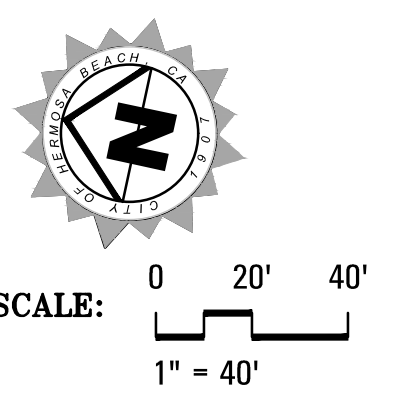
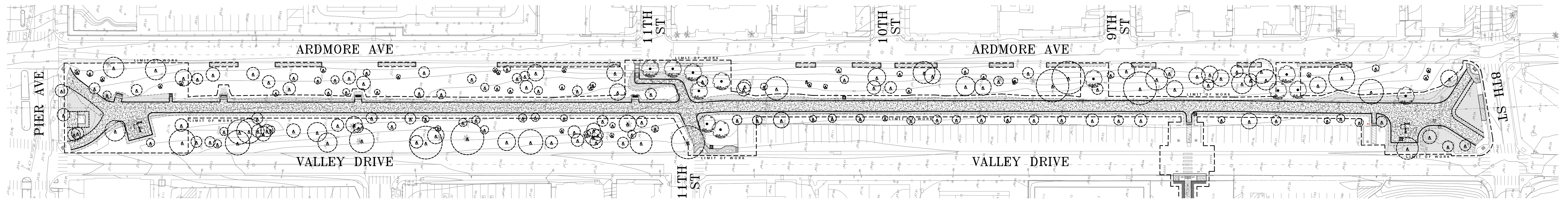


CITY OF HERMOSA BEACH

CONSTRUCTION PLANS FOR

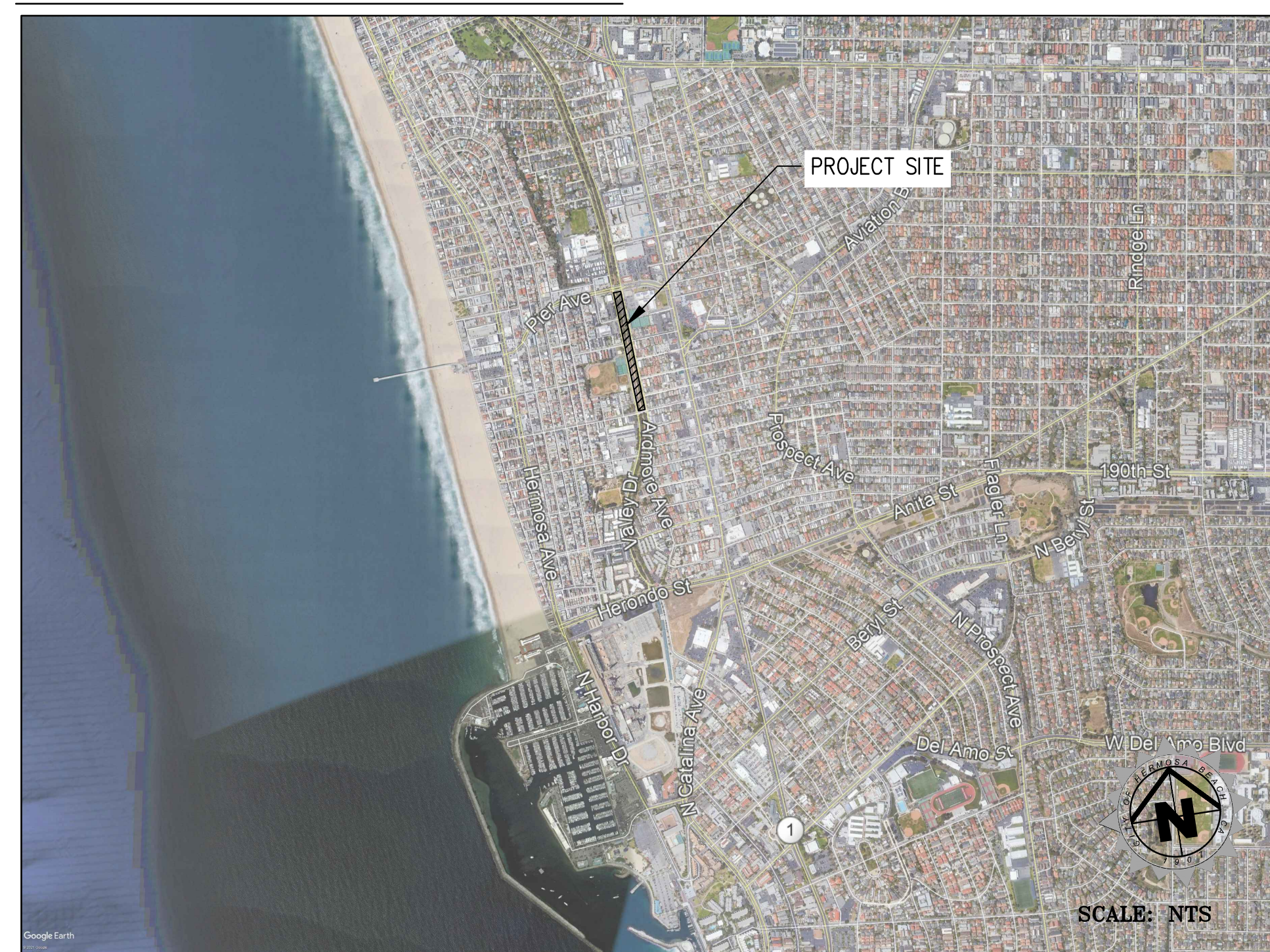
CIP 502 GREENBELT PEDESTRIAN TRAIL, CIP 604 CITY WIDE ADA IMPROVEMENTS, & CIP 194 ANNUAL STRIPING IMPROVEMENTS



PROJECT SITE MAP



REGIONAL CONTEXT MAP



SHEET INDEX

NUMBER	SHEET TITLE
G-00	COVER
G-01	GENERAL CONSTRUCTION NOTES
G-02	GENERAL CONSTRUCTION NOTES
D-01	DEMOLITION PLAN
D-02	CIVIL DEMOLITION PLAN
D-03	TREE PROTECTION PLAN
C-01	HORIZONTAL LAYOUT PLAN
C-02	LAYOUT PLAN DETAILS
C-03	LAYOUT PLAN DETAILS
C-04	GRADING PLAN
C-05	GRADING PLAN
C-06	GRADING PLAN DETAILS
C-07	GRADING PLAN DETAILS
C-08	GRADING PLAN DETAILS
L-01	MATERIAL PLAN
L-02	MATERIAL DETAILS
L-03	PLANTING PLAN
L-04	PLANTING DETAILS
I-01	IRRIGATION PLAN
I-02	IRRIGATION LEGEND
I-03	IRRIGATION DETAILS
I-04	IRRIGATION DETAILS

CONSULTANT TEAM

LANDSCAPE ARCHITECT

Name: SWA Group
 Contact: Ying-yu Hung, PLA, ASLA
 Principal in Charge
 Ryan McKay, ASLA
 Associate
 Address: 811 W 7th Street, 8th Floor
 Los Angeles, CA 90017-3419
 Phone: (213) 236-9090
 Email: rmckay@SWAGroup.com

CONSULTING ENGINEER

Name: Huitt-Zollars, Inc
 Contact: John Viassis
 Associate/ Senior Project Manager
 Address: 90 E. Thousand Oaks Blvd.
 Suite 201
 Thousand Oaks, CA 91360
 Phone: (805) 418-1819
 Email: jviassis@Huitt-Zollars.com

IRRIGATION

Name: Sweeney & Associates
 Contact: Lance Sweeney, ASIC
 President
 Address: 38730 Sky Canyon Drive, Suite C
 Murrieta, CA 92563
 Phone: (951) 461-6830
 Email: LSweeney@sweeneyassoc.com

PRIVATE ENGINEER'S NOTICE TO CONTRACTORS

THE EXISTENCE AND APPROPRIATE LOCATION OF ANY UNDERGROUND UTILITIES OR STRUCTURES SHOWN ON THESE PLANS ARE OBTAINED BY A SEARCH OF AVAILABLE RECORDS TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO EXISTING UTILITIES OR STRUCTURES EXCEPT AS SHOWN ON THESE PLANS. THE ENGINEER ASSUMES NO LIABILITY AS TO THE EXACT LOCATION OF SAID LINES NOR FOR UTILITIES OR IRRIGATION LINES WHOSE LOCATIONS ARE NOT SHOWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING ALL UTILITY AND IRRIGATION COMPANIES PRIOR TO WORK ON EXCAVATION TO DETERMINE EXACT LOCATION OF ALL FACILITIES AFFECTING THIS WORK, WHETHER OR NOT SHOWN HEREON, AND FOR PROTECTING, AND REPAIRING ANY DAMAGE CAUSED TO THESE FACILITIES.
 THE CONTRACTOR SHALL CALL IN A LOCATION REQUEST TO UNDERGROUND SERVICE ALERT (U.S.A.) PHONE (800) 422-4133 TWO (2) WORKING DAYS PRIOR TO DIGGING, NO CONSTRUCTION PERMIT ISSUED BY PUBLIC WORKS DEPARTMENT SHALL BE VALID INVOLVING UNDERGROUND FACILITIES UNLESS THE APPLICANT HAS AN INQUIRY IDENTIFICATION NUMBER ISSUED BY U.S.A.

ABBREVIATIONS

BOC	BACK OF CURB	H	HEIGHT	TC	TOP OF CURB
CFCI	CITY FURNISHED CONTRACTOR INSTALLED	HDW	DRIVEWAY	TCMH	TELECOMMUNICATION MANHOLE
CL	CENTERLINE	HCR	HANDICAP RAMP	TCPB	TELECOMMUNICATION PULLBOX
CPAT	AERIAL TARGET	HPD	PAD	TCVLT	TELECOMMUNICATION VAULT
CPCX	CONTROL POINT	GAL	GALLON	TP	TOP OF ASPHALT PAVEMENT
CPECH	ELEVATION CHECK	LF	LINEAR FOOT	TREE	TREE
CPFCH	FORESIGHT CHECK	LIP	GUTTER	TSSG	TRAFFIC SIGNAL
CPSPW	SPIKE & WASHER	MFSPW	SPIKE AND WASHER	TYP	TYPICAL
CPBMB	BENCHMARK	NG	NATURAL GROUND	RWT	RETAINING WALL TOP
CP2X2	HUB 2X2 TACKED	OC	ON CENTER	W	WIDTH
DF	DRINKING FOUNTAIN	PA	PLANTING AREA	WTBO	BLOW-OFF
EA	EACH	POB	POINT OF BEGINNING	WTFH	FIRE HYDRANT
EPT	EDGE OF PAVEMENT	PVCO	TOP OF CONCRETE	WTICB	IRRIGATION CONTROL BOX
EX	EXISTING	PWPB	POWER PULLBOX	WTICV	IRRIGATION CONTROL VALVE
FG	FINISHED GRADE	SCH	SCHEDULE	WTVL	WATER VALVE
FL	FLOWLINE	SF	SQUARE FOOT		
FS	FINISHED SURFACE	SIGN	SIGN		
		SWK	SIDEWALK		

BENCH MARK:
 No. OY12552 ELEV. 54.821'
 DATE ADJ. 2013 QUAD. TORRANCE



REVISIONS		
No.	DESCRIPTION	DATE
1	ISSUE FOR BID	04/10/24



811 W 7th Street, 8th Floor
 Los Angeles, California
 90017-3419
 United States
 www.swagroup.com
 +1.213.236.9090

PLANS PREPARED BY: Ryan McKay
 PLANS CHECKED BY: Jeremy Klemic



Job Number
 HRBT203
 Date
 04/10/2024

CITY OF HERMOSA BEACH
 PUBLIC WORKS DEPARTMENT
 RECOMMENDED FOR PERMIT ISSUANCE:

[Signature]

CIP 194, 502 & 604
 GREENBELT PEDESTRIAN TRAIL

COVER

FILE NUMBER
 23-003

G-00

SHT. 01 OF 22

GENERAL NOTES

- CONSTRUCTION WORK HOURS ARE LIMITED TO 8:00AM TO 6:00 PM, MONDAY THROUGH FRIDAY. WORK IS PROHIBITED ON SATURDAYS, SUNDAYS, AND HOLIDAYS AS DEFINED IN THE SPECIAL PROVISIONS.
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, THE LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION ("GREENBOOK"), CITY OF HERMOSA BEACH PUBLIC WORKS STANDARDS, AND ALL OTHER CONTRACTUAL REQUIREMENTS.
- ALL WORK DONE WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE DONE BY A LICENSED CONTRACTOR.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL NECESSARY PERMITS FROM THE CITY AND ANY OTHER JURISDICTIONAL AGENCIES REQUIRED TO ACCOMPLISH ALL WORK WITHIN THE PUBLIC RIGHT-OF-WAY. NO WORK SHALL START UNTIL ALL NECESSARY PERMITS ARE OBTAINED.
- ALL WORK IS SUBJECT TO THE REQUIREMENTS OF THE PERMIT(S) OF THE CITY OF HERMOSA BEACH INCLUDING, BUT NOT LIMITED TO, BARRICADES, TRAFFIC CONTROL, BACKFILL COMPACTION, PAVEMENT REPAIRS, ETC.
- ALL CONTRACTORS WORKING ON PUBLIC WORKS PROJECTS MUST HAVE A CURRENT CITY OF HERMOSA BEACH BUSINESS LICENSE.
- THE CONTRACTOR SHALL PROVIDE WRITTEN NOTIFICATION TO THE PUBLIC WORKS DEPARTMENT ON A CITY-PROVIDED PUBLIC NOTICE FORM FOR APPROVAL THEN, UPON APPROVAL, DISTRIBUTE THE NOTICE TO ALL AFFECTED PROPERTIES AT LEAST 72 HOURS IN ADVANCE OF START OF CONSTRUCTION. NOTICE SHALL INFORM THE PUBLIC OF ALL CONSTRUCTION OPERATIONS INCLUDING ANY STREET CLOSURE OR PARKING RESTRICTION.
- THE CONTRACTOR SHALL NOTIFY BUS COMPANIES OF ANY STREET CLOSURES AT LEAST 72 HOURS PRIOR TO THE COMMENCEMENT OF WORK. THE CONTRACTOR SHALL COORDINATE THE TEMPORARY RELOCATION OF ANY BUS STOP IMPACTED BY CONSTRUCTION; SEE AGENCY CONTACTS FOR CONTACT INFORMATION.
- THE CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH THE PLANS PRIOR TO COMMENCING WORK. SHOULD CONFLICTING INFORMATION BE FOUND ON THE PLANS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER BEFORE PROCEEDING WITH THE WORK IN QUESTION.
- PRIOR TO COMMENCING CONSTRUCTION, THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS IN THE FIELD INCLUDING DIMENSIONS AND SOIL CONDITIONS. IF THE FIELD CONDITIONS DIFFER FROM THOSE SHOWN ON THE PLANS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND SHALL NOT BEGIN CONSTRUCTION UNTIL THE CHANGED CONDITIONS HAVE BEEN EVALUATED AND ADDRESSED. ANY WORK PERFORMED IN CONFLICT WITH THE CONTRACT DOCUMENTS OR ANY APPLICABLE CODE REQUIREMENTS SHALL BE CORRECTED BY THE CONTRACTOR AT THEIR OWN EXPENSE AND AT NO EXPENSE TO THE CITY.
- NOTES AND DETAILS ON THE DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE GIVEN CONSTRUCTION SHALL BE AS SHOWN FOR SIMILAR WORK.
- THE CONTRACTOR SHALL SUPPLY ALL EQUIPMENT, LABOR, AND MATERIALS NECESSARY TO PERFORM THE WORK SHOWN ON THE PLAN. THE CONTRACTOR SHALL USE ADEQUATE NUMBERS OF SKILLED WORKERS WHO ARE THOROUGHLY TRAINED AND EXPERIENCED IN THE NECESSARY CRAFTS AND WHO ARE COMPLETELY FAMILIAR WITH THE SPECIFIED REQUIREMENTS AND THE METHODS REQUIRED PRIOR TO PERFORMANCE OF THE WORK.
- THE CONTRACTOR SHALL COORDINATE ALL WORK, INCLUDING SUBCONTRACTORS' WORK, SO AS TO ELIMINATE CONFLICTS AND WORK TOWARD THE GENERAL COMPLETION OF THE ENTIRE PROJECT WITHIN THE CONTRACT PERIOD.
- THE CONTRACTOR SHALL REPLACE ALL EXISTING IMPROVEMENTS (PAVEMENT, STRIPING, RAISED MARKERS, ETC.) DAMAGED DURING CONSTRUCTION IN KIND AND TO THE SAME OR BETTER CONDITION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE OR EXCESSIVE WEAR AND TEAR TO ROADS, OR ADJACENT PUBLIC OR PRIVATE PROPERTY CAUSED BY CONSTRUCTION-RELATED WORK AND SHALL BE RESPONSIBLE TO IMPLEMENT MEASURES TO PREVENT SUCH DAMAGE.
- ANY ASPHALT OR CONCRETE PAVEMENT WITHIN THE PROPERTY LIMITS THAT IS DAMAGED DURING CONSTRUCTION SHALL BE REMOVED AND REPLACED TO MEET CURRENT CITY STANDARDS.
- ALL EXISTING SURFACE FEATURES SHALL BE PROTECTED IN PLACE UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES DURING CONSTRUCTION.
- ANY PUBLIC PROPERTY DAMAGED DURING CONSTRUCTION SHALL BE REPLACED IN KIND OR BETTER TO THE SATISFACTION OF THE PUBLIC WORKS INSPECTOR OR ENGINEER. THE CITY SHALL, AT ITS DISCRETION AND IN THE INTEREST OF PUBLIC SAFETY, MAKE ANY REPAIRS DEEMED NECESSARY; THE COST OF SUCH REPAIRS SHALL BE DEDUCTED FROM THE CONTRACT COST.
- GRAFFITI IN FRESHLY POURED CONCRETE SHALL BE REMOVED BY WHATEVER MEANS NECESSARY UP TO AND INCLUDING REMOVAL AND REPLACEMENT.
- UNLESS OTHERWISE NOTED, ALL TRAFFIC SIGNS SHALL BE PROTECTED IN PLACE BY THE CONTRACTOR.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING AN APPROVED COPY OF CONSTRUCTION PLANS AT THE PROJECT SITE DURING CONSTRUCTION. ALL DRAWINGS ARE CONSIDERED PART OF THE CONTRACT DOCUMENTS.
- THE CONTRACTOR SHALL MAKE AVAILABLE FOR THE INSPECTOR'S REVIEW, ON A DAILY BASIS, AS-BUILT DRAWINGS FOR WORK PERFORMED UP TO AND INCLUDING THE PREVIOUS DAY'S ACTIVITIES. WORK SHALL NOT BE CONSIDERED COMPLETE UNTIL AS-BUILT DRAWINGS ARE SUBMITTED AND ACCEPTED BY THE PUBLIC WORKS DIRECTOR.
- VERIFICATION: VERIFY SITE INFORMATION, INCLUDING PROPERTY LINES, LIMITS OF WORK, EASEMENTS, BUILDINGS, ROADWAY CURB AND/OR GUTTERS, UTILITIES, DUCT BANKS, AND OTHER INFORMATION THAT MAY AFFECT THE SCOPE OF WORK INCLUDED ON THESE DRAWINGS. CONTRACTOR SHALL CONTACT THE CITY FOR DIRECTION ON HOW TO PROCEED IF ACTUAL SITE CONDITIONS VARY FROM WHAT IS SHOWN ON THE DRAWINGS.
- DESIGN INTENT: THESE DRAWINGS REPRESENT THE GENERAL DESIGN INTENT TO BE IMPLEMENTED ON THE SITE. CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE CITY FOR ANY ADDITIONAL CLARIFICATION OR DETAILS NECESSARY TO ACCOMMODATE SITE CONDITIONS OR ARCHITECTURAL DETAILS.
- CONTRACTOR COORDINATION: CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH IMPROVEMENTS SHOWN IN THE REDESIGN. EACH CONTRACTOR SHALL COORDINATE AND OTHERWISE INTEGRATE WORK WITH THAT OF OTHERS IN AN EFFICIENT AND TIMELY MANNER SO AS TO PROVIDE THE CITY WITH A WELL-CONSTRUCTED, EASILY MAINTAINABLE PROJECT. EACH CONTRACTOR SHALL NOTIFY OTHERS AT LEAST TWO WORKING DAYS IN ADVANCE OF COVERING, COMPLETING, OR EXPOSING WORK TO BE INSTALLED BY OTHERS.
- CONTRACTORS' JOB SITE CONDITIONS: CONTRACTOR AGREES TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR SITE CONDITIONS DURING CONSTRUCTION, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD THE CITY AND THE LANDSCAPE ARCHITECT HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE CITY OR THE LANDSCAPE ARCHITECT.
- AREA OF DISTURBANCE: LIMIT USE OF PREMISES TO WORK IN AREAS AS INDICATED. DO NOT DISTURB PORTIONS OF THE SITE BEYOND AREAS IN WHICH WORK IS INDICATED. KEEP DRIVEWAYS AND ENTRANCES SERVING PREMISES CLEAR AND AVAILABLE TO THE CITY AND EMERGENCY VEHICLES AT ALL TIMES. DO NOT USE THESE AREAS FOR PARKING OR STORAGE OF MATERIALS. SCHEDULE DELIVERIES TO MINIMIZE USE OF DRIVEWAYS AND ENTRANCES.
- EXISTING UTILITIES: A REASONABLE EFFORT HAS BEEN MADE TO LOCATE AND DELINEATE ALL KNOWN UNDERGROUND UTILITIES. THE CONTRACTOR IS CAUTIONED THAT ONLY EXCAVATION WILL REVEAL THE TYPES, EXTENT, SIZES, LOCATION, AND DEPTHS OF SUCH UNDERGROUND UTILITIES. HOWEVER, THE CONSULTANT CAN ASSUME NO RESPONSIBILITY FOR THE COMPLETENESS OR ACCURACY OF ITS DELINEATION OF SUCH UNDERGROUND UTILITIES, NOR FOR THE EXISTENCE OF OTHER BURIED OBJECTS OR UTILITIES WHICH ARE NOT SHOWN ON THESE DRAWINGS. VERIFY THE LOCATION OF UTILITIES PRIOR TO COMMENCEMENT OF EXCAVATION THROUGH NOTIFICATION OF LOCAL AUTHORITIES AND UNDERGROUND SERVICE ALERT (1-800-422-4133) AT LEAST 48-HOURS PRIOR TO ANY EXCAVATION. CONTRACTOR SHALL CAREFULLY EXCAVATE, AS NECESSARY, TO CONFIRM UTILITY LOCATIONS, AND WHEN WORKING IN THE VICINITY OF UTILITIES, ANY DAMAGE TO UTILITIES THAT ARE NOT TO BE PROTECTED IN PLACE OR DESIGNATED TO REMAIN WHICH IS CAUSED BY ANY PERSON, VEHICLE, EQUIPMENT, OR TOOL RELATED TO THE EXECUTION OR INSTALLATION OF WORK UNDER THE CONTRACT SHALL BE REPAIRED IMMEDIATELY AND AT NO ADDITIONAL EXPENSE TO THE CITY. CONTRACTOR BEARS FULL RESPONSIBILITY FOR THIS WORK.
- TREE PROTECTION AND MAINTENANCE REQUIREMENTS: ALL TRENCHING WITHIN THE DRIPLINE OF EXISTING TREES TO REMAIN SHALL BE BY HAND, WITH CARE TAKEN NOT TO CUT OR DAMAGE ROOTS OVER ONE INCH IN DIAMETER. TREES TO REMAIN SHALL BE FENCED PER TEMPORARY TREE AND PLANT PROTECTION SPECIFICATIONS.
- CONFLICTS: WHERE PLANS AND/OR SPECIFICATIONS ARE FOUND TO BE IN CONFLICT, OR WHERE VARIOUS ITEMS OF WORK ARE SEEN TO BE IN CONFLICT, IMMEDIATELY NOTIFY THE CITY FOR DIRECTION PRIOR TO PROCEEDING WITH WORK.
- UNAUTHORIZED CHANGES AND USES: ALL PROPOSED CHANGES TO THE PLANS MUST BE BROUGHT TO THE ATTENTION OF THE CITY IN WRITING AND MUST BE APPROVED BY THE CITY IN ADVANCE.
- DESIGN CONSULTANT ADVISORY: ADVISE CONSTRUCTION AND OPERATIONS WITH THE CITY FOR WORK INDICATED HEREIN. INFORM THE CITY ON THE PREFERRED CONSTRUCTION SCHEDULE PRIOR TO THE WORK BEING PERFORMED. ADJUST CONSTRUCTION SCHEDULE ACCORDINGLY BASED ON A MUTUALLY-AGREABLE TIMETABLE. NOTIFY THE CITY IF CHANGE TO CONSTRUCTION SCHEDULE IS REQUIRED DUE TO DIFFERENCES IN ACTUAL CONSTRUCTION PROGRESS. INCLUDE THE CITY AT PRE-INSTALLATION MEETINGS COVERING PORTIONS OF THE WORK THAT ARE RELATED. NOTIFY THE CITY IF CHANGES TO CONSTRUCTION SCHEDULE ARE REQUIRED DUE TO DIFFERENCES IN ACTUAL CONSTRUCTION PROGRESS.
- CLEARING AND CRUBBING: CONTRACTOR SHALL CLEAR AND GRUB ALL EXISTING VEGETATION UNLESS OTHERWISE INDICATED, AS REQUIRED FOR SITE CONSTRUCTION, IRRIGATION AND PLANTING OPERATIONS. PRIOR TO COMMENCEMENT OF WORK, LIMIT OF CLEARING SHALL BE REVIEWED BY THE CITY. STRIP ALL ORGANIC MATTER TO A SUFFICIENT DEPTH TO COMPLETELY REMOVE SUCH MATERIAL.
- CLEAN UP- CONTRACTOR SHALL REMOVE LITTER AND DEBRIS FROM THE PROJECT SITE AS REQUIRED TO KEEP SITE IN AN ORDERLY FASHION. DUST CONTROL MEASURES SHALL BE EXERCISED.
- CONTRACTOR TO COORDINATE WITH CITY REGARDING ALL SALVAGEABLE MATERIALS, INCLUDING BUT NOT LIMITED TO UTILITIES, WOOD CHIPS & SITE FURNISHINGS.

UTILITY NOTES

- THE CONTRACTOR SHALL CALL IN A LOCATION REQUEST TO UNDERGROUND SERVICE ALERT (USA) AT (800) 227-2600 AT LEAST 72 HOURS BEFORE PERFORMING ANY DIGGING. SECTION 4216/4217 OF THE GOVERNMENT CODE REQUIRES THAT A DIGALERT IDENTIFICATION NUMBER BE ISSUED BEFORE A PERMIT TO EXCAVATE WILL BE VALID. THE CONTRACTOR SHALL PROVIDE THE DIGALERT NUMBER TO THE CITY, AND UPON EXPOSING ANY UNDERGROUND FACILITY, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THAT UTILITY COMPANY.
- EXISTING UTILITIES AND STRUCTURES (UNDERGROUND, SURFACE, OR OVERHEAD) ARE INDICATED ONLY TO THE EXTENT THAT SUCH INFORMATION WAS KNOWN, MADE AVAILABLE TO, OR DISCOVERED BY THE DESIGNER IN PREPARING THE DRAWINGS. THE LOCATIONS, CONFIGURATIONS, AND PLAN VIEW ELEVATIONS OF SUBSURFACE FACILITIES ARE APPROXIMATE AND NOT ALL UTILITIES AND FACILITIES MAY BE INDICATED.
- THE CONTRACTOR SHALL DETERMINE THE LOCATIONS, DEPTH, MATERIAL, CONDITIONS, ROUNDNESS, AND SIZE OF ALL UTILITIES, AND SUBSTRUCTURES INCLUDING SERVICE CONNECTIONS AND LATERALS WITHIN THE ALIGNMENT AND WORK LIMITS OF THE PROPOSED IMPROVEMENTS.
- THE CONTRACTOR SHALL BEAR THE COST OF REPAIRING OR REPLACING ANY OF SAID STRUCTURES DAMAGED BY THEM DURING THE PROSECUTION OF THE WORK. ALL REPAIRS AND REPLACEMENTS SHALL BE DONE IN THE PRESENCE OF THE INSPECTOR. ALL LOCATIONS SHOWN ON THE PLANS FOR UTILITIES HAVE BEEN TAKEN FROM AVAILABLE RECORDS AND THEIR COMPLETENESS AND CORRECTNESS ARE IN NO WAY GUARANTEED.
- BEFORE CONSTRUCTION IS STARTED, CONTRACTOR SHALL COORDINATE WITH THE OWNER OF EACH UTILITY AND DEFINE THE REQUIREMENTS AND METHODS TO ACCOMMODATE THE PROTECTION, TEMPORARY SUPPORT, ADJUSTMENT, OR RELOCATION OF ANY UTILITIES AFFECTED BY THE PROPOSED WORK. THE CONTRACTOR SHALL EXERCISE CARE WHEN WORKING NEAR EXISTING UTILITIES AND SHALL BE RESPONSIBLE FOR ALL DAMAGE, BREAKAGE, OR LEAKS CAUSED BY THEIR WORK.
- ALL EXISTING UTILITIES SHALL BE MAINTAINED AND PROTECTED IN PLACE BY THE CONTRACTOR UNLESS OTHERWISE NOTED. EXISTING UTILITIES AND/OR NEW IMPROVEMENTS SHALL BE SUPPORTED AS REQUIRED BY THE ENGINEER IN ACCORDANCE WITH SSPWC STANDARD PLAN 224-3.
- ALL FIRE HYDRANTS, WATER CONTROL VALVES, AND MAINTENANCE HOLES SHALL BE KEPT FREE FROM OBSTRUCTIONS AND AVAILABLE FOR USE.
- IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO ADJUST TO FINISHED GRADE EXISTING SEWER AND STORM DRAIN MAINTENANCE MANHOLES AND COVERS AND ALL OTHER UTILITY BOX AND VALVE COVERS, WHERE APPLICABLE, CONCRETE COLLARS SHALL BE INSTALLED TO MATCH FINISHED GRADE WHETHER INDICATED ON THE PLANS OR NOT.
- IN ADDITION TO ITEMS LISTED IN THESE PLANS, THE CONTRACTOR SHALL FURNISH ALL NECESSARY ADAPTORS, COUPLINGS, BOLTS, GASKETS, CAULKING MATERIALS, AND REPAIRING MATERIALS AS REQUIRED TO COMPLETE THE WORK.
- PIPES SHALL BE CONSTRUCTED SO AS TO PROVIDE THE FOLLOWING MINIMUM CLEARANCES TO EXISTING OR OTHER PROPOSED UNDERGROUND CONDUITS OR STRUCTURES (UNLESS OTHERWISE NOTED ON PLANS OR IN SPECS):
 - A. HORIZONTAL: 24-INCHES OUTSIDE DIAMETER TO OUTSIDE DIAMETER
 - B. VERTICAL: 12-INCHES OUTSIDE DIAMETER TO OUTSIDE DIAMETER
- ALL CROSSING UTILITIES SHALL HAVE A MINIMUM 12-INCH CLEARANCE UNLESS OTHERWISE NOTED.
- CONTRACTOR SHALL POTHOLE AND VERIFY DEPTH, LOCATION, AND DIMENSIONS OF EXISTING FACILITIES AND CONNECTION POINTS PRIOR TO CONSTRUCTION OF MAINS.
- LOCATIONS OF EXISTING SEWER, GAS, AND WATER SERVICE LATERALS ARE NOT SHOWN ON THE PLANS. CONTRACTOR SHALL PROTECT IN PLACE ALL EXISTING SERVICES UNLESS OTHERWISE NOTED
- BACKFILL OF TRENCHES SHALL BE DONE IN LIFTS OF NO MORE THAN 8-INCHES WITH WATER AND APPROPRIATE COMPACTION TOOLS USED BETWEEN EACH LIFT. ONE SACK SLURRY MIX CAN BE USED IN PLACE OF NATIVE SOIL. AFTER BACKFILLING THE TRENCH, A TEMPORARY ASPHALT PATCH SHALL BE PLACED OVER THE TRENCH AND REMAIN FOR NO MORE THAN TWO WEEKS. THE FINAL PATCH SHALL BE A MINIMUM OF 5" THICK OR 1" THICKER THAN THE EXISTING PAVEMENT. THE CONTRACTOR SHALL FOLLOW THE LATEST HERMOSA BEACH PUBLIC WORKS STANDARD DETAILS 115 -117.
- THE FINAL PATCH ON ASPHALT STREETS SHALL BE PER THE LATEST HERMOSA BEACH PUBLIC WORKS STANDARD PLANS 115 AND 116.
- THE FINAL PATCH ON CONCRETE STREETS SHALL BE PER THE LATEST HERMOSA BEACH PUBLIC WORKS STANDARD PLAN 115.

TRAFFIC CONTROL NOTES

- THE CONTRACTOR MAY PROHIBIT PARKING WITHIN THE CONSTRUCTION LIMITS AND AS NECESSARY TO COMPLETE THE WORK, SUBJECT TO THE APPROVAL OF THE ENGINEER. ACCESS TO ALL RESIDENCES AND BUSINESSES SHALL BE MAINTAINED AT ALL TIMES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO POST "NO PARKING" SIGNS WITH SPECIFIC TIME FRAMES ON CITY-APPROVED SIGNS AT LEAST 72 HOURS PRIOR TO THE COMMENCEMENT OF WORK.
- TRAFFIC CONTROL DEVICES AND METHODS SHALL CONFORM TO THE REQUIREMENTS OF THE STATE OF CALIFORNIA MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (CAMUTCD), LATEST REVISION, AND WORK AREA TRAFFIC CONTROL HANDBOOK (WATCH MANUAL), LATEST EDITION.
- ALL STREET CLOSURES REQUIRE A TRAFFIC CONTROL PLAN TO BE REVIEWED AND APPROVED BY THE CITY ENGINEER PRIOR TO CONSTRUCTION.

SITE CONTROL / SAFETY NOTES

- THE CONTRACTOR SHALL COMPLY WITH ALL LOCAL SOUND CONTROL AND NOISE LEVEL RULES, REGULATIONS, AND ORDINANCES WHICH APPLY TO ANY WORK PERFORMED PURSUANT TO THE CONTRACT.
- ALL CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE REGULATIONS OF CAL-OSHA.
- ANY WALLS, FENCES, STRUCTURES, AND/OR APPURTENANCES ADJACENT TO THIS PROJECT EITHER IN THE PUBLIC RIGHT-OF-WAY OR PRIVATE PROPERTY SHALL BE PROTECTED IN PLACE, UNLESS OTHERWISE NOTED. IF THE CONTRACTOR'S ACTIVITIES DAMAGE OR ADVERSELY AFFECT SAID ITEMS IN ANY WAY, THE CONTRACTOR IS RESPONSIBLE FOR WORKING OUT AN ACCEPTABLE SOLUTION TO THE SATISFACTION OF THE AFFECTED PROPERTY OWNERS AT THE CONTRACTOR'S COST.
- THE CONTRACTOR SHALL BE RESPONSIBLE DURING ALL PHASES OF THE WORK FOR PROVIDING PUBLIC SAFETY AND CONVENIENCE.
- THE CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITIONS, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY, DURING THE COURSE OF CONSTRUCTION, AND UNTIL THE DATE OF THE NOTICE OF COMPLETION. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND SHALL NOT BE LIMITED TO WORKING HOURS DESCRIBED IN THE PROJECT SPECIFICATIONS.
- IN THE CASE OF SUSPENSION OF THE WORK FOR ANY CAUSE WHATSOEVER, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MATERIALS AND SHALL PROPERLY STORE THEM IF NECESSARY AND SHALL ERECT TEMPORARY STRUCTURE(S) WHERE NECESSARY. THE CITY WILL NOT BE HELD RESPONSIBLE FOR THE CARE OR PROTECTION OF ANY MATERIAL OR PARTS OF THE WORK PRIOR TO FINAL ACCEPTANCE, UNLESS OTHERWISE SPECIFIED.
- THE CONTRACTOR IS RESPONSIBLE TO OBTAIN THEIR OWN STAGING AREA FOR ALL TOOLS, EQUIPMENT, MATERIAL, AND PARKING. AT THE END OF EACH DAY, THE CONTRACTOR SHALL REMOVE ALL MATERIALS, DEBRIS, FOREIGN MATERIAL, AND EQUIPMENT FROM THE JOB SITE UNLESS OTHERWISE APPROVED BY THE ENGINEER.
- THE PUBLIC RIGHT-OF-WAY SHALL NOT BE USED FOR A STAGING AREA AS DESCRIBED ABOVE UNLESS OTHERWISE AUTHORIZED BY THE CITY.
- WATER SHALL BE PROVIDED ON SITE AND USED TO CONTROL DUST DURING CONSTRUCTION OPERATIONS. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING A HYDRANT METER FROM CAL WATER (CALL (310) 420-7730) AND PAY FOR CONSTRUCTION WATER.
- AS REQUIRED BY THE ENGINEER, THE CONTRACTOR SHALL FURNISH AND OPERATE A SELF-LOADING MOTOR SWEEPER WITH SPRAY NOZZLES AT LEAST TWICE EACH WORKING DAY TO KEEP PAVED AREAS ACCEPTABLY CLEAN WHEREVER CONSTRUCTION, INCLUDING RESTORATION, IS INCOMPLETE.
- PROPER BARRICADES SHALL BE PLACED AROUND ANY CONSTRUCTION SITE WITHIN THE PUBLIC RIGHT-OF-WAY. THESE BARRICADES SHALL COMPLY WITH THE REQUIREMENTS OF THE WATCH MANUAL.
- ALL VEHICLES THAT INTRUDE INTO A NORMAL TRAFFIC LANE MUST HAVE PROPER SIGNAGE AND BARRICADES AS REQUIRED BY THE WATCH MANUAL.
- ALL WORK VEHICLES ARE SUBJECT TO ALL APPLICABLE PARKING RESTRICTIONS.
- FLAGMEN ARE REQUIRED FOR ANY VEHICLES THAT BLOCK THE TRAVEL LANE AND REQUIRE TRAFFIC TO USE THE OPPOSING LANE TO PASS.

SURVEY/LAYOUT NOTES

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL SURVEY MONUMENTS INCLUDING PROPERTY CORNER MARKERS, UNLESS OTHERWISE NOTED ON THE PLANS. PRIOR TO COMMENCEMENT OF WORK ALL SURVEY MONUMENTS IN THE PROJECT AREA SHALL BE LOCATED AND TIED OUT. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR REPLACING ANY SURVEY MONUMENTS THAT ARE DISTRIBUTED DURING CONSTRUCTION. PROPERTY CORNER MARKERS AND SURVEY MONUMENTS DAMAGED BY CONSTRUCTION ACTIVITIES SHALL BE RE-ESTABLISHED BY A PROFESSIONAL SURVEYOR LICENSED IN THE STATE OF CALIFORNIA.
- CONSTRUCTION STAKING FOR IMPROVEMENTS SHOWN ON THESE PLANS SHALL BE PERFORMED BY A PROFESSIONAL SURVEYOR LICENSED IN THE STATE OF CALIFORNIA.
- ALL SURVEY POINTS AND MONUMENTS SHALL BE PROTECTED IN PLACE OR RESET AND RECORDED IF THEY ARE REMOVED OR DESTROYED DURING CONSTRUCTION.

GENERAL DEMOLITION NOTES

- THE CONTRACTOR SHALL FIELD VERIFY CONDITIONS PRIOR TO THE COMMENCEMENT OF WORK. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER. NO DEMOLITION WORK SHALL COMMENCE WITHOUT FIELD VERIFICATION BY THE CONTRACTOR, OWNER, AND ENGINEER.
- THE CONTRACTOR TO CLEAR PROJECT SITE AREA WITHIN THE CONFINES OF THE LIMIT OF WORK LINE.
- THE CONTRACTOR SHALL MAINTAIN SECURITY FENCING AROUND THE LIMIT OF WORK DURING DEMOLITION. NO UNAUTHORIZED PERSONNEL SHALL ENTER THE AREA.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY AND ALL PERMITS AND SHALL PAY ALL FEES NECESSARY FOR ENCROACHMENT, GRADING, DEMOLITION, AND DISPOSAL OF SAID MATERIALS AS REQUIRED BY LOCAL AND STATE JURISDICTIONS.
- DAMAGE TO ANY EXISTING UTILITIES AND SERVICES TO REMAIN SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR SHALL REPAIR AND/OR REPLACE IN KIND.
- PROTECT IN PLACE ALL UTILITIES UNLESS OTHERWISE NOTED.

AMERICANS WITH DISABILITIES NOTES

- ALL SLOPES IN DIRECTION OF TRAVEL SHOWN ON THIS PLAN WERE DESIGNED AT OR BELOW MAXIMUM ALLOWED GRADES BY THE AMERICANS WITH DISABILITIES ACT ACCESS GUIDE (ADAAG), AND THE CALIFORNIA BUILDING CODE (CBC). IT IS THE RESPONSIBILITY OF THE CONTRACTORS TO FAMILIARIZE THEMSELVES WITH THE ADAAG AND CBC AND IN THE EVENT THAT A DESIGN QUESTION SHOULD ARISE, OR A FIELD CONDITION PRESENT ITSELF THAT IS DIFFERENT THAN SHOWN ON THESE PLANS, WORK SHOULD CEASE AND THE DESIGN ENGINEER SHALL BE NOTIFIED SO THAT AN ACCEPTABLE SOLUTION CAN BE DETERMINED.
- THE CONTRACTOR IS ADVISED TO CAREFULLY CHECK ALL PHASES OF WORK RELATING TO ADAAG AND CBC ACCESS FOR THIS PROJECT. SINCE THE CODE DOES NOT ALLOW FOR A CONSTRUCTION TOLERANCE, ANY CONSTRUCTION THAT EXCEEDS MAXIMUM OR MINIMUM DIMENSIONS AND SLOPES AS CALLED OUT BY ADAAG AND CBC ARE SUBJECT TO REJECTION BY THE INSPECTOR AND ANY MAY BE REQUIRED TO BE REMOVED AND REPLACED.
- SINCE THE CIVIL ENGINEER OR SURVEYOR CANNOT CONTROL THE EXACT METHODS OR MEANS USED BY THE GENERAL CONTRACTOR OR THEIR SUB-CONTRACTORS DURING THE GRADING AND CONSTRUCTION OF THE PROJECT, THE CIVIL ENGINEER OR SURVEYOR ASSUMED NO RESPONSIBILITY FOR THE FINAL ACCEPTANCE OF ADAAG OR CBC RELATED ITEMS OF THIS PROJECT BY THE INSPECTING AUTHORITY OR OTHER AFFECTED PARTIES.
- COMPLIANCE WITH ADAAG AND CBC CONSTRUCTION REQUIREMENTS AND CALIFORNIA TITLE 24 WILL BE SOLE RESPONSIBILITY OF THE GENERAL CONTRACTOR AND HIS SUB-CONTRACTORS.
- ACCESSIBLE PARKING SPACES SERVING A PARTICULAR BUILDING SHALL BE LOCATED ON THE SHORTEST ACCESSIBLE ROUTE OF TRAVEL FROM ADJACENT PARKING TO AN ACCESSIBLE ENTRANCE. IN PARKING FACILITIES THAT DO NOT SERVE A PARTICULAR BUILDING, ACCESSIBLE PARKING SHALL BE LOCATED ON THE SHORTEST ACCESSIBLE ROUTE OF TRAVEL TO AN ACCESSIBLE PEDESTRIAN ENTRANCE OF THE PARKING FACILITY.
- ONE IN EVERY SIX ACCESSIBLE OFF-STREET PARKING STALLS, BUT NOT LESS THAN ONE, SHALL BE SERVED BY AN ACCESSIBLE AISLE OF 9'-0" MINIMUM WIDTH AND SHALL BE SIGNED VAN ACCESSIBLE. THE R7-8B SIGN SHALL BE MOUNTED BELOW THE R99B (CA) PLAQUE OR THE R99C (CA) SIGN.
- IN EACH PARKING STALL, A CURB OR WHEEL STOP SHALL BE PROVIDED IF REQUIRED TO PREVENT ENCROACHMENT OF VEHICLES OVER THE REQUIRED WIDTH OF WALKWAYS. PARKING STALLS SHALL BE SO LOCATED THAT PERSONS WITH DISABILITIES ARE NOT COMPELLED TO WHEEL OR WALK BEHIND PARKED VEHICLES OTHER THAN THEIR OWN. FOR MORE WHEEL STOP REQUIREMENTS, SEE THE CALTRANS STATE STANDARD SPECIFICATION 78-5.02.
- PARKING SPACES AND ACCESS AISLES SHALL BE LEVEL WITH SURFACE SLOPES NOT EXCEEDING 2% IN ALL DIRECTIONS.
- WHERE PLAQUE R99B (CA), SIGN R99C (CA) OR SIGN R7-8B ARE INSTALLED, THE BOTTOM OF THE SIGN OR PLAQUE PANEL SHALL BE A MINIMUM OF 7'-0" ABOVE THE SURROUNDING SURFACE.
- THE WORDS "NO PARKING", SHALL BE PAINTED IN WHITE LETTERS NO LESS THAN 1'-0" HIGH AND LOCATED SO THAT IT IS VISIBLE TO TRAFFIC ENFORCEMENT OFFICIALS.
- A R100B (CA) SIGN SHALL BE POSTED IN A CONSPICUOUS PLACE AT EACH ENTRANCE TO OFF-STREET PARKING FACILITIES OR IMMEDIATELY ADJACENT TO AND VISIBLE FROM EACH STALL. THE SIGN SHALL INCLUDE THE ADDRESS WHERE THE TOWED VEHICLE MAY BE RECLAIMED AND THE TELEPHONE NUMBER OF THE LOCAL TRAFFIC LAW ENFORCEMENT AGENCY.
- WHERE A SINGLE (NON-VAN) ACCESSIBLE PARKING SPACE IS PROVIDED, THE LOADING AND UNLOADING ACCESS AISLE SHALL BE ON THE PASSENGER SIDE OF THE VEHICLE AS THE VEHICLE IS GOING FORWARD INTO THE PARKING SPACE.
- WHERE A VAN ACCESSIBLE PARKING SPACE IS PROVIDED, THE LOADING AND UNLOADING ACCESS AISLE SHALL BE 8'-0" WIDE MINIMUM, AND SHALL BE ON THE PASSENGER SIDE OF THE VEHICLE AS THE VEHICLE IS GOING FORWARD INTO THE PARKING SPACE.
- ACCESSIBLE PARKING ONLY SIGN SHALL BE SIGN R99C (CA), OR SIGN R99 (CA) WITH PLAQUE R99B (CA).
- CONTRACTOR SHALL REMOVE ALL CONFLICTING STRIPING BY WET SAND BLASTING.

ROADWAY RECONSTRUCTION GENERAL NOTES

- CURB AND GUTTER AND RAMP TO BE REPLACED TO MATCH EXISTING AND IN ACCORDANCE WITH "GREEN BOOK" STANDARDS.
- JOIN NEW CURB AND GUTTER TO ASPHALT PAVEMENT PER PLAN. CONSTRUCT CURB AND GUTTER PER THE "GREEN BOOK" STD PLAN 120-3.
- JOIN NEW ASPHALT PAVING TO CURB AND GUTTER PER PLAN. PRIME ALL AREAS TO BE JOINED. SAW CUT ALL CONCRETE AND ASPHALT PAVING TO BE JOINED PRIOR TO DEMOLITION AND REMOVALS.

SIGNING AND STRIPING GENERAL NOTES

- ALL REQUIRED STRIPING AND SIGNAGE SHALL CONFORM WITH THE LATEST APPLICABLE CALTRANS STANDARD PLANS AND LATEST CALTRANS STANDARD SPECIFICATIONS, INCLUDING SECTION 84 AND CITY AND COUNTY STANDARDS AND REQUIREMENTS.
- COMPLY WITH ALL MARKING REQUIREMENTS OF AGENCY HAVING JURISDICTION.
- TRAFFIC STRIPING AND PAVEMENT MARKINGS SHALL BE THERMOPLASTIC IN ACCORDANCE WITH CALTRANS STANDARD SPECIFICATIONS SECTION 84 AND PROJECT BID DOCUMENTS.
- REPLACE ALL SIGNAGE AND STRIPING DAMAGED BY THE WORK IN KIND WITH NEW PER CITY, AGENCY, JURISDICTION REQUIREMENTS.

BENCH MARK: No. <u>0Y12552</u> ELEV. <u>54.821'</u> DATE ADJ. <u>2013</u> QUAD. <u>TORRANCE</u>			REVISIONS <table border="1"> <thead> <tr> <th>No.</th> <th>DESCRIPTION</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>ISSUE FOR BID</td> <td>04/10/24</td> </tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table>	No.	DESCRIPTION	DATE	1	ISSUE FOR BID	04/10/24																<p>811 W 7th Street, 8th Floor Los Angeles, California 90017-9419 United States www.swagroup.com +1.213.236.9090</p>	PLANS PREPARED BY: <i>Ryan McKay</i> PLANS CHECKED BY: <i>Jeremy Klemic</i> 	Job Number HRBT203 Date 04/10/2024	CITY OF HERMOSA BEACH PUBLIC WORKS DEPARTMENT RECOMMENDED FOR PERMIT ISSUANCE: 	CIP 194, 502 & 604 GREENBELT PEDESTRIAN TRAIL	FILE NUMBER 23-003
No.	DESCRIPTION	DATE																												
1	ISSUE FOR BID	04/10/24																												
GENERAL CONSTRUCTION NOTES								G-01	SHT. 02 OF 22																					

GRADING PLAN GENERAL NOTES

- ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE LATEST ADOPTED VERSION AND AMENDMENTS OF THE CALIFORNIA BUILDING CODE. ALL CONSTRUCTION MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE APPLICABLE CITY/COUNTY STANDARDS AND STANDARD SPECIFICATIONS, LATEST ADOPTED EDITION AND AMENDMENTS. IF THERE IS A CONFLICT BETWEEN CODES, THE CONTRACTOR WILL NOTIFY THE CIVIL ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION.
- NO FILL SHALL BE PLACED ON THE EXISTING GROUND SURFACE UNTIL THE GROUND HAS BEEN CLEARED OF WEEDS, DEBRIS, TOPSOIL, DELETERIOUS MATERIAL AND SCARIFIED AND COMPACTED PER THE GEOTECHNICAL RECOMMENDATIONS.
- AFTER COMPLETION OF THE GRADING OPERATION, AND PRIOR TO A REQUEST FOR FINAL INSPECTION, THE SOILS ENGINEER SHALL SUBMIT TO THE UNDERSIGNED REGISTERED CIVIL ENGINEER A COPY OF DENSITY REPORTS, TOGETHER WITH HIS WRITTEN VERIFICATION THAT THE COMPLETED WORK CONFORMS TO THE INTENT OF THE PLANS, SPECIFICATION AND SOILS REPORT RECOMMENDATIONS.
- PERMANENT CUT OR FILL SLOPES SHALL NOT EXCEED A SLOPE OF THREE HORIZONTAL TO ONE VERTICAL.
- ALL FILL SLOPE FACES SHALL BE COMPACTED. IF THE SLOPE IS TO BE LANDSCAPED, THE SURFACE SIX INCHES MAY BE LEFT UNCOMPACTED FOR PLANTING.
- CONTRACTOR SHALL PROVIDE PROTECTIVE MEASURES AND TEMPORARY DRAINAGE AND DESILTING FACILITIES TO PROTECT ADJOINING PROPERTIES FROM STORM WATERS ORIGINATING ON OR DIVERTED FROM THE CONSTRUCTION SITE.
- GRADE SHEETS FOR ALL CONCRETE CURB AND GUTTERS, CURBS, "V" GUTTERS, AND SLABS SHALL BE PREPARED BY THE UNDERSIGNED ENGINEER. COPIES OF THE GRADE SHEETS SHALL BE MAINTAINED AT THE JOB SITE FOR THE CITY ENGINEER'S REVIEW.
- GRADE STAKES SHALL BE SET AT 12.5' INTERVALS FOR ALL "V" GUTTERS, CURB AND GUTTER, AND DRAINAGE SYSTEMS WITH FLOW LINE SLOPES OF LESS THAN 0.4%. CONTRACTOR SHALL PROVIDE GRADE SHEETS TO THE CITY ENGINEER'S OFFICE FOR ACCEPTANCE 48 HOURS PRIOR TO POURING CONCRETE.
- EXISTING CONTOURS AND OTHER EXISTING TOPOGRAPHIC FEATURES ARE A TRUE REPRESENTATION OF SITE CONDITIONS ON CITY OF HERMOSA BEACH CIP 502 AND CIP 604, PROVIDED BY DIGITAL MAPPING, INC.
- THE CONTRACTOR SHALL KEEP ALL ADJACENT STREETS AND HAUL ROUTES CLEAR DIRT AND DEBRIS ORIGINATING FROM THE CONSTRUCTION SITE OR RESULTING FROM THE PROJECT WORK.
- THE CONTRACTOR WILL BE RESPONSIBLE FOR MAINTAINING LOW LEVELS OF NOISE AND DUST.
- THE CONTRACTOR SHALL SECURE ALL NECESSARY EXCAVATION AND CONSTRUCTION PERMITS FROM THE CITY OF HERMOSA FOR ALL WORK WITHIN THE PUBLIC RIGHT-OF-WAY AND ASSOCIATED EASEMENTS.
- ANY MODIFICATIONS OR CHANGES TO THIS PLAN MUST BE APPROVED BY THE CITY ENGINEER PRIOR TO THE INSTITUTION OF SAID MODIFICATION OR CHANGE.
- THE UNDERSIGNED REGISTERED CIVIL ENGINEER CERTIFIES THAT HIS PLAN WAS PREPARED UNDER HIS SUPERVISION AND THAT THE PLAN DOES COMPLY WITH CITY OF HERMOSA ORDINANCES. HE WILL, UPON COMPLETION OF THE PROJECT AND PRIOR TO REQUEST FOR FINAL ACCEPTANCE, SUBMIT TO THE CITY ENGINEER WRITTEN VERIFICATION THAT THE COMPLETED WORK DOES CONFORM TO THIS PLAN. FURTHERMORE, AS THE ENGINEER OF RECORD, HE HAS SELECTED APPROPRIATE BMPs TO EFFECTIVELY MINIMIZE THE NEGATIVE IMPACTS OF THIS PROJECT'S CONSTRUCTION ACTIVITIES ON STORM WATER QUALITY. THE PROJECT OWNER AND CONTRACTOR ARE AWARE THAT THE SELECTED BMPs MUST BE INSTALLED, MONITORED, AND MAINTAINED TO ENSURE THEIR EFFECTIVENESS. THE BMPs NOT SELECTED FOR IMPLEMENTATION ARE REDUNDANT OR DEEMED NOT APPLICABLE TO THE PROPOSED CONSTRUCTION ACTIVITIES.

(Signature) 4/11/24
 _____ DATE
 SIGNATURE

JOHN VLASSIS, P.E. NO. 49830

 PRINTED NAME RCE

IRRIGATION NOTES

- ALL LOCAL MUNICIPAL AND STATE LAWS, RULES AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBY INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS AND THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR.
- THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING UTILITIES, STRUCTURES AND SERVICES BEFORE COMMENCING WORK. THE LOCATIONS OF UTILITIES, STRUCTURES AND SERVICES SHOWN IN THESE PLANS ARE APPROXIMATE ONLY. ANY DISCREPANCIES BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS SHALL BE REPORTED TO THE CITY.
- THE CONTRACTOR SHALL OBTAIN THE PERTINENT ENGINEERING OR ARCHITECTURAL PLANS BEFORE BEGINNING WORK.
- THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS REQUIRED TO PERFORM THE WORK INDICATED HEREIN BEFORE BEGINNING WORK.
- THIS DESIGN IS DIAGRAMMATIC. ALL EQUIPMENT SHOWN IN PAVED AREAS IS FOR DESIGN CLARITY ONLY AND IS TO BE INSTALLED WITHIN PLANTING AREAS.
- THE CONTRACTOR SHALL NOT WILLFULLY INSTALL ANY EQUIPMENT AS SHOWN ON THE PLANS WHEN IT IS OBVIOUS IN THE FIELD THAT UNKNOWN CONDITIONS EXIST THAT WERE NOT EVIDENT AT THE TIME THESE PLANS WERE PREPARED. ANY SUCH CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE CITY PRIOR TO ANY WORK OR THE IRRIGATION CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY FOR ANY FIELD CHANGES DEEMED NECESSARY BY THE CITY.
- INSTALL ALL EQUIPMENT AS SHOWN IN THE DETAILS AND SPECIFICATIONS. CONTRACTOR SHALL BE RESPONSIBLE TO COMPLY WITH LOCAL CITY, COUNTY AND STATE REQUIREMENTS FOR BOTH EQUIPMENT AND INSTALLATION.
- ACTUAL LOCATION FOR THE INSTALLATION OF THE CONTROLLER IS TO BE DETERMINED IN THE FIELD BY THE CITY.
- ALL PIPE UNDER PAVED OR DECOMPOSED GRANITE AREAS TO BE INSTALLED IN SLEEVING TWICE THE DIAMETER OF THE PIPE CARRIED. SEE IRRIGATION LEGEND, SHEET I-02, FOR TYPE. ALL WIRE UNDER PAVED AREAS TO BE INSTALLED IN A SCH. 40 SLEEVE THE SIZE REQUIRED TO EASILY PULL WIRE THROUGH. ALL SLEEVES TO BE INSTALLED WITH A MINIMUM DEPTH AS SHOWN ON THE SLEEVING DETAILS. SLEEVES TO EXTEND AT LEAST 12" PAST THE EDGE OF THE PAVING.
- ALL QUICK COUPLER AND REMOTE CONTROL VALVES TO BE INSTALLED IN SHRUB OR GROUND COVER AREAS WHERE POSSIBLE. ALL QUICK COUPLER AND REMOTE CONTROL VALVES TO BE INSTALLED AS SHOWN ON THE INSTALLATION DETAILS. INSTALL ALL QUICK COUPLER AND REMOTE CONTROL VALVES WITHIN 18" OF HARDSCAPE.
- ALL HEADS ARE TO BE INSTALLED WITH THE NOZZLE, SCREEN AND ARCS SHOWN ON THE PLANS. ALL HEADS ARE TO BE ADJUSTED TO PREVENT OVERSPRAY ONTO BUILDINGS, WALLS, FENCES AND HARDSCAPE. THIS INCLUDES, BUT NOT LIMITED TO, ADJUSTMENT OF DIFFUSER PIN OR ADJUSTMENT SCREW, REPLACEMENT OF PRESSURE COMPENSATING SCREENS, REPLACEMENT OF NOZZLES WITH MORE APPROPRIATE RADIUS UNITS AND THE REPLACEMENT OF NOZZLES WITH ADJUSTABLE ARC UNITS.
- THE CONTRACTOR IS REQUIRED TO CONTACT DIGALERT OR 811 A MINIMUM OF TWO (2) DAYS PRIOR TO THE START OF ANY EXCAVATIONS ON THE PROJECT AND SPECIFICALLY PRIOR TO THE INSTALLATION OF ANY GROUNDING RODS. DIAL 811 OR LOG ONTO WWW.DIGALERT.ORG TO START A PROJECT TICKET. DIGALERT AND 811 IS A FREE SERVICE PROVIDED TO THE PROJECT. FAILURE TO CONTACT AND HAVE THE EXISTING UTILITIES IDENTIFIED, LOCATED AND MARKED SHALL MAKE THE CONTRACTOR SOLELY RESPONSIBLE FOR ANY AND ALL DAMAGES.

LANDSCAPE / PLANTING NOTES

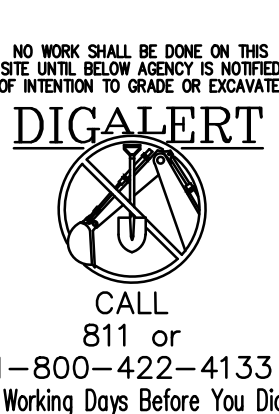


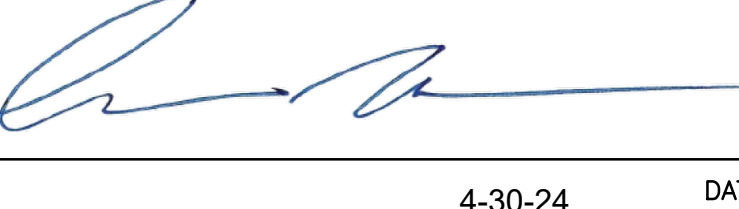
- TREES AND FOLIAGE (TO DRIP LINE), SIGNS, PARKING METERS, AND OTHER IMPROVEMENTS SHALL BE PROTECTED IN PLACE, UNLESS OTHERWISE NOTED, AND ANY DAMAGE TO EXISTING IMPROVEMENTS SHALL BE REPAIRED OR THE IMPROVEMENTS REPLACED IN KIND AT THE CONTRACTORS EXPENSE.
- TREES WITHIN THE PUBLIC RIGHT-OF-WAY MAY NOT BE REMOVED WITHOUT AUTHORIZATION FROM THE ENGINEER AND ARE TO BE PROTECTED FROM INJURY OR DAMAGE DURING CONSTRUCTION.
- THE CONTRACTOR SHALL NOTIFY THE PUBLIC WORKS DEPARTMENT PRIOR TO ANY TRIMMING, REMOVING, OR RELOCATING OF AN EXISTING STREET TREE.
- FOR ANY TREE REMOVED DURING THE COURSE OF CONSTRUCTION, THE TREE SHALL BE REPLACED BY TWO IN KIND IN LOCATIONS DETERMINED BY THE ENGINEER.
- IF STREET TREES ARE REQUIRED IN THE PARKWAY, NEWLY INSTALLED TREES SHALL BE INSTALLED PER THE GREENBOOK TO THE SATISFACTION OF THE INSPECTOR OR ENGINEER. CONTACT THE PUBLIC WORKS DEPARTMENT FOR TYPE(S), SIZE(S), AND LOCATION(S) OF TREES.
- AGRONOMIC SOIL FERTILITY ANALYSIS: CONTRACTOR SHALL, AT NO ADDITIONAL COST TO THE CITY, PERFORM REQUIRED AGRONOMIC SOIL FERTILITY ANALYSIS AND PERCOLATION TESTING OF THE NATIVE SITE SOILS PRIOR TO PLANTING INSTALLATION. FERTILITY ANALYSIS SHALL INCLUDE RECOMMENDATIONS FOR PREPARATION OF THE SITE'S SURFACE SOILS, AND FOR PREPARATION OF THE AMENDED SOIL BACKFILL FOR LANDSCAPE PLANTING. REFER TO SOIL PREPARATION SPECIFICATIONS FOR REQUIREMENTS. WHERE NATIVE SITE SOIL IS INSUFFICIENT, OR AS DIRECTED UNDER THE SPECIFICATIONS, PROVIDE APPROVED IMPORTED AMENDED TOPSOIL FILL IN QUANTITY AS REQUIRED. REFER TO SPECIFICATIONS.
- FINISH GRADING: FINISH GRADING OF LANDSCAPE PLANTING AREAS SHALL BE REVIEWED AND APPROVED IN THE FIELD BY THE CITY FOLLOWING INSTALLATION AND BACKFILL OF SUB-SURFACE IRRIGATION SYSTEM COMPONENTS. REQUIRED SURFACE SOIL PREPARATION, AND PRIOR TO INSTALLATION OF PLANTS. REMOVE ALL TRASH, ROCKS, AND CONSTRUCTION DEBRIS PRIOR TO PLANT MATERIAL INSTALLATION. SMOOTH, EVEN, CONSISTENT SURFACE GRADIENT TRANSITIONS IN ALL PLANTING AREAS IS THE DESIGN INTENT. AS REQUIRED, PROVIDE ADDITIONAL FILL FOR LOW SPOTS AND SHAPE SURFACE AREAS ACCORDINGLY TO ELIMINATE HIGH SPOTS.
- FINISH GRADING ELEVATIONS: PRIOR TO PLANTING INSTALLATION, CONTRACTOR SHALL COMPACT THE FINISHED GRADIENTS OF DESIGNATED PLANTING AREAS TO ESTABLISH A FIRM BUT NOT OVERLY COMPACTED FINISHED SOIL LEVEL THAT IS HORTICULTURALLY-ACCEPTABLE FOR LANDSCAPE PLANTING THAT WILL NOT PIT, RUT, OR DEPRESS UNDER FOOT-TRAFFIC DURING PLANTING OPERATIONS. CONTRACTOR SHALL VERIFY WITH THE CITY THAT FINISHED SURFACE ELEVATION OF ADJOINING WALKS, PAVEMENTS, ETC. (WHICH ALLOW FOR MULCH TO BE APPLIED ON GRADIENTS), REFER TO SPECIFICATIONS FOR FURTHER REQUIREMENTS.
- MODIFICATIONS: EXACT LOCATIONS OF PLANT MATERIALS SHALL BE FLAGGED/STAKED, REVIEWED, AND APPROVED BY THE CITY IN THE FIELD PRIOR TO INSTALLATION OF PLANT MATERIALS. ORIENT PLANT MATERIALS TO SUIT FIELD CONDITIONS OR PER THE CITY'S PREFERENCE. CITY RESERVES THE RIGHT TO MAKE MODIFICATIONS TO PLANT MATERIAL LAYOUT, LOCATION, OR ORIENTATION AT ANY TIME DURING THE CONTRACT PERIOD. THE CONTRACTOR SHALL BUDGET A MINIMUM OF EIGHT (8) WORKER DAYS FOR THIS TASK.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ADVISE THE CITY OF ANY CONDITION FOUND ON THE SITE WHICH PROHIBITS INSTALLATION OF PLANT MATERIALS AS SHOWN ON THE DRAWINGS.
- PLANTING LAYOUT: UNLESS OTHERWISE NOTED ON THE DRAWINGS, PLANT MATERIALS SHALL BE PROPERLY ALIGNED AND EQUALLY-SPACED. REFER TO PLANTING DETAILS FOR ALIGNMENT AND SPACING REQUIREMENTS. THE DESIGN INTENT IS TO PROVIDE DESIGNATED PLANTING AREAS THAT ARE FULL, DENSE, AND COMPLETE WITH NO VOIDS DUE TO MISSING PLANT MATERIALS.
- UTILITY, IRRIGATION, AND PLANT MATERIAL CONFLICTS: EVERY EFFORT HAS BEEN MADE TO AVOID CONFLICTS BETWEEN THE PLANT MATERIAL LOCATIONS AND LOCATIONS OF MAJOR SITE UTILITIES OR IRRIGATION SYSTEM COMPONENTS. CONTRACTOR IS ADVISED THAT LOCATIONS OF PLANT MATERIALS AS SHOWN ON THE DRAWINGS TAKES PRECEDENCE OVER LOCATIONS OF ANY IRRIGATION SYSTEM COMPONENT (PIPING, VALVES, BACKFLOWS, ETC.). NOTE THAT IRRIGATION SYSTEM DRAWINGS ARE DIAGRAMMATIC. SHOULD CONFLICTS BECOME EVIDENT BETWEEN THE PLANTING DESIGN CONCEPT (I.E. TREE LOCATIONS, HEDGES, SHRUB MASSINGS, ETC.) AND THE IRRIGATION SYSTEM COMPONENTS, CONTRACTOR SHALL FIELD-ADJUST TO ELIMINATE ANY CONFLICTS WITH THE DESIGN INTENT OF PLANT MATERIAL LOCATIONS, AS DIRECTED BY THE CITY. ANY REQUIRED CHANGES SHALL BE PERFORMED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CITY.
- CONTRACT GROWING REQUIREMENTS: UNLESS OTHERWISE DIRECTED BY THE CITY WITHIN 30 DAYS AFTER AWARD OF BID, CONTRACTOR SHALL ARRANGE FOR AND SECURE VIA CONTRACT-GROWING AGREEMENTS WITH NURSERY SUPPLIERS ALL PLANT MATERIALS AS SPECIFIED FOR THIS PROJECT.
- QUALITY: CONTRACTOR SHALL FURNISH AND INSTALL ONLY SUPERIOR-QUALITY PREMIUM-GRADE PLANT MATERIALS FOR THIS PROJECT. FULL IN CONTAINER, SYMMETRICAL, WELL-BALANCED, DENSELY FOLIATED, WELL-ROOTED, VIGOR IN GROWTH, PEST AND DISEASE-FREE PLANT MATERIALS MEETING THE MINIMUM SIZES INDICATED FOR EACH SPECIES IS THE DESIGN INTENT. ANY PLANT MATERIALS FOUND TO NOT CONFORMING TO THIS INTENT WILL BE REJECTED BY THE CITY AND SHALL BE REMOVED IMMEDIATELY FROM THE SITE.
- SELECTION AND TAGGING OF PLANT MATERIAL STOCK: ONCE NURSERY SOURCES ARE IDENTIFIED, CONTRACTOR SHALL ARRANGE FOR FIELD-SELECTION AND TAGGING OF PLANT MATERIALS BY THE CITY PRIOR TO DELIVERY. CONTRACTOR SHALL ARRANGE FOR REVIEW AND APPROVAL OF ALL PLANT MATERIALS DELIVERED TO THE SITE AND PRIOR TO INSTALLATION. SELECTION AND TAGGING OF PLANT MATERIALS AT THE NURSERY OR PLACE OF GROWTH DOES NOT CANCEL THE RIGHT OF THE CITY TO REJECT PLANT MATERIALS THAT ARE DELIVERED AT THE PROJECT SITE IF DAMAGED OR UNACCEPTABLE CONDITIONS ARE FOUND THAT WERE NOT DETECTED AT THE NURSERY, PLACE OF GROWTH, OR DURING THE SUBMITTAL PROCESS.
- INSTALLER QUALIFICATIONS: EXECUTION OF WORK HEREIN SHALL BE PERFORMED BY A VALID CONTRACTOR LICENSED FOR THE PERFORMED WORK SCOPE.
- PLANT QUANTITIES: CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL PLANT COUNTS AND AREA REQUIREMENTS AS INDICATED ON THE DRAWINGS. PLANT MATERIAL QUANTITIES, IF PROVIDED, ARE FOR THE CITY'S INFORMATION ONLY. PLANT SPACING IS AS INDICATED ON THE PLANT LEGEND. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE THE NECESSARY QUANTITY OF PLANT MATERIALS NEEDED TO PROVIDE FULL COVERAGE OF PLANTING AREAS AS INDICATED ON THE DRAWINGS, AT THE SPECIFIED SPACING AND PATTERN LAYOUT REQUIREMENTS.
- HANDLING OF PLANT MATERIALS: ONLY HANDLE PLANT MATERIALS BY HORTICULTURALLY-ACCEPTED PRACTICES. FOR CONTAINER-GROWN STOCK, ONLY HANDLE PLANT MATERIALS BY THEIR CONTAINERS. DO NOT HANDLE PLANT MATERIALS BY THEIR TRUNKS OR STEMS. PROTECT PLANT MATERIALS FROM DAMAGE DURING MOVING OR TRANSPORT.
- PRUNING OF PLANT MATERIALS: CONTRACTOR SHALL ONLY PRUNE INSTALLED PLANT MATERIALS AT THE WRITTEN DIRECTION OF THE CITY. PLANT MATERIALS THAT HAVE BEEN PRUNED, TOPPED, THINNED, OR LTOPPED PRIOR TO OR WITHOUT THIS DIRECTION, BY EVIDENCE OF FRESH CUTS, SHALL BE SUBJECT TO REJECTION BY THE CITY. ALL PRUNING OPERATIONS SHALL BE UNDER THE DIRECT PRESENCE OF AN APPROVED CERTIFIED ARBORIST, AND WORK PERFORMED THROUGH ANSI A300 PRUNING REQUIREMENTS.
- PLANT NAMES ARE ABBREVIATED ON THE DRAWINGS. SEE PLANT SCHEDULE FOR KEY AND CLASSIFICATION.
- REFER TO SHEETS L-03 FOR PLANTING PLANS AND REFER TO SHEET L-04 FOR PLANTING DETAILS.
- SHRUB AND GROUND COVER SELECTION: PHOTOS OF PLANTS SHALL BE SUBMITTED TO THE CITY FOR REVIEW.
- TREE SELECTION: THE CITY SHALL BE AFFORDED THE OPPORTUNITY TO SELECT TREES FROM NURSERY.
- ALL PLANT MATERIAL MUST BE APPROVED BY THE CITY PRIOR TO DELIVERY.
- IRRIGATION: PLANT MATERIALS SHALL BE THOROUGHLY IRRIGATED IMMEDIATELY AFTER PLANTING. MANUALLY IRRIGATE OR ACTIVATE IRRIGATION SYSTEMS NECESSARY TO APPLY SUFFICIENT WATER REQUIRED TO ADEQUATELY SUSTAIN VEGETATION ONCE INSTALLED.
- CONDITION OF PLANT MATERIALS: CONTRACTOR IS RESPONSIBLE TO MAINTAIN ALL INSTALLED PLANT MATERIALS IN A HEALTHY, THRIVING, VIGOROUS, PEST AND DISEASE-FREE CONDITION THROUGHOUT INSTALLATION AND DURING THE SPECIFIED LANDSCAPE ESTABLISHMENT PERIOD SPECIFICATION SECTION 329813. ANY PLANT MATERIALS FOUND TO BE MISSING, DEAD, DYING, BROKEN, DISEASED, OR OTHERWISE DAMAGED DURING THE DURATION OF THE CONTRACT SHALL BE REMOVED AND REPLACED ACCORDINGLY WITH ACCEPTABLE NURSERY STOCK MEETING THE SAME SPECIFIED SPECIES, VARIETY, SIZE, AND QUALITY.
- EXISTING VEGETATION: AS APPLICABLE, EXISTING VEGETATION DESIGNATED TO REMAIN SHALL BE PROTECTED-IN-PLACE UNLESS OTHERWISE NOTED, PER SPECIFICATION REQUIREMENTS. ANY DAMAGE TO EXISTING VEGETATION DESIGNATED TO REMAIN SHALL BE REPLACED BY THE CONTRACTOR AT THE SAME SIZE OF THE DAMAGED MATERIAL, AT NO ADDITIONAL COST TO THE CITY.
- LANDSCAPE ESTABLISHMENT PERIOD: FOLLOWING SUBSTANTIAL COMPLETION, FOR THE SPECIFIED DURATION INDICATED IN THE SPECIFICATIONS, CONTRACTOR SHALL PERFORM ALL NECESSARY MAINTENANCE REQUIREMENTS FOR THE VIABLE ESTABLISHMENT OF LANDSCAPE PLANTING AND OTHER INSTALLED EXTERIOR IMPROVEMENTS, INCLUDING BUT NOT LIMITED TO, FULLY-OPERATIONAL AND FUNCTIONING IRRIGATION SYSTEM, TRASH REMOVAL, WEED ABATEMENT, PEST AND DISEASE CONTROL, REMEDIAL GRADING, EROSION CONTROL, MULCH DRESSINGS, PAVEMENT AND SURFACE CLEANING, FREE-FLOW DRAINAGE, AND OTHER FUNCTIONS.

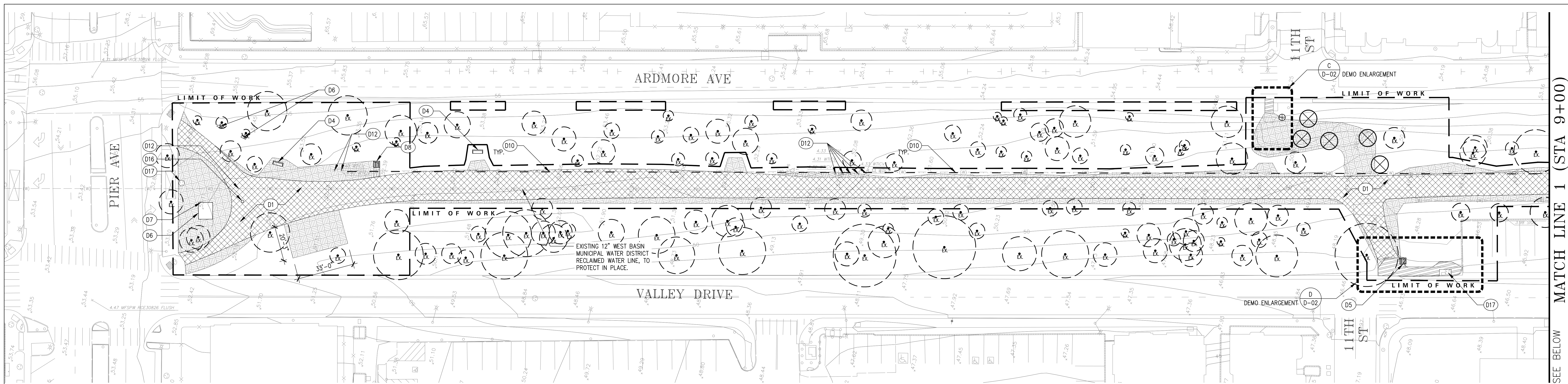
EROSION CONTROL NOTES

- THE CONTRACTOR SHALL MAINTAIN AND CLEAN, IF NECESSARY, ALL EXISTING ON-SITE AND ADJACENT STORM DRAIN INLETS DURING THE COURSE OF CONSTRUCTION AND UNTIL THE WORK IS FORMALLY ACCEPTED BY THE CITY.
- ALL DEBRIS AND FOREIGN MATERIAL SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT AN APPROVED DISPOSAL SITE. THE CONTRACTOR SHALL OBTAIN NECESSARY PERMITS FOR THE TRANSPORTATION OF MATERIAL TO AND FROM THE SITE. THE REMOVAL AND DISPOSAL OF DEMOLITION ITEMS (TREES, PAVEMENT, SOIL, ETC.) SHALL BE AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR IS ADVISED THAT ALL MATERIAL AND DEBRIS CREATED BY REMOVAL OPERATIONS SHALL BECOME THE CONTRACTOR'S PROPERTY AND SHALL BE REMOVED FROM THE JOB SITE IN A MANNER AND AT A LOCATION ACCEPTABLE TO ALL AGENCIES AFFECTED BY THE WORK UNLESS INSTRUCTED BY THE ENGINEER OTHERWISE. THE CITY SHALL HAVE RIGHT OF FIRST REFUSAL FOR SALVAGEABLE PARTS, AND IF INSTRUCTED BY THE ENGINEER THE CONTRACTOR SHALL DELIVER SUCH PARTS TO THE CITY YARD.
- THE CONTRACTOR SHALL PROTECT IN PLACE ALL EXISTING CURB DRAINS AND PARKWAY CULVERTS WHETHER SPECIFIED ON THE PLANS OR NOT. THE CONTRACTOR SHALL ENSURE DRAINS AND CULVERTS REMAIN FUNCTIONAL AT ALL TIMES.
- THE CONTRACTOR SHALL PROVIDE INLET PROTECTION FOR ALL INLETS DOWNSTREAM OF THE WORK AREA IN ACCORDANCE WITH CASQA BMP SE-10.
- PRIOR TO STORM EVENTS SOIL BINDER, STRAW WATTLE, OR OTHER EROSION CONTROL DEVICES MAY BE APPLIED AND SECURED TO DISTURBED OPEN AREAS DURING GRADING OPERATIONS IF DETERMINED NECESSARY BY THE CONTRACTOR OR ENGINEER.
- REASONABLE CARE SHALL BE TAKEN WHEN HAULING ANY EARTH, SAND, GRAVEL, STONE, DEBRIS, OR ANY HAZARDOUS SUBSTANCE OVER ANY PUBLIC STREET, ALLEY, OR OTHER PUBLIC PLACE, SHOULD ANY MATERIAL BLOW, SPILL, OR TRACK OVER AND UPON SAID PUBLIC PLACE OR ADJACENT PRIVATE PROPERTY, IMMEDIATE CLEAN UP SHALL OCCUR.
- THE CONTRACTOR SHALL CONSTRUCT TEMPORARY EROSION CONTROL MEASURES AS DIRECTED BY THE ENGINEER TO CONTROL DRAINAGE WHICH HAS BEEN AFFECTED BY GRADING AND/OR TRENCHING OPERATIONS.

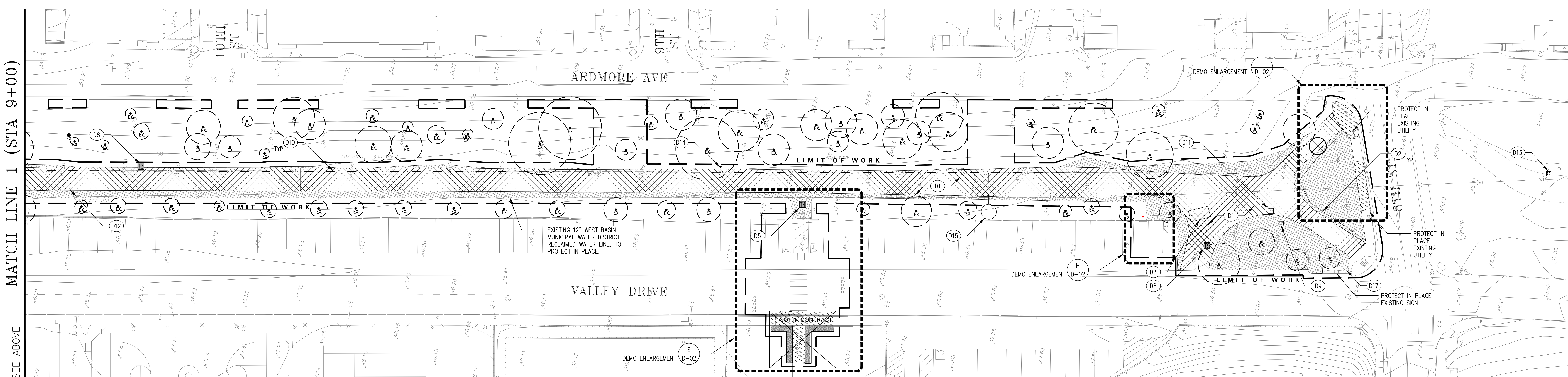
CONSTRUCTION MATERIAL NOTES

- UNLESS OTHERWISE SPECIFICALLY MENTIONED ON THE PLANS, THE CONTRACTOR SHALL CONSTRUCT ALL SIDEWALKS, CURB RAMPS, AND STREET CROSSINGS IN COMPLIANCE WITH ADA STANDARDS AND REQUIREMENTS.
- ALL FORMS AND COMPACTION SHALL BE INSPECTED PRIOR TO ANY CONCRETE POUR OR ASPHALT BEING PLACED.
- ALL EXISTING PAVEMENT TO BE REMOVED SHALL BE SAW-CUT OR WHEEL-CUT AND REMOVED TO CLEAN STRAIGHT LINES WITH NO OVERCUT.
- ALL CONCRETE CURB AND GUTTER FLOW LINES WITH LESS THAN 1% GRADE SHALL BE WATER TESTED PRIOR TO FINAL FINISHING TO ENSURE PROPER DRAINAGE WITHOUT UNACCEPTABLE HIGH OR LOW SPOTS.
- AT ALL LOCATIONS WHERE NEW PAVEMENT JOINS EXISTING, THE EXISTING PAVEMENT SHALL BE COATED WITH AN ASPHALTIC EMULSION.
- WHERE EXISTING PAVEMENT OR SUBGRADE IS FOUND TO BE UNSTABLE, THE CONTRACTOR SHALL REMOVE AND REPLACE A MINIMUM OF 1 FOOT OF SUBGRADE WITH CRUSHED MISCELLANEOUS BASE (CMB) AND COMPACT TO 95% OF MAXIMUM DRY DENSITY OBTAINABLE AS MEASURED BY ASTM D-1557. IF SHALLOW UTILITIES PREVENT REMOVAL OF SUBGRADE SOIL, A WOVEN GEOFABRIC SHALL BE USED TO PROVIDE STRENGTH TO THE SUBGRADE.
- EXPANSION JOINTS PERPENDICULAR TO THE CURB SHALL BE INSTALLED IN COMBINED CURB AND GUTTER AT THE BCR, ECR, BC, EC, AND AT LOCATIONS WHERE THE CURB JOINS EXISTING STRUCTURES. LONGITUDINAL EXPANSION JOINTS SHALL BE INSTALLED WHERE THE CURB BUTTS AGAINST ANY EXISTING STRUCTURE.
- THE EXACT LOCATIONS AND LIMITS FOR THE REMOVAL AND CONSTRUCTION OF SIDEWALKS AND CURB AND GUTTER SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- PRIOR TO FINAL ACCEPTANCE OF STREET IMPROVEMENTS, ALL PAVEMENT, STRIPING, AND STENCILING WITHIN THE PROJECT AREA SHALL BE RESTORED TO LIKE NEW CONDITION TO THE SATISFACTION OF THE ENGINEER. PAVEMENT MARKING MATERIAL FOR TRAFFIC STRIPING ON PUBLIC ROADS SHALL CONFORM TO SECTIONS 210 AND 214 OF THE LATEST VERSION OF THE GREENBOOK.
- ALL TRAFFIC MARKING AND STRIPING, UNLESS OTHERWISE NOTED, SHALL CONFORM TO THE LATEST EDITION OF THE CAMUTCD, THE GREENBOOK, AND CALTRANS STANDARD PLANS.
- AT LEAST 72 HOURS SHALL ELAPSE FROM THE TIME CONCRETE IS PLACED BEFORE VEHICULAR TRAFFIC IS PERMITTED TO TRAVEL ON IT, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
- ALL UTILITY BOXES SHALL BE ADJUSTED TO THE NEW FINISHED GRADE. DAMAGED BOXES SHALL BE REPLACED. KEEP ALL UTILITY BOXES OUT OF DRAINAGE FLOW LINES, CURB RETURNS, DRIVEWAY APPROACHES, AND CURB RAMPS UNLESS APPROVED BY THE CITY ENGINEER.
- ALL FILL SOILS OR SOILS DISTURBED OR OVER-EXCAVATED DURING CONSTRUCTION SHALL BE COMPACTED TO 95% MAXIMUM DENSITY AS DETERMINED BY ASTM SOIL COMPACTION TEST D-1557.
- ALL PORTLAND CEMENT CONCRETE (PCC) AND ASPHALTIC CONCRETE (AC) SHALL BE REMOVED TO A SAWCUT, COLD JOINT, OR SCORE MARK. NO FLOATER SLABS LESS THAN THE MINIMUM INDICATED IN THE LATEST HERMOSA BEACH PUBLIC WORKS STANDARD PLANS 115 - 117. PCC AND AC REMOVALS SHALL BE SAWCUT A MINIMUM OF 2 INCHES IN THE NECESSARY WORK AREA. SAWCUT SLURRY SHALL BE REMOVED WITH THE VACUUM MACHINE AND DISPOSED OF PROPERLY. NO SLURRY SHALL BE ALLOWED TO ENTER THE STORM DRAIN SYSTEM.
- SHOULD ANY LINEAR OR AREA TRENCH JOINT BE LOCATED WITHIN 2 FEET (AC PAVEMENT) OR 3 FEET (PCC PAVEMENT) OF AN EXISTING PAVEMENT PATCH AND/OR CURB AND GUTTER ALIGNMENT, THE ADJACENT PAVEMENT SECTION/PATCH SHALL BE REMOVED AND REPAVED ALONG WITH THE TRENCH PAVEMENT RESTORATION.
- ALL DAMAGED AND/OR REMOVED DRIVEWAY APPROACH, PCC SIDEWALK, OR CURB AND GUTTER SHALL BE RECONSTRUCTED TO GREENBOOK STANDARDS.
- RAMP ASPHALT AT EXISTING DRIVEWAYS, GUTTERS, ETC. FOLLOWING MILLING OPERATIONS TO PROVIDE ACCESS IF PAVING IS NOT SCHEDULED FOR THE SAME DAY.
- ALL EXCAVATIONS SHALL BE APPROPRIATELY SHORED AND PLATED OR BACKFILLED AT THE END OF EACH WORKING DAY AND ROADS OPENED TO VEHICULAR TRAFFIC UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER. PLATES SHALL BE TACK WELDED, PINNED, AND/OR SECURED IN PLACE BY ANOTHER METHOD APPROVED BY THE INSPECTOR OR ENGINEER.
- TRAFFIC PLATES ON EXCAVATED AREAS SHALL BE SKID RESISTANT, WITH MINIMUM COEFFICIENT OF FRICTION EQUIVALENT TO 0.35 PER CALIFORNIA TEST METHOD 342. STEEL PLATES BRIDGING SHALL BE STEEL OF MINIMUM A36 GRADE FOR HS20 TRUCK LOADING PER CALTRANS BRIDGE DESIGN SPECIFICATION MANUAL.
- TRAFFIC STRIPING, MARKINGS, AND RAISED PAVEMENT MARKERS DAMAGED DURING CONSTRUCTION SHALL BE REINSTALLED IN KIND OR AS DIRECTED BY THE ENGINEER AND NOTED IN THE SPECIAL PROVISIONS. ALL NEW STRIPING AND MARKINGS SHALL BE THERMOPLASTIC UNLESS OTHERWISE NOTED AND APPROVED.

BENCH MARK: No. <u>0Y12552</u> , ELEV. <u>54.821'</u> DATE ADJ. <u>2013</u> , QUAD. <u>TORRANCE</u>	 CALL 811 or 1-800-422-4133 2 Working Days Before You Dig www.digalert.com	REVISIONS No. DESCRIPTION DATE ISSUE FOR BID 04/10/24	 811 W 7th Street, 8th Floor Los Angeles, California 90017-5419 United States www.swagroup.com +1.213.236.9090	PLANS PREPARED BY: <u>Ryan McKay</u> PLANS CHECKED BY: <u>Jeremy Klemic</u> 	Job Number <u>HRBT203</u> Date <u>04/10/2024</u>	CITY OF HERMOSA BEACH PUBLIC WORKS DEPARTMENT RECOMMENDED FOR PERMIT ISSUANCE: 	CIP 194, 502 & 604 GREENBELT PEDESTRIAN TRAIL GENERAL CONSTRUCTION NOTES	FILE NUMBER 23-003 G-02
		DATE <u>04/10/2024</u>	DATE <u>4-30-24</u>	DATE <u>4-30-24</u>	SHT. 03 OF 22			



A DEMOLITION PLAN - PIER AVENUE TO SOUTH OF 11TH STREET
1"=20'



B DEMOLITION PLAN - SOUTH OF 11TH STREET TO 8TH STREET
1"=20'

GENERAL DEMOLITION NOTES:

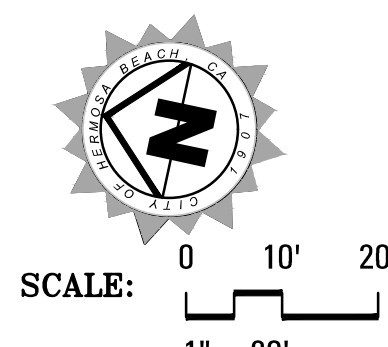
1. THE CONTRACTOR SHALL FIELD VERIFY CONDITIONS PRIOR TO THE COMMENCEMENT OF WORK. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER. NO DEMOLITION WORK SHALL COMMENCE WITHOUT FIELD VERIFICATION BY THE CONTRACTOR, OWNER, AND ENGINEER.
2. THE CONTRACTOR TO CLEAR PROJECT SITE AREA WITHIN THE CONFINES OF THE LIMIT OF WORK LINE.
3. THE CONTRACTOR SHALL MAINTAIN SECURITY FENCING AROUND THE LIMIT OF WORK DURING DEMOLITION. NO UNAUTHORIZED PERSONNEL SHALL ENTER THE AREA.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY AND ALL PERMITS AND SHALL PAY ALL FEES NECESSARY FOR ENCROACHMENT, GRADING, DEMOLITION, AND DISPOSAL OF SAID MATERIALS AS REQUIRED BY LOCAL AND STATE JURISDICTIONS.
5. DAMAGE TO ANY EXISTING UTILITIES AND SERVICES TO REMAIN SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR SHALL REPAIR AND/OR REPLACE IN KIND.
6. PROTECT IN PLACE ALL UTILITIES UNLESS OTHERWISE NOTED.
7. PROTECT IN PLACE ALL SIGNAGE AND MARKERS UNLESS OTHERWISE NOTED.
8. PROTECT IN PLACE ALL EXISTING TREES UNLESS OTHERWISE NOTED. REFER TO TREE PROTECTION PLAN, SHEET D-03 FOR TREE PROTECTION REQUIREMENTS AND REMOVAL.

DEMO PLAN NOTES

- | | |
|--|--|
| <ul style="list-style-type: none"> D1 REMOVE EXISTING WOOD CHIP TRAIL TO A DEPTH OF 8 INCHES. PROTECT IN PLACE EXISTING SPRINKLER HEADS AND LATERAL LINE PIPING INSTALLED ON BOTH SIDES OF TRAIL. PRIOR TO TRAIL REMOVAL, STAKE OUT HEADS TO LOCATE THEIR POSITIONS. REPAIR AND REPLACE ANY HEADS OR PIPES DAMAGED BY THIS WORK. D2 REMOVE EXISTING LANDSCAPE HEADER. D3 REMOVE AND DISPOSE OF EXISTING FITNESS EQUIPMENT AND ASSOCIATED FOOTINGS. D4 SALVAGE AND REINSTALL EXISTING MEMORIAL BENCH PER SHEET L-01. D5 SALVAGE AND REINSTALL EXISTING TRASH CAN PER SHEET L-01. D6 PROTECT IN PLACE EXISTING MEMORIAL. D7 PROTECT IN PLACE EXISTING CONCRETE PAD, BENCH, TRELIS, ELECTRICAL CONDUIT AND VINES. D8 PROTECT IN PLACE EXISTING TRASH CAN. D9 PROTECT IN PLACE BACKFLOW DEVICE IN CAGE. | <ul style="list-style-type: none"> D10 PROTECT IN PLACE THE EXISTING 4" IRRIGATION MAIN AND CONTROL WIRES RUNNING IN THIS APPROXIMATE LOCATION FOR THE RE-USE. REPAIR AND/OR REPLACE ANY EQUIPMENT DAMAGED BY THIS WORK. D11 PROTECT IN PLACE EXISTING DRINKING FOUNTAIN AND ADJUST TO GRADE AS NEEDED, SEE CIVIL SHEET C-05. D12 PROTECT IN PLACE WATER VALVE AND ADJUST TO GRADE, SEE CIVIL SHEET C-05. D13 PROTECT IN PLACE EXISTING IRRIGATION CONTROLLER "A" AND ALL OF THE EXISTING LOW VOLTAGE CONTROL WIRES SHALL BE PROTECTED IN PLACE AND REMAIN IN SERVICE. REFER TO IRRIGATION PLAN I-01. D14 PROTECT IN PLACE EXISTING TRAIL MARKER SIGNAGE. D15 PROTECT IN PLACE EXISTING IRRIGATION WATER POINT OF CONNECTION. CONTRACTOR SHALL PROTECT IN PLACE AND REMAIN IN SERVICE. D16 PROTECT IN PLACE EXISTING WATER MONITORING DEVICE. D17 PROTECT IN PLACE EXISTING CATCH BASIN AND ACCESS HOLE. |
|--|--|

DEMO LEGEND

SYMBOL	DESCRIPTION	QTY.
	EXISTING TREE TO REMAIN AND PROTECT IN PLACE	
	REMOVE EXISTING TREE	6 TREES
	GRIND AND REMOVE EXISTING TREE STUMP	1 STUMP
	REMOVE AND DISPOSE EXISTING WOOD CHIP TRAIL	PER PLAN
	CLEAR AND GRUB EXISTING PLANTING AREA	PER PLAN
	REMOVE EXISTING CONCRETE, REFER TO SHEET D-02	PER PLAN
	LIMIT OF WORK	



BENCH MARK:
No. QY12552, ELEV. 54.821'
DATE ADJ. 2013, QUAD. TORRANCE



REVISIONS		
No.	DESCRIPTION	DATE



811 W 7th Street, 8th Floor
Los Angeles, California
90017-9419
United States
www.swagroup.com
+1.213.236.9090

PLANS PREPARED BY: Ryan McKay
PLANS CHECKED BY: Jeremy Klemic



Job Number
HRBT203
Date
04/10/2024

CITY OF HERMOSA BEACH
PUBLIC WORKS DEPARTMENT
RECOMMENDED FOR PERMIT ISSUANCE:

DATE
04/10/2024

CIP 194, 502 & 604
GREENBELT PEDESTRIAN TRAIL

DEMOLITION PLAN

FILE NUMBER
23-003

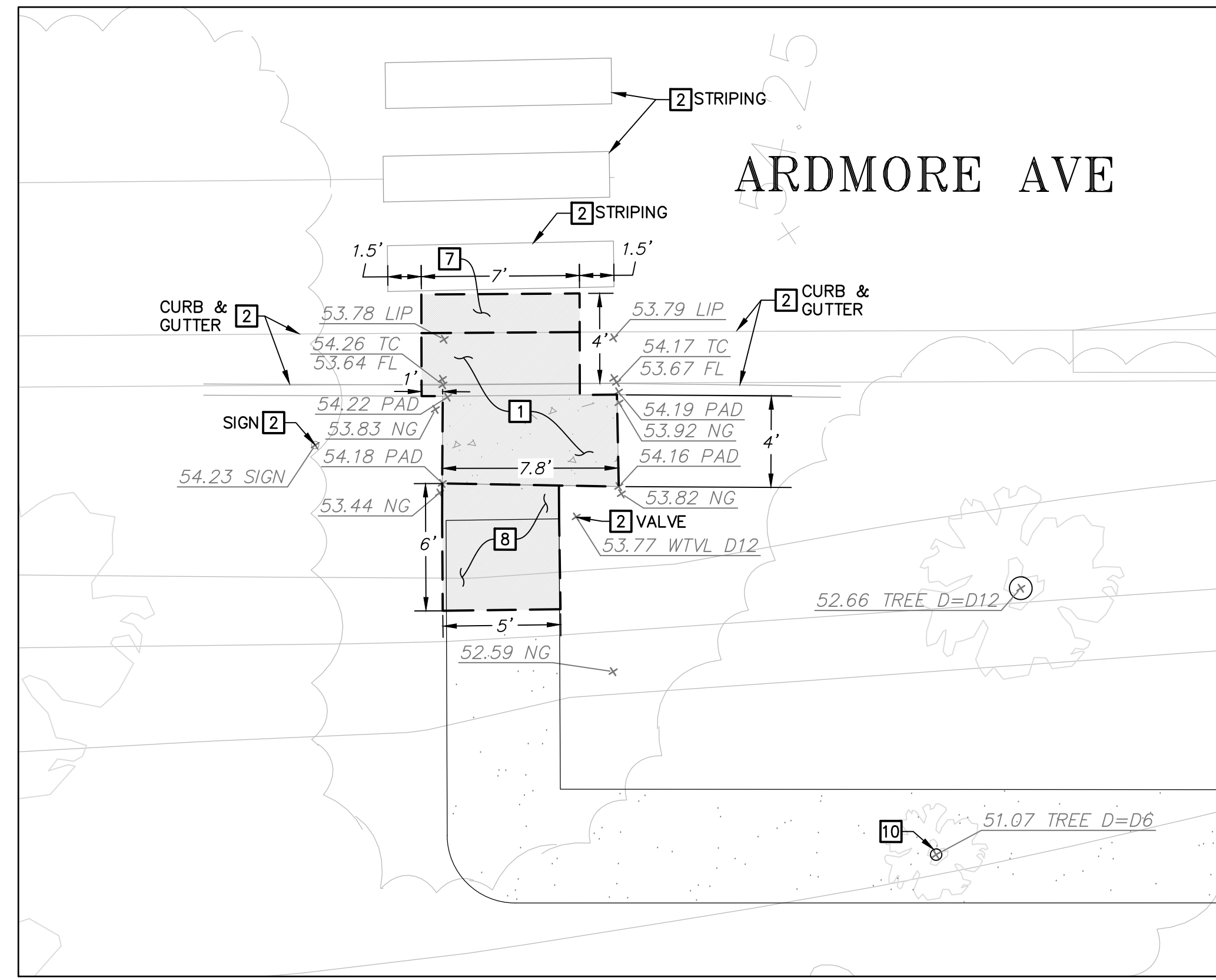
D-01

SHT. 04 OF 22

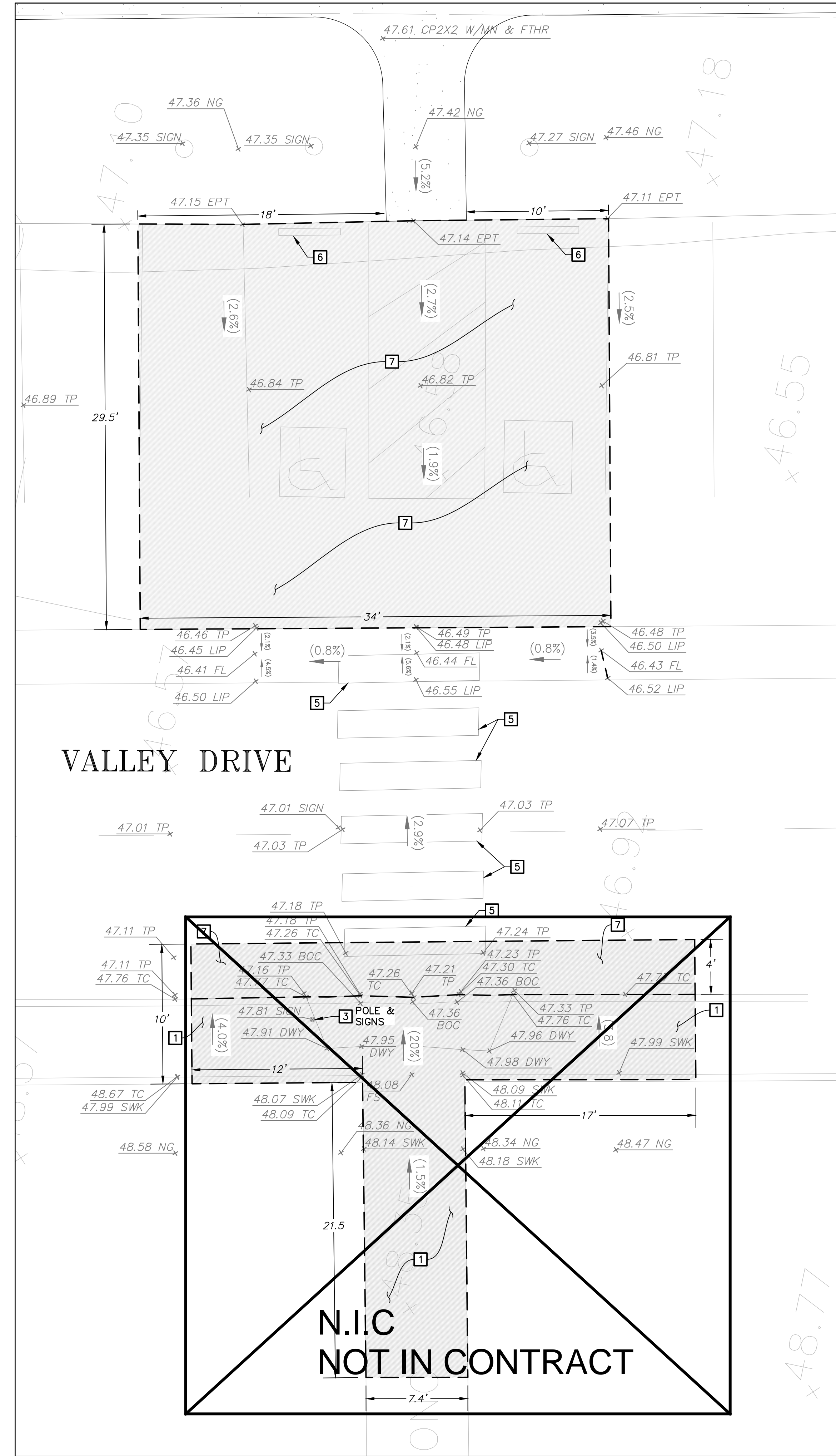
MATCH LINE 1 (STA 9+00)
SEE BELOW

MATCH LINE 1 (STA 9+00)

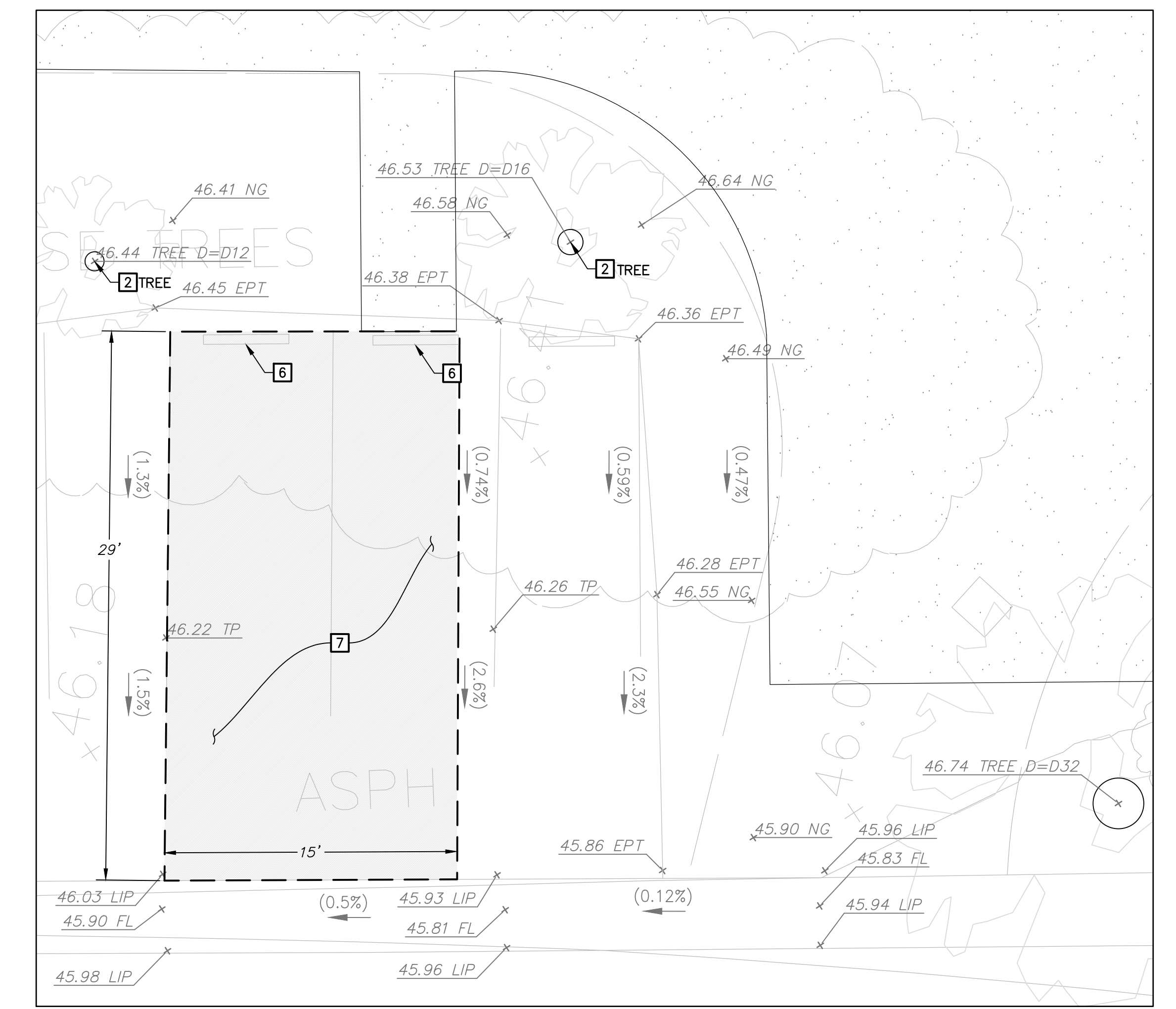
SEE ABOVE



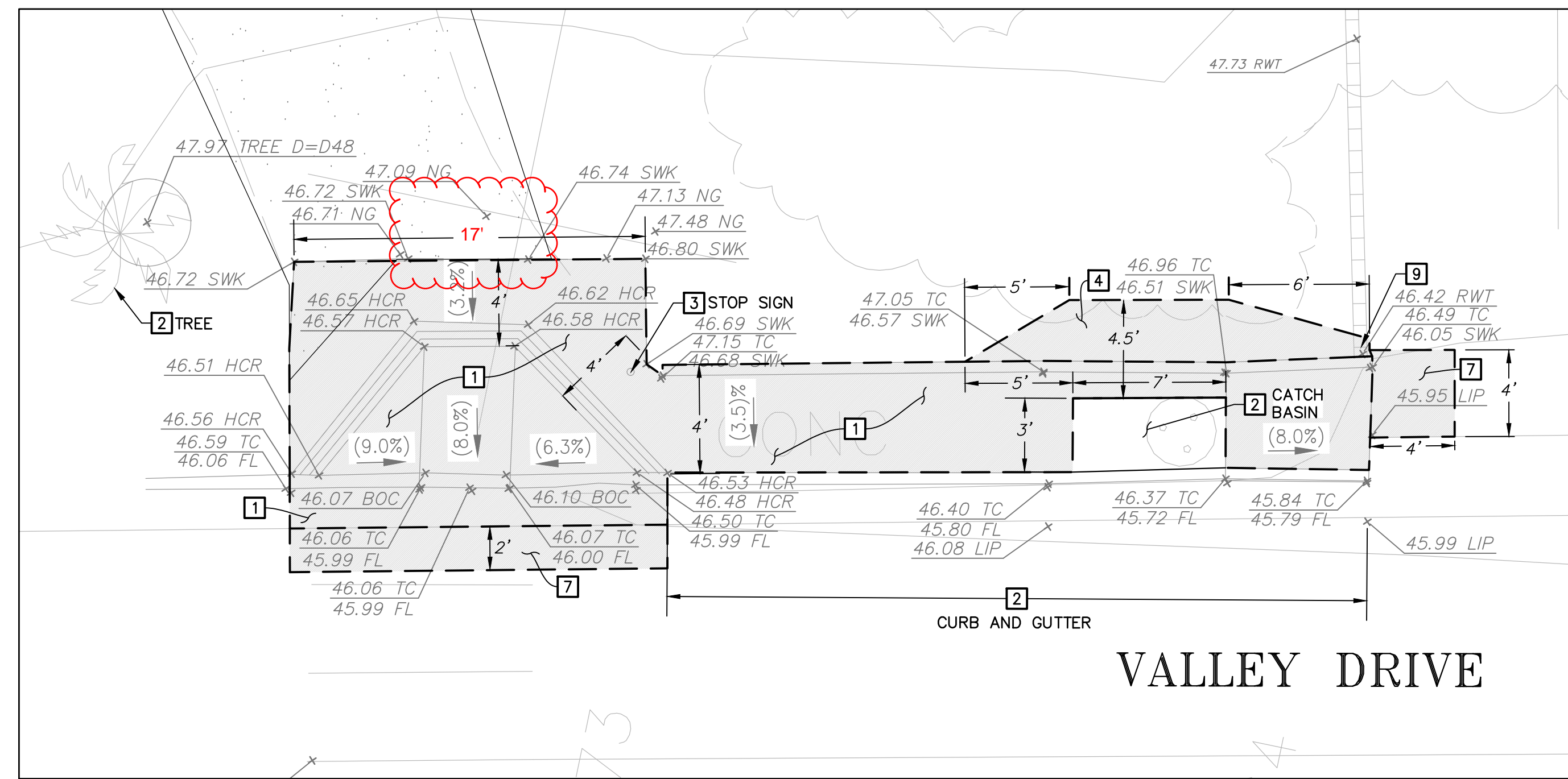
DETAIL C
1"=5'



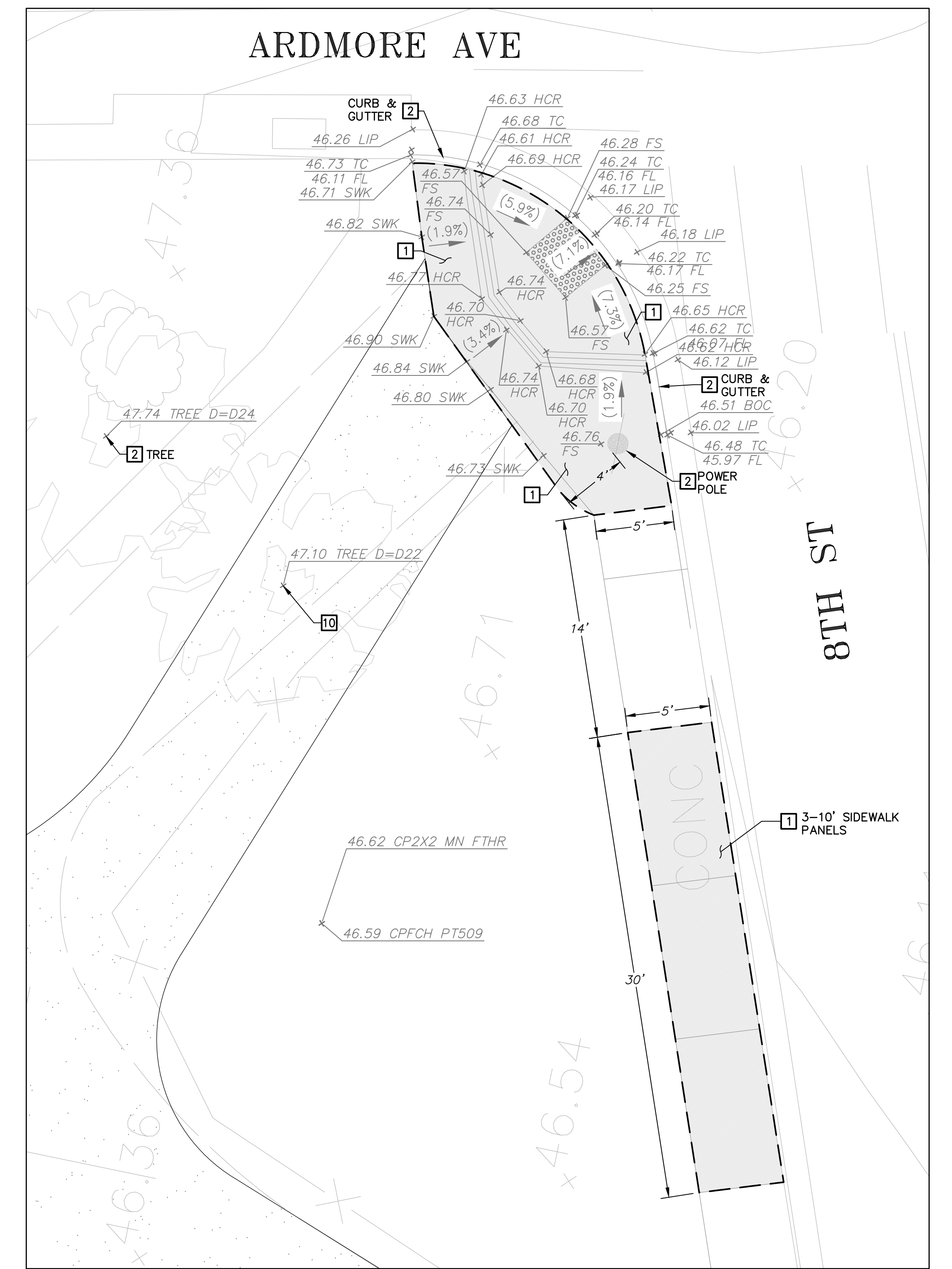
DETAIL E
1"=5'



DETAIL H
PROPOSED ADA
PARKING
1"=5'



CURB RAMP D
1"=5'



CURB RAMP F
1"=5'

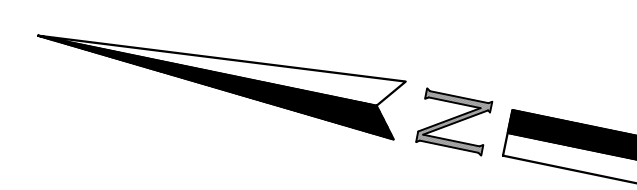
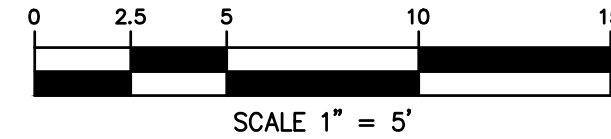
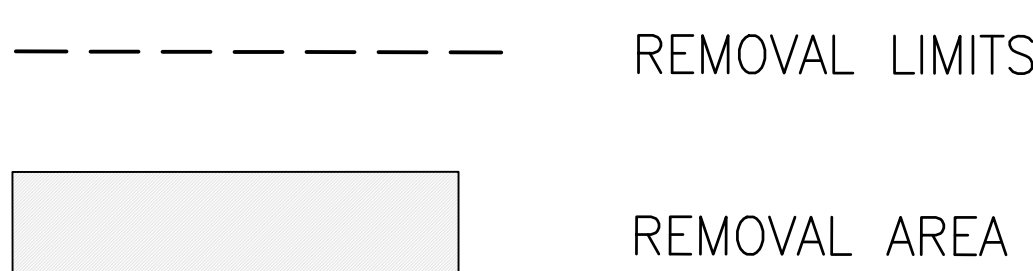
ABBREVIATION LEGEND

BOC	BACK OF CURB
CPAT	AERIAL TARGET
CPCX	CONTROL POINT
CPFCH	FORESIGHT CHECK
CPTBM	BENCHMARK
CP2X2	HUB 2X2 TACKED
EPT	EDGE OF PAVEMENT
FL	FLOWLINE
FS	FINISHED SURFACE
HDW	DRIVEWAY
HCR	HANDICAP RAMP
HPD	PAD
LIP	GUTTER
MFSPW	SPIKE AND WASHER
NG	NATURAL GROUND
PVCO	TOP OF CONCRETE
PWPB	POWER PULLBOX
SIGN	SIGN
SWK	SIDEWALK
TC	TOP OF CURB
TCMH	TELECOMMUNICATION MANHOLE
TCPB	TELECOMMUNICATION PULLBOX
TCVLT	TELECOMMUNICATION VAULT
TOE	TOE OF SLOPE
TOP	TOP OF SLOPE
TP	TOP OF ASPHALT PAVEMENT
TREE	TREE
TSSG	TRAFFIC SIGNAL
RWT	RETAINING WALL TOP
WTBO	BLOW-OFF
WTFH	FIRE HYDRANT
WTICB	IRRIGATION CONTROL BOX
WTICV	IRRIGATION CONTROL VALVE
WTVL	WATER VALVE

DEMOLITION NOTES

- 1 REMOVE EXISTING CURBS, GUTTERS, PCC. EXISTING SUB-BASE TO REMAIN
- 2 PROTECT IN PLACE
- 3 REMOVE AND RELOCATE PER DETAILS ON SHEETS C-06 AND C-07
- 4 REMOVE ALL EXISTING PLANTS AND GROUND COVER
- 5 REMOVE EXISTING PAVEMENT STRIPING
- 6 REMOVE AND DISPOSE WHEEL STOP
- 7 REMOVE EXISTING AC
- 8 CUT AND REMOVE INTERFERING TREE ROOTS
- 9 REMOVE PORTION OF BLOCK WALL
- 10 REMOVE EXISTING TREE

DEMOLITION LEGEND



BENCH MARK:

No. QY12552, ELEV. 54.821'

DATE ADJ. 2013, QUAD. TORRANCE



REVISIONS		
No.	DESCRIPTION	DATE



811 W 7th Street, 8th Floor
Los Angeles, California 90017-3419
United States
www.swagroup.com
+1.213.236.9090

PLANS PREPARED BY:

HUITT ZOLLARS
90 E. Thousand Oaks Boulevard, Suite 201
Thousand Oaks, California 91360
Phone (805) 418-1802 Fax (805) 418-1819

CITY OF HERMOSA BEACH
PUBLIC WORKS DEPARTMENT

RECOMMENDED FOR PERMIT ISSUANCE:

4-30-24 DATE

CIP 194, 502 & 604
GREENBELT PEDESTRIAN TRAIL

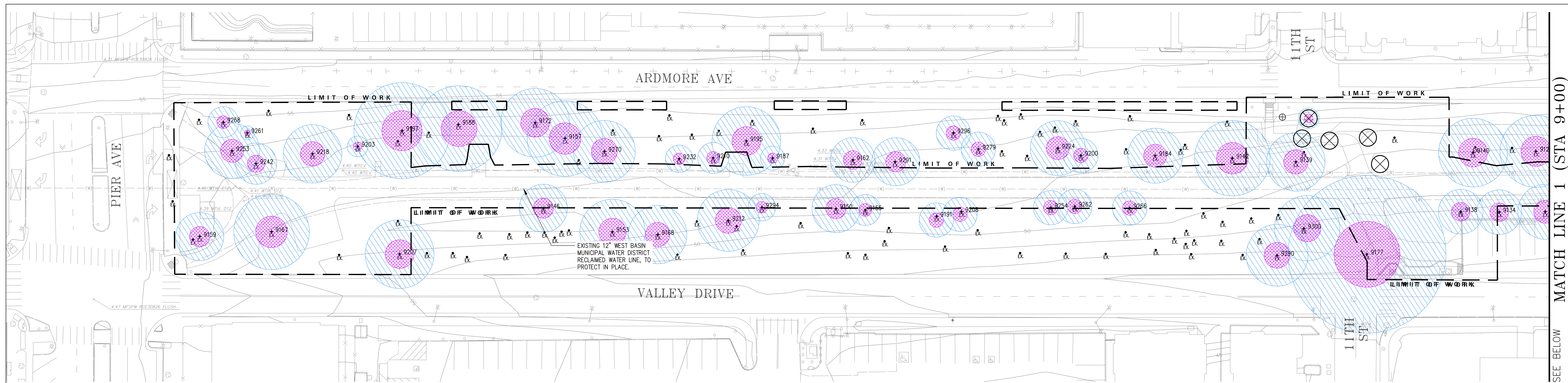
CIVIL DEMOLITION PLAN

FILE NUMBER

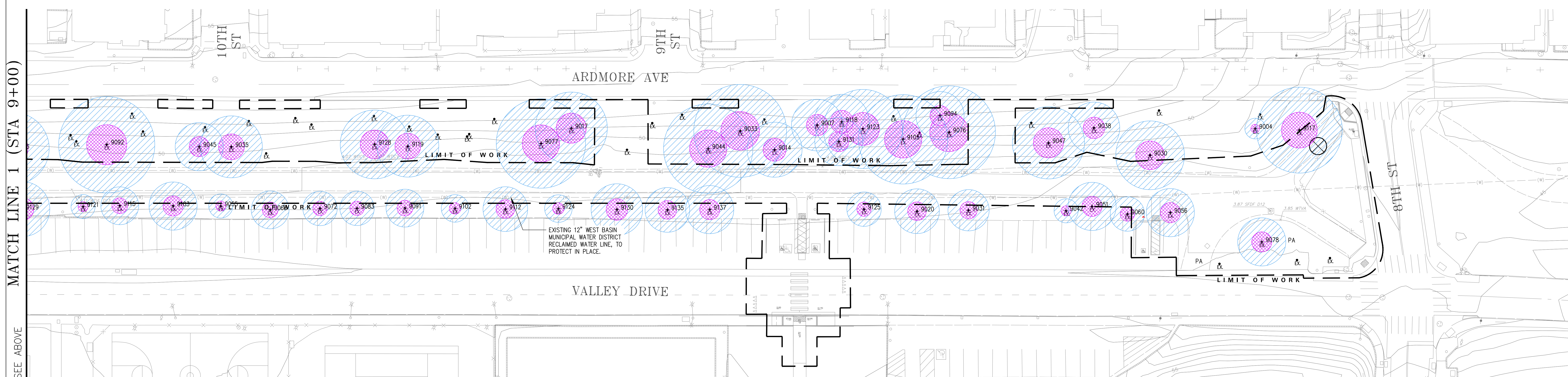
23-003

D-02

SHT. 05 OF 22



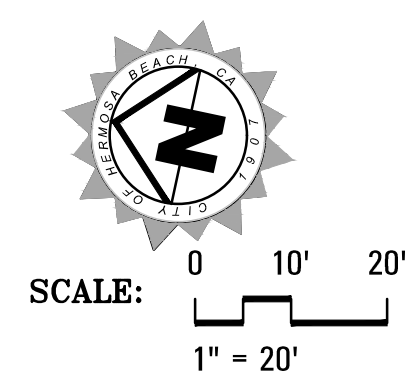
A TREE PROTECTION PLAN – PIER AVENUE TO SOUTH OF 11TH STREET
1"=20'



B TREE PROTECTION – SOUTH OF 11TH STREET TO 8TH STREET
1"=20'

- NOTES:**
- DO NOT CUT ANY ROOTS WITHIN THE CRITICAL ROOT ZONE.
 - CONTRACTOR TO HAND DIG WITHIN THE RADIUS OF THE OPTIMAL ROOT ZONE. USE OF HEAVY EQUIPMENT TO REMOVE ROOTS IS PROHIBITED IN THIS ZONE. ANY ROOTS REMOVED IN THIS ZONE, SHALL BE DONE WITH A SHARP TOOL AND UNDER THE REVIEW OF THE CITY ARBORIST.
 - REDWOOD HEADER AND CAST IN PLACE CONCRETE SHALL NOT BE INSTALLED WITHIN THE CRITICAL ROOT ZONE.
 - CONTRACTOR TO BE PROVIDED TREE REPORT BY CITY'S APPOINTED ARBORIST UPON REQUEST TO CITY.

