CITY OF SANTA ROSA
IMPROVEMENT PLANS FOR

SMART MULTI-USE PATH
AT HEARN AVENUE CROSSING

CONTRACT No. C01727

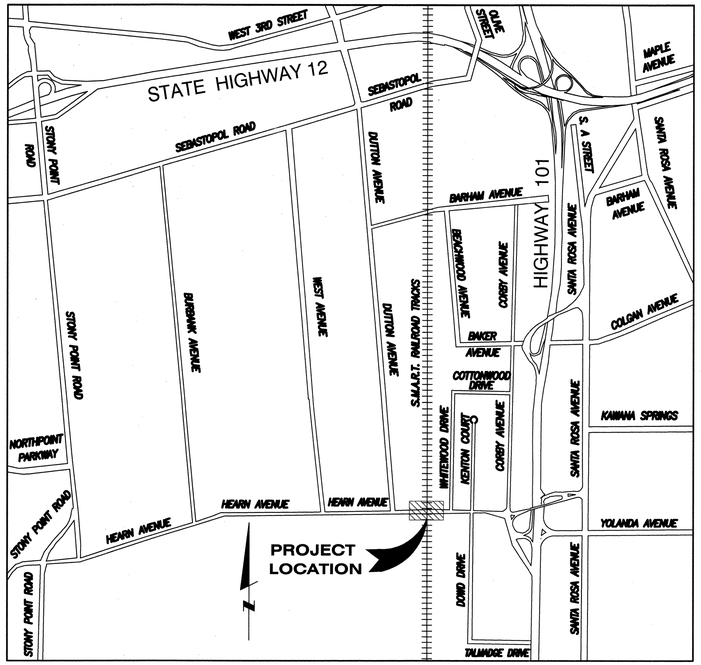
GENERAL NOTES

1. ALL WORKMANSHIP, MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE CITY OF SANTA ROSA STANDARDS PLANS, THE CITY OF SANTA ROSA CONSTRUCTION SPECIFICATIONS FOR PUBLIC IMPROVEMENTS, THE SPECIAL PROVISIONS FOR THIS PROJECT AND THE 2015 STATE STANDARD SPECIFICATIONS AND STANDARD PLANS. THE CONTRACTOR IS RESPONSIBLE FOR UNDERSTANDING ALL STANDARDS PERTAINING TO THIS PROJECT.
2. THE LOCATIONS OF THE EXISTING UTILITIES AND UNDERGROUND CONDUITS SHOWN ON THE PLANS ARE BASED ON THE BEST AVAILABLE INFORMATION. THE CITY ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THIS INFORMATION OR THE INADVERTENT OMISSION OF ANY SUCH INFORMATION.
3. ANY DAMAGES TO CITY, OTHER UTILITIES AND PRIVATE PROPERTY INCLUDING LANDSCAPING, IRRIGATION OR OTHER IMPROVEMENTS WHICH ARE DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED OR REPLACED AT THE CONTRACTORS EXPENSE AND TO THE SATISFACTION OF THE ENGINEER.
4. PRIOR TO COMMENCING WORK ON THIS PROJECT, THE CONTRACTOR SHALL CALL THE PUBLIC WORKS COORDINATORS AT AT&T, PG&E, SCWA AND SMART TO NOTIFY THEM OF IMPENDING UNDERGROUND CONSTRUCTION.
5. THE CONTRACTOR SHALL CALL UNDERGROUND SERVICE ALERT (U.S.A.) AT (800) 642-2444 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION FOR MARK OUTS OF EXISTING UNDERGROUND FACILITIES.
6. THE CONTRACTOR SHALL CALL PG&E AT 579-6200 AT LEAST 48 HOURS PRIOR TO ANY WORK IN THE VICINITY OF HIGH VOLTAGE OR HIGH PRESSURE GAS MAINS.
7. NOT ALL CROSSWALKS, STOP BARS OR OTHER EXISTING PAVEMENT MARKINGS MAY BE SHOWN ON THE PLANS FOR CLARITY OF THE EXISTING AND/OR PLANNED SUBSURFACE CONDITIONS. MARKINGS DAMAGED DUE TO THE CONTRACTOR'S OPERATIONS SHALL BE REPLACED PER CITY OF SANTA ROSA TRAFFIC STANDARDS, PART III, TRAFFIC MARKINGS. PATCHING OF DAMAGED MARKINGS WILL NOT BE ALLOWED WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
8. ALL TRAFFIC DETECTION SYSTEMS DAMAGED BY THE CONTRACTORS OPERATIONS SHALL BE REPLACED PER STATE STD ES-5D AND CITY OF SANTA ROSA TRAFFIC STANDARDS. DAMAGE TO HOME RUNS WILL REQUIRE FULL REPLACEMENT OF LOOP SYSTEMS WITH SPLICING AT DETECTOR HAND HOLE OR PULL BOX ONLY.
9. THE CONTRACTOR SHALL ARRANGE FOR GROUNDWATER DISPOSAL PER CITY SPECIFICATIONS.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMMEDIATE OFF SITE DISPOSAL AND RECYCLING OF ALL BITUMINOUS PAVEMENT, CONCRETE, REINFORCEMENT AND TRENCH SPOILS AS REQUIRED BY THE SPECIAL PROVISIONS, SECTION 124. MATERIAL RECYCLING. ALL TRENCHES SHALL BE PAVED AT THE END OF EACH WORKING DAY PER CITY SPECIFICATIONS.
11. RAILROAD MUST BE NOTIFIED WHEN WORK IS OCCURING WITHIN SMART RIGHT-OF-WAY AND WHEN THERE IS ACTIVITY IN THE AREA OF THE RAIL ON A DAILY BASIS. AN ENCROACHMENT PERMIT WILL BE REQUIRED THROUGH SMART.

(CONTINUED ON SHEET 2)

RECORD PLAN DATA

PROJECT START:	WATER SERVICE TYPE: NONE
PROJECT END:	MANUFACTURER: N/A
GEN. CONTRACTOR:	FIRE HYDRANT TYPE: NONE
SUPERINTENDENT:	MANUFACTURER: N/A
UNDERGROUND CONTRACTOR:	INSPECTOR:
FOREMAN:	CONSTRUCTION MANAGER:
SEWER PIPE TYPE: NONE	RECORD PLANS BY:
MANUFACTURER: N/A	ADDITIONAL INFO:
SEWER FITTINGS MANUFACTURER: NONE	
M.H. MANUFACTURER: NONE	
WATER PIPE TYPE: NONE	
MANUFACTURER: NONE	
WATER VALVE MANUFACTURER: NONE	
WATER FITTINGS MANUFACTURER: NONE	



LOCATION MAP
NOT TO SCALE

VICINITY MAP
NOT TO SCALE

INDEX TO SHEETS

SHEET NO.	TITLE
1	TITLE SHEET
2	SURVEY CONTROL PLAN
3	POT HOLE RESULTS
4	DEMOLITION AND EROSION CONTROL PLAN
5	CROSS SECTIONS
6	LAYOUT
7	GRADING PLAN
8	SIGNAGE AND STRIPING PLAN
9	DETAILS
10	TRAFFIC SIGNAL PLAN
11	POLE AND CONDUCTOR SCHEDULE
12	SIGNAL INTERCONNECT PLAN

BASIS OF BEARINGS

SOUTH 25° 23' 47" EAST BETWEEN CITY OF SANTA ROSA HORIZONTAL CONTROL NETWORK COORDINATE MONUMENTS G-301 & G-299. NAD83 - ZONE 2 - EPOCH 2010.00.

BENCH LEVEL DATA

CITY OF SANTA ROSA VERTICAL CONTROL NETWORK BENCHMARK D-247. ELEVATION = 132.383' FEET (NGVD 29).

PROJECT DIRECTORY

OWNER
CITY OF SANTA ROSA
TRANSPORTATION AND PUBLIC WORKS DEPARTMENT
69 STONY CIRCLE
SANTA ROSA, CA 95404
707.543.3800

CIVIL ENGINEER
ALTA PLANNING + DESIGN
STEVEN FRIESON, PE
304 12th STREET, SUITE 2A
OAKLAND, CA 94607
510.540.5008

ENVIRONMENTAL CONSULTANT
LSA ASSOCIATES
LAURA LAFLER
157 PARK PLACE
POINT RICHMOND, CA 94801
510.236.6810

TRAFFIC ENGINEER
W-TRANS
STEVE FITZSIMONS
1276 LINCOLN AVE, SUITE 206
SAN JOSE, CA 95125
650.314.8313

alta PLANNING + DESIGN
304 12th STREET, SUITE 2A
OAKLAND, CA 94607
510.540.5008

BEFORE EXCAVATING CALL
U.S.A. UNDERGROUND SERVICE ALERT
800-642-2444
TWO DAYS BEFORE ALL PLANNED WORK OPERATIONS

REGISTERED PROFESSIONAL ENGINEER
STEVEN B. FRIESON
No. 42110
CIVIL
STATE OF CALIFORNIA

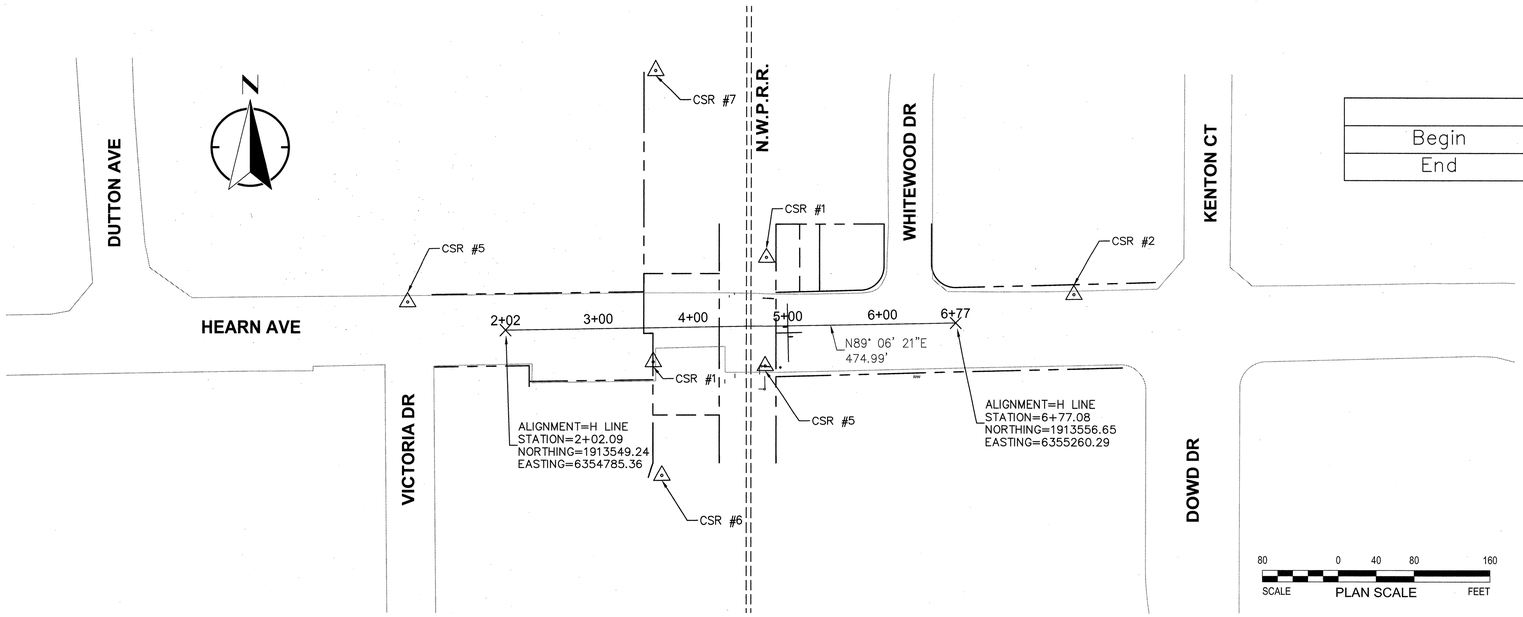
NO.	DATE	REVISION	BY	Dept.	Signature	Date
				Design/Const		1/4/20
				Survey		1/15/20
				TPW Field Svc's		1/14/20
				Traffic		1/4/20
				Materials Lab		4/16/20

