# CITY OF SANTA ROSA
## IMPROVEMENT PLANS FOR
# LOWER COLGAN CREEK RESTORATION PHASE 2
## CONTRACT No. C01924


VICINITY MAP
NOT TO SCALE

| EXCAVATION - FINAL PAY |
|---|
| CUT 29,200 CY |
| FILL 1,800 CY |
| NET 31,000 CY |

CALL UNDERGROUND SERVICE ALERT (USA)
800-642-2444 TWO WORKING DAYS
BEFORE ALL PLANNED WORK OPERATIONS

CALL 811 USA NORTH — 811 — CALL 811 USA NORTH

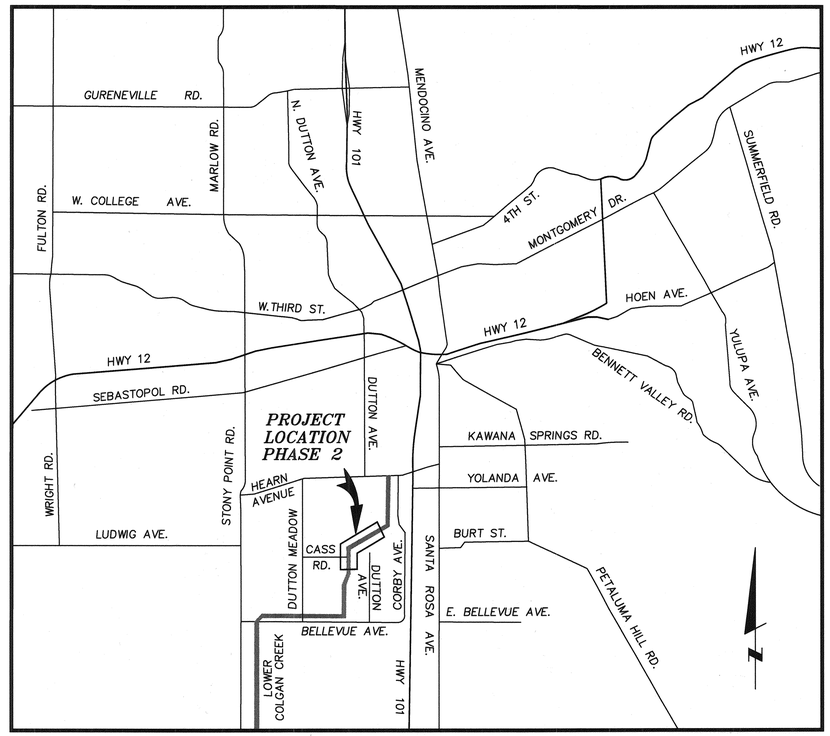
USANorth811.ORG

## INDEX



## SYMBOLS

- EX. SONOMA WATER RIGHT OF WAY AND OR PROPERTY ACQUISITION
- EX. CONTOUR LINES & ELEVATION (105)
- EX. CHANNEL / SWALE FLOW LINE
- PROPOSED NEW THALWEG (16+00, C23)
- NEW SWALE
- TEMPORARY 6' SECURITY FENCING
- NEW 6' CHAIN LINK FENCE
- EX. SANITARY SEWER
- EX. / NEW WATERLINE (W, WV)
- EX. CENTERLINE
- NEW MAINTENANCE ROAD
- NEW MULTI-USE PATHWAY
- EX. STORM DRAIN PIPE AND INLET
- NEW DROP INLET AND STORM DRAIN
- EX. MONUMENT
- EX. MONITOR WELL LOCATION TO BE REMOVED/ REMAIN
- NEW CEDAR SPLIT RAIL FENCING
- EX. COUNTY ROAD




LOCATION MAP NOT TO SCALE

## ABBREVIATIONS

| | | | |
|---|---|---|---|
| Ac | ACRES | LT | LEFT |
| AB | AGGREGATE BASE | LWD | LARGE WOOD DEBRIS |
| A.C. | ASPHALT CONCRETE | MAINT. | MAINTENANCE |
| A.D.A. | AMERICANS WITH DISABILITIES ACT | MAX. | MAXIMUM |
| APN | ASSESSOR PARCEL NUMBER | MIL. | MILLIMETER |
| BC | BEGINNING OF CURVE | MIN. | MINIMUM |
| BKF | BANKFULL ELEVATION | MON | MONUMENT |
| BM | BENCHMARK | N.I.C. | NOT IN CONTRACT |
| CL | CENTERLINE | NTS | NOT TO SCALE |
| CONC. | CONCRETE | O.C. | ON CENTER |
| CMP | CORRUGATED METAL PIPE | OD. | OUTSIDE DIAMETER |
| CY | CUBIC YARDS | PCC | POINT OF COMPOUND CURVE |
| C.S.P. | CALTRANS STANDARD PLANS | POC | POINT ON CURVE |
| CSR | CITY OF SANTA ROSA | PRC | POINT OF REVERSE CURVE |
| DI | DROP INLET | PT. | POINT |
| DIA. | DIAMETER | R.C. | RELATIVE COMPACTION |
| DOC. | DOCUMENT | RCP | REINFORCED CONCRETE PIPE |
| EC | END OF CURVE | RSP | ROCK SLOPE PROTECTION |
| EL/ELEV. | ELEVATION | SPEC. | SPECIFICATION |
| EX. | EXISTING | RT | RIGHT |
| EG | EXISTING GROUND | R/W | RIGHT OF WAY |
| EP | SHOULDER EDGE OF PAVE OR PATH | SCWA | SONOMA COUNTY WATER AGENCY (SONOMA WATER) |
| ESM | ENGINEERED STREAMBED MATERIAL | SD | EX. STORM DRAIN |
| FG | FINISH GRADE | SS | EX. SANITARY SEWER |
| FL | EX. FLOWLINE | S'LY | SOUTHERLY |
| FT | FEET | STD. | STANDARD |
| GB | GRADE BREAK | T | TON |
| H/V | HORIZONTAL / VERTICAL | TG | TOP OF GRATE |
| HDPE | HIGH DENSITY POLYETHYLENE | TEL. | EX. TELEPHONE LINES |
| HGL | HYDRAULIC GRADE LINE | TOB | TOP OF BANK |
| INV/IG | INVERT GRADE | TYP. | TYPICAL |
| IN | INCH | VLT. | EX. VAULT |
| LF | LINEAL FEET | W/ | WITH |
| L OR R | LEFT OR RIGHT | | |

## GENERAL NOTES

1. ALL WORKMANSHIP, MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE CITY OF SANTA ROSA STANDARD PLANS, THE CONSTRUCTION SPECIFICATIONS FOR PUBLIC IMPROVEMENTS, THE SPECIAL PROVISIONS FOR THIS PROJECT AND THE STATE STANDARD SPECIFICATIONS AND STANDARD PLANS. THE CONTRACTOR IS RESPONSIBLE FOR UNDERSTANDING ALL STANDARDS PERTAINING TO THIS PROJECT.
2. THE CONTRACTOR SHALL CALL UNDERGROUND SERVICE ALERT (USA) AT 1-800-642-2444 NO LESS THAN 2 WORKING DAYS PRIOR TO ANY EXCAVATION FOR MARK OUTS OF EXISTING UNDERGROUND FACILITIES IN ACCORDANCE WITH SECTION 5-1.36 OF THE SPECIAL PROVISIONS.
3. THE LOCATIONS OF UNDERGROUND UTILITIES AND OTHER OBSTACLES SHOWN ON THE PLANS ARE BASED ON THE BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL POTHOLE AND DETERMINE THE EXACT LOCATION OF ALL POTENTIAL CONFLICTS IN ACCORDANCE WITH U.S.A. LAWS AND THESE SPECIAL PROVISIONS AND THE STANDARD SPECIFICATIONS. IF ANY UNMARKED UTILITIES ARE ENCOUNTERED, OR IF UNABLE TO LOCATE A MARKED UTILITY AFTER POT HOLING, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER OF THAT UTILITY AND THE ENGINEER. PER SECTION 15 OF THE SPECIAL PROVISIONS.
4. ALL SEWER MANHOLES, MAINLINE CLEANOUTS AND WATER VALVES THAT ARE ON ACTIVE SYSTEMS SHALL BE ACCESSIBLE TO CITY PERSONNEL AT ALL TIMES AND SHALL BE BROUGHT TO GRADE WITHIN 48 HOURS OF PAVING. PER SECTION 15 OF THE SPECIAL PROVISIONS.
5. THE CONTRACTOR SHALL PROTECT AND PRESERVE CITY/COUNTY MONUMENTS. THE CONTRACTOR SHALL COORDINATE WITH THE CITY ENGINEER OR SURVEYOR 10 WORKING DAYS IN ADVANCE FOR REFERENCING OF EXISTING MONUMENTS TO BE DISTURBED. THE CONTRACTOR SHALL RECONSTRUCT DISTURBED MONUMENTS IN ACCORDANCE WITH CITY STANDARD 280 OR SONOMA WATER STANDARDS.
6. OVERHEAD UTILITY SERVICE DROPS ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL INVESTIGATE THE SITE AND BE AWARE OF LIMITED CLEARANCES UNDER OVERHEAD UTILITY LINES, BUSHES AND HANGING TREE BRANCHES. THE CONTRACTOR'S TRUCKS AND EXCAVATION EQUIPMENT SHALL BE SIZED SO THAT OVERHEAD WIRES AND TREE BRANCHES ARE NOT DAMAGED.
7. ALL EXCAVATED MATERIAL SHALL BE DISPOSED OF AS GENERATED AND AT NO TIME SHALL THE CONTRACTOR PLACE EXCAVATED MATERIAL AT THE WORK SITE. PER SECTION 19 OF THE SPECIAL PROVISIONS.
8. THE CONTRACTOR SHALL ONLY REMOVE EXISTING TREES OR SHRUBS AS NOTED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
9. FOR CLARITY OF EXISTING SUBSURFACE CONDITIONS, NOT ALL CROSSWALKS, STOP BARS, OR EXISTING PAVEMENT MARKINGS ARE SHOWN ON THE PLANS. ALL TRAFFIC STRIPES, RAISED PAVEMENT MARKERS AND PAVEMENT MARKINGS DAMAGED BY THE CONTRACTOR SHALL BE REPLACED IN THEIR ENTIRETY. REPLACEMENT OF DAMAGED MARKINGS SHALL INCLUDE REFLECTIVE AND NON-REFLECTIVE RAISED PAVEMENT MARKERS. ANY DAMAGED TAPE WILL BE REMOVED AND REPLACED WITH THERMOPLASTIC. ALL WORK PER CITY OF SANTA ROSA TRAFFIC STANDARDS PART III, TRAFFIC MARKINGS.

## RECORD PLAN DATA

| | |
|---|---|
| PROJECT START: | WATER SERVICE TYPE: |
| PROJECT END: | MANUFACTURER: |
| GEN. CONTRACTOR: | FIRE HYDRANT TYPE: |
| SUPERINTENDENT: | MANUFACTURER: |
| UNDERGROUND CONTRACTOR: | INSPECTOR: |
| FOREMAN: | CONSTRUCTION MANAGER: |
| SEWER PIPE TYPE: | RECORD PLANS BY: |
| MANUFACTURER: | ADDITIONAL INFO: |
| SEWER FITTINGS MANUFACTURER: | |
| M.H. MANUFACTURER: | |
| WATER PIPE TYPE: | |
| MANUFACTURER: | |
| WATER VALVE MANUFACTURER: | |
| WATER FITTINGS MANUFACTURER: | |

REGISTERED PROFESSIONAL ENGINEER — DAVID C. MONTAGUE — No. 46002 — Exp. 12/31/20 — CALIFORNIA

| No. | Date | Revision | By | Dept. | Signature | Date |
|---|---|---|---|---|---|---|
| | | | | Design/Const | | 2-27-2020 |
| | | | | Survey | | |
| | | | | TPW Field Svc's | | 2/27/20 |
| | | | | Utilities Op's | | |
| | | | | Traffic | | |
| | | | | Parks | | |
| | | | | Storm Water | | 2-27-20 |

SCALE: As Shown — DATE: FEBRUARY 2020
DWN BY: GL — CHK BY: GJD

APPROVED: Deputy Director - Engineering
By Lori Urbanek — Date 3/3/2020

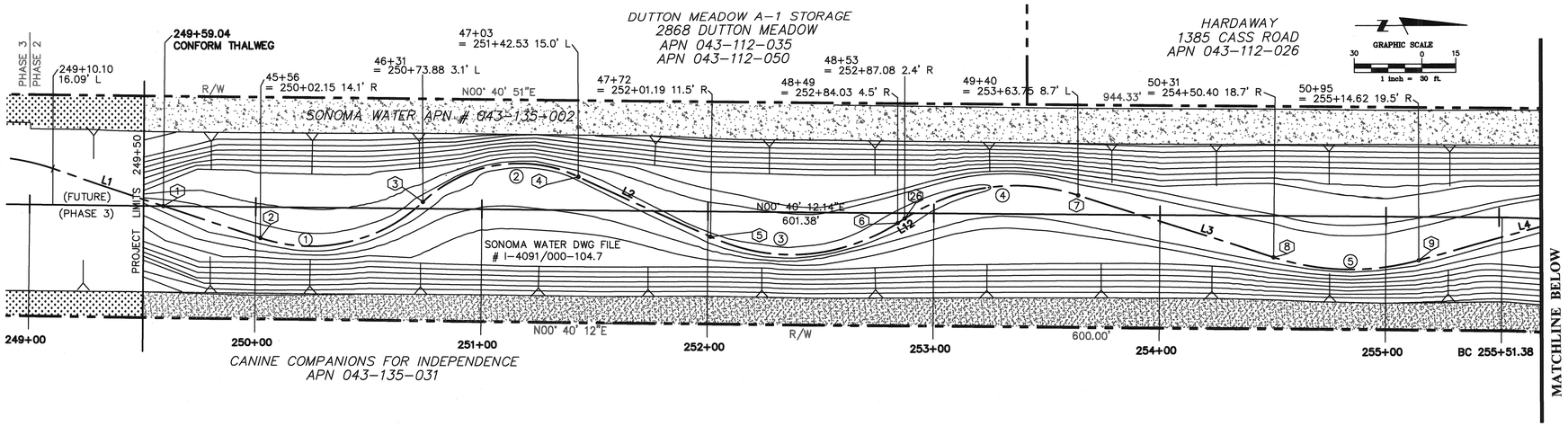
City of Santa Rosa
**LOWER COLGAN CREEK RESTORATION - PHASE 2**

**COVER SHEET**

CONTRACT NO. C01924

SHEET 1 OF 29

FILE NO. 2019-0028



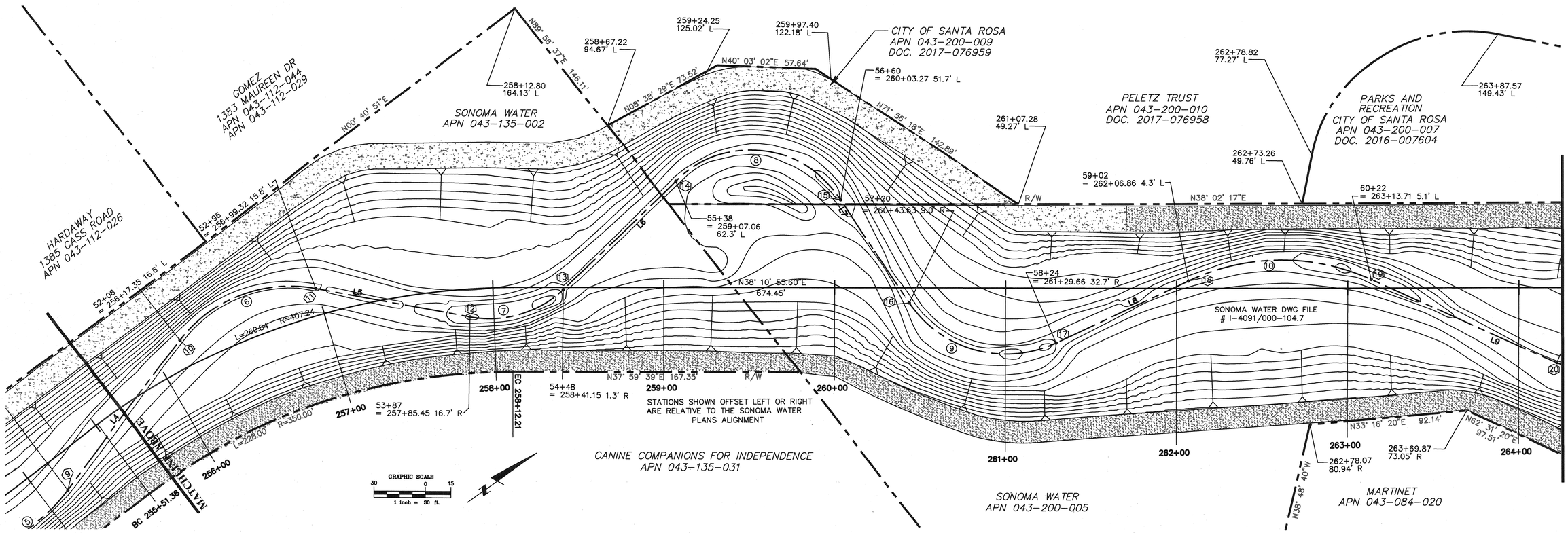

## SURVEY CONTROL DATA:

| Pt. | Description | Northing | Easting | Elev. |
|---|---|---|---|---|
| 1 | BRASS DISK SONOMA WATER | 1908998.206 | 6350644.016 | 104.91 |
| 5 | WELL MON | 1909011.074 | 6352629.970 | 109.24 |
| 17 | CHISELED X | 1909124.448 | 6352612.762 | 108.89 |
| 20 | IRON PIPE 3/4in 'CSR' | 1909316.780 | 6353580.990 | 111.39 |
| 21 | SPIKE 3/8in DIA. | 1909655.230 | 6353606.010 | 113.01 |
| 22 | IRON PIPE 3/4in 'CSR' | 1909891.570 | 6353608.110 | 114.04 |
| 24 | IRON PIPE 3/4in 'CSR' | 1910310.740 | 6353699.580 | 114.42 |
| 25 | SPIKE 3/8in DIA. | 1910516.120 | 6353714.530 | 115.91 |
| 26 | SPIKE 3/8in DIA. | 1910834.670 | 6353718.420 | 116.35 |
| 27 | SPIKE 3/8in DIA. | 1911062.810 | 6353721.160 | 116.98 |
| 28 | IRON PIPE 3/4in 'CSR' | 1911295.620 | 6353712.730 | 116.83 |
| 29 | SPIKE 3/8in DIA. | 1911463.930 | 6353826.950 | 118.22 |
| 30 | IRON PIPE 3/4in 'CSR' | 1911608.040 | 6353834.930 | 117.42 |
| 31 | SPIKE 3/8in DIA. | 1911836.610 | 6354121.990 | 119.91 |
| 32 | SPIKE 3/8in DIA. | 1911976.980 | 6354141.700 | 120.76 |
| 33 | SPIKE 3/8in DIA. | 1912209.610 | 6354420.630 | 121.66 |
| 34 | IRON PIPE 3/4in 'CSR' | 1912269.980 | 6354363.780 | 121.52 |
| 35 | IRON PIPE 3/4in 'CSR' | 1912460.050 | 6354590.960 | 122.88 |

## BENCHMARK DATA

D-305, EL=107.729
BELLEVUE AVENUE AND BURGESS DRIVE AT ENTRANCE TO HIGH SCHOOL;
3" CITY DISK ON TOP OF WALL AT BRIDGE (BOX) CULVERT,
1 FOOT NORTH OF S'LY END OF THE WESTERLY WING WALL.

D-306, EL=109.243
BELLEVUE AVENUE AND DUTTON MEADOW; 2" CITY DISK IN WELL MONUMENT ON CL,
16 FEET NORTH OF THE CL INTERSECTION.




## PLAN

## THALWEG CURVE DATA:

| Curve # | Length | Radius | Delta |
|---|---|---|---|
| 1 | 77.67' | 70.29' | 63°18'25" |
| 2 | 73.99' | 61.96' | 68°25'02" |
| 3 | 86.84' | 85.02' | 58°31'06" |
| 4 | 80.15' | 89.03' | 51°34'55" |
| 5 | 65.16' | 111.09' | 33°36'12" |
| 6 | 89.66' | 80.48' | 63°49'48" |
| 7 | 59.09' | 62.23' | 54°24'32" |
| 8 | 110.66' | 63.07' | 100°31'35" |
| 9 | 97.30' | 67.99' | 81°59'19" |
| 10 | 110.37' | 125.60' | 50°21'00" |
| 11 | 112.10' | 94.73' | 67°48'17" |

## THALWEG LINE DATA:

| | | | | | |
|---|---|---|---|---|---|
| L1 | 96.87' | N18° 50' 15"E | L6 | 91.55' | N05° 57' 54"W |
| L2 | 64.41' | N25° 00' 36"E | L7 | 72.88' | S85° 26' 03"E |
| L3 | 90.88' | N18° 12' 59"E | L8 | 85.61' | N12° 35' 03"E |
| L4 | 109.45' | N15° 23' 10"W | L9 | 119.64' | N62° 56' 04"E |
| L5 | 91.75' | N48° 26' 38"E | L10 | 102.81' | N04° 52' 22"W |
| L12 | 3.68' | N33° 22' 06"W | L11 | 64.87' | N47° 12' 43"E |

ALL DISTANCES/LENGTHS SHOWN HEREON THE DATA
TABLES ARE IN FEET AND DECIMALS THEREOF.

## THALWEG POINT TABLE:

| Pt. | Easting | Northing | Desc. |
|---|---|---|---|
| 1 | X = 6353746.98 | Y = 1910705.87 | CONFORM |
| 2 | X = 6353761.60 | Y = 1910748.71 | BC |
| 3 | X = 6353745.23 | Y = 1910820.65 | PRC |
| 4 | X = 6353734.10 | Y = 1910889.42 | EC |
| 5 | X = 6353761.33 | Y = 1910947.80 | BC |
| 6 | X = 6353755.27 | Y = 1911030.69 | PRC |
| 7 | X = 6353743.04 | Y = 1911110.55 | EC |
| 8 | X = 6353771.45 | Y = 1911196.88 | BC |
| 9 | X = 6353773.04 | Y = 1911261.09 | EC |
| 10 | X = 6353744.00 | Y = 1911366.61 | BC |
| 11 | X = 6353768.21 | Y = 1911448.19 | EC |
| 12 | X = 6353836.86 | Y = 1911509.05 | BC |
| 13 | X = 6353857.47 | Y = 1911562.09 | EC |
| 14 | X = 6353847.96 | Y = 1911653.14 | BC |
| 15 | X = 6353915.71 | Y = 1911722.56 | EC |
| 16 | X = 6353988.35 | Y = 1911716.76 | BC |
| 17 | X = 6354060.13 | Y = 1911769.73 | EC |
| 18 | X = 6354078.78 | Y = 1911853.28 | BC |
| 19 | X = 6354144.21 | Y = 1911937.76 | EC |
| 20 | X = 6354250.75 | Y = 1911992.19 | BC |
| 21 | X = 6354302.03 | Y = 1912084.59 | EC |
| 22 | X = 6354293.30 | Y = 1912187.03 | BC |
| 23 | X = 6354374.81 | Y = 1912248.79 | PRC |
| 24 | X = 6354416.72 | Y = 1912259.29 | EC |
| 26 | X = 6353753.25 | Y = 1911033.76 | EC |

## NOTES

1. THE STATIONING AND ALIGNMENT ARE DERIVED FROM DATA SHOWN ON 'LAGUNA-MARK-WEST ZONE 1A COLGAN CREEK CHANNEL IMPROVEMENT RIGHT OF WAY MAP', SONOMA COUNTY WATER AGENCY, UNDER DRAWING NUMBER I-4091/000-104.7. BOUNDARIES BASED ON HISTORICAL ASSESSOR DATA.
2. UTILITY LOCATIONS ARE APPROXIMATE AND SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR.
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CALL BEFORE YOU DIG
811
1-800-642-2444
USANorth811.ORG

REGISTERED PROFESSIONAL ENGINEER
DAVID C. MONTAGUE
No. 46002
Exp. 12/31/2020
CIVIL
STATE OF CALIFORNIA

City of Santa Rosa

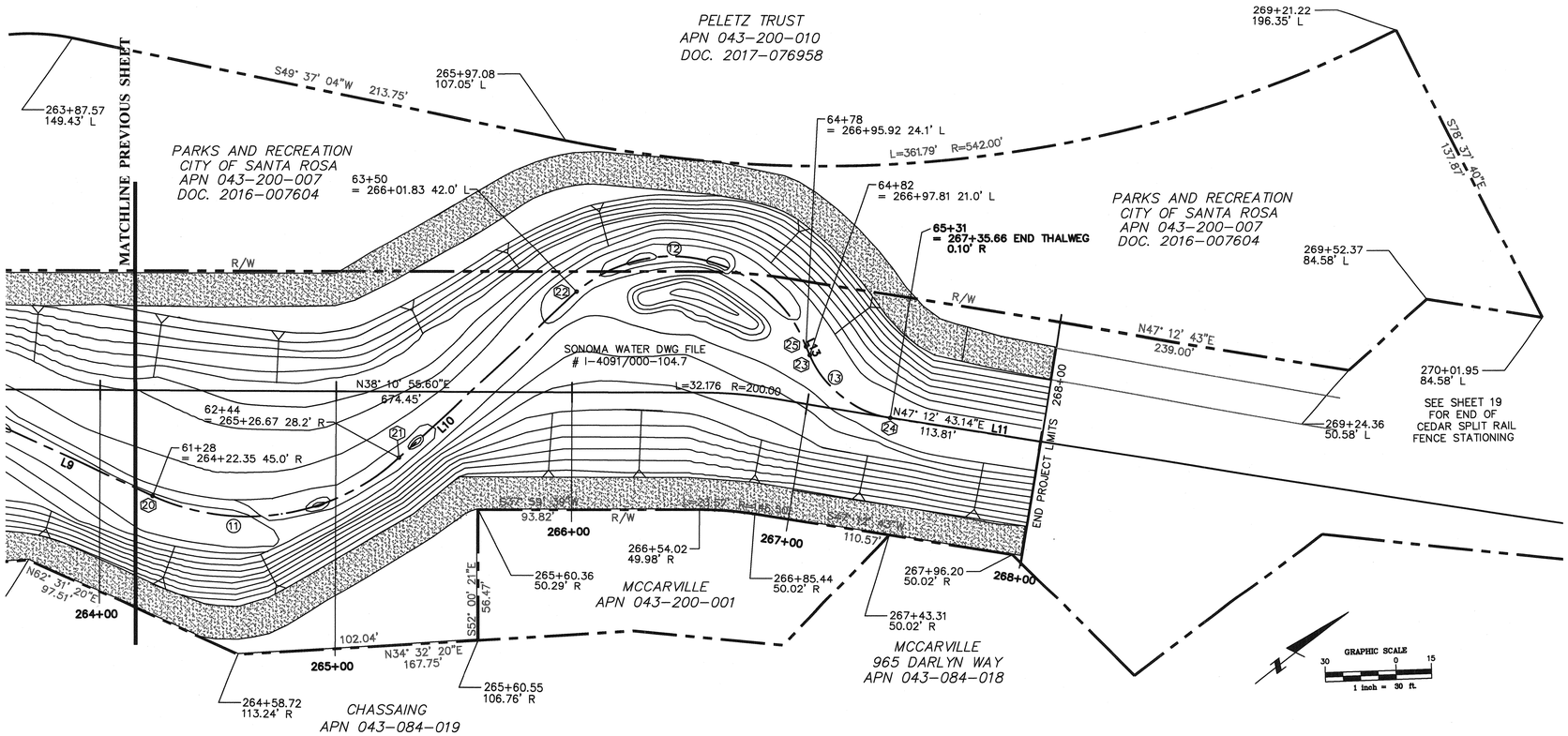
| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

DATE: FEBRUARY 2020
CHK BY: GJD
APPROVED: Deputy Director - Engineering
By Lori Urbanek Date 3/3/2020
SCALE: As Shown
DWN BY: GL

City of Santa Rosa
LOWER COLGAN CREEK RESTORATION - PHASE 2

HORIZONTAL CONTROL PLAN

CONTRACT NO. C01924
SHEET 2 OF 29
FILE NO. 2019-0028




## PLAN

## THALWEG POINT TABLE:

| Pt. | Easting | Northing | Desc. |
|---|---|---|---|
| 20 | X = 6354250.75 | Y = 1911992.19 | BC |
| 21 | X = 6354302.03 | Y = 1912084.59 | EC |
| 22 | X = 6354293.30 | Y = 1912187.03 | BC |
| 23 | X = 6354374.81 | Y = 1912248.79 | PRC |
| 24 | X = 6354416.72 | Y = 1912259.29 | EC |
| 25 | X = 6354370.92 | Y = 1912249.81 | EC |

## THALWEG CURVE DATA:

| Curve # | Length | Radius | Delta |
|---|---|---|---|
| 11 | 112.10' | 94.73' | 67°48'17" |
| 12 | 116.03' | 62.00' | 107°13'48" |
| 13 | 45.06' | 44.95' | 57°26'25" |

## THALWEG LINE DATA:

| | | |
|---|---|---|
| L9 | 119.64' | N62° 56' 04"E |
| L10 | 102.81' | N04° 52' 22"W |
| L11 | 64.87' | N47° 12' 43"E |
| L13 | 4.03' | S75° 20' 52"E |

## SURVEY CONTROL DATA:

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| 1 | BRASS DISK SONOMA WATER | 1908998.206 | 6350644.016 | 104.91 |
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D-306, EL=109.243
BELLEVUE AVENUE AND DUTTON MEADOW; 2" CITY DISK IN WELL MONUMENT ON CL,
16 FEET NORTH OF THE CL INTERSECTION.