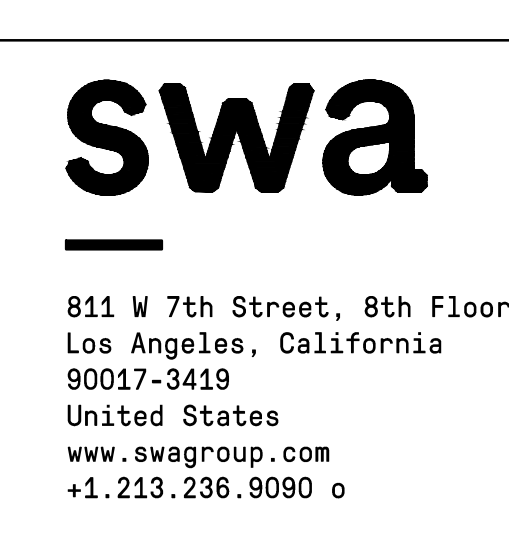
TREE PROTECTION KEY		
SYMBOL	DESCRIPTION	QTY.
	REMOVE EXISTING TREE	6 TREE
	GRIND AND REMOVE EXISTING TREE STUMP	1 STUMP
	EXISTING TREE TO REMAIN AND PROTECT IN PLACE	
	CRITICAL ROOT ZONE	
	OPTIMAL ROOT ZONE	



BENCH MARK:
No. QY12552 ELEV. 54.821'
DATE ADJ. 2013 QUAD. TORRANCE



REVISIONS		
No.	DESCRIPTION	DATE
1	ISSUE FOR BID	04/10/24



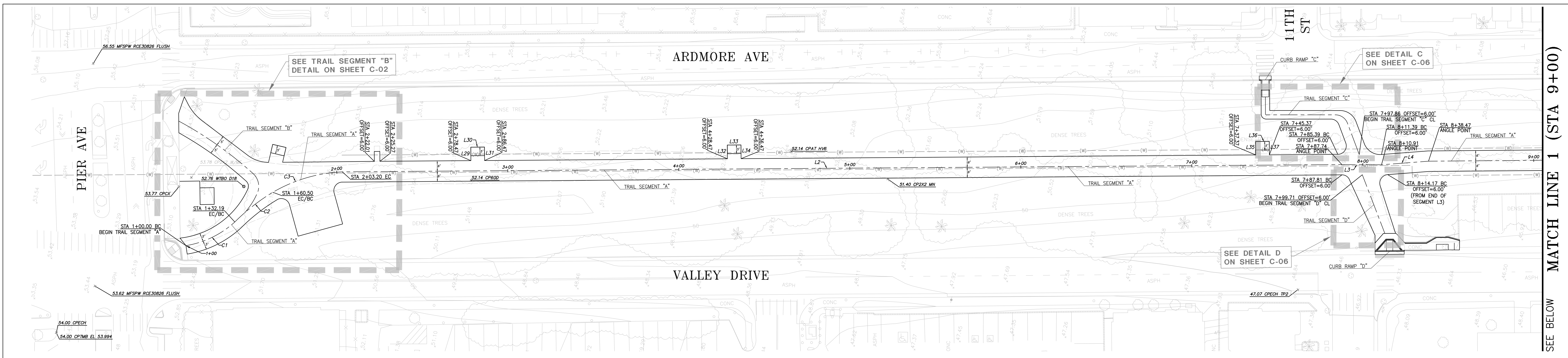
PLANS PREPARED BY: Ryan McKay
PLANS CHECKED BY: Jeremy Klemic

Job Number
HRBT203
Date
04/10/2024

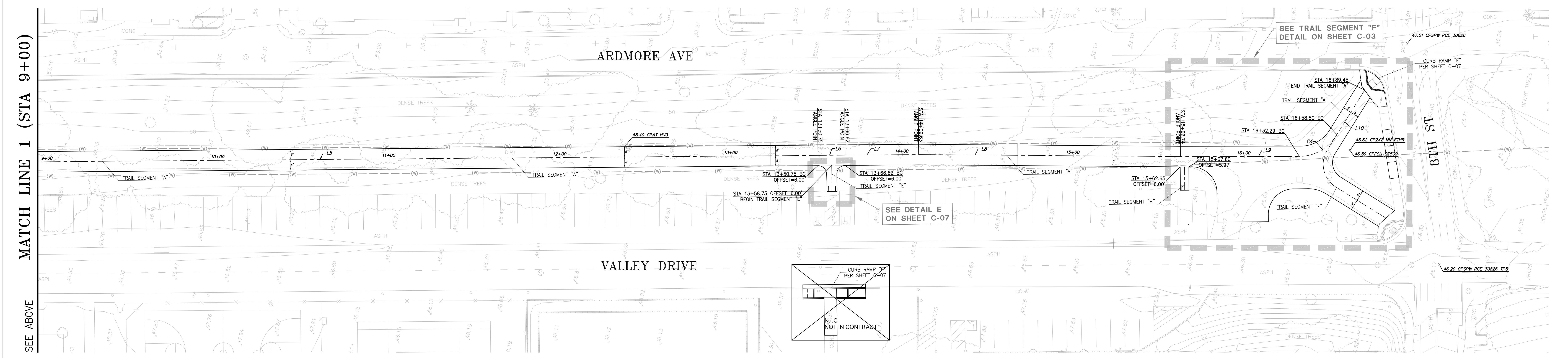
CITY OF HERMOSA BEACH
PUBLIC WORKS DEPARTMENT
RECOMMENDED FOR PERMIT ISSUANCE:

CIP 194, 502 & 604
GREENBELT PEDESTRIAN TRAIL
TREE PROTECTION PLAN

FILE NUMBER
23-003
D-03
SHT. 06 OF 22



A HORIZONTAL LAYOUT PLAN – PIER AVENUE TO SOUTH OF 11TH STREET
1"=20'



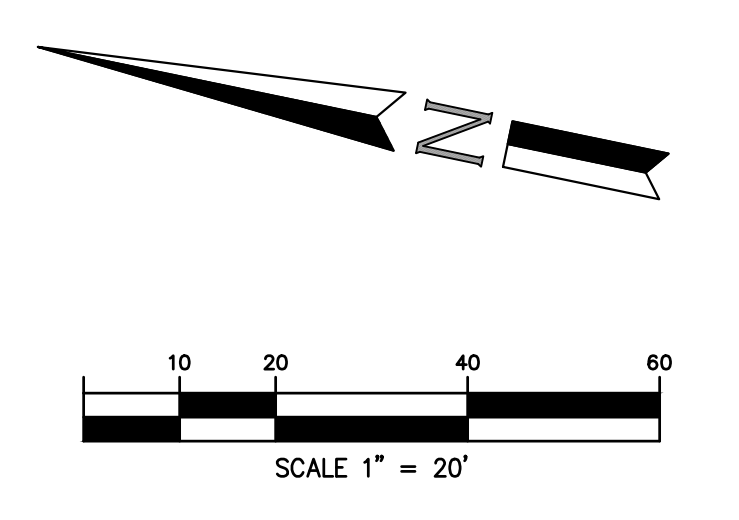
B HORIZONTAL LAYOUT PLAN – SOUTH OF 11TH STREET TO 8TH STREET
1"=20'

Line Table		
Line #	Length	Direction
L1	0.13'	S43° 54' 53.13"W
L2	584.54'	S12° 06' 11.38"E
L3	23.17'	S11° 24' 41.07"E
L4	27.57'	S16° 02' 24.20"E
L5	512.28'	S12° 09' 35.08"E
L6	15.87'	S12° 09' 25.07"E
L7	43.01'	S12° 09' 38.78"E
L8	153.11'	S11° 14' 39.73"E
L9	69.54'	S11° 45' 48.20"E
L10	30.65'	S69° 39' 37.98"E
L11	3.12'	S77° 36' 55.86"W
L12	3.76'	S78° 00' 38.47"W
L13	0.61'	S78° 00' 38.47"W
L14	3.85'	S77° 33' 43.50"W
L15	1.93'	N83° 43' 00.30"W
L16	2.11'	N82° 06' 49.82"W
L17	2.01'	N83° 17' 13.78"W
L18	4.20'	N82° 18' 15.09"W
L19	4.43'	N51° 05' 01.73"E
L20	32.68'	N25° 25' 50.09"E

Line Table		
Line #	Length	Direction
L21	10.79'	N88° 29' 55.49"W
L22	8.00'	N1° 30' 04.51"E
L23	8.86'	S88° 29' 55.49"E
L24	14.25'	N12° 06' 47.43"W
L25	39.41'	N12° 18' 36.10"W
L26	5.77'	S77° 53' 12.57"W
L27	3.26'	N12° 24' 51.45"W
L28	5.79'	N77° 53' 12.57"E
L29	7.87'	S77° 53' 12.57"W
L30	8.00'	N12° 06' 47.43"W
L31	7.88'	N77° 53' 12.57"E
L32	8.02'	S77° 53' 14.89"W
L33	8.00'	N12° 06' 47.43"W
L34	8.02'	N77° 53' 18.61"E
L35	7.84'	S77° 53' 12.57"W
L36	8.00'	N12° 06' 47.43"W
L37	7.84'	N77° 53' 14.76"E
L38	35.15'	N20° 05' 12.17"E
L39	1.71'	N53° 22' 02.51"W
L40	36.26'	S20° 05' 12.17"W

Line Table		
Line #	Length	Direction
L41	8.18'	S12° 14' 46.93"E
L42	3.99'	N77° 32' 52.52"E
L43	29.95'	S12° 09' 35.08"E
L44	18.40'	S77° 44' 33.69"W
L45	1.35'	S12° 05' 58.69"E
L46	13.69'	N77° 54' 03.99"E
L47	5.00'	S12° 05' 53.71"E
L48	13.69'	S77° 54' 06.29"W
L49	18.79'	N62° 57' 35.96"E
L50	27.00'	S27° 02' 24.04"E
L51	18.97'	S62° 57' 35.96"W

Curve Table				
Curve #	Length	Radius	Delta	Direction
C1	32.19'	55.58'	33°11'09"	S37°29'28"E
C2	28.31'	116.44'	13°55'41"	S49°39'04"E
C3	42.71'	88.38'	27°41'14"	S28°04'13"E
C4	26.51'	25.56'	59°25'46"	S41°51'10"E
C5	24.69'	15.74'	89°50'42"	N67°46'57"E
C11	14.53'	43.42'	19°09'56"	N69°27'59"W
C12	11.68'	10.12'	66°07'14"	S63°46'57"W
C13	53.33'	222.87'	13°42'38"	S23°31'02"W
C14	13.73'	30.00'	26°13'25"	N37°58'19"E
C15	13.27'	20.01'	38°00'38"	N07°21'48"E



BENCH MARK:
No. QY12552, ELEV. 54.821'
DATE ADJ. 2013, QUAD. TORRANCE



REVISIONS		
No.	DESCRIPTION	DATE
	ISSUE FOR BID	04/10/24

swa
811 W 7th Street, 8th Floor
Los Angeles, California 90017-3419
United States
www.swagroup.com
+1.213.236.9090

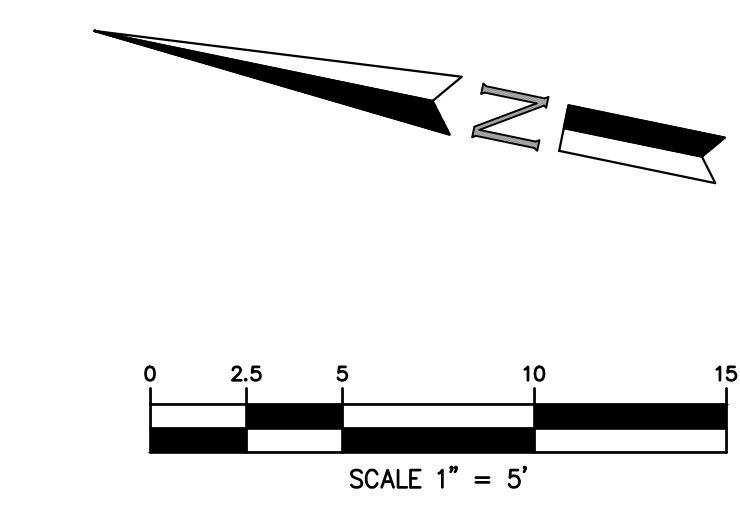
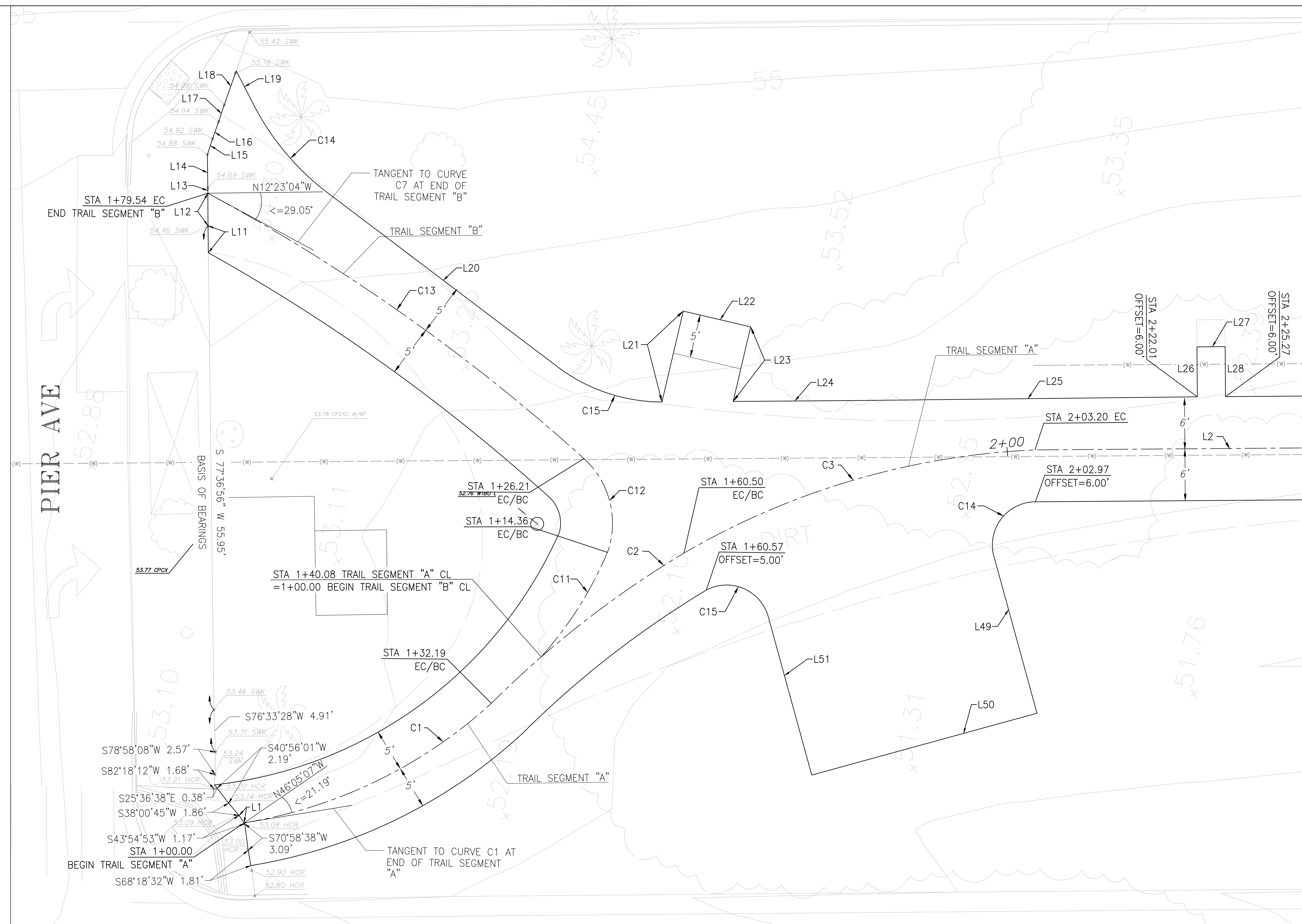
PLANS PREPARED BY:
HUITT ZOLLARS
90 E. Thousand Oaks Boulevard, Suite 201
Thousand Oaks, California 91380
Phone (805) 418-1802 Fax (805) 418-1819

CITY OF HERMOSA BEACH
PUBLIC WORKS DEPARTMENT
RECOMMENDED FOR PERMIT ISSUANCE:

4-30-24 DATE

CIP 194, 502 & 604
GREENBELT PEDESTRIAN TRAIL
HORIZONTAL LAYOUT PLAN
SHT. 07 OF 22

FILE NUMBER
23-003
C-01



TRAIL SEGMENT B
DETAIL
1"=5'

Line #	Length	Direction
L1	0.13'	S43° 54' 53.13"W
L2	584.54'	S12° 06' 11.38"E
L3	23.17'	S11° 24' 41.07"E
L4	27.57'	S16° 02' 24.20"E
L5	512.28'	S12° 09' 35.08"E
L6	15.87'	S12° 09' 25.07"E
L7	43.01'	S12° 09' 38.78"E
L8	153.11'	S11° 14' 39.73"E
L9	69.54'	S11° 45' 48.20"E
L10	30.65'	S69° 39' 37.98"E
L11	3.12'	S77° 36' 55.86"W
L12	3.76'	S78° 00' 38.47"W
L13	0.61'	S78° 00' 38.47"W
L14	3.85'	S77° 33' 43.50"W
L15	1.93'	N83° 43' 00.30"W
L16	2.11'	N82° 06' 49.82"W
L17	2.01'	N83° 17' 13.78"W
L18	4.20'	N82° 18' 15.09"W
L19	4.43'	N51° 05' 01.73"E
L20	32.68'	N25° 25' 50.09"E

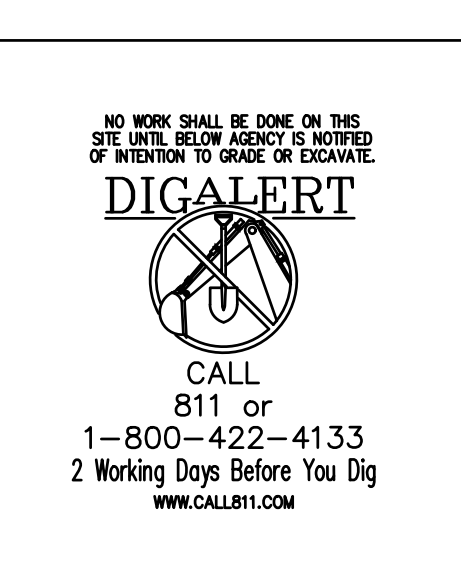
Line #	Length	Direction
L21	10.79'	N88° 29' 55.49"W
L22	8.00'	N1° 30' 04.51"E
L23	8.86'	S88° 29' 55.49"E
L24	14.25'	N12° 06' 47.43"W
L25	39.41'	N12° 18' 36.10"W
L26	5.77'	S77° 53' 12.57"W
L27	3.26'	N12° 24' 51.45"W
L28	5.79'	N77° 53' 12.57"E
L29	7.87'	S77° 53' 12.57"W
L30	8.00'	N12° 06' 47.43"W
L31	7.88'	N77° 53' 12.57"E
L32	8.02'	S77° 53' 14.89"W
L33	8.00'	N12° 06' 47.43"W
L34	8.02'	N77° 53' 18.61"E
L35	7.84'	S77° 53' 12.57"W
L36	8.00'	N12° 06' 47.43"W
L37	7.84'	N77° 53' 14.76"E
L38	35.15'	N20° 05' 12.17"E
L39	1.71'	N53° 22' 02.51"W
L40	36.26'	S20° 05' 12.17"W

Line #	Length	Direction
L41	8.18'	S12° 14' 46.93"E
L42	3.99'	N77° 32' 52.52"E
L43	29.95'	S12° 09' 35.08"E
L44	18.40'	S77° 44' 33.69"W
L45	1.35'	S12° 05' 58.69"E
L46	13.69'	N77° 54' 03.99"E
L47	5.00'	S12° 05' 53.71"E
L48	13.69'	S77° 54' 06.29"W
L49	18.79'	N62° 57' 35.96"E
L50	27.00'	S27° 02' 24.04"E
L51	18.97'	S62° 57' 35.96"W

Curve #	Length	Radius	Delta	Direction
C1	32.19'	55.58'	331°09'	S37°29'28"E
C2	28.31'	116.44'	135°51'	S49°39'04"E
C3	42.71'	88.38'	27°41'14"	S28°04'13"E
C4	26.51'	25.56'	59°25'46"	S41°51'10"E
C5	24.69'	15.74'	89°50'42"	N67°46'57"E
C11	14.53'	43.42'	19°09'56"	N69°27'59"W
C12	11.68'	10.12'	66°07'14"	S63°46'57"W
C13	53.33'	222.87'	13°42'38"	S23°31'02"W
C14	13.73'	30.00'	281°3'25"	N37°58'19"E
C15	13.27'	20.01'	38°00'38"	N07°21'48"E



BENCH MARK:
No. QY12552, ELEV. 54.821'
DATE ADJ. 2013, QUAD. TORRANCE



REVISIONS		
No.	DESCRIPTION	DATE

swa
811 W 7th Street, 8th Floor
Los Angeles, California 90017-3419
United States
www.swagroup.com
+1.213.236.9090

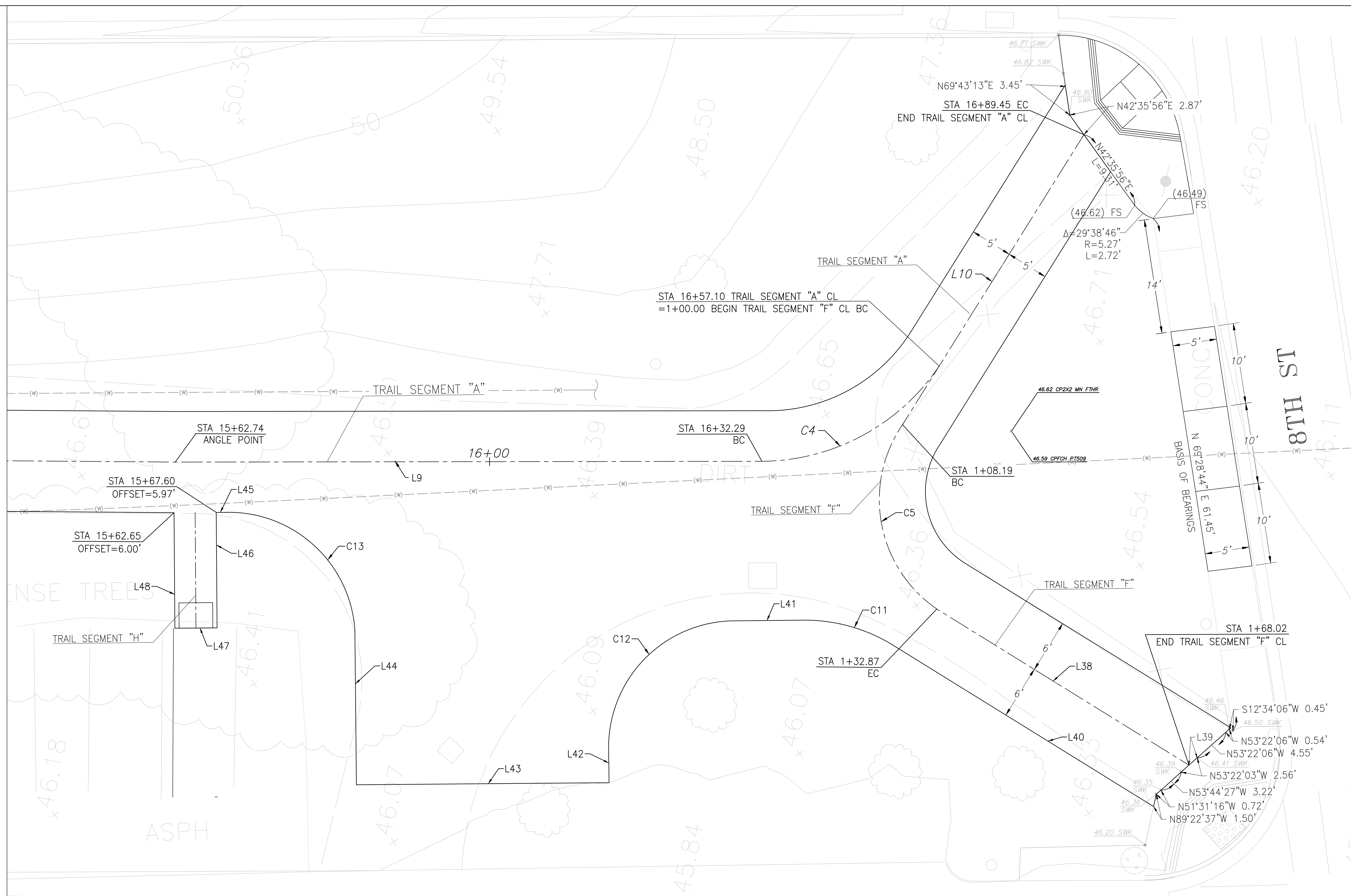
PLANS PREPARED BY:
HUITT ZOLLARS
90 E. Thousand Oaks Boulevard, Suite 201
Thousand Oaks, California 91360
Phone (805) 418-1802 Fax (805) 418-1819

CITY OF HERMOSA BEACH
PUBLIC WORKS DEPARTMENT
RECOMMENDED FOR PERMIT ISSUANCE:

4-30-24 DATE

CIP 194, 502 & 604
GREENBELT PEDESTRIAN TRAIL
LAYOUT PLAN DETAILS

FILE NUMBER
23-003
C-02
SHT. 08 OF 22



TRAIL SEGMENT F
DETAIL
1"=5'

Line #	Length	Direction
L1	0.13'	S43° 54' 53.13"W
L2	584.54'	S12° 06' 11.38"E
L3	23.17'	S11° 24' 41.07"E
L4	27.57'	S16° 02' 24.20"E
L5	512.28'	S12° 09' 35.08"E
L6	15.87'	S12° 09' 25.07"E
L7	43.01'	S12° 09' 38.78"E
L8	153.11'	S11° 14' 39.73"E
L9	69.54'	S11° 45' 48.20"E
L10	30.65'	S69° 39' 37.98"E
L11	3.12'	S77° 36' 55.86"W
L12	3.76'	S78° 00' 38.47"W
L13	0.61'	S78° 00' 38.47"W
L14	3.85'	S77° 33' 43.50"W
L15	1.93'	N83° 43' 00.30"W
L16	2.11'	N82° 06' 49.82"W
L17	2.01'	N83° 17' 13.78"W
L18	4.20'	N82° 18' 15.09"W
L19	4.43'	N51° 05' 01.73"E
L20	32.68'	N25° 25' 50.09"E

Line #	Length	Direction
L21	10.79'	N88° 29' 55.49"W
L22	8.00'	N1° 30' 04.51"E
L23	8.86'	S88° 29' 55.49"E
L24	14.25'	N12° 06' 47.43"W
L25	39.41'	N12° 18' 36.10"W
L26	5.77'	S77° 53' 12.57"W
L27	3.26'	N12° 24' 51.45"W
L28	5.79'	N77° 53' 12.57"E
L29	7.87'	S77° 53' 12.57"W
L30	8.00'	N12° 06' 47.43"W
L31	7.88'	N77° 53' 12.57"E
L32	8.02'	S77° 53' 14.89"W
L33	8.00'	N12° 06' 47.43"W
L34	8.02'	N77° 53' 18.61"E
L35	7.84'	S77° 53' 12.57"W
L36	8.00'	N12° 06' 47.43"W
L37	7.84'	N77° 53' 14.76"E
L38	35.15'	N20° 05' 12.17"E
L39	1.71'	N53° 22' 02.51"W
L40	36.26'	S20° 05' 12.17"W

Line #	Length	Direction
L41	8.18'	S12° 14' 46.93"E
L42	3.99'	N77° 32' 52.52"E
L43	29.95'	S12° 09' 35.08"E
L44	18.40'	S77° 44' 33.69"W
L45	1.35'	S12° 05' 58.69"E
L46	13.69'	N77° 54' 03.99"E
L47	5.00'	S12° 05' 53.71"E
L48	13.69'	S77° 54' 06.29"W
L49	18.79'	N62° 57' 35.96"E
L50	27.00'	S27° 02' 24.04"E
L51	18.97'	S62° 57' 35.96"W

Curve #	Length	Radius	Delta	Direction
C1	32.19'	55.58'	331°09'	S37°29'28"E
C2	28.31'	116.44'	13°55'41"	S49°39'04"E
C3	42.71'	88.38'	27°41'14"	S28°04'13"E
C4	26.51'	25.56'	59°25'46"	S41°51'10"E
C5	24.69'	15.74'	89°50'42"	N67°46'57"E
C11	14.53'	43.42'	19°09'56"	N69°27'59"W
C12	11.68'	10.12'	66°07'14"	S63°46'57"W
C13	53.33'	222.87'	13°42'38"	S23°31'02"W
C14	13.73'	30.00'	261°3'25"	N37°58'19"E
C15	13.27'	20.01'	38°00'38"	N07°21'48"E

BENCH MARK:
No. QY12552, ELEV. 54.821'
DATE ADJ. 2013, QUAD. TORRANCE



REVISIONS		
No.	DESCRIPTION	DATE

swa
811 W 7th Street, 8th Floor
Los Angeles, California 90017-3419
United States
www.swagroup.com
+1.213.236.9090

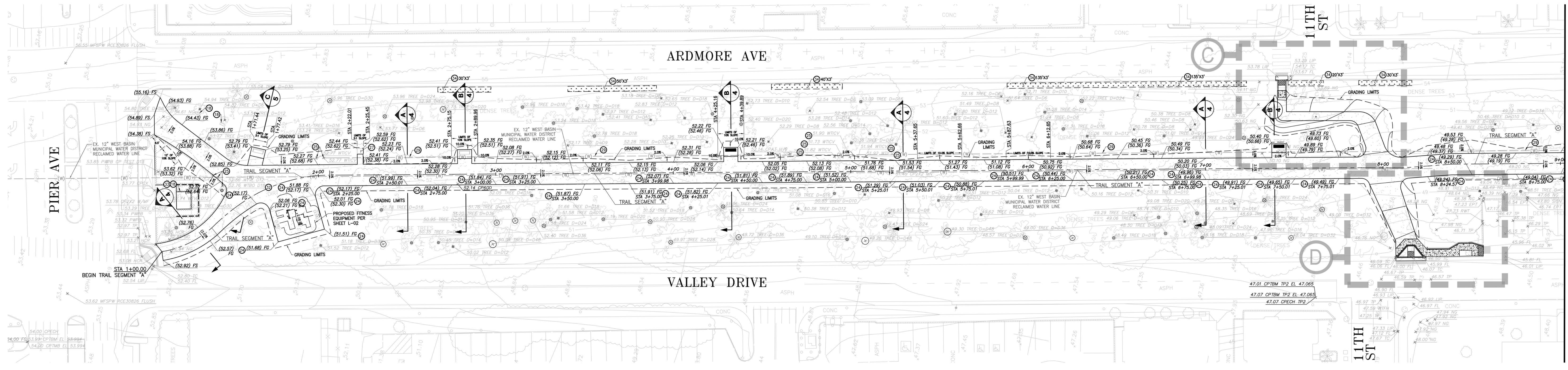
PLANS PREPARED BY:
HUITT ZOLLARS
90 E. Thousand Oaks Boulevard, Suite 201
Thousand Oaks, California 91360
Phone (805) 418-1802 Fax (805) 418-1819

CITY OF HERMOSA BEACH
PUBLIC WORKS DEPARTMENT
RECOMMENDED FOR PERMIT ISSUANCE:

4-30-24 DATE

CIP 194, 502 & 604
GREENBELT PEDESTRIAN TRAIL
LAYOUT PLAN DETAILS

FILE NUMBER
23-003
C-03
SHT. 09 OF 22

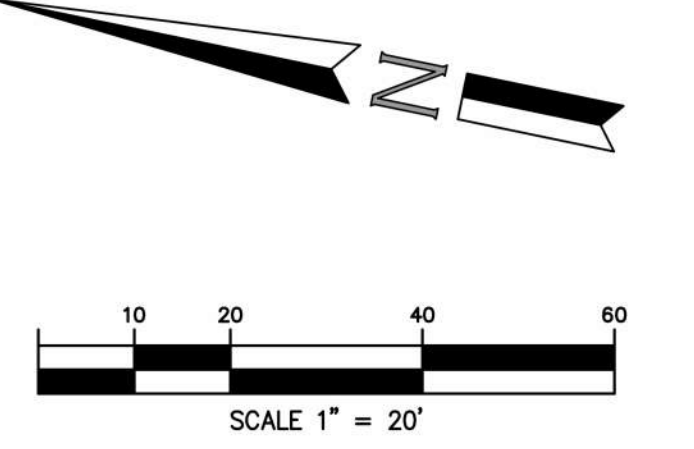


MATCH LINE 2 (STA 9+00)
SEE SHEET C-05

A GRADING PLAN – PIER AVENUE TO SOUTH OF 11TH STREET
1"=20'

CONSTRUCTION NOTES

- ⑮ PROTECT IN PLACE EXISTING MEMORIAL
- ⑯ EXISTING GRADE TO BE HELD FOR WESTERLY EDGE OF PROPOSED TRAIL
- ⑰ ADJUST EXISTING WATER VALVE TO GRADE
- ⑱ PROTECT EXISTING TRASH BIN IN PLACE
- ⑳ PROTECT IN PLACE EXISTING 4" IRRIGATION MAIN AND CONTROL WIRES
- ㉑ PROTECT IN PLACE EXISTING WATER BLOW-OFF ASSEMBLY
- ㉒ PROTECT IN PLACE EXISTING CONCRETE PAD, BENCH, TRELIS, ELECTRICAL CONDUIT AND VINES
- ㉓ PROVIDE SOIL & FILL 2" BELOW TOP OF CURB PER LANDSCAPE PLANS

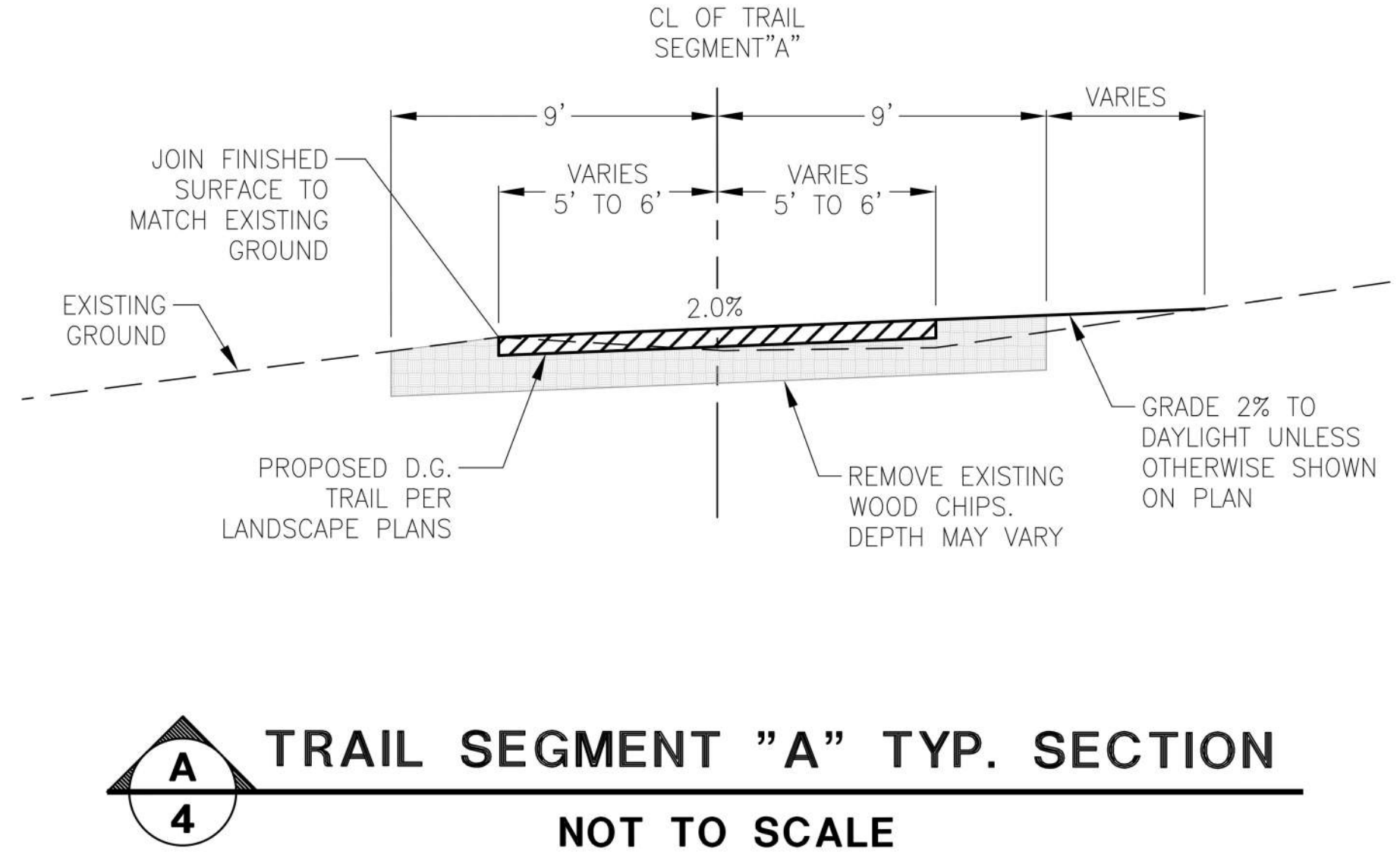


ABBREVIATION LEGEND

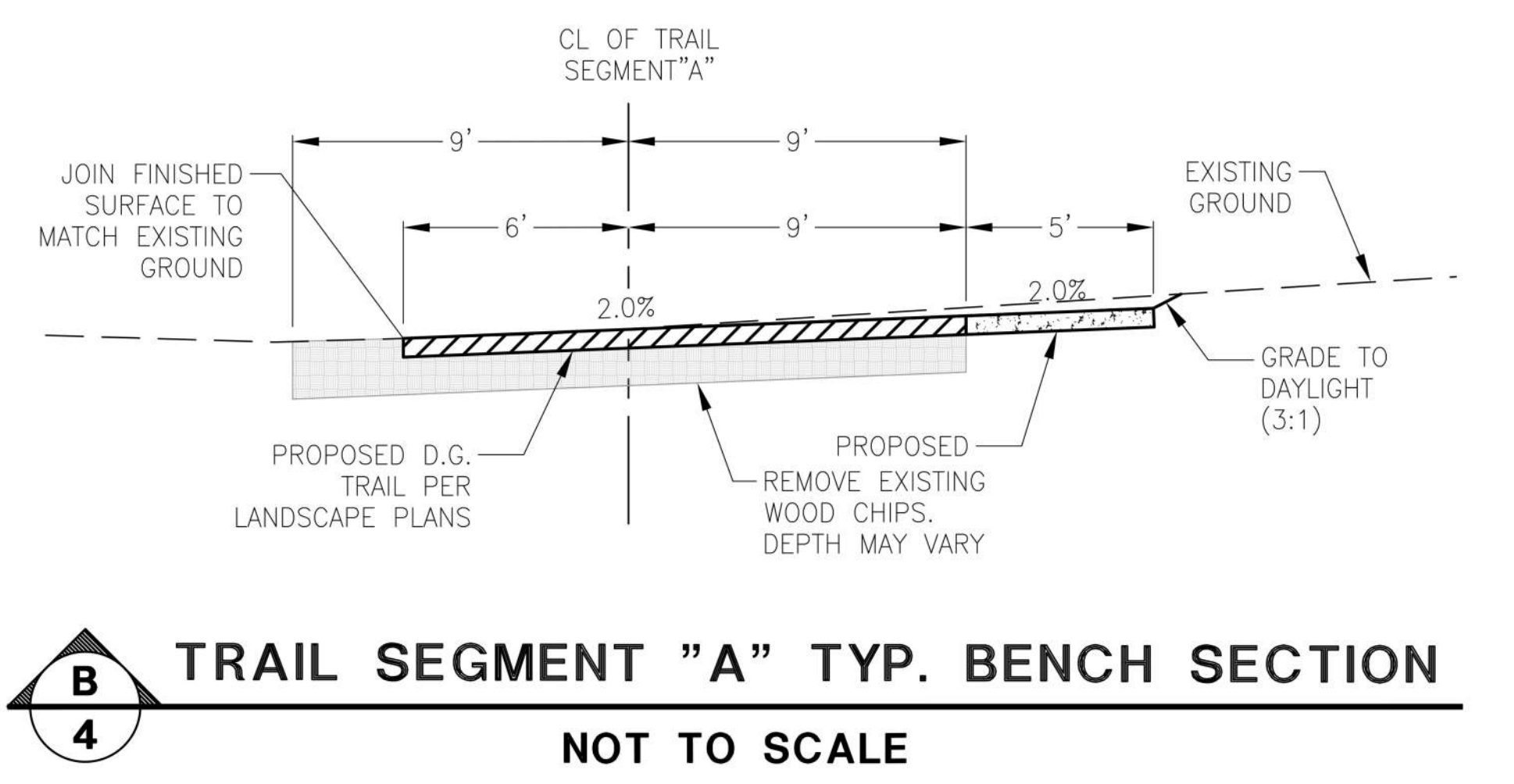
BOC	BACK OF CURB
CPAT	AERIAL TARGET
CPCX	CONTROL POINT
CPECH	ELEVATION CHECK
CPFCH	FORESIGHT CHECK
CPSPW	SPIKE & WASHER
CPTBM	BENCHMARK
CP2X2	HUB 2X2 TACKED
EPT	EDGE OF PAVEMENT
FL	FLOWLINE
FS	FINISHED SURFACE
HDW	DRIVEWAY
HCR	HANDICAP RAMP
HPD	PAD
LIP	GUTTER
MSPW	SPIKE AND WASHER
NG	NATURAL GROUND
PVCO	TOP OF CONCRETE
PWPB	POWER PULLBOX
SIGN	SIGN
SWK	SIDEWALK
TC	TOP OF CURB
TCMH	TELECOMMUNICATION MANHOLE
TCPB	TELECOMMUNICATION PULLBOX
TCVLT	TELECOMMUNICATION VAULT
TP	TOP OF ASPHALT PAVEMENT
TREE	TREE
TSSG	TRAFFIC SIGNAL
RWT	RETAINING WALL TOP
WBLO	BLOW-OFF
WTH	FIRE HYDRANT
WICBS	IRRIGATION CONTROL BOX
WICV	IRRIGATION CONTROL VALVE
WTVL	WATER VALVE

LEGEND

	PROPOSED GRADE
	EXISTING GRADE
	GRADING LIMITS
	DG SURFACE PER LANDSCAPE PLANS
	ADA DETECTABLE WARNING SURFACE
	PROPOSED PCC
	PROPOSED AC
	GRADED NATURAL GROUND
	PROPOSED SOIL FILL
	SEE ENLARGED DETAILS ON SHEET C-06, AND C-07.



A TRAIL SEGMENT "A" TYP. SECTION
NOT TO SCALE



B TRAIL SEGMENT "A" TYP. BENCH SECTION
NOT TO SCALE

BENCH MARK:
No. QY12552, ELEV. 54.821'
DATE ADJ. 2013, QUAD. TORRANCE



REVISIONS		
No.	DESCRIPTION	DATE

swa
811 W 7th Street, 8th Floor
Los Angeles, California 90017-3419
United States
www.swagroup.com
+1.213.236.9090

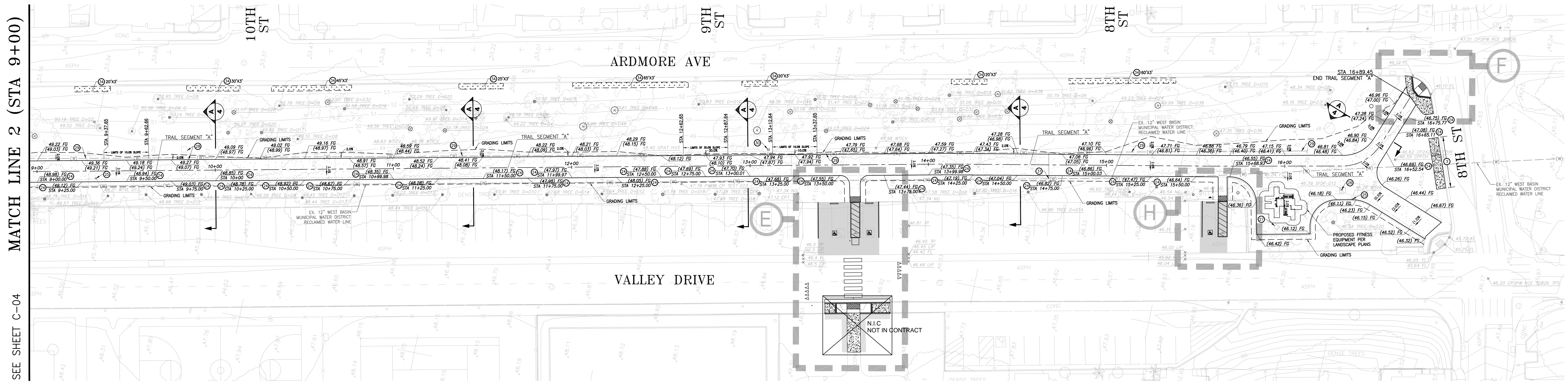
PLANS PREPARED BY:
HUITT ZOLLARS
90 E. Thousand Oaks Boulevard, Suite 201
Thousand Oaks, California 91320
Phone (805) 418-1802 Fax (805) 418-1819

CITY OF HERMOSA BEACH
PUBLIC WORKS DEPARTMENT
RECOMMENDED FOR PERMIT ISSUANCE:

DATE: 4-30-24

CIP 194, 502 & 604
GREENBELT PEDESTRIAN TRAIL
GRADING PLAN

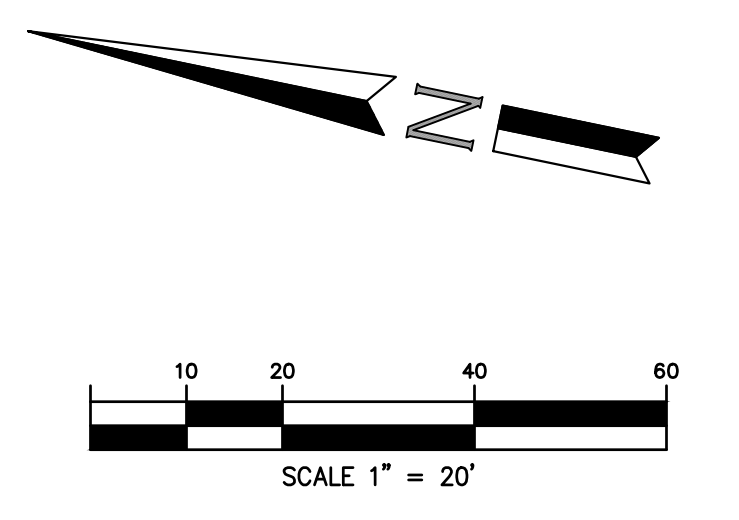
FILE NUMBER
23-003
C-04
SHT. 10 OF 22



MATCH LINE 2 (STA 9+00)

SEE SHEET C-04

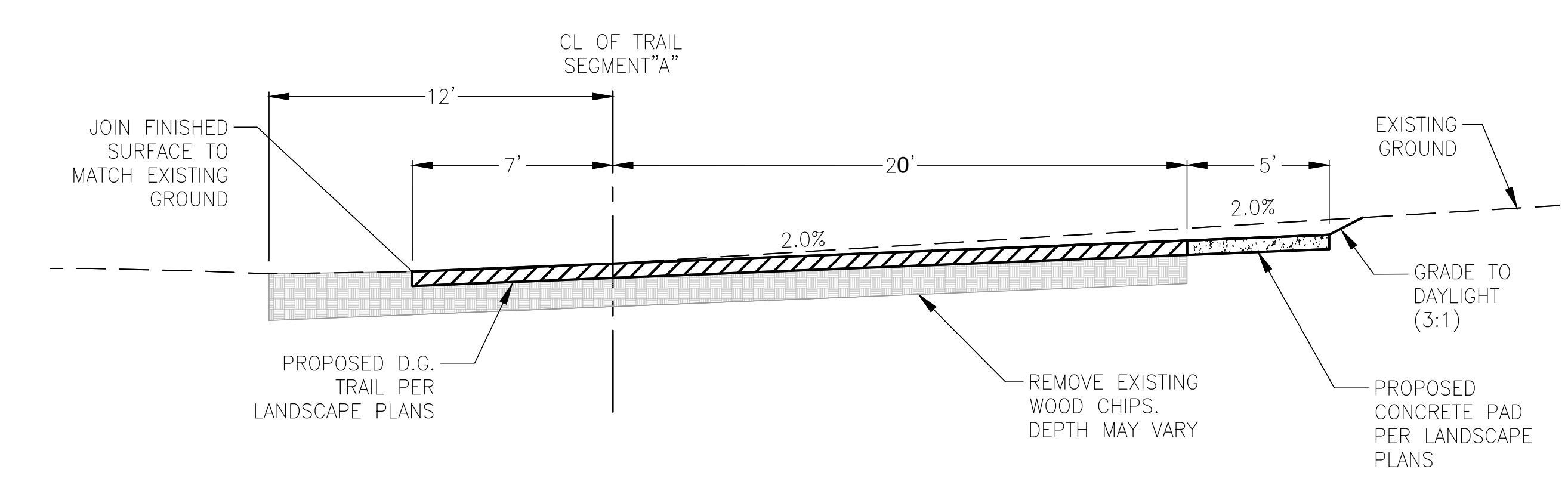
(B) GRADING PLAN – SOUTH OF 11TH STREET TO 8TH STREET
1"=20'



ABBREVIATION LEGEND	
BOC	BACK OF CURB
CPAT	AERIAL TARGET
CPCK	CONTROL POINT
CPECH	ELEVATION CHECK
CPFCH	FORESIGHT CHECK
CPSPW	SPIKE & WASHER
CPFBM	BENCHMARK
CP2X2	HUB 2X2 TACKED
EPT	EDGE OF PAVEMENT
FL	FLOWLINE
FS	FINISHED SURFACE
HDW	DRIVEWAY
HCR	HANDICAP RAMP
HPD	PAD
LIP	GUTTER
MFSPW	SPIKE AND WASHER
NG	NATURAL GROUND
PVCO	TOP OF CONCRETE
PWPB	POWER PULLBOX
SIGN	SIGN
SWK	SIDEWALK
TC	TOP OF CURB
TCMH	TELECOMMUNICATION MANHOLE
TCPB	TELECOMMUNICATION PULLBOX
TCVLT	TELECOMMUNICATION VAULT
TP	TOP OF ASPHALT PAVEMENT
TREE	TREE
TSSG	TRAFFIC SIGNAL
RWT	RETAINING WALL TOP
WTBO	BLOW-OFF
WTH	FIRE HYDRANT
WTCB	IRRIGATION CONTROL BOX
WTCV	IRRIGATION CONTROL VALVE
WTVL	WATER VALVE

LEGEND	
	PROPOSED GRADE
	EXISTING GRADE
	GRADING LIMITS
	DG SURFACE PER LANDSCAPE PLANS
	ADA DETECTABLE WARNING SURFACE
	PROPOSED PCC
	PROPOSED AC
	GRADED NATURAL GROUND
	PROPOSED SOIL FILL
	SEE ENLARGED DETAILS ON SHEET C-06, AND C-07.

- CONSTRUCTION NOTES**
- (1) CONSTRUCT SIDEWALK PER SPPWC STD. 113-2
 - (2) EXISTING GRADE TO BE HELD FOR WESTERLY EDGE OF PROPOSED TRAIL
 - (3) ADJUST EXISTING WATER VALVE TO GRADE
 - (4) ADJUST EXISTING BACKFLOW SYSTEM TO GRADE
 - (5) PROTECT EXISTING TRASH BIN IN PLACE
 - (6) MOVE EXISTING TRASH BIN TO OUTSIDE EDGE OF PROPOSED PATH
 - (7) PROTECT IN PLACE EXISTING 4" IRRIGATION MAIN AND CONTROL WIRES
 - (8) PROTECT IN PLACE EXISTING SIGNAGE
 - (9) PROTECT IN PLACE EXISTING IRRIGATION WATER POINT OF CONNECTION
 - (10) PROVIDE SOIL & FILL 2" BELOW TOP OF CURB PER LANDSCAPE PLANS



(C) BENCH SECTION
NOT TO SCALE

BENCH MARK:
No. QY12552, ELEV. 54.821'
DATE ADJ. 2013, QUAD. TORRANCE

REVISIONS		
No.	DESCRIPTION	DATE
1	ISSUE FOR BID	04/10/24

swa
811 W 7th Street, 8th Floor
Los Angeles, California 90017-3419
United States
www.swagroup.com
+1.213.236.9090

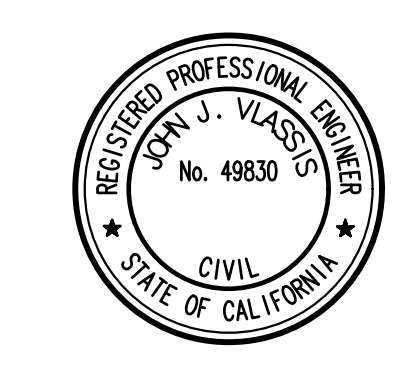
PLANS PREPARED BY:
HUITT ZOLLARS
90 E. Thousand Oaks Boulevard, Suite 201
Thousand Oaks, California 91350
Phone (805) 418-1802 Fax (805) 418-1819

CITY OF HERMOSA BEACH
PUBLIC WORKS DEPARTMENT
RECOMMENDED FOR PERMIT ISSUANCE:

4-30-24 DATE

CIP 194, 502 & 604
GREENBELT PEDESTRIAN TRAIL
GRADING PLAN

FILE NUMBER
23-003
C-05
SHT. 11 OF 22



CONSTRUCTION NOTES

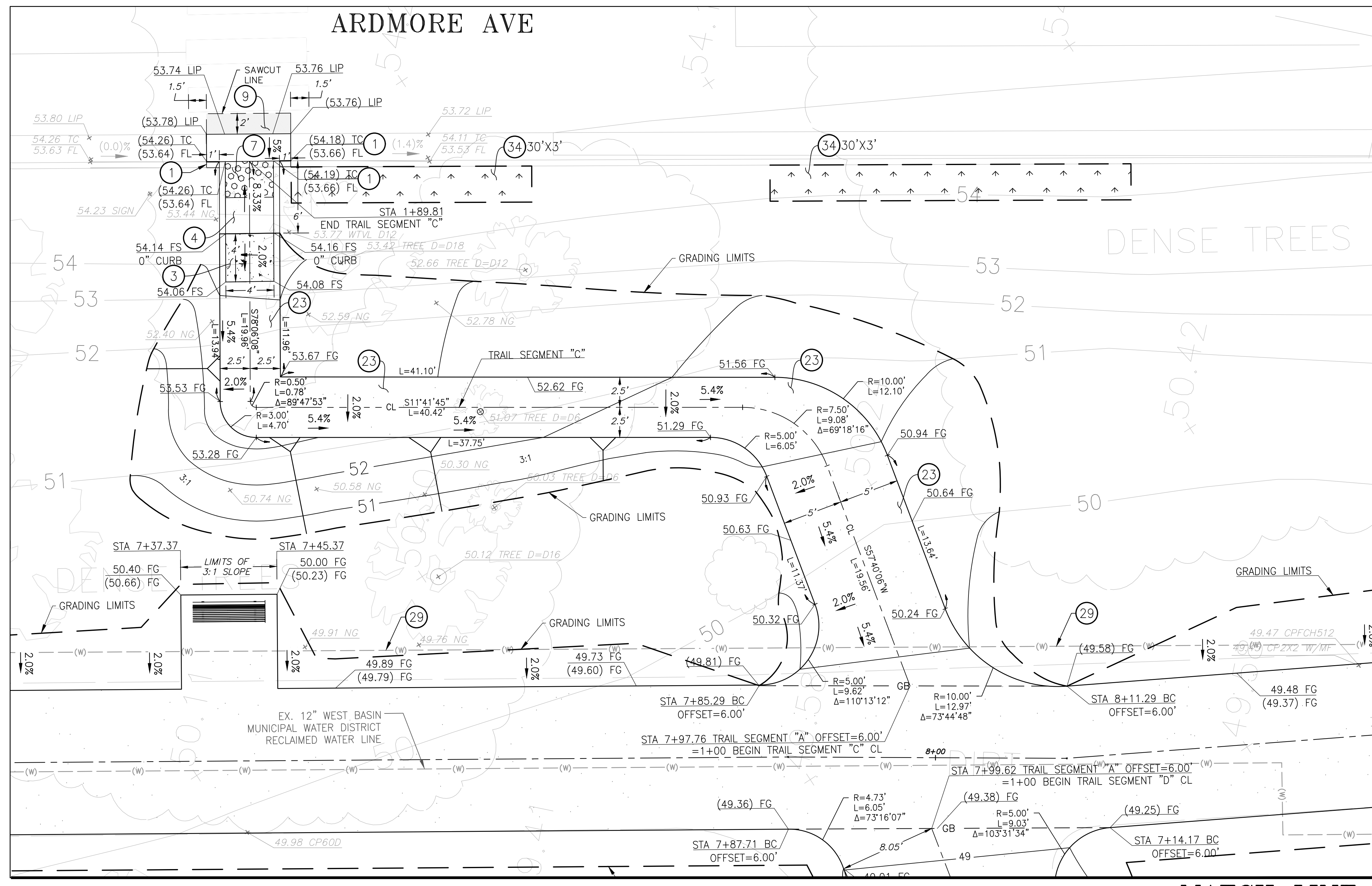
1. CONSTRUCT 6" CONCRETE CURB AND GUTTER PER SPPWC STD. 120-3 TYPE A3-6, W=24"
2. CONSTRUCT 6" CONCRETE CURB PER SPPWC STD. 120-3 TYPE A1-6
3. CONSTRUCT SIDEWALK PER SPPWC STD. 113-2
4. CONSTRUCT MODIFIED CURB RAMP PER SPPWC STD. 111-5, TYPE 1 WITH DETAIL D CURB
5. CONSTRUCT NEW CURB RAMP PER SPPWC STD. 111-5, CASE A, TYPE 1 (X.LIP=5.27', X.DOWN=4.75', Y=6.0')
6. CONSTRUCT CAST IN PLACE DETECTABLE WARNING SURFACE PER SPPWC STD. 111-5
7. CONSTRUCT 3" AC OVER 5" BASE STRUCTURAL PAVEMENT SECTION WITH 2" GRIND AND CAP 1" OUTSIDE WITH SAWCUT
8. RELOCATE EXISTING STOP SIGN
9. SEE LANDSCAPE PLANS FOR CONSTRUCTION OF DECOMPOSED GRANITE PATH
10. PROTECT IN PLACE EXISTING 4" IRRIGATION MAIN AND CONTROL WIRES
11. PROVIDE SOIL & FILL 2" BELOW TOP OF CURB PER LANDSCAPE PLANS

LEGEND

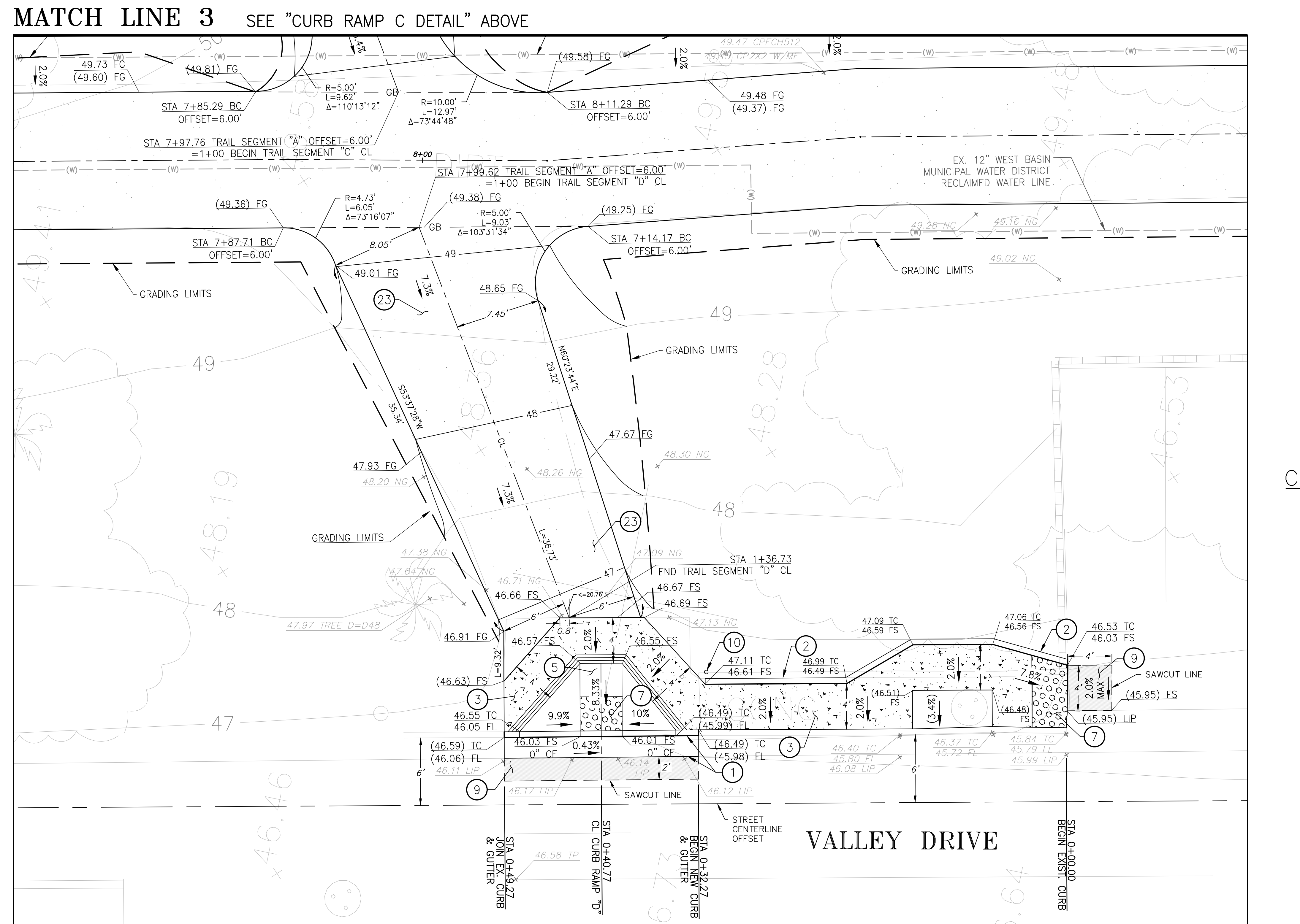
- XX.XX FG PROPOSED GRADE
- (XX.XX) FG EXISTING GRADE
- GRADING LIMITS
- DG SURFACE PER LANDSCAPE PLANS
- ADA DETECTABLE WARNING SURFACE
- PROPOSED PCC
- PROPOSED AC
- GRADED NATURAL GROUND
- PROPOSED SOIL FILL

ABBREVIATION LEGEND

- BOC BACK OF CURB
- CPAT AERIAL TARGET
- CPX CONTROL POINT
- CPCH ELEVATION CHECK
- CPFH FORESIGHT CHECK
- CPSPW SPIKE & WASHER
- CPBM BENCHMARK
- CP2X HUB 2X2 TACKED
- EPT EDGE OF PAVEMENT
- FL FLOWLINE
- FS FINISHED SURFACE
- HDW DRIVEWAY
- HCR HANDICAP RAMP
- HPD PAD
- LIP GUTTER
- MSPW SPIKE AND WASHER
- NG NATURAL GROUND
- PVCO TOP OF CONCRETE
- PWPB POWER PULLBOX
- SIGN SIGN
- SWK SIDEWALK
- TC TOP OF CURB
- TCMH TELECOMMUNICATION MANHOLE
- TCPB TELECOMMUNICATION PULLBOX
- TCVLT TELECOMMUNICATION VAULT
- TP TOP OF ASPHALT PAVEMENT
- TREE TREE
- TSSG TRAFFIC SIGNAL
- RWT RETAINING WALL TOP
- WBO BLOW-OFF
- WTH FIRE HYDRANT
- WTICB IRRIGATION CONTROL BOX



SEE "CURB RAMP D DETAIL" BELOW MATCH LINE 3



BENCH MARK:

No. QY12552, ELEV. 54.821'
DATE ADJ. 2013, QUAD. TORRANCE



REVISIONS		
No.	DESCRIPTION	DATE
1	ISSUE FOR BID	04/10/24

swa
811 W 7th Street, 8th Floor
Los Angeles, California 90017-3419
United States
www.swagroup.com
+1.213.236.9090

PLANS PREPARED BY:

HUITT ZOLLARS
90 E. Thousand Oaks Boulevard, Suite 201
Thousand Oaks, California 91360
Phone (805) 418-1802 Fax (805) 418-1819

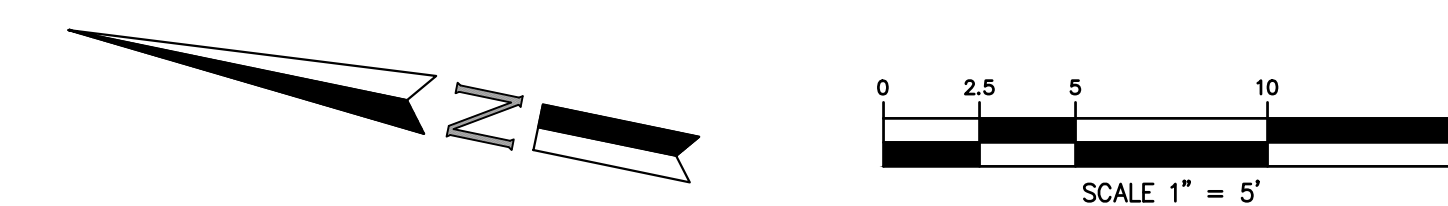
CITY OF HERMOSA BEACH
PUBLIC WORKS DEPARTMENT
RECOMMENDED FOR PERMIT ISSUANCE:

4-30-24 DATE

CIP 194, 502 & 604
GREENBELT PEDESTRIAN TRAIL
GRADING PLAN DETAILS

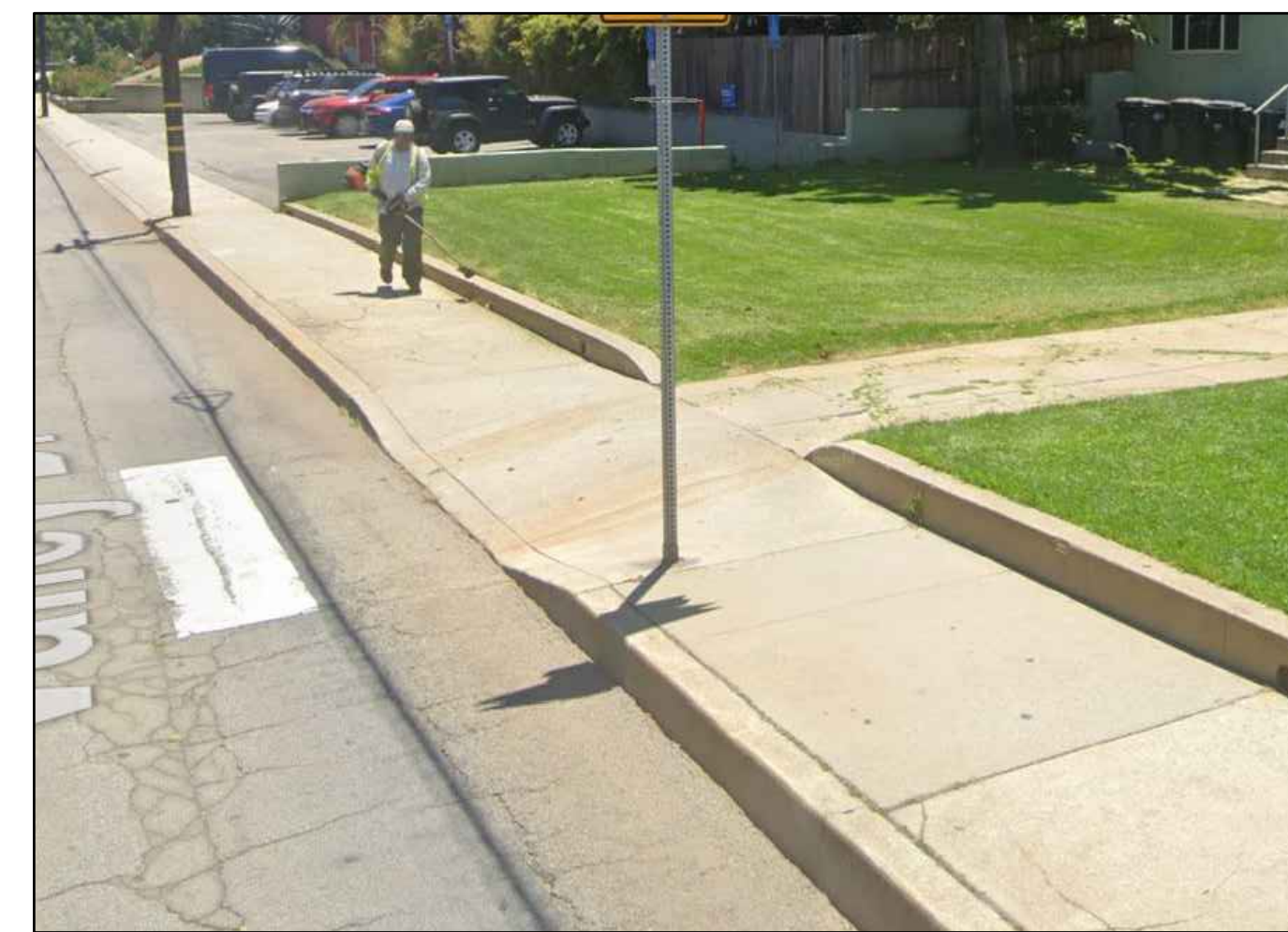
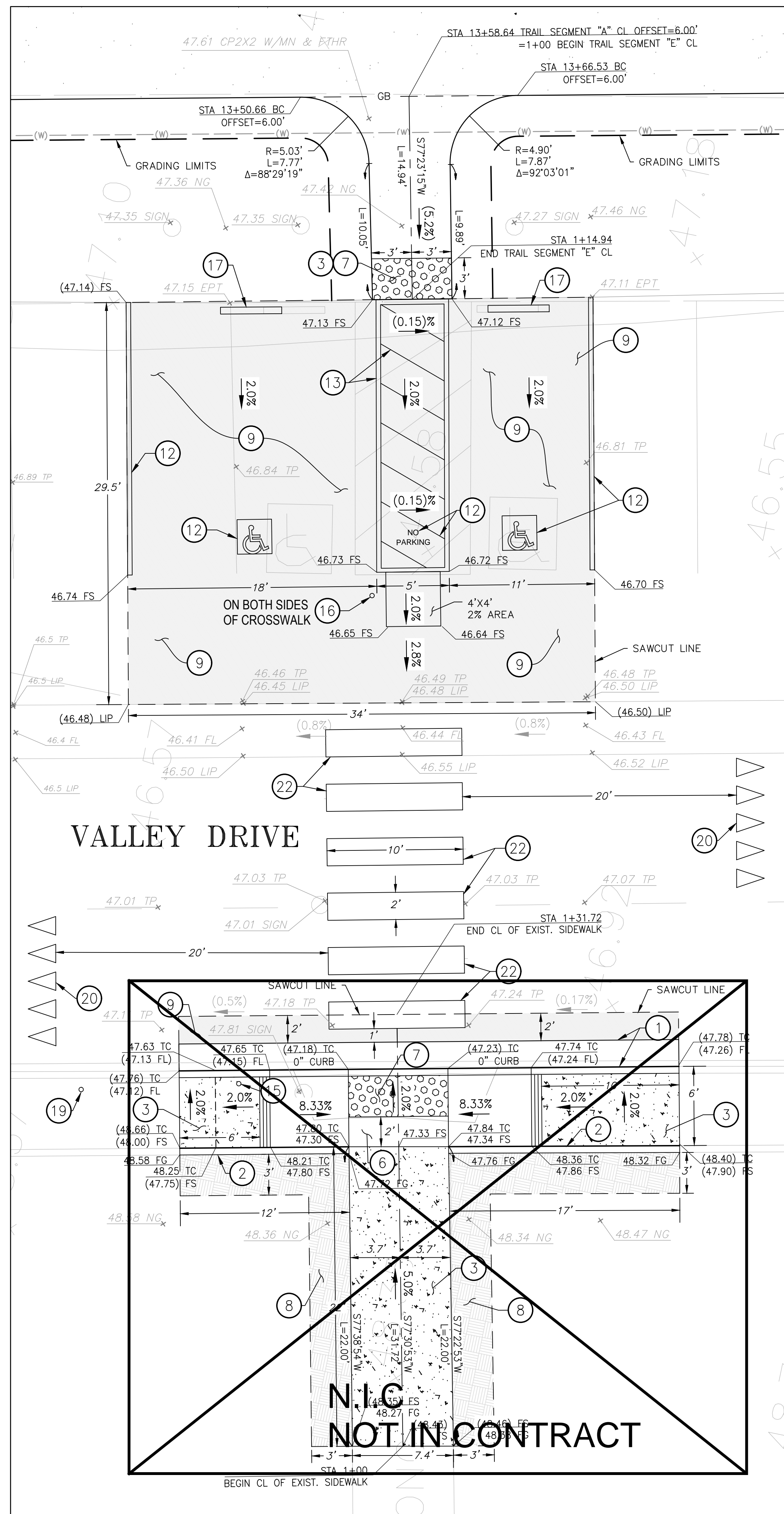
FILE NUMBER
23-003
C-06
SHT. 12 OF 22

CURB RAMP C
DETAIL
1"=5'

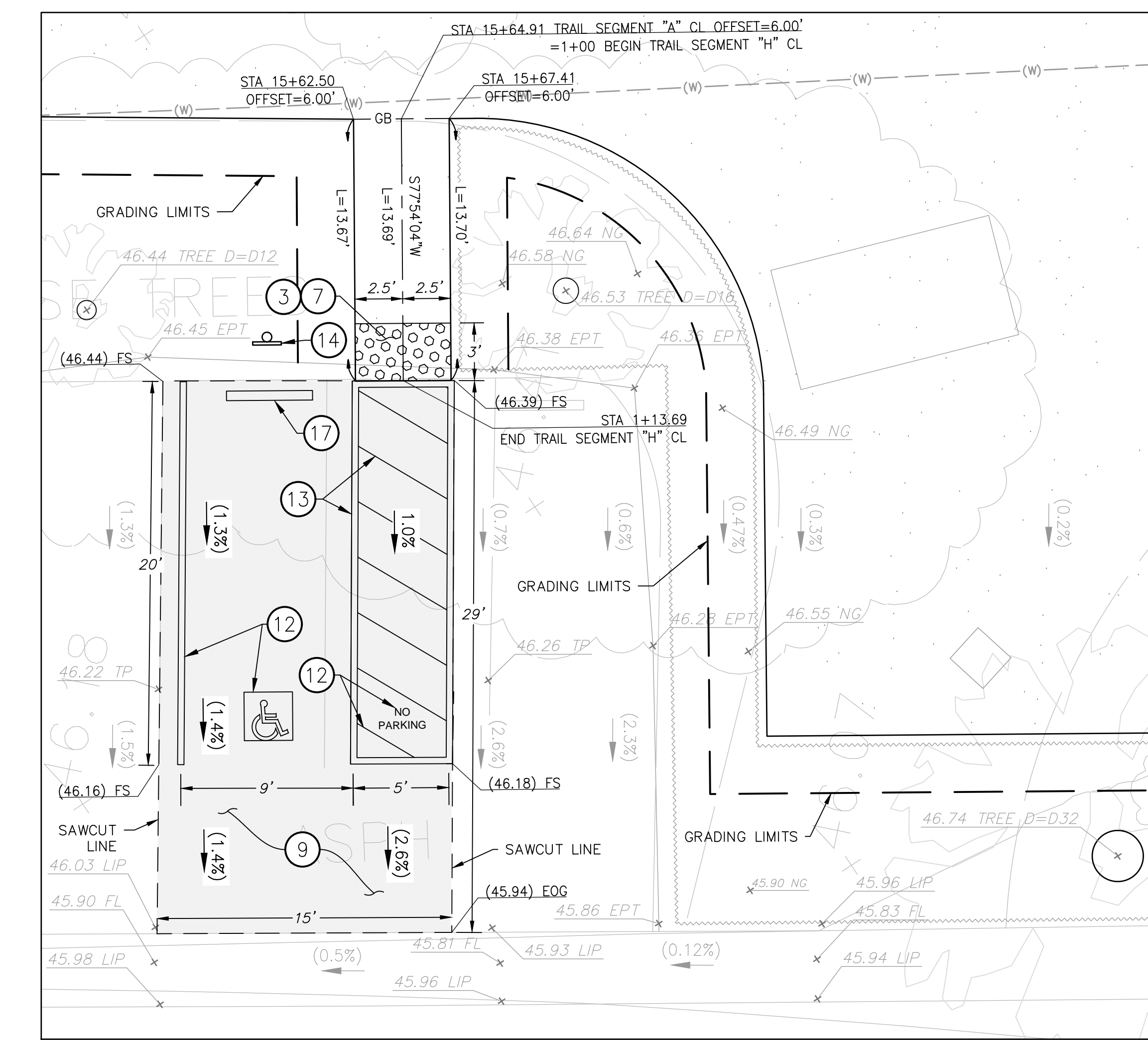


CURB RAMP D
DETAIL
1"=5'

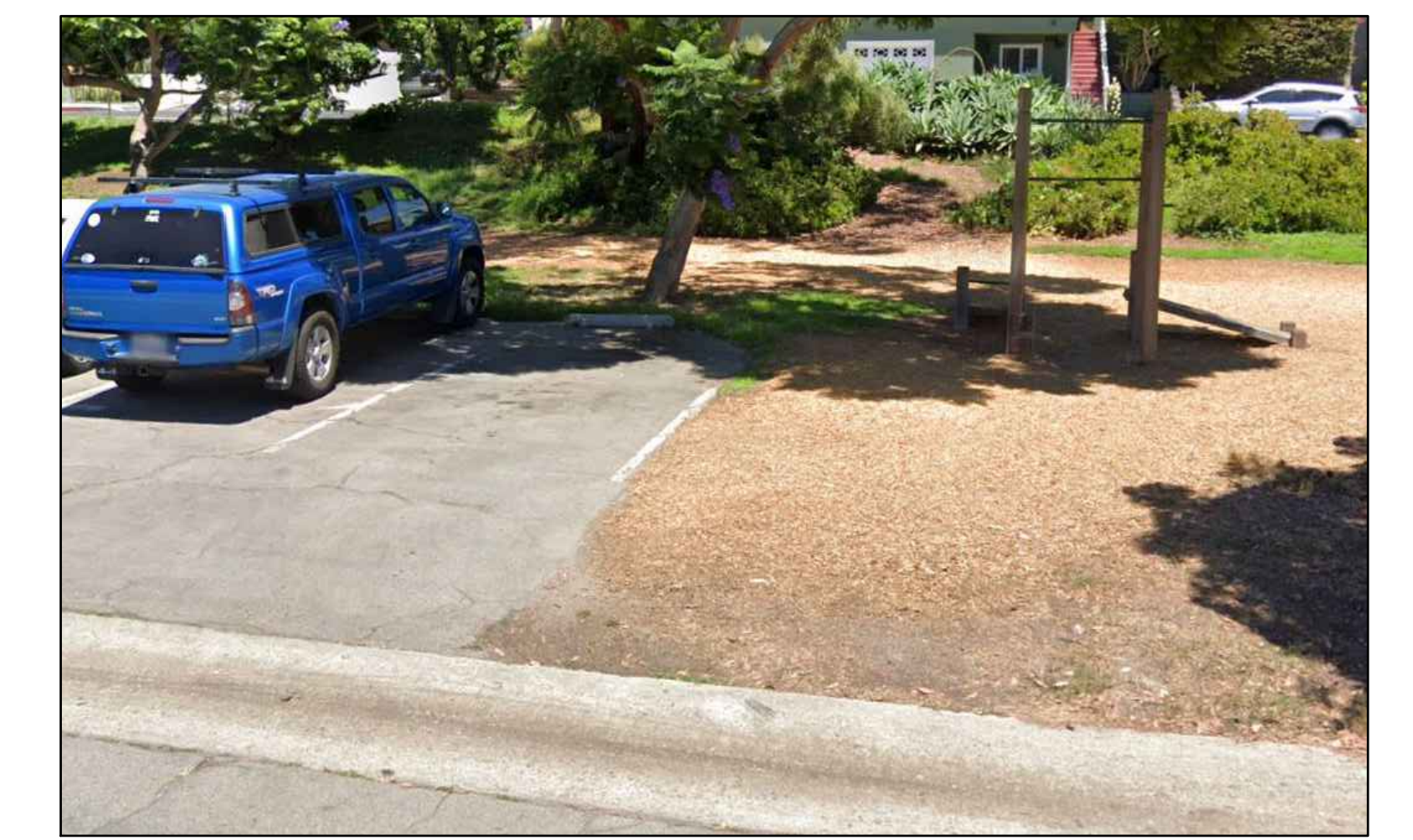
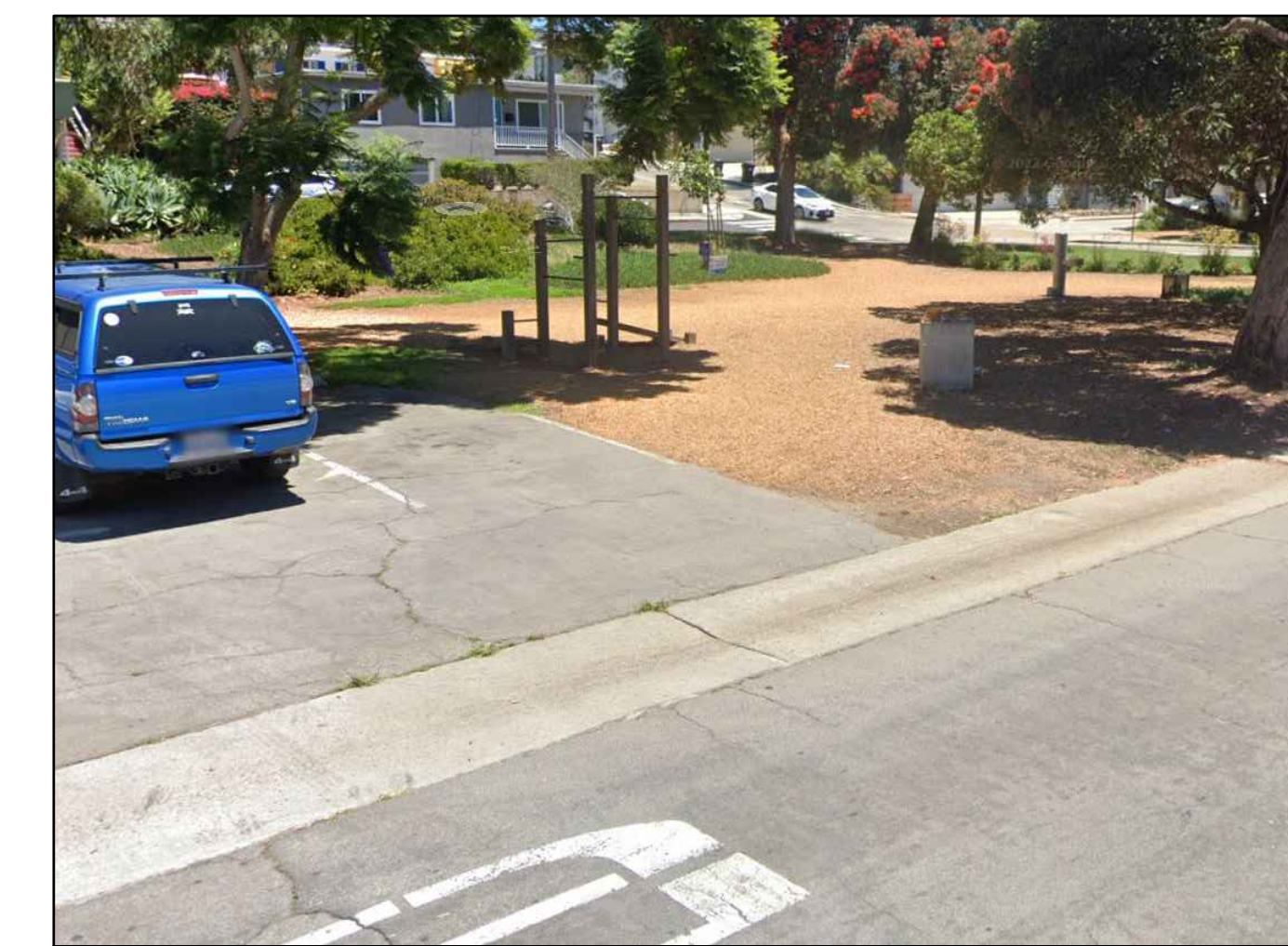




CURB RAMP E
DETAIL
1"=5'



DETAIL H
PROPOSED ADA
PARKING
1"=5'

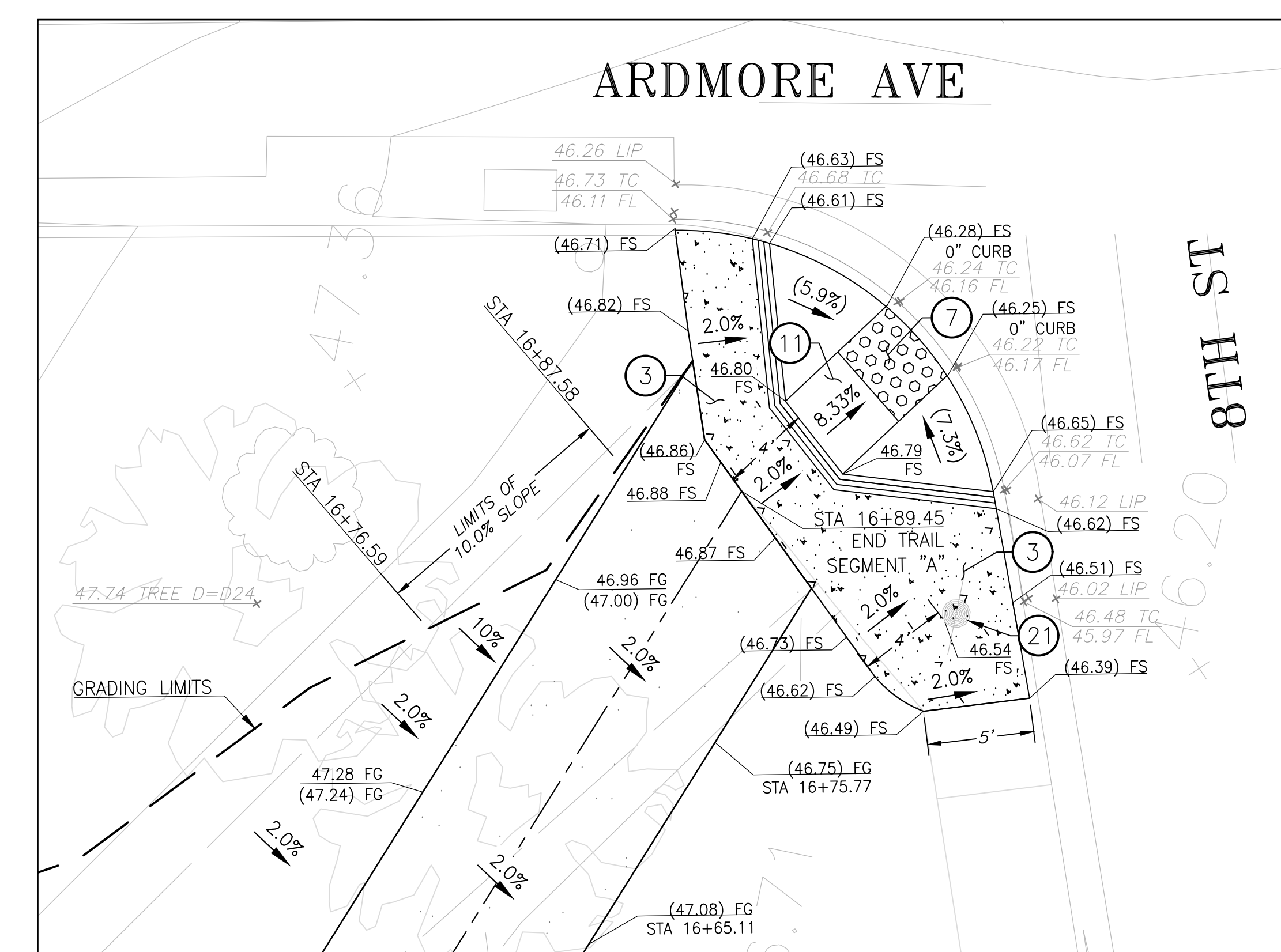


CONSTRUCTION NOTES

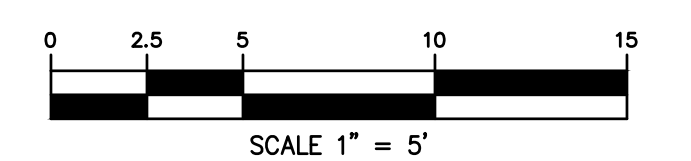
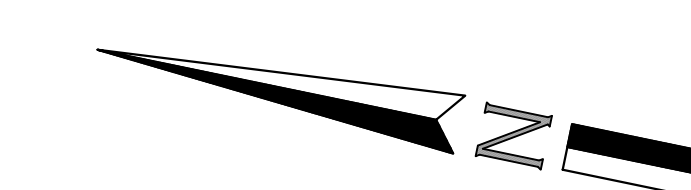
- 1) CONSTRUCT 6" CONCRETE CURB AND GUTTER PER SPPWC STD. 120-3 TYPE A3-6, W=24"
- 2) CONSTRUCT 6" CONCRETE CURB PER SPPWC STD. 120-3 TYPE A1-6
- 3) CONSTRUCT SIDEWALK PER SPPWC STD. 113-2
- 4) CONSTRUCT NEW CURB RAMP PER SPPWC STD. 111-5, CASE B, TYPE 1 (X,UP=6.12", X,DOWN=5.77", Y=6.0")
- 5) CONSTRUCT CAST IN PLACE DETECTABLE WARNING SURFACE PER SPPWC STD. 111-5
- 6) GRADE TO MATCH PROPOSED FINISHED GRADE AT TOP OF CURB/RAMP
- 7) CONSTRUCT 3" AC OVER 5" BASE STRUCTURAL PAVEMENT SECTION WITH 2" GRIND AND CAP 1" OUTSIDE WITH SAWCUT
- 8) CONSTRUCT NEW CURB RAMP PER SPPWC STD. 111-5, CASE A, TYPE 1 (X=6.5", Y=6.5")
- 9) APPLY STRIPING PER DETAIL E ON SHEET C-08
- 10) ADA PATH OF TRAVEL. INSTALL 4" BLUE BORDERS AND 4" WHITE DIAGONALS AT 3'-0" MAX CENTERS. SEE DETAIL E ON SHEET C-08
- 11) INSTALL ISA PARKING SIGN PER DETAIL E ON SHEET C-08 ON 2.5' SQ. PERFORATED STEEL TUBE
- 12) INSTALL CITY FURNISHED RFRB MODEL R920-E SYSTEM WITH EXISTING POLE AND SIGNS PER DETAIL D ON SHEET C-08
- 13) INSTALL CITY FURNISHED RFRB MODEL R920-E SYSTEM ON 2.5' SQ. PERFORATED STEEL TUBE PER DETAIL D ON SHEET C-08 (TOTAL QUANTITY: 2)
- 14) FURNISH AND INSTALL NEW WHEELSTOPS
- 15) INSTALL R1-2 YIELD SIGN ON 2.5' SQ. PERFORATED STEEL TUBE
- 16) APPLY YIELD LINE PER CALTRANS STD. PLAN A24E
- 17) APPLY 2" THICK FOAM AROUND POLE PRIOR TO POURING CONCRETE
- 18) APPLY 22' LONG CONTINENTAL CROSSWALK STRIPING WITH 2' SPACING PER CALTRANS STD. PLAN A24E

ADA NOTES:

1. ACCESSIBLE PARKING SPACES SERVING A PARTICULAR BUILDING SHALL BE LOCATED ON THE SHORTEST ACCESSIBLE ROUTE OF TRAVEL FROM ADJACENT PARKING TO AN ACCESSIBLE ENTRANCE. IN PARKING FACILITIES THAT DO NOT SERVE A PARTICULAR BUILDING, ACCESSIBLE PARKING SHALL BE LOCATED ON THE SHORTEST ACCESSIBLE ROUTE OF TRAVEL TO AN ACCESSIBLE PEDESTRIAN ENTRANCE OF THE PARKING FACILITY.
2. ONE IN EVERY SIX ACCESSIBLE OFF-STREET PARKING STALLS, BUT NOT LESS THAN ONE, SHALL BE SERVED BY AN ACCESSIBLE AISLE OF 9'-0" MINIMUM WIDTH AND SHALL BE SIGNED VAN ACCESSIBLE. THE R7-8B SIGN SHALL BE MOUNTED BELOW THE R99B (CA) PLAQUE OR THE R99C (CA) SIGN.
3. IN EACH PARKING STALL, A CURB OR WHEEL STOP SHALL BE PROVIDED IF REQUIRED TO PREVENT ENCROACHMENT OF VEHICLES OVER THE REQUIRED WIDTH OF WALKWAYS. PARKING STALLS SHALL BE SO LOCATED THAT PERSONS WITH DISABILITIES ARE NOT COMPELLED TO WHEEL OR WALK BEHIND PARKED VEHICLES OTHER THAN THEIR OWN. FOR MORE WHEEL STOP REQUIREMENTS, SEE THE CALTRANS STATE STANDARD SPECIFICATION 78-5.02.
4. PARKING SPACES AND ACCESS AISLES SHALL BE LEVEL WITH SURFACE SLOPES NOT EXCEEDING 2% IN ALL DIRECTIONS.
5. WHERE PLAQUE R99B (CA), SIGN R99C (CA) OR SIGN R7-8B ARE INSTALLED, THE BOTTOM OF THE SIGN OR PLAQUE PANEL SHALL BE A MINIMUM OF 7'-0" ABOVE THE SURROUNDING SURFACE.
6. THE WORDS "NO PARKING", SHALL BE PAINTED IN WHITE LETTERS NO LESS THAN 1'-0" HIGH AND LOCATED SO THAT IT IS VISIBLE TO TRAFFIC ENFORCEMENT OFFICIALS.
7. A R100B (CA) SIGN SHALL BE POSTED IN A CONSPICUOUS PLACE AT EACH ENTRANCE TO OFF-STREET PARKING FACILITIES OR IMMEDIATELY ADJACENT TO AND VISIBLE FROM EACH STALL. THE SIGN SHALL INCLUDE THE ADDRESS WHERE THE TOWED VEHICLE MAY BE RECLAIMED AND THE TELEPHONE NUMBER OF THE LOCAL TRAFFIC LAW ENFORCEMENT AGENCY.
8. WHERE A SINGLE (NON-VAN) ACCESSIBLE PARKING SPACE IS PROVIDED, THE LOADING AND UNLOADING ACCESS AISLE SHALL BE ON THE PASSENGER SIDE OF THE VEHICLE AS THE VEHICLE IS GOING FORWARD INTO THE PARKING SPACE.
9. WHERE A VAN ACCESSIBLE PARKING SPACE IS PROVIDED, THE LOADING AND UNLOADING ACCESS AISLE SHALL BE 8'-0" WIDE MINIMUM, AND SHALL BE ON THE PASSENGER SIDE OF THE VEHICLE AS THE VEHICLE IS GOING FORWARD INTO THE PARKING SPACE.
10. ACCESSIBLE PARKING ONLY SIGN SHALL BE SIGN R99C (CA), OR SIGN R99 (CA) WITH PLAQUE R99B (CA).
11. CONTRACTOR SHALL REMOVE ALL CONFLICTING STRIPING BY WET SAND BLASTING.



CURB RAMP F
DETAIL
1"=5'

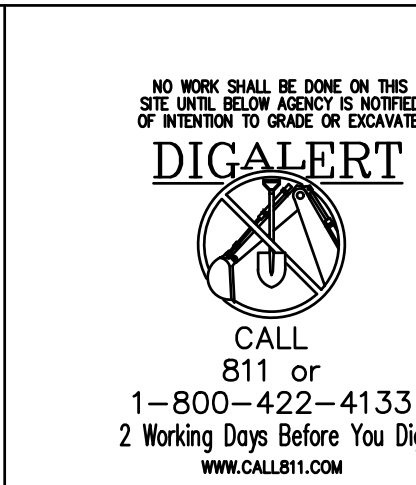


NOTE: SEE SHEET C-06 FOR GRAPHIC LEGEND & ABBREVIATION LEGEND



BENCH MARK:
No. QY12552, ELEV. 54.821'
DATE ADJ. 2013, QUAD. TORRANCE

REVISIONS		
No.	DESCRIPTION	DATE



swa
811 W 7th Street, 8th Floor
Los Angeles, California
90017-3419
United States
www.swagroup.com
+1.213.236.9090

PLANS PREPARED BY:
HUIT ZOLLARS
90 E. Thousand Oaks Boulevard, Suite 201
Thousand Oaks, California 91360
Phone (805) 418-1802 Fax (805) 418-1819

CITY OF HERMOSA BEACH
PUBLIC WORKS DEPARTMENT
RECOMMENDED FOR PERMIT ISSUANCE:

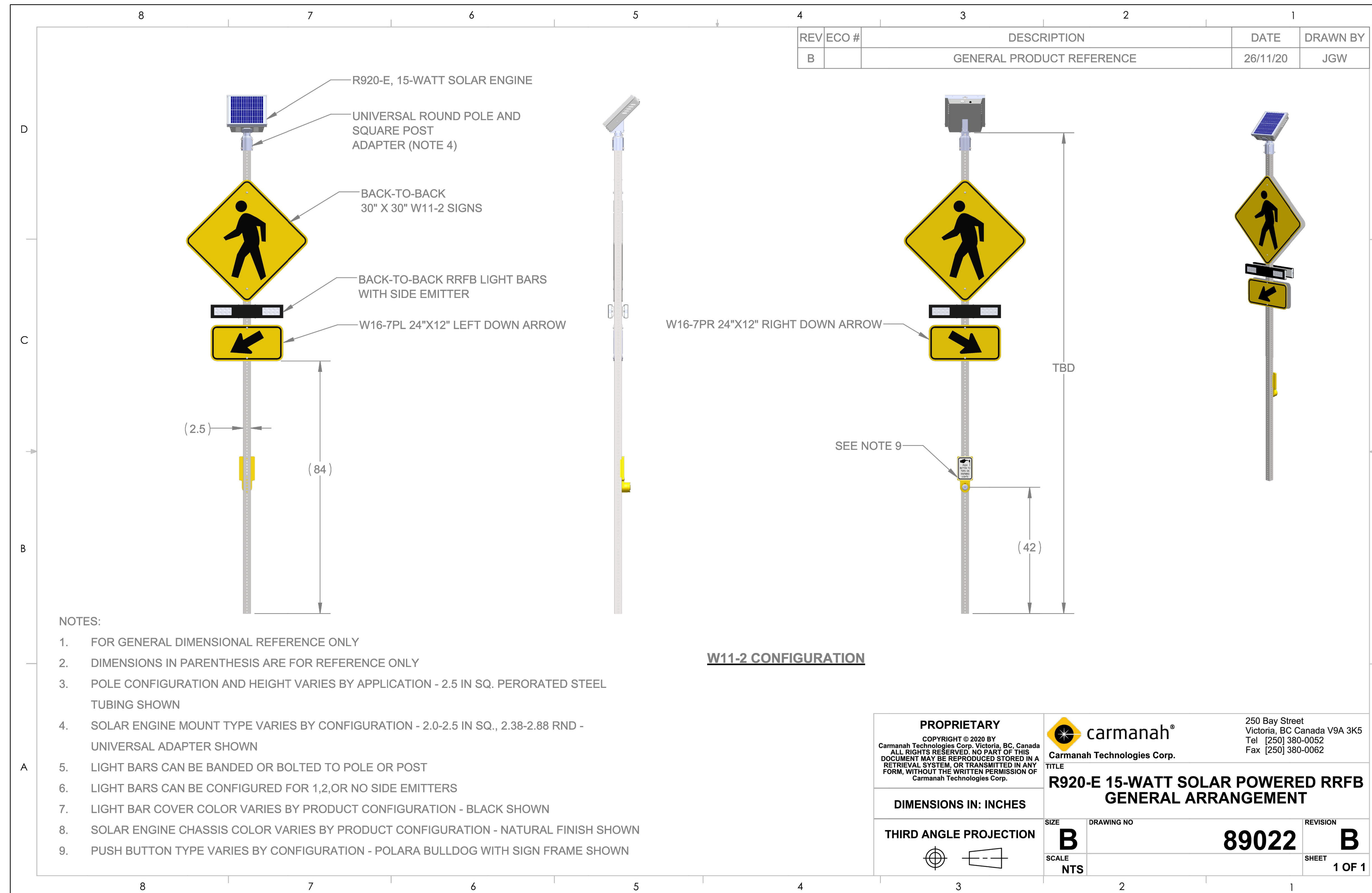
4-30-24 DATE

CIP 194, 502 & 604
GREENBELT PEDESTRIAN TRAIL
GRADING PLAN DETAILS

FILE NUMBER
23-003
C-07
SHT. 13 OF 22

ADA NOTES:

1. ACCESSIBLE PARKING SPACES SERVING A PARTICULAR BUILDING SHALL BE LOCATED ON THE SHORTEST ACCESSIBLE ROUTE OF TRAVEL FROM ADJACENT PARKING TO AN ACCESSIBLE ENTRANCE. IN PARKING FACILITIES THAT DO NOT SERVE A PARTICULAR BUILDING, ACCESSIBLE PARKING SHALL BE LOCATED ON THE SHORTEST ACCESSIBLE ROUTE OF TRAVEL TO AN ACCESSIBLE PEDESTRIAN ENTRANCE OF THE PARKING FACILITY.
2. ONE IN EVERY SIX ACCESSIBLE OFF-STREET PARKING STALLS, BUT NOT LESS THAN ONE, SHALL BE SERVED BY AN ACCESSIBLE AISLE OF 9'-0" MINIMUM WIDTH AND SHALL BE SIGNED VAN ACCESSIBLE. THE R7-8B SIGN SHALL BE MOUNTED BELOW THE R99B (CA) PLAQUE OR THE R99C (CA) SIGN.
3. IN EACH PARKING STALL, A CURB OR WHEEL STOP SHALL BE PROVIDED IF REQUIRED TO PREVENT ENCROACHMENT OF VEHICLES OVER THE REQUIRED WIDTH OF WALKWAYS. PARKING STALLS SHALL BE SO LOCATED THAT PERSONS WITH DISABILITIES ARE NOT COMPELLED TO WHEEL OR WALK BEHIND PARKED VEHICLES OTHER THAN THEIR OWN. FOR MORE WHEEL STOP REQUIREMENTS, SEE THE CALTRANS STATE STANDARD SPECIFICATION 78-5.02.
4. PARKING SPACES AND ACCESS AISLES SHALL BE LEVEL WITH SURFACE SLOPES NOT EXCEEDING 2% IN ALL DIRECTIONS.
6. WHERE PLAQUE R99B (CA), SIGN R99C (CA) OR SIGN R7-8B ARE INSTALLED, THE BOTTOM OF THE SIGN OR PLAQUE PANEL SHALL BE A MINIMUM OF 7'-0" ABOVE THE SURROUNDING SURFACE.
9. THE WORDS "NO PARKING", SHALL BE PAINTED IN WHITE LETTERS NO LESS THAN 1'-0" HIGH AND LOCATED SO THAT IT IS VISIBLE TO TRAFFIC ENFORCEMENT OFFICIALS.
10. A R100B (CA) SIGN SHALL BE POSTED IN A CONSPICUOUS PLACE AT EACH ENTRANCE TO OFF-STREET PARKING FACILITIES OR IMMEDIATELY ADJACENT TO AND VISIBLE FROM EACH STALL. THE SIGN SHALL INCLUDE THE ADDRESS WHERE THE TOWED VEHICLE MAY BE RECLAIMED AND THE TELEPHONE NUMBER OF THE LOCAL TRAFFIC LAW ENFORCEMENT AGENCY.
11. WHERE A SINGLE (NON-VAN) ACCESSIBLE PARKING SPACE IS PROVIDED, THE LOADING AND UNLOADING ACCESS AISLE SHALL BE ON THE PASSENGER SIDE OF THE VEHICLE AS THE VEHICLE IS GOING FORWARD INTO THE PARKING SPACE.
12. WHERE A VAN ACCESSIBLE PARKING SPACE IS PROVIDED, THE LOADING AND UNLOADING ACCESS AISLE SHALL BE 8'-0" WIDE MINIMUM, AND SHALL BE ON THE PASSENGER SIDE OF THE VEHICLE AS THE VEHICLE IS GOING FORWARD INTO THE PARKING SPACE.
13. ACCESSIBLE PARKING ONLY SIGN SHALL BE SIGN R99C (CA), OR SIGN R99 (CA) WITH PLAQUE R99B (CA).
14. CONTRACTOR SHALL REMOVE ALL CONFLICTING STRIPING BY WET SAND BLASTING.



- NOTES:
1. FOR GENERAL DIMENSIONAL REFERENCE ONLY
 2. DIMENSIONS IN PARENTHESIS ARE FOR REFERENCE ONLY
 3. POLE CONFIGURATION AND HEIGHT VARIES BY APPLICATION - 2.5 IN SQ. PERORATED STEEL TUBING SHOWN
 4. SOLAR ENGINE MOUNT TYPE VARIES BY CONFIGURATION - 2.0-2.5 IN SQ., 2.38-2.88 RND - UNIVERSAL ADAPTER SHOWN
 5. LIGHT BARS CAN BE BANDED OR BOLTED TO POLE OR POST
 6. LIGHT BARS CAN BE CONFIGURED FOR 1,2,OR NO SIDE EMITTERS
 7. LIGHT BAR COVER COLOR VARIES BY PRODUCT CONFIGURATION - BLACK SHOWN
 8. SOLAR ENGINE CHASSIS COLOR VARIES BY PRODUCT CONFIGURATION - NATURAL FINISH SHOWN
 9. PUSH BUTTON TYPE VARIES BY CONFIGURATION - POLARA BULLDOG WITH SIGN FRAME SHOWN

W11-2 CONFIGURATION

PROPRIETARY
COPYRIGHT © 2020 BY
Carmanah Technologies Corp. Victoria, BC Canada
ALL RIGHTS RESERVED. NO PART OF THIS
DOCUMENT MAY BE REPRODUCED STORED IN A
RETRIEVAL SYSTEM, OR TRANSMITTED IN ANY
FORM, WITHOUT THE WRITTEN PERMISSION OF
Carmanah Technologies Corp.

carmanah
Carmanah Technologies Corp.
250 Bay Street
Victoria, BC Canada V8A 3K5
Tel (250) 380-0052
Fax (250) 380-0062

**R920-E 15-WATT SOLAR POWERED RRFb
GENERAL ARRANGEMENT**

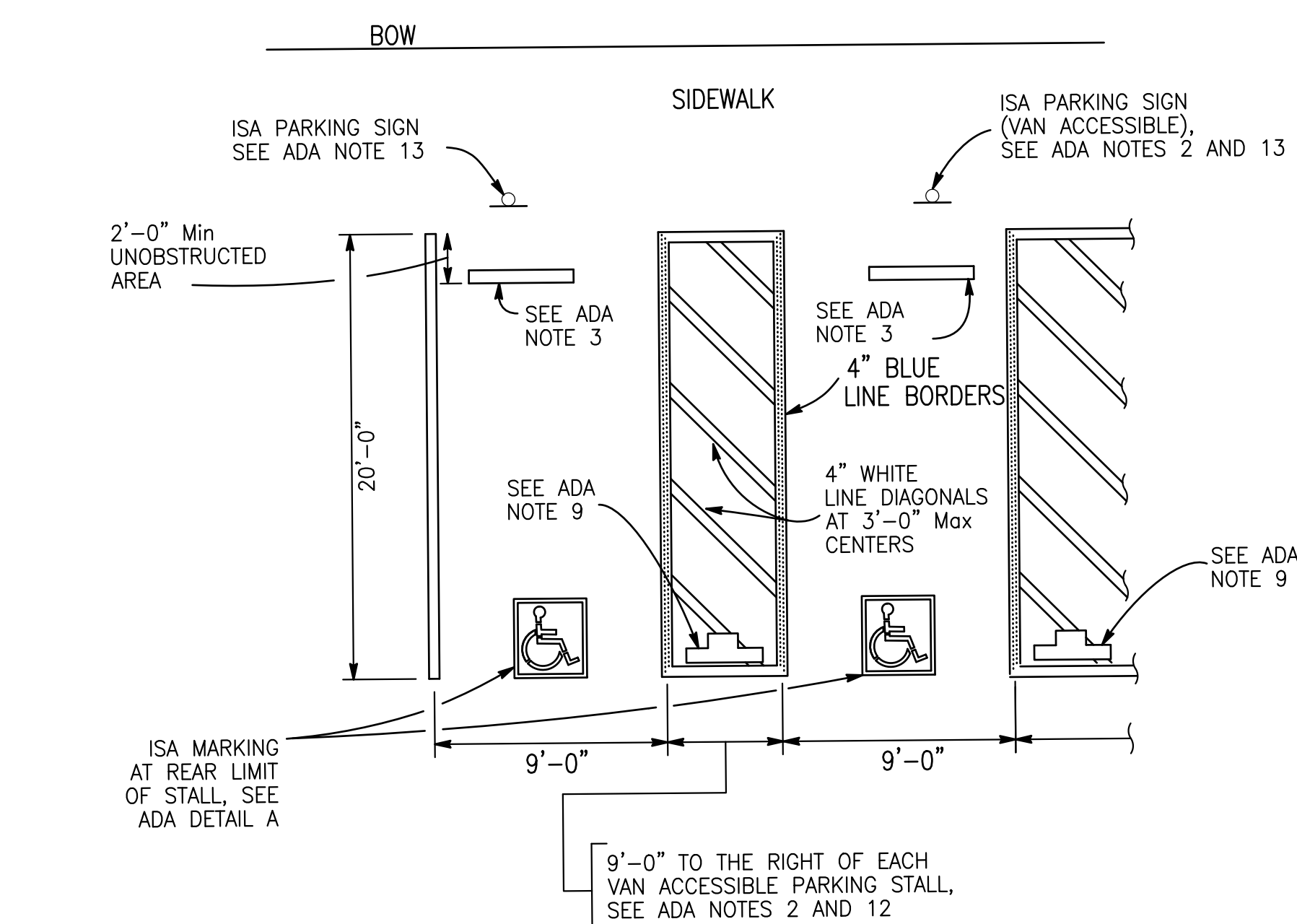
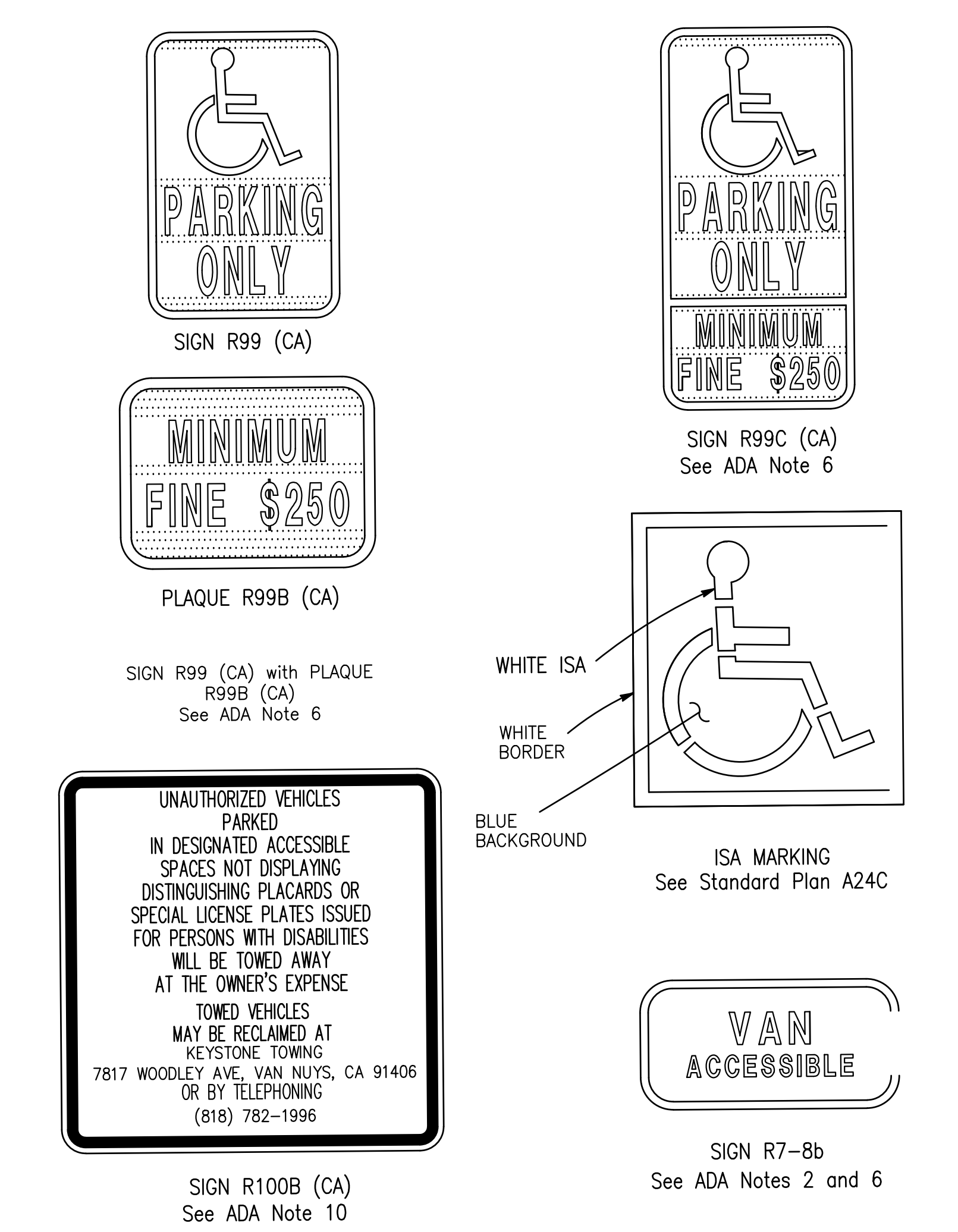
DIMENSIONS IN: INCHES

THIRD ANGLE PROJECTION

SIZE: B
SCALE: NTS

DRAWING NO: 89022
REVISION: B

SHEET: 1 OF 1



SOLAR POWERED RRFb DETAIL D
SCALE: NONE 8

DOUBLE ADA PARKING STALL DETAIL E
SCALE: NONE 8



BENCH MARK:
No. QY12552, ELEV. 54.821'
DATE ADJ. 2013, QUAD. TORRANCE



REVISIONS		
No.	DESCRIPTION	DATE
1	ISSUE FOR BID	04/10/24

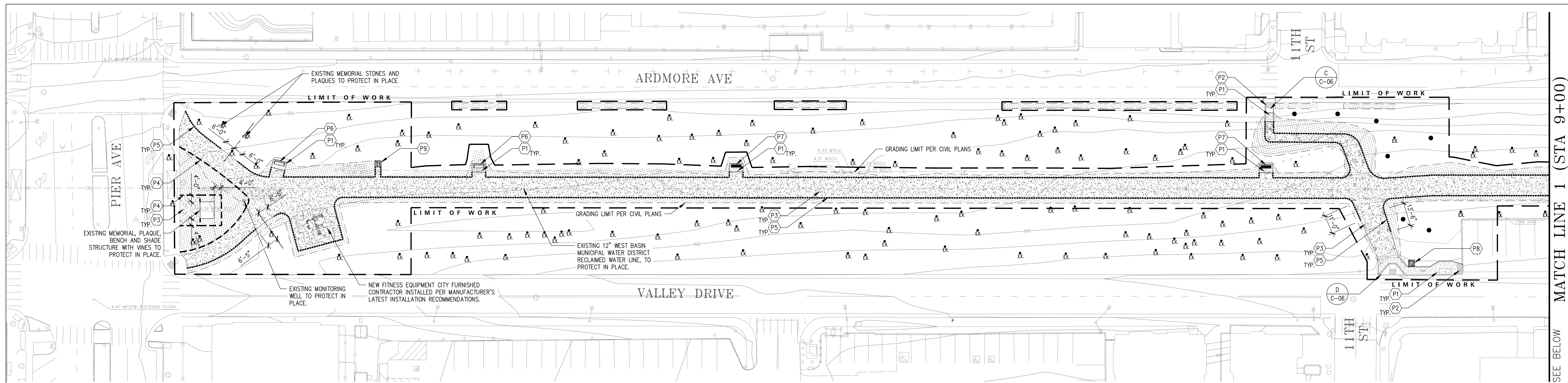


PLANS PREPARED BY:
HUITT ZOLLARS
90 E. Thousand Oaks Boulevard, Suite 201
Thousand Oaks, California 91350
Phone (805) 418-1802 Fax (805) 418-1819

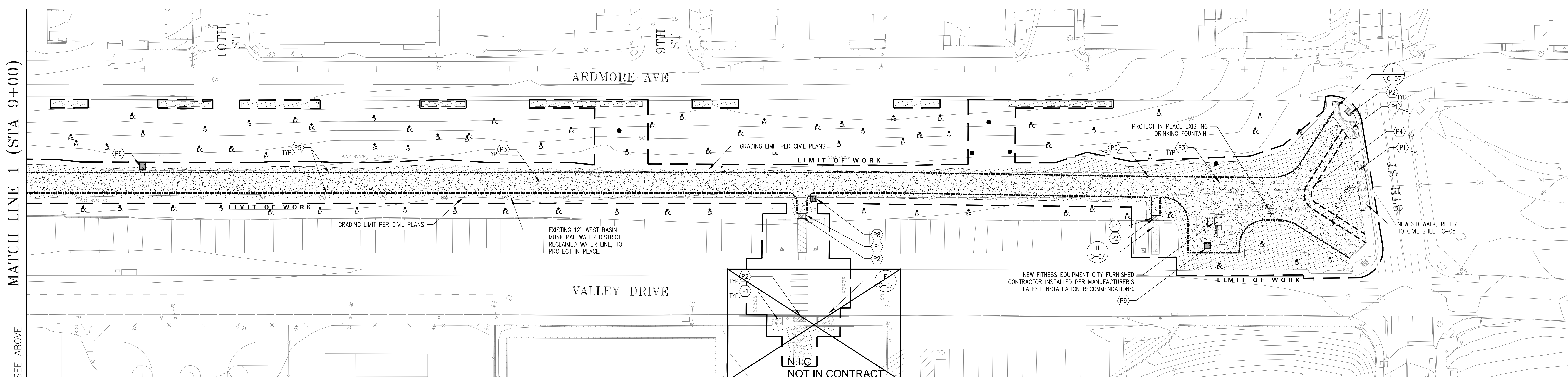
CITY OF HERMOSA BEACH
PUBLIC WORKS DEPARTMENT
RECOMMENDED FOR PERMIT ISSUANCE:
4-30-24 DATE

CIP 194, 502 & 604
GREENBELT PEDESTRIAN TRAIL
GRADING PLAN DETAILS

FILE NUMBER
23-003
C-08
SHT. 14 OF 22



A MATERIALS PLAN – PIER AVENUE TO SOUTH OF 11TH STREET
1"=20'

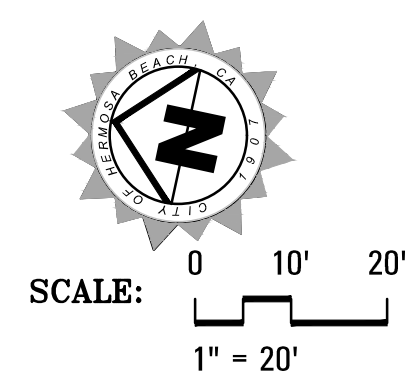


B MATERIALS PLAN – SOUTH OF 11TH STREET TO 8TH STREET
1"=20'

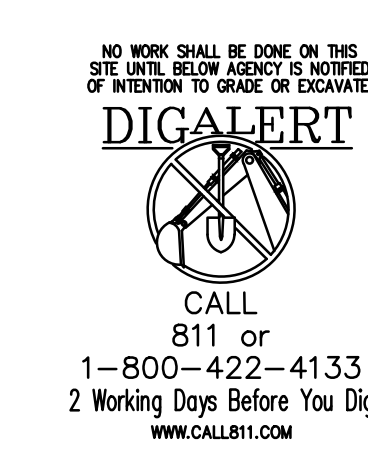
MATERIALS SCHEDULE (P)									
SYMBOL	KEY	DESCRIPTION	MATERIAL	SUPPLIER	QTY	COLOR	FINISH	REMARK	DETAIL
	P1	CAST IN PLACE CONCRETE PAVING	CITY STANDARD CONCRETE	PER QUALIFIED CONTRACTOR	REFER TO CIVIL PLANS	NATURAL GRAY	TOPCAST 5	FINISH AND COLOR TO BE CONSISTENT THROUGHOUT	REFER TO CIVIL PLANS
	P2	DETECTABLE WARNING SURFACE	-	PER QUALIFIED CONTRACTOR	REFER TO CIVIL PLANS	-	-	-	REFER TO CIVIL PLANS
	P3	STABILIZED DECOMPOSED GRANITE	DECOMPOSED GRANITE	KRC ROCK OR APPROVED EQUAL	24,566 SF	SUNNYSIDE	-	LOCALLY SOURCED MATERIAL, CONTRACTOR TO PROVIDE PHYSICAL SAMPLE TO FOR CITY REVIEW AND APPROVAL	A-B L-02
	P4	FLUSH REDWOOD HEADER	REDWOOD	PER QUALIFIED CONTRACTOR	320 LF	NATURAL	-	LOCALLY SOURCED MATERIAL.	C L-02
	P5	CONCEALED REDWOOD HEADER	REDWOOD	PER QUALIFIED CONTRACTOR	3,435 LF	NATURAL	-	LOCALLY SOURCED MATERIAL. REDWOOD HEADER TO BE INSTALLED AT EDGE OF PATH AND OUTSIDE OF CRITICAL ROOT ZONE. REFER TO TREE PROTECTION PLAN FOR LOCATIONS.	D L-02

MATERIALS SCHEDULE (P) CONTINUED									
SYMBOL	KEY	DESCRIPTION	MATERIAL	SUPPLIER	QTY	COLOR	FINISH	REMARK	DETAIL
	P6	SALVAGED MEMORIAL BENCH	-	EXISTING ON SITE	2	-	-	CONTRACTOR TO REMOVE, CLEAN, AND RE-INSTALL ON NEW CONCRETE PAD	E L-02
	P7	NEW MEMORIAL BENCH	-	CITY TO PROVIDE, CONTRACTOR TO INSTALL	2	-	-	CONTRACTOR TO INSTALL PER MANUFACTURER'S LATEST RECOMMENDATIONS.	E L-02
	P8	REINSTALL EXISTING TRASH CAN	-	EXISTING ON SITE	2	-	-	CONTRACTOR TO REINSTALL PER MANUFACTURER'S LATEST RECOMMENDATIONS. FINAL LOCATION TO BE VERIFIED IN FIELD WITH CITY.	-
	P9	PROTECT IN PLACE EXISTING TRASH CAN	-	EXISTING ON SITE	-	-	-	-	-

LAYOUT LEGEND	
SYMBOL	DESCRIPTION
	LIMIT OF WORK
	CENTERLINE
	ALIGN
	EXISTING TREE TO PROTECT IN PLACE
	PLANTING AREA



BENCH MARK:
No. QY12552, ELEV. 54.821'
DATE ADJ. 2013, QUAD. TORRANCE



REVISIONS		
No.	DESCRIPTION	DATE
1	ISSUE FOR BID	04/10/24

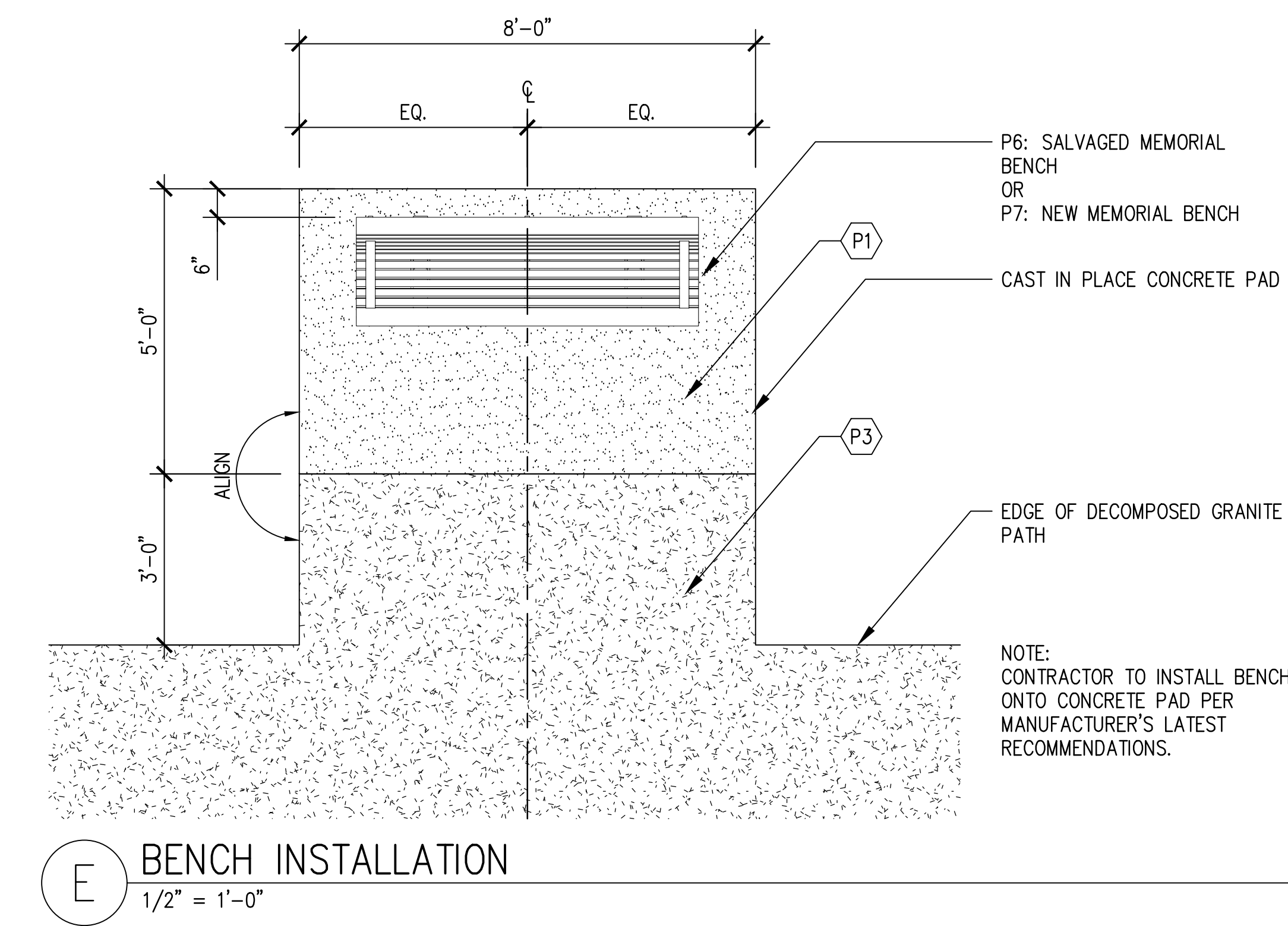
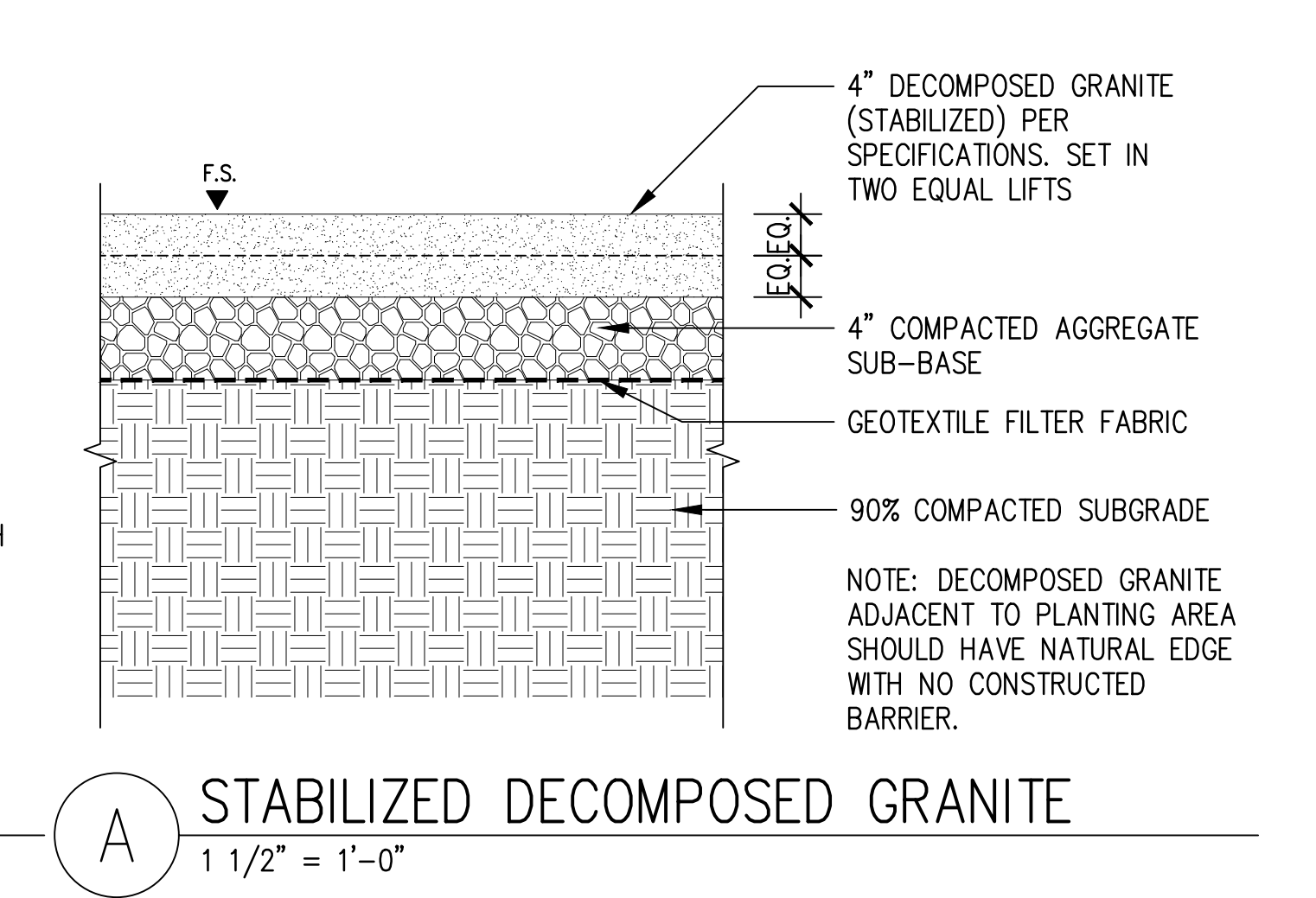
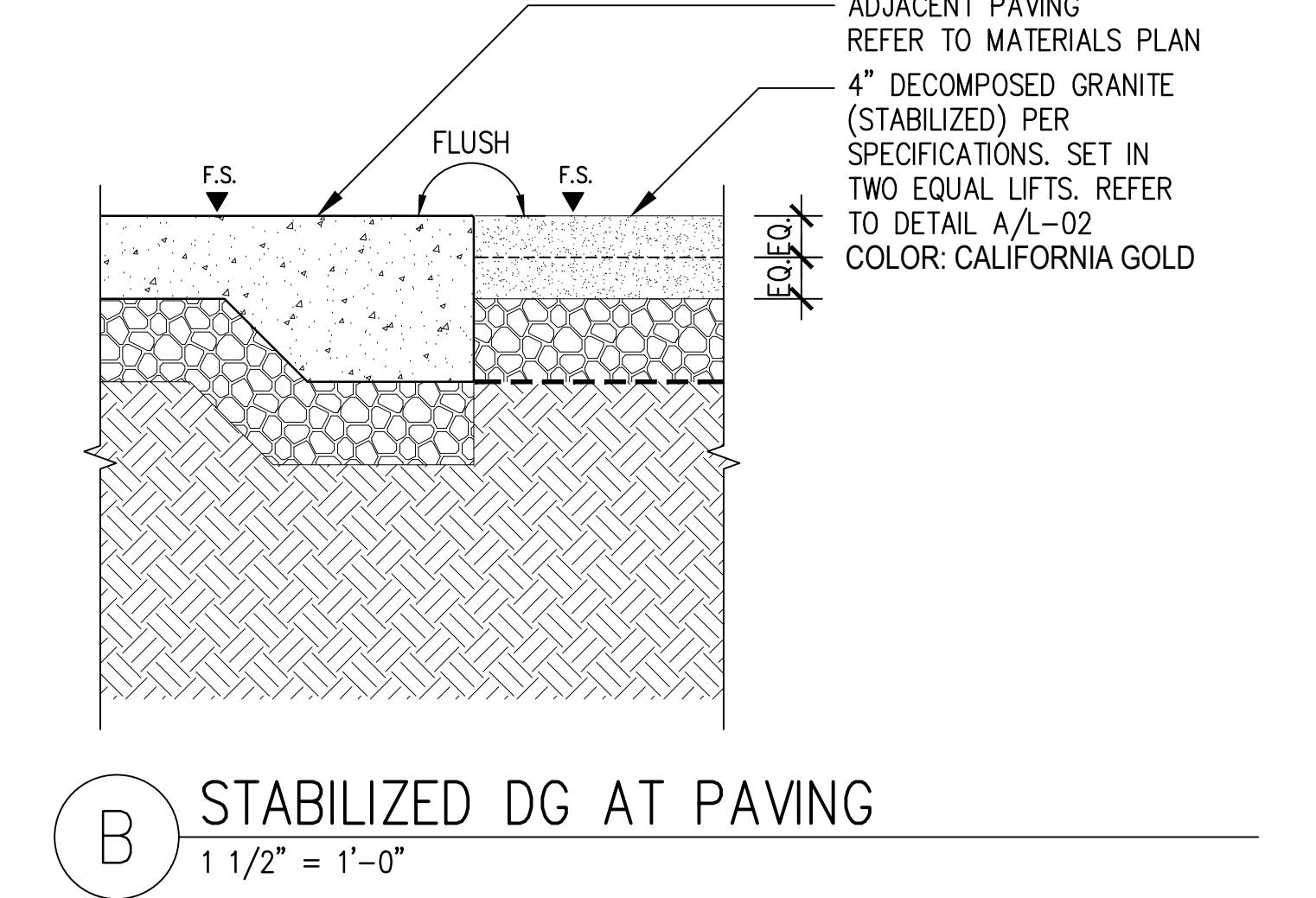
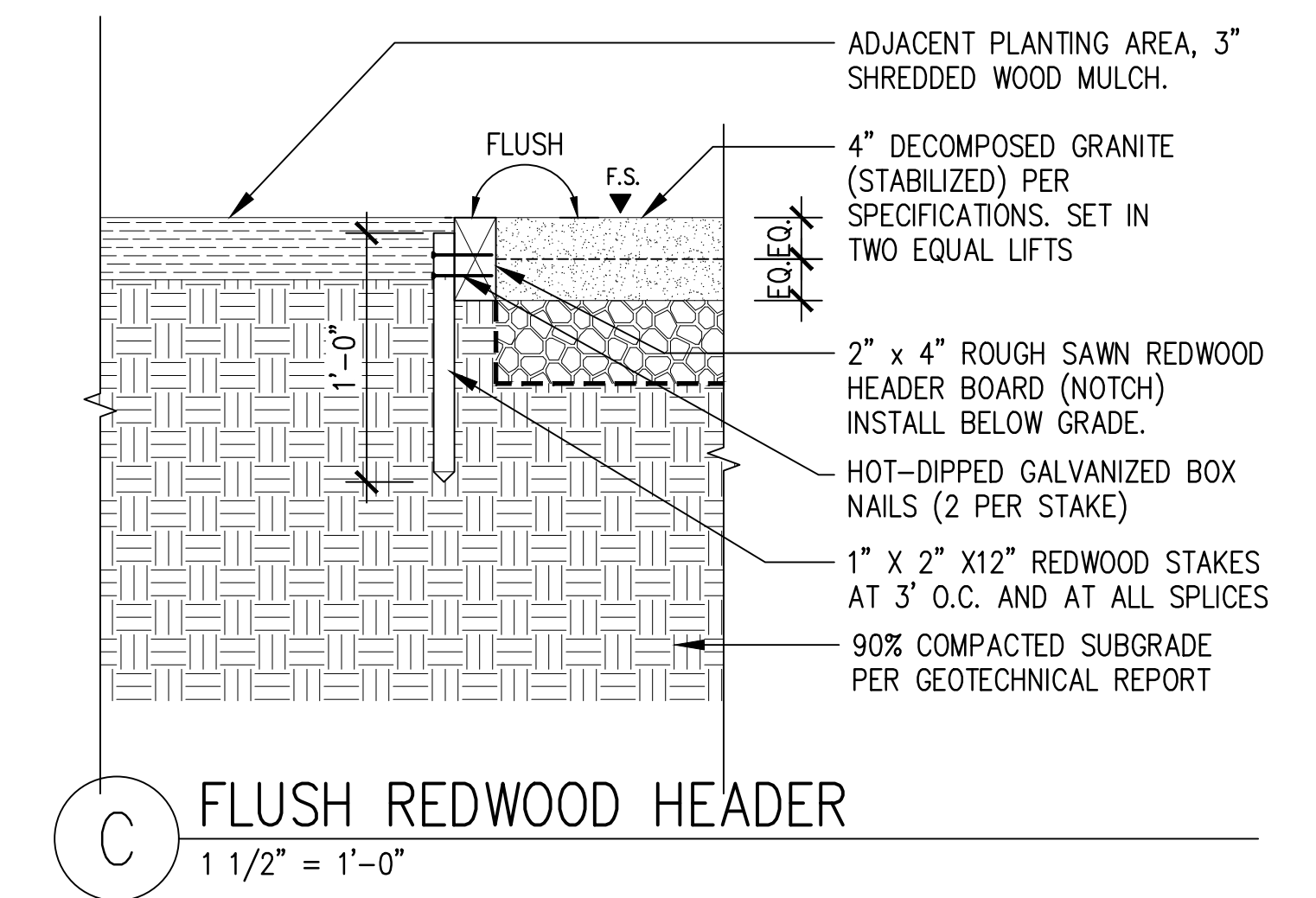
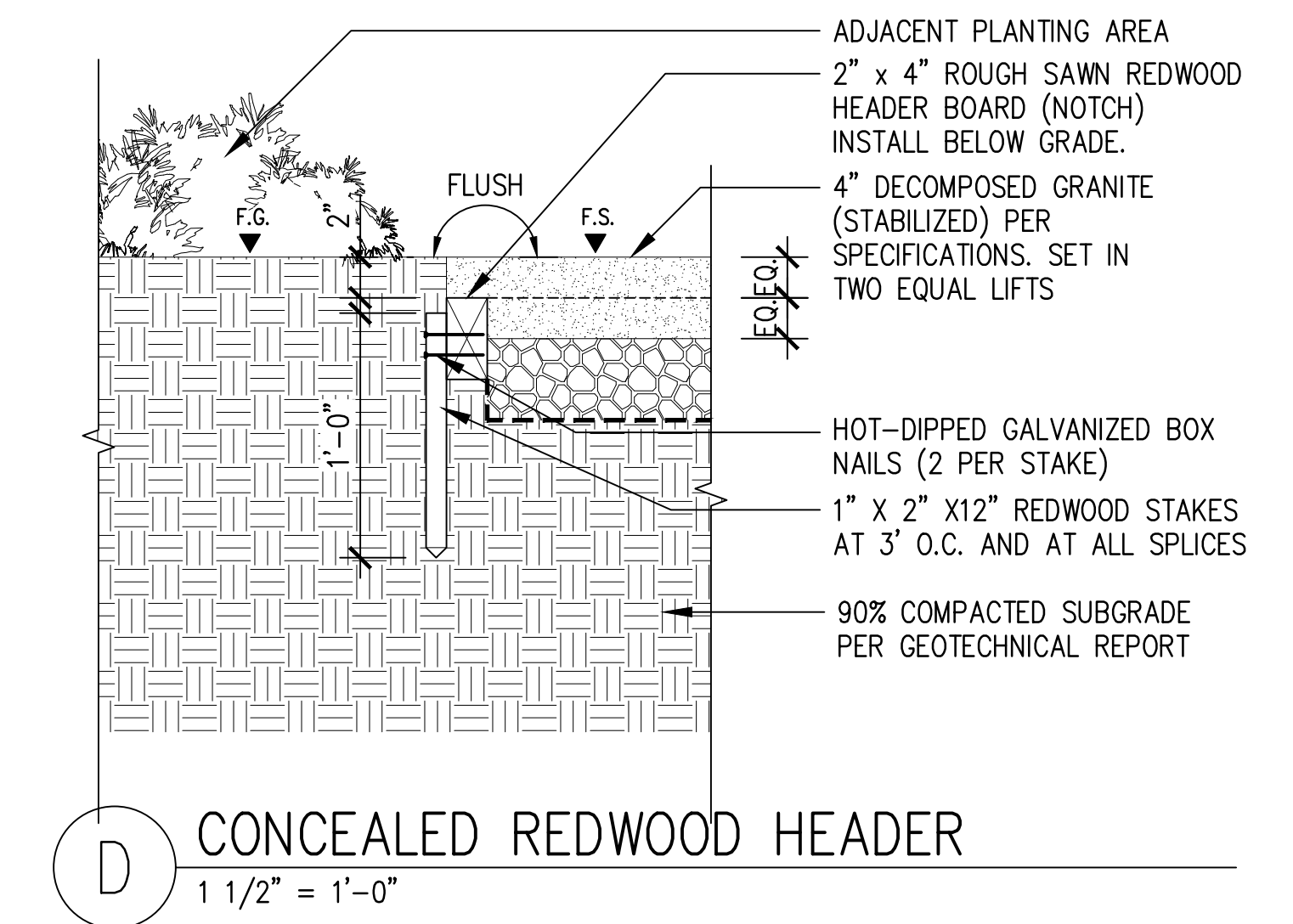