DATE: 9/27/2019
CHK BY: SF
SCALE: NTS
DWN BY: ML
APPROVED: Deputy Director - Engineering
Date 1/27/20
By Lori Urbanek, PE

CITY OF SANTA ROSA
SMART MULTI-USE PATH
HEARN AVENUE GRADE CROSSING

TITLE SHEET

CONTRACT NO. C01727
SHEET 1 OF 12
FILE NO. 2018-0017



80 0 40 80 160
SCALE PLAN SCALE FEET

DESIGN CENTERLINE TABLE - "H"

	Northing	Easting	Station	Bearing
Begin	1913549.24	6354785.36	2+02.09	N89°06'21"E
End	1913556.65	6355260.29	6+77.08	N89°06'21"E

LEGEND

- COBBLES
- CONCRETE SIDEWALK
- CLEAR AND GRUB
- DETECTABLE WARNING SURFACE
- EASEMENT
- ELECTRIC – OVERHEAD WIRE
- ELECTRIC – VAULT
- FENCE – CHAINLINK
- FENCE – WIRE
- FIBER OPTIC – MARKOUT
- FOUNDATION 2 OR 3 POTHOLE
- GAS – MARKOUT
- GRAVEL BAGS
- REMOVE ASPHALT PAVEMENT (.5' DEPTH)
- REMOVE COBBLE STONES AND MEDIAN CURB
- REMOVE CONCRETE SURFACING
- REMOVE EXISTING TREE AND ROOT MASS
- SANITARY SEWER – MANHOLE
- RIGHT OF WAY
- SAWCUT PAVEMENT
- SET SURVEY CONTROL POINT AS NOTED
- S.C.W.A CONDUIT
- S.C.W.A CONDUIT
- SIGN
- SMART SIGNAL MARKOUT
- SMART – VAULT
- STORM DRAIN – DROP INLET
- TELEPHONE – MARKOUT
- TELEPHONE – VAULT
- TRAFFIC SIGNAL – INTERCONNECT MARKOUT
- UTILITY ONE-HOLE POTHOLE AND BORE PIT LOCATION
- UTILITY POLE
- WATER – MARKOUT
- WATER – VAULT

ABBREVIATION

A.C.	ASPHALT CONCRETE
A.B.	AGGREGATE BASE
CL	CENTERLINE
CONC.	CONCRETE
DY	DASHED YELLOW
(E)	EXISTING
EX.	EXISTING
FL	FLOWLINE
FND	FOUND
GV	GAS VALVE
HMA	HOT MIX ASPHALT
JP	JOINT POLE
LIP	LIP OF GUTTER
TC	TOP OF CURB

SURVEY CONTROL POINT DATA TABLE

Point	Northing	Easting	Elev.	Description
1	1913520.281	6354941.459	131.29	FND 2" A.D. "SMART PROJECT CONTROL 371 PLS7935"
2	1913586.602	6355384.873	132.25	SET CUT
3	1913514.362	6355059.448	133.28	SET CUT X
4	1913625.310	6355060.694	132.92	SET PK NAIL
5	1913578.022	6354682.202	129.17	FND CUT X
6	1913397.776	6354950.433	129.1	SET SPIKE 90 PENNY
7	1913822.912	6354943.585	129.83	SET SPIKE 90 PENNY

GENERAL NOTES (CONTINUED FROM SHEET 1)

12. THE CONTRACTOR SHALL MAINTAIN TRAFFIC, FLAGGING, AND PEDESTRIAN USE CONTROL DURING CONSTRUCTION IN ACCORDANCE WITH THE CURRENT EDITION OF THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (CAMUTCD) AND AS DIRECTED BY THE ENGINEER. SIGNS SHALL BE CONSTRUCTED WITH REFLECTIVE MATERIAL ON A BACKING OF METAL, FABRIC OR OTHER DURABLE WEATHER RESISTANT MATERIAL ONLY (NO WOOD SIGNS). SIGNS SHALL BE COVERED OR REMOVED WHEN NOT REQUIRED.

13. THE CONTRACTOR SHALL MAINTAIN REASONABLE ACCESS TO ALL SIDEWALKS, STREETS AND DRIVEWAYS DURING CONSTRUCTION ACCORDING TO ADA STANDARDS.

14. ALL WALKWAYS SHALL BE SAFE AND USEABLE AT THE END OF EACH WORKDAY OR AS DIRECTED BY THE ENGINEER.

15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEAN UP AND REMOVAL OF ALL LITTER AND DEBRIS FROM THE PROJECT SITE ON A WEEKLY BASIS REGARDLESS OF WHETHER THE LITTER OR DEBRIS WAS GENERATED BY THE CONTRACTOR, THE PUBLIC OR OTHERS.

16. THE CONTRACTOR SHALL PRESERVE AND PROTECT CITY MONUMENTS WHEREVER POSSIBLE. THE CONTRACTOR SHALL COORDINATE WITH THE CITY ENGINEER 10 WORKING DAYS PRIOR TO DISTURBING ANY MONUMENT.

17. PRIOR TO COMMENCING WORK WITHIN THE LIMITS OF THE COLGAN CREEK CHANNEL, THE CONTRACTOR SHALL OBTAIN A REVOCABLE LICENSE FROM THE SONOMA COUNTY WATER AGENCY. CONTACT MIKE TOVANI AT (707) 547-1070 72-HOURS IN ADVANCE OF CONSTRUCTION.

REGISTERED PROFESSIONAL ENGINEER
STEVEN B. FRYESON
No. 42110
CIVIL
STATE OF CALIFORNIA

City of Santa Rosa

NO.	DATE	REVISION	BY

SCALE: 1" = 80'
DWN BY: ML
DATE: 9/27/2019
CHK BY: SF

APPROVED: *Deputy Director – Engineering*
By _____ Date 1/27/20
Lori Urbanek, PE

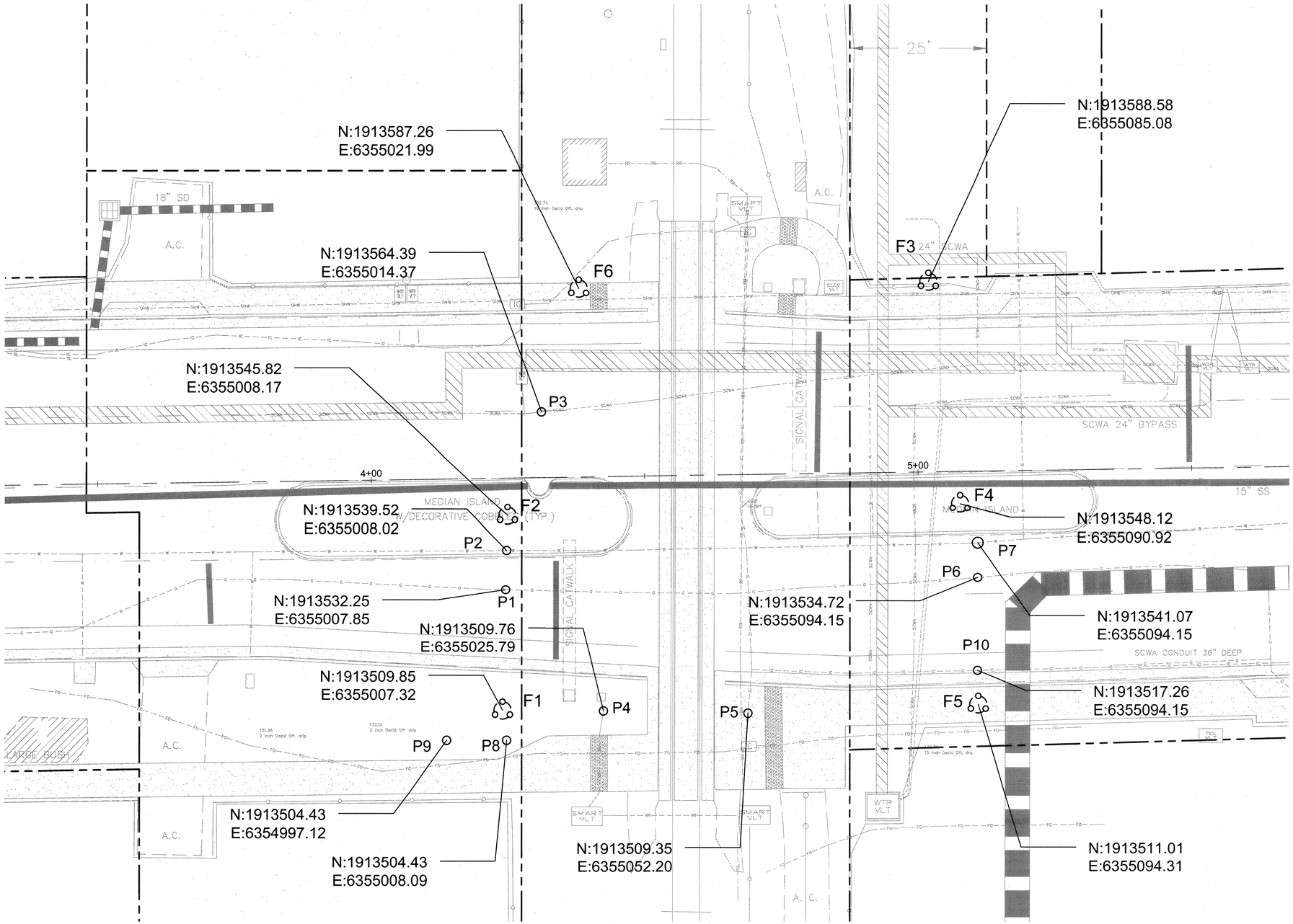
CITY OF SANTA ROSA
SMART MULTI-USE PATH
HEARN AVENUE GRADE CROSSING

SURVEY CONTROL PLAN

CONTRACT NO.
C01727

SHEET **2** OF 12

FILE NO. 2018-0017



POTHOLES			
LABEL	TYPE	SURFACE ELEVATION (FEET)	EXCAVATION DEPTH (FEET)
P1	GAS UTILITY	133.13	5.33*
P2	WATER UTILITY	133.83	5.5*
P3	S.C.W.A CONDUIT	133.21	5.25
P4	SMART UTILITY	133.10	3.96
P5	SMART UTILITY	133.52	3.00
P6	GAS UTILITY	132.35	3.00
P7	WATER UTILITY	132.53	4.66
P8	BORE PIT	132.99	5*
P9	BORE PIT	132.40	5*
P10	SMART UTILITY	132.11	2.91
F1	POLE FOUNDATION	N/A	6, 6
F2	POLE FOUNDATION	N/A	7, 10
F3	POLE FOUNDATION	N/A	6, 5
F4	POLE FOUNDATION	N/A	9, 7
F5	POLE FOUNDATION	N/A	9, 9, 10
F6	POLE FOUNDATION	N/A	6, 6.5

NOTES

POLE FOUNDATION AND BORE PIT POT HOLES WERE EXCAVATED TO MAXIMUM POLE DEPTH OR UNTIL ROCKY SOIL WAS ENCOUNTERED. TWO OR THREE HOLES WHERE POT HOLED BASED ON THE DIAMETER OF THE PROPOSED FOUNDATION. NO UTILITY CONFLICTS WHERE FOUND.

