STAFF REPORT

DATE: **SEPTEMBER 12, 2023**

TO: **MAYOR AND CITY COUNCIL**

FROM: **DAVID WAHBA, PUBLIC WORKS DIRECTOR**

SUBJECT: **REQUEST TO ADOPT RESOLUTION NO. 2559, APPROVING AN INITIAL STUDY AND MITIGATED NEGATIVE DECLARATION (IS/MND), AND MITIGATION MONITORING AND REPORTING PROGRAM (MMRP) UNDER THE CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) FOR A TRANSPORTATION ENHANCEMENT AND ADA IMPROVEMENT PROJECT AT PALOS VERDES DRIVE NORTH (PVDN) AND LONDON LN. (DAPPLEGRAY ELEMENTARY SCHOOL ENTRANCE); AND, TO SOLICIT BIDS FOR THE PROJECT WITH FUNDING BY A "MEASURE M FUNDING AGREEMENT MULTI-YEAR SUB REGIONAL PROGRAM" WITH THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY (LACMTA)**

OVERVIEW

The following is a request for the City Council to 1) Approve Resolution No. 2559, adopting an Initial Study and Mitigated Negative Declaration (IS/MND), and a Mitigation Monitoring and Reporting Program (MMRP), all under the California Environmental Quality Act (CEQA), for a Transportation Enhancement and Americans with Disability Act (ADA) Improvement Project (Project), located at Palos Verdes Drive North (PVDN) and London Ln. (Dapplegray elementary School); and, 2) To direct staff to solicit bids for the Project under Willdan Engineering's existing contract.

BACKGROUND

On July 25, 2020, the City Council entered into a Funding Agreement with the Los Angeles County Metropolitan Transportation Authority (LACMTA), which adopted the "Los Angeles County Traffic Improvement Plan" for smaller local-level projects aimed at reducing traffic congestion under Measure M. The Measure M Grant awarded to the City in 2020 under a Funding Agreement in the amount of $1,554,300, is for intersection improvements at Dapplegray School (London Lane) and Palos Verdes Drive North. More specifically, the Grant awarded is for environmental review, preparation of engineered plans and specifications, and construction of the Project. The City is required to provide a level of matching funds as further discussed below.

On July 25, 2020, the City Council also approved a Task Order with Willdan Engineering, in the amount of $210,607.50, to complete the Project's environmental review, and engineered plans and specifications, all of which have been completed to date. The bid documents and assistance with Project bidding are still pending and will be authorized pending Council approval on September 12, 2023.

Last year, as the engineered plans were being completed, it was noted that the Project would most likely be more expensive to construct than originally estimated at approximately two million dollars, largely due to the retaining walls required for the roadway's widening and increase costs in labor and materials. The construction of the Project has now been estimated at approximately three million dollars but will not be known until the Project is placed out to bid. With this new information and the shortfall in estimated funding, staff had applied for additional Project funding, of which LACMTA awarded the City an additional $1,325,952, for a grand total Grant amount of $2,880,252. On April 25, 2023, the Council approved the amended funding agreement with LACMTA, which was fully executed by all parties and returned to the City on May 2, 2023.

The Project's total soft costs have been estimated at approximately $500,000 (including construction management and observation services, which is still being determined) and the actual construction costs at approximately $3,000,000, bringing the total cost of the Project to approximately $3,500,000. With these figures cited, the City will need to contribute the difference or "match" $619,748. Staff has earmarked $619,457 (total account balance) in Traffic Impact Fees that have been collected over the past several years to assist in funding this Project, which would essentially deplete the funds in this account for the Project. Note that as future Projects in the commercial district are approved, more funds will be collected for Traffic Impact Fees for other future Projects.

This Project was initially budgeted over a three fiscal year period and was originally set to be completed in FY 22-23 (or by the end of summer 2023); however, it was delayed due to Covid and a pause in the Project's environmental review and engineering design to determine if LACMTA would grant the City more funding. Since the City was approved for additional funding, the Project resumed, and the timeline has been revised to now complete the Project by the end of 2024 or possibly by the summer of 2025.

DISCUSSION

This Project *("Transportation Enhancement and Americans with Disability Act (ADA) Improvement Project"*) is for intersection capacity improvements at Palos Verdes Drive North (PVDN) and the Dapplegray Elementary School Entrance (London Lane). The improvements will be made approximately 800 feet east and west of the Dapplegray School Entrance along PVDN. The Project improvements will enhance the traffic flow along PVDN, by replacing and enhancing the traffic signals and overhead lighting, improving ADA access, modifying the median islands, removing and adding new landscaping, adjusting the equestrian trail and pedestrian pathways, and replacing and enhancing the two bus stops with new covered shelters. The Project also consists of widening the intersection to add additional through lanes (including accompanying merging lanes), one lane for eastbound and one lane for westbound PVDN. To