PLANS PREPARED BY: Ryan McKay
PLANS CHECKED BY: Jeremy Klemic
Job Number: HRBT203
Date: 04/10/2024
YING-YU HUNG, LANDSCAPE ARCHITECT #4374

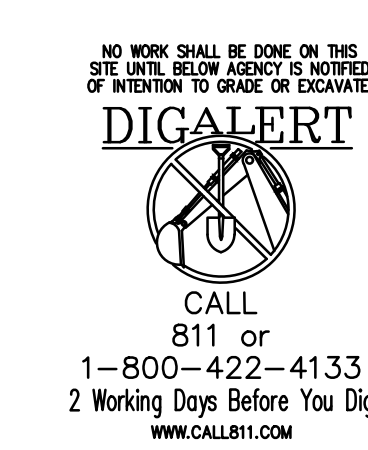
CITY OF HERMOSA BEACH
PUBLIC WORKS DEPARTMENT
RECOMMENDED FOR PERMIT ISSUANCE:
DATE: 4-30-24

CIP 194, 502 & 604
GREENBELT PEDESTRIAN TRAIL
MATERIAL PLAN

FILE NUMBER: 23-003
SHEET: L-01 OF 22



BENCH MARK:
 No. OY12552, ELEV. 54.821'
 DATE ADJ. 2013, QUAD. TORRANCE



REVISIONS		
No.	DESCRIPTION	DATE

swa
 811 W 7th Street, 8th Floor
 Los Angeles, California
 90017-9419
 United States
 www.swagroup.com
 +1.213.236.9090

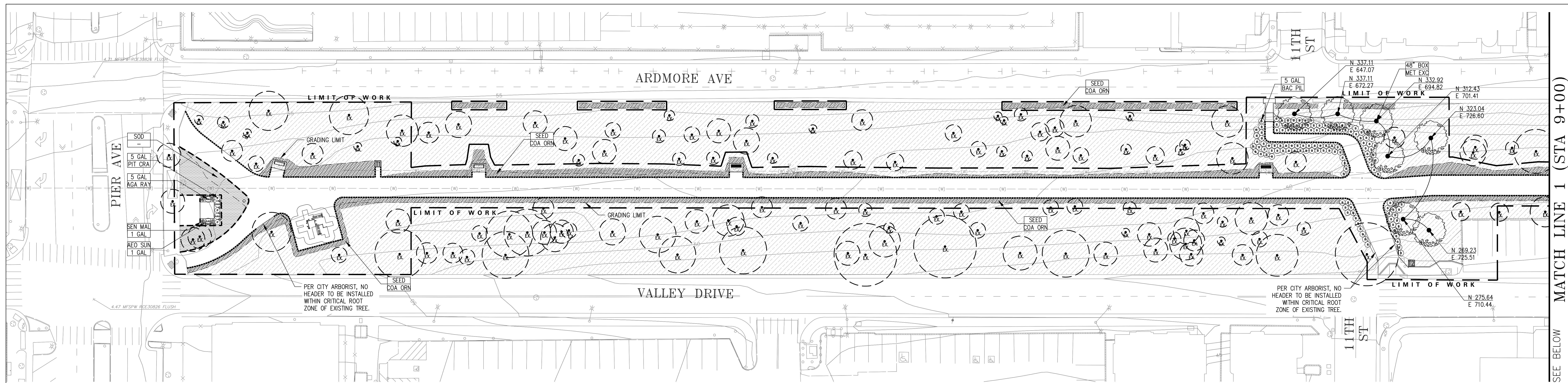
PLANS PREPARED BY: Ryan McKay
 PLANS CHECKED BY: Jeremy Klemic

Job Number
 HRBT203
 Date
 04/10/2024

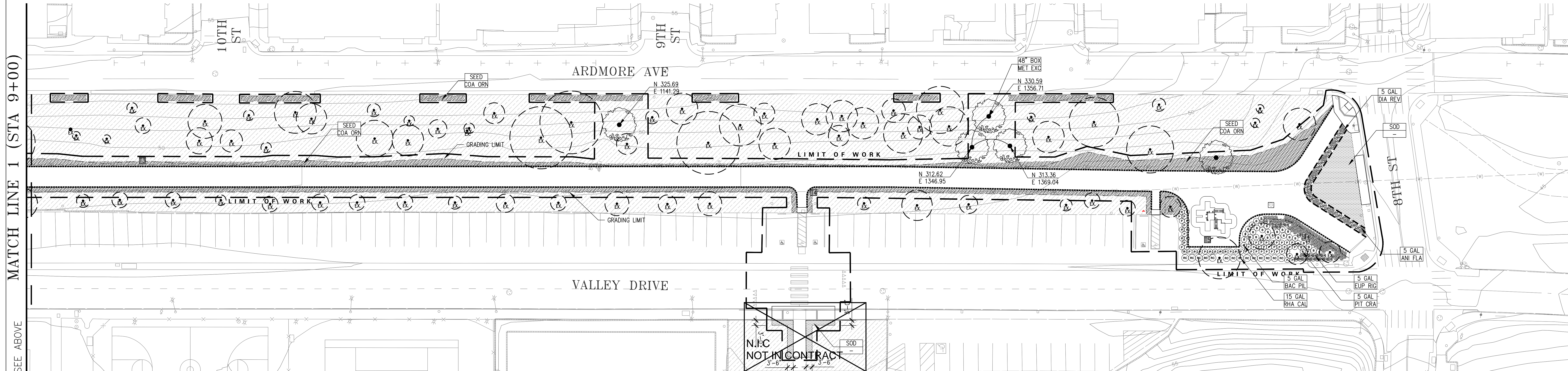
CITY OF HERMOSA BEACH
 PUBLIC WORKS DEPARTMENT
 RECOMMENDED FOR PERMIT ISSUANCE:

CIP 194, 502 & 604
 GREENBELT PEDESTRIAN TRAIL
 MATERIAL DETAILS

FILE NUMBER
 23-003
L-02



A LAYOUT & MATERIALS PLAN - PIER AVENUE TO SOUTH OF 11TH STREET
1"=20'



B LAYOUT & MATERIALS PLAN - SOUTH OF 11TH STREET TO 8TH STREET
1"=20'

PLANTING LEGEND			
SYMBOL	ABBREVIATION	BOTANICAL NAME	COMMON NAME
⊙	AEO SUN	AEONIUM 'SUNBURST'	SUNBURST AEONIUM
⊙	AGA RAY	AGAVE ATTENUATA 'RAY OF LIGHT'	VARIEGATED FOXTAIL AGAVE
⊙	ANI FLA	ANIGOZANTHOS 'YELLOW GEM'	YELLOW KANGAROO PAW
⊙	BAC PIL	BACCHARIS PILLULARIS 'PIGEON POINT'	DWARF COYOTE BUSH
⊙	DIA REV	DIANELLA REVOLUTA 'LITTLE REV'	LITTLE REV FLAX LILY
⊙	EUP RID	EUPHORBIA RIGIDA	SILVER SPURGE
⊙	PIT CRA	PITTIOSPORUM CRASSIFOLIUM 'COMPACTUM'	DWARF KARO
⊙	RHA CAL	RHAMNUS CALIFORNICA 'EVE CASE'	EVE CASE COFFEEBERRY

PLANTING LEGEND (CONTINUED)			
SYMBOL	ABBREVIATION	BOTANICAL NAME	COMMON NAME
⊙	SEN MAN	SENECIO MANDRALISCAE	BLUE CHALKSTICK
⊙	SOD	PLATINUM TE PASPALUM	-
⊙	-	EXISTING PLANTING AREA TO PROTECT IN PLACE	-

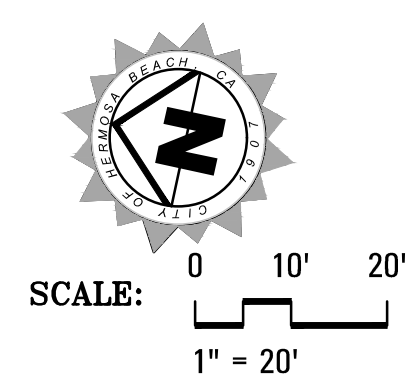
HYDROSEED LEGEND			
SYMBOL	ABBREVIATION	BOTANICAL NAME	COMMON NAME
⊙	COA ORN	COASTAL ORNAMENTAL LOW GROW NATIVE SEED MIX	-

TREE LEGEND			
SYMBOL	ABBREVIATION	BOTANICAL NAME	COMMON NAME
⊙	MET EXC	TRISTANIA CONFERTA	BRISBANE BOX TREE
⊙	-	EXISTING TREE TO PROTECT IN PLACE	-

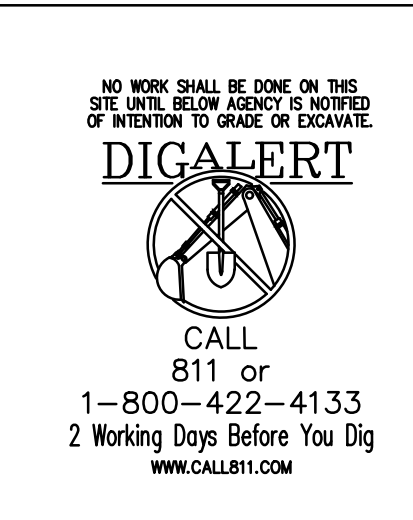
SEE SHEET L-04 FOR FULL PLANTING, HYDROSEED AND TREE SCHEDULE



D PLANT IMAGES
NOT TO SCALE



BENCH MARK:
No. QY12552, ELEV. 54.821'
DATE ADJ. 2013, QUAD. TORRANCE



REVISIONS		
No.	DESCRIPTION	DATE
1	ISSUE FOR BID	04/10/24

swa
811 W 7th Street, 8th Floor
Los Angeles, California
90017-9419
United States
www.swagroup.com
+1.213.236.9090

PLANS PREPARED BY: Ryan McKay
PLANS CHECKED BY: Jeremy Klemic

Job Number
HRBT203
Date
04/10/2024

CITY OF HERMOSA BEACH
PUBLIC WORKS DEPARTMENT
RECOMMENDED FOR PERMIT ISSUANCE:

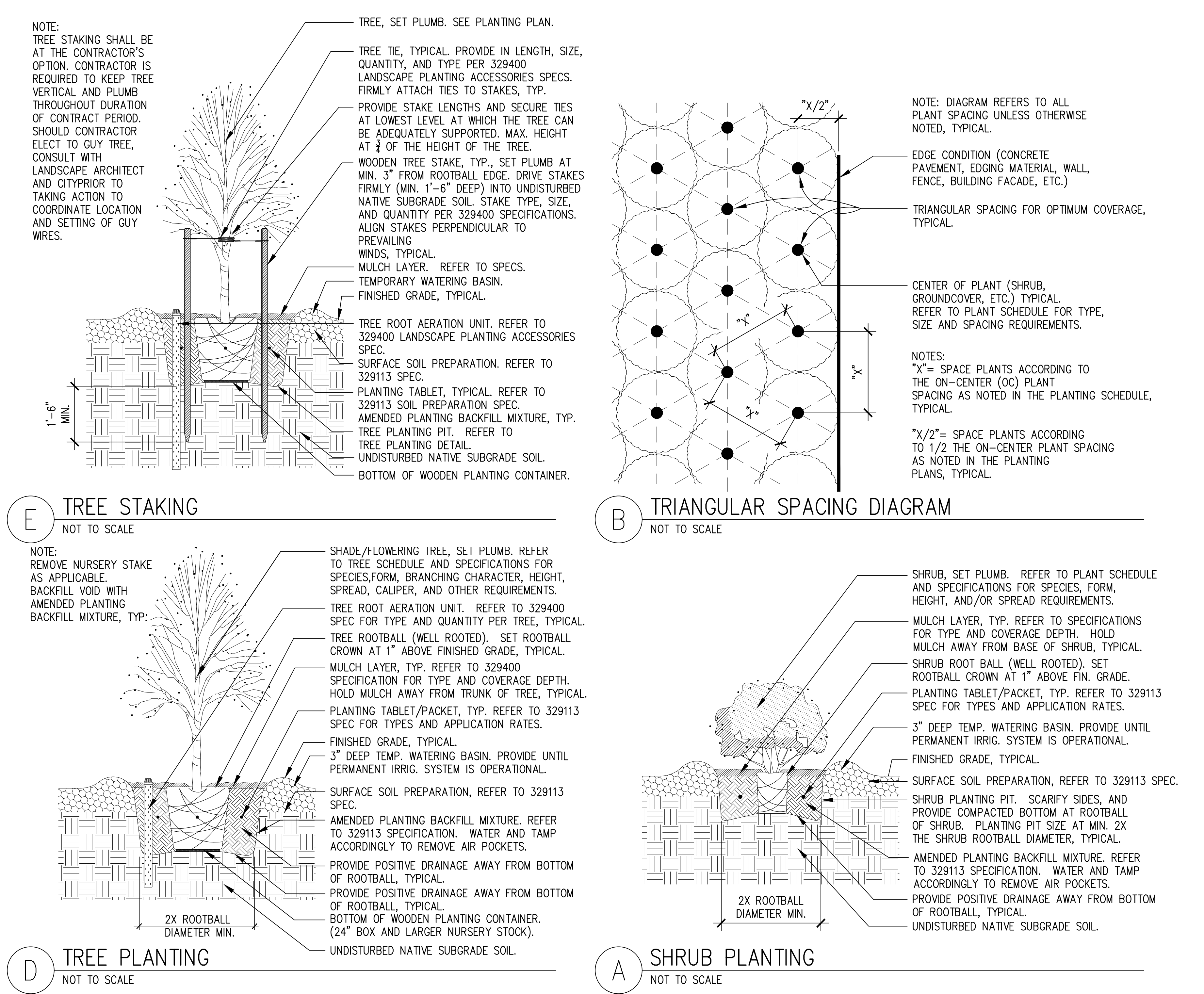
CIP 194, 502 & 604
GREENBELT PEDESTRIAN TRAIL
PLANTING PLAN

FILE NUMBER
23-003
L-03
SHT. 17 OF 22

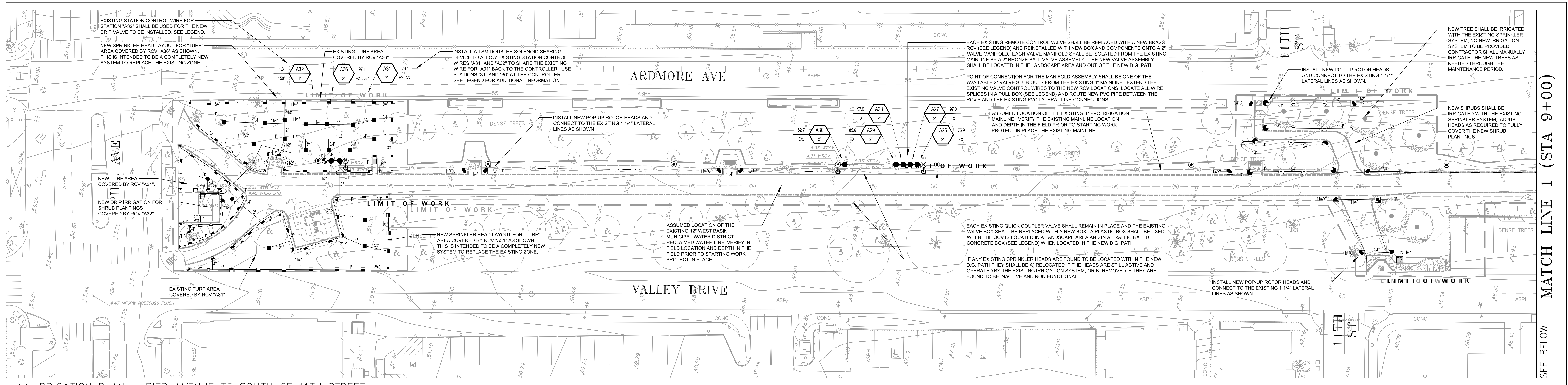
PLANTING SCHEDULE										
SYMBOL	ABBREVIATION	BOTANICAL NAME	COMMON NAME	MATURE SIZE	INSTALL SIZE	SPACING	WATER USE	QTY.	DETAIL	REMARKS
⊙	AEO SUN	AEONIUM 'SUNBURST'	SUNBURST AEONIUM	2' H X 2' W	1 GAL	24" O.C.	LOW	8	(A-B) (L-04)	FULL, DENSE, SYMMETRICAL, WELL-ROOTED
⊙	AGA RAY	AGAVE ATTENUATA 'RAY OF LIGHT'	VARIEGATED FOXTAIL AGAVE	3-4' H X 4-5' W	5 GAL	36" O.C.	LOW	4	(A-B) (L-04)	FULL, DENSE, SYMMETRICAL, WELL-ROOTED
⊙	ANI FLA	ANIGOZANTHOS 'YELLOW GEM'	YELLOW KANGAROO PAW	4-5' H X 1-2' W	5 GAL	24" O.C.	LOW	45	(A-B) (L-04)	FULL, DENSE, SYMMETRICAL, WELL-ROOTED
⊙	BAC PIL	BACCHARIS PILULARIS 'PIGEON POINT'	DWARF COYOTE BUSH	18" H X 6-8' W	5 GAL	40" O.C.	LOW	157	(A-B) (L-04)	FULL, DENSE, SYMMETRICAL, WELL-ROOTED
⊙	DIA REV	DIANELLA REVOLUTA 'LITTLE REV'	LITTLE REV FLAX LILY	2-4' H X 1-2' W	5 GAL	18" O.C.	LOW	107	(A-B) (L-04)	FULL, DENSE, SYMMETRICAL, WELL-ROOTED
⊙	EUP RID	EUPHORBIA RIGIDA	SILVER SPURGE	1-2' H X 2-3' W	5 GAL	24" O.C.	LOW	27	(A-B) (L-04)	FULL, DENSE, SYMMETRICAL, WELL-ROOTED
⊙	PIT CRA	PITOSPORUM CRASSIFOLIUM 'COMPACTUM'	DWARF KARO	2-3' H X 4-6' W	5 GAL	30" O.C.	LOW	66	(A-B) (L-04)	FULL, DENSE, SYMMETRICAL, WELL-ROOTED
⊙	RHA CAL	RHAMNUS CALIFORNICA 'EVE CASE'	EVE CASE COFFEEBERRY	3-6' H X 4-6' W	15 GAL	48" O.C.	LOW	14	(A-B) (L-04)	FULL, DENSE, SYMMETRICAL, WELL-ROOTED
⊙	SEN MAN	SENECIO MANDRALISCAE	BLUE CHALKSTICK	1-2' H X 2-3' W	1 GAL	12" O.C.	LOW	14	(A-B) (L-04)	FULL, DENSE, SYMMETRICAL, WELL-ROOTED
■	SOD	PLATINUM TE PASPALLUM	-	-	-	-	HIGH	2,256 SF	-	SOD
■	-	EXISTING PLANTING AREA TO PROTECT IN PLACE	-	-	-	-	-	-	-	-

HYDROSEED SCHEDULE							
SYMBOL	ABBREVIATION	BOTANICAL NAME	COMMON NAME	LBS/ACRE	WATER USE	QTY.	REMARKS
■	COA ORN	COASTAL ORNAMENTAL LOW GROW NATIVE SEED MIX	-	-	LOW	12,115 SF	HYDROSEED APPLICATION, SOURCE: S&S SEEDS 805.684.0436
		ACMISPON HEERMANNII	HEERMANN'S LOTUS	4.00			
		AGROSTIS PALLENS	BENTGRASS	8.00			
		ACHILLEA MILLEFOLIUM	YARROW	1.00			
		MUHLEBERGIA MICROSPERMA	LITTLESEED MUHLY	4.00			
		MELICA IMPERFECTA	COASTAL MELIC	4.00			

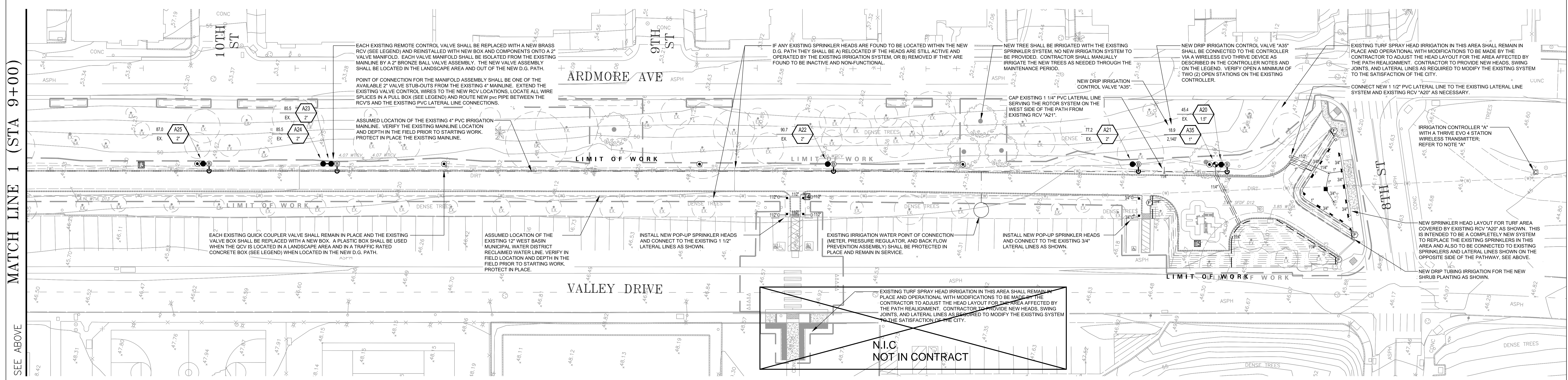
TREE SCHEDULE										
SYMBOL	ABBREVIATION	BOTANICAL NAME	COMMON NAME	MATURE SIZE	INSTALL SIZE	WATER USE	QTY.	DETAIL	REMARKS	
⊙	MET EXC	TRISTANIA CONFERTA	BRISBANE BOX TREE	25-30' H X 25-30' W	48" BOX	LOW	12	(D-E) (L-04)	FULL, DENSE, SYMMETRICAL, WELL-ROOTED	
⊙	-	EXISTING TREE TO PROTECT IN PLACE	-	-	-	-	-	-	-	



BENCH MARK: No. <u>QY12552</u> , ELEV. <u>54.821'</u> DATE ADJ. <u>2013</u> , QUAD. <u>TORRANCE</u>	 CALL 811 or 1-800-422-4133 2 Working Days Before You Dig www.call11.com	REVISIONS <table border="1"> <tr> <th>No.</th> <th>DESCRIPTION</th> <th>DATE</th> </tr> <tr> <td>1</td> <td>ISSUE FOR BID</td> <td>04/10/24</td> </tr> </table>	No.	DESCRIPTION	DATE	1	ISSUE FOR BID	04/10/24	 811 W 7th Street, 8th Floor Los Angeles, California 90017-9419 United States www.swagroup.com +1.213.236.9090	PLANS PREPARED BY: Ryan McKay PLANS CHECKED BY: Jeremy Klemic Job Number: HRBT203 Date: 04/10/2024 YING-YU HUNG, LANDSCAPE ARCHITECT #4374	CITY OF HERMOSA BEACH PUBLIC WORKS DEPARTMENT RECOMMENDED FOR PERMIT ISSUANCE: DATE: 04/10/2024	CIP 194, 502 & 604 GREENBELT PEDESTRIAN TRAIL PLANTING DETAILS	FILE NUMBER 23-003 L-04 SHT. 18 OF 22
No.	DESCRIPTION	DATE											
1	ISSUE FOR BID	04/10/24											



A IRRIGATION PLAN – PIER AVENUE TO SOUTH OF 11TH STREET
1"=20'



B IRRIGATION PLAN – SOUTH OF 11TH STREET TO 8TH STREET
1"=20'

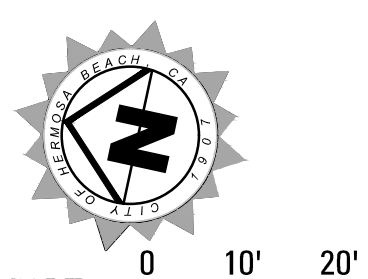
NOTE A:
EXISTING CONTROLLER "A" AND ALL OF THE EXISTING LOW VOLTAGE CONTROL WIRES SHALL BE PROTECTED IN PLACE AND REMAIN IN SERVICE. CONTROLLER "A" IS LOCATED APPROXIMATELY 200 FEET SOUTH FROM THE LOCATION SHOWN ON THE DRAWINGS. A 4 STATION THRIVE EVO WIRELESS VALVE SYSTEM SHALL BE INSTALLED TO SERVE THE NEW RCV "A35". INSTALL THE THRIVE TRANSMITTER INSIDE THE EXISTING CONTROLLER ENCLOSURE AND WIRE THE TRANSMITTER TO THE CONTROLLER'S 24 VOLT POWER. THE STATION IS ON THE CONTROLLER. AND THE COMMON GROUND WIRE. THE THRIVE RECEIVER SHALL BE INSTALLED INSIDE THE VALVE BOX FOR NEW RCV "A35" AND CONNECT IT TO THE RCV AS REQUIRED BY THE MANUFACTURER. INSTALL NEW BATTERIES IN THE RECEIVER AND TEST AND ENSURE THAT THE COMMUNICATION BETWEEN THE TRANSMITTER AND RECEIVER IS STABLE. PROGRAM THE CONTROLLER AS REQUIRED TO SCHEDULE STATIONS "A31" AND "A32" (BOTH NEW TURF AREAS, AND STATION "A35" NEW DRIP IRRIGATION FOR SHRUB AND GROUND COVER AREAS.

NOTE B:
THESE PLANS ARE DIAGRAMMATIC AND BASED ON THE ORIGINAL IRRIGATION DRAWINGS FROM DECEMBER 9, 1997. ACTUAL VALVE, SPRINKLER HEAD, AND PIPE LOCATIONS MAY VARY FROM WHERE SHOWN ON THESE DRAWINGS. CONTRACTOR SHALL FIELD VERIFY THE PLAN LOCATIONS PRIOR TO BIDDING. ALL DIRECTIONS FOR VALVE AND SPRINKLER HEAD RELOCATION AND INSTALLATION SHALL FOLLOW THE INSTRUCTIONS AND DETAILS PROVIDED. ACTUAL LOCATIONS MAY VARY AND THE CONTRACTOR SHALL MAKE ADJUSTMENTS AS NECESSARY TO COMPLETE THE DESCRIBED WORK AT NO ADDITIONAL COST.

NOTE C:
CONTRACTOR SHALL DOCUMENT THE RELOCATED EQUIPMENT LOCATIONS IN AS-BUILT DRAWINGS AS DESCRIBED IN THE IRRIGATION SPECIFICATIONS.

NOTE D:
THE SPRINKLER HEAD CHANGES SHOWN ON THESE DRAWINGS ARE SHOWN TO PREVENT OVER SPRAY OF RECYCLED WATER ONTO ADJACENT D.G. PATH, BENCHES, EXERCISE EQUIPMENT AND PAVING. NEW ROTOR HEADS SHOWN SHALL BE INSTALLED AND ADJACENT HEADS ADJUSTED TO ELIMINATE ANY OVER SPRAY. NOZZLES SHOWN FOR ROTOR HEADS ARE APPROXIMATE AND SHOULD BE CHECKED WITH ADJACENT HEADS TO MATCH THE EXISTING MATCHED PRECIPITATION RATE NOZZLE SCHEDULE USED FOR THE EXISTING ROTOR HEADS. RETAIN ALL UNUSED NOZZLES FROM HUNTER NOZZLE TREE AND BE PREPARED TO CHANGE THE NOZZLES SHOULD DIRECTED BY CITY STAFF OR THE IRRIGATION CONSULTANT DURING THE COVERAGE TEST OR FINAL SITE OBSERVATION.

I HAVE COMPLIED WITH THE CRITERIA OF THE IRRIGATION GUIDELINES AND APPLIED THEM ACCORDINGLY FOR THE EFFICIENT USE OF WATER IN THE IRRIGATION DESIGN PLAN



SCALE: 0 10' 20'
1" = 20'

BENCH MARK:

No. QY12552 ELEV. 54.821'

DATE ADJ. 2013 QUAD. TORRANCE



REVISIONS		
No.	DESCRIPTION	DATE

swa
811 W 7th Street, 8th Floor
Los Angeles, California
90017-3419
United States
www.swagroup.com
+1.213.236.9090

PLANS PREPARED BY: Ryan McKay
PLANS CHECKED BY: Jeremy Klemic

YING-YU HUNG, LANDSCAPE ARCHITECT
#4374

Job Number
HRBT203
Date
04/10/2024

CITY OF HERMOSA BEACH
PUBLIC WORKS DEPARTMENT

RECOMMENDED FOR PERMIT ISSUANCE:

DATE 04/10/2024

CIP 194, 502 & 604
GREENBELT PEDESTRIAN TRAIL

FILE NUMBER
23-003

IRRIGATION PLAN

I-01

SHT. 19 OF 22

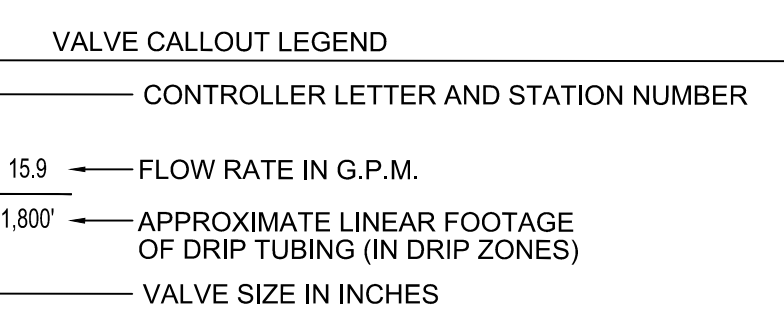
sweeney + associates
IRRIGATION DESIGN AND CONSULTING
28710 Skyway Circle, Suite 4
Hermosa Beach, CA 92643
www.sweeneyassoc.com T: (310) 481-9810

FOR IRRIGATION PLAN SEE SHEET I-01
FOR IRRIGATION LEGEND SEE SHEET I-02
FOR IRRIGATION DETAILS SEE SHEETS I-03 AND I-04.

SEE BELOW
MATCH LINE 1 (STA 9+00)

IRRIGATION MATERIAL LEGEND

SYMBOL	MANUFACTURER	MODEL NO. / DESCRIPTION	FLOW RATE (GPM)	PSI	RADIUS	PR. RATE	DETAIL
	RAIN BIRD	RD-06-S-P30-FNP 6" POP-UP TURF HEAD WITH AN 8 SERIES HE-VAN ADJUSTABLE ARC NOZZLE	.29, .39, .59, 1.17	30	8 FT	2.03 IN./HR.	A
	RAIN BIRD	RD-06-S-P30-FNP 6" POP-UP TURF HEAD WITH AN 10 SERIES HE-VAN ADJUSTABLE ARC NOZZLE	.45, .59, .89, 1.78	30	10 FT	1.98 IN./HR.	A
	RAIN BIRD	RD-06-S-P30-FNP 6" POP-UP TURF HEAD WITH AN 12 SERIES HE-VAN ADJUSTABLE ARC NOZZLE	.59, .79, 1.18, 2.37	30	12 FT	1.83 IN./HR.	A
	RAIN BIRD	RD-06-S-P30-FNP 6" POP-UP TURF HEAD WITH AN 15 SERIES HE-VAN NOZZLE	.93, 1.23, 1.85, 3.70	30	15 FT	1.83 IN./HR.	A
NO SYMBOL	RAIN BIRD	USE THE 6" POP-UP HEAD SHOWN ABOVE FOR ALL NEW TURF AREAS AND USE A RD-12-S-P30-FNP 12" POP-UP FOR REPLACEMENT OF ANY EXISTING 12" POP-UP SPRAY HEADS.					A
NO SYMBOL	RAIN BIRD	SPRINKLER HEADS WITH 1/2" NPT INLETS SHALL BE INSTALLED WITH A SA-125050 POLY SWING JOINT AS PART OF THE ASSEMBLY.					A
	HUNTER	POP-12-2CV 12" POP-UP SHRUB ROTOR WITH MPF05 NOZZLES (RED)	1.00, 1.99	45	25 FT	0.70 IN./HR.	A
	HUNTER	POP-12-2CVR 12" POP-UP SHRUB ROTOR WITH #3 (Q) AND #5 (T) STANDARD NOZZLES	3.0, 5.0	45	40 FT	0.63 IN./HR.	B
NO SYMBOL	HUNTER	SPRINKLER HEADS WITH 3/4" NPT INLETS SHALL BE INSTALLED WITH A HSA-0-3-2-12 PVC SWING JOINT AS PART OF THE ASSEMBLY.					B
	NETAFIM	SUB-SURFACE DRIP TUBING AS DESCRIBED BELOW:	0.53 GPH / EMITTER	30	N/A	0.70 IN./HR.	C,D
NO SYMBOL	NETAFIM	CONNECTION BETWEEN DRIP TUBING AND PVC SUPPLY AND DISCHARGE HEADERS SHALL BE MADE USING SCH. 40 PVC SXT FITTINGS, TL BARBED DRIP TUBING FITTINGS AND BLANK DRIP TUBING. USE A SCH. 40 PVC/LATERAL X LATERAL X 1/2" SxSxT TEE (OR A LATERAL X 1/2" SxT 90° ELBOW) FITTING ON THE PVC LATERAL LINE HEADER, A TL/DIAPHRAGM X 1/2" W/ALV ADAPTER, A SHORT LENGTH OF BLANK DRIP TUBING, AND A TL/TEE BARBED TEE FITTING. ALL END RUNS OF TUBING SHALL BE CONNECTED WITH A PVC DISCHARGE HEADER. NO HEATING OF TUBING SHALL BE ALLOWED FOR ASSEMBLY.					C,D
NO SYMBOL	NETAFIM	TL SERIES 17mm BARBED FITTINGS FOR CONNECTIONS BETWEEN DRIP TUBING (TUBING-TO-TUBING ONLY). NO HEATING OF TUBING SHALL BE ALLOWED.					C,D
--- AS APPROVED	AS APPROVED	PVC SUPPLY AND DISCHARGE HEADERS SHALL BE PVC LATERAL LINE PIPE (AS SHOWN BELOW), 1 1/4" MINIMUM SIZE WITH SCH. 40 PVC FITTINGS.					C,D,O
	GPH IRRIGATION	GFN-F4 DRIP FLUSH / INDICATOR NOZZLE, PURPLE IN COLOR, INSTALLED ONTO A RAIN BIRD RD-12-S-P30-FNP POP-UP SPRINKLER BODY. THE FLUSH NOZZLE SHALL BE CLOSED FOR NORMAL OPERATION OF THE DRIP SYSTEM.					C,E
IF FOUND	EXISTING	GATE VALVE TO REMAIN IN PLACE WITH A NEW VALVE BOX TO BE INSTALLED OVER THE EXISTING VALVE. WHEN THE GATE VALVE IS LOCATED IN THE PLANTED AREA AND OUTSIDE OF THE NEW D.G. PATH, THE NEW VALVE BOX SHALL BE A TRAFFIC RATED, CONCRETE VALVE BOX WITH A LOCKING, HINGED METAL LID.					F
	EXISTING (ASSUMED LOCATIONS)	QUICK COUPLER VALVE TO REMAIN IN PLACE WITH A NEW VALVE BOX TO BE INSTALLED OVER THE EXISTING VALVE. WHEN THE QUICK COUPLER VALVE IS LOCATED IN THE PLANTED AREA AND OUTSIDE OF THE NEW D.G. PATH, THE NEW VALVE BOX SHALL BE A TRAFFIC RATED, CONCRETE VALVE BOX WITH A LOCKING, HINGED METAL LID.					G
	SUPERIOR (ASSUMED LOCATIONS)	ALL EXISTING REMOTE CONTROL VALVES SHALL BE REPLACED WITH NEW BRASS 9600W BRASS REMOTE CONTROL VALVES (RCV). RCV SIZE AS SHOWN (1", 1 1/2" AND 2" SIZES). INSTALL EACH NEW RCV WITH A "PDS-M07" PRESSURE REGULATOR AND A PURPLE COLOR CODED CROSS HANDLE. REMOTE CONTROL VALVES SHALL BE REMOVED FROM THE MAINLINE AND INSTALLED ONTO A SEPARATE 2" SCH. 40 PVC MANIFOLD WITH A BRASS ISOLATION BALL VALVE UPSTREAM OF THE VALVES. RELOCATED VALVES MAY BE INSTALLED WITH UP TO FOUR (4) RCV'S PER MANIFOLD. ALL VALVE MANIFOLDS SHALL BE INSTALLED OUTSIDE OF THE NEW D.G. PATH AND WITHIN THE LANDSCAPE AREA. INSTALL THE NEW RCV INSIDE A STANDARD RECTANGULAR PLASTIC VALVE BOX WITH A PURPLE LID. FOR EXISTING RCV'S REMOVED FROM THE EXISTING MAINLINE, USE A 2" STUB-UP AS THE MANIFOLD CONNECTION POINT AND EXTEND THE MAINLINE TO THE NEW BALL VALVE AND VALVE MANIFOLD LOCATION. ALL UNUSED EXISTING VALVE STUB-UPS SHALL BE CAPPED AND SEALED. EXTEND CONTROL WIRES FOR THE RCV'S AS REQUIRED TO ENSURE CONNECTION OF THE RCV'S TO THEIR ORIGINAL CONTROLLER STATION NUMBERS. NO RCV'S SHALL BE INSTALLED IN THE NEW D.G. PATH.					H,K
	SUPERIOR (NEW EQUIPMENT)	9600W 1" BRASS DRIP REMOTE CONTROL VALVE ASSEMBLY (DRCV). ASSEMBLY IS COMPLETE WITH CONTROL VALVE AND A PLASTIC PRESSURE REGULATING BASKET FILTER. INSTALL A RAIN BIRD PRB-104-CR00K 200 MESH BASKET FILTER DOWN STREAM OF THE CONTROL VALVE. INSTALL THE DRCV INSIDE A STANDARD SIZED RECTANGULAR VALVE BOX. REPLACE THE STANDARD VALVE SOLENOID WITH A SUPERIOR MODEL 1630S DC LATCHING SOLENOID AND WIRE TO THE THRIVE EVO TRANSMITTER TO BE LOCATED IN THE VALVE BOX, ATTACHED TO THE UNDERSIDE OF THE BOX LID.					IK
	NIBCO (NEW EQUIPMENT)	T-885-66-LF 2" BRASS FULL PORT BALL VALVE WITH FPT END CONNECTIONS, AS A MANIFOLD ISOLATION VALVE TO BE INSTALLED ONTO THE NEW REMOTE CONTROL VALVE MANIFOLDS. ALL RELOCATED, EXISTING VALVE GROUPS ARE INTENDED TO BE INSTALLED IN MANIFOLDS OFF OF THE EXISTING MAINLINE. SEE DETAILS. INSTALL THE ISOLATION BALL VALVE INSIDE A STANDARD SIZE, PLASTIC VALVE BOX.					JK
	THRIVE EVO (NEW EQUIPMENT)	FOUR STATION WIRELESS VALVE CONTROL SYSTEM TO BE INSTALLED TO OPERATE THE ADDED DRIP REMOTE CONTROL VALVES. INSTALL THE THRIVE TRANSMITTER INSIDE THE EXISTING CONTROLLER ENCLOSURE AND WIRE TO STATION 5 ON THE EXISTING CONTROLLER. INSTALL THE THRIVE RECEIVER TO THE UNDERSIDE OF THE DRIP REMOTE CONTROL VALVE VALVE BOX AND WIRE TO THE DC LATCHING SOLENOID ON THE CONTROL VALVE. INSTALL THE REQUIRED BATTERIES INTO THE THRIVE RECEIVER PER THE MANUFACTURER'S REQUIREMENTS.					LM
NO SYMBOL	TRANSITIONAL SYSTEMS MFG. "TSM"	A TSM DOUBLER SHALL BE USED TO LINK STATIONS "A31" AND "A32" TO THE SAME PILOT WIRE ("A31" FROM THE CONTROLLER. INSTALL THE DOUBLER AS RECOMMENDED BY THE MANUFACTURER USING THE TWO STATIONS AT THE CONTROLLER ("31" AND "36") PER INSTALLATION OPTION #1, USING A JUMPER WIRE BETWEEN TERMINALS "31 AND "36". THE EXISTING VALVE STATION WIRE FOR VALVE "A32" TO SERVE THE NEW STATION "A32" (DRIP SYSTEM) AS SHOWN ON THE PLANS.					N
NO SYMBOL	WEATHERMATIC	IT IS ASSUMED THAT THERE ARE TWO OPEN STATIONS ON THE EXISTING 36 STATION SMARTLINE / SMART LINK IRRIGATION CONTROLLER, #35 AND #36. IF IT IS FOUND THAT THERE ARE NOT TWO (2) OPEN STATIONS ON THE CONTROLLER, A WEATHERMATIC SLM12-4800 EXPANSION MODULE SHALL BE ADDED TO THE EXISTING CONTROLLER. PROVIDE A BID FOR THE ADDITIONAL EXPANSION MODULE AS A SEPARATE LINE ITEM AS IT MAY NOT BE NEEDED.					NA
--- AS APPROVED	AS APPROVED	PURPLE PVC PIPE 2" CL. 315, SOLVENT WELD WITH SCH. 40 PVC FITTINGS, AS RECYCLED WATER LATERAL LINES. INSTALL 12" BELOW FINISHED GRADE.					O
--- AS APPROVED	AS APPROVED	PURPLE PVC PIPE 2" CL. 315, SOLVENT WELD WITH SCH. 40 PVC FITTINGS, AS RECYCLED WATER MANIFOLD MAINLINES. INSTALL 18" BELOW FINISHED GRADE.					O
NO SYMBOL	EXISTING	EXISTING 2" THROUGH 4" PVC IRRIGATION MAINLINE TO BE PROTECTED IN PLACE AND TO REMAIN IN SERVICE FOR THE IRRIGATION SYSTEM.					NA
--- AS APPROVED	AS APPROVED	PURPLE PVC PIPE SCH. 40 AS SLEEVING, TWICE THE DIAMETER OF PIPE OR WIRE BUNDLE CARRIED (2" MINIMUM SIZE) INSTALL ALL PIPE AND WIRE UNDER PAVING D.G. PATH, HARDSCAPE, ETC. (OR AS DIRECTED BY OWNER'S AUTHORIZED REPRESENTATIVE) INSIDE SLEEVES. SLEEVES UNDER PEDESTRIAN PAVING SHALL BE INSTALLED 24" BELOW FINISHED GRADE.					P
NO SYMBOL	LASCO	ALL FITTINGS USED WITH SOLVENT WELD MAINLINE PIPE SHALL BE SCH. 80 PVC FITTINGS, GRAY IN COLOR, AND SIZED TO MATCH THE MAINLINE PIPE. ALL FITTINGS USED WITH SOLVENT WELD LATERAL LINE PIPE SHALL BE SCH. 40 PVC, WHITE IN COLOR, AND SIZED TO MATCH THE LATERAL LINE PIPE. ALL THREADED PVC NIPPLES SHALL BE SCH. 80 PVC PIPE, DARK GRAY IN COLOR, WITH MOLDED THREADS.					NA
NO SYMBOL	WELD-ON	ALL SOLVENT WELD CONNECTIONS FOR BOTH MAINLINE AND LATERAL LINE SHALL BE MADE USING THE TWO-STEP PROCESS OF PRIMER AND SOLVENT CEMENT. PRIMER SHALL BE #48 LOW VOC "PURPLE PRIMER". SOLVENT CEMENT SHALL BE 705 LOW VOC, GRAY COLORED "MEDIUM BODIED" CEMENT. USE DAUBERS SIZED AT LEAST ONE-HALF THE SIZE OF THE LARGEST PIPE BEING JOINED. ALL SOLVENT CEMENTED JOINTS SHALL BE MADE PER THE PIPE AND FITTING MANUFACTURER'S RECOMMENDATIONS.					NA
NO SYMBOL	PAIGE ELECTRIC	P70790 POLYETHYLENE INSULATED, SOLID COPPER CONDUCTOR IRRIGATION CONTROL WIRE #14UF AWG DIRECT BURIAL (U.L. APPROVED). PILOT WIRES SHALL BE RED IN COLOR, COMMON GROUND WIRE SHALL BE WHITE IN COLOR, SPARE WIRES SHALL BE YELLOW IN COLOR. USE NEW WIRE TO EXTEND THE EXISTING CONTROL WIRES AS NECESSARY WHEN RELOCATING THE REMOTE CONTROL VALVES. MAKE CONNECTIONS TO EXISTING WIRES USING WATERPROOF WIRE CONNECTIONS AND INSTALL INSIDE A VALVE BOX WITH AT LEAST THREE FEET OF WIRE LOOP TO BE ABLE TO REMOVE SPLICES FROM THE BOX. USE PLASTIC 10" ROUND BOX IN PLANTED AREAS AND RECTANGULAR CONCRETE WITH METAL LID IF INSTALLED IN NEW D.G. PATH.					O,P,Q
NO SYMBOL	3M	DBRY-6 DIRECT BURIAL, U.L. APPROVED, WATER-PROOF WIRE CONNECTORS FOR USE ON ALL WIRE SPLICES AND CONNECTIONS.					Q
NO SYMBOL	RAIN BIRD	PLASTIC VALVE BOXES SHALL BE VB SERIES, WITH OVERLAPPING LIDS. VALVE BOX BODIES SHALL BE BLACK IN COLOR. LIDS FOR BOXES SHALL BE PURPLE. ALL BOXES SHALL BE SECURED WITH A RAIN BIRD VB-LOCK-H HEXAGON HEAD BOLT, WASHER AND CLIP. BOXES SHALL BE AS SHOWN BELOW:					R
NO SYMBOL	EISEL ENT.	DESCRIPTION: BLACK BOXES AND PURPLE LIDS 10" ROUND BOXES: VB-10RND (BOX) AND VB-10RNDPL (LID) STANDARD RECTANGULAR BOXES: VB-STDB (BOX) AND VB-STDPL (LID) W8X3HL TRAFFIC RATED CONCRETE VALVE BOXES WITH A LOCKING, HINGED CAST IRON COVER. LIDS FOR BOXES SHALL BE PAINTED PURPLE TO INDICATE THE USE OF RECYCLED / RECLAIMED WATER. BOXES SIZED AT 10.00" X 17.25" RECTANGULAR. USE FOR ALL ISOLATION VALVES, QUICK COUPLER VALVES, PULL BOXES, AND REMOTE CONTROL VALVES LOCATED WITHIN THE NEW D.G. PATH. EISEL ENTERPRISES IS LOCATED IN PLACENTIA, CALIFORNIA. TELEPHONE NUMBER (714) 993-1706.					R



IRRIGATION NOTES

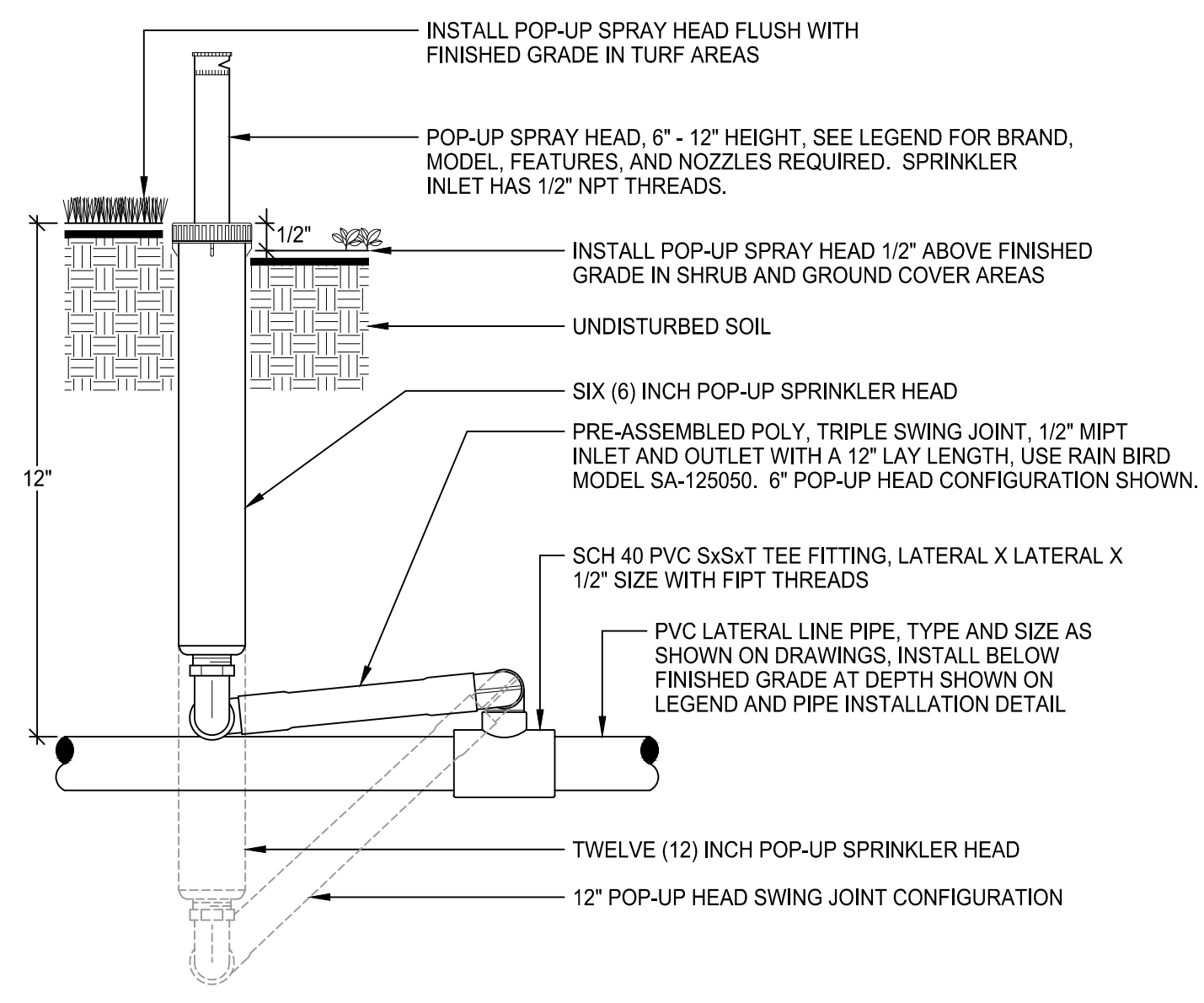
- ALL LOCAL MUNICIPAL AND STATE LAWS, RULES AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBY INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS AND THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR.
- THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING UTILITIES, STRUCTURES AND SERVICES BEFORE COMMENCING WORK. THE LOCATIONS OF UTILITIES, STRUCTURES AND SERVICES SHOWN IN THESE PLANS ARE APPROXIMATE ONLY. ANY DISCREPANCIES BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS SHALL BE REPORTED TO THE CITY.
- THE CONTRACTOR SHALL OBTAIN THE PERTINENT ENGINEERING OR ARCHITECTURAL PLANS BEFORE BEGINNING WORK.
- THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS REQUIRED TO PERFORM THE WORK INDICATED HEREIN BEFORE BEGINNING WORK.
- THIS DESIGN IS DIAGRAMMATIC. ALL EQUIPMENT SHOWN IN PAVED AREAS IS FOR DESIGN CLARITY ONLY AND IS TO BE INSTALLED WITHIN PLANTING AREAS.
- THE CONTRACTOR SHALL NOT WILLFULLY INSTALL ANY EQUIPMENT AS SHOWN ON THE PLANS WHEN IT IS OBVIOUS IN THE FIELD THAT UNKNOWN CONDITIONS EXIST THAT WERE NOT EVIDENT AT THE TIME THESE PLANS WERE PREPARED. ANY SUCH CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE CITY PRIOR TO ANY WORK OR THE IRRIGATION CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY FOR ANY FIELD CHANGES DEEMED NECESSARY BY THE CITY.
- INSTALL ALL EQUIPMENT AS SHOWN IN THE DETAILS AND SPECIFICATIONS. CONTRACTOR SHALL BE RESPONSIBLE TO COMPLY WITH LOCAL CITY, COUNTY AND STATE REQUIREMENTS FOR BOTH EQUIPMENT AND INSTALLATION.
- ACTUAL LOCATION FOR THE INSTALLATION OF THE CONTROLLER IS TO BE DETERMINED IN THE FIELD BY THE CITY.
- ALL PIPE UNDER PAVED OR DECOMPOSED GRANITE AREAS TO BE INSTALLED IN SLEEVING TWICE THE DIAMETER OF THE PIPE CARRIED. SEE LEGEND FOR TYPE. ALL WIRE UNDER PAVED AREAS TO BE INSTALLED IN A SCH. 40 SLEEVE THE SIZE REQUIRED TO EASILY PULL WIRE THROUGH. ALL SLEEVES TO BE INSTALLED WITH A MINIMUM DEPTH AS SHOWN ON THE SLEEVING DETAILS. SLEEVES TO EXTEND AT LEAST 12" PAST THE EDGE OF THE PAVING.
- ALL QUICK COUPLER AND REMOTE CONTROL VALVES TO BE INSTALLED IN SHRUB OR GROUND COVER AREAS WHERE POSSIBLE. ALL QUICK COUPLER AND REMOTE CONTROL VALVES TO BE INSTALLED AS SHOWN ON THE INSTALLATION DETAILS. INSTALL ALL QUICK COUPLER AND REMOTE CONTROL VALVES WITHIN 18" OF HARDSCAPE.
- ALL HEADS ARE TO BE INSTALLED WITH THE NOZZLE, SCREEN AND ARCS SHOWN ON THE PLANS. ALL HEADS ARE TO BE ADJUSTED TO PREVENT OVERSPRAY ONTO BUILDINGS, WALLS, FENCES AND HARDSCAPE. THIS INCLUDES, BUT NOT LIMITED TO, ADJUSTMENT OF DIFFUSER PIN OR ADJUSTMENT SCREW, REPLACEMENT OF PRESSURE COMPENSATING SCREENS, REPLACEMENT OF NOZZLES WITH MORE APPROPRIATE RADIUS UNITS AND THE REPLACEMENT OF NOZZLES WITH ADJUSTABLE ARC UNITS.
- THE CONTRACTOR IS REQUIRED TO CONTACT DIGALERT OR 811 A MINIMUM OF TWO (2) DAYS PRIOR TO THE START OF ANY EXCAVATIONS ON THE PROJECT AND SPECIFICALLY PRIOR TO THE INSTALLATION OF ANY GROUNDING RODS. DIAL 811 OR LOG ONTO WWW.DIGALERT.ORG TO START A PROJECT TICKET. DIGALERT AND 811 IS A FREE SERVICE PROVIDED TO THE PROJECT. FAILURE TO CONTACT AND HAVE THE EXISTING UTILITIES IDENTIFIED, LOCATED AND MARKED SHALL MAKE THE CONTRACTOR SOLELY RESPONSIBLE FOR ANY AND ALL DAMAGES.

I HAVE COMPLIED WITH THE CRITERIA OF THE IRRIGATION GUIDELINES AND APPLIED THEM ACCORDINGLY FOR THE EFFICIENT USE OF WATER IN THE IRRIGATION DESIGN PLAN



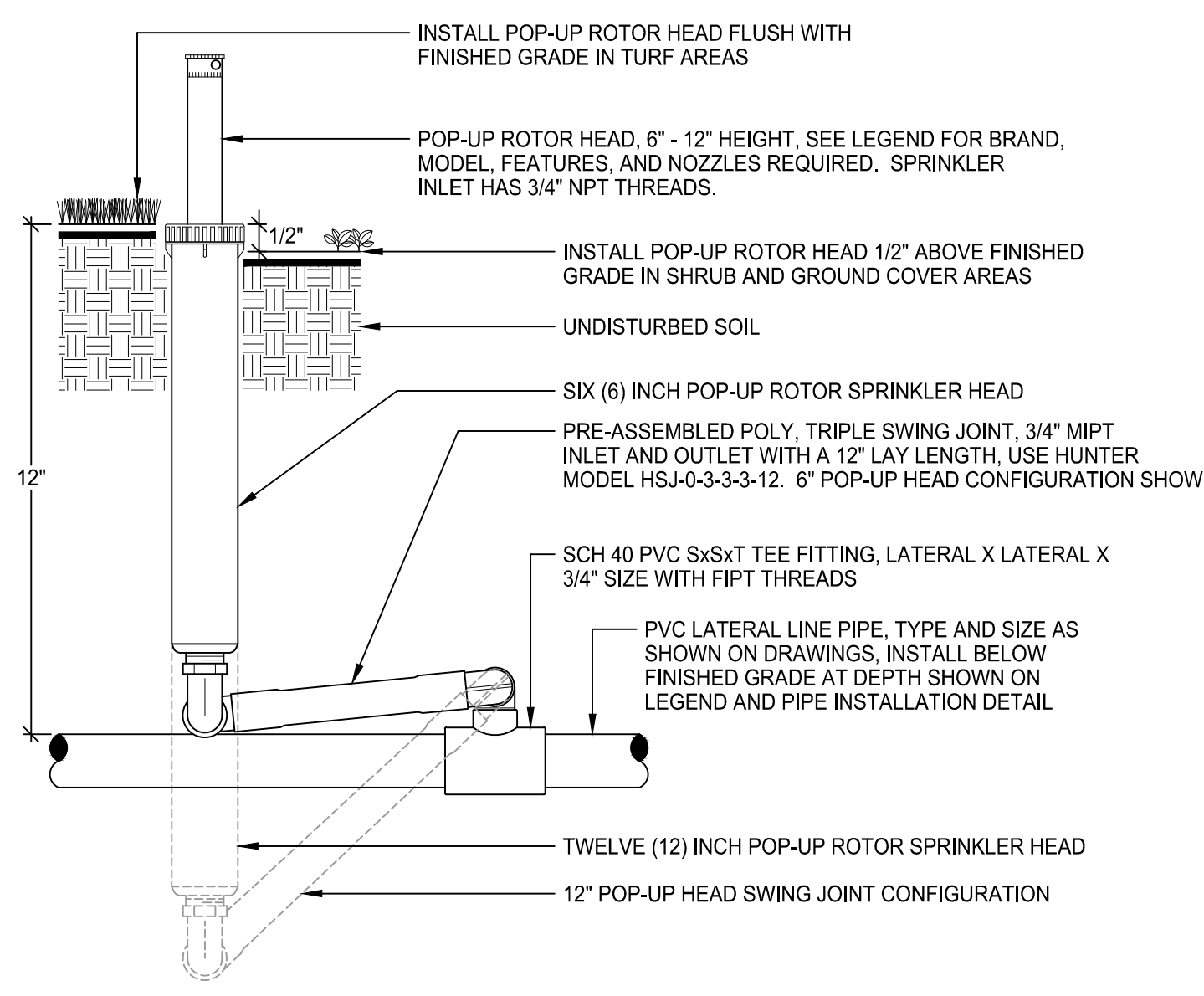
FOR IRRIGATION PLAN SEE SHEET I-01
FOR IRRIGATION LEGEND SEE SHEET I-02
FOR IRRIGATION DETAILS SEE SHEETS I-03 AND I-04.

BENCH MARK: No. <u>QY12552</u> , ELEV. <u>54.821'</u> DATE ADJ. <u>2013</u> , QUAD. <u>TORRANCE</u>		REVISIONS No. DESCRIPTION DATE ISSUE FOR BID 04/10/24		PLANS PREPARED BY: Ryan McKay PLANS CHECKED BY: Jeremy Klemic	Job Number HRBT203 Date 04/10/2024	CITY OF HERMOSA BEACH PUBLIC WORKS DEPARTMENT RECOMMENDED FOR PERMIT ISSUANCE: 	CIP 194, 502 & 604 GREENBELT PEDESTRIAN TRAIL	FILE NUMBER 23-003
				YING-YU HUNG, LANDSCAPE ARCHITECT #4374	DATE 04/10/2024	DATE 4-30-24	IRRIGATION LEGEND	I-02 SHT. 20 OF 22



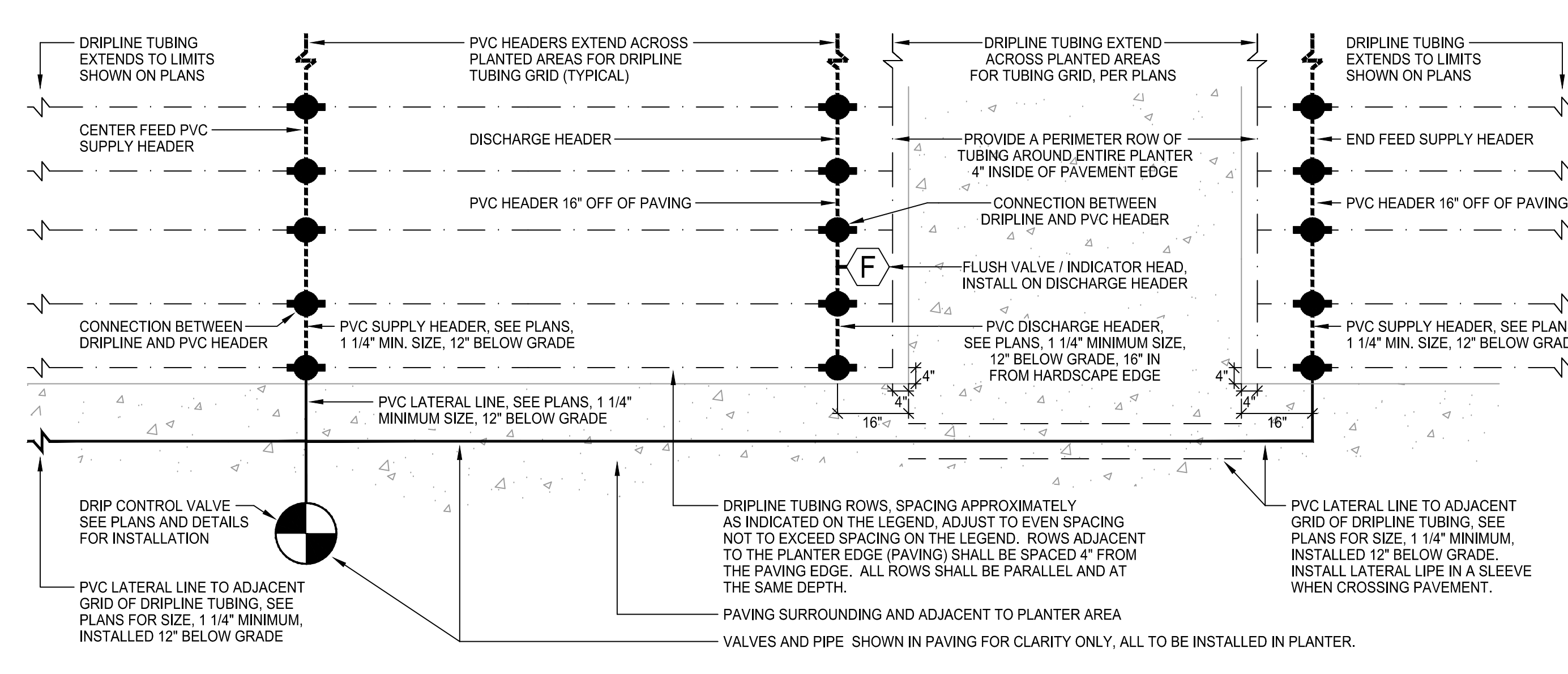
INSTALL POP-UP SPRAY HEAD FLUSH WITH FINISHED GRADE IN TURF AREAS
 POP-UP SPRAY HEAD, 6" - 12" HEIGHT, SEE LEGEND FOR BRAND, MODEL, FEATURES, AND NOZZLES REQUIRED. SPRINKLER INLET HAS 1/2" NPT THREADS.
 INSTALL POP-UP SPRAY HEAD 1/2" ABOVE FINISHED GRADE IN SHRUB AND GROUND COVER AREAS
 UNDISTURBED SOIL
 SIX (6) INCH POP-UP SPRINKLER HEAD
 PRE-ASSEMBLED POLY TRIPLE SWING JOINT, 1/2" MPT INLET AND OUTLET WITH A 1/2" LAY LENGTH. USE RAIN BIRD MODEL SA-125050. 6" POP-UP HEAD CONFIGURATION SHOWN.
 SCH 40 PVC SxSxT TEE FITTING, LATERAL X LATERAL X 1/2" SIZE WITH FPT THREADS
 PVC LATERAL LINE PIPE, TYPE AND SIZE AS SHOWN ON DRAWINGS, INSTALL BELOW FINISHED GRADE AT DEPTH SHOWN ON LEGEND AND PIPE INSTALLATION DETAIL.
 TWELVE (12) INCH POP-UP SPRINKLER HEAD
 12" POP-UP HEAD SWING JOINT CONFIGURATION

SECTION VIEW - N.T.S.



INSTALL POP-UP ROTOR HEAD FLUSH WITH FINISHED GRADE IN TURF AREAS
 POP-UP ROTOR HEAD, 6" - 12" HEIGHT, SEE LEGEND FOR BRAND, MODEL, FEATURES, AND NOZZLES REQUIRED. SPRINKLER INLET HAS 1/2" NPT THREADS.
 INSTALL POP-UP ROTOR HEAD 1/2" ABOVE FINISHED GRADE IN SHRUB AND GROUND COVER AREAS
 UNDISTURBED SOIL
 SIX (6) INCH POP-UP ROTOR SPRINKLER HEAD
 PRE-ASSEMBLED POLY TRIPLE SWING JOINT, 3/4" MPT INLET AND OUTLET WITH A 1/2" LAY LENGTH. USE HUNTER MODEL HS-4-3-3-3-12. 6" POP-UP HEAD CONFIGURATION SHOWN.
 SCH 40 PVC SxSxT TEE FITTING, LATERAL X LATERAL X 3/4" SIZE WITH FPT THREADS
 PVC LATERAL LINE PIPE, TYPE AND SIZE AS SHOWN ON DRAWINGS, INSTALL BELOW FINISHED GRADE AT DEPTH SHOWN ON LEGEND AND PIPE INSTALLATION DETAIL.
 TWELVE (12) INCH POP-UP ROTOR SPRINKLER HEAD
 12" POP-UP HEAD SWING JOINT CONFIGURATION

SECTION VIEW - N.T.S.



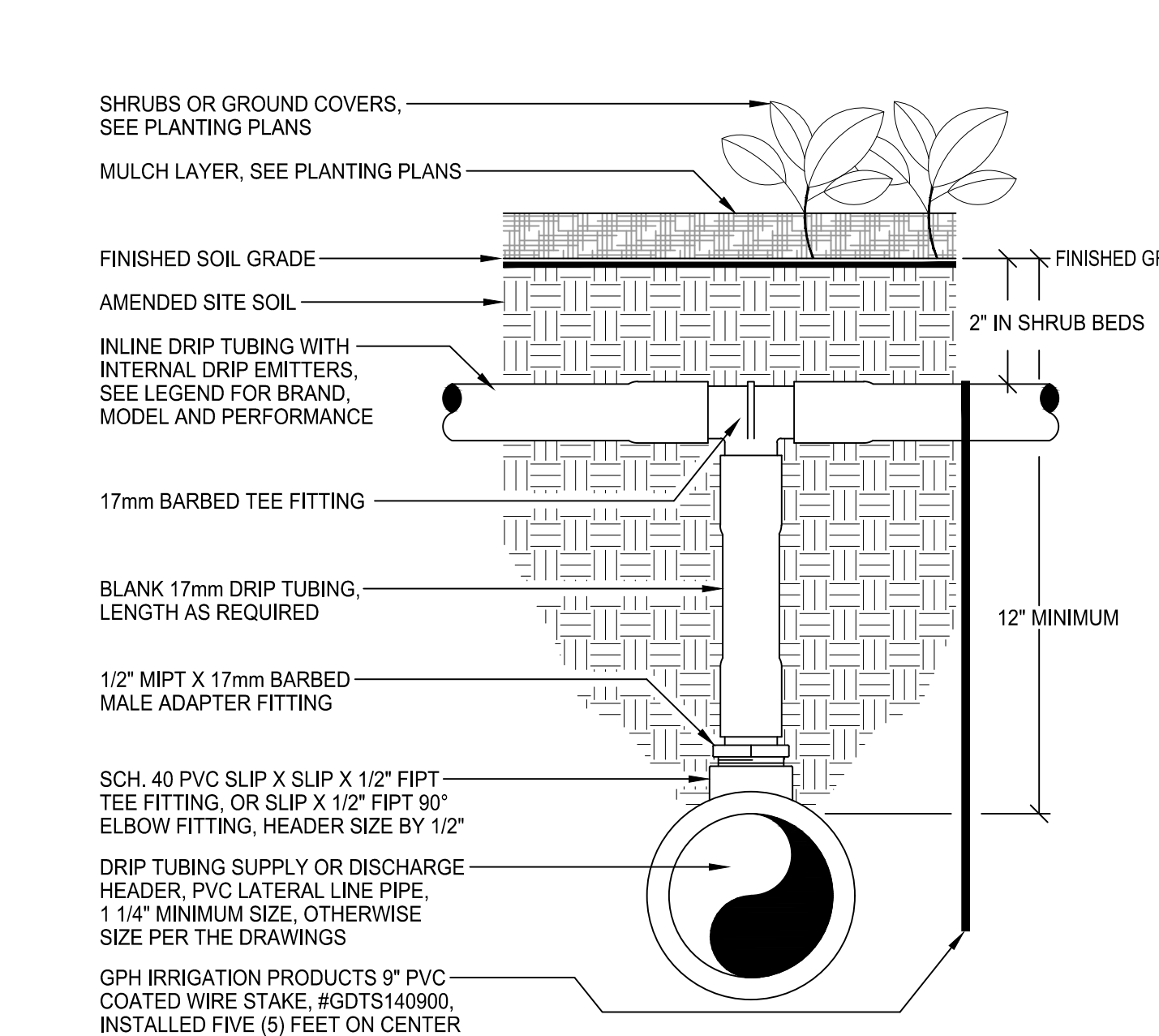
NOTE:
 PVC SUPPLY AND DISCHARGE HEADERS SHALL BE INSTALLED AT END RUNS OF TUBING, NO MORE THAN 16" FROM THE EDGE OF THE HARDSCAPE. WHERE A TUBING END RUN HAS ONLY TWO (2) OR THREE (3) ROWS, A PVC DISCHARGE HEADER IS NOT NEEDED AND THE PERIMETER ROW OF TUBING SHALL BE USED FOR THE DISCHARGE. WHERE FOUR (4) OR MORE TUBING ROWS END RUN, A PVC DISCHARGE HEADER IS REQUIRED.
 PVC PIPE FOR LATERALS, SUPPLY HEADERS AND DISCHARGE HEADERS SHALL BE MINIMUM 1 1/4" SIZE, OR SIZED AS SHOWN ON THE PLANS.
 ENTIRE PERIMETER OF PLANTING AREA SHALL HAVE A ROW OF DRIP TUBING INSTALLED 4" OFF OF THE EDGE OF THE HARDSCAPE AS SHOWN ABOVE.

PLAN VIEW - N.T.S.

A POP-UP SPRAY HEAD

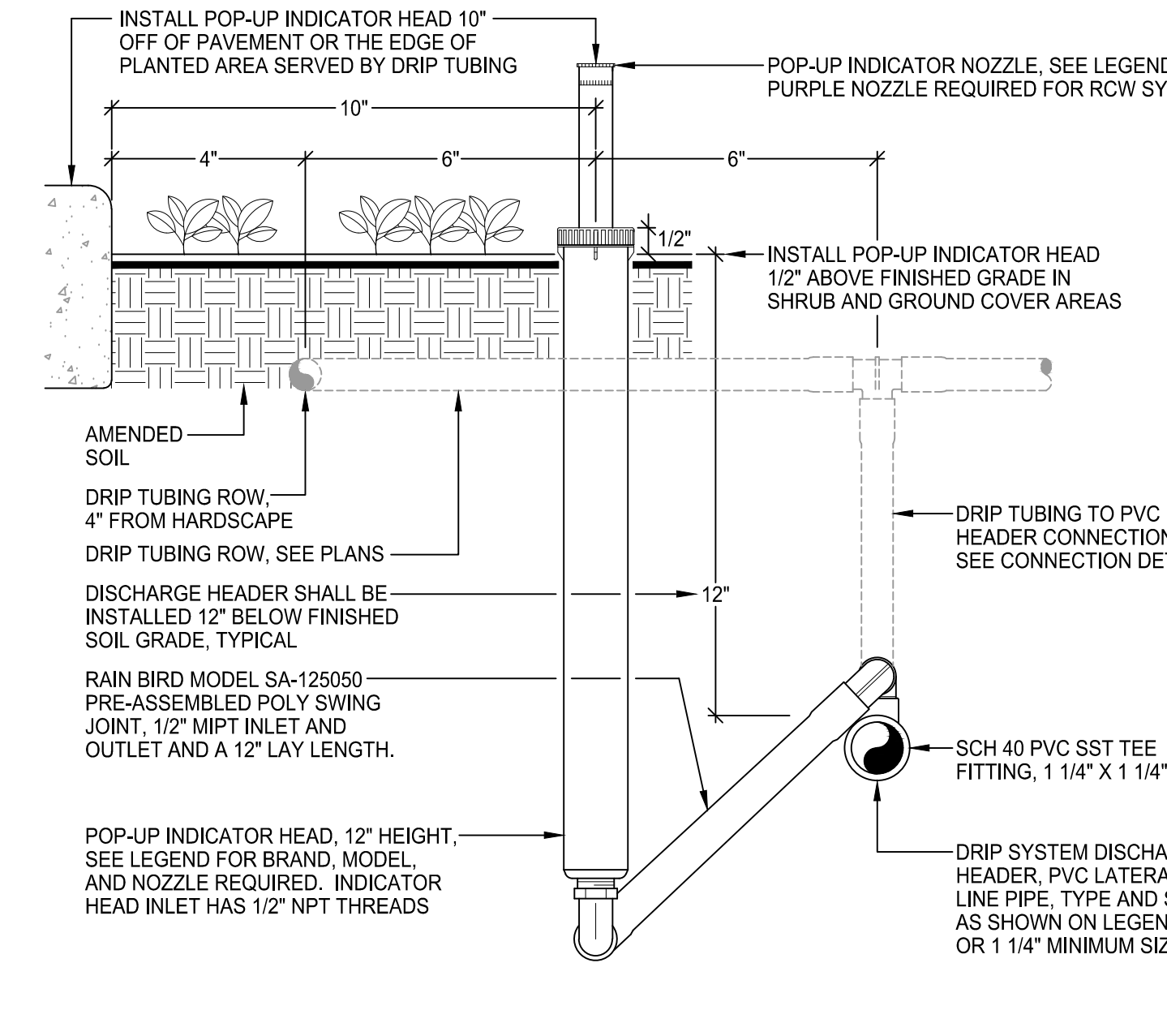
B POP-UP ROTOR HEAD

C DRIP TUBING LAYOUT



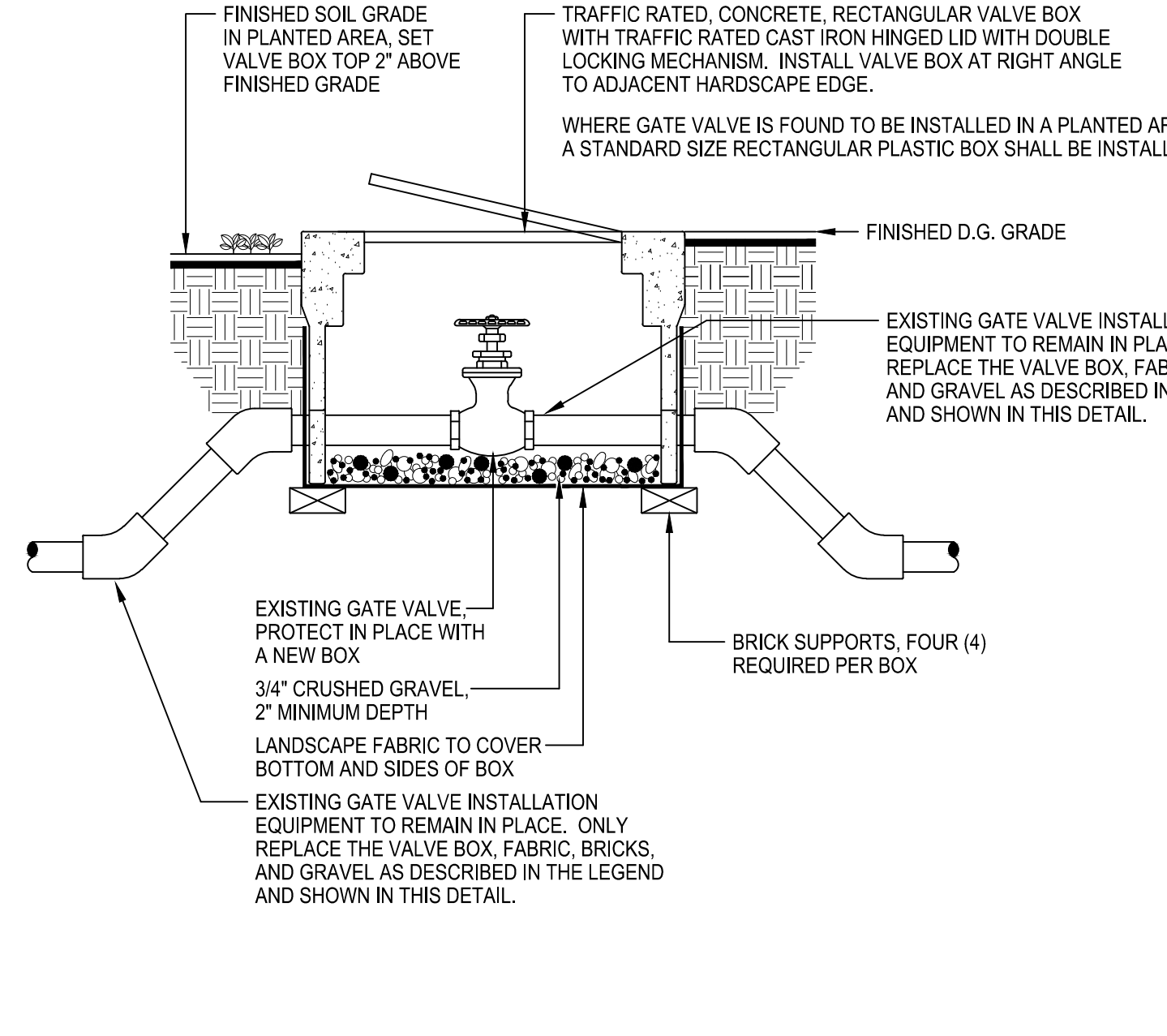
SHRUBS OR GROUND COVERS, SEE PLANTING PLANS
 MULCH LAYER, SEE PLANTING PLANS
 FINISHED SOIL GRADE
 AMENDED SITE SOIL
 INLINE DRIP TUBING WITH INTERNAL DRIP EMITTERS, SEE LEGEND FOR BRAND, MODEL AND PERFORMANCE
 17mm BARBED TEE FITTING
 BLANK 17mm DRIP TUBING, LENGTH AS REQUIRED
 1/2" MPT X 17mm BARBED MALE ADAPTER FITTING
 SCH 40 PVC SxSxT SLIP X 1/2" FPT TEE FITTING, OR SLIP X 1/2" FPT 90° ELBOW FITTING, HEADER SIZE BY 1/2"
 DRIP TUBING SUPPLY OR DISCHARGE HEADER, PVC LATERAL LINE PIPE, 1 1/4" MINIMUM SIZE, OTHERWISE SIZE PER THE DRAWINGS
 GPH IRRIGATION PRODUCTS 9" PVC COATED WIRE STAKE, #GDS144900, INSTALLED FIVE (5) FEET ON CENTER

SECTION VIEW - N.T.S.



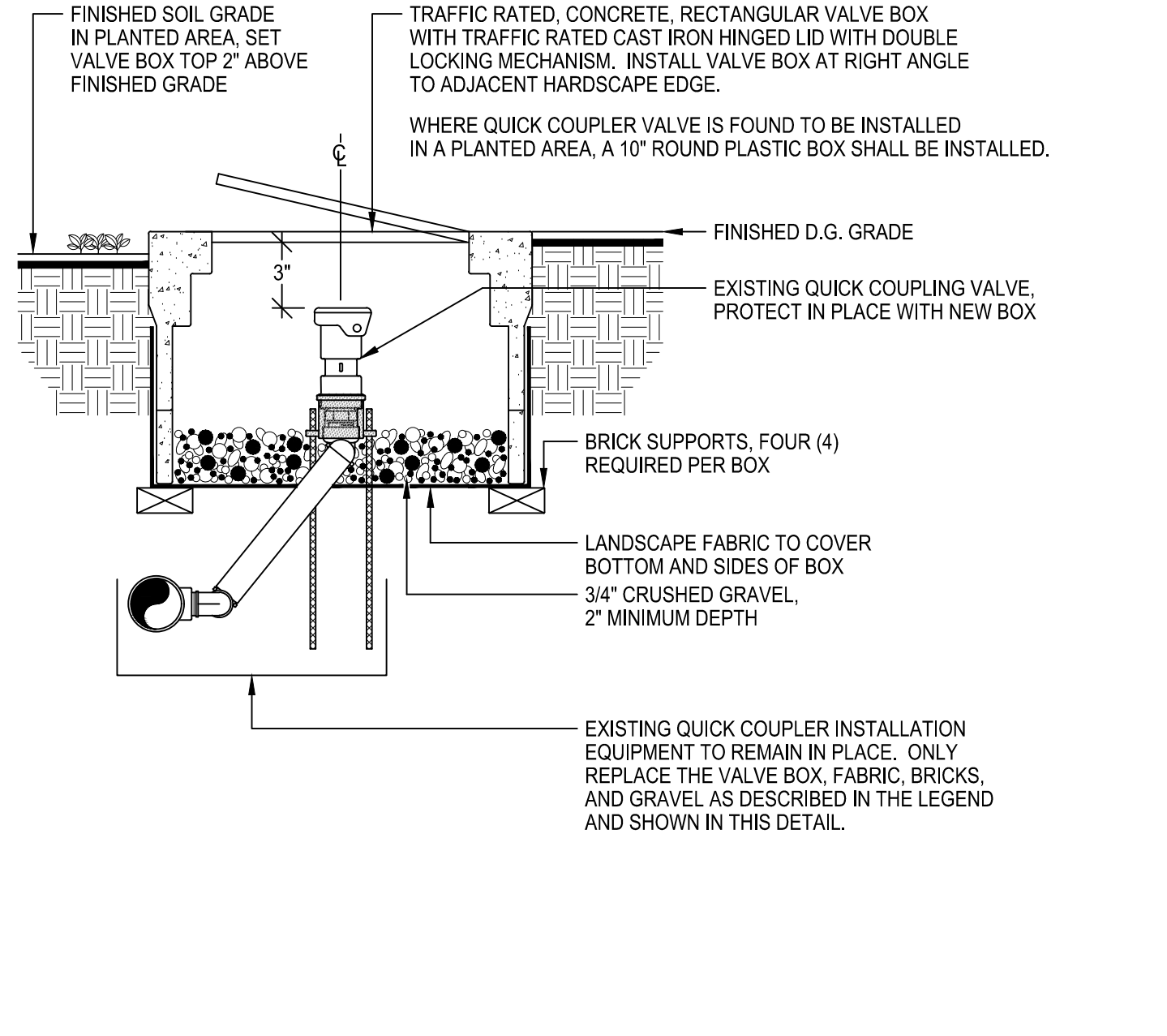
INSTALL POP-UP INDICATOR HEAD 10" OFF OF PAVEMENT OR THE EDGE OF PLANTED AREA SERVED BY DRIP TUBING
 POP-UP INDICATOR NOZZLE, SEE LEGEND, PURPLE NOZZLE REQUIRED FOR ROW SYSTEMS
 INSTALL POP-UP INDICATOR HEAD 1/2" ABOVE FINISHED GRADE IN SHRUBS AND GROUND COVER AREAS
 AMENDED SOIL
 DRIP TUBING ROW, 4" FROM HARDSCAPE
 DRIP TUBING ROW, SEE PLANS
 DISCHARGE HEADER SHALL BE INSTALLED 12" BELOW FINISHED SOIL GRADE, TYPICAL
 RAIN BIRD MODEL SA-125050 PRE-ASSEMBLED POLY SWING JOINT, 1/2" MPT INLET AND OUTLET AND A 1/2" LAY LENGTH
 POP-UP INDICATOR HEAD, 12" HEIGHT, SEE LEGEND FOR BRAND, MODEL, AND NOZZLE REQUIRED, INDICATOR HEAD INLET HAS 1/2" NPT THREADS
 DRIP SYSTEM DISCHARGE HEADER, PVC LATERAL LINE PIPE, TYPE AND SIZE AS SHOWN ON LEGEND, OR 1 1/4" MINIMUM SIZE
 SCH 40 PVC SxSxT TEE FITTING, 1 1/4" X 1 1/4" X 1/2"

SECTION VIEW - N.T.S.



FINISHED SOIL GRADE IN PLANTED AREA, SET VALVE BOX TOP 2" ABOVE FINISHED GRADE
 FINISHED D.G. GRADE
 TRAFFIC RATED, CONCRETE, RECTANGULAR VALVE BOX WITH TRAFFIC RATED CAST IRON HINGED LID WITH DOUBLE LOCKING MECHANISM. INSTALL VALVE BOX AT RIGHT ANGLE TO ADJACENT HARDSCAPE EDGE.
 WHERE GATE VALVE IS FOUND TO BE INSTALLED IN A PLANTED AREA, A STANDARD SIZE RECTANGULAR PLASTIC BOX SHALL BE INSTALLED.
 EXISTING GATE VALVE INSTALLATION EQUIPMENT TO REMAIN IN PLACE. ONLY REPLACE THE VALVE BOX, FABRIC, BRICKS, AND GRAVEL AS DESCRIBED IN THE LEGEND AND SHOWN IN THIS DETAIL.
 EXISTING GATE VALVE - PROTECT IN PLACE WITH A NEW BOX
 3/4" CRUSHED GRAVEL, 2" MINIMUM DEPTH
 LANDSCAPE FABRIC TO COVER BOTTOM AND SIDES OF BOX
 EXISTING GATE VALVE INSTALLATION EQUIPMENT TO REMAIN IN PLACE. ONLY REPLACE THE VALVE BOX, FABRIC, BRICKS, AND GRAVEL AS DESCRIBED IN THE LEGEND AND SHOWN IN THIS DETAIL.
 BRICK SUPPORTS, FOUR (4) REQUIRED PER BOX
 LANDSCAPE FABRIC TO COVER BOTTOM AND SIDES OF BOX, 3/4" CRUSHED GRAVEL, 2" MINIMUM DEPTH
 EXISTING QUICK COUPLER VALVE, PROTECT IN PLACE WITH NEW BOX

SECTION VIEW - N.T.S.



FINISHED SOIL GRADE IN PLANTED AREA, SET VALVE BOX TOP 2" ABOVE FINISHED GRADE
 FINISHED D.G. GRADE
 TRAFFIC RATED, CONCRETE, RECTANGULAR VALVE BOX WITH TRAFFIC RATED CAST IRON HINGED LID WITH DOUBLE LOCKING MECHANISM. INSTALL VALVE BOX AT RIGHT ANGLE TO ADJACENT HARDSCAPE EDGE.
 WHERE QUICK COUPLER VALVE IS FOUND TO BE INSTALLED IN A PLANTED AREA, A 10" ROUND PLASTIC BOX SHALL BE INSTALLED.
 EXISTING QUICK COUPLER VALVE, PROTECT IN PLACE WITH NEW BOX
 BRICK SUPPORTS, FOUR (4) REQUIRED PER BOX
 LANDSCAPE FABRIC TO COVER BOTTOM AND SIDES OF BOX, 3/4" CRUSHED GRAVEL, 2" MINIMUM DEPTH
 EXISTING QUICK COUPLER VALVE, PROTECT IN PLACE WITH NEW BOX

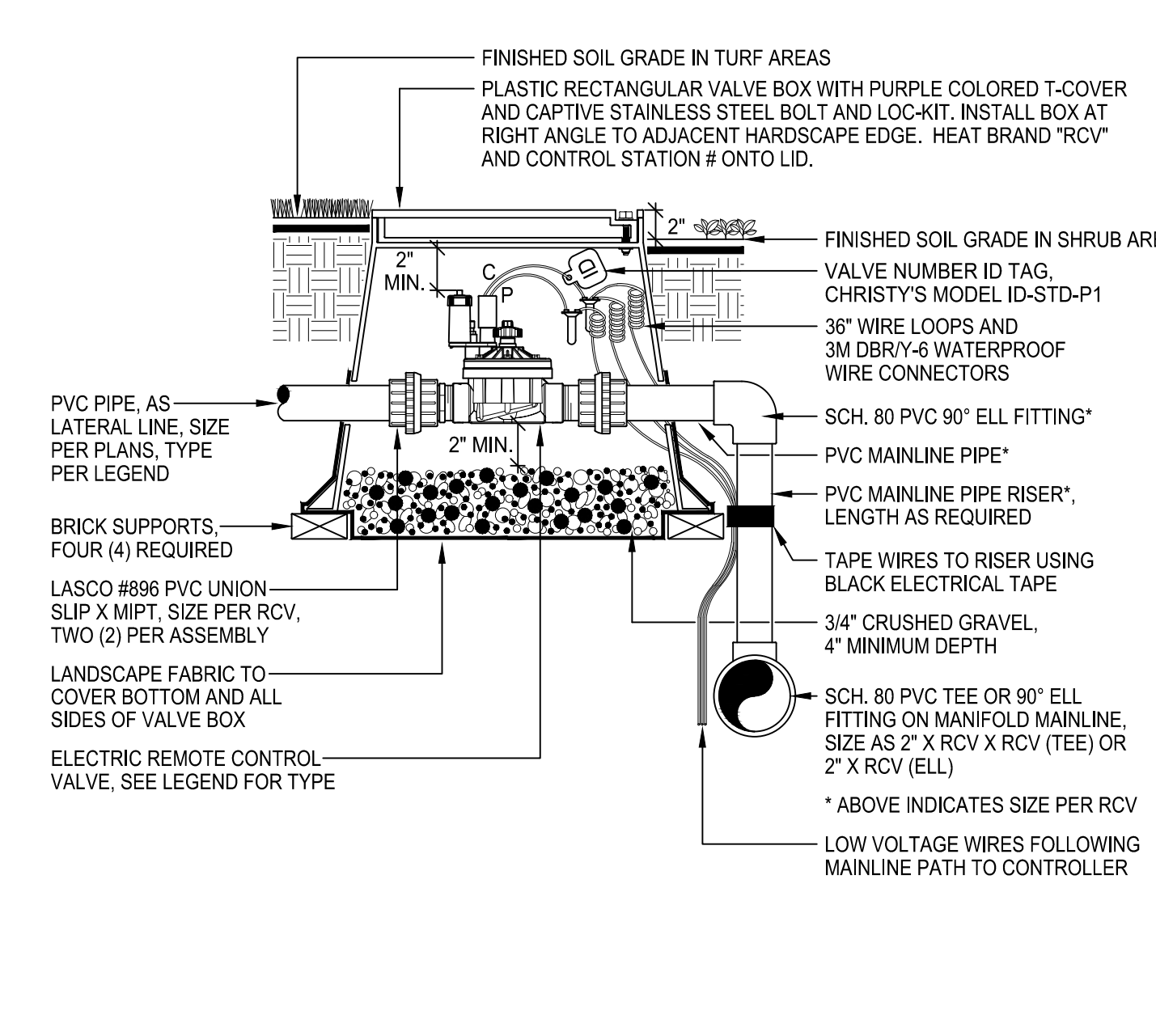
SECTION VIEW - N.T.S.

D DRIP TUBING CONNECTION

E DRIP INDICATOR HEAD

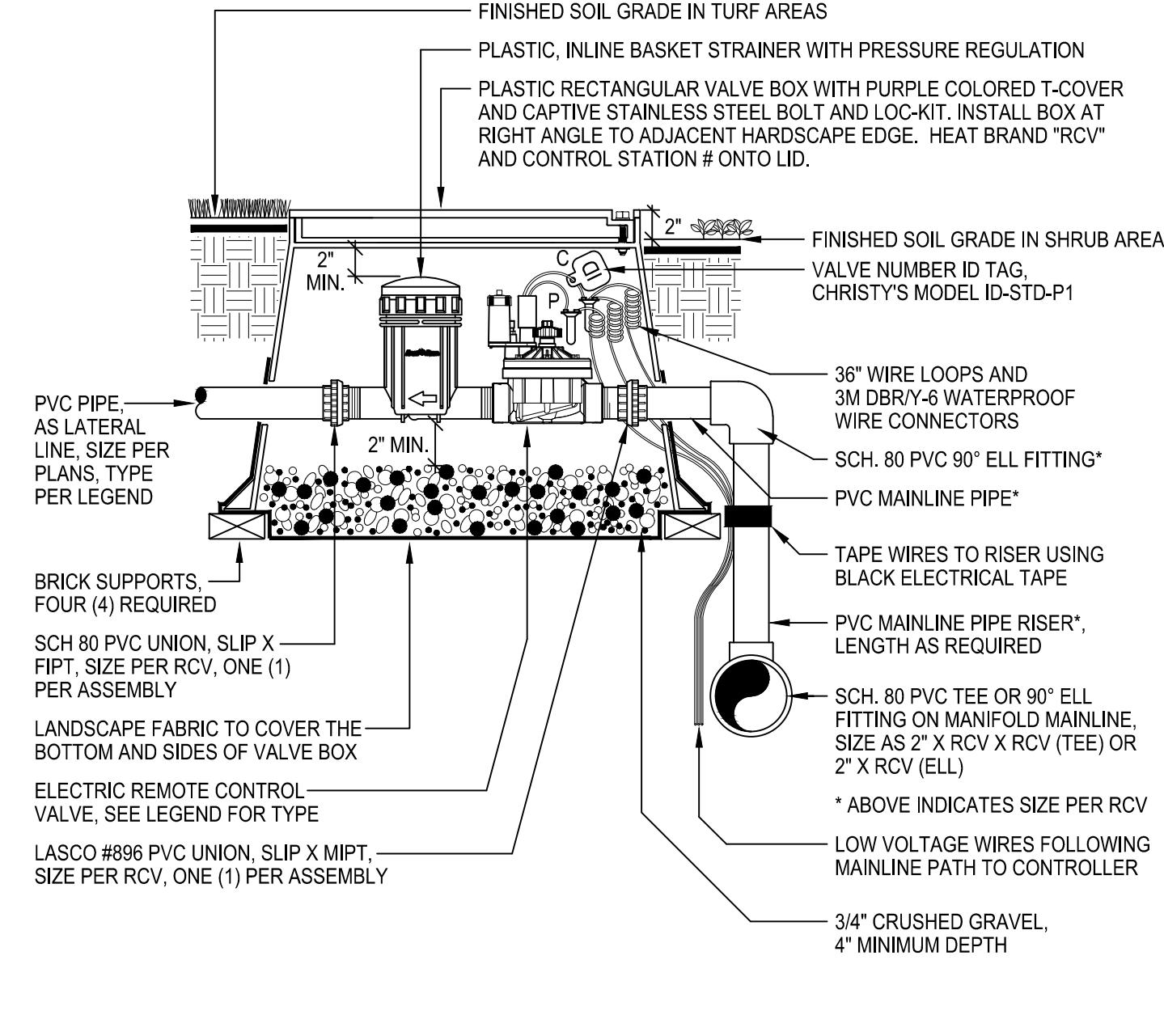
F GATE VALVE

G EXISTING QUICK COUPLER VALVE



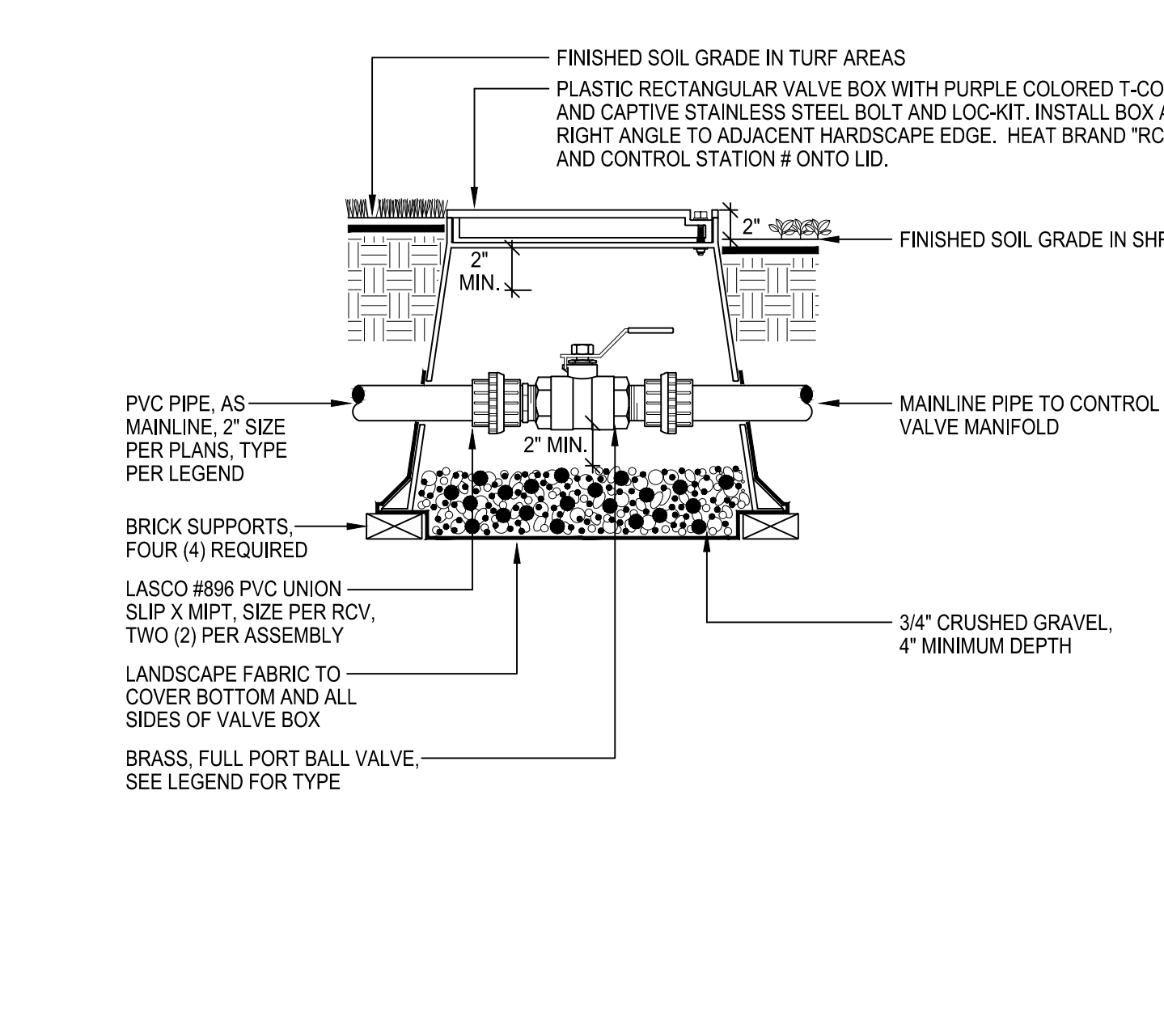
FINISHED SOIL GRADE IN TURF AREAS
 PLASTIC RECTANGULAR VALVE BOX WITH PURPLE COLORED T-COVER AND CAPTIVE STAINLESS STEEL BOLT AND LOCK-RT. INSTALL BOX AT RIGHT ANGLE TO ADJACENT HARDSCAPE EDGE. HEAT BRAND "RCV" AND CONTROL STATION # ONTO LID.
 FINISHED SOIL GRADE IN SHRUB AREAS
 VALVE NUMBER ID TAG, CHRISTY'S MODEL, ID-ST-D-P1
 3/8" WIRE LOOPS AND 3M DBRY-6 WATERPROOF WIRE CONNECTORS
 PVC PIPE, AS LATERAL LINE, SIZE PER PLANS, TYPE PER LEGEND
 PVC MAINLINE PIPE RISER, LENGTH AS REQUIRED
 TAKE WIRES TO RISER USING BLACK ELECTRICAL TAPE
 BRICK SUPPORTS, FOUR (4) REQUIRED
 LASCO #86 PVC UNION, SLIP X MPT, SIZE PER RCV, TWO (2) PER ASSEMBLY
 LANDSCAPE FABRIC TO COVER BOTTOM AND ALL SIDES OF VALVE BOX
 ELECTRIC REMOTE CONTROL VALVE, SEE LEGEND FOR TYPE
 SCH. 80 PVC 90° ELL FITTING
 FITTING ON MANIFOLD MAINLINE SIZE AS 2" X RCV X RCV (TEE) OR 2" X RCV (ELL)
 * ABOVE INDICATES SIZE PER RCV
 LOW VOLTAGE WIRES FOLLOWING MAINLINE PATH TO CONTROLLER

SECTION VIEW - N.T.S.



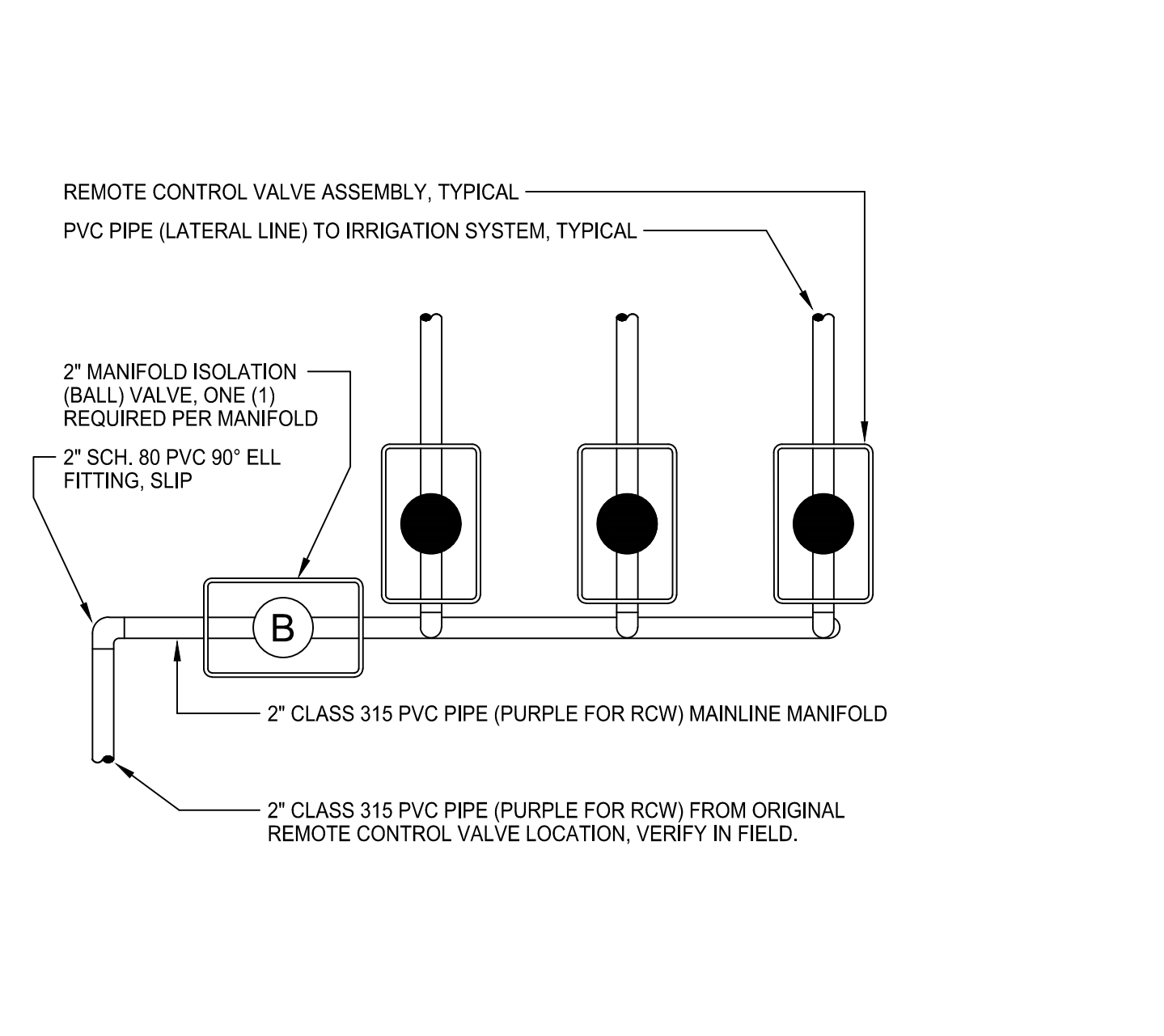
FINISHED SOIL GRADE IN TURF AREAS
 PLASTIC INLINE BASKET STRAINER WITH PRESSURE REGULATION
 PLASTIC RECTANGULAR VALVE BOX WITH PURPLE COLORED T-COVER AND CAPTIVE STAINLESS STEEL BOLT AND LOCK-RT. INSTALL BOX AT RIGHT ANGLE TO ADJACENT HARDSCAPE EDGE. HEAT BRAND "RCV" AND CONTROL STATION # ONTO LID.
 FINISHED SOIL GRADE IN SHRUB AREAS
 VALVE NUMBER ID TAG, CHRISTY'S MODEL, ID-ST-D-P1
 3/8" WIRE LOOPS AND 3M DBRY-6 WATERPROOF WIRE CONNECTORS
 PVC PIPE, AS LATERAL LINE, SIZE PER PLANS, TYPE PER LEGEND
 PVC MAINLINE PIPE RISER, LENGTH AS REQUIRED
 TAKE WIRES TO RISER USING BLACK ELECTRICAL TAPE
 BRICK SUPPORTS, FOUR (4) REQUIRED
 LASCO #86 PVC UNION, SLIP X MPT, SIZE PER RCV, ONE (1) PER ASSEMBLY
 LANDSCAPE FABRIC TO COVER THE BOTTOM AND SIDES OF VALVE BOX
 ELECTRIC REMOTE CONTROL VALVE, SEE LEGEND FOR TYPE
 LASCO #86 PVC UNION, SLIP X MPT, SIZE PER RCV, ONE (1) PER ASSEMBLY
 SCH. 80 PVC TEE OR 90° ELL FITTING ON MANIFOLD MAINLINE SIZE AS 2" X RCV X RCV (TEE) OR 2" X RCV (ELL)
 * ABOVE INDICATES SIZE PER RCV
 LOW VOLTAGE WIRES FOLLOWING MAINLINE PATH TO CONTROLLER
 3/4" CRUSHED GRAVEL, 4" MINIMUM DEPTH

SECTION VIEW - N.T.S.



FINISHED SOIL GRADE IN TURF AREAS
 PLASTIC RECTANGULAR VALVE BOX WITH PURPLE COLORED T-COVER AND CAPTIVE STAINLESS STEEL BOLT AND LOCK-RT. INSTALL BOX AT RIGHT ANGLE TO ADJACENT HARDSCAPE EDGE. HEAT BRAND "RCV" AND CONTROL STATION # ONTO LID.
 FINISHED SOIL GRADE IN SHRUB AREAS
 VALVE NUMBER ID TAG, CHRISTY'S MODEL, ID-ST-D-P1
 3/8" WIRE LOOPS AND 3M DBRY-6 WATERPROOF WIRE CONNECTORS
 PVC PIPE, AS MAINLINE, SIZE PER PLANS, TYPE PER LEGEND
 PVC MAINLINE PIPE RISER, LENGTH AS REQUIRED
 TAKE WIRES TO RISER USING BLACK ELECTRICAL TAPE
 BRICK SUPPORTS, FOUR (4) REQUIRED
 LASCO #86 PVC UNION, SLIP X MPT, SIZE PER RCV, TWO (2) PER ASSEMBLY
 LANDSCAPE FABRIC TO COVER BOTTOM AND ALL SIDES OF VALVE BOX
 BRASS FILL PORT BALL VALVE, SEE LEGEND FOR TYPE
 MANLINE PIPE TO CONTROL VALVE MANIFOLD
 3/4" CRUSHED GRAVEL, 4" MINIMUM DEPTH

SECTION VIEW - N.T.S.



REMOTE CONTROL VALVE ASSEMBLY, TYPICAL
 PVC PIPE (LATERAL LINE) TO IRRIGATION SYSTEM, TYPICAL
 2" MANIFOLD ISOLATION (BALL VALVE, ONE (1) REQUIRED PER MANIFOLD)
 2" SCH. 80 PVC 90° ELL FITTING, SLIP
 2" CLASS 315 PVC PIPE (PURPLE FOR RCV) MAINLINE MANIFOLD
 2" CLASS 315 PVC PIPE (PURPLE FOR RCV) FROM ORIGINAL REMOTE CONTROL VALVE LOCATION, VERIFY IN FIELD

SECTION VIEW - N.T.S.

H REMOTE CONTROL VALVE

I DRIP REMOTE CONTROL VALVE

J MANIFOLD BALL VALVE

K VALVE MANIFOLD LAYOUT

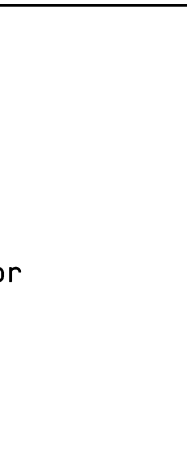
I HAVE COMPLIED WITH THE CRITERIA OF THE IRRIGATION GUIDELINES AND APPLIED THEM ACCORDINGLY FOR THE EFFICIENT USE OF WATER IN THE IRRIGATION DESIGN PLAN



BENCH MARK:
 No. 0Y12552, ELEV. 54.821'
 DATE ADJ. 2013, QUAD. TORRANCE



REVISIONS		
No.	DESCRIPTION	DATE
1	ISSUE FOR BID	04/10/24

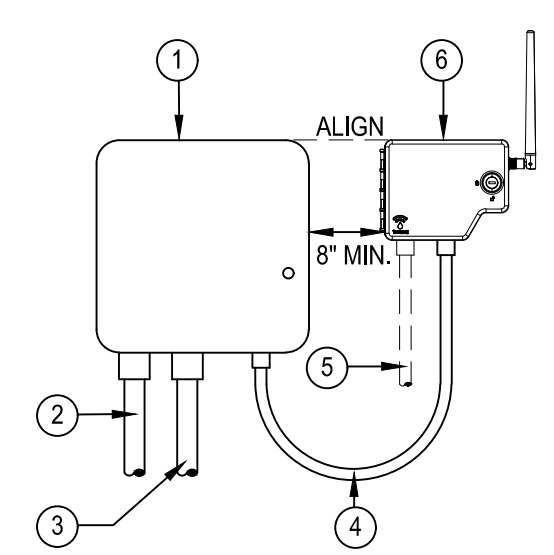


PLANS PREPARED BY: Ryan McKay
 PLANS CHECKED BY: Jeremy Klemic
 Job Number: HRBT203
 Date: 04/10/2024
 YUNG-YU HUNG, LANDSCAPE ARCHITECT #4374

CITY OF HERMOSA BEACH
 PUBLIC WORKS DEPARTMENT
 RECOMMENDED FOR PERMIT ISSUANCE:
 [Signature]

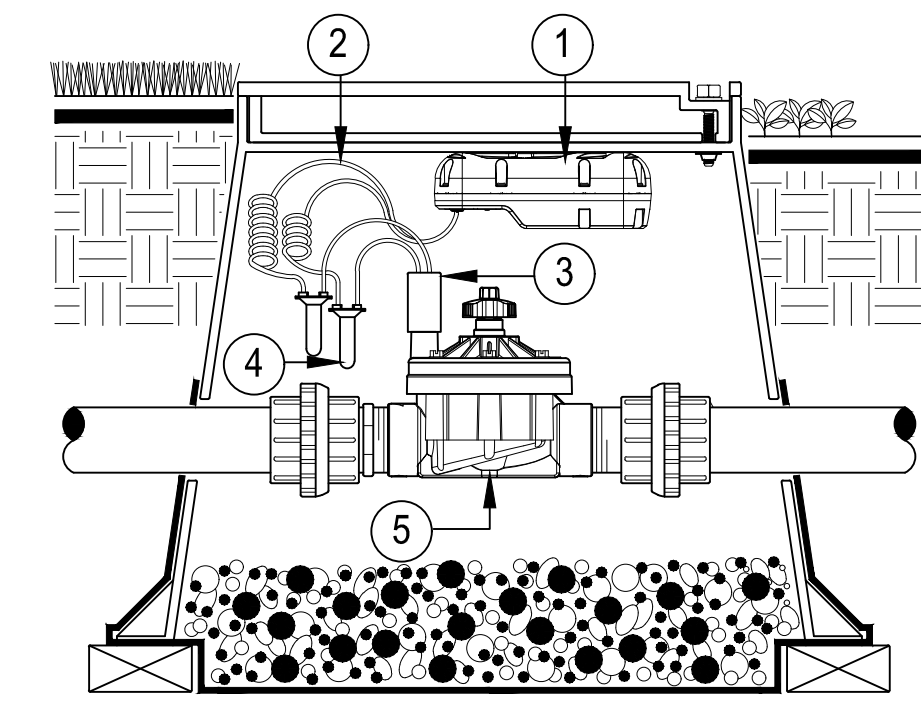
CIP 194, 502 & 604
 GREENBELT PEDESTRIAN TRAIL
 IRRIGATION DETAILS
 FILE NUMBER: 23-003
 SHEET: 21 OF 22

FOR IRRIGATION PLAN SEE SHEET I-01
 FOR IRRIGATION LEGEND SEE SHEET I-02
 FOR IRRIGATION DETAILS SEE SHEETS I-03 AND I-04.



- 1 NEW OR EXISTING MULTI-WIRE IRRIGATION CONTROLLER.
 - 2 120-VOLT INPUT POWER INTO CONTROLLER.
 - 3 REMOTE CONTROL WIRE CONDUIT.
 - 4 1/2" FLEXIBLE CONDUIT BETWEEN THE IRRIGATION CONTROLLER AND THE EVO™ TRANSMITTER WITH MALE ADAPTERS AND LOCKNUTS.
 - 5 OPTIONAL 1/2" CONDUIT FOR STEP-DOWN TRANSFORMER WIRE IF CONTROLLER DOES NOT HAVE A 24 VAC AUXILIARY OUTPUT.
 - 6 THRIVE 4-STATION TRANSMITTER WITH EXTERNAL ANTENNA.
- NOTE:**
MOUNT THE EVO™ TRANSMITTER LEVEL AND PERPENDICULAR TO THE GROUND PLANE.

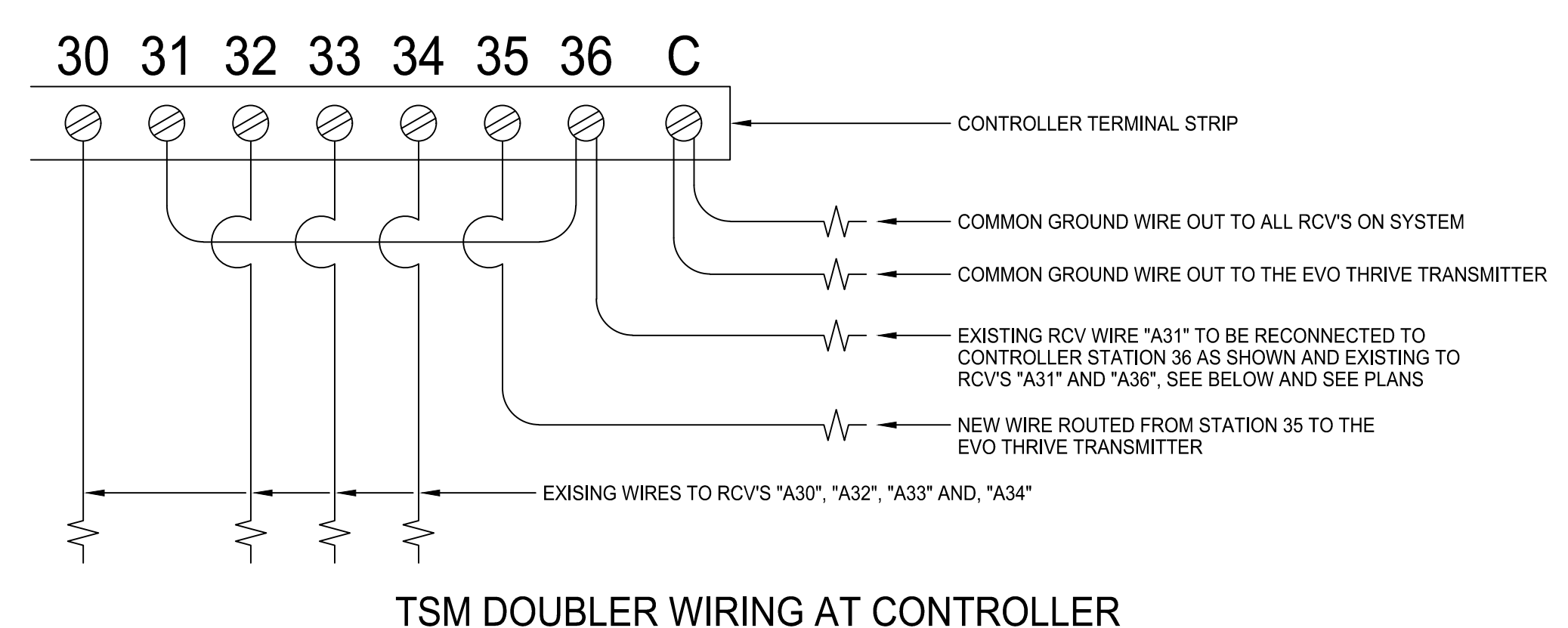
SECTION VIEW - N.T.S.



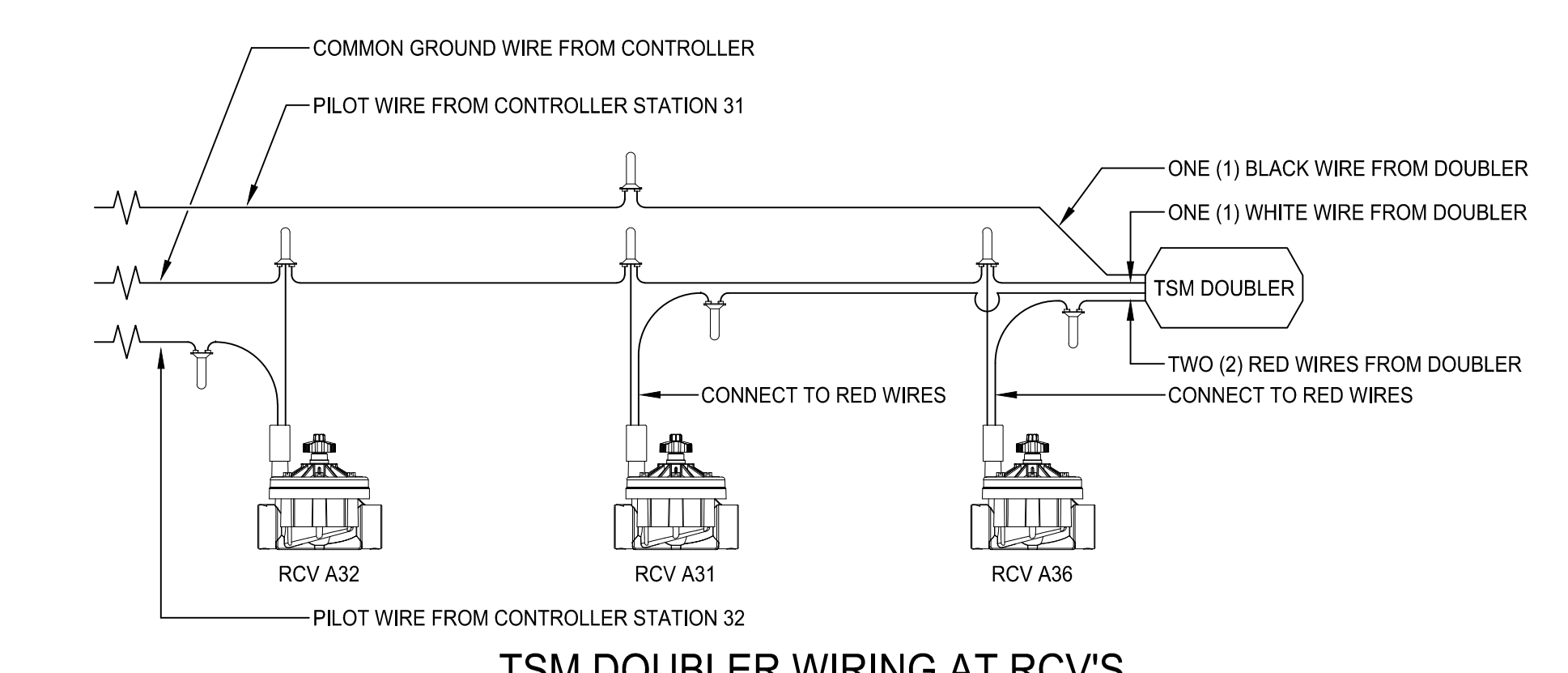
- 1 THRIVE EVO™ RECEIVER. SECURE TO THE UNDERSIDE OF A VALVE BOX LID WITH SUPPLIED STAINLESS STEEL FASTENERS, WASHERS, AND NUTS.
- 2 CONNECT UP TO FOUR NEW OR EXISTING REMOTE CONTROL VALVES TO THE RECEIVER'S FIELD WIRES.
- 3 REMOVE AND REPLACE THE AC SOLENOID WITH A DC LATCHING SOLENOID COMPATIBLE WITH THE MANUFACTURER OF THE REMOTE CONTROL VALVE.
- 4 CONNECT PILOT AND COMMON WIRES WITH SUPPLIED DB9B CONNECTORS.
- 5 NEW OR EXISTING REMOTE CONTROL VALVE.

NOTE:
DETAIL FOR WIRELESS CONTROL SYSTEM ONLY. SEE VALVE INSTALLATION DETAILS FOR THE INSTALLATION REQUIREMENTS FOR EACH VALVE.

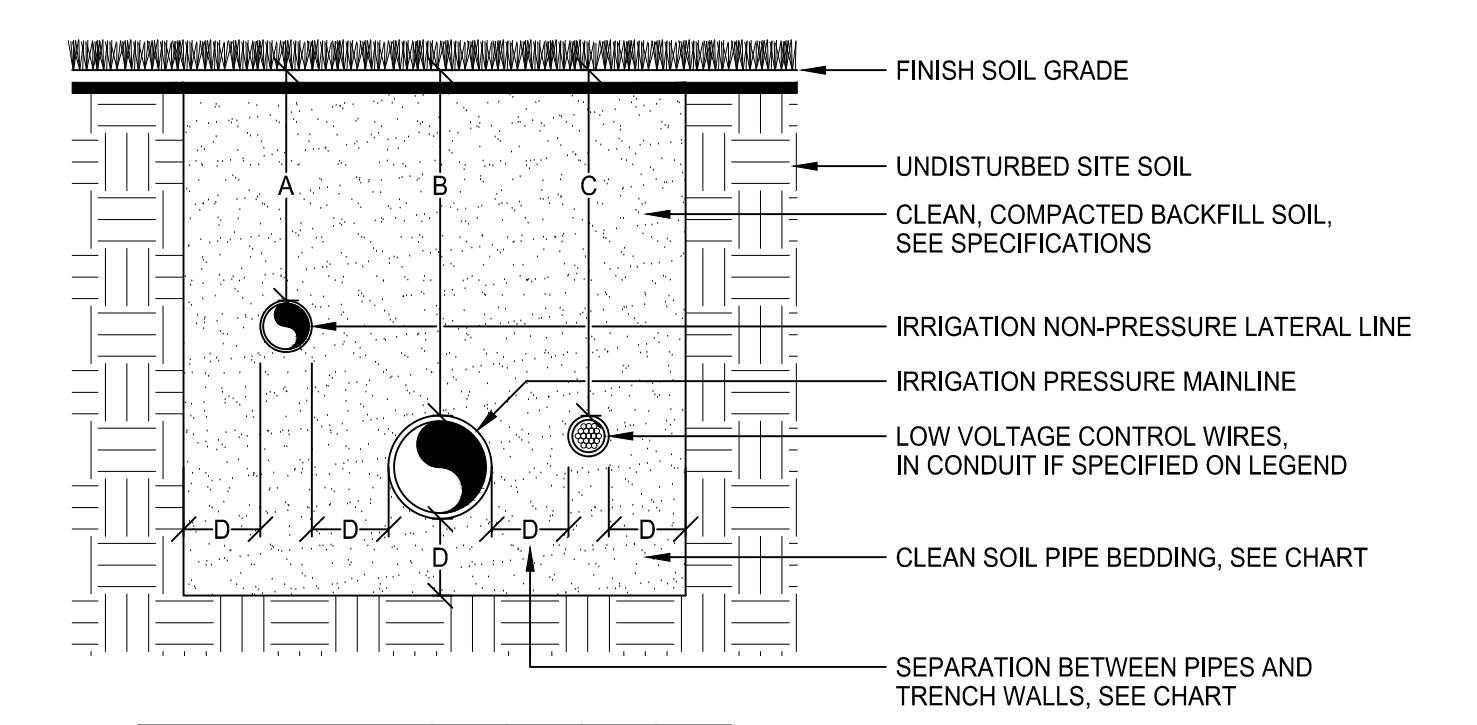
SECTION VIEW - N.T.S.



TSM DOUBLER WIRING AT CONTROLLER



TSM DOUBLER WIRING AT RCV'S



PIPE SIZES	A	B	C	D
SIZES 3/4" TO 2 1/2"	12"	18"	18"	4"
SIZES 3" AND 4"	18"	24"	24"	4"
SIZES 6" AND LARGER	30"	24"	6"	

NOTE:
CONTRACTOR IS REQUIRED TO CONTACT 811 OR DIGALERT A MINIMUM OF TWO (2) DAYS PRIOR TO ANY EXCAVATION ON THE PROJECT. DIAL 811 OR LOG ONTO WWW.DIGALERT.ORG.