*THE MARKED UTILITY WAS NOT FOUND. BASED ON ROADWAY UPLIFT, IT IS ASSUMED THAT THE UTILITY IS AT A GREATER DEPTH THAN POT HOLED.

LEGEND

FOUNDATION 2 OR 3 HOLE POTHOLE

UTILITY ONE-HOLE POTHOLE AND BORE PIT LOCATION

N

10 0 5 10 20
SCALE PLAN SCALE FEET

REGISTERED PROFESSIONAL ENGINEER STEVEN B. FRIESON No. 42110 CIVIL STATE OF CALIFORNIA

City of Santa Rosa

NO.	DATE	REVISION	BY

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DATE: 9/27/2019
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APPROVED: Deputy Director – Engineering
By Lori Urbanek, PE Date 1/27/20

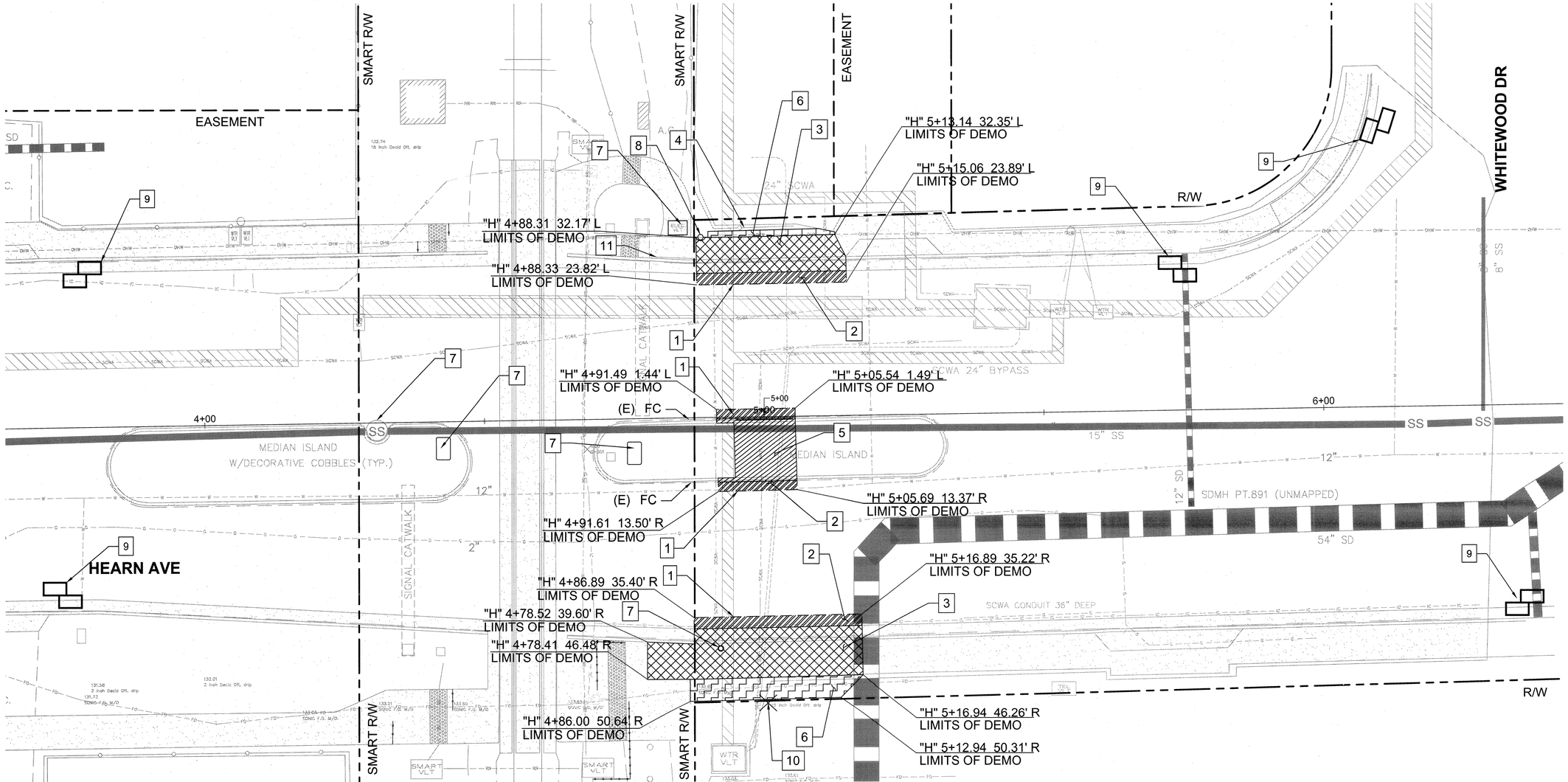
CITY OF SANTA ROSA
SMART MULTI-USE PATH
HEARN AVENUE GRADE CROSSING

POT HOLE RESULTS

CONTRACT NO. C01727

SHEET 3 OF 12

FILE NO. 2018-0017



DEMOLITION GENERAL NOTES:

1. SAWCUT AND REMOVAL LINES ARE APPROXIMATE AND SUBJECT TO FIELD MODIFICATION DEPENDING ON ACTUAL LIMITS OF ASPHALT, CURB, GUTTER, AND SIDEWALK WORK.
2. LOCATION OF UTILITY FACILITIES SHOWN WERE OBTAINED FROM CITY SURVEY DATA. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION OF ALL EX. UTILITIES AT LEAST 48 HOURS IN ADVANCE OF EXCAVATION.
3. DEMOLITION FOR TRAFFIC SIGNAL PAVING NOT SHOWN, SEE SHEET 5 FOR SIGNAL CONDUIT TRENCH DETAILS.

DEMOLITION SHEET NOTES AND LEGEND:

ROADWAY

1. SAWCUT (E) PAVEMENT
2. REMOVE (E) ASPHALT PAVEMENT (0.5' DEPTH)
3. REMOVE (E) CONCRETE SURFACING
4. PROTECT IN PLACE (E) FENCE
5. REMOVE (E) COBBLE STONES AND MEDIAN CURB
6. CLEAR AND GRUB
7. (E) UTILITY COVER (TYPE VARIES)
8. (E) UTILITY POLE
9. GRAVEL BAGS PER DETAIL 2, SHEET 9
10. REMOVE EXISTING TREE AND ROOT MASS
11. REMOVE AND RELOCATE EXISTING PEDESTRIAN BARRICADE. SEE L-1

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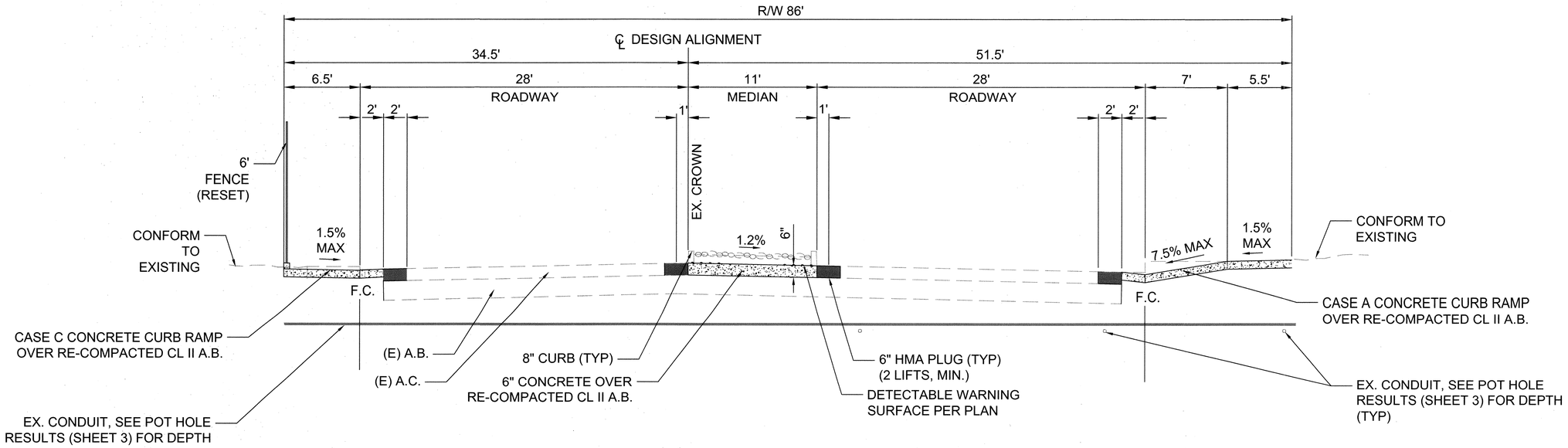
SCALE: 1" = 10'
DWN BY: ML
APPROVED: Deputy Director – Engineering
By Lori Urbanek, PE
Date 9/27/20

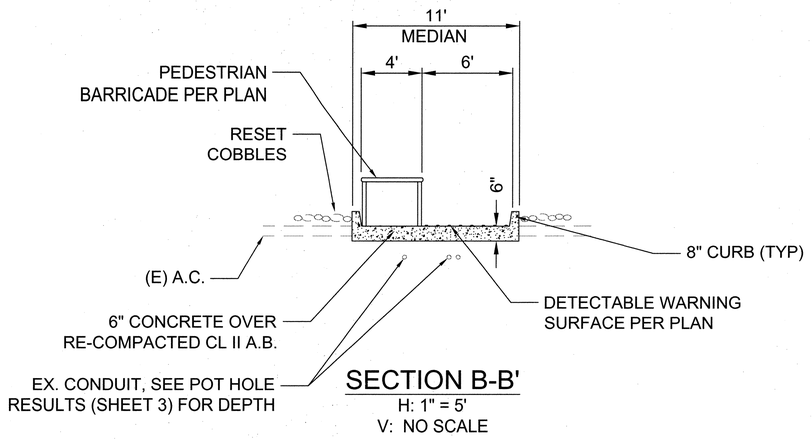
CITY OF SANTA ROSA
SMART MULTI-USE PATH
HEARN AVENUE GRADE CROSSING
DEMOLITION AND EROSION CONTROL PLAN