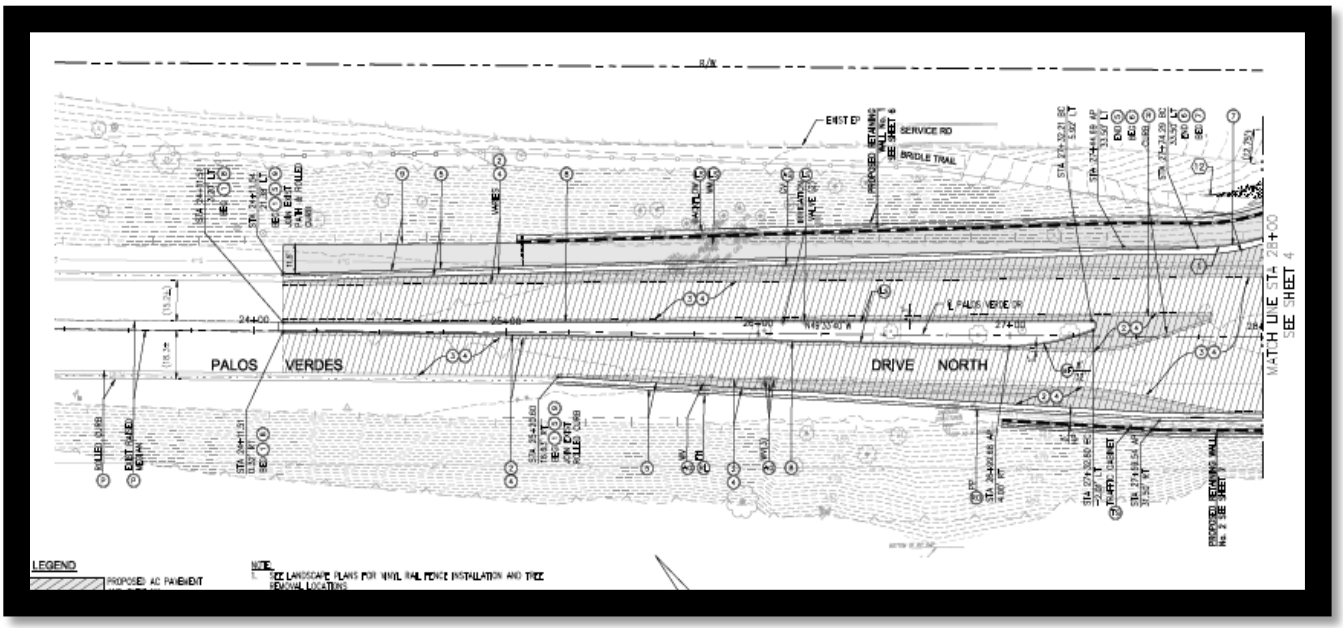
accommodate the road widening, new retaining walls of varying heights (maximum five feet tall) will be built on both sides of the PVDN roadway.

Project Location Map—Dapplegray Elementary School (PVDN & London Lane)

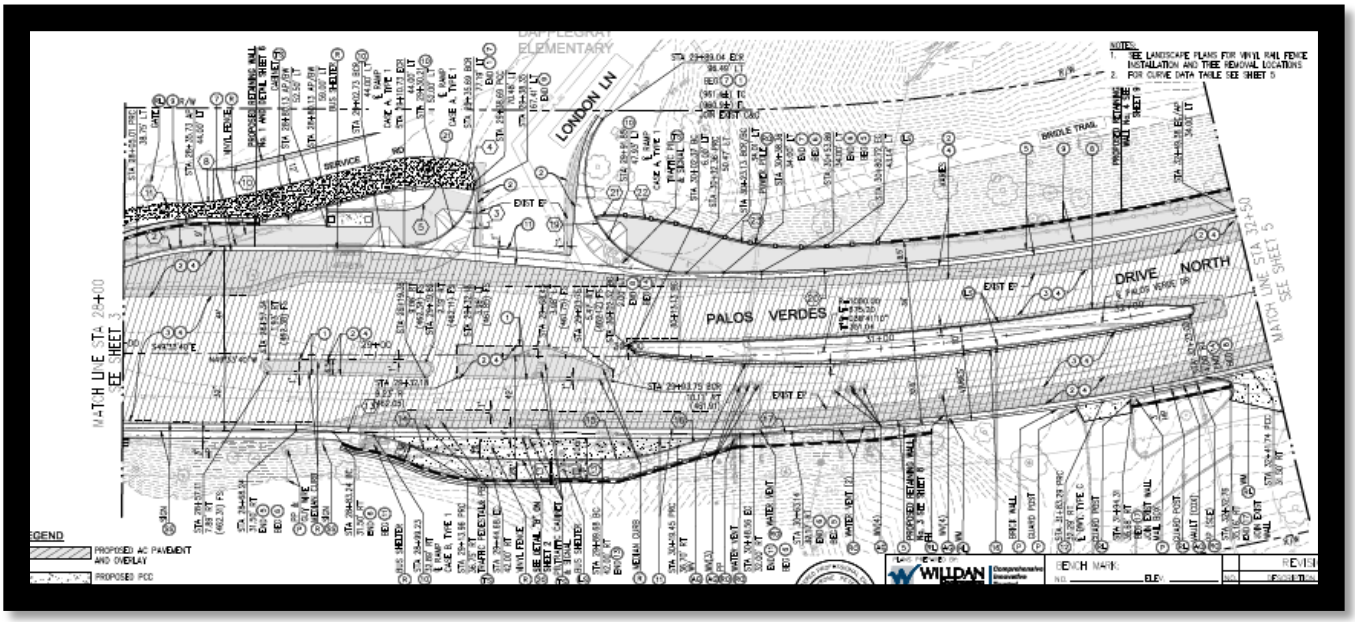
Note that this Project was designed in concept some 20 years ago (as part of the Peninsula Village Overlay Zone in the commercial district) in anticipation of future City and Peninsula-wide Projects and will help traffic flow in and around this intersection and offer improvements for other modes of transportation as well. With the assistance of LACMTA funding of nearly three million dollars, and the City's Transportation Impact fees collected totaling over $600,000, the Project can now be made possible.