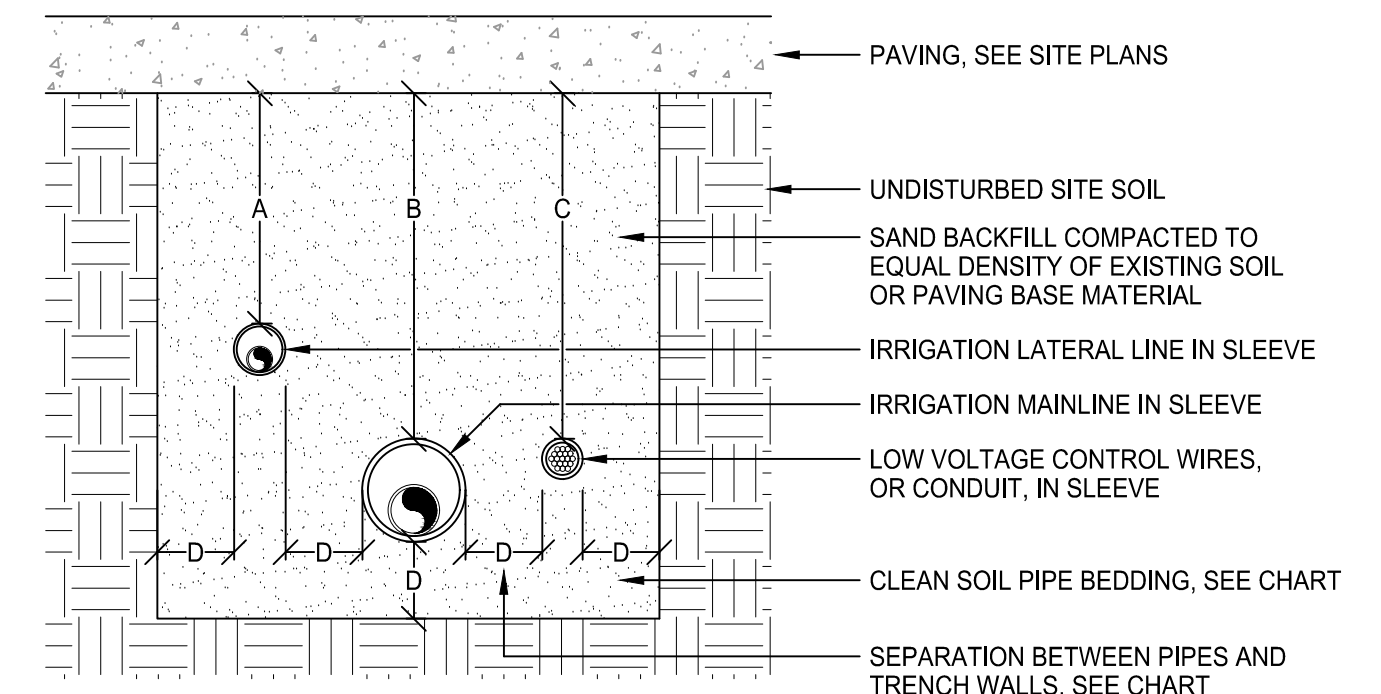


L THRIVE EVO WIRELESS TRANSMITTER

M THRIVE EVO WIRELESS RECEIVER

N TSM DOUBLER INSTALLATION

O PIPE INSTALLATION

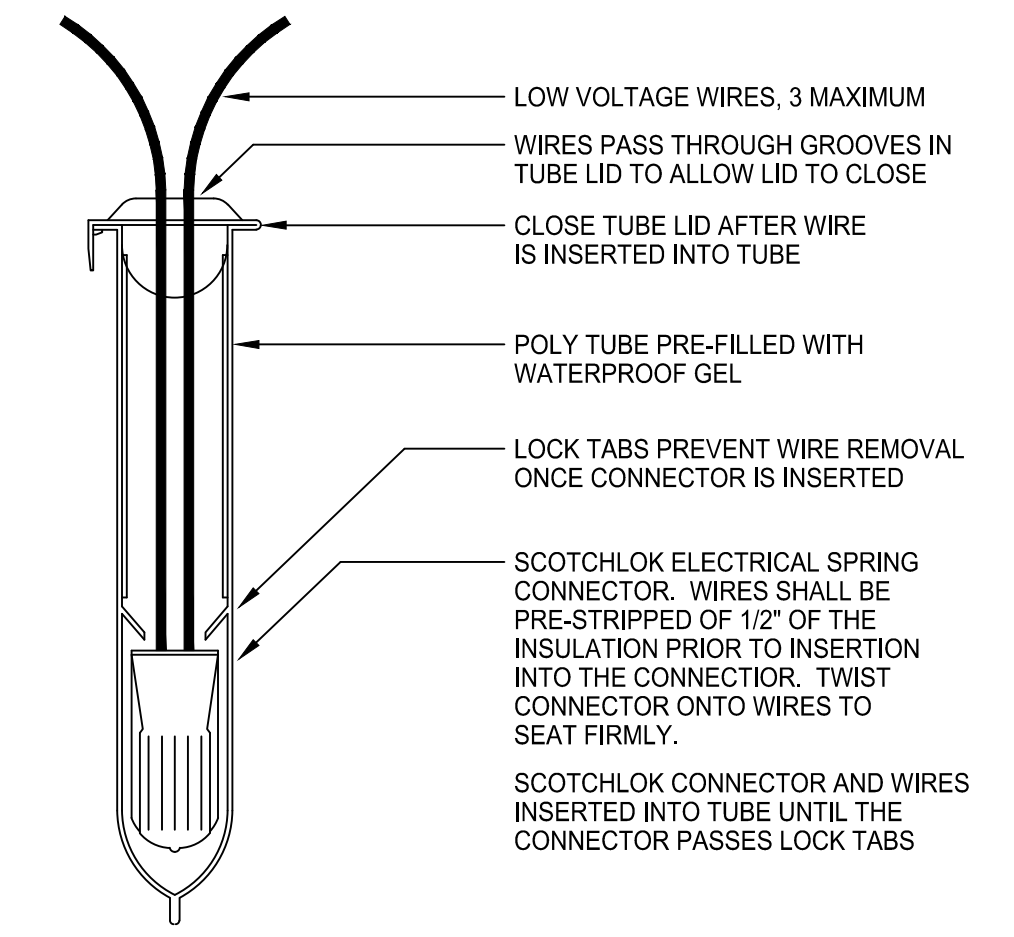


PIPE SIZES	A	B	C	D
UNDER PEDESTRIAN PAVING	12"	24"	24"	4"
UNDER VEHICULAR PAVING	24"	36"	36"	6"

NOTE:
CONTRACTOR IS REQUIRED TO CONTACT 811 OR DIGALERT A MINIMUM OF TWO (2) DAYS PRIOR TO ANY EXCAVATION ON THE PROJECT. DIAL 811 OR LOG ONTO WWW.DIGALERT.ORG.
SLEEVES SHALL BE TWICE THE DIAMETER OF THE PIPE OR WIRE BUNDLE CARRIED WITHIN, EXCEPT WHEN USING BELL AND GASKET PIPING WHERE MAINLINE SLEEVES SHALL BE 2.5 TIMES THE SIZE OF THE PIPE.
SLEEVES SHALL EXTEND 12" PAST THE EDGE OF PAVING INTO THE PLANTER.

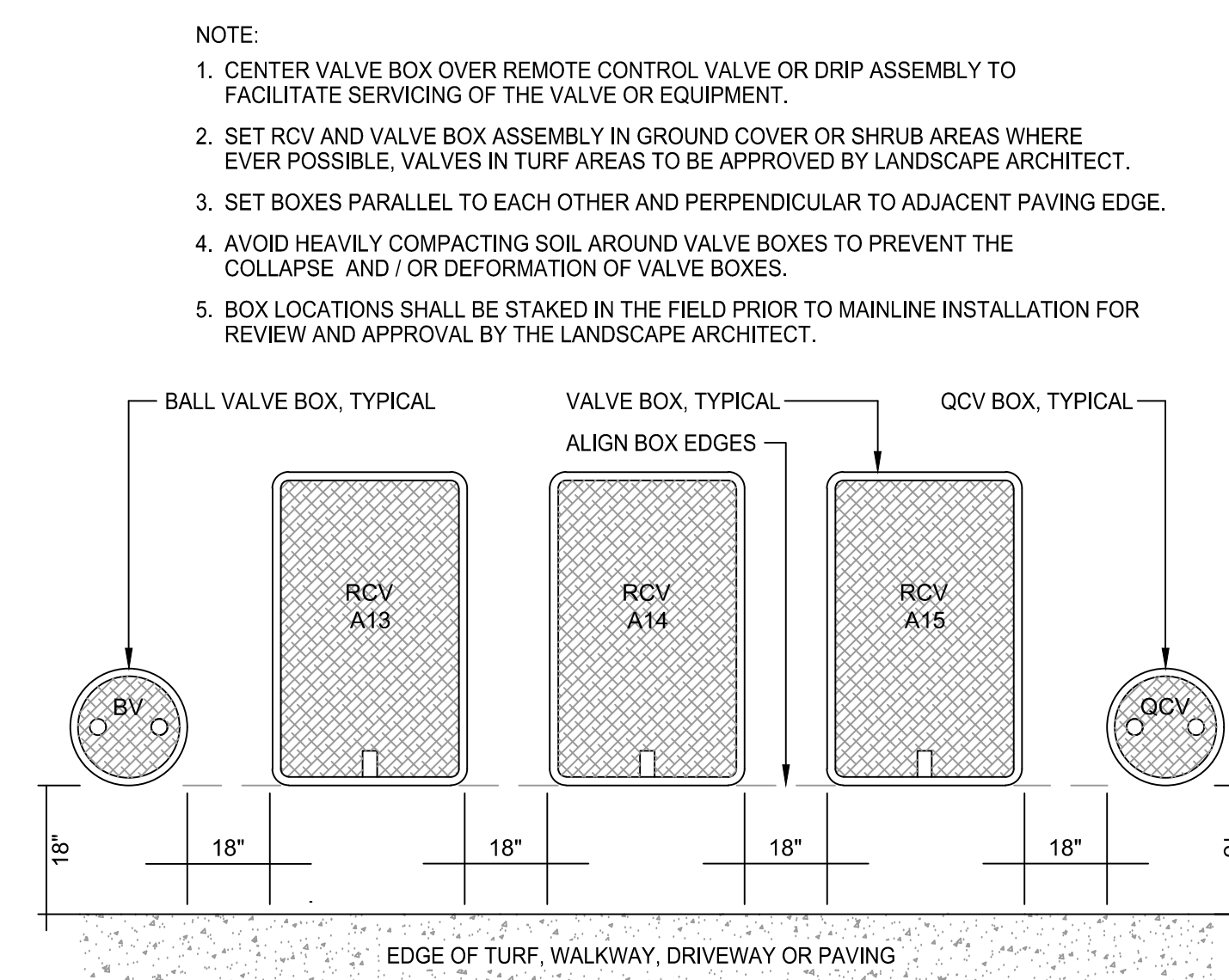


SECTION VIEW - N.T.S.



NOTE:
WIRE CONNECTOR SHALL BE A 3M DB9B-4 DIRECT BURY SPLICE KIT (U.L. APPROVED). KIT SHALL INCLUDE A SCOTCHLOK Y SPRING CONNECTOR, A POLYPROPYLENE TUBE AND A WATERPROOF SEALING GEL. TUBE SHALL BE SUPPLIED PREFILLED WITH GEL.
DIRECT BURY SPLICE KIT SHALL BE USED TO ELECTRICALLY CONNECT 2 - 3 #14 OR 2 #12 PRE-STRIPPED COPPER WIRES. LARGER WIRES OR GREATER QUANTITIES OF WIRES SHALL REQUIRE A LARGER APPROVED WIRE CONNECTION.

SECTION VIEW - N.T.S.



- NOTE:**
1. CENTER VALVE BOX OVER REMOTE CONTROL VALVE OR DRIP ASSEMBLY TO FACILITATE SERVICING OF THE VALVE OR EQUIPMENT.
 2. SET RCV AND VALVE BOX ASSEMBLY IN GROUND COVER OR SHRUB AREAS WHERE EVER POSSIBLE. VALVES IN TURF AREAS TO BE APPROVED BY LANDSCAPE ARCHITECT.
 3. SET BOXES PARALLEL TO EACH OTHER AND PERPENDICULAR TO ADJACENT PAVING EDGES.
 4. AVOID HEAVILY COMPACTING SOIL AROUND VALVE BOXES TO PREVENT THE COLLAPSE AND / OR DEFORMATION OF VALVE BOXES.
 5. BOX LOCATIONS SHALL BE STAKED IN THE FIELD PRIOR TO MAINLINE INSTALLATION FOR REVIEW AND APPROVAL BY THE LANDSCAPE ARCHITECT.

NOTE:
VALVE BOXES SHALL BE INSTALLED IN SHRUB AND GROUND COVER AREAS. NO VALVES SHALL BE INSTALLED IN TURF AREAS WITHOUT PRIOR APPROVAL BY THE LANDSCAPE ARCHITECT.

PLAN VIEW - N.T.S.

P SLEEVE INSTALLATION

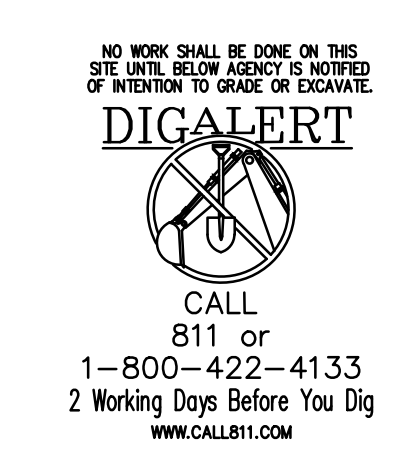
Q WIRE CONNECTION

R VALVE BOX LAYOUT

I HAVE COMPLIED WITH THE CRITERIA OF THE IRRIGATION GUIDELINES AND APPLIED THEM ACCORDINGLY FOR THE EFFICIENT USE OF WATER IN THE IRRIGATION DESIGN PLAN



BENCH MARK:
No. QY12552 ELEV. 54.821'
DATE ADJ. 2013 QUAD. TORRANCE



REVISIONS		
No.	DESCRIPTION	DATE
1	ISSUE FOR BID	04/10/24



811 W 7th Street, 8th Floor
Los Angeles, California
90017-9419
United States
www.swagroup.com
+1.213.236.9090

PLANS PREPARED BY: Ryan McKay
PLANS CHECKED BY: Jeremy Klemic

Job Number
HRBT203
Date
04/10/2024

CITY OF HERMOSA BEACH
PUBLIC WORKS DEPARTMENT

RECOMMENDED FOR PERMIT ISSUANCE:

CIP 194, 502 & 604
GREENBELT PEDESTRIAN TRAIL

IRRIGATION DETAILS

FILE NUMBER
23-003

I-04

SHT. 22 OF 22

FOR IRRIGATION PLAN SEE SHEET I-01
FOR IRRIGATION LEGEND SEE SHEET I-02
FOR IRRIGATION DETAILS SEE SHEETS I-03 AND I-04.

YING-YU HUNG, LANDSCAPE ARCHITECT
#4374

DATE
04/10/2024

4-30-24 DATE



**CITY OF HERMOSA BEACH
CONTRACT DOCUMENTS AND SPECIFICATIONS
FOR**

**CIP NO. 502 GREENBELT PEDESTRIAN TRAIL
CIP NO. 604 CITY WIDE ADA IMPROVEMENTS
CIP NO. 194 ANNUAL STRIPING IMPROVEMENTS**

APRIL 2024

NOTICE INVITING BIDS

Notice is hereby given that the City of Hermosa Beach will receive electronic bids until **2:00 PM on MONDAY, MAY 20, 2024**, at which time the electronic bids will be publicly opened at the City Council Chambers at 1315 Valley Drive, Hermosa Beach, CA 90254 and posted on Planet Bids for **CIP No. 502 Greenbelt Pedestrian Trail, CIP No. 604 City Wide ADA Improvements, and CIP No. 194 Annual Striping Improvements.**

The combined project includes, but is not limited to, construction of an ADA compliant stabilized decomposed granite (DG) trail with landscaping along the Greenbelt from Pier Avenue to 8th Street, between Valley Drive and Ardmore Ave, removal and installation of trees, construction of ADA curb ramps and sidewalk, installation of City furnished Rapid Flashing Rectangular Beacon, installation of City furnished fitness equipment and pavement striping.

No Pre-Bid Meeting. Contractors are encouraged to walk the job site.

The engineer's cost estimate for the project is \$900,000. License requirement is a valid **State of California Contractors License Class "A" OR Class "C-27" AND Class "C-8"**.

The duration of the project is **50 working days**. All bids must be submitted electronically on Planet Bids Portal, accessible through the City's webpage at <https://www.hermosabeach.gov/our-government/city-clerk/bids-and-proposals> where you must first register as a vendor through our Planet Bids Portal. Contract Documents, plans, and specifications will be available for review on Planet Bids. All relevant materials shall be obtained from the link above.

Each proposal must be accompanied by a cash deposit, a certified or cashier's check, or a Bidder's bond, made payable to the City of Hermosa Beach, in an amount not less than 10 percent of the total bid submitted.

The successful Bidder will be required to furnish a faithful performance bond in the amount of 100 percent of the Contract price, a payment bond in the amount of 100 percent of the Contract price, and a warranty bond all in the attached form satisfactory to the City Attorney. The successful Bidder will also be required to pay the State of California prevailing wage scale as determined by the Department of Industrial Relations, available at <https://www.dir.ca.gov/OPRL/DPreWageDetermination.htm>.

The Contractor must be registered with the Department of Industrial Relations at the time of bid. Contractor's registration information is available at: <https://www.dir.ca.gov/Public-Works/Contractor-Registration.html>

The City reserves the right to reject any or all bids and to waive any informality or irregularity in any bid received and to be the sole judge of the merits of the respective bids received. The award, if made, will be made to the lowest responsive and responsible Bidder.

Please submit any questions related to this bid on Planet Bids portal no later than **5:00 PM on THURSDAY, MAY 9, 2024.**

TABLE OF CONTENTS

**CIP NO. 502 GREENBELT PEDESTRIAN TRAIL
CIP NO. 604 CITY WIDE ADA IMPROVEMENTS
CIP NO. 194 ANNUAL STRIPING IMPROVEMENTS**

I. PROJECT DESCRIPTION AND UNDERSTANDING	5
II. NOTICE TO BIDDERS	6
III. INSTRUCTION TO BIDDERS	9
IV. BID DOCUMENTS.....	18
A. PROPOSAL	18
B. BID SCHEDULE	19
C. BID BOND	22
D. BIDDER'S ASSURANCE.....	26
E. BIDDER'S DECLARATION.....	27
F. CERTIFICATE OF NON-DISCRIMINATION BY CONTRACTORS.....	29
G. CERTIFICATION OF PRINCIPAL.....	30
H. DECLARATION OF ELIGIBILITY TO CONTRACT.....	31
I. NON-COLLUSION DECLARATION	32
J. REFERENCES OF WORK.....	33
K. SUBCONTRACTORS LIST.....	35
L. IRAN CONTRACTING ACT CERTIFICATION.....	38
M. PUBLIC WORKS CONTRACTOR REGISTRATION CERTIFICATION.....	39
V. CONTRACT DOCUMENTS.....	40
A. CONTRACT AGREEMENT	41
B. AGREEMENT OF INDEMNIFICATION	59
C. EQUALS	61
D. FAITHFUL PERFORMANCE BOND	62
E. PAYMENT BOND (LABOR AND MATERIALS)	69
F. GUARANTEE TO THE CITY OF HERMOSA BEACH	75
G. GENERAL COMPREHENSIVE LIABILITY ADDITIONAL INSURED ENDORSEMENT	76
H. AUTOMOBILE LIABILITY ADDITIONAL INSURED ENDORSEMENT	78
I. INSTRUCTIONS FOR COMPLETING, EXECUTING, AND SUBMITTING EVIDENCE OF INSURANCE TO THE OWNER	81
J. WORKER'S COMPENSATION INSURANCE CERTIFICATE.....	83
K. SUPPLEMENTAL INFORMATION TO BE COMPLETED BY PRINCIPAL.....	84
L. W9 FORM.....	85

VI. SPECIAL PROVISIONS

VII. TECHNICAL PROVISIONS

EXHIBIT "A" - SOLID WASTE REPORTING

EXHIBIT "B" - CONSTRUCTION NOTICE TEMPLATE

EXHIBIT "C" - EXERCISE EQUIPMENT SET

EXHIBIT "D" - BENCH

City of Hermosa Beach

**CIP NO. 502 GREENBELT PEDESTRIAN TRAIL
CIP NO. 604 CITY WIDE ADA IMPROVEMENTS
CIP NO. 194 ANNUAL STRIPING IMPROVEMENTS**

I. PROJECT DESCRIPTION AND UNDERSTANDING

The combined project includes, but is not limited to, construction of an ADA compliant stabilized decomposed granite (DG) trail with landscaping along the Greenbelt from Pier Avenue to 8th Street, between Valley Drive and Ardmore Ave, removal and installation of trees, construction of ADA curb ramps and sidewalk, installation of City furnished Rapid Flashing Rectangular Beacon, installation of City furnished fitness equipment and pavement striping.

Contractor will need to secure entire work site with temporary construction fencing during the duration of the project, closing access to pedestrians.

II. NOTICE TO BIDDERS

Prospective Bidder: To be considered as a responsive Bidder you must register on Planet Bids portal through the city's website at <https://www.hermosabeach.gov/our-government/city-clerk/bids-and-proposals>.

Pre-bid Meeting: There will be no pre-bid meeting. Each Bidder is strongly encouraged to walk the job site. Each prospective Bidder shall familiarize itself with the plans and work site(s) to satisfy itself that it has the abilities and resources to complete the work.

Bid Documents: Bid Documents, including but not limited to specifications and proposal forms, will be available for download on Planet Bids Portal, accessible through the webpage at:

<https://pbsystem.planetbids.com/portal/51313/bo/bo-search>.

To the extent required by Section 20103.7 of the Public Contract Code, upon request from a Contractor plan room service, the City shall provide an electronic copy of the Contract Documents at no charge to the Contractor plan room.

It is the responsibility of each prospective Bidder to download and print all bid documents for review and to verify the completeness of Bid Documents before submitting a bid. The City does not assume any liability or responsibility based on any defective or incomplete copying, excerpting, scanning, faxing, downloading, or printing of the Bid Documents.

Questions: All questions regarding this bid shall be submitted through Planet Bids no later than **MAY 9, 2024 at 5:00 PM**. Proposers shall not contact City personnel or Elected Officials with any questions or clarifications concerning this Invitation for Bids other than through Planet Bids. Any City response for this Bid that is not posted through Planet Bids is unauthorized and will be considered invalid.

Submittal of Bids: Electronic bids shall be submitted through Planet Bids until **MAY 20, 2024, at 2:00 PM** at which time they will be publicly opened and read in the City Council Chambers at 1315 Valley Drive, Hermosa Beach, CA. All bids shall be valid for a period of 90 calendar days after the bid opening date.

Bidder's Guarantee: Each bid must be accompanied by cash or a certified check or a cashier's check or Bidder's bond made payable to the City of Hermosa Beach for an amount equal to at least ten percent (10%) of the bid price. In accordance with Public Contract Code Section 20170, the Bidder's Bond shall be issued by a surety company admitted to do business in the State of California. Further, in accordance with Public Contract Code Section 20172, such guarantee shall be forfeited should the Bidder to whom the Contract is awarded fail to enter into the Contract within the specified time.

Payment, Performance Bonds: The successful Bidder will be required to furnish a Faithful Performance Bond and a Labor and Material Payment Bond, each in an amount equal to one hundred percent (100%) of the Contract Price. Each bond shall be in the forms set forth herein and shall be secured from a surety company that meets all State of California bonding

requirements, as defined in California Code of Civil Procedure Section 995.120, and that is a California admitted surety insurer.

Substitution of Securities: Pursuant to Section 22300 of the Public Contract Code of the State of California, the successful Bidder may substitute certain securities for funds withheld by the City to ensure its performance under the Contract.

Contractor License: In accordance with provisions of Section 3300 of the California Public Contract Code, City of Hermosa Beach has determined that the **Contractor shall possess a valid “A” California Contractor’s License OR a valid “C-27” California Contractor’s License AND a valid “C-8” California Contractor’s License.** Failure to possess such license may render the bid as non-responsive and bar the award of the Contract to that non-responsive Bidder.

Prevailing Wages: Pursuant to Labor Code Section 1773, the Contractor shall pay the prevailing rate of per diem wages and the prevailing wage rate for holiday and overtime work applicable in Los Angeles County from the Director of the Department of Industrial Relations for each craft, classification, or type of worker needed to execute this Contract. A copy of these prevailing wage rates may be obtained by visiting: <https://www.dir.ca.gov/Public-Works/Prevailing-Wage.html>

In addition, a copy of the prevailing rate of per diem wages will be made available at the City’s Public Works Department upon request. The successful Bidder shall post a copy of the prevailing wage rates at each job site. It shall be mandatory for the Bidder to whom the Contract is awarded, and for any subcontractors, to comply with all Labor Code provisions, which include but are not limited to the payment of not less than the said specified prevailing wage rates to all workers employed by them in the execution of the Contract, employment of apprentices, hours of labor, and debarment of Contractors and subcontractors.

Contractor’s Registration with the Department of Industrial Relations (DIR): The Bidder’s attention is directed to Labor Code Section 1725.5, which provides that a Contractor or subcontractor shall not be qualified to bid on, be listed in a Bid proposal, subject to the requirements of Public Contract Code Section 4104, or engage in the performance of any Contract that is subject to Labor Code Section 1720 et seq., unless currently registered and qualified to perform public work pursuant to Labor Code Section 1725.5. No Bid will be accepted, nor any Contract entered into without proof of the Contractor’s and subcontractors’ current registration with the DIR to perform public work. If awarded a Contract, the Bidder and its subcontractors, of any tier, shall maintain active registration with the DIR for the duration of the Project.

Compliance Monitoring and Enforcement: Contractor’s performance of the Work described in the Notice Inviting Bids is subject to compliance monitoring and enforcement by the California Department of Industrial Relations. In bidding on this Project, it shall be the Bidder’s sole responsibility to evaluate and include the cost of complying with all labor compliance requirements under this Contract and applicable law in its Bid.

Award of Contract: The City shall award the Contract for the Project to the lowest responsive, responsible Bidder as determined by the City from the total base bid. City reserves

the right to reject any or all bids or to waive any irregularities or informalities in any bids or in the bidding process.

III. INSTRUCTION TO BIDDERS

Form of Proposal: The proposal shall be fully executed and submitted on the forms provided by the City. Proposal forms can be obtained from Planet Bids.

Signatures: All places where signatures are required must be fully executed.

Proposal: Documents which shall be signed and returned to the City with the Bid Proposal are:

- A. Proposal
- B. Bid Schedule
- C. Bid Bond
- D. Bidder's Assurance
- E. Bidder's Declaration
- F. Certificate of Non-Discrimination by Contractors
- G. Certification of Principal
- H. Declaration of Eligibility to Contract
- I. Non-Collusion Declaration
- J. References for Work
- K. SubContractor List
- L. Iran Contracting Act Certification
- M. Public Works Contractor Registration Certification
- N. Addenda (if applicable)

Contract: Documents which shall be signed and returned to the City by the successful Bidder within 10 days of notification of intent to award Contract:

- A. Contract Agreement
- B. Agreement of Indemnification and Hold Harmless and Waiver of Subrogation and Contribution
- C. Equals
- D. Faithful Performance Bond
- E. Payment Bond (Labor and Materials)
- F. Guarantee to the City of Hermosa Beach
- G. General Comprehensive Liability Additional Insured Endorsement
- H. Automobile Liability Additional Insured Endorsement
- I. Instructions for Completing, Executing, and Submitting Evidence of Insurance to the Owner
- J. Worker's Compensation Insurance Certificate
- K. Supplemental Information to be Completed by Principal
- L. W-9 Form
- M. Copy of City Business License

Delivery of Proposal: Each Bid prepared by Bidder shall be completed in itself and shall be submitted electronically through Planet Bids.

Prevailing Wage: In accordance with the provisions of Section 1770 et seq., of the Labor Code, the Director of the Department of Industrial Relations of the State of California has ascertained the general prevailing rate of wages which is the minimum amount which shall be paid to all workers employed to perform the work. A copy of the determination is on file in the office of the City Clerk and is hereby incorporated herein and made a part hereof as though fully set forth herein.

A copy of the determination will be made available to any interested person upon request and shall be posted at the job site.

Overtime: As per Labor Code Section 1810 et seq., eight (8) hours is the legal working day. The Contractor shall pay overtime for each worker who works in excess of the legal working day.

Payment: Refer to the Contract Agreement for payment information. Contractor shall submit progress payment requests on City approved form.

Required Bonds: Prior to the execution of the Contract, the successful Bidder shall file with the City surety bonds in the amounts and for the purposes noted below. The surety insurer shall be a California admitted surety insurer, as defined in Code of Civil Procedure section 995.120. Contractor shall pay all premiums and costs thereof and incidental thereto.

Per Civil Code section 3247, a Payment Bond is required if the Contract is for more than \$25,000.

The successful Bidder shall give the following surety bonds with good and sufficient sureties:

"Payment Bond – Labor and Materials" shall be so conditioned as to insure to the benefit of persons furnishing materials for or performing labor upon the work. Bond to be in the sum of not less than 100% of the Contract price to assure the claims of materialmen supplying materials to Contractor, and for payment to laborers and subcontractors employed on the project.

"Faithful Performance Bond" in the sum of not less than 100% of the Contract price to assure the faithful performance of the Contract; shall be conditioned as to assure the faithful performance by the Contractor of all work under said Contract, in a manner that is satisfactory and acceptable to the City; that all materials and workmanship supplied by him will be free from original or developed defects; and that should original or developed defects or failures appear, the Contractor shall, at his own expense, make good such defects and failures and make all replacements and adjustments required, within a reasonable time after being notified by the City to do so, and to the satisfaction of the City.

Rejection of Proposals: The City reserves the right to reject any and all proposals and to waive any minor or technical discrepancies or irregularities. Proposals may be rejected if they show any alteration of form, additions not called for, conditional bids, incomplete bids, erasures, or irregularities of any kind.

Agents: When proposals are signed by an agent, other than the officer or officers of a corporation authorized to sign Contracts on its behalf or a member of a partnership, a "Power of Attorney" must be on file with the City prior to opening bids or shall be submitted with the proposal; otherwise, the proposal will be rejected as irregular and unauthorized.

Withdrawal of Proposals: Any bid may be withdrawn at any time prior to the time fixed in the public notice for the opening of bids only by written request for the withdrawal of the bid filed with the City Engineer. The request shall be executed by the Bidder or their duly authorized representative. The withdrawal of a bid does not prejudice the right of the Bidder to file a new bid. Bids are opened exactly at the time fixed in the public notice for opening bids. A bid will not be received after that time, nor may any bid be withdrawn after that time. No Bidder may withdraw his bid within ninety (90) days after the actual date of the opening thereof.

Insurance: Without limiting Contractor's indemnification, Contractor shall maintain in force at all times during the performance of this agreement the insurance provisions set out in the Contract Agreement.

City Business License and Permits: The successful Bidder shall obtain a valid City of Hermosa Beach Business License prior to commencing work under this Contract.

The successful Bidder will be required to obtain City Right of Way Permit to work in public right-of-way, issued at no fee for the project.

Increased or Decreased Quantities: The City reserves the right to increase, or decrease, or to entirely eliminate items or portions of items from work if found desirable or expedient.

Approximate Estimate: The quantities in the Bid Schedule are approximate only, being given as a basis for the comparison of bids. The City does not, expressly or by implication, agree that the actual amount of work will correspond therewith. The Contractor shall verify in the field the accuracy of the estimated quantities.

Examination of Plans, Specifications, Contract, and Site of Work: The Bidder shall examine carefully the site of the work contemplated, the Plans and Specifications, and the proposal and Contract forms therefor. The submission of a bid shall be conclusive evidence that the Bidder has investigated and is satisfied as to the conditions to be encountered, as to the character, quality and scope of work to be performed, the quantities of materials to be furnished, and as to the requirements of the proposal, Plans, Specifications, and the Contract.

Where the City may have made investigations of subsurface conditions in areas where work is to be performed under the Contract, such investigations are made only for the purpose of study and design. Where such investigations have been made, Bidders or Contractors may, upon written request, inspect the records of the City as to such investigations subject to and upon the conditions hereinafter set forth. Such inspection of records may be made at the office of the City Engineer.

The records of such investigations are not a part of the Contract and are shown solely for the convenience of the Bidder or Contractor. It is expressly understood and agreed that the City assumes no responsibility whatsoever in respect to the sufficiency or accuracy of the investigations thus made, the records thereof, or of the interpretations set forth therein or made by the City in its use thereof and there is no warranty or guaranty, either expressed or implied, that the conditions indicated by such investigations or records thereof are representative of those existing throughout such areas, or any part thereof, or that unlooked for developments may not occur, or that materials other than, or in proportions different than these indicated, may not be encountered.

Bidders shall satisfy themselves by personal examination of the locations of the proposed work, and by such other means as they may choose as to actual conditions and requirements and as to the accuracy of the quantities stated in the Proposal forms. Information derived from the maps, plans, specifications, profiles, or drawings, or from the Engineer or his assistants (or the Architects or their assistants), shall not relieve the Bidder of this responsibility, and the interpretation of the data disclosed by borings or other preliminary investigations is not guaranteed nor is any liability assumed by the City.

If a prospective Bidder is in doubt as to the true meaning or intent of any part of the Contract Documents including the Specifications, or discovers discrepancies in, or omissions from, the Specifications or Drawings, they may submit to the Engineer a written request for an interpretation or a correction thereof via Planet Bids. Interpretations or corrections of the Contract Documents including the Specifications and Drawings, shall be made only by addendum duly issued by the Engineer, and a copy of such addendum will be uploaded on Planet Bids and such addendum shall be considered a part of and incorporated in the Contract Documents.

Relief of Bidders: If the Bidder claims a mistake was made in their bid, the Bidder shall give the City written notice within five (5) days after the opening of the bids of the alleged mistake, specifying in the notice in detail how the mistake occurred.

Disqualification of Bidders: More than one proposal from an individual, firm, partnership, corporation, or combination thereof under the same or different names will not be considered. Reasonable grounds for believing that any individual, firm, partnership, corporation, or combination thereof is interested in more than one proposal for the work contemplated may cause the rejection of all proposals in which such individual, firm, partnership, corporation, or combination thereof is interested. If there is reason for believing that collusion exists among the Bidders, any or all proposals may be rejected. Proposals in which the prices obviously are unbalanced due to mathematical errors may be rejected.

Award of Contract: The award of the Contract, if it be awarded, will be to the lowest responsible Bidder whose proposal complies with all of the requirements prescribed. Such award, if made, will normally be made within in ninety (90) calendar days of the opening of the proposals.

If the lowest responsible Bidder refuses or fails to execute the Contract, the City may award the Contract to the second lowest responsible Bidder. If the second lowest responsible Bidder refuses or fails to execute the Contract, the City may award the Contract to the third lowest responsible Bidder.

Execution of Contract: The Contract shall be signed by the successful Bidder and returned, together with the Contract bonds, insurance endorsements and certificates, and all other required documents within ten (10) business days after the Bidder has received notice of intent to award.

Failure to Execute Contract: Failure of the lowest responsible Bidder, the second lowest responsible Bidder, or the third lowest responsible Bidder to execute the Contract and file acceptable bonds as provided herein within ten (10) business days after such Bidder has received notice that the Contract has been awarded to them shall be just cause for the forfeiture

of the proposal guaranty. The successful Bidder may file with the City Engineer a written notice, signed by the Bidder, or his authorized representative, specifying that the Bidder will refuse to execute the Contract if presented to him. The filing of such notice shall have the same force and effect as the failure of the Bidder to execute the Contract and furnish acceptable bonds within the time herein above prescribed.

Return of Proposal Guaranties: Within ten (10) business days after the award of the Contract to the lowest responsible Bidder, the City will return the proposal guaranties, other than Bidder's bonds, accompanying such of the proposals as are not to be further considered in making the award. Retained proposal guaranties will be held until the Contract has been finally executed, after which all proposal guaranties, except Bidder's bonds and any guaranties which have been forfeited, will be returned to the respective Bidders whose proposals they accompany.

Qualifications of Bidders: Each Bidder shall be skilled and regularly engaged in the general class or type of work called for under the Contract. A statement setting forth their experience shall be submitted by each Bidder on the References of Work form provided herein.

Each Bidder shall possess valid active Contractor's License issued by the Contractor's State License Board at the time their bid is submitted. The class of license shall be applicable to the work specified in the Contract. Each Bidder shall also have no less than five (5) years' experience in the magnitude and the character of the work bid.

Pursuant to section 1103 of the Public Contract Code, City staff has determined that the following non-exhaustive experience is reasonably necessary to satisfactorily perform the public works Contract:

The Contractor shall have a minimum of three (3) projects of similar type of construction and magnitude with other public agencies within the past five (5) years.

The Contractor shall have been in the business under the same name and California Contractor's License for a minimum of five (5) continuous years prior to the bid opening date for this project. The license used to satisfy this requirement shall be of the same type as that required by the Contract.

The Contractor shall perform above 50% of the Contract with its own forces.

Bidders must be thoroughly competent and capable of satisfactorily performing the work covered by the proposal. They shall have had project experience similar to the project scope of work. When requested, they shall furnish such statements relative to previous experience on similar work, the plan or procedure proposed, and the organization, machinery, plant, and other equipment available for the contemplated work, and the financial condition and resources of the Bidder, as may be deemed necessary by the City Engineer in determining such competence and capability.

The City of Hermosa Beach will not enter into a Contract with any Bidder who is not properly licensed to do the work of this Contract under the provisions of Section 7000 et seq., of the Business and Professions Code, unless particularly exempted by the terms thereof. A bid by a Contractor who is not properly licensed shall be considered non-responsive and will be rejected. The Contractor must hold all sub-Contractors to these same Contract requirements.

The sheet for Bidder's signature in the Bid Proposal shall clearly show the Contractor's name, address, telephone number, State of California Contractor's license number, classification, and date of expiration.

Completeness of Bids: Bids are required for the entire work. The amount of the bid for comparison purposes will be the total bid price of all items. The Bidder shall set forth the bid price for each item in the respective spaces provided for these purposes.

In case of discrepancy between the unit price and the total set forth for the item, the unit price shall prevail, provided, however, if the amount set forth as a unit price is ambiguous, unintelligible or uncertain for any cause, or is omitted, or in the case where the unit price is the same amount as the entry in the "Total" column, then the amount set forth in the "Total" column for the item shall prevail in accordance with the following:

- a) As to lump sum items, the amount set forth in the "Total" column shall be the unit price.
- b) As to unit price items, the amount set forth in the "Total" column shall be divided by the estimated quantity for the item and the price thus obtained shall be the unit price.

The City may waive technical or non-substantive inconsistencies in any bid.

Non-discrimination: Pursuant to the provisions of 31 CFR, Part 51, Section 51.55, the Revenue Sharing Act, notice is hereby given of the following policy, effective immediately:

The City of Hermosa Beach does not discriminate on the basis of handicapped status in admission or access to, or treatment of, or employment in, its programs and activities. The office that will coordinate compliance is that of Human Resources.

Workers' Compensation Insurance: Before execution of this Agreement by the City, the Contractor shall file with the City's Risk Manager the following signed certification:

"I am aware of, and will comply with, Section 3700 of the Labor Code, requiring every employer to be insured against liability for Workers' Compensation or to undertake self-insurance before commencing any of the work."

The Contractor shall also comply with Section 3700 of the Labor Code by securing, paying for and maintaining in full force and effect for the duration of this Agreement, complete Workers' Compensation Insurance, and shall furnish a Certificate of Insurance to the City's Risk Manager reflecting such insurance before this Agreement becomes effective. Contractor shall fully indemnify and hold harmless City, its attorneys, agents, officers, and employees for any claims in law or equity occasioned by the failure of Contractor to comply with the terms of this section. Every Workers' Compensation Insurance policy required hereunder, shall bear an endorsement, or shall have attached a rider, providing that in the event of expiration or proposed cancellation of such policy for any reason whatsoever, the City's Risk Manager shall be notified of such action by registered mail, postage prepaid, return receipt requested, at least 30 days before such expiration or cancellation becomes effective.

Indemnification: Bidders are instructed to refer to the Contract Agreement.

Subcontractors: Bidders must list the name, address of the place of business, Contractor license number, and DIR registration number for each subcontractor to be responsible for more

than 1/2 of 1% of the total bid, and the portion of the job for which that subcontractor is responsible. Only one subcontractor may be listed for each portion of the job.

Unfair Business Practices Claims: In entering into a public works Contract or a subcontract to supply goods, services, or materials pursuant to a public works Contract, the Contractor or sub-Contractor offers and agrees to assign to the awarding body all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Section 15) or under the Cartwright Act (Chapter 2, (commencing with Section 16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, services, or materials pursuant to the public works Contract or the subcontract. This assignment shall be made and become effective at the time the awarding body renders final payment to the Contractor without further acknowledgment by the parties. (Section 7103.5, California Public Contract Code.)

Bidder Registration Requirement: Pursuant to Labor Code sections 1725.5 and 1771.1, all Contractors and subcontractors that wish to bid on, be listed in a bid proposal, or enter into a Contract to perform public work must be registered with the Department of Industrial Relations (DIR). No bid will be accepted, nor any Contract entered into without proof of the Contractor's and subcontractors' current registration with the DIR to perform public work. If awarded a Contract, the Bidder and its subcontractors, of any tier, shall maintain active registration with the DIR for the duration of the Project. To this end, Bidder shall sign and submit with its bid proposal the Public Works Contractor Registration Certification on the form provided, attesting to the facts contained therein. Failure to submit this form may render the bid non-responsive. In addition, each Bidder shall provide the registration number for each listed subcontractor in the space provided in the Subcontractors List form.

Claim Procedures: Bidders are instructed to refer to the Contract Documents, including by way of illustration and not by limitation the Contract Agreement.

Protest Procedures: Bidders may file a "protest" of a bid proposal with the City's City Manager. In order for a Bidder's protest to be considered valid, the protest must:

- A. Be filed in writing within five (5) calendar days after the bid opening date;
- B. Clearly identify the specific irregularity or accusation;
- C. Clearly identify the specific City staff determination or recommendation being protested;
- D. Specify in detail the grounds for protest and the facts supporting the protest;
- E. Include all relevant supporting documentation with the protest at time of filing; and
- F. Be transmitted concurrently to all other parties with a direct financial interest that may be adversely affected by the outcome of the protest. Such parties shall include all other Bidders or proposers who appear to have a reasonable prospect of receiving an award depending upon the outcome of the protest.

If the protest does not comply with each of these requirements, the City may reject the protest with or without further review.

If the protest is timely and complies with the above requirements, the City Manager, or other designated City staff member, shall review the protest, any response from the challenged Bidder(s), and all other relevant information, and will provide a written decision to the protestor. The City Manager or designee shall have up to ten calendar days to decide whether to approve or reject the protest. The written decision of the City Manager or designee on the protest shall be served upon the protesting Bidder and any Bidder subject to the protest within fourteen (14) calendar days of receipt of the bid protest. The City Manager or designee may extend the ten (10) calendar days if necessary, to review additional information requested from any Bidder.

If the protester wishes to further contest the protest, it shall appeal this decision to the City Council by filing a statement of appeal with the City Clerk within five (5) days of the issuance of the City Manager's decision. Said statement of appeal shall include all information required of the original bid protest, as well as a short and plain statement setting forth why the protester disputes the City Manager's decision and the legal and factual basis for such dispute. Any person or entity may present a formal protest to the City with respect to solicitations being conducted by staff.

A Bidder whose bid has been protested by another Bidder may submit to the City Manager a written response to the protest by email or by personal delivery or overnight mail to City Hall, 1315 Valley Drive, Hermosa Beach, California 90254, so that it is received by the City no later than seven calendar days after the protest has been served by the protesting Bidder.

1. Definitions

- a. "Bidder" means any person or firm providing a timely, written response to the City solicitation.
- b. "Bid Protest" means any protest with regard to the response submitted by another Bidder.
- c. "Response" means the written response to the City solicitation provided by a person or firm.
- d. "Solicitation Protest" means a statement of protest, dispute, challenge, disagreement, disapproval or other objection regarding documents, determinations or actions taken or contemplated by the City with respect to a solicitation.
- e. "Solicitation" means the document by which the City identifies goods, equipment, services, or public construction projects for which it seeks a response.

2. Format – The protest must be in writing and include the following information at a minimum:

- a. The name, address, and phone number of the protester, or the authorized representative of the protester;
- b. The signature of the protester or authorized representative of the protester;
- c. The project number and title under which the protest is submitted;

- d. A detailed description of the legal and/or factual grounds for the protest and all supporting documentation. For protests containing elements not based on publicly released information the protest must contain documentation clearly showing the date on which the protester received the information; and
 - e. The form of relief requested.
3. State or Federal Funding

If the subject matter of the solicitation or project is receiving any state or federal funds which requires a protest procedure different than the procedures stated above, then that protest procedure shall control.

In the event there is any lawsuit filed against the City relating to any federally funded project, the City will provide prompt notice of that lawsuit to all agencies who participated in the funding of the project.

4. Mandatory Procedure

This administrative procedure and the time limits set forth herein are mandatory. Failure to comply with these mandatory procedures shall constitute a waiver of any right to pursue the bid protest, including filing a Government Code claim or any legal proceedings or actions.

IV. BID DOCUMENTS

A. PROPOSAL

**CIP NO. 502 GREENBELT PEDESTRIAN TRAIL
CIP NO. 604 CITY WIDE ADA IMPROVEMENTS
CIP NO. 194 ANNUAL STRIPING IMPROVEMENTS**

CONTRACTOR: _____ Date: _____

TO: City of Hermosa Beach
Honorable Mayor and Members of the City Council City Hall
Hermosa Beach, California, 90254

Ladies and Gentlemen:

The undersigned declares that he/she has carefully examined the location of the proposed work and that he/she has examined the Plans and Specifications, has read the Contract Documents, and hereby agrees to furnish all labor, materials, equipment, tools, transportation, and services to do all work required for:

**CIP NO. 502 GREENBELT PEDESTRIAN TRAIL
CIP NO. 604 CITY WIDE ADA IMPROVEMENTS
CIP NO. 194 ANNUAL STRIPING IMPROVEMENTS**

In accordance with the Plans and Specifications prepared by the Engineer, in accordance with the Special Provisions, the Contract Documents, and in accordance with the Standard Specifications for Public Works Construction 2021, Unified Building Code for Construction (current edition) (except Sections 1-9), and the requirements of the Engineer under said documents, for the prices shown herein.

The Contractor also certifies that they are registered with the Department of Industrial Relations.

All work shall be completed within 50 working days from the date the Notice to Proceed is issued by the Engineer.

Contractor Signature

PWCR Registration Number

B. BID SCHEDULE

CIP NO. 502 GREENBELT PEDESTRIAN TRAIL CIP NO. 604 CITY WIDE ADA IMPROVEMENTS CIP NO. 194 ANNUAL STRIPING IMPROVEMENTS

Item No.	Estimated Quantity	Unit	Description of Work	Payment Reference	Unit Price	Total
1	1	LS	Mobilization and Demobilization (5% max. of total bid schedule cost)	7-3.4	-	\$
2	101	LF	Remove Existing Curb	7-6.4		\$
3	24	LF	Remove Existing Curb and Gutter	7-6.4		\$
4	780	SF	Remove Existing PCC Sidewalk and Curb Ramp	7-6.4		\$
5	125	SF	Remove Existing Pavement Striping	7-6.4		\$
6	1420	SF	Remove Existing AC Pavement	7-6.4		\$
7	12,755	CF	Remove Existing Wood Chip Trail	7-6.4		\$
8	4,780	SF	Clearing and Grubbing	7-6.5		\$
9	1	LS	Remove Existing Fitness Equipment and Associated Footings	7-6.4	-	\$
10	6	EA	Remove Existing Tree (Including Stump and Roots)	7-6.6		\$
11	1	EA	Remove Existing Stump and Roots	7-6.6		\$
12	62	LF	Construct 6" Curb	7-6.7		\$
13	61	LF	Construct 6" PCC Curb and 24" PCC Gutter	7-6.8		\$
14	700	SF	Construct 4" PCC Sidewalk	7-6.9		\$
15	213	SF	Construct 4" PCC Curb Ramp	7-6.10		\$
16	76	SF	Furnish and Install Detectable Warning Surface	7-6.11		\$
17	1356	SF	Construct AC Pavement	7-6.12		\$
18	2	EA	Relocate Existing Sign and Signpost	7-6.13		\$

Item No.	Estimated Quantity	Unit	Description of Work	Payment Reference	Unit Price	Total
19	1	EA	Furnish and Install Sign Post	7-6.14		\$
20	10	EA	Furnish and Install Signs	7-6.14		\$
21	1	EA	Install City Furnished RRFB Model System on Existing Post	7-6.15		\$
22	1	EA	Install City Furnished RRFB Model System on New Post	7-6.15		\$
23	16	SF	Construct 4' Ribbon Gutter	7-6.16		\$
24	225	LF	4" ADA Parking Striping	7-6.17		\$
25	3	EA	Handicap Symbol Striping	7-6.17		\$
26	2	EA	"No Parking" Symbol Striping	7-6.17		\$
27	20	LF	Yield Line Striping	7-6.17		\$
28	120	SF	Crosswalk Striping (Continental)	7-6.17		\$
29	2	EA	Furnish and Install Wheel Stop	7-6.18		\$
30	2	EA	Adjust Water Valve to Grade	7-6.19		\$
31	1	EA	Adjust Backflow System to Grade	7-6.19		\$
32	24,566	SF	Construct Stabilized Decomposed Granite	7-6.20		\$
33	320	LF	Install Flush Redwood Header	7-6.21		\$
34	3,435	LF	Install Concealed Redwood Header	7-6.21		\$
35	2	EA	Salvage and Reinstall Existing Memorial Bench	7-6.22		\$
36	2	EA	Install City Furnished Memorial Bench	7-6.22		\$
37	2	EA	Salvage and Reinstall Existing Trash Can	7-6.22		\$
38	2	EA	Install City Furnished Fitness Equipment Set	7-6.22		\$
39	160	SF	Construct Cast in Place Concrete Paving for Benches	7-6.23		\$
40	12	EA	Install 48" Box Tree	7-6.24		\$
41	14	EA	Install 15 Gallon Shrub	7-6.24		\$
42	249	EA	Install 5 Gallon Shrub	7-6.24		\$
43	22	EA	Install 1 Gallon Shrub	7-6.24		\$

Item No.	Estimated Quantity	Unit	Description of Work	Payment Reference	Unit Price	Total
44	2,254	SF	Install Sod	7-6.24		\$
45	10,300	SF	Install Hydroseed	7-6.24		\$
46	1	LS	Adjust and Install New Existing Irrigation System	7-6.25	-	\$

(Total Bid in Figures) _____

(Total Bid in Words) _____

Contractor Name: _____

In case of any discrepancy between the words and the figures, the words shall prevail. If the unit price and the total amount for any item are not in agreement, the unit price alone shall be considered to represent the Bidder's intention and all totals will be corrected to conform thereto. Attached hereto is cash, a certified check, a cashier's check, or a Bidder's bond in the amount of

_____ Dollars, said amount being not less than ten (10) percent of the amount bid. It is agreed a portion equal to the difference between the low bid and second low bid shall be retained as liquidated damages by the City if the undersigned fails or refuses to execute the Contract and furnish the required bonds and certificates of insurance within the time provided.

Contractor Signature: _____

PW Registration #: _____

State License #: _____

Contractor Company Name: _____

C. BID BOND

KNOW ALL MEN BY THESE PRESENTS:

WHEREAS, _____, (hereinafter referred to as "Contractor") intends to submit a bid to the City of Hermosa Beach, California, a Municipal Corporation, for the performance of certain work as required in the City of Hermosa Beach **CIP NO. 502 GREENBELT PEDESTRIAN TRAIL, CIP NO. 604 CITY WIDE ADA IMPROVEMENTS, AND CIP NO. 194 ANNUAL STRIPING IMPROVEMENTS** said work being: **CIP NO. 502 GREENBELT PEDESTRIAN TRAIL, CIP NO. 604 CITY WIDE ADA IMPROVEMENTS, AND CIP NO. 194 ANNUAL STRIPING IMPROVEMENTS** as shown in this specification, and in compliance with the specifications therefore under an invitation of said City contained in a notice or advertisement for bids or proposals.

NOW, THEREFORE, we, the Contractor, as Principal, and _____ a corporation organized and existing under the laws of the State of _____, duly authorized to transact business under the laws of the State of California as Surety, are held and firmly bound unto the City of Hermosa Beach, as Obligee, in the sum of _____ Dollars (\$_____) lawful money of the United States of America, said sum being not less than ten percent (10%) of the bid amount for the payment of which sum well and truly to be made, the said Principal, and said Surety, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH THAT: If the bid of the said Principal is rejected by the said Obligee; or if the said Obligee shall accept the bid of the said Principal and said Principal shall enter into an Agreement with said Obligee in accordance with the terms of the bid, and shall give such bond or bonds as may be specified in the bidding or Contract Documents with good and sufficient surety for the faithful performance of such Agreement and for the prompt payment of labor and material furnished in the prosecution thereof; or in the event of the failure of said Principal to enter such Agreement and give such bond or bonds, if said Principal shall pay to said Obligee the difference not to exceed the penalty thereof between the amount specified in said bid and such larger amount for which said Obligee may in good faith Contract with another party to perform the work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect. In case suit is brought upon this bond, the court shall fix and award and the surety shall pay, in addition to the face amount hereof, costs and reasonable attorney's fees incurred by the City of Hermosa Beach in successfully enforcing said obligation.

IN WITNESS THEREOF, we have hereunto, set our hands and seals this _____ day of _____, _____.

Principal
By _____
Title _____

Surety

By

Title

Notary Acknowledgment

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA
 COUNTY OF _____

On _____, 20____, before me, _____, Notary Public,
 personally

appeared _____, who proved to me on the basis of satisfactory
 evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature of Notary Public _____

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

CAPACITY CLAIMED BY SIGNER

DESCRIPTION OF ATTACHED DOCUMENT

- .. Individual
- .. Corporate Officer

Title(s)	Title or Type of Document
<ul style="list-style-type: none"> .. Partner(s) .. Limited .. General .. Attorney-In-Fact .. Trustee(s) .. Guardian/Conservator .. Other: 	<hr/> Number of Pages <hr/> Date of Document

Signer is representing:
Name Of Person(s) Or Entity(ies)

Signer(s) Other Than Named Above

D. BIDDER'S ASSURANCE

**CIP NO. 502 GREENBELT PEDESTRIAN TRAIL
CIP NO. 604 CITY WIDE ADA IMPROVEMENTS
CIP NO. 194 ANNUAL STRIPING IMPROVEMENTS**

FROM:

Name of Bidder: _____

Business Address: _____

Telephone No: _____

TO:

Members of the City Council
c/o City Hall
City of Hermosa Beach, California

Members of the City Council:

Pursuant to your published Notice Inviting Bids for: **CIP NO. 502 GREENBELT PEDESTRIAN TRAIL, CIP NO. 604 CITY WIDE ADA IMPROVEMENTS, AND CIP NO. 194 ANNUAL STRIPING IMPROVEMENTS**

The undersigned declares that he/she has carefully examined the location of the proposed work; that he/she has carefully examined the Plans and Specifications, and read the accompanying Instructions to Bidders and hereby proposes to furnish all materials, machinery, tools, labor, and services and do all the work necessary to complete the project in accordance with said Plans and Specifications and other Contract Documents at the item prices on the bidding schedule.

BY: _____

TITLE: _____

E. BIDDER'S DECLARATION

CIP NO. 502 GREENBELT PEDESTRIAN TRAIL CIP NO. 604 CITY WIDE ADA IMPROVEMENTS CIP NO. 194 ANNUAL STRIPING IMPROVEMENTS

It is understood and agreed that:

1. The undersigned has carefully examined all documents which will form a part of the Contract; namely, the Notice Inviting Bids, the Instructions to Bidders, this Proposal, the Bid Bond, the Contract, the Faithful Performance Bond, Warranty Bond, the Payment Bond, the federal requirements, if any, the Plans and Specifications, the Special Provisions, and the Technical Provisions.
2. The undersigned has, by investigation at the site of the work and otherwise, satisfied himself as to the nature and location of the work and fully informed himself as to all conditions and matters, which can in any way affect the work or the cost thereof.
3. The undersigned fully understands the scope of work and has checked carefully all words and figures inserted in this Proposal and he further understands that the City will not be responsible for any errors or omissions in the preparation of the Proposal.
4. The undersigned agrees and acknowledges that he is aware of the provisions of Section 3700 of the Labor Code which requires every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that Code, and that the undersigned will comply with such provisions before commencing the performance of the Contract if it is awarded to the undersigned.

The undersigned will execute the Contract and furnish the required statutory bonds and certificates of insurance within the period of time specified in the Contract Documents.

The undersigned will begin work after award of Contract and a Notice to Proceed has been given as herein specified and will complete said work within the time specified in the Bidding Schedule.

5. The undersigned certifies that this Proposal is genuine and not sham or collusive, or made in the interest or on behalf of a person not herein named, and the undersigned has not directly or indirectly induced or solicited any other Bidder to put in a sham bid nor induced any other person, firm, or corporation to refrain from bidding.
6. The undersigned will accept an award and enter into a Contract for all work scheduled herein on which he puts in a bid. The awards for such work are to be entirely at the discretion of the Owner after evaluation of the bids as submitted. The undersigned agrees that the Owner shall recover or retain as liquidated damages an amount equal to the difference between the low bid and amount of the bid of the Bidder with whom the City enters into a Contract, and the surplus, if any, shall be returned to the lowest Bidder in accordance with the provisions of the Public Contract Code section 20174 in the event of his failure to execute a Contract and furnish required bonds and insurance therefor within the time provided.

7. This bid will not be withdrawn within a period of ninety (90) days after the date of its proper opening by the City.

8. The undersigned Bidder stated under penalty of perjury that the representations made in submitting this bid are, to the best of his/her knowledge, true, accurate, and complete.

Respectfully submitted,

_____ Contractor's Business Name	_____ Contractor Signature Title
_____ Business Address: Street	_____ By Title
_____ City State Zip Classification	_____ Contractor's License No. and
_____ Business Phone Number	_____ Date
_____ Name Title	_____ Residence: Street
_____ City State Zip	_____ Residence Phone Number

Note: If the bid is made by an individual, it must be signed with the full name of the Bidder, whose address must be given: if it is made by a firm, it must be signed in the co-partnership's name by a general partner thereof, who shall also sign his or her own name, and the name and full address of each member must be given; and if it is made by a corporation, it must be signed by a properly authorized officer, the corporate name shall be set forth, and the corporate seal shall be affixed.

F. CERTIFICATE OF NON-DISCRIMINATION BY CONTRACTORS

**CIP NO. 502 GREENBELT PEDESTRIAN TRAIL
CIP NO. 604 CITY WIDE ADA IMPROVEMENTS
CIP NO. 194 ANNUAL STRIPING IMPROVEMENTS**

As suppliers of goods or services to the City, the firm listed below certifies that it does not discriminate in its employment with regard to race, color, religion, sex, or national origin; that it is in compliance with all applicable federal, state, and local directives, and executive orders regarding non-discrimination in employment; and that it agrees to pursue positively and aggressively the principle of equal opportunity in employment.

We agree specifically:

1. To establish or observe employment policies which affirmatively promote opportunities for minority persons at all job levels.
2. To communicate this policy to all persons concerned, including all company employees, outside recruiting services, especially those serving minority communities, and to the minority communities at large.
3. To take affirmative steps to hire minority employees within the company.

FIRM _____

TITLE OF PERSON SIGNING _____

SIGNATURE _____

DATE _____

Please include any additional information available regarding equal opportunity employment programs now in effect within your company:

G. CERTIFICATION OF PRINCIPAL

**CIP NO. 502 GREENBELT PEDESTRIAN TRAIL
CIP NO. 604 CITY WIDE ADA IMPROVEMENTS
CIP NO. 194 ANNUAL STRIPING IMPROVEMENTS**

I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for Workers' Compensation or to undertake self-insurance in accordance with the provisions of that Code, and I will comply with such provisions before commencing the performance of the work of this Contract. (Section 1861, Labor Code.)

Signature: _____

Name: _____

Title: _____

Name of Company: _____

H. DECLARATION OF ELIGIBILITY TO CONTRACT
[Labor Code Section 1777.1; Public Contract Code Section 6109]

CIP NO. 502 GREENBELT PEDESTRIAN TRAIL
CIP NO. 604 CITY WIDE ADA IMPROVEMENTS
CIP NO. 194 ANNUAL STRIPING IMPROVEMENTS

The undersigned, a duly authorized representative of the Contractor, certifies and declares that:

1. The undersigned Contractor is aware of Section 1771.1 and 1777.7 of the California Labor Code, which prohibit a Contractor or subcontractor who has been found by the Labor Commissioner or the Director of Industrial Relations to be in violation of certain provisions of the Labor Code, from bidding on, being awarded, or performing work as a subcontractor on a public works project for specified periods of time.

2. The undersigned Contractor is not ineligible to bid on, be awarded or perform work as a subcontractor on a public works project by virtue of the foregoing provisions of Sections 1771.1 or 1777.7 of the California Labor Code or any other provision of law.

3. The undersigned Contractor is aware of California Public Contract Code Section 6109, which states:

“(a) A public entity, as defined in Section 1100 [of the Public Contract Code], may not permit a Contractor or subcontractor who is ineligible to bid or work on, or be awarded, a public works project pursuant to Section 1777.1 or 1777.7 of the Labor Code to bid on, be awarded, or perform work as a subcontractor on, a public works project. Every public works project shall contain a provision prohibiting a Contractor from performing work on a public works project with a subcontractor who is ineligible to perform work on the public works project pursuant to Section 1771.1 or 1777.7 of the Labor Code.”

“(b) Any Contract on a public works project entered into between a Contractor and a debarred subcontractor is void as a matter of law. A debarred subcontractor may not receive any public money for performing work as a subcontractor on a public works Contract, and any public money that may have been paid to a debarred subcontractor by a Contractor on the project shall be returned to the awarding body. The Contractor shall be responsible for the payment of wages to workers of a debarred subcontractor who has been allowed to work on the project.”

4. The undersigned Contractor has investigated the eligibility of each and every subcontractor the undersigned Contractor intends to use on this public works project, and determined that none of them is ineligible to perform work as a subcontractor on a public works project by virtue of the foregoing provisions of the Public Contract Code, Sections 1771.1 or 1777.7 of the Labor Code, or any other provision of law.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct. Executed this _____ day of _____, at _____ (place of execution), California.

Signature: _____
Name: _____
Title: _____
Name of Company: _____

I. NON-COLLUSION DECLARATION

**CIP NO. 502 GREENBELT PEDESTRIAN TRAIL
CIP NO. 604 CITY WIDE ADA IMPROVEMENTS
CIP NO. 194 ANNUAL STRIPING IMPROVEMENTS**

The undersigned declares:

I am the _____ of _____, the party making the foregoing Bid.

The Bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation. The Bid is genuine and not collusive or sham. The Bidder has not directly or indirectly induced or solicited any other Bidder to put in a false or sham bid. The Bidder has not directly or indirectly colluded, conspired, connived, or agreed with any Bidder or anyone else to put in a sham bid, or to refrain from bidding. The Bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the Bid Price of the Bidder or any other Bidder, or to fix any overhead, profit, or cost element of the Bid Price, or of that of any other Bidder. All statements contained in the Bid are true. The Bidder has not, directly or indirectly, submitted his or her Bid Price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid, and has not paid, and will not pay, any person or entity for such purpose.

Any person executing this declaration on behalf of a Bidder that is a corporation, partnership, joint venture, limited liability company, limited liability partnership, or any other entity, hereby represents that he or she has full power to execute, and does execute, this declaration on behalf of the Bidder.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration is executed on _____ [date], at _____ [city], _____ [state].

NAME OF BIDDER

SIGNATURE OF BIDDER

ADDRESS OF BIDDER

CITY STATE ZIP

J. REFERENCES OF WORK

**CIP NO. 502 GREENBELT PEDESTRIAN TRAIL
CIP NO. 604 CITY WIDE ADA IMPROVEMENTS
CIP NO. 194 ANNUAL STRIPING IMPROVEMENTS**

Provide names, addresses, phone numbers and email addresses for at least three public agencies for which Bidder has performed similar work within the past five years.

All contact information must be current.

1. _____
Name and Address of Public Agency

Name and Telephone Number of Public Agency's Project Manager

Name and Detailed Description of Project

Original Contract Amount Original Date of Completion

Final Contract Amount Final Date of Completion

Number of Change Orders _____

2. _____

Name and Address of Public Agency

Name and Telephone Number of Public Agency's Project Manager

Name and Detailed Description of Project

Original Contract Amount Original Date of Completion

Final Contract Amount Final Date of Completion

Number of Change Orders _____

3. _____

Name and Address of Public Agency

Name and Telephone Number of Public Agency's Project Manager

Name and Detailed Description of Project

Original Contract Amount

Original Date of Completion

Final Contract Amount

Final Date of Completion

Number of Change Orders _____

For additional References, please add separate sheets.

NAME OF BIDDER

SIGNATURE OF BIDDER

DATE _____

K. SUBCONTRACTORS LIST

**CIP NO. 502 GREENBELT PEDESTRIAN TRAIL
CIP NO. 604 CITY WIDE ADA IMPROVEMENTS
CIP NO. 194 ANNUAL STRIPING IMPROVEMENTS**

In compliance with the "Subletting and Subcontracting Fair Practices Act" being Sections 4100-4113 of the Government Code of the State of California, and any amendments thereto, each Bidder shall set forth below: (a) the name and location of the place of business, (b) the California Contractor license number, (c) the DIR public works Contractor registration number unless exempt pursuant to Labor Code Sections 1725.5 and 1771.1, and (d) the portion of the work which will be done by each subcontractor who will perform work or labor or render service to the prime Contractor in or about the construction of the work or improvement in an amount in excess of one-half (1/2) of one percent (1%) of the prime Contractor's total bid, and shall further set forth the portion of the work which will be done by each subcontractor. Only one subcontractor for each such portion shall be listed.

Notwithstanding the foregoing, if the work involves the construction of streets and highways, then the Bidder shall list each subcontractor who will perform work or labor or render service to the Bidder in or about the work in an amount in excess of one-half of one percent (0.5%) of the Bidder's Total Bid Price or \$10,000, whichever is greater. No additional time shall be granted to provide the below requested information.

If the Contractor fails to specify a subcontractor for any portion of the work to be performed under the Contract, he shall be deemed to have agreed to perform such portion himself, and he shall not be permitted to subcontract that portion of the work except under the conditions hereinafter set forth.

Subletting or subcontracting of any portion of the work to which subcontractor was designated in the original bid shall only be permitted in cases of public emergency or necessity, and then only after a finding reduced to writing as a public record of the legislative body of the Owner.

We propose to use the following listed subcontractors as per Public Contract Code Section 4100 et seq.: List all Subcontractors. The subcontractor shall be licensed for the type of work they are performing.

Sub-Contractors Name:	Address:
Description of Work:	
CSLB Contractor License NO.	DIR Registration NO.
Phone NO.	Dollar Amount of Work & % of Work

Sub-Contractors Name:	Address:
Description of Work:	
CSLB Contractor License NO.	DIR Registration NO.
Phone NO.	Dollar Amount of Work & % of Work

Sub-Contractors Name:	Address:
Description of Work:	
CSLB Contractor License NO.	DIR Registration NO.
Phone NO.	Dollar Amount of Work & % of Work

Sub-Contractors Name:	Address:
Description of Work:	
CSLB Contractor License NO.	DIR Registration NO.
Phone NO.	Dollar Amount of Work & % of Work

Sub-Contractors Name:	Address:
Description of Work:	
CSLB Contractor License NO.	DIR Registration NO.
Phone NO.	Dollar Amount of Work & % of Work

Sub-Contractors Name:	Address:
Description of Work:	
CSLB Contractor License NO.	DIR Registration NO.
Phone NO.	Dollar Amount of Work & % of Work

Sub-Contractors Name:	Address:
Description of Work:	
CSLB Contractor License NO.	DIR Registration NO.
Phone NO.	Dollar Amount of Work & % of Work

Sub-Contractors Name:	Address:
Description of Work:	
CSLB Contractor License NO.	DIR Registration NO.
Phone NO.	Dollar Amount of Work & % of Work

Percent of work to be performed by sub-Contractors: _____%
 (Note: 50% of work is required to be performed by general Contractor)
 For additional Sub-Contractors, please add additional sheet(s)

L. IRAN CONTRACTING ACT CERTIFICATION
(Public Contract Code Section 2200 et seq.)

As required by California Public Contract Code Section 2204, the Contractor certifies subject to penalty for perjury that the option checked below relating to the Contractor's status in regard to the Iran Contracting Act of 2010 (Public Contract Code Section 2200 *et seq.*) is true and correct:

The Contractor is not:

- (1) identified on the current list of person and entities engaged in investment activities in Iran prepared by the California Department of General Services in accordance with subdivision (b) of Public Contract Code Section 2203; or
- (2) a financial instruction that extends, for 45 days or more, credit in the amount of \$20,000,000 or more to any other person or entity identified on the current list of persons and entities engaging in investment activities in Iran prepared by the California Department of General Services in accordance with subdivision (b) of Public Contract Code Section 2203, if that person or entity uses or will use the credit to provide goods or services in the energy sector in Iran.

The City has exempted the Contractor from the requirements of the Iran Contracting Act of 2010 after making a public finding that, absent the exemption, the City will be unable to obtain the goods and/or services to be provided pursuant to the Contract.

The amount of the Contract payable to the Contractor for the Project does not exceed \$1,000,000.

Signature: _____

Printed Name: _____

Title: _____

Firm Name: _____

Date: _____

Note: In accordance with Public Contract Code Section 2205, false certification of this form shall be reported to the California Attorney General and may result in civil penalties equal to the greater of \$250,000 or twice the Contract amount, termination of the Contract and/or ineligibility to bid on Contracts for three years.

M. PUBLIC WORKS CONTRACTOR REGISTRATION CERTIFICATION

Pursuant to Labor Code sections 1725.5 and 1771.1, all Contractors and subcontractors that wish to bid on, be listed in a bid proposal, or enter into a Contract to perform public work must be registered with the Department of Industrial Relations. See <http://www.dir.ca.gov/Public-Works/PublicWorks.html> for additional information.

No bid will be accepted nor any Contract entered into without proof of the Contractor’s and subcontractors’ current registration with the Department of Industrial Relations to perform public work.

Bidder hereby certifies that it is aware of the registration requirements set forth in Labor Code sections 1725.5 and 1771.1 and is currently registered as a Contractor with the Department of Industrial Relations.¹

Name of Bidder: _____

DIR Registration Number: _____

DIR Registration Expiration: _____

Small Project Exemption: _____ Yes or _____ No

Unless Bidder is exempt pursuant to the small project exemption, Bidder further acknowledges:

1. Bidder shall maintain current DIR registration for the duration of the project.
2. Bidder shall maintain a current DIR registration for the duration of the project.
3. Bidder shall include the requirements of Labor Code sections 1725.5 and 1771.1 in its Contract with subcontractors and ensure that all subcontractors are registered at the time of bid opening and maintain registration status for the duration of the project.
4. Failure to submit this form or comply with any of the above requirements may result in a finding that the bid is non-responsive.

Name of Bidder: _____

Signature: _____

Name and Title: _____

Dated: _____

¹ If the Project is exempt from the Contractor registration requirements pursuant to the small project exemption under Labor Code Sections 1725.5 and 1771.1, please mark “Yes” in response to “Small Project Exemption.”

V. CONTRACT DOCUMENTS

**CIP NO. 502 GREENBELT PEDESTRIAN TRAIL
CIP NO. 604 CITY WIDE ADA IMPROVEMENTS
CIP NO. 194 ANNUAL STRIPING IMPROVEMENTS**

A. CONTRACT AGREEMENT

This Construction Agreement (“Agreement”) is made and entered into as of the date executed by the Mayor and attested to by the City Clerk, by and between [INSERT CONTRACTOR NAME] (hereinafter referred to as "CONTRACTOR") and the City of Hermosa Beach, California, a municipal corporation (hereinafter referred to as "CITY").

RECITALS

- A. Pursuant to the Notice Inviting Sealed Bids for CIP NO. 502 GREENBELT PEDESTRIAN TRAIL, 604 604 CITY WIDE ADA IMPROVEMENTS, & 194 ANNUAL STRIPING IMPROVEMENTS (“Project”), bids were received, publicly opened, and declared on the date specified in the notice; and
- B. On [INSERT DATE], City’s City Council declared CONTRACTOR to be the lowest responsible Bidder and accepted the bid of CONTRACTOR; and
- C. The City Council has authorized the Mayor to execute a written Contract with CONTRACTOR for furnishing labor, equipment, and material for the CIP No. 502 GREENBELT PEDESTRIAN TRAIL, 604 604 CITY WIDE ADA IMPROVEMENTS, & 194 ANNUAL STRIPING IMPROVEMENTS in the City of Hermosa Beach.

NOW, THEREFORE, in consideration of the foregoing and the mutual covenants herein contained, it is agreed:

- 1. GENERAL SCOPE OF WORK: CITY agrees to engage CONTRACTOR and CONTRACTOR agrees to furnish all necessary labor, tools, materials, appliances, and equipment for and do the work for the 502 GREENBELT PEDESTRIAN TRAIL, 604 604 CITY WIDE ADA IMPROVEMENTS, & 194 ANNUAL STRIPING IMPROVEMENTS in the City of Hermosa Beach. The work shall be performed in accordance with the Plans and Specifications dated [INSERT DATE], (the “Specifications”) on file in the office of the City Clerk and in accordance with bid prices set forth in CONTRACTOR’S Bid Proposal and in accordance with the instructions of the City Engineer.
- 2. INCORPORATED DOCUMENTS TO BE CONSIDERED COMPLEMENTARY: The Contract documents for the aforesaid project shall consist of the Notice Inviting Bids, Instructions to Bidders, Bid Proposal, Builders General Provisions, Standard Specifications 2021 edition, Special Provisions, Exhibit A and Exhibit B, and all referenced specifications, details, standard drawings, and appendices; together with this Agreement and all required bonds, insurance certificates, permits, notices and affidavits; and also, including any and all addenda or supplemental agreements clarifying, amending, or extending the work contemplated as may be required to insure its completion in an acceptable manner. All of the provisions of said Contract documents are made a part hereof as though fully set forth herein. This Contract is intended to require a complete and finished piece of work and anything necessary to complete the work properly and in accordance with the law and lawful governmental regulations shall be performed by CONTRACTOR whether set out specifically in the Contract or not. Should it be ascertained that any inconsistency exists between the aforesaid documents and this written agreement, the provisions of this Agreement, the

Builders General Provisions and the Standard Specifications, in that order, shall control. Collectively, these Contract documents constitute the complete agreement between CITY and CONTRACTOR and supersede any previous agreements or understandings.

3. COMPENSATION: CONTRACTOR agrees to receive and accept the prices set forth in its Bid Proposal [INSERT VALUE] as full compensation for furnishing all materials, performing all work, and fulfilling all obligations hereunder. Said compensation shall cover all expenses, losses, damages, and consequences arising out of the nature of the work during its progress or prior to its acceptance including those for well and faithfully completing the work and the whole thereof in the manner and time specified in the aforesaid Contract documents; and also including those arising from actions of the elements, unforeseen difficulties or obstructions encountered in the prosecution of the work, suspension or discontinuance of the work, and all other unknowns or risks of any description connected with the work.
4. TIME OF PERFORMANCE: CONTRACTOR agrees to complete the work within 50 working days from the date of the notice to proceed. By signing this Agreement, CONTRACTOR represents to CITY that the Contract time is reasonable for completion of the work and that CONTRACTOR will complete such work within the Contract time.
5. LIQUIDATED DAMAGES: In accordance with Government Code section 53069.85, it is agreed that CONTRACTOR will pay to CITY the sum set forth in Exhibit "A" for each and every calendar day of delay beyond the time prescribed in the Contract Documents for finishing the Work, as Liquidated Damages and not as a penalty or forfeiture. In the event this is not paid, CONTRACTOR agrees CITY may deduct that amount from any money due or that may become due CONTRACTOR under the Contract. This Article does not exclude recovery of other damages specified in the Contract Documents.
6. SUBSTITUTION OF SECURITIES: Pursuant to section 22300 of the Public Contract Code of the State of California, CONTRACTOR may request CITY to make retention payments directly to an escrow agent or may substitute securities for any money withheld by CITY to ensure performance under the Contract. At the request and expense of CONTRACTOR, securities equivalent to the amount withheld shall be deposited with CITY or with a state or federally chartered bank as the escrow agent who shall return such securities to CONTRACTOR upon satisfactory completion of the Contract. Deposit of securities with an escrow agent shall be subject to a written agreement substantially in the form provided in section 22300 of the Public Contract Code.
7. PREVAILING WAGES AND CALIFORNIA LABOR LAWS.

Pursuant to Labor Code §§ 1720 *et seq.*, and as specified in 8 California Code of Regulations § 16000 ("Prevailing Wage Laws"), CONTRACTOR must pay its workers prevailing wages. It is CONTRACTOR's responsibility to interpret and implement any prevailing wage requirements, and CONTRACTOR agrees to pay any penalty or civil damages resulting from a violation of the prevailing wage laws. CONTRACTOR shall defend, indemnify and hold the CITY, its officials, officers, employees and agents free and harmless from any claim or liability arising out of any failure or alleged failure to comply with the Prevailing Wage Laws. CONTRACTOR and any

subcontractor shall forfeit a penalty of up to \$200 per calendar day or portion thereof for each worker paid less than the prevailing wage rates.

In accordance with Labor Code § 1773.2, copies of the prevailing rate of per diem wages are available upon request from CITY's Engineering Division or the website for State of California Prevailing wage determination at <http://www.dir.ca.gov/DLSR/PWD>. CONTRACTOR must post a copy of the prevailing rate of per diem wages at the job site.

CITY directs CONTRACTOR's attention to Labor Code §§ 1777.5, 1777.6 and 3098 concerning the employment of apprentices by CONTRACTOR or any subcontractor.

Labor Code § 1777.5 requires CONTRACTOR or subcontractor employing tradesmen in any apprenticeship occupation to apply to the joint apprenticeship committee nearest the site of the public works project and which administers the apprenticeship program in that trade for a certificate of approval. The certificate must also fix the ratio of apprentices to journeymen that will be used in the performance of the Contract. The ratio of apprentices to journeymen in such cases will not be less than one to five except:

When employment in the area of coverage by the joint apprenticeship committee has exceeded an average of 15 percent in the 90 days before the request for certificate, or

When the number of apprentices in training in the area exceeds a ratio of one to five, or

When the trade can show that it is replacing at least 1/30 of its membership through apprenticeship training on an annual basis state-wide or locally, or

Assignment of an apprentice to any work performed under a public works Contract would create a condition that would jeopardize his or her life or the life, safety, or property of fellow employees or the public at large, or the specific task to which the apprentice is to be assigned is of a nature that training cannot be provided by a journeyman.

When CONTRACTOR provides evidence that CONTRACTOR employs registered apprentices on all of his Contracts on an annual average of not less than one apprentice to eight journeymen.

CONTRACTOR is required to make contributions to funds established for the administration of apprenticeship programs if CONTRACTOR employs registered apprentices or journeymen in any apprenticeable trade on such Contracts and if other Contractors on the public works site are making such contributions.

CONTRACTOR and any subcontractor must comply with Labor Code §§ 1777.5 and 1777.6 in the employment of apprentices.

Information relative to apprenticeship standards, wage schedules and other requirements may be obtained from the Director of Industrial Relations, ex-officio the Administrator of Apprenticeship, San Francisco, California, or from the Division of Apprenticeship Standards and its branch offices.

The CONTRACTOR or any subcontractor that is determined by the Labor Commissioner to have knowingly violated Section 1777.5 shall forfeit as a civil penalty an amount not exceeding \$100 for each full calendar day of noncompliance, or such greater amount as provided by law.

CONTRACTOR and each subcontractor shall keep an accurate payroll record, showing the name, address, social security number, work classification, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed by him or her in connection with the public work. The payroll records shall be certified and shall be available for inspection at all reasonable hours at the principal office of CONTRACTOR in the manner provided in Labor Code section 1776. In the event of noncompliance with the requirements of this section, CONTRACTOR shall have 10 days in which to comply subsequent to receipt of written notice specifying in what respects such CONTRACTOR must comply with this section. Should noncompliance still be evident after such 10-day period, CONTRACTOR shall, as a penalty to CITY, forfeit not more than \$100.00 for each calendar day or portion thereof, for each worker, until strict compliance is effectuated. The amount of the forfeiture is to be determined by the Labor Commissioner. A Contractor who is found to have violated the provisions of law regarding wages on Public Works with the intent to defraud shall be ineligible to bid on Public Works Contracts for a period of one to three years as determined by the Labor Commissioner. Upon the request of the Division of Apprenticeship Standards or the Division of Labor Standards Enforcement, such penalties shall be withheld from progress payments then due. The responsibility for compliance with this section is on CONTRACTOR. The requirement to submit certified payroll records directly to the Labor Commissioner under Labor Code section 1771.4 shall not apply to work performed on a public works project that is exempt pursuant to the small project exemption specified in Labor Code Section 1771.4.

Any ineligible Contractor or subcontractor pursuant to Labor Code Sections 1777.1 and 1777.7 may not perform work on this Project.

By executing this Contract, CONTRACTOR verifies that it fully complies with all requirements and restrictions of state and federal law respecting the employment of undocumented aliens, including, but not limited to, the Immigration Reform and Control Act of 1986, as may be amended from time to time, and shall require all subcontractors and sub-subcontractors to comply with the same.

8. LEGAL HOURS OF WORK: Eight (8) hours of labor shall constitute a legal day's work for all workmen employed in the execution of this Contract, and CONTRACTOR and any subcontractor under it shall comply with and be governed by the laws of the State of California having to do with working hours set forth in Division 2, Part 7, Chapter 1, Article 3 of the Labor Code of the State of California as amended.

CONTRACTOR shall forfeit, as a penalty to City, twenty-five dollars (\$25.00) for each laborer, workman or mechanic employed in the execution of the Contract, by him or any subcontractor under it, upon any of the work hereinbefore mentioned, for each calendar day during which the laborer, worker or mechanic is required or permitted to labor more than eight (8) hours in any one calendar day or 40 hours in any one calendar week in violation of the Labor Code.

9. PUBLIC WORKS CONTRACTOR REGISTRATION: Pursuant to Labor Code sections 1725.5 and 1771.1, all Contractors and subcontractors that wish to bid on, be listed in a bid proposal, or enter into a Contract to perform public work must be registered with the Department of Industrial Relations (DIR). No bid will be accepted nor any Contract entered into without proof of the Contractor's and subcontractors' current registration with the DIR to perform public work. Notwithstanding the foregoing, the Contractor registration requirements mandated by Labor Code Sections 1725.5 and 1771.1 shall not apply to work performed on a public works project that is exempt pursuant to the small project exemption specified in Labor Code Sections 1725.5 and 1771.1.
10. LABOR COMPLIANCE AND STOP ORDERS: This Project is subject to compliance monitoring and enforcement by the DIR. It shall be CONTRACTOR's sole responsibility to evaluate and pay the cost of complying with all labor compliance requirements under this Contract and applicable law. Any stop orders issued by the DIR against CONTRACTOR or any subcontractor that affect CONTRACTOR's performance of Work, including any delay, shall be CONTRACTOR's sole responsibility. Any delay arising out of or resulting from such stop orders shall be considered CONTRACTOR caused delay subject to any applicable liquidated damages and shall not be compensable by the CITY. CONTRACTOR shall defend, indemnify and hold CITY, its officials, officers, employees and agents free and harmless from any claim or liability arising out of stop orders issued by the DIR against CONTRACTOR or any subcontractor.
11. DEBARMENT OF CONTRACTORS AND SUBCONTRACTORS: Contractors or subcontractors may not perform work on a public works project with a subcontractor who is ineligible to perform work on a public project pursuant to Labor Code section 1777.1 or 1777.7. Any Contract on a public works project entered into between a Contractor and a debarred subcontractor is void as a matter of law. A debarred subcontractor may not receive any public money for performing work as a subcontractor on a public works Contract. Any public money that is paid, or may have been paid to a debarred subcontractor by a Contractor on the Project shall be returned to the CITY. CONTRACTOR shall be responsible for the payment of wages to workers of a debarred subcontractor who has been allowed to work on the project.
12. LABOR/EMPLOYMENT SAFETY: CONTRACTOR shall comply with all applicable laws and regulations of the federal, state, and local government, including Cal/OSHA requirements and requirements for verification of employees' legal right to work in the United States

CONTRACTOR shall maintain emergency first aid treatment for its employees which complies with the Federal Occupational Safety and Health Act of 1970 (29 U.S.C. § 651 *et seq.*), and California Code of Regulations, Title 8, Industrial Relations Division 1, Department of Industrial Relations, Chapter 4. CONTRACTOR shall ensure the availability of emergency medical services for its employees in accordance with California Code of Regulations, Title 8, Section 1512.

CONTRACTOR shall submit the Illness and Injury Prevention Program and a Project site specific safety program to CITY prior to beginning Work at the Project site. CONTRACTOR shall maintain a confined space program that meets or exceeds the CITY Standards. CONTRACTOR shall adhere to CITY's lock out tag out program

13. TRAVEL AND SUBSISTENCE PAY: CONTRACTOR agrees to pay travel and subsistence pay to each worker needed to execute the work required by this Agreement as such travel and subsistence payments are defined in the applicable collective bargaining agreements filed in accordance with Labor Code Section 1773.8.
14. CONTRACTOR'S LIABILITY: The City of Hermosa Beach and its officers, agents and employees ("Indemnitees") shall not be answerable or accountable in any manner for any loss or damage that may happen to the work or any part thereof, or for any of the materials or other things used or employed in performing the work; or for injury or damage to any person or persons, either workers or employees of CONTRACTOR, of its subcontractors or the public, or for damage to adjoining or other property from any cause whatsoever arising out of or in connection with the performance of the work. CONTRACTOR shall be responsible for any damage or injury to any person or property resulting from defects or obstructions or from any cause whatsoever.

To the fullest extent permitted by law, CONTRACTOR will indemnify Indemnities against and will hold and save Indemnitees harmless from any and all actions, claims, damages to persons or property, penalties, obligations or liabilities that may be asserted or claimed by any person, firm, entity, corporation, political subdivision, or other organization arising out of or in connection with the work, operation, or activities of CONTRACTOR, its agents, employees, subcontractors or invitees provided for herein, whether or not there is concurrent passive negligence on the part of City. In connection therewith:

a. CONTRACTOR will defend any action or actions filed in connection with any such claims, damages, penalties, obligations or liabilities and will pay all costs and expenses, including attorneys' fees, expert fees and costs incurred in connection therewith.

b. CONTRACTOR will promptly pay any judgment rendered against CONTRACTOR or Indemnitees covering such claims, damages, penalties, obligations and liabilities arising out of or in connection with such work, operations or activities of CONTRACTOR hereunder, and CONTRACTOR agrees to save and hold the Indemnitees harmless therefrom.

c. In the event Indemnitees are made a party to any action or proceeding filed or prosecuted against CONTRACTOR for damages or other claims arising out of or in connection with the work, operation or activities hereunder, CONTRACTOR agrees to pay to Indemnitees and any all costs and expenses incurred by Indemnitees in such action or proceeding together with reasonable attorneys' fees.

Contractor's obligations under this section apply regardless of whether or not such claim, charge, damage, demand, action, proceeding, loss, stop notice, cost, expense, judgment, civil fine or penalty, or liability was caused in part or contributed to by an Indemnitee. However, without affecting the rights of City under any provision of this agreement, to the extent required by Civil Code section 2782, Contractor shall not be required to indemnify and hold harmless City for liability attributable to the active negligence of City, provided such active negligence is determined by agreement between the parties or by the findings of a court of competent jurisdiction. In instances where City is shown to have been actively negligent and where City active negligence

accounts for only a percentage of the liability involved, the obligation of Contractor will be for that entire portion or percentage of liability not attributable to the active negligence of City.

So much of the money due to CONTRACTOR under and by virtue of the Contract as shall be considered necessary by City may be retained by City until disposition has been made of such actions or claims for damages as aforesaid.

It is expressly understood and agreed that the foregoing provisions are intended to be as broad and inclusive as is permitted by the law of the State of California. This indemnity provision shall survive the termination of the Agreement and is in addition to any other rights or remedies which Indemnitees may have under the law.

This indemnity is effective without reference to the existence or applicability of any insurance coverage which may have been required under this Agreement or any additional insured endorsements which may extend to Indemnitees.

CONTRACTOR, on behalf of itself and all parties claiming under or through it, hereby waives all rights of subrogation and contribution against the Indemnitees, while acting within the scope of their duties, from all claims, losses and liabilities arising out of or incident to activities or operations performed by or on behalf of the CONTRACTOR regardless of any prior, concurrent, or subsequent passive negligence by the Indemnitees.

15. THIRD PARTY CLAIMS. In accordance with Public Contract Code § 9201, CITY will promptly inform CONTRACTOR regarding third-party claims against CONTRACTOR, but in no event later than ten (10) business days after CITY receives such claims. Such notification will be in writing and forwarded in accordance with the “Notice” section of this Agreement. As more specifically detailed in the Contract documents, CONTRACTOR agrees to indemnify and defend the City against any third-party claim.
16. WORKERS COMPENSATION: In accordance with California Labor Code Sections 1860 and 3700, CONTRACTOR and each of its subcontractors will be required to secure the payment of compensation to its employees. In accordance with the provisions of California Labor Code Section 1861, CONTRACTOR, by signing this Contract, certifies as follows: "I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for worker's compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work of this Contract.
17. INSURANCE: CONTRACTOR shall procure and maintain for the duration of the Agreement, and for 1 year thereafter, insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the CONTRACTOR, its agents, representatives, employees, or subcontractors.
 - a. Minimum Scope and Limit of Insurance. Coverage shall be at least as broad as:
 - i. Commercial General Liability (CGL): Insurance Services Office (ISO) Form CG 00 01 covering CGL on an “occurrence” basis, including products and completed operations, property damage,

bodily injury and personal & advertising injury with limits no less than \$5,000,000 per occurrence. If a general aggregate limit applies, either the general aggregate limit shall apply separately to this project/location (ISO CG 25 03 or 25 04) or the general aggregate limit shall be twice the required occurrence limit.

- ii. Automobile Liability: Insurance Services Office Form CA 0001 covering Code 1 (any auto), with limits no less than \$5,000,000 per accident for bodily injury and property damage.
 - iii. Workers' Compensation insurance as required by the State of California, with Statutory Limits, and Employers' Liability insurance with a limit of no less than \$1,000,000 per accident for bodily injury or disease.
 - iv. Builder's Risk (Course of Construction) insurance utilizing an "All Risk" (Special Perils) coverage form, with limits equal to the completed value of the project and no coinsurance penalty provisions.
 - v. Professional Liability (if Design/Build), with limits no less than \$2,000,000 per occurrence or claim, and \$2,000,000 policy aggregate.
 - vi. Contractors' Pollution Legal Liability and/or Asbestos Legal Liability and/or Errors and Omissions (if project involves environmental hazards) with limits no less than \$1,000,000 per occurrence or claim, and \$2,000,000 policy aggregate.
 - vii. If the Contractor maintains broader coverage and/or higher limits than the minimums shown above, the CITY requires and shall be entitled to the broader coverage and/or the higher limits maintained by CONTRACTOR. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage shall be available to the CITY.
- b. Self-Insured Retentions. Self-insured retentions must be declared to and approved by the CITY. At the option of the CITY, either: the CONTRACTOR shall obtain coverage to reduce or eliminate such self-insured retentions as respects the CITY, its officers, officials, employees, and volunteers; or the CONTRACTOR shall provide a financial guarantee satisfactory to the CITY guaranteeing payment of losses and related investigations, claim administration, and defense expenses. The policy language shall provide, or be endorsed to provide, that the self-insured retention may be satisfied by either the named insured or CITY.
- c. Other Insurance Provisions. The insurance policies are to contain, or be endorsed to contain, the following provisions:
- i. The CITY, its officers, officials, employees, and volunteers are to be covered as additional insureds on the CGL policy with respect to liability arising out of work or operations performed by or on behalf of the CONTRACTOR including materials, parts, or equipment furnished in connection with such work or operations and automobiles owned, leased, hired, or borrowed by or on behalf of the CONTRACTOR. General liability coverage can be provided in the form of an endorsement to the CONTRACTOR's insurance (at least as broad as ISO Form CG 20 10, CG 11 85 or both CG 20 10, CG 20 26, CG 20 33, or CG 20 38; and CG 20 37 forms if later revisions used).
 - ii. For any claims related to this project, the CONTRACTOR's insurance coverage shall be primary insurance coverage at least as broad as ISO CG 20 01 04 13 as respects the CITY, its officers,

officials, employees, and volunteers. Any insurance or self-insurance maintained by the CITY, its officers, officials, employees, or volunteers shall be excess of the CONTRACTOR's insurance and shall not contribute with it.

- iii. Each insurance policy required by this clause shall provide that coverage shall not be canceled, except with notice to the CITY.
- d. Builder's Risk (Course of Construction) Insurance.
 - i. CONTRACTOR may submit evidence of Builder's Risk insurance in the form of Course of Construction coverage. Such coverage shall name the CITY as a loss payee as their interest may appear.
 - ii. If the Project does not involve new or major reconstruction, at the option of the CITY, an Installation Floater may be acceptable. For such projects, a Property Installation Floater shall be obtained that provides for the improvement, remodel, modification, alteration, conversion or adjustment to existing buildings, structures, processes, machinery, and equipment. The Property Installation Floater shall provide property damage coverage for any building, structure, machinery or equipment damaged, impaired, broken, or destroyed during the performance of the Work, including during transit, installation, and testing at the CITY's site.
- e. Claims Made Policies. If any coverage required is written on a claims-made coverage form:
 - i. The retroactive date must be shown, and this date must be before the execution date of the Contract or the beginning of Contract work.
 - ii. Insurance must be maintained and evidence of insurance must be provided for at least five (5) years after completion of Contract work.
 - iii. If coverage is cancelled or non-renewed, and not replaced with another claims-made policy form with a retroactive date prior to the Contract effective, or start of work date, the CONTRACTOR must purchase extended reporting period coverage for a minimum of five (5) years after completion of Contract work.
 - iv. A copy of the claims reporting requirements must be submitted to the CITY for review.
 - v. If the services involve lead-based paint or asbestos identification/remediation, the Contractors Pollution Liability policy shall not contain lead-based paint or asbestos exclusions. If the services involve mold identification/remediation, the Contractors Pollution Liability policy shall not contain a mold exclusion, and the definition of Pollution shall include microbial matter, including mold.
 - f. Acceptability of Insurers. Insurance is to be placed with insurers authorized to conduct business in the state with a current A.M. Best rating of no less than A: VII, unless otherwise acceptable to the CITY.
 - g. Waiver of Subrogation. CONTRACTOR hereby agrees to waive rights of subrogation which any insurer of CONTRACTOR may acquire from CONTRACTOR by virtue of the payment of any

loss. CONTRACTOR agrees to obtain any endorsement that may be necessary to affect this waiver of subrogation. The Workers' Compensation policy shall be endorsed with a waiver of subrogation in favor of the CITY for all work performed by the CONTRACTOR, its employees, agents and subcontractors.

- h. Verification of Coverage. CONTRACTOR shall furnish the CITY with original Certificates of Insurance including all required amendatory endorsements (or copies of the applicable policy language effecting coverage required by this clause) and a copy of the Declarations and Endorsement Page of the CGL policy listing all policy endorsements to CITY before work begins. However, failure to obtain the required documents prior to the work beginning shall not waive the CONTRACTOR's obligation to provide them. The CITY reserves the right to require complete, certified copies of all required insurance policies, including endorsements, required by these specifications, at any time.
- i. Subcontractors. CONTRACTOR shall require and verify that all subcontractors maintain insurance meeting all requirements stated herein, and CONTRACTOR shall ensure that CITY is an additional insured on insurance required from subcontractors. For CGL coverage, subcontractors shall provide coverage with a form at least as broad as CG 20 38 04 13.
- j. Special Risks or Circumstances. CITY reserves the right to modify these requirements, including limits, based on the nature of the risk, prior experience, insurer, coverage, or other circumstances.

18. COMPLIANCE WITH CARB REGULATIONS:

- a. Contractor shall comply, and shall ensure all subcontractors comply, with all applicable requirements of the most current version of the regulations imposed by California Air Resources Board ("CARB") including, without limitation, all applicable terms of Title 13, California Code of Regulations Division 3, Chapter 9 and all pending amendments ("Regulation").
- b. Throughout the Project, and for three (3) years thereafter, Contractor shall make available for inspection and copying any and all documents or information associated with Contractor's and its subcontractors' fleets including, without limitation, the Certificates of Reported Compliance ("CRCs"), fuel/refueling records, maintenance records, emissions records, and any other information the Contractor is required to produce, keep or maintain pursuant to the Regulation upon two (2) calendar days' notice from the City.
- c. Contractor shall be solely liable for any and all costs associated with compliance with the Regulation as well as for any and all penalties, fines, damages, or costs associated with any and all violations, or failures to comply with the Regulation. Contractor shall defend, indemnify and hold harmless the City, its officials, officers, employees and authorized volunteers free and harmless from any claims, liabilities, costs, penalties or interest arising out of any failure or alleged failure to comply with the Regulation.

19. ASSIGNMENT: This Contract is not assignable nor the performance of either party's duties delegable without the prior written consent of the other party. Any attempted or purported

assignment or delegation of any of the rights or obligations of either party without the prior written consent of the other shall be void and of no force and effect.

20. INDEPENDENT CONTRACTOR: CONTRACTOR is and shall at all times remain as to the CITY, a wholly independent Contractor. Neither the CITY nor any of its agents shall have control of the conduct of CONTRACTOR or any of CONTRACTOR'S employees, except as herein set forth. CONTRACTOR shall not at any time or in any manner represent that it or any of its agents or employees are in any manner agents or employees of CITY.
21. TAXES: CONTRACTOR is responsible for paying all retail sales and use, transportation, export, import, special or other taxes and duties applicable to, and assessable against any work, materials, equipment, services, processes and operations incidental to or involved in this Contract. CONTRACTOR is responsible for ascertaining and arranging to pay them. The prices established in the Contract shall include compensation for any taxes CONTRACTOR is required to pay by laws and regulations in effect at the bid opening date.
22. LICENSES: CONTRACTOR represents and warrants to CITY that it has all licenses, permits, qualifications, insurance, and approvals of whatsoever nature which are legally required of CONTRACTOR to practice its profession. CONTRACTOR represents and warrants to CITY that CONTRACTOR shall, at its sole cost and expense, keep in effect or obtain at all times during the term of this Agreement any licenses, permits, insurance, and approvals which are legally required of CONTRACTOR to practice its profession. CONTRACTOR shall maintain a City of Hermosa Beach business license, if required under CITY ordinance.

Contractors are required by law to be licensed and regulated by the Contractors' State License Board which has jurisdiction to investigate complaints against Contractors if a complaint regarding a patent act or omission is filed within five (5) years of the date of the alleged violation. A complaint regarding a latent act or omission pertaining to structural defects must be filed within ten (10) years of the date of the alleged violation. Any questions concerning a Contractor may be referred to the Registrar, Contractors' State License Board, P.O. Box 26000, Sacramento, California 95826.
23. RECORDS: CONTRACTOR shall maintain accounts and records, including personnel, property, and financial records, adequate to identify and account for all costs pertaining to this Agreement and such other records as may be deemed necessary by CITY or any authorized representative, and will be retained for four years after the expiration of this Agreement. All such records shall be made available for inspection or audit by CITY at any time during regular business hours.
24. SEVERABILITY. If any portion of these Contract documents are declared by a court of competent jurisdiction to be invalid or unenforceable, then such portion will be deemed modified to the extent necessary in the opinion of the court to render such portion enforceable and, as so modified, such portion and the balance of this Agreement will continue in full force and effect.
25. WHOLE AGREEMENT: This Agreement supersedes any and all other agreements either oral or written, between the parties and contains all of the covenants and agreements between the parties pertaining to the work of improvements described herein. Each party to this Contract acknowledges that no representations, inducements, promises or agreements, orally or otherwise,

have been made by any party, or anyone acting on behalf of any party, which are not embodied herein, and that any other agreement, statements or promise not contained in this Contract shall not be valid or binding. Any modifications of this Contract will be effective only if signed by the party to be charged.

26. AUTHORITY: CONTRACTOR affirms that the signatures, titles, and seals set forth hereinafter in execution of this Agreement represent all individuals, firm members, partners, joint ventures, and/or corporate officers having a principal interest herein. Each party warrants that the individuals who have signed this Agreement have the legal power, right, and authority to make this Agreement and to bind each respective party. This Agreement may be modified by written amendment. CITY's city manager may execute any such amendment on CITY's behalf.
27. NOTICES: All notices permitted or required under this Agreement shall be in writing, and shall be deemed made when delivered to the applicable party's representative as provided in this Agreement. Additionally, such notices may be given to the respective parties at the following addresses, or at such other addresses as the parties may provide in writing for this purpose. Such notices shall be deemed made when personally delivered or when mailed forty-eight (48) hours after deposit in the U.S. mail, first-class postage prepaid, and addressed to the party at its applicable address.

CITY OF HERMOSA BEACH
1315 Valley Drive
Hermosa Beach, CA 90254

Attention: _____ Project Manager

CONTRACTOR:

Attention: _____

28. DISPUTES. Effective January 1, 1991, Section 20104 et seq., of the California Public Contract Code prescribes a process utilizing informal conferences, non-binding judicial supervised mediation, and judicial arbitration to resolve disputes on construction claims of \$375,000 or less. Effective January 1, 2017, Section 9204 of the Public Contract Code prescribes a process for negotiation and mediation to resolve disputes on construction claims. The intent of this Section is to implement Sections 20104 et seq. and Section 9204 of the California Public Contract Code. This Section shall be construed to be consistent with said statutes.

Claims. For purposes of this Section, "Claim" means a separate demand by CONTRACTOR, after a change order duly requested in accordance with the terms of this Contract has been denied by the CITY, for (A) a time extension, (B) payment of money or damages arising from Work done by or on behalf of CONTRACTOR pursuant to the Contract, or (C) an amount the payment of

which is disputed by the CITY. A “Claim” does not include any demand for payment for which CONTRACTOR has failed to provide notice, request a change order, or otherwise failed to follow any procedures contained in the Contract Documents. Claims governed by this Section may not be filed unless and until CONTRACTOR completes all procedures for giving notice of delay or change and for the requesting of a time extension or change order, including but not necessarily limited to the change order procedures contained herein, and CONTRACTOR’s request for a change has been denied in whole or in part. Claims governed by this Section must be filed no later than fourteen (14) days after a request for change has been denied in whole or in part or after any other event giving rise to the Claim. The Claim shall be submitted in writing to the CITY and shall include on its first page the following in 16 point capital font: “THIS IS A CLAIM.” Furthermore, the claim shall include the documents necessary to substantiate the claim. Nothing in this Section is intended to extend the time limit or supersede notice requirements otherwise provided by Contract for the filing of claims, including all requirements pertaining to compensation or payment for extra Work, disputed Work, and/or changed conditions. Failure to follow such Contractual requirements shall bar any claims or subsequent lawsuits for compensation or payment thereon.

Supporting Documentation. The CONTRACTOR shall submit all claims in the following format:

Summary of claim merit and price, reference Contract Document provisions pursuant to which the claim is made

List of documents relating to claim:

Specifications

Drawings

Clarifications (Requests for Information)

Schedules

Other

Chronology of events and correspondence

Analysis of claim merit

Analysis of claim cost

Time impact analysis in CPM format

If CONTRACTOR’s claim is based in whole or in part on an allegation of errors or omissions in the Drawings or Specifications for the Project, CONTRACTOR shall provide a summary of the percentage of the claim subject to design errors or omissions and shall obtain a certificate of merit in support of the claim of design errors and omissions.

Cover letter and certification of validity of the claim, including any claims from subcontractors of any tier, in accordance with Government Code section 12650 *et seq.*

City’s Response. Upon receipt of a claim pursuant to this Section, CITY shall conduct a reasonable review of the claim and, within a period not to exceed 45 days, shall provide CONTRACTOR a written statement identifying what portion of the claim is disputed and what portion is undisputed.

Any payment due on an undisputed portion of the claim will be processed and made within 60 days after the public entity issues its written statement.

If CITY needs approval from its governing body to provide the CONTRACTOR a written statement identifying the disputed portion and the undisputed portion of the claim, and the governing body does not meet within the 45 days or within the mutually agreed to extension of time following receipt of a claim sent by registered mail or certified mail, return receipt requested, CITY shall have up to three days following the next duly publicly noticed meeting of the governing body after the 45-day period, or extension, expires to provide CONTRACTOR a written statement identifying the disputed portion and the undisputed portion.

Within 30 days of receipt of a claim, CITY may request in writing additional documentation supporting the claim or relating to defenses or claims CITY may have against the CONTRACTOR. If additional information is thereafter required, it shall be requested and provided pursuant to this subdivision, upon mutual agreement of CITY and the CONTRACTOR.

CITY's written response to the claim, as further documented, shall be submitted to CONTRACTOR within 30 days (if the claim is less than \$50,000, within 15 days) after receipt of the further documentation, or within a period of time no greater than that taken by CONTRACTOR in producing the additional information or requested documentation, whichever is greater.

Meet and Confer. If the CONTRACTOR disputes CITY's written response, or CITY fails to respond within the time prescribed, the CONTRACTOR may so notify CITY, in writing, either within 15 days of receipt of CITY's response or within 15 days of CITY's failure to respond within the time prescribed, respectively, and demand an informal conference to meet and confer for settlement of the issues in dispute. Upon receipt of a demand, CITY shall schedule a meet and confer conference within 30 days for settlement of the dispute.

Mediation. Within 10 business days following the conclusion of the meet and confer conference, if the claim or any portion of the claim remains in dispute, CITY shall provide the CONTRACTOR a written statement identifying the portion of the claim that remains in dispute and the portion that is undisputed. Any payment due on an undisputed portion of the claim shall be processed and made within 60 days after CITY issues its written statement. Any disputed portion of the claim, as identified by CONTRACTOR in writing, shall be submitted to nonbinding mediation, with CITY and CONTRACTOR sharing the associated costs equally. CITY and CONTRACTOR shall mutually agree to a mediator within 10 business days after the disputed portion of the claim has been identified in writing unless the parties agree to select a mediator at a later time.

If the Parties cannot agree upon a mediator, each Party shall select a mediator and those mediators shall select a qualified neutral third party to mediate with regard to the disputed portion of the claim. Each Party shall bear the fees and costs charged by its respective mediator in connection with the selection of the neutral mediator.

For purposes of this section, mediation includes any nonbinding process, including, but not limited to, neutral evaluation or a dispute review board, in which an independent third party or board assists the Parties in dispute resolution through negotiation or by issuance of an evaluation. Any mediation utilized shall conform to the timeframes in this section.

Unless otherwise agreed to by CITY and CONTRACTOR in writing, the mediation conducted pursuant to this section shall excuse any further obligation under Section 20104.4 to mediate after litigation has been commenced.

The mediation shall be held no earlier than the date CONTRACTOR completes the Work or the date that CONTRACTOR last performs Work, whichever is earlier. All unresolved claims shall be considered jointly in a single mediation unless a new unrelated claim arises after mediation is completed.

Procedures After Mediation. If following the mediation, the claim or any portion remains in dispute, CONTRACTOR must file a claim pursuant to Chapter 1 (commencing with Section 900) and Chapter 2 (commencing with Section 910) of Part 3 of Division 3.6 of Title 1 of the Government Code. For purposes of those provisions, the running of the period of time within which a claim must be filed shall be tolled from the time CONTRACTOR submits his or her written claim pursuant to subdivision (a) until the time the claim is denied, including any period of time utilized by the meet and confer conference or mediation.

Civil Actions. The following procedures are established for all civil actions filed to resolve claims subject to this Section:

Within 60 days, but no earlier than 30 days, following the filing or responsive pleadings, the court shall submit the matter to non-binding mediation unless waived by mutual stipulation of both parties or unless mediation was held prior to commencement of the action in accordance with Public Contract Code section 9204 and the terms of these procedures.. The mediation process shall provide for the selection within 15 days by both parties of a disinterested third person as mediator, shall be commenced within 30 days of the submittal, and shall be concluded within 15 days from the commencement of the mediation unless a time requirement is extended upon a good cause showing to the court.

If the matter remains in dispute, the case shall be submitted to judicial arbitration pursuant to Chapter 2.5 (commencing with Section 1141.10) of Title 3 of Part 3 of the Code of Civil Procedure, notwithstanding Section 1114.11 of that code. The Civil Discovery Act of 1986 (Article 3 (commencing with Section 2016) of Chapter 3 of Title 3 of Part 4 of the Code of Civil Procedure) shall apply to any proceeding brought under this subdivision consistent with the rules pertaining to judicial arbitration.

In addition to Chapter 2.5 (commencing with Section 1141.10) of Title 3 of Part 3 of the Code of Civil Procedure, (A) arbitrators shall, when possible, be experienced in construction law, and (B) any party appealing an arbitration award who does not obtain a more favorable judgment shall, in addition to payment of costs and fees under that chapter, also pay the attorney's fees on appeal of the other party.

Government Code Claims. In addition to any and all Contract requirements pertaining to notices of and requests for compensation or payment for extra work, disputed work, claims and/or changed conditions, CONTRACTOR must comply with the claim procedures set forth in Government Code sections 900 et seq. prior to filing any lawsuit against the CITY. Such Government Code claims and any subsequent lawsuit based upon the Government Code claims shall be limited to those

matters that remain unresolved after all procedures pertaining to extra work, disputed work, claims, and/or changed conditions have been followed by CONTRACTOR. If no such Government Code claim is submitted, or if any prerequisite Contractual requirements are not otherwise satisfied as specified herein, CONTRACTOR shall be barred from bringing and maintaining a valid lawsuit against the CITY. A Government Code claim must be filed no earlier than the date the work is completed or the date CONTRACTOR last performs work on the Project, whichever occurs first. A Government Code claim shall be inclusive of all unresolved claims unless a new unrelated claim arises after the Government Code claim is submitted.

Non-Waiver. CITY's failure to respond to a claim from CONTRACTOR within the time periods described in this Section or to otherwise meet the time requirements of this Section shall result in the claim being deemed rejected in its entirety. CITY's failure to respond shall not waive CITY's rights to any subsequent procedures for the resolution of disputed claims.

24. NON-DISCRIMINATION: Contractor represents that it is an equal opportunity employer and that it shall not discriminate against any employee or applicant for employment because of race, religion, color, national origin, ancestry, sex, age or other interests protected by the State or Federal Constitutions. Such non-discrimination shall include, but not be limited to, all activities related to initial employment, upgrading, demotion, transfer, recruitment or recruitment advertising, layoff or termination. A violation of this section exposes CONTRACTOR to the penalties provided for in Labor Code Section 1735.
25. TERMINATION: This Contract may be terminated by CITY at any time, either with or without cause, by giving CONTRACTOR three (3) days advance written notice. In the event of termination by CITY for any reason other than the fault of CONTRACTOR, CITY shall pay CONTRACTOR for all Work performed up to that time as provided herein. In the event of breach of the Contract by Contractor, CITY may terminate the Contract immediately without notice, may reduce payment to CONTRACTOR in the amount necessary to offset CITY's resulting damages, and may pursue any other available recourse against CONTRACTOR. CONTRACTOR may not terminate this Contract except for cause. In the event this Contract is terminated in whole or in part as provided, CITY may procure, upon such terms and in such manner as it may determine appropriate, services similar to those terminated. Further, if this Contract is terminated as provided, CITY may require CONTRACTOR to provide all finished or unfinished documents, data, diagrams, drawings, materials or other matter prepared or built by CONTRACTOR in connection with its performance of this Contract.
26. ANTI-TRUST CLAIMS: This provision shall be operative if this Contract Agreement is applicable to California Public Contract Code Section 7103.5. In entering into this Contract Agreement to supply goods, services or materials, Contractor hereby offers and agrees to assign to the Agency all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Section 15) or under the Cartwright Act (Chapter 2, commencing with Section 16700, of Part 2 of Division 7 of the Business and Professions Code) arising from purchases of goods, services, or materials pursuant to the Contract Agreement. This assignment shall be made and become effective at the time the Agency tender final payment to Contractor, without further acknowledgment by the Parties.

27. NO THIRD PARTY BENEFICIARY. This Contract and every provision herein is for the exclusive benefit of the Contractor and the City and not for the benefit of any other party. There will be no incidental or other beneficiaries of any of the Contractor's or the City's obligations under this Contract.
28. TIME IS OF ESSENCE. Time is of the essence for each and every provision of the Contract Documents.
29. FORCE MAJEURE. If CONTRACTOR is delayed in the performance or progress of the work by a Force Majeure Event, then the CONTRACTOR shall be entitled to a time extension, as provided in the Contract documents, when the work stopped is on the critical path and shall not be charged liquidated damages. Such a non-compensable adjustment shall be CONTRACTOR's sole and exclusive remedy for such delays and the CONTRACTOR will not receive an adjustment to the Contract price or any other compensation. Contractor must submit a timely request in accordance with the requirements of the Contract documents. A Force Majeure Event shall mean an event that materially affects a party's performance and is one or more of the following: (1) Acts of God or other natural disasters occurring at the project site; (2) terrorism or other acts of a public enemy; (3) orders of governmental authorities (including, without limitation, unreasonable and unforeseeable delay in the issuance of permits or approvals by governmental authorities that are required for the work); (4) pandemics, epidemics or quarantine restrictions; and (5) strikes and other organized labor action occurring at the project site and the effects thereof on the work, only to the extent such strikes and other organized labor action are beyond the control of CONTRACTOR and its subcontractors, of every tier, and to the extent the effects thereof cannot be avoided by use of replacement workers. For purposes of this section, "orders of governmental authorities," includes ordinances, emergency proclamations and orders, rules to protect the public health, welfare and safety, and other actions of the City in its capacity as a municipal authority.
30. PROVISIONS REQUIRED BY LAW AND CONTRACTOR COMPLIANCE. Each and every provision of law required to be included in these Contract Documents shall be deemed to be included in these Contract Documents. The Contractor shall comply with all requirements of applicable federal, state and local laws, rules and regulations, including, but not limited to, the provisions of the California Labor Code and California Public Contract Code which are applicable to this Work.
31. ACCEPTANCE OF FACSIMILE SIGNATURES. The Parties agree that this Contract, agreements ancillary to this Contract, and related documents to be entered into in connection with this Contract will be considered signed when the signature of a party is delivered by facsimile transmission. Such facsimile signature will be treated in all respects as having the same effect as an original signature.
32. GOVERNING LAW: This Agreement shall be governed by the laws of the State of California, and exclusive venue for any action involving this Contract will be in Los Angeles County.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement with all the formalities required by law on the respective dates set forth opposite their signatures.

State of California
CONTRACTOR'S License No. _____

CONTRACTOR

_____ By: _____
Date TITLE

CITY OF HERMOSA BEACH, CALIFORNIA

_____ By: _____
Date MAYOR

ATTEST:

_____ By: _____
Date CITY CLERK

CONTRACTOR'S Business Phone _____

Emergency Phone at which CONTRACTOR can be reached at any time: () _____

APPROVED AS TO FORM:

CITY ATTORNEY

Date

**B. AGREEMENT OF INDEMNIFICATION
AND HOLD HARMLESS AND WAIVER OF SUBROGATION AND
CONTRIBUTION**

**CIP NO. 502 GREENBELT PEDESTRIAN TRAIL
CIP NO. 604 CITY WIDE ADA IMPROVEMENTS
CIP NO. 194 ANNUAL STRIPING IMPROVEMENTS**

Contract/Agreement/License/Permit No. or description: _____

Indemnitor(s) (list all names):

To the fullest extent permitted by law, Indemnitor hereby agrees, at its sole cost and expense, to defend, protect, indemnify, and hold harmless the City of Hermosa Beach and its respective elected officials, officers, attorneys, agents, employees, volunteers, successors, and assigns (collectively "Indemnitees") from and against any and all damages, costs, expenses, liabilities, claims, demands, causes of action, proceedings, expenses, judgments, penalties, liens, and losses of any nature whatsoever, including fees of accountants, attorneys, or other professionals and all costs associated therewith (collectively "Liabilities"), arising or claimed to arise, directly or indirectly, out of, in connection with, resulting from, or related to any act, failure to act, error, or omission of Indemnitor or any of its officers, agents, servants, employees, subcontractors, materialmen, suppliers or their officers, agents, servants or employees, arising or claimed to arise, directly or indirectly, out of, in connection with, resulting from, or related to the above-referenced Contract, agreement, license, or permit (the "Agreement") or the performance or failure to perform any term, provision, covenant, or condition of the Agreement, including this indemnity provision. This indemnity provision is effective regardless of any prior, concurrent, or subsequent active or passive negligence by Indemnitees and shall operate to fully indemnify Indemnitees against any such negligence. This indemnity provision shall survive the termination of the Agreement and is in addition to any other rights or remedies which Indemnitees may have under the law. Payment is not required as a condition precedent to an Indemnitee's right to recover under this indemnity provision, and an entry of judgment against an Indemnitee shall be conclusive in favor of the Indemnitee's right to recover under this indemnity provision. Indemnitor shall pay Indemnitees for any attorney fees and costs incurred in enforcing this indemnification provision. Notwithstanding the foregoing, nothing in this instrument shall be construed to encompass (a) Indemnitees' sole negligence or willful misconduct to the limited extent that the underlying Agreement is subject to Civil Code 2782(a), or (b) the Contracting public agency's active negligence to the limited extent that the underlying Agreement is subject to Civil Code 2782(b). This indemnity is effective without reference to the existence or applicability of any insurance coverages which may have been required under the Agreement or any additional insured endorsements which may extend to Indemnitees.

Indemnitor, on behalf of itself and all parties claiming under or through it, hereby waives all rights of subrogation and contribution against the Indemnitees, while acting within the scope of their duties, from all claims, losses and liabilities arising out of or incident to activities or operations performed by or on behalf of the Indemnitor regardless of any prior, concurrent, or subsequent active or passive negligence by the Indemnitees. Accountants, attorneys, or other professionals employed by Indemnitor to defend Indemnitees shall be selected by Indemnitees.

In the event there is more than one person or entity named in the Agreement as an Indemnitor, then all obligations, liabilities, covenants and conditions under this instrument shall be joint and several.

“Indemnitor”

Name _____

Name _____

By: _____

By: _____

C. EQUALS

**CIP NO. 502 GREENBELT PEDESTRIAN TRAIL
CIP NO. 604 CITY WIDE ADA IMPROVEMENTS
CIP NO. 194 ANNUAL STRIPING IMPROVEMENTS**

The undersigned desires to use the material, product, thing, or service described below, as “an equal” to such item as specified.

In accordance with the provisions under General Conditions, entitled EQUALS, if the City shall find any item so described equal to the respective item specified, then the undersigned may furnish such item, together with all necessary labor, materials, equipment and incidentals required to perform and complete the work.

Contractor’s Name

Date

Address

Telephone Number

Materials, apparatus or equipment specified for which Bidder proposes “an equal”		Complete description of the materials, apparatus or equipment the Bidder desires to use as “an equal” and name of Contractor if different
<i>Specify page number</i>		
1.		
2.		
3.		

D. FAITHFUL PERFORMANCE BOND

**CIP NO. 502 GREENBELT PEDESTRIAN TRAIL
CIP NO. 604 CITY WIDE ADA IMPROVEMENTS
CIP NO. 194 ANNUAL STRIPING IMPROVEMENTS**

KNOW ALL PERSONS BY THESE PRESENTS:

THAT WHEREAS, the City of Hermosa Beach, (hereinafter referred to as “City”) has awarded to _____, (hereinafter referred to as the “Contractor”) an agreement for **Contract NO.** _____, (hereinafter referred to as the “Project”).

WHEREAS, the work to be performed by the Contractor is more particularly set forth in the Contract Documents for the Project dated _____, (hereinafter referred to as “Contract Documents”), the terms and conditions of which are expressly incorporated herein by reference; and

WHEREAS, the Contractor is required by said Contract Documents to perform the terms thereof and to furnish a bond for the faithful performance of said Contract Documents.

NOW, THEREFORE, we, _____, the undersigned Contractor and _____ as Surety, a corporation organized and duly authorized to transact business under the laws of the State of California, are held and firmly bound unto the City in the sum of _____ DOLLARS, (\$ _____), said sum being not less than one hundred percent (100%) of the total amount of the Contract, for which amount well and truly to be made, we bind ourselves, our heirs, executors and administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH, that, if the Contractor, his or its heirs, executors, administrators, successors or assigns, shall in all things stand to and abide by, and well and truly keep and perform the covenants, conditions and agreements in the Contract Documents and any alteration thereof made as therein provided, on its part, to be kept and performed at the time and in the manner therein specified, and in all respects according to their intent and meaning; and shall faithfully fulfill all obligations including the one (1) year guarantee of all materials and workmanship; and shall indemnify and save harmless the City, its officials, officers, employees, and authorized volunteers, as stipulated in said Contract Documents, then this obligation shall become null and void; otherwise it shall be and remain in full force and effect.

As a part of the obligation secured hereby and in addition to the face amount specified therefore, there shall be included costs and reasonable expenses and fees including reasonable attorney’s fees, incurred by City in enforcing such obligation.

As a condition precedent to the satisfactory completion of the Contract Documents, unless otherwise provided for in the Contract Documents, the above obligation shall hold good for a period of one (1) year after the acceptance of the work by City, during which time if Contractor

shall fail to make full, complete, and satisfactory repair and replacements and totally protect the City from loss or damage resulting from or caused by defective materials or faulty workmanship. The obligations of Surety hereunder shall continue so long as any obligation of Contractor remains. Nothing herein shall limit the City's rights or the Contractor or Surety's obligations under the Contract, law or equity, including, but not limited to, California Code of Civil Procedure Section 337.15.

Whenever Contractor shall be, and is declared by the City to be, in default under the Contract Documents, the Surety shall remedy the default pursuant to the Contract Documents, or shall promptly, at the City's option:

- i. Take over and complete the Project in accordance with all terms and conditions in the Contract Documents; or
- ii. Obtain a bid or bids for completing the Project in accordance with all terms and conditions in the Contract Documents and upon determination by Surety of the lowest responsive and responsible Bidder, arrange for a Contract between such Bidder, the Surety and the City, and make available as work progresses sufficient funds to pay the cost of completion of the Project, less the balance of the Contract price, including other costs and damages for which Surety may be liable. The term "balance of the Contract price" as used in this paragraph shall mean the total amount payable to Contractor by the City under the Contract and any modification thereto, less any amount previously paid by the City to the Contractor and any other set offs pursuant to the Contract Documents.
- iii. Permit the City to complete the Project in any manner consistent with California law and make available as work progresses sufficient funds to pay the cost of completion of the Project, less the balance of the Contract price, including other costs and damages for which Surety may be liable. The term "balance of the Contract price" as used in this paragraph shall mean the total amount payable to Contractor by the City under the Contract and any modification thereto, less any amount previously paid by the City to the Contractor and any other set offs pursuant to the Contract Documents.

Surety expressly agrees that the City may reject any Contractor or subcontractor which may be proposed by Surety in fulfillment of its obligations in the event of default by the Contractor.

Surety shall not utilize Contractor in completing the Project nor shall Surety accept a bid from Contractor for completion of the Project if the City, when declaring the Contractor in default, notifies Surety of the City's objection to Contractor's further participation in the completion of the Project.

The Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract Documents or to the Project to be performed thereunder shall in any way affect its obligations on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract Documents or to the Project.

By their signatures hereunder, Surety and Contractor hereby confirm under penalty of perjury that surety is an admitted surety insurer authorized to do business in the State of California.

[REMAINDER OF PAGE LEFT INTENTIONALLY BLANK]

IN WITNESS WHEREOF, we have hereunto set our hands and seals this _____ day of _____, 20____.

Contractor/ Principal

By _____

Title _____

Surety

By _____
Attorney-in-Fact

Title _____

The rate of premium on this bond is _____ per thousand. The total amount of premium charges is \$_____.
(The above must be filled in by corporate attorney.)

THIS IS A REQUIRED FORM

Any claims under this bond may be addressed to:

(Name and Address of Surety) _____

(Name and Address of Agent or Representative for service of process in California, if different from above) _____

(Telephone number of Surety and Agent or Representative for service of process in California) _____

Notary Acknowledgment

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA
COUNTY OF _____

On _____, 20___, before me, _____, Notary Public, personally

appeared _____, who proved to me on the basis of satisfactory

evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature of Notary Public _____

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

CAPACITY CLAIMED BY SIGNER

DESCRIPTION OF ATTACHED DOCUMENT

- .. Individual
- .. Corporate Officer

- | | | |
|-------------------------|------------|----------|
| _____ | | Title(s) |
| .. Partner(s) | .. Limited | |
| | .. General | |
| .. Attorney-In-Fact | | |
| .. Trustee(s) | | |
| .. Guardian/Conservator | | |
| .. Other: | | |

- | | | |
|-------|--|---------------------------|
| _____ | | Title or Type of Document |
| _____ | | Number of Pages |
| _____ | | Date of Document |

Signer is representing:
Name Of Person(s) Or Entity(ies)

Signer(s) Other Than Named Above

NOTE: This acknowledgment is to be completed for Contractor/Principal.

Notary Acknowledgment

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA
COUNTY OF _____

On _____, 20___, before me, _____, Notary Public, personally

appeared _____, who proved to me on the basis of satisfactory

evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature of Notary Public _____

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

CAPACITY CLAIMED BY SIGNER

DESCRIPTION OF ATTACHED DOCUMENT

- .. Individual
- .. Corporate Officer

- | | |
|-------------------------|------------|
| | Title(s) |
| .. Partner(s) | .. Limited |
| | .. General |
| .. Attorney-In-Fact | |
| .. Trustee(s) | |
| .. Guardian/Conservator | |
| .. Other: | |

- | | |
|--|---------------------------|
| | Title or Type of Document |
| | Number of Pages |
| | Date of Document |

Signer is representing:
Name Of Person(s) Or Entity(ies)

Signer(s) Other Than Named Above

NOTE: This acknowledgment is to be completed for the Attorney-in-Fact. The Power-of Attorney to local representatives of the bonding company must also be attached.

END OF PERFORMANCE BOND

E. PAYMENT BOND (LABOR AND MATERIALS)

**CIP NO. 502 GREENBELT PEDESTRIAN TRAIL
CIP NO. 604 CITY WIDE ADA IMPROVEMENTS
CIP NO. 194 ANNUAL STRIPING IMPROVEMENTS**

KNOW ALL MEN BY THESE PRESENTS That

WHEREAS, the City of Hermosa Beach (hereinafter designated as the "City"), by action taken or a resolution passed _____, 20____, has awarded to _____ hereinafter designated as the "Principal," a Contract for the work described as follows: **Contract NO.** _____ (the "Project"); and

WHEREAS, said Principal is required to furnish a bond in connection with said Contract; providing that if said Principal or any of its Subcontractors shall fail to pay for any materials, provisions, provender, equipment, or other supplies used in, upon, for or about the performance of the work Contracted to be done, or for any work or labor done thereon of any kind, or for amounts due under the Unemployment Insurance Code or for any amounts required to be deducted, withheld, and paid over to the Employment Development Department from the wages of employees of said Principal and its Subcontractors with respect to such work or labor the Surety on this bond will pay for the same to the extent hereinafter set forth.

NOW THEREFORE, we, the Principal and _____ as Surety, are held and firmly bound unto the City in the penal sum of _____ Dollars (\$_____) lawful money of the United States of America, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH that if said Principal, his or its subcontractors, heirs, executors, administrators, successors or assigns, shall fail to pay any of the persons named in Civil Code Section 9100, fail to pay for any materials, provisions or other supplies, used in, upon, for or about the performance of the work Contracted to be done, or for any work or labor thereon of any kind, or amounts due under the Unemployment Insurance Code with respect to work or labor performed under the Contract, or for any amounts required to be deducted, withheld, and paid over to the Employment Development Department or Franchise Tax Board from the wages of employees of the Contractor and his subcontractors pursuant to Revenue and Taxation Code Section 18663, with respect to such work and labor the Surety or Sureties will pay for the same, in an amount not exceeding the sum herein above specified, and also, in case suit is brought upon this bond, all litigation expenses incurred by the City in such suit, including reasonable attorneys' fees, court costs, expert witness fees and investigation expenses.

This bond shall inure to the benefit of any of the persons named in Civil Code Section 9100 so as to give a right of action to such persons or their assigns in any suit brought upon this bond.

It is further stipulated and agreed that the Surety on this bond shall not be exonerated or released from the obligation of this bond by any change, extension of time for performance,

addition, alteration or modification in, to, or of any Contract, plans, specifications, or agreement pertaining or relating to any scheme or work of improvement herein above described, or pertaining or relating to the furnishing of labor, materials, or equipment therefore, nor by any change or modification of any terms of payment or extension of the time for any payment pertaining or relating to any scheme or work of improvement herein above described, nor by any rescission or attempted rescission or attempted rescission of the Contract, agreement or bond, nor by any conditions precedent or subsequent in the bond attempting to limit the right of recovery of claimants otherwise entitled to recover under any such Contract or agreement or under the bond, nor by any fraud practiced by any person other than the claimant seeking to recover on the bond and that this bond be construed most strongly against the Surety and in favor of all persons for whose benefit such bond is given, and under no circumstances shall Surety be released from liability to those for whose benefit such bond has been given, by reason of any breach of Contract between the owner or City and original Contractor or on the part of any obligee named in such bond, but the sole conditions of recovery shall be that claimant is a person described in Civil Code Section 9100, and has not been paid the full amount of his claim and that Surety does hereby waive notice of any such change, extension of time, addition, alteration or modification herein mentioned, including but not limited to the provisions of sections 2819 and 2845 of the California Civil Code.

By their signatures hereunder, Surety and Principal hereby confirm under penalty of perjury that surety is an admitted surety insurer authorized to do business in the State of California.

IN WITNESS WHEREOF, we have hereunto set our hands and seals this _____ day of _____, 20__.

Contractor/ Principal

By _____

Title _____

Surety

By _____ Attorney-in-Fact

Title _____

Notary Acknowledgment

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA
COUNTY OF _____

On _____, 20___, before me, _____, Notary Public, personally

appeared _____, who proved to me on the basis of satisfactory

evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature of Notary Public _____

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

CAPACITY CLAIMED BY SIGNER

DESCRIPTION OF ATTACHED DOCUMENT

- .. Individual
- .. Corporate Officer

- | | |
|-------------------------|------------|
| _____ | Title(s) |
| .. Partner(s) | .. Limited |
| | .. General |
| .. Attorney-In-Fact | |
| .. Trustee(s) | |
| .. Guardian/Conservator | |
| .. Other: | |

- | | |
|-------|---------------------------|
| _____ | Title or Type of Document |
| _____ | Number of Pages |
| _____ | Date of Document |

Signer is representing:
Name Of Person(s) Or Entity(ies)

Signer(s) Other Than Named Above

NOTE: This acknowledgment is to be completed for Contractor/Principal.

Notary Acknowledgment

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA
COUNTY OF _____

On _____, 20___, before me, _____, Notary Public, personally

appeared _____, who proved to me on the basis of satisfactory

evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature of Notary Public _____

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

CAPACITY CLAIMED BY SIGNER

DESCRIPTION OF ATTACHED DOCUMENT

- Individual
- Corporate Officer

- _____ Title(s)
- Partner(s) Limited
 - General
 - Attorney-In-Fact
 - Trustee(s)
 - Guardian/Conservator
 - Other:

_____ Title or Type of Document

_____ Number of Pages

_____ Date of Document

Signer is representing: Name Of Person(s) Or Entity(ies)	
	Signer(s) Other Than Named Above

NOTE: This acknowledgment is to be completed for the Attorney-in-Fact. The Power-of-Attorney to local representatives of the bonding company must also be attached.

END OF PAYMENT BOND

F. GUARANTEE TO THE CITY OF HERMOSA BEACH

**CIP NO. 502 GREENBELT PEDESTRIAN TRAIL
CIP NO. 604 CITY WIDE ADA IMPROVEMENTS
CIP NO. 194 ANNUAL STRIPING IMPROVEMENTS**

As a material inducement to the City to award the Contract for CIP NO. _____ to the _____, the undersigned (“Guarantor”) has agreed to enter into this guarantee. The Guarantor hereby unconditionally guarantees to the fullest extent allowed by law the following work included in this project: _____ (“the work”).

Guarantor guarantees that the materials and equipment used by itself and its sub-Contractors will be free from defects and that the work will conform to the plans and specifications. Should any of the materials or equipment prove defective or should the work as a whole, or any part thereof, prove defective for any reason whatsoever (except due to intentional torts by the City), or should the work as a whole or any part thereof fail to operate properly or fail to comply with the plans and specifications, Guarantor will, at the City’s sole election: 1) reimburse the City, upon written demand, for all of the City’s expenses incurred replacing or restoring any such equipment or materials, including the cost of any work necessary to make such replacement or repairs; or 2) replace any such defective material or equipment and repair said work completely, all without any cost to the City. Guarantor further guarantees that any such repair work will conform to the plans and specifications for the project. This guarantee will remain in effect for one year from the date on which the Contract for the work is accepted by the City.