CONTRACT NO. C01727
SHEET 4 OF 12
FILE NO. 2018-0017



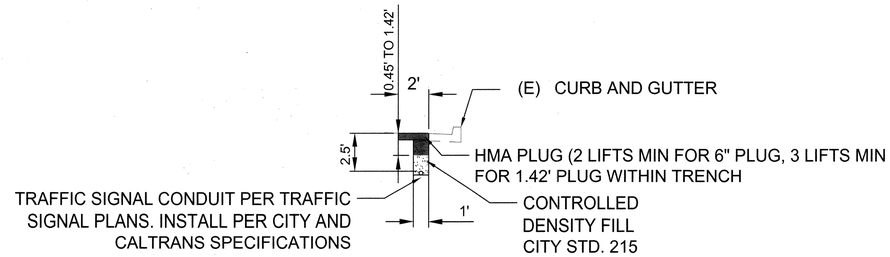
SECTION A-A': HEARN AVE STA 5+00

H: 1" = 5'
V: NO SCALE



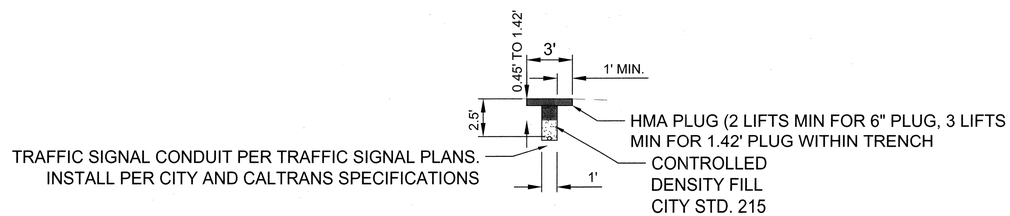
SECTION B-B'

H: 1" = 5'
V: NO SCALE



TYPICAL SIGNAL CONDUIT TRENCH

ADJACENT TO CURB
H: 1" = 5'
V: NO SCALE



TYPICAL SIGNAL CONDUIT TRENCH

H: 1" = 5'
V: NO SCALE

5 0 5 10
SCALE PLAN SCALE FEET

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SCALE: AS SHOWN
DWN BY: NL
DATE: 9/27/2019
CHK BY: SF

APPROVED: *Deputy Director – Engineering*
By Lori Urbanek, PE
Date 1/27/20

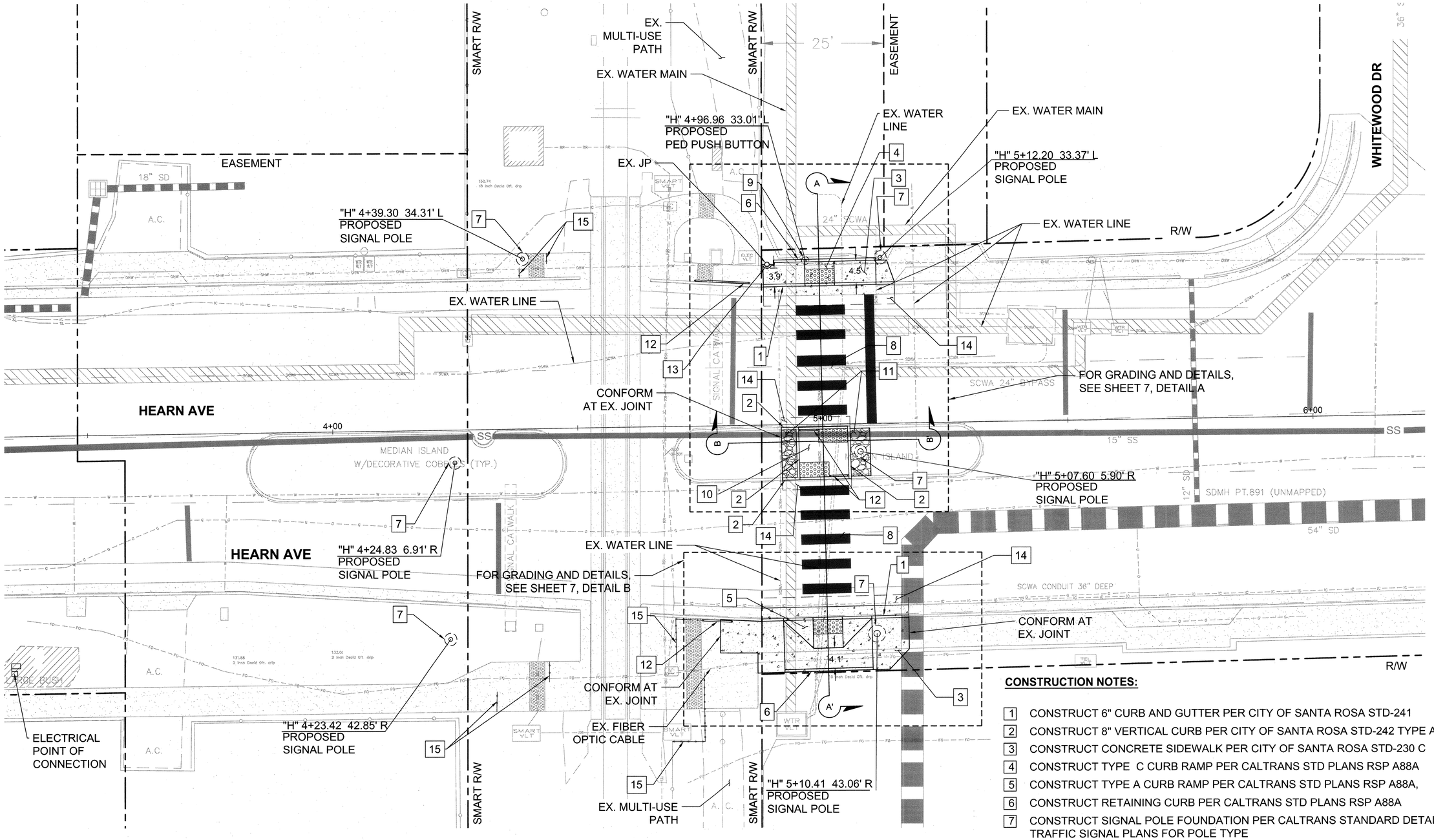
CITY OF SANTA ROSA
SMART MULTI-USE PATH
HEARN AVENUE GRADE CROSSING

CROSS SECTIONS

CONTRACT NO.
C01727

SHEET 5 OF 12

FILE NO. 2018-0017



GENERAL NOTES:

1. SEE SHEET 5 FOR TRAFFIC SIGNAL CONDUIT TRENCH TYPICAL CROSS SECTIONS
2. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL PROPOSED SIGNAL POLES AND COORDINATE WITH CITY ENGINEER

N

10 0 5 10 20
SCALE PLAN SCALE FEET

LEGEND:

- CONCRETE SIDEWALK
- DETECTABLE WARNING SURFACE
- COBBLES

CONSTRUCTION NOTES:

1. CONSTRUCT 6" CURB AND GUTTER PER CITY OF SANTA ROSA STD-241
2. CONSTRUCT 8" VERTICAL CURB PER CITY OF SANTA ROSA STD-242 TYPE A
3. CONSTRUCT CONCRETE SIDEWALK PER CITY OF SANTA ROSA STD-230 C
4. CONSTRUCT TYPE C CURB RAMP PER CALTRANS STD PLANS RSP A88A
5. CONSTRUCT TYPE A CURB RAMP PER CALTRANS STD PLANS RSP A88A,
6. CONSTRUCT RETAINING CURB PER CALTRANS STD PLANS RSP A88A
7. CONSTRUCT SIGNAL POLE FOUNDATION PER CALTRANS STANDARD DETAILS. SEE TRAFFIC SIGNAL PLANS FOR POLE TYPE
8. CONTINENTAL CROSSWALK MARKING, SEE SIGNING AND STRIPING PLAN, SHEET 7
9. CONSTRUCT PEDESTRIAN PUSH BUTTON FOUNDATION PER DETAIL 3, SHEET 9. SEE TRAFFIC SIGNAL PLANS FOR POLE TYPE
10. CONSTRUCT 6" CONCRETE FLUSH MEDIAN WITH DETECTABLE WARNING SURFACES
11. RESET EX. COBBLES WITH GROUT
12. INSTALL TYPE I PEDESTRIAN BARRICADE PER CALTRANS DETAIL ES-7Q
13. PLACE ½" EXPANSION JOINT AT POLE
14. HMA PLUG, TYPICAL. SEE SECTION A-A, SHEET 5
15. SMART TO INSTALL Z-GATES AS SEPARATE PROJECT