## SURVEY CONTROL DESCRIPTION

G-300: CORBY AVENUE AT OLD BELLEVUE AVENUE CENTERLINE EXTENSIONS, 12' NORTH OF EX. SSHM #17 AND 11' WEST OF EX. VAULT
N: 1908984.607 E: 6356331.865

G-1010: CENTER OF DUKE COURT CUL-DE-SAC, BRASS DISK STAMPED "CITY OF SANTA ROSA"
N: 1911361.107 E: 6354738.66

## NOTES

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REGISTERED PROFESSIONAL ENGINEER
DAVID C. MONTAGUE
No. 46002
Exp. 12/31/20
CIVIL
STATE OF CALIFORNIA

City of Santa Rosa

| NO. | DATE | REVISION | BY |
|---|---|---|---|

SCALE: As Shown
DWN BY: GL
DATE: FEBRUARY 2020
CHK BY: GJD

APPROVED: Deputy Director - Engineering
By Lori Urbanek Date 3/3/2020

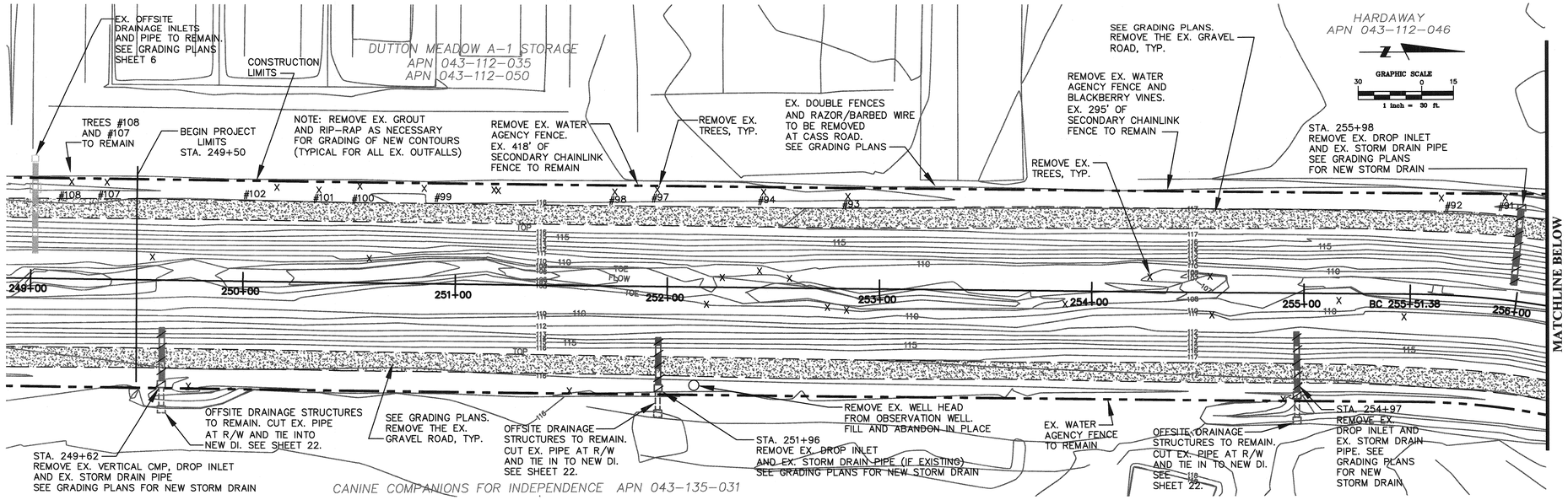
City of Santa Rosa
**LOWER COLGAN CREEK RESTORATION - PHASE 2**

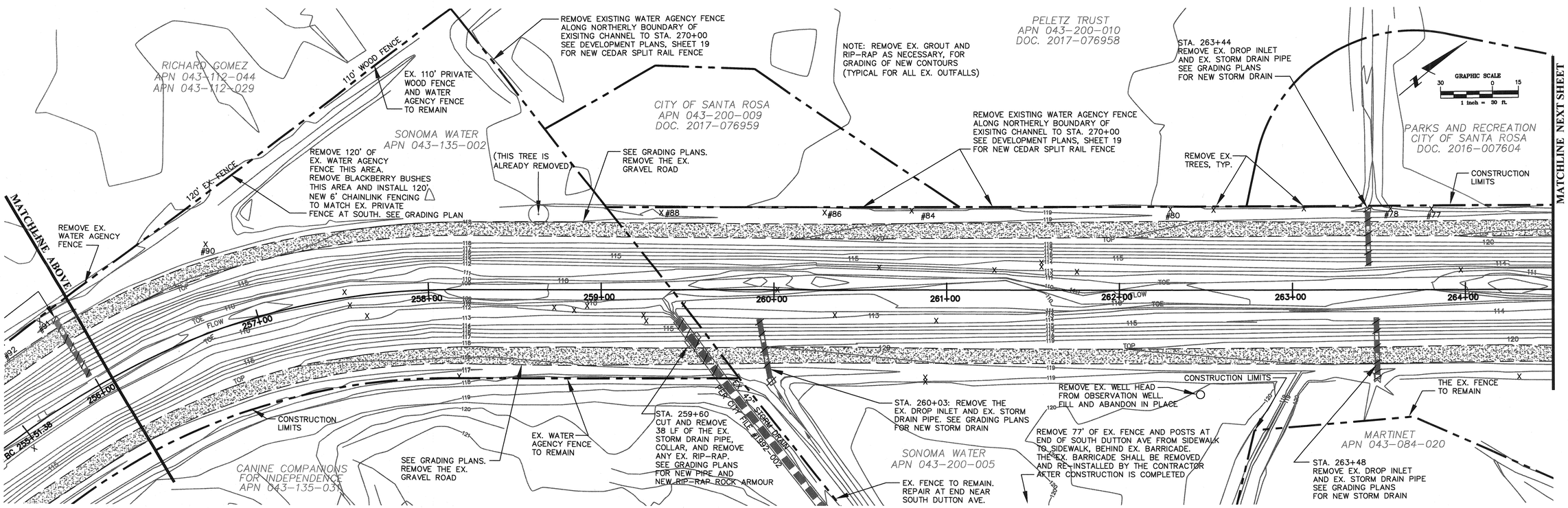
**HORIZONTAL CONTROL PLAN**

CONTRACT NO. C01924

SHEET 3 OF 29

FILE NO. 2019-0028




## PLAN

X = TREE TO BE REMOVED

CALL BEFORE YOU DIG
811
1-800-642-2444
USANorth811.ORG

## NOTES

1. UTILITY AND STORM DRAIN STRUCTURE LOCATIONS ARE APPROXIMATE AND SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR. RIGHT OF WAY LINES AND PROPERTY LINES ARE SHOWN FOR REPRESENTATION ONLY AND DO NOT CONSTITUTE AN ACTUAL PROPERTY BOUNDARY SURVEY.
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REGISTERED PROFESSIONAL ENGINEER DAVID C. MONTAGUE No. 46602 Exp. 12/31/20 CIVIL STATE OF CALIFORNIA

City of Santa Rosa

| NO. | DATE | REVISION | BY |
|---|---|---|---|

SCALE: As Shown
DATE: FEBRUARY 2020
DWN BY: GL
CHK BY: GJD

APPROVED: Deputy Director - Engineering
By Lori Urbanek Date 3/3/2020

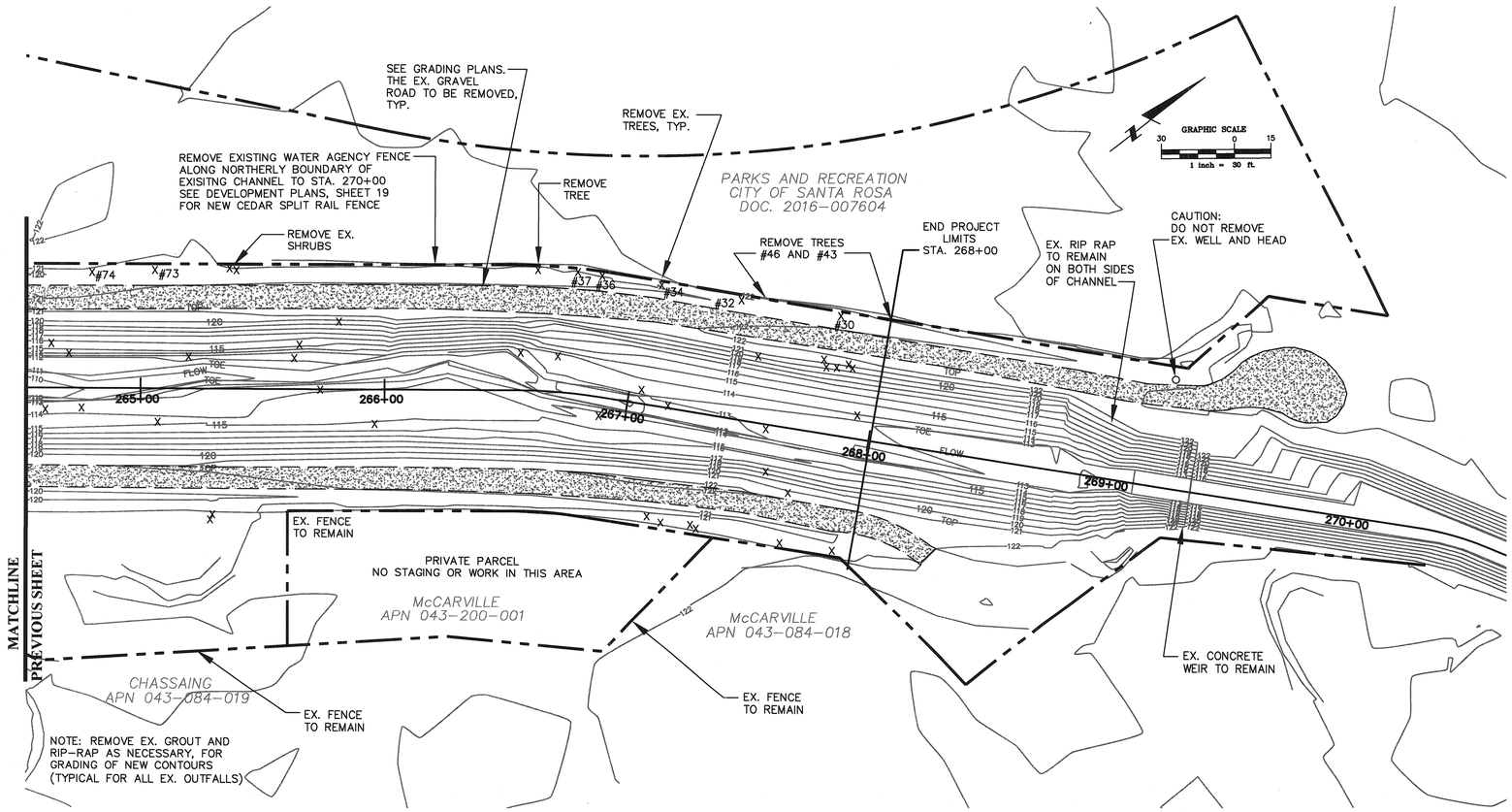
City of Santa Rosa
LOWER COLGAN CREEK RESTORATION - PHASE 2

DEMOLITION PLAN

CONTRACT NO. C01924

SHEET 4 OF 29

FILE NO. 2019-0028




## PLAN

## LEGEND

X = TREE TO BE REMOVED

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1. UTILITY AND STORM DRAIN STRUCTURE LOCATIONS ARE APPROXIMATE AND SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR. RIGHT OF WAY LINES AND PROPERTY LINES ARE SHOWN FOR REPRESENTATION ONLY AND DO NOT CONSTITUTE AN ACTUAL PROPERTY BOUNDARY SURVEY.

2. REMOVAL AND OFFHAUL OF EXCESSIVE AND UNFORSEEN ITEMS SHALL BE RESPONSIBILITY OF THE CONTRACTOR. ITEMS SUCH AS FENCING, VEGETATION, TREES, RIP-RAP, CONCRETE, GRAVEL, TRASH, STORM DRAIN PIPES, DROP INLETS, ETC. ARE FOR INFORMATIONAL PURPOSES AND DO NOT REPRESENT A COMPLETE DEMOLITION PLAN.

REGISTERED PROFESSIONAL ENGINEER DAVID C. MONTAGUE No. 46002 Exp. 12/31/2020 CIVIL STATE OF CALIFORNIA

City of Santa Rosa

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

DATE: FEBRUARY 2020
CHK BY: GJD
APPROVED: Deputy Director - Engineering
By Lori Urbanek Date 3/5/2020

SCALE: As Shown
DWN BY: GL

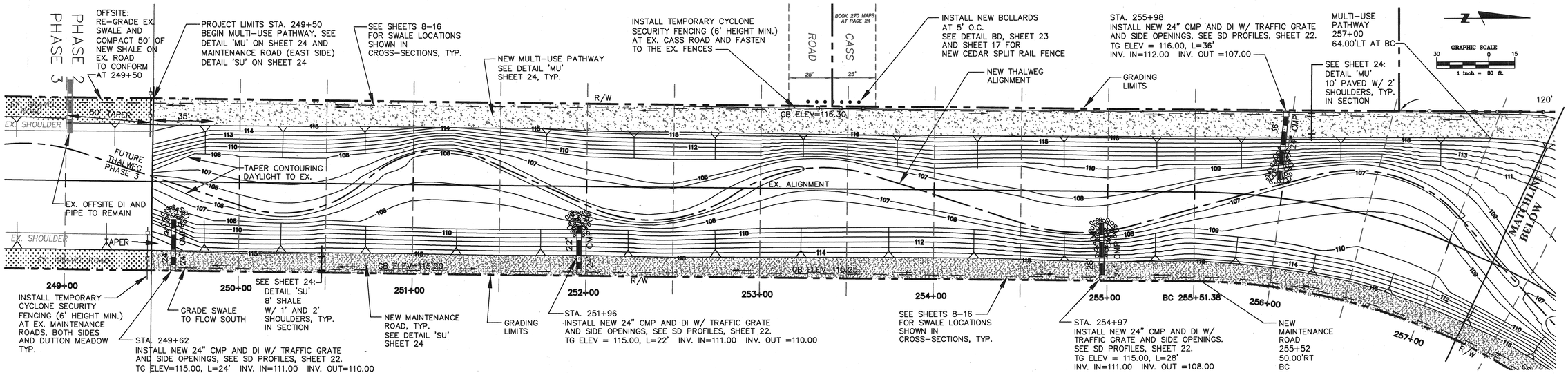
City of Santa Rosa
**LOWER COLGAN CREEK RESTORATION - PHASE 2**

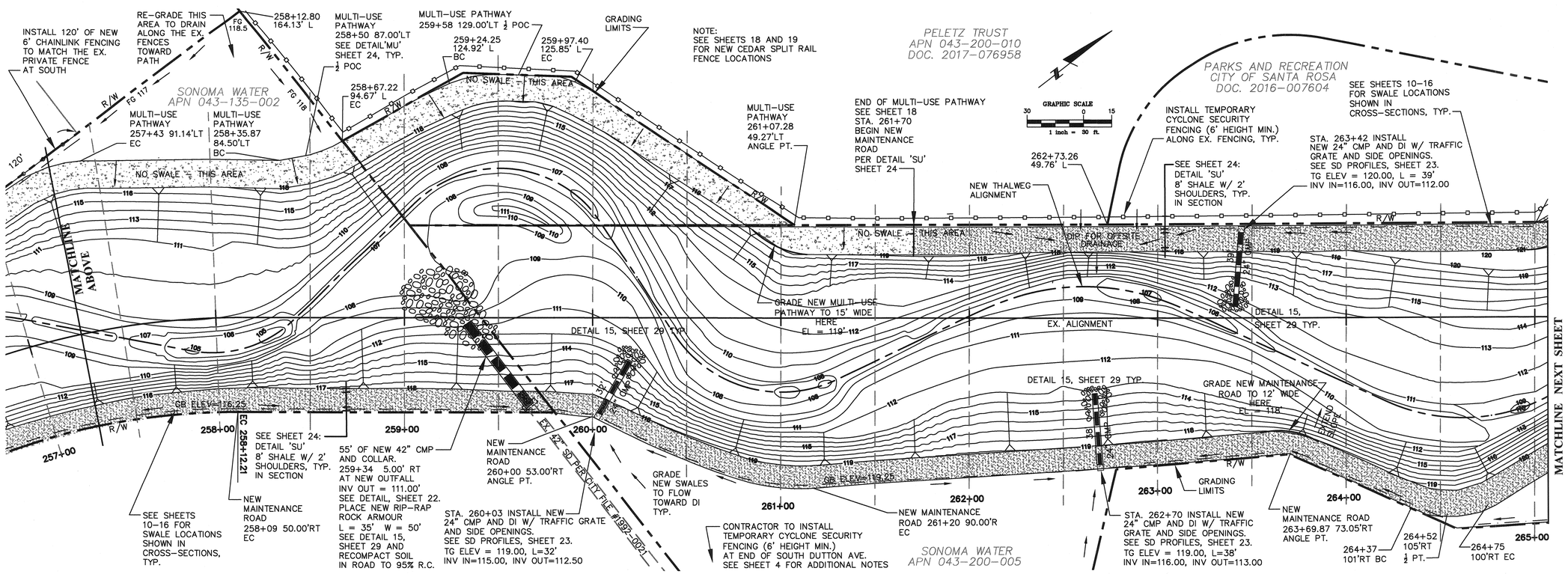
**DEMOLITION PLAN**

CONTRACT NO. C01924

SHEET 5 OF 29

FILE NO. 2019-0028




## PLAN

## NOTES

1. STORM DRAIN STRUCTURE LOCATIONS ARE APPROXIMATE AND SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR. RIGHT OF WAY LINES, FENCES AND PROPERTY LINES ARE SHOWN FOR REPRESENTATION ONLY, AND DO NOT CONSTITUTE AN ACTUAL PROPERTY BOUNDARY SURVEY.
2. ALIGNMENT AND STATIONING DERIVED FROM EXISTING CHANNEL RIGHT OF WAY MAP FROM SONOMA WATER TITLED "LAGUNA-MARK WEST ZONE 1A COLGAN CHANNEL IMPROVEMENTS", UNDER DRAWING NUMBER I-4091/000-104.7. STATIONS AND OFFSETS SHOWN FOR STRUCTURES, PATHWAYS AND ROADS ARE APPROXIMATE.
3. LINES PERPENDICULAR TO THE SHOWN EX. ALIGNMENT REPRESENT THE CROSS SECTIONS ALONG THE EXISTING CHANNEL AND NEW THALWEG CORRIDOR AREA.
4. CONTRACTOR SHALL WORK WITHIN EXISITNG R/W. CONTRACTOR SHALL NOT ACCESS OR DISTURB LAND OUTSIDE EXISITNG R/W AT ANYTIME.
5. SUBSEQUENT GRADE STAKES SET BY CONTRACTOR/GRADE SETTER MAY REQUIRE FIELD VERIFICATION.
6. ELEVATIONS SHOWN ON PLANS ARE BASED ONLY ON CITY DATUM, NOT COUNTY DATUM.

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DAVID C. MONTAGUE No. 46002 Exp. 6/30/21 CIVIL STATE OF CALIFORNIA REGISTERED PROFESSIONAL ENGINEER

City of Santa Rosa

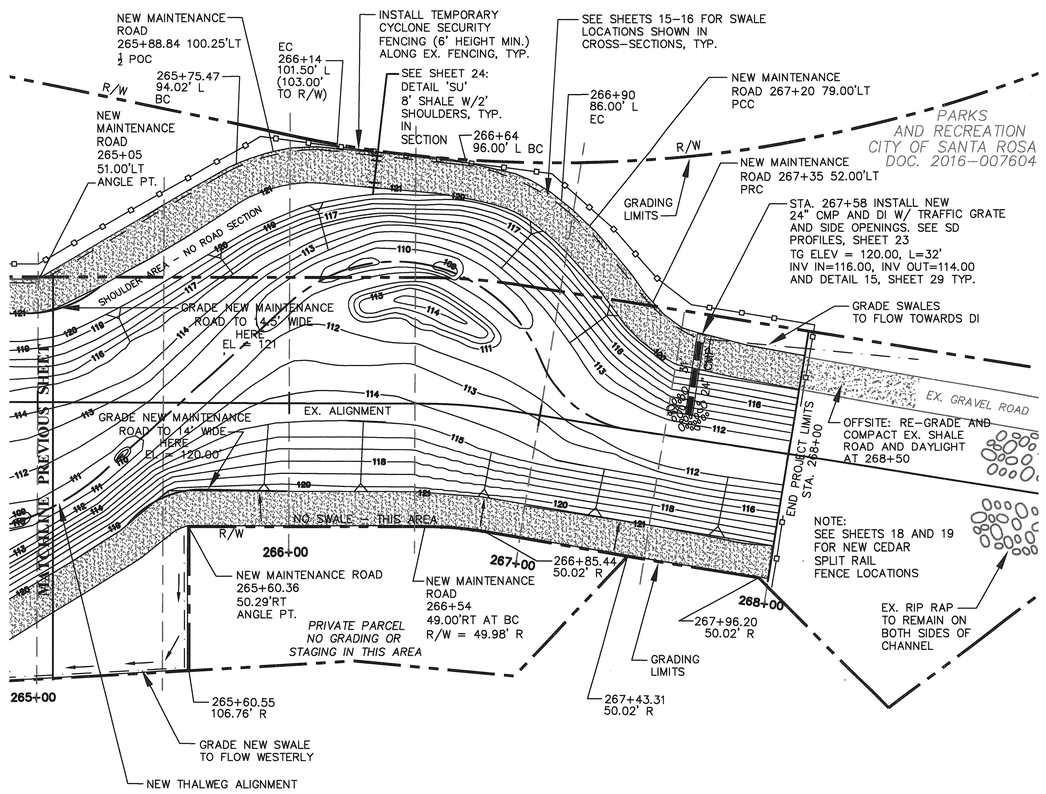
| NO. | DATE | REVISION | BY |
|---|---|---|---|

DATE: FEBRUARY 2020
CHK BY: GJD
SCALE: As Shown
DWN BY: GL
APPROVED: Deputy Director - Engineering
By Lori Urbanek Date 3/3/2020

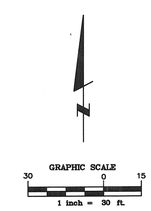
City of Santa Rosa
**LOWER COLGAN CREEK RESTORATION - PHASE 2**

**GRADING AND DRAINAGE PLAN**

CONTRACT NO. C01924
SHEET 6 OF 29
FILE NO. 2019-0028




## PLAN




## NOTES

1. STORM DRAIN STRUCTURE LOCATIONS ARE APPROXIMATE AND SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR. RIGHT OF WAY LINES, FENCES AND PROPERTY LINES ARE SHOWN FOR REPRESENTATION ONLY, AND DO NOT CONSTITUTE AN ACTUAL PROPERTY BOUNDARY SURVEY.
2. ALIGNMENT AND STATIONING DERIVED FROM EXISTING CHANNEL RIGHT OF WAY MAP FROM SONOMA WATER TITLED "LAGUNA–MARK WEST ZONE 1A COLGAN CHANNEL IMPROVEMENTS", UNDER DRAWING NUMBER I–4091/000–104.7. STATIONS AND OFFSETS SHOWN FOR STRUCTURES, PATHWAYS AND ROADS ARE APPROXIMATE.
3. LINES PERPENDICULAR TO THE SHOWN EX. ALIGNMENT REPRESENT THE CROSS SECTIONS ALONG THE EXISTING CHANNEL AND NEW THALWEG CORRIDOR AREA.
4. CONTRACTOR SHALL WORK WITHIN EXISITNG R/W. CONTRACTOR SHALL NOT ACCESS OR DISTURB LAND OUTSIDE EXISITNG R/W AT ANYTIME.
5. SUBSEQUENT GRADE STAKES SET BY CONTRACTOR/GRADE SETTER MAY REQUIRE FIELD VERIFICATION.
6. ELEVATIONS SHOWN ON PLANS ARE BASED ONLY ON CITY DATUM, NOT COUNTY DATUM.