Guarantor understands and agrees that the City shall have the unqualified option to make any replacements or repairs itself or to have such replacement, repair, performed by the undersigned. The City shall have no obligation to consult with Guarantor before the City proceeds to perform any repair, replacement, or work itself. If the City elects to have Guarantor perform said repair, replacement, or work, Guarantor agrees that the repair, replacement, or work shall be performed within 15 days after receipt of a written demand from the City.

If the City elects to perform the replacement, repairs itself, Guarantor agrees to make reimbursement payment within 15 days after receipt of a written demand for payment from the City.

If the Guarantor fails or refuses to comply with this guarantee, the City shall be entitled to all costs and expenses, including attorneys and expert fees, reasonably incurred by reason of Guarantor’s failure or refusal.

Guarantor

Contractor

Date

By

Title

**G. GENERAL COMPREHENSIVE LIABILITY ADDITIONAL INSURED
ENDORSEMENT**

**CIP NO. 502 GREENBELT PEDESTRIAN TRAIL
CIP NO. 604 CITY WIDE ADA IMPROVEMENTS
CIP NO. 194 ANNUAL STRIPING IMPROVEMENTS**

NAME OF ADDRESS OF INSURED:

General description of agreement(s) and/or activity(ies) insured:

Notwithstanding any inconsistent statement in the policy to which this endorsement is attached or in any endorsement now or hereafter attached thereto, it is agreed as follows:

1. That the City of Hermosa Beach and its or their elected officials, officers, agents and employees are insureds thereunder in relation to those activities described generally above with regard to operations performed by or on behalf of the named insured.
2. Such insurance shall be primary, and not contributing with any other insurance maintained _____ by _____ the _____ City.
3. The policy to which this endorsement is attached shall apply separately to each insured against whom claim is made or suit is brought except with respect to the limits of the company's _____ liability.
4. The policy to which this endorsement is attached shall not be subject to cancellation, change in coverage, reduction of limits or non-renewal except after written notice to Risk Management, City of Hermosa Beach, by certified mail, return receipt requested, not less than thirty (30) days prior to the effective date thereto.

CANCELLATION NOTICE AND ENDORSEMENT TO BE SENT TO:

Risk Management
City of Hermosa Beach
1315 Valley Dr. Hermosa
Beach, CA 90254
(310) 318-0202

Except as stated above and not in conflict with this endorsement, nothing contained herein shall be held to waive, alter or extend any of the limits, agreements, or exclusions of the policy to which this endorsement is attached.

Endorsement No. _____	Effective Date _____	Policy No. _____
-----------------------	----------------------	------------------

TYPE OF COVERAGES TO WHICH LIMITS OF THIS ENDORSEMENT ATTACHES LIABILITY	POLICY PERIOD FROM _____ TO _____
--	-----------------------------------

Scheduled items or locations are to be identified on an attached sheet.

The following inclusions relate to the above coverages includes:

- | | |
|---|---|
| <input type="checkbox"/> Premises & Operations | <input type="checkbox"/> Explosion Hazard |
| <input type="checkbox"/> Contractual Liability | <input type="checkbox"/> Collapse |
| <input type="checkbox"/> Independent Contractors | <input type="checkbox"/> Underground Hazard |
| <input type="checkbox"/> Products/Completed Operations | <input type="checkbox"/> Personal Injury |
| <input type="checkbox"/> Broad Form Property Damage | <input type="checkbox"/> _____ |
| <input type="checkbox"/> Broad Form Liability Endorsement | |

A deductible or self-insured retention (strike out one) of _____ applies to _____ coverage.

DEDUCTIBLE APPLIES PER CLAIM, _____ PER OCCURRENCE _____

INSURANCE COMPANY
ADDRESS: _____

I, _____, (print name) hereby declare under penalty of perjury, under the laws of the State of California, that I have the authority to bind the above-named insurance company to this endorsement and by my execution hereof, do so bind said company.

Signature of Authorized Representative (Original Signature only; No facsimile signature or initialed signature accepted)

Executed at _____, _____ on _____ 20____.

Phone NO.: () _____

H. AUTOMOBILE LIABILITY ADDITIONAL INSURED ENDORSEMENT

**CIP NO. 502 GREENBELT PEDESTRIAN TRAIL
CIP NO. 604 CITY WIDE ADA IMPROVEMENTS
CIP NO. 194 ANNUAL STRIPING IMPROVEMENTS**

NAME OF ADDRESS OF INSURED:

General description of agreement(s) and/or activity(ies) insured:

Notwithstanding any inconsistent statement in the policy to which this endorsement is attached or in any endorsement now or hereafter attached thereto, it is agreed as follows:

1. That the City of Hermosa Beach and its or their elected officials, officers, agents and employees are insureds thereunder in relation to those activities described generally above with regard to operations performed by or on behalf of the named insured.
2. Such insurance shall be primary, and not contributing with any other insurance maintained by the _____ City.
3. The policy to which this endorsement is attached shall apply separately to each insured against whom claim is made or suit is brought except with respect to the limits of the company's liability.
4. The policy to which this endorsement is attached shall not be subject to cancellation, change in coverage, reduction of limits or non-renewal except after written notice to Risk Management, City of Hermosa Beach, by certified mail, return receipt requested, not less than thirty (30) days prior to the effective date thereto.

CANCELLATION NOTICE AND ENDORSEMENT TO BE SENT TO:

Risk Management
City of Hermosa Beach
1315 Valley Dr. Hermosa
Beach, CA 90254
(310) 318-0202

Except as stated above and not in conflict with this endorsement, nothing contained herein shall be held to waive, alter or extend any of the limits, agreements, or exclusions of the policy to which this endorsement is attached.

Endorsement No. _____	Effective Date _____	Policy No. _____
--------------------------	-------------------------	------------------

TYPE OF COVERAGES TO WHICH LIMITS OF THIS ENDORSEMENT ATTACHES <u>LIABILITY</u>	POLICY PERIOD FROM _____ TO _____
--	--------------------------------------

Scheduled items or locations are to be identified on an attached sheet.

The following inclusions relate to the above coverages includes:

- Owned Automobiles
- Non-owned Automobiles
- Hired Automobiles
- Owned, Non-owned and Hired Automobiles

A deductible or self-insured retention (strike out one) of _____ applies to _____ coverage.

DEDUCTIBLE APPLIES PER CLAIM, _____ PER OCCURRENCE _____

INSURANCE COMPANY
ADDRESS: _____

I, _____, (print name) hereby declare under penalty of perjury, under the laws of the State of California, that I have the authority to bind the above-named insurance company to this endorsement and by my execution hereof, do so bind said company.

Signature of Authorized Representative (Original Signature
only; No facsimile signature or initialed signature
accepted)

Executed at _____, _____ on _____ 20
.

Phone NO.: () _____

**I. INSTRUCTIONS FOR COMPLETING, EXECUTING, AND SUBMITTING
EVIDENCE OF INSURANCE TO THE OWNER**

**CIP NO. 502 GREENBELT PEDESTRIAN TRAIL
CIP NO. 604 CITY WIDE ADA IMPROVEMENTS
CIP NO. 194 ANNUAL STRIPING IMPROVEMENTS**

Insured: _____ Date: _____
(Contractor, Lessee, Permittee, etc.)

Insured

- A. In order to reduce problems and time delays in providing evidence of insurance to the City, you are requested to give your insurance agent or broker a copy of the attached Insurance Requirements and endorsement forms along with these instructions for completing, executing, and submitting evidence of insurance.

If the agreement requires Workers' Compensation coverage and you have been authorized by the State of California to self-insure Workers' Compensation, then a copy of the certificate from the State authorizing self-insurance for Workers' Compensation shall meet the requirements for Workers' Compensation insurance covering activities within the State of California.

All questions relating to insurance should be directed to the department or office responsible for your Contract, lease, permit, or other agreement.

Insurance Agent or Broker

- B. The appropriate Endorsement Form shall be used. No changes in the terms of the Endorsement will be permitted. Certificates of Insurance alone will not be accepted by the City.

More than one insurance policy may be required to comply with the insurance requirements. Endorsement forms appropriate to your insured's Contract, lease or permit are checked below and enclosed.

- Workers' Compensation/Employers Liability
- General Liability
- Automobile Liability
- Excess/umbrella Liability
- Professional Liability
- Property insurance
- Fine Arts Property Insurance

You shall have an authorized representative of the insurance company sign the completed endorsement forms, note his phone number at the bottom of page 2 and have said representative

transmit the forms to the City. Signatures must be originals as the City will not accept facsimile (rubber stamp, photocopy, etc.) or initialed signatures.

The name of the Insurance Company underwriting the coverage and its address shall be noted on page 2 of the endorsement form.

The "General description of agreement(s) and/or activity(ies) insured" shall include reference to the activity and/or to either the specific City Contract number, lease number, permit number or construction approval number.

The coverages and limits for each type of insurance are specified in the attached sheet of insurance requirements. When coverage is on a scheduled basis, then a separate sheet is to be attached to the endorsement listing such scheduled locations, vehicles, etc., so covered.

Endorsements to excess policies will be required when primary insurance is insufficient in complying with the City's requirements.

If there is insufficient space on the form to note pertinent information, such as inclusions, exclusions or specific provisions, etc., a separate sheet may be attached.

When additional sheets are attached, change the number of pages at the bottom of the form.

Completed Endorsement(s) and questions relating to the required insurance are to be directed to:

Risk Management
City of Hermosa Beach
1315 Valley Dr. Hermosa
Beach, CA 90254
(310) 318-0202

Improperly completed Endorsements will be returned to your insured for correction by an authorized representative of the insurance company.

DELAY IN SUBMITTING PROPERLY COMPLETED ENDORSEMENT FORMS MAY DELAY YOUR INSURED'S INTENDED OCCUPANCY OR OPERATION UNDER AGREEMENT WITH THE OWNER.

For extensions or renewals of insurance policies which have the City's Endorsement Form(s) attached, the City will accept a copy of the endorsement (with an original signature) to extend the period of coverage as evidence of continued coverage.

J. WORKER'S COMPENSATION INSURANCE CERTIFICATE

**CIP NO. 502 GREENBELT PEDESTRIAN TRAIL
CIP NO. 604 CITY WIDE ADA IMPROVEMENTS
CIP NO. 194 ANNUAL STRIPING IMPROVEMENTS**

The Contractor shall execute the following form as required by the California Labor Code, Sections 1860 and 1861:

I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that Code, and I will comply with such provisions before commencing the performance of the work of the Contract.

DATED: _____

CONTRACTOR: _____

By: _____

Signature

Title

ATTEST:

By: _____

Signature

Title

K. SUPPLEMENTAL INFORMATION TO BE COMPLETED BY PRINCIPAL

**CIP NO. 502 GREENBELT PEDESTRIAN TRAIL
CIP NO. 604 CITY WIDE ADA IMPROVEMENTS
CIP NO. 194 ANNUAL STRIPING IMPROVEMENTS**

If an individual, so state. If a firm or co-partnership, state the firm and give the names of all individual co-partners composing the partnership. If a corporation, state legal name of corporation; state also the names of the president, secretary, treasurer, and manager thereof.

Business Address:

Telephone Number:

Date:

Print Name:

Principal

Signature:

L. W9 FORM

Form **W-9**
(Rev. October 2018)
Department of the Treasury
Internal Revenue Service

Request for Taxpayer Identification Number and Certification

**Give Form to the
requester. Do not
send to the IRS.**

▶ Go to www.irs.gov/FormW9 for instructions and the latest information.

Print or type. See Specific Instructions on page 3.	<p>1 Name (as shown on your income tax return). Name is required on this line; do not leave this line blank.</p> <hr/> <p>2 Business name/disregarded entity name, if different from above</p> <hr/> <p>3 Check appropriate box for federal tax classification of the person whose name is entered on line 1. Check only one of the following seven boxes.</p> <p><input type="checkbox"/> Individual/sole proprietor or single-member LLC <input type="checkbox"/> C Corporation <input type="checkbox"/> S Corporation <input type="checkbox"/> Partnership <input type="checkbox"/> Trust/estate</p> <p><input type="checkbox"/> Limited liability company. Enter the tax classification (C=C corporation, S=S corporation, P=Partnership) ▶ _____</p> <p>Note: Check the appropriate box in the line above for the tax classification of the single-member owner. Do not check LLC if the LLC is classified as a single-member LLC that is disregarded from the owner unless the owner of the LLC is another LLC that is not disregarded from the owner for U.S. federal tax purposes. Otherwise, a single-member LLC that is disregarded from the owner should check the appropriate box for the tax classification of its owner.</p> <p><input type="checkbox"/> Other (see instructions) ▶ _____</p>	<p>4 Exemptions (codes apply only to certain entities, not individuals; see instructions on page 3):</p> <p>Exempt payee code (if any) _____</p> <p>Exemption from FATCA reporting code (if any) _____</p> <p><small>(Applies to accounts maintained outside the U.S.)</small></p>
	<p>5 Address (number, street, and apt. or suite no.) See instructions.</p> <hr/> <p>6 City, state, and ZIP code</p> <hr/> <p>7 List account number(s) here (optional)</p> <hr/>	<p>Requester's name and address (optional)</p> <hr/>

Part I Taxpayer Identification Number (TIN)

Enter your TIN in the appropriate box. The TIN provided must match the name given on line 1 to avoid backup withholding. For individuals, this is generally your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the instructions for Part I, later. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN*, later.

Note: If the account is in more than one name, see the instructions for line 1. Also see *What Name and Number To Give the Requester* for guidelines on whose number to enter.

Social security number					
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; border: 1px solid black; height: 20px;"></td> <td style="width: 2%; border: 1px solid black; text-align: center;">-</td> <td style="width: 25%; border: 1px solid black; height: 20px;"></td> <td style="width: 2%; border: 1px solid black; text-align: center;">-</td> <td style="width: 46%; border: 1px solid black; height: 20px;"></td> </tr> </table>		-		-	
	-		-		
or					
Employer identification number					
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; border: 1px solid black; height: 20px;"></td> <td style="width: 2%; border: 1px solid black; text-align: center;">-</td> <td style="width: 73%; border: 1px solid black; height: 20px;"></td> </tr> </table>		-			
	-				

Part II Certification

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me); and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding; and
3. I am a U.S. citizen or other U.S. person (defined below); and
4. The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct.

Certification instructions. You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions for Part II, later.

Sign Here	<p>Signature of U.S. person ▶ _____</p>	<p>Date ▶ _____</p>
------------------	---	---------------------

General Instructions

Section references are to the Internal Revenue Code unless otherwise noted.

Future developments. For the latest information about developments related to Form W-9 and its instructions, such as legislation enacted after they were published, go to www.irs.gov/FormW9.

Purpose of Form

An individual or entity (Form W-9 requester) who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) which may be your social security number (SSN), individual taxpayer identification number (ITIN), adoption taxpayer identification number (ATIN), or employer identification number (EIN), to report on an information return the amount paid to you, or other amount reportable on an information return. Examples of information returns include, but are not limited to, the following.

- Form 1099-INT (interest earned or paid)

- Form 1099-DIV (dividends, including those from stocks or mutual funds)
 - Form 1099-MISC (various types of income, prizes, awards, or gross proceeds)
 - Form 1099-B (stock or mutual fund sales and certain other transactions by brokers)
 - Form 1099-S (proceeds from real estate transactions)
 - Form 1099-K (merchant card and third party network transactions)
 - Form 1098 (home mortgage interest), 1098-E (student loan interest), 1098-T (tuition)
 - Form 1099-C (canceled debt)
 - Form 1099-A (acquisition or abandonment of secured property)
- Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN.

If you do not return Form W-9 to the requester with a TIN, you might be subject to backup withholding. See What is backup withholding, later.

VI. SPECIAL PROVISIONS

**CIP NO. 502 GREENBELT PEDESTRIAN TRAIL
CIP NO. 604 CITY WIDE ADA IMPROVEMENTS
CIP NO. 194 ANNUAL STRIPING IMPROVEMENTS**

The following Special Provisions supplement and amend the 2021 Standard Specifications for Public Works Construction (SSPWC). These Special Provisions have been arranged into a format and sequence that parallels the Standard Specifications for Public Works Construction.

TABLE OF CONTENTS

VI. SPECIAL PROVISIONS	1
PART 1 – GENERAL PROVISIONS	4
PREFACE: STANDARD SPECIFICATIONS AND STANDARD DRAWINGS	4
SECTION 1 – GENERAL	4
1-2 TERMS AND DEFINITIONS	4
SECTION 2 – SCOPE OF THE WORK	4
2-2 PERMITS	4
2-5 THE CONTRACTOR’S EQUIPMENT AND FACILITIES	5
2-5.5 <i>Contractor’s Responsibility for Work</i>	5
2-5.6 <i>Notice and Service Thereof</i>	5
2-11 RETENTION OF IMPERFECT WORK	6
SECTION 3 – CONTROL OF THE WORK	6
3-6 THE CONTRACTOR’S REPRESENTATIVE	6
3-7 CONTRACT DOCUMENT	7
3-8 SUBMITTALS	7
3-12 WORK SITE MAINTENANCE	8
3-13 COMPLETION, ACCEPTANCE, AND WARRANTY	9
SECTION 5 - LEGAL RELATIONS AND RESPONSIBILITIES	9
5-3 LABOR	9
5-4 INSURANCE	9
5-7 SAFETY	11
5-8 LAWS TO BE OBSERVED	11
5-9 FAIR EMPLOYMENT PRACTICE COMMISSION CERTIFICATION	13
SECTION 6 – PROSECUTION AND PROGRESS OF THE WORK	13
6-1 CONSTRUCTION SCHEDULE AND COMMENCEMENT OF THE WORK	13
6-9 LIQUIDATED DAMAGES	15
SECTION 7 – MEASUREMENT AND PAYMENT	15
7-3 PAYMENT	15
7-6 PAYMENT FOR PROJECT BID ITEMS	18
PART 2 – CONSTRUCTION MATERIALS	27
SECTION 200 – ROCK MATERIALS	27
200-2 UNTREATED BASE MATERIALS	27
SECTION 201 – CONCRETE, MORTAR, AND RELATED MATERIALS	27
201-1 PORTLAND CEMENT CONCRETE	27
203-6 ASPHALT CONCRETE	27
PART 3 – CONSTRUCTION METHODS	28
SECTION 300 – EARTHWORK	28
300-1 CLEARING AND GRUBBING	28
SECTION 301 – SUBGRADE PREPARATION, TREATED MATERIALS, AND PLACEMENT OF BASE MATERIALS	29
301-1 SUBGRADE PREPARATION	29
SECTION 302 – ROADWAY SURFACING	29
302-5 ASPHALT CONCRETE PAVEMENT	29
SECTION 303 – CONCRETE AND MASONRY CONSTRUCTION	30

303-5 CONCRETE CURBS, WALKS, GUTTERS, CROSS GUTTERS, ALLEY INTERSECTIONS, ACCESS RAMPS, AND DRIVEWAYS.....	30
PART 4 – EXISTING IMPROVEMENTS.....	33
SECTION 400 – PROTECTION AND RESTORATION.....	33
400-4 TREES.....	33
400-5 SIGNPOST.....	33
SECTION 401– REMOVAL.....	33
401-8 TREES.....	33
PART 6 – TEMPORARY TRAFFIC CONTROL.....	35
SECTION 600 – ACCESS.....	35
600-1 GENERAL.....	35
SECTION 601 – TEMPORARY TRAFFIC CONTROL FOR CONSTRUCTION AND MAINTENANCE WORK ZONES.....	36
601-1 GENERAL.....	36
601-7 PAYMENT.....	38
PART 9 – SPECIFIC CONDITIONS.....	39
SECTION 900 – CONSTRUCTION MANAGEMENT.....	39
900-1 PROCORE SOFTWARE.....	39

PART 1 – GENERAL PROVISIONS

PREFACE: STANDARD SPECIFICATIONS AND STANDARD DRAWINGS

The Standard Specifications for Public Works Construction (SSPWC), written and promulgated by the Southern California Chapter of the American Public Works Association and the Southern California Districts of the Associated General Contractors of California, shall be the Standard Specifications of the City. All work shall conform to the edition indicated in this document and in the bid proposal documents, including supplements, of the SSPWC, these Special Provisions which supplement or modify the SSPWC, the Standard Plans for Public Works Construction (SPPWC) of the same edition as the SSPWC, and the Standard Drawings as issued by the City available at the time bids are opened unless otherwise specified in the Contract documents.

The above referenced Standard Specifications, Special Provisions and Standard Drawings are hereby made a part of the Contract documents.

SECTION 1 – GENERAL.

1-2 TERMS AND DEFINITIONS.

Whenever the following terms are used in the SSPWC, they shall be understood to mean and refer to the following:

- a) Board – The City Council of the City of Hermosa Beach
- b) Contract documents – Documents including but not limited to the proposal forms, Special Provisions, Bonds, Insurance, Contract, and all Addenda setting forth any modifications to the documents.
- c) Engineer – The Director of Public Works/City Engineer or their authorized representative
- d) Bidder – An individual, co-partnership, association, or corporation submitting a proposal for the work contemplated, acting directly or through a duly authorized representative.
- e) Legal Address of Contractor – The address given on the Contractor’s bid and is hereby designated as the place to which all notices, letters or other communications to the Contractor shall be mailed or delivered.

SECTION 2 – SCOPE OF THE WORK.

2-2 PERMITS.

Add the following:

Prior to beginning work, the Contractor shall obtain authorization and permits from the City of Hermosa Beach. The Contractor will be responsible to protect and preserve all property and improvements in accordance with the Contract documents.

The Contractor must have or obtain a valid City of Hermosa Beach Business License in accordance with the provisions of the Hermosa Beach Municipal Code.

City Right of Way Permit

A City Right of Way Permit is required to work within public right-of-way and will be issued at no cost to the Contractor.

Right of Way Permits

When work occurs in the right-of-way of other entities, the Contractor shall obtain a no fee right of way permit as required for an encroachment from that entity.

2-5 THE CONTRACTOR'S EQUIPMENT AND FACILITIES.

2-5.4 Haul Routes.

Replace the entire subsection with the following:

Haul Routes shall be per the City of Hermosa Beach Truck Routes map. See Cover Sheet on project plans.

Add the following subsections:

2-5.5 Contractor's Responsibility for Work.

Until the formal acceptance of the work by the City, the Contractor shall have the charge and care thereof and shall, subject to the insurance protection furnished, bear the risk of accident, loss or damage to any part thereof by action of the elements or from any other cause, whether arising from the execution or from the non-execution of the work. The Contractor shall rebuild, repair, restore and otherwise correct damages to any portion of the work occasioned by any of the above causes before its acceptance.

In case of suspension of work from any cause whatever, the Contractor shall be responsible for all materials and the proper temporary storage thereof.

2-5.6 Notice and Service Thereof.

Any notice required or given by one party to the other under the Contract shall be in writing and shall be dated and signed by the party giving such notice or by a duly authorized representative of such party. Any such notice shall not be effective for any purpose whatever unless served in the following manner:

Notice shall be given to the City by personal delivery thereof to the City's Engineer or by depositing the same in the United States mail enclosed in a sealed envelope, registered and with postage prepaid, addressed to:

Public Works Department
City of Hermosa Beach
1315 Valley Dr.
Hermosa Beach, CA 90254

Notice shall be given to the Contractor by personal delivery thereof to said Contractor or to his authorized representative at the site of the project, or by depositing the same in the United States mail, enclosed in a sealed envelope addressed to said Contractor at the address established for the conduct of the work under this Contract, postage prepaid and registered.

Notice shall be given to the Surety, or any other person, by personal delivery to said Surety or other person, or by depositing the same in the United States Mail, enclosed in a sealed envelope addressed to such Surety or persons at the address of said Surety or persons last communicated to the party giving the notice, postage prepaid and registered.

2-5.7 Warranty of Title.

No materials, supplies, or equipment for the work under this Contract shall be purchased subject to any chattel mortgage or under a conditional sale Contract or other agreement by which an interest therein or any part thereof is retained by the seller or supplier. The Contractor warrants clear and good title to all materials, supplies, and equipment installed and incorporated in the work, and agrees upon completion of all work to deliver the premises, together with all improvements and appurtenances constructed or placed thereon by them to the City free from any claims, liens, encumbrances, or charges, and further agrees that neither they nor any person, firm, or corporation furnishing any material or labor for work covered by the Contract shall have any right to a lien upon the premises or any improvement or appurtenance thereon; provided, that this shall not preclude the Contractor from installing metering devices or other equipment of utility companies the title of which is commonly retained by the utility company.

Nothing contained in this section, however, shall defeat or impair the right of such persons furnishing materials or labor under any bond given by the Contractor for their protection, or any right under any law permitting such persons to look to funds due the Contractor, which are in the hands of the City.

2-11 RETENTION OF IMPERFECT WORK.

If any portion of the work done or materials furnished under the Contract proves defective or not in accordance with the specifications and Contract drawings, and if the imperfection in the same is not of sufficient magnitude or importance to make the work dangerous or undesirable, or if the removal of such work is impracticable or will create conditions which are dangerous or undesirable in the opinion of the Engineer, the Engineer shall have the right and authority to retain the work instead of requiring it to be removed and reconstructed, but he shall make such deductions therefor in the payment due the Contractor as may be just and reasonable.

SECTION 3 – CONTROL OF THE WORK.

3-6 THE CONTRACTOR’S REPRESENTATIVE.

Add the following:

The Contractor shall provide the Engineer with the name, address, and business and home telephone numbers of the person responsible for the maintenance of barricades, traffic control signs, lights and other safety devices.

3-7 CONTRACT DOCUMENT.

3-7.2 Precedence of Contract documents.

Replace the entire subsection with the following:

If there is a conflict between any of the Contract documents, the document highest in the order of precedence shall control. The order of precedence, from highest to lowest, shall be as follows:

1. Requirements of law, including the Code and Ordinances of the City of Hermosa Beach.
2. Permits from other agencies as may be required by law.
3. Permits from City of Hermosa Beach Departments as may be required by law or ordinance.
4. The Contract.
5. The Bid Proposal.
6. Addenda.
7. Notice Inviting Bids.
8. Instructions to Bidders.
9. Special and General Provisions.
10. Plans.
11. City of Hermosa Beach Standard Plans.
12. Other Standard Plans.
13. Standard Specifications for Public Works Construction.
14. Reference Specifications.

Change orders, supplemental agreements, and approved revisions to Plans and Specifications will take precedence over documents listed above, except those listed as FIRST, SECOND, and THIRD. Detailed plans shall have precedence over general plans.

3-8 SUBMITTALS.

3-8.1 General.

Add the following:

The Contractor shall submit the following submittals within ten (10) days of notification of the City's intent to award this Contract:

- Project Construction Schedule, sequence, and phase sequence plan
- Preconstruction video on USB, 2 copies
- Copy of City Business License (Prime and Subcontractors)

- 24 Hr. Emergency Phone Call List
- Letters identifying site authorized Contractor’s representative or “Superintendent” and Contractor’s “Competent Person”
- Vehicular and Pedestrian Traffic Control Plan
- WPCP / Best Management Practices
- Asphalt Concrete material specifications and mix design
- Concrete material specifications and mix design
- Crushed Miscellaneous Base material specifications
- Topsoil material specifications
- Decomposed Granite specifications
- Detectable Warning System/Truncated Domes for access ramps
 - One (1) ADA tile sample, minimum 6” x 6”
 - Shop drawings for access ramp products showing fabrication details, composite structural system, tile surface profile, sound on cane amplification feature, plans showing tile placement including joints, and material to be used as well as outlining installation materials and procedure
- Construction Notices sample template shall be provided by the City to the Contractor and modified and submitted to the engineer for review and approval. Approved Construction Notice shall be distributed by Contractor. See Exhibit C
- Others as requested by the Engineer

3-12 WORK SITE MAINTENANCE.

3-12.6.2 Best Management Practices (BMPs).

Replace the entire subsection with the following:

Best Management Practices (BMPs) shall be defined as a method used to prevent or control stormwater runoff and the discharge of pollutants, including sediment, into local storm drains and/or drainage facilities leading to waterbodies. The contractor shall obtain and refer to the California Stormwater Quality Association’s *2023 Construction BMP Handbook*, the City of Hermosa Beach Community Development Department’s *Best Management Practices for Small Construction Sites* brochure, and any other materials provided by the City. The contractor shall, based on those documents, the contract documents, and latest industry best practices, provide a project-specific erosion control plan which will specify which BMPs will be utilized for wind erosion control, tracking control, erosion and sediment control, non-storm water control, and waste management and materials pollution control.

The contractor shall be responsible for installing, constructing, inspecting, maintaining, and removing and disposing of BMPs in accordance with the erosion control plan and as requested by

the Engineer throughout the duration of construction, including outside of working hours. Additional BMPs may be required due to change(s) in field conditions, contractor activities, or construction operations. The contractor shall be responsible for adjusting BMPs as requested by the Engineer to achieve erosion control objectives. The contractor shall also be responsible for BMP implementation and maintenance throughout any temporary suspension of the work.

Payment for BMPs shall be included in cost of the other items of work. The Contractor shall comply with the requirements described above in implementing BMPs including obtaining any required permits. No additional compensation will be made therefor.

3-13 COMPLETION, ACCEPTANCE, AND WARRANTY.

Add the following subsection:

3-13.4 Completion and Acceptance.

In addition to the guarantees as required in Section 2-4 of the Standard Specifications, the Faithful Performance Bond shall remain in full force and effect for a period of one year after acceptance of the work by the City to insure that defects, which appear within said period, will be repaired, replaced, or corrected by the Contractor, at its own cost and expense, to the satisfaction of the Engineer within thirty (30) days of written notice thereof by the City.

SECTION 5 - LEGAL RELATIONS AND RESPONSIBILITIES.

5-3 LABOR.

Add the following subsection:

5-3.6 Laws.

Each Bidder must submit with the Bid Proposal a fully executed Certificate of Non-Discrimination by Contractors. Bids will not be considered unless accompanied by the completed Certificate.

After the opening of bids and the determination of the low Bidder, said low Bidder shall submit to the Public Works Department, no later than 5:00 P.M. on the third working day following the bid opening, a completed "Fair Employment Practices Contractor Compliance Report".

The Contractor shall comply with all applicable provisions of Sections 1776, 1777.5 and 1777.7 of the California Labor Code. The Contractor shall be responsible for compliance with Section 1776 and shall insert a provision in all subcontracts requiring subcontractors to comply with said section.

The Contractor is prohibited from performing work on this project with a subcontractor who is ineligible to perform work on the project pursuant to Section 1777.1 or 1777.7 of the Labor Code.

5-4 INSURANCE.

Replace the entire subsection with the following:

The Contractor shall, at its expense, maintain in effect all times during the performance of work under the Contract not less than the following coverage and limits of insurance, which shall be maintained with insurers licensed to sell insurance in the State of California and having a "A-" or

higher rating in the latest edition of Best's Insurance Guide, and shall be subject to approval by the City's Risk Manager:

Workers' Compensation and Employer's Liability

- Workers' Compensation – coverage as required by law
- Employer's Liability – limits of at least \$1,000,000 per occurrence

Comprehensive General Liability

- Combined Single Limit - \$2,000,000

Automobile Liability

- Combined Single Limit - \$1,000,000

The automobile and general comprehensive liability policies may be combined in a single policy with a combined single limit of \$1,000,000.

All of the Contractor's policies shall contain an endorsement providing written notice shall be given to the City at least 30 calendar days prior to termination, cancellation or reduction of coverage in the policy

The Bodily Injury and Property Damage Liability policies shall contain the following:

1. An endorsement extending coverage to the City as an insured, in the same manner as the named insured as respects liabilities arising out of the performance of any work under the Contract. Such insurance shall be primary insurance as respects the interest of the City, and any other insurance maintained by the City shall be excess and not contributing insurance with the insurance required hereunder.
2. "Severability of Interest" clause.
3. Elimination of any exclusion regarding loss or damage to property caused by explosion or resulting from collapse of buildings or structures or damage to property underground, commonly referred to by insurers as the "XCU" hazards.
4. Provision or endorsement stating that such insurance, subject to all of its other terms and conditions, applies to the liability assumed by the Contractor under the Contract.

Promptly on execution of the Contract, and prior to commencement of any work, the Contractor shall deliver to the City copies of all required policies and endorsements thereto on the forms supplied by the City.

The Contractor shall require and verify similar insurance on the part of its subcontractors.

The foregoing requirements as to the types, limits and City approval of insurance coverage to be maintained by the Contractor are not intended to and shall not in any manner limit or qualify the liabilities and obligation assumed by the Contractor under the Contract.

Any policy or policies of insurance that the Contractor or his Subcontractors elects to carry as insurance against loss or damage to their construction equipment and tools or other personal property used in fulfillment of this Contract shall include a provision waiving the insurer's right of subrogation against the City.

The cost of all insurance shall be included in the Contractor's bid.

5-7 SAFETY.

Add the following subsection:

5-7.9 Emergency Provisions.

Unusual conditions may arise on the work which will require that immediate and unusual provision be made to protect the public from danger or loss or damage to life and property, due directly or indirectly to the prosecution of the work, and it is part of the service required of the Contractor to make such provisions and to furnish such protection.

Whenever, in the opinion of the City, an emergency exists of which the City is aware and against which the Contractor has not taken sufficient precaution for the safety of the public or the protection of utilities or of adjacent structures or property which may be injured by the progress of construction; and whenever, in the opinion of the City, immediate action shall be considered necessary in order to protect public or private personnel or property interests, or prevent likely loss of human life or damage on account of the operations under the Contract, then in that event the City may provide suitable protection to said interests by causing such work to be done and material to be furnished, as in the opinion of the City may seem reasonable and necessary, all at the expense of the Contractor.

Add the following subsections:

5-8 LAWS TO BE OBSERVED.

5-8.1 Laws and Regulations.

The Contractor shall keep himself fully informed of all Federal and State laws, County and City ordinances and regulations which, in any manner, affect those engaged or employed on the work, the materials used in the work or the conduct of the work. If any discrepancy or inconsistency should be discovered in this Contract or in the Plans or Specifications herein referred to, in relation to any such law, ordinance or regulation, the Contractor shall forthwith report the same in writing to the Engineer. The Contractor shall, at all times, observe and comply with and shall cause all his agents and employees to observe and comply with all such applicable laws, ordinances and regulations in effect or which may become effective before completion of this Contract. He shall protect and indemnify the City and its officers and agents against any claim or liability arising from or based on the violations of any such laws, ordinances or regulations whether by himself or by his employees or his subcontractors or their employees.

Except as otherwise explicitly provided in these Specifications, all permits and licenses necessary to the prosecution of the work shall be secured by the Contractor at his own expense and he shall pay all taxes properly assessed against his equipment or property used or required in connection with the work.

All state laws, all county and city ordinances and regulations now imposed by competent authority and relating to any materials required to be furnished under these specifications and works required to be done hereunder, shall be deemed to be and hereby are made controlling and part of these specifications.

5-8.2 General.

The Contractor shall keep himself fully informed of all existing state and national laws and municipal ordinances and regulations which in any manner affect those engaged or employed in the work, or the materials used in the work or which in any way affect the conduct of the work and of all such orders and decrees of bodies or tribunals having any jurisdiction or authority over the same.

5-8.3 Eight-Hour Law.

Eight (8) hours labor constitutes a legal day's work. The Contractor shall forfeit as a penalty \$25.00 (Twenty-five dollars) for each workman employed in the execution of the Contract by the Contractor or any subcontractor under him for each calendar day during which such workman is required or permitted to work more than eight (8) hours in any one calendar day and forty (40) hours in any one calendar week in violation of the provisions of the Labor Code and in particular, Section 1810 to Section 1815 thereof inclusive except that work performed by employees of Contractors in excess of eight (8) hours per day and forty (40) hours during any one week, shall be compensated at not less than one and one-half (1 1/2) times the basic rate of pay as provided in Section 1815.

5-8.4 Prevailing Rate of Per Diem Wages.

Pursuant to the provisions of Section 1773 of the Labor Code, the general prevailing wage rates in the County in which the work is to be done have been determined by the Director of the California Department of Industrial Relations. These wages are set forth in the General Prevailing Wage Rates. The Federal Minimum wage rates for this project as predetermined by the United States Secretary of labor are set forth herein by addenda and in copies that may be examined at the offices described above where project plans, special provisions, and proposal forms may be seen. Addenda to modify the federal minimum wage rates, if necessary, will be issued to holders. Future effective general prevailing wage rates which have been predetermined and are on file with the California Department of Industrial Relations are referenced but not printed in the general prevailing wage rates.

Attention is directed to the Federal minimum wage rate requirements in these Special Provisions. If there is a difference between the minimum wage rates predetermined by the Secretary of labor and the general prevailing wage rates determined by the Director of the California Department of Industries Relations for similar classifications of labor, the Contractor and subcontractor shall pay not less than the higher wage rate. The City will not accept lower State wage rates not specifically included in the Federal minimum wage determination. This includes "helper" (or other classifications based on hours of experience) or any other classifications not appearing in the Federal wage rate determination. Where Federal wage determinations do not contain the State wage rate determination otherwise available for use by the Contractor and subcontractor, the Contractor and subcontractor shall pay not less than the Federal minimum wage rate which most closely approximates the duties of the employees in question.

The U.S. Department of Transportation (DOT) provides a toll-free "hotline" service to report bid rigging activities. Bid rigging activities can be reported Mondays through Fridays, between 8:00 a.m. and 5:00 p.m., eastern time, Telephone No. 1-800-424-9071. Anyone with knowledge of possible bid, Bidder collusion, or other fraudulent activities should use the "hotline" to report these activities. The "hotline" is part of the DOT's continuing effort to identify and investigate highway construction Contract fraud and abuse and is operated under the

direction of the DOT Inspector General. All information will be treated confidentially and caller anonymity will be respected.

The Contractor shall comply with Labor Code Section 1775. In accordance with said section, the Contractor shall forfeit as a penalty to the City \$50.00 (fifty dollars) for each calendar day, or portion thereof, for each workman paid less than the stipulated prevailing rates for such work or craft in which such workman is employed for any work done under the Contract by him or by any subcontractor under him in violation of the provisions of the Labor Code and in particular Labor Code Sections 1770 to 1780, inclusive. In addition to said penalty and pursuant to said Section 1775, the difference between such stipulated prevailing wage rates and the amount paid to each workman for each calendar day or portion thereof for which each workman was paid less than the stipulated prevailing wage rate shall be paid to each workman by the Contractor.

5-8.5 Certified Payroll.

Pursuant to Section 1776 of the Labor Code, the Contractor and/or subcontractors shall submit weekly to the City for each week in which any Contract work is performed a certified copy of all payroll records. Should the Contractor fail to provide such payroll certificates, the City may withhold.

\$1,000.00 for each weekly payroll certificate not received from payment due.

5-9 FAIR EMPLOYMENT PRACTICE COMMISSION CERTIFICATION.

The Contractor's attention is directed to the requirements in Section 12990 of the Government Code for nondiscrimination and compliance employment programs.

SECTION 6 – PROSECUTION AND PROGRESS OF THE WORK.

6-1 CONSTRUCTION SCHEDULE AND COMMENCEMENT OF THE WORK.

6-1.1 Construction Schedule.

Add the following:

The Contractor's proposed construction schedule shall be submitted to the Engineer within ten (10) days of notification of the City's intent to award this Contract. The schedule shall be supported by written statements from each supplier of materials or equipment indicating that all orders have been placed and acknowledged, and setting forth the dates that each item will be delivered.

In preparation of the construction schedule, the following items shall be considered:

- The City observes the following holidays, which shall be considered non-working days. If the Contractor elects to work on any of the City holidays the Contractor shall be responsible for paying any associated inspection costs, including overtime and holiday premiums. **Any work not completed and fully open to public traffic shall be maintained in a safe and delineated condition. Traffic control and safety devices shall be maintained at all times.**
 - New Year's Day

- Martin Luther King Jr.'s Birthday
 - Washington's Birthday
 - Cesar Chavez Day
 - Memorial Day
 - Juneteenth
 - Independence Day
 - Labor Day
 - Veterans Day
 - Thanksgiving
 - Christmas Day
- The Contractor's working hours shall be limited to the hours between 8:00 A.M. and 6:00 P.M., Monday through Friday. Deviation from normal working hours will not be allowed unless written permission has been duly obtained beforehand from the office of the City Engineer. The Contractor shall provide adequate light for proper prosecution of the work, for the safety of the workmen and the public, and for proper inspection.
 - In the event of either a requested or emergency deviation, inspection service fees will be charged against the Contractor. The service fees will be calculated at overtime rates including benefits, overhead and travel time. The service fees will be deducted from any amounts due to the Contractor.

Prior to issuing the Notice to Proceed, the Engineer will schedule a preconstruction meeting with the Contractor to review the proposed construction schedule and delivery dates, arrange utility coordination, discuss construction methods and clarify inspection procedures.

The names, addresses, and telephone numbers of the Contractor and subcontractors, or their representatives, shall be filed with the Public Works Manager and the County Sheriff's Department or the City Police Department prior to beginning work.

The Contractor shall also notify the City of Hermosa Beach and the owners of all utilities and substructures not less than 72 hours prior to starting construction. The following utility companies list of names and telephone numbers is intended for the convenience of the Contractor and is not guaranteed to be complete or correct:

Southern California Edison Co.	310/783-9332
The Gas Co.	310/605-7837
Verizon	818/837-0394
Hermosa Beach Police & Fire	310/524-2750
Time Warner (Cable TV)	310/216-4184
West Basin Municipal Water District	310/217-2411
Athens Services	626/934-4696
California Water Service Co.	310/257-1428
Underground Service Alert	800/227-2600

Los Angeles County Flood Maintenance 562/861-0316
Los Angeles County Public Works 626/458-3109

The Contractor shall submit periodic Progress Reports to the Director of Public Works by the tenth day of each month. The report shall include an updated Construction Schedule. Any deviations from the original schedule shall be explained. Progress payments will be withheld pending receipt of any outstanding reports.

6-4.3 Payment for Delays.

To the furthest extent permitted by law, replace the entire subsection with the following:

In compliance with the provisions of California Public Contract Code § 7102, the Contractor will be compensated for damages incurred due to delays in completing the Work due solely to the fault of the City, where such delay is unreasonable under the circumstances and not contemplated by the parties. The Contractor and City agree that determining actual damages is impracticable and extremely difficult. As such, the Contractor shall be entitled to the appropriate time extension and to payment of liquidated damages in the sum of \$1,200 per Day of delay in excess of the time specified for the Completion of the Work. Such amount shall constitute the only payment allowed and shall necessarily include all overhead (direct or indirect), all profit, all administrative costs, all bond costs, all labor, materials, equipment and rental costs, and any other costs, expenses and fees incurred or sustained as a result of such delay. The Contractor expressly agrees to be limited solely to the liquidated damages for all such delays as defined in this subsection.

6-9 LIQUIDATED DAMAGES.

Add the following:

The amount of liquidated damages is hereby amended to **\$1,200** for each consecutive calendar day.

SECTION 7 – MEASUREMENT AND PAYMENT.

7-3 PAYMENT.

7-3.2 Partial and Final Payment.

Replace the entire subsection with the following:

The closure date for periodic progress payments shall be the twenty-fifth day of each month. Authorization to pay is commonly received on the tenth day of the following month. However, payments will be withheld pending receipt of any outstanding reports required by the Contract documents.

Each month, the Contractor shall meet with the Engineer, a minimum of three working days prior to the submittal of the progress payment to the City, to finalize and receive approval regarding the measurement of the Work performed through the closure date and the estimated value of the progress payment based on the contract Unit Prices or as provided for in the bid schedule. Any progress payment submitted without such approval will be considered incomplete and returned to the Contractor and no payment shall be considered until such approval is obtained. Payments will be withheld pending receipt of any outstanding reports required by the contract documents.

The final progress payment will not be released until the Contractor returns the control set of specifications and plans indicating the as-built conditions.

7-3.4 Mobilization.

Replace the entire subsection with the following:

Mobilization and demobilization shall include all site visits; preparation of all submittals; BMPs; obtaining all permits, insurance, and bonds; video recording of the site existing conditions; moving onto the site all materials and equipment; set up of any temporary facilities (e.g. sanitary facilities, parking, construction water, equipment and materials staging area, fencing); distribution of all notification materials; removal of same at completion of the work; site cleanup; and other work as required to perform and complete the work.

It shall be the Contractor's responsibility to secure the entire limit of the work site with temporary construction fencing. The fencing limits and layout are subject to approval by the Engineer.

No material, equipment, or vehicles to be left overnight on sidewalks or streets unless approved the Engineer.

A minimum of one week prior to the start of construction, the Contractor shall video record all areas where construction is to take place. Such video recordings shall be provided to the Engineer before construction commences. These video recordings shall serve as a record of the existing conditions for disputes arising from restoration and should therefore be taken along the line of construction and site access and staging areas at sufficient detail as necessary to clearly depict details of existing conditions. Video recordings shall document existing sidewalks, and adjacent conditions. The video recordings shall be on two USB copies and given to the Engineer. All video recordings shall be indexed and catalogued in such a manner that each photographed area is readily identifiable and shall also indicate the date and time (hour, minutes, and seconds) on which the recording was made. The Contractor shall also video record any unusual conditions encountered during construction that are not already a matter of photographic record. In any areas where existing conditions cannot be determined by means of video recording, the area shall be restored as approved by the Engineer at Contractor's expense. All video recordings shall become the property of the City.

Mobilization shall consist of preparatory work and operations including, but not limited to, those necessary for the movement of personnel, equipment, materials and incidentals to the project site necessary for work on the project and for all other work and operations which must be performed or costs incurred including bonds, insurance, construction permits and/or permit riders as may be required by law, and financing prior to beginning work on the various contract items on the project site.

Mobilization shall also include the cost, time and labor to move the necessary construction equipment to and from the job site, supervisory time on the job by the Contractor's personnel to keep the construction site in a safe condition and all other related work as required for all non-working days during the course of construction. Contractor is responsible for securing an adequate storage site for equipment and materials.

Mobilization shall include any work shown on the plans, including removal and/or relocation of an item of work shown on construction documents, which has no corresponding bid item for said

work. It shall also include removal of vegetation, removal and/or modifications to the existing planters, wall, fences, gates within the project area, on private properties and within the public right of way as shown on the construction documents. Full compensation relating to that work, including the furnishing of labor and materials, and the disposal of materials shall be included herein.

Mobilization shall include compliance with water quality and air quality laws; furnishing all water required for the construction work; protection of utilities, trees, fences, walls, landscaping, and other facilities; and the relocations as shown on the plans. All complaints received by the City associated with the construction alleging damage to private property and vehicles shall be responded to by the Contractor within one working day of notification. Failure to comply with this provision may result in a penalty of one hundred and fifty dollars (\$150.00) per occurrence.

The Contractor shall have on the work site at all times, as its agent, a competent superintendent capable of reading and thoroughly understanding the plans, specifications, other related documents, and directions from the Engineer.

Contractor shall confine his operations and work area within the project area. No encroachment into private property will be permitted without the prior written consent of the property owner. Obtaining this consent will be the responsibility and the costs of the Contractor. Material shown on the plans or designated in the Special Provisions which is to be used in the reconstructed work and which has been damaged or destroyed as a result of the Contractor's operations shall be repaired or replaced at the option of the Engineer by the Contractor at the Contractor's sole expense.

The Contractor shall provide personnel to keep the construction site in a safe condition at all times, including non-working hours. Mobilization shall include scheduling and phasing of the work per the requirements of the City. The Contractor shall coordinate all construction activities with the City.

Payment for mobilization shall be per the Lump Sum (LS) price bid not exceeding 5% of the total bid amount for the project and shall include obtaining and paying for all bonding, insurance, business licenses and permits, as required for entire project, from the City of Hermosa Beach and all related agencies including but not limited to utility companies and private and public agencies. The City of Hermosa Beach will waive its permit fee.

The Contractor shall comply with the requirements specified by each license or permit. Compensation also includes furnishing a crew to pothole at the discretion of the Engineer. Progress payments for this item shall be paid in accordance with the completion percentage of the project and shall include the costs of such mobilization and administration for the entire contract period.

Add the following subsection:

7-3.9 Work Performed Without Direct Payment.

Tools and materials of any class for which no price is fixed in the Proposal, it shall be understood that such work, equipment, labor, tools, and materials shall be provided without extra charge, allowance, or direct payment of any kind. The cost of performing such work or furnishing such equipment, labor, tools, and materials shall be included in the unit bid prices in the Proposal and no additional compensation will be paid therefor.

7-4.2 Basis for Establishing Costs.

7-4.2.1 Labor.

Replace the entire subsection with the following:

The costs of labor will be the actual cost for wages of workers performing the extra work at the time the extra work is done, plus the employer payments of payroll taxes, health and welfare, pension, vacation, apprenticeship funds, and other direct costs, resulting from Federal, State, or local laws, as well as assessments or benefits required by collective bargaining agreements.

7-4.3 Markup

7-4.3.1 Work by the Contractor.

Replace the entire subsection with the following:

An allowance for overhead and profit shall be added to the Contractor's costs and shall constitute the full and complete markup for all overhead and profit on extra work performed by the Contractor. The Contractor shall also be compensated for the actual increase in the Contractor's bond premium caused by the extra work. The markup shall be:

- a. Labor – 20%
- b. Materials – 15%
- c. Tool and Equipment Rental – 15%
- d. Other Items – 15%

7-4.3.2 Work by a Subcontractor.

When any of the extra work is performed by a subcontractor, the markup shall be applied to the subcontractor's costs. An allowance for the Contractor's overhead and profit shall be added to the sum of the subcontractor's costs and markup and shall constitute the full and complete markup for all overhead and profit for the Contractor on work by the subcontractor. For Contractor markup of subcontractor's costs, the allowance shall be 10% on the first \$2,000 or portion thereof and 5% on costs in excess of \$2,000.

Add the following section:

7-6 PAYMENT FOR PROJECT BID ITEMS.

7-6.1 Traffic Control and Public Safety.

The Contractor shall provide and maintain all construction area traffic controls in accordance with Part 6 of the Standard Specifications for Public Works Construction, the latest version of the California Manual on Uniform Traffic Control Devices (CA MUTCD), and Work Area Traffic Control Handbook (WATCH), and as noted herein. All necessary traffic control devices shall be in place prior to the start of work on a project section.

The Contractor shall so conduct his operations as to offer the least possible obstruction and inconvenience to public traffic. Every effort shall be made to provide a clear and unobstructed view of all traffic control signs, signals, and markers.

The Contractor shall maintain access for emergency vehicles at all times. The Contractor shall maintain a 24-hour emergency service to remove, install, relocate, and maintain warning devices and shall furnish to the Engineer names and telephone numbers of three persons responsible for this emergency service. In the event these persons do not promptly respond when notified, or it becomes necessary to call other forces to accomplish emergency service, the Contractor will be responsible for any cost incurred.

All existing permanent traffic control signs, barricades, and devices shall remain in effective operation unless a substitute operation is arranged for and approved by the Engineer. In the event that a temporary traffic control device or sign conflicts with a permanent one, the Contractor shall cover the permanent device to eliminate the conflict.

Prior to the start of each workday, the Contractor shall perform all necessary work incidental to and commensurate with the proper signing, detouring, barricading, etc., heretofore and hereinafter specified that is required for that particular day's schedule of operations. No construction shall be permitted until such signing and detouring operations have been completed.

The Contractor may post "Temporary No Parking" signs only after notifying and receiving approval from the Engineer. Type of sign, method, and location of such posting shall conform to the California MUTCD sign chart. The Contractor shall be required to provide and maintain all necessary flag persons, barricades, delineators, signs, flashers, and any other safety equipment as set forth in the latest publication of the California MUTCD, or as required by the Engineer to ensure safe passage of traffic (vehicles, pedestrians, cyclists, etc.).

The Contractor shall submit a traffic control and phasing plan for approval prior to beginning construction. No work shall commence on a phase until the previous phase is completed unless approved by the Engineer. The Contractor shall include these sequences in their work progress schedule to be submitted. The Contractor shall provide written notification to all businesses and residents near the construction one week prior to the work start date. The notice shall be prepared by the Contractor, approved by the City, distributed by the Contractor, and will include a preliminary schedule, name of the job superintendent/foreman and a telephone number where they can be reached 24 hours a day in case of emergency.

The cost for all project noticing will be included in the price of the traffic control. Failure or refusal by the Contractor to comply with the above requirements shall be sufficient cause for the Engineer to order the work done by City forces and for all costs thereof to be borne by the Contractor.

This item shall also include non-skid steel plates and temporary AC including installation and removal; all associated temporary signing and striping; flashing arrow signs; flagging and/or flagger costs; and other items as requested by the Engineer to safely complete the work.

Should the Contractor appear to be negligent in furnishing warning and protective measures as above provided, the Engineer may direct attention to the existence of a hazard, and the necessary warning and protective measures shall be furnished and installed by the Contractor, at their expense. Should the Engineer point out the inadequacy of warning and protective measures, such action on the part of the Engineer shall not relieve the Contractor from responsibility for public safety or abrogate its obligation to furnish and pay for these devices.

The Contractor shall provide access as required to accommodate special circumstance at any residence including access for disabled, impaired, special medical needs, etc.

Payment for Traffic Control and Public Safety shall be included in the cost for other items of work and shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals and for doing all the work involving placing, removing, storing, maintaining, moving to new locations, replacing and disposing of the components of traffic control system as specified in the SSPWC and these specifications, and as directed by the City.

7-6.2 Survey and Construction Staking.

The Contractor shall perform all necessary survey and construction staking required to complete the work per the contract documents.

Payment for Survey and Construction Staking shall be included in the cost of other items of work and shall include furnishing all labor, materials, tools, equipment, transportation, and incidentals for performing all work involved, complete and in place, as shown in the Plans and in accordance with the contract documents. No additional compensation will be allowed therefor.

7-6.3 Temporary Construction Fencing.

It shall be the Contractor's responsibility to secure the entire limit of the work site with temporary construction fencing. The fencing limits and layout are subject to approval by the Engineer.

Payment for Temporary Construction Fencing shall be included in the cost of Mobilization and Demobilization.

7-6.4 Remove Existing Improvements.

Removal and demolition shall conform to the SSPWC and contract documents.

The Contractor shall control any dust that is caused by the operations. No additional compensation will be allowed for removal or disposal of any other materials, which may require special handling or disposal.

Payment shall be made at the contract unit price per Cubic Foot (CF), Square Foot (SF), Linear Foot (LF), or Lump Sum (LS) as defined in the bid schedule and shall include furnishing all labor, materials, tools, equipment, transportation, and incidentals for performing all work involved, complete and in place, as shown in the Plans and in accordance with the contract documents, unclassified excavation, removal of existing improvements and materials, irrigation repair, landscaping restoration, adjustment of miscellaneous utility items found within the limits of construction, and finishing. No additional compensation will be allowed therefor.

7-6.5 Clearing and Grubbing.

Clearing and grubbing shall conform to the SSPWC and contract documents and shall include all clearing and grubbing for the construction of the new improvements and any clearing and grubbing and/or removal and replacement shown on the plans for which there is no bid item of work.

Clearing and grubbing shall include the removal and disposal of block wall, edging, headers, trail material, foundations, lawn, planting areas, irrigation systems, and other items as indicated in the contract documents and as directed by the Engineer.

The Contractor shall notify the Engineer prior to the removal of any existing trees. Any existing improvement damaged or destroyed by the construction operations shall be replaced in kind by the Contractor.

The Contractor shall control any dust that is caused by clearing and grubbing operations. No additional compensation will be allowed for removal or disposal of any other materials, which may require special handling or disposal.

Payment for Clearing and Grubbing shall be made at the contract unit price per Cubic Foot (CF), Square Foot (SF), Linear Foot (LF), or Lump Sum (LS) as defined in the bid schedule and shall include furnishing all labor, materials, tools, equipment, transportation, and incidentals for performing all work involved, complete and in place, as shown in the Plans and in accordance with the contract documents. No additional compensation will be allowed therefor.

7-6.6 Remove Existing Tree (Including Stump and Roots).

Work to include full stump and root removal of tree.

Payment shall be made per the Contract unit price per each tree/stump removed along with the sump and roots and shall include furnishing all labor, materials, tools, equipment, transportation, and incidentals for performing all work involved in this section, complete and in place, as shown in the Plans and in accordance with the contract documents including unclassified excavation, removal of existing improvements and materials, irrigation repair, landscaping restoration, adjustment of miscellaneous utility items found within the limits of construction, and finishing. No additional compensation will be allowed therefor.

7-6.7 Construct 6" PCC Curb.

Refer to Technical Specification Section 32 13 13.

Payment for Construct 6" PCC Curb shall be made at the contract unit price per Linear Foot (LF) and shall include furnishing all labor, materials, tools, equipment, transportation, and incidentals for performing all work involved in this section, complete and in place, as shown in the Plans and in accordance with the contract documents including unclassified excavation, removal of existing improvements and materials, preparation of subgrade, construction of curb, irrigation repair, landscaping restoration, adjustment of miscellaneous utility items found within the limits of construction, and finishing. No additional compensation will be allowed therefor.

7-6.8 Construct 6" PCC Curb and 24" PCC Gutter.

Refer to Technical Specification Section 32 13 13.

Payment for 6" PCC Curb and 24" PCC Gutter shall be made at the contract unit price per Linear Foot (LF) and shall include furnishing all labor, materials, tools, equipment, transportation, and incidentals for performing all work involved in this section, complete and in place, as shown in the Plans and in accordance with the contract documents including unclassified excavation, removal of existing improvements and materials, preparation of subgrade, construction of curb and gutter, irrigation repair, landscaping restoration, adjustment of miscellaneous utility items found within the limits of construction, and finishing. No additional compensation will be allowed therefor.

7-6.9 Construct 4" PCC Sidewalk.

Refer to Technical Specification Section 32 13 13.

Payment for Construct 4" PCC Sidewalk shall be made at the contract unit price per Square Foot (SF) and shall include furnishing all labor, materials, tools, equipment, transportation, and incidentals for performing all work involved in this section, complete and in place, as shown in the Plans and in accordance with the contract documents including unclassified excavation, removal of existing improvements and materials, preparation of subgrade, construction of sidewalk, irrigation repair, landscaping restoration, adjustment of miscellaneous utility items found within the limits of construction, and finishing. No additional compensation will be allowed therefor.

7-6.10 Construct 4" PCC Curb Ramp.

Refer to Technical Specifications Section 32 13 13.

Payment for Construct 4" PCC Curb Ramp shall be made at the contract unit price per Square Foot (SF) and shall include furnishing all labor, materials, tools, equipment, transportation, and incidentals for performing all work involved in this section, complete and in place, as shown in the Plans and in accordance with the contract documents including unclassified excavation, removal of existing improvements and materials, preparation of subgrade, construction of concrete, irrigation repair, landscaping restoration, adjustment of miscellaneous utility items found within the limits of construction, and finishing. No additional compensation will be allowed therefor.

7-6.11 Furnish and Install Detectable Warning Surface.

Refer to Technical Specification Section 32 13 13.

Payment for Furnish and Install Detectable Warning Surface shall be made at the contract unit price per Square Foot (SF) and shall include furnishing all labor, materials, tools, equipment, transportation, and incidentals for performing all work involved in this section, complete and in place, as shown in the Plans and in accordance with the contract documents including unclassified excavation, removal of existing improvements and materials, preparation of subgrade, construction of concrete, irrigation repair, landscaping restoration, adjustment of miscellaneous utility items found within the limits of construction and finishing. No additional compensation will be allowed therefor.

7-6.12 Construct AC Pavement.

Refer to Technical Specification Section 32 12 16.

Payment for Construct AC Pavement shall be made at the contract unit price per Square Foot (SF) and shall include furnishing all labor, materials, tools, equipment, transportation, and incidentals for performing all work involved in this section, complete and in place, as shown in the Plans and in accordance with the contract documents including all work associated with preparation and compaction of the base material, tack coat, and preparation of the surface to receive AC paving; delivery and installation and compaction of the AC pavement to the required thickness; protection and rolling of the AC paving during the cooling period. No additional compensation will be allowed therefor. AC material delivered to the site and not used as part of the roadway pavement section shall not be paid as part of this bid item.

7-6.13 Relocate Existing Sign and Signpost.

Payment for Relocate Existing Sign and Post shall be made per the Contract unit price per each post relocated, and shall include furnishing all labor, materials, tools, equipment, transportation, and incidentals for performing all work involved in this section, complete and in place, as shown in the Plans and in accordance with the contract documents.

7-6.14 Furnish and Install Signpost and Signs.

New signposts and signs are subject to the same requirements as the existing. Refer to Section 400-5 for requirements.

Payment for Furnish and Install Signpost and Signs shall be per the Contract unit price per each, and shall include furnishing all labor, materials, tools, equipment, transportation, and incidentals for performing all work involved in this section, complete and in place, as shown in the Plans and in accordance with the contract documents.

7-6.15 Install City Furnished Rectangular Rapid Flashing Beacon (RRFB) System.

Refer to Technical Specification Section 34 41 13.

City to furnish and supply to Contractor the RRFB system for installation.

Payment for Install City Furnished RRFB Model System on Existing Post shall be per the Contract Unit Price per each (EA) and shall include furnishing all labor, materials, tools, equipment, transportation, and incidentals for performing all work involved in this section, complete and in place, as shown in the Plans and in accordance with the contract documents including but not limited to installing sign posts with all mounting hardware, nuts & bolts, brackets, fasteners & clamps; excavating of the required hole for embedment of the sign pole; placing the concrete sign pole base; installing City-furnished RRFB system on existing post; and finishing the surface or restoring the landscaping where applicable.

Payment for Install City Furnished RRFB Model System on New Post shall be per the Contract Unit Price per each (EA) and shall include furnishing all labor, materials, tools, equipment, transportation, and incidentals for performing all work involved in this section, complete and in place, as shown in the Plans and in accordance with the contract documents including but not limited to: furnishing and installing sign posts with all mounting hardware, nuts & bolts, brackets, fasteners & clamps; excavating of the required hole for embedment of the sign pole; placing the concrete sign pole base; installing City-furnished RRFB system on existing post; and finishing the surface or restoring the landscaping where applicable.

7-6.16 Construct 4' Ribbon Gutter.

Refer to Technical Specification Section 32 13 13.

Payment for Construct 4' Ribbon Gutter shall be made at the contract unit price per Linear Foot (LF) and shall include furnishing all labor, materials, tools, equipment, transportation, and incidentals for performing all work involved in this section, complete and in place, as shown in the Plans and in accordance with the contract documents including unclassified excavation, removal of existing improvements and materials, preparation of subgrade, construction of gutter, irrigation repair, landscaping restoration, adjustment of miscellaneous utility items found within the limits of construction and finishing. No additional compensation will be allowed therefor.

7-6.17 Striping and Pavement Marking.

Installation of striping and pavement markings shall conform to the SSPWC and contract documents.

All cat tracking for all striping (lane lines, limit lines, crosswalks, and pavement markings) shall be reviewed and approved by the City Traffic Engineer prior to installing the final striping.

The Contractor shall control any dust that is caused by striping work. No additional compensation will be allowed for removal or disposal of any other materials, which may require special handling or disposal.

Payment shall be made at the contract unit price per Square Foot (SF), Linear Foot (LF), or per the Contract unit price per each as defined in the bid schedule and shall include furnishing all labor, materials, tools, equipment, transportation, and incidentals for performing all work involved, complete and in place, as shown in the Plans and in accordance with the contract documents, unclassified excavation, removal of existing improvements and materials, irrigation repair, landscaping restoration, adjustment of miscellaneous utility items found within the limits of construction, and finishing. No additional compensation will be allowed therefor.

7-6.18 Furnish and Install Wheel Stop.

Payment for Furnish and Install Wheel Stop shall be made at the contract unit price per Each (EA) and shall include furnishing all labor, materials, tools, equipment, transportation, and incidentals for performing all work involved in this section, complete and in place, as shown in the Plans and in accordance with the contract documents. No additional compensation will be allowed therefor.

7-6.19 Adjust to Grade.

Payment for Adjust Water Valve to Grade and Adjust Backflow System to Grade shall be at the contract unit price per Each (EA) and shall include furnishing all labor, materials, tools, equipment, transportation, and incidentals for performing all work involved in this section, complete and in place, as shown in the Plans and in accordance with the contract documents. Work covered includes, but is not limited to, that required for protection of existing improvements during construction, adjustment of the utility and lid to grade, installation of crushed rock at the base of meter boxes (as applies), cleaning of boxes/cans of debris, and setting of the lids to the final grade based on new construction, complete in place, along with all other work associated with this bid item and no additional compensation will be allowed.

7-6.20 Construct 4" Stabilized Decomposed Granite Path.

Refer to Technical Specification Section 32 15 13.

Payment for Construct 4" Stabilized Decomposed Granite Path shall be made at the contract unit price per Square Foot (SF) and shall include furnishing all labor, materials, tools, equipment, transportation, and incidentals for performing all work involved in this section, complete and in place, as shown in the Plans and in accordance with the contract documents. No additional compensation will be allowed therefor.

7-6.21 Install Redwood Header.

Refer to Section 32 94 00

Payment for Install Flush Redwood Header as shown on the plans shall be made at the contract unit price per linear foot (LF) and shall include furnishing all labor, materials, tools, equipment, transportation, and incidentals for performing all work involved in this section, complete and in place, as shown in the Plans and in accordance with the contract documents. Work covered includes, but is not limited to, that required for excavation, removal, and disposal of soil to accommodate installation and complete construction of the redwood header including stakes, splices, hardware and backfill necessary for the item of work. No additional compensation will be allowed therefor.

7-6.22 Memorial Bench, Trash Can, and Exercise Equipment.

Refer to Section 12 93 00

Payment for Salvage and Reinstall Existing Memorial Bench as shown on the plans shall be made at the contract unit price per each and shall include furnishing all labor, materials, tools, equipment, transportation, and incidentals for performing all work involved in this section, complete and in place, as shown in the Plans and in accordance with the contract documents. Work covered includes, but is not limited to, that required for excavation, removal, and disposal of soil to accommodate installation, protection and temporary storage of the existing memorial bench, complete removal of any existing concrete base/foundation, all necessary grading, backfilling, and repair of benches, at the direction of the city, necessary for re-installation of memorial bench by anchoring each leg to new concrete pad, as shown on the plans. No additional compensation will be allowed therefor.

Payment for Install City Furnished Memorial Bench shall be made at the contract unit price per Each (EA) and shall include furnishing all labor, equipment, tools and materials necessary for the item of work. No additional compensation will be allowed therefor. City shall furnish memorial bench to contractor for installation. Contractor to secure bench with anchor bolts.

Payment for Salvage and Reinstall Existing Trash Can shall be made at the contract unit price per Each (EA) and shall include furnishing all labor, equipment, tools and materials necessary for removal, protection and temporary storage of the existing trash can, complete removal of any existing concrete base/foundation, all necessary grading, backfilling, and repair of trash can, at the direction of the city, necessary for re-installation of trash can by anchoring per the city's standard detail. No additional compensation will be allowed therefor

Payment for Install City Furnished Fitness Equipment shall be made at the contract unit price per Each (EA) set installed and shall include furnishing all labor, equipment, tools and materials necessary for the item of work. No additional compensation will be allowed therefor. City shall furnish exercise equipment to contractor for installation.

7-6.23 Construct Cast in Place Concrete Paving for Benches.

Refer to Section 32 13 13

Payment for Construct Cast in Place Concrete Paving for Benches shall be made at the contract unit price per Square Foot (SF) and shall include furnishing all labor, equipment, tools and materials necessary for the item of work including unclassified excavation, removal of existing improvements and materials, preparation of subgrade, construction of sidewalk, irrigation repair,

landscaping restoration, adjustment of miscellaneous utility items found within the limits of construction and finishing. No additional compensation will be allowed therefor.

7-6.24 Install Planting.

Refer to Section 32 93 00

Payment for Install 48" Box Tree, Install 15 Gallon Shrub, Install 5 Gallon Shrub, Install 1 Gallon Shrub, Install Sod, Install Hydroseed, shall be made at the contract unit price per Square Foot (SF) or contract unit price per each and shall include furnishing all labor, equipment, tools and materials necessary for the item of work including unclassified excavation, removal of existing improvements and materials, preparation of subgrade, irrigation repair, landscaping restoration, adjustment of miscellaneous utility items found within the limits of construction and finishing. No additional compensation will be allowed therefor.

7-6.25 Adjust and Install New Existing Irrigation System.

Refer to Section 32 80 00

Payment Adjust and Install New Existing Irrigation System as shown on plans and specified herein shall be made at the contract unit price per Lump Sum (LS) for each phase of the project and shall include furnishing all labor, equipment, tools and materials necessary for the item of work including nozzles, spray heads, valves, PVC piping, sleeving, backflow preventer, sensors, quick couplers and irrigation controller. No additional compensation will be allowed therefor.

PART 2 – CONSTRUCTION MATERIALS

SECTION 200 – ROCK MATERIALS.

200-2 UNTREATED BASE MATERIALS.

200-2.1 General.

Replace the entire subsection with the following:

Materials for use as untreated base or subbase shall be crushed aggregate base.

SECTION 201 – CONCRETE, MORTAR, AND RELATED MATERIALS.

201-1 PORTLAND CEMENT CONCRETE.

200-1.1 General.

Add the following:

Concrete shall be type 520-C-2500 PSI concrete per the City of Hermosa Beach Standard Plans for Public Works No. 106.

203-6 ASPHALT CONCRETE.

203-6.1 General.

Add the following:

Asphalt concrete shall be type C2-PG 64-10 for surface courses. No reclaimed asphalt concrete material (RAP) is allowed.

PART 3 – CONSTRUCTION METHODS

SECTION 300 – EARTHWORK.

300-1 CLEARING AND GRUBBING.

300-1.2 Root Pruning and Tree Trimming.

Replace the entire section with the following:

a. Equipment

Pruning of roots shall be done using a Vermeer trenching machine with a root pruning attachment or a comparable piece of equipment, as approved by the Engineer. The equipment shall safely cut a narrow trench four to six inches wide to accommodate the installation of the root barrier.

Where sidewalks, curb ramp, or curbs are removed, the roots can be severed at the point adjacent to the edge of the new sidewalk, curb ramp, or curb to be installed, using other pneumatic tools to make the break-out and removal work more efficient.

Any roots over three inches in diameter must be cleanly cut using a chain saw or other sawing tool before the barrier is installed and the trench backfilled.

b. Execution

Tree roots and other objectionable material shall be removed from areas of construction to a depth of 6 inches below the bottom of concrete. Tree roots shall be removed from parkways if visible or if instructed by Engineer.

Cleanly cut roots do not need to be painted or treated in any way other than the installation of root deflection barrier.

300-1.4 Payment.

Replace the entire subsection with the following:

There shall be no separate payment for root pruning or tree trimming; all costs thereto shall be considered included in the Contract unit price for Clearing and Grubbing for the items of work for which the pruning or trimming is required.

SECTION 301 – SUBGRADE PREPARATION, TREATED MATERIALS, AND PLACEMENT OF BASE MATERIALS.

301-1 SUBGRADE PREPARATION.

301-1.1 General.

Add the following:

Base is required under all PCC and AC improvements as shown on the Plans.

A minimum of 4 inches of CAB shall be placed under sidewalks and access ramps.

A minimum of 8 inches of CAB shall be placed under curb and gutter.

301-1.7 Payment.

Add the following:

There shall be no separate payment for placement and preparation of subgrade material under curb, curb and gutter, sidewalks, and access ramps; all costs thereto shall be considered included in the Contract unit prices for the items of work for which subgrade material is required.

SECTION 302 – ROADWAY SURFACING

302-5 ASPHALT CONCRETE PAVEMENT.

302-5.4 Tack Coat.

Replace the first sentence of the first paragraph with the following:

If the asphalt concrete pavement is being constructed directly upon an existing hard-surfaced pavement, a tack coat of performance grade PG 64-10 paving asphalt conforming to 203-1 applied at an approximate rate of 0.25 L/m² (0.05 gallon per square yard), or SS-1h emulsified asphalt applied at an approximate rate of 0.25 L/m² to 0.45 L/m² (0.05 to 0/10 gallon per square yard), shall be uniformly applied upon the existing pavement preceding the placement of the asphalt concrete.

Add the following paragraph:

A Tack Coat shall be applied between base and surface courses when the surface course is not placed immediately after the base course, and to existing paved surfaces where new asphalt concrete overlaps or abuts existing pavement. Tack Coat shall be as specified in Section 302-5.4. There shall be no separate payment for Tack Coat.

302-5.5 Distribution and Spreading.

Add the following:

The surface course shall be flush with adjacent existing pavement surface. Maximum variance of 1/8". Surface course adjacent to edge of gutter shall have a 3/8" lip over the top longitudinal edge of the gutter.

302-5.8 Manhole (and other structures).

Add the following:

Contractor shall be required to protect and maintain existing utility access frames, grates, and lids during paving operations. No grade difference at lip, between utility frame and asphalt concrete finished grade pavement, shall be allowed.

SECTION 303 – CONCRETE AND MASONRY CONSTRUCTION.

303-5 CONCRETE CURBS, WALKS, GUTTERS, CROSS GUTTERS, ALLEY INTERSECTIONS, ACCESS RAMPS, AND DRIVEWAYS.

303-5.1 Requirements.

303-5.1.1 General.

Add the following:

PCC access ramps, sidewalks, and driveways shall not be poured monolithically with any new concrete adjacent to them.

303-5.5 Finishing.

303-5.5.2 Curb.

Add the following:

Unless otherwise approved by the Engineer, the entire affected concrete curb or curb and gutter portion shall be removed by sawcutting the adjacent AC pavement two (2) feet from the edge of the area to be removed. The Contractor shall reconstruct this two-foot-wide section in accordance with Standard Plan 111-5 of the SPPWC or as directed by the Engineer.

Curb and curb and gutter shall be constructed within 72 hours of removal of sidewalks, ADA curb ramp, and curb and gutter in each location. Clearing and grubbing shall be in accordance with Subsection 300-1, per the SSPWC, including removal and disposal of materials, and pruning and removal of interfering tree roots underneath or adjacent to existing access ramp.

The Contractor shall contact the Engineer a minimum of 24 hours prior to performing any excavations within a 25-foot radius of a street tree. Any damage to the street tree may result in tree replacement by Contractor or payment of replacement costs by Contractor based on the value of the damaged tree.

303-5.5.3 Walk.

Add the following:

Sidewalk shall be constructed within 72 hours of removal of sidewalks in each location. The Contractor shall remove all existing concrete sidewalk shown on the plans to the nearest control joint. Clearing and grubbing shall be in accordance with Subsection 300-1, per the SSPWC, including removal and disposal of materials, and pruning and removal of interfering tree roots underneath existing sidewalk or adjacent to sidewalk.

Finished surfaces shall match the finish and color of adjacent concrete.

The Contractor shall be responsible for protecting newly constructed concrete improvements from damage. Contractor shall remove and replace all concrete damaged prior to acceptance. Concrete shall be replaced score line to score line unless otherwise directed by the Engineer. Patching damaged concrete is not allowed.

The Contractor shall contact the Engineer a minimum of 24 hours prior to performing any excavations within a 25-foot radius of a street tree. Any damage to the street tree may result in tree replacement by Contractor or payment of replacement costs by Contractor based on the value of the damaged tree.

The expansion joint and weakened joint pattern shall be maintained and reconstructed, unless otherwise directed by the Engineer.

The Contractor shall mark all manholes, valves, substructures, survey monuments, vaults, utility boxes, or any other items that are visible on the surface and that will interfere with constructing a fully compliant sidewalk. The Contractor shall protect and adjust to grade any such items to match grade of the surrounding concrete to the satisfaction of the Engineer.

Vegetation interfering with construction operations shall be carefully trimmed without damaging the integrity of the vegetation. Vegetation, which must be removed for construction, shall be removed, and disposed of by the Contractor. The Contractor shall protect in place or reconstruct any irrigation lines and sprinkler heads hindering (and adjacent to) the construction activity area as directed by the Engineer. Damage to existing irrigation lines and sprinkler heads shall be replaced at Contractors expense.

303-5.5.5 Alley Intersections, Access Ramps, and Driveways.

Add the following:

Unless otherwise approved by the Engineer, the entire affected concrete curb or curb and gutter portion shall be removed by sawcutting the adjacent AC pavement two (2) feet from the edge of the area to be removed. The Contractor shall reconstruct this two (2) foot wide section in accordance with Standard Plan 111-5 of the SPPWC or as directed by the Engineer.

Curb ramps shall be constructed within 72 hours of removal of sidewalks, ADA curb ramp, and curb and gutter in each location. Clearing and grubbing shall be in accordance with Subsection 300-1, per the SSPWC, including removal and disposal of materials, and pruning and removal of interfering tree roots underneath or adjacent to existing access ramp.

The Contractor shall contact the Engineer a minimum of 24 hours prior to performing any excavations within a 25-foot radius of a street tree. Any damage to the street tree may result in tree replacement by Contractor or payment of replacement costs by Contractor based on the value of the damaged tree.

Where necessary to match existing grades at the back or side of the ramp, the Contractor shall construct a rear curb for curb ramps. Curb height shall be constructed to match existing grade. Where existing walls are adjacent to curb ramp construction, the rear side curb shall be constructed to protect existing walls. Contractor shall protect in place existing vegetation and miscellaneous items adjacent to rear curb for access ramps adjacent to private property.

The Contractor shall mark all manholes, valves, substructures, survey monuments, vaults, utility

boxes, or any other items that are visible on the surface and that will interfere with constructing a fully compliant curb ramp. The Contractor shall protect and adjust to grade any such items to match grade of the surrounding concrete to the satisfaction of the Engineer.

Vegetation interfering with construction operations shall be carefully trimmed without damaging the integrity of the vegetation. Vegetation, which must be removed for construction, shall be removed, and disposed of by the Contractor. The Contractor shall protect in place or reconstruct any irrigation lines and sprinkler heads hindering (and adjacent to) the construction activity area as directed by the Engineer. Damage to existing irrigation lines and sprinkler heads shall be replaced at Contractors expense.

The Contractor shall relocate existing facilities such as street sign poles that are within the curb ramp area that conflict with the new proposed improvement. Any damaged signs due to construction shall be replaced at the Contractor's expense. The new location for such facility shall be as directed by the Engineer, if not already included in the plans, in the field and shall be within the general vicinity of the existing.

The Contractor shall tie down any survey monuments/markers obliterated during construction and reestablish said monuments/markers following construction.

PART 4 – EXISTING IMPROVEMENTS

SECTION 400 – PROTECTION AND RESTORATION.

Add the following subsections:

400-4 TREES.

The Contractor shall take care to protect all trees not approved for removal by the Engineer.

There shall be no separate payment for protection of existing trees; all costs thereto shall be considered included in the Contract unit prices for the items of work for which the protection is required.

400-5 SIGNPOST.

Contractor shall remove existing sign post from parkway when shown on plans to be removed by excavating to a depth necessary to remove the post and any existing foundation or anchoring assembly. Contractor shall protect and store the existing post and signs for reinstallation.

Contractor shall install a new anchoring assembly and reinstall the existing post with signs.

Contractor shall obtain approval by the Engineer of sign placement before permanently installing the new post. All signs and posts shall be reset the same day as the existing signs and posts are removed.

The bottom of the lowest sign shall be 7 feet above the sidewalk, if applicable. The lowest sign can be lower if in the parkway as approved by the Engineer.

See Section 7 for payment details.

SECTION 401– REMOVAL.

401-8 TREES.

The Contractor shall notify the Public Works Inspector 48 hours prior to beginning any work performed under this specification.

The Contractor shall notify all affected property owners, in writing, of the proposed construction 72 hours prior to beginning any work. The notification shall be in the form of fliers. The City Construction Notice Template is attached in Exhibit C; template shall be modified by the Contractor and sent to the Engineer for review and approval. Contractor shall distribute notices to residents and commercial establishments affected by the construction once approved by the Engineer.

The Contractor shall be responsible for the removal of any trees adjacent to repair, removal, and/or replacement sites which, in the opinion of the City, require root loss that would mortally wound the tree, or result in destabilizing the tree to an unacceptable level.

Where a tree to be removed in close proximity to an overhead utility line or guy line, extreme caution shall be taken to avoid damage to these lines. Any damage that does occur shall be promptly reported to the City Police Department, and to the utility company that is involved. The

cost of repair of the damage will be at the Contractor's expense.

If damage occurs to any adjacent shrubs or trees that are to remain, immediate treatment or necessary replacement of same type of shrubs or trees shall be carried out under the direction of the City at the Contractor's expense.

Where shown on the Plans, or as requested by the Engineer, tree removal shall consist of notifications; cutting and complete removal of the tree stump, branches, and large roots (those with a diameter larger than one inch) to a minimum depth of 24 inches from top of curb; excavation; hauling; disposal; backfill; and restoration of removal area. Stump grindings will be removed and replaced with Class A topsoil to grade within the tree well or parkway.

See Section 7 for payment details.

PART 6 – TEMPORARY TRAFFIC CONTROL

SECTION 600 – ACCESS.

600-1 GENERAL.

Add the following:

Access to street intersections, public and private parking lots, commercial businesses, residences, and other public and private properties shall be maintained at all times. At least 72 hours in advance of commencing any work that may affect the access to private properties, the Contractor shall provide construction notices to adjacent residential properties, and commercial establishments. The Construction Notice template (attached on “Exhibit C Construction Notice Template”) shall be modified by the Contractor and sent to the engineer for review and approval. The Contractor shall distribute notices to residents and commercial establishments affected by construction once approved by the Engineer. Vehicular access to and from commercial and residential driveways and parking lots shall be maintained at all times, except when performing items of work which cannot be accomplished without access restriction.

When access must be restricted, as determined by the Engineer, it shall occur only for the time period required to accomplish the particular item of work.

Modifications to traffic control shall be performed to correct any deficiencies in traffic flow (vehicular, bicycle, pedestrian, etc.) as deemed necessary by the Engineer or Public Works Inspector.

All traffic lanes shall be open for public use on the days and at the times specified below:

1. Saturdays, Sundays, and legal holidays: from 12:00 a.m. to 11:59 p.m.
2. Fridays and any day preceding a legal holiday: from 5:00 a.m. to 11:59 p.m.
3. All days not covered in 1 and 2 above: 7:00 a.m. to 8:30 a.m. and 4:00 p.m. to 6:00 p.m.
4. Non-construction hours: all hours when the Contractor's employees are not physically present at the construction site actively performing Contract work.
5. In the vicinity of any Elementary or Middle School, the Contractor shall determine arrival and departure times of said school and shall provide for adequate traffic control for any school age pedestrian and/or bicycle routes to the school during the arrival and departure periods. The submittal of traffic control plans shall include arrival and departure times for each school. At no time will traffic control be allowed in the immediate vicinity so as to cause a hazard to a school pedestrian crosswalk during arrival and departure time periods.

On those days and hours when closure of traffic lanes is not prohibited under the provisions of the preceding subparagraph A, no more than one lane may be closed at any time during construction hours. During any lane closure, Type II flashing arrow boards shall be used in accordance with the most recent Edition of the Manual on Uniform Traffic Control Devices (MUTCD), the California Supplement to the MUTCD hereinafter referred as CAMUTCD issued by the State of California.

SECTION 601 – TEMPORARY TRAFFIC CONTROL FOR CONSTRUCTION AND MAINTENANCE WORK ZONES.

601-1 GENERAL.

Replace the first paragraph with the following:

All work required for maintaining and controlling traffic shall conform to the most recent Edition of the Manual on Uniform Traffic Control Devices (MUTCD), the California Supplement to the MUTCD hereinafter referred to as CAMUTCD issued by the State of California, Department of Transportation (Caltrans), and the "Work Area Traffic Control Handbook," published by Building News, Inc.

Add the following:

All construction work and traffic control shall be scheduled and constructed to provide for a minimum of inconvenience and a maximum of safety to the public vehicular, bicycle and pedestrian traffic.

The Contractor shall be responsible for the protection of vehicular, bicycle and pedestrian traffic until the work called for in the Plans, the Standard Specifications, and Special Provisions have been accepted by the Engineer.

The Contractor shall notify the Engineer of intent to begin work following notice to proceed before work is to begin. The Contractor shall cooperate with the Engineer relative to handling traffic through the area and shall make all arrangements relative to keeping the working area clear of parked vehicles.

Contractor's equipment and personal vehicles of the Contractor's employees shall not be parked on the traveled way nor on any section where traffic is restricted at any time.

During any period when two-way traffic is not provided, as approved by the engineer, the Contractor shall employ flaggers to control traffic through the construction zone.

The Contractor shall notify the Engineer of any operation that will affect two-way flow of traffic more than five minutes for every half hour of working time, at least two working days in advance of such operation. Submitted traffic control plans must be signed/stamped by a licensed Traffic Engineer.

If the Contractor fails to maintain and control traffic at any time during the construction period such that the safety to public vehicular, bicycle and/or pedestrian traffic is compromised in any way in the opinion of the Engineer or the City Police Department, the City will require the Contractor to stop work and open all traffic lanes, or immediately modify the traffic control plan, subject to approval by the City, to ensure that the unsafe situation is corrected. If, due to the nature of the work, it is impossible to open all traffic lanes, or the Contractor is unable to immediately modify the traffic control plan to restore safe and adequate traffic control, the City may mobilize emergency forces to re-establish adequate and safe traffic control. The emergency forces may include Police Department, Maintenance Services Division, Engineering Division, Contractors or consultants hired by the City or other personnel as required to re-establish adequate and safe traffic control.

The Contractor shall pay for the full and complete time and material cost for any emergency response by City forces and firms hired by the City as described herein. This payment shall be in addition to the liquidated damages provided for in Section 6-9 of these specifications. Contractor agrees to pay such costs as provided for in this paragraph, and in case the same are not paid, Contractor agrees that City may deduct the amount of such costs from any money that is due or that may be due the Contractor under the Contract. The Contractor shall not be entitled to any delay claims for work stopped by the City in order to correct an unsafe traffic condition, regardless of whether traffic control was set up in accordance with an approved traffic control plan.

601-3.5 Signs and Signage.

601-3.5.1 General.

Replace the entire subsection with the following:

Signs shall conform to the most recent Edition of the Manual on Uniform Traffic Control Devices (MUTCD), the California Supplement to the MUTCD hereinafter referred as CAMUTCD issued by the State of California, Department of Transportation (Caltrans), and the "Work Area Traffic Control Handbook," published by Building News, Inc. Each sign shall consist of a base, standard or framework, and a sign panel. Sign units shall be capable of being delivered to the work site and placed into immediate operation.

Signs shall include all temporary signs required for the direction of traffic through or around the work site. Sign placement shall conform to the documents listed above and the Traffic Control Plan.

Advance warning signs shall be provided with orange warning flags in advance of temporary stop signs. Temporary stop signs are required any time a traffic signal is dark. Temporary stop signs shall be mounted at 7 feet high.

The Contractor shall post standard "NO PARKING" construction zone signs 72 hours prior to construction, not more than 50 feet apart within the work area, showing the date and time of construction. "NO PARKING" signs are to have the language "By order of the H.B.P.D. 318-0360 CVC 22658 / HBMC 10.32.220 & 10.12.040" on the signs. Signs can be obtained from the City.

601-3.5.2 Payment.

Replace the entire subsection with the following:

See Section 7 for payment details.

601-3.6 Channelizing Devices.

601-3.6.1 General.

Add the following:

Channeling devices shall be spaced as necessary for proper delineation; however, in no case shall the spacing between portable delineators exceed 25 feet on tangents or 10 feet on curves.

Fluorescent traffic cones shall be new or reconditioned, and of good commercial quality flexible material suitable for the purpose intended. The outer section of the portion above the base of the cone shall be a highly pigmented fluorescent orange polyvinyl compound. The overall height of the cone shall be at least 28 inches. The base shall be of sufficient weight and size or shall be anchored in a manner such that the traffic cone will remain in an upright position.

The fluorescent traffic cones shall be spaced as necessary for proper delineation; however, in no case shall the spacing between fluorescent traffic cones exceed 25 feet on tangents or 10 feet on curves.

Only one type of channelizing device shall be used at any one time.

Channelizing devices shall be placed at all locations shown on the Traffic Control Plan and at such locations as directed by the Engineer.

Channelizing devices shall be left in place at their designated locations, maintained, repaired, and replaced as required until their removal is approved by the Engineer.

If the channelizing devices are damaged, or are not in an upright position, for any reason, said devices shall immediately be replaced, or restored to their original locations in an upright position, by the Contractor, 24 hours per day, 7 days per week for as long as required by the City.

See Section 7 for payment details.

Add the following subsection:

601-7 PAYMENT.

See Section 7 for payment details.

PART 9 – SPECIFIC CONDITIONS

SECTION 900 – CONSTRUCTION MANAGEMENT.

900-1 PROCORE SOFTWARE.

The contractor shall use the Procore construction management software (with account for the project made available by the City at no additional cost) for various construction management activities related to the project including but not limited to submission of schedules, project material submittals, and RFIs. Project documents including plans and specifications will also be made available on Procore for the contractor's use for the duration of the project.

VII. TECHNICAL PROVISIONS

**CIP NO. 502 GREENBELT PEDESTRIAN TRAIL
CIP NO. 604 CITY WIDE ADA IMPROVEMENTS
CIP NO. 194 ANNUAL STRIPING IMPROVEMENTS**

The following technical provisions supplement the 2021 Standard Specifications for Public Works Construction (SSPWC) and Special Provisions.

TABLE OF CONTENTS

025639	Temporary Tree & Plant Protection
031000	Concrete Formwork
033000	Cast in Place Concrete
129300	Site & Street Furnishings
311000	Site Clearing
312000	Earth Moving
312219	Landscape Grading
321216	Asphalt Paving
321313	Concrete Paving
321513	Stabilized Decomposed Granite Paving
321723	Pavement Markings
328400	Landscape Irrigation
329113	Soil Preparation
329200	Lawn & Grasses
329300	Exterior Plants
329400	Landscape Planting Accessories
329400	Landscape Establishment Period
344113	Traffic Signals

SECTION 025639 – TEMPORARY TREE & PLANT PROTECTION

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes materials, labor, apparatus, tools, equipment, temporary construction, transportation, and services necessary for and incidental to performing the proper completion of Work for Temporary Tree & Plant Protection, as shown in the Contract Drawings, and as specified herein this Section.
- B. Work under this Section consists of, but is not necessarily limited to, furnishing and installing the following:
 - 1. Protecting and maintaining existing trees and vegetation not specifically designated for removal, to remain.
 - 2. Protection shall be extended to trees and/or vegetation located within or directly adjacent to the Project Site, whether the tree trunk and/or vegetation are located within the designated Limits of Work.
- C. Related Sections: The following Sections contain requirements that relate to Work in this Section:
 - 1. Section 328400 – Planting Irrigation
 - 2. Section 329200 – Lawns and Grasses.
 - 3. Section 329300 – Exterior Plants.
 - 4. Section 329400 – Landscape Planting Accessories.

1.2 DEFINITIONS AND APPLICABLE STANDARDS

- A. References:
 - 1. ANSI – American National Standards Institute.
 - 2. ASTM – American Society for Testing & Materials.
 - 3. ISA – International Society of Arboriculture.
 - 4. USDA – United States Department of Agriculture.
- B. Definitions:
 - 1. Tree – A woody perennial plant which usually has (but not limited to) a single dominant trunk and has a mature height of fifteen-feet (15’) or more and has a trunk diameter (caliper) of three-inches (3”) or more when measured at twenty-four-inches (24”) above the finished grade.
 - 2. Drip-line – The outermost extent of the tree’s foliated canopy, which encompasses the tree leaves or fronds, trunk, branches, roots, and soil. In no case shall a drip line encompass an area under a tree canopy, which is less than ten-feet (10’) in diameter. Since each tree is unique in size, scale, and form, the delineated drip-line of each tree shall be refined at the discretion of the Landscape Architect.
 - 3. Injury – Bruising, scarring, tearing, gouging, or breaking of roots, branches, or trunk(s), soil compaction around the drip-line, or contamination around the drip-line which results in the decline to the health of the tree.

4. Root Zone– The soil volume surrounding a plant containing the roots.

C. Reference Standards:

1. *American National Standard for Tree Care Operation, Tree, Shrub, and Other Woody Plant Maintenance (ANSI A300)*, American National Standards Institute, Latest Edition.
2. *American National Standard for Tree Care Operations (ANSI Z133)*, American National Standards Institute, Latest Edition.
3. *Tree Pruning Guidelines*, International Society of Arboriculture, 1995 Edition.
4. *Pruning Standards for Shade Trees*, National Arborists Association, Latest Edition.

1.3 SUBMITTALS

- A. Contractor shall provide site photographs or videotape, sufficiently detailed and described, of existing conditions of trees and vegetation, adjoining construction, and site improvements that might be misconstrued as damage caused by site clearing, tree pruning, or tree protection. Submit photographs or videotape to the Landscape Architect prior to commencement of Work.
- B. Product Data: Submit complete and legible materials list of items to be provided for Work described herein this Section.
- C. Submit complete detailed schedule and description of Work to be done within drip-line, (if any), including list of equipment to be used.
- D. Submit schedule and description of proposed pruning and/or other remedial work to existing plant materials. Submit qualifications describing years of experience and list of similar projects completed for the following:
 1. A State of California licensed Pest Control Advisor shall propose application of all herbicides or pesticides.
 2. A Certified Arborist shall propose pruning of trees or other vegetation. The Certified Arborist shall have a minimum of five (5) year's post-certification experience performing pruning and observation work for projects of comparable size with trees of similar size and nature.
 3. Tree Pruning Company, and List of Certified Tree Workers, who will perform Work relating to requirements herein this Section. Tree Pruning Company shall have a minimum of five (5) years experience specializing in performing the work of this Section for projects of comparable size with trees of similar size and nature.

1.4 QUALITY ASSURANCE AND CONTROL

- A. Pre-Installation Conference: Conduct conference at Project Site.
- B. Pruning and remedial work shall be done under the direct supervision of an Arborist certified by the International Society of Arborists (ISA); or Arborist who is a member in good standing in the American Society of Consulting Arborists, in compliance with ISA and ANSI Standards. Arborist shall be on Site continuously while existing trees or roots are being pruned or remedial work is being performed.

1.5 PROJECT SITE CONDITIONS

- A. Contractor shall become aquatinted with existing site conditions, verifying quantities and locations of all protected trees and vegetation, and other information as may be necessary. Notify the Landscape Architect of unsatisfactory conditions, in writing, prior to commencement of Work.
- B. Tree Flagging: Prior to commencement of Work, Contractor shall flag existing trees and vegetation to remain and protected throughout the duration of Work. Adequately flag tree trunks with bright-colored tape (neon colors preferred). Verify flagged trees and vegetation with the Landscape Architect.
- C. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during tree-pruning or tree-protection operations.
 - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from the Owner and authorities having jurisdiction.
 - 2. Provide alternate routes around closed or obstructed traffic ways, if required, by authorities having jurisdiction.
- D. Locate all utilities prior to any Work, and perform Work in a manner which will avoid possible damage. Notify utility locator service for area where Project is located before site clearing where applicable. Notify the Landscape Architect if conflicts exist.
- E. Improvements on Adjoining Property: Authority for performing indicated removal and alteration Work on property adjoining Owner's property shall be obtained by the adjoining property Owner(s) prior to commencement of Work.
- F. Protect existing Work and Work of other trades: Damage to existing construction caused by Work of this Section shall be promptly repaired and/or replaced at the expense of the Contractor.
- G. Environmental Requirements: Perform actual pruning operations (if needed) during those seasons suitable for the specific tree type, in accordance with locally acceptable horticultural practices.
- H. Pre-Tree Pruning/Tree Protection Conference: Contractor shall conduct a Pre-Tree Pruning/Tree Protection Conference at the Project Site with Certified Arborist (who will be on-site supervising the Work of the Project) and the Landscape Architect.
 - 1. Contractor shall be responsible for notifying parties, in writing, at least seven (7) days in advance to schedule the Conference.
 - 2. Contractor shall provide to parties in attendance within seven (7) days a written legible inventory of Work to be accomplished, including species (botanical and common name), location, size, specific pruning needs or tree protection needs as identified during the Conference, recommended pruning or tree protection methods to meet the identified needs, and any additional conditions noted.

1.6 SCHEDULE

- A. Install Tree Protection Barricades prior to commencement of Work.
- B. Work shall be done according to approved Schedule.

1.7 GUARANTEE

- A. Contractor shall Guarantee that plants covered under the Provisions of this Section shall be healthy and in a flourishing condition of active growth for two (2) years from the date of Final Acceptance.
- B. Requirements of the guarantee shall apply if failure of the Contractor to take specified precautions and Work within restrictions of this Section contributes to the destruction, decline, or injury to a tree to remain, in the judgment of the Landscape Architect.
- C. If a tree designated to be protected accordingly is destroyed or injured so that in the judgment of the Landscape Architect it should be replaced, it shall be removed at the expense of the Contractor. Contractor shall pay compensation to the Owner of the property where the tree was located at the rate as specified herein this Section (see Compensation).

1.8 COMPENSATION

- A. Contractor shall replace existing plant material designated to remain that dies or sustained injury from the result of the Contractor's negligence to provide adequate required protection, pruning, or maintenance during the course of construction operations.
- B. Trees: Contractor shall thoroughly remove damaged tree, including trunk, branches, and roots, at no cost to the Owner, and at the direction of the Landscape Architect.
 - 1. Contractor shall furnish and install per requirements in Section 329300 – Exterior Plants, with an equal size tree (in height, spread, and caliper), and of the same form, species, and in the same quantity as those tree(s) that were damaged, at the direction of the Landscape Architect. Compensation shall include the actual cost of the item boxed out of the ground; transportation or delivery of boxed item to the site; unloading, planting and staking; maintenance, including watering, fertilizing, pruning, pest control, and other care to bring replacement to same general condition of the original item.
- C. Other Plant Material (other than Trees): Contractor shall replace other vegetation (other than trees) that died or sustained injury from the result of the Contractor's negligence to provide adequate required vegetation protection, pruning, or maintenance during the course of construction operations. Compensation shall be awarded to the Owner as follows:
 - 1. Contractor shall thoroughly remove damaged vegetation at no cost to the Owner, and at the direction of the Landscape Architect.
 - 2. Contractor shall furnish and install per requirements in Section 329300 – Exterior Plants, with equal size plant material as those which damaged ((5) gallon container stock minimum (as applicable)) of the same form, species, and in the same quantity as vegetation that was damaged, at the direction of the Landscape Architect.

PART 2 - PRODUCTS

2.1 TREE PROTECTION MATERIALS

- A. Barricade for Protection of Existing Vegetation:

1. Fabric: Utility (snow) type fencing, minimum four-feet (4'-0") high, consisting of a vinyl meshed fabric in a bright orange color. Fabric shall be approved by the Landscape Architect.
 2. Posts: Metal or wood, sufficient in gauge (as appropriate) and size to support the fabric material in a taut and plumb condition. Posts shall be subject to approval by the Landscape Architect.
 3. Signs: Posted plastic laminated signs, attached to fabric fencing, with words "WARNING-KEEP OUT-TREE PROTECTION ZONE".
- B. Mulch: Where available, Contractor shall stockpile and reuse shredded wood chips produced from on-site tree removals and remedial work, if chips are disease free and acceptable to the Landscape Architect. Where on-site chips are not available, Contractor shall provide Shredded Wood Mulch as specified in Section 329400 – Landscape Planting Accessories.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Provide erosion-control measures as needed to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.
- B. Locate and clearly flag trees and vegetation to remain or to be relocated.
- C. Protect existing site improvements to remain from damage during construction.

3.2 TREE AND VEGETATION PROTECTION

- A. Protect existing trees and other vegetation indicated to remain in place against the following:
 1. Storage or parking of automobiles or other vehicles.
 2. Stockpiling of building materials, refuse, or excavated materials.
 3. Use of trees as support posts, power posts, or sign posts, anchorage for ropes, guy wires, or power lines, or other similar functions.
 4. Dumping of poisonous materials on or around plant roots, trunks, branches, or foliage. Such materials include, but are not limited to, paint, petroleum products, dirty water, or other deleterious materials.
 5. Cutting, breaking, or skinning of roots caused by utility trenching, foundation digging, placement of curbs and trenches, and other miscellaneous excavation without prior written approval by the Landscape Architect.
 6. Damage by skinning or bruising of bark on trunks or branches, caused by maneuvering vehicles or stacking material or equipment too close to the plant.
 7. Compaction of the soil within the drip-line of the plants due to movement of trucks or grading machines, pedestrian or vehicular traffic, storage of equipment or materials.
 8. Excessive water or heat from equipment, utility line construction, or burning of trash under or near vegetation to remain.
 9. Damage to root system from flooding, erosion, and excessive wetting and drying resulting from watering and other operations.

- B. Prior to commencement of construction activities, the Contractor shall erect and maintain a temporary fenced barricade around the drip-line of individual trees, around perimeter drip-line of groups of trees, or around other vegetation to remain.
1. Prevent damage to roots during installation of barricade posts. Space posts approximately 4'-0" on-center (O.C.) and securely attach fabric.
 2. Barricades shall be installed plumb, taut, and sturdy to prevent unauthorized access around drip-line of trees and protected vegetation. Repair sagging or damaged barricades immediately.
 3. Immediately after barricade fencing is installed, cover entire soil area inside of the fence area with a four-inch (4") layer of mulch. Keep mulch eighteen-inches (18") away from root crown. Irrigate protected trees and vegetation to a moist soil depth of eighteen-inches (18") deep.
 4. During the course of construction, relocation of the barricade may be required to facilitate construction. Contractor shall relocate barricade as directed by the Landscape Architect at no additional expense to the Owner.
 5. Remove barricade when construction operations are complete or when directed by the Landscape Architect.
- C. Irrigation: Contractor shall supply fresh potable water in adequate amounts and rates of application as required to maintain the health of protected plant material throughout the duration of the construction operations. Contractor shall maintain a watering schedule and document dates and duration of irrigation applications.
1. Construct a temporary watering basin, as required, on the surface of the existing undisturbed grade, with imported soil, to aid in the retention of water around existing protected trees and planting.
- D. Do not excavate within drip line of trees, unless approved, in writing, by the Landscape Architect.
- E. Where excavation for new construction is required within drip line of trees, hand clear and excavate to minimize damage to root systems. Use narrow-tine spading forks, comb soil to expose roots, and cleanly cut roots as close to excavation as possible.
1. Cover exposed roots with burlap and water regularly.
 2. Temporarily support and protect roots from damage until they are permanently relocated and covered with soil.
 3. Coat cut faces of roots more than 1-1/2 inches in diameter with emulsified asphalt or other approved coating formulated for use on damaged plant tissues.
 4. Cover exposed roots with wet burlap to prevent roots from drying out. Backfill with soil as soon as possible.
- F. Protect root systems of existing trees and vegetation from damage due to chemically injurious materials in solution caused by run-off or spillage during mixing or placement of construction materials, and drainage of stored materials.
- G. Protect root systems from flooding, erosion, excessive wetting or drying resulting from de-watering or other operations.
- H. Repair or replace trees and vegetation indicated to remain that are damaged by construction operations, in a manner approved by the Landscape Architect.
1. Employ a qualified arborist, licensed in jurisdiction where Project is located, to submit details of proposed repairs and to repair damage to trees and shrubs.

2. Replace trees that cannot be repaired and restored to full-growth status, as determined by the qualified Arborist.

3.3 CLEARING AND GRUBBING

- A. Remove obstructions, trees, shrubs, grass, and other vegetation to permit installation of new construction. Removal includes digging out stumps and obstructions and grubbing roots.
 1. Do not remove trees, shrubs, and other vegetation indicated to remain or to be relocated.
 2. Cut minor roots and branches of trees indicated to remain in a clean and careful manner where such roots and branches obstruct installation of new construction.
 3. Completely remove stumps, roots, obstructions, and debris extending to a depth of eighteen-inches (18") inches below exposed sub-grade.
 4. Use only hand methods for grubbing within drip line of remaining trees.
- B. Fill depressions caused by clearing and grubbing operations with satisfactory soil material, unless further excavation or earthwork is indicated.

3.4 PRUNING AND REMEDIAL WORK

- A. Pruning and remedial work shall be done under continuous supervision of the approved Arborist, according to approved submittals, and per ANSI A300 Pruning Standards.
- B. Provide pruning, cabling and bracing, irrigation, pest and disease control and other remedial treatments as recommended by the approved Arborist, required to assure the long-term health of the trees and existing vegetation, and the safety of persons and property.

3.5 LANDSCAPE ESTABLISHMENT PERIOD

- A. Keep areas within tree protection barricades free from weeds, trash, and debris. Do not use herbicides.
- B. Maintain mulch layer and protective devices throughout entire duration of Contract.

END OF SECTION

SECTION 03 10 00 – CONCRETE FORMWORK

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Principal work in this Section includes but is not necessarily limited to:
 - 1. Formwork and shoring for cast-in-place concrete.
 - 2. Accessories and form coating.
 - 3. Installation of inserts, bolts, anchors and other items furnished by other trades for installation in formed concrete. Coordination of work of all trades affecting concrete formwork.
- B. Work installed but furnished in other Sections includes but is not necessarily limited to:
 - 1. Items supplied by other trades where the items must be placed when forms are erected.
- C. Related work in other Sections includes but is not necessarily limited to:
 - 1. Division 32 for forming of exterior concrete curbs, walks and paving

1.02 SUBMITTALS

- A. General: Make submittals in accordance with the requirements of the General Conditions if required.

1.03 QUALITY ASSURANCE

- A. Standards: The applicable provisions of ACI 347R, Guide to Formwork for Concrete, and ACI 301, Chapter 4, Specification for Structural Concrete for Buildings, govern the work of this Section.
- B. Testing Agency Qualifications: An independent agency, acceptable to authorities having jurisdiction, qualified according to ASTM C 1077 and ASTM E 329 for testing indicated.
- C. Definitions:
 - 1. Exposed concrete: Exposed-to-view concrete which will receive finish materials such as paint, applied directly to its surface, or left unfinished. Not included is exposed concrete in Mechanical and Utility Rooms and exposed exterior architectural concrete.
 - 2. Concealed concrete: Covered by structure or with finish material other than that applied directly to its surface as specified above. Included is exposed concrete in mechanical and utility rooms.
- D. Tolerances for exposed concrete:

1. General: Following is a list of the maximum permissible deviations from established lines, grades and dimensions for exposed concrete.
 - a. Honeycombs, bubbles and similar defects are considered a part of the finish and are to be distinguished from tolerances described herein.
 - b. Variations in the level of elevated concrete such as floors and beams shall be measured before removal of supporting shores. The Contractor is responsible for deflection.

- E. Tolerances for concealed concrete: Concealed concrete shall meet the following requirements.
 1. Sufficiently accurate to accommodate the details of abutting work.
 2. Measurably accurate so that the maximum deviation is not over 3/8" in 8 ft.
 3. Measurably accurate so that the total maximum deviation is not over 1" in 40 ft. or more.

1.04 REFERENCE STANDARDS.

- A. ACI 117 – Standard Specifications for Tolerances for Concrete Construction and Materials; American Concrete Institute.
- B. ACI 301 – Specifications for Structural Concrete for Buildings; American Concrete Institute.
- C. ACI 318 – Building Code Requirements for Structural Concrete and Commentary; American Concrete Institute.
- D. ACI 347 – Guide to Formwork for Concrete; American Concrete Institute.
- E. ASME A17.1 – Safety Code for Elevators and Escalators; The American Society of Mechanical Engineers.

PART 2 - PRODUCTS

2.01 FORM MATERIALS

- A. Forms for exposed finish concrete (flat surfaces):
 1. Unless otherwise indicated, construct formwork with plywood, metal, metal- framed plywood-faced or other panel type materials acceptable to the Architect providing continuous, straight, as-cast surfaces. Furnish in largest practicable sizes to minimize number of joints and to conform to joint system where shown. Provide form material with sufficient thickness to withstand pressure of placed concrete without bow or deflection beyond allowable tolerances.
 2. Use plywood complying with US Product Standards PS-1, "B-B High Density Overlaid Concrete Form", Class 1, edge-sealed, with each piece bearing the legible trademark of an approved inspection agency.
 3. Required form features:

- a. True shape and edges.
 - b. Sharp, undamaged corners and edges.
 - c. Uniformly smooth, clean surfaces without checks or knots.
 - d. Free of damage, holes, bumps, warps and bends.
 - e. Hard, waterproof surface.
 - f. Single-unit forms without lapped joints for columns, beams and joists.
4. Do not use the following forms:
- a. Segmented units for joists.
 - b. Boards.
 - c. Plywood without high density overlay contact surface.
 - d. Earth forms.
- B. Forms for concealed finish: Form concrete surfaces which will be concealed in the finished structure with detectable warning or other acceptable material. Provide lumber dressed on at least 2 edges and 1 side for tight fit.
1. Forms that cannot be removed after concrete has been poured:
 - a. High density polystyrene blocks, (HDFM-1), Styrofoam PD Board, with minimum compressive strength of 60 lbs/sq.inch. Thickness shall be as required.
 - b. Constructed of steel; no wood or fiberboard forms permitted at these locations.
- C. Form ties:
1. For all concrete that will remain exposed to view: Provide factory-fabricated, adjustable-length, removable or snap-off metal ties, designed to prevent form deflection, and to prevent spalling concrete surfaces upon removal. Provide plastic cone ties where indicated on Drawings or approved by the Architect.
 2. Unless otherwise shown, provide ties so that portion remaining within concrete after removal of exterior parts is at least 1-1/2" from the outer concrete surface. Provide form ties, which will leave a hole not larger than 1" diameter in the concrete surface.
 3. Form ties fabricated on the job site, or wire ties, wood spreaders, or embedded types in which embedded portion is less than 1-1/2" from exterior face of concrete, are not acceptable.
- D. Form coating: Commercial formulation that will not bond with, stain, nor adversely affect concrete surfaces, and will not impair subsequent treatment of concrete surfaces requiring bond or adhesion, nor impede the wetting of surfaces to be cured with water or curing compounds, nor affect subsequent finishes to be applied to concrete surfaces.
- E. Inserts:
1. Metal inserts for anchorage of materials or equipment to concrete construction not supplied by other trades and as required for the work.
 2. Adjustable wedge inserts of malleable cast iron, complete with bolts, nuts and

- washers; minimum 3/4" bolt size unless otherwise indicated.
3. Threaded inserts of malleable cast iron, furnished complete with full-depth bolts; minimum 3/4" bolt size, unless otherwise indicated.
 4. Stainless steel sheet metal reglets formed of the same material and gage as the flashing metal to be built into the reglets. Fill reglet or cover slot to prevent intrusion of concrete or debris.
- F. Chamfer strips: 3/4" x 3/4" virgin vinyl with 1/2" radius and 1/2" nailing leg at corner.
- G. Prefabricated construction joint keyways, complete with all accessories.

2.02 DESIGN OF FORMWORK

- A. Design, erect, support, brace and maintain formwork so that it will safely support vertical and lateral loads that might be applied, until such loads can be supported by the concrete structure. Carry vertical and lateral loads to ground by formwork system and in-place construction that has attained adequate strength for that purpose.
- B. Design forms and falsework to include assumed values of live load, dead load, weight of moving equipment operated on formwork, ambient temperature, foundation pressures, stresses, lateral stability, and other factors pertinent to safety of structure during construction.
- C. Design formwork to be readily removable without impact, shock or damage to concrete surfaces and adjacent materials.
- D. For concrete surfaces which will remain exposed in the Work, seal joints with sealant or tape to prevent cement paste leakage. At other locations provide formwork sufficiently tight to prevent leakage of cement paste during concrete placement. Solidly butt joints and provide backup material at joints to prevent leakage and fins.
- E. Design formwork to take into account the placing rate, temperature, vibrating and retarding admixtures so all portions of the assembly withstand the concrete pressures without deformation beyond 1/360 of spans.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine substrates and adjoining construction, and conditions under which formwork will be installed.
- B. Do not proceed with installation until unsatisfactory conditions detrimental to the proper and timely completion of this work have been corrected.

3.02 FORM CONSTRUCTION

A. General:

1. Construct forms complying with ACI 347, to the sizes, shapes, lines and dimensions shown, and as required to obtain accurate alignment, location, grades, level and plumb work in finished structures. Provide for openings, offsets, sinkages, keyways, recesses, moldings, rustications, reglets, chamfers, blocking, screeds, bulkheads, anchorages and inserts, and other features required. Use selected materials to obtain required finishes.
2. Provide camber in formwork as required for anticipated deflections due to weight and pressures during concrete placement and construction loads for long span members without intermediate supports.
3. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush plates or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces where the slope is too steep to place concrete with bottom forms only. Kerf wood inserts for forming keyways, reglets, recesses, and the like, to prevent swelling and assure ease of removal.
4. Provide temporary openings where interior of formwork is inaccessible for clean-out, for inspection before concrete placement, and for placement of concrete. Brace temporary closures and set tightly to forms to prevent loss of concrete mortar. Locate temporary openings on forms in as inconspicuous location as possible, consistent with project requirements.
5. Form intersecting planes to provide true, clean-out corners, with edge grain of plywood not exposed as form for concrete.
6. Before concrete placement, check the lines and levels of erected formwork. Make corrections and adjustments to ensure proper size and location of concrete members and stability of forming systems.
7. During concrete placement, check formwork and related supports to ensure that forms are not displaced and that completed work will be within specified tolerances.
8. Engage a licensed surveyor to verify that formwork is within specified allowable tolerances. Surveyor shall report in writing to the Construction Manager, with copy to the Contractor, certifying formwork as acceptable or indicating deviations from allowable tolerances.

B. Provisions for other trades: Provide openings in concrete formwork to accommodate work of other trades. Accurately place and securely support items to be built into forms.

C. Cleaning and tightening: Thoroughly clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt or other debris just before concrete is to be placed. Retighten forms immediately after concrete placement as required to eliminate mortar leaks.

3.03 FORMS FOR EXPOSED CONCRETE

A. General:

1. Drill forms to suit ties used and to prevent leakage of concrete mortar around tie holes. Do not splinter forms by driving ties through improperly prepared holes.
2. Do not use metal cover plates for patching holes or defects in forms.
3. Provide sharp, clean corners at intersecting planes, without visible edges or

offsets. Back joints with extra studs or girts to maintain true, square intersections.

4. Use extra studs, walers and bracing to prevent bowing of forms between studs.
5. Assemble forms so they may be readily removed without damage to exposed concrete surfaces.
6. Form molding shapes, recesses and projections with smooth-finish materials, and install in forms with sealed joints to prevent displacement.

B. Corner treatment:

1. Form exposed corners of beams and columns with chamfers to produce smooth, solid, unbroken lines, except where otherwise indicated.
2. Form chamfers with 3/4" x 3/4" strips, unless otherwise indicated, accurately formed and surfaced to produce uniformly straight lines and tight edge joints. Extend terminal edges to require limit and miter chamfer at changes in direction.
3. Concealed corners may be formed either square or chamfered.

C. Joint locations:

1. Utilize largest available form panels for minimum joint spacing of 8 ft. x 4 ft.
2. Arrange joints in a symmetrical pattern so center of the surface involved is either a joint or the center of a form unit. Use form units of matching size where possible.
3. Arrange forms with continuous support at every joint to keep from offsetting during the placing operation.
4. Exposed joints not shown shall be made and located to least impair the strength of the structure.
5. Where a joint will occur, thoroughly clean the surface of the concrete and remove laitance. In addition, wet vertical joints thoroughly and slush with neat cement grout immediately before placement of new concrete.
6. At horizontal construction joints, provide 1-1/2" continuous blocking at top of first casting. Remove blocking and re-brace forming member tightly against first casting to form a leak-proof joint for second placement.
7. Refer to Section 03 30 00 for additional provisions on this subject.

3.04 PREPARATION OF FORM SURFACES

- A. Clean form surfaces of embedded materials, of accumulated mortar or grout from previous concreting, and of other foreign material before concrete is placed in them.
- B. Unless otherwise specified or approved, treat form surfaces as follows:
1. Coat high density overlay plywood with mill oil of 100 or higher viscosity, in accordance with APA recommendations.
 2. Do not allow excess form coating material to stand in puddles in the forms nor to come in contact with hardened concrete against which fresh concrete is to be placed.

3.05 INSTALLATION OF EMBEDDED ITEMS

- A. General: Set and build into the work anchorage devices and other embedded items required for other work that is attached to, or supported by concrete. Use setting drawings, diagrams, instructions, and directions provided by suppliers of the items to be attached thereto.
- B. Edge forms and screeds strips for slabs: Set edge forms or bulkheads and intermediate screed strips for slabs to obtain required elevations and contours in the finished slab surface. Provide and secure units to support types of screeds required.

3.06 REMOVAL OF FORMS

- A. General: Comply with California Building Code, Section 1906.2 Removal of Forms, shores and Reshoring.
- B. Formwork supporting weight of concrete, such as beam soffits, joists, slabs and other structural elements may not be removed in less than 14 days, and not until concrete has attained design minimum 28-day compressive strength. Determine potential compressive strength of in-place concrete after tests of field-cured specimens, representative of the concrete location or members, have been made by the Contractor's Testing Agency.
- C. Form facing material may be removed 4 days after placement, only if shores and other vertical supports have been arranged to permit removal of form facing material without loosening or disturbing shores and supports.

3.07 RE-USE OF FORMS

- A. Clean and repair surfaces of forms to be re-used. Split, frayed, delaminated or otherwise damaged form facing material will not be acceptable. Apply new form coating compound material to concrete contact surfaces as specified for new formwork.
- B. When forms are extended for successive concrete placement, thoroughly clean surfaces, remove fins and laitance, and tighten forms to close all joints. Align and secure joints to avoid offsets. Do not use "patched" forms for exposed concrete surfaces, except when acceptable to the Owner.

3.08 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing and inspecting agency to perform tests and inspections and to submit reports.

END OF SECTION

SECTION 03 30 00 – CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Principal work in this Section includes but is not necessarily limited to:
 - 1. Cast in place concrete.
 - 2. Installation of items to be embedded in unformed concrete; refer to Section 03 10 00 for items to be embedded in formed concrete. Coordinate with requirements of all Sections having items to be embedded in Concrete.
- B. Related work in other Sections includes but is not necessarily limited to:
 - 1. Division 31 Section “Earth Moving” for excavation, grading and granular fill beneath building slabs on grade.
 - 2. Division 32 Sections: “Asphaltic Paving” and “Concrete Paving” for site paving and concrete.

1.02 SUBMITTALS

- A. Product Data: For each type of manufactured material and product indicated.
- B. Design Mixes: For each concrete mix. Include alternate mix designs when characteristics of materials, project conditions, weather, test results, or other circumstances warrant adjustments.
 - 1. Indicate amounts of mix water to be withheld for later addition at Project site.
- C. Material Test Reports: From a qualified testing agency indicating and interpreting test results for compliance of the following with requirements indicated, based on comprehensive testing of current materials:
- D. Material Certificates: Signed by manufacturers certifying that each of the following items complies with requirements:
 - 1. Cementitious materials and aggregates.
 - 2. Admixtures.
 - 3. Waterstops.
 - 4. Curing materials.
 - 5. Floor and slab treatments.
 - 6. Bonding agents.
 - 7. Adhesives.
 - 8. Vapor retarders.
 - 9. Epoxy joint filler.
 - 10. Joint-filler strips.

11. Repair materials.

E. Minutes of preinstallation conference.

1.03 QUALITY ASSURANCE

A. Local / Regional Materials:

1. Provide cementitious and aggregate materials that are quarried and mixed regionally within a radius of 500 miles of Project Site.

B. Reference standards: Applicable provisions of the following govern the work of this Section, except as noted or specified.

1. ACI 211, Recommended Practice for Selecting Proportions for Normal and Heavyweight Concrete.
2. ACI 211.1, Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete.
3. ACI 211.2, Standard Practice for Selecting Proportions for Structural Lightweight Concrete.
4. ACI 301, Specifications for Structural Concrete for Buildings.
5. ACI 302, Recommended Practice for Concrete Floor and Slab Construction.
6. ACI 303R, Guide to Cast-In-Place Architectural Concrete Practice.
7. ACI 304, Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete.
8. ACI 304.5, Recommended Practice for Batching, Mixing, and Job Control of Lightweight Concrete.
9. ACI 318, Building Code Requirements for Reinforced Concrete.
10. ACI 305, Recommended Practice for Hot Weather Concreting.
11. ACI 306, Recommended Practice for Cold Weather Concreting.

C. Testing Agency Qualifications: an independent agency, acceptable to authorities having jurisdiction, qualified according to ASTM C1077 and ASTM E329 for testing indicated.

D. Source quality control:

1. Testing Agency shall test the materials for conformance with these Specifications before concrete mixes are established, and when source is changed, unless recent test results of materials to be used on the Project are acceptable to the Owner.
2. Testing coarse aggregates:
 - a. Test aggregates before and after concrete mix is established and whenever the character source of material is changed, but not less than one test for each 500 cubic yards.
 - b. Perform a sieve analysis to determine conformity with limits of gradation. Perform sampling and testing according to ASTM C33, and as follows:
 - 1) Sampling of aggregates: ASTM D75. Take samples of aggregates at source of supply, or if source of supply has been approved, from storage bunkers at ready mixed concrete plant.

- 2) Testing of aggregates shall include:
 - a) Sieve analysis: ASTM C136
 - b) Organic impurities: ASTM C40. Fine aggregate shall develop a color not darker than the referenced standard color.
 - c) Soundness: ASTM C88. Loss after 5 cycles not over 8% for coarse aggregate, nor 10% for fine aggregate.
 - d) Abrasion of concrete aggregate: ASTM C131. Weight loss not over 10 1/2% after 100 revolutions, nor 42% after 500 revolutions.
 - e) Deleterious materials: ASTM C33.
 - f) Materials passing No. 200 sieve: ASTM C117, not over 1% for gravel, 1.5% for crushed aggregate per ASTM C33.
 - g) Reactive materials: ASTM C289. Aggregates shall indicate no potential deleterious reactivity.
 - h) Definitions: ASTM C125.
3. Cement test:
 - a. The cement mill laboratory will be acceptable as testing laboratory for this purpose when approved by the Owner. Submit evidence to show that the cement mill laboratory is qualified to perform tests. The laboratory shall make tests for every 500 barrels or fraction thereof of cement used, in accordance with ASTM C150.
 - b. Make tensile strength test at 7 days. Tag the cement for identification at the location of sampling. A representative of the Testing Agency shall certify that materials being used are taken from the lots sampled and tested for this report.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Portland cement: ASTM C150, Type II low alkali. Do not change brand or type of cement without the Owner's written approval. Cement may be supplemented with fly ash conforming to ASTM C 618.
- B. Aggregates: Submit pit source and characteristics of each type aggregate prior to designing mixes.
 1. ASTM C33 for normal weight concrete.
 2. ASTM C330 for structural lightweight concrete.
 3. Aggregate shall be graded so that coarse aggregate nominal size is not larger than 1/5 of the narrowest dimension between form faces; nor 3/4 of the minimum clear spacing between individual reinforcing bars or bundles of bars, whichever is less, but never greater than 3/4" in any dimension for slabs 4" thick or less; 1 1/2" at all other locations.
 4. Except where specifically indicated, "Pea Gravel" concrete (concrete with a maximum aggregate size of 3/8") shall not be permitted without written permission from the Owner.
- C. Admixtures:

1. Calcium chloride, thiocyanates and admixtures containing chloride ions are not permitted.
 2. Other than specified, admixtures complying with the following may be used with the Owner's approval. Submit manufacturer's data for each product proposed for use.
 3. Admixtures shall comply with the following:
 - a. Air-entraining admixture: ASTM C260, certified by manufacturer to be compatible with other required admixtures.
 - b. Water-reducing admixture: ASTM C494, Type A.
 - c. High-range water-reducing admixture (super plasticizer): ASTM C494, Type F or Type G.
 - d. Water-reducing, non-chloride accelerator admixture: ASTM C494, Type E.
 - e. Water-reducing, retarding admixture: ASTM C494, Type D.
- D. Structural adhesive: ASTM C881, 2-component material suitable for use on dry or damp surfaces. Provide material "Type", "Grade", and "Class" to suit Project requirements.
- E. Water: Fresh, clean, and free of oil and other materials injurious to concrete.
- F. Curing compound:
1. Liquid membrane forming compound containing a fugitive dye, conforming to ASTM C309, Type I, guaranteed not to affect the bond, adhesion, or effectiveness of finishes and surface treatment specified herein to be applied to concrete.
 2. Curing compound used on exposed concrete surfaces shall be non-discoloring, fast drying and shall be conclusively demonstrated not to darken or yellow with age. Curing compound for use on concrete floors to receive adhered floor finishes shall be specially formulated for such use and shall be certified by the manufacturer not to inhibit the bonding qualities of flooring adhesives.
- G. Expansion joint materials:
1. Joint filler: Non bituminous product compatible with sealant specified in Section 07 90 00. Use in combination with plastic joint cap.
 2. Joint sealant and back up rod: As specified in Section 07 90 00.
- H. Non-shrink grout: Cement-based Non-metallic Non-shrink grout with minimum 28-day strength of 5,000 psi.
- I. Bonding agent: Latex bonding agent suitable for indoor and outdoor use, conforming to ASTM C-1059.
- J. Curing paper: Fiber-reinforced, asphalt-impregnated kraft paper
- 2.02 MIXES
- A. Mix Design: Concrete shall be designed in accordance with the California Building Code, Section 1905.2.3, Method B.

1. A testing agency under the direction of a California-registered Civil or Structural Engineer shall design all structural concrete mixes required for the Project to provide:
 - a. Concrete of the compressive strength specified by Greenbook 2021, Standard Specifications for Public Works Construction (SSPWC). Adequate workability and proper consistency to permit concrete to be worked readily into the forms and around reinforcement without segregation and excessive bleeding.
 - b. Other requirements of these Specifications.
 2. Determine proper proportions for design mixes in accordance with ACI 211 or ACI 318.
 3. Determine proper water cement ratio by preliminary test made in accordance with ASTM C192.
 4. Slump limits: Proportion and design mixes to result in the concrete slump at point of placement not exceeding the maximum recommended by ACI 301 and as accepted in the mix design.
 5. Tests shall be conducted in accordance with ASTM C39.
- B. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement in concrete as follows:
1. Fly Ash: Use the highest percentage of fly ash replacement possible to meet performance and drying time criteria.
 2. Combined Fly Ash and Pozzolan: 25 percent.
- C. Submit reports showing results of sieve analysis, mix design and results of compression tests. Make test specimens from not less than 3 batches of each design mix. The trial batch strength for each mix shall exceed indicated f_c by 25% or a lesser amount based on standard deviations of strength test records according to ACI 318. Do not start concrete production until mixes have been reviewed and are acceptable to the Owner.
- D. For each batch, weigh the fine and coarse aggregate separately, measure cement and water separately and introduce separately into the mix so that proportions can be accurately controlled and easily checked.
- E. Do not change proportions established by the accepted mix design without the Owner's written approval.
1. Cement: If concrete develops less than required minimum strength, adjust mix proportions and increase the amount of cement, as necessary.
 2. Water: Do not exceed predetermined amount of water because of slowness of discharge from mixer or any other reason, but reduce water to minimum necessary to produce concrete that will work readily into corners and angles of forms and around reinforcements, without segregation of materials and without free water collecting on the surface.
 3. Aggregates: Reasonable variations in grading will be allowed because of characteristics of available materials and the need for workability and strength.
- F. Concrete mixing:

1. Mixing and delivery shall comply with ASTM C94, these Specifications, and Building Code requirements.
2. Testing Agency shall perform check sieve analysis of the aggregates being used, check compliance with mix design and the cement being used against mix design; check that water has been removed from the drum before adding mix ingredients for the following load and shall witness the loading of mixing trucks. Testing Agency shall provide a written report of each inspection indicating compliance or non-compliance with these Specifications.
3. In addition to the requirements of ASTM C94 Section 16.1 provide the following information on delivery tickets. Provide a ticket signed by an authorized representative of the batching plant with each mixer truck of concrete delivered to the site.
 - a. Type and brand of cement.
 - b. Cement content per cu. yd., of concrete.
 - c. Maximum size of aggregate.
 - d. Total water content expressed as water/cement ratio.
4. Deliver batch tickets to the Inspector at the site when concrete is delivered.
5. Maintain equipment in proper operating condition, with drums cleaned before charging each batch. Schedule rate of delivery to prevent delay of placing the concrete after mixing, or holding dry-mixed materials too long in the mixer before the addition of water and admixtures.
6. Remove all materials, including water remaining in the ready mix truck drum, completely before ingredients for the following loads are introduced in the drum.
7. Do not use concrete which has not been placed 30 minutes after leaving the mixer, or concrete that is not placed within 60 minutes after water is introduced into the mix.
8. Mix proportions for architectural cast-in-place concrete shall provide a mixture of proper workability and strength for specific type of concrete, with water-cement ratio in accordance with requirements of ACI 303R, Chapter 6. Slump shall be as low as possible, consistent with the particular type of concrete and methods of deposit. Consistency for any placement shall be constant from batch to batch in order to provide uniformity in the end product. Experiment with dryer concrete lifts gradually toward the top to provide a more uniform appearance. Experimentation may be done on concealed basement walls and/or mock-ups using Architectural concrete mix.
 - a. Make every effort to pour architectural concrete with concrete temperatures between 65 and 85 degrees F. Higher temperatures can result in faster setting rate, and visible flow lines and cold joints.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Inspect excavations, subgrades and formwork, as applicable for each placing operation, for accuracy of lines, levels, elevations and dimensions.
- B. Moisten, do not saturate, earth subgrade and bearing surfaces. Do not place concrete on muddy subgrade.
- C. Wet wood forms thoroughly when they are not treated with form release agent. Wet other

materials sufficiently to reduce suction and maintain concrete workability.

- D. Embedded items including, but not limited to, conduits, anchors and rough hardware, built into concrete as indicated or required.
 - 1. Embed bolts, inserts and other items in the concrete. Secure accurately so that they are not displaced during concrete placing, compacting and finishing operations. Wire tie, nail or bolt embeds securely to forms.
 - 2. Set embedded bolts for materials and equipment attached to concrete to template, layouts and shop drawings. Verify size, length and location of electrical conduits with respect to equipment supports.
 - 3. Fill voids in sleeves, inserts and anchor slots temporarily with readily removable material to prevent entry of concrete in the voids.
- E. Install expansion joint fillers where indicated. Cover filler with plastic joint cap and leave in place until ready to receive sealant, then remove and discard plastic cap.
- F. Do not proceed with placement of concrete until all conditions are satisfactory.

3.02 CONVEYING

- A. Rapid handling: Transport concrete from the mixer to location of placing as rapidly as practical to avoid separation or loss of ingredients.
- B. Transporting methods:
 - 1. Use cranes, carts, buggies or other approved means to deliver concrete to final locations. Do not use delivery systems (pipe, chutes, etc.) formed of aluminum for transporting concrete.
 - 2. If pumping of concrete is contemplated, first obtain the Owner's approval for the design mix and the placement method before placing concrete.
- C. Free fall: As dictated by job conditions at each location, but not more than 4 ft. where concrete will be exposed in the Work and 6 ft. at all other locations. Avoid large concentration of concrete in one location, which would produce unacceptable deflection in supporting formwork or steel decking.
- D. Concrete flow: Keep surface of concrete level during placing with a minimum of concrete allowed to flow from one position to another. Carry concrete up uniformly for the length of walls being placed to reduce lateral flow of concrete to 5 ft. maximum.
- E. Runways: Construct substantial runways and scaffolding to avoid movement and vibration in the forms and reinforcing steel as a result of transporting and placing concrete.

3.03 PLACING

- A. General: Comply with the more restrictive requirements of ACI 304 and California Building Code, Section 1905.7 Preparation of Equipment and Place of Deposit. Do not place concrete in or under water.