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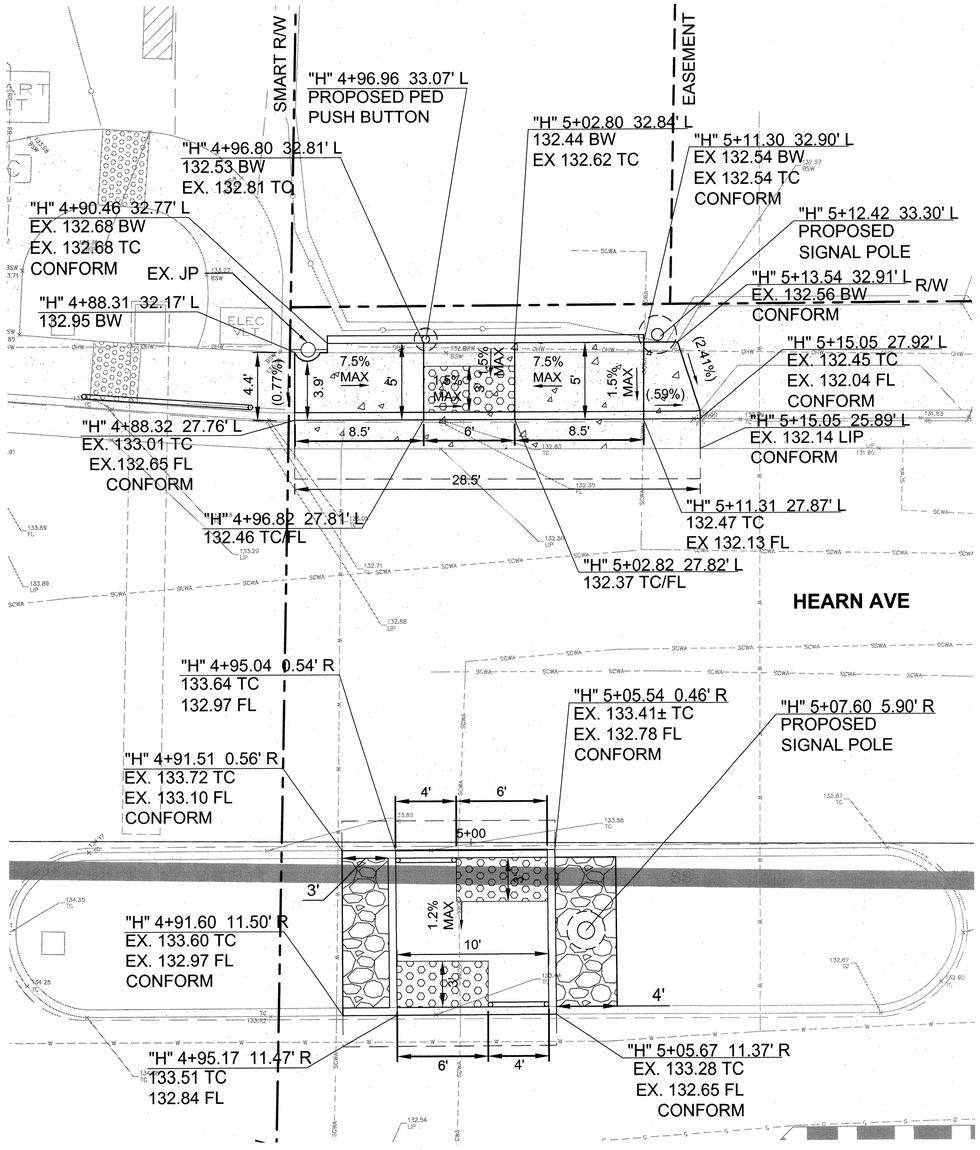
By Lori Urbanek, PE
Date 1/27/20

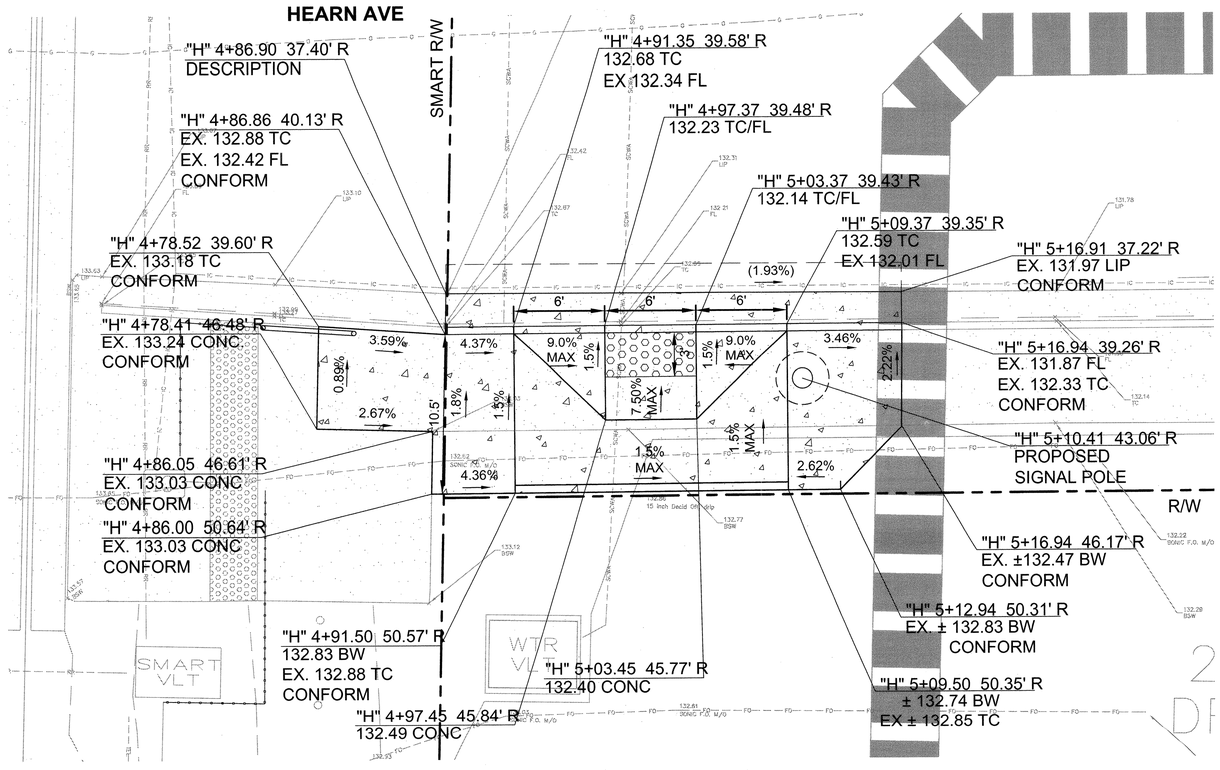
CITY OF SANTA ROSA
SMART MULTI-USE PATH
HEARN AVENUE GRADE CROSSING

LAYOUT

CONTRACT NO. C01727
SHEET 6 OF 12
FILE NO. 2018-0017



DETAIL A
NORTH SIDE OF HEARN AVE CROSSING AND MEDIAN



DETAIL B
SOUTH SIDE OF HEARN AVE CROSSING

N

5 0 5 10
SCALE PLAN SCALE FEET

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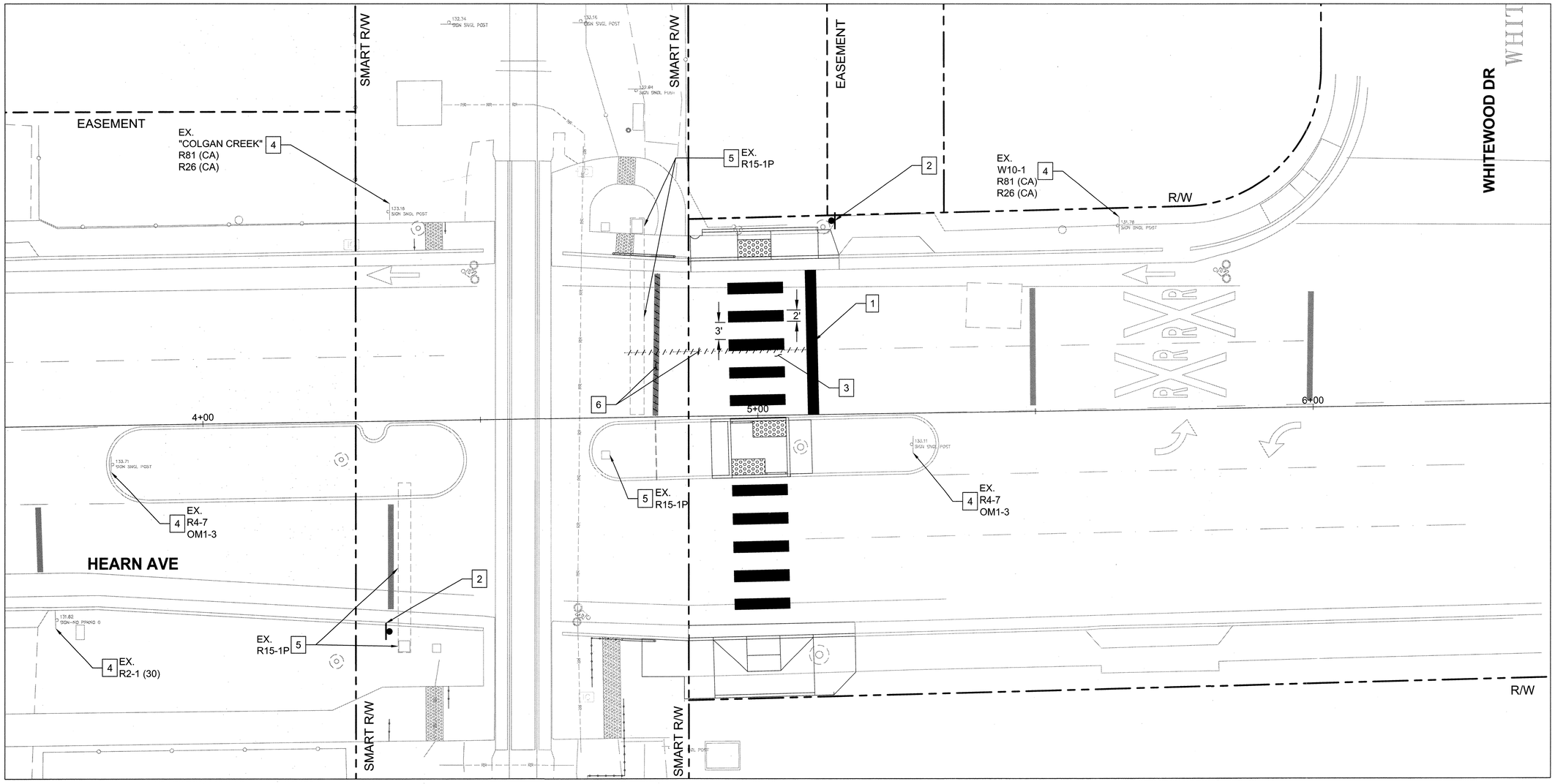
APPROVED: Deputy Director – Engineering
By Lori Urbanek, PE Date 1/22/20

CITY OF SANTA ROSA
SMART MULTI-USE PATH
HEARN AVENUE GRADE CROSSING

GRADING PLAN

CONTRACT NO.
C01727
SHEET 7 OF 12
FILE NO. 2018-0017



GENERAL STRIPING NOTES:

1. THE CONTRACTOR SHALL REMOVE ALL CONFLICTING STRIPING, PAVEMENT MARKINGS AND LEGENDS BY SANDBLASTING. ANY DEBRIS SHALL BE PROMPTLY REMOVED BY THE CONTRACTOR.
2. ALL LIMIT LINES / STOP LINES, CROSSWALK LINES, AND PAVEMENT MARKINGS SHALL BE THERMOPLASTIC.