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REGISTERED PROFESSIONAL ENGINEER DAVID C. MONTAGUE No. 46002 Exp. 12/31/22 STATE OF CALIFORNIA

City of Santa Rosa

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DATE: FEBRUARY 2020
CHK BY: GJD

APPROVED: Deputy Director – Engineering
By Lori Urbanek Date 3/3/2020

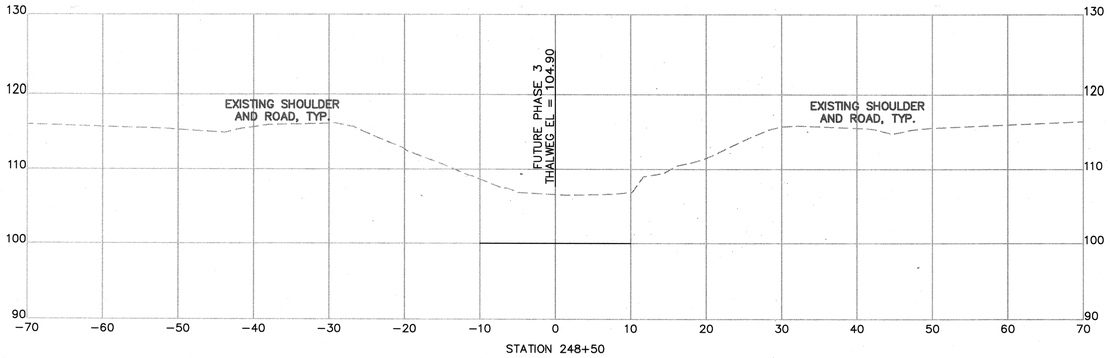
City of Santa Rosa
**LOWER COLGAN CREEK RESTORATION - PHASE 2**

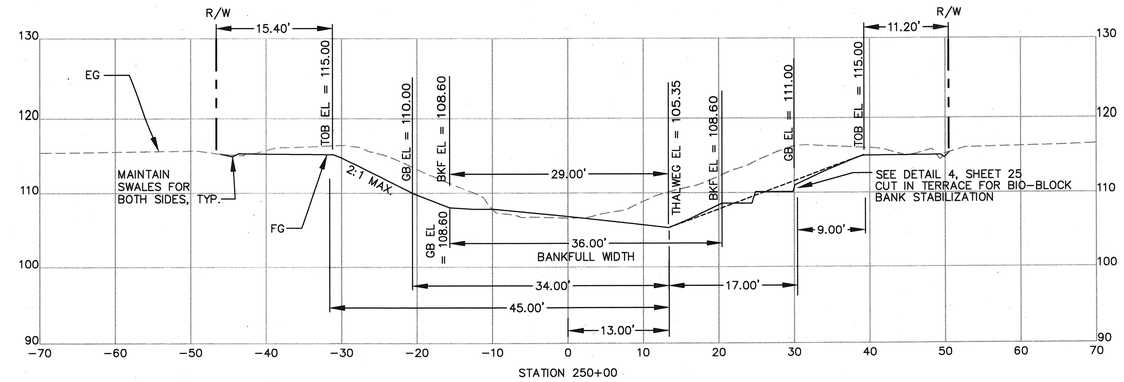
**GRADING AND DRAINAGE PLAN**

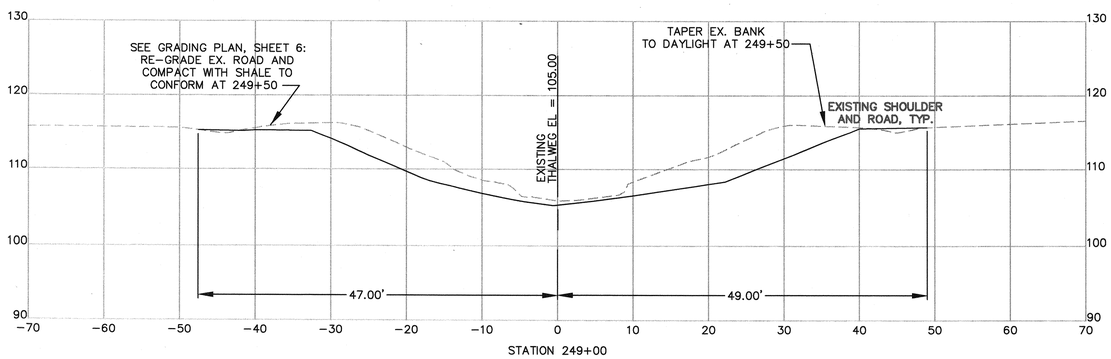
CONTRACT NO. C01924

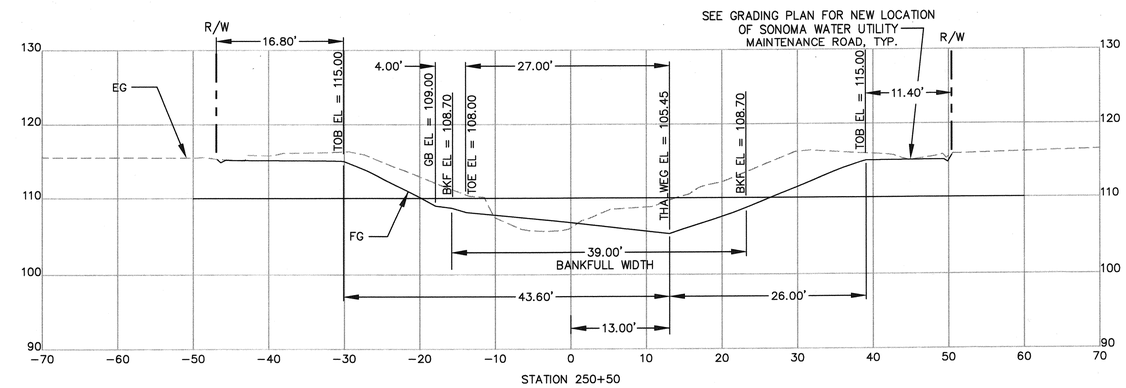
SHEET 7 OF 29

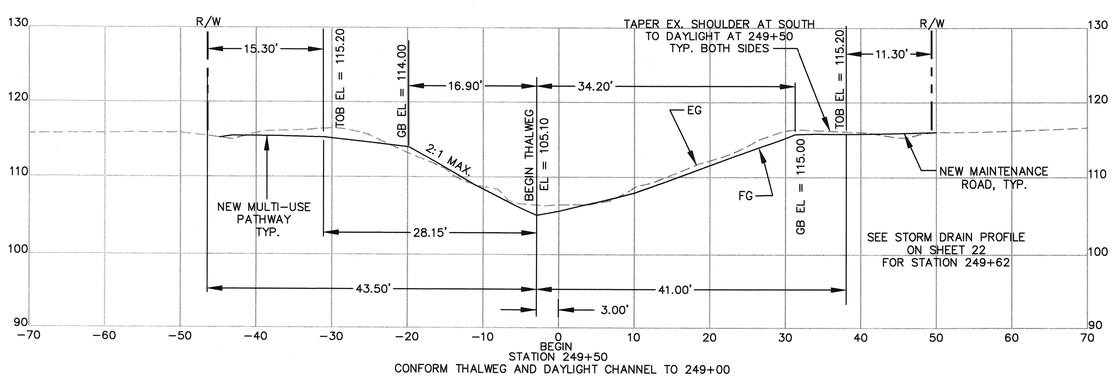
FILE NO. 2019–0028

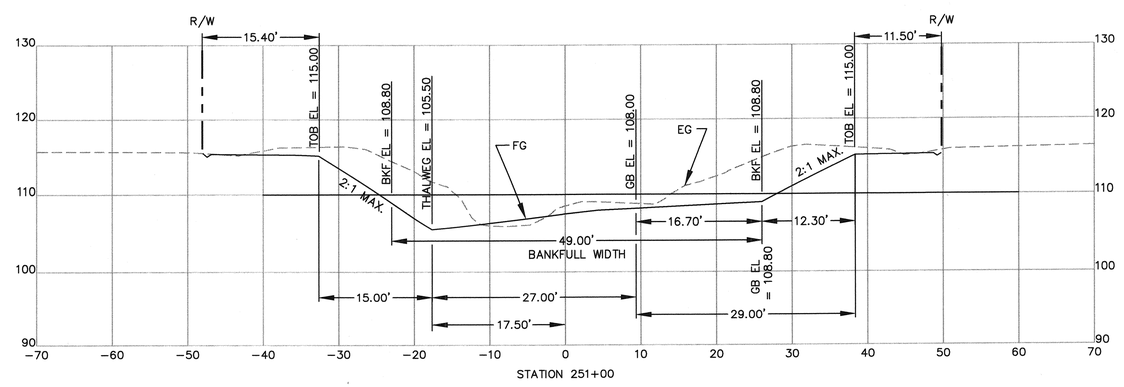



## NOTES

1. TOPOGRAPHIC INFORMATION BY CITY OF SANTA ROSA.
2. ALIGNMENT AND STATION BASED ON EXISTING CHANNEL RIGHT OF WAY MAP FROM SONOMA WATER: "LAGUNA-MARK WEST ZONE 1A COLGAN CHANNEL IMPROVEMENTS", DRAWING NUMBER i-4091/000-104.7.

SCALE:
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VERT 1" = 10'

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## LEGEND

- - - - - EXISTING GRADE (EG)
——— PROPOSED FINISHED GRADE (FG)

REGISTERED PROFESSIONAL ENGINEER DAVID C. MONTAGUE No. 46002 Exp. 12/31/20 STATE OF CALIFORNIA

City of Santa Rosa

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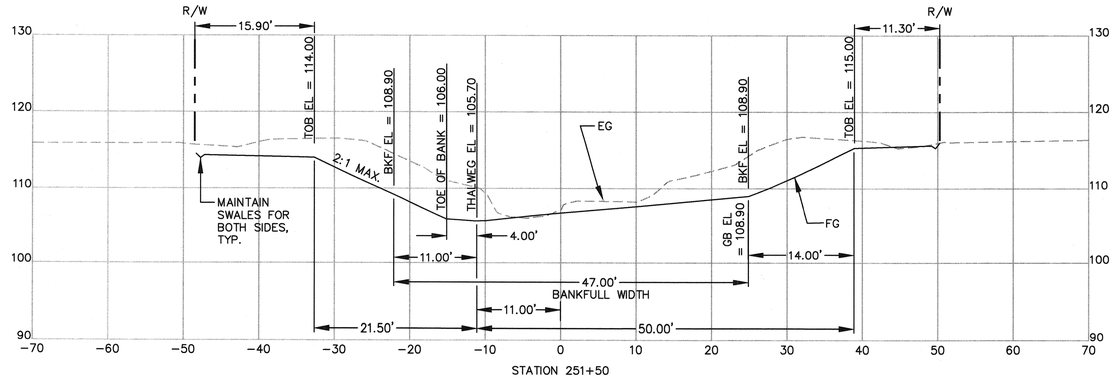
DATE: FEBRUARY 2020
GJD
CHK BY:
Engineering
Date 3/3/2020
APPROVED: Deputy Director – Engineering
Lori Urbanek
By

SCALE: As Shown
DWN BY: GL

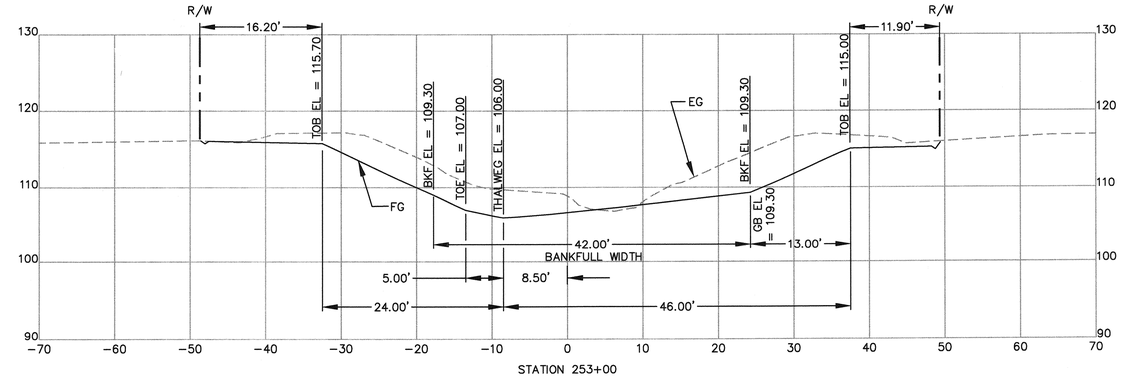
City of Santa Rosa
**LOWER COLGAN CREEK RESTORATION - PHASE 2**

**SECTIONS STA 248+50 TO STA 251+00**

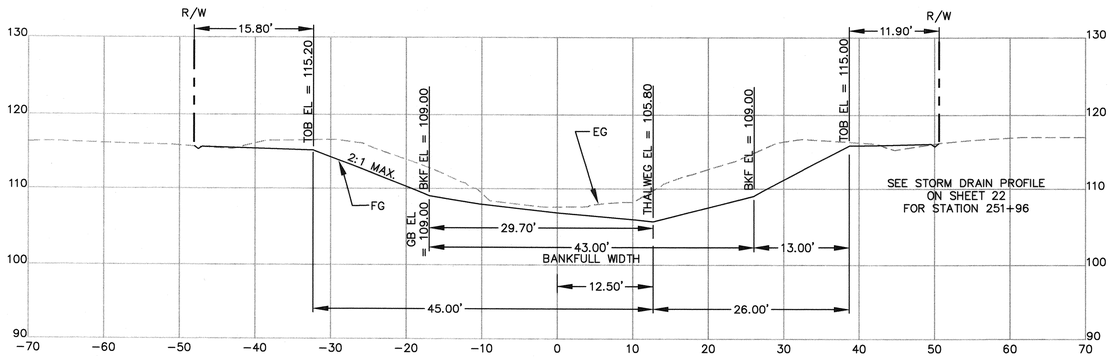
CONTRACT NO. C01924
SHEET 8 OF 29
FILE NO. 2019-0028



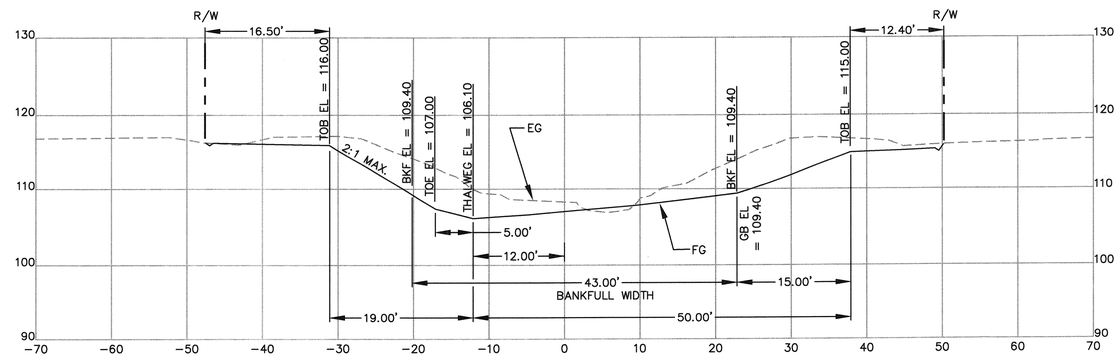

STATION 251+50



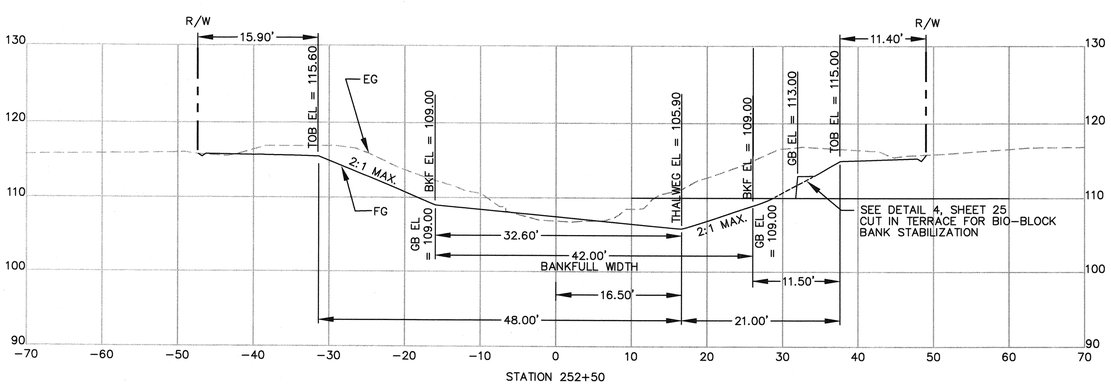

STATION 253+00



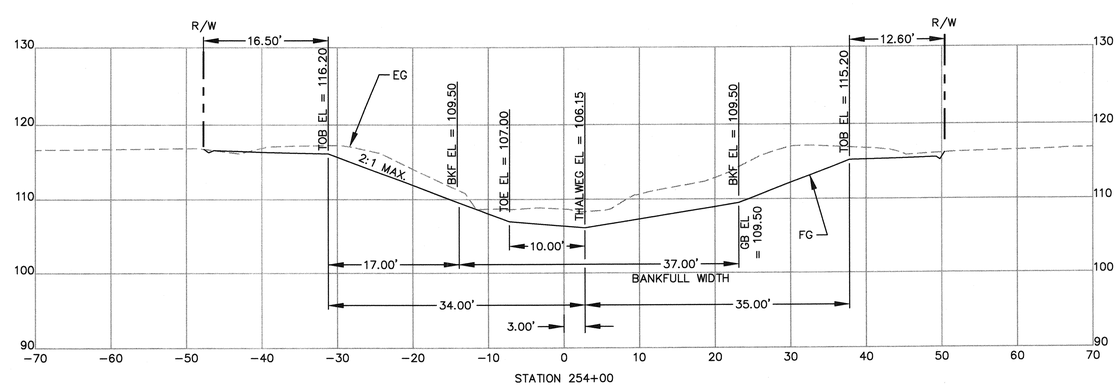

STATION 252+00




STATION 253+50




STATION 252+50




STATION 254+00

## NOTES

1. TOPOGRAPHIC INFORMATION BY CITY OF SANTA ROSA.
2. ALIGNMENT AND STATION BASED ON EXISTING CHANNEL RIGHT OF WAY MAP FROM SONOMA WATER: "LAGUNA–MARK WEST ZONE 1A COLGAN CHANNEL IMPROVEMENTS", DRAWING NUMBER I–4091/000–104.7.

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## LEGEND

- - - - - EXISTING GRADE (EG)
——— PROPOSED FINISHED GRADE (FG)

REGISTERED PROFESSIONAL ENGINEER
DAVID G. MONTAGUE
No. 46607
Exp. 12/31/22
CIVIL
STATE OF CALIFORNIA
3/3/2022

City of Santa Rosa

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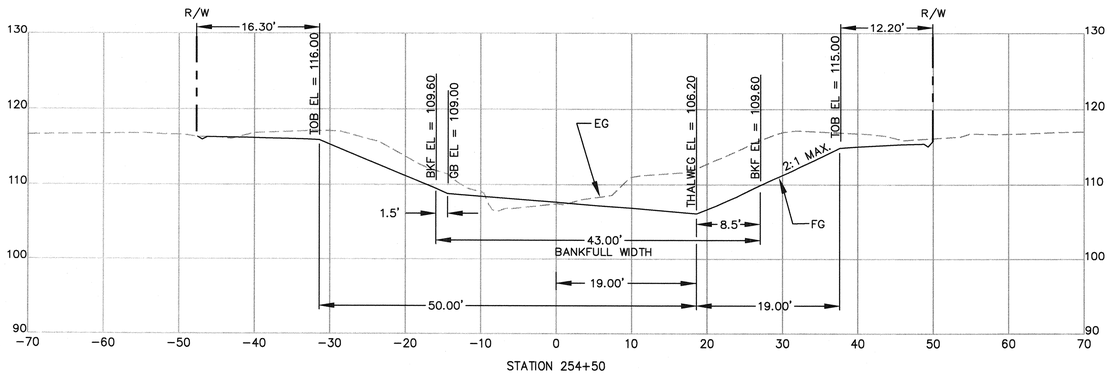
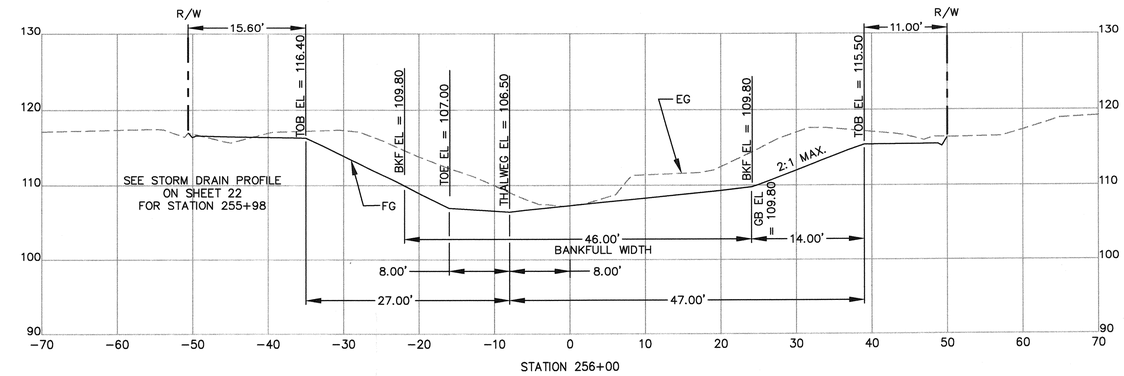
DWN BY: GL
DATE: FEBRUARY 2020
CHK BY: GJD
APPROVED: Deputy Director – Engineering
By Lori Urbanek Date 3/3/2022

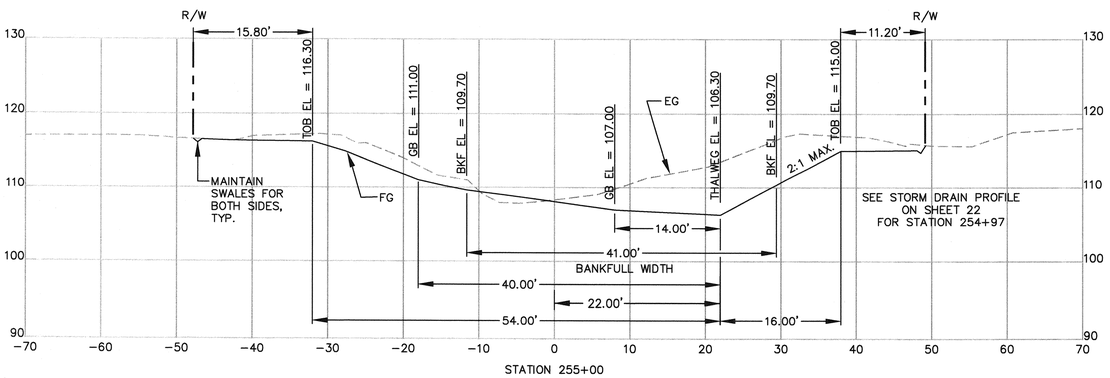
City of Santa Rosa
**LOWER COLGAN CREEK RESTORATION - PHASE 2**

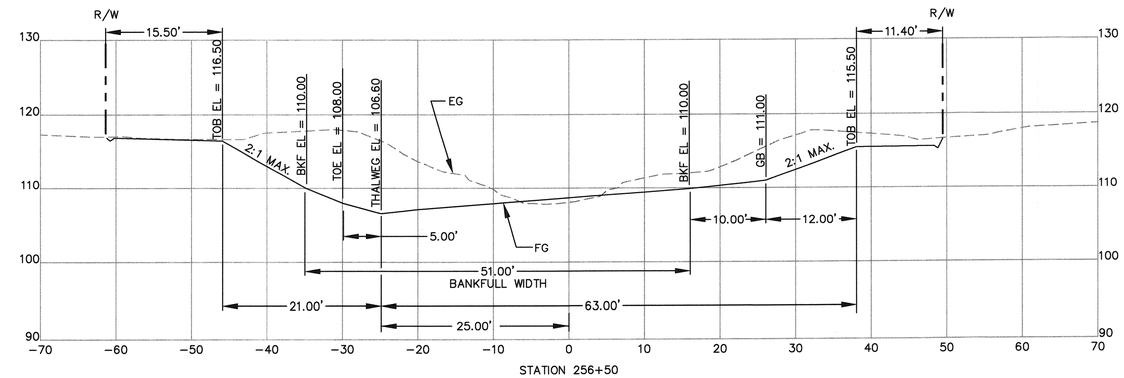
**SECTIONS**
**STA 251+50 TO STA 254+00**

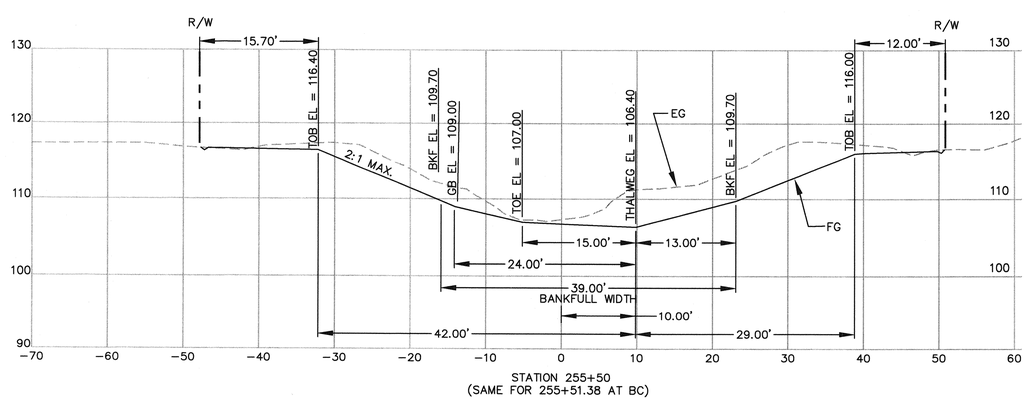
CONTRACT NO. C01924
SHEET 9 OF 29
FILE NO. 2019–0028

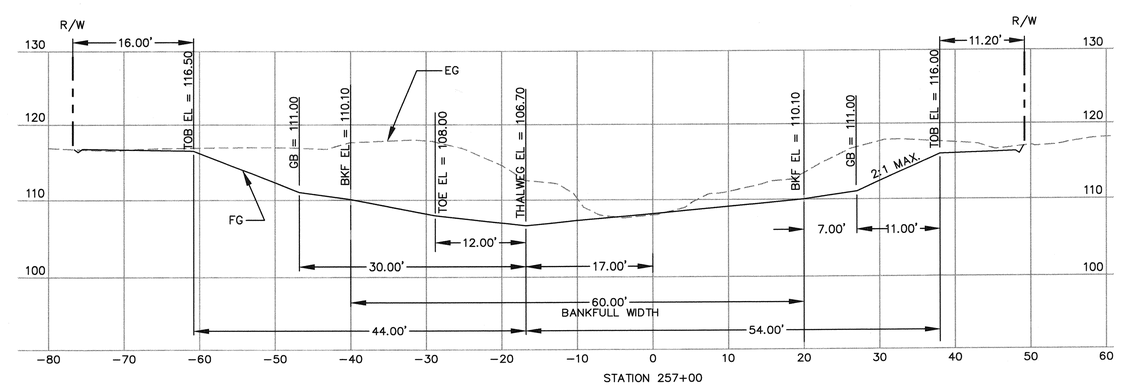



## NOTES

1. TOPOGRAPHIC INFORMATION BY CITY OF SANTA ROSA.
2. ALIGNMENT AND STATION BASED ON EXISTING CHANNEL RIGHT OF WAY MAP FROM SONOMA WATER: "LAGUNA-MARK WEST ZONE 1A COLGAN CHANNEL IMPROVEMENTS", DRAWING NUMBER i-4091/000-104.7.

