	23'	45'
P11	24"	23'	45'
P12	24"	23'	42'
P13	24"	23'	40'
P14	24"	23'	37'
P15	30"	30'	45'
P16	30"	30'	45'
P17	30"	30'	45'
P18	30"	23'	30'
P19	30"	23'	30'
P20	30"	15'	20'
P21	30"	30'	45'
P22	30"	30'	45'
P23	24"	23'	37'
P24	24"	23'	38'
P25	24"	23'	41'
P26	24"	23'	43'
P27	24"	23'	43'
P28	24"	23'	43'
P29	24"	23'	43'
P30	24"	23'	43'
P31	24"	23'	42'
P32	24"	23'	39'
P33	24"	23'	37'
P34	24"	23'	37'
P35	30"	30'	45'
P36	30"	30'	45'
P37	30"	30'	45'
P38	30"	23'	30'
P39	30"	23'	30'
P40	30"	15'	20'
P41	30"	15'	20'
P42	30"	15'	20'

* LENGTH IS ESTIMATED BASED OFF THE EXISTING GRADING AND MAY VARY DEPENDING ON FINAL PLACEMENT OF PILES.

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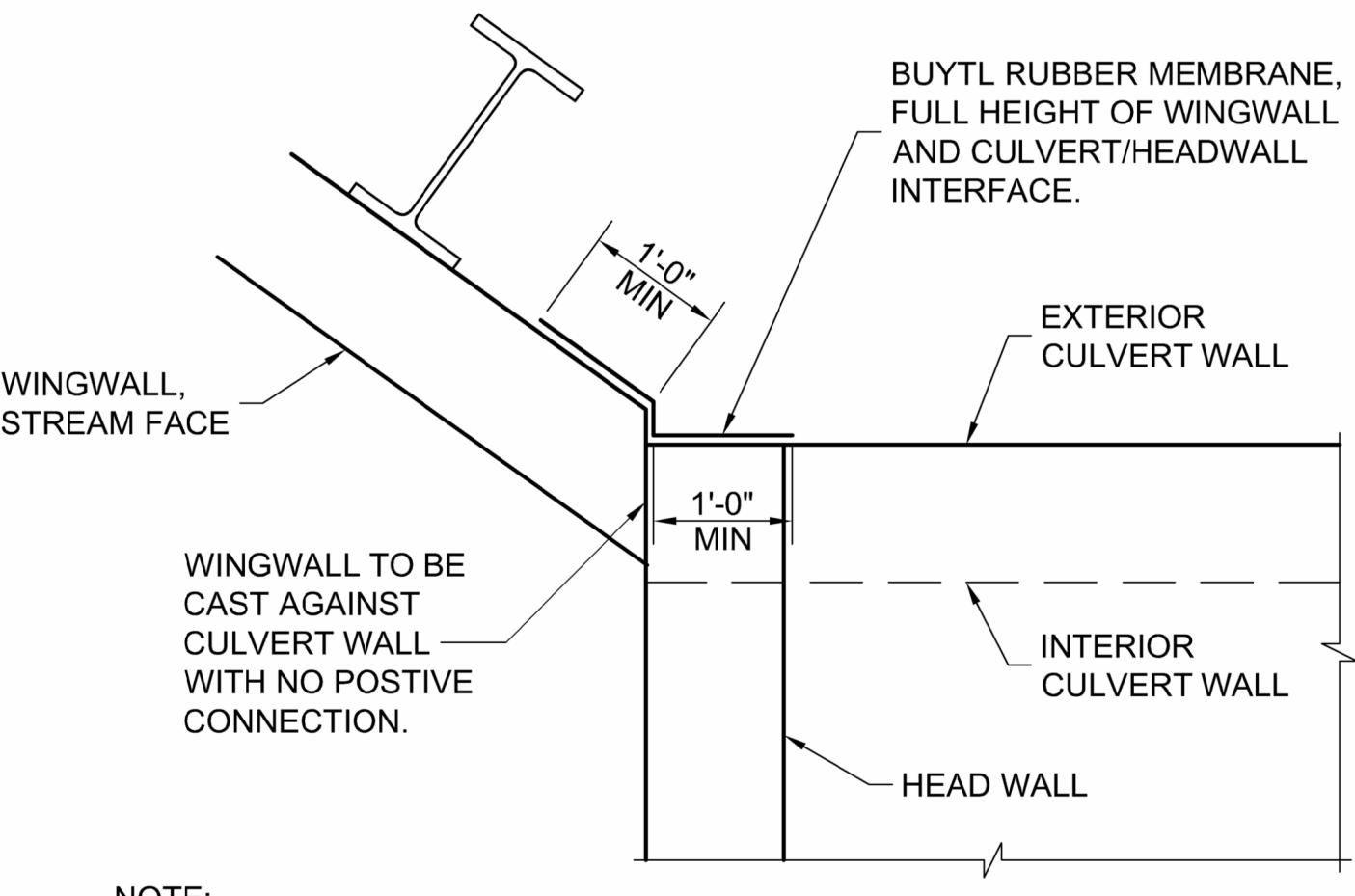
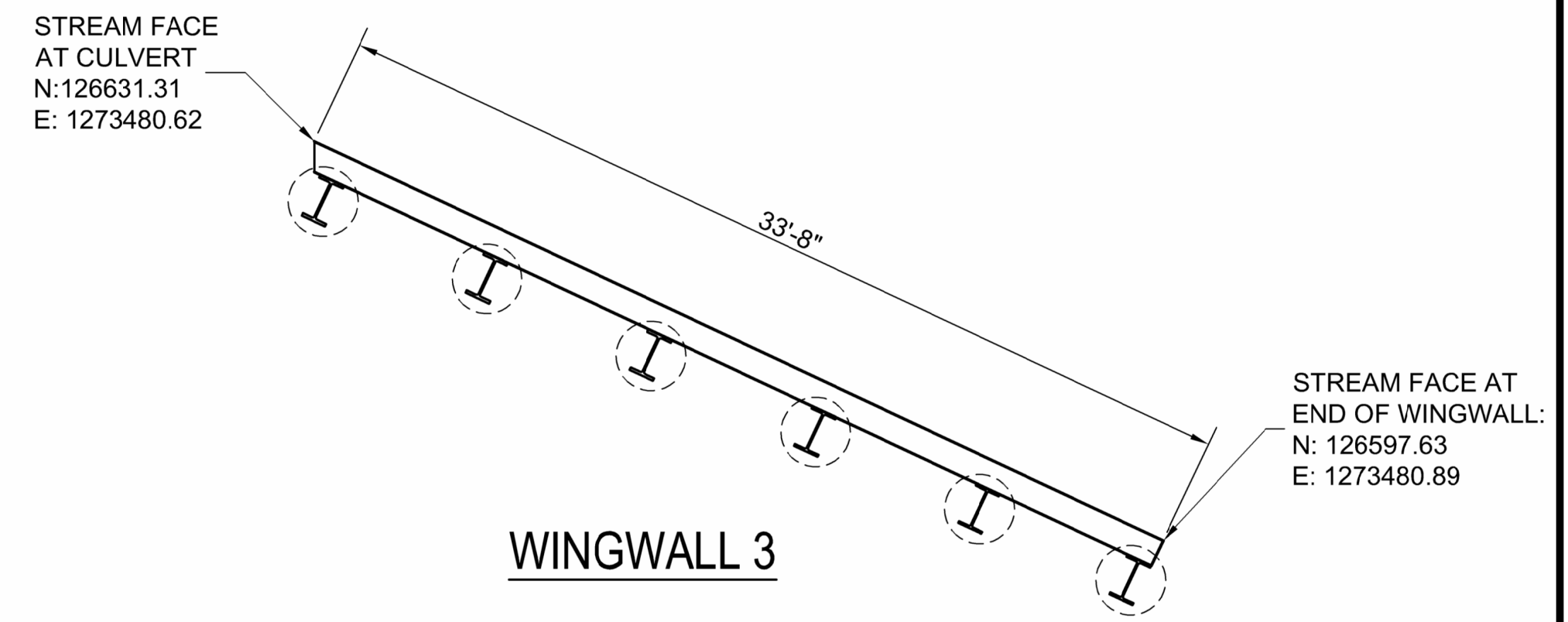