SIGNAGE AND STRIPING LEGEND AND SHEET NOTES:

- [1] INSTALL 24" WIDE WHITE STOP BAR ~ 25 LF (THERMOPLASTIC)
- [2] FURNISH AND INSTALL SIGN POST PER COUNTY OF SONOMA DETAIL 712A WITH R10-6 SIGN.
- [3] INSTALL CONTINENTAL CROSSWALK MARKING PER DETAIL 1, SHEET 9
- [4] PROTECT IN PLACE EXISTING SIGN AND POST
- [5] PROTECT IN PLACE EXISTING SIGN MOUNTED ON EXISTING RAILROAD EQUIPMENT
- [6] REMOVE EXISTING PAVEMENT STRIPING

N

10 0 5 10 20
SCALE PLAN SCALE FEET

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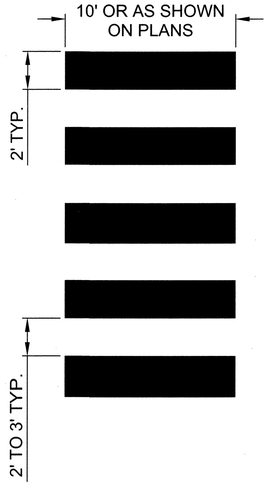
APPROVED: Deputy Director – Engineering
By _____ Date 1/27/20
Lori Urbanek, PE

CITY OF SANTA ROSA
SMART MULTI-USE PATH
HEARN AVENUE GRADE CROSSING
SIGNAGE AND STRIPING PLAN

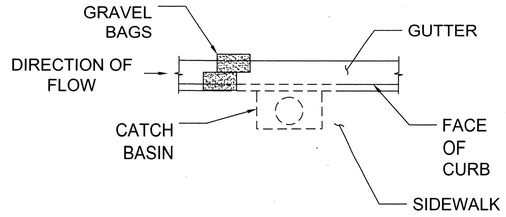
CONTRACT NO.
C01727

SHEET 8 OF 12

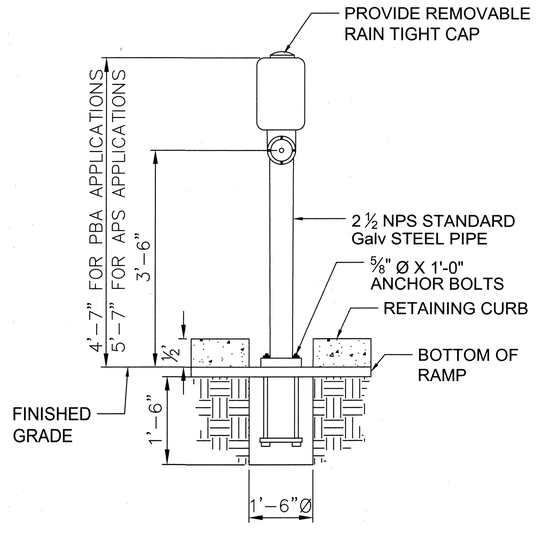
FILE NO. 2018-0017



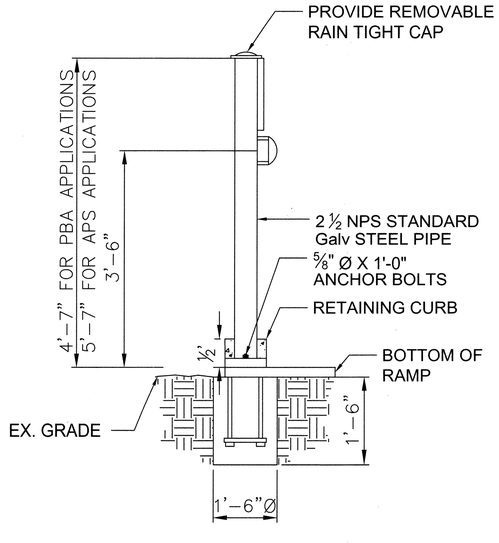
1 CONTINENTAL STYLE CROSSWALK
NTS



2 TEMPORARY STORM DRAIN SEDIMENT TRAP
NTS



FRONT VIEW



SIDE VIEW

3 PUSH BUTTON ASSEMBLY POST
NTS

REGISTERED PROFESSIONAL ENGINEER
STEVEN B. FRIESON
No. 42110
CIVIL
STATE OF CALIFORNIA

City of Santa Rosa

NO.	DATE	REVISION	BY

SCALE: NTS
DWN BY: NL
DATE: 9/27/2019
CHK BY:

APPROVED: Deputy Director – Engineering
By _____ Date 1/27/20
Lori Urbanek, PE

CITY OF SANTA ROSA
SMART MULTI-USE PATH
HEARN AVENUE GRADE CROSSING

DETAILS

CONTRACT NO.
C01727

SHEET 9 OF 12

FILE NO. 2018–0017

TRAFFIC SIGNAL NOTES: (THIS SHEET ONLY)

1. TRAFFIC SIGNAL WORK SHALL CONFORM TO THE CITY OF SANTA ROSA TRAFFIC STANDARDS, LATEST EDITION, AND THE 2018 CALTRANS STANDARD PLANS AND SPECIFICATIONS FOR DETAILS NOT COVERED IN THE CITY STANDARDS.

2. APS TO BE POLARA NAVIGATOR 2-WIRE SYSTEM. RACK MOUNTED CCU MODEL: iCCU-C.

3. INSTALL CITY-FURNISHED MCCAIN 2070LX WITH 2033 SOFTWARE CONTROLLER WITH MODEM AND SAFETRAN 332L. CALL ELECTRICAL SHOP AT LEAST TEN (10) WORKING DAYS PRIOR TO CONTRACTOR'S SCHEDULED INSTALL DATE. TERMINATE SIC TO TERMINALS TO MATCH WIRE COLORS OF EXISTING SIC CONNECTIONS AT THE HEARN/DOWD INTERSECTION.

4. CITY-FURNISHED MODEL 332L CABINET TO INCLUDE: TASK LIGHTING, DOCUMENT DRAWER, DROP-DOWN SHELF INSIDE FRONT DOOR, AND QUICK RELEASE CABINET FAN MOUNT. GDI MODEL 2070-6A MODEM, ACTELLIS ETHERNET SWITCH MODEL ML684d AND ML604d EXTENDER, 2070-7B SERIAL COMM MODULE, 12-200 LOAD SWITCHES, 2-204 FLASHERS, 2-242 DC ISOLATORS, 2-222 DETECTOR AMPLIFIERS, 1-EDI-2010 ECLIP CONFLICT MONITOR UNIT, AND ALL NECESSARY CARDS, MODULES, AND COMPONENTS TO OPERATE INTERSECTION.

5. FURNISH AND INSTALL BBS ON SOUTH SIDE OF CONTROLLER CABINET IN NEMA ENCLOSURE, TESCO 22-000-BBS OR APPROVED EQUAL.

6. THE CONTROLLER CABINET SHALL INCLUDE CITY-FURNISHED EQUIPMENT FOR A RAILROAD PREEMPTION SYSTEM PROVIDING ALL AREMA RAIL INTERCONNECT FUNCTIONS LISTED IN SECTION 10-3.07 UNDER RAILROAD CABLE. KNOWN SYSTEM MANUFACTURES ARE MCCAIN TRAFFIC SOLUTIONS, OR APPROVED EQUAL, WHO PROVIDES THE FOLLOWING ITEMS:
   - RAILROAD INTERFACE PANEL (RRIP), M54419A
   - RRIP HARNESS AND MOUNTING KIT C11, M54451

7. ALL PULL BOXES SHALL BE CALTRANS NO. 5 PER STANDARD PLANS ES-8A UNLESS OTHERWISE NOTED.

8. POLES WITH PBAs SHALL BE LOCATED WITH 3 FEET OF LEVEL SIDEWALK ADJACENT TO THE PBA.

9. EXTEND PEDESTRIAN PUSH BUTTON HOUSING AS NEEDED BY INSTALLING POLARA PUSH BUTTON FRAME EXTENDER.

10. VIDEO DETECTION SHALL CONSIST OF A GRIDSMART CAMERA DETECTION SYSTEM WITH TYPE B LOOP DETECTORS FOR ADVANCE DETECTION. CONTRACTOR SHALL COMPLY WITH VENDOR GUIDELINES FOR INSTALLATION OF ALL COMPONENTS. CONTRACTOR SHALL HAVE A VENDOR-REPRESENTATIVE PRESENT AT TURN-ON.

11. TWELVE-CONDUCTOR RAILROAD CABLE (12CSC): THE TWELVE-CONDUCTOR SIGNAL CABLE SHALL CONSIST OF ELEVEN NO. 14 CONDUCTORS AND ONE NO. 12 CONDUCTOR. THE CABLE JACKET SHALL HAVE A MINIMUM AVERAGE THICKNESS OF 60 MILS AND SHALL HAVE A MINIMUM THICKNESS AT ANY POINT OF 48 MILS. THE NOMINAL OUTSIDE DIAMETER OF THE CABLE SHALL NOT EXCEED 0.80-INCH. THE COLOR CODE FOR THE NO. 12 CONDUCTOR SHALL BE WHITE. THE NO. 12 CONDUCTOR IS NOT USED FOR RAILROAD PREEMPTION INTERCONNECT.

12. NEW SIC INSTALLED FROM NEW CONTROLLER, THROUGH BOX A TO EXISTING CONTROLLER AT DOWD DRIVE TO BE A HYBRID FIBER OPTIC CABLE CONSTRUCTED WITH 12 SMF AND 6 PAIR OF 22 AWG SOLID COPPER CONDUCTORS. MFG SUPERIOR ESSEX P/N 720/2336S. TERMINAL STRIPS SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR.

CONSTRUCTION NOTES:

1. INSTALL PAD PER ES-3C. EXTEND PAD 10' TO THE EAST TO ACCOMODATE SERVICE ENCLOSURE. INCREASE 4'-2" DEPTH DIMENSION TO 7'-2" AND INCLUDE 30" MINIMUM PAD AROUND ALL FOUR SIDES OF CABINET. SEE TRAFFIC SIGNAL NOTE 3.