SCALE:
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## LEGEND

- - - - - EXISTING GRADE (EG)
——— PROPOSED FINISHED GRADE (FG)

REGISTERED PROFESSIONAL ENGINEER
DAVID C. MONTAGUE
No. 48002
Exp. 12/31/20
CIVIL
STATE OF CALIFORNIA

City of Santa Rosa

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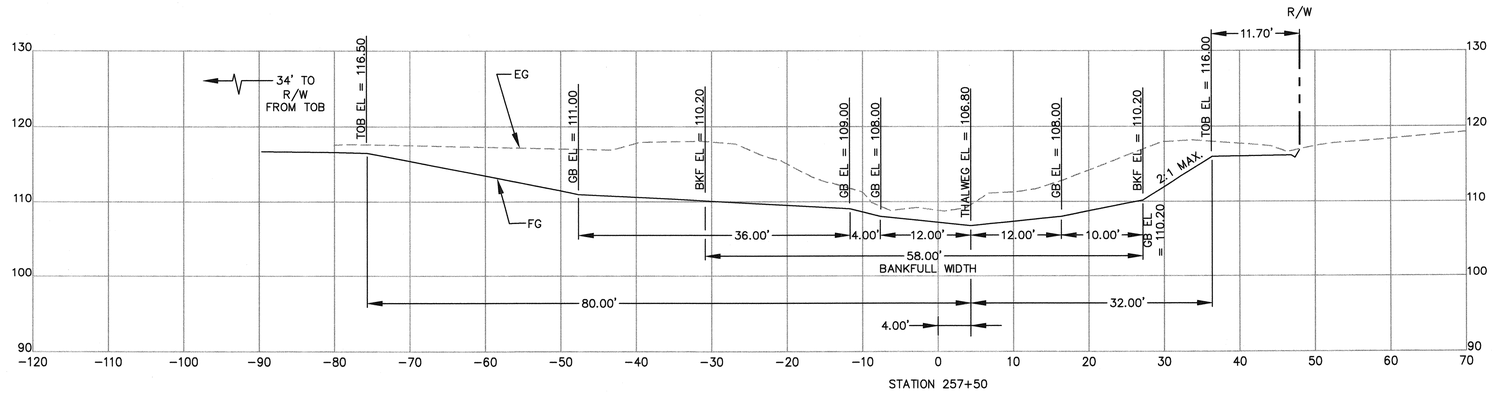
DWN BY: GL
APPROVED: Deputy Director - Engineering
By Lori Urbanek
Date 3/3/2020

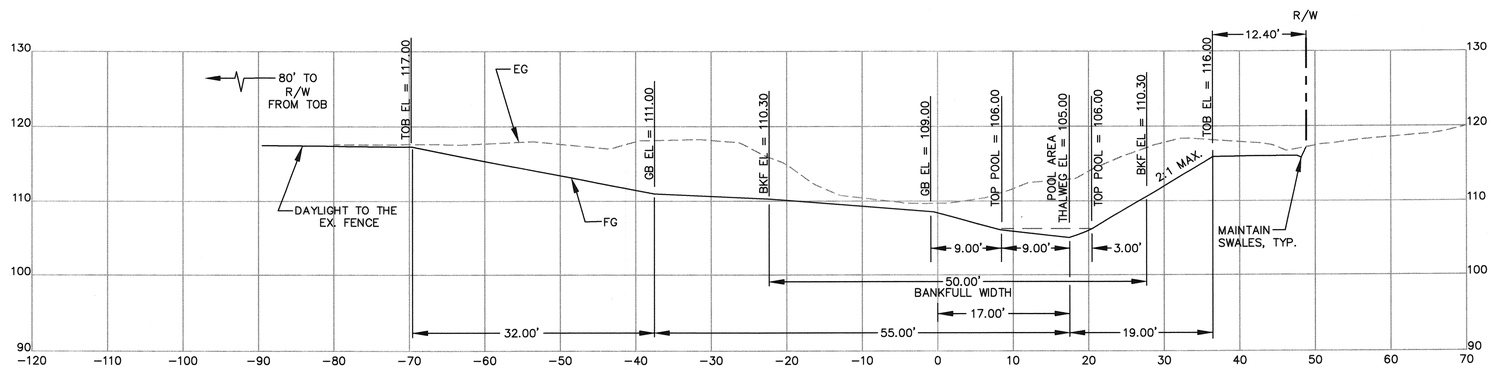
City of Santa Rosa
**LOWER COLGAN CREEK RESTORATION - PHASE 2**

**SECTIONS**
**STA 254+50 TO STA 257+00**

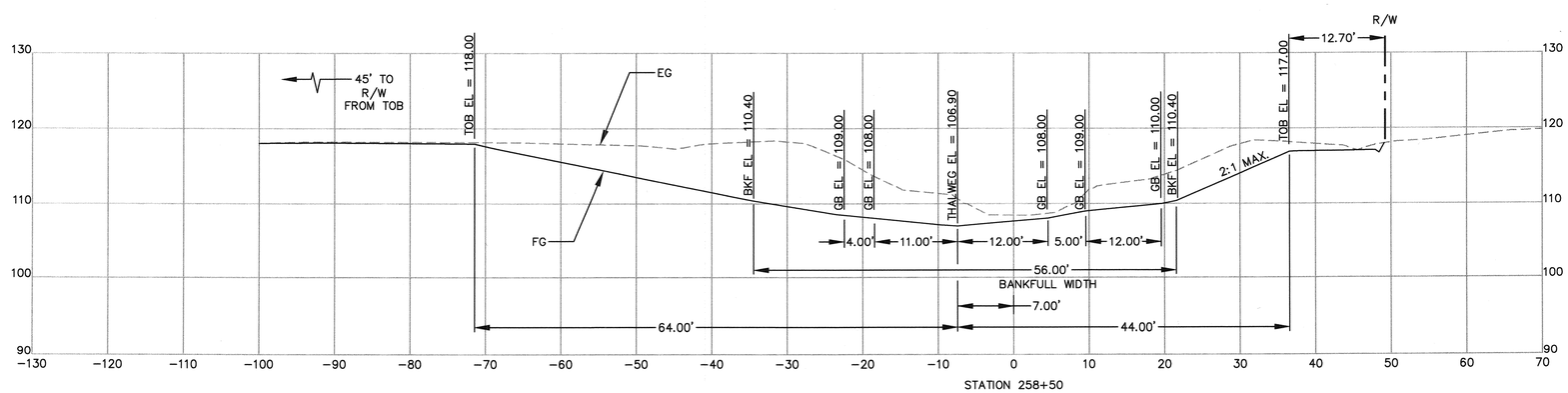
CONTRACT NO. C01924
SHEET 10 OF 29
FILE NO. 2019-0028




STATION 257+50




STATION 258+00




STATION 258+50

## NOTES

1. TOPOGRAPHIC INFORMATION BY CITY OF SANTA ROSA.
2. ALIGNMENT AND STATION BASED ON EXISTING CHANNEL RIGHT OF WAY MAP FROM SONOMA WATER: "LAGUNA–MARK WEST ZONE 1A COLGAN CHANNEL IMPROVEMENTS", DRAWING NUMBER i–4091/000–104.7.

SCALE:
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## LEGEND

EXISTING GRADE (EG)
PROPOSED FINISHED GRADE (FG)

REGISTERED PROFESSIONAL ENGINEER DAVID C. MONTAGUE No. 46902 Exp. 12/31/20 CIVIL STATE OF CALIFORNIA

City of Santa Rosa

| NO. | DATE | REVISION | BY |
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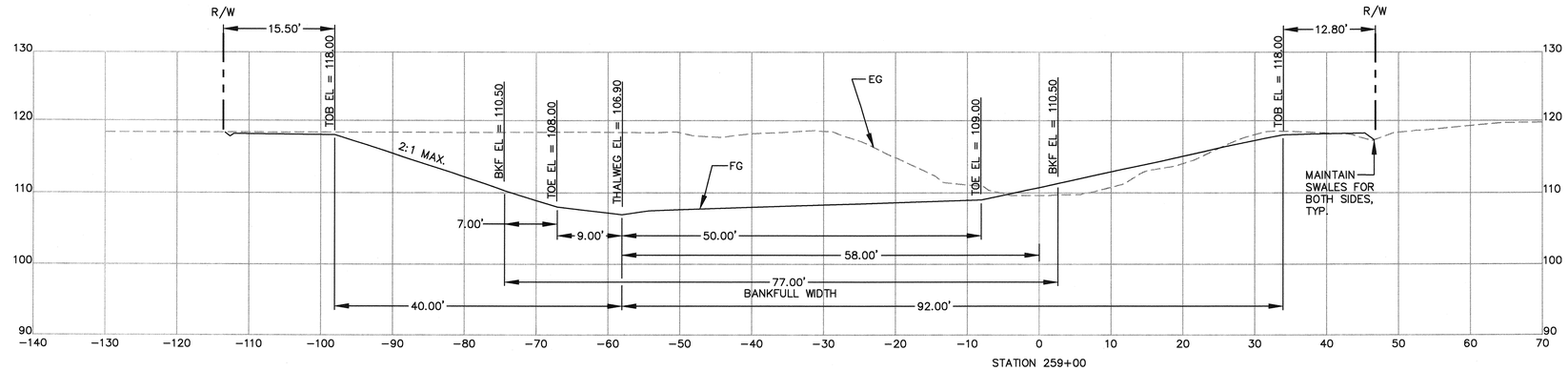
DWN BY: GL

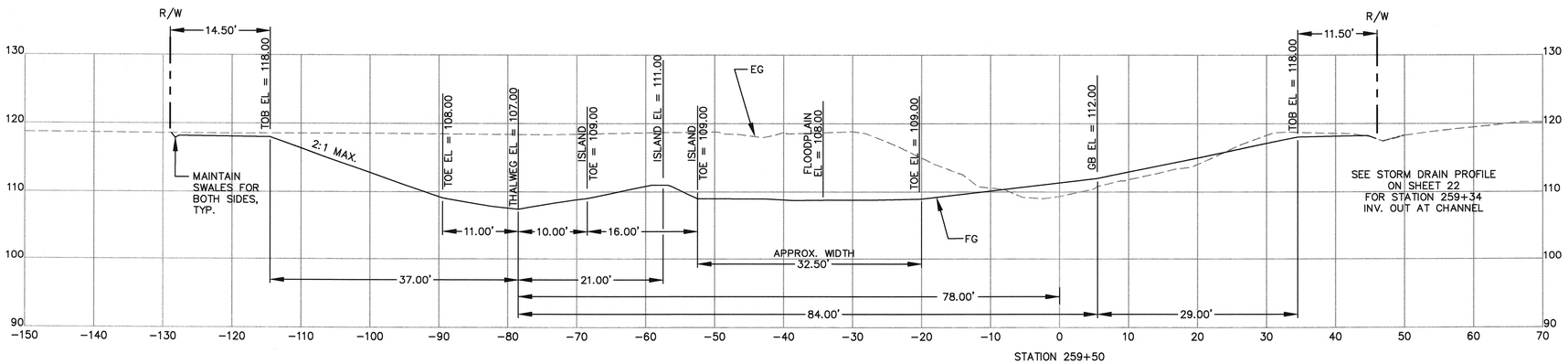
APPROVED: Deputy Director – Engineering
By Lori Urbanek Date 3/3/2020

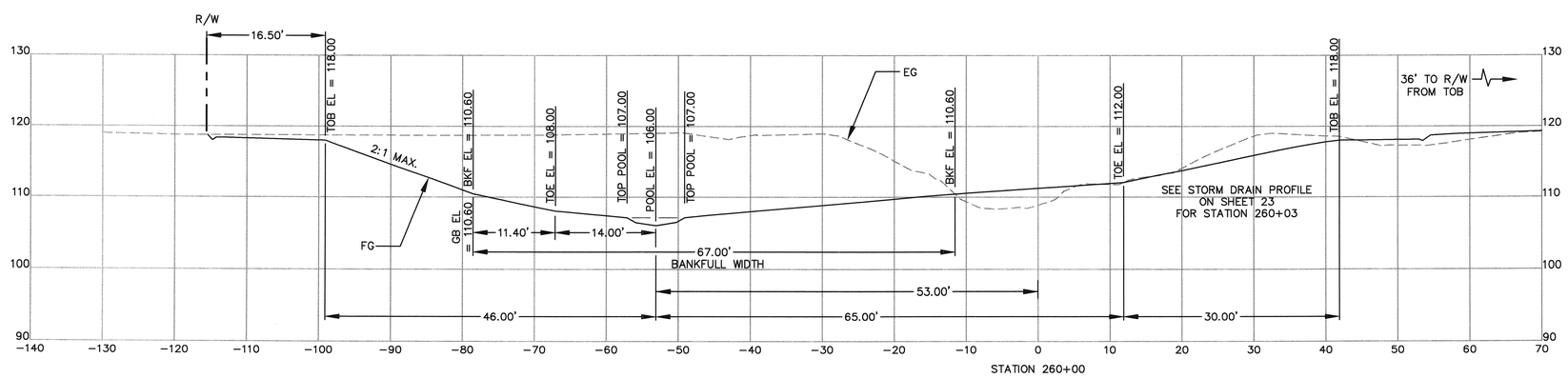
City of Santa Rosa
**LOWER COLGAN CREEK RESTORATION - PHASE 2**

**SECTIONS STA 257+50 TO STA 258+50**

CONTRACT NO. C01924
SHEET 11 OF 29
FILE NO. 2019–0028




## NOTES

1. TOPOGRAPHIC INFORMATION BY CITY OF SANTA ROSA.
2. ALIGNMENT AND STATION BASED ON EXISTING CHANNEL RIGHT OF WAY MAP FROM SONOMA WATER: "LAGUNA–MARK WEST ZONE 1A COLGAN CHANNEL IMPROVEMENTS", DRAWING NUMBER I–4091/000–104.7.

SCALE:
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– – – – – EXISTING GRADE (EG)
——— PROPOSED FINISHED GRADE (FG)

REGISTERED PROFESSIONAL ENGINEER
DAVID C. MONTAGUE
No. 49002
Exp. 12/31/2020
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APPROVED: Deputy Director – Engineering
By Lori Urbanek Date 3/3/2020
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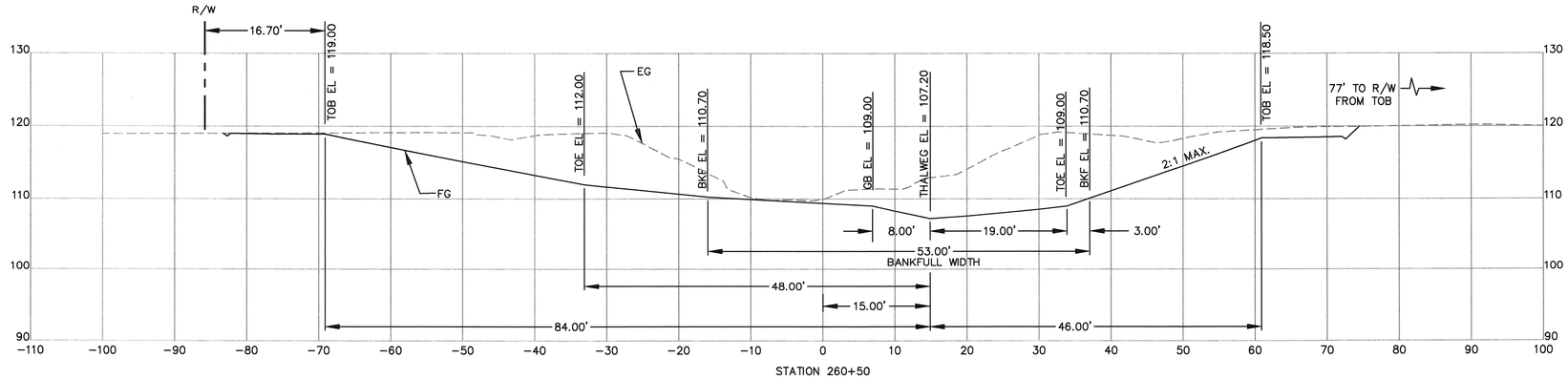
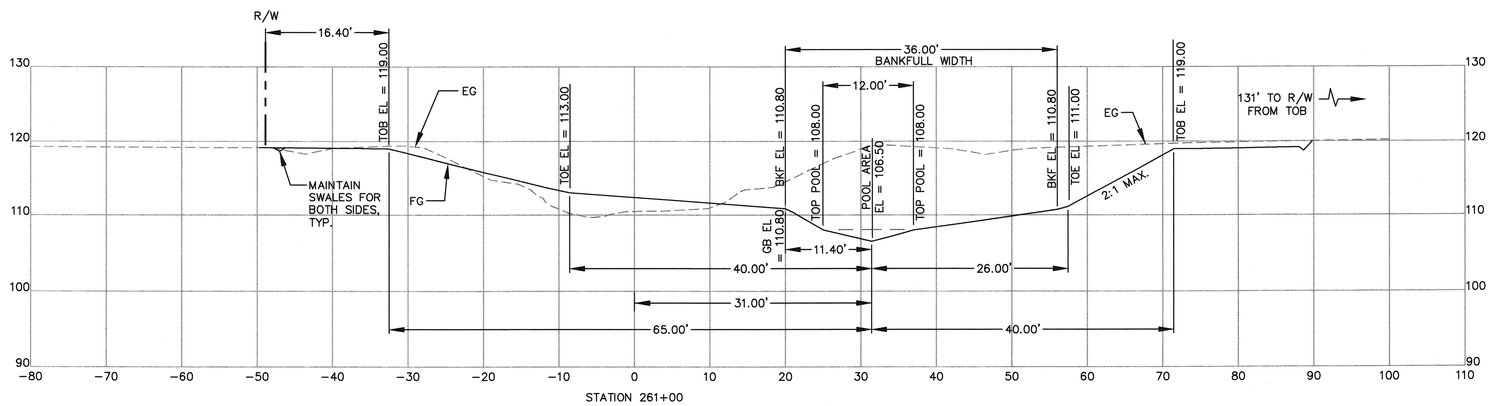
DWN BY: GL

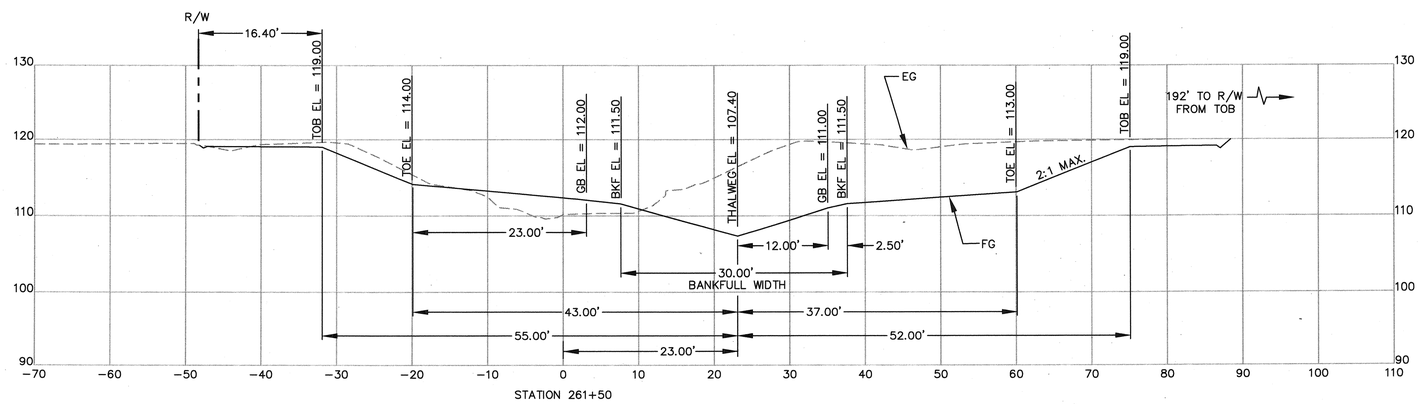
City of Santa Rosa
**LOWER COLGAN CREEK RESTORATION - PHASE 2**

**SECTIONS STA 259+00 TO STA 260+00**

CONTRACT NO. C01924
SHEET 12 OF 29
FILE NO. 2019–0028




## NOTES

1. TOPOGRAPHIC INFORMATION BY CITY OF SANTA ROSA.
2. ALIGNMENT AND STATION BASED ON EXISTING CHANNEL RIGHT OF WAY MAP FROM SONOMA WATER: "LAGUNA–MARK WEST ZONE 1A COLGAN CHANNEL IMPROVEMENTS", DRAWING NUMBER i–4091/000–104.7.

SCALE:
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## LEGEND

– – – – – EXISTING GRADE (EG)
——— PROPOSED FINISHED GRADE (FG)

REGISTERED PROFESSIONAL ENGINEER DAVID C. MONTAGUE No. 46902 CIVIL STATE OF CALIFORNIA
Exp. 12/31/21

City of Santa Rosa

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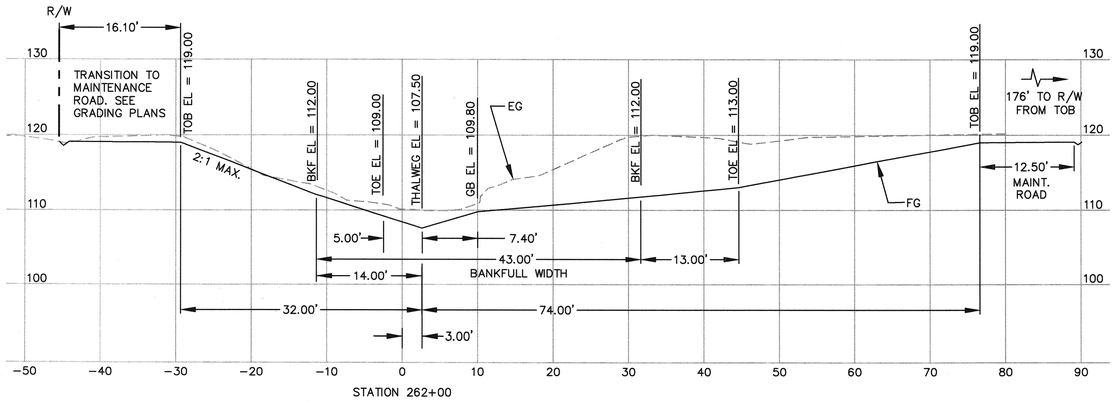
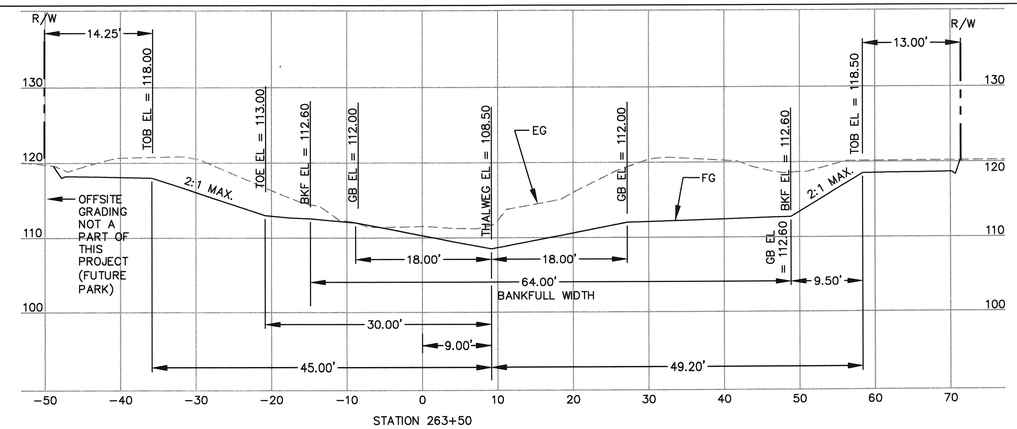
SCALE: As Shown
DWN BY: GL
DATE: FEBRUARY 2020
CHK BY: GJD
APPROVED: Deputy Director – Engineering
By Lori Urbanek Date 3/3/2020

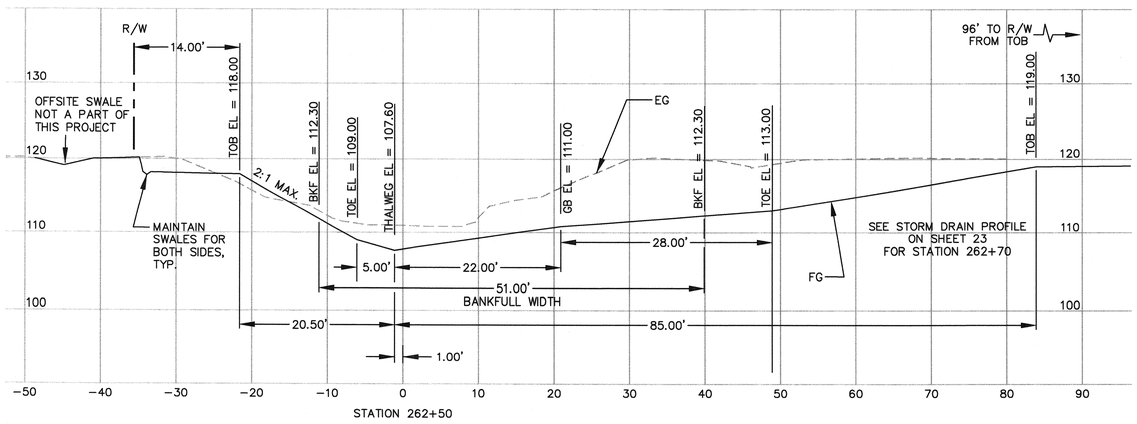
City of Santa Rosa
**LOWER COLGAN CREEK RESTORATION - PHASE 2**