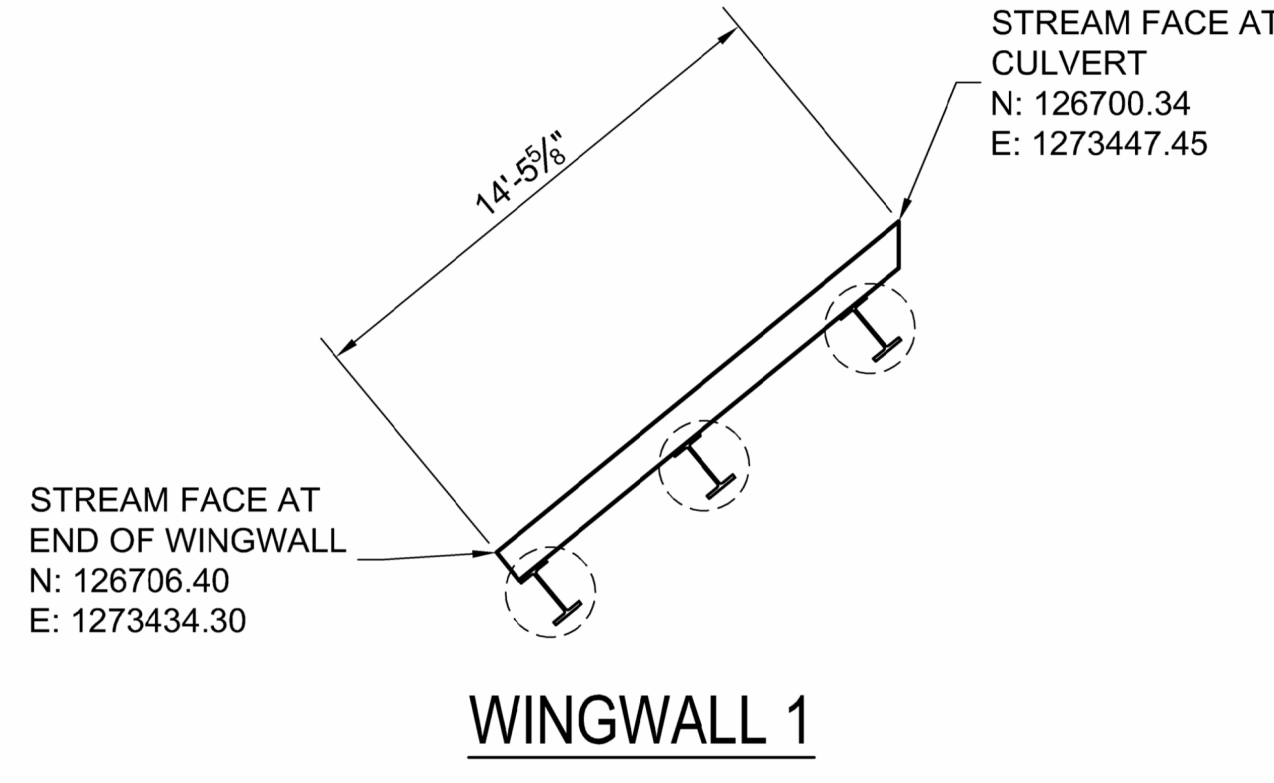
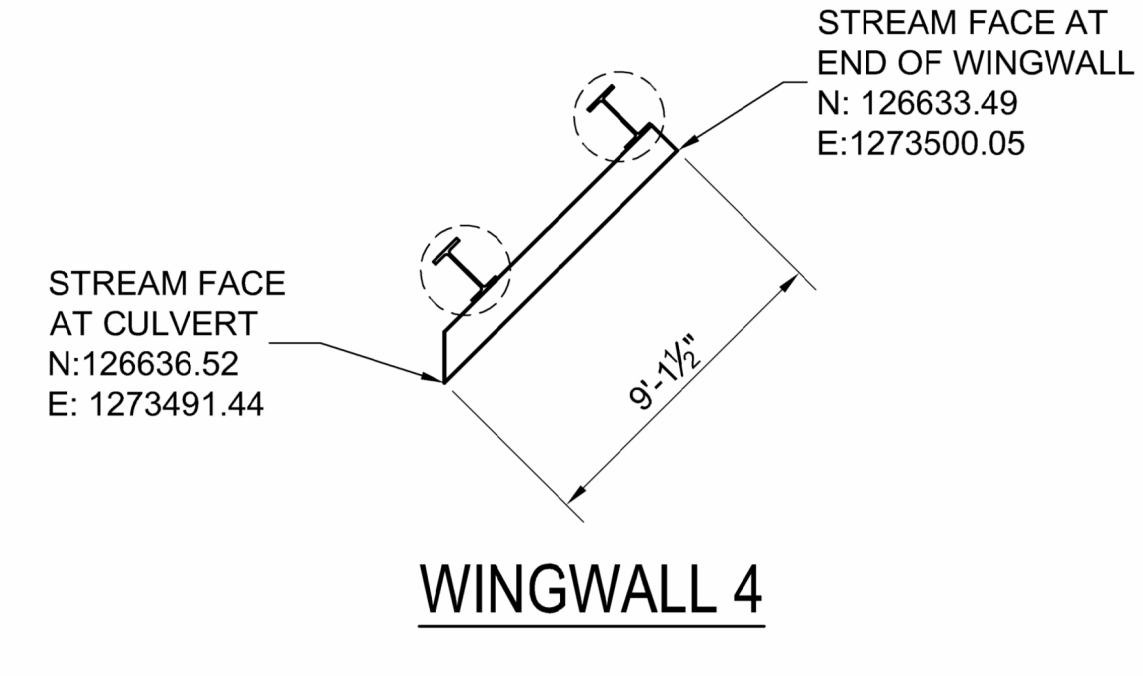
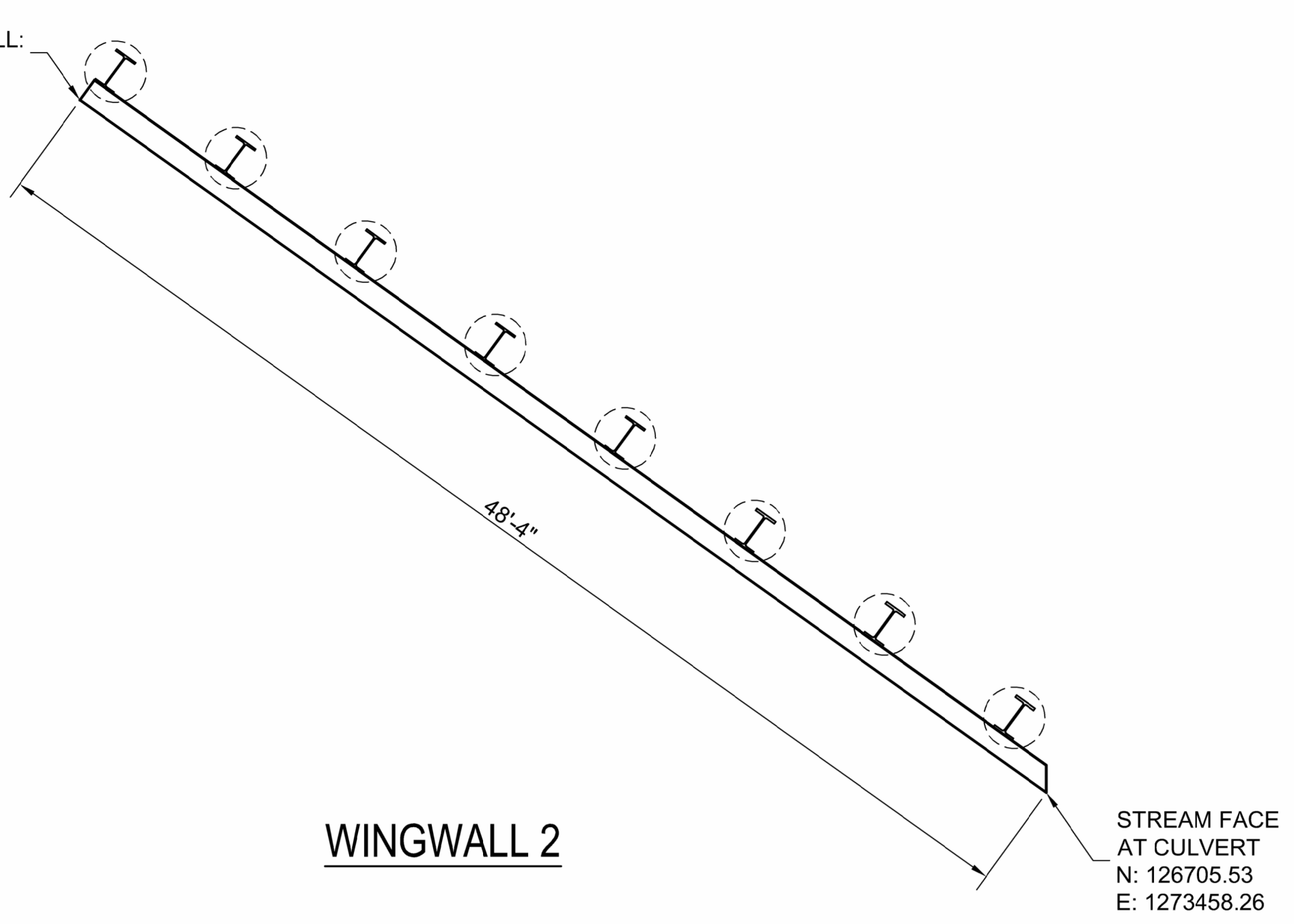
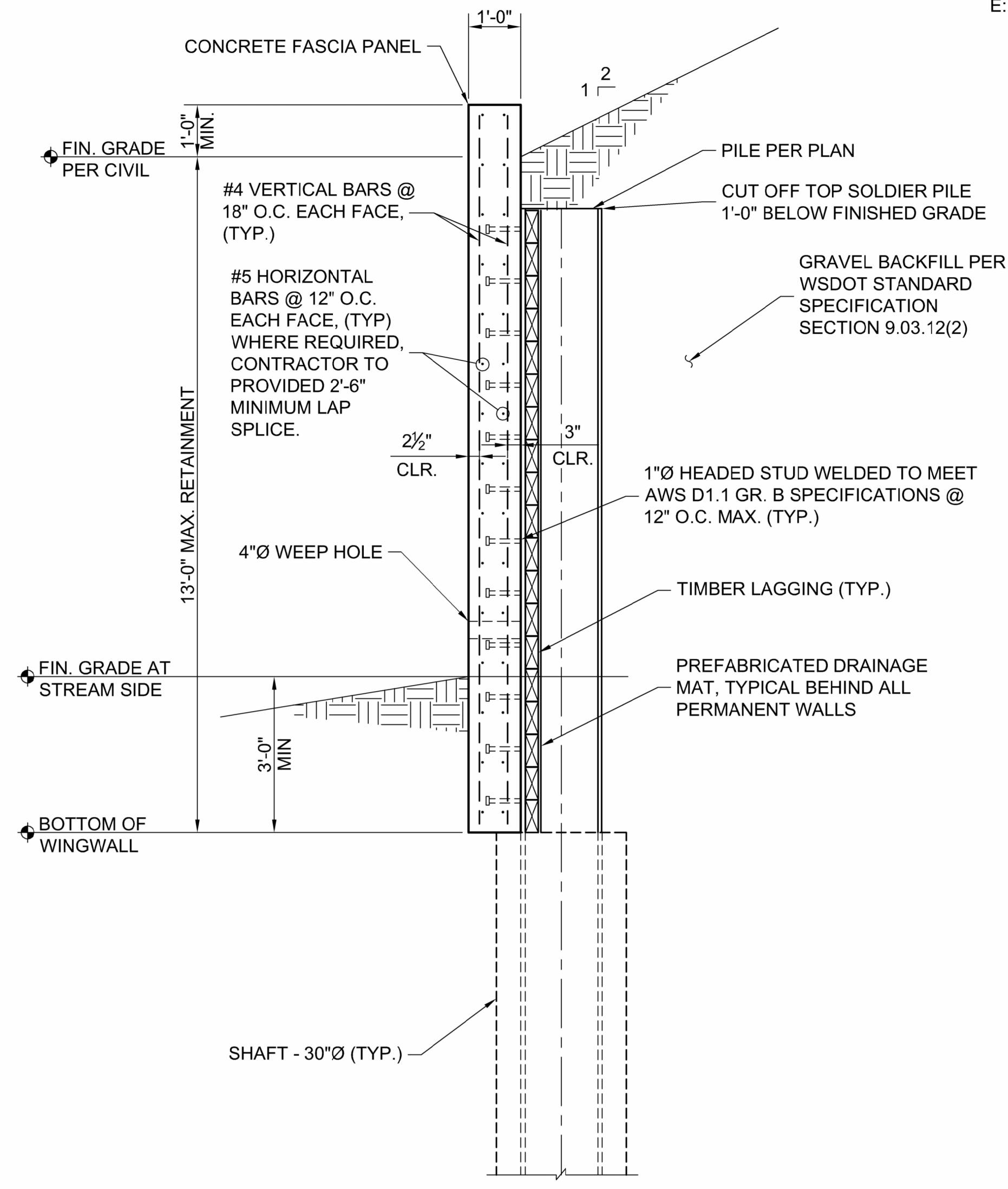