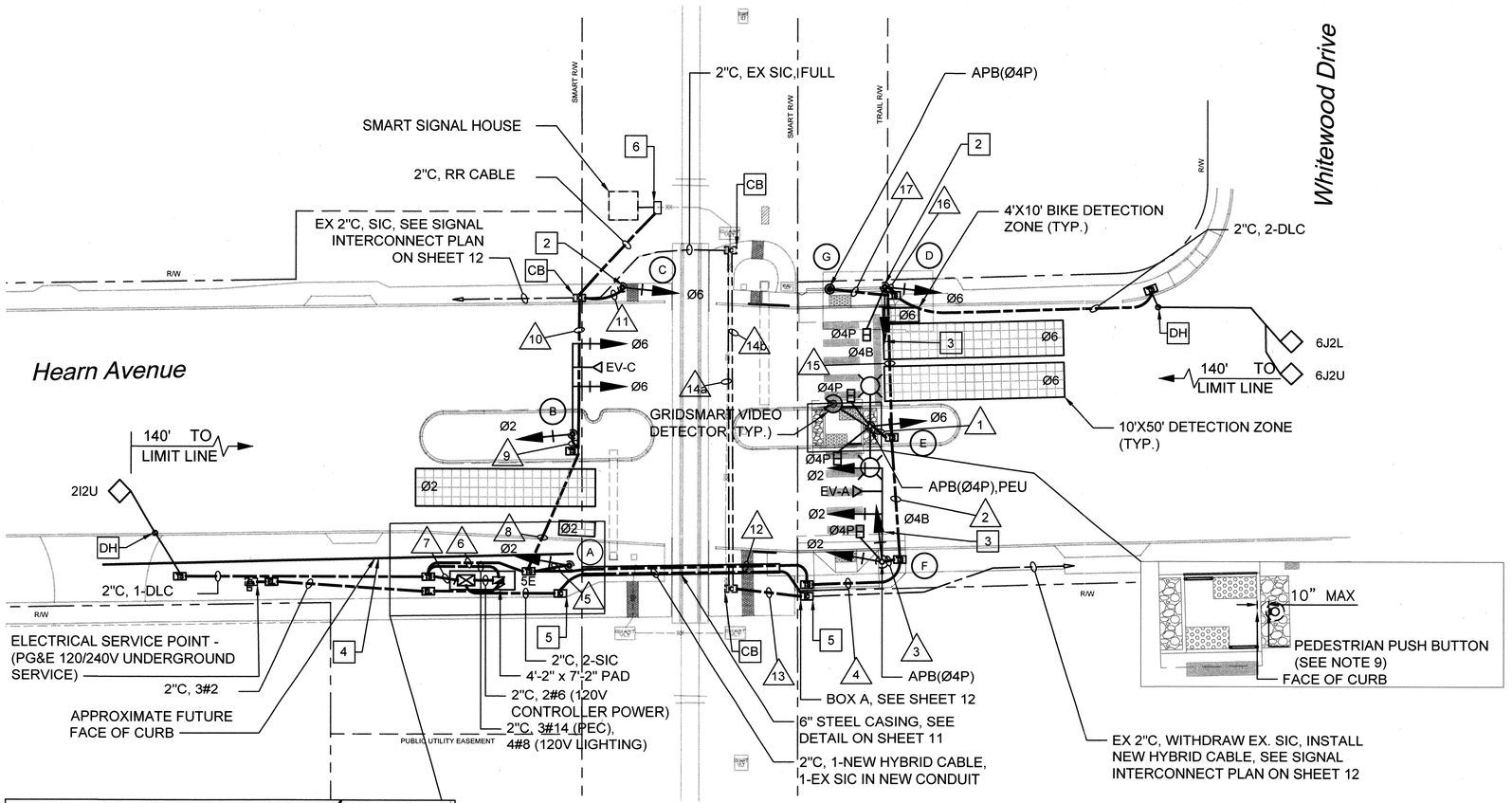
2. POTHOLE TO FULL DEPTH OF FOUNDATION BEFORE DIGGING FOUNDATION OR HAND-DIG FOUNDATION. HAVE USA MARKINGS IN PLACE BEFORE POTHOLING.

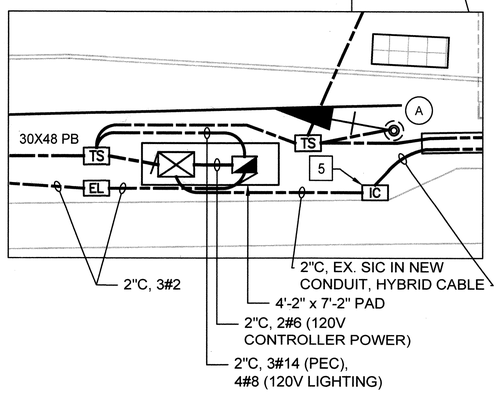
3. INSTALL BICYCLE SIGNAL PER CALTRANS STANDARD PLAN ES-4C.

4. ALL EQUIPMENT ON SOUTH SIDE OF HEARN AVENUE SHALL BE INSTALLED SOUTH OF FUTURE FACE OF CURB.

5. INTERCONNECT PULLBOX SHALL BE 17"x30" WITH FLARED WALLS, AND A MINIMUM FINISH DEPTH OF NO LESS THAN 28" TO THE BOTTOM OF THE LID (FL 36 OR EQUIVALENT) .

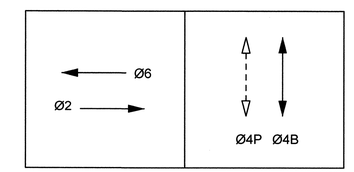
6. COIL 50' OF RR CABLE IN PB. TO BE TERMINATED BY SMART.





LEGEND

	New Opticom 721 Detector
DH	Standard Note, See Caltrans Std. Plan ES-1A
CB	Install Conduit into Existing Pull Box
	GridSMART Video Camera
	Video Detection Zone
6J2U	Detector Address
Exist. / NEW	Traffic Signal Conduit
TS	Pull Box with Lid Inscribed SIGNAL
IC	Pull Box with Lid Inscribed INTERCONNECT



PROPOSED PHASE DIAGRAM

EVA=Ø2
EVC=Ø6

0 20' 40'
SCALE: 1"=20'

UNDERGROUND SERVICE ALERT
DIAL TOLL FREE 1-800-227-2600 OR 811
AT LEAST TWO WORKING DAYS BEFORE DIGGING

REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA — STEVEN M. FITZGERALD — C036435 — Exp. 6/30/20 — CIVIL
01-16-2020

W-Trans

City of Santa Rosa

NO.	DATE	REVISION	BY

DATE: 1/7/2020
CHK BY: SF
SCALE: 1" = 20'
DWN BY: KR
APPROVED: Deputy Director - Engineering
By _____ Date 1/27/20

TRAFFIC SIGNAL PLAN

CITY OF SANTA ROSA
SMART MULTI-USE PATH
HEARN AVENUE CROSSING

CONTRACT NO. C01727
SHEET 10 OF 12
FILE NO. 2018-0017

CONDUCTOR TABLE

AWG	CIRCUIT	RUNS 1	2	3	4	5	6	7	8	9	10	11	12	13	14a	14b	15	16	17
NO. 14	ø2			3	3	3	9	9	3	3			3						
	ø4B		3	3	6		6	6					6				3	3	
	ø6	3	6		6		12	12	6	3	3	3	6				3	3	
	ø4P	2	4	2	6		6	4					6				2	2	
	PBA(ø4P)	2	6	2	8		6	4					6				4	2	2
	PEC	3	3		3		3						3						
	SPARES		3		3		6	6	3		3		3				3		
	TOTAL No. 14	10	25	10	35	3	48	41	12	6	6	3	33				15	10	2
NO. 8	SIGNAL NEUTRAL	1	1	1	1	1	3	3	1	1	1	1	1				1	1	
	LIGHTING	4	4		4		4						4						
	GROUND (BARE)	1	1	1	1	1	1	1	1	1	1	1	1	1		1	1	1	1
	TOTAL No. 8	6	6	2	6	2	8	4	2	2	2	2	6	1		1	2	2	1
DLC	ø2							1											
	ø6		2		2		2	2					2				2		
	TOTAL DLC		2		2		2	3					2				2		
VIDS	GRIDSMART	1	1		1		1	1					1						
SIC	EXISTING SIC													1**		1*			
	NEW SIC																		
OPTICOM CABLE	CHANNEL A			1	1		1	1					1						
	CHANNEL C						1	1	1	1									
	TOTAL EV CABLES			1	1		2	2	1	1			1						
RR																			
	RR CABLE						1	1	1		1								
CONDUIT SIZE (INCHES)		2"	3"	2"	3"	2"	3"	2–3"	3"	3"	3"	3"	3"	2"	4"	4"	3"	2"	2"
CONDUIT FILL (PERCENT)		19	15	12	19	5	25	10	6	4	3	2	18	4	0	1	8	10	3
CONDUIT STATUS (N=NEW, E=EXISTING)		N	N	N	N	N	N	N	N	N	N	N	N	N	E	E	N	N	N

EMPTY CONDUIT

* EXISTING SIC TO REMAIN, ** PULL EXISTING SIC INTO NEW CONDUIT

POLE AND EQUIPMENT SCHEDULE

No.	STANDARD TYPE	SMA	LMA	VEHICLE SIGNAL MAST ARM MTG	ø	POLE MTG	ø	PED SIGNAL ø	MTG	PBA ø	ARROW	LED LUMINAIRE	SPECIAL REQUIREMENTS
(A)	1–A					TV–1–T	2						
(B)	18–3–100*	25'		MAT MAS	6 6	SV–1–T	2						TENONS ON REVERSE SIDE OF MAST ARM, EVC
(C)	1–A					TV–1–T	6						
(D)	1–A					TV–2–T	4B 6	4P	SP–1–T	4P	-->		
(E)	15D–TS		12' 12'			SV–1–T	6	4P 4P	SP–2–T	4P	<-->	88W 88W	PEU, GRIDSMART. FURNISH AND INSTALL TWO 88W LIGHT FIXTURES ON POLE.
(F)	18–3–100*	25'		MAT MAS	2 2	SV–2–T	2 4B	4P	SP–1–T	4P	<--		EVA
(G)	PPB POST									4P	<--		

4B = PHASE 4 BICYCLE SIGNAL HEAD PER CSP ES–4C; * = DIMENSION F SHALL BE STANDARD 12'

6" STEEL CASING DETAIL

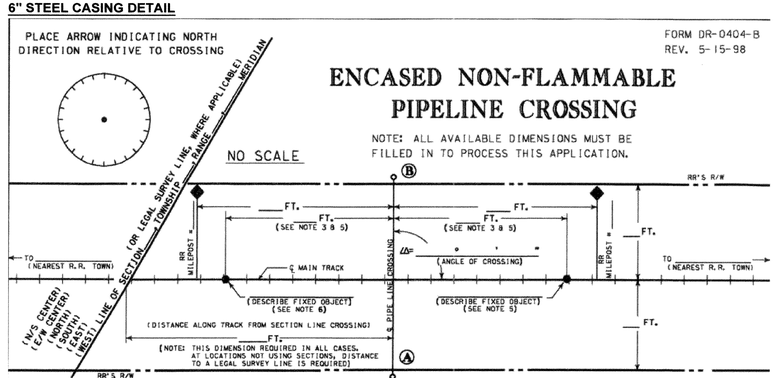
PLACE ARROW INDICATING NORTH DIRECTION RELATIVE TO CROSSING

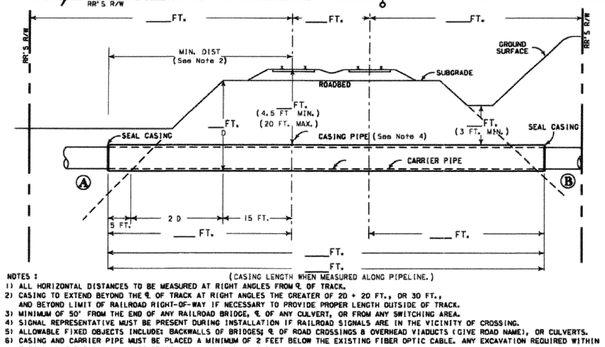
FORM DR-0404-B
REV. 5-15-98

ENCASED NON-FLAMMABLE PIPELINE CROSSING

NOTE: ALL AVAILABLE DIMENSIONS MUST BE FILLED IN TO PROCESS THIS APPLICATION.