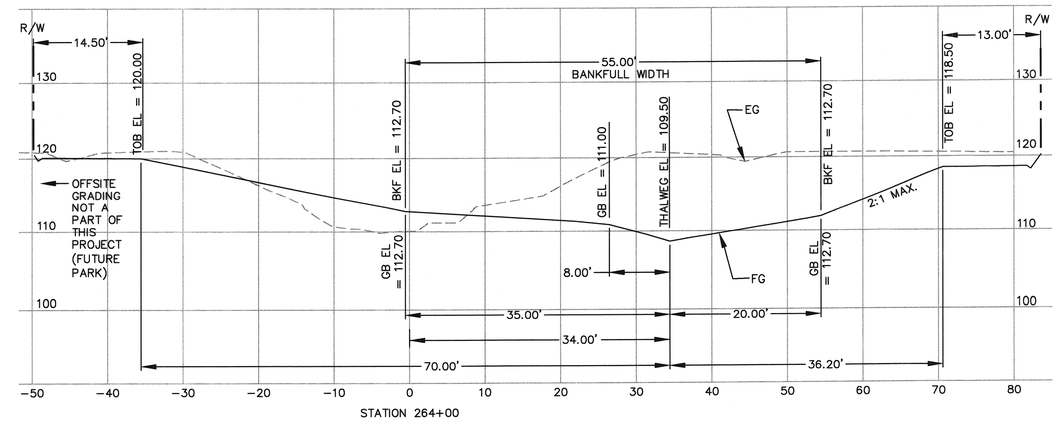
**SECTIONS STA 260+50 TO STA 261+50**

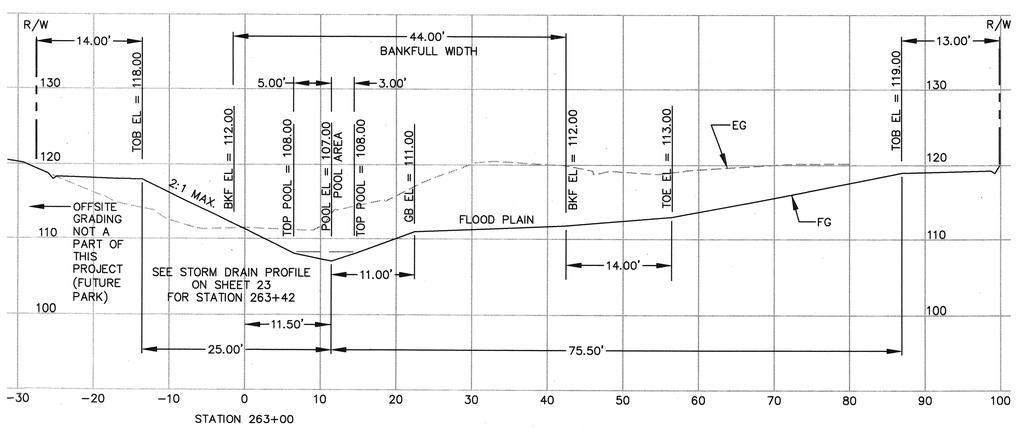
CONTRACT NO. C01924
SHEET 13 OF 29
FILE NO. 2019–0028

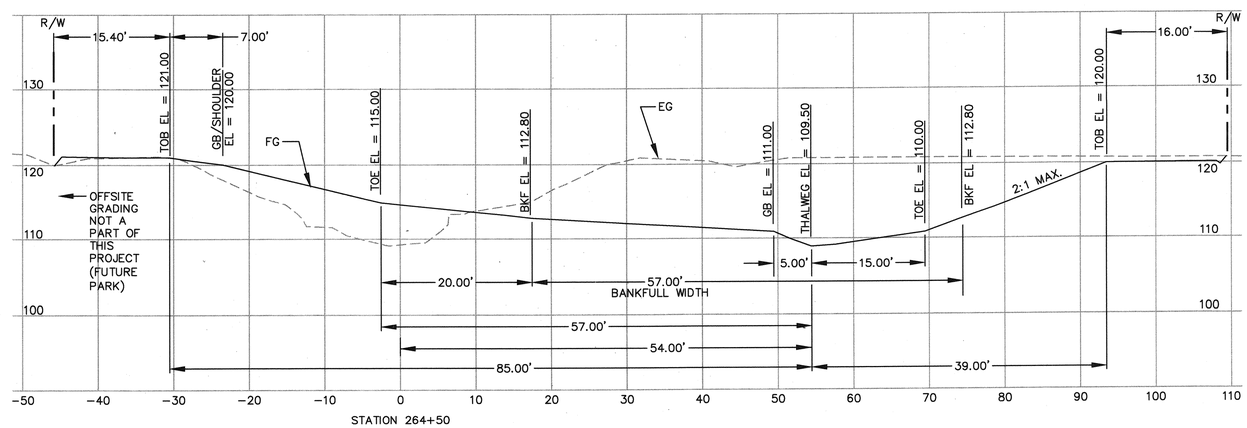



## NOTES

1. TOPOGRAPHIC INFORMATION BY CITY OF SANTA ROSA.
2. ALIGNMENT AND STATION BASED ON EXISTING CHANNEL RIGHT OF WAY MAP FROM SONOMA WATER: "LAGUNA–MARK WEST ZONE 1A COLGAN CHANNEL IMPROVEMENTS", DRAWING NUMBER i–4091/000–104.7.

SCALE:
HORZ. 1" = 10'
VERT 1" = 10'

CALL BEFORE YOU DIG
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USANorth811.ORG

## LEGEND

– – – – – EXISTING GRADE (EG)
——— PROPOSED FINISHED GRADE (FG)

REGISTERED PROFESSIONAL ENGINEER DAVID C. MONTAGUE No. 46002 Exp. 12/31/20 CIVIL STATE OF CALIFORNIA

City of Santa Rosa

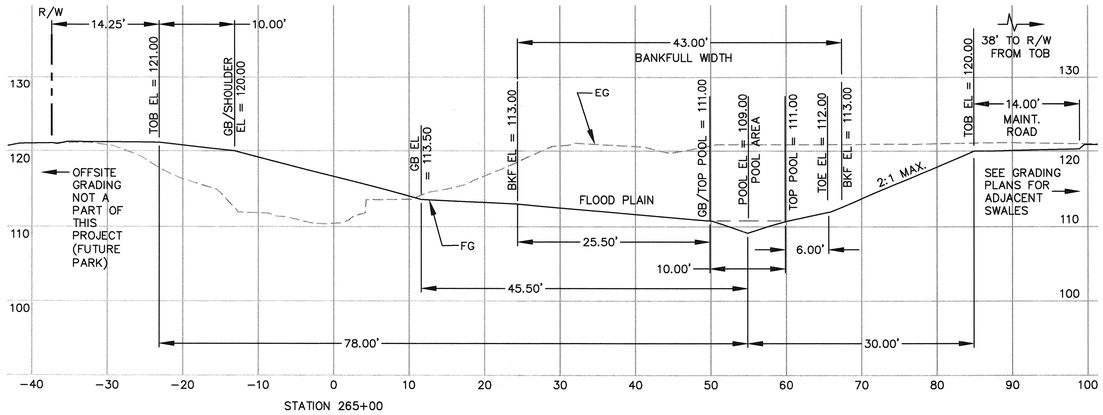
| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

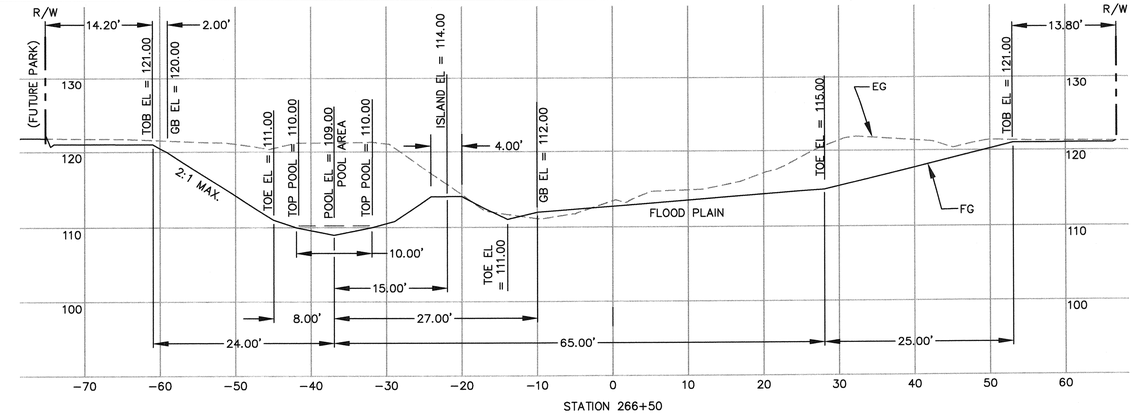
DATE: FEBRUARY 2020
CHK BY: GJD
DWN BY: GL
SCALE: As Shown
APPROVED: Deputy Director – Engineering
By Lori Urbanek Date 3/3/2020

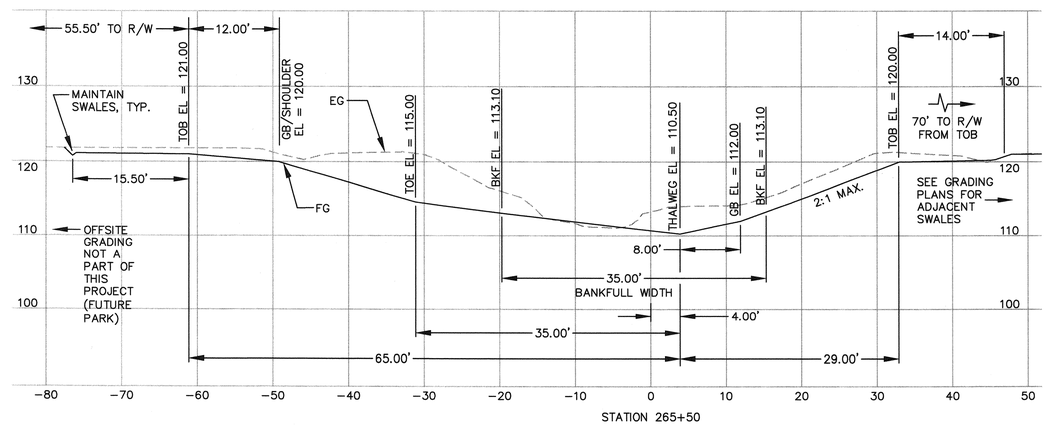
City of Santa Rosa
**LOWER COLGAN CREEK RESTORATION - PHASE 2**

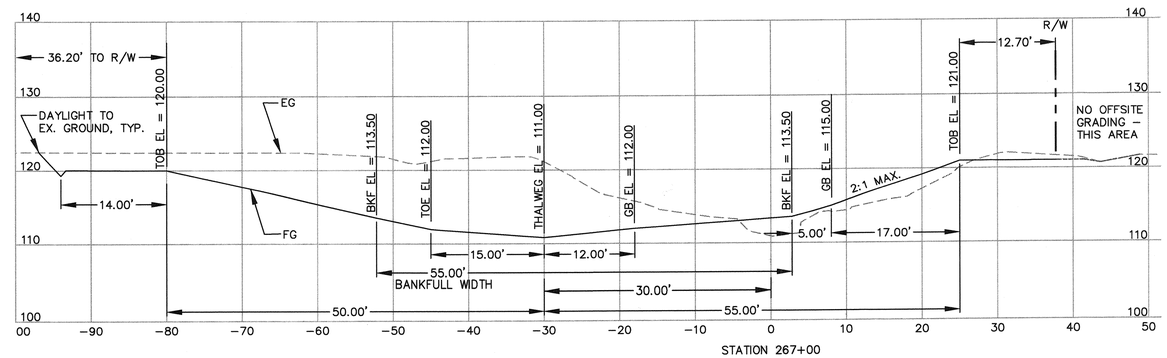
**SECTIONS**
**STA 262+00 TO STA 264+50**

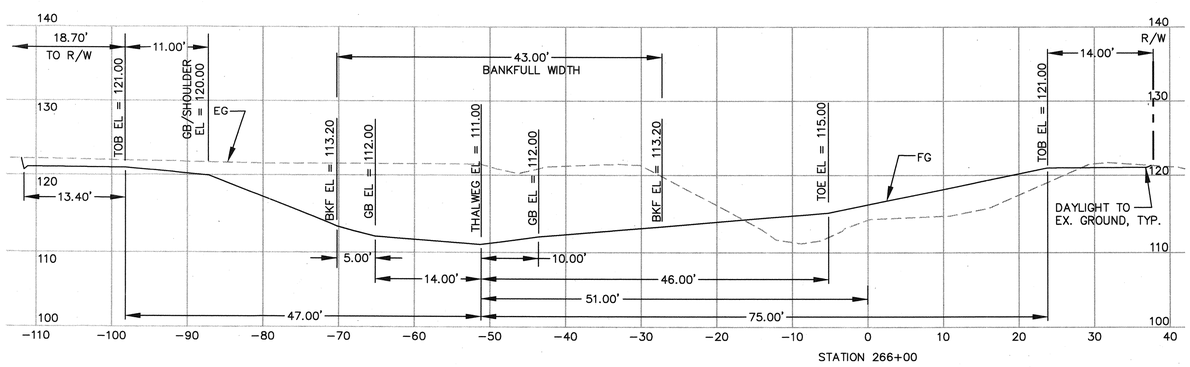
CONTRACT NO. C01924
SHEET 14 OF 29
FILE NO. 2019–0028

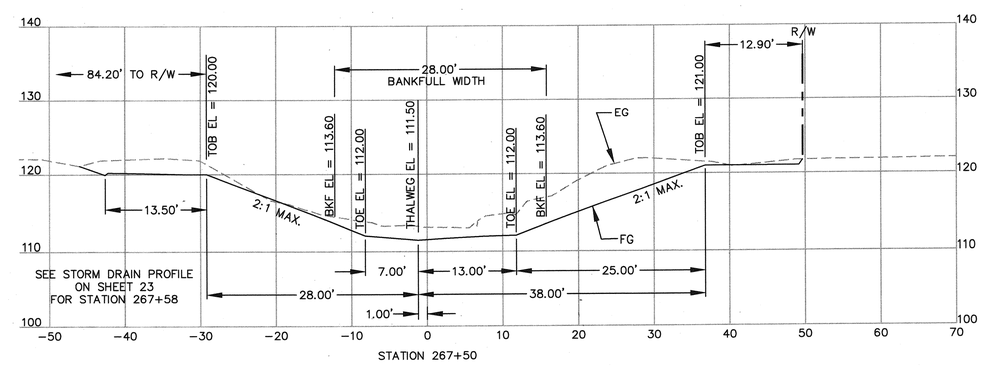



## NOTES

1. TOPOGRAPHIC INFORMATION BY CITY OF SANTA ROSA.
2. ALIGNMENT AND STATION BASED ON EXISTING CHANNEL RIGHT OF WAY MAP FROM SONOMA WATER: "LAGUNA–MARK WEST ZONE 1A COLGAN CHANNEL IMPROVEMENTS", DRAWING NUMBER i–4091/000–104.7.

SCALE:
HORZ. 1" = 10'
VERT 1" = 10'

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## LEGEND

– – – – – EXISTING GRADE (EG)
——— PROPOSED FINISHED GRADE (FG)

REGISTERED PROFESSIONAL ENGINEER
DAVID C. MONTAGUE
No. 46092
Exp. 12/31/22
CIVIL
STATE OF CALIFORNIA

City of Santa Rosa

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

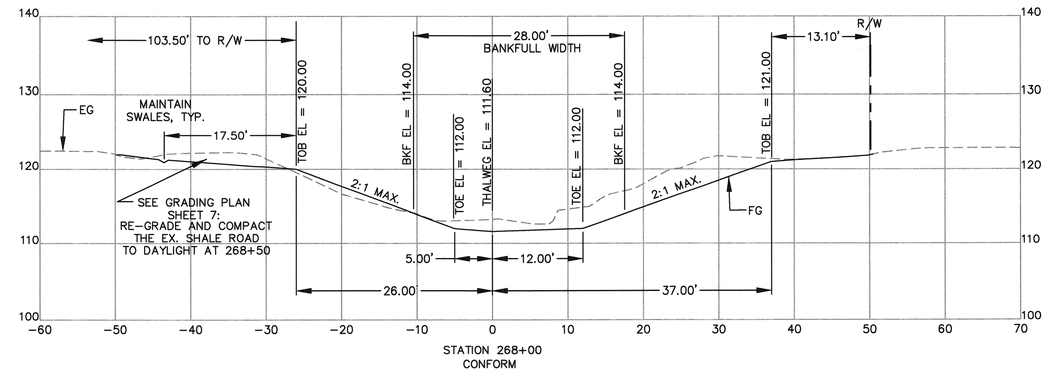
DATE: FEBRUARY 2020
CHK BY: GJD
SCALE: As Shown
DWN BY: GL

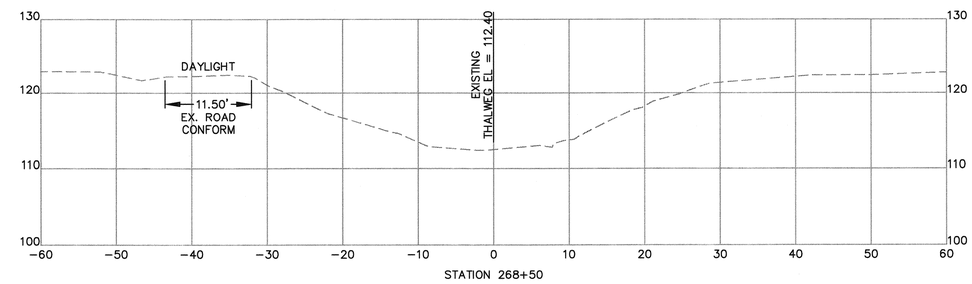
APPROVED: Deputy Director – Engineering
By _____ Date 3/3/2020
Lori Urbanek

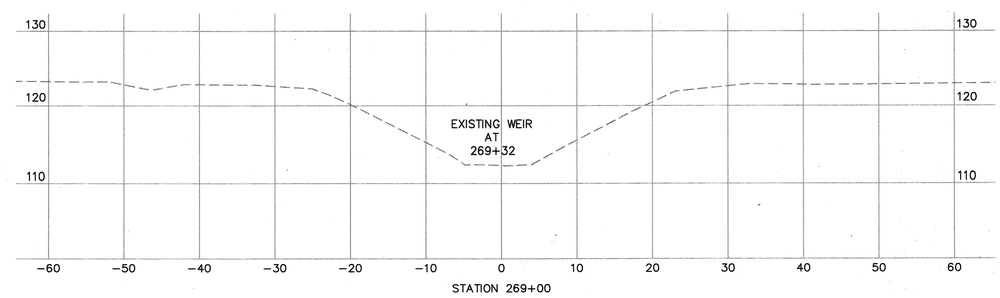
City of Santa Rosa
**LOWER COLGAN CREEK RESTORATION - PHASE 2**

**SECTIONS STA 265+00 TO STA 267+50**

CONTRACT NO. C01924
SHEET 15 OF 29
FILE NO. 2019–0028




## NOTES

1. TOPOGRAPHIC INFORMATION BY CITY OF SANTA ROSA.
2. ALIGNMENT AND STATION BASED ON EXISTING CHANNEL RIGHT OF WAY MAP FROM SONOMA WATER: "LAGUNA-MARK WEST ZONE 1A COLGAN CHANNEL IMPROVEMENTS", DRAWING NUMBER i-4091/000-104.7.

SCALE:
HORZ. 1" = 10'
VERT 1" = 10'

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## LEGEND

- - - - - EXISTING GRADE (EG)
——— PROPOSED FINISHED GRADE (FG)

REGISTERED PROFESSIONAL ENGINEER
DAVID C. MONTAGUE
No. 46002
Exp. 12/31/20
CIVIL
STATE OF CALIFORNIA

City of Santa Rosa

| NO. | DATE | REVISION | BY |
|---|---|---|---|

SCALE: As Shown
DWN BY: GL
DATE: FEBRUARY 2020
CHK BY: GJD

APPROVED: Deputy Director - Engineering
By _____ Date 3/3/2020
Lori Urbanek

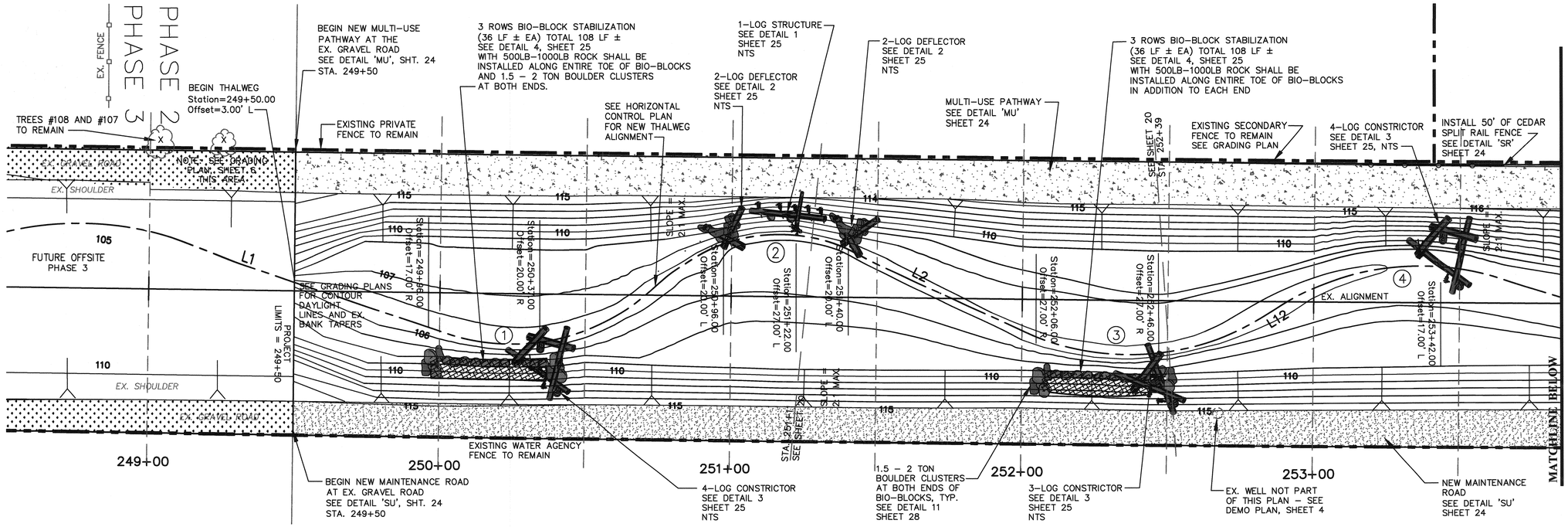
City of Santa Rosa
**LOWER COLGAN CREEK RESTORATION - PHASE 2**

**SECTIONS**
**STA 268+00 TO STA 269+00**

CONTRACT NO.
C01924

SHEET 16 OF 29

FILE NO. 2019-0028



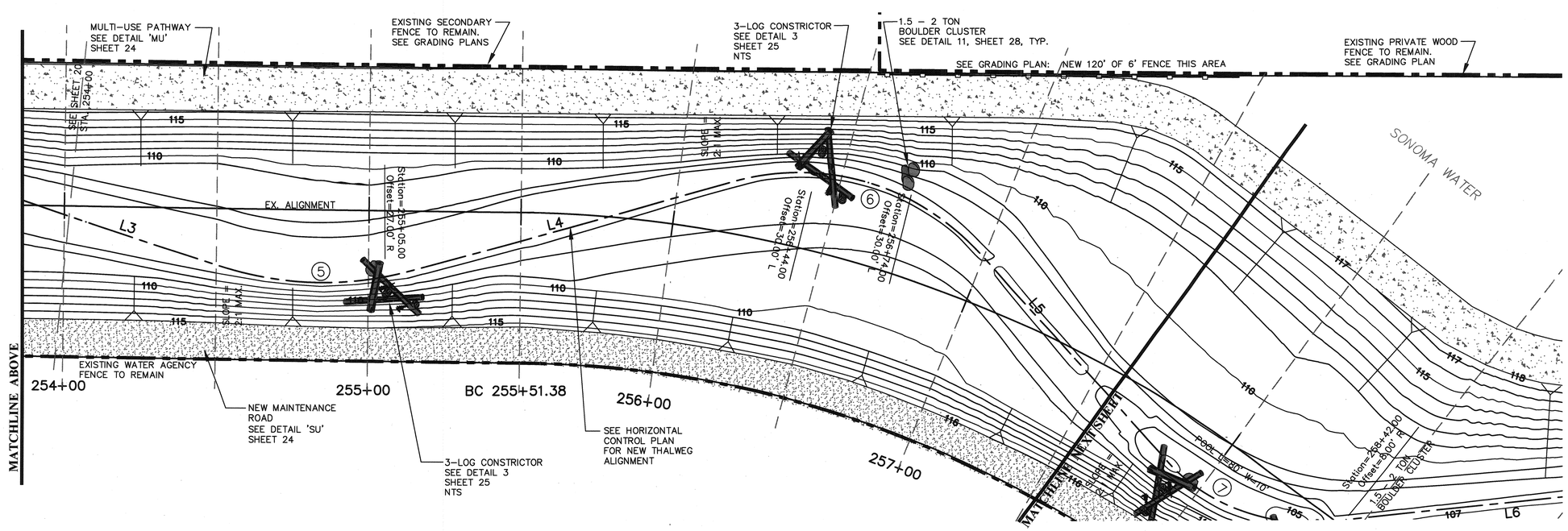

## THALWEG LINE DATA:

| | | |
|---|---|---|
| L1 | 96.87' | N18° 50' 15"E |
| L2 | 64.41' | N25° 00' 36"E |
| L3 | 90.88' | N18° 12' 59"E |
| L4 | 109.45' | N15° 23' 10"W |
| L5 | 91.75' | N48° 26' 38"E |
| L6 | 91.55' | N05° 57' 54"W |

## THALWEG CURVE DATA:

| Curve # | Length | Radius | Delta |
|---|---|---|---|
| 1 | 77.67' | 70.29' | 63°18'25" |
| 2 | 73.99' | 61.96' | 68°25'02" |
| 3 | 86.84' | 85.02' | 58°31'06" |
| 4 | 80.15' | 89.03' | 51°34'55" |
| 5 | 65.16' | 111.09' | 33°36'12" |
| 6 | 89.66' | 80.48' | 63°49'48" |
| 7 | 59.09' | 62.23' | 54°24'32" |

ALL DISTANCES/LENGTHS SHOWN HEREON THE DATA TABLES ARE IN FEET AND DECIMALS THEREOF.




## NOTES

1. SEE SHEETS 25–29 FOR ADDITIONAL PLACEMENT OF NEW STRUCTURES AND DIMENSIONS.
2. SEE SHEETS 23–24 FOR ROAD SECTIONS & DETAILS.
3. FOR SPLIT RAIL FENCE, SEE SPECIFICATIONS AND SHEET 24, FOR TYPE AND DIMENSIONS.
4. THALWEG ALIGNMENT DATA SHOWN ON THESE DATA TABLES PER HYDRAULIC ENGINEER DESIGN.
5. RIGHT OF WAY LINES AND PROPERTY LINES ARE SHOWN FOR REPRESENTATION ONLY, AND DO NOT CONSTITUTE AN ACTUAL PROPERTY BOUNDARY SURVEY.
6. ALIGNMENT AND STATIONING DERIVED FROM EXISTING CHANNEL RIGHT OF WAY MAP FROM SONOMA WATER TITLED "LAGUNA–MARK WEST ZONE 1A COLGAN CHANNEL IMPROVEMENTS", UNDER DRAWING NUMBER I–4091/000–104.7
7. DASHED LINES PERPENDICULAR TO THE SHOWN EX. ALIGNMENT REPRESENT THE GRADING CROSS SECTIONS ALONG THE EXISTING CHANNEL AND NEW THALWEG CORRIDOR AREA.