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NO.	DATE	REVISION

CULVERT REPLACEMENT PROJECT
 REDONDO CREEK AT 16TH AVENUE S
ELEVATIONS

SHT.	17
OF	20
CITY PROJECT #:	34293

STREAM FACE AT
END OF WINGWALL:
N:126753.19
E:1273466.73



NOTE:
CONDITION AT WINGWALL 2 SHOWN,
OTHER WALLS ARE SIMILAR

WINGWALL SECTION B S-1

WINGWALL - CULVERT INTERFACE 1 S-1

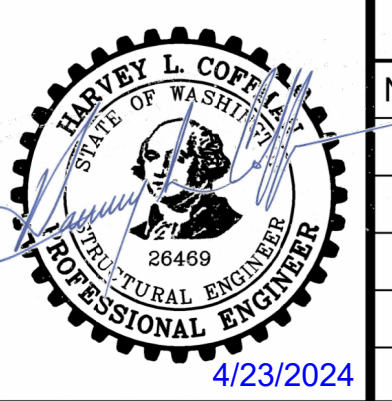
S-4



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NO.	DATE	REVISION

CULVERT REPLACEMENT PROJECT
REDONDO CREEK AT 16TH AVENUE S
WINGWALL DETAILS

SHT.	18
OF	20
CITY PROJECT #:	34293

*** Official bid documents, plan holder's list, and addenda (if applicable) are available on BXWA.com ***

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GENERAL TRAFFIC CONTROL NOTES

1. CONSTRUCTION STAGING SHOWN IS INTENDED TO DEMONSTRATE A POSSIBLE GENERAL COURSE OF ACTION. THE CONTRACTOR SHOULD REVIEW AND, IF DESIRED, DEVELOP ALTERNATIVES SUITABLE TO THEIR OPERATIONS. ALTERNATIVE STAGING, IF DEVELOPED BY THE CONTRACTOR, SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. ACCEPTANCE OF ALTERNATIVE STAGING CONCEPTS SHALL BE AT THE SOLE DISCRETION OF THE ENGINEER AND THE CONTRACTOR SHALL NOT PRESUME THAT ALTERNATIVES WILL BE ACCEPTED.
2. ALL EXISTING AND FUTURE IMPROVEMENTS, INCLUDING UTILITIES, ARE NOT SHOWN ON THIS DRAWING. FOR ADDITIONAL INFORMATION, SEE APPLICABLE CONTRACT DRAWINGS. THIS PLAN DEPICTS GENERAL STAGING ONLY.
3. CONSTRUCTION ACTIVITIES NOT SPECIFICALLY SEQUENCED SHALL BE CONDUCTED IN A MANNER TO MINIMIZE PUBLIC IMPACT. FULL PROGRESS SCHEDULES IN ACCORDANCE WITH SECTION 1-08.3 OF THE SPECIFICATIONS ARE NECESSARY FOR ITEMS INCLUDING, BUT NOT LIMITED TO, STORM DRAINS, UTILITY TRENCHING AND OTHER ITEMS AFFECTING TRAFFIC OR AGENCY COORDINATION.
4. ALL CHANNELIZATION SHOWN IS SCHEMATIC ONLY. DETAILED TRAFFIC CONTROL PLANS CONFORMING TO THE MUTCD AND WSDOT STANDARD PLANS SHALL BE SUBMITTED BY THE CONTRACTOR FOR APPROVAL BY THE ENGINEER AT LEAST (14) DAYS PRIOR TO THE START OF ANY CONSTRUCTION STAGE.
5. CONTRACTOR SHALL MAINTAIN EXISTING DRAINAGE SYSTEM OR CONSTRUCT TEMPORARY SYSTEM UNTIL FINAL DRAINAGE FACILITIES ARE OPERATIONAL.
6. TRAFFIC SAFETY DRUMS SHALL BE SPACED AS INDICATED. FLASHERS SHALL BE MOUNTED ON ALTERNATING DRUMS. USE YELLOW TRAFFIC SAFETY DRUMS TO DELINEATE DRIVEWAYS.
7. LANE CLOSURES SHALL BE AS SPECIFIED HEREIN AND IN SECTION 1-07.23(1), CONSTRUCTION UNDER TRAFFIC, IN THE SPECIAL PROVISIONS.
8. ENCROACHMENT ON TRAVELED LANES IS NOT ALLOWED.
9. FLOODLIGHTS SHALL BE PROVIDED TO MARK FLAGGER STATIONS AT NIGHT.
10. STEADY BURNING WARNING LIGHTS (TYPE C MUTCD) SHALL BE USED TO MARK CHANNELIZATION DEVICES AT NIGHT.
11. CHANNELIZATION DEVICES ARE TO BE EXTENDED TO A POINT WHERE THEY ARE VISIBLE TO APPROACHING TRAFFIC.
12. ABRUPT PAVEMENT EDGES OF 0.10 FT OR GREATER TRANSVERSE TO THE ROADWAY SHALL BE WEDGED ACCORDING TO THE REQUIREMENTS OF SECTION 1-07, LEGAL RELATIONS AND RESPONSIBILITIES TO THE PUBLIC.
13. PROTECT AND/OR ADJUST VALVE BOXES, MANHOLE LIDS, VAULT LIDS & CB LIDS WHEN EXPOSED PRIOR TO FINAL GRADING AND PAVING.
14. ALL CONSTRUCTION SIGNING, STRIPING AND CHANNELIZATION DEVICES SHALL BE PER MUTCD AND WSDOT STANDARD PLANS. CONFLICTING SIGNS AND CHANNELIZATION SHALL BE COVERED OR REMOVED.