- B. Consolidation: Thoroughly consolidate concrete and work it around reinforcement and embedded items and into corners and angles of forms, by spading, rodding and tamping to exclude rock pockets, air bubbles and honeycombs, and to obtain required density and strength.
- C. Internal vibration:
1. Use mechanical vibrators to consolidate each layer with that previously placed, to completely embed reinforcement and fixtures and to bring fine materials to the faces and top surfaces to produce the proper finish.
 2. Assign at least one workman at each location where concrete is being placed to vibrate and consolidate the concrete in forms. Take care to avoid overvibration causing separation of ingredients. Keep extra standby vibrator at the site.
 3. Do not use vibrator to move concrete.
- D. Flow of concrete: Keep surface of concrete level during placing, with a minimum of concrete allowed to flow from one position to another. Place concrete in a continuous operation until each section or panel has been completed.
- E. Record: Keep records showing location, date and time of placement of all concrete on the Project.
- F. Floor slabs: Shape slabs to the levels, slopes and elevations indicated and accurately pitch or grade to drainage fittings and fixtures installed in them. Where indicated, depress slabs to receive other finishes.
- G. Temperature: Do not place concrete when the temperatures of the materials in contact with the concrete, and the ambient temperature exceed the ranges recommended in ACI 305 and 306, if it is likely to exceed these temperature before the concrete has taken its initial set, unless special precautions recommended by ACI 305 and 306 are provided.
- H. Construction joints: Refer also to Section 03 10 00 - Concrete Formwork for additional provisions on this subject. Comply with the more restrictive requirements of the California Building Code, Section 1906.4 Construction Joints and the following:
1. Provide keyways at least 1 1/2" deep in construction joints in slabs; use prefabricated bulkheads specified for slabs.
 2. Keep exposed face of construction joints continuously moist from time of initial set until subsequent placing of concrete against them, but not to exceed the curing period. When not damp, wet (do not saturate) the contact surface of joints for a minimum of 24 hours before placing adjoining concrete.
 - a. Before placing adjoining concrete, clean contact surfaces to remove all laitance, loosened particles of aggregate or damaged concrete, and expose sound, coarse aggregates solidly embedded in the matrix.
 - b. To achieve the above, the contact surface may be washed with clean water under pressure (jet blast), may be sandblasted, or in areas which will be concealed from view when the building is completed an approved structural adhesive may be used on clean, structurally sound concrete. Remove wash water

entirely from surface.

- c. If a contact surface becomes coated with foreign materials of any nature after being cleaned, clean again to suitable condition.

I. Tolerances: In compliance with ACI 117 as follows.

1. Paragraph 2.1, except for reference to slip forming.

3.04 FINISH OF FORMED SURFACES

A. Related unformed surfaces:

1. At horizontal offsets and similar unformed surfaces occurring adjacent to formed surfaces, strike off smooth and finish with textured matching the adjacent formed surfaces.
2. Continue the final surface treatment of formed surfaces uniformly across the adjacent unformed surface, unless otherwise shown.

3.05 FINISHING FLATWORK

A. Protection:

1. Protect work of other trades from damage by covering it with heavy kraft paper securely taped in place. Leave protection in place as long as its need exists.

B. Compacting and floating:

1. Bring slabs to proper elevations and strike off with a straightedge. Remove excess water and laitance.
 - a. Compact and consolidate to embed coarse aggregates.
 - b. Float and test surfaces with a 10 ft. straightedge and eliminate high and low spots to comply with tolerances specified.
 - c. From this point, use the methods and tools necessary to produce surface tolerances and finishes specified.

C. Moisture control: In addition to other finishing requirements, use a water fog spray to reduce plastic shrinkage cracks during flatwork finishing operations when conditions of low humidity and/or high temperature exist.

1. Immediately after concrete has been brought to a flat surface and the shiny film of moisture disappears, restore it and maintain until final troweling by applying a light film of moisture with an atomizing type fog sprayer.
2. Use frequent light applications of moisture rather than excessive amounts at any one time. Adjust the amount and frequency of fog spray as required by variable conditions of weather, wind, temperature and humidity.

D. General requirements:

1. Finish surfaces to produce a uniform appearance throughout area involved and throughout adjacent areas with the same treatment.
2. Use no troweling machines within 12" of electrical junction and outlet boxes which are set to finish flush with concrete floors. Float and trowel such areas by hand with wood floats and steel trowels, taking care to see that concrete is finished flush with box cover and matches adjacent surfaces.
3. Markings:
 - a. At expansion joints and elsewhere as indicated, mark slabs with a 1/4" radius rounded edging or marking tool. In textured work edge and mark slabs, after texturing, with a combination edging/ smoothing tool approximately 1-1/2" wide.
 - b. Where saw cutting is indicated, time this operation so that it is performed as soon as concrete has hardened sufficiently to prevent aggregates being dislodged by the saw, but before shrinkage stresses have developed sufficiently to produce cracking. Saw cutting shall be performed on the same day as placement of the concrete.
 - c. Make marking lines straight, or curved as indicated, equally spaced and parallel to adjacent lines and/or walls, edges and other construction, and of uniform depth and cross section, with intersections accurately formed.

E. Curbs: Immediately after removing forms finish faces and top with a steel trowel.

3.06 CURING

- A. General: Coordinate curing methods with requirements of manufacturers whose materials will be applied over concrete surfaces.
- B. Formed concrete: Wet the tops and exposed portions of formed concrete, keep moist and at a temperature of not less than 50 deg F until forms are removed, but for not less than 7 days duration. If forms are removed before 14 days after concrete is cast, coat concrete with curing compound as specified for flatwork below.
- C. Concrete flatwork:
 1. After finishing, spray the specified curing compound uniformly in 2 coats at 90 deg. to each other not exceeding coverage rates recommended by the manufacturer. Inspect treated surfaces daily for 14 days for evidence of drying. Re wet the surfaces and apply a new application of curing compound if premature drying occurs, as soon as can be done after finishing without marring the surfaces.
 2. Remove sealer residue after curing period is completed.

3.07 MISCELLANEOUS CONCRETE WORK

- A. Pits, trenches and curbs: Construct pits for curbs, gutters, and other miscellaneous concrete

work.

3.08 PROTECTING/CLEANING

- A. Protect finished concrete surfaces from stains, abrasions and other damages until acceptance by the Owner.
 - 1. Cover concrete with non-staining, waterproof tarpaulins or similar form of protection when performing other work adjacent to concrete surfaces.
 - 2. Protect exposed edges of concrete by boarding.
 - 3. Do not allow fire in direct contact with concrete.
 - 4. Provide adequate protection against injurious action by sun or wind.
- B. Upon completion, wash and clean exposed concrete and leave free of oil, paint, plaster and foreign substances, ready to receive applied finishes or to be left exposed.

Protect fresh concrete from heavy rain and mechanical injury.

Prot

3.09 DEFECTIVE CONCRETE

- A. Concrete which does not meet the requirements of the Contract Documents will be deemed defective.
- B. Remove defective concrete as directed by the Owner and replace with concrete meeting the requirements of the Contract Documents, at no additional cost to the Owner.

3.10 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing and inspection agency to perform tests and inspections and to submit reports.
- B. Concrete quality control: The following will be performed by the Inspectors. Additional tests may be made by the Contractor, for its convenience, at the Contractor's expense.
 - 1. Samples will be taken during progress of the work to determine slump, compression strength, aggregate sieve analysis, and grout mix tests, with assistance furnished by the Contractor.
 - 2. 4 cylinders will be made for each day's pour, or for each 150 cubic yards, or once for each 5,000 sq. ft. of surface area, whichever is less, for each type of concrete being cast.
 - 3. 1 cylinder shall be tested at 7 days, and 2 cylinders at 28 days. The remaining cylinder will be kept in reserve in case tests are unsatisfactory.
 - 4. Samples will be made in accordance with ASTM C172.
 - 5. Specimens will be made and laboratory cured in accordance with ASTM C31.
 - 6. The 28 day values shall be the criteria for acceptance of concrete regarding strength only.
 - a. 7 day tests may be regarded as indicative of compliance or non-compliance with the 28 day strength requirements, and the Contractor should be guided accordingly in matter of adjusting proportions, if necessary, and notify the

CAST-IN-PLACE CONCRETE

033000 - 11

- Owner.
- b. 7 day tests shall also be a guide regarding time for form removal.
7. Slump tests will be made for each set of tests cylinders in accordance with ASTM C143.
- C. Tests evaluation:
1. Concrete cylinder test shall be evaluated in accordance with ACI 214 and 318.
 2. If 28 day test results indicate that concrete strength is not as specified, core concrete as instructed by the Owner in accordance with ASTM C42.
 - a. Plug core hole solid as specified in Article 3.04 of this Section.
 - b. The cost of cores, tests and patching shall be borne by the Contractor.
 3. In the event that additional core tests do not show strength required, or as determined by load tests made in accordance with ACI 318, the defective concrete shall be removed and replaced, or shall be reinforced as directed by the Owner, at the Contractor's expense.
 4. If core tests results fall below design strength specified, adjust the concrete mix or water content for future batches, at no additional cost to the Owner.

END OF SECTION

SECTION 129300 – SITE AND STREET FURNISHINGS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes materials, labor, apparatus, tools, equipment, temporary construction, transportation, and services necessary for and incidental to performing the proper completion of Work for Site and Street Furnishings, as shown on the Contract Drawings, and as specified herein this Section.
- B. Work under this Section consists of, but is not necessarily limited to, furnishing and installing the following:
 - 1. Fitness Equipment (Unit).
 - 2. Salvaged Bench (Unit)
 - 3. Bench (Unit)

1.2 SUBMITTALS

- A. General:
 - 1. Collect information into a single Submittal for each element of construction and type of product or equipment identified under this Section for review.
 - 2. To expedite review, Submittal shall be organized and presented into specific sections or headings. Furnish neat, concise, legible, and clearly identifiable information, and sufficiently explicit detail, to enable proper evaluation for Contract compliance. Highlight catalog, product data, or brochures containing various products, sizes, and materials to show particular item submitted.
 - 3. Submittal Format: As applicable, furnish Submittal as a single electronic digital PDF (Portable Document Format) file.
- B. Digital Submittal Information:
 - 1. Product/Material Data: Submit available product/material literature, test reports, color charts, supplied by manufacturer's, indicating that their products comply with specified requirements. Provide manufacturing source (name, address, and telephone number), and distributor source (name, address, and telephone number) for each product/material type in this Section.
 - 2. Shop Drawings to show component parts, fabrication, installation, and dimensions for items indicated herein this Section.
- C. Material Samples:
 - 1. Submit printed manufacturer's product data, including color charts or color chips of actual fabricated products, for material sample review.
 - 2. Samples of complete Units or parts of Units of the items indicated herein this Section shall be furnished, as requested by Landscape Architect, for review and approval.
 - 3. Submit manufacturer's written certification that each product complies with specified requirements noted herein.

- D. Submittals under this Article will be rejected and returned without the benefit of review by the Landscape Architect if they are difficult to read due to insufficient scale, poor image quality, or poor drafting quality; or if all of the required information is missing or not presented in the format as requested. Partial Submittals will not be accepted.
- E. No Work under this Section shall proceed until all information indicated herein this Article have been reviewed, accepted, and approved by the Landscape Architect, in writing.

1.3 QUALITY ASSURANCE AND CONTROL

- A. All materials and Work shall be in accordance with the State Codes and Specifications and other criteria herein specified.
- B. Single-Source Responsibility: Obtain furnishing Units from each respective single source with resources to provide products and materials of consistent quality in appearance and physical properties without delaying the Work.

1.4 COORDINATION, SCHEDULING, AND OBSERVATIONS

- A. Notify the Contractors performing Work related to installation of Work under this Section in ample time so as to allow sufficient time for them to perform their portion of Work and that progress of Work is not delayed. Verify conditions at the Project Site for Work that affects installation under this Section. Coordinate items of other trades to be furnished and set in place.
- B. Field Measurements: Contractor shall take field measurements as required. Report major discrepancies between the Contract Drawings and field dimensions to the Landscape Architect prior to commencing Work. Check adjoining finished surfaces, finished grades, and other Work by accurate field measurements before erection. Maintain required levels and grade elevations. Review installation procedures and coordinate Work herein this Section with other Work affected.
- C. Perform installation operations only when weather is suitable in accordance with locally accepted practices:
- D. Coordinating furnishing footings with utility locations. Note potential conflicts to the Landscape Architect.
- E. Construction Site Observations: Periodic site observations shall be made by the Landscape Architect during the installation of Work under this Section for compliance with requirements for type, size, and quality. Landscape Architect retains right to observe Work for defects and to reject unsatisfactory or defective material at any time during progress of Work. Contractor shall remove rejected materials immediately from Project site. Contractor shall request, in writing, at least one (1) week in advance of the time when mandatory site observation(s) by the Landscape Architect are required.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Furnishings shall be stored as necessary to prevent damage and shall be in new condition when ready for installation. It shall be the responsibility of the Contractor to install “factory condition” furnishings.
- B. Store materials off ground and under cover, away from damp surfaces and inclement weather.
- C. Deliver manufactured materials in original, unopened packages or containers with manufacturer's labels intact and legible. Deliver and install materials so as to not delay Work, and install only after preparations for installation have been completed.

1.6 SUBSTITUTIONS

- A. Consideration: Materials to be considered equal to the Materials indicated herein this Section shall be reviewed by the Landscape Architect. Materials with equal performance characteristics produced by other Manufacturer’s and/or Distributors may be considered, providing deviations in dimensional size, color, composition, operation, and/or other characteristics do not change the design concept, aesthetic appearance, nor intended performance, as solely judged by the Landscape Architect. The burden of proof on product equality is on the Contractor.
- B. Specific reference to Manufacturer’s names and products specified herein are used as standards of quality. This implies no right to the Contractor to substitute other materials without prior written approval by the Landscape Architect for Work under this Section.
- C. Materials substituted and installed by the Contractor, without prior written approval by the Landscape Architect, may be rejected. Contractor shall not be entitled to be compensated by the Owner where the Contractor has installed rejected substitutions without receiving prior written approval.
- D. Contract Price: Substituted Materials under this Section shall not increase the Contract price.

PART 2 - PRODUCTS

2.1 FITNESS EQUIPMENT (Unit)

- A. Fitness Equipment shall consist of the complete assembly, including Fitness Equipment and all applicable mounting hardware.
 - 1. Product: To be furnished to Contractor by City.
- B. Install in quantity as indicated on the Contract Drawings.

2.2 SALVAGED BENCH (Unit)

- A. Bench shall consist of the complete assembly, including bench seat and all applicable mounting hardware.
 - 1. Product: To be salvaged from site.
- B. Install in quantity as indicated on the Contract Drawings.

2.3 BENCH (Unit)

- A. Bench shall consist of the complete assembly, including bench seat and all applicable mounting hardware.
 - 1. Product: To be furnished to Contractor by City.
- B. Install in quantity as indicated on the Contract Drawings.

2.4 MISCELLANEOUS MATERIALS

- A. Anchors, Fasteners, Fittings, and Hardware: Stainless steel, commercial quality, tamper-proof, vandal & theft resistant, concealed, recessed, and capped or plugged. Provide from manufacturer of site furnishing, as applicable.
- B. Non-shrink, Non-metallic Setting Grout: Pre-mixed, factory-packaged, non-staining, non-corrosive, non-gaseous Setting Grout, suitable for exterior applications, complying with ASTM C1107.
 - 1. Products & Manufacturers: Subject to compliance with requirements, provide products by one (1) of the following:
 - a. *Euco N-S Grout*, Euclid Chemical Co.
 - b. *Crystex*, L&M Construction Chemicals, Inc.
 - c. *Masterflow 713*, BASF Building Systems, Inc.
 - d. *Conspec Enduro 50*, CONSPEC Marketing and Manufacturing Co.
 - e. *Rapidset Grout*, Rapidset Products.
 - f. *SikaGrout 212*, Sika Corporation.
 - g. *Quikcrete Commercial Grade Fast Set Non-Shrink Grout*, Quikcrete Companies.
 - h. *588 Grout*, W.R. Meadows.
 - i. *Certi-Grout #1000*, Vexcon Chemicals.
 - j. Or equal, as approved by the Landscape Architect.
- C. Erosion-resistant Anchoring Cement: Factory-packaged, non-shrink, non-staining, hydraulic-controlled expansion cement formulation for mixing with potable water at Project site to create pour-able anchoring, patching, and grouting compound, resistant to erosion from water exposure without needing protection by a sealer or waterproof coating, recommended in writing by manufacturer of site furnishings, for exterior applications.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. General: Examine areas and conditions under which site furnishing units are to be installed with Installer present, for compliance with requirements for correct and level finished grade, mounting surfaces, installation tolerances, and other conditions affecting performance.
 - 1. Remedy any conditions detrimental to the proper and timely completion of the Work.
 - 2. Do not proceed with the Work until unsatisfactory conditions have been corrected in a manner acceptable to the Landscape Architect.
- B. Verification:

1. Verify that substrates are stable and capable of supporting the weight of items covered under this Section.
2. Verify that substrates have been adequately prepared to securely anchor those items that will be surface mounted.

3.2 INSTALLATION

A. Fitness Equipment (Unit):

1. Fitness Equipment Unit shall be furnished and located as shown on the Contract Drawings, and as directed by the Contract Specifications. Verify exact locations and orientation with the City's Representative prior to installation.
2. Use actual Unit(s) to establish all dimensions for installation.
3. Erect and install Unit in accordance with the Manufacturer's written instructions and recommendations. Install Unit(s) plumb, accurately, and in the correct orientation and relationship with other site furnishings, elements and/or paving as shown on the Contract Drawings.
4. Install footings, anchorages, or mounting hardware, as applicable, in strict accordance with the Manufacturer's instructions.
 - a. Embed Unit into cast-in-place concrete foundation. Foundation for Unit shall be completely set below work of surrounding pavements.

B. Salvaged Bench (Unit):

1. Salvaged Bench Unit shall be salvaged by contractor from site and protected until installed in place as located on the Contract Drawings, and as directed by the Contract Specifications. Verify exact locations (both at ground level and on-structure) with the City prior to installation.
2. Use actual Unit(s) to establish all dimensions for installation.
3. Erect and install Unit(s) in accordance with the Manufacturer's instructions and recommendations. Install unit(s) plumb, accurately, and in the correct orientation and relationship with other site furnishings, elements and/or paving as shown on the Contract Drawings.
4. Install all anchorage and mounting hardware, as applicable, in strict accordance with Manufacturer's instructions, and as directed by the City.

C. Bench (Unit):

1. Bench Unit shall be provided to contractor by the city and located as shown on the Contract Drawings, and as directed by the Contract Specifications. Verify exact locations (both at ground level and on-structure) with the City prior to installation.
2. Use actual Unit(s) to establish all dimensions for installation.
3. Erect and install Unit(s) in accordance with the Manufacturer's instructions and recommendations. Install unit(s) plumb, accurately, and in the correct orientation and relationship with other site furnishings, elements and/or paving as shown on the Contract Drawings.
4. Install all anchorage and mounting hardware, as applicable, in strict accordance with Manufacturer's instructions, and as directed by the City.

3.3 PROTECTION

- A. Protect installed furnishings against damage throughout the duration of the construction period, complying with Manufacturer's directions.
 - 1. Remove and replace damaged furnishings as required to deliver factory-condition units at Final Acceptance of Work.

3.4 CLEANING

- A. After completing site furnishing installation, inspect components. Remove protective packaging and dispose properly. Remove spots, dirt, and debris. Repair damaged finishes to match original finish, or replace component.
 - 1. Touch-up Painting: Where directed by the Landscape Architect, clean field welds, bolted connections, and abraded areas of the Work. Paint exposed areas with paint or other material as supplied by the Manufacturer of the damaged Unit. Apply by brush, to thickness recommended by paint manufacturer.

END OF SECTION

SECTION 311000 - SITE CLEARING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Greenbook 2021, Standard Specifications for Public Works Construction (SSPWC), Sections 300, and 301.
- B. City of Hermosa Beach Grading and Construction Permit.

1.02 SUMMARY

A. Section Includes:

1. Protecting existing vegetation to remain.
2. Removing existing vegetation.
3. Clearing and grubbing.
4. Stripping and stockpiling topsoil.
5. Removing above- and below-grade site improvements.
6. Disconnecting, capping or sealing, and removing site utilities.
7. Temporary erosion and sedimentation control.

B. Related Requirements:

1. Section 31 20 00 "Earth Moving"
2. City of Hermosa Beach Grading and Construction Permit.
3. State Water Resources Control Board's (SWRCB) Construction General Permit (CGP)

1.03 DEFINITIONS

- A. Subsoil: Soil beneath the level of subgrade; soil beneath the topsoil layers of a naturally occurring soil profile, typified by less than 1 percent organic matter and few soil organisms.
- B. Surface Soil: Soil that is present at the top layer of the existing soil profile. In undisturbed areas, surface soil is typically called "topsoil," but in disturbed areas such as urban environments, the surface soil can be subsoil.
- C. Topsoil: Top layer of the soil profile consisting of existing native surface topsoil or existing in-place surface soil; the zone where plant roots grow.
- D. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

1.04 PREINSTALLATION MEETINGS

- A. Pre-installation Conference: Conduct conference at Project site.

1.05 MATERIAL OWNERSHIP

- A. Except for materials indicated to be stockpiled or otherwise remain Owner's property, cleared materials shall become Contractor's property and shall be removed from Project site.

1.06 INFORMATIONAL SUBMITTALS

- A. Existing Conditions: Documentation of existing trees and plantings, adjoining construction, and site improvements that establishes preconstruction conditions that might be misconstrued as damage caused by site clearing.
 - 1. Use sufficiently detailed photographs or video recordings.
 - 2. Include plans and notations to indicate specific wounds and damage conditions of each tree or other plant designated to remain.
- B. Record Drawings: Identifying and accurately showing locations of capped utilities and other subsurface structural, electrical, and mechanical conditions.

1.07 QUALITY ASSURANCE

1.08 FIELD CONDITIONS

- A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.
 - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
 - 2. Provide alternate routes around closed or obstructed traffic-ways if required by Owner or authorities having jurisdiction.
- B. Utility Locator Service: Notify utility locator service for area where Project is located before site clearing.
- C. Do not commence site clearing operations until temporary erosion- and sedimentation- control measures are in place.
- D. Soil Stripping, Handling, and Stockpiling: Perform only when the soil is dry or slightly moist.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Satisfactory Soil Material: Requirements for satisfactory soil material are specified in Section 31 20 00 "Earth Moving."
 - 1. Obtain approved borrow soil material off-site when satisfactory soil material is not

available on-site.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Protect and maintain benchmarks and survey control points from disturbance during construction.
- B. Protect existing site improvements to remain from damage during construction.
 - 1. Restore damaged improvements to their original condition, as acceptable to Owner.

3.02 TEMPORARY EROSION AND SEDIMENTATION CONTROL

- A. Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, State Water Resources Control Board's (SWRCB) Construction General Permit (CGP) and requirements of the City of Hermosa Beach Grading and Construction Permits.
- A. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones.
- B. Inspect, maintain, and repair erosion- and sedimentation-control measures during construction until permanent vegetation has been established.
- C. Remove erosion and sedimentation controls, and restore and stabilize areas disturbed during removal.

3.03 EXISTING UTILITIES

- A. Locate, identify, disconnect, and seal or cap utilities indicated to be removed.
 - 1. Arrange with utility companies to shut off indicated utilities.
 - 2. Owner will arrange to shut off indicated utilities when requested by Contractor.
- B. Locate, identify, and disconnect utilities indicated to be abandoned in place.
- C. Excavate for and remove underground utilities indicated to be removed.
- D. Removal of underground utilities is included in earthwork sections.

3.04 CLEARING AND GRUBBING

- A. Remove obstructions, trees, shrubs, and other vegetation to permit installation of new construction.

3.05 SITE IMPROVEMENTS

- A. Remove existing above- and below-grade improvements as indicated and necessary to facilitate new construction.
- B. Remove slabs, paving, curbs, gutters, and aggregate base as indicated.
 - 1. Unless existing full-depth joints coincide with line of demolition, neatly saw-cut a long line of existing pavement to remain before removing adjacent existing pavement. Saw-cut faces vertically.
 - 2. Paint cut ends of steel reinforcement in concrete to remain with two coats of antirust coating, following coating manufacturer's written instructions. Keep paint off surfaces that will remain exposed.

3.06 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off Owner's property.
- B. Separate recyclable materials produced during site clearing from other non-recyclable materials. Store or stockpile without intermixing with other materials, and transport them to recycling facilities. Do not interfere with other Project work.

3.07 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct Pregrading conference at Project site.
 - 1. Review methods and procedures related to earthmoving, including, but not limited to, the following:
 - a. Personnel and equipment needed to make progress and avoid delays.
 - b. Coordination of Work with utility locator service.
 - c. Coordination of Work and equipment movement with the locations of tree- and plant-protection zones.
 - d. Extent of trenching by hand or with air spade.
 - e. Field quality control.

END OF SECTION

SECTION 312000 – EARTH MOVING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.
- B. Greenbook 2021, Standard Specifications for Public Works Construction (SSPWC), Sections 300, and 301, and 306.
- C. City of Hermosa Beach Permit.

1.02 SUMMARY

- A. Section Includes:
 - 1. Excavating and filling for rough grading the Site.
 - 2. Preparing subgrades for slabs-on-grade, walks, pavements, trees, turf and grasses, and plants.
 - 3. Drainage course for concrete slabs-on-grade.
 - 4. Subbase course for concrete, walks, pavements.
 - 5. Subbase course and base course for asphalt paving.
 - 6. Excavating and backfilling trenches for utilities and pits for buried utility structures.
- B. Related Requirements
 - 1. Section 03 30 00 "Cast-in-Place Concrete" for granular course if placed over vapor retarder and beneath the slab-on-grade.
 - 2. Section 31 10 00 "Site Clearing" for site stripping, grubbing, stripping and stock piling topsoil, and removal of above- and below-grade improvements and utilities.
 - 3. City of Hermosa Beach Permits.

1.03 DEFINITIONS

- A. Backfill: Soil material or controlled low-strength material used to fill an excavation.
 - 1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
 - 2. Final Backfill: Backfill placed over initial backfill to fill a trench.
- B. Base Course: Aggregate layer placed between the subbase course and hot-mix asphalt paving.
- C. Bedding Course: Aggregate layer placed over the excavated subgrade in a trench before laying pipe.
- D. Borrow Soil: Suitable soil transported to site to be used in Fill or Backfill.

- E. Drainage Course: Aggregate layer supporting the slab-on-grade that also minimizes upward capillary flow of pore water.
- F. Unclassified Excavation: Removal of material encountered above subgrade and sidewalk elevations, and to lines and dimensions indicated.
- G. Overexcavation and Recompaction: Overexcavation and Recompaction shall consist of excavation of unsuitable material below subgrade, sidewalk elevations, and lines and dimensions indicated; and recompaction with suitable fill as directed by the Owner.
- H. Export Soil: Excess excavated soil from site not used in Fill, to be exported from site and legally disposed of off-site.
- I. Subbase Course: Aggregate layer placed between the subgrade and base course for hot-mix asphalt pavement, or aggregate layer placed between the subgrade and a cement concrete pavement or a cement concrete or hot-mix asphalt walk.
- J. Subgrade: Uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase, drainage fill, drainage course, or topsoil materials.
- K. Utilities: Power poles, Underground pipes, conduits, ducts, structures, and cables.

1.04 QUALITY ASSURANCE

- A. Geotechnical Testing Agency Qualifications: Qualified according to ASTM E 329 and ASTM D 3740 for testing indicated.

1.05 FIELD CONDITIONS

- A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during earth-moving operations.
 - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
 - 2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.
- B. Utility Locator Service: Notify utility locator service for area where Project is located before beginning earth-moving operations.
- C. Do not commence earth-moving operations until temporary site fencing and erosion- and sedimentation-control measures specified in Section 31 10 00 "Site Clearing," are in place.
- D. The following practices are prohibited within protection zones of protected trees if applicable; or an area which preserves roots and soil and keeps branches clear of contact with construction equipment and materials.:
 - 1. Storage of construction materials, debris, or excavated material.

2. Parking vehicles or equipment.
 3. Foot traffic.
 4. Erection of sheds or structures.
 5. Impoundment of water.
 6. Excavation or other digging unless otherwise indicated.
 7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.
- E. Do not direct vehicle or equipment exhaust towards protection zones.
- F. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones.

PART 2 - PRODUCTS

2.01 GENERAL

- A. General: All construction materials shall conform to Greenbook 2021, Standard Specifications for Public Works Construction (SSPWC), Sections 200; and City of Hermosa Beach Permit.

PART 3 - EXECUTION

3.01 GENERAL

- A. All construction methods shall conform to Greenbook 2021, Standard Specifications for Public Works Construction (SSPWC), Sections 300 and 301, and City of Hermosa Beach Permit.

3.02 DEWATERING

- A. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.
- B. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation.
1. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches.

3.03 EXCAVATION

- A. GENERAL

1. Unclassified Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include rock, soil materials, and obstructions. No changes in the Contract Sum or the Contract Time will be authorized for rock excavation or removal of obstructions.
2. Overexcavation and Recompaction: When unsuitable material is encountered, as determined by the landscape architect or inspector, excavate below elevations, and recompact with suitable fill material to subgrade elevations as directed by the Owner.

B. EXCAVATION FOR WALKS AND PAVEMENTS

1. Excavate surfaces under walks and pavements to indicated lines, cross-sections, elevations, and subgrades.
2. All Pavement excavation shall conform to Greenbook 2021, Standards and Specifications for Public Works Construction (SSPWC), Sections 300 and 301, and City of Hermosa Beach Permit.

C. EXCAVATION FOR UTILITY TRENCHES

1. Excavation of trenches shall conform to Greenbook 2021, Standards and Specifications for Public Works Construction (SSPWC), Sections 300 and 301, and City of Hermosa Beach Permit.

3.04 SUBGRADE INSPECTION

- A. Notify Owner when excavations and fills have reached required subgrade elevation.
- B. If Owner or Testing Agency determines that unsatisfactory soil is present, the contractor shall excavate and replace with suitable compacted backfill or fill material as directed by Owner.
- C. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Owner, without additional compensation.

3.05 BACKFILL

A. GENERAL

1. Place and compact backfill in excavations promptly, but not before completing the following:
 - a. Construction below finish grade including, where applicable, subdrainage, dampproofing, waterproofing, and perimeter insulation.
 - b. Surveying locations of underground utilities for Record Documents.
 - c. Testing and inspecting underground utilities.
 - d. Removing concrete formwork.
 - e. Removing trash and debris.
 - f. Place backfill on subgrades free of mud, frost, snow, or ice.

B. UTILITY TRENCH BACKFILL

1. Place bedding material, and backfill utility trenches in conformance with Greenbook 2021, Standard Specifications for Public Works Construction (SSPWC), Sections 300 and 301; utility agency requirements.

C. SOIL FILL

1. Place Fill in conformance with Greenbook 2021, Standard Specifications for Public Works Construction (SSPWC), Section 300; City of Hermosa Beach Permit

D. COMPACTION OF SOIL BACKFILLS AND FILLS

1. Compact Soil Backfills and Fills in conformance with Greenbook 2021, Standard Specifications for Public Works Construction (SSPWC), Section 300; City of Hermosa Beach Permit.

3.06 GRADING

- A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.

1. Provide a smooth transition between adjacent existing grades and new grades.
2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.

- B. Site Rough Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to elevations required to achieve indicated finish elevations, within the following subgrade tolerances:

1. Turf or Unpaved Areas: Plus or minus one-tenth foot.
2. Walks: Plus or minus ½ inch.
3. Pavements: Plus or minus ½ inch.

3.07 FIELD QUALITY CONTROL

- A. General: Field Quality Control, including construction observations, inspection, testing, compaction, and clean up, shall conform to Greenbook 2021, Standard Specifications for Public Works Construction (SSPWC).

- B. Testing Agency: Contractor will engage a qualified geotechnical engineering testing agency to perform tests and inspections.

- C. Testing agency shall inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earth moving only after test results for previously completed work comply with requirements.

- D. Testing agency will test compaction of soils in place according to ASTM D 1556, ASTM D 2167, ASTM D 2937, and ASTM D 6938, as applicable. Tests will be performed at the following locations and frequencies:

1. Paved and Slab Areas: At subgrade and at each compacted fill and backfill layer, at least one test for every 2,000 square feet or less of paved area or building slab but in no case fewer than three tests.
 2. Trench Backfill: At each compacted initial and final backfill layer, at least one test for every 150 feet or less of trench length but no fewer than two tests.
- E. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil materials to depth required; recompact and retest until specified compaction is obtained.

3.08 PROTECTION

A. Protecting Graded Areas:

1. Protect newly graded areas from traffic, freezing, and erosion.
2. Graded areas shall be free of trash and debris.

B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.

1. Scarify or remove and replace soil material to depth as directed by Owner; reshape and recompact.

C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.

1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.09 DISPOSAL OF WASTE MATERIALS

- A. Remove waste materials, including unsuitable soil, trash, oversize rocks, rubble, and debris, and legally dispose of them off Owner's property.

3.10 BORROW AND EXPORT SOIL

- A. Borrow Soil: Obtain, transport from off-site to project site, place and compact Borrow Soil as Fill or Backfill, if sufficient quantity of suitable soil excavated on-site is not available to complete subgrade elevations, backfills, and to the lines and dimensions indicated. Provide Borrow Soil in the quantity necessary to complete the Fills and Backfills.

- B. Export Soil: Transport from site and legally dispose of off-site, excavated soil, including utility trench spoils, in excess of quantity needed on-site to complete subgrade elevations, backfills, and to the lines and dimensions indicated.

END OF SECTION

SECTION 312219 – LANDSCAPE GRADING

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes materials, labor, apparatus, tools, equipment, temporary construction, transportation, and services necessary for and incidental to performing the proper completion of Work for Finished Grading in Landscape Planting Areas, as shown in the Contract Drawings, and as specified herein this Section.
- B. Work under this Section consists of, but is not necessarily limited to, furnishing and installing the following:
 - 1. Finish Grading of Landscape Planting Areas.
- C. Related Sections: The following Sections contain requirements that relate to Work in this Section:
 - 1. Section 328400 – Landscape Irrigation
 - 2. Section 329113 – Soil Preparation.
 - 3. Section 329200 – Lawns and Grasses.
 - 4. Section 329300 – Exterior Plants.
 - 5. Section 329400 – Landscape Planting Accessories.
 - 6. Section 329813 – Landscape Establishment Period.
 - 7. Section 334300 – Landscape Drainage.

1.2 SITE CONDITIONS

- A. Dust Nuisance: Contractor shall assume full responsibility for alleviation or prevention of dust as a result of Work under this Section.
- B. Excessive rock, dead or declining vegetation, trash, debris, or other items that has accumulated shall be removed from the Project Site by the Contractor, and as directed by the Landscape Architect, prior to completion of Finish Grading operations.
- C. Work under this Section shall be performed only during the period when beneficial and optimum Landscape Grading results may be obtained. If the moisture content of the soil should reach such a level that working it would destroy soil structure or cause compaction. Landscape Grading operations shall be suspended until, in the opinion of the Landscape Architect, the moisture content is increased or reduced to acceptable levels and the desired results are likely to be obtained.
- D. Soil moisture level prior to Landscape Grading shall be no less than 75% of field capacity. The determination of adequate soil moisture for Landscape Grading shall be in the sole judgment of the Landscape Architect.

1.3 QUALITY ASSURANCE AND CONTROL

- A. Installer Qualifications:
 - 1. Valid California C-27 (Landscaping Contractor) License.
- B. Engage an experienced, licensed Contractor who has completed landscaping work similar in material, design, and extent to that indicated for this Project and with a record of successful landscape establishment.
- C. Installer's Field Supervision: Contractor shall maintain an experienced, full-time landscape supervisor/superintendent at the Project Site during times that landscaping operations identified herein the Contract are in progress.

1.4 COORDINATION, SCHEDULING:, AND OBSERVATIONS

- A. Sequencing: Complete Finish Grading after general Soil Preparation (refer to Section 329113) and prior to installation of Irrigation System (Refer to Section 328400) in each area graded.
- B. Re-grade, as required, to acceptable Landscape Grades established by Landscape Architect once irrigation system is installed.
- C. Utilities: Determine location of above grade and underground utilities and perform Work in a manner which will avoid damage to utilities. Hand excavate, as required. Maintain grade stakes until removal is mutually agreed upon by parties concerned.
- D. Excavation: When conditions detrimental to adequate Finish Grading operations are encountered, such as rubble fill, adverse drainage conditions, or obstructions, cease operations and notify Landscape Architect for further direction.
- E. Perform Finish Grading operations only when weather and soil conditions are suitable in accordance with locally accepted practices.
- F. Construction Site Observations: Periodic site observations shall be made by the Landscape Architect during the installation of Work under this Section for compliance with requirements. Landscape Architect retains right to observe Work for defects and to reject unsatisfactory or defective work under this Section at any time during progress of Work. Contractor shall request, in writing, at least one (1) week in advance of the time when mandatory site observation(s) by the Landscape Architect are required.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions: Verify that the following soil preparation items (per Section 329113) have been completed prior to commencement of Landscape Grading:
 - 1. Installation of (stockpiled) topsoil and soil preparation, including debris removal.
 - 2. Incorporation of soil amendments.

3.2 INSTALLATION

A. Subsoil Preparation:

1. Rough grade sub-soil systematically to allow for a maximum amount of natural settlement and compaction. Eliminate uneven areas and low spots. Remove debris, roots, branches, stones, etc. Remove sub-soil that has been contaminated with petroleum products.
2. Cut out areas to subgrade elevation which are to receive stabilizing base for paving and sidewalks.
3. Bring sub soil to required levels, profiles, and contours. Make changes in grade gradual. Blend slopes into level areas.
4. Cultivate subgrade to a depth of three-inches (3") where topsoil is to be placed. Repeat cultivation in areas where equipment used for hauling and spreading topsoil has compacted sub-soil.

B. Finish Grading:

1. In all planting areas, a layer of soil amendments and fertilizers shall be uniformly spread and thoroughly cultivated by means of mechanical tiller as recommended by the approved Agronomic Soil Fertility Report (per Section 329113 – Soil Preparation). Planting areas shall be free of all weeds, construction debris, trash, debris, and rocks 1" in diameter or larger for a minimum depth of two-inches (2").
2. Provide Finish Grades for natural runoff of water without low spots or pockets. Accurately set flow line grades at a two-percent (2%) minimum positive gradient, unless otherwise noted in the Contract Drawings.
3. Finish Grades shall be smooth, even, and on a uniform plane with no abrupt changes, pits, or undulations of the surface. Slope grades uniformly between given spot elevations.
4. Finish Grades not otherwise indicated shall be uniform levels or slopes between points where elevations are given, or between points established by walks, paving, curbs or catch basins.
5. Tops and toes of slopes shall be gently rounded or feathered to produce a gradual and natural-appearing transition between relatively level areas and slopes, per the satisfaction of the Landscape Architect.
6. Slope grade away from buildings a minimum two-inches (2") in ten-feet (10') unless otherwise indicated on Contract Drawings.

C. Tolerances:

1. Planting areas, including areas planted with turf grasses, shall be true to grade within one-inch (1") when tested with a ten-foot (10') straightedge.
2. Hold Finish Grades in landscape planting areas below top of adjacent pavement, headers, curbs, or walls (where applicable), as follows:
 - a. Shrub, Annual and Groundcover Areas: One and one-half inches (1-1/2").
 - b. Sodded Turf Grass Areas: One-inch (1").

END OF SECTION

SECTION 321216 - ASPHALT PAVING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Greenbook 2021, Standard Specifications for Public Works Construction (SSPWC), Sections 200, 201, 203, 213, 300, 301, 302, 303, and 314.
- B. City of Hermosa Beach Specifications and Codes.

1.02 SUMMARY

- A. Section Includes:
 - 1. Cold milling of existing asphalt pavement.
 - 2. Hot-mix asphalt patching.
 - 3. Hot-mix asphalt paving.
 - 4. Hot-mix asphalt overlay.
 - 5. Asphalt curbs.
 - 6. Asphalt traffic-calming devices.
 - 7. Asphalt surface treatments.
- B. Related Requirements:
 - 1. Section 31 20 00 "Earth Moving" for subgrade preparation, fill material, unbound-aggregate subbase and base courses, and aggregate pavement shoulders.

1.03 PREINSTALLATION MEETINGS

- A. Pre-installation Conference: Conduct conference at Project site.
 - 1. Review methods and procedures related to hot-mix asphalt paving including, but not limited to, the following:
 - a. Review proposed sources of paving materials, including capabilities and location of plant that will manufacture hot-mix asphalt.
 - b. Review requirements for protecting paving work, including restriction of traffic during installation period and for remainder of construction period.

1.04 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include technical data and tested physical and performance properties.
 - 2. Job-Mix Designs: Certification, by authorities having jurisdiction, of approval of each job mix proposed for the Work.

3. Job-Mix Designs: For each job mix proposed for the Work.
- B. Samples for Verification: For the following product, in manufacturer's standard sizes unless otherwise indicated:
 1. Paving Fabric: 12 inches (300 by 300 mm) minimum.

1.05 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For manufacturer and testing agency.
- B. Material Certificates: For each paving material. Include statement that mixes containing recycled materials will perform equal to mixes produced from all new materials.
- C. Material Test Reports: For each paving material, by a qualified testing agency.
- D. Field quality-control reports.

1.06 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A paving-mix manufacturer registered with and approved by City of Hermosa Beach.
- B. Testing Agency Qualifications: Qualified according to ASTM D 3666 for testing indicated.
- C. Regulatory Requirements: Comply with materials, workmanship, and other applicable requirements of City of Hermosa Beach for asphalt paving work.

PART 2 - PRODUCTS

2.01 GENERAL

- A. General: All construction materials shall conform Greenbook 2021, Standard Specifications for Public Works Construction (SSPWC); Sections 200, 201, 203, and 213.
- B. Concrete: Portland Cement Concrete (PCC) shall also conform to the recommendations and requirements of Greenbook 2021, Standard Specifications for Public Works Construction (SSPWC). Cement shall be Type II or V Portland Cement. PCC shall be specified by Special Exposure and shall conform to Greenbook 2015, Standard Specifications for Public Works Construction (SSPWC), Section 201, Table 201-1.1.3, Severe Exposure Mix.

PART 3 - EXECUTION

3.01 GENERAL

- A. All construction methods shall conform to Greenbook 2021, Standard Specifications for Public Works Construction (SSPWC), Sections 301, 302, 303, and 314.

3.02 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.
- B. Field Quality Control: Field Quality Control, including construction observations, inspection, testing, and cleaning, shall conform to Greenbook 2021, Standard Specifications for Public Works Construction (SSPWC)

3.03 WASTE HANDLING

- A. General: Handle asphalt-paving waste according to Greenbook 2021, Standard Specifications for Public Works Construction (SSPWC)

END OF SECTION

SECTION 32 13 13 - CONCRETE PAVING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions apply to this Section.
- B. Greenbook 2021, Standard Specifications for Public Works Construction (SSPWC), Sections 200, 201, 203, 213, 300, 301, 302, 303, and 314.
- C. CRSI's "Manual of Standard Practice"
- D. ACI 117 "Specifications for Tolerances for Concrete Construction"
- E. ACI 301 "Specifications for Structural Concrete"
- F. ACI 306.1 Standard Specification for Cold Weather Concreting

1.02 SUMMARY

- A. Section Includes Concrete Paving Including the Following:
 - 1. Driveways.
 - 2. Roadways.
 - 3. Parking lots.
 - 4. Curbs and gutters.
 - 5. Walks.
- B. Related Requirements:
 - 1. Section 31 20 00 "Earth Moving" for subgrade preparation, fill material, unbound-aggregate subbase and base courses, and aggregate pavement shoulders.
 - 2. Section 32 17 23 "Pavement Markings."

1.03 DEFINITIONS

- A. Cementitious Materials: Portland cement alone or in combination with one or more of blended hydraulic cement, fly ash, slag cement, and other pozzolans.
- B. W/C Ratio: The ratio by weight of water to cementitious materials.

1.04 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.
 - 1. Review methods and procedures related to concrete paving, including but not limited to, the following:
 - a. Concrete mixture design.
 - b. Quality control of concrete materials and concrete paving construction practices.

2. Require representatives of each entity directly concerned with concrete paving to attend, including the following:
 - a. Contractor's superintendent.
 - b. Independent testing agency responsible for concrete design mixtures.
 - c. Ready-mix concrete manufacturer.
 - d. Concrete paving Subcontractor.

1.05 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Design Mixtures: For each concrete paving mixture. Include alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

1.06 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified ready-mix concrete manufacturer and testing agency.
- B. Material Certificates: For the following, from manufacturer:
 1. Cementitious materials.
 2. Steel reinforcement and reinforcement accessories.
 3. Fiber reinforcement.
 4. Admixtures.
 5. Curing compounds.
 6. Applied finish materials.
 7. Bonding agent or epoxy adhesive.
 8. Joint fillers.
- C. Material Test Reports: For each of the following:
 1. Aggregates: Include service-record data indicating absence of deleterious expansion of concrete due to alkali-aggregate reactivity.
- D. Field quality-control reports.

1.07 QUALITY ASSURANCE

- A. Ready-Mix-Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
 1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities" (Quality Control Manual - Section 3, "Plant Certification Checklist").

B. Testing Agency Qualifications: Qualified according to ASTM C 1077 and ASTM E 329 for testing indicated.

1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-1 or an equivalent certification program.

1.08 PRECONSTRUCTION TESTING

A. Preconstruction Testing Service: Engage a qualified independent testing agency to perform preconstruction testing on concrete paving mixtures.

1.09 FIELD CONDITIONS

A. Traffic Control: Maintain access for vehicular and pedestrian traffic as required for other construction activities.

B. Cold-Weather Concrete Placement: Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing, or low temperatures. Comply with ACI 306.1 and the following:

1. When air temperature has fallen to or is expected to fall below 40 deg F, uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F and not more than 80 deg F at point of placement.
2. Do not use frozen materials or materials containing ice or snow.
3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in design mixtures.

C. Hot-Weather Concrete Placement: Comply with ACI 301 and as follows when hot-weather conditions exist:

1. Cool ingredients before mixing to maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated in total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
2. Cover steel reinforcement with water-soaked burlap, so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.
3. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

PART 2 - PRODUCTS

2.01 CONCRETE, GENERAL

A. ACI Publications: Comply with ACI 301 unless otherwise indicated.

2.02 FORMS

- A. Form Materials: Plywood, metal, metal-framed plywood, or other approved panel-type materials to provide full-depth, continuous, straight, and smooth exposed surfaces.
 - 1. Use flexible or uniformly curved forms for curves with a radius of 100 feet or less. Do not use notched and bent forms.
- B. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and that will not impair subsequent treatments of concrete surfaces.

2.03 STEEL REINFORCEMENT

- A. Recycled Content: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.
- B. Deformed-Steel Welded-Wire Reinforcement: ASTM A 1064/A 1064M, flat sheet.
- C. Reinforcing Bars: ASTM A 615/A 615M, Grade 60; deformed.
- D. Steel Bar Mats: ASTM A 184/A 184M; with ASTM A 615/A 615M, Grade 60 deformed bars; assembled with clips.
- E. Joint Dowel Bars: ASTM A 615/A 615M, Grade 60 plain-steel bars. Cut bars true to length with ends square and free of burrs.
- F. Tie Bars: ASTM A 615/A 615M, Grade 60; deformed.
- G. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars, welded-wire reinforcement, and dowels in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or precast concrete of greater compressive strength than concrete specified, and as follows:
 - 1. Equip wire bar supports with sand plates or horizontal runners where base material will not support chair legs.
 - 2. For epoxy-coated reinforcement, use epoxy-coated or other dielectric-polymer-coated wire bar supports.

2.04 CONCRETE MATERIALS

- A. Regional Materials: Concrete shall be manufactured within 500 miles of Project site from aggregates and cement that have been extracted, harvested, or recovered, as well as manufactured, within 500 miles of Project site.
- B. Cementitious Materials: Use the following cementitious materials, of same type, brand, and source throughout Project:
 - 1. Portland Cement: ASTM C 150/C 150M, gray portland cement Type II or Type V.
 - 2. Fly Ash: ASTM C 618, Class F.

3. Slag Cement: ASTM C 989/C 989M, Grade 100 or 120.
- C. Normal-Weight Aggregates: ASTM C 33/C 33M, Class 1N , uniformly graded. Provide aggregates from a single source with documented service-record data of at least 10 years' satisfactory service in similar paving applications and service conditions using similar aggregates and cementitious materials.
 1. Maximum Coarse-Aggregate Size: 1 inch nominal.
 2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.
 - D. Air-Entraining Admixture: ASTM C 260/C 260M.
 - E. Chemical Admixtures: Admixtures certified by manufacturer to be compatible with other admixtures and to contain not more than 0.1 percent water-soluble chloride ions by mass of cementitious material.
 1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
 2. Retarding Admixture: ASTM C 494/C 494M, Type B.
 - F. Water: Potable and complying with ASTM C 94/C 94M.

2.05 CURING MATERIALS

- A. Absorptive Cover: AASHTO M 182, Class 3, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. dry or cotton mats.
- B. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- C. Water: Potable.
- D. Evaporation Retarder: Waterborne, monomolecular, film forming, manufactured for application to fresh concrete.
 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. BASF Construction Chemicals - Building Systems; Confilm.
 - b. Bon Tool Co.; 32-301-B7 BonWay Evaporation Retarder.
 - c. Brickform, a division of Solomon Colors, Inc.; Evaporation Retarder.
 - d. ChemMasters; SprayFilm.
 - e. Dayton Superior Corporation; AquaFilm J74.
 - f. Euclid Chemical Company (The), an RPM company; EUCOBAR.
 - g. Kaufman Products, Inc.; VaporAid.
 - h. L&M Construction Chemicals, Inc.; E-CON.
 - i. Lambert Corporation; Lambco Skin.
 - j. Meadows, W. R., Inc.; EVAPRE.
 - k. Metalcrete Industries; Waterhold.
 - l. Nox-Crete Products Group; Monofilm.
 - m. Sika Corporation, Inc.; SikaFilm.

- n. SpecChem, LLC; SpecFilm.
 - o. TK Products, Division of Sierra Corporation; TK-2120 TRI-FILM.
 - p. Vexcon Chemicals Inc.; Certi-Vex EnvioAssist.
 - q. Or equal.
- E. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, dissipating.
- 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Anti-Hydro International, Inc.; A-H Curing Compound #2 DR WB.
 - b. ChemMasters, Inc; Safe-Cure Clear DR.
 - c. Dayton Superior Corporation; Clear Resin Cure J11W.
 - d. Euclid Chemical Company (The), an RPM company; Kurez DR VOX.
 - e. Kaufman Products, Inc.; DR Cure.
 - f. L&M Construction Chemicals, Inc.; L&M Cure R.
 - g. Lambert Corporation; Aqua Kure – Clear.
 - h. Meadows, W. R., Inc.; 1100-CLEAR.
 - i. Nox-Crete Products Group; Res-Cure [DH] [DS].
 - j. Right Pointe; Clear Water Resin.
 - k. SpecChem, LLC; PaveCure Rez.
 - l. TK Products, Division of Sierra Corporation; TK-2519 DC WB.
 - m. Vexcon Chemicals Inc.; Certi-Vex Envio Cure 100.
 - n. Or equal.
- F. White, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 2, Class B, dissipating.
- 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Anti-Hydro International, Inc.; A-H Curing Compound #2 WP WB.
 - b. ChemMasters; Safe-Cure 2000.
 - c. Dayton Superior Corporation; White Resin Cure J10W.
 - d. Kaufman Products, Inc.; Thinfilm 450.
 - e. L&M Construction Chemicals, Inc.; L&M Cure R-2.
 - f. Lambert Corporation; Aqua-Cure White.
 - g. Meadows, W. R., Inc.; 1200-WHITE.
 - h. SpecChem, LLC; PaveCure Rez White.
 - i. Vexcon Chemicals Inc.; Certi-Vex Envio Cure White 100.
 - j. Or equal

2.06 RELATED MATERIALS

- A. Joint Fillers: ASTM D 1751, asphalt-saturated cellulosic fiber or ASTM D 1752, cork or self-expanding cork in preformed strips.
- B. Bonding Agent: ASTM C 1059/C 1059M, Type II, non-redispersible, acrylic emulsion or styrene butadiene.

- C. Epoxy-Bonding Adhesive: ASTM C 881/C 881M, two-component epoxy resin capable of humid curing and bonding to damp surfaces; of class suitable for application temperature, of grade complying with requirements, and of the following types:
 - 1. Types IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.

2.07 CAST IN PLACE DETECTABLE WARNING MATERIALS

- A. Detectable Warning Stamp: Semi-rigid polyurethane mats with formed underside capable of imprinting detectable warning pattern on plastic concrete; perforated with a vent hole at each dome.
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Armor-Tile tactile systems product or equal
 - b. Safety Step TD
 - c. or equal .
 - 2. Size of Stamp: matching detectable warning area shown on Drawings.

2.08 CONCRETE MIXTURES

- A. Prepare design mixtures, proportioned according to ACI 301, for each type and strength of normal-weight concrete, and as determined by either laboratory trial mixtures or field experience.
 - 1. Use a qualified independent testing agency for preparing and reporting proposed concrete design mixtures for the trial batch method.
 - 2. When automatic machine placement is used, determine design mixtures and obtain laboratory test results that comply with or exceed requirements.
- B. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement in concrete as follows:
 - 1. Fly Ash or Pozzolan: 25 percent.
 - 2. Slag Cement: 50 percent.
 - 3. Combined Fly Ash or Pozzolan, and Slag Cement: 50 percent, with fly ash or pozzolan not exceeding 25 percent.
- C. Add air-entraining admixture at manufacturer's prescribed rate to result in normal-weight concrete at point of placement having an air content as follows:
 - 1. Air Content: 4-1/2 percent plus or minus 1-1/2 percent for 1-inch nominal maximum aggregate size.

- D. Limit water-soluble, chloride-ion content in hardened concrete to 0.30 percent by weight of cement.
- E. Chemical Admixtures: Use admixtures according to manufacturer's written instructions.
 - 1. Use water-reducing admixture in concrete as required for placement and workability.
 - 2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
- F. Concrete Mixtures: Normal-weight concrete.
 - 1. Concrete specified by Special Exposure, "Severe Expose," per Greenbook 2015, Standards Specifications for Public Works Construction (SSPWC) 201-1.1.3
 - 2. Portland cement type II or V.
 - 3. Compressive Strength (28 Days): 5000 psi.
 - 4. Maximum W/C Ratio at Point of Placement: 0.40.

2.09 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M. Furnish batch certificates for each batch discharged and used in the Work.
 - 1. When air temperature is between 85 and 90 deg. F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg. F, reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine exposed subgrades and subbase surfaces for compliance with requirements for dimensional, grading, and elevation tolerances.
- B. Proof-roll prepared subbase surface below concrete paving to identify soft pockets and areas of excess yielding.
 - 1. Completely proof-roll subbase in one direction and repeat in perpendicular direction. Limit vehicle speed to 3 mph.
 - 2. Proof-roll with a pneumatic-tired and loaded, 10-wheel, tandem-axle dump truck weighing not less than 15 tons.
 - 3. Correct subbase with soft spots and areas of pumping or rutting exceeding depth of 1/2 inch according to requirements in Section 31 20 00 "Earth Moving."
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

- A. Remove loose material from compacted subbase surface immediately before placing concrete.

3.03 EDGE FORMS AND SCREED CONSTRUCTION

- A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.
- B. Clean forms after each use and coat with form-release agent to ensure separation from concrete without damage.

3.04 STEEL REINFORCEMENT INSTALLATION

- A. General: Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, or other bond-reducing materials.
- C. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement. Maintain minimum cover to reinforcement.
- D. Install welded-wire reinforcement in lengths as long as practicable. Lap adjoining pieces at least one full mesh, and lace splices with wire. Offset laps of adjoining widths to prevent continuous laps in either direction.
- E. Install fabricated bar mats in lengths as long as practicable. Handle units to keep them flat and free of distortions. Straighten bends, kinks, and other irregularities, or replace units as required before placement. Set mats for a minimum 2-inch overlap of adjacent mats.

3.05 JOINTS

- A. General: Form construction, isolation, and contraction joints and tool edges true to line, with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline unless otherwise indicated.
 - 1. When joining existing paving, place transverse joints to align with previously placed joints unless otherwise indicated.
- B. Construction Joints: Set construction joints at side and end terminations of paving and at locations where paving operations are stopped for more than one-half hour unless paving terminates at isolation joints.
 - 1. Continue steel reinforcement across construction joints unless otherwise indicated. Do not continue reinforcement through sides of paving strips unless otherwise indicated.
 - 2. Provide tie bars at sides of paving strips where indicated.
 - 3. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or coat with asphalt one-half of dowel length to prevent concrete bonding to one side of joint.
- C. Isolation Joints: Form isolation joints of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, other fixed objects, and where indicated.
 - 1. Extend joint fillers full width and depth of joint.

2. Terminate joint filler not less than 1/2 inch or more than 1 inch below finished surface if joint sealant is indicated.
 3. Furnish joint fillers in one-piece lengths. Where more than one length is required, lace or clip joint-filler sections together.
 4. During concrete placement, protect top edge of joint filler with metal, plastic, or other temporary preformed cap. Remove protective cap after concrete has been placed on both sides of joint.
- D. Contraction Joints: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of the concrete thickness, as follows, to match jointing of existing adjacent concrete paving and locations as shown on the plans:
1. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch-wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before developing random contraction cracks.
 - a. Tolerance: Ensure that sawed joints are within 3 inches either way from centers of dowels.
 2. Doweled Contraction Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or coat with asphalt one-half of dowel length to prevent concrete bonding to one side of joint.

3.06 CONCRETE PLACEMENT

- A. Before placing concrete, inspect and complete formwork installation, steel reinforcement, and items to be embedded or cast-in.
- B. Remove snow, ice, or frost from subbase surface and steel reinforcement before placing concrete. Do not place concrete on frozen surfaces.
- C. Moisten subbase to provide a uniform dampened condition at time concrete is placed. Do not place concrete around manholes or other structures until they are at required finish elevation and alignment.
- D. Comply with ACI 301 requirements for measuring, mixing, transporting, and placing concrete.
- E. Do not add water to concrete during delivery or at Project site. Do not add water to fresh concrete after testing.
- F. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.
- G. Consolidate concrete according to ACI 301 by mechanical vibrating equipment supplemented by hand spading, rodding, or tamping.

1. Consolidate concrete along face of forms and adjacent to transverse joints with an internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Use only square-faced shovels for hand spreading and consolidation. Consolidate with care to prevent dislocating reinforcement, dowels and joint devices.
- H. Screed paving surface with a straightedge and strike off.
- I. Commence initial floating using bull floats or darbies to impart an open-textured and uniform surface plane before excess moisture or bleedwater appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading surface treatments.
- J. Curbs and Gutters: Use design mixture for automatic machine placement. Produce curbs and gutters to required cross section, lines, grades, finish, and jointing.
- K. Slip-Form Paving: Use design mixture for automatic machine placement. Produce paving to required thickness, lines, grades, finish, and jointing.
 1. Compact subbase and prepare subgrade of sufficient width to prevent displacement of slip-form paving machine during operations.

3.07 FLOAT FINISHING

- A. General: Do not add water to concrete surfaces during finishing operations.
- B. Float Finish: Begin the second floating operation when bleedwater sheen has disappeared and concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture.
 1. Burlap Finish: Drag a seamless strip of damp burlap across float-finished concrete, perpendicular to line of traffic, to provide a uniform, gritty texture.
 2. Medium-to-Fine-Textured Broom Finish: Draw a soft-bristle broom across float-finished concrete surface, perpendicular to line of traffic, to provide a uniform, fine-line texture.

3.08 CAST IN PLACE DETECTABLE WARNING SURFACE INSTALLATION

- A. The factory-installed plastic sheeting must remain in place during the entire installation process to prevent the splashing of concrete onto the finished surface of the tile.
- B. When preparing to set the tile, it is important that no concrete be removed in the area to accept the tile. It is imperative that the installation technique eliminates any air voids under the tile. Holes in the tile perimeter allow air to escape during the installation process. Concrete will flow through the large holes in each embedment flange on the underside of the tile. This will lock the tile solidly into the cured concrete.

- C. The concrete shall be poured and finished true and smooth to the required dimensions and slope prior to the tile placement. Immediately after finishing concrete, the electronic level should be used to check that the required slope is achieved. The tile shall be placed true and square to the curb edge in accordance with the contract drawings. The Cast In Place Detectable/Tactile Warning Surface Tiles shall be tamped (or vibrated) into the fresh ADA Tactile Tiles 2019 CBC Title 24 Compliant Section 32 17 26-4 January 1,2020 concrete to ensure that the field level of the tile is flush to the adjacent concrete surface. The embedment process should not be accomplished by stepping on the tile as this may cause uneven setting which can result in air voids under the tile surface. The contract drawings indicate that the tile field level (base of truncated dome) is flush to adjacent surfaces to permit proper water drainage and eliminate tripping hazards between adjacent finishes.
- D. In cold weather climates it is recommended that the Cast In Place Detectable/Tactile Warning Surface Tiles be set deeper such that the top of domes are level to the adjacent concrete on the top and sides of ramp and that the base of domes to allow water drainage. This installation will reduce the possibility of damage due to snow clearing operations.
- E. Immediately after placement, the tile elevation is to be checked to adjacent concrete. The elevation and slope should be set consistent with contract drawings to permit water drainage to curb as the design dictates. Ensure that the field surface of the tile is flush with the surrounding concrete and back of curb so that no ponding is possible on the tile at the back side of curb.
- F. While concrete is workable, a 3/8" radius edging tool shall be used to create a finished edge of concrete, then a steel trowel shall be used to finish the concrete around the tile's perimeter, flush to the field level of the tile.
- G. During and after the tile installation and the concrete curing stage, it is imperative that there is no walking, leaning or external forces placed on the tile that may rock the tile causing a void between the underside of tile and concrete.
- H. Following tile placement, review installation tolerances to contract drawings and adjust tile before the concrete sets. Two suitable weights of 25 lb each may be required to be placed on each tile as necessary to ensure solid contact of the underside of tile to concrete.

3.09 AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.
- B. Comply with ACI 306.1 for cold-weather protection.
- C. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete but before float finishing.
- D. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.

- E. Curing Methods: Cure concrete by moisture curing, moisture-retaining-cover curing, curing compound or a combination of these as follows:
1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
 - a. Water.
 - b. Continuous water-fog spray.
 - c. Absorptive cover, water saturated and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.
 2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Immediately repair any holes or tears occurring during installation or curing period, using cover material and waterproof tape.
 3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating, and repair damage during curing period.

3.10 PAVING TOLERANCES

- A. Comply with tolerances in ACI 117 and as follows:
1. Elevation: 1/4 inch.
 2. Thickness: Plus 3/8 inch, minus 1/4 inch.
 3. Surface: Gap below 10-feet- long; unlevelled straightedge not to exceed 1/4 inch.
 4. Alignment of Tie-Bar End Relative to Line Perpendicular to Paving Edge: 1/2 inch per 12 inches of tie bar.
 5. Lateral Alignment and Spacing of Dowels: 1 inch.
 6. Vertical Alignment of Dowels: 1/4 inch.
 7. Alignment of Dowel-Bar End Relative to Line Perpendicular to Paving Edge: 1/8 inch per 12 inches of dowel.
 8. Joint Spacing: 3 inches.
 9. Contraction Joint Depth: Plus 1/4 inch, no minus.
 10. Joint Width: Plus 1/8 inch, no minus.

3.11 FIELD QUALITY CONTROL

- D Testing Agency: Engage a qualified testing agency to perform tests and inspections.
- A. Testing Services: Testing and inspecting of composite samples of fresh concrete obtained according to ASTM C 172/C 172M shall be performed according to the following requirements:
1. Testing Frequency: Obtain at least one composite sample for each 5000 sq. ft. or fraction thereof of each concrete mixture placed each day.

- a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
 2. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
 3. Air Content: ASTM C 231/C 231M, pressure method; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
 4. Concrete Temperature: ASTM C 1064/C 1064M; one test hourly when air temperature is 40 deg F and below and when it is 80 deg F and above, and one test for each composite sample.
 5. Compression Test Specimens: ASTM C 31/C 31M; cast and laboratory cure one set of three standard cylinder specimens for each composite sample.
 6. Compressive-Strength Tests: ASTM C 39/C 39M; test one specimen at seven days and two specimens at 28 days.
 - a. A compressive-strength test shall be the average compressive strength from two specimens obtained from same composite sample and tested at 28 days.
- B. Strength of each concrete mixture will be satisfactory if average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.
- C. Test results shall be reported in writing to Owner, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.
- D. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Owner but will not be used as sole basis for approval or rejection of concrete.
- E. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Owner.
- F. Concrete paving will be considered defective if it does not pass tests and inspections.
- G. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
- H. Prepare test and inspection reports.

3.12 REPAIR AND PROTECTION

- A. Remove and replace concrete paving that is broken, damaged, or defective or that does not comply with requirements in this Section. Remove work in complete sections from joint to joint unless otherwise approved by Owner.
- B. Drill test cores, where directed by Owner, when necessary to determine magnitude of cracks or defective areas. Fill drilled core holes in satisfactory paving areas with portland cement concrete bonded to paving with epoxy adhesive.
- C. Protect concrete paving from damage. Exclude traffic from paving for at least 14 days after placement. When construction traffic is permitted, maintain paving as clean as possible by removing surface stains and spillage of materials as they occur.
- D. Maintain concrete paving free of stains, discoloration, dirt, and other foreign material. Sweep paving not more than two days before date scheduled for Substantial Completion inspections.

3.13 WASTE HANDLING

- A. General: Handle concrete-paving waste according to approved waste management plan required in Section 01 74 19 "Construction Waste Management and Disposal."

END OF SECTION 32 13 13

SECTION 321513 – STABILIZED DECOMPOSED GRANITE PAVING

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes materials, labor, apparatus, tools, equipment, temporary construction, transportation, and services necessary for and incidental to performing the proper completion of Work, as required, to make a complete, universally-accessible, stabilized Decomposed Granite Paving Application on a prepared sub-grade, as shown in the Contract Drawings, and as specified herein this Section.
- B. Work under this Section consists of, but is not necessarily limited to, furnishing and installing the following:
 - 1. Decomposed Granite Material.
 - 2. Organic Binder (Stabilizer), where applicable in paving locations.
 - 3. Accessories (Soil Sterilant (Herbicide)).
- C. Related Sections: The following Sections contain requirements that relate to Work in this Section:
 - 1. Section 312219 – Landscape Grading.
 - 2. Section 3284 00 – Landscape Irrigation
 - 3. Section 329113 – Soil Preparation.
 - 4. Section 329400 – Landscape Planting Accessories (Geotextile Filter Fabric; Wood Header, Soil Sterliant (Herbicide), etc.
 - 5. Section 329813 – Landscape Establishment Period.

1.2 DEFINITIONS AND APPLICABLE STANDARDS

- A. References:
 - 1. ASTM – American Society for Testing and Materials.
 - 2. AASHTO – American Association of State Highway and Transportation Officials.
 - 3. ADAAG – American with Disabilities Act Accessibility Guidelines.
 - 4. CBC – California Building Code, Title 24 Disabled Access Regulations.
- B. Definitions:
 - 1. Percent Compaction: Per ASTM D1557, percentage of the maximum in-place dry density of the same material, as determined by the Geotechnical Engineer.
 - 2. Stabilized Decomposed Granite Paving: Shall consist of a thoroughly pre-blended mixture (before placement) of Decomposed Granite material (fines) and Organic Binder (“Stabilizer”), that is set in lifts, reacted with water, and compacted in place, creating a universally-accessible finished surface.
- C. Standards for Installation:
 - 1. Standard Specifications: Standard Specifications of the State of California, Business and Transportation Agency, Department of Transportation (CALTRANS).

1.3 SUBMITTALS

A. General:

1. Collect information into a single Submittal for each element of construction and type of product or equipment identified under this Section for review.
2. To expedite review, Submittal shall be organized and presented into specific sections or headings. Furnish neat, concise, legible, and clearly identifiable information, and sufficiently explicit detail, to enable proper evaluation for Contract compliance. Highlight catalog, product data, or brochures containing various products, sizes, and materials to show particular item submitted.
3. Submittal Format: As applicable, furnish Submittal as a single electronic digital PDF (Portable Document Format) file.

B. Digital Submittal Information:

1. Product/Material Data: Submit available product/material literature supplied by manufacturer's, indicating that their products comply with specified requirements, technical data, and tested physical and performance properties. Provide manufacturing source (name, address, and telephone number), and distributor source (name, address, and telephone number) for each type of product/material:
 - a. Decomposed Granite Material.
 - b. Organic Binder.
 - c. Soil Sterilant (Herbicide).
2. Supplemental Data:
 - a. Sieve Analysis: Submit Sieve Analysis of each type of Decomposed Granite material to ensure it meets proper grading requirements.
 - b. Material Test Reports: Submit certified copies of the field tests performed (testing the compressive strengths) of the Stabilized Decomposed Granite Paving finished surface.
 - c. Recommendation: Submit written recommendation from the Manufacturer/Distributor of the Organic Binder, indicating the quantity (pounds) of Organic Binder required per ton of Decomposed Granite material (lbs./ton). Recommendation shall be specific to each type of Stabilized Decomposed Granite material specified herein.
3. Qualification Data: Submit names for firms and persons specified in the "Quality Assurance and Control" Article to demonstrate their capabilities and experience on similar Decomposed Granite installations.
4. Maintenance Data: Submit available maintenance literature supplied by manufacturer indication their best practices for replenishing, grooming and performance of product.

C. Material Samples: Submit four (4) sets of physical Material Samples for review of kind, color, pattern, size, and texture for a check of these characteristics with other elements, and for a comparison of these characteristics between Submittal and actual component as delivered and installed. Include the full range of exposed color and texture expected in the completed Work. Provide Material Samples bound and individually wrapped in re-sealable labeled 1-gallon plastic bags (as applicable):

1. Submit sample in sufficient quantity (one (1) pound minimum, per bag) of each Decomposed Granite material for review to ensure color will be compatible with the Project.

- D. Submittals under this Article will be rejected and returned without the benefit of review by the Landscape Architect if they are difficult to read due to insufficient scale, poor image quality, or poor drafting quality; or if all of the required information is missing or not presented in the format as requested.
- E. No Work shall proceed under this Section until Submittal requirements indicated herein have been reviewed accordingly by the Landscape Architect.

1.4 QUALITY ASSURANCE AND CONTROL

- A. Installer Qualifications:
 - 1. Requirement: Valid California C-27 (Landscaping Contractor) License.
 - 2. Engage an experienced Installer who has completed in the last two (2) years at least three (3) Stabilized Decomposed Granite Paving installations similar in material, design, and extent to that indicated for this Project, and whose work has resulted in construction with a record of successful in-service performance.
 - 3. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on the Project site during times that installations under this Section are in progress.
- B. Source Limitations: Obtain each type of Stabilized Decomposed Granite material from the same Manufacturer's plant.
- C. Single-Source Responsibility: Obtain each color, type, and/or variety of Stabilized Decomposed Granite material from a single source with resources to provide products and materials of consistent quality in appearance and physical properties without delaying the Work.
- D. Manufacturer's Directions: Follow Manufacturer's directions and drawings in cases where the Manufacturers of articles used in this Section furnish directions covering points not shown in the Contract Drawings and Contract Specifications.
- E. Field-Constructed Mock-ups: Prior to the installation of Work under this Section, Contractor shall erect Field-Constructed Mock-ups for each type of Stabilized Decomposed Granite Paving application to verify selections made under this Article and to demonstrate aesthetic effects as well as qualities of materials and execution. Build Field-Constructed Mock-ups to comply with the following requirements, using materials and same base construction including special features for surface finish, compaction within lifts, color(s), and contiguous work, as indicated for the final unit of Work.
 - 1. Locate Field-Constructed Mock-ups in a location and of the size indicated or, if not indicated, as directed by the Owner's Representative.
 - 2. Notify the Landscape Architect, in writing, at least one (1) week in advance of the dates and times when Field-Constructed Mock-ups will be erected.
 - 3. Demonstrate quality and range of aesthetic effects and workmanship in the Field-Constructed Mock-ups that will be produced in the final unit of Work.
 - 4. Obtain the Landscape Architect's acceptance of the Field-Constructed Mock-ups, in writing, before the start of Work. Accepted Mock-ups are a prerequisite to commencing Work under this Section.
 - 5. Retain and maintain Field-Constructed Mock-ups during construction in an undisturbed condition. Accepted Field-Constructed Mock-ups shall be the standard for judging the completed Work under this Section.

- a. When directed by the Landscape Architect, Contractor shall demolish and remove Field-Constructed Mock-up Samples from the Project Site.
6. Contractor shall provide a separate Field Constructed Mock-up for each type of Stabilized Decomposed Granite Paving application for review by the Landscape Architect.
 - a. Each Field-Constructed Mock-up shall measure four-feet (4') wide and four-feet (4') long, and at the specified respective depths of Decomposed Granite indicated in the Contract Drawings, to compare the aesthetics of material colors, textures, and finishes. Include the specified header/edging material around the perimeter of the Mock-up.
 - 1) When the Landscape Architect determines that a Field-Constructed Mock-up does not meet requirements, retain it for reference and create another Field-Constructed Mock-up until the Field-Constructed Mock-up is accepted by the Landscape Architect.
7. Accepted Field-Constructed Mock-up(s) will be the standard by which remaining Work will be evaluated for technical and aesthetic merit, and re a prerequisite to commencing any Work under this Section.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Protect Stabilized Decomposed Granite Paving material from contamination with foreign materials. Isolate stockpiles to prevent mixing of different aggregate grades prevent contamination with organic materials.
- B. Deliver perishable material in original, unopened packaging. Protect from dampness.
- C. Deliver and install Decomposed Granite materials so as to not delay Work, and install only after preparations for installation have been completed.

1.6 COORDINATION, SCHEDULING, AND OBSERVATIONS

- A. Notify the Contractors performing Work related to installation of Work under this Section in ample time so as to allow sufficient time for them to perform their portion of Work and that progress of Work is not delayed. Verify conditions at the Project Site for Work that affects installation under this Section. Coordinate items of other trades to be furnished and set in place.
- B. Utilities: Determine location of above grade and underground utilities and perform Work in a manner which will avoid damage to utilities. Hand excavate, as required. Maintain grade stakes until removal is mutually agreed upon by parties concerned.
- C. Excavation: When conditions detrimental to installing Stabilized Decomposed Granite Paving is encountered, such as rubble fill, adverse drainage conditions, or obstructions, cease installation operations and notify Landscape Architect for further direction.
- D. Traffic Control: Maintain access for vehicular, bicycle, and pedestrian traffic as required for other construction activities during installation of Stabilized Decomposed Granite Paving. Access shall also be unobstructed and maintained at all times to allow for entry and exit of emergency vehicles.

- E. Grades and Levels: Establish and maintain required levels and grade elevations. Review installation procedures and coordinate Work herein this Section with other Work affected.
- F. Installation: Perform installation of Stabilized Decomposed Granite Paving only when weather and soil conditions during rain or while sub base is wet from rain. Do not apply Soil Sterilant when winds exceed 10 mph or during or immediately after rain.
- G. Sequence and Scheduling: Do not install Work under this Section prior to acceptance of sub-grade preparation Work under another Section. Install edging/header materials prior to placement of Stabilized Decomposed Granite Paving, where applicable. Coordinate with other trades to insure proper placement of irrigation sleeves (per Section 328400) prior to installation of Decomposed Granite.
- H. Construction Site Observations: Periodic site observations shall be made by the Landscape Architect during the installation of Work under this Section for compliance with requirements. Landscape Architect retains right to observe Work for defects and to reject unsatisfactory or defective Work under this Section at any time during progress of Work. The Contractor shall request, in writing, at least one (1) week in advance of the time when mandatory site observation(s) by the Landscape Architect are required.

1.7 SUBSTITUTIONS

- A. Consideration: Stabilized Decomposed Granite Paving materials to be considered equal to the Stabilized Decomposed Granite Paving materials indicated herein this Section shall be reviewed by the Landscape Architect. Materials with equal performance characteristics produced by other Manufacturer's and/or Distributors may be considered, providing deviations in dimensional size, color, composition, operation, and/or other characteristics do not change the design concept, aesthetic appearance, nor intended performance, as solely judged by the Landscape Architect. The burden of proof on product equality is on the Contractor.
- B. Specific reference to Manufacturer's names and products specified herein are used as standards of quality. This implies no right to the Contractor to substitute other materials without prior written approval by the Landscape Architect for Work under this Section.
- C. Stabilized Decomposed Granite Paving material(s) substituted and installed by the Contractor, without prior written approval by the Landscape Architect, may be rejected. Contractor shall not be entitled to be compensated by the Owner where the Contractor has installed rejected substitutions without receiving prior written approval.
- D. Contract Price: Substituted Stabilized Decomposed Granite Paving material(s) shall not increase the Contract price.

1.8 LANDSCAPE ESTABLISHMENT PERIOD

- A. Refer to Section 329813 – Landscape Establishment Period, for requirements under this Article.
 - 1. During the duration of the Landscape Establishment Period, continuously maintain Stabilized Decomposed Granite Paving finishes until Final Acceptance of Work is granted. Immediately repair damage to the Work as the result of weather or traffic conditions. Report damage resulting from Work of other trades after installation of

Stabilized Decomposed Granite Paving Work. Repair to match adjacent undisturbed Work.

PART 2 - PRODUCTS

2.1 DECOMPOSED GRANITE MATERIAL

- A. Clean, hard, durable particles or fragmented fines of select crushed granite, river rock, or basalt. Material fines shall be evenly mixed throughout the aggregate. When produced from gravel, fifty percent (50%) by weight of the material retained on a No. 4 sieve shall have one (1) fractured face.
- B. The portion retained on the No. 4 sieve shall have a maximum percentage of wear of 50 at 500 revolutions as determined by AASHTO T96-77.
- C. Portion passing a No. 4 sieve shall have a maximum liquid limit of 25 and a maximum plasticity index of 7, as determined by AASHTO T89-81 and AASHTO 90-81 respectively.
- D. Composition: Decomposed Granite material shall be free from clay lumps, vegetable matter, or deleterious material.
- E. Grading Requirements:

<i>Percentage of Weight Passing a Square Mesh Sieve (AASHTO T11-82 and T27-82)</i>	
<u>Sieve Size</u>	<u>Percent Passing</u>
3/8"	100%
No. 4	95 – 100%
No. 8	75 – 80%
No.16	55 – 65%
No. 30	40 – 50%
No. 50	25 – 35%
No. 100	20 – 25%
No. 200	5 – 15%

- F. Products & Manufacturers: Subject to compliance with requirements, provide products by the following:
 - 1. Stabilized Decomposed Granite Paving:
 - a. Type: Refer to the Contract Drawings.
 - b. Supplier: Refer to the Contract Drawings.
 - c. Or equal, as approved by the Landscape Architect.

2.2 ORGANIC BINDER

- A. Organic Binder: Non-toxic, colorless, odorless, non-staining, concentrated organic powder that, when water is applied and then compressed, binds the Decomposed Granite material together, creating a natural-appearing, firm surface of Stabilized Decomposed Granite Paving.
 - 1. Products & Manufacturers: Subject to compliance with requirements, provide products by the following:
 - a. Material: *Stabilizer*®, Stabilizer Solutions, Inc., Phoenix, AZ.
 - 1) Supplier:
 - a) KRC Rock, San Marcos, CA, ph. 800-427-0572.
 - b) Southwest Boulder & Stone, Fallbrook, CA, ph. 877.792.7625.
 - c) Or equal, as approved by the Landscape Architect.
 - 2) Application Rate: Per Manufacturer’s written recommendations. Minimum application rate of 12 lbs./ton.

2.3 EQUIPMENT

- A. Mixing Equipment: Batch-type, using revolving blades or rotary drum.
- B. Compaction Equipment: Power roller, weighing not less than five (5) tons.

2.4 ACCESSORIES

- A. Soil Sterilant: Spray-applied, Non-Selective Post-Emergent Herbicide, for control of annual grasses and broadleaf weeds. Refer to Section 329400 – Landscape Planting Accessories. Apply in locations designated to receive Stabilized Decomposed Granite Paving only.
- B. Aggregate Sub-Base: Class II, per “Standard Specifications”, as required.
- C. Water: Per ASTM C 94, from potable domestic source, and free from deleterious materials such as oils, acids, and organic matter. Transport as required.
- D. Edging/Header Materials: Refer to Section 329400 – Landscape Planting Accessories.
- E. Geotextile Filter Fabric: Refer to Section 329400 – Landscape Planting Accessories.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine surfaces indicated to receive Stabilized Decomposed Granite Paving, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of surfacing.
- B. Sub-grades shall have been rough graded to within 0.10 ft. of finish grades less depth in location to receive Stabilized Decomposed Granite Paving.
- C. Insure edging materials and irrigation sleeving have been installed and are in place and secured. Do not proceed with installation Work until unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Application of Soil Sterilant:
1. Mixing: Mix Soil Sterilant product in sprayer tank with clean water, according to Manufacturer's current printed instructions. Use sprayer, which will apply the solution uniformly, without disturbing the soil.
 2. Spray Solution: Shake or stir prior to each application. Apply to dry soil surface only.
 3. Application: Provide Soil Sterilant only in locations designated to receive Stabilized Decomposed Granite Paving, as indicated on the Contract Drawings.
 4. Over-spraying: Avoid spraying on walls, adjoining pavements, and all areas to receive landscape planting.
 5. Depth: Immediately after application of spray solution, thoroughly incorporate the solution into the soil to a depth of two-inches (2") to four-inches (4"), per Manufacturer's current printed instructions.
- B. Compaction: After completion of soil sterilization operations, compact sub-base to minimum 90% compaction.

3.3 INSTALLATION

- A. Installing Edging/Headers: Install Edgings/Headers, as indicated on the Contract Drawings. Refer to Section 329400 – Landscape Planting Accessories for requirements. Edgings/Headers at the full depth of the perimeter of the Stabilized Decomposed Granite Paving, as indicated. Edgings/Headers shall be straight or curving as required, and securely in place, true to line and grade as required. Align header edges and set flush with adjacent paving where applicable.
- B. Installing Geo-textile Filter Fabric: Geo-textile Filter Fabric shall be installed only in locations designated to receive Stabilized Decomposed Granite Paving. Install Fabric accordingly as indicated in the Contract Drawings to prevent weeds from growing up through the Stabilized Decomposed Granite Paving. Place the Geotextile Filter Fabric across the entire width of the Paving surface; overlap ends of Fabric rolls at a minimum of six inches (6").
- C. Installing Aggregate Sub-Base (as applicable):
1. Verification: Do not place Aggregate Sub-Base prior to acceptance of sub grade preparation.
 2. Placement: Spread Aggregate Sub-Base to thicknesses shown on the Contract Drawings and compact to a minimum of ninety-percent (90%) compaction.
- D. Installing Stabilized Decomposed Granite Paving:
1. Verification: Verify locations to receive Stabilized Decomposed Granite Paving.
 2. Lines and Levels:
 - a. Install Stabilized Decomposed Granite Paving true to grade, providing proper drainage of water off path and properly coinciding with adjacent Work and elevations.
 - b. Provide a finished Stabilized Decomposed Granite Paving surface uniform in texture and appearance. Do not permit finished Work to vary more than 1/8 inch in 10 feet from true profile and cross section. Finished Work shall be installed to fully comply as a universally-accessible pavement surface, per applicable Code requirements.
 3. Mixing:

- a. General: Stabilized Decomposed Granite Paving shall be thoroughly pre-blended before placement.
 - b. Organic Binder: Thoroughly pre-blend Decomposed Granite material with Organic Binder at the rate recommended by the Organic Binder manufacturer for each type of Decomposed Granite material specified, but not less than of twelve (12) pounds of Organic Binder per one (1) ton of Decomposed Granite material (dry weight).
 - 1) It is essential the Organic Binder be thoroughly mixed, blended, and uniformly incorporated throughout the Decomposed Granite material to achieve a successful result. The Organic Binder locks the fines in the Decomposed Granite material together, trapping the larger crushed aggregate screenings. The Organic Binder does not act directly on larger aggregate screenings. Proper mixing is a must for a successful application.
 - a) Blending is best accomplished in a plug mill; a truck mounted mixer or a portable mechanical mixer may also be used.
 - b) Blend Stabilized Decomposed Granite Paving mixture for a minimum of 15 minutes prior to placing on compacted sub-surface material.
 - c) Drop spreading of Organic Binder over graded Decomposed Granite material is not acceptable. Mixing by roto-tilling is also not acceptable.
 - d) Organic Binder shall not be applied during, just prior to, or immediately following rainfall.
4. Placement:
- a. General: After pre-blending, place the Stabilized Decomposed Granite Paving material onto the compacted sub-surface material. Carefully place to avoid segregation in two (2) equal two-inch (2") lifts.
 - b. Grade, screed, and smooth the Stabilized Decomposed Granite Paving to desired finish grades. Allow for compaction of the material.
5. Watering: Apply water until moisture penetrates to the full depth of the Stabilized Decomposed Granite Paving.
- a. Water activates the Organic Binder; it is essential that the full depth of the Stabilized Decomposed Granite Paving is saturated at this time. Apply water from a hand held hose with a spray nozzle set to coarse spray. Water pressure should not disturb the leveled Paving surface. Do not use a water truck for water distribution or a high-pressure sprayer.
 - 1) Test for water penetration through random core inspections. After inspection of cores, fill cored holes with Paving removed; smooth and hand tamp to match adjoining surface grades.
 - 2) A one (1)-hour application at a rate of +/-20 GPM per 1,000 sq. ft. of surface seems to achieve the desired full depth moisture penetration.
 - 3) Let watered Stabilized Decomposed Granite Paving stand between six (6) to twenty-four (24) hours until all surface water has dissipated; the Paving surface should be moist, but not wet.
6. Compacting: While the Stabilized Decomposed Granite Paving material is still thoroughly moist, compact to a minimum 90% relative compaction, or as recommended by the Geotechnical Engineer. Compact each area with at least four (4) passes of the compacting equipment. After compacting, screed smooth.
- a. Compaction should be done with a heavy lawn roller (minimum 225 pounds and maximum 30-inch width) to achieve finish grade and initial compaction. Hand-tamp edges around benches, signposts, trash receptacles, etc. Use a heavy (1-ton minimum) small rider, after having used the lawn roller, to obtain the desired final

dense, smooth uniform texture. Do not use whackers, vibratory rollers or a vibrating plate tamper; the Stabilized Decomposed Granite Paving will not harden for weeks after vibration.

- 1) If the Decomposed Granite Paving surface is flaky or sticks to the roller drum, the Paving hydration level is deficient; cautiously add more water as required to achieve the Paving's proper hydration level.
 - 2) If the roller creates a wash board effect or rills, additional time is required to allow the Paving to achieve the proper hydration level.
7. Contaminated Areas: Do not permit Stabilized Decomposed Granite Paving to contaminate adjoining planting areas or finishes. Clean up and remove all material spilled into adjacent planting areas.
 8. Grading: When surface areas have been rolled and it becomes necessary to add a thin layer of Stabilized Decomposed Granite Paving material to bring the surface to grade, the previously rolled or compacted area shall be thoroughly scarified to a depth of two-inches (2") to provide a bond with the added Material.
 9. Drainage: Surface to be compacted and graded to ensure proper drainage of water off walkway to adjacent surfacing and/or planting area.
 10. Curing: Allow finished Stabilized Decomposed Granite Paving surface to dry completely. Set-up time varies, depending on weather conditions.
 - a. A hot, dry climate will set up sooner than a cool, moist climate.

3.4 FIELD QUALITY CONTROL

- A. Tests: For each lift of Stabilized Decomposed Granite Paving, provide written verification as to the degree of compaction by a certified testing laboratory. Re-compact failed areas until specified compaction is achieved.
- B. Testing shall be the sole financial responsibility of the Contractor.

3.5 REVIEW OF COMPLETED INSTALLATION

- A. Finished Stabilized Decomposed Granite Paving surfaces shall be smooth, uniform and solid, with no evidence of shipping or cracking. Dried, compacted material shall be firm through the entire depth, with no spongy areas. Loose material shall not be present on the surface initially. After the first year of use, a minor amount of loose material is expected on the surface of Stabilized Decomposed Granite Paving finishes.
- B. Loose Decomposed Granite material on the surface or unconsolidated crushed aggregate screenings below the surface of Stabilized Decomposed Granite Paving finishes is evidence of improper bonding due to poor mixing or insufficient watering. Test the loose material for adequate Organic Binder by wetting, then tamping, and allowing it to dry. If the material still is unconsolidated, the Organic Binder did not get mixed adequately throughout the Stabilized Decomposed Granite Paving material. If the material now is solid, initial watering was insufficient. Cracking or sponginess is evidence of excessive Organic Binder in the mix.
- C. Unconsolidated Paving areas shall be excavated and replaced accordingly with new Stabilized Decomposed Granite Paving material with a high proportion of fines meeting the grading requirements above, and pre-blended with Organic Binder per the procedures listed above.

Patched areas shall be wetted thoroughly and rolled smooth. Patching shall be completed prior to any surface smoothing.

- D. Smoothing of Stabilized Decomposed Granite Paving: Significant irregularities shall be smoothed out prior to final acceptance of Work. Smoothing shall be accomplished by rewetting/saturating rough areas thoroughly, and then rolling the material again with a heavy roller (1,000–1,500 lb. powered walk-behind roller, or small rider). Whackers are not recommended.
- E. Tolerances of Stabilized Decomposed Granite Paving:
 - 1. Depth: Final thickness of completed Stabilized Decomposed Granite Paving shall not vary more than 1/4-inch from dimension indicated in the Contract Drawings. Measurements may be taken by means of test holes taken at random, finished surfaces. Correct any variations in the thickness beyond the allowable ½ inch by repeating the procedures listed above.
- F. Width: Final width of completed Stabilized Decomposed Granite Paving shall not vary more than ½ inch from typical dimension width as indicated. Measurements may be taken at random cross sections along the finished surface.
- G. Where installed, no edges of the Geotextile Filter Fabric shall be exposed.

3.6 REPAIRS AND PROTECTION

- A. Damage or Defective Installation: Remove and replace Stabilized Decomposed Granite Paving that is damaged or defective, or does not meet the requirements indicated herein this Section.
- B. Replacement of Stabilized Decomposed Granite Paving: If compression tests of cored samples fail to meet the specified compressive strengths as recommended by the Manufacturer, immediately remove and replace the Stabilized Decomposed Granite Paving with material conforming to the Contract Specifications.
- C. Protection: Protect Stabilized Decomposed Granite Paving against traffic, injury, defacement or damage (by rain or other outside force during curing period) and subsequent construction operations until Substantial Completion. Exclude traffic from Stabilized Decomposed Granite Paving for a minimum of fourteen (14) days after placement. When construction traffic is permitted, it is the Contractor's responsibility to maintain Stabilized Decomposed Granite Paving as clean and level as possible by removing surface stains, spillage of materials as they occur, and traffic markings/grooves, etc., and to repair any damaged caused by said construction traffic.
- D. Maintain Stabilized Decomposed Granite Paving finishes free of stains, discoloration, dirt, and other foreign material until Final Acceptance of Work.

3.7 CLEAN UP AND PROTECTION

- A. For Work under this Section, keep Work area in a clean, orderly, and safe condition. Contractor shall remove trash caused from his Work on a weekly basis throughout the duration of the Work.

- B. Protect Stabilized Decomposed Granite Paving from damage due to landscape operations, operations by other Contractors and trades, and trespassers. Maintain protection during installation and maintenance periods.
- C. Upon completion of his Work under this Section, the Contractor shall remove rubbish, waste, debris, excess construction materials, and other items resulting from construction operations offsite as described herein this Section and directed by the Landscape Architect. Clean all adjoining pavements, edgings/headers free from excess Stabilized Decomposed Granite Paving material.

3.8 FINAL REVIEW

- A. Final Review under this Section shall be performed upon completion of the Landscape Establishment Period. Refer to Section 329813 – Landscape Establishment Period, for requirements.

END OF SECTION

SECTION 32 17 23 - PAVEMENT MARKINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract apply to this Section.
- B. Greenbook 2021, Standard Specifications for Public Works Construction (SSPWC), Sections 210, 214, 310, and 314.
- C. Standard Plans for Public Works Construction (SPPWC), Std. Plan 180-0
- D. California Building Code (CBC), Section 1129B.4
- E. California Green Building Standards Code, Section 5.106.5.2.1

1.2 SUMMARY

- A. Section includes painted striping and markings applied to asphalt and concrete pavement.
- B. Related Requirements:
 - 1. California Building Code (CBC), Section 1129B for accessibility parking.
 - 2. California Green Building Standards Code, Section 5.106.5.2.1

1.3 PREINSTALLATION MEETINGS

- A. Pre-installation Conference: Conduct conference at Project site.
 - 1. Review methods and procedures related to marking pavement including, but not limited to, the following:
 - a. Pavement aging period before application of pavement markings.
 - b. Review requirements for protecting pavement markings, including restriction of

traffic during installation period.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include technical data and tested physical and performance properties.

1.5 QUALITY ASSURANCE

A. Regulatory Requirements: Comply with materials, workmanship, and other applicable requirements of Standard Specifications for Public Works Construction (SSPWC).

PRODUCTS

1.6 GENERAL

A. All construction materials shall conform to Greenbook 2021, Standard Specifications for Public Works Construction (SSPWC), Sections 210 and 214; and California Green Building Standards Code, Section 5.106.5.2.1

EXECUTION

1.7 GENERAL

A. All construction methods shall conform to Greenbook 2021, Standard Specifications for Public Works Construction (SSPWC), Sections 310 and 314; California Building Code (CBC), Section 1129B; and California Green Building Standards Code, Section 5.106.5.2.1

END OF SECTION

SECTION 328400 - LANDSCAPE IRRIGATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Project Specifications:
 - 1. Section 312000 – Earth Moving.
 - 2. Section 329113 – Soil Preparation.
 - 3. Section 329200 – Lawns & Grasses.
 - 4. Section 329300 – Exterior Plants.
 - 5. Section 329400 – Landscape Planting Accessories.
 - 6. Section 329813 – Landscape Establishment Period.

- B. American Society for Testing & Materials:
 - 1. ASTM D1120.
 - 2. ASTM D1785.
 - 3. ASTM D2241.
 - 4. ASTM D2466.
 - 5. ASTM D2467.
 - 6. ASTM D2564.
 - 7. ASTM D2774.
 - 8. ASTM D2855.
 - 9. ASTM F402.
 - 10. ASTM F656.
 - 11. ASTM F690.

1.2 SUMMARY

- A. It is the intent of the Specifications and Drawings that the finished system is complete in every respect and shall be ready for operation satisfactory to the Landscape Architect.

- B. The work shall include all materials, labor, services, transportation, and equipment necessary to perform the work as indicated on the Drawings, in these Specifications, and as necessary to complete the contract.

- C. Section Includes:
 - 1. Piping.
 - 2. Automatic control valves.
 - 3. Sprinklers.
 - 4. Drip irrigation specialties.
 - 5. Control system.
 - 6. Boxes for automatic control valves.

1.3 DEFINITIONS AND APPLICABLE STANDARDS

- A. References:
 - 1. ANSI – American National Standards Institute.
 - 2. ASTM – American Society for Testing & Materials.
 - 3. NFPA – National Fire Protection Association.
 - 4. NSF – National Sanitary Foundation.
- B. Mainline Piping: Downstream of backflow prevention device and to the control valves. Piping is under constant pressure during.
- C. Lateral Line Piping: Downstream from control valves to the sprinklers and drip specialties. Piping is under pressure during flow.
- D. Low Voltage: As defined in NFPA 70 for circuits and equipment operating at less than 50V or for remote control, signaling power-limited circuits.
- E. The following are industry abbreviations for plastic materials:
 - 1. PVC: Polyvinyl chloride plastic.
 - 2. Poly: Polyethylene plastic.
 - 3. FIPT: Female Iron Pipe Thread.
 - 4. MIPT: Male Iron Pipe Thread.
- F. Date of Completion: The date at the close of the Landscape Establishment Period when the work has been completed, checked, accepted, and written approval of the work has been given by the Landscape Architect.
- G. Date of Acceptance: The date at the end of the warranty period as specified herein, and written acceptance has been given by the Landscape Architect.
- H. Finish Grade: Elevation of finished surface of planting soil within 1/10th of an inch.

1.4 CONSTRUCTION DRAWINGS

- A. Due to the scale of the Drawings, it is not possible to indicate all offsets, fittings, sleeves, etc. which may be required. Carefully investigate the structural and finished conditions affecting this work and plan the work accordingly, furnishing such fittings, etc. as may be required to meet such conditions. Drawings are generally diagrammatic and indicative of the work to be installed. The work shall be installed in such a manner as to avoid conflicts between irrigation systems, planting, and Landscape Architectural features.
- B. All work called for on the Drawings by notes or details shall be furnished and installed whether or not specifically mentioned in the Specifications. When an item is shown on the Drawings but not shown on the Specifications or vice versa, it shall be deemed to be as shown on both. Landscape Architect shall have final authority for clarification.
- C. Do not willfully install the irrigation system as shown on the Drawings when it is obvious in the field that obstructions, grade differences or discrepancies in area dimensions exist that might not have been considered in engineering. Such obstructions or differences should be brought to the attention of the Landscape Architect as soon as detected. In the event this notification is not performed, the Contractor assumes full responsibility for any revision necessary.

1.5 PERFORMANCE REQUIREMENTS

- A. Location of Sprinklers and Specialties:
 - 1. The design location is approximate. Make minor adjustments necessary to avoid plantings, trees, and obstructions such as signs and light standards.
 - 2. Where the location of the obstruction does not allow for installation of the sprinkler head, Contractor shall adjust the location of the heads, change nozzles, or add heads as necessary to avoid the obstruction.
 - 3. Maintain 100 percent (head-to-head) irrigation coverage of areas indicated.
- B. Minimum Working Pressures: The following are minimum pressure requirements for piping, valves, and specialties unless otherwise indicated:
 - 1. Mainline Piping: 200 PSI.
 - 2. Lateral Line Piping: 200 PSI.

1.6 PRE-CONSTRUCTION SUBMITTALS

- A. Product Data:
 - 1. Prior to ordering of any materials, and for each type of product indicated provide submittals for acceptance by the Landscape Architect. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.
 - 2. Contractor shall prepare submittals “in house” and no submittals from suppliers, distributors, or other third parties shall be acceptable.
 - 3. The submittals shall include the following information:
 - a. A title sheet with the job name, the Contractor’s name, address and telephone number, submittal date and submittal number.
 - b. An index sheet showing the item number (i.e. 1, 2, 3, etc.); an item description (i.e. sprinkler head); the manufacturer’s name (i.e. Rain Bird); the item model number (i.e. 44DLRC); and the page(s) in the submittal set that contain the catalog cuts.
 - c. The catalog cuts are to be one or two pages from the most recent manufacturer’s catalog that indicate the product submitted. Do not submit parts lists, exploded diagrams, price lists or other extra information.
 - d. The catalog cuts shall clearly indicate the manufacturer’s name and the item model number. The item model number, all specified options and specified sizes shall be circled or highlighted on the catalog cuts.
 - e. Submittals for equipment indicated on the legend without manufacturer names, or “as acceptable substitution”, shall contain the manufacturer, Class or Schedule, ASTM numbers and/or other certifications as indicated in these specifications.
 - 4. Submittal format requirements:
 - a. Submittals shall be provided as one complete package for the project. Multiple or partial submittal packages will not be reviewed.
 - b. The submittal package shall be submitted as a single PDF file.
 - c. The submittal package shall have all pages numbered in the lower right-hand corner. Page numbers shall correspond with the submittal index.
 - d. Landscape Architect will not review the submittal package unless provided in the format described above.

- B. Substitutions:
1. If the Contractor wishes to substitute any equipment or materials for those equipment or materials listed on the Drawings and Specifications, they may do so by providing the following information to the Landscape Architect for approval.
 - a. Written statement indicating the reason for making the substitution.
 - b. Catalog cut sheets, technical data, and performance information for each substitute item.
 - c. The difference and potential savings in installed price if the item is accepted. No contract price increases shall be allowed.
 - d. Estimated schedule impact.
 2. Landscape Architect will allow no substitutions without prior written acceptance.
 3. Landscape Architect will allow no substitutions of the control system indicated on the Drawings.

1.7 AS-BUILT RECORD DRAWINGS

- A. Record accurately on one set of drawings all changes in the work constituting departures from the original contract drawings and the actual final installed locations of all required components as shown below.
- B. The as-built record drawings shall be prepared to the satisfaction of the City. Prior to final inspection of work, submit record drawings to the Landscape Architect.
- C. As-built record drawings shall be prepared using AutoCAD 2020 drafting software and the original irrigation drawings as a base. No manual drafted record drawings shall be acceptable. The Contractor may obtain digital base files from the Landscape Architect.
- D. Prior to final inspection of work, submit as-built record drawings as PDF plotted digital files for review by the Landscape Architect. After acceptance by the Landscape Architect, make required changes and re-plot the as-built record drawings as a new PDF file and provide on a memory stick marked with the job name and date.
- E. Requirements of As-built record drawings.
 1. Record drawing information and dimensions shall be collected on a day-to-day basis during the installation of the pressure mainline to fully indicate all routing locations and pipe depths. Locations for all other irrigation equipment shall be collected prior to the final inspection of the work.
 2. Two dimensions from two permanent points of reference such as buildings, sidewalks, curbs, streetlights, hydrants, etc. shall be shown for each piece of irrigation equipment shown below. Where multiple components are installed with no reasonable reference point between the components, dimensioning may be made to the irrigation equipment. All irrigation symbols shall be clearly shown matching the irrigation legend for the drawings. All lettering on the record drawings shall be a minimum of 1/8 inch in size.
 3. Show locations and depths of the following items:
 - a. Point of connection (including water POC, backflow devices, master control valves, flow sensors, etc.)
 - b. Routing of sprinkler pressure main lines (dimensions shown at a maximum of 100 feet along routing)
 - c. Isolation valves

- d. Automatic remote control valves (indicate station number and size)
- e. Quick coupling valves
- f. Drip air relief and flush valves
- g. Routing of control wires where installed separate from irrigation mainline.
- h. Related equipment (as may be directed).

1.8 FIELD QUALITY CONTROL

- A. Provide at least one English speaking person who shall be present at all times during execution of this portion of the work and who shall be thoroughly familiar with the type of materials being installed and the manufacturer's recommended methods of installation and who shall direct all work performed under this section.
- B. The manufacturer's directions and detailed Drawings shall be followed in all cases where the manufacturer of articles used in this contract furnishes directions covering points not shown in the Drawings and Specifications.
- C. All local, municipal, and state laws, rules and regulations governing or relating to any portion of this work are hereby incorporated into and made a part of these specifications, and their provisions shall be carried out. Anything contained in these Specifications shall not be construed to conflict with any of the above rules and regulations of the same. However, when these Drawings and Specifications call for or describe materials, workmanship, or construction of a better quality, higher standard, or larger size than is required by the above rules and regulations, the provisions of these Drawings and Specifications shall take precedence.
- D. Materials supplied for this project shall be new and free from any defects. Defective materials shall be replaced immediately at no additional cost.
- E. Secure the required licenses and permits including payments of charges and fees, give required notices to public authorities, verify permits secured or arrangements made by others affecting the work of this section.
- F. Required permits and fees for this work are the sole responsibility of the Contractor.

1.9 INSPECTIONS

- A. The Contractor shall permit the Landscape Architect to visit and inspect, at all times, any part of the work and shall provide safe access for such visits.
- B. Where the Specifications require work to be tested by the Contractor, it shall not be covered until accepted by the Landscape Architect. The Contractor shall be solely responsible for notifying the Landscape Architect a minimum of 48 hours in advance, where and when the work is ready for testing. Should any work be covered without testing or acceptance, it shall be, if so ordered, uncovered at the Contractor's expense.
- C. Inspections will be required for the following at a minimum:
 - 1. Final inspection prior to the start of Landscape Establishment Period.
 - 2. Final acceptance prior to turnover.

- D. Work that fails testing and is not accepted will be retested. Hourly rates and expenses of the Landscape Architect for re-inspection or retesting will be paid by the Contractor at no additional cost.

1.10 DELIVERY, STORAGE, AND HANDLING

- A. Deliver piping with factory-applied end caps. Maintain end caps through shipping, storage, and handling to prevent pipe-end damage and to prevent entrance of dirt, debris, and moisture.
- B. Exercise care in handling, loading, unloading, and storing plastic pipe and fittings under cover until ready to install. Transport plastic pipe only on a vehicle with a bed long enough to allow the pipe to lay flat to avoid undue bending and concentrated external load.
- C. Store plastic piping protected from direct sunlight. Support plastic piping to prevent sagging and bending.
- D. Use all means necessary to protect irrigation system materials before, during, and after installation and to protect the installation work and materials of all other trades. In the event of damage, immediately make all repairs and replacements necessary to the acceptance of the Landscape Architect and at no additional cost.

1.11 PROJECT CONDITIONS

- A. Verify and be familiar with the locations, size, and detail of points of connection provided as the source of water and electrical supply to the irrigation system.
- B. Irrigation design is based on the available water pressure shown on the Drawings. Verify the static water on the project prior to the start of construction. Should a discrepancy exist, notify the Landscape Architect prior to beginning construction.
- C. Prior to cutting into the soil, locate all cables, conduits, sewer septic tanks, and other utilities as are commonly encountered underground, and take proper precautions not to damage or disturb such improvements. If a conflict exists between such obstacles and the proposed work, promptly notify the Landscape Architect who will arrange for relocations. Proceed in the same manner if a rock layer or any other such conditions are encountered.
- D. Protect all existing utilities and features to remain on and adjacent to the project site during construction. Repair, at Contractor's own cost, all damage resulting from Contractor's operations or negligence.
- E. Coordinate installation of required sleeving as shown on the plans.
- F. Verify and be familiar with the existing irrigation systems in areas adjacent to and within the Project area of work.
- G. Protect all existing irrigation systems, in areas adjacent to and within the project area of work, from damage due to Contractor's operations.

- H. Interruption of Existing Water Service: Do not interrupt water service to facilities occupied, unless permitted under the following conditions and then only after arranging to provide temporary water service according to the requirements indicated:
 - 1. Notify Landscape Architect no fewer than two working days (48 hours) in advance of proposed interruption of water service.
 - 2. Do not proceed with interruption of water service without the Landscape Architect's written permission.

1.12 EXTRA MATERIALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents. Supply as a part of this contract the following items for each Point of Connection:
 - 1. One wrench for disassembly and adjustment of each type of sprinkler head used in the irrigation system.
 - 2. Two extra sprinkler heads of each size and type.
 - 3. Two hundred feet of drip system tubing of each size and type.
 - 4. Two extra drip flush valve / indicator head nozzles.
 - 5. Twenty-five additional drip tubing barbed fittings of each of the following: 90° elbows, TEEs, couplings, and barb x 1/2" MIPT adapters.
- B. The above equipment shall be turned over to the Landscape Architect at the final inspection.

1.13 GUARANTEE

- A. The entire irrigation system, including all work done under this contract, shall be unconditionally guaranteed against all defects and fault of material and workmanship, including settling of backfilled areas below grade, for a period of one (1) year following the filing of the Date of Completion.
- B. Should any problem with the irrigation system be discovered within the guarantee period, it shall be corrected by the Contractor at no additional expense to the City / Owner within ten (10) calendar days of receipt of written notice from the Landscape Architect. When the nature of the repairs as determined by the Landscape Architect constitutes an emergency (i.e. broken pressure line) the Landscape Architect may proceed to make repairs at the Contractor's expense. Damage to existing improvements resulting either from faulty materials or workmanship, or from the necessary repairs to correct same, shall be repaired to the satisfaction of the Landscape Architect by the Contractor, all at no additional cost.
- C. Manufacturer's warranties shall not relieve the Contractor of his liability under the guarantee. Such warranties shall only supplement the guarantee.
- D. Guarantee shall be submitted on Contractor's own letterhead as follows:

GUARANTEE FOR IRRIGATION SYSTEM

We hereby guarantee that the irrigation system we have furnished and installed is free from defects in materials and workmanship, and the work has been completed in accordance with the Drawings and Specifications, ordinary wear and tear and unusual abuse, or neglect excepted. We agree to repair or replace any defective material during

the period of one year from the date of filing of the Notice of Completion and also to repair or replace any damage resulting from the repairing or replacing of such defects at no additional cost. We shall make such repairs or replacements within 10 calendar days following written notification by the Landscape Architect. In the event of our failure to make such repairs or replacements within the time specified after receipt of written notice from Landscape Architect, we authorize the Landscape Architect to proceed to have said repairs or replacements made at our expense and we will pay the costs and charges therefore upon demand.

PROJECT NAME:

PROJECT LOCATION:

CONTRACTOR NAME:

ADDRESS:

TELEPHONE:

SIGNED:

DATE:

PART 2 - PRODUCTS

2.1 PVC PIPES AND FITTINGS

- A. Pipe shall be marked continuously with manufacturer's name, nominal pipe size, schedule or class, PVC type and grade, National Sanitation Foundation approval, Commercial Standards designation, and date of extrusion.
- B. Comply with requirements in the piping schedule for applications of pipe and fitting materials, and for joining methods for specific services, service locations, and pipe sizes.
- C. Mainline piping upstream of the remote-control valve shall be Class 315 solvent weld PVC conforming to ASTM D2241.
- D. Lateral line piping and drip system header piping, 3/4 inches through 2 inches in diameter, downstream of the remote-control valve shall be Schedule 40 solvent weld PVC conforming to ASTM D1785.
- E. Sleeves carrying pipes and conduits under paving 2 inches in diameter and larger shall be Schedule 40 solvent weld PVC conforming to ASTM D1785.
- F. PVC pipes shall be purple color coded for use with recycled water systems. All PVC pipe shall be imprinted with recycled water warning statements as required by local codes.
- G. PVC fittings shall be as follows:
 - 1. Manufactured from PVC compounds conforming to ASTM D1120.
 - 2. Mainline fittings shall be Schedule 80 PVC, solvent weld type, conforming to ASTM D2467.

3. Lateral line fittings shall be Schedule 40 PVC, solvent weld type, conforming to ASTM D2466.
4. All threaded PVC fittings, regardless of where used, shall be Schedule 80 PVC conforming to ASTM D2464.
5. PVC Unions: Shall be Schedule 80 PVC with socket inlets and MIPT or FIPT outlet as shown.

2.2 PIPING JOINING MATERIALS

- A. PVC pipe shall be joined using a two-step process of primer and solvent cement.
- B. The primer for joining PVC Piping shall conform to ASTM F 656.
- C. The solvent cement for joining PVC Piping shall conform to ASTM D 2564.
- D. The primer and solvent cement shall be of the manufacturer, model, and formulation as indicated on the Drawings.

2.3 AUTOMATIC CONTROL VALVES

- A. Remote-Control Valves:
 1. Remote-control valves shall be the manufacturer, model, and sizes indicated on the Drawings.
 2. Remote-control valves shall have brass bodies, stainless steel and brass trim, and chlorine resistant rubber internal components.
 3. Remote-control valve shall be normally closed, diaphragm type with manual-flow adjustment, internal filter protection, and operated by 24V ac solenoid.
 4. Where noted, remote-control valve shall have an adjustable pressure regulator to control the downstream water pressure during operation.

2.4 MISCELLANEOUS VALVES AND EQUIPMENT

- A. Plastic, Drip Filters:
 1. Drip filter shall be the manufacturer, model, and sizes indicated on the Drawings.
 2. The drip filter shall have fiberglass reinforced nylon bodies and stainless-steel filter element.
 3. The drip filter shall have a built-in pressure regulator and a visible “clean (green) / dirty (red) filter status indicator built into the basket strainer cap.
 4. The drip filter shall have MIPT inlet and outlet connections.
 5. The drip filter shall have filtration equivalent to 200 mesh or greater.
 6. Drip remote control valve assemblies sized at 1-inch shall include one basket strainer.
- B. Drip System Flush Valves:
 1. Drip system flush valve shall be the manufacturer, model, and sizes indicated on the Drawings.

2. The drip system flush valve shall also indicate the operational status of the drip system with an orange color coded nozzle.
 3. The drip system flush valve shall be installed on a 12" pop-up sprinkler head as indicated on the Drawings.
- C. Valve Assembly Components:
1. Unions shall be the manufacturer, model, and size indicated on the Drawings.
 2. Unions shall be Sch. 80 PVC type with slip x FIPT and slip x MIPT used as indicated on the Drawings.

2.5 SPRINKLERS

- A. General Requirements: Designed for uniform coverage over entire spray area indicated at available water pressure.
- B. Plastic, Spray Sprinklers:
1. Adjustable arc, fan spray pattern with matched precipitation nozzles and adjustable radius and arc patterns.
 2. Description:
 - a. Body Material: ABS.
 - b. Cap: Plastic, color coded purple for use with recycled water.
 - c. Pop-up Height: 6" and 12".
 - d. Nozzle: ABS.
 - e. Retraction Spring: Stainless steel.
 - f. Internal Parts: Corrosion resistant.
 - g. Pattern: Adjustable with radius and flow adjustment.
 - h. Pressure Regulation: Preset in pop-up body at 30 PSI.
 - i. Check Valve: Yes.
 3. Spray head shall be of the manufacturer, model, size, and type indicated on the Drawings.
 4. Spray head bodies shall be equipped with a built-in check valve and pressure regulation.
 5. Swing joints for spray heads shall be a manufactured Poly type construction, and MIPT inlet and outlet. Swing joint shall be 1/2" size with a 12" lay length.
- C. Plastic, Rotary Sprinklers:
1. Adjustable arc, single stream with matched precipitation nozzles and adjustable radius and arc patterns.
 2. Description:
 - a. Body Material: ABS.
 - b. Cap: Plastic, color coded purple for use with recycled water.
 - c.
 - d. Pop-up Height: 12".
 - e. Nozzle: Plastic.
 - f. Retraction Spring: Stainless steel.
 - g. Internal Parts: Corrosion resistant.
 - h. Pattern: Adjustable with radius and flow adjustment.
 - i. Pressure Regulation: Preset in pop-up body at 45 PSI.
 - j. Check Valve: Yes.

3. Rotary head shall be of the manufacturer, model, size, and type indicated on the Drawings.
4. Rotary heads shall be equipped with a built-in check valve and pressure regulation.
5. Swing joints for rotary heads shall be a manufactured PVC type construction, rubber O-rings, and MIPT inlet and outlet. Swing joint shall be 3/4" size with a 12" lay length.

2.6 DRIP TUBING

- A. Drip tubing shall be of the manufacturer, model, size, and flow rate indicated on the Drawings.
 1. Tubing: Flexible PE, 17mm diameter, black exterior color with a purple color coded strip to indicate use with recycled water.
 2. Emitters: Pressure compensating, turbulent flow, pressure compensating with built-in check valve.
 3. Flow Rate: 0.53 gallons per hour as indicated on the Drawings.
 4. Emitter Spacing: 12" on center.
 5. Fittings: 17mm barb type, same manufacturer as tubing.
- B. Drip components such as barbed fittings, tubing hold down stakes and pop-up flush valve / indicator heads shall be of the manufacturer, model, size, and type indicated on the Drawings.

2.7 CONTROL SYSTEMS

- A. Control system shall be of the manufacturer, model, size as indicated on the Drawings.
- B. Control System Description:
 1. The control system shall include a radio transmitter and receiver capable of controlling up to 4 individual zones.
 2. The control system transmitter shall be installed inside the existing controller enclosure and wired to the controller.
 3. The control system receiver shall be installed inside the new valve box at the control valve and wired to the control valve.
 4. The control valve shall have its solenoid replaced with a DC latching solenoid as indicated on the Drawings.
 5. The control system receiver shall have batteries installed per the manufacturer's instructions.
- C. Low voltage control wires shall be of the manufacturer, model, size as indicated on the Drawings.
- D. Waterproof wire connectors shall be of the manufacturer, model, size as indicated on the Drawings.

2.8 IRRIGATION EQUIPMENT BOXES

- A. Plastic Boxes:

1. The drip remote control valve shall be installed below grade in a plastic box.
 2. Description: The valve box and cover shall be of the manufacturer, model, size, and color as indicated on the Drawings.
 - a. The cover and box shall be capable of sustaining a load of 1,500 pounds.
 - b. Valve box extensions shall be by the same manufacturer as the valve box.
 - c. The plastic irrigation valve box cover shall be an overlapping 'T' type.
 - d. Boxes shall have purple colored lids.
 - e. Box covers shall be equipped with a "hexagon-head" locking kit to secure the lid to the box.
 3. Sizes:
 - a. Quick Coupler valves shall be installed inside 10" round valve boxes.
 - b. Ball valves, remote control valves and drip remote control valves shall be installed inside standard sized rectangular valve boxes.
 - c. Each valve box shall house a single valve as described above.
- B. Concrete Boxes:
1. Where indicated in the Drawings the existing remote control valves, gate valves, and quick coupler valves shall be installed inside of traffic rated concrete valve boxes with hinged steel lids.
 2. Hinged steel lids shall be painted purple to indicate the use with recycled / reclaimed water.
- C. Drainage Backfill: Cleaned gravel or crushed stone, graded to an average size of 3/4 inch shall be placed inside the valve box. The minimum depth of drainage backfill in valve boxes shall be 4 inches.
- D. Landscape Fabric:
1. Landscape fabric shall be used to fully wrap the sides and bottom of the valve box.
 2. Landscape fabric for valve box assemblies shall be 5.0- oz. weight woven polypropylene weed barrier. Landscape fabric shall have a burst strength of 225 PSI, a puncture strength of 60 lbs. and capable of water flow of 12 gallons per minute per square foot.
 3. Type: DeWitt Pro 5 Weed Barrier or approved equal.

PART 3 - EXECUTION

3.1 TRENCHING

- A. Provide a minimum cover of 18" over the top of mainline piping.
- B. Provide a minimum cover of 12" over the top of lateral line piping.
- C. Provide a minimum cover of 24" over the top of sleeves in pedestrian areas. Provide a minimum cover of 36" over the top of sleeves in vehicular areas.
- D. Trenching under existing trees shall be performed by hand. The Contractor shall take care to protect the roots of the trees from damage by the trenching exercise.

3.2 PIPING INSTALLATION

- A. Location and Arrangement: Drawings indicate location and arrangement of piping systems. Install piping as indicated unless deviations are approved by the Landscape Architect.
- B. During loading, transportation and unloading, every precaution shall be taken to prevent damage to the pipe. No pipe shall be dropped from trucks or allowed to roll down slides without proper retaining ropes. During transportation the pipe shall rest on suitable pads, strips, skids or blocks securely wedged or tied in place. Any pipe damaged shall be replaced.
- C. Carefully inspect all pipe and fittings before installation, removing dirt, scale, burrs, and reaming. Install pipe with all markings up for visual inspection and verification. Pipe shall not exhibit scratches or gouges. Defective, damaged, or unsound pipe shall be rejected and must be removed from the site.
- D. Install fittings for changes in direction and branch connections.
- E. PVC pipes shall be installed in a manner which will provide for expansion and contraction as recommended by the pipe manufacturer.
- F. Install underground thermoplastic piping according to ASTM D 2774 and ASTM F 690.
- G. Install PVC piping in dry weather when the temperature is above 40 deg F. Allow joints to cure at least 24 hours at temperatures above 40 deg F before testing.
- H. Install piping in sleeves under decomposed granite walkways.

3.3 PVC JOINT CONSTRUCTION

- A. PVC Piping Solvent-Cemented Joints: Clean and dry joining surfaces. Join pipe and fittings according to the following:
 - 1. Comply with ASTM F 402 for safe-handling practice of cleaners, primers, and solvent cements.
 - 2. PVC Non-pressure Piping: Join according to ASTM D 2855.

3.4 EQUIPMENT INSTALLATION

- A. The ball valves, quick coupler valves, remote-control valves, and drip remote control valve assemblies shall be installed below grade in valve boxes as indicated in the Drawings.
- B. Where indicated on the Drawings the existing remote control valves, gate valves, and quick coupler valves shall be installed inside of traffic rated concrete valve boxes with hinged steel lids.
- C. Components indicated in the Drawings shall be considered required by the assembly and shall be installed as shown.

3.5 SPRINKLER INSTALLATION

- A. Sprinklers shall be installed as indicated in the Drawings.
- B. Height of sprinklers above grade, distance from hardscape features, walls and buildings shall be as indicated on the Drawings.
- C. Flush all lateral lines with water prior to the installation of the heads and nozzles.
- D. Adjust nozzles to provide complete coverage to the landscaped area without overspray onto buildings, walls, or adjacent hardscape areas.
- E. Adjustment of sprinkler head layout may be required to accommodate trees, planting and other vertical obstructions and shall be performed at no additional cost.

3.6 DRIP IRRIGATION SPECIALTY INSTALLATION

- A. Install drip tubing at the depth below grade indicated on the Drawings.
- B. Install drip tubing products at the row spacing indicated on the Drawings.
- C. Install drip tubing so that the spacing between the first row of drip tubing in a planted area is no more than 4 inches from the edge of any paving, roadway, or curbing.
- D. Install drip filter units as indicated on the Drawings.
- E. Install flush valve / indicator heads as indicated on the Drawings.

3.7 CONTROL SYSTEM INSTALLATION

- A. Equipment Mounting: Install control system as indicated on the Drawings.
- B. Verify the radio signal from the controller is capable of actuating (on and off) the new remote control valves.
- C. Install low voltage wires and waterproof wire connectors as indicated on the Drawings.

3.8 CONTROLLER PROGRAMMING

- A. Connect remote control irrigation valve wires to the assigned valve ports in the controller.
- B. Test the radio control system for operation prior to planting.

3.9 ADJUSTING

- A. Adjust valves, align heads, and check the coverage of each system prior to coverage test.

- B. If it is determined by the Landscape Architect that additional adjustments or nozzle changes will be required to provide proper coverage, all necessary changes or adjustments shall be made prior to any planting.
- C. The entire system shall be operating properly before any planting operations commence.
- D. Automatic control valves are to be adjusted so that the irrigation heads operate at the pressure recommended by the manufacturer. The adjustment of the control valve pressures shall be made using a pressure gage to adjust pressure to the recommended pressure at the highest, or farthest sprinkler head or drip flush valve on each control valve zone.
- E. Adjust sprinklers and devices so they will be flush with finish grade.

3.10 CLEANING

- A. Prior to installation of irrigation heads, the valves shall be opened, and a full head of water used to flush out the lines and risers.
- B. Irrigation heads shall be installed after the flushing of the system has been completed.
- C. All drip tubing systems shall be fully flushed with water through the flush valves and all drip filters cleaned prior to the final observations.

3.11 DEMONSTRATION

- A. Do not allow or cause any of the work of this section to be covered up or enclosed until it has been observed, tested, and accepted by the Landscape Architect.
- B. The Contractor shall be solely responsible for notifying the Landscape Architect a minimum of 48 hours in advance, where and when the work is ready for testing.
- C. When the irrigation system is completed, the Contractor shall perform a coverage test of each system in its entirety to determine if the water coverage for the planted areas is complete and adequate in the presence of the Landscape Architect.
- D. The Contractor shall furnish all materials and perform all work required to correct any inadequacies of coverage due to deviations from the plans, or where the system has been willfully installed as indicated on the Drawings when it is obviously inadequate, without bringing this to the attention of the Landscape Architect.
- E. The coverage test shall be accepted by the Landscape Architect and accomplished before starting any planting.

3.12 BACKFILLING

- A. Backfill material on all lines shall be the same as adjacent soil free of debris, litter, and rocks over 1/2 inch in diameter.

1. Backfill shall be tamped in 4-inch layers under the pipe and uniformly on both sides for the full width of the trench and the full length of the pipe. Backfill materials shall be sufficiently damp to permit thorough compaction, free of voids. Backfill shall be compacted to dry density equal to adjacent undisturbed soil and shall conform to adjacent grades.
2. Flooding in lieu of tamping is not allowed.
3. Under no circumstances shall truck wheels be used to compact backfill.
4. Provide sand backfill a minimum of 4 inches over and under all piping under paved areas.

3.13 MAINTENANCE

- A. During the Landscape Establishment Period the Contractor shall adjust and maintain the irrigation system in a fully operational condition providing complete irrigation coverage to all intended plantings.

3.14 COMPLETION CLEANING

- A. Clean up shall be made as each portion of the work progresses. Refuse and excess dirt shall be removed from the site, all walks and paving shall be swept, and any damage sustained on the work of others shall be repaired to original conditions.
- B. Dispose of waste, trash, and debris in accordance with applicable laws and ordinances and as prescribed by authorities having jurisdiction. Bury no such waste material and debris on the site. Burning of trash and debris will not be permitted. The Contractor shall remove and dispose of rubbish and debris generated by his work and workmen at frequent intervals or when ordered to do so by the Landscape Architect.
- C. At the time of completion, the entire site will be cleared of tools, equipment, rubbish, and debris which shall be disposed of off-site in a legal disposal area.

3.15 COMPLETION

- A. At the time of the pre-Landscape Establishment Period inspection, the Landscape Architect will inspect the work, and if not accepted, will prepare a punch list of items to be completed by the Contractor.
- B. Punch list shall be checked off by contractor and submitted to Landscape Architect prior to any follow-up meeting. This checked off list to indicate that all punch list items have been completed.
- C. At the time of the post-Landscape Establishment Period or final inspection the work will be re-inspected, and final acceptance will be in writing by the Landscape Architect.
- D. The Landscape Architect shall have final authority on all portions of the work.

- E. After the system has been completed, the Contractor shall instruct the City / Owner in the operation and maintenance of the irrigation system and shall furnish a complete set of operating and maintenance instructions.
- F. Any settling of trenches which may occur during the one-year period following acceptance shall be repaired to the Landscape Architect's satisfaction by the Contractor without any additional expense to the City / Owner. Repairs shall include the complete restoration of all damage to planting, paving or other improvements of any kind as a result of the work.

END OF SECTION 328400 - LANDSCAPE IRRIGATION

SECTION 329113 – SOIL PREPARATION

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes materials, labor, apparatus, tools, equipment, temporary construction, transportation, and services necessary for and incidental to performing the proper completion of Work, as required to make a complete and thorough preparation of the planting soil, including soil amendment products, imported topsoil, as required, to make up deficiencies in quantity of soil available on site, as shown in the Contract Drawings, and as specified herein this Section.
- B. Work under this Section consists of, but is not necessarily limited to, furnishing and installing the following:
 - 1. Agronomic Soil Fertility Testing and Soil Percolation Testing.
 - 2. Topsoil.
 - 3. Pre-Plant Weed Control.
 - 4. Soil Conditioners, Amendments and Fertilizers (Organic & Chemical).
- C. Related Sections: The following Sections contain requirements that relate to Work in this Section:
 - 1. Section 312219 – Landscape Grading.
 - 2. Section 328400 – Landscape Irrigation
 - 3. Section 329200 – Lawns and Grasses.
 - 4. Section 329300 – Exterior Plants.
 - 5. Section 329400 – Landscape Planting Accessories.
 - 6. Section 329813 – Landscape Establishment Period.

1.2 DEFINITIONS AND APPLICABLE STANDARDS

- A. References:
 - 1. USDA – United States Department of Agriculture.
 - 2. ASTM – American Society for Testing & Materials.
- B. Definitions:
 - 1. *Topsoil* - Shall be friable soil, providing sufficient structure in order to give good tilth and aeration to the soil. Topsoil shall be free of roots, clods, stones larger than one-inch (1”) in the greatest dimension, pockets of coarse sand, noxious weeds, sticks, lumber, brush and other litter. It shall not be infested with nematodes or other undesirable disease-causing organisms such as insects and plant pathogens.
 - 2. *Gradation Limits* - Soil shall be a sandy loam, loam, clay loam or clay. The definition of soil texture shall be per the USDA classification scheme. Gravel over ¼-inch in diameter shall be less than 20% by weight.
 - 3. *Permeability Rate* - Hydraulic conductivity rate shall be not less than one-inch (1”) per hour, nor more than twenty-inches (20”) per hour, when tested in accordance with the USDA Handbook Number 60, Method 34b, or other approved Methods.
 - 4. *Fertility* - The range of the essential elemental concentration in soil shall be as follows:

<u>Ammonium Bicarbonate/ DTPA Extraction (PPM)</u>		
Element	Concentration of elements for Soil Selection, measured as mg/kilogram dry weight basis	Concentration of Elements for Final Acceptance (amended and conditioned soil) measured as mg/kilogram dry weight basis
Phosphorous	2 - 40	10 - 40
Potassium	40 - 220	100 - 220
Iron	2 - 35	24 - 35
Manganese	0.3 - 6	0.6 - 6
Zinc	0.6 - 8	1 - 8
Copper	0.1 - 5	0.3 - 5
Boron	0.2 - 1	0.2 - 1
Magnesium	50 - 150	50 - 150
Sodium	0 - 100	0 - 100
Sulfur	25 - 500	25 - 500
Molybdenum	0.1 - 2	0.1 - 2

5. *Acidity* - The soil pH range measured in the saturation extract (Method 21a, USDA Handbook Number 60) shall be 6.0 – 7.9.
6. *Salinity* - The salinity range measured in the saturation extract (Method 3a, USDA Handbook Number 60) shall be 0.5 – 2.0 dS/m. If calcium and if sulfate ions both exceed 20 milliequivalents per liter in the saturation extract, the maximum salinity shall be 4.0 dS/m.
7. *Chloride* - The maximum concentration of soluble chloride in the saturation extract (Method 3a, USDA Handbook Number 60) shall be 150 mg/1 (parts per million).
8. *Boron* - The maximum concentration of soluble boron in the saturation extract (Method 3a, USDA Handbook Number 60) shall be 1 mg/1 (parts per million).
9. *Sodium Adsorption Ratio (SAR)* - The maximum SAR shall be 3 measured per Method 20b, USDA Handbook Number 60.
10. *Aluminum* – Available aluminum measured with the Ammonium Bicarbonate/DTPA Extraction shall be less than 3.0 parts per million.
11. *Soil Organic Matter Content* - Sufficient soil organic matter shall be present to impart good physical soil properties but not be excessive to cause toxicity or cause excessive reduction in the volume of soil due to decomposition of organic matter. The desirable range is 3% to 5%. The carbon:nitrogen ratio should be about 10. A high carbon:nitrogen ratio can indicate the presence of hydrocarbons or non-humified organic matter.
12. *Calcium Carbonate Content* - Free calcium carbonate (limestone) shall not be present in acid-loving plants.
13. *Heavy Metals* - The maximum permissible elemental concentration in the soil shall not exceed the following concentrations:

<u>Ammonium Bicarbonate/DTPA Extraction (PPM)</u>	
<i>Element</i>	<i>(mg/kilogram) dry weight basis</i>

Arsenic	1.0
Cadmium	1.0
Chromium	10.0
Cobalt	2.0
Lead	30.0
Mercury	1.0
Nickel	5.0
Selenium	3.0
Silver	.5
Vanadium	3.0

- a. If the soil pH is between 6 and 7, the maximum permissible elemental concentration shall be reduced 50% to the above values. If the soil pH is less than 6.0, the maximum permissible elemental concentration shall be reduced 75% of the above values. No more than three (3) metals shall be present at 50% or more of the above values.
14. *Phytotoxic constituent, herbicides, hydrocarbons, etc.* – Germination and growth of plants shall not be restricted more than 10% compared to the reference soil. Total petroleum hydrocarbons shall not exceed 50 mg/kg dry soil measured per the modified EPA Method No. 8015. Total aromatic volatile organic hydrocarbons (benzene, toluene, xylene and ethylbenzene) shall not exceed 0.5 mg/kg dry soil measured per EPA Method No. 8020.
 15. *Sub Grade* - Soil level resulting from the rough grading work under another Section. Cultivation of sub grade areas prior to placement of Topsoil is included in this Section.
 16. *Stockpiled Topsoil* - Soil stockpiled for spreading over prepared sub-grade.
 17. *Stockpiled Native Topsoil* - Topsoil stripped from the site prior to rough grading Work (under another Section), to be spread and amended as Work under this Section.
 18. *Imported Topsoil* - Off-site Topsoil, imported and stockpiled under this Section, to be spread and amended as Work under this Section.