## PLAN

GRAPHIC SCALE
20 0 10
1 inch = 20 ft.

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DAVID C. MONTAGUE No. 48002 Exp. 12/31/20 REGISTERED PROFESSIONAL ENGINEER STATE OF CALIFORNIA CIVIL

City of Santa Rosa

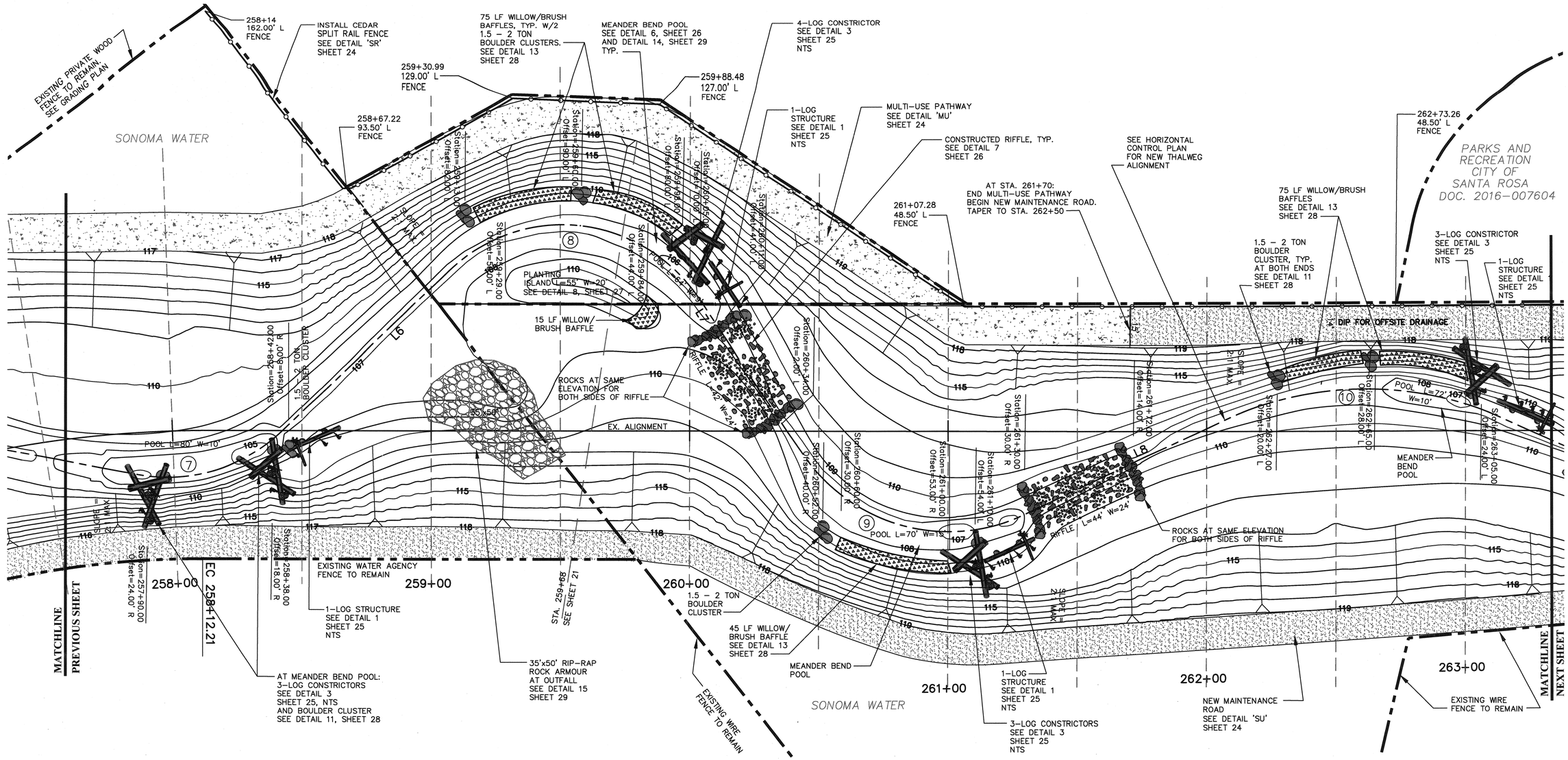
| NO. | DATE | REVISION | BY |
|---|---|---|---|

SCALE: As Shown
DWN BY: GL
DATE: FEBRUARY 2020
CHK BY: GJD
APPROVED: Deputy Director – Engineering
By Lori Urbanek Date 3/3/2020

City of Santa Rosa
**LOWER COLGAN CREEK RESTORATION - PHASE 2**

**CREEK DEVELOPMENT PLAN**

CONTRACT NO. C01924
SHEET 17 OF 29
FILE NO. 2019–0028




## PLAN

## THALWEG CURVE DATA:

| Curve # | Length | Radius | Delta |
|---|---|---|---|
| 7 | 59.09' | 62.23' | 54°24'32" |
| 8 | 110.66' | 63.07' | 100°31'35" |
| 9 | 97.30' | 67.99' | 81°59'19" |
| 10 | 110.37' | 125.60' | 50°21'00" |
| 11 | 112.10' | 94.73' | 67°48'17" |

## THALWEG LINE DATA:

| | | |
|---|---|---|
| L6 | 91.55' | N05° 57' 54"W |
| L7 | 72.88' | S85° 26' 03"E |
| L8 | 85.61' | N12° 35' 03"E |

ALL DISTANCES/LENGTHS SHOWN HEREON THE DATA TABLES ARE IN FEET AND DECIMALS THEREOF.

GRAPHIC SCALE
20 0 10
1 inch = 20 ft.

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## NOTES

1. SEE SHEETS 25–29 FOR ADDITIONAL PLACEMENT OF NEW STRUCTURES AND DIMENSIONS.
2. SEE SHEETS 23–24 FOR ROAD SECTIONS & DETAILS.
3. FOR SPLIT RAIL FENCE, SEE SPECIFICATIONS AND SHEET 24, FOR TYPE AND DIMENSIONS.
4. THALWEG ALIGNMENT DATA SHOWN ON THESE DATA TABLES PER HYDRAULIC ENGINEER DESIGN.
5. RIGHT OF WAY LINES AND PROPERTY LINES ARE SHOWN FOR REPRESENTATION ONLY, AND DO NOT CONSTITUTE AN ACTUAL PROPERTY BOUNDARY SURVEY.
6. ALIGNMENT AND STATIONING DERIVED FROM EXISTING CHANNEL RIGHT OF WAY MAP FROM SONOMA WATER TITLED "LAGUNA–MARK WEST ZONE 1A COLGAN CHANNEL IMPROVEMENTS", UNDER DRAWING NUMBER I–4091/000–104.7
7. DASHED LINES PERPENDICULAR TO THE SHOWN EX. ALIGNMENT REPRESENT THE GRADING CROSS SECTIONS ALONG THE EXISTING CHANNEL AND NEW THALWEG CORRIDOR AREA.

REGISTERED PROFESSIONAL ENGINEER DAVID C. MONTAGUE No. 46002 Exp. 12/31/20 CIVIL STATE OF CALIFORNIA

City of Santa Rosa

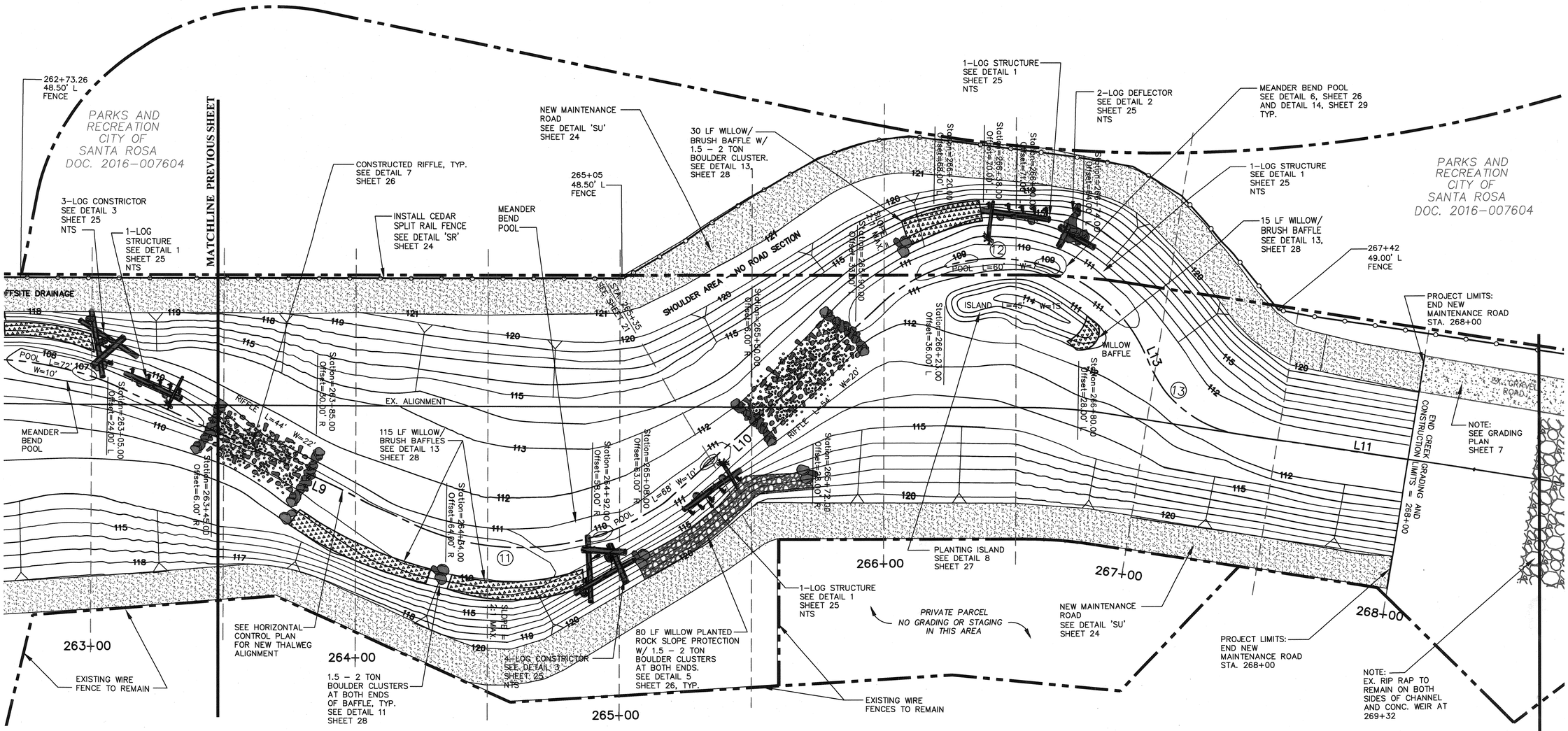
| NO. | DATE | REVISION | BY |
|---|---|---|---|

DATE: FEBRUARY 2020
CHK BY: GJD
SCALE: As Shown
DWN BY: GL
APPROVED: Deputy Director – Engineering
By Lori Urbanek Date 3/3/20

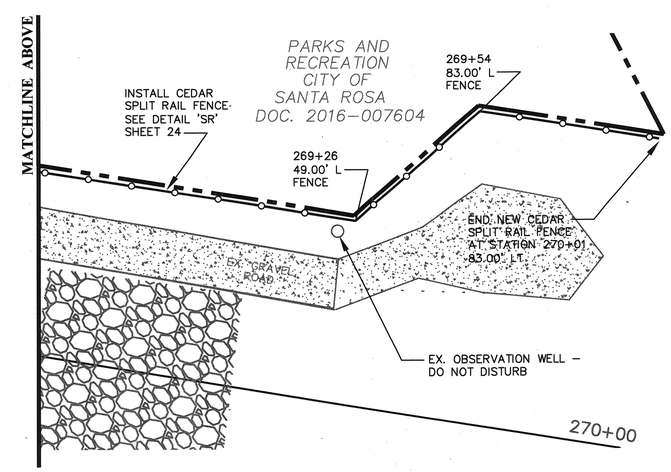
City of Santa Rosa
**LOWER COLGAN CREEK RESTORATION - PHASE 2**

**CREEK DEVELOPMENT PLAN**

CONTRACT NO. C01924
SHEET 18 OF 29
FILE NO. 2019–0028




## PLAN




## THALWEG CURVE DATA:

| Curve # | Length | Radius | Delta |
|---|---|---|---|
| 10 | 110.37' | 125.60' | 50°21'00" |
| 11 | 112.10' | 94.73' | 67°48'17" |
| 12 | 116.03' | 62.00' | 107°13'48" |
| 13 | 45.06' | 44.95' | 57°26'25" |

## THALWEG LINE DATA:

| | | |
|---|---|---|
| L9 | 119.64' | N62° 56' 04"E |
| L10 | 102.81' | N04° 52' 22"W |
| L11 | 64.87' | N47° 12' 43"E |
| L13 | 4.03' | S75° 20' 52"E |

ALL DISTANCES/LENGTHS SHOWN HEREON THE DATA TABLES ARE IN FEET AND DECIMALS THEREOF.

## NOTES

1. SEE SHEETS 25-29 FOR ADDITIONAL PLACEMENT OF NEW STRUCTURES AND DIMENSIONS.
2. SEE SHEETS 23-24 FOR ROAD SECTIONS & DETAILS.
3. FOR SPLIT RAIL FENCE, SEE SPECIFICATIONS AND SHEET 24, FOR TYPE AND DIMENSIONS.
4. THALWEG ALIGNMENT DATA SHOWN ON THESE DATA TABLES PER HYDRAULIC ENGINEER DESIGN.
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6. ALIGNMENT AND STATIONING DERIVED FROM EXISTING CHANNEL RIGHT OF WAY MAP FROM SONOMA WATER TITLED "LAGUNA-MARK WEST ZONE 1A COLGAN CHANNEL IMPROVEMENTS", UNDER DRAWING NUMBER I-4091/000-104.7
7. DASHED LINES PERPENDICULAR TO THE SHOWN EX. ALIGNMENT REPRESENT THE GRADING CROSS SECTIONS ALONG THE EXISTING CHANNEL AND NEW THALWEG CORRIDOR AREA.

GRAPHIC SCALE
20 0 10
1 inch = 20 ft.

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USANorth811.ORG

DAVID J. MONTAGUE
REGISTERED PROFESSIONAL ENGINEER
No. 46002
Exp. 12/31/20
STATE OF CALIFORNIA CIVIL

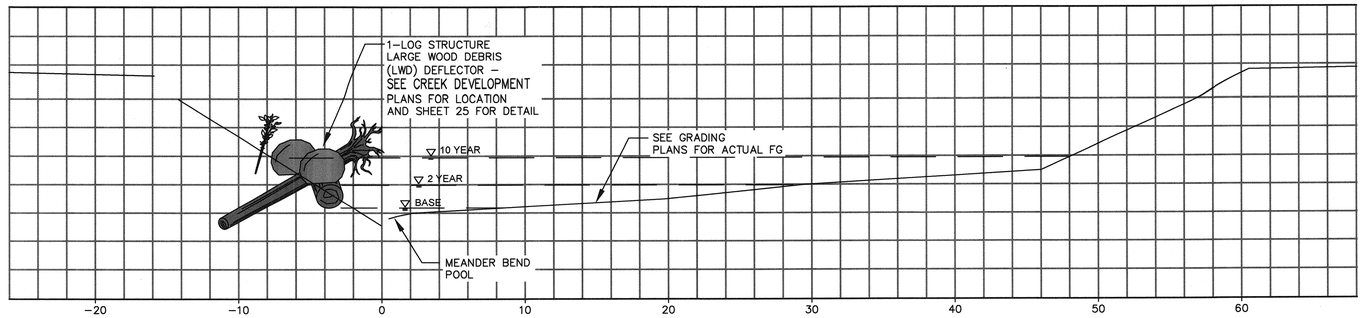
City of Santa Rosa

| NO. | DATE | REVISION | BY |
|---|---|---|---|

DATE: FEBRUARY 2020
CHK BY: GJD
SCALE: As Shown
DWN BY: GL
APPROVED: Deputy Director - Engineering
By: Lori Urbanek
Date: 3/3/2020

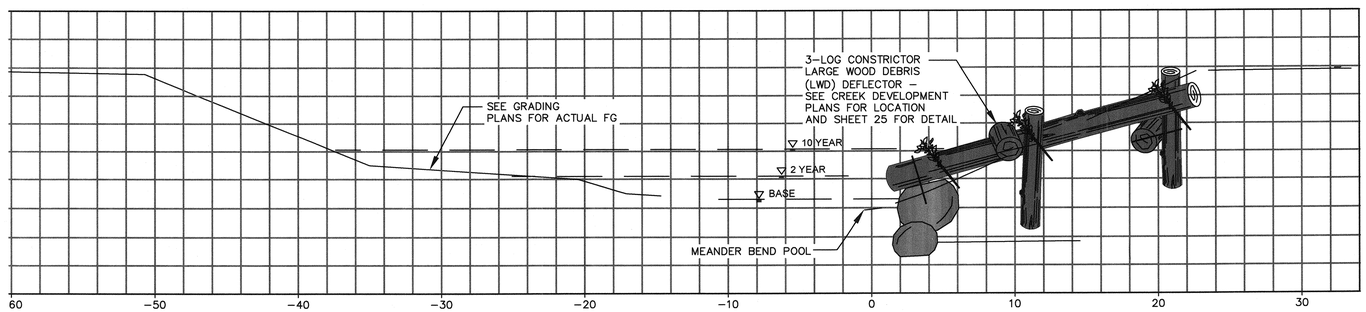
City of Santa Rosa
**LOWER COLGAN CREEK RESTORATION - PHASE 2**
**CREEK DEVELOPMENT PLAN**

CONTRACT NO. C01924
SHEET 19 OF 29
FILE NO. 2019-0028



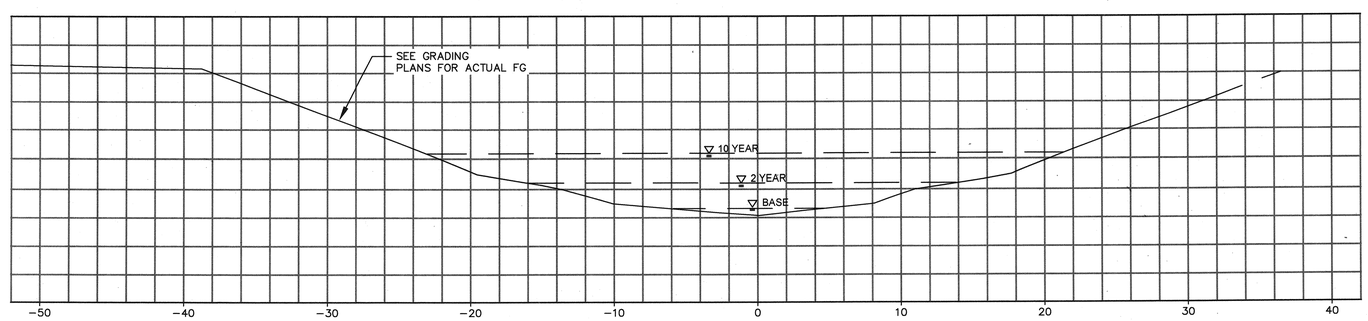

## STATION 251+11 - CREEK DEVELOPMENT PLAN

CHANNEL TILT SEGMENT RIGHT MEANDER WITH LWD STRUCTURE




## STATION 252+39 - CREEK DEVELOPMENT PLAN

CHANNEL TILT SEGMENT LEFT MEANDER WITH LWD STRUCTURE




## STATION 254+00 - CREEK DEVELOPMENT PLAN

CHANNEL TILT SEGMENT - NO MEANDER

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SCALE:

1" = 5' HORZ.
1" = 5' VERT.

## NOTES

1. CROSS SECTIONS SHOWN REFERENCE TO APPROXIMATE THALWEG ALIGNMENT STATIONING.
2. SEE DETAIL SHEETS 25-29 FOR ACTUAL DIMENSIONS OF THE CREEK FEATURES TO BE INSTALLED.

REGISTERED PROFESSIONAL ENGINEER
DAVID C. MONTAGUE
No. 46092
Exp. 6/30/20
CIVIL
STATE OF CALIFORNIA

City of Santa Rosa

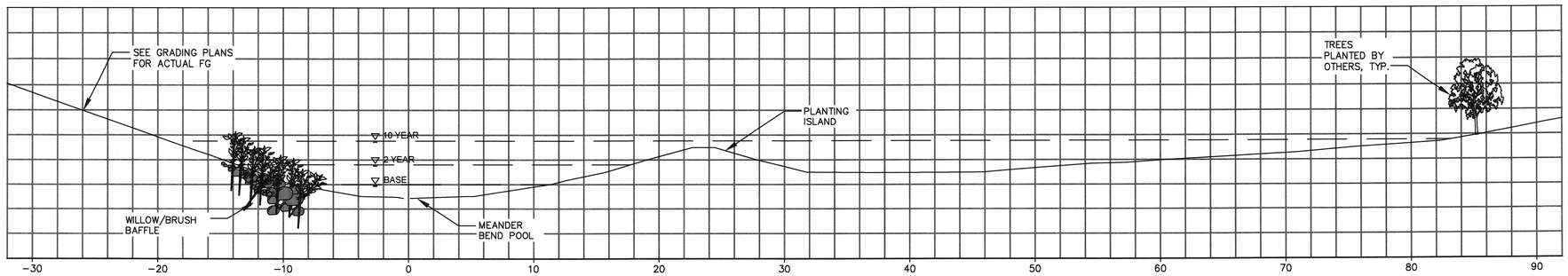
| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

SCALE: As Shown
DATE: FEBRUARY 2020
DWN BY: GL
CHK BY: GJD
APPROVED: Deputy Director - Engineering
Date 3/3/2020
By Lori Urbanek

City of Santa Rosa
**LOWER COLGAN CREEK RESTORATION - PHASE 2**

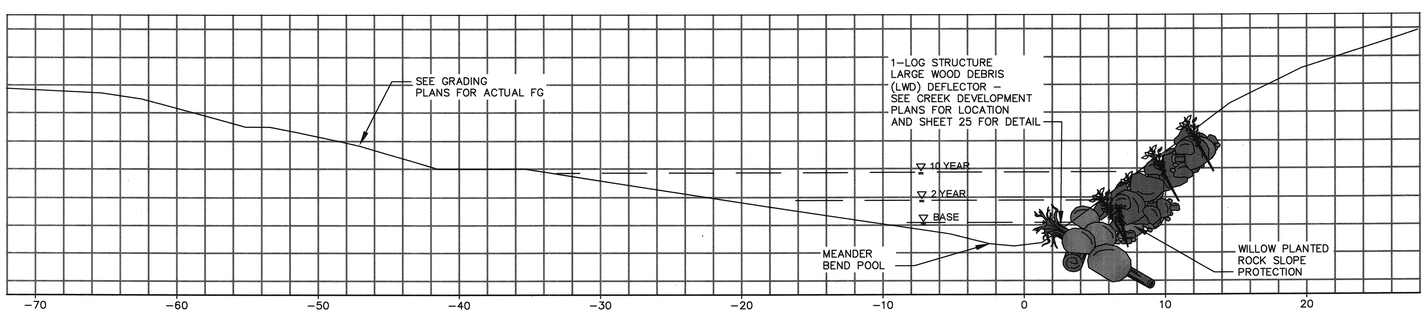
**CREEK FEATURE CROSS SECTIONS**

CONTRACT NO. C01924
SHEET 20 OF 29
FILE NO. 2019-0028




## STATION 259+68 - CREEK DEVELOPMENT PLAN

WILLOW PLANTED BAFFLE AND PLANTING ISLAND




## STATION 265+35 - CREEK DEVELOPMENT PLAN

WILLOW PLANTED ROCK TOE PROTECTION

SCALE:

1" = 5' HORZ.
1" = 5' VERT.

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## NOTES

1. CROSS SECTIONS SHOWN REFERENCE TO APPROXIMATE THALWEG ALIGNMENT STATIONING.
2. SEE DETAIL SHEETS 25-29 FOR ACTUAL DIMENSIONS OF THE CREEK FEATURES TO BE INSTALLED.

REGISTERED PROFESSIONAL ENGINEER DAVID G. MONTAGUE No. 46002 Exp. 12/31/20 STATE OF CALIFORNIA

City of Santa Rosa

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

DATE: FEBRUARY 2020
CHK BY: GJD
SCALE: As Shown
DWN BY: GL

APPROVED: Deputy Director - Engineering
By: Lori Urbanek Date 3/3/2020

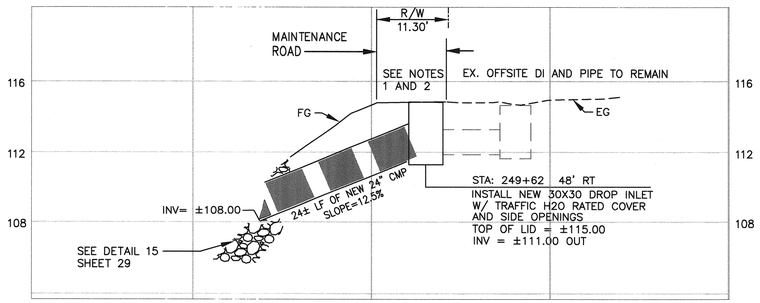
City of Santa Rosa
**LOWER COLGAN CREEK RESTORATION - PHASE 2**

**CREEK FEATURE CROSS SECTIONS**

CONTRACT NO. C01924

SHEET 21 OF 29

FILE NO. 2019-0028




SD **STORM DRAIN PROFILE DETAIL - STA. 249+62 48' RT.**
NTS

STORM DRAIN NOTES:

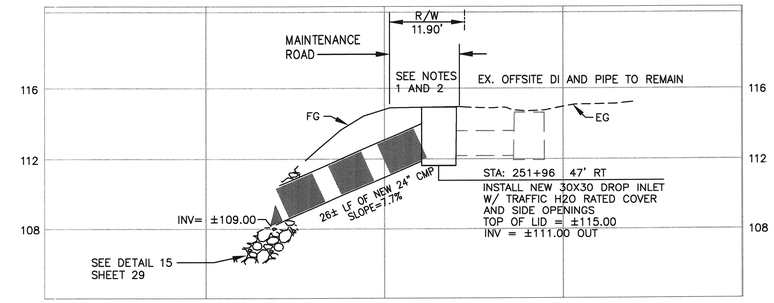
1. INSTALL NEW DROP INLETS (DI) WITHIN THE SHOULDER OR SWALE OF THE MAINTENANCE ROAD AND THE MULTI-USE PATHWAY.