CONSTRUCTION SIGNING NOTES:

"MOTORCYCLES USE EXTREME CAUTION" SIGNS (W21-1701) SHALL BE INSTALLED WHEN THE FOLLOWING ROADWAY CONDITIONS EXIST:

1. GROOVED PAVEMENT
2. ABRUPT PAVEMENT EDGE (0.10 FT OR GREATER)
3. STEEL PLATES
4. LOOSE GRAVEL OR EARTH

SPECIFIC SIGNS FOR EACH OF THE CONDITIONS NOTED SHALL BE INSTALLED ALONG WITH THE "MOTORCYCLES USE EXTREME CAUTION" SIGNS.

K:\FEDERAL_WAY\1066 - Redondo Culvert Replacement\DESIGN\Drawings\Contract\21066TCP.dwg, 1/31/2024



BID DOCUMENT

T-1

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DESIGNED:
REVIEWED:
APPROVED:



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CULVERT REPLACEMENT PROJECT
REDONDO CREEK AT 16TH AVENUE S

TRAFFIC CONTROL GENERAL NOTES

SHT 19
OF 20
CITY PROJECT #: 34293

*** Official bid documents, plan holder's list, and addenda (if applicable) are available on BXWA.com ***

BUFFER DATA										
LONGITUDINAL BUFFER SPACE = B										
SPEED (MPH)	25	30	35	40	45	50	55	60	65	70
LENGTH (feet)	155	200	250	305	360	425	495	570	645	730
TRANSPORTABLE ATTENUATOR ROLL AHEAD DISTANCE = R										
HOST VEHICLE WEIGHT 9,900 TO 22,000 lbs.					HOST VEHICLE WEIGHT > 22,000 lbs.					
< 45 MPH	45-55 MPH	> 55 MPH	< 45 MPH	45-55 MPH	> 55 MPH	< 45 MPH	45-55 MPH	> 55 MPH	< 45 MPH	45-55 MPH
	123'	172'	74'	100'	150'					
PROTECTIVE VEHICLE (WORK VEHICLE) = R										
NO SPECIFIED DISTANCE REQUIRED										

SIGN SPACING = X (1)		
RURAL ROADS	45 / 55 MPH	500' □
RURAL ROADS & URBAN ARTERIALS	35 / 40 MPH	350' □
RURAL ROADS & URBAN ARTERIALS RESIDENTIAL & BUSINESS DISTRICTS	25 / 30 MPH	200' □ (2)
URBAN STREETS	25 MPH OR LESS	100' □ (2)