C. Measurements:

1. PPM: Measurement, in parts per million.

1.3 SUBMITTALS

A. General:

1. Collect information into a single Submittal for each element of construction and type of product or equipment identified under this Section for review.
2. To expedite review, Submittal shall be organized and presented into specific sections or headings. Furnish neat, concise, legible, and clearly identifiable information, and sufficiently explicit detail, to enable proper evaluation for Contract compliance. Highlight catalog, product data, or brochures containing various products, sizes, and materials to show particular item submitted.
3. Submittal Format: As applicable, furnish Submittal as a single electronic digital PDF (Portable Document Format) file.

B. Digital Submittal Information:

1. Product/Material Data. Submit available product/material literature supplied by manufacturer's, indicating that their products comply with specified requirements. Provide manufacturing source (name, address, and telephone number), and distributor source (name, address, and telephone number) for each type of product/material.

- a. Planting Soil (Imported/Amended Topsoil).
 - b. Soil Amendments (for each type used, for Sand, Perlite, Peat Humus, Gypsum, Soil Sulfur, Iron, etc).
 - c. Bulk Composted Organic Soil Amendment Material.
 - d. Granular Soil Conditioning Material.
 - e. Mycorrhizal Inoculum.
 - f. Fertilizers (for each type used).
2. Agronomic Soil Fertility Analysis and Recommendations: Submit a minimum of fourteen (14) days prior to amending of the soil and ordering soil amendments. The locations of where each of the soil test samples were derived from the Project Site shall be keyed to the site plan and shall be included with the results.
 3. Qualification Data: Submit names for firms and persons specified in the “Quality Assurance and Control” Article to demonstrate their capabilities and experience on similar installations.
 4. Receipts and photo documentation (dated for the project) of all soil preparation products purchased and installed for are to be provided to Owner and Landscape Architect for record purposes.
- C. Material Samples: Submit four (4) sets of physical Material Samples for review of kind, color, pattern, size, and texture for a check of these characteristics with other elements, and for a comparison of these characteristics between Submittal and actual component as delivered and installed. Include the full range of exposed color and texture expected in the completed Work. Provide Material Samples bound and individually wrapped in re-sealable labeled 1-gallon plastic bags (as applicable):
1. Provide Material Sample sets for each item submitted under Product/Material Data.
- D. Submittals under this Article will be rejected without the benefit of review by the Landscape Architect if they are difficult to read due to insufficient scale, poor image quality, or poor drafting quality; or if the required information is missing or not presented in the format as requested.
- E. No Work shall proceed under this Section until Submittal requirements indicated herein have been reviewed accordingly by the Landscape Architect.

1.4 QUALITY ASSURANCE AND CONTROL

- A. Installer Qualifications for requirements indicated herein this Section:
1. Licensed Landscape Contractor, C-27, in the State of California.
 - a. Engage an experienced, licensed Contractor who has completed landscaping work similar in material, design, and extent to that indicated for this Project and with a record of successful landscape establishment.
 - b. Installer's Field Supervision: Contractor shall maintain an experienced, full-time landscape supervisor/superintendent at the Project Site during times that landscaping operations identified herein the Contract are in progress.
- B. Manufacturer's Directions: Follow Manufacturer's directions and drawings in cases where the Manufacturers of articles used in this Section furnish directions covering points not shown in the Contract Drawings or Contract Specifications.
- C. Permits, Fees, Bonds, Testing, and Inspections: Contractor shall arrange and pay for permits, fees, bonds, testing, and inspections necessary to perform and complete his portion of the Work.

- D. Approved Testing Laboratory and Procedures for Agronomic Soil Fertility Analyses:
1. Agronomic Soil Fertility Analyses shall be conducted by a reputable, certified, agronomic soils laboratory. Laboratory shall be a member of the Council on Soil Testing and Plant Analysis. The same laboratory shall be used throughout the duration of the Contract:
 - a. Wallace Laboratories, El Segundo, CA. 310-615-0116.
 - b. Soil and Plant Laboratory, Orange, CA. 714-282-8777.
 - c. Fruit Growers Laboratory, Santa Paula, CA. 805-659-0910.
 2. Contractor shall verify and confirm the selected Testing Laboratory and specific location(s) of soil sample(s) with the Landscape Architect prior to commencing soil sampling operations.
 3. For each Soil type, submit the physical Soil Samples directly to the selected Laboratory for analysis, per the procedures outlined per Part III herein this Section.
 - a. In addition to the physical Soil Samples, Contractor shall also provide the Laboratory with a copy of the Soil Amendment and Fertilizer products indicated herein this Section.
 4. Along with the testing data results, the Agronomic Soil Fertility Analysis shall also include written recommendations authored by the Laboratory conducting the Analyses for amending, treating, and/or correcting the sampled soils. Laboratory shall utilize the organic-based Soil Amendments and Fertilizers described herein this Section to the greatest extent possible to produce satisfactory planting soil(s) suitable for sustaining healthy viable plant growth.
 - a. The Analyses shall also include Maintenance and Post-Maintenance fertilization programs for planted areas within the Contract.
 5. Agronomic Soil Fertility Analyses shall be performed on each Soil Type samples, and include testing results for the following:

pH;
Electro-conductivity (salinity) measurement – saturated extract.
Measurement of sodicity (Sodium Absorption Ratio);
Estimate of soil texture and soil organic matter;
Presence of lime;
Nutrients/Toxic Elements measurement of DPTA extract
Saturation extracts for nitrate, sulfate, sodium, calcium, magnesium, potassium, soluble phosphate, and boron;
Parasitic nematodes;
Herbicide contamination;
(For Lightweight Soil Mixes): Test for physical and chemical composition, and saturated weight per cu.ft.

6. Planting operations shall not commence until the results of the Agronomic Soil Fertility Analysis and Recommendations are reviewed accordingly by the Landscape Architect.
7. The quantity or type of amendments may be modified by the Landscape Architect within fourteen (14) days of receipt of the results. The Agronomic Soil Fertility Analysis and Recommendations shall take precedence over the amendment and fertilizer application rates specified herein or on the Contract Documents.
8. The Agronomic Soil Fertility Report/Recommendation shall take precedence over the amendment and fertilizer application rates specified herein or on the Contract Documents.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. General: Deliver and install materials so as to not delay Work, and install only after preparations for installation have been completed.
 - 1. Packaged Materials: Deliver packaged materials in original, unopened packages or containers, with manufacturer's labels intact and legible, showing weight, analysis, and name of manufacturer. Store and secure properly to prevent theft or damage.
 - a. Store packaged materials off ground and under cover, away from damp surfaces and inclement weather.
 - b. Protect during storage and construction against soilage or contamination from earth and other materials.
 - 2. Bulk Materials:
 - a. Deliver and store bulk materials so as not to impede Work of others.
 - b. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas, or plants.
 - c. Protect during storage and construction against soilage or contamination from earth and other materials. Provide adequate separation between bulk materials so as not to cross-contaminate bulk materials.
 - d. Store under cover, away from inclement weather.
 - e. Provide erosion-control measures to prevent erosion or displacement of bulk materials, discharge of soil-bearing water run-off, and airborne dust reaching adjacent properties, water conveyance systems, structures, or walkways.
 - f. Accompany each delivery of bulk materials (fertilizers, amendments, topsoil, etc.) with appropriate certificates. Furnish original certificates to Landscape Architect upon request.

1.6 COORDINATION, SCHEDULING, AND OBSERVATIONS

- A. Notify the Contractors performing Work related to installation of Work under this Section in ample time so as to allow sufficient time for them to perform their portion of Work and that progress of Work is not delayed. Verify conditions at the Project Site for Work that affects installation under this Section. Coordinate items of other trades to be furnished and set in place.
- B. Utilities: Determine location of above grade and underground utilities and perform Work in a manner which will avoid damage to utilities. Hand excavate, as required. Maintain grade stakes until removal is mutually agreed upon by parties concerned.
- C. Excavation: When conditions detrimental to adequate Soil Preparation operations are encountered, such as rubble fill, adverse drainage conditions, or obstructions, cease operations and notify Landscape Architect for further direction.
- D. Installation: Perform Soil Preparation operations only when weather and soil conditions are suitable in accordance with locally accepted practices.
- E. Construction Site Observations: Periodic site observations shall be made by the Landscape Architect during the installation of Work under this Section for compliance with requirements for type, size, and quality. Landscape Architect retains right to observe Work for defects and to reject unsatisfactory or defective material at any time during progress of Work. Contractor shall remove rejected materials immediately from Project site. The Contractor shall request, in writing, at least one (1) week in advance of the time when mandatory site observation(s) by the Landscape Architect are required.

1.7 SITE CONDITIONS

- A. Project Site shall be free of weeds, native grasses, evasive grasses, (Bermuda Grass, Nut Grass, Kikiyu Grass, etc.) prior to Topsoil distribution or soil amendment placement.
- B. Excessive rock, dead or declining vegetation, trash, debris, or other items that has accumulated throughout the duration of the Project shall be removed from the Project Site by the Contractor, and as directed by the Landscape Architect.
- C. Grading and soil preparation Work shall be performed only during the period when beneficial and optimum horticultural results may be obtained. If the moisture content of the soil should reach such a level that working it would destroy soil structure or cause compaction, spreading and grading operations shall be suspended until, in the opinion of the Landscape Architect, the moisture content is increased or reduced to acceptable levels and the desired results are likely to be obtained.
 - 1. Soil moisture level prior to planting shall be no less than 75% of field capacity. The determination of adequate soil moisture for planting shall be in the sole judgment of the Landscape Architect.
 - 2. If the soil moisture level is found to be insufficient for planting, planting pits shall be filled with water and allowed to drain before commencing planting operations.
- D. Planting areas which become compacted in excess of 85% relative compaction due to construction activities shall be tilled and thoroughly cross-ripped to a minimum depth of twelve-inches (12") to alleviate the condition, taking care to avoid all existing subsurface utilities, drainage, etc.

1.8 SUBSTITUTIONS

- A. Consideration: Materials to be considered equal to the Materials indicated herein this Section shall be reviewed by the Landscape Architect. Materials with equal performance characteristics produced by other Manufacturer's and/or Distributors may be considered, providing deviations in dimensional size, color, composition, operation, and/or other characteristics do not change the design concept, aesthetic appearance, nor intended performance, as solely judged by the Landscape Architect. The burden of proof on product equality is on the Contractor.
- B. Specific reference to Manufacturer's names and products specified herein are used as standards of quality. This implies no right to the Contractor to substitute other materials without prior written approval by the Landscape Architect for Work under this Section.
- C. Materials substituted and installed by the Contractor, without prior written approval by the Landscape Architect, may be rejected. Contractor shall not be entitled to be compensated by the Owner where the Contractor has installed rejected substitutions without receiving prior written approval.
- D. Contract Price: Substituted Materials under this Section shall not increase the Contract price.

PART 2 - PRODUCTS

2.1 SOIL MIXES/BLENDS

A. Soil Conditioner Blend, for amending on-site native soil planting surfaces, stockpiled, plant back fill or imported topsoil: Furnish a thoroughly blended composition of Bulk Composted Organic Soil Amendment Material and Granular Soil Conditioning Material & Fertilizer. Any substitution for the “Soil Conditioner Blend” listed herein must be requested by the Contractor and approved, in writing, by the Landscape Architect at least thirty (30) days prior to installation.

1. Bulk Composted Organic Soil Amendment Material:

- a. Material Composition: Bulk Composted Organic Soil Amendment Material shall be thoroughly cured for a minimum of 100 days, and shall be free from any trash (glass, metal, plastic, etc.) deleterious materials, bio-solids, and/or toxic chemicals. The Material shall be non-hazardous, and conform to US Environmental Protection Agency 40 CFR503 criteria for “Class A” products. It shall also exceed standards and specifications for unrestricted application as a landscaping and agricultural soil amendment.
- b. Humus material shall have an acid-soluble ash content of no less than 6% and no more than 20%. The organic matter content shall be at least 50% on a dry weight basis.
- c. Types of acceptable products are composts, manures, mushroom composts, straw, alfalfa, peat mosses etc. low in salts, low in heavy metals, free from weed seeds, free of pathogens and other deleterious materials.
- d. Composted wood products are conditionally acceptable [stable humus must be present]. Wood based products are not acceptable which are based on red wood or cedar.
- e. Sludge-based materials are not acceptable.
 - 1) Gradation/Screen Analysis: A minimum of 90% of the material by weight shall pass a ½” screen. Material passing the screen shall meet the following criteria:

<i>Percent Passing</i>	<i>Sieve Designation</i>
80 - 100%	6.35 mm (1/4”)
50 – 80%	2.38 mm (No. 8)
0 – 40%	500 micron (No. 35)

- 2) Maturity: Physical characteristics suggestive of maturity include shall include:
 - a) Color: Dark brown to black.
 - b) Odor: Aerobic, without malodorous presence of decomposition products.
 - c) Particle characterization: Identifiable wood pieces are acceptable but the balance of Material should be soil-like without recognizable grass or leaves.
- f. Analytical Properties: Contractor shall submit proof of the Bulk Composted Organic Soil Amendment Material by providing a sample as identified herein this Section, and a lab analysis that has been performed within 30 days of the installation of the planting. Soil mix shall have (at a minimum) the following properties:

<i>Material</i>	<i>Minimum Targeted Property/Range</i>
Total Nitrogen (N%)	.50-1.0%
Phosphorus (as P2O5)	2.0%

Potassium (as K ₂ O)	0.2%
pH (units)	6.0 to 7.5, as determined in saturated paste.
Organic Content	Minimum 50% based on dry weight and determined by ash method. Minimum 205 lbs. organic matter per cubic yard of compost.
ECe (millimho/cm)	<5.0; based on pre-leaching with equal volume of water.
Carbon-to-Nitrogen Ratio	<25-to-1, nitrogen stabilized.
Bulk Density	1,000 to 1,100 pounds/cubic yard.
Sodium Absorption Ratio (SAR)	Under 20.0
Total Iron	1.5%3.
Moisture Content	35%-60%
Acid-soluble Ash content	No less than 6% and no greater than 20%.
Salt Content	<10millimho/cm @ 25d C. on a saturated paste extract.
Boron Content	<1.0 parts per million on a saturated paste extract.
Silicon-Content (acid-insoluble ash)	<50%
Calcium Carbonate	No presence on alkaline soils.
Maximum Total Permissible Pollutant Concentrations Parts per million (mg/kg dry-weight basis)	<ul style="list-style-type: none"> • Arsenic: 1.0 • Cadmium: 1.0 • Chromium: 10.0 • Cobalt: 2.0 • Copper: 1.0 • Lead: 30.0 • Mercury: 1.0 • Molybdenum: 2.0 • Nickel: 5.0 • Selenium: 1.0 • Silver: 0.5 • Vanadium: 3.0 • Zinc: 2.0

- g. Application Rate: As indicated herein this Section under “Planting Soil Amendments Schedule”.
- h. Commercial-Grade Products & Manufacturers: Subject to compliance with requirements, provide products by one (1) of the following:
- 1) *Soil Conditioner*, Synagro Professional Organic Soil Products.
 - 2) *Agromend*, Agromin Horticultural Products.
 - 3) *Humic Compost 1/2”*, Greenway Compost.
 - 4) *Superior Blend Compost*, Artesia Sawdust Products, Inc.
 - 5) *Compost*, EarthWorks Soil Amendments, Inc.
 - 6) *Contractor’s Blend*, Recycled Wood Products (RWP).
 - 7) *#SSA-CST Supreme Organic Soil Amendment*, Plants Choice, Inc.
 - 8) *Humic Compost 3/8”*, Agri Service, Inc.

- 9) Or equal, as approved by the Landscape Architect.
2. Granular Soil Conditioning Material & Fertilizer:
- a. Material Composition and Analytical Properties: Granular Soil Conditioning Material & Fertilizer shall be a singular manufacturer-blended combination of soil conditioning material and fertilizer. It shall be granular in form, long-lasting, free flowing, and suitable for application with approved equipment. It shall not contain any sewage sludge or manure-based products, and shall contain the following guaranteed minimum available analysis range:

<u>Element/Material</u>	<u>Targeted Property Range</u>
Nitrogen (N)	5.0% to 6.0%
Phosphoric Acid (as P2O5)	2.0% to 3.0%
Potash (as K2O)	1.0% to 4.0%
Humic Acids	15.0 % to 20.0%
Calcium	7.0%
Sulfur	0.0% to 5.0%

- b. Commercial-Grade Products, Manufacturers and Associated Rates of Application: Subject to compliance with requirements, provide products by one (1) of the following:
- 1) *Tri-C 6-2-4*, Tri-C Enterprises LLC, Chino, CA. 800-927-3311.
 - a) Application Rate at 70 lbs. per 1,000 square feet of planting area.
 - 2) *Gro-Power Plus 5-3-1*, Gro-Power, Chino, CA. 909-393-3744.
 - a) Application Rate at 200 lbs. per 1,000 square feet of planting area.
 - 3) or equal, as approved by the Landscape Architect.

2.2 ORGANIC SOIL AMENDMENT COMPONENTS

A. Peat Humus:

1. Type: Canadian Sphagnum Peat, as derived from the genus Sphagnum, medium-divided, coarse fibrous texture, brown in color.
2. Measurement: Measure peat in air dry condition, containing not more than 35% moisture by weight on an "as-received" basis.
3. Physical Properties:

<u>Percent Passing</u>	<u>Sieve Size</u>
95 - 100%	9.51 mm (3/8 in.)
0 - 40%	500 micron (#35, 32 mesh)

4. Organic Content (dry weight basis): Minimum 95%.
5. Fiber Content: Greater than 66%.
6. Water Holding Capacity: 20x to 30x its dry weight in water.
7. Range in Ash Content (%): 1.0 to 5.0.
8. Chemical Properties:
 - a. Nitrogen (dry weight basis): 0.6-3.0%.

- b. Salinity/Soluble Salts: Saturation extract conductivity 0.0-3.0 millimhos/cm @ 25 degrees C.
 - c. pH range: 3.0 to 4.0.
 - 9. Unacceptable Materials:
 - a. Coir Dust.
 - b. Sedge Peat.
 - c. Reed Peat.
 - d. Hypnum Peat.
- B. Mycorrhizal Inoculum:
 - 1. Mycorrhizal Inoculum for Plant Material (not Palm Trees): Dual soil-conditioning biological inoculum system of endo-and ecto- Mycorrhizal, used to further aid the plants ability to efficiently uptake available soil nutrients and increase resistance to drought.
 - a. Products & Manufacturers: Subject to compliance with requirements, provide products by one (1) of the following:
 - 1) *4-gram Myco-Pak*, Tri-C Enterprises LLC, Chino, CA, 800-927-3311.
 - 2) *4 oz. Packet - Roots 1 Step*, Roots, Inc., Independence, MO, 800-342-6173.
 - 3) Or equal, as approved by the Landscape Architect.
 - b. Provide at the prescribed application rate, per the Manufacturer's written recommendations.

2.3 CHEMICAL SOIL AMENDMENT COMPONENTS

- A. General: Chemical Soil Amendment Components listed herein may or may not be used, depending on the results of the Agronomic Soil Fertility Report. Provide as required:
- B. Gypsum: Commercially-processed and packaged agricultural-grade hydrated calcium sulfate product (CaSO₄), 92.0% minimum, pH at 7.1.
 - 1. Commercial-Grade Products & Manufacturers: Subject to compliance with requirements, provide products by one (1) of the following:
 - a. *Ben Franklin® No. 1 Agricultural Gypsum*, U.S. Gypsum Company.
 - b. *100% Good Stuff Gypsum™*, Art Wilson Company.
 - c. *CAL-SUL® Pelletized Agricultural Gypsum*, North Pacific Group.
 - d. *Bumper Harvest Agricultural Gypsum*, Domtar Gypsum.
 - e. *Premium 97 Solution-Grade Gypsum*, Diamond K, Inc.
 - f. Or equal, as approved by the Landscape Architect.
- C. Soil Sulfur: Elemental Sulfur (90% min.) commercially manufactured, water degradable, palletized.
 - 1. Commercial-Grade Products & Manufacturers: Subject to compliance with requirements, provide products by one (1) of the following:
 - a. *Disper-Sul*, Martin Resources, Inc.
 - b. *Soil Sulfur*, Red Top.
 - c. Or equal, as approved by the Landscape Architect.
- D. Iron: Non-staining, 40% Fe minimum, complete with micro-nutrients and 2% humic acids, as derived from iron oxide, manganese oxide, or zinc oxide.
 - 1. Commercial-Grade Products & Manufacturers: Subject to compliance with requirements, provide products by one (1) of the following:
 - a. *Gro-Power Iron*, Gro-Power, Chino, CA.

- b. *Iron 45 w/ Micronutrients*, Tri-C Enterprises LLC, Chino, CA.
 - c. Or equal, as approved by the Landscape Architect.
- E. Dolomite Lime: Agricultural-grade mineral soil conditioner containing 35% minimum magnesium carbonate, and 49% minimum calcium carbonate, 100% passing #65 sieve.
 - F. Potassium Sulfate (Sulfate of Potash K₂O), (0-0-50 guaranteed analysis N-P₂O₅-K₂O): Agricultural-grade, containing minimum 50% of water-soluble potash and 18% Sulfur (S).
 - G. Single Superphosphate P₂O₅ (0-15-0 guaranteed analysis N-P₂O₅-K₂O): Commercial product, containing 15% available phosphoric acid and 14% Sulfur.
 - H. Triple Superphosphate P₂O₅, (0-45-0 guaranteed analysis N-P₂O₅-K₂O): Commercial product, containing 45% available phosphate and 15% Calcium (Ca).
 - I. Ammonium Sulfate (NH₄)₂SO₄, (21-0-0 guaranteed analysis N-P₂O₅-K₂O): Commercial product containing approximately 21% ammonia.
 - J. Ammonium Nitrate NH₄NO₃, (34-0-0 guaranteed analysis N-P₂O₅-K₂O): Commercial product containing approximately 34% ammonia.
 - K. Calcium Nitrate CaNO₃, (15.5-0-0 guaranteed analysis N-P₂O₅-K₂O): Agricultural grade containing 15-1/2% nitrogen.
 - L. Potassium Nitrate KNO₃, (13-0-45 guaranteed analysis N-P₂O₅-K₂O): Commercial product containing approximately 13% nitrogen and 45% potassium.
 - M. Ureaformaldehyde (38-0-0 guaranteed analysis N-P₂O₅-K₂O): Granular commercial product containing approximately 38% nitrogen.
 - N. Urea CO(NH₂)₂, (46-0-0 guaranteed analysis N-P₂O₅-K₂O): Granular commercial product containing 46% nitrogen.
 - O. I.B.D.U. (Iso Butyldiene Diurea): Commercial product containing 31% nitrogen.

2.4 FERTILIZERS

- A. Composition: Nitrogen (N), phosphorous (P₂O₅), and potassium (K₂O) content, plus other elements, as indicated.
- B. Palm Tree Fertilizer (pre-plant 9-3-9) <<<VERIFY>>>:
 1. Organic-based, long-lasting, controlled-release, uniform in composition, free flowing, granular- type fertilizer with micronutrients, suitable for application with approved equipment.
 2. Palm Fertilizer shall contain the following minimum available percentages by weight of plant food (pending results of soil analysis):

<i>Element/Material</i>	Targeted Property Range
-------------------------	-------------------------

Nitrogen (N) - Slow Release	9.0% minimum
Phosphoric acid (as P2O5)	3.0% minimum
Potash (as K2O)	9.0% minimum
Calcium (Ca)	3.0% minimum
Magnesium (Mg)	4.0% minimum
Sulfur (S)	6.0% minimum
Iron (Fe)	2.0% minimum
Manganese (Mg)	0.05% minimum
Zinc (Z)	0.05% minimum
Humus	25.0% minimum
Humic Acids w/ micronutrients	5.0% minimum

3. Commercial-Grade Products & Manufacturers: Subject to compliance with requirements, provide products by one (1) of the following:
 - a. Gro-Power 9-3-9 Palm & Tropical with Micronutrients, Gro-Power, Chino, CA. 909-393-3744.
 - b. Or equal, as approved by the Landscape Architect.
4. Application Rate: Per Manufacturer's current printed recommendation.

C. Turf Grass Starter Fertilizer (pre-plant 3-12-12), as required

1. General: Shall be applied for turf grasses planted from sod or seed (not hydroseed or hydrostolons).
2. Fertilizer shall be an organic-based, long-lasting, controlled-release, uniform in composition, free flowing granular-type fertilizer with micronutrients, suitable for application with approved equipment. Fertilizer shall be high in potassium and phosphorous elements to aid in strong root development.
 - a. Turf/Lawn Fertilizer shall contain the following minimum available percentages by weight of plant food (pending results of soil analysis):

<u>Element/Material</u>	<u>Targeted Property Range</u>
Nitrogen (N) Slow Release	3.0% minimum
Phosphoric acid (as P2O5)	12.0% minimum
Potash (as K2O)	12.0% minimum
Humus	35.0% minimum
Humic Acids w/ micro-nutrients and soil enhancers	7.0% minimum

3. Commercial-Grade Products & Manufacturers: Subject to compliance with requirements, provide products by one (1) of the following:
 - a. *Gro-Power 3-12-12 Flower & Bloom*, Gro-Power, Chino, CA. 909-393-3744.
 - b. Or equal, as approved by the Landscape Architect.
4. Application Rate: Twenty (20) pounds per 1,000 SF.

D. Fertilizer Tablet:

1. General: Fertilizer Tablet shall be a 7-gram tablet, organic-based, tightly compressed chip-type commercial grade, 12-month slow-release planting tablets, and shall be composed of the following available percentages by weight of plant food:

<i>Element/Material</i>	<i>Targeted Property Range</i>
Nitrogen (N)	12.0% minimum
Phosphoric acid (as P ₂ O ₅)	8.0% minimum
Potash (as K ₂ O)	8.0% minimum
Humus	20.0% minimum
Humic Acids w/ micronutrients and soil enhancers	4.0% minimum

2. Commercial-Grade Products & Manufacturers: Subject to compliance with requirements, provide products by one (1) of the following:
 - a. *Gro-Power 12-8-8 Planting Tablets*, Gro-Power, Chino, CA 909-393-3744.
 - 1) Application Rate: As indicated herein Part III this Section.
 - b. Or equal, as approved by the Landscape Architect.

2.5 ACCESSORIES

- A. Wetting Agent/Water Storing Polymer: Non-biodegradable, granular, polyacrylamide polymer soil amendment.
 1. Commercial-Grade Products & Manufacturers: Subject to compliance with requirements, provide products by one (1) of the following:
 - a. *Broadleaf P4*, Broadleaf Industries, Inc. Chula Vista, CA (619)424-7880.
 - b. Or equal, as approved by the Landscape Architect.
- B. Perforated Drain Pipe & Drain Sock (Tree Chimney): Refer to Section 329400 – Landscape Planting Accessories.
- C. Landscape Mulch Material:
 1. Organic Wood Mulch: Refer to Section 329400 – Landscape Planting Accessories.
 2. Landscape Mulch Material for Submersible Planting Pots: Refer to Section 329400 – Landscape Planting Accessories.

PART 3 - EXECUTION

3.1 AGRONOMIC SOIL FERTILITY REPORT/RECOMMENDATION

Once rough grading has been accomplished, and prior to commencing Soil Preparation operations, (amendments, fertilizers, etc.), soil samples shall be taken from representative areas and below grade depths of the Project Site. Locations and depths to gather the representative soil samples shall be accomplished by the Contractor under the direction of the Landscape Architect.

1. Provide 2 Soil Samples.

- B. Guidelines for Selecting the Soil Samples:
1. Select representative areas to sample. The area needs to be uniform in color, texture, depth, and drainage with the same fertilizing program and type of use. Planting areas to receive lawns, flowerbeds, trees, cut areas, fill areas, etc. should be tested separately. An area containing multiple trees and shrubs can be grouped into one area if the planting is the same.
 2. Depths and process of soil sampling:
 - a. Sample as deep as the soil will be amended, generally six-inches (6") deep for groundcover/lawns, eighteen-inches (18") deep for shrub areas, twenty-four-inches (24") deep for small boxed trees, and three-feet (3') to four-feet (4') for large boxed trees.
 - b. Use a soil probe or soil auger to remove a core sample; otherwise, use a shovel to dig a hole to the desired depth. Sample the soil from the side of the excavated hole, scraping the side with a trowel. The tools used for digging shall be clean and not rusty. Avoid sampling when the soil is too wet.
 3. In desired areas where multiple sub-samplings are taken from any one (1) area to create a combined sample, mix the sub-samples homogenously together in a clean plastic bucket prior to placing in the plastic bag.
 4. Each Sample shall be sent directly to the laboratory in a separate, re-sealable, one (1)-gallon plastic bag. Provide a minimum of four (4) cups of soil within each respective sample to allow for adequate testing.

3.2 SOIL PERCOLATION TESTING

- A. Type/Quantity: During operations of Agronomic Soil Fertility Testing and prior to installing Plant Material, Contractor shall perform Soil Percolation Tests, through the direction of the Landscape Architect, in selected representative areas of the Project Site, to verify acceptable natural drainage, soil structure, and soil composition. Contractor shall verify the locations of the Soil Percolation Tests with the Landscape Architect.
1. Required Number of Soil Percolation Tests: 1
- B. Procedure: Each Soil Percolation Test shall be performed as follows:
1. Dig a hole: 2'-0" wide x 2'-0" long x 2'-0" deep.
 2. Fill the hole with water to top and cover with plywood and barricade. Allow hole to drain and fill again to top.
 3. Make daily observations, noting the depth of water each day.
 4. Report findings, in writing, to the Landscape Architect. Include the length of time the water takes to drain completely from each hole, date of test, location, and other information, which may be useful in providing further recommendations.
- C. Results: Based on the combined results of the Agronomic Soil Fertility Testing and the Soil Percolation Tests, Contractor may be required to install additional tree drainage sumps or other drainage methods at each planting pit for trees larger than 15-gallon container stock. This does not relieve the Contractor's obligation within the Base Bid to provide the required Tree Root Aeration Units indicated in Section 329400 – Landscape Planting Accessories. Contractor shall include, as a line-item price within the Base Bid, the price per each additional tree drainage sump, should they be required (based on the testing). Should additional tree drainage sumps or other methods is required, compensation shall be awarded to the Contractor at the line-item price (each) as provided by the Contractor.

3.3 SOIL MOISTURE CONTENT

- A. General: Do not work soil when moisture content is so great that excessive compaction occurs, or when it is so dry that dust will form in air, or that clods will not break readily. Apply water, if necessary, to bring soil to an optimum moisture content for tilling and planting. Soil moisture level prior to planting shall be no less than 75% of field capacity. The determination of adequate soil moisture for planting shall be the judgment of the Landscape Architect. Range: Maintain within two-percent (2%) above or below optimum moisture content at times during Work.

3.4 SITE CONDITIONS

- A. Contractor shall protect existing and new improvements and systems installed prior to planting installation. Maintain protection in place until completion of Work and contracted Landscape Establishment Period.
- B. Protect concrete paving, headers, and drainage from staining due to contact with wet nitrogen stabilized mulch/sawdust, or contact with chelated iron. Correct any stained concrete.

3.5 CLEARING & CULTIVATION

- A. Clearing: Clear planting areas free of stones two-inches (1") in diameter and larger, weeds, debris, and other extraneous materials prior to soil preparation Work.
- B. Pre-Plant Weed Control:
 - 1. Clear and remove existing weeds by spraying and grubbing to at least one-inch (1") below the soil surface.
 - 2. Dead weeds shall be cleared and removed prior to planting.
 - 3. Maintain a weed-free Project Site until final acceptance by the Owner, utilizing mechanical, chemical, or manual treatment.
- C. Cultivation of Native Site Soil and/or Spreading Imported Topsoil, with Amendments/Fertilizers:
 - 1. Verification: In planting areas where Imported Topsoil will be applied, verify that sub-grades prior to installation of Imported Topsoil have been established under rough grading. Do not spread Imported Topsoil prior to acceptance of sub-grade Work.
 - 2. Cultivation: Following Pre-Plant Weed Control operations, rip or cultivate verified planting areas of Native Site Soil at the indicated depth, prior to applying Imported Topsoil (if required) and Soil Amendments/Fertilizers.
 - a. Depth of Cultivation: minimum Ten-inches (10").
 - 3. Following initial cultivation of existing Native Site Soil, evenly spread Imported Topsoil (if required) throughout all planting areas at the minimum indicated depth to meet finished landscape grades.
 - a. Depth of Imported Topsoil: Minimum six-inches (6").
 - 4. Once Imported Topsoil has been spread, uniformly broadcast all required Soil Amendments and Fertilizers indicated in Planting Soil Amendments Schedule (below) as amended through the results of the Agronomic Soil Fertility Report.
 - 5. Thoroughly cultivate/blend all materials to provide a homogenous planting soil mixture at the indicated depth:
 - a. Depth of Cultivation: Minimum Ten-inches (10").

6. Tamp/compact prepared Planting Soil as required to eliminate settlement, and complete finish grading operations per Section 312219 – Landscape Grading.
7. Planting Soil Amendment Schedule:

<u>Soil Amendment/Fertilizer</u>	<u>Ratio</u>
First Component of Soil Conditioner Blend: Bulk Composted Organic Soil Amendment	Four (4) cu. yds. / 1,000 square feet of planting area.
Second Component of Soil Conditioner Blend: Granular Soil Conditioning Material & Fertilizer	At indicated ratio, per selected Manufacturer.
Gypsum	200 pounds / 1,000 square feet.
Commercial Fertilizer	At indicated ratio, per selected Manufacturer.
Soil Sulfur	8 pounds / 1,000 square feet of planting area.
Iron (non-staining)	10 pounds / 1,000 square feet of planting area.

- a. Modifications: The Planting Soil Amendment Schedule may be modified, based on the combined results of the Agronomic Soil Fertility Tests and Percolation Tests.
 - 1) Contractor shall be provided with fair and adequate compensation by the Owner should additions or increases to the specified ratios are required to the Planting Soil Amendment Schedule due to the Agronomic Soil Fertility Test results and/or recommendations by the Landscape Architect.
 - 2) Contractor shall provide the Owner fair and adequate credit should subtractions or decreases to the specified ratios are required to the Planting Soil Amendment Schedule due to the Agronomic Soil Fertility Test results and/or recommendations by the Landscape Architect.
8. Complete finish grading operations per Section 312219 – Landscape Grading.

3.6 APPLICATION RATES

- A. Fertilizer Tablets shall be spread equidistantly around the perimeter within the Amended Planting Backfill Mixture, up to within three-inches (3”) of the finished grade of the Mixture, and at the following rates:

<i>Size of Plant Material</i>	<i>Total Quantity of 7-gram Fertilizer Tablets</i>
Liner, Plug, Flat-Size Plant, or 4” Pot.	One (1) Tablet
One (1)-gallon Container stock.	Three (3) Tablets
Five (5)-gallon Container stock.	Nine (9) Tablets
Fifteen (15)-gallon container stock	Fifteen (15) Tablets
24” Box Container Stock	Sixteen (16) Tablets
30” Box Container Stock	Eighteen (18) Tablets
36” Box Container Stock	Twenty (20) Tablets
42” Box Container Stock	Twenty-two (22) Tablets
48” Box Container Stock	Twenty-four (24) Tablets
60” Box Container Stock	Thirty-six (36) Tablets
For Container Stock larger than 60” Box.	Six (6) Tablets for each ½” of tree caliper size.
For each 1’-0” of Palm Tree (apical meristem) height. (Example: a 25’ Palm tree requires 50 tablets)	Two (2) Tablets.

- Contractor shall not provide Fertilizer Tablets for designated native plant species, as indicated in the Contract Drawings or as directed by the Landscape Architect. Contractor shall verify with the Landscape Architect, in writing, as to which plants are subject to not receive the Fertilizer Tablets.

B. Mycorrhizal Inoculum Application Rate:

- During application of Fertilizer/Planting Tablets, Mycorrhizal Inoculum shall be spread equidistantly around the perimeter within the Amended Planting Backfill Mixture, up to within three (3”) inches of the finished grade of the Mixture, at the prescribed application rate per the Manufacturer’s written recommendations.

3.7 DRAINAGE OF PLANTING AREAS

A. Surface Drainage:

- Discrepancies: Provide proper surface drainage of planted areas. Submit in writing all discrepancies in the Contract Drawings or Specifications, or prior Work done by others, which Contractor feels precludes establishing proper drainage.
- Correction: Include description of work required for correction or relief of said condition.

B. Detrimental Drainage, Soils and Obstructions:

- Notification: Submit in writing all soils or drainage conditions considered detrimental to growth of plant materials. State condition and submit proposal and cost estimate for correcting condition.
- Correction: Submit for acceptance a written proposal and cost estimate for the correction before proceeding with Work.

3. Obstructions: If rock, underground construction Work, tree roots, or other obstructions are encountered in the performance of Work under this Section, submit cost required to remove the obstructions to a depth of not less than six-inches (6") below the required soil depth.

3.8 CLEAN UP AND PROTECTION

- A. For Work under this Section, keep Work area in a clean, orderly, and safe condition. Contractor shall remove trash caused from his Work on a weekly basis throughout the duration of the Work.
- B. Protect site from damage due to landscape operations, operations by other Contractors and trades, and trespassers. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged Soil Preparation areas as directed.
- C. Upon completion of his Work under this Section, the Contractor shall remove rubbish, waste, debris, excess construction materials, and other items resulting from construction operations offsite as described herein this Section, as directed by the Landscape Architect.

END OF SECTION 329113 – SOIL PREPARATION

SECTION 329200 – LAWNS & GRASSES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes materials, labor, apparatus, tools, equipment, temporary construction, transportation, and services necessary for and incidental to performing the proper completion of Work, as required to make a complete Turf Grass (via sod) and Ornamental Groundcover (via hydroseed) planting installation, as shown on the Contract Drawings, and as specified herein this Section.
- B. Work under this Section consists of, but is not necessarily limited to, furnishing and installing the following:
 - 1. Sodded Turf Grasses.
 - 2. Seeded Wildflower Mix (Hydroseeded).
- C. Related Sections. The following Sections contain requirements that relate to Work in this Section:
 - 1. Section 328400 – Landscape Irrigation.
 - 2. Section 312219 – Landscape Grading.
 - 3. Section 329113 – Soil Preparation.
 - 4. Section 329300 – Exterior Plants.
 - 5. Section 329400 – Landscape Planting Accessories.
 - 6. Section 329813 – Landscape Establishment Period.

1.2 DEFINITIONS AND APPLICABLE STANDARDS

- A. References:
 - 1. ASPA – American Sod Producers Association.
 - 2. AOSA – Association of Official Seed Analysts.
- B. Definitions:
 - 1. Plant Material(s): Refers to living plant species, inclusive of turf grass (via sown seed, stolons, and/or sod), ornamental grasses or groundcovers (via sown seed or sown plugs) for the Project.
 - 2. Planting Area (PA): As denoted on the Contract Drawings, shall refer to areas to be installed with Plant Material(s), or areas where existing vegetation shall be protected.
 - 3. Hydro-Mulching: Refers to the practice of sowing seeds (via hydro-seeding method) or stolons (via hydro-stolonizing method) together within a slurry mixture of water, fertilizer, cellulose (wood) fiber mulch, binder additive / soil and mulch tackifier, and other additives and materials, which is sprayed uniformly on a prepared soil surface through a pressurized distribution system.
- C. Measurements:
 - 1. SQ/FT: Measurement, in square-foot.

1.3 SUBMITTALS

A. General:

1. Collect information into a single Submittal for each element of construction and type of product identified under this Section for review.
2. To expedite review, Submittal shall be organized and presented into specific sections or headings. Furnish neat, concise, legible, and clearly identifiable information, and sufficiently explicit detail, to enable proper evaluation for Contract compliance. Highlight catalog, product data, or brochures containing various products, sizes, and materials to show particular item submitted.
3. Submittal Format: As applicable, furnish Submittal as a single electronic digital PDF (Portable Document Format) file.

B. Digital Submittal Information:

1. Product Data: Manufacturer's current catalog cuts and specifications for materials included herein this Section.
2. Certifications:
 - a. Certificates of inspection as required by law for transportation of each shipment of plant material as required.
 - 1) Seed Certification: Certification of turf grass seeds from seed vendor for each turf grass-seed mixture, stating the botanical and common name and percentage by weight of each species and variety, and percentage of purity, germination, weed seed, and insert materials. Include the year of production and date of packaging if applicable. Seed mix certificate shall also include incorporated fertilizer and rate of application for hydro-mulching, as applicable.
 - 2) Sod Certification: Certification of each seed mixture for sod, identifying sod source, including name and telephone number of supplier.
3. Hydro-mulching mixture(s), inclusive of plant material, fertilizer(s), inoculate, binder additive, fiber mulch, and water. Also provide the following information:
 - a. Number of required loads and amount of water.
 - b. Area to be covered (in acres).
 - c. Equipment to be used and capacity of equipment.
 - d. Hydro-mulching subcontractor's company name, location, and license number.
4. Qualification Data, for firms and persons specified in the "Quality Assurance and Control" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and address of architects and owners, and other information specified.
5. Meeting Notes from Pre-installation Conference.

C. Submittals under this Article will be rejected and returned without the benefit of review by the Landscape Architect if they are difficult to read due to insufficient scale, poor image quality, or poor drafting quality; or if the required information is missing or not presented in the format as requested.

D. No Work shall proceed under this Section until Submittal requirements indicated herein have been reviewed accordingly by the Landscape Architect.

1.4 QUALITY ASSURANCE & CONTROL

- A. Installer Qualifications:
 - 1. Requirement: Valid California C-27 (Landscaping Contractor) License.
 - 2. For Contractor or Sub-Contractor installing hydro-mulching materials: Valid California C-61 (Limited Specialty Contractor, Classification D-59 Hydroseed Spraying) License.
 - 3. Installer's Field Supervision: Installer to maintain an experienced full-time supervisor on the Project site during times that installations under this Section are in progress.
- B. Plant Material Quality:
 - 1. Refer to requirements under Part 2 herein this Section.
- C. Observation: Landscape Architect may observe installation Work herein this Section at Project Site for compliance with requirements for type, size, and quality. Landscape Architect retains right to observe installation of products for defects and to reject unsatisfactory or defective material or installation at any time during progress of Work. Contractor shall remove rejected Work immediately from Project site.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Seed:
 - 1. Delivery: Furnish standard Seed in unopened and undamaged Manufacturer's standard containers bearing original certification labels showing quantity, analysis and name of Manufacturer.
 - 2. Storage: Protect Seed from weather or other conditions that would damage or impair the effectiveness of the product.
- B. Sod:
 - 1. Harvest and Delivery: Harvest Sod from the source and deliver to Project Site within 24 hours. Deliver only as much Sod as can be installed in one (1) day's work. Carefully handle Sod accordingly to the requirements of the ASPA's "*Specifications for Turfgrass, Sod Materials, and Transplanting/Installing*".
 - 2. Review: Sod not transplanted within this time period shall be reviewed by the Landscape Architect prior to installation.
- C. Cellulose (Wood) Fiber Mulch:
 - 1. Labeling: Each package of Cellulose (Wood) Fiber Mulch shall be marked by the Manufacturer to show the air dry weight content.
 - 2. Storage: Protect from weather or other conditions that would damage or impair the effectiveness of the product.
- D. Binder Additive / Soil and Mulch Tackifier:
 - 1. Labeling: Each package of Binder Additive / Soil and Mulch Tackifier shall be marked by the Manufacturer to show the air dry weight content.
 - 2. Storage: Protect from weather or other conditions that would damage or impair the effectiveness of the product.
- E. Hydro-Mulching Slow-Release Fertilizer:
 - 1. Delivery: Furnish material in unopened and undamaged Manufacturer's standard containers bearing original certification labels showing quantity, analysis and name of Manufacturer.

2. Storage: Protect material from weather or other conditions that would damage or impair the effectiveness of the product.
- F. Granular Soil Conditioning Material & Fertilizer:
1. Delivery: Furnish material in unopened and undamaged Manufacturer's standard containers bearing original certification labels showing quantity, analysis and name of Manufacturer.
 2. Storage: Protect material from weather or other conditions that would damage or impair the effectiveness of the product.
- G. Mycorrhizal Inoculum for Hydro-Mulch-type Applications:
1. Delivery: Furnish material in unopened and undamaged Manufacturer's standard containers bearing original certification labels showing quantity, analysis and name of Manufacturer.
 2. Storage: Protect material from weather or other conditions that would damage or impair the effectiveness of the product.

1.6 PROJECT SITE CONDITIONS

- A. General Requirements: Installation under this Section shall be performed only during the time of day and during seasons when satisfactory results can be expected, unless authorized by the Landscape Architect.
1. Seeds: Install immediately after finish grading and irrigation installation are accepted.
 2. Sod: Install immediately after finish grading and irrigation installation are accepted.
- B. Climate Restrictions: Do not install Plant Materials under this Section during rainy or inclement weather.
- C. Hydro-Mulching Operations:
1. Irrigated Areas: Commence Work within fourteen (14) calendar days after the completion and acceptance of Soil Preparation (per Section 329113 – Soil Preparation.) in planting areas.
 2. Un-irrigated Areas: Commence work only between October 1st through February 28th, or as directed by the Landscape Architect. Should Contractor commences installation outside of this time frame, Contractor is responsible to provide temporary irrigation, as required, to un-irrigated areas to insure proper germination and growth establishment of the hydro-mulching materials to satisfy an minimum of 95% coverage of the hydro-mulched areas to satisfy Final Acceptance requirements.

1.7 SUBSTITUTIONS

- A. Consideration: Materials to be considered equal to the Materials indicated herein this Section shall be reviewed by the Landscape Architect. Materials with equal performance characteristics produced by other Manufacturer's and/or Distributors may be considered, providing deviations in dimensional size, color, composition, operation, and/or other characteristics do not change the design concept, aesthetic appearance, nor intended performance, as solely judged by the Landscape Architect. The burden of proof on product equality is on the Contractor.

- B. Specific reference to Manufacturer's names and products specified herein are used as standards of quality. This implies no right to the Contractor to substitute other materials without prior written approval by the Landscape Architect for Work under this Section.
- C. Materials substituted and installed by the Contractor, without prior written approval by the Landscape Architect, may be rejected. Contractor shall not be entitled to be compensated by the Owner where the Contractor has installed rejected substitutions without receiving prior written approval.
- D. Contract Price: Substituted Materials under this Section shall not increase the Contract price.

1.8 WARRANTY

- A. Time Period: Warrant Plant Materials under this Section are established and in a healthy and flourishing condition of active growth six (6) months from date of Final Acceptance.
- B. Appearance During Warranty:
 - 1. Turf Grass areas shall be free of dead or dying patches, and shall show foliage of a normal density, size and color.
 - 2. Wildflower areas shall be free of dead or dying patches, and shall show foliage of a normal density, size and color.
- C. Delays: Delays caused by the Contractor in completing planting operations under this Section which extend the planting into more than one (1) planting season shall extend the Warranty Period correspondingly.
- D. Coverage: Warrant growth and coverage of installations under this Section to the effect that a minimum of 95% of the area planted shall be covered and of acceptable appearance with the specified planting after one (1) growing season, with no bare spots.
 - 1. Exceptions: Contractor shall not be held responsible for failures due to neglect by Owner, vandalism, or natural disaster during Warranty Period. Report such conditions in writing.

1.9 FINAL ACCEPTANCE AND LANDSCAPE ESTABLISHMENT PERIOD

- A. Refer to Section 329813 – Landscape Establishment Period.

PART 2 - PRODUCTS

2.1 TURF GRASS MATERIALS

- A. General:
 - 1. Provide sodded installation of Turf Grass areas as designated on the Contract Drawings.
- B. Turf Grass Sod Material:
 - 1. Provide certified Turf Grass Sod complying with ASPA's Specifications for thickness, size, strength, moisture content, and mowed height. Provide Sod of grass species and

- varieties selected, proportioned by weight, and minimum percentages of purity, germination, and maximum percentage of weed seed.
2. Sod shall consist of live, growing, mature nursery-grown field stock, and shall arrive with a lush appearance, uniform texture, and a deep green color typical of the selected turf grass species.
 3. Sod shall be machine-cut from the nursery field with a minimum of one-half inch (1/2") of soil that completely covers the roots of the Sod. Sod shall contain a healthy, virile root system of dense, strong, thickly matted roots throughout, with no dead or dry edges, and capable of vigorous growth and development when planted. Sod shall be sufficiently dense to bear handling and placement without tearing.
 4. Sod shall be free of thatch, diseases, and harmful insects, and reasonably free from noxious or broadleaf weeds or other grasses, and shall not contain any other matter deleterious to its growth or which might affect its subsistence or hardiness when transplanted.
 - a. Sod shall be considered "weed free" if no more than ten (10) weeds are found per 100 SF of Sod.
 - b. Entire lot of Sod shall be rejected if found to contain the following weeds: common Bermuda grass, quackgrass, nutgrass, johnsongrass, poison ivy, nimbleweed, thistle, bindweed, bentgrass, perennial sorrel, or bromegrass.
 5. Turf Grass Sod Species:
 - a. Type: *Sea Spray* Seashore Paspalum (a blended hybrid Paspalum grass mixture), high salt and drought tolerance, good for reclaimed or gray water applications), dark green, medium-fine textured. High activity levels, reel mower at 1/4" to 1-1/2".
 - b. Products & Manufacturers: Subject to compliance with requirements, provide products by one (1) of the following:
 - 1) West Coast Turf, 800-447-1840.
 - 2) Or equal (no known equal).

2.2 SLOPE STABILIZATION GROUNDCOVER PLANTING (via Hydro-mulching Applications)

A. Hydro-mulching Applications of Slope Stabilization Planting

1. Seed: Fresh, clean, dry, certified, new-crop Seed, complying with the AOSA's *"Rules for Testing Seeds"* for purity and germination tolerances. Provide seed of species and varieties, proportions by weight, and minimum percentages of purity, germination, and maximum percentage of weed seed. Comply with the following:
 - a. Testing: Seed shall have been tested for purity and germination not more than 12 months prior to the application of the seed. The test results from seed testing shall be delivered to the Landscape Architect prior to applying the seed. Seed labels furnished by the seed vendors supplying the seed shall indicate the purity, germination and pure live seed as determined by testing. Seed with a germination rate lower than the minimum rate specified may be used when approved by the Landscape Architect, in writing.
 - b. Labeling: Seed required to be labeled under the California Food and Agricultural Code, shall be labeled by the vendors supplying the seed. Contractor shall furnish written evidence (seed label or letter) to the Landscape Architect that seed, not required to be labeled under the California Food and Agricultural Code, has been tested for purity and germination by a seed laboratory certified by the Association

- of Official Seed Analysts, or a seed technologist certified by the Society of Commercial Seed Technologists.
- c. Percentage of Seed Germination: The percentage of seed germination shall include the germination percentage of any hard and dormant seed. Seed specified without a germination requirement, at the time of sowing, shall be from the previous or current year's harvest, and shall be labeled to include the name date (month and year) collected and the name and address of the seed supplier.
 - d. All shipments of seed not accompanied by a valid California Nursery Stock Certificate shall be reported to the County Agricultural Commissioner at the point of destination for inspection and shall be held until released by the Commissioner.
 - e. Seed treated with mercury compounds shall not be used.
 - f. Legume seed shall be pellet-inoculated with a viable bacteria compatible for use with that species of seed. All inoculated seed shall be labeled to show the mass of seed, the date of inoculation, and the mass and source of inoculant materials.
2. Slope Stabilization Seed - Mix "Coastal Ornamental Low Grow Native Seed Mix" (Weed Seed shall not exceed >15%.)

<i>Botanical Name/</i> Common Name	Percentage by Weight (in Pounds/acre)
<i>Acmispon heermannii/</i> Hermann's Lotus	4.00
<i>Agrostis pallens/</i> Bentgrass	8.00
<i>Achillea millefolium/</i> Yarrow	1.00
<i>Muhlenberia microsperma/</i> Littleseed Muhly	4.00
<i>Melica imperfecta/</i> Coastal Melic	4.00

2.3 HYDROMULCHING MATERIALS (HYDROSEEDING/HYDROSTOLONIZING)

A. Seed Mix:

1. Fresh, clean, dry, new-crop seed complying with AOSA's "Journal of Seed Technology; Rules for Testing Seeds" for purity and germination tolerances.
2. Contractor shall furnish certification showing origin of all seed and Pure Live Seed (PLS) purity (times (x)) percent germination. Each bag of seed shall be tagged and sealed by the producer in accordance with the U.S. Department of Agriculture's rules and regulation under the Federal Seed Act and applicable State seed laws or other local certification authority within the state of origin. The label shall indicate analysis of seed and date of analysis. Seed may be premixed by the seed dealer and appropriate data indicated on the bag label for each variety.
3. State-certified seed of species as specified.
4. Seed shall be domestic grown and shall be furnished in sealed standard containers, each of which carries the analysis label.
5. Seed which has become wet, moldy, musty or otherwise damaged will not be acceptable.
6. Seed Mix Rate is given in pounds of Pure Live Seed (PLS) per acre. Refer to Contract Drawings for Seed Mix species.
 - a. Minimum Purity: 95%.
 - b. Minimum Germination: 90%.

- B. Wood Fiber Mulch, pre-blended with Organic Binder Additive / Soil & Mulch Tackifier:
1. Composition: Wood Fiber Mulch shall be composed of 100% virgin thermally-refined wood fiber, dark-green-colored, sterilized to contain no germination or growth inhibiting factors. It shall be consistent in texture, which disburses evenly and remains suspended in agitated water. Mulch shall be pre-blended by the Manufacturer with a high-viscosity, non-toxic, hydro-colloid guar gum-based Soil & Mulch Tackifier, minimum 3%.
 2. Unacceptable Materials: Paper (Cellulose) Fiber Mulch, or a blended Wood Fiber/Paper (Cellulose) Fiber Mulch, shall not be used.
 3. Weight: Weight specification of Wood Fiber Mulch refers only to air dry weight of the fiber material. Absolute air dry weight is considered equivalent to 10% moisture.
 4. Dispersion in Slurry: Wood Fiber Mulch shall be manufactured in such manner that after addition to and agitation in slurry tanks with fertilizer, seed, water and other approved additives, fibers in the material will become uniformly suspended to form a homogeneous slurry.
 5. Absorption Capacity: When hydraulically sprayed on the ground, the Wood Fiber Mulch material will form a blotter-like groundcover impregnated uniformly with seed, which will allow the absorption of moisture and allow rainfall to percolate to the underlying soil.
 6. Property Analysis (meet the following minimum requirements):
 - a. Moisture Content (9%-12% +/- 3%, Wet Weight Basis).
 - b. Organic Matter (96%, +/- 2%, Oven Dry Weight Basis).
 - c. Ash Content (.7%, +/- 0.2%, Oven Dry Weight Basis).
 - d. Wood Fiber: 97%.
 - e. pH (4.5-4.8, +/- 0.5).
 - f. Moisture Holding Capacity (grams of water/100 grams oven dry fiber): Minimum 1150 grams of fiber.
 7. Products & Manufacturers: Subject to compliance with requirements, provide products by one (1) of the following:

Product, and Manufacturer	Binder Additive / Tackifier	Application	Rate @ lb/Ac
Cowed Fibers® 2000, Profile Products, LLC.	Pre-blended in product as provided by Manufacturer.	<2:1 Slopes to 1:1 Slopes.	2500
		</= 3:1 Slopes to </= 2:1 Slopes	2000
		Moderate to 3:1 Slopes	1500
EarthGuard® Wood Fiber Mulch plus Tackifier, Terro Novo, Inc.	Pre-blended in product as provided by Manufacturer.	<2:1 Slopes to 1:1 Slopes.	2500
		</= 3:1 Slopes to </= 2:1 Slopes	2000
		Moderate to 3:1 Slopes	1500
EcoFibre® Tac Mulch, Canfor Corporation.	Pre-blended in product as provided by Manufacturer.	<2:1 Slopes to 1:1 Slopes.	2500
		</= 3:1 Slopes to	2000

		</= 2:1 Slopes	
		Moderate to 3:1 Slopes	1500
Mat-Fiber Plus®, Mat, Inc.	Pre-blended in product as provided by Manufacturer.	<2:1 Slopes to 1:1 Slopes.	2500
		</= 3:1 Slopes to </= 2:1 Slopes	2000
		Moderate to 3:1 Slopes	1500

C. Soil Stabilizing Emulsion Blend Additive:

1. Water permeable, soil stabilizing liquid Blend Additive, developed as a true emulsion consisting of two (2) completely immiscible liquids, in which minute globules of one (1) liquid are dispersed but not dissolved throughout the other liquid. Blend Additive shall be non-toxic to plant and animal life, and must be registered and licensed by the State of California, Department of Food and Agriculture, as an “auxiliary soil amendment.”
2. Soil Stabilizing Emulsion Blend Additive shall consist of at least (3) three different linear anionic copolymers of acrylamide/sodium acrylate in water-in-oil emulsions, lending distinct molecular weights greater than 12×10^6 and anionic mole percentages (charge density) greater than 25%, within one emulsion. Blend Additive must be guaranteed to contain 30% (+/- 1%) active polymer, in which all of the active particles are ultra-fine in size. Blend Additive shall also be guaranteed to have 100 ppm or less of residual acrylamide.
3. Soil Stabilizing Emulsion Blend shall hydrate and disperse in a mixing tank with circulating water forming a homogenous slurry, either alone or in combination with other materials, and shall be pH stable in the presence of fertilizer.
4. Products & Manufacturers: Subject to compliance with requirements, provide products by one (1) of the following:
 - a. *EarthGuard SFM Soil Stabilizing Emulsion*, Terra Novo, Inc.
 - b. Or equal (no known equal).

D. Hydromulching Slow-Release Fertilizer:

1. Pelleted- or granular-form fertilizer, organic-based, long-lasting, controlled-release, uniform in composition, free flowing, singular manufacturer-blended combination of soil conditioning material and fertilizer with micronutrients, suitable for application with approved equipment. It shall not contain any sewage sludge or manure-based products, and shall contain the guaranteed minimum available analysis range. Installed in the hydroseed slurry mix, and consisting of the following minimum available percentages by weight of plant food:

<i>Element/Material</i>	<i>Targeted Property Range</i>
Nitrogen (N)	5.0% to 6.0%
Phosphoric acid (as P ₂ O ₅)	2.0% to 3.0%
Potash (as K ₂ O)	1.0% to 4.0%
Humic Acids	15.0% to 20.0%

Calcium (Ca)	7.0%
Sulfur (S)	0.0% to 5.0%

2. Products, Manufacturers and Associated Rates of Application: Subject to compliance with requirements, provide products by one (1) of the following:
 - a. *Tri-C 6-2-4*, Tri-C Enterprises LLC, Chino, CA, 800-927-3311.
 - 1) Application Rate at 70 lbs. per 1,000 square feet of planting area.
 - b. *Gro-Power Plus 5-3-1*, Gro-Power, Chino, CA. 909-393-3744.
 - 1) Application Rate at 200 lbs. per 1,000 square feet of planting area.
 - c. Or equal, as approved by the Landscape Architect.

E. Mycorrhizal Inoculum for Hydromulch-type Applications: To be added as part of the Hydromulching operations, providing a dual soil-conditioning biological inoculum system of endo-and ecto- Mycorrhizal to further aid the immature plant's ability to efficiently uptake available soil nutrients and also increase resistance to drought.

1. Products & Manufacturers: Subject to compliance with requirements, provide products by one (1) of the following:
 - a. *Tri-C Endo 120*, Tri-C Enterprises LLC, Chino, CA, 800-927-3311.
 - b. *Gro-Life*, Gro-Power, Gro-Power, Chino, CA. 909-393-3744.
 - c. Or equal, as approved by the Landscape Architect.
2. Provide at the prescribed application rate per the Manufacturer's written recommendations, or as indicated herein this Section.
3. Selected Manufacturer of the Hydromulching Slow-Release Fertilizer and the Mycorrhizal Inoculum for Hydromulch-type Applications shall be of the same manufacturer.

F. Water: Clean, fresh, potable, free of deleterious materials, as furnished by Owner. Transport as required.

2.4 HYDROMULCHING MIXTURES (Refer to Part 3 herein this Section for requirements)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verification of Conditions:

1. Grades: Verify that grades are within one-inch (1") plus or minus (+/-) of the required finished grades. Verify that applicable soil preparation and erosion control materials have installed under other Sections of the Contract Specifications (Refer to Soil Preparation Specification 329113). Report all variations in writing.
2. Irrigation System: Verify that the irrigation system is installed and 100% coverage of the subject area is complete, tested, and in full working order. Complete installation of the irrigation system is a prerequisite for commencing work under this Section.
3. Stones, Weeds, and Debris: Verify that planting areas under this Section are clear of stones larger than 1/2 in. diameter, and that weeds, debris and other extraneous materials have been removed prior to installation.

3.2 PREPARATION

- A. Limit sub-grade preparation to areas that will be planted in the immediate future.
- B. Excessive Soil Moisture: Do not commence Work under this Section when Soil Moisture Content is so great that excessive compaction to the soil will occur during installation. Owner and/or Landscape Architect shall be the sole judges as to a acceptable soil moisture content.
- C. Inadequate Soil Moisture: Apply water, in quantity as necessary, to bring soil to a optimum moisture content for installation under this Section. Do not work soil when it is so dry that dust will form in air or where clods will not readily break apart.
- D. Cultivation of Slopes: Planting areas of 2:1 slopes and greater shall be ripped or cultivated to a depth of three inches (3") immediately prior to hydroseeding. Refer to Section 329113 – Soil Preparation.
- E. Hydro-mulching of Non-irrigated Grass/Wildflowers Areas: Installation shall only occur during the period between October 15th and December 1st.
- F. Erosion Control Fabric: Refer to Section 329400 – Landscape Planting Accessories.
- G. Contractor's Option: Perform manual hand seeding, machine, or hydro-mulching of planting areas.

3.3 TURF GRASS SOD INSTALLATION

- A. Delivery: Sod slabs shall be delivered on pallets and installed at the Project Site within twenty-four (24) hours after harvesting. Sod not installed within this time period shall be inspected and approved or rejected by the Landscape Architect. Do not lay sod if dormant.
- B. Protection: Protect root system of the sod from exposure from the weather, including dehydration, contamination, and heating during transportation to the site and delivery. In hot, dry, or windy weather conditions, stacked sod at the Project Site shall be lightly sprinkled with water to prevent sod slab edges from drying out.
- C. Allowance Period for Soil Settlement: Turf Grass Sod installation shall be started only after soil preparation and finish grading has been completed and soil has been permitted to settle under full irrigation during deep-water leaching operations for a minimum of two (2) weeks.
- D. After Allowance Period of Soil Settlement has expired, the areas to be sodded shall be loosened to a depth of two-inches (2"), raked, and floated to the final finished grade by a standard acceptable method. Finished areas shall be kept moist, even, and smooth, free from ridges and depressions, rocks, debris, and dirt clods, and reasonably well firmed.
- E. Compaction and Final Grading: Contractor shall provide sod beds that will not "footprint. Lightly rake and roll soil with two-hundred (200) pound water-ballast roller (filled 1/3 – 1/2 full), and bring level firm to finish grade. Final rolling shall be at right angles to slopes to prevent erosion. Sub-soil finish grade shall be sufficiently below the final grade to allow for the thickness of the sod material. Where applicable, newly sodded areas shall blend and match with existing turf grass areas so as to produce a smooth, unified field of turf grass.

- F. Application of Fertilizer: Apply the Pre-plant Starter Fertilizer evenly throughout the area to be sodded, at the prescribed application rate. Evenly distribute fertilizer by applying equal quantities in two (2) directions at right angles to each other.
- G. Raking: After broadcasting starter fertilizer, lightly rake and smooth seed bed surface to 1/4 in. depth. Install sod immediately thereafter, provided the sod bed has remained in a friable condition.
- H. Sodding Operations:
1. Lay sod to form a solid mass with tightly fitted butt joints, with "green-side up".
 2. Starter Strip: Lay first row of sod in a straight line, with subsequent rows parallel to and tightly against each other.
 3. Butt ends and sides of sod; do not stretch or overlap. Stagger sod strips or pads (in a running-bond-type pattern) to offset joints in adjacent courses.
 4. Avoid damage to sub-grade or sod during installation.
 5. Tamp and roll lightly to ensure full contact with sub-grade, eliminate air pockets, and form a smooth surface. Work sifted soil or fine sand into minor cracks between pieces of sod; remove excess to avoid smothering sod and adjacent grass.
 6. Lay sod parallel to the lay of the sodded area. Lay sod across angle of slopes exceeding 3:1, beginning at the bottom of slope area.
 7. Anchor sod on slopes exceeding 6:1 with wood stakes spaced at two (2) pegs per square yard. Provide not less than two (2) anchors per sod strip to prevent slippage.
 8. Cutting: Use a sharp knife to cut sod to fit straight segments or curves (and apertures in "turfblock" paving). Trim sod in straight lines when planting beds are linear or parallel to the hardscape elements. Trim sod slabs in a smooth, continuous curve when sod edges are placed against curvilinear hardscape elements.
 9. Mulch Ring at Sod in Turf Grass Areas: Trim sod in clean diameter circles around the perimeter of trees planted in turf grass areas, as indicated on the Contract Drawings. The Mulch Ring circles shall have the tree trunk located in the middle of the circle. Provide Organic Wood Mulch in these areas, at the designated thickness specified herein this Section.
- I. Initial Watering: Saturate sod with fine water spray within two (2) hours of planting. Do not lay entire amount of sod before beginning watering. Water in lightly, when a relatively large area of sod has been placed.
1. During first week, water daily to supplement rainfall as necessary to maintain moist soil to a minimum depth of two-inches (2") below the sod until sod has rooted. Repeat watering at regular intervals until sod has established itself.
 2. Once established, decrease the watering frequency and increase the amount of water per application.
- J. Protection on Site: Erect temporary barricades, warning signs & flags, as required. Protect the sodded areas against vehicular and pedestrian traffic until sodded areas have established growth to the satisfaction of the Owner or Landscape Architect.
- K. Sod Establishment:
1. Mow and maintain turf height recommended by the turf grass nursery. Do not cut more than 40% of the total grass blade length in one (1) single mowing.
 2. Replace dead or dying sod with new sod.
 3. Eradicate weeds between second and third mowing. Apply herbicides uniformly at the Manufacturer's recommended rate.

4. Apply a second application of the Pre-plant Starter Fertilizer uniformly to the surface at the Manufacturer's recommended application rate thirty (30) days after seeding.
5. Dispose of protective barricades and warning signs at the termination of the sod establishment period.

3.4 HYDROSEED/HYDROSTOLON (HYDROMULCHING) INSTALLATION (Wildflower and/or Slope Stabilization Installation)

A. General Application Requirements:

1. Areas to receive hydro-mulching are to be applied by a licensed and approved hydro-mulch contractor, with qualified applicators. Submit valid registration under Submittals Article herein this Section prior to commencing Work.
2. Weed Control: Apply pre-plant weed control to the hydro-mulching areas, to the satisfaction and approval of the Landscape Architect, prior to hydro-mulching operations.
3. Install irrigation system, plant container stock, and perform fine grading and specified soil preparation operations, as required, to the satisfaction and approval of the Landscape Architect prior to commencing hydro-mulching operations.
 - a. Restrictions: Do not perform hydro-mulching operations when winds exceed fifteen (15) mph.
4. Hydro-mulching Equipment: Hydraulic equipment used for the application of the hydro-mulching slurry mixture shall be of the type as approved by the Landscape Architect.
 - a. Equipment shall have a built-in agitation system with an operating capacity sufficient to agitate, suspend, and homogeneously mix a slurry containing one-thousand-two-hundred (1,200) pounds of mulching material.
 - b. The slurry distribution lines and nozzles shall be large enough to prevent stoppage and shall provide even distribution of the slurry.
 - c. The slurry tank shall have a minimum capacity of one-thousand-five-hundred (1,500) gallons and shall be mounted on a traveling unit which will place the slurry tank and spray nozzles within sufficient proximity to the areas to be sprayed so as to provide uniform distribution without waste.
5. Pre-Application Cleaning: Prior to preparing hydro-mulching slurry, thoroughly clean and flush hydro-mulching storage tank, agitators, hoses, nozzles, and other equipment that will come into contact with slurry mixture free from residue from previous hydro-mulching applications. Verify with Owner's Representative a location where cleaning can be demonstrated, and perform flushing operations to the visual satisfaction of the Owner's Representative.
 - a. When different hydro-mulching seed mixtures are being applied for the project using the same hydro-mulching equipment, Contractor shall provide a thorough cleaning of the hydro-mulching equipment between applications to insure that no cross-contamination occurs between the mixture recipes.
6. Timing: Hydro-mulching operations shall be applied twenty-four (24) hours prior to or following a storm event. Verify application date(s) with the Landscape Architect prior to installation.
7. Hydro-mulching slurry mixes that have not been applied within thirty (30) minutes (forty-five (45) minutes maximum) after mixing shall be rejected.

- #### B. Mixing/Blending: In a clean hydro-seeding vessel, fill vessel with water to at least one-third (1/3) capacity (high enough to cover agitators) prior to adding any hydro-mulching ingredients. Continue to fill vessel with water and add all specified liquid-based ingredients while agitators are in motion. Once full with the accurate amount of ingredients in solution, add the specified

dry ingredients, and continue mixing/agitating until uniformly blended into a homogenous slurry suitable for hydraulic application. Continue to mix tank a minimum of ten (10) minutes prior to application. Note that correct mixing and proper application are key factors in obtaining satisfactory performance.

- C. Application: Apply slurry uniformly to hydro-mulched areas in a one- (1) step process. Slurry shall be applied by a qualified applicator, at a minimum rate of three-thousand (3,000) gallons/acre (higher rates may be required) evenly over the entire area to be treated. Caution should be taken to avoid creating puddles or runoff. The slurry must be sprayed from multiple directions and angles to ensure complete and proper coverage. Apply slurry in a sweeping motion so as to fall like rain, allowing the slurry to build upon itself on the ground until a coating is achieved that resembles a thick, blotter-like groundcover. Treated areas shall not be disturbed after application.
1. A Certificate of Compliance shall be furnished to the Landscape Architect, stating that the appropriate quantities, blending and application methods as specified herein have been properly followed.

D. Hydro-Mulching Mixtures:

1. Hydro-seed Mixture (for Wildflower and/or Slope Stabilization Applications; One (1)-Step Process):

<i>Material</i>	<i>Quantity</i>
Wildflower, and/or Slope Stabilization Seed Mix	Refer to requirements herein this Section for selected Wildflower, and/or Slope Stabilization Seed Mix and Application Rate(s).
Wood Fiber Mulch, pre-blended with Binder Additive / Soil and Mulch Tackifier	Per Selected Manufacturer's Recommended Application Rate, per slope condition.
Soil Stabilizing Emulsion Blend Additive	Per Manufacturer's Recommended Application Rate.
Hydromulching Slow-Release Fertilizer	Per selected Manufacturer's Recommended Application Rate.
Mycorrhizal Inoculum for Hydro-mulch-type Applications.	Per Selected Manufacturer's Recommended Application Rate
Water	As required to provide a homogenous slurry suitable for hydraulic application.

- E. Germination: Hydro-mulched areas shall be kept thoroughly moist to insure germination and growth of the sown plant material. Do not allow the plant material bed to dry out at any time. Irrigate hydro-mulched areas thoroughly immediately after the application, for a minimum of

twenty-one (21) to twenty-four (24) days after planting, or until the new growth of the plants is sufficiently well-established, as per the Landscape Architect's instructions.

- F. Protection of Hydro-Mulched Areas: Hydro-mulched areas shall be protected against foot or vehicular traffic and other use immediately after hydro-mulching installation is completed. Contractor shall install temporary warning signs, stakes, twine, flagging, etc., as required, around the perimeter of the areas that have been hydro-mulched to deter activity from disturbing the germination and growth of the hydro-mulched areas. Contractor shall remove protection as instructed by the Landscape Architect.
 - 1. Hydro-mulched areas that do not germinate satisfactorily, in the sole opinion of the Landscape Architect, shall be re-hydro-mulched at approximately fourteen (14)-day intervals, using the same specified materials and installation methodology until an overall acceptable stand of growing plant material is produced.

3.5 FIELD QUALITY CONTROL

- A. Tests: Samples of materials may be taken and tested for conformity to the Contract Specifications at any time by the Landscape Architect.
- B. Rejected Materials: Remove rejected materials immediately from the site at Contractor's expense. Pay cost of testing of materials not meeting the Contract Specifications.
- C. Intent: A consistent, thriving, and even cover of installed sod, or hydro-mulching materials is the intent of this Section.
- D. Satisfactory Installation Performance Standards:
 - 1. Turf Grass Sod: A consistent, thriving, and even cover of installed sod materials is the intent of this Section. At the end of the Landscape Establishment Period, a healthy, uniform, close stand of sodded turf grass has been established, free of weeds and surface irregularities, at 100% percent full coverage with no bare spots. Provide additional sod, as required, to meet design intent. Failure to comply with this requirement shall extend the Landscape Establishment Period accordingly until the requirement is met.
 - 2. Hydro-Mulching Applications: At the end of the Landscape Establishment Period, a healthy, uniform, close stand of hydro-mulched plant material has been established, free of weeds and surface irregularities, with coverage exceeding 95% percent coverage with no bare spots exceeding 6" inches. Failure to comply with this requirement shall extend the Landscape Establishment Period accordingly until satisfactory installation requirements are met.

3.6 CLEANING

- A. Hydro-mulching Overspray: Upon completion of hydro-mulching operations, clean off any slurry overspray from drainage devices, paving surfaces, plant materials, and site or architectural features. Contractor shall exercise caution in cleaning these areas so as not to wash away previously hydro-mulched areas (as applicable).
- B. Erosion: Immediately restore eroded areas. Keep adjacent paved surfaces cleaned of dirt, mud or stains and organic debris.

END OF SECTION

SECTION 329300 – EXTERIOR PLANTS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes materials, labor, apparatus, tools, equipment, temporary construction, transportation, and services necessary for and incidental to performing the proper completion of Work, as required to make a complete Exterior Landscape Planting installation, as shown in the Contract Drawings, and as specified herein this Section.
- B. Work under this Section consists of, but is not necessarily limited to, furnishing and installing the following:
 - 1. Trees.
 - 2. Shrubs.
 - 3. Ground Covers.
 - 4. Ornamental Grasses.
 - 5. Succulents
 - 6. Perennials.
- C. Related Sections: The following Sections contain requirements that relate to Work in this Section:
 - 1. Section 025639 – Temporary Tree and Plant Protection.
 - 2. Section 311000 – Site Clearing.
 - 3. Section 312219 – Landscape Grading.
 - 4. Section 328400 – Landscape Irrigation.
 - 5. Section 329113 – Soil Preparation.
 - 6. Section 329200 – Lawns and Grasses.
 - 7. Section 329400 – Landscape Planting Accessories.
 - 8. Section 329813 – Landscape Establishment Period.

1.2 DEFINITIONS AND APPLICABLE STANDARDS

- A. References:
 - 1. ASTM – American Society for Testing Materials.
 - 2. USDA – United States Department of Agriculture.
 - 3. ANSI – American National Standards Institute.
- B. Reference Standards:
 - 1. *An Annotated Checklist of Woody Ornamental Plants of California, Oregon, and Washington*, (Number 4091), McClintock and Leiser, Division of Agricultural Sciences, University of California, 1979.
 - 2. *American National Standard for Nursery Stock (ANSI Z60.1)*. American National Standards Institute, and American Association of Nurserymen, Latest edition,
 - 3. *American Joint Committee on Horticultural Nomenclature*, 1942 Edition of Standardized Plant Names.
 - 4. *Hortus III*, 1976 Edition, Liberty Hyde Bailey Hortorium, Cornell University.
 - 5. *The Hillier Gardener's Guide to Trees and Shrubs*, 4th Edition, 1978.

6. *Manual of Cultivated Conifers*, Den Ouden & Boon, 1978.
7. *Datascape Guide to Commercial Nomenclature*, American Nurserymen Publishing Co., Chicago, IL, 1994.
8. *American National Standard for Tree Care Operation, Tree, Shrub, and Other Woody Plant Maintenance (ANSI A300)*, American National Standards Institute, Latest Edition.

C. Definitions:

1. *Plant Material(s)* – Refers to living plant species, inclusive of trees, shrubs, groundcovers, vines, ornamental grasses, cacti/succulents, espaliers, annuals, perennials, etc., as indicated in the Contract Drawings.
2. *Planting Area (PA)* – As denoted on the Contract Drawings, shall refer to areas to be installed with Plant Material(s), or areas where existing vegetation shall be protected.
3. *Plant Height* – Measurement of main body height, not measurement to branch tip.
4. *Plant Spread* – Measurement of main body diameter, not measurement from branch tip to branch tip.
5. *Amended Planting Backfill Mixture* – Refer to Section 329113 – Soil Preparation.
6. *Balled and Burlapped Stock* – Healthy, vigorous exterior plants with firm, natural balls of earth in which they are grown, with ball size not less than diameter and depth recommended by ANSI Z60.1 for type and size of tree or shrub required; wrapped, tied, rigidly supported, and drum laced as recommended by ANSI Z60.1.
7. *Balled and Potted Stock* – Healthy, vigorous exterior plants dug with firm, natural balls of earth in which they are grown and placed, unbroken, in a container. Ball size is not less than diameter and depth recommended by ANSI Z60.1 for type and size of exterior plant required.
8. *Bare-Root Stock* – Healthy, vigorous exterior plants grown with a well-branched, fibrous-root system developed by transplanting or root pruning, with soil or growing medium removed, and with not less than minimum root spread according to ANSI Z60.1 for type and size of exterior plant required.
9. *Clump* – Where three or more young trees were planted in a group and have grown together as a single tree having three or more main stems or trunks.
10. *Container-Grown Stock* – Healthy, vigorous, well-rooted exterior plants grown in a container with well-established root system reaching sides of container and maintaining a firm ball when removed from container. Container shall be rigid enough to hold ball shape and protect root mass during shipping and be sized according to ANSI Z60.1 for type and size of exterior plant required.
11. *Fabric Bag-Grown Stock* – Healthy, vigorous, well-rooted exterior plants established and grown in-ground in a porous fabric bag with well-established root system reaching sides of fabric bag. Fabric bag size is not less than diameter, depth, and volume required by ANSI Z60.1 for type and size of exterior plant.
12. *Finish Grade* – Elevation of finished surface of planting soil.
13. *Manufactured Topsoil* – Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.
14. *Multi-Stem* – Where three (3) or more main stems arise from the ground from a single root crown or at a point right above the root crown.
15. *Sub-grade* – Surface or elevation of subsoil remaining after completing excavation, or top surface of a fill or backfill, before placing planting soil.
16. *Subsoil* – All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.

D. Measurements:

1. sq/ft or SF: Measurement, in square-foot.

2. O.C.: Measurement used for On-Center spacing.

1.3 SUBMITTALS

A. General:

1. Collect information into a single Submittal for each element of construction and type of product or equipment identified under this Section for review.
2. To expedite review, Submittal shall be organized and presented into specific sections or headings. Furnish neat, concise, legible, and clearly identifiable information, and sufficiently explicit detail, to enable proper evaluation for Contract compliance. Highlight catalog, product data, or brochures containing various products, sizes, and materials to show particular item submitted.
3. Submittal Format: As applicable, furnish Submittal as a single electronic digital PDF (Portable Document Format) file.

B. Digital Submittal Information:

1. Alphabetized List of Plant Material.
2. Planting Installation Schedule:
 - a. Provide anticipated site area(s) and dates of installation for each type of planting.
3. Qualification Data, for firms and persons specified in the "Quality Assurance and Control" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and address of architects and owners, and other information specified.
4. Meeting Notes from Pre-installation Conference.
5. Description of Plant Material, for each species indicated in the Contract Drawings, submitted in the following format:

(Provide Color Photograph of Plant Material here)	
(Note: Photograph shall include a person, tape measurer, or other scaled reference).	
<i>Project Name:</i>	
<i>Botanical Name:</i>	
<i>Common Name:</i>	
<i>Form (Multi, Standard, etc.):</i>	
<i>Container Size (as applicable):</i>	
<i>Overall Height (provide Apical Meristem Height for Palms):</i>	
<i>Spread:</i>	
<i>Caliper (as applicable):</i>	
<i>Quantity Required (per Contract Drawings):</i>	
<i>Quantity Available (at supplying Nursery):</i>	
<i>Supplying Nursery Name:</i>	
<i>Contact Name at Nursery:</i>	
<i>Nursery Address:</i>	
<i>Nursery Phone Number:</i>	
<i>Date of Nursery Photo:</i>	
<i>Comments/Remarks:</i>	

6. The Alphabetized List of Plant Material and Description of Plant Material shall not be construed as to acceptance of the Plant Material. All Plant Material shall be subject to review and approval by the Landscape Architect upon delivery to the Project Site.
- C. Submittals under this Article will be rejected without the benefit of review by the Landscape Architect if they are difficult to read due to insufficient scale, poor image quality, or poor drafting quality; or if the required information is missing or not presented in the format as requested.

- D. No Work shall proceed under this Section until Submittal requirements indicated herein have been reviewed accordingly by the Landscape Architect.

1.4 QUALITY ASSURANCE AND CONTROL

- A. Installer Qualifications:
 - 1. Requirement: Valid California C-27 (Landscaping Contractor) License.
 - 2. Engage an experienced Installer who has demonstrated completed landscaping work similar in material, design, and extent to that indicated for this Project and with a record of successful landscape establishment.
 - 3. Installer's Field Supervision: Installer shall maintain an experienced full-time supervisor on the Project site during times that landscaping installations under this Section are in progress.
- B. Plant Material: Provide quality, size, genus, species, and variety of Plant Material indicated, complying with applicable requirements of ANSI Z60.1 "American Standard for Nursery Stock."
 - 1. Selection of Plant Material purchased under allowances will be made by the Owner, who has the option to tag Plant Material stock at their place of growth before they are prepared for transplanting.
 - 2. At least one (1) plant of each Plant Material species delivered to the Project Site shall have an identification tag from supplying nursery showing botanical and common name of the plant as identified in the Contract Drawings. Landscape Architect shall be provided the opportunity for an on-site debriefing by the Contractor that identifies the size and specific type of Plant Material upon delivery.
 - 3. Incorrect Planting Materials:
 - a. Replace, at no cost to Owner, Plant Material that is revealed during the course of the Contract as to being untrue to the species indicated in the Contract Drawings and reviewed accordingly under this Section.
 - b. Provide replacements equal to the size and quality to match the planted materials at the time the untrue species is discovered.
 - 4. Replacement of Plant Material: Refer to the Guarantee Article indicated herein this Section.
- C. Observation: Landscape Architect may observe Plant Materials at their place of growth (nursery), at the site before or after planting, or both, for compliance with requirements for genus, species, variety, size and quality. Landscape Architect also retains right to observe Plant Material further for size and condition of root balls, trunks, branches, and crowns; insects; pests; disease; weeds; injuries, and latent defects. Landscape Architect reserves the right to reject unsatisfactory and/or defective Plant Material at any time during progress of Work. Contractor shall remove rejected Plant Material immediately from Project site.
- D. Regulatory Requirements:
 - 1. Contractor shall meet the requirements of applicable laws, codes, and regulations as required by the authorities having jurisdiction over the Work.
 - 2. Provide for inspections and permits by Federal, State, and Local authorities in furnishing, transporting, and installing materials.
- E. Permits, Fees, Bonds, and Inspections: Contractor shall arrange and pay for permits, fees, bonds, and inspections necessary to perform and complete Work under this Section.

- F. Plant Material Review and Selection (Tagging):
1. At the discretion of the Landscape Architect, Plant Material will be subject to review, photographed, and selected/tagged by the Landscape Architect at the nursery, or other place of growth, prior to delivery to the Project Site. Contractor shall verify with the Landscape Architect if tagging operations are required.
 2. Selecting/Tagging of Plant Materials at the nursery or place of growth does not cancel the right of the Landscape Architect to reject Plant Materials at the Project Site, if damaged or unacceptable conditions are found that were not detected at the nursery, place of growth, or in the submitted photographs.
- G. Plant Material Delivery: Plant Material shall be delivered with original Plant Material tagging materials set in place, as selected and marked by the Landscape Architect at the nursery or place of growth. Contractor shall notify Landscape Architect upon deliver of Plant Material for review of stock and tagging materials. Plant Materials delivered without original tagging materials, or with broken, damaged, or altered tagging materials, shall be subject to rejection by the Landscape Architect. Rejected Plant Material shall be removed immediately.
- H. Pre-installation Conference: Conduct conference at Project Site to comply with requirements of Division 1 Section "Project Meetings".
- I. Protection of Existing Plant Material:
1. Refer to Requirements specified in Section 025639 – Temporary Tree and Plant Protection.
 2. It is the intent of the Contract Documents that certain existing Plant Materials shall be retained. Prior to the removal of any Plant Materials, the Contractor shall confer with the Landscape Architect to determine which Plant Materials are to remain.
 3. All existing Plant Materials which are to remain in the project shall be tagged and identified by the Contractor prior to start of Work.
 4. Contractor shall be responsible for Plant Materials that are designated to remain. Damage to any Plant Materials which results in death or permanent disfiguration of said Materials shall result in compensation outlined in Section 025639 – Temporary Tree and Plant Protection. The Landscape Architect shall be the sole judge of the condition of the Plant Materials.
 5. Existing Plant Materials designated to remain shall be protected at all times from damage by construction activity (tools, materials, equipment, personnel, etc.). Damage by the Contractor to existing Plant Materials shall be repaired at the Contractor's expense to the satisfaction of the Owner, as directed by the Landscape Architect.
 6. Contractor shall insure that no foreign material and/or liquid, such as paint, concrete, cement, oil, turpentine, acid or the like, be deposited or allowed to be deposited on soil within the drip line (the outside edge of the foliage overhang) of any Plant Material. Do not store construction materials, debris, or excavated material within drip line of existing Plant Material. Should any such poisoning of the soil occur, the Contractor shall thoroughly remove said soil as directed by the Landscape Architect and replace with acceptable soil at no additional cost to the Owner.
 7. Excavation adjacent to existing Plant Materials: Where it is necessary to excavate in close proximity to the drip lines of existing Plant Materials, all possible caution shall be exercised to avoid injury to roots and trunk. Excavation close to Plant Materials shall be done by hand, with narrow-tine spading forks or other approved tools to comb soil to expose roots. Tunnel under roots two-inches (2") and larger in diameter. Cutting of roots two-inches (2") and larger shall be only on the approval of the City's appointed Arborist.
 8. Replacement of Damaged Plant Material: Replace existing Plant Material to remain as required, hat are damaged by Contractor during construction with accepted Plant Material

of the same species, size, and quantity as those damaged, at no additional cost to Owner. Owner shall be the sole judge as to the extent of the damage and the value of said damaged Plant Material.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. General: Do not prune Plant Material before delivery, except as approved by the Landscape Architect. Protect bark, branches, and root systems from sun scald, drying, sweating, whipping, and other handling and tying damage. Do not bend or bind-tie Plant Material in such a manner as to destroy natural shape.
1. Immediately after digging field-grown Plant Materials, pack root systems in wet straw, hay, burlap, or other suitable material to keep root system moist until final planting installation.
 2. Deliver freshly dug field-grown Plant Materials with firm, natural balls of earth of sufficient depth to include fibrous and feeding roots, meeting or exceeding requirements of ANSI Z60.1 for root ball diameter.
- B. Handling Plant Materials:
1. Handle balled and burlap Plant Material stock by the root ball.
 2. Handle container-grown Plant Materials only by their containers.
 3. DO NOT handle Plant Materials by their trunks or stems.
 4. DO NOT drop any Plant Materials.
 5. DO NOT bind or handle Plant Materials with wire or rope.
 6. Pad trunk and branches of Plant Materials whenever using hoisting cables, chains, or straps.
 7. Should the Contractor engage in handling any Plant Material(s) by any unacceptable method(s), the Landscape Architect shall reserve the right to reject any of the mishandled Plant Material(s). The Contractor shall replace rejected Plant Material(s) with approved Plant Material(s), at no additional cost to the Owner.
- C. Delivery: Provide protective covering during delivery. Deliver Plant Material only after preparations for planting have been completed and install immediately. If planting is delayed more than six (6) hours after delivery, set Plant Materials in shade, protect from weather and mechanical damage, and keep roots moist. Anchor plants to prevent damage from winds.
1. Heel-in bare-root Plant Material stock. Soak roots in water for two (2) hours prior to planting.
 2. Set balled Plant Material stock on ground and cover ball with soil, peat moss, sawdust, or other acceptable material.
 3. DO NOT remove container-grown Plant Material stock from containers before time of planting.
 4. Water root systems of Plant Material stored on site with a fine-mist spray. Water as often as necessary to maintain root systems in a moist condition.

1.6 COORDINATION, SCHEDULING, AND OBSERVATIONS

- A. Acceptance: Do not install Plant Materials prior to acceptance of finish grades and installation of irrigation system.

- B. Utilities: Determine location of above grade and underground utilities and perform Work in a manner which will avoid damage to utilities. Hand excavate, as required. Maintain grade stakes until removal is mutually agreed upon by parties concerned.
- C. Excavation: When conditions detrimental to plant growth are encountered, such as rubble fill, adverse drainage conditions, or obstructions, cease planting operations and notify Landscape Architect for further direction.
- D. Construction Site Observations: Landscape Architect may observe installation Work herein this Section at Project Site for compliance with requirements for type, size, and quality. Landscape Architect retains right to observe installation of products and materials for defects and to reject unsatisfactory or defective product, material, or installation at any time during progress of Work. Contractor shall remove rejected Work immediately from Project site. Contractor shall request, in writing, at least one (1) week in advance of the time when mandatory site observation(s) by the Landscape Architect are required.

1.7 PROJECT SITE CONDITIONS

- A. General: Installation of Plant Materials shall be performed only during the time of day and during seasons when satisfactory results can be expected, unless authorized by the Landscape Architect.
- B. Climate Restrictions: Do not install Plant Materials during rainy or inclement weather.

1.8 SUBSTITUTIONS

- A. Consideration: Plant Materials to be considered equal to the Plant Materials indicated herein this Section shall be reviewed by the Landscape Architect. Plant Materials with equal performance characteristics may be considered, providing deviations in dimensional size, color, composition, operation, and/or other characteristics do not change the design concept, aesthetic appearance, or intended performance, as solely judged by the Landscape Architect. The burden of proof on product equality is on the Contractor.
 - 1. Substituted Plant Materials shall be true to species and variety and shall conform to measurements specified, except that plants larger than specified may be used if accepted. If larger Plant Materials are accepted, increase the ball of earth in proportion to the size of the plant, as required. Plant Materials overgrown for their container size will be rejected.
- B. Specific reference to Manufacturer's names and products specified herein are used as standards of quality. This implies no right to the Contractor to substitute other materials without prior written approval by the Landscape Architect for Work under this Section.
- C. Plant Materials substituted and installed by the Contractor, without prior written approval by the Landscape Architect, may be rejected. Contractor shall not be entitled to be compensated by the Owner where the Contractor has installed rejected substitutions without receiving prior written approval.
- D. Contract Price: Substituted Plant Materials under this Section shall not increase the Contract price.

1.9 WARRANTY

- A. General: The Warranty indicated herein in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract, and shall be in addition to, and run concurrent with, other guarantees or warranties made by the Contractor under requirements of the Contract Documents.
- B. Warranty: Contractor shall warrant living Plant Materials under this Section for a period of one (1) year after date of Substantial Completion. Warrant against defects including death and unsatisfactory growth, except for defects resulting from lack of adequate maintenance, neglect, or abuse by the Owner; abnormal weather conditions unusual for the Warranty Period; or incidents which are beyond the Contractor's control.
- C. Replacement of Plant Material:
 - 1. Replace Plant Materials exhibiting conditions which are determined to be unacceptable due to workmanship by the Contractor, at no cost to the Owner, per the direction of the Landscape Architect.
 - 2. Remove and replace dead or dying Plant Material immediately unless required to plant in the succeeding planting season.
 - 3. Contractor shall be held responsible for a maximum of two (2) replacement of each failed Plant Material after Final Acceptance during the Warranty Period.
 - a. Closely match replacements to adjacent specimens of the same species. Apply requirements of this Specification to replacements.

1.10 FINAL ACCEPTANCE AND LANDSCAPE ESTABLISHMENT PERIOD

- A. Refer to Section 329813 – Landscape Establishment Period.

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS FOR PLANT MATERIAL

- A. Immediately upon award of Contract for Work in this Section, Contractor shall locate and purchase or hold for purchase plant material as required.
 - 1. Contractor shall verify with Landscape Architect of Plant Material that has been nursery “contract grown” by the Owner for use of Work under this Contract.
 - 2. Contractor shall review the condition of the Plant Material with Landscape Architect at the nursery maintaining the Plant Material prior to delivery, and when delivered to the Project Site.
- B. Quality: Plant Materials shall have a growth habit typical for each variety and species indicated in the Plant List (as detailed on the Contract Drawings).
 - 1. All Plant Materials specified shall be superior/premium-grade nursery stock, full, densely foliated, symmetrical, with tightly knit branching, so trained or favored in development and appearance in form, number of branches, compactness and symmetry, healthy, and vigorous in growth, as reviewed and determined by the Landscape Architect.

2. Plant Materials shall be free from insect pests, eggs and larvae, plant diseases, sun scalds, fresh bark abrasions, excessive abrasions, windburn, salt burn, weeds, or other disfigurements or conditions, as reviewed and determined by the Landscape Architect.
 3. Plant Material shall be subject per the California State Department of Agriculture's Regulations for Nursery Inspections of Rules and Grading.
 4. Growing Conditions: Plant Materials shall be nursery-grown in accordance with good horticultural practices under climatic conditions similar to those of project unless otherwise specifically authorized.
- C. Container Stock (excluding annuals) shall be grown in boxes or containers in which delivered for at least one (1) growing season, but not over two (2) years. Plant Material grown in boxes or containers shall be cultivated during this time to permit full rooting within the specified box or container to bind the planting soil, but not so long as to create a "root-bound" condition.
1. Plant Material shall be completely free of circling, kinked or girdling trunk surface and center roots, and show no evidence of a pot-bound condition.
 2. No boxed nor container Plant Material shall be planted which have cracked or broken balls of earth when separated from their boxes or containers.
 3. No Plant Material shall be planted with damaged roots, broken root balls, or which are found to be "root-bound" when separated from their containers.
- D. Pruning:
1. Do not prune Plant Materials unless directed by the Landscape Architect.
 2. Pruning of Plant Material as grown at the nursery shall conform to ANSI A300 standards.
 3. Consult with Landscape Architect for pruning Plant Materials after delivery and installation.
- E. Measurements: Measure Plant Material according to ANSI Z60.1 with branches and trunks or canes in their normal position. Do not prune to obtain required sizes.
1. Take caliper measurement at a point on the trunk six-inches (6") above natural ground line for trees up to four-inches (4") in caliper (at a point twelve-inches (12") above the natural ground line for trees over four-inches (4") in caliper).
 - a. Measure foliage across mean foliage dimension when branches are in their normal upright position.
 - b. For trees to be supplied in "raised up" condition, foliage origin along main trunk shall be measured from soil line after installation.
 - c. Height and spread dimensions specified refer to main body of plant and not branch tip to tip. Properly trimmed plants shall measure the same in any direction. If a plant is unevenly grown, it shall be classified in the size category of the smallest dimension.
 2. Size Range: If a range of size is given, do not use Plant Materials less than the minimum size. The measurements specified are the minimum size acceptable and are the measurements after pruning, where pruning is required. Plant Materials that meet the measurements specified, but do not possess a normal balance between height and spread shall be rejected.
- F. Field Dug Stock: Prior to digging of field-grown Plant Materials, insure that excess loose fill resulting from cultivation around trunks/stems and over roots be removed down to natural finish grade at crown of Plant Materials. During digging, verify that size of tree spade or other equipment is adequate to encompass the actively growing root zone of all Plant Materials. Plant Materials which, after digging, show mostly large fleshy roots and few fibrous roots, will be rejected.

- G. Condition of Root Systems: Plant Materials must prove to be completely free of circling, kinked or girdling trunk surface and center roots and show no evidence of a root-bound condition. Upon inspection by Landscape Architect at the job site, if five-percent (5%) or more of the plants of each species are found to contain kinked, circling or girdling roots, all plants of that species shall be rejected.
- H. Unacceptable Trees: Trees that have damaged, broken, pruned, or crooked leaders will be rejected. Trees having a main leader shall not have been headed back. Trees with abrasions of the bark, sunscalds, disfiguring knots, or fresh cuts of limbs over 3/4 in. which have not completely callused will be rejected.

2.2 SHADE AND FLOWERING TREES

- A. Shade and Flowering Trees: Single-stem trees with straight trunk, well-balanced crown, and intact leader, of height and caliper indicated, conforming to ANSI Z60.1 for type of trees required, subject to review and acceptance by the Landscape Architect. Container-grown trees will be acceptable and shall be subject to meeting ANSI Z60.1 limitations for container stock.
 - 1. Branching Height: 1/2 of tree height, unless otherwise indicated on Contract Drawings.
- B. Small Trees: Small upright or spreading type, branched or pruned naturally according to species and type, and with relationship of caliper, height, and branching recommended by ANSI Z60.1, subject to review and acceptance by the Landscape Architect. Container-grown trees will be acceptable and shall be subject to meeting ANSI Z60.1 limitations for container stock.
 - 1. Form: As indicated on the Contract Drawings for individual selected species.

2.3 SHRUBS

- A. Form and Size: Shrubs with not less than the minimum number of canes required by and measured according to ANSI Z60.1 for type, shape, and height of Shrub, subject to review and acceptance by the Landscape Architect. Container-grown Shrubs will be acceptable in lieu of balled and burlapped.
 - 1. Container-grown Shrubs shall be subject to meeting ANSI Z60.1 limitations for container stock, and other requirements as indicated on the Contract Drawings.

2.4 BROADLEAF EVERGREENS

- A. Form and Size: Normal-quality, well-balanced, well-rooted , broadleaf evergreens, of type, height, spread, and shape required, subject to review and acceptance by the Landscape Architect.
 - 1. Container-grown broadleaf evergreens shall be subject to meeting ANSI Z60.1 limitations for container stock, and other requirements as indicated on the Contract Drawings.

2.5 GROUND COVERS

- A. Provide ground covers full, established, and well-rooted in removable flats, containers, or integral peat pots, and with not less than the minimum number and length of runners required by ANSI Z60.1 for the container size indicated, and other requirements as indicated on the Contract Drawings, subject to review and acceptance by the Landscape Architect.

2.6 SUCCULENTS

- A. Form and Size: Superior-quality, established, full, symmetrical, well-balanced, well-rooted, of type, height, spread, and shape required, subject to review and acceptance by the Landscape Architect.
 - 1. Container-grown stock shall be subject to meeting ANSI Z60.1 limitations for container stock.

2.7 ORNAMENTAL GRASSES

- A. Form and Size: Normal-quality, established, full, well-balanced, well-rooted, of type, height, spread, and shape required, subject to review and acceptance by the Landscape Architect.
 - 1. Container-grown stock shall be subject to meeting ANSI Z60.1 limitations for container stock.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. NO WORK UNDER THIS SECTION SHALL COMMENCE UNTIL SUBMITTALS UNDER THIS SECTION HAVE BEEN REVIEWED ACCORDINGLY BY THE LANDSCAPE ARCHITECT.
- B. Prior to commencing Work under this Section, Contractor shall examine previously installed Work from other trades and verify that such Work is complete and to the point where Work herein may commence properly. Do not proceed with Work until unsatisfactory conditions have been corrected.
- C. Installation practices of the Plant Materials shall be performed during those periods when weather and soil conditions are suitable and in accordance with locally accepted horticultural practices, as judged by the Landscape Architect.
 - 1. Soil moisture levels prior to planting shall be no less than seventy-five-percent (75%) of field capacity. The determination of adequate soil moisture for planting shall be in the sole judgment of the Landscape Architect, and their decision shall be final.
 - a. If the soil moisture level is found to be insufficient for planting installation, planting pits shall be filled with water and allowed to drain before commencing planting operations.
 - b. Any planting area that may become compacted in excess of eighty-five-percent (85%) relative compaction (due to construction operations or other activities during the Contract) shall be tilled and thoroughly cross-ripped to a minimum depth of nine-inches (9") to alleviate the condition, taking care to avoid all existing subsurface utilities, drainage, etc.
 - c. Do not commence planting installation prior to acceptance of Section 329113 – Soil Preparation.
- D. Contractor shall notify the Landscape Architect, in writing, on the anticipated commencement date and length of duration of the landscape installation.

- E. Preparation of Planting Installation: Lay out individual Plant Material locations and areas for multiple plantings. Stake locations, outline areas, and gain the Landscape Architect's acceptance prior to commencing physical planting installation.
- F. At the discretion of the Landscape Architect, Contractor shall make field adjustments to the planting layout, as required, per the direction of the Landscape Architect. Layout changes made accordingly shall be performed at no additional cost to the Owner.
- G. No more Plant Materials shall be distributed in the planting area on any day than can be installed and watered on that day. Plant Materials shall be planted and watered immediately after the removal of their containers, as applicable.
- H. Contractor shall protect existing and new improvements and systems installed prior to planting installation. Maintain protection in place until completion of Work and Landscape Establishment Period.
- I. Finish Grades for planting areas shall have been established (per Section 312219 – Landscape Grading) prior to Work under this Section. Verify that grades are within one-inch plus or minus (1"±) of the required finish grade, and that all proper soil amendments and fertilizers have been furnished and installed accordingly as specified (per Section 329113 – Soil Preparation).
 - 1. Maintain positive surface drainage of all planted areas throughout the duration of the Contract.
- J. Pre-Planting: Where Plant Materials are to be pre-planted to permit site improvements to be installed around them, Contractor shall be responsible for the accurate layout and placement of those Plant Materials, as measured to their centerlines. Confirm designated pre-planting operations with Landscape Architect prior to commencing Work. Contractor shall also be responsible for the protection of pre-planted Plant Materials while other Work is taking place around them. Provide regular irrigation, as necessary, prior to installation and functioning of irrigation systems (per Section 328400 – Landscape Irrigation).

3.2 EXCAVATION FOR PLANT MATERIAL

- A. General: Upon completion of applicable pre-planting soil preparation requirements indicated in Section 329113 – Soil Preparation, excavate planting hole(s) for Plant Material with scarified vertical sides, with the bottom of the excavated hole slightly raised and compacted at the center to assist drainage and to minimize settlement of the Plant Material. Excavate holes according to the spacing alignment (i.e. hedge spacing, grid spacing, triangular spacing, etc.) and the on-center (O.C.) spacing intervals (i.e. 24" O.C. etc.) indicated on the Contract Drawings. Loosen any hard subsoil in the bottom of the excavation where evident, and remove all rocks greater than one-half-inch (1/2") in diameter, trash, debris, etc. Retain the excavated soil for use as part of the Amended Planting Backfill Mixture (as indicated in Section 329113 – Soil Preparation).
 - 1. Container-Grown Plant Material:
 - a. Excavate the planting hole to the width and depth indicated on the Contract Drawings. Depth of the planting hole includes the depth indicated for the compacted setting layer at the bottom of the excavation, where the top of the plant's root collar is one-inch (1") higher than finished grade or as further directed by the Landscape Architect:
 - b. Compacted Setting Layer: Provide a crown of a minimum six-inch (6") depth of native planting soil.

- c. Where Tree Root Aeration Unit(s) are indicated, (per Section 329400 – Landscape Planting Accessories), provide further excavation in the planting hole by auger to the required minimum depth for installation of the Tree Root Aeration Unit assembly.
- 2. Field Grown/Specimen Trees:
 - a. Excavate the planting hole to the width and depth indicated on the Contract Drawings. Depth of the planting hole includes the depth indicated for the compacted setting layer at the bottom of the excavation, where the top of the plant's root collar is one-inch (1") higher than finished grade or as further directed by the Landscape Architect:
 - b. Compacted Setting Layer: Provide a crown of a minimum six-inch (6") depth of native planting soil.
 - c. Where Tree Root Aeration Unit(s) are indicated (per Section 329400 – Landscape Planting Accessories), provide further excavation in the planting hole by auger to the required minimum depth for installation of the Tree Root Aeration Unit assembly.
 - d. In areas where special subsurface drainage for planting is indicated, tie drainage pipes, as required, into the drain system.
 - e. Excavate planting hole at 3x the diameter of the rootball.
- B. Obstructions: Notify the Landscape Architect immediately if unexpected rock, debris, contaminants, obstructions, or other items that are detrimental to the healthy sustained growth of Plant Material is encountered in the excavation process.
 - 1. Hardpan Layer: If encountered, drill six-inch (6") diameter holes into free-draining strata or to a depth of ten-feet (10'), whichever is less, and backfill with free-draining material.
- C. Drainage: Notify the Landscape Architect if subsoil conditions show evidence of unexpected water seepage or retention in planting holes.

3.3 PLANTING PLANT MATERIAL

- A. Container-Grown Plant Material: Set Container-Grown Plant Material plumb and in the center of the excavated planting hole, with top of the root ball raised above adjacent finish grade as indicated. Set Container-Grown Plant Material in the proper spacing and/or alignment(s) as indicated on the Contract Documents, or as further directed at the Project Site by the Landscape Architect.
 - 1. For plastic container stock (4" pot, 1-gallon, 5-gallon, 15-gallon, etc.), carefully remove the plant container prior to setting the plant in the excavated hole so as not to damage root ball. Tip container to horizontal position and shake carefully to remove Plant Material. Support root ball during installation to prevent cracking or shedding of soil.
 - 2. Set the Plant Material stock on the specified setting layer of compacted native soil, with the top of root ball set one-inch (1") above the finished grade to allow for settlement of the Plant Material within the excavated planting hole. Provide the orientation of the Plant Material that is confirmed and accepted by the Landscape Architect. During the process of determining an acceptable orientation of the plant material, carefully handle the Plant Material by its container; avoid handling the Plant Material by its trunk.
 - a. Plant Material with a damaged root ball upon removal of the container, or if the root ball fails to thoroughly hold the soil as it is removed from the container, or if the plant is mishandled or damaged during planting operations, shall be rejected.

3. For wooden boxed container stock, carefully set whole boxed container of the Plant Material stock on the specified setting layer of compacted native soil, with the top of root ball set one-inch (1") above the finished grade to allow for settlement of the Plant Material within the excavated planting hole. Provide the orientation of the Plant Material that is confirmed and accepted by the Landscape Architect. During the process of determining an acceptable orientation, carefully handle the Plant Material by its container; avoid handling the Plant Material by its trunk or branches. Once orientation is accepted, remove the steel strapping and the sides of the wooden container so as not to damage the root ball or any part of the plant. Do not remove the bottom of the wooden container. Discard sides.
 - a. Plant Material with a damaged root ball upon removal of the container, or if the root ball fails to thoroughly hold the soil as it is removed from the container, or if the plant is mishandled or damaged during planting operations, shall be rejected.
4. Scarification: After removing container from plant, scarify the sides of the root ball to a depth of one-inch (1") at four (4) to six (6) equally-spaced locations around the perimeter of the root ball or at twelve-inch (12") intervals on sides of wooden boxed container stock. Cut and remove circling roots over 3/8 in. diameter.
5. Prepare the Amended Planting Backfill Mixture: Amend each cubic yard (cu/yd) of native soil excavated from the planting hole by incorporating and thoroughly mixing/blending the following:
 - a. ¼ yard of Bulk Composted Organic Soil Amendment Material (per Section 329113 – Soil Preparation).
 - b. ½ pound of Granular Soil Conditioning Material & Fertilizer (per Section 329113 – Soil Preparation).
 - c. Add Mycorrhizal Inoculum to the excavated native soil, (per Section 329113 – Soil Preparation), per the Manufacturer's latest printed instructions.
 - 1) Pending the results of the Agronomic Soil Fertility Report, the Amended Planting Backfill Mixture may be modified accordingly to include additional soil amendments or fertilizers (gypsum, iron, potash, etc.) or the ratios as indicated in the Mixture indicated above may be modified.
 - a) The cost of providing modifications to the Amended Planting Soil Backfill Mixture (as recommended through the Agronomic Soil Fertility Report and as directed by the Landscape Architect) shall be borne by the Contractor.
6. Install the Tree Root Aeration Unit(s) prior to backfilling operations, as required (per Section 329400 – Landscape Planting Accessories).
7. In areas where indicated on the Contract Drawings, install the Deep Watering Bubblers as part of the irrigation system.
8. Backfilling the excavated planting hole:
 - a. Place the Amended Planting Backfill Mixture around the root ball in the excavated planting hole. Place the Mixture in six-inch (6") lifts, tamping each lift accordingly to settle the Mixture and eliminate voids and air pockets. Foot tamp the backfill, as required.
 - b. Maintain the plant plumb while working the Mixture around the root ball. When the planting hole is approximately half-backfilled, water thoroughly before placing the remainder of the Mixture.
 - c. Add the Fertilizer Tablets and other amendments (per Section 329113 – Soil Preparation) as required, at the prescribed application rates indicated herein this Article or if not indicated, per the Manufacturer's instructions.
 - d. Place the final layers of the Mixture, tamping accordingly, to the top of the root ball. Do not place the Mixture on top of the root ball.

- e. Dish and tamp top of the Mixture to form a three-inch (3”) deep watering basin centered on the Plant Material’s trunk to the rim width of the planting hole. Do not cover the top of the root ball with the backfill mixture.
 - f. Thoroughly mix together water and Plant Vitamin/Hormone Stimulant in application ratio as recommended by Stimulant Manufacture (per Section 329400 – Landscape Planting Accessories). Apply liquid matrix in sufficient quantity to thoroughly saturate the basin to settle the Mixture, and to eliminate voids and air pockets. Should any portions of the root mass be exposed, add additional Mixture as needed to thoroughly cover the root mass.
9. Mulching: Apply mulch in watering basins as indicated on the Contract Drawings. Refer to Section 329400 – Landscape Planting Accessories for type and requirements.
- B. Field-Dug Specimen Plant Material: Set Field-Dug Specimen Plant Material plumb and in the center of the excavated planting hole, with top of the root ball raised above adjacent finish grades as indicated. Set Field-Dug Specimen Plant Material in the proper spacing and/or alignment(s) as indicated on the Contract Documents, or as further directed at the Project Site by the Landscape Architect.
- 1. After excavation of the planting hole, provide subsurface piping drainage and/or Tree Root Aeration Units as indicated on the Contract Drawings. Tie subsurface drainage into storm drainage system, where required. Install the Tree Root Aeration Units, where required.
 - 2. Carefully set the Field-Dug Specimen Plant Material stock on the specified setting layer of compacted native soil, with the top of root ball set one-inch (1”) above the finished grade to allow for settlement of the Plant Material within the excavated planting hole. Provide the orientation of the Plant Material that is confirmed and accepted by the Landscape Architect. During the process of determining an acceptable orientation of the Plant Material, carefully handle the Plant Material by a cradle around its root ball mass or by its planting container; avoid handling the Plant Material by its trunk.
 - a. For Field-Dug Specimen Plant Material delivered in a wooden boxed container, do not remove sides or bottom of the container until the Specimen’s orientation is accepted by the Landscape Architect. Once orientation is accepted, remove steel strapping and the sides of the wooden container so as not to damage the root ball or any part of the Specimen. Do not remove the bottom of the wooden container. Discard sides.
 - 1) Any Specimen with a damaged root ball upon removal of the container, or if the root ball fails to thoroughly hold the soil as it is removed from the container, or if the plant is mishandled or damaged during planting operations, shall be rejected.
 - 3. Scarification: After removing container from plant, scarify the sides of the root ball to a depth of one-inch (1”) at four (4) to six (6) equally-spaced locations around the perimeter of the root ball or at twelve-inch (12”) intervals on sides of wooden boxed container stock. Cut and remove circling roots over 3/8 in. diameter.
 - 4. Prepare the Amended Planting Backfill Mixture: Amend each cubic yard (cu/yd) of native soil excavated from the planting hole by incorporating and thoroughly mixing and blending in the following:
 - a. ¼ yard of Bulk Composted Organic Soil Amendment Material (per Section 329113 – Soil Preparation).
 - b. ½ pound of Granular Soil Conditioning Material & Fertilizer (per Section 329113 – Soil Preparation).
 - c. Add Mycorrhizal Inoculum to the excavated native soil, (per Section 329113 – Soil Preparation), per the Manufacturer’s latest printed instructions.

- 1) Pending the results of the Agronomic Soil Fertility Report, the Amended Planting Backfill Mixture may be modified accordingly to include additional soil amendments or fertilizers (gypsum, iron, potash, etc.) or the ratios as indicated in the Mixture indicated above may be modified.
 - a) The cost of providing modifications to the Amended Planting Soil Backfill Mixture (as recommended through the Agronomic Soil Fertility Report and as directed by the Landscape Architect) shall be borne by the Contractor.
 5. In areas indicated on the Contract Drawings, install the Deep Watering Bubblers as part of the irrigation system (per Section 328400 – Landscape Irrigation).
 6. Install the Tree Root Aeration Unit(s) prior to backfilling operations, as required (per Section 329400 – Landscape Planting Accessories).
 7. Backfilling the excavated planting hole:
 - a. Place the Amended Planting Backfill Mixture around the root ball in the excavated planting hole. Place the Mixture in six-inch (6”) lifts, tamping each lift accordingly to settle the Mixture and eliminate voids and air pockets.
 - b. Maintain the plant plumb while working the Mixture around the root ball. When the planting hole is approximately half-backfilled, water thoroughly before placing the remainder of the Mixture.
 - c. Add the Fertilizer Tablets and other amendments, as required, at the prescribed application rates indicated herein this Article or if not indicated, per the Manufacturer’s instructions.
 - d. Place the final layers of the Mixture, tamping accordingly, to the top of the root ball. Do not place the Mixture on top of the root ball.
 - e. Dish and tamp top of the Mixture to form a three-inch (3”) deep watering basin centered on the Plant Material’s trunk to the rim width of the planting hole.. Do not cover the top of the root ball with the backfill mixture.
 - f. Thoroughly mix together water and Plant Vitamin/Hormone Stimulant in application ratio as recommended by Stimulant Manufacture (per Section 329400 – Landscape Planting Accessories). Apply liquid matrix in sufficient quantity to thoroughly saturate the basin to settle the Mixture, and to eliminate voids and air pockets. Should any portions of the root mass be exposed, add additional Mixture as needed to thoroughly cover the root mass.
 8. Mulching: Apply mulch in watering basins as indicated on the Contract Drawings. Refer to Section 329400 – Landscape Planting Accessories for type and requirements.
- C. Plant Settling and Orientation: Plant Material that has settled deeper than the surrounding grade shall be excavated and raised to the correct level, to the satisfaction of the Landscape Architect. Plant Material installed without direction and/or approval as to its proper orientation shall be subject to excavation and acceptable orientation, to the satisfaction of the Landscape Architect.
- D. Fertilizer Tablet(s) Application Rate: Refer to Section 329113 – Soil Preparation.

3.4 PLANTING GROUND COVERS

- A. General: Upon completion of applicable pre-planting soil preparation requirements indicated in Section 329113 – Soil Preparation, excavate planting hole(s) for Ground Covers and/or Vine Plant Material with scarified vertical sides, with the bottom of the excavated hole slightly raised and compacted at the center to assist drainage and to minimize settlement of the Plant Material. Refer to requirements indicated in Part III of this Section for Excavation.

1. Plant Settling: Plant Material that has settled deeper than the surrounding grade shall be raised to the correct level.
- B. Excavate holes according to the spacing alignment (i.e. triangular spacing, etc.) and the on-center (O.C.) spacing intervals (i.e. 24" O.C. etc.) indicated on the Contract Drawings. Loosen any hard subsoil in the bottom of the excavation where evident, and remove all rocks greater than one-half-inch (1/2") in diameter, trash, debris, etc.
- C. Obstructions: Notify the Landscape Architect immediately if unexpected rock, debris, contaminants, obstructions, or other items that are detrimental to the healthy sustained growth of Plant Material is encountered in the excavation process.
- D. Ground Covers: Follow applicable planting requirements per Articles 3.02 and 3.03 indicated herein this Section.
 1. Carefully set root mass into excavated hole, spreading roots, and backfill with planting soil.
 2. Add Fertilizer Tablets and other amendments, as required, within backfill.
 3. Work soil around roots to eliminate air pockets, and provide a slight saucer indentation around plants to retain surface water.
 4. Water thoroughly after planting, taking care not to cover plant crowns with wet soil.

3.5 PRUNING PLANT MATERIAL

- A. At no time shall Plant Material be pruned, trimmed, thinned, shaped, or topped prior to delivery. Pruning, trimming, thinning, shaping, or topping of Plant Material shall be only conducted on the Project Site, and under the presence and direction of the Landscape Architect or approved Certified Arborist. Plant Material that has been pruned and delivered to the Project Site without prior approval by the Landscape Architect or an approved Certified Arborist will be rejected.
- B. When directed by the Landscape Architect or an approved Certified Arborist, Contractor shall prune, thin, and shape plant material, according to standard horticultural practice, to preserve the natural character of the Plant Material.
 1. Pruning and remedial work shall be done per ANSI A300.
 2. Prune trees to retain required height and spread. Do not cut tree leaders; remove only injured or dead branches from trees.
 3. Prune shrubs accordingly to retain natural character.
 4. Provide pruning, cabling and bracing, irrigation, pest and disease control and other remedial treatments as recommended to assure the long-term health of the trees and existing vegetation, and the safety of persons and property.
 5. Newly planted trees shall be pruned near the termination of the Landscape Establishment Period, per the direction of the Landscape Architect, as required.

3.6 CLEAN UP AND PROTECTION

- A. During installation operations, keep Work area in an orderly and safe condition. Contractor shall remove trash caused from his Work on a weekly basis throughout the duration of the Work.
- B. Protect landscaping from damage due to landscape operations, operations by other Contractors and trades, and trespassers. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged landscape work as directed.

- C. Upon completion of his Work under this Section, the Contractor shall remove rubbish, waste, debris, excess construction materials, surplus soil and other items resulting from construction operations and legally dispose of it off the Owner's property.
- D. Scars, ruts, or other marks in the ground caused by the Contractor's Work shall be repaired.
- E. Remove equipment and implements of service, and leave the entire Project Site area in a neat, clean, and Owner-approved condition.
- F. Labels: Remove all nursery-type labels, flags, and or identification markings from Plant Materials.

3.7 FINAL REVIEW

- A. Final Review under this Section shall be performed upon completion of the Landscape Establishment Period. Refer to Section 329813 – Landscape Establishment Period, for requirements.

END OF SECTION

SECTION 329400 – LANDSCAPE PLANTING ACCESSORIES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes materials, labor, apparatus, tools, equipment, temporary construction, transportation, and services necessary for and incidental to performing the proper completion of Work, as required to make a complete exterior Landscape Planting Accessories installation, as shown in the Contract Drawings, and as specified herein this Section.
- B. Work under this Section consists of, but is not necessarily limited to, furnishing and installing the following:
 - 1. Mulches (wood products).
 - 2. Tree Root Aeration Units (a.k.a. Tree Chimney's).
 - 3. Stakes and Guys.
 - 4. Erosion Control Materials.
 - 5. Landscape Edgings (Headers).
 - 6. Weed Control Barrier / Geotextile Filter Fabric.
 - 7. Miscellaneous Materials (Herbicides, Vitamin Stimulant/Root Hormone, etc.).
- C. Related Sections: The following Sections contain requirements that relate to Work in this Section:
 - 1. Section 312219 – Landscape Grading.
 - 2. Section 321513 – Stabilized Decomposed Granite Paving.
 - 3. Section 321313 – Concrete Paving.
 - 4. Section 328400 – Landscape Irrigation
 - 5. Section 329113 – Soil Preparation.
 - 6. Section 329200 – Lawns & Grasses.
 - 7. Section 329300 – Exterior Plants.
 - 8. Section 329813 – Landscape Establishment Period.

1.2 DEFINITIONS AND APPLICABLE STANDARDS

- A. References:
 - 1. ASTM – American Society for Testing and Materials.
 - 2. ANSI – American National Standards Institute.
- B. Definitions: (Not Used).
- C. Measurements:
 - 1. PSI: Measurement, in pounds per square inch.
 - 2. CU/FT: Measurement, in cubic-foot.
 - 3. PPM: Measurement, in parts per million.

1.3 SUBMITTALS

- A. General:
1. Collect information into a single Submittal for each element of construction and type of product or equipment identified under this Section for review.
 2. To expedite review, Submittal shall be organized and presented into specific sections or headings. Furnish neat, concise, legible, and clearly identifiable information, and sufficiently explicit detail, to enable proper evaluation for Contract compliance. Highlight catalog, product data, or brochures containing various products, sizes, and materials to show particular item submitted.
 3. Submittal Format: As applicable, furnish Submittal as a single electronic digital PDF (Portable Document Format) file.
- B. Digital Submittal Information:
1. Product/Material Data. Submit available product/material literature supplied by manufacturer's, indicating that their products comply with specified requirements. Provide manufacturing source (name, address, and telephone number), and distributor source (name, address, and telephone number) for each type of product/material.
 2. Qualification Data: Submit names for firms and persons specified in the "Quality Assurance and Control" Article to demonstrate their capabilities and experience on similar Landscape Planting Accessories installations.
- C. Material Samples: Submit four (4) sets of physical Material Samples for review of kind, color, pattern, size, and texture for a check of these characteristics with other elements, and for a comparison of these characteristics between Submittal and actual component as delivered and installed. Include the full range of exposed color and texture expected in the completed Work. Provide Material Samples bound and individually wrapped in re-sealable labeled 1-gallon plastic bags (as applicable):
1. 0.50 cubic foot of Landscape Mulch Material (Shredded Wood Mulch).
 2. One (1) two-foot (2'-0") long section of Tree Root Aeration Unit assembly.
 3. One (1) set of Tree Tying/Staking Materials for each type used, as applicable.
 4. One (1) set of Tree Guying Materials for each type used, as applicable.
 5. One (1) two-foot (2'-0") square sample of Erosion Control Material for each type used, as applicable.
 6. One (1) two-foot (2'-0") sample of Landscape Edging Materials and Accessories (stake, etc), to verify gauge, size, and color selected, as applicable.
 7. One (1) two-foot (2'-0") square sample of Weed Control Barrier / Geotextile Filter Fabric for each type used, as applicable.
- D. Scaled Shop Drawings: Not Required.
- E. Field-Constructed Mock-ups: Not Required.
- F. Submittals under this Article will be rejected and returned without the benefit of review by the Landscape Architect if they are difficult to read due to insufficient scale, poor image quality, or poor drafting quality; or if all of the required information is missing or not presented in the format as requested. Partial Submittals will not be accepted.
- G. No Work shall proceed under this Section until Submittal requirements indicated herein have been reviewed accordingly by the Landscape Architect.

1.4 QUALITY ASSURANCE AND CONTROL

- A. Installer Qualifications:
 - 1. Requirement: Valid California C-27 (Landscaping Contractor) License.
 - 2. Engage an experienced Installer who has completed Landscape Planting Accessories work similar in material, design, and extent to that indicated for this Project and with a record of successful installation.
 - 3. Installer's Field Supervision: Installer shall maintain an experienced full-time supervisor on the Project site during times that installations under this Section are in progress.
- B. Observation: Landscape Architect may observe installation of Landscape Planting Accessories at Project Site for compliance with requirements for type, size, and quality. Landscape Architect retains right to observe Landscape Planting Accessories for defects and to reject unsatisfactory or defective material at any time during progress of Work. Contractor shall remove rejected Accessories immediately from Project site.
- C. Manufacturer's Directions: Follow Manufacturer's directions and drawings in cases where the Manufacturers of articles used in this Section furnish directions covering points not shown in the Contract Drawings and Contract Specifications.
- D. Permits, Fees, Bonds, and Inspections: Contractor shall arrange and pay for permits, fees, bonds, testing services, and inspections necessary to perform and complete Work under this Section.
- E. Single-Source Responsibility: Obtain each color, type, and variety of products/materials from a single source with resources to provide products/materials of consistent quality in appearance and physical properties without delaying Work.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Provide new, unused materials indicated under this Section. Store and secure properly to prevent theft or damage. Deliver and store perishable material in original, unopened packaging. It is the responsibility of the Contractor to install "factory condition" Units.
- B. Damaged Materials: Be responsible for all damage or disfiguration of Work until Final Acceptance. Remove off site and replace at no additional cost to Owner all damaged or rejected materials.
- C. Deliver materials so as to not delay Work, and install only after preparations for installation have been completed.

1.6 COORDINATION, SCHEDULING, AND OBSERVATIONS

- A. Utilities: Determine location of above grade and underground utilities and perform Work in a manner which will avoid damage to utilities. Hand excavate, as required. Maintain grade stakes until removal is mutually agreed upon by parties concerned.
- B. Excavation: When conditions detrimental to installing Landscape Planting Accessories are encountered, such as rubble fill, adverse drainage conditions, or obstructions, cease installation operations and notify Landscape Architect for further direction.

- C. Field Measurements: Contractor shall take field measurements as required. Report major discrepancies between the Contract Drawings and field dimensions to the Landscape Architect prior to commencing Work.
- D. Installation: Perform installation of Landscape Planting Accessories only when weather and soil conditions are suitable in accordance with locally accepted practices.
- E. Construction Site Observations: Contractor shall request, in writing, at least one (1) week in advance of the time when mandatory site observation(s) by the Landscape Architect are required.

1.7 SUBSTITUTIONS

- A. Consideration: Materials to be considered equal to the Materials indicated herein this Section shall be reviewed by the Landscape Architect. Materials with equal performance characteristics produced by other Manufacturer's and/or Distributors may be considered, providing deviations in dimensional size, color, composition, operation, and/or other characteristics do not change the design concept, aesthetic appearance, nor intended performance, as solely judged by the Landscape Architect. The burden of proof on product equality is on the Contractor.
- B. Specific reference to Manufacturer's names and products specified herein are used as standards of quality. This implies no right to the Contractor to substitute other materials without prior written approval by the Landscape Architect for Work under this Section.
- C. Materials substituted and installed by the Contractor, without prior written approval by the Landscape Architect, may be rejected. Contractor shall not be entitled to be compensated by the Owner where the Contractor has installed rejected substitutions without receiving prior written approval.
- D. Contract Price: Substituted Materials under this Section shall not increase the Contract price.

1.8 LANDSCAPE ESTABLISHMENT PERIOD

- A. Refer to Section 329813 – Landscape Establishment Period, for requirements under this Article.
 - 1. During the duration of the Landscape Establishment Period, continuously maintain Landscape Planting Accessories by tightening, holding plumb, and/or repairing Staking and/or Guying supports, providing adequate depths and coverage requirements of Landscape Mulching Materials, monitoring drainage within Tree Root Aeration Units, hold Edging Materials true and in proper alignments, and other requirements, as required, to establish healthy, viable landscape planting materials until Final Acceptance of Work is granted.

PART 2 - PRODUCTS

2.1 LANDSCAPE MULCH MATERIALS

- A. Shredded Wood Mulch: Shredded Wood Mulch, free from deleterious materials, debris, and weed seed. Suitable as a top dressing of trees, shrubs and groundcovers, consisting of following:
1. Type: Shredded cedar, redwood, fir, or hardwood commercial wood bark products, composted with humus and leaf materials. Shredded Wood Mulch shall be graded and to average dimensions of one-inch (1") to three-inches (3") in length, and flat in cross-section.
 - a. Minimum organic matter content at 80%.
 - b. pH between 5.0 and 8.0.
 - c. Salt content shall be less than 4 millimho/cm @ 25 ° C. on a saturated paste extract.
 - d. Boron content of the saturated extract shall be less than 1.0 parts per million.
 - e. Calcium carbonate shall not be present.
 - f. Carbon:Nitrogen ratio is less than 100:1.
 - g. Compost shall be aerobic without malodorous presence of decomposition products.
 - h. Maximum particle size shall be 2 inches. A maximum of 5% shall pass a No. 2 screen.

<i>Maximum Total Permissible Pollutant Concentrations (in parts per million (PPM)) on a dry weight basis:</i>	
Arsenic	20 ppm
Molybdenum	30 ppm
Cadmium	15 ppm
Nickel	50 ppm
Chromium	150 ppm
Selenium	25 ppm
Cobalt	50 ppm
Silver	10 ppm
Copper	150 ppm
Vanadium	50 ppm
Lead	150 ppm
Zinc	150 ppm
Mercury	10 ppm

2. Coverage Depth:
 - a. Refer to Part 3 indicated herein this Section.
3. Products & Manufacturer's: Subject to compliance with requirements, provide products by one (1) of the following:
 - a. *ES-2 Mulch*, Agromin Horticultural Products.
 - b. *Pacific Mulch™*, Greenways Environmental.
 - c. *Walk-On Chips*, Earthworks Soil Amendments, Inc.
 - d. *Landscape Mulch*, Agri Service, Inc.
 - e. *Red Fir Bark*, Greenway Compost.
 - f. *A-1 Oak Deco Chips*, Hanson Aggregates/A-1 Soils.
 - g. *#SBM 3, Special Mulch #3*, Plants Choice, Inc.
 - h. Or equal, as approved by the Landscape Architect.

2.2 TREE ROOT AERATION UNITS (TREE CHIMNEY'S)

- A. General: Tree Root Aeration Units are a complete assembly, consisting of a perforated Aeration Pipe Tube, wrapped in Geo-textile Filter Fabric sleeving, and topped with a Grate.
- B. Aeration Pipe Tube: Manufactured from high-density polyethylene (HDPE) resin, meeting ASTM F810. Pipe shall be perforated with machine-drilled holes, set either with 3/8" holes on 4" centers at 120 degrees, or on-half-inch (1/2") holes on five-inch (5") centers at one-hundred-twenty (120) degrees.
 - 1. Length: As required, per Contract Drawings.
 - 2. Size (Diameter):
 - a. 4" diameter Pipe.
 - b. 6" diameter Pipe.
 - 3. Products & Manufacturer's: Subject to compliance with requirements, provide products by one (1) of the following:
 - a. *3000 Triple Wall Drainage Pipe*, ADS.
 - b. *Perforated SDR35 Solvent Weld Underdrain Pipe*, P.W. Eagle.
 - c. *COEX*, PSP.
 - d. *Big "O" Drainage Tubing*, Armtec.
 - e. Or equal, as approved by the Landscape Architect.
- C. Geo-textile Filter Fabric Sleeving for Aeration Pipe Tube: Meet ASTM D6707. Permeable, lightweight, continuous, non-woven, UV resistant, synthetic geo-textile (nylon or polyester) filament material, engineered to allow water permeability and deter soil permittivity, per ASTM D4491. Fabric shall be non-biodegradable, resistant to acids and alkalis, and sized accordingly.
 - 1. Length: As required, per length of Aeration Pipe.
 - 2. Size: As required, to sleeve (snugly fit) over the diameter of the specified Aeration Pipe tube.
 - 3. Products & Manufacturer's: Subject to compliance with requirements, provide products by one (1) of the following:
 - a. *Drain Sock*, ADS.
 - b. *Drain-Sleeve Filter Fabric*, Carriff Corporation.
 - c. *Filter Fabric*, Zodiac Fabrics, Inc.
 - d. *Big "O" Sock Filter*, Armtec.
 - e. *Drain-Eez*, Christy's.
 - f. Or equal, as approved by the Landscape Architect.
- D. Aeration Pipe Grates (sized accordingly to fit snugly to the specified Aeration Pipe Tube).
 - 1. Shrub and Groundcover Areas: Atrium-type Grate.
 - a. Products & Manufacturer's: Subject to compliance with requirements, provide products by one (1) of the following:
 - 1) *4" Atrium Grate #78S (sand color)*, National Diversified Sales (NDS), Camarillo, CA.
 - 2) Or equal, as approved by the Landscape Architect.
 - 2. Lawn Areas: Flat-type Grate, round in shape.
 - a. Products & Manufacturer's: Subject to compliance with requirements, provide products by one (1) of the following:
 - 1) *4" Round Grate #13 (green color)*, National Diversified Sales (NDS), Camarillo, CA.
 - 2) Or equal, as approved by the Landscape Architect.