2. INSTALL NEW PIPE BEYOND SHOULDER OF MAINTENANCE ROAD OR MULTI-USE PAVED PATHWAY TO RIP-RAP OUTFALL LOCATIONS.

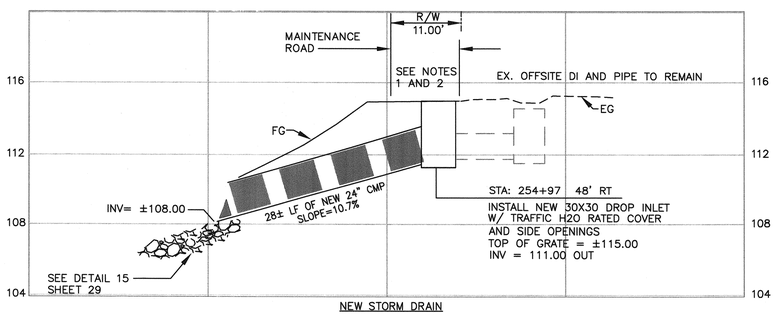
3. CUT BACK THE EXISTING PIPE AS NECESSARY AT STATIONS 249+62, 251+96 AND 254+97. ADJUST TO NEW GRADES WITH NEW DROP INLETS.

4. EXISTING STORM DRAIN PIPES AND INLETS ARE BASED ON TOPOGRAPHICAL INFORMATION ONLY. CONTRACTOR IS RESPONSIBLE TO FIELD VERIFY.

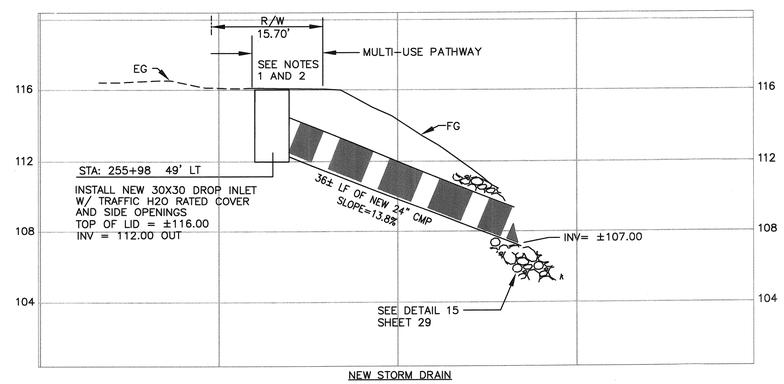
5. ALL NEW DROP INLETS AS SHOWN ON THE PLANS SHALL BE INSTALLED PER MANUFACTURERS SPECIFICATIONS.



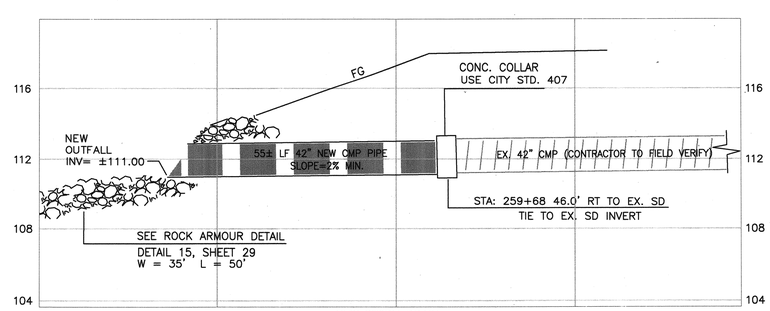

SD **STORM DRAIN PROFILE DETAIL - STA. 251+96 47' RT.**
NTS




SD **STORM DRAIN PROFILE DETAIL - STA. 254+97 48' RT.**
NTS




SD **STORM DRAIN PROFILE DETAIL - STA. 255+98 49' LT.**
NTS




SD **STORM DRAIN TIE-IN DETAIL - STA. 259+34 AT NEW OUTFALL 5' RT.**
NTS

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USANorth811.ORG

REGISTERED PROFESSIONAL ENGINEER
DAVID C. MONTAGUE
No. 46902
Exp. 12/31/22
CIVIL
STATE OF CALIFORNIA

City of Santa Rosa

| NO. | DATE | REVISION | BY |
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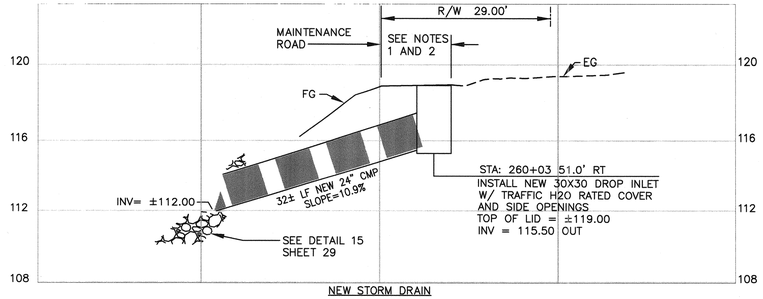
DATE: FEBRUARY 2020
CHK BY: GJD
SCALE: As Shown
DWN BY: GL

APPROVED: Deputy Director – Engineering
By Lori Urbanek Date 3/3/2020

City of Santa Rosa
**LOWER COLGAN CREEK RESTORATION - PHASE 2**

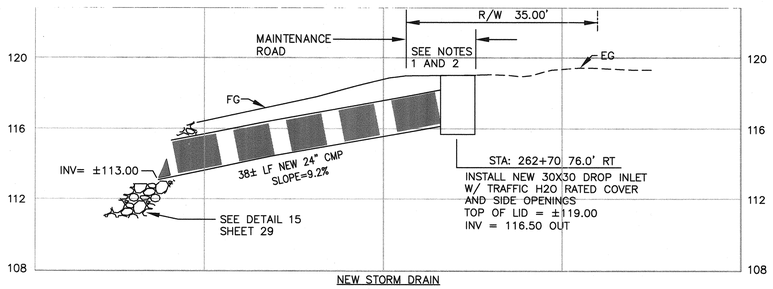
**STORM DRAIN PROFILE DETAILS**

CONTRACT NO. C01924
SHEET 22 OF 29
FILE NO. 2019-0028



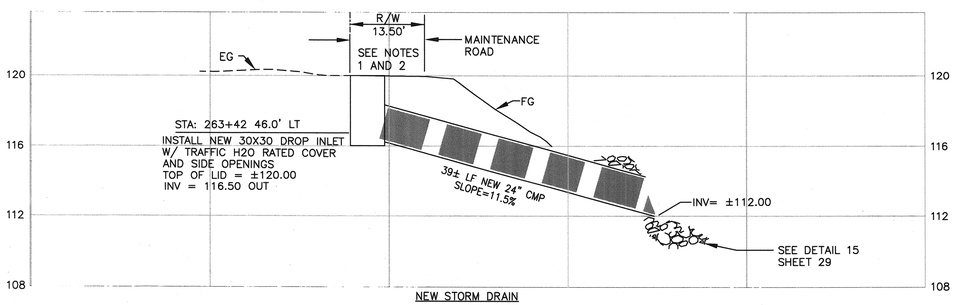

## SD STORM DRAIN PROFILE DETAIL - STA. 260+03 51' RT

NTS



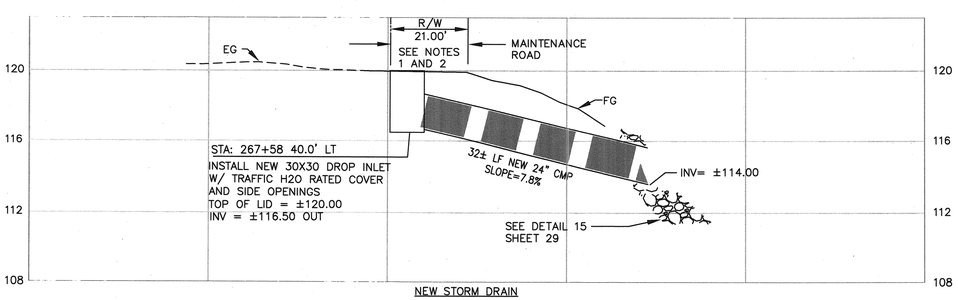

## SD STORM DRAIN PROFILE DETAIL - STA. 262+70 79' RT

NTS




## SD STORM DRAIN PROFILE DETAIL - STA. 263+42 46' LT

NTS




## SD STORM DRAIN PROFILE DETAIL - STA. 267+58 41' LT

NTS

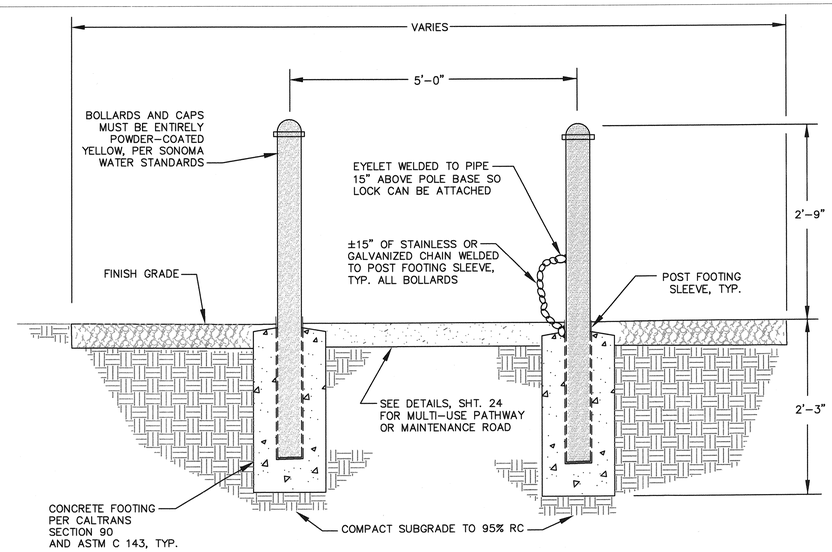
STORM DRAIN NOTES:

1. INSTALL NEW DROP INLETS (DI) WITHIN THE SHOULDER OR SWALE OF THE MAINTENANCE ROAD AND THE MULTI-USE PATHWAY.

2. INSTALL NEW PIPE BEYOND SHOULDER OF MAINTENANCE ROAD OR MULTI-USE PAVED PATHWAY TO RIP-RAP OUTFALL LOCATIONS.

3. EXISTING STORM DRAIN PIPES AND INLETS ARE BASED ON TOPOGRAPHICAL INFORMATION ONLY. CONTRACTOR IS RESPONSIBLE TO FIELD VERIFY.

4. ALL NEW DROP INLETS AS SHOWN ON THE PLANS SHALL BE INSTALLED PER MANUFACTURERS SPECIFICATIONS.




1. REMOVABLE BOLLARDS TO BE LOCATED BEHIND BACK OF STREET R/W AREAS AND 5' ON CENTER.
2. REMOVABLE BOLLARD CONSTRUCTED OF 4½" OD. SCHEDULE 40 STEEL AND REMOVABLE WITH DOME TOP.
3. WELD EYELET 15" ABOVE GRADE AND WELD 15" LENGTH OF CHAIN TO BASE SLEEVE, PER SCWA STANDARD, TYPICAL ALL BOLLARDS. USE SCWA LOCKS ONLY AT UPPER EYELET.
4. BOLLARDS, EXCEPT FOR POST FOOTING SLEEVES, SHALL BE ENTIRELY POWDER-COATED, INCLUDING CAPS. COLOR SHALL BE YELLOW.

## BD REMOVABLE BOLLARD - DETAIL

NTS

DETAIL PER SONOMA WATER
SEE GRADING PLAN, SHEET 6

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REGISTERED PROFESSIONAL ENGINEER DAVID C. MONTAGUE No. 46002 Exp. 12/31/22 CIVIL STATE OF CALIFORNIA

City of Santa Rosa

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DATE: FEBRUARY 2020
CHK BY: GJD

APPROVED: Deputy Director – Engineering
By Lori Urbanek Date 3/3/2020

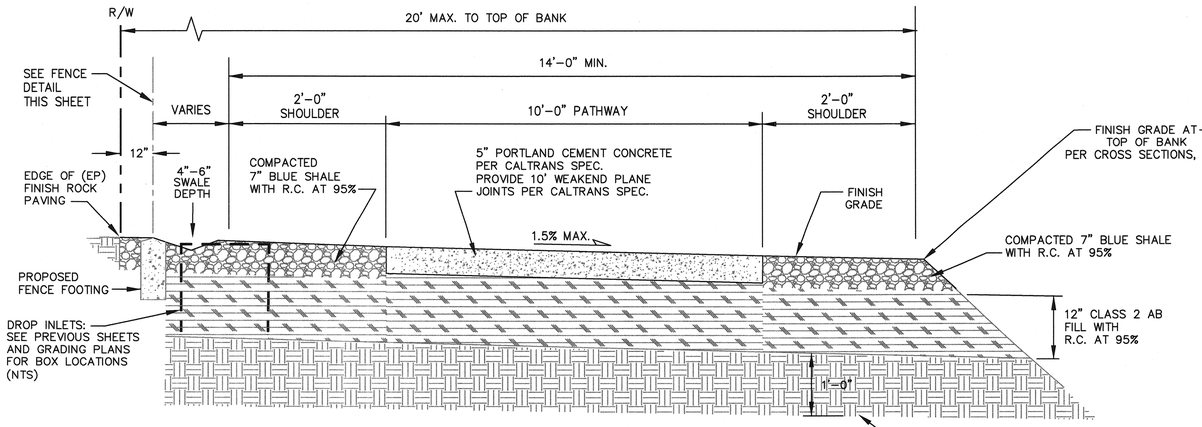
City of Santa Rosa
**LOWER COLGAN CREEK RESTORATION - PHASE 2**

**STORM DRAIN, FENCE AND BOLLARD DETAILS**

CONTRACT NO. C01924

SHEET 23 OF 29

FILE NO. 2019-0028




## (MU) NEW MULTI-USE PATHWAY DETAIL

NTS

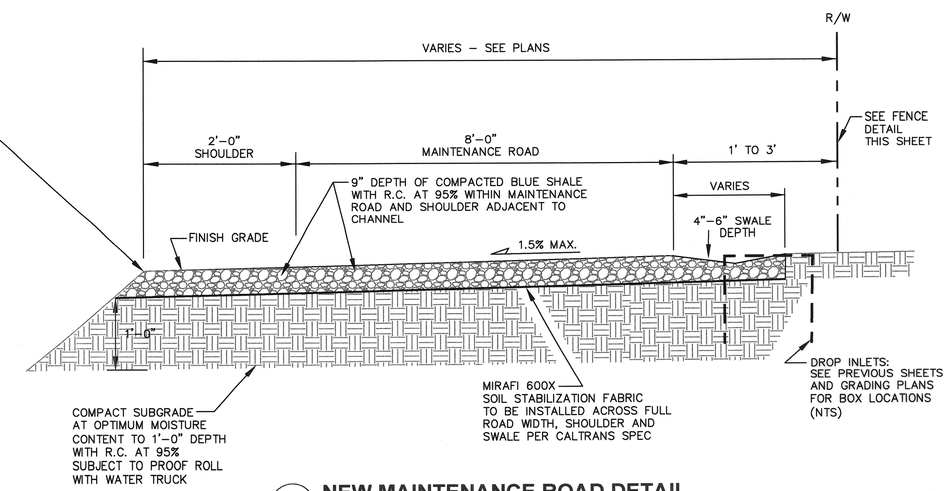
NOTE:

ANY HEAVY EQUIPMENT OR VEHICLES USED DURING CONSTRUCTION AND MAINTENANCE OF THE NEW MULTI-USE PATHWAY WHICH CAUSES DAMAGE TO SUBGRADE AND NEW SURFACE SHALL BE REPAIRED BY THE CONTRACTOR AT THEIR EXPENSE.

CONTRACTOR SHALL BE RESPONSIBLE FOR PLACEMENT OF ALL FORMS, GRADES, AND SLOPES OF NEW MULTI-USE PATHWAY.

CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING SURE NEW MULTI-USE PATHWAY IS IN COMPLIANCE WITH A.D.A. STANDARDS

DROP INLETS SHOWN SCHEMATIC ONLY – NOT TO SCALE




## (SU) NEW MAINTENANCE ROAD DETAIL

NTS

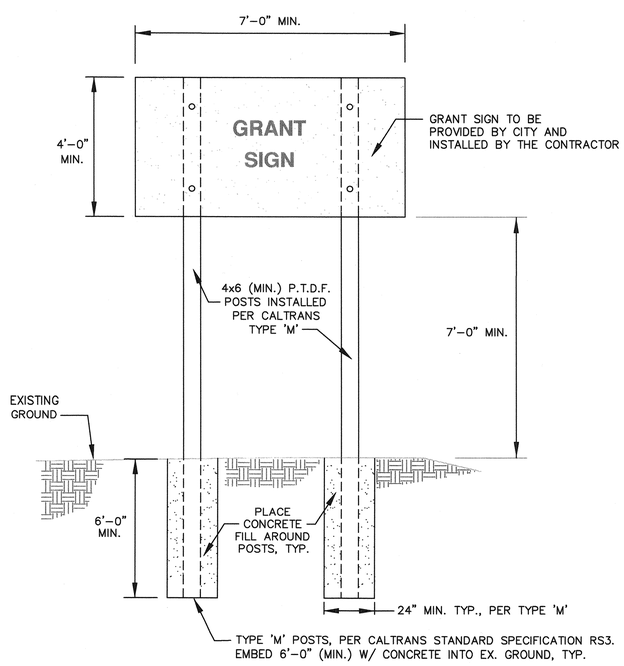
NOTE:

ANY HEAVY EQUIPMENT OR VEHICLES USED DURING CONSTRUCTION AND MAINTENANCE OF THE NEW MAINTENANCE ROAD WHICH CAUSES DAMAGE TO SUBGRADE AND NEW SURFACE SHALL BE REPAIRED BY THE CONTRACTOR AT THEIR EXPENSE.

CONTRACTOR SHALL BE RESPONSIBLE FOR PLACEMENT OF ALL FORMS, GRADES, AND SLOPES OF NEW MAINTENANCE ROAD.

CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING SURE NEW MAINTENANCE ROAD IS IN COMPLIANCE WITH A.D.A. STANDARDS

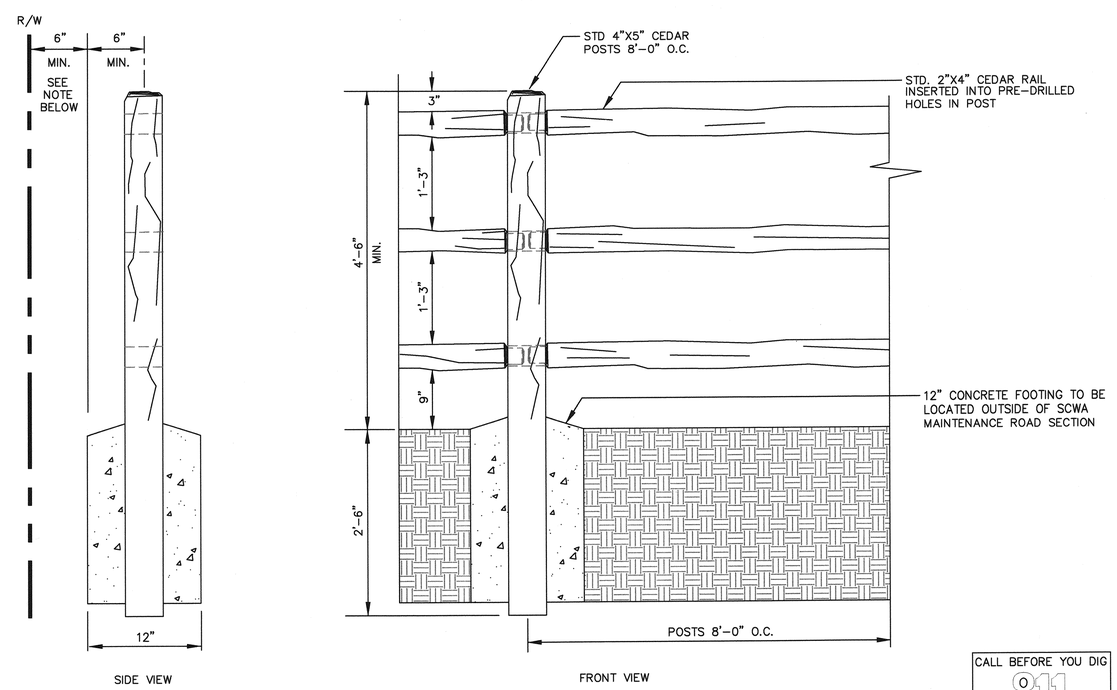
DROP INLETS SHOWN SCHEMATIC ONLY – NOT TO SCALE




## (FS) GRANT FUNDING SIGN DETAIL

NTS

PER CALTRANS STANDARD SPECIFICATIONS TYPE 'M' SIGN




## (SR) CEDAR SPLIT RAIL FENCE DETAIL

NTS

NOTE: EDGE OF CONCRETE BASE FOR FENCE POST MUST BE A MIN. OF 6" INSIDE OF THE PROPERTY OR RIGHT OF WAY LINE.

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CHK BY: GJD

APPROVED: Deputy Director – Engineering
By Lori Urbanek Date 3/3/2020

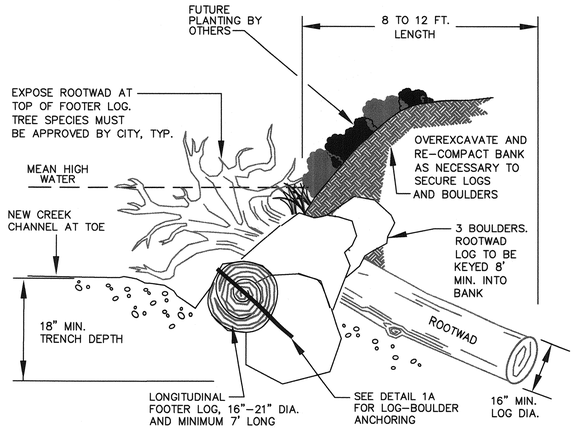
City of Santa Rosa
**LOWER COLGAN CREEK RESTORATION - PHASE 2**

**PATHWAY - ROAD - FENCE - SIGN**

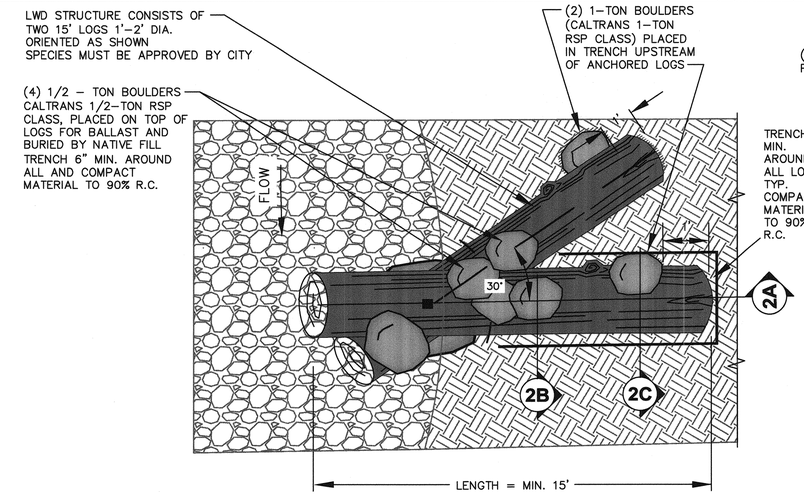
CONTRACT NO. C01924

SHEET 24 OF 29

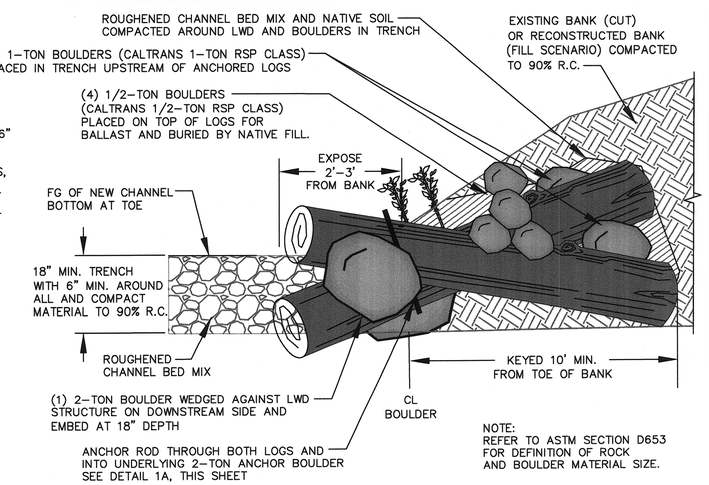
FILE NO. 2019-0028



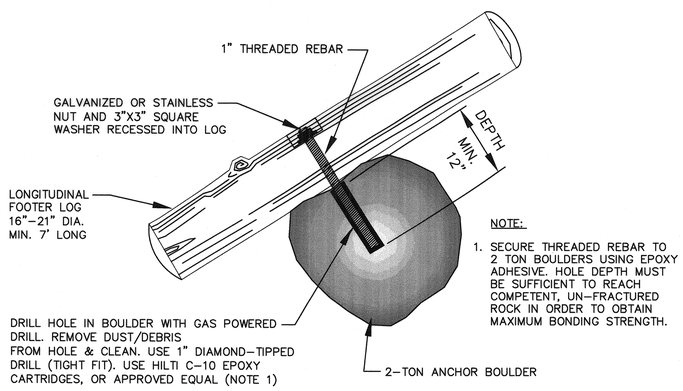

1 **(LWD) 1-LOG STRUCTURE - DETAIL**
NTS




2 **(LWD) 2-LOG DEFLECTOR - DETAIL**
NTS



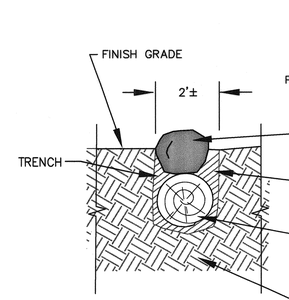

2A **SECTION VIEW**
NTS



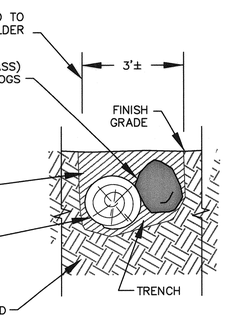

NOTE:

1. SECURE THREADED REBAR TO 2 TON BOULDERS USING EPOXY ADHESIVE. HOLE DEPTH MUST BE SUFFICIENT TO REACH COMPETENT, UN-FRACTURED ROCK IN ORDER TO OBTAIN MAXIMUM BONDING STRENGTH.