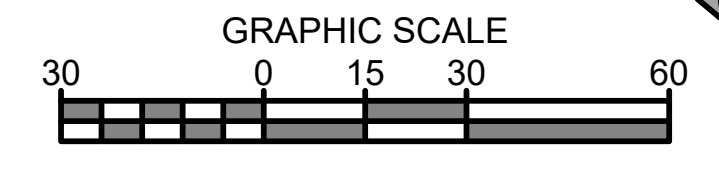
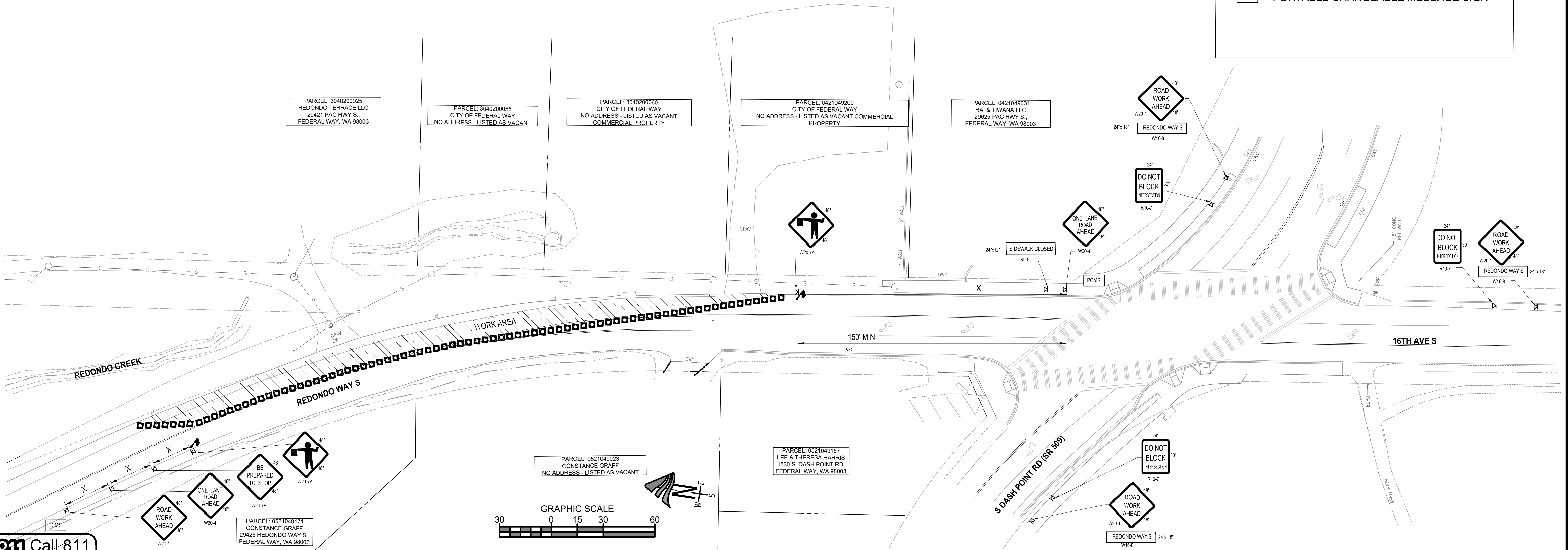
(1) ALL SPACING MAY BE ADJUSTED TO ACCOMMODATE INTERCHANGE RAMP, AT-GRADE INTERSECTIONS AND DRIVEWAYS.
(2) THIS SPACING MAY BE REDUCED IN URBAN AREAS TO FIT ROADWAY CONDITIONS.

MINIMUM TAPER LENGTH = L (FEET)										
LANE WIDTH (feet)	POSTED SPEED (MPH)									
	25	30	35	40	45	50	55	60	65	70
10	105	150	205	270	450	500	-	-	-	-
11	115	165	225	295	495	550	-	-	-	-
12	125	180	245	320	540	600	-	-	-	-

CHANNELIZATION DEVICE SPACING (feet)		
MPH	TAPER	TANGENT
50	40	80
35/45	30	60
25/30	20	40

LEGEND

- FLAGGING STATION
- TEMPORARY SIGN LOCATION
- CHANNELIZING DEVICES
- WORK AREA
- PORTABLE CHANGEABLE MESSAGE SIGN



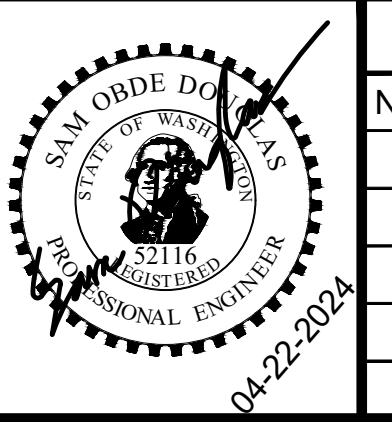
811 Call 811
two business days
before you dig

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CULVERT REPLACEMENT PROJECT
REDONDO CREEK AT 16TH AVENUE S

TRAFFIC CONTROL PLAN

SHT	20
OF	20
CITY PROJECT #:	34293

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