NO SCALE





STEEL CASING WALL THICKNESS CHART	
MINIMUM THICKNESS	DIAMETER OF CASING PIPE
.2500"	1/4"	12" OR LESS
.3125"	5/16"	OVER 12"–18"
.3750"	3/8"	OVER 18"–22"
.4375"	7/16"	OVER 22"–28"
.5000"	1/2"	OVER 28"–34"
.5625"	9/16"	OVER 34"–42"
.6250"	5/8"	OVER 42"–48"

OVER 48" MUST BE APPROVED BY R.R. CO.

NOTE: THIS CHART IS ONLY FOR SMOOTH STEEL CASING PIPES WITH MINIMUM YIELD STRENGTH OF 35,000 PSI.

FORMULA TO FIGURE CASING LENGTH WITH ANGLE OF CROSSING OTHER THAN 90°

NOTES :
1) ALL HORIZONTAL DISTANCES TO BE MEASURED AT RIGHT ANGLES FROM ℄ OF TRACK.
2) CASING TO EXTEND BEYOND THE ℄ OF TRACK AT RIGHT ANGLES THE GREATER OF 2D + 20 FT., OR 30 FT., AND BEYOND LIMIT OF RAILROAD RIGHT-OF-WAY IF NECESSARY TO PROVIDE PROPER LENGTH OUTSIDE OF TRACK.
3) MINIMUM OF 50' FROM THE END OF ANY RAILROAD BRIDGE, ℄ OF ANY CULVERT, OR FROM ANY SWITCHING AREA.
4) SIGNAL REPRESENTATIVE MUST BE PRESENT DURING INSTALLATION IF RAILROAD SIGNALS ARE IN THE VICINITY OF CROSSING.
5) ALLOWABLE FIXED OBJECTS (INCLUDE: BACKWALLS OF BRIDGES) ℄ OF ROAD CROSSINGS & OVERHEAD VIADUCTS (GIVE ROAD NAME), OR CULVERTS.
6) CASING AND CARRIER PIPE MUST BE PLACED A MINIMUM OF 2 FEET BELOW THE EXISTING FIBER OPTIC CABLE. ANY EXCAVATION REQUIRED WITHIN 5 FEET OF THE EXISTING FIBER OPTIC CABLE MUST BE HAND DUG.

A) IS PIPELINE CROSSING WITHIN DEDICATED STREET ?____YES;____NO;
B) IF YES, NAME OF STREET _____
D) DISTRIBUTION LINE _____ OR TRANSMISSION LINE _____
C) CARRIER PIPE :
COMMODITY TO BE CONVEYED_____
OPERATING PRESSURE_____PSI
WALL THICKNESS_____;DIAMETER_____;MATERIAL_____;
E) CASING PIPE :
WALL THICKNESS_____;DIAMETER_____;MATERIAL_____;
NOTE :CASING MUST HAVE 2" CLEARANCE BETWEEN GREATEST OUTSIDE DIAMETER OF CARRIER PIPE AND INTERIOR DIAMETER OF CASING PIPE. WHEN FURNISHING DIMENSIONS, GIVE OUTSIDE OF CARRIER PIPE AND INSIDE OF CASING PIPE.
F) METHOD OF INSTALLING CASING PIPE UNDER TRACK(S):
_____DRY BORE AND JACK (WET BORE NOT PERMITTED) ;
_____TUNNEL ; OTHER_____
G) WILL CONSTRUCTION BE BY AN OUTSIDE CONTRACTOR?____YES;____NO;
H) DISTANCE FROM CENTER LINE OF TRACK TO NEAR FACE OF BORING AND JACKING PITS WHEN MEASURED AT RIGHT ANGLES TO TRACK_____ (30' MIN.)
I) APPLICANT HAS CONTACTED 1-800-336-9193, U. P. COMMUNICATION DEPARTMENT, AND HAS DETERMINED FIBER OPTIC CABLE_____DOES ;_____DOES NOT ; EXIST IN VICINITY OF WORK TO BE PERFORMED . TICKET NO._____

EXHIBIT "A"

(FOR RAILROAD USE ONLY)

UNION PACIFIC RAILROAD CO.

(SUBDIVISION)

M. P _____ E. S. _____

ENCASED _____ CROSSING AT

(NEAREST CITY) (COUNTY) (STATE)

(APPLICANT)

RR FILE NO._____ DATE_____

WARNING

IN ALL OCCASIONS, U. P. COMMUNICATIONS DEPARTMENT MUST BE CONTACTED IN ADVANCE OF ANY WORK TO DETERMINE EXISTENCE AND LOCATION OF FIBER OPTIC CABLE.
PHONE : 1-800-336-9193

CONSTRUCTION NOTES:

1. ALL UNDERGROUND PIPELINES (EXCLUDING DRAINAGE CULVERTS) CROSSING UNDER OR NEAR RAILROAD TRACK SHALL BE IN ACCORDANCE WITH CS 1741 AND CS 1742.
2. ALL CABLE INSTALLATION UNDER OR NEAR RAILROAD TRACK SHALL BE IN ACCORDANCE WITH THE AREMA MANUAL, CHAPTER 1, PART 5.5, "SPECIFICATIONS FOR FIBER OPTIC (ROUTE) CONSTRUCTION ON RAILROAD RIGHT-OF-WAY."
3. CONSTRUCTION OF UNDERGROUND WIRELINES OF 750 VOLTS OR LESS SHALL BE IN ACCORDANCE WITH UNION PACIFIC RAILROAD FROM DR-0404-F.
4. CONSTRUCTION OF UNDERGROUND PIPELINES AND UTILITIES UNDER RAILROAD TRACK SHALL BE BY THE JACK AND BORE METHOD UNLESS OTHERWISE AUTHORIZED BY SMART'S ENGINEER.
5. CONTRACTORS WORKING WITHIN 25 FEET OF THE CENTERLINE OF ANY ACTIVE RAILROAD TRACK SHALL ARRANGE TO HAVE ROADWAY WORKER TRAINING AS REQUIRED BY FEDERAL RAILROAD ADMINISTRATION (FRA) CODE OF FEDERAL REGULATIONS (CFR) PART 213. ARRANGEMENTS MUST BE MADE BY THE CONTRACTOR TO HAVE RAILROAD FLAGGER PROTECTION SUPPLIED BY THE OPERATING RAILROAD.

REGISTERED PROFESSIONAL ENGINEER — STEVEN M. FITZGERALD — No. C036435 — Exp. 6/30/20 — CIVIL — STATE OF CALIFORNIA — 01-16-2020

W-Trans

City of Santa Rosa

NO.	DATE	REVISION	BY

DATE: 1/7/2020 CHK BY: SF

SCALE: DWN BY: KR

APPROVED: Deputy Director – Engineering

By _____ Date 1/27/20

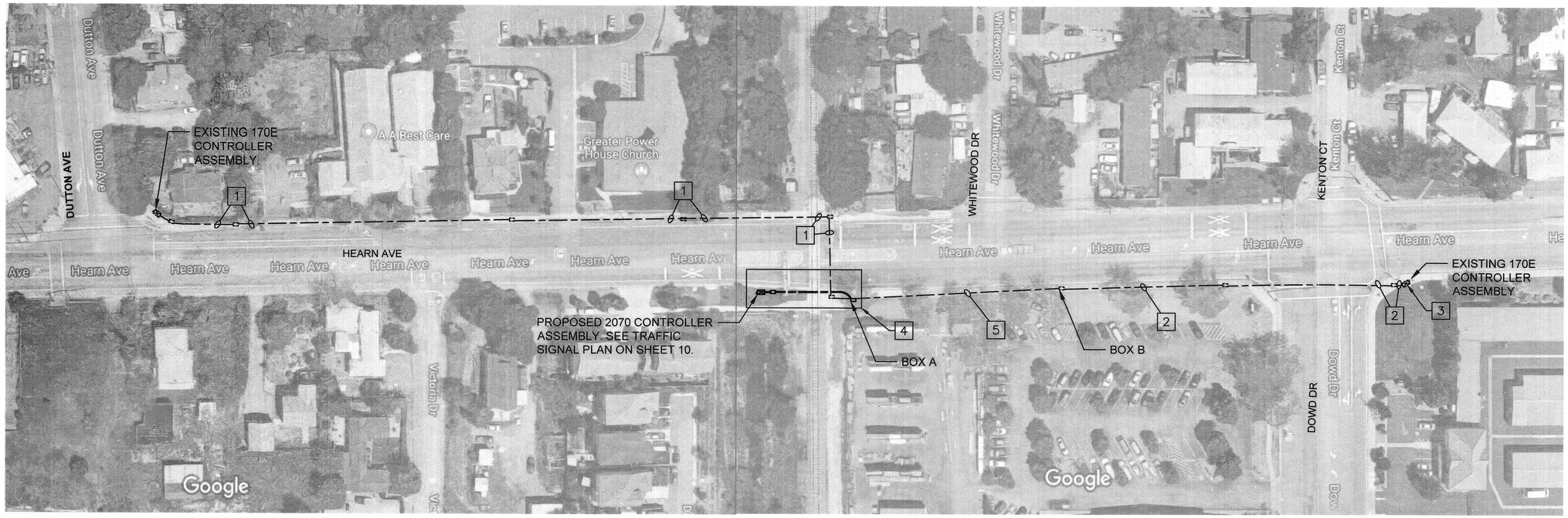
POLE AND CONDUCTOR SCHEDULE

CITY OF SANTA ROSA
SMART MULTI-USE PATH
HEARN AVENUE CROSSING

CONTRACT NO. C01727

SHEET 11 OF 12

FILE NO. 2018–0017



CONSTRUCTION NOTES:

1. EXISTING 2"C, SIC TO REMAIN
2. WITHDRAW EXISTING SIC FROM EXISTING 2"C. INSTALL NEW HYBRID CABLE.
3. DISCONNECT EXISTING SIC FROM TERMINALS AND WITHDRAW FROM CABINET. PULL NEW HYBRID CABLE IN TO CABINET AND CONNECT COPPER PAIRS TO TERMINALS TO MATCH WIRE COLORS TO EXISTING SIC CONNECTIONS.
4. SEE TRAFFIC SIGNAL PLAN ON SHEET 10 FOR DETAIL.
5. CUT EXISTING SIC IN BOX B. WITHDRAW EXISTING SIC FROM EX 2"C FROM BOX A TO BOX B. INSTALL NEW HYBRID CABLE. SEE SIGNAL PLAN ON SHEET 10 FOR DETAIL.

N

0 40' 80'

SCALE: 1"=40'

REGISTERED PROFESSIONAL ENGINEER
STEVEN W. FITZGERALD
No. C036435
Exp. 6/30/20
CIVIL
STATE OF CALIFORNIA
01-16-2020

W-Trans 25

City of Santa Rosa

NO.	DATE	REVISION	BY

SCALE: 1" = 40'
DWN BY: ACJ
DATE: 1/7/2020
CHK BY: DJW

APPROVED: Deputy Director – Engineering
By _____ Date 1/27/20

SIGNAL INTERCONNECT PLAN

CITY OF SANTA ROSA
SMART MULTI-USE PATH
HEARN AVENUE CROSSING

CONTRACT NO.
C01727

SHEET 12 OF 12

FILE NO. 2018–0017