2.3 STAKES AND GUYS

A. Tree Staking Assembly:

1. Wooden Stake Tree Staking Assembly: Complete tree staking Unit, consisting of Lodge Pole Pine Tree Stakes with (*choose one: Tree Ties/Tree Straps/Twist Braces*)
 - a. Tree Stakes: Lodge Pole Pine Wooden Tree Stake, straight shaft, shaved and cut, cleaned and bare of branches and stubs, free of loose knots, bends, splits, or bows, of uniform thickness, with a minimum diameter of either two-inches (2") or two-one-half (2-1/2") to three-inches (3"). Lengths shall be eight-feet (8'), ten-feet (10') or twelve-feet (12'), as required, to adequately and firmly penetrate the sub grade and support the tree. Stake shall have a minimum ten-inch (10") long tapered/conical driving point, and chamfered top to minimize splitting when driven. Stake shall be pressure treated (per Federal Specification TT-W-00571-J-Table 2) with an EPA-registered pesticide containing inorganic arsenic (copper chromium arsenate, meeting Federal Specification TT-W-550-Type 1) to protect it from insect attack and decay.
 - 1) Quantity, Size, and Length per tree:
 - a) >24" box container stock: Minimum two (2) two-one-half-inches (2-1/2") or three-inches (3") diameter, ten-foot (10') or twelve-foot (12') long (as required) Wooden Tree Stakes per tree.
 - 2) Special Circumstances: Should lengths of Wooden Tree Stakes be inadequate to satisfactorily support the tree being staked in an upright, plumb condition, Contractor shall provide Metal Stake Tree Staking Assembly as indicated herein this Article.
 - 3) Products & Manufacturer's: Subject to compliance with requirements, provide products by one (1) of the following:
 - a) Sullivan & Mann Lumber Company, Tustin, CA.
 - b) BVC Tree Stakes.
 - c) TruStakes, 4Seasons Wood Products.
 - d) Or equal, as approved by the Landscape Architect.
 - b. Tree Straps: Non-stretch, biodegradable cotton, dyed dark-green color, one-inch (1") wide x eighteen-inches (18") long, with one-inch (1") brass grommets at each end. Break strength at 260 lbs. nominal.
 - 1) Quantity, Size, and Length per tree:
 - a) 24" box container stock and larger: Provide two (2) Tree Straps minimum for each set of Tree Stakes provided.
 - 2) Products & Manufacturer's: Subject to compliance with requirements, provide products by one (1) of the following:
 - a) #3718 Biodegradable Original Treestrap®, GCS.
 - b) Or equal (no known equal).
 - 3) Tree Strap Wire: Smooth, galvanized annealed Steel Wire, 12 gauge. Provide Wire in adequate lengths to anchor the grommet ends of the Tree Straps to the Tree Stakes.

2.4 EROSION CONTROL MATERIALS

- A. Rolled Erosion Control Blanket: 95-100% organic biodegradable materials, consisting of machine-manufactured 100% certified weed free agricultural straw fibers, 100% natural coconut-fibers (coir), or a combination thereof, evenly distributed over the entire area of the Blanket. Fibers shall be sewn into a medium weight natural fiber, degradable mesh net (top

and/or bottom) on on-one-half-inch (1-1/2") centers, with cotton polyester or polypropylene thread. Blanket rolls shall be a minimum of 6'-6" wide, and a minimum of .05 lb./sq. yd. Provide "U"-shaped, 11-gauge steel wire staples, six-inches (6") to eight-inches (8") long, two-inch (2") crown, to anchor Erosion Control Blankets to soil surface.

1. Products & Manufacturer's: Subject to compliance with requirements, provide product(s) as required by one (1) Manufacturer, subject to specific slope gradient conditions indicated per the Contract Drawings, as follows:

<u>Slope Gradient Application</u>	<u>Product Type and Composition</u>	<u>* Acceptable Manufacturers and Manufacturer's Product Reference Numbers</u>			<u>Anticipated Functional Longevity of Product</u>
		Greenfix America, Brawley, CA 760-351-7791	North American Green, Evansville, IN 800-772-2040	Western Excelsior, Mancos, CO 800-833-8573	
5:1 to 4:1 slopes.	100% Straw; Single Organic Net (Top Only).	#WS05B	#S75BN	#NAT-SR-1	12 Months
4:1 to 3:1 slopes.	100% Straw; Double Organic Net (Top & Bottom).	#WS072 B	#S150BN	#NAT-SS-2	12 Months
3:1 to 2:1 slopes.	70% Straw + 30% Coconut Fibers (Coir); Double Net (Top & Bottom).	#CFS072 B	#SC150BN	#NAT-CS-3	18 Months
2:1 to 1:1 slopes, and greater.	100% Coconut Fibers (Coir); Double Net (Top & Bottom).	#CF072B	#C125BN	#NAT-CC-4	24 Months

* or equal, as approved by the Landscape Architect.

- B. Open Weave Jute Fiber Mesh: Biodegradable, woven, 100% natural jute fiber yarn, +/- 0.25" thick, un-dyed and unbleached, 0.92 lbs. per sq. yd. minimum, with 50% to 65% open area. Provide "U"-shaped, 11-gauge steel wire staples, six-inches (6") to eight-inches (8") long, 2" crown, to anchor Jute Fiber Mesh to soil surface.

1. Products & Manufacturer's: Subject to compliance with requirements, provide products by one (1) of the following:

- a. *Anti-Wash/Geojute*, Belton Industries, Inc.
 - b. Or equal, as approved by the Landscape Architect.
2. Provide on slope gradients 4:1 and greater

2.5 LANDSCAPE EDGINGS/HEADERS/MOWSTRIPS

- A. Wood Edging/Header:
 1. General: Wood Edging/Header shall be in the location and size as shown on the Contract Drawings.
 - a. Type: Redwood, all heart.
 - b. Size: 2 x 6 x 12' length minimum.
 2. Splices and Hardware: Wood, same species as Wood Edging/Header, not less than twelve inches (12") in length. Attach Splices to Wood Edging/Header with hot-dipped galvanized wood deck screws (#12, 3" long, minimum six (6) screws per Splice). Pre-drill all holes at 3/4 of the diameter of the actual screw. Place Splices on ground cover side of Wood Edging/Header, at 1/2" below the top of the Edging/Header.
 3. Stakes and Hardware: Wood, same species as Wood Edging/Header, 1 x 2 x 12" inches long in nominal, with hot-dipped galvanized common box nails for anchoring headers and edging. Space stakes at intervals not less than four-feet (4') on-center intervals. Place stakes on ground cover side of header, at one-half-inch (1/2") below the top of the header.

2.6 WEED CONTROL BARRIER/GEO-TEXTILE FILTER FABRIC

- A. Type: Permeable, lightweight, continuous, non-woven, geo-textile polypropylene filament material, UV-resistant, engineered to allow water permeability and deter soil permittivity, per ASTM D4491. Geo-Textile Filter Fabric shall be inert to biological degradation and resistant to naturally encountered chemicals, alkalis and acids. Meet AASHTO M288-96, Class 1.
- B. Products & Manufacturer's: Subject to compliance with requirements, provide products by one (1) of the following:
 1. *Amoco 4553*, Amoco Fabrics and Fibers Company.
 2. *FX-80HS*, Carthage Mills.
 3. *C-80NW*, Contech.
 4. *180 EX*, Linq.
 5. *Geotex 801*, Propex, Inc.
 6. *TerraTex N08*, Webtec.
 7. *180N*, TC Mirafi.
 8. *3301*, Typar Landscape Products.
 9. Or equal, as approved by the Landscape Architect.

2.7 MISCELLANEOUS MATERIALS

- A. Water: Per ASTM C94, from potable domestic source, and free from deleterious materials such as oils, acids, and organic matter. Transport as required.
- B. Stress Reducing Agent: 100% natural organic root and plant stimulator solution, used to eliminate transplant shock and provide better establishment of plants. Solution shall contain a

natural wetting agent, designed to improve nutrient release, water-holding capacity, cation exchange capacity in soil, and stimulate fertilizer and micronutrient uptake.

1. Products & Manufacturer's: Subject to compliance with requirements, provide products by one (1) of the following:
 - a. *Roots NoBurn*®, Novozymes Biologicals, Inc., Salem, VA.
 - b. *Essential*® *Plus 1-0-1*, Growth Products, White Plains, NY.
2. Application Rate: Provide at prescribed rate and application per Manufacturer's written recommendations.

C. Wetting Agent and Soil Penetrant (Surfactant): Highly-concentrated liquid solution. Provide in a diluted liquid solution, mixed with water, at the time of watering-in recently planted plant species.

1. Products & Manufacturer's: Subject to compliance with requirements, provide products by one (1) of the following:
 - a. *Roots NoBurn*®, Novozymes Biologicals, Inc., Salem, VA.
 - b. *LESCO-Wet*™ *Plus*, Lescos, Inc., Cleveland, OH.
 - c. *Naiad Liquid Wetting Agent*, Naiad Company, Inc., Stockton, CA.
 - d. *Aqua-Gro L*, Scotts Company, Marysville, OH.
 - e. *Sixteen-90*, Aquatrols, Cherry Hills, NJ.
 - f. Or equal, as approved by the Landscape Architect.
2. Application Rate: Provide at prescribed rate and application per Manufacturer's written recommendations, per one-hundred (100) gallons of water.

D. Plant Vitamin/Hormone Stimulant: Highly-concentrated liquid vitamin solution. Provide in a diluted liquid solution, mixed with water, at the time of watering-in recently planted plant species.

1. Products & Manufacturer's: Subject to compliance with requirements, provide products by one (1) of the following:
 - a. *SUPERthrive*, Vitamin Institute.
 - b. *Roots Concentrate Rooting Stimulant*, Novozymes Biologicals, Inc.
 - c. *Root-Maxx Plus*, Bio-Plex.
 - d. Or equal, as approved by the Landscape Architect.
2. Application Rate: Provide at prescribed rate and application per Manufacturer's written recommendations, per one-hundred (100) gallons of water.

E. Herbicides: EPA registered and approved, from the following:

1. Non-Selective Post-Emergent Herbicide: Spray-applied solution containing a minimum of 41% of the active ingredient "glyphosate" (full strength), with a surfactant, mixed with water accordingly per the Manufacturer's directions.
 - a. Products & Manufacturer's: Subject to compliance with requirements, provide products by one (1) of the following:
 - 1) *Roundup*® *PRO*, (41% glyphosate), Monsanto Company.
 - 2) *Roundup*® *PROmax* (concentrate, 50% glyphosate), Monsanto Company.
 - 3) *Honcho*® *Plus*, (41% glyphosate), Monsanto Company.
 - 4) *Prosecutor* (41% glyphosate), LESCO, Inc.
 - 5) *High Yield*® *Kill-Zall Weed & Grass Killer*, (41% glyphosate), Voluntary Purchasing Groups.
 - 6) Or equal, as approved by the Landscape Architect.
 - b. Application Rate: Provide at prescribed rate and application per Manufacturer's written recommendations, per one-hundred (100) gallons of water.

2. Selective Pre-Emergent Herbicide (Packaged dry material application): Pre-emergent control of annual grasses and broadleaf weeds in turf grass areas, and woody ornamental trees, shrubs, vines, and groundcover areas.
 - a. Products & Manufacturer's: Subject to compliance with requirements, provide products by one (1) of the following:
 - 1) *Ronstar® 2G*, (granular), Aventis Environmental Science USA.
 - 2) *Snapshot® 2.5 GT* (granular), (2% trifluralin), Dow AgroSciences LLC.
 - 3) *XL*2G*, SETRE Chemical Company.
 - 4) *Casoron 4G*, Chemtura.
 - 5) *Treflan® HFP* (43% trifluralin), Dow AgroSciences LLC.
 - 6) *Treflan® TR-10*, (10% Granular trifluralin), Dow AgroSciences LLC.
 - 7) *Surflan®*, Dow AgroSciences, LLC.
 - 8) Or equal, as approved by the Landscape Architect.
 - b. Application Rate: Provide at prescribed rate and application per Manufacturer's written recommendations, per one-hundred (100) gallons of water.
3. Selective Post-Emergent Herbicide: Pre-mixed, flow-able formulation designed for product stability, uniformity in the spray solution and ease of handling. Post-emergent control of annual grasses, nutsedge, and broadleaf weeds in turf, generally with one (1) application.
 - a. Products & Manufacturer's: Subject to compliance with requirements, provide products by one (1) of the following:
 - 1) *Trimec® Plus*, PBI/Gordon Corporation.
 - 2) *Three-Way*, LESCO, Inc.
 - 3) Or equal, as approved by the Landscape Architect.
 - b. Application Rate: Provide at prescribed rate and application per Manufacturer's written recommendations, per one-hundred (100) gallons of water.

PART 3 - EXECUTION

3.1 GENERAL

- A. Installation practices of the Landscape Planting Accessories shall be performed during those periods when weather and soil conditions are suitable and in accordance with locally accepted horticultural practice, as approved by the Landscape Architect. Contractor shall notify the Landscape Architect, in writing, on the anticipated commencement date and length of duration of the landscape installation.
- B. Examination: Examine areas to receive landscaping for compliance with requirements and for conditions affecting performance of Work of this Section. No work under this section shall commence until all submittals under this section have been reviewed and approved, in writing. Do not proceed with installation until unsatisfactory conditions have been corrected.
- C. Prior to Work in this Section, Contractor shall examine previously installed Work from other trades and verify that such Work is complete and as required, to the point where the installation of the Landscape Planting Accessories may commence properly.

3.2 PROTECTION OF SITE

- A. Contractor shall protect existing and new improvements and systems installed prior to installation of Landscape Planting Accessories. Maintain protection in place until completion of Work and Landscape Establishment Period.

3.3 INSTALLATION OF TREE ROOT AERATION UNITS (TREE CHIMNEY'S)

- A. General: Tree Root Aeration Unit(s) shall be installed after excavation of planting hole and prior to placement of Amended Planting Backfill Mixture.
- B. Upon completion of excavation of planting hole, auger a twelve-inch (12") diameter hole at the edge of the excavation. Depth shall extend two-feet (2') beyond the compacted setting layer crown of native planting soil. Remove excess soil.
- C. Pipe Installation: Slide Geo-Textile Filter Fabric Sleeve over full length of Perforated Aeration Pipe Tube. Secure open end (as set in bottom of hole) of Filter Fabric Sleeve with a knot or pipe wrap tape. Place assembly Unit plumb, in vertical position, in the bottom of the augered hole. Set the top of the Unit ½" above the finished surface elevation of the mulch layer.
- D. Set Plant Material accordingly, and backfill the planting hole with Amended Planting Backfill Mixture, being careful not to provide backfill within the inside of the Tree Root Aeration Unit assembly.
- E. Attach Aeration Pipe Grate to top end of the sleeved Aeration Pipe Tube extending above grade. Provide appropriate Pipe Grate indicated for the application.
- F. Quantity Schedule:
 - 1. Provide one (1) Tree Root Aeration Unit assembly for each tree up to but not including a 24"-box container size.
 - 2. Provide two (2) Tree Root Aeration Unit assemblies located at opposing sides of the root ball and at opposite ends of the Tree Stakes and/or Deep Watering Bubblers, for each tree sized at 24"-box container and up to but not including a 48"-box container size.
 - 3. Location: Coordinate location of Tree Root Aeration Units to be set equally and in between locations designated to receive deep watering irrigation bubblers, where applicable.

3.4 STAKING AND GUYING

- A. General: Tree Staking and Tree Guying shall be per the direction of the Landscape Architect. Staking and/or guying of trees shall be completed immediately following tree planting operations.
 - 1. Contractor shall provide new Tree Stake or Tree Guy assemblies; reconditioned or previously-used Tree Stake or Tree Guy assemblies shall not be permitted. Provide one (1) set of Tree Staking materials or Tree Guying materials per tree, as required. Trees shall remain plumb and straight from installation through the Contractor Warranty period. Staking and Guying assemblies shall remain the property of the Owner.
- B. Staking/Guying Methodology: Unless otherwise directed on the Contract Drawings or as directed by the Landscape Architect based on field conditions, provide the following Staking/Guying Assemblies, as measured by the size of the tree being supported:

1. 5-gallon size Container Stock to 36"-Box Tree, or for trees up to 3" caliper: Provide Staking Method. Number of stakes per tree shall be as directed herein this Section.
2. For trees larger than 36"-Box size or over 3" caliper: Provide Staking or Guying Method, or as directed by the Landscape Architect.
3. Multi-trunk Trees: Provide Tree Guying Method, or as directed by the Landscape Architect.

C. Tree Staking Method:

1. Single Tree Stake (Wooden or Metal):
 - a. Locate Stake at the closest point to the main trunk as possible, yet outside of the root ball and tree branch canopy.
 - b. Firmly drive the tapered end of the Stake plumb into the undisturbed native sub-grade, perpendicular to the side of the prevailing wind, at the minimum depth indicated in the Contract Drawings, or deeper, as required, to firmly support the Stake and minimize any movement of the Stake. Do not damage the tree trunk nor branch canopy, nor penetrate the root ball with the Stake. Do not damage or splinter the Stake. Stake shall not touch the trunk nor branch canopy of the tree.
2. Double Tree Stakes (Wooden or Metal):
 - a. Locate Stakes at the closest point to the main trunk as possible, yet outside of the root ball and tree branch canopy.
 - b. Firmly drive the tapered end of one (1) of the Stakes plumb into the undisturbed native sub-grade, perpendicular to the side of the prevailing wind, at the minimum depth indicated in the Contract Drawings, or deeper, as required, to firmly support the Stake and minimize any movement of the Stake. Do not damage the tree trunk or branch canopy, nor penetrate the root ball with the Stake. Do not damage or splinter the Stake.
 - c. Install the other Stake in similar fashion, directly opposite from the first Stake (180 degrees), and equidistant from the tree trunk.
 - d. Installed Stakes shall not touch the trunk nor branch canopy of the tree.
3. Tying to Tree Stakes (Wooden or Metal):
 - a. Tree Straps: Wrap and twist the Tree Strap around the tree trunk, at the lowest point where the tree gains the highest support, per the direction of the Landscape Architect. Secure the Strap with wire; thread the wire through the grommet ends of the Strap and twist wire to secure. Wrap other end of wire around the Stake, twist, and secure it to the Stake. (For Metal Stakes, thread wire through holes drilled through the stake). Repeat for other Stake(s), as required. For trees requiring multiple tree straps, locate additional straps as required along the tree trunk to provide additional vertical support. Cut off and bend back excessive wire beyond the twists to the Stake(s) to provide a safe condition. The tree shall be supported accordingly to assure a straight, firm position of the tree canopy, yet to allow enough slack to avoid rigid restraint of the tree.
 - b. Once the tree is thoroughly staked, carefully remove the nursery stake(s). Backfill and tamp the nursery stake void(s) with planting soil.

3.5 INSTALLATION OF EROSION CONTROL MATERIALS

- A. Clear away trash, large stones, and other debris. Prepare sub grade; fine grade area to receive Erosion Control Material, eliminating footprints, tracks, and ruts.

- B. Sequences: For hydroseed applications, install the seed slurry prior to installing the Erosion Control Material. In applications where rooted stock is planted on the slope, care shall be exercised to prevent disruption or damage to the underlying material.
- C. Unroll Material as close as possible to its intended final position to minimize the need to drag the Material which would dislocate underlying materials or disturb the prepared sub grade or planting. Install Material flush and completely in contact with the ground. Confirm that there is no tension on the Material to minimize soil contact.
- D. Overlap Material at a minimum of four-inches (4") on the sides and eighteen-inches (18") on the ends. Staples shall be inserted at intervals no greater than three-feet (3') on-center along overlaps and down the center of each roll length.
- E. Joining rolls of the Material shall be installed at the down-channel end of the installed roll, which should overlap the up-channel end of the roll being installed. Overlap should be a minimum of eighteen-inches (18"). Equally set staples on twelve-inch (12") on-center spacing.
- F. Anchor slot at top of slope shall be installed by burying up-channel end in a six-inch (6") minimum deep trench. Equally set staples on twelve-inch (12") on-center spacing.
- G. On slopes less than six-feet (6') in height, Material may be installed with roll perpendicular to the contours.
- H. The terminal fold shall be installed by bringing the Material down to the level area before terminating. Turn the end under a minimum of six-inches (6"). Equally set staples across the fold at twelve-inch (12") on-center spacing.

3.6 INSTALLATION OF LANDSCAPE EDGINGS (HEADERS/EDGINGS/MOWSTRIPS)

- A. General: Install in location(s) in solid undisturbed soil, or in soil set at ninety-percent (90%) relative compaction, at areas as indicated on the Contract Drawings.
 - 1. Horizontal Alignments:
 - a. Straight Alignments: Where indicated on the Contract Drawings, install Landscape Edgings in straight/angular sections, true to the alignments as indicated, free of "wiggles" or bends, using strings as guides.
 - b. Curved Alignments: Where indicated on the Contract Drawings, install Landscape Edgings in curved./radial sections, true to the alignments as indicated, free of "wiggles" or bends, following marked alignments as reviewed in the field by the Landscape Architect.
 - 2. Vertical Alignments: Install parallel to and following along the contoured finished grade.
 - 3. Refer to the Manufacturer's latest printed instructions and Contract Drawings for requirements of Landscape Edgings/Headers fabricated from metal materials.

3.7 MULCHING

- A. General: Mulch backfilled surfaces of pits, trenches, planted areas, and other areas indicated.
- B. Shredded Wood Mulch:
 - 1. General: Verify locations to receive Shredded Wood Mulch.

2. Apply the following average thickness of Shredded Wood Mulch, and finish level with adjacent finished surfaces. Do not place Shredded Wood Mulch directly against trunks or stems of Plant Materials. Remove Shredded Wood Mulch that is placed against the growing bases or within the basal nodes of plants.
3. Thickness/Depth: Three-inches (3”), minimum.
4. While settlement and/or decomposition of the Shredded Wood may occur during the duration of the Contract, the Shredded Wood Mulch thickness as indicated shall be consistent throughout the duration of the Contract. The Contractor shall provide additional Shredded Wood Mulch, as needed, and as directed by the Landscape Architect, to maintain the specified constant thickness of the Shredded Wood Mulch, until Acceptance of Work is granted.

3.8 INSTALLATION OF MISCELLANEOUS MATERIALS

- A. Anti-Dessicant: Apply using power spray to provide an adequate film over trunks, branches, stems, twigs, and foliage.
 1. When deciduous trees or shrubs are moved in full-leaf, spray with anti-desiccant at nursery before moving and again two (2) weeks after planting.
- B. Stress Reducing Agent: Apply, as required and directed by the Landscape Architect, per Manufacturer’s latest printed instructions.
- C. Wetting Agent & Soil Penetrant: Apply, as required and directed by the Landscape Architect, per Manufacturer’s latest printed instructions.
- D. Herbicides: Apply, as required and directed by the Landscape Architect, per Manufacturer’s latest printed instructions.
- E. Plant Vitamin/Root Stimulant: Apply, per the Manufacturer’s latest printed instructions. Refer to application requirements per Section 329300 – Exterior Plants.

3.9 CLEAN UP AND PROTECTION

- A. For Work under this Section, keep Work area in a clean, orderly, and safe condition. Contractor shall remove trash caused from his Work on a weekly basis throughout the duration of the Work.
- B. Protect landscaping from damage due to landscape operations, operations by other Contractors and trades, and trespassers. Maintain protection during installation and landscape establishment periods. Treat, repair, or replace damaged Landscape Planting Accessories as directed.
- C. Upon completion of his Work under this Section, the Contractor shall remove rubbish, waste, debris, excess construction materials, and other items resulting from construction operations offsite as described herein this Section and directed by the Landscape Architect.

3.10 FINAL REVIEW

- A. Final Review under this Section shall be performed upon completion of the Landscape Establishment Period. (Refer to Section 329813 – Landscape Establishment Period for requirements).

END OF SECTION

SECTION 329813 – LANDSCAPE ESTABLISHMENT PERIOD

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes materials, labor, apparatus, tools, equipment, temporary construction, transportation, and services necessary for and incidental to performing the proper completion of Work, as required to make a complete Landscape Establishment Period (“Service”), as specified during progress of the Work, after installation, for a designated period after Preliminary Acceptance, as shown in the Contract Drawings, and as specified herein this Section.
- B. Contractor acknowledges that the Services specified under this Section are not intended to express every detail of the Services to be provided by Contractor, and Contractor hereby represents that it is experienced and competent in providing Services that meets or exceeds generally accepted practices commensurate with those provided by other companies that provide such Service.
- C. Work under this Section consists of, but is not necessarily limited to, furnishing and installing the following:
 - 1. Establishment of Landscape Installation, for a given frequency and duration as specified herein this Section. Work includes the following:
 - a. Litter Control.
 - b. Weed Control.
 - c. Pest Control.
 - d. Plant Care.
 - e. Fertilization of Plant Materials.
 - f. Plant Replacement.
 - g. Plant Pruning.
 - h. Plant Staking and Adjustments.
 - i. Temporary Plant Protection.
 - j. Operation, Adjustment, and Maintenance of Irrigation Controller and Irrigation System.
 - k. Cleaning of Paving Surfaces.
 - l. Reapplication of Mulching Materials.
 - m. Erosion Control and Drainage.
 - n. Removal of Green Waste.
- D. Related Sections: The following Sections contain requirements that relate to Work in this Section:
 - 1. Section 312219 – Landscape Grading.
 - 2. Section 321513 – Stabilized Decomposed Granite (Site Paving & Landscape Mulch).
 - 3. Section 328400 – Landscape Irrigation.
 - 4. Section 329113 – Soil Preparation.
 - 5. Section 329200 – Lawns & Grasses.
 - 6. Section 329300 – Exterior Plants.
 - 7. Section 329400 – Landscape Planting Accessories.

1.2 DEFINITIONS AND APPLICABLE STANDARDS

A. References:

1. USDA – United States Department of Agriculture.
2. ASTM – American Society for Testing & Materials.
3. ANSI – American National Standards Institute.
4. ISA – International Society of Arboriculture.

B. Standards:

1. American National Standard for Tree Care Operation, Tree, Shrub, and Other Woody Plant Maintenance (ANSI A300), American National Standards Institute, Latest Edition.
2. American National Standard for Tree Care Operations (ANSI Z133), American National Standards Institute, Latest Edition.
3. Tree Pruning Guidelines, International Society of Arboriculture, 1995 Edition.
4. Pruning Standards for Shade Trees, National Arborists Association, Latest Edition.

1.3 SUBMITTALS

A. General:

1. Collect information into a single Submittal for each element of construction and type of product or equipment identified under this Section for review.
2. To expedite review, Submittal shall be organized and presented into specific sections or headings. Furnish neat, concise, legible, and clearly identifiable information, and sufficiently explicit detail, to enable proper evaluation for Contract compliance. Highlight catalog, product data, or brochures containing various products, sizes, and materials to show particular item submitted.
3. Submittal Format: As applicable, furnish Submittal as a single electronic digital PDF (Portable Document Format) file.

B. Digital Submittal Information:

1. Quality Control Submittal:
 - a. Qualification Data: Submit names for firms and persons specified in the “Quality Assurance and Control” Article to demonstrate their capabilities and experience on similar Landscape Planting Accessories installations.
 - b. Schedule of maintenance operations and monthly status report, including list of equipment, materials proposed for the job, and watering schedule(s).
 - c. Licenses, permits and insurance required by the local jurisdiction, the State, or Federal government, pertaining to Work under this Section.
 - 1) Pesticide Applicator: Valid California Qualified Applicator Certificate (QAC), with “B – Landscape Maintenance” Category, as administered by the California Department of Pesticide Regulation (DPR).
 - d. Monthly record of herbicides, insecticides and disease control chemicals used for the Project.
 - e. Written application recommendation by a licensed agricultural pest control advisor for weed, pest and disease controls restricted by the Director of Agriculture proposed for this Work.
2. Project Closeout Submittal:
 - a. Include in a single 3-ring binder a Landscape Maintenance Manual for use by the Owner, containing an indexed collection of all schedules, records and permits

listed above, including documentation of accepted condition of planting and irrigation at Final Acceptance.

- C. Material Samples: Not required.
- D. Scaled Shop Drawings: Not required.
- E. Field-Constructed Mock-ups: Not required.
- F. Submittals under this Article will be rejected and returned without the benefit of review by the Landscape Architect if they are difficult to read due to insufficient scale, poor image quality, or poor drafting quality; or if all of the required information is missing or not presented in the format as requested. Partial Submittals will not be accepted.
- G. No Work shall proceed under this Section until Submittal requirements indicated herein have been reviewed accordingly by the Landscape Architect.

1.4 QUALITY ASSURANCE AND CONTROL

- A. Qualifications:
 - 1. Valid California C-27 (Landscaping Contractor) License.
 - 2. Experience: Contractor or sub-contractor performing Work under this Section shall have a full-time employee assigned to the Project as foreman for the duration of the Contract. Employee shall have a minimum of four (4) years experience in landscape maintenance supervision, with experience or training in entomology, pest control, soils, fertilizers and plant identification. Employee shall speak English fluently.
 - 3. Labor Force: Landscape maintenance labor force shall be thoroughly familiar with, and trained in, the Work to be accomplished, and shall perform the task in a competent, efficient manner acceptable to the Owner.
- B. Requirements:
 - 1. Supervision: Landscape Maintenance Foreman shall directly supervise the Work force during duration indicated herein this Section. Notify Owner of changes in supervision.
 - 2. Identification: Provide proper identification during duration for landscape maintenance firm's vehicles and labor force. Be uniformly dressed in a manner satisfactory to the Owner.

1.5 PROJECT/SITE CONDITIONS

- A. Site Visit: At beginning of the designated Landscape Establishment Period, visit and tour the site with the Owner's Representative, Landscape Architect, and other interested parties, to clarify the scope of Work, and understand existing project/site conditions.
- B. Documentation of Conditions: Document the general condition of installed plant materials, recording those which are healthy and thriving, and unacceptable materials which are damaged, dead, and/or dying and in need of replacement.
- C. Irrigation System: Document general condition of existing irrigation system, making sure that faulty, improper, and/or non-functioning irrigation materials or equipment are reported.

1.6 SEQUENCING AND SCHEDULING

- A. Perform Work under Landscape Establishment Period during hours mutually agreed upon between Owner and Contractor.
- B. Work force shall be present at the Project Site at a minimum duration indicated in this Section, and at other times as necessary, to perform specified Work, in accordance with the approved schedule under the Landscape Establishment Period.

1.7 WARRANTY

- A. Specific Requirements: Refer to the following Sections:
 - 1. Section 328400 – Landscape Irrigation.
 - 2. Section 329200 – Lawns & Grasses.
 - 3. Section 329300 – Exterior Plants.
 - 4. Section 329400 – Landscape Planting Accessories.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Materials and equipment as required to perform Work under this Section shall be provided by Contractor.
- B. Water: Clean, potable and fresh, as available from Owner.
- C. Fertilizers:
 - 1. Fertilizer Tablets: Tightly compressed, slow-release and long-lasting complete fertilizer tablets, bearing manufacturer's label of guaranteed analysis of chemicals present. Refer to Section 329113 – Soil Preparation, for requirements.
 - 2. Balanced, once-a-season application, controlled-release Fertilizer(s), with a blend of coated prills which supply controlled-release nitrogen, phosphorus and potassium, and uncoated, rapidly soluble prills containing nitrogen and phosphorus.
- D. Herbicides, Insecticides, and Fungicides:
 - 1. Provide materials with original manufacturers' containers, properly labeled with guaranteed analysis.
 - 2. Use non-staining materials.
- E. Replacement Tree Guys, Stakes, Ties and Wires: Match originally accepted existing materials installed on the Project.

2.2 EQUIPMENT

- A. General: Use only the proper tool(s) required for each task under this Section.
 - 1. Maintain tools in sharp, properly-functioning condition.
 - 2. Clean and sterilize all pruning tools prior to usage.

- B. Insect/Disease Prevention: Provide measures to prevent introduction of insect or disease-laden materials onto the Site. Refer to Section 329300 – Exterior Plants.

PART 3 - EXECUTION

3.1 FREQUENCY AND DURATION OF LANDSCAPE ESTABLISHMENT PERIOD

- A. Following satisfactory completion of all items included on the Landscape Punch List, the contracted Landscape Establishment Period shall commence and progress.
- B. Frequency and Duration:
 - 1. Work performed under this Section shall be executed by Contractor at a minimum of once per week, for a duration of a minimum of 90 calendar days.

3.2 COMMENCING THE LANDSCAPE ESTABLISHMENT PERIOD

- A. Preliminary Review: As soon as landscape installation is substantially completed per the Contract Documents, Contractor shall arrange to hold a preliminary review on-site with the Landscape Architect, Owner, and other interested parties to evaluate the condition and execution of the completed Work. Evaluation of the Work shall be executed by the Landscape Architect through a “Landscape Punch List”.
- B. Date of Review: Notify Landscape Architect at least five (5) working days prior to anticipated Date of Review.
- C. Commencing the Landscape Establishment Period: The date on which the Landscape Architect determines that the landscape installation is substantially-complete, whereas outstanding Work included on the Landscape Punch List is addressed and satisfactorily completed to the satisfaction of the Landscape Architect.

3.3 PREPARATION

- A. Protection:
 - 1. Protect new landscape planting areas from damage during duration of Landscape Establishment Period, until Final Acceptance.
 - 2. Provide temporary protection fences, barriers and signs, as required, for protection.
- B. Replacements:
 - 1. Immediately treat or replace plant materials as directed, which become damaged or injured as a result of Contractor's operations or negligence, per the Landscape Architect, at no additional cost to Owner.
 - 2. Replacement plant materials shall match size and variety of plant material being replaced.

3.4 PLANTING ESTABLISHMENT

- A. Watering Basins:

1. Maintain watering basins around the perimeter of the installed plant materials so that enough water can be applied to establish and maintain adequate soil moisture through the root zone of the plant materials. Re-dish and tamp basins accordingly which have become damaged or have failed since installation.
 2. For supplemental hand watering of watering basins, use a water wand to break the water force. Do not permit use of "jet" type watering equipment. Do not permit crown roots to become exposed to air through dislodging of soil and mulch.
 3. Mulch: Maintain originally specified thickness of mulch material to reduce evaporation and frequency of watering.
 4. During rainy season, open basins to allow surface drainage away from the root crown where excess water may accumulate. Restore watering basins at end of rainy season.
 5. At the end of the rainy season, re-dish and tamp watering basin at trees and shrubs.
- B. Settlement of Plant Materials: Reset/replant sunken or settled plant materials to proper grades and in upright position.
- C. Weed Control:
1. Planting areas throughout site shall be weed-free at all times, including areas between plants and along watering basins.
 2. Use only recommended and legally-approved herbicides to control and maintain weed growth.
 3. Avoid frequent soil cultivation that destroys shallow roots and breaks the seal of pre-emergent herbicides.
- D. Pruning:
1. Prune trees to select and develop permanent scaffold branches that are smaller in diameter than the trunk or branch to which they are attached, and which have vertical spacing of eighteen-inches (18") to forty-eight-inches (48") and radial orientation so as not to overlay each another.
 2. Prune trees to eliminate diseased or damaged growth, and narrow "V-shaped" branch forks that lack strength. Reduce toppling and wind damage by thinning-out crowns.
 3. Prune trees to maintain growth within space limitations, maintaining a natural appearance and balancing crown with roots.
 4. No stripping of lower branches of young trees shall be permitted.
 5. Retain lower branches in a "tipped back" or pinched condition to promote caliper trunk growth. Do not cut back to fewer than six (6) buds or leaves on such branches. Only cut lower branches flush with the trunk after the tree is able to stand erect without staking or other support.
 6. Thin out and shape evergreen trees when necessary to prevent wind and storm damage. Do primary pruning of deciduous trees during the dormant season. Do not permit any pruning of trees prone to excessive "bleeding" during growth season.
 7. Prune damaged trees or those that constitute health or safety hazards at any time of year as required.
 8. Make pruning cuts clean and close to the trunk, without cutting into the branch collar. "Stubbing" will not be permitted. Cut smaller branches flush with trunk or lateral branch. Make larger cuts one-inch (1") diameter or larger parallel to shoulder rings, with the top edge of the cut at the trunk or lateral branch.
 9. Branches too heavy to handle shall be precut in three (3) stages to prevent splitting or peeling of bark. Make the first two (2) cuts eighteen inches (18") or more from the trunk to remove the branch. Make the third cut at the trunk to remove the resulting stub.

10. Do not prune or clip shrubs into balled or boxed forms unless specifically called for by design.
 11. Clip shrubs to be hedged when branches project two-inches (2") beyond limit of clipped hedge shown on the Contract Drawings.
 12. Take extreme care to avoid transmitting disease from one infected plant to another. Properly sterilize pruning tools before going from one infected plant to other plant materials.
- E. Maintenance of Existing Plant Materials to Remain:
1. General: Conform to applicable paragraphs regarding pruning, watering, spraying and fertilizing of new plant materials as indicated herein this Section.
 2. Symptoms: Be alert to symptoms of construction damage to existing plantings as evidenced by wilting, un-seasonal or early flowering or loss of leaves, and insect or disease infestation due to declining vigor.
 3. Notification: Submit in writing of evidences of declining vigor immediately upon discerning the problem. Take appropriate interim measures to mitigate the severity of the problem as specified in this Section.
 4. Proposal: Submit written proposal and cost estimate for the correction of all conditions before proceeding with permanent correction Work.

3.5 GROUNDCOVER ESTABLISHMENT

- A. Irrigation:
1. Check for moisture penetration throughout the root zone at least twice a month.
 2. Water as frequently as necessary to maintain healthy growth of groundcovers.
- B. Weed Control:
1. Control weeds, preferably by hand removal, with pre-emergent herbicides and with selective systemic herbicides.
 2. Minimize hoeing of weeds in order to avoid plant damage.
- C. Fertilization:
1. Recently installed plant materials: Verify with Owner actual completion date of planting installation and rate of prior application of fertilizers.
 2. New Plant Materials: Place Planting Tablets (per Section 329113 – Soil Preparation) beside the root ball about one-inch (1") from root tips.
 3. Established Plant Materials: Do not use complete fertilizers unless soil test shows specific nutrient deficiencies.
- D. Mowing and Edging:
1. Edge groundcovers to keep in bounds. Trim top growth as necessary to achieve an overall even appearance.
 2. Ground covers which lend themselves to mowing shall be mowed to specified height above finished grade in order to renew growth, improve density and attractiveness.
- E. Replacements:
1. Replace dead and missing plants after obtaining Owner's agreement to pay for replacement.
 2. Damages due to Contractor's negligence shall be paid for without charge to Owner.

3.6 TURF GRASS ESTABLISHMENT

A. Irrigation:

1. Irrigate Turf Grass at such frequency as weather conditions require, to replenish soil moisture to six inches (6”) below root zone.
2. Provide a total of one-one-half inches (1-1/2”) of water weekly, during hot summer weather, in three (3) applications per week, minimum.
3. Water at night if irrigation system is electrically controlled. Otherwise, watering shall be done during early mornings.

B. Weed Control:

1. Control broadleaf weeds with selective herbicides.
2. In areas where crabgrass has infested the turf grass, apply a selective post-emergent herbicide as soon as possible, and prior to flowering.
3. Apply pre-emergent herbicides prior to crabgrass germination.
4. Do not irrigate for forty-eight (48) hours after application of herbicidal sprays.
5. Coordinate application of herbicides with thatch control and reseeding schedule as described below.

C. Mowing and Edging:

1. Mowing:

- a. Mow Turf Grass at a frequency so the maximum grass heights are maintained as listed below:

Turf Type	Growing Season	Dormant Season
Bluegrass or Tall Fescue	2 to 4”	2 to 3”
Perennial Ryegrass	2.5 to 3.5”	2 to 3”
Hybrid Bermuda	1.5 to 2”	2 to 3”
St. Augustine	2.5 to 4”	2 to 3”

- b. Mulching mowers shall not be used.
- c. Turf grass shall be cut with rotary mowers to maintain a uniform and horticulturally correct height.
- d. Blades shall be kept sufficiently sharp and properly adjusted to provide a cleanly-cut grass blade. Grass blade bruising, tearing, or shredding shall be prevented.
- e. Mowing pattern/direction shall be rotated weekly where feasible to prevent rutting and minimize compaction.

2. Edging:

- a. Sidewalks, curbs, plants, walkways, roadway edges, space between planter beds, curbs, headers, and bed edges shall be mechanically edged with a steel blade edger on each visit, not to exceed seven (7) days, to maintain a neat, clean turf edge. String-type edgers shall not be used for this function.
- b. Clippings shall either be vacuumed or blown-off all surfaces, or may be blown back to lawn, but no visible clumps of cut grass shall remain. Clippings, if bagged, shall be removed from the property on the same day the property is serviced.

3. String Trimming:

- a. String Trimming shall be performed on a weekly basis around roadway signs, guard posts, trees, shrubs, utility poles, and other obstacles where mowers cannot reach. Do not allow string trimming to damage the trunk or foliage of plants.

- b. Grass shall be trimmed to the same desired height as determined by the mowing operation.
 - c. Particular shall be given to trimming around sprinkler heads and other irrigation appliances to provide maximum water coverage.
 - d. Turf adjacent to tree wells, valve boxes, and quick coupling valves shall be trimmed as needed to maintain a clean appearance. Chemical defoliant or herbicides shall not be used as an “edger” in these areas.
4. Chemical Edging:
- a. Chemical application may be used to kill weeds and turf in and around areas adjacent to buildings, the base of fence lines, or where bed edges do not exist.
 - b. Chemicals shall be used accordingly to applicable rules and regulations.
- D. Reseeding/Overseeding:
1. Reseeding/Overseeding: Match existing seed mix of adjacent areas. Refer to Section 329200 – Lawns & Grasses.
- E. Renovating of Existing Lawns (where applicable):
1. Thatch Control: Maintain thatch layer at 1/2 in. depth or less. Verticut as required.
 - a. Three (3) weeks before verticutting turf grass, apply nitrate fertilizers.
 - b. Perform verticutting operations preferably in the fall months, but otherwise during the spring months. Remove all debris from verticutting. Overseed as needed.
 - c. Over-seeding must not be followed by application of pre-emergent herbicides for at least four (4) to six (6) weeks. Normally this means that turf grasses invaded by weeds shall be renovated and over-seeded in the Fall, and treated for weed control in the following late Winter.
- F. Core Aeration:
1. Do not perform aeration work during season of active weed germination.
 2. Aerify compacted areas to improve water penetration when needed, using a piston-driven aerifier with hollow tines. Rake up and remove all resulting soil cores. Fertilize and irrigate immediately after clean-up of cores.
 3. Contractor shall be responsible for locating and flagging irrigation devices, equipment, and lines prior to aerating.
- G. Fertilization:
1. Recently seeded/sodded Turf Grass areas: Verify with Owner previous applications of fertilizer(s).
 2. Established Turf Grass areas: Apply a slow-release (3 to 5 months) fertilizer (21-8-8; N-P-K) once in spring and again in the fall at the following rates:

<u>Program</u>	<u>1000 sq. ft.</u>	<u>Acre</u>
Optimum	15 lbs.	650 lbs.
Medium	12 lbs.	500 lbs.
Low	8 lbs.	350 lbs.

3. Apply fertilizer when turf grass is dry and preferably after mowing. Do not apply during hot weather or when turf grass is under stress. Water immediately after application.
4. Apply only nitrogen unless a soil test shows a specific nutrient deficiency.
5. If soil pH gets below 6.0, then a basic fertilizer such as calcium nitrate may be preferable to an acidic fertilizer. Follow the soil chemist's recommendation when deficiencies appear.

3.7 INSECTS, PESTS, AND DISEASE CONTROL

- A. Inspection: Inspect plant materials for signs of stress, damage and potential trouble from the following:
 - 1. Presence of insects, moles, gophers, rabbits, ground squirrels, snails and slugs in planting areas.
 - 2. Discolored or blotching leaves or needles.
 - 3. Unusually light green or yellowish green color inconsistent with normal green color of leaves.
- B. Personnel: Only licensed, qualified, trained personnel shall perform spraying for insect, pest and disease control.
- C. Application: Spray with extreme care to avoid all hazards to any person or pet in the area or adjacent areas.
- D. Lawn or vegetation-damaging pests shall be controlled in a timely manner to minimize damage.

3.8 IRRIGATION

- A. General:
 - 1. Apply water in sufficient quantities and as often as seasonal conditions require to keep installed planted areas moist at all times, well below the root system of plants. Hand water as required if irrigation system is not fully functional.
 - 2. Repair without additional charge to Owner damages to Irrigation System caused by Contractor's operations. Perform repairs within one (1) watering period.
 - 3. Report promptly to Owner accidental damage not resulting from Contractor's negligence or operations.
 - 4. Twice a month, use a probe or other acceptable tool to check the rootball moisture of representative plants as well as the surrounding soil.
- B. Cleaning and Monitoring the System:
 - 1. Continually monitor the irrigation systems to verify that they are functioning properly as designed. Make program adjustments required by changing field conditions.
 - 2. Prevent spraying on windows, building walls, by balancing the throttle control on the remote control valves and the adjustment screws on the sprinkler heads. Do not allow water to atomize and drift.

3.9 AGGREGATE SURFACING MATERIALS

- A. Aggregate Surfacing:
 - 1. Maintain Aggregate Surfacing materials at the depth indicated in the Contract Documents. Replace Aggregate Surfacing that is unlike in character (color, size, texture). Defective, fractured, stained, or material which does not meet the requirements herein in this Section shall be removed and replaced with appropriate Aggregate Surfacing material as specified.
 - 2. Rake Aggregate Surfacing surfaces smooth, consistent, and level, with no depressions, voids, rills, footprints, etc. Fines from the Aggregate Surfacing that are located on the

finished surface shall be raked and/or removed accordingly to maintain a clean, consistent Aggregate Surfacing finish.

3. Maintain Aggregate Surfacing free of stains, weeds, discoloration, trash, fines, debris, soil, sand, or other foreign material.
 - a. Contractor shall exercise care so as not to contaminate Aggregate Surfacing with Shredded Wood Mulches, plant materials, soil, or other foreign substances.
 - b. Soil that has contaminated the Aggregate Surfacing areas shall be removed from the Aggregate Surfacing. Raking to “hide” the soil below the finished surface of the Aggregate Surfacing is not acceptable.

3.10 GRADING AND DRAINAGE

- A. During the Landscape Establishment Period, all flow lines shall be maintained to allow for free flow of surface water. Displaced material which interferes with drainage shall be removed and placed as directed. Low Spots and pockets shall be graded to drain properly. Jute netting or other erosion control measures as directed shall be installed at flow lines and other locations where surface erosion is evident.
- B. Damage to planting areas shall be repaired immediately and throughout the Landscape Establishment Period. Depressions caused by vehicles, bicycles, or foot traffic shall be filled and leveled. Replant damaged areas.
- C. All paved areas shall be washed and maintained in a neat and clean condition at all times.
- D. All subsurface drains and inlets shall be periodically cleared of debris, leaves, trash, etc., and flushed with clear water to avoid buildup of silt and debris.

3.11 CLEANING

- A. General: Dispose of pruned plant materials, vacuum turf grass clippings and leaves, sweep walkways and rake smooth mulched areas. Remove from the site containers and other evidence of maintenance activities.
- B. Litter Control:
 1. Site areas under the Contract shall be cleared on a weekly basis of visible litter or debris, grass clippings, and garage.
 2. Debris caused by normal seasonal winds shall be removed from site
 3. Contractor shall be responsible for disposal of debris in accordance with local rules and regulations.
- C. Blowing:
 1. Landscape debris generated by Work under this Section shall be blown-off or swept on a weekly basis. Do not blow grass clippings, edgings, or debris into shrub beds or onto paved areas unless after such blowing, the resultant accumulation of material is gathered and removed from the site.

3.12 TERMINATION OF THE LANDSCAPE ESTABLISHMENT PERIOD

- A. Final Acceptance Procedure:
 - 1. Work will be accepted by the Landscape Architect upon satisfactory completion of all Work, including Landscape Establishment Period, but exclusive of replacement of materials under the Warranty Period.
 - 2. Submit a written request to Landscape Architect for review for Final Acceptance at least five (5) working days prior to anticipated Final Review date, which is at the end of the Landscape Establishment Period.

- B. Corrective Work:
 - 1. Work requiring corrective action or replacement shall be performed within ten (10) calendar days after the Final Review.
 - 2. Perform corrective Work and materials replacement in accordance with the Contract Documents, Work shall be made by the Contractor at no cost to the Owner.
 - 3. After corrective Work is completed, the Contractor shall again request a Final Review for Final Acceptance as outlined above.
 - a. Continue maintenance of all landscaped areas until such time as all corrective measures have been completed and accepted.

- C. Conditions for Acceptance of Work at End of Landscape Establishment Period:
 - 1. Each plant shall be alive and thriving, showing signs of growth and no signs of stress, disease, or any other weaknesses.
 - 2. Replace plant materials not meeting these conditions. An additional Warranty Period equal in length to the original shall be commenced for all such plants and planted areas.

- D. Final Acceptance Date: The date on which the Landscape Architect issues a Letter of Final Acceptance. Upon Final Acceptance, Owner will assume responsibility for maintenance of the Work beyond the Landscape Establishment Period.

3.13 CLOSE OUT

- A. Landscape Maintenance Record:
 - 1. Submit binder to Owner with documentation and records required and utilized during the Landscape Establishment Period.

- B. Keys and Identification: Return keys and identification materials supplied by Owner for the purpose of site access.

END OF SECTION

SECTION 34 41 13 – TRAFFIC SIGNALS

PART 1 - RECTANGULAR RAPID FLASHING BEACON SYSTEM

1.01 SCOPE

- A. Principal work in this Section includes but is not necessarily limited to:
 - 1. Furnishing and installing a Rectangular Rapid Flashing Beacon (RRFB) solar system that will provide wireless communication between assemblies and APS pushbutton activation.
- B. All work shall conform to MUTCD standards and the MUTCD – Interim Approval for Optional Use of Pedestrian-Actuated Rectangular Rapid-Flashing Beacons at Uncontrolled Marked Crosswalks (IA-21).
- C. All work shall conform to the latest provisions of the Standard Specifications, Revised Standard Specifications, Standard Plans and Revised Standard Plans of the State of California, Department of Transportation and these Special Provisions.
- D. The Rectangular Rapid Flashing Beacon (RRFB) solar system shall be furnished by the city of Hermosa Beach and shall be fully compliant with all Federal Highway Administration (FHWA) and MUTCD guidelines. The system shall consist of the components described in this specification.

1.02 WORK TO BE ACCOMPLISHED

- A. Product Data: For each type of manufactured material and product indicated.

1.03 SYSTEM SERVER

- A. The system server shall be housed in one or more independent facilities with on-premises 24/7 security staff and Uninterruptible Power Supply (UPS).

1.04 CONTROLLER

- A.
 - A. The controller shall be provided by the city of Hermosa Beach. The controller shall be equipped with a GPRS/EDGE modem and GPS receiver attached to its antenna unit, and the system shall not require the installation or alteration of any other equipment or associated hardware, such as traffic signal controllers, Ethernet connections, local radios, local wireless connections or local networks.
 - B. The controller shall be housed in a vandal-resistant, fiberglass NEMA 4X pole-mounted cabinet with a lockable, hinged door, intended for indoor or outdoor use, primarily to provide a degree of protection against corrosion, windblown dust and rain, splashing water, hose-directed water, and damage from ice formation.
 - C. The LED light outputs and flash pattern shall be completely programmable, with the capability to actuate RRFB and LED-enhanced signs.
 - D. The controller shall be reconfigurable if future MUTCD or State guidelines specify a different flash pattern.
 - E. The controller shall be capable of storing input count data in preset intervals, with downloadable capabilities using Windows-based PC software program and standard programming cable.
 - F. The controller shall be, in the unlikely event of failure, replaceable independently of other components.

1.05 RECTANGULAR RAPID FLASHING BEACON (RRFB)

- A. The RRFB will be furnished by the city of Hermosa Beach. The RRFB shall be high performance (HP) RRFB. The RRFB housing shall contain two primary light bars mounted in compliance with MUTCD requirements, but exceeding the minimum 5"W x 2"H size and MUTCD total light emission requirements. In addition to the primary light bars, the housing shall have smaller secondary light bars mounted on each end for pedestrian notification, arrayed in a 0.4" W x 2"H rectangle. The secondary light bars shall have optional opaque covers if pedestrian notification from either or both ends of the housing is not desired. The overall dimensions of the RRFB unit shall be 29"W x 4"H x 1.5"D. The LEDs used in both the primary and secondary light bars shall be rated for a minimum 15 - year life, and the light bars shall not protrude beyond the surface of the housing, shall not be mounted to the housing with exposed screws, and shall be covered with polycarbonate windows for durability and vandal resistance. The RRFB shall draw attention at distances greater than 1000 feet during the day and over 1 mile at night. The RRFB housing shall be made of powder-coated aluminum with a minimum thickness of 0.125", and shall provide a mounting mechanism allowing for directional rotation of the primary light bars toward oncoming traffic at curves, corners, and roundabouts. The controller shall adjust RRFB brightness as outside light levels change between day and night, being brighter during the day and less bright at night. RRFB bars mounted on a pole shall be able to be independently aimed to optimize performance in each direction.

1.06 ACTIVATION DEVICES

- A. The controller shall be activated by an ADA compliant Polara Bulldog push button. A Pedestrian pushbutton instruction sign shall be furnished by the city of Hermosa Beach at a minimum size of 5"x7" and mounted adjacent to or integral with each pedestrian pushbutton.

1.07 COMMUNICATION PROTOCOLS

- A. Each controller shall be equipped with a GPRS/EDGE modem and GPS receiver attached to its antenna unit.
- B. For security and reliability purposes, communication between the System Server and the Controller shall utilize the closed-loop Transmission Control Protocol/ Internet Protocol ("TCP/IP") over a highly secure Virtual Private Network ("VPN") in addition to the intrinsic security provided by the cell network encryption. Communication between the System Server and any desktop, netbook, tablet or smartphone running a mainstream browser, such as Internet Explorer, Firefox, Chrome or Safari ("Capable Device"), shall be via a secure (https) website and shall also use TCP/IP protocol, in this case encrypted using the same machinery employed in electronic funds transfer.

1.08 WIRELESS TRANSCEIVER RADIO

- A. Radio control shall be solar-powered, operating on a FCC- approved 900mhz frequency, hopping spread spectrum network with a normal operating range of 1000 feet.
- B. Radios shall provide wireless communication between the assemblies to integrate the pushbutton activation of indications.
- C. To ensure all integral indications consistently flash in unison, the Radio shall synchronize the controllers to activate the indications within 120msec of one other and remain synchronized throughout the duration of the flashing cycle.

- D. Radio systems shall operate from 3.6 VDC to 15 VDC.
- E. The Radio shall be, in the unlikely event of failure, replaceable independently of other components. The Radio shall have a minimum operating temperature range of -30dF to 165dF.

1.09 NO LOCAL SOFTWARE

- A. No local host or client software and its associated maintenance updates shall be required.

1.10 REMOTE MANAGEMENT

- A. The controller shall be remotely managed for purposes of activation duration setting and maintenance. Remote management shall be performed over a cellular M2M network and the internet, from anywhere an internet connection can be made by a capable device. Multiple users from any locations with internet access shall be able to perform system management operations simultaneously.

1.11 INTUITIVE USER INTERFACE

- A. Using unique user names and passwords, users shall be able to access the graphical, browser-based user interface ("UI"). For ease of system management, the UI shall use intuitive graphics, and the UI shall display an icon representing each Controller with its name and exact location on a Google Map. Security access shall be hierarchical, and allow system administrators to assign system administrator, scheduler / editor or viewer-only permission to individual users.

1.12 REPORTS

- A. Each system shall provide daily activation, bulb outage, battery health (solar only) and communication interruption (knockdown) reports through the UI. These reports may be viewed and/or downloaded.

1.13 PROACTIVE DIAGNOSTICS

- A. Each system shall generate proactive daily bulb outage, battery health (solar only) and communication interruption (knockdown) diagnostics delivered by email to a configurable set of recipients.

1.14 MECHANICAL AND ELECTRICAL SPECIFICATIONS

- A. Power Options
 - a. The controller unit shall be available in a solar 12 VDC, 20 AHr version equipped with a 20W or 45W solar panel, as well as a 120 VAC, 50W version. Solar-powered system shall provide a minimum of 30 days of back-up battery power in the absence of sunlight while operating at full brightness and at standard usage levels.
 - b. The solar panel's battery shall be replaceable independently of other components.
 - c. The solar engines shall be furnished by the city if Hermosa Beach

1.15 PEDESTAL BASE AND POLE SHAFT

- A. The RRFB system shall be mounted on a Type 1-A Standard pole as per standard ES-7B of the Standard Plans and Revised Standard Plans of the State of California, Department of Transportation.
- B. Poles to be furnished by contractor.

1.16 PEDESTRIAN PUSH BUTTONS

- A. Pedestrian Push Buttons shall be provided by the city of Hermosa Beach. Pedestrian push button housings shall be Type B, and shall conform to Section 86-1.02U and 87-1.03U “Push Button Assemblies” and the “Americans with Disability Act” requirements. Pedestrian push button housings shall be either die-cast or permanent mold-cast aluminum.
- B. Pedestrian push button signs shall be porcelain enameled metal. The sign legend shall be a symbolic person and arrow (black) on white background.
- C. All push button housing mounting bolts, sign mounting screws, and push button cap screws shall be Type 316 stainless steel. Sign mounting screws shall not be the theft-proof type.
- D. All pedestrian push button housings and push button caps shall be painted black in color.

1.17 SIGNS

- A. Traffic signs to be mounted on poles shall be furnished by the contractor. Sign panels shall be constructed of reflective sheeting on aluminum. Sign location and placement shall conform to the City of Oxnard Standard Plans Plate 204 and these Specifications.
- B. The contractor shall furnish a certificate of compliance from the manufacturer showing that the sign panels conform to the specifications issued by the State of California, Department of Transportation, and/or the City of Oxnard for materials, size, and legend.

1.18 WARRANTY

- A. The controller unit and the HP RRFB Crosswalk Lighting System shall be supported by a three (3) year warranty.

1.19 TESTING

- A. The functional test for each lighting system shall consist of not less than 7 days. If unsatisfactory performance of the system develops, the conditions shall be corrected and the test shall be repeated until the 14 days of continuous, satisfactory operation is obtained.

1.20 MEASUREMENT AND PAYMENT

- A. Payment for the RECTANGULAR RAPID FLASHING BEACON (RRFB) system work shall be made at the lump sum (LS) price per specifications. The bid lump sum shall include the cost of furnishing all materials, labor, equipment, testing and all incidentals necessary to complete the work in accordance with the Standard Specifications.

END OF SECTION

EXHIBIT “A” - SOLID WASTE REPORTING

SOLID WASTE REPORTING

Pursuant to the California Integrated Solid Waste Management Act of 1989, the City is required to report the amount of solid waste generated within the City and the disposal of that waste with the ultimate required goal of being a reduction of at least 50% in the amount of solid waste being disposed in landfills. To permit the City to comply with this State law, the Contractor is required to complete the Solid Waste Report form, a copy of which is included in these special provisions. The report includes a summary of the solid waste generated by the project, a summary of solid waste disposed of at class III landfills and a summary of solid waste diverted from disposal through recycling and re-use. The Contractor may use a self-generated report format that includes all of the information included on the City form.

The report shall be filed with the City after project completion and prior to final payment. If the project time span includes more than one calendar year, a separate report is required for the solid waste in each calendar year. A report for a calendar year that does not coincide with project completion shall be filed with the City on or before January 31st.

Supporting documents to be submitted with the report shall include legible copies of weigh tickets, receipts, or invoices that specifically identify the job site location that generated the waste materials. If materials are taken to a location where weigh tickets, receipts, or invoices are not available, the Contractor shall provide the documentation on its own company letterhead.

The Contractor is encouraged to divert solid waste from disposal at landfills through recycling and re-use when possible while maintaining compliance with all other Contract specifications and special provisions.

**Contractor's Construction and Demolition
Waste Diversion Reporting Form**

Job Site Address (where waste was generated): _____

City Permit No.: _____

Material	Name of Facility/Site Where Taken	Disposal	Aggregate	Recycled or Reused				
				Alternative landfill	Compost	Engineered Fill	Mulch	Other
				Tons	Tons	Tons	Tons	Tons
ASPHALT								
CONCRETE								
DIRT								
GREEN WASTE								
METAL								
OTHER SEGREGATED MATERIALS(Describe)								
ROCKS								
WOOD								
MIXED WASTE								
OTHER CONSTRUCTION OR DEMOLITION WASTE								
TOTAL								
COMPANY NAME:					DATE OF REPORT:			

EXHIBIT "B" - CONSTRUCTION NOTICE TEMPLATE

COMPANY LETTERHEAD

NOTICE OF WORK/CONSTRUCTION

Name of Project Date of Notice

Dear Residents and Businesses (if applicable):

Provide a brief description of the work that is to be performed. Four to five sentences should suffice.

Map detailing what streets will be closed.

What: Provide a brief description of what is happening. One sentence should suffice.

Start/Duration: When is the project expected to start and how long is it anticipated to take for it to be completed? If there are different phases, indicate the estimated time.

What to Expect: Will there be noise? Will there be flaggers directing traffic? Will residents have access or will it be a full closure? Will parking be temporarily blocked? Include enough details.

Equipment in Use: What kind of equipment will be seen?

Working Hours: What are the working hours and days?

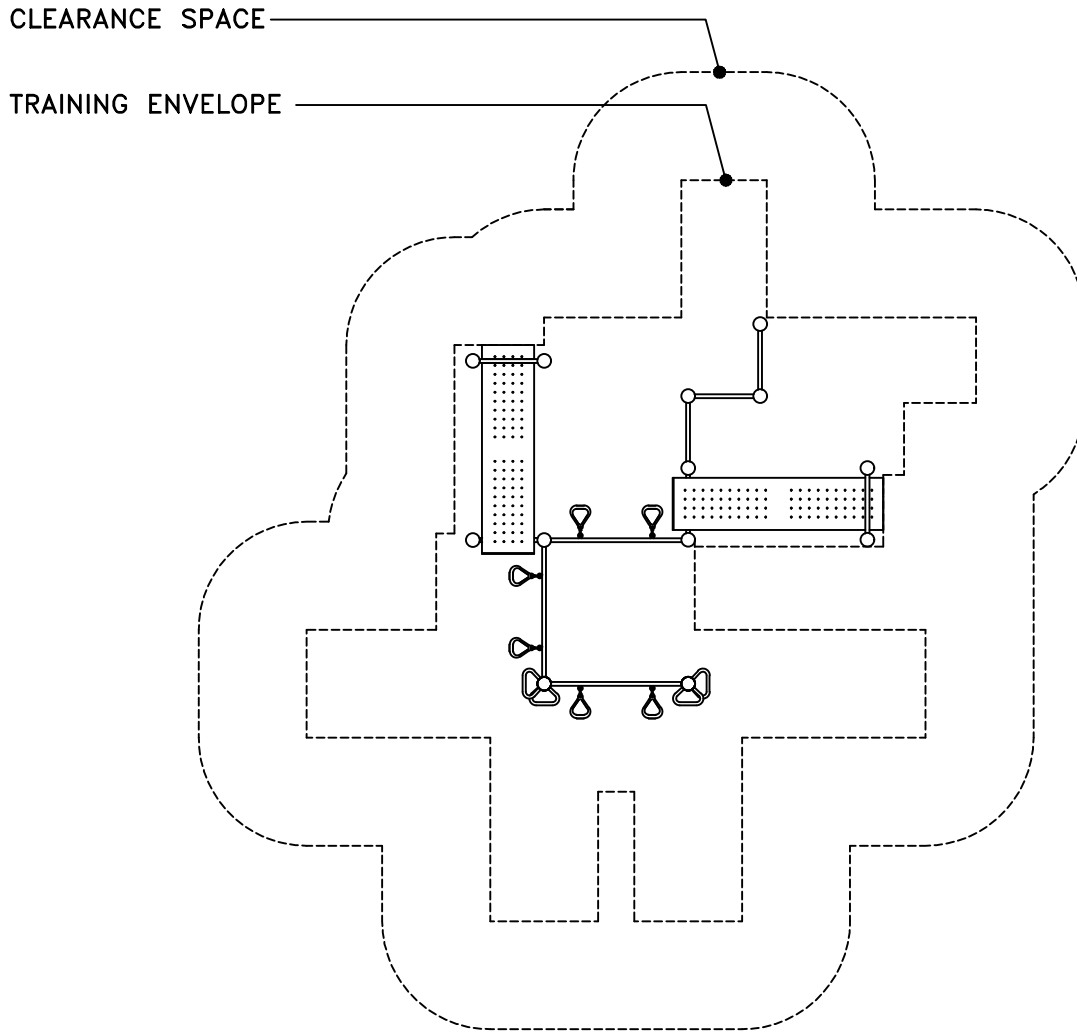
Contact Information

Always include contact information for residents and business owners in case they have questions or concerns.

We apologize for any inconvenience and thank you for your patience. Sincerely,

Contractor Name

EXHIBIT "C" - EXERCISE EQUIPMENT SET



EXERCISE ACTIVITIES

- 1. HEEL-FLEX 4. TOE-TOUCH
- 2. TOE-REACH 5. KNEE-GRIP
- 3. HIP-FLEX 6. ARM-STRETCH

GROUP A SIGN NO. 9700-AS
IS INCLUDED WITH GROUP A

TRAINING ENVELOPE

18'-7" X 20'-7" (5.7m X 6.3m)

CLEARANCE SPACE

24'-7" X 26'-7" (7.5m X 8.1m)

TOP VIEW

NOT FOR CONSTRUCTION. CONTACT COLUMBIA CASCADE COMPANY FOR INSTALLATION INSTRUCTIONS.

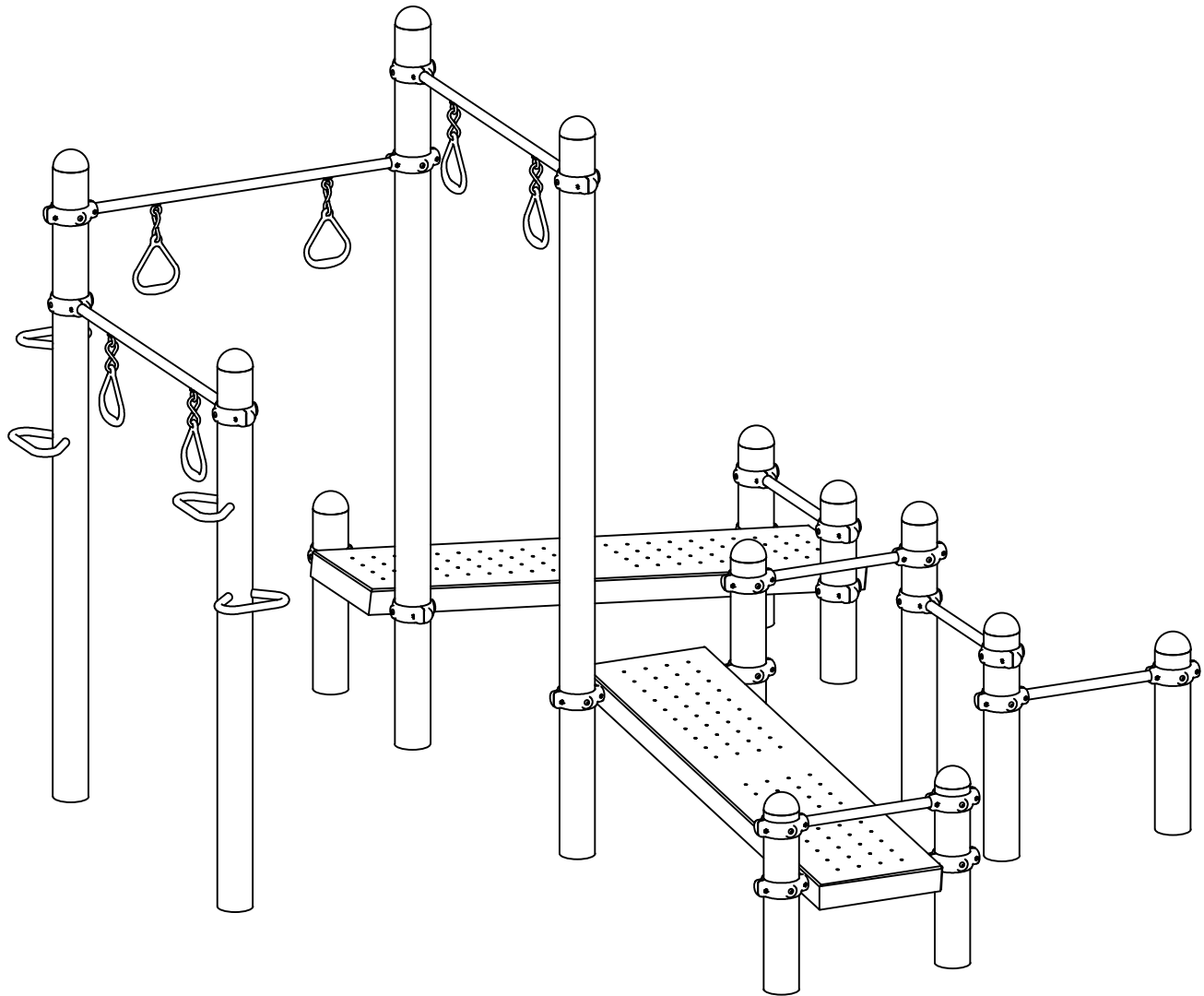
Date	Revision	By
△		
△		
△		
△	03-09-17	T. ENVELOPE ES/CL
Scale	Drawn by: AT	10-30-03
3/16" = 1'-0"	Ck'd by:	

COLUMBIA CASCADE COMPANY
 Makers of TimberForm®, PipeLine®, RePlay®
 TimberForm®-2 and CycLoops® Products.

1300 S.W. Sixth Avenue, Suite 310 Telephone 503/223-1157
 Portland, Oregon 97201-3464 Facsimile 503/223-4530
 U.S.A.

This drawing reveals the copyrighted intellectual property of Columbia Cascade Company. Not for use by others without our express, written authorization.

Title: PIPELINE FITNESS CLUSTER MODEL NO. 9700-03-A PIPELINE GROUP A (SOFDEK BENCH TOPS)	Drawing No. W-9700-03-A	Sheet 1 of 2
--	----------------------------	-----------------



ISOMETRIC VIEW

NOT FOR CONSTRUCTION. CONTACT COLUMBIA CASCADE COMPANY FOR INSTALLATION INSTRUCTIONS.

Date	Revision	By
△		
△		
△		
△	03-10-17	T. ENVELOPE ES/CL
Scale	Drawn by: AT	10-30-03
NONE	Ch'd by:	

COLUMBIA CASCADE COMPANY
 Makers of TimberForm®, PipeLine®, RePlay®
 TimberForm®-2 and CycLoops® Products.

1300 S.W. Sixth Avenue, Suite 310 Telephone 503/223-1157
 Portland, Oregon 97201-3464 Facsimile 503/223-4530
 U.S.A.

This drawing reveals the copyrighted intellectual property of Columbia Cascade Company. Not for use by others without our express, written authorization.

Title:
 PIPELINE FITNESS CLUSTER
 MODEL NO. 9700-03-A
 PIPELINE GROUP A
 (SOFDEK BENCH TOPS)

Drawing No. W-9700-03-A

Sheet 2 of 2

PipeLine Specifications

No. 9700-A-03 Fitness Cluster Group with SofDek™ Benches

FITNESS EQUIPMENT

Fitness equipment shall be *PipeLine*® Fitness Cluster Group A as manufactured by Columbia Cascade Company, 1300 SW Sixth Avenue, Suite 310, Portland OR 97201-3464 U.S.A.

GENERAL

Fitness Cluster Group A shall consist of an instructional sign and six exercise activities. All fabrication shall take place in an enclosed factory environment by personnel experienced in the manufacture of fitness equipment.

1.0 SIGNAGE

1.1 Instructional Sign

Instructional sign shall consist of pipe frame and graphic panel. One piece pipe frame shall be 1-5/16" (33 mm) o.d. schedule 80 steel pipe formed into a "U" shape. Each frame leg shall embed 3'-0" (915 mm) below finished grade and have a 3/8" (10 mm) diameter hole to receive one No. 4 reinforcing bar (to be supplied by installing contractor). Pipe frame shall be ground smooth, deburred, and CASPAX-7™ finished in accordance with Section 4.0.

Sign panel shall be fabricated of 18 gauge (1.2 mm) mild steel plate and include a graphic illustration and written instructions for safe and proper use of the fitness apparatus. Panel shall be porcelain enamel finished BLUE or GREEN with white graphics in accordance with Paragraph 1.3. The manufacturer shall attach panels to sign frames with vandal-resistant fasteners.

1.3 Signage Finish

Graphic panel shall be coated on all sides with porcelain enamel, a colorful, glossy, tough, extremely weather-resistant finish. The porcelain enamel process shall permanently fuse a thick layer of glass to the metal substrate at temperatures exceeding 1,500°F (815°C). To assure adhesion, only glasses possessing thermal expansion qualities lower than those of the steel plate shall be accepted.

2.0 FITNESS APPARATUS

PipeLine Fitness Cluster Group A shall consist of six exercise activities as follows:

1. Heel-Flex
2. Toe-Reach
3. Hip-Flex
4. Toe-Touch
5. Knee-Grip
6. Arm-Stretch

3.0 METAL MATERIALS

3.1 Posts

All posts shall be 4-1/2" (o.d.) schedule 40 steel pipe with a minimum wall thickness of 7/32" in accordance with ASTM A-53, Type E, Grade A. *Thin wall tubing is not acceptable.* Posts and their end caps shall be CASPAX-7™ finished in accordance with Section 4.0.

3.2 End Treatment

Exposed ends of posts shall be fitted with a cast aluminum (384 alloy) hemi-dome end cap permanently adhered in place. Easily vandalized plastic and/or friction fit end caps are not permitted.

3.3 Post Embedment

Posts shall be embedded 3'-0" (915 mm) below grade in concrete footings as depicted on the erection drawings. Actual concrete footing sizes can vary and depend on job site and climatic conditions. Consult project engineer/owner for exact requirements. Posts shall include through holes to receive two No. 4 reinforcing bars (to be supplied by installing contractor).

3.4 Collars

Cast aluminum (384 alloy) two-piece attachment collars shall be provided in sufficient quantity to connect all rails to support posts. Collars must be formed to recess bolt fastener. Each collar set shall include two vandal-resistant stainless steel socket-head cap screws with nuts and two 1/4" x 1" drive rivets. Collars shall be CASPAX-7 finished in accordance with Section 4.0.

3.5 Straight and Curved Rails

Unless otherwise noted, all steel straight and curved rails shall be 1-5/16" (33 mm) o.d. schedule 40 steel pipe in accordance with ASTM A-53, Type E, Grade A. Straight and Curved Rails shall be CASPAX-7 finished in accordance with Section 4.0.

3.6 Fabrication

All welds shall comply with AWS standard D1.1. All edges, ends, and welds shall be ground smooth by hand to a maximum grit of 36 and shotblasted to a uniform surface texture.

3.7 Quality Control

Inspectors shall examine metal components for correct fabrication, fastener hole alignment, and smoothness.

3.8 Additional Hardware

Additional hardware shall be provided in sufficient quantity to complete assembly of the PipeLine Fitness Clusters. All hardware shall be non-ferrous, or color finished with CASPAX-7, or galvanized, or electrostatic zinc plated in accordance with the manufacturer's standard.

4.0 METAL FINISH

Metal parts, except fasteners and sign panels, shall be finished with CASPAX-7, a colorful, tough, opaque, exterior use powder coating. *Liquid, epoxy, or lead-containing powder coatings are not acceptable.* The CASPAX-7 color shall be the manufacturer's standard or as selected by the owner's representative and designated on the project plans and/or specifications.

4.1 Cleaning

Substrate preparation shall consist first of mechanical cleaning to remove heavy mill scale, rust, varnish, grease, etc., then chemical cleaning in accordance with TT-C-490C, Methods I and III.

4.2 Phosphate Application

After cleaning, the metal substrate shall receive a corrosion-inhibiting iron phosphate coating in accordance with TT-C-490C, Type II, before application of the final color coat.

4.3 Powder Application

The coating powder shall be uniformly applied by the electrostatic method to a minimum thickness of six mils. Promptly after the application of the powder, the coating shall be oven-cured at 400°F (204°C) to chemically bond the finish to the substrate and to render the color finished surface resistant to abrasion, impact, household chemicals, weathering and rusting.

4.4 Chronological Importance

For a corrosion-inhibiting agent to be effective, all fabrication including cutting, coping, grinding, and welding *must be completed before application of the corrosion-inhibiting agent.* Corrosion-inhibiting agent applied prior to fabrication are not acceptable.

4.5 Quality Control

The applicator shall test the finish of each lot for correct millage, chemical resistance, hardness, and internal bond in accordance with established industry standard test methods.

Records of this quality control procedure shall be made and retained for two years.

5.0 SOFDEK BENCHES

5.2 SofDek Perforated Steel Benches

Benches shall be manufactured of 11 gage (.125" thick) perforated mild steel plate. Each unit shall be reinforced with 1/4 inch thick mild steel bar as necessary to insure structural integrity. No sharp metal edges shall be exposed. Benches shall be thermo-plastic finished in accordance with Paragraph 5.2.3.

5.2.1 Cleaning

Substrate preparation shall consist first of mechanical cleaning to remove heavy mill scale, rust, varnish, grease, etc., then chemical cleaning in accordance with TT-C-490C, Methods I and III.

5.2.2 Phosphate Application

After cleaning, the metal substrate shall receive a corrosion-inhibiting iron phosphate coating in accordance with TT-C-490C, Type II, before application of the final color coat.

5.2.3 Thermoplastic Application

The ultra-violet stabilized thermoplastic coating shall be applied by the electrostatic process to pre-heated substrate to a thickness of approximately 30 mils then allowed to cure before handling. Final Durometer (hardness) shall be 52 on the D Shore scale in accordance with ASTM D 2240. The color coated surface shall bond to the substrate and be resistant to abrasion, impact, household chemicals, weathering and rusting.

5.2.4 Chronological Importance

For a corrosion-inhibiting agent to be effective, all fabrication including cutting, coping, grinding, and welding *must be completed before application of the corrosion-inhibiting agent*. Corrosion-inhibiting agents applied prior to fabrication are not acceptable.

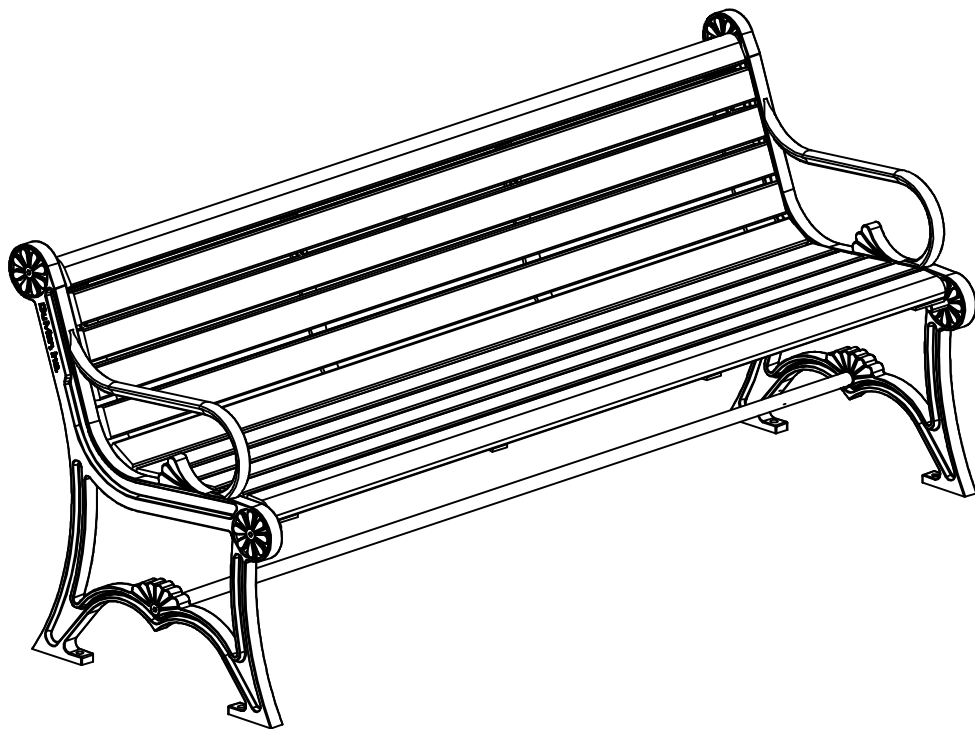
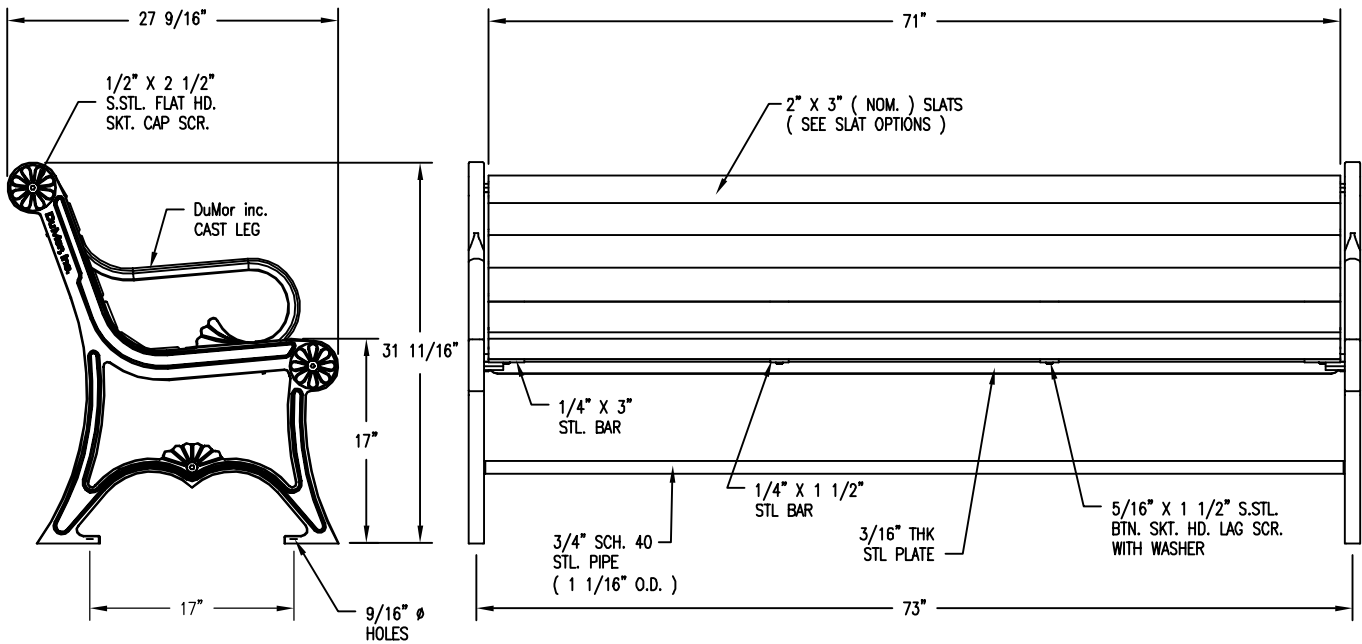
5.2.5 Quality Control

The applicator shall test the finish of each lot for correct millage, chemical resistance, hardness, and internal bond in accordance with established industry standard test methods. Records of this quality control procedure shall be made and retained for two years.

6.0 INSTALLATION INSTRUCTIONS AND AIDS

To guide installation, PipeLine Fitness Cluster Group A shall be accompanied by bills of materials, written instructions, and an erection plan view drawing to be furnished prior to or with the delivery of the fitness equipment. To facilitate assembly, each part shall be indelibly stenciled with an easily-read identification number keyed to the bills of materials and erection drawings. All components shall be shipped unitized, protectively wrapped, banded for mechanical handling and ready for assembly.

EXHIBIT "D" - BENCH



NOTES

- 1.) ALL STL. MEMBERS COATED W/ ZINC RICH EPOXY THEN FINISHED W/ POLYESTER POWDER COATING.
- 2.) 1/2" X 3 3/4" EXPANSION ANCHOR BOLTS PROVIDED.
- 3.) CUSTOM LETTERING AVAILABLE FOR RECESSED SIDE PANELS (TOTAL OF 37 SPACES).

CUSTOM LETTERING (37 SPACES) _____

SLAT OPTIONS

- ANTIQUE MAHOGANY TEXTURED
- BRAZILIAN WALNUT TEXTURED
- OTHER _____



BENCH

DATE DRAWN : 11/08/18
 DRAWN BY : ESS
 DATE REV. :
 REV. BY :

REV.
A

DRAWING NUMBER

57-60TX

SHEET
1 OF 3

NOTE:

- 1.) DURING ASSEMBLY PROCEDURE;
DO NOT COMPLETELY TIGHTEN HARDWARE.
- 2.) THE ACTUAL PARTS WILL NOT BE NUMBERED.
NUMBERS ONLY APPLY TO DRAWING.
- 3.) UPON COMPLETION OF ASSEMBLY SQUARE
ALL COMPONENTS THEN TIGHTEN ALL HARDWARE.
- 4.) MOUNT AND ANCHOR AS SPECIFIED.

TOOLS REQ'D

- 3/4" WRENCH
- 1/2" WRENCH
- 5/16" ALLEN WRENCH
- 1/4" ALLEN WRENCH
- 3/16" ALLEN WRENCH
- 1/2" MASONRY DRILL BIT
- DRILL

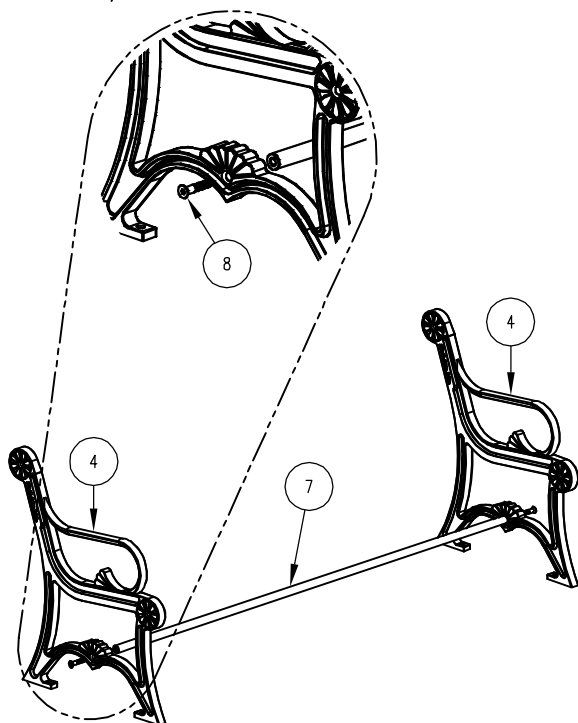
PARTS LIST

ITEM	QTY	PART NO	DESCRIPTION
1	9	0-143-60TX-01	2" X 3" X 71" INT'R SLAT, TX
2	2	0-143-60TX-02	2" X 3" X 71" EDGE SLAT, TX
3	2	0-16-60-06	71" SEAT BRACE
4	2	0-57-00-02	CAST IRON BENCH SUPPORT W/BACK
5	2	0-57-00-03	CENTER CONTOUR STRAP
6	2	0-57-00-05	END CONTOUR STRAP
7	1	0-57-60-04	71 3/4" PIPE BRACE
8	6	1-12-065	1/2" X 2 1/2" FLT SKT HD CAP SCR
9	8	1-12-116	5/16" X 1" SS BTN SKT HD CAP SCR
10	44	1-13-023	5/16" X 1 1/2" SS BTN SKT HD LAG
11	8	1-20-016	5/16" SS NYLON LOCKNUT
12	60	1-22-017	5/16" SS FLAT WASHER

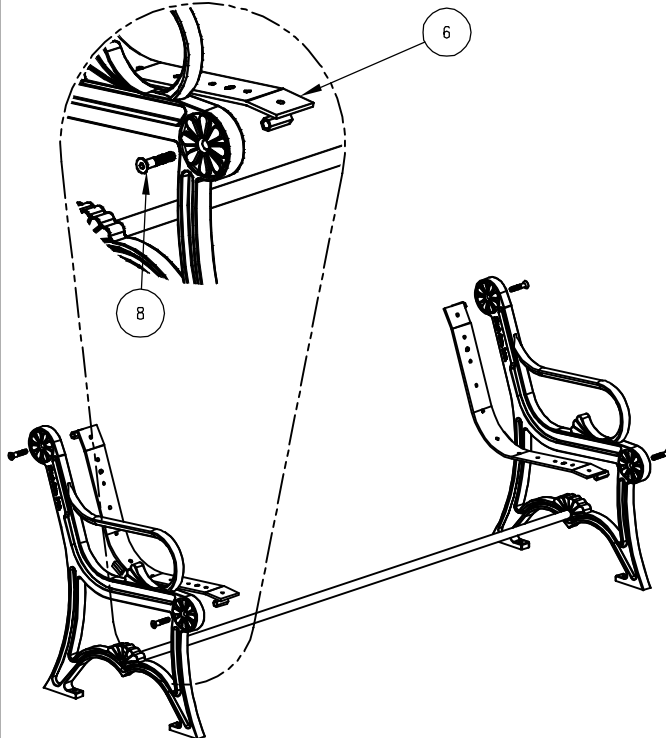
KITS PROVIDED

ITEM	QTY	PART NO	DESCRIPTION
13	1	K-143-60	143-60 SER HARDWARE KIT
14	1	K-ANC0860-4	1/2" X 3 3/4" SS ANCHOR KIT (4PC)
15	1	K-FC0840-6	1/2" CAP HARDWARE KIT (6PC)

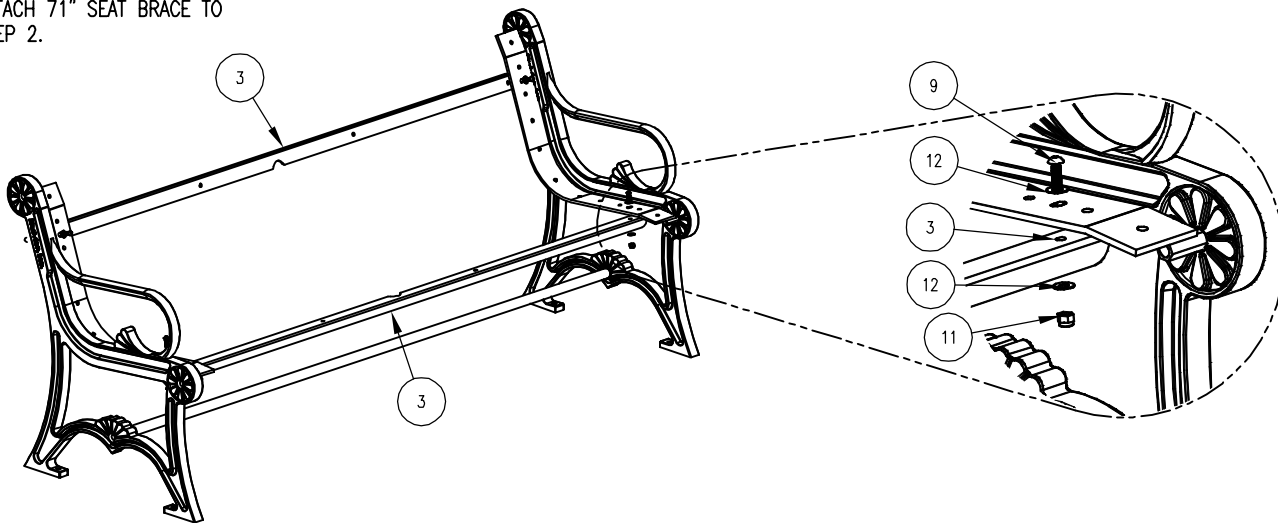
1 ATTACH CAST BENCH SUPPORT TO 71 3/4" PIPE BRACE.



2 ATTACH END CONTOUR STRAPS TO STEP 1.



3 ATTACH 71" SEAT BRACE TO STEP 2.



ASSEMBLY INSTRUCTIONS

DATE DRAWN : 11/08/18
 DRAWN BY : ESS
 DATE REV. :
 REV. BY :

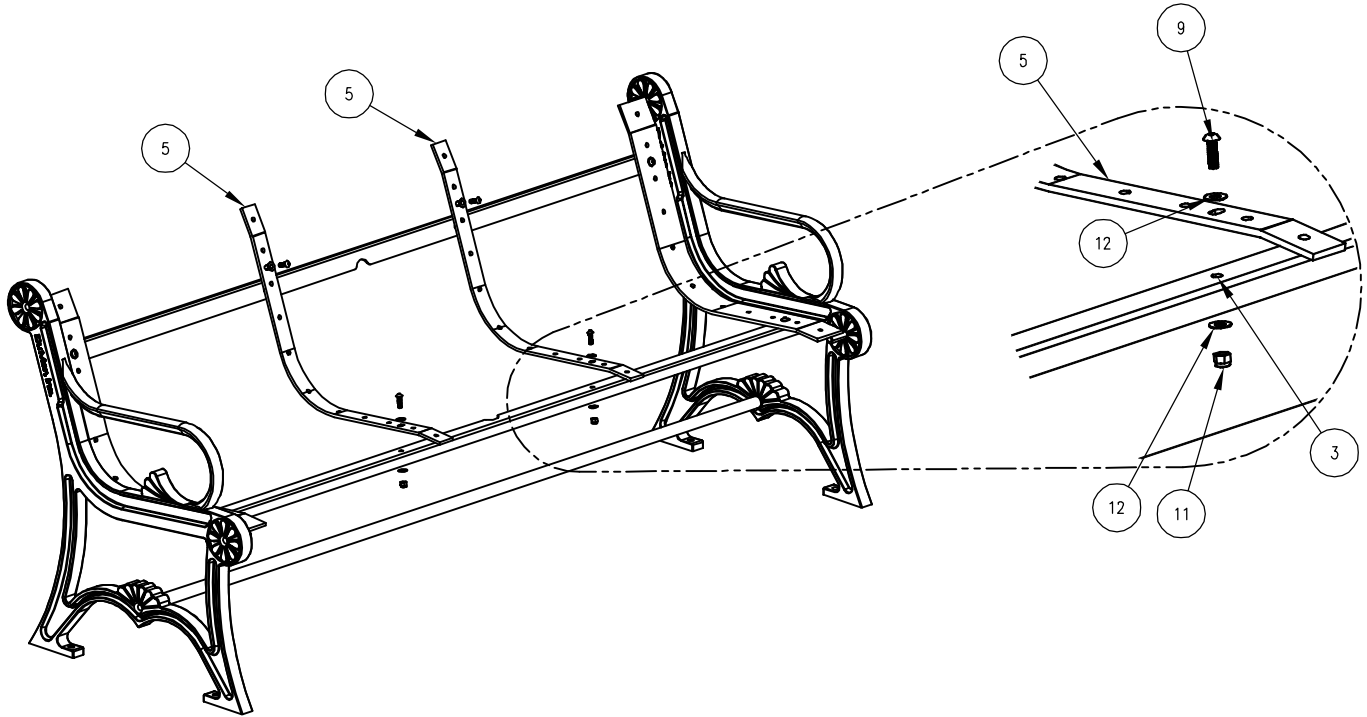
REV.
A

DRAWING NUMBER

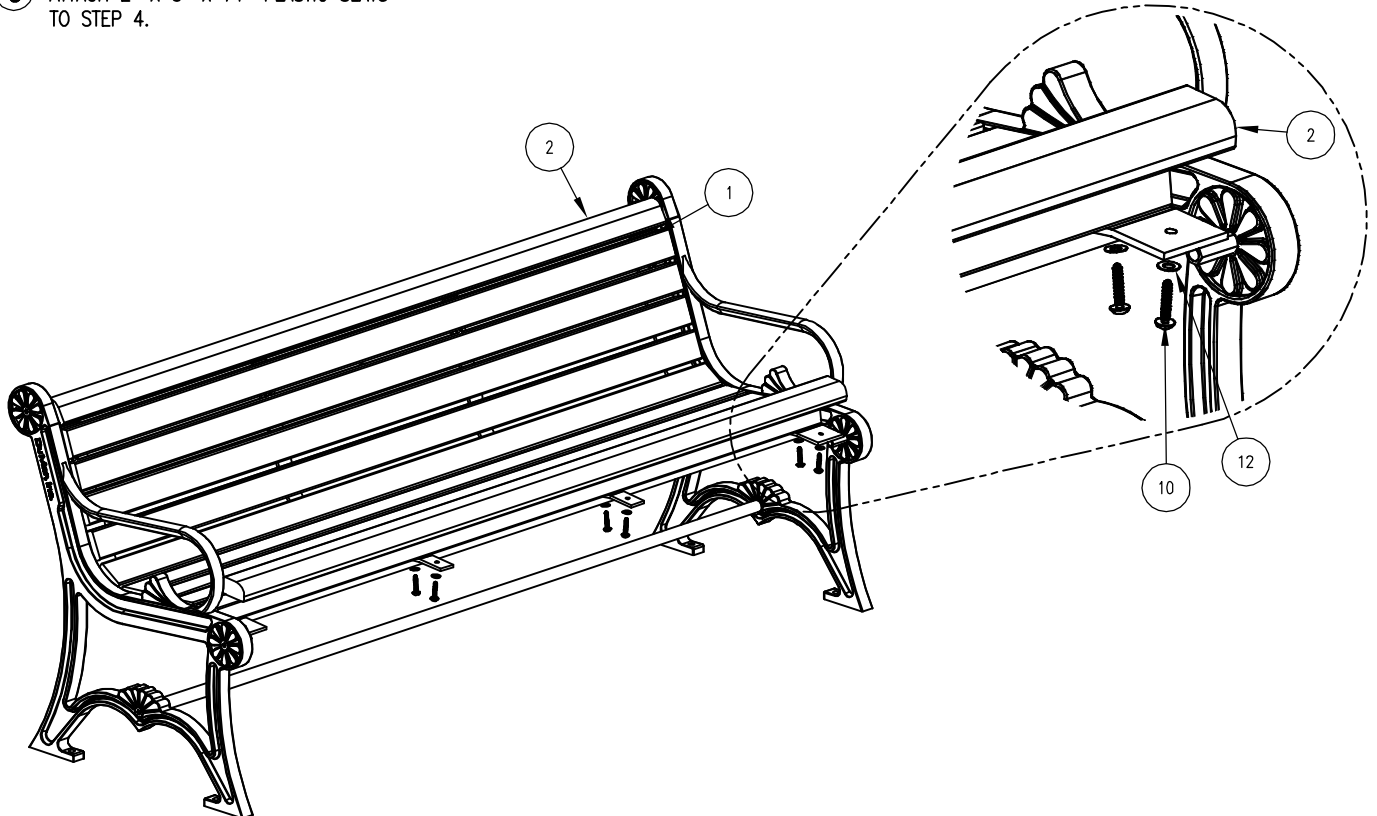
57-60TX

SHEET
2 OF 3

4 ATTACH CENTER CONTOUR STRAPS TO STEP 3.



5 ATTACH 2" X 3" X 71" PLASTIC SLATS TO STEP 4.



ADDENDUM No. 1

CIP 502 – Greenbelt Pedestrian Trail
CIP 604 - City Wide ADA Improvements
CIP 194 – Annual Striping Improvements

DATE: 5/16/2024

TO: All Prospective Bidders

Please note the following changes and/or additions to the **Contract Documents, Plans and Specifications**, for the project indicated above.

1. **Response to Questions**

Q: Will a listed subcontractor fulfill the C-8 requirement for this contract and the requirements in the Notice Inviting Bids? Is there a limitation on submitting a prime proposal and sub-proposals to other prime bidders for portions of the work?

A. Yes, a prime contractor with a C-27 license with a subcontractor with a C-8 license will meet the license requirements. The prime contractor must be the one submitting the bid. The prime contractor must complete above 50% of the contract with its own forces.

Q: In the sample contract for the above referenced project, the insurance is asking for Builder's Risk, \$5 million GL and \$5 million Auto coverage (see pages 47-50 of the PDF file). However, when you look at the Special Provisions for the project, section 5-4 (pages 94-96 of the PDF), there is no mention of Builder's Risk, and the insurance limits are \$2 million for GL and \$1 million for the Auto. Which one is correct? The pricing for insurance is very different depending on the amount and the builder's risk requirement. Also, there is no mention of whether Umbrella coverage can meet requirements. Is that possible?

A: For Commercial General Liability, the City will require a \$2 Million per occurrence and \$4 Million general aggregate policy. For Automobile Liability, the City will require a \$1 Million policy. Builder's Risk insurance will not be required. Umbrella coverage may be accepted. The sample contract is amended as a part of this Addendum to reflect those requirements after award of bid.

2. Refer to NOTICE INVITING BIDS

Delete the paragraph:

*Notice is hereby given that the City of Hermosa Beach will receive electronic bids until **2:00 PM on MONDAY, MAY 20, 2024**, at which time the electronic bids will be publicly opened at the City Council Chambers at 1315 Valley Drive, Hermosa Beach, CA 90254 and posted on Planet Bids for **CIP No. 502 Greenbelt Pedestrian Trail, CIP No. 604 City Wide ADA Improvements, and CIP No. 194 Annual Striping Improvements.***

Replace with the following:

*Notice is hereby given that the City of Hermosa Beach will receive electronic bids until **2:00 PM on THURSDAY, MAY 23, 2024**, at which time the electronic bids will be publicly opened at the City Council Chambers at 1315 Valley Drive, Hermosa Beach, CA 90254 and posted on Planet Bids for **CIP No. 502 Greenbelt Pedestrian Trail, CIP No. 604 City Wide ADA Improvements, and CIP No. 194 Annual Striping Improvements.***

Delete the paragraph:

*Please submit any questions related to this bid on Planet Bids portal no later than **5:00 PM on MONDAY, MAY 9, 2024.***

Replace with the following:

*Please submit any questions related to this bid on Planet Bids portal no later than **5:00 PM on MONDAY, MAY 20, 2024.***

3. Refer to Part IV – BID DOCUMENTS, B. BID SCHEDULE

The Bid Schedule has been revised to more accurately reflect the Plans.

Delete the original Bid Schedule and replace it with Attachment 1.

4. Refer to Part IV – BID DOCUMENTS, D. BIDDER’S ASSURANCE

Delete the words “bidding schedule” and replace with “Bid Schedule.”

5. Refer to Part IV – BID DOCUMENTS, D. BIDDER’S DECLARATION

Remove the phrase:

The undersigned will begin work after award of Contract and a Notice to Proceed has been given as herein specified and will complete said work within the time specified in the Bidding Schedule

Replace with the following:

*The undersigned will begin work after award of Contract and a Notice to Proceed has been given as herein specified and will complete said work within the time specified in the **Bid Documents.***

6. Refer to Part V – CONTRACT DOCUMENTS, A. CONTRACT AGREEMENT

Remove the clause:

INCORPORATED DOCUMENTS TO BE CONSIDERED COMPLEMENTARY: The Contract documents for the aforesaid project shall consist of the Notice Inviting Bids, Instructions to Bidders, Bid Proposal, Builders General Provisions, Standard Specifications edition, Special Provisions, Exhibits A and B and all referenced specifications, details, standard drawings, and appendices; together with this Agreement and all required bonds, insurance certificates, permits, notices and affidavits; and also, including any and all addenda or supplemental agreements clarifying, amending, or extending the work contemplated as may be required to insure its completion in an acceptable manner. All of the provisions of said Contract documents are made a part hereof as though fully set forth herein. This Contract is intended to require a complete and finished piece of work and anything necessary to complete the work properly and in accordance with the law and lawful governmental regulations shall be performed by CONTRACTOR whether set out specifically in the Contract or not. Should it be ascertained that any inconsistency exists between the aforesaid documents and this written agreement, the provisions of this Agreement, the Builders General Provisions and the Standard Specifications, in that order, shall control. Collectively, these

Contract documents constitute the complete agreement between CITY and CONTRACTOR and supersede any previous agreements or understandings.

Replace with the following:

INCORPORATED DOCUMENTS TO BE CONSIDERED COMPLEMENTARY: The Contract documents for the aforesaid project shall consist of the Notice Inviting Bids, Instructions to Bidders, Bid Proposal, Builders General Provisions, Standard Specifications **for Public Works Construction** 2021 edition, Special Provisions, **Exhibits A, B, C, D, and E** and all referenced specifications, details, standard drawings, and appendices; together with this Agreement and all required bonds, insurance certificates, permits, notices and affidavits; and also, including any and all addenda or supplemental agreements clarifying, amending, or extending the work contemplated as may be required to insure its completion in an acceptable manner. All of the provisions of said Contract documents are made a part hereof as though fully set forth herein. This Contract is intended to require a complete and finished piece of work and anything necessary to complete the work properly and in accordance with the law and lawful governmental regulations shall be performed by CONTRACTOR whether set out specifically in the Contract or not. Should it be ascertained that any inconsistency exists between the aforesaid documents and this written agreement, the provisions of this Agreement, the Builders General Provisions and the Standard Specifications, in that order, shall control. Collectively, these Contract documents constitute the complete agreement between CITY and CONTRACTOR and supersede any previous agreements or understandings.

Remove the clause:

LIQUIDATED DAMAGES: In accordance with Government Code section 53069.85, it is agreed that CONTRACTOR will pay to CITY the sum set forth in Exhibit "A" for each and every calendar day of delay beyond the time prescribed in the Contract Documents for finishing the Work, as Liquidated Damages and not as a penalty or forfeiture. In the event this is not paid, CONTRACTOR agrees CITY may deduct that amount from any money due or that may become due CONTRACTOR under the Contract. This Article does not exclude recovery of other damages specified in the Contract Documents.

Replace with the following:

LIQUIDATED DAMAGES: In accordance with Government Code section 53069.85, it is agreed that CONTRACTOR will pay to CITY the sum set forth in **Section 6-9 of the Special Provisions** for each and every calendar day of delay beyond the time prescribed in the Contract Documents for finishing the Work, as Liquidated Damages and not as a penalty or forfeiture. In the event this is not paid, CONTRACTOR agrees CITY may deduct that amount from any money due or that

may become due CONTRACTOR under the Contract. This Article does not exclude recovery of other damages specified in the Contract Documents.

Under Clause 7, Prevailing Wages and California Labor Laws, delete the paragraphs:

When employment in the area of coverage by the joint apprenticeship committee has exceeded an average of 15 percent in the 90 days before the request for certificate, or

When the number of apprentices in training in the area exceeds a ratio of one to five, or

When the trade can show that it is replacing at least 1/30 of its membership through apprenticeship training on an annual basis state wide or locally, or

Assignment of an apprentice to any work performed under a public works Contract would create a condition that would jeopardize his or her life or the life, safety, or property of fellow employees or the public at large, or the specific task to which the apprentice is to be assigned is of a nature that training cannot be provided by a journeyman.

When CONTRACTOR provides evidence that CONTRACTOR employs registered apprentices on all of his Contracts on an annual average of not less than one apprentice to eight journeymen.

Replace with the following:

When **unemployment** in the area of coverage by the joint apprenticeship committee has exceeded an average of 15 percent in the 90 days before the request for certificate, or

When the number of apprentices in training in the area exceeds a ratio of one to five, or

When the trade can show that it is replacing at least 1/30 of its membership through apprenticeship training on an annual basis state wide or locally, or

Assignment of an apprentice to any work performed under a public works Contract would create a condition that would jeopardize his or her life or the life, safety, or property of fellow employees or the public at large, or the specific task to which the apprentice is to be assigned is of a nature that training cannot be provided by a journeyman.

When CONTRACTOR provides evidence that CONTRACTOR employs registered apprentices on all of his Contracts on an annual average of not less than one apprentice to **five** journeymen.

Delete Section 17(a)(i):

Commercial General Liability (CGL): Insurance Services Office (ISO) Form CG 00 01 covering CGL on an “occurrence” basis, including products and completed operations, property damage, bodily injury and personal & advertising injury with limits no less than \$5,000,000 per occurrence. If a general aggregate limit applies, either the general aggregate limit shall apply separately to this project/location (ISO CG 25 03 or 25 04) or the general aggregate limit shall be twice the required occurrence limit.

Replace Section 17(a)(i) with the following:

Commercial General Liability (CGL): Insurance Services Office (ISO) Form CG 00 01 covering CGL on an “occurrence” basis, including products and completed operations, property damage, bodily injury and personal & advertising injury with limits no less than **\$2,000,000** per occurrence. If a general aggregate limit applies, either the general aggregate limit shall apply separately to this project/location (ISO CG 25 03 or 25 04) or the general aggregate limit shall be twice the required occurrence limit.

Delete Section 17(a)(ii):

Automobile Liability: Insurance Services Office Form CA 0001 covering Code 1 (any auto), with limits no less than \$5,000,000 per accident for bodily injury and property damage.

Replace Section 17(a)(ii) with the following:

Automobile Liability: Insurance Services Office Form CA 0001 covering Code 1 (any auto), with limits no less than **\$1,000,000** per accident for bodily injury and property damage.

Delete Section 17(a)(iv).

7. Refer to Part V – CONTRACT DOCUMENTS, C. EQUALS

Delete the paragraph:

In accordance with the provisions under General Conditions, entitled EQUALS, If the City shall find any item so described equal to the respective item specified,

then the undersigned may furnish such item, together with all necessary labor, materials, equipment and incidentals required to perform and complete the work.

Replace with the following:

If the City shall find any item so described equal to the respective item specified, then the undersigned may furnish such item, together with all necessary labor, materials, equipment and incidentals required to perform and complete the work.

8. Refer to PART VI – SPECIAL PROVISIONS

Delete Special Provision Section 2-5.4, Haul Routes:

Haul Routes shall be per the City of Hermosa Beach Truck Routes map. See Cover Sheet on project plans.

Replace Special Provision Section 2-5.4, Haul Routes with the following:

Haul Routes shall be per the City of Hermosa Beach Truck Routes map. See Exhibit E of the Contract Documents.

Under Special Provision Section 3-8, Submittals, delete the bullet:

- *Crushed Miscellaneous Base material specifications*

Replace it with the following:

- *Crushed Aggregate Base material specifications*

Under Special Provision Section 3-8, Submittals, delete the bullet:

Constructions Notices sample template shall be provided by the City to the Contractor and modified and submitted to the engineer for review and approval. Approved Construction Notice shall be distributed by Contactor. See Exhibit C.

Replace it with the following:

Constructions Notices sample template shall be provided by the City to the Contractor and modified and submitted to the engineer for review and approval. Approved Construction Notice shall be distributed by Contactor. See Exhibit B.

Under Special Provision Section 7-6.4, delete the paragraph:

Payment shall be made at the contract unit price per Cubic Foot (CF), Square Foot (SF), Linear Foot (LF), or Lump Sum (LS) as defined in the bid schedule and shall include furnishing all labor, materials, tools, equipment, transportation, and incidentals for performing all work involved, complete and in place, as shown in the Plans and in accordance with the contract documents, unclassified excavation, removal of existing improvements and materials, irrigation repair, landscaping restoration, adjustment of miscellaneous utility items found within the limits of construction, and finishing. No additional compensation will be allowed therefor.

Replace it with:

Payment shall be made at the contract unit price per Cubic Foot (CF), Square Foot (SF), Linear Foot (LF), or Lump Sum (LS) as defined in the bid schedule and shall include furnishing all labor, materials, tools, equipment, transportation, and incidentals for performing all work involved, complete and in place, as shown in the Plans and in accordance with the contract documents, unclassified excavation, removal of existing improvements and materials, irrigation repair, landscaping restoration, adjustment of miscellaneous utility items found within the limits of construction, and finishing. **All quantities shall be based on the volume the existing improvements occupy in situ.** No additional compensation will be allowed therefor.

Under Special Provision Section 7-6.20, delete the paragraph:

Payment for Construct 4" Stabilized Decomposed Granite Path shall be made at the contract unit price per Square Foot (SF) and shall include furnishing all labor, materials, tools, equipment, transportation, and incidentals for performing all work involved in this section, complete and in place, as shown in the Plans and in accordance with the contract documents. No additional compensation will be allowed therefor.

Replace it with the following:

Payment for Construct 4" Stabilized Decomposed Granite Path shall be made at the contract unit price per Square Foot (SF) and shall include **all grading adjacent to the path as shown on the Plans** and furnishing all labor, materials, tools, equipment, transportation, and incidentals for performing all work involved in this section, complete and in place, as shown in the Plans and in accordance with the contract documents. No additional compensation will be allowed therefor.

Under Special Provision Section 7-6.24 delete the paragraph

Payment for Install 48" Box Tree, Install 15 Gallon Shrub, Install 5 Gallon Shrub, Install 1 Gallon Shrub, Install Sod, Install Hydroseed, shall be made at the contract unit price per Square Foot (SF) or contract unit price per each and shall include furnishing all labor, equipment, tools and materials necessary for the item of work including unclassified excavation, removal of existing improvements and materials, preparation of subgrade, irrigation repair, landscaping restoration, adjustment of miscellaneous utility items found within the limits of construction and finishing. No additional compensation will be allowed therefor.

Replace it with the following:

*Payment for Install 48" Box Tree, Install 15 Gallon Shrub, Install 5 Gallon Shrub, Install 1 Gallon Shrub, Install Sod, **Provide Soil and Fill 2" Below Top of Curb, and** Install Hydroseed, shall be made at the contract unit price per Square Foot (SF) or contract unit price per each and shall include furnishing all labor, equipment, tools and materials necessary for the item of work including unclassified excavation, removal of existing improvements and materials, preparation of subgrade, irrigation repair, landscaping restoration, adjustment of miscellaneous utility items found within the limits of construction and finishing. No additional compensation will be allowed therefor.*

Under Special Provision Section 200-1.1 with the following:

Concrete shall be type 520-C-2500 PSI concrete per the City of Hermosa Beach Standard Plans for Public Works No. 106.

Replace it with the following:

Concrete shall be type 520-C-2500 PSI concrete.

Add the following after paragraph four of Special Provision Section 400-5:

Where there is no curb, the lateral distance between the edge of the sign panel and the edge of the nearest travel way shall be a minimum of 6 feet. Where there is a curb, the lateral distance between the edge of the sign panel and the flowline shall be a minimum of 2 feet.

9. **Refer to EXHIBITS**

Add Exhibit “E” to the Contract Documents. Exhibit “E” is attached as Attachment 2.

10. **Refer to CIP NO. 502 GREENBELT PEDESTRIAN TRAIL, CIP NO. 604 CITY WIDE ADA IMPROVEMENTS, CIP NO. 194 ANNUAL STRIPING IMPROVEMENTS CONSTRUCTION PLANS**

The Plans were revised to resolve some discrepancies.

Replace Sheets D-01 and D-02 with Sheets D-01 Rev.1 and D-02 Rev.1 attached as Attachment 3.

ADDENDUM ISSUED BY:

_____ **for** Lucho Rodriguez, City Engineer

ACKNOWLEDGEMENT OF ADDENDUM No. 1

CIP 502 – Greenbelt Pedestrian Trail
CIP 604 - City Wide ADA Improvements
CIP 194 – Annual Striping Improvements

Complete and sign this acknowledgement form. Enclose the original copy of the acknowledgement in your bid. Failure to do so may result in disqualification of your firm's bid.

The undersigned acknowledges receipt of Addendum No. 1 dated May 16, 2024.

ATTEST:

Principal:

Address:

By:

Title:

ADDENDUM NO. 1 – ATTACHMENT 1

B. BID SCHEDULE

**CIP NO. 502 GREENBELT PEDESTRIAN TRAIL
CIP NO. 604 CITY WIDE ADA IMPROVEMENTS
CIP NO. 194 ANNUAL STRIPING IMPROVEMENTS**

Item No.	Estimated Quantity	Unit	Description of Work	Payment Reference	Unit Price	Total
1	1	LS	Mobilization and Demobilization (5% max. of total bid schedule cost)	7-3.4	-	\$
2	32	LF	Remove Existing Curb	7-6.4		\$
3	15	LF	Remove Existing Curb and Gutter	7-6.4		\$
4	680	SF	Remove Existing PCC Sidewalk and Curb Ramp	7-6.4		\$
5	125	SF	Remove Existing Pavement Striping	7-6.4		\$
6	1,502	SF	Remove Existing AC Pavement	7-6.4		\$
7	17,553	CF	Remove Existing Wood Chip Trail	7-6.4		\$
8	14,485	SF	Clearing and Grubbing	7-6.5		\$
9	1	LS	Remove Existing Fitness Equipment and Associated Footings	7-6.4	-	\$
10	6	EA	Remove Existing Tree (Including Stump and Roots)	7-6.6		\$
11	1	EA	Remove Existing Stump and Roots	7-6.6		\$
12	56	LF	Construct 6" Curb	7-6.7		\$
13	24	LF	Construct 6" PCC Curb and 24" PCC Gutter	7-6.8		\$
14	550	SF	Construct 4" PCC Sidewalk	7-6.9		\$
15	169	SF	Construct 4" PCC Curb Ramp	7-6.10		\$
16	87	SF	Furnish and Install Detectable Warning Surface	7-6.11		\$

Item No.	Estimated Quantity	Unit	Description of Work	Payment Reference	Unit Price	Total
17	1502	SF	Construct AC Pavement	7-6.12		\$
18	2	EA	Relocate Existing Sign and Signpost	7-6.13		\$
19	1	EA	Furnish and Install Sign Post	7-6.14		\$
20	10	EA	Furnish and Install Signs	7-6.14		\$
21	1	EA	Install City Furnished RRFB Model System on Existing Post	7-6.15		\$
22	1	EA	Install City Furnished RRFB Model System on New Post	7-6.15		\$
23	0	SF	Construct 4' Ribbon Gutter	7-6.16		\$
24	232	LF	4" ADA Parking Striping	7-6.17		\$
25	3	EA	International Symbol of Access Pavement Marking	7-6.17		\$
26	2	EA	"No Parking" Pavement Marking	7-6.17		\$
27	20	LF	Yield Line Pavement Marking	7-6.17		\$
28	120	SF	Crosswalk Pavement Marking (Continental)	7-6.17		\$
29	3	EA	Furnish and Install Wheel Stop	7-6.18		\$
30	12	EA	Adjust Water Valve to Grade	7-6.19		\$
31	1	EA	Adjust Backflow System to Grade	7-6.19		\$
32	24,566	SF	Construct Stabilized Decomposed Granite	7-6.20		\$
33	346	LF	Install Flush Redwood Header	7-6.21		\$
34	3,435	LF	Install Concealed Redwood Header	7-6.21		\$
35	2	EA	Salvage and Reinstall Existing Memorial Bench	7-6.22		\$
36	2	EA	Install City Furnished Memorial Bench	7-6.22		\$
37	2	EA	Salvage and Reinstall Existing Trash Can	7-6.22		\$
38	2	EA	Install City Furnished Fitness Equipment Set	7-6.22		\$
39	160	SF	Construct Cast in Place Concrete Paving for Benches	7-6.23		\$

Item No.	Estimated Quantity	Unit	Description of Work	Payment Reference	Unit Price	Total
40	12	EA	Install 48" Box Tree	7-6.24		\$
41	14	EA	Install 15 Gallon Shrub	7-6.24		\$
42	392	EA	Install 5 Gallon Shrub	7-6.24		\$
43	22	EA	Install 1 Gallon Shrub	7-6.24		\$
44	2,254	SF	Install Sod	7-6.24		\$
45	12,324	SF	Install Hydroseed	7-6.24		\$
46	1	LS	Adjust and Install New Existing Irrigation System	7-6.25		\$
47	4	EA	Remove Existing Wheel Stops	7-6.4		
48	1	EA	Adjust Existing Water Fountain to Grade	7-6.19		
49	18	CF	Unclassified Excavation	7-6.4		
50	915	SF	Provide Soil and Fill 2" Below Top of Curb	7-6.24		

(Total Bid in Figures) _____

(Total Bid in Words) _____

Contractor Name: _____

In case of any discrepancy between the words and the figures, the words shall prevail. If the unit price and the total amount for any item are not in agreement, the unit price alone shall be considered to represent the Bidder's intention and all totals will be corrected to conform thereto. Attached hereto is cash, a certified check, a cashier's check, or a Bidder's bond in the amount of

_____ Dollars, said amount being not less than ten (10) percent of the amount bid. It is agreed a portion equal to the difference between the low bid and second low bid shall be retained as liquidated damages by the City if the undersigned fails or refuses to execute the Contract and furnish the required bonds and certificates of insurance within the time provided.

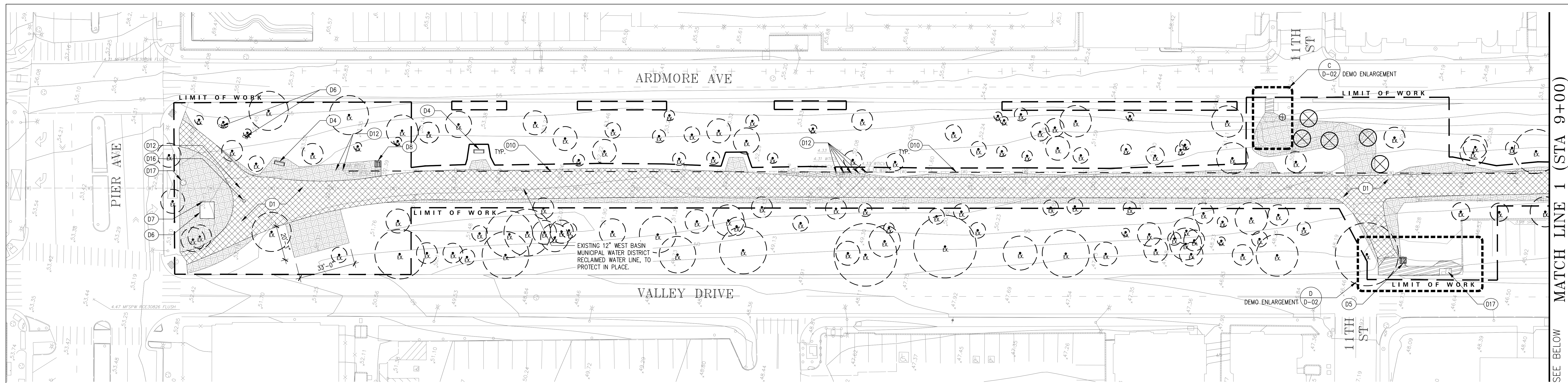
Contractor Signature: _____

PW Registration #: _____

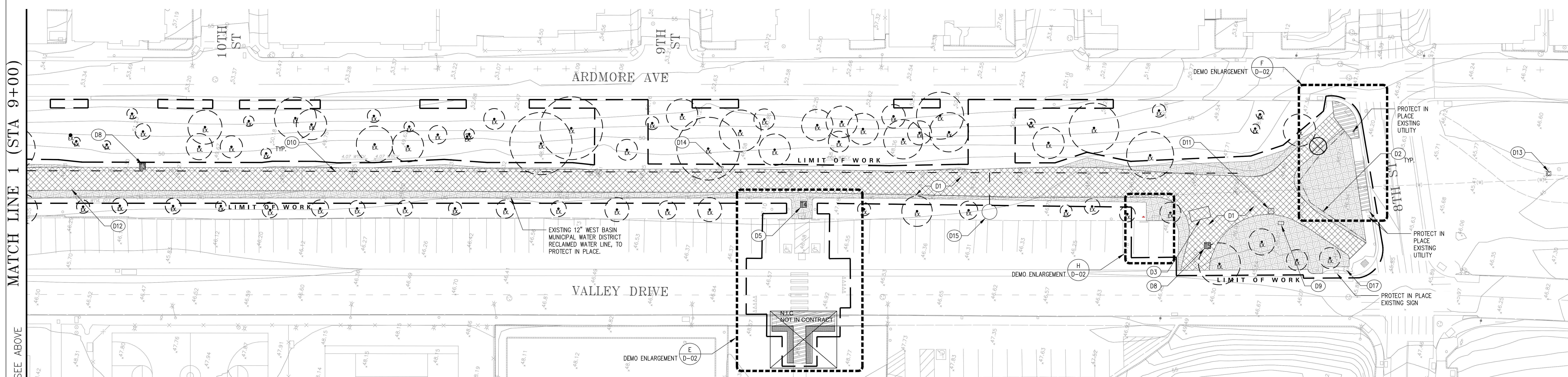
State License #: _____

Contractor Company Name: _____

[REMAINDER OF PAGE LEFT INTENTIONALLY BLANK]



A DEMOLITION PLAN - PIER AVENUE TO SOUTH OF 11TH STREET
1"=20'



B DEMOLITION PLAN - SOUTH OF 11TH STREET TO 8TH STREET
1"=20'

GENERAL DEMOLITION NOTES:

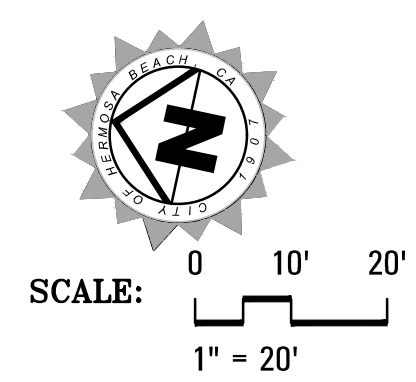
1. THE CONTRACTOR SHALL FIELD VERIFY CONDITIONS PRIOR TO THE COMMENCEMENT OF WORK. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER. NO DEMOLITION WORK SHALL COMMENCE WITHOUT FIELD VERIFICATION BY THE CONTRACTOR, OWNER, AND ENGINEER.
2. THE CONTRACTOR TO CLEAR PROJECT SITE AREA WITHIN THE CONFINES OF THE LIMIT OF WORK LINE.
3. THE CONTRACTOR SHALL MAINTAIN SECURITY FENCING AROUND THE LIMIT OF WORK DURING DEMOLITION. NO UNAUTHORIZED PERSONNEL SHALL ENTER THE AREA.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY AND ALL PERMITS AND SHALL PAY ALL FEES NECESSARY FOR ENCROACHMENT, GRADING, DEMOLITION, AND DISPOSAL OF SAID MATERIALS AS REQUIRED BY LOCAL AND STATE JURISDICTIONS.
5. DAMAGE TO ANY EXISTING UTILITIES AND SERVICES TO REMAIN SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. CONTRACTOR SHALL REPAIR AND/OR REPLACE IN KIND.
6. PROTECT IN PLACE ALL UTILITIES UNLESS OTHERWISE NOTED.
7. PROTECT IN PLACE ALL SIGNAGE AND MARKERS UNLESS OTHERWISE NOTED.
8. PROTECT IN PLACE ALL EXISTING TREES UNLESS OTHERWISE NOTED. REFER TO TREE PROTECTION PLAN, SHEET D-03 FOR TREE PROTECTION REQUIREMENTS AND REMOVAL.

DEMO PLAN NOTES

- D1 REMOVE EXISTING WOOD CHIP TRAIL TO A DEPTH OF 8 INCHES. PROTECT IN PLACE EXISTING SPRINKLER HEADS AND LATERAL LINE PIPING INSTALLED ON BOTH SIDES OF TRAIL. PRIOR TO TRAIL REMOVAL, STAKE OUT HEADS TO LOCATE THEIR POSITIONS. REPAIR AND REPLACE ANY HEADS OR PIPES DAMAGED BY THIS WORK.
- D2 REMOVE EXISTING LANDSCAPE HEADER.
- D3 REMOVE AND DISPOSE OF EXISTING FITNESS EQUIPMENT AND ASSOCIATED FOOTINGS.
- D4 SALVAGE AND REINSTALL EXISTING MEMORIAL BENCH PER SHEET L-01.
- D5 SALVAGE AND REINSTALL EXISTING TRASH CAN PER SHEET L-01.
- D6 PROTECT IN PLACE EXISTING MEMORIAL.
- D7 PROTECT IN PLACE EXISTING CONCRETE PAD, BENCH, TRELIS, ELECTRICAL CONDUIT AND VINES.
- D8 PROTECT IN PLACE EXISTING TRASH CAN.
- D9 PROTECT IN PLACE BACKFLOW DEVICE IN CAGE.
- D10 PROTECT IN PLACE THE EXISTING 4" IRRIGATION MAIN AND CONTROL WIRES RUNNING IN THIS APPROXIMATE LOCATION FOR THE RE-USE. REPAIR AND/OR REPLACE ANY EQUIPMENT DAMAGED BY THIS WORK.
- D11 PROTECT IN PLACE EXISTING DRINKING FOUNTAIN AND ADJUST TO GRADE AS NEEDED, SEE CIVIL SHEET C-05.
- D12 PROTECT IN PLACE WATER VALVE AND ADJUST TO GRADE, SEE CIVIL SHEET C-05.
- D13 PROTECT IN PLACE EXISTING IRRIGATION CONTROLLER "A" AND ALL OF THE EXISTING LOW VOLTAGE CONTROL WIRES SHALL BE PROTECTED IN PLACE AND REMAIN IN SERVICE. REFER TO IRRIGATION PLAN I-01.
- D14 PROTECT IN PLACE EXISTING TRAIL MARKER SIGNAGE.
- D15 PROTECT IN PLACE EXISTING IRRIGATION WATER POINT OF CONNECTION. CONTRACTOR SHALL PROTECT IN PLACE AND REMAIN IN SERVICE.
- D16 PROTECT IN PLACE EXISTING WATER MONITORING DEVICE.
- D17 PROTECT IN PLACE EXISTING CATCH BASIN AND ACCESS HOLE.

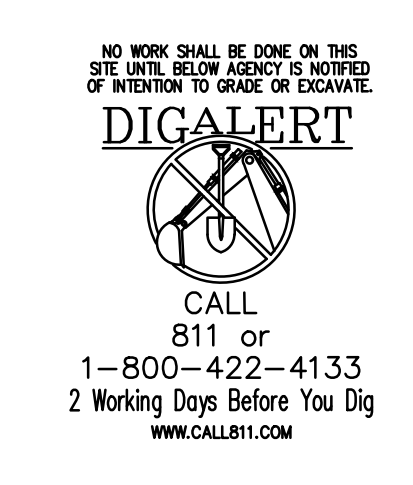
DEMO LEGEND

SYMBOL	DESCRIPTION	QTY.
	EXISTING TREE TO REMAIN AND PROTECT IN PLACE	
	REMOVE EXISTING TREE	6 TREES
	GRIND AND REMOVE EXISTING TREE STUMP	1 STUMP
	REMOVE AND DISPOSE EXISTING WOOD CHIP TRAIL	PER PLAN
	CLEAR AND GRUB EXISTING PLANTING AREA	PER PLAN
	REMOVE EXISTING CONCRETE, REFER TO SHEET D-02	PER PLAN
	LIMIT OF WORK	



BENCH MARK:

No.	QY12552	ELEV.	54.821'
DATE ADJ.	2013	QUAD.	TORRANCE



REVISIONS		
No.	DESCRIPTION	DATE
0	ISSUE FOR BID	04/10/24
1	ADDENDUM NO. 1	05/16/24



PLANS PREPARED BY: Ryan McKay
PLANS CHECKED BY: Jeremy Klemic

Job Number: HRBT203
Date: 04/10/2024

YING-YU HUNG, LANDSCAPE ARCHITECT #4374

DATE: 04/10/2024

CITY OF HERMOSA BEACH
PUBLIC WORKS DEPARTMENT

RECOMMENDED FOR PERMIT ISSUANCE:

DATE: 4-30-24

CIP 194, 502 & 604
GREENBELT PEDESTRIAN TRAIL

DEMOLITION PLAN

FILE NUMBER: 23-003

D-01

SHT. 04 OF 22