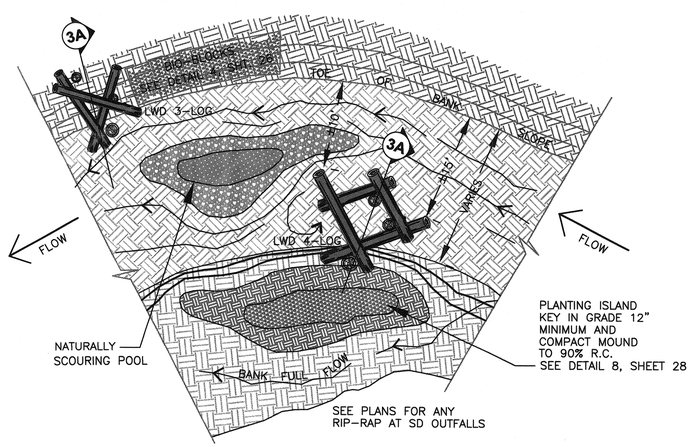
1A **LOG-BOULDER ANCHORING DETAIL**
TOP VIEW
NTS



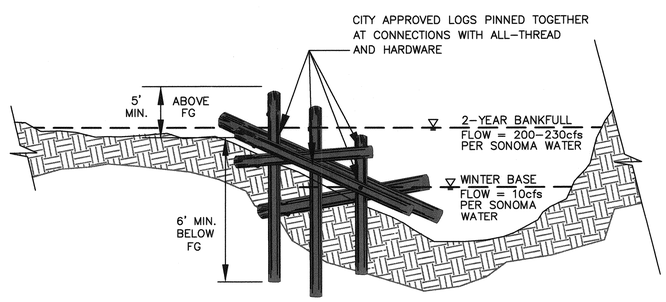

2B **SECTION VIEW**
NTS



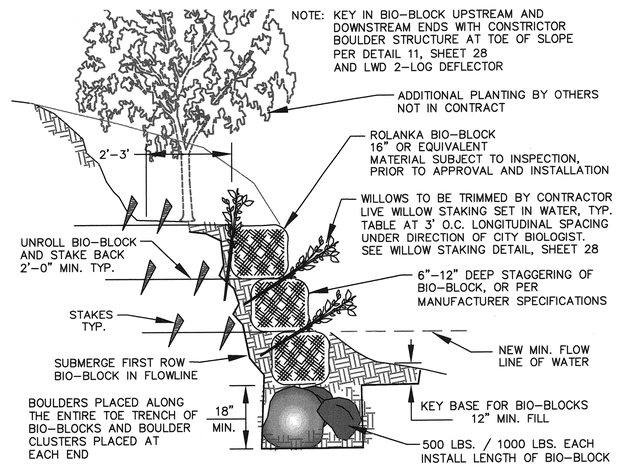

2C **SECTION VIEW**
NTS




3 **(LWD) 3-LOG OR 4-LOG CONSTRICTOR DETAIL**
PLAN VIEW
NTS




3A **SECTION VIEW**
NTS




4 **BIO-BLOCK BANK STABILIZATION STRUCTURES**
NTS

REGISTERED PROFESSIONAL ENGINEER DAVID C. MONTAGUE No. 46002 Exp. 12/31/20 CIVIL STATE OF CALIFORNIA

City of Santa Rosa

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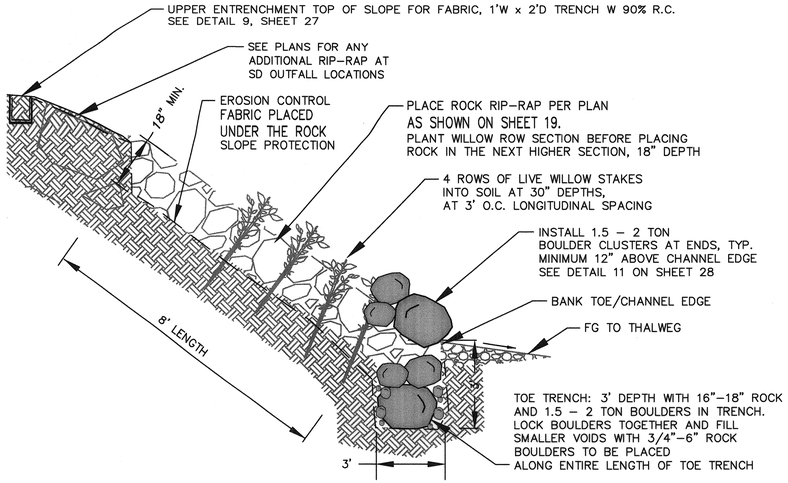
APPROVED: Deputy Director - Engineering
By Lori Urbanek
Date 3/3/2020

SCALE: As Shown
DWN BY: GL

City of Santa Rosa
**LOWER COLGAN CREEK RESTORATION - PHASE 2**

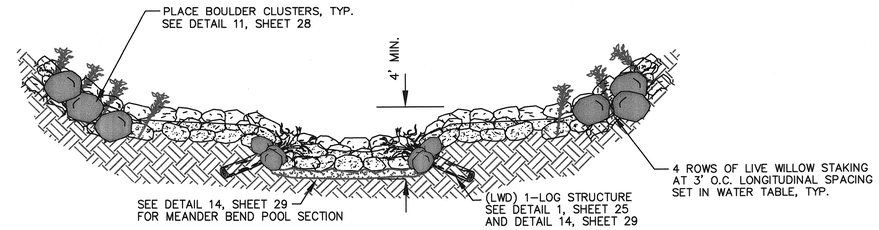
**DETAILS 1 - 4**

CONTRACT NO. C01924
SHEET 25 OF 29
FILE NO. 2019-0028



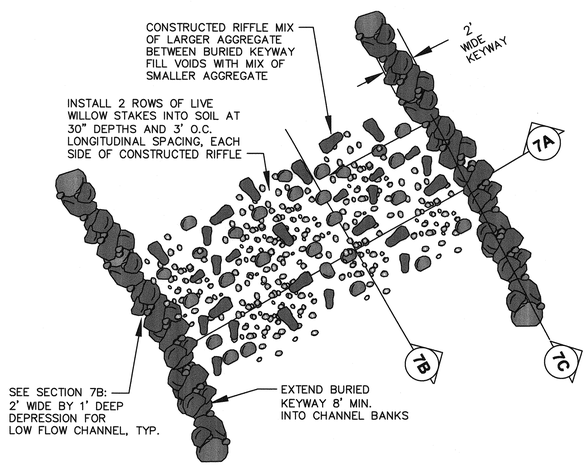

## 5 WILLOW PLANTED ROCK SLOPE PROTECTION DETAIL

NTS



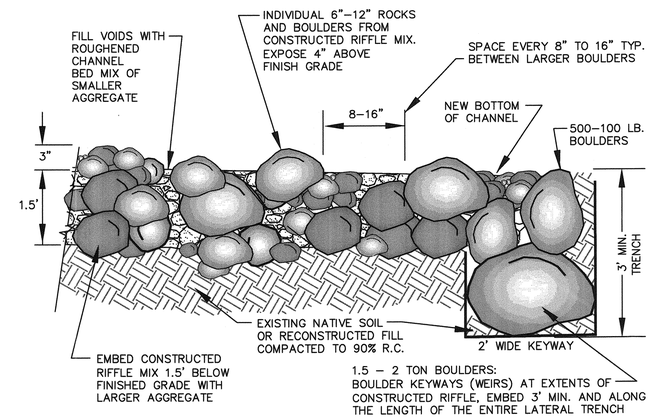

## 6 TYPICAL CHANNEL SECTION WITH POOL

NTS




## 7 CONSTRUCTED RIFFLE DETAIL

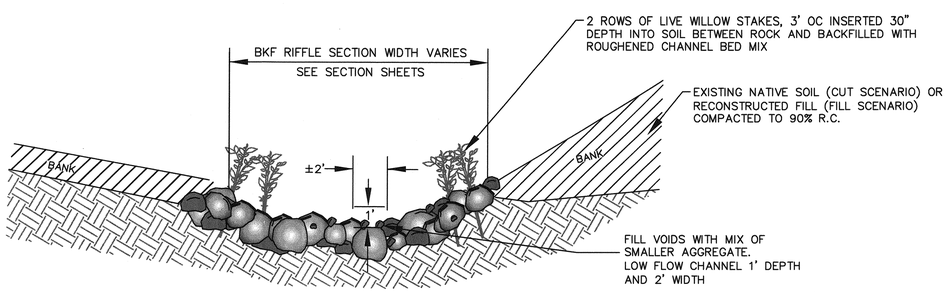
PLAN VIEW NTS




## 7A RIFFLE DETAIL - ROCK SECTION

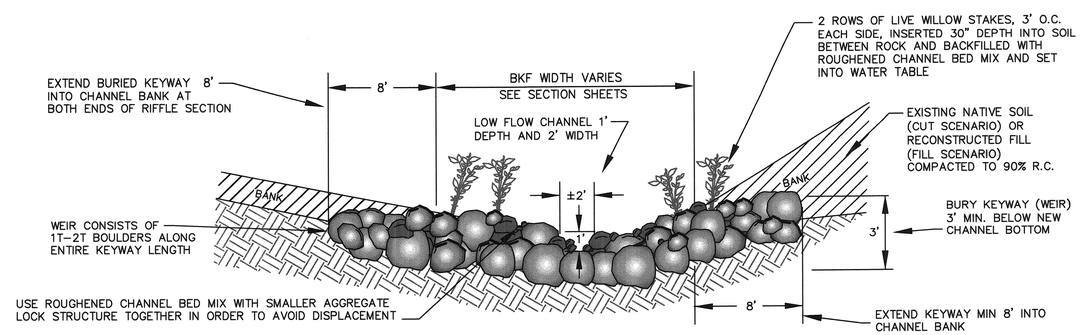
PROFILE VIEW NTS

NOTE:
REFER TO ASTM SECTION D653 FOR DEFINITION OF ROCK AND BOULDER MATERIAL TO BE PLACED




## 7B RIFFLE DETAIL - MIDDLE SECTION

NTS




## 7C RIFFLE DETAIL - END KEYWAY SECTION (WEIR)

KEYWAY SECTION NTS

REGISTERED PROFESSIONAL ENGINEER DAVID C. MONTAGUE No. 46002 Exp. 6/31/22 CIVIL STATE OF CALIFORNIA

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By Lori Urbanek Date 3/3/2022

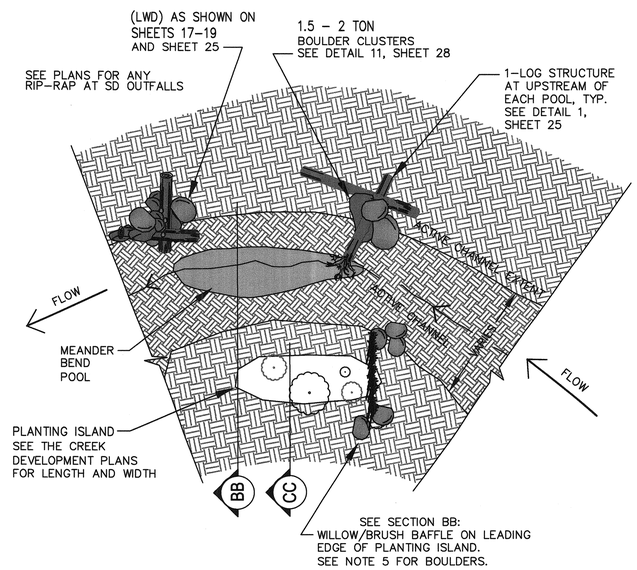
City of Santa Rosa
**LOWER COLGAN CREEK RESTORATION - PHASE 2**

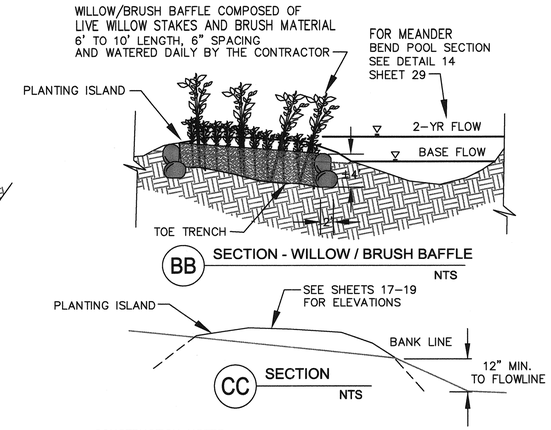
**DETAILS 5 - 7**

CONTRACT NO. C01924

SHEET 26 OF 29

FILE NO. 2019-0028



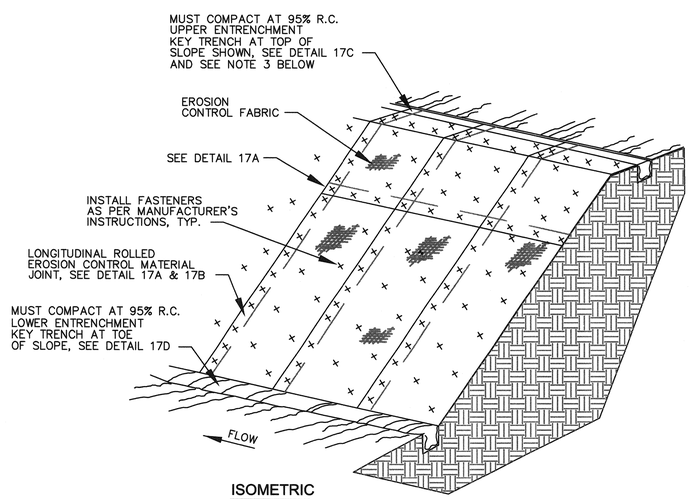




CONSTRUCTION NOTES:

1. EXCAVATE TOE TRENCH 2' WIDTH AND 4' DEPTH. ISLAND BOTTOM SHOULD BE 12" MIN. LOWER THAN CHANNEL BANK LINE AND GROUNDWATER TABLE
2. PLACE WILLOW CUTTINGS AT 6" SPACING; LEAVE AS MUCH BRANCH MATERIAL ON WILLOW AS POSSIBLE. CONTRACTOR RESPONSIBLE FOR DAILY WATERING UNTIL ESTABLISHED
3. PLACE BRUSH AT 6" SPACING; LEAVE AS MUCH BRANCH MATERIAL AS POSSIBLE
4. BACKFILL WITH MOIST SOIL, COMPACT MOUND AND TRENCHES TO 95% R.C.
5. EMBED 2 TO 3, 500–1000 TON BOULDERS AROUND THE BAFFLE ENDS

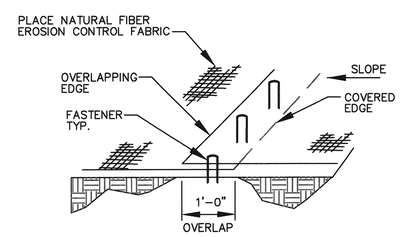
## 8 PLANTING ISLAND DETAIL AND LAYOUT

NTS




ISOMETRIC

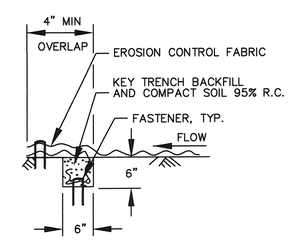
ON SLOPE




MATERIAL JOINT ISOMETRIC

DETAIL 17A NTS

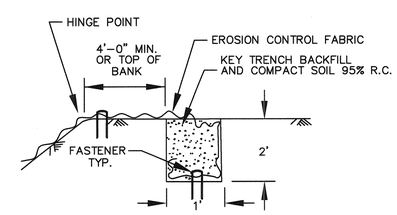
LONGITUDINAL JOINT DETAIL




MATERIAL JOINT SECTION

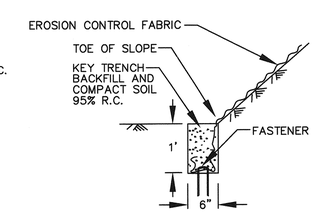
DETAIL 17B NTS

TRANSVERSE JOINT DETAIL




UPPER ENTRENCHMENT SECTION

DETAIL 17C NTS




LOWER ENTRENCHMENT SECTION

DETAIL 17D NTS

NOTES:

1. IF TRANSVERSE ROLLED EROSION CONTROL MATERIAL JOINTS ARE REQUIRED ON SLOPES, SEE DETAIL 17A& 17B.
2. EROSION CONTROL FABRIC TO BE INSTALLED WITHIN ENTIRE CHANNEL LIMITS FROM TOP OF BANK TO TOP OF BANK.
3. FABRIC IN LONGITUTIDNAL TRENCHING FOR TOE AND TOP OF BANK WILL REQUIRE BACKFILL AND COMPACTION @ 95% R.C. UNDER FIELD REVIEW BY ENGINEER

## 9 EROSION CONTROL FABRIC DETAIL

ALL CREEK BANKS, TYP. NTS

REGISTERED PROFESSIONAL ENGINEER DAVID C. MONTAGUE No. 49602 Exp. 12/31/20 CIVIL STATE OF VIRGINIA

City of Santa Rosa

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By Lori Urbanek Date 3/3/2020

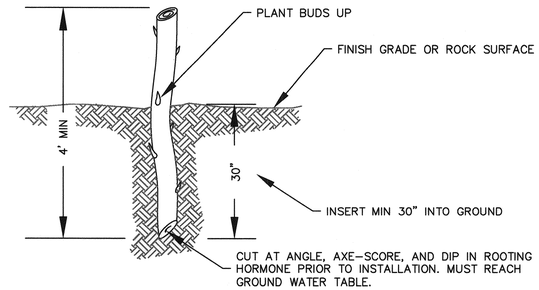
City of Santa Rosa
LOWER COLGAN CREEK RESTORATION - PHASE 2

DETAILS 8 - 9

CONTRACT NO. C01924

SHEET 27 OF 29

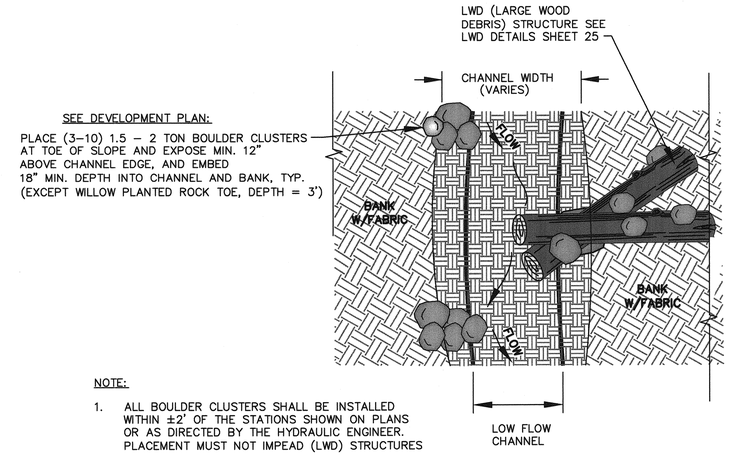
FILE NO. 2019–0028




NOTES:

1. WILLOW STAKE SPECIES SHALL BE RED, YELLOW OR AS APPROVED BY CITY BIOLOGIST AND LOCATED WITHIN 10 MILES OF THE PROJECT SITE. STAKES WAITING FOR USE MUST BE IN WATER FOR 24 HOURS PRIOR TO DELIVERY AND INSTALLATION. ARROYO WILLOWS WILL NOT BE ALLOWED.
2. CONTRACTOR RESPONSIBLE FOR PROVIDING SOURCE DOCUMENTATION TO ENGINEER AND SHALL HAVE A BOOM TRUCK AVAILABLE AT ALL TIMES TO HARVEST WILLOWS.
3. EACH STAKE SHALL BE 1.5" – 3" DIAMETER AT THE BOTTOM TO FACILITATE ROOT GROWTH IN MOIST SOIL. WILLOWS TO BE TRIMMED BY THE CONTRACTOR.
4. INSERT MINIMUM 30" INTO GROUND BELOW FINISH GRADING.
5. FOR WILLOW STAKES IN ROCK TOE AND WILLOW PLANTED ROCK SLOPE PROTECTION AREAS INSTALL STAKES AND ROCK CONCURRENTLY AND THEN BACKFILL WITH NATIVE SOIL TO PROMOTE ROOTING. CONTRACTOR IS RESPONSIBLE FOR IMMEDIATE AND SCHEDULED WATERING

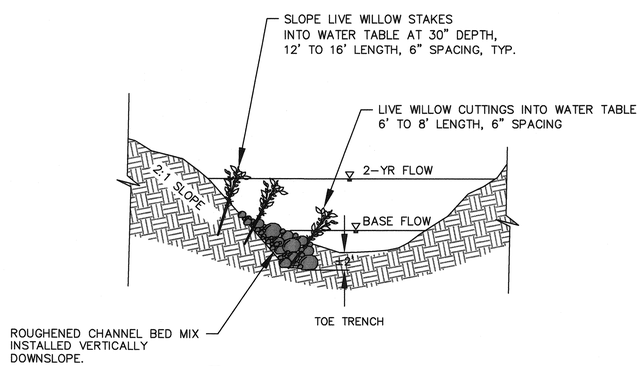
## 10 LIVE WILLOW STAKES DETAIL
NTS



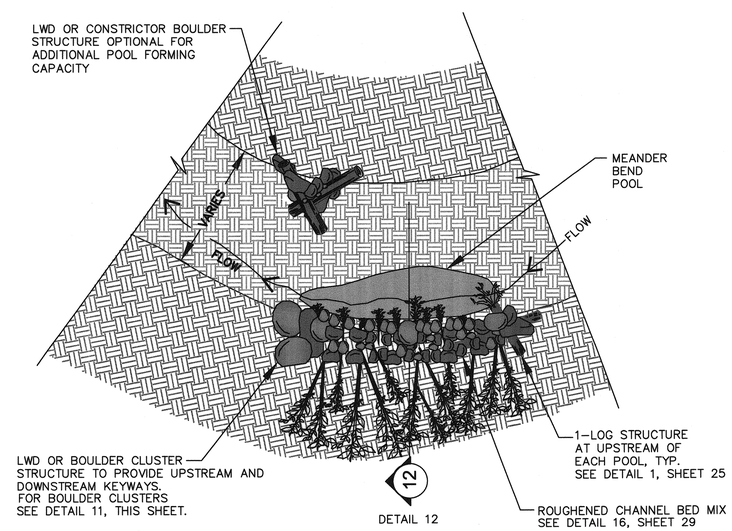

NOTE:

1. ALL BOULDER CLUSTERS SHALL BE INSTALLED WITHIN ±2' OF THE STATIONS SHOWN ON PLANS OR AS DIRECTED BY THE HYDRAULIC ENGINEER. PLACEMENT MUST NOT IMPEAD (LWD) STRUCTURES

## 11 BOULDER CLUSTER STRUCTURE DETAIL
NTS




## 12 WILLOW STAKING
NTS




## 13 WILLOW / BRUSH BAFFLE PLAN AND TYPICAL SECTION
NTS

REGISTERED PROFESSIONAL ENGINEER DAVID C. MONTAGUE No. 46002 Exp. 12/31/20 CIVIL STATE OF CALIFORNIA

City of Santa Rosa

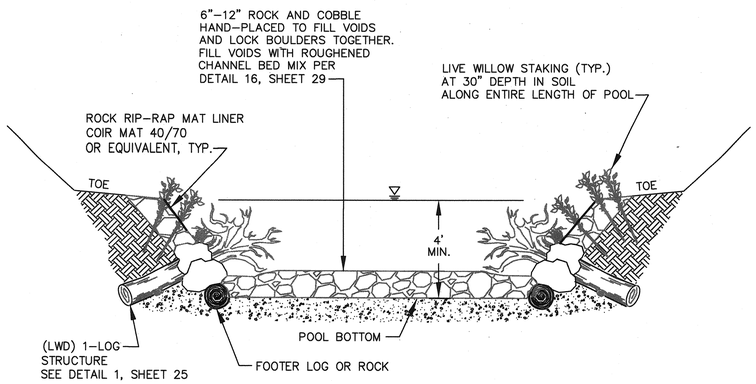
| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

DATE: FEBRUARY 2020
CHK BY: GJD
SCALE: As Shown
DWN BY: GL
APPROVED: Deputy Director – Engineering
By Lori Urbanek Date 3/3/2020

City of Santa Rosa
LOWER COLGAN CREEK RESTORATION - PHASE 1

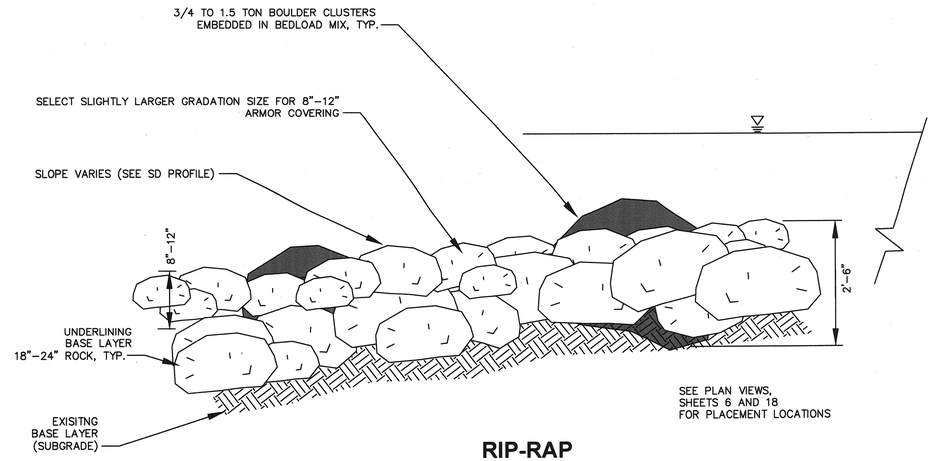
DETAILS 10 - 13

CONTRACT NO. C01924
SHEET 28 OF 29
FILE NO. 2019–0028




## 14 MEANDER BEND POOL SECTION DETAIL

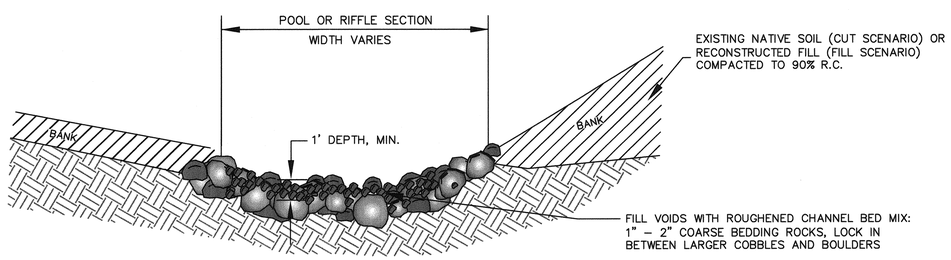
NTS




## 15 RIP-RAP ROCK ARMOUR DETAIL

NTS

LIGHT CLASS RSP
THICKNESS OF 2.5 FEET, MIN.
PLACEMENT METHOD B, PER CALTRANS STANDARD.
CONSTRUCTED BEDLOAD LAYER:
D16 = 1"
D50 = 12"
D84 = 24"
D100= 60"




## 16 ROUGHENED CHANNEL BED MIX DETAIL

1" – 2" COARSE BEDDING ROCK

NTS

REGISTERED PROFESSIONAL ENGINEER DAVID C. MONTAGUE No. 46002 Exp. 6/31/20 CIVIL STATE OF CALIFORNIA

City of Santa Rosa

| NO. | DATE | REVISION | BY |
|---|---|---|---|
| | | | |

SCALE: As Shown
DWN BY: GL
DATE: FEBRUARY 2020
CHK BY: GJD

APPROVED: Deputy Director – Engineering
By Lori Urbanek Date 3/3/2020

City of Santa Rosa
**LOWER COLGAN CREEK RESTORATION - PHASE 2**

**DETAILS 14 - 16**

CONTRACT NO. C01924

SHEET 29 OF 29

FILE NO. 2019–0028