Proposed Project Improvements

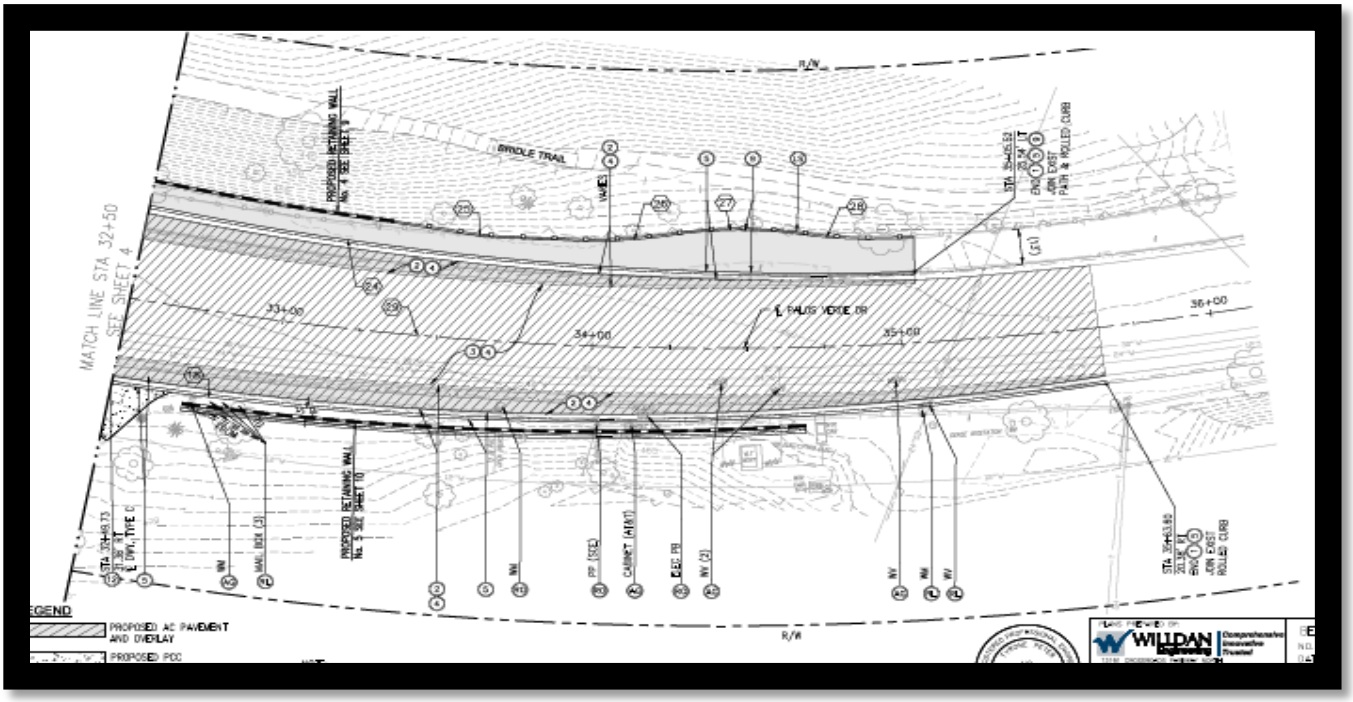
PVDN, West of London Lane



Intersection of PVDN & London Lane



PVDN, East of London Lane



For complete Project plans, please refer to the attached exhibits.

CEQA Review

Staff, under contract with Willdan Engineering, completed an Initial Study/Mitigated Negative Declaration (IS/MND) for this Project as required under the California Environmental Quality Act (CEQA). The IS/MND was published for public review (via a Notice of Intent (NOI) to adopt an IS/MND) on the City's website and by the State Clearinghouse (SCH No. 202.3040182) on April 7, 2023, with a 30-day comment period from April 10 – May 10, 2023.

The link for the Project's CEQA Notice of Intent (NOI) to adopt a Mitigated Negative Declaration, Draft IS/MND and SCH documents can all be found here: https://www.rollinghillsestates.gov/departments/public-works/Project-updates/transportation-enhancement-and-ada-improvements-for-dapplegray-school-at-palos-verdes-drive-north.

The City received one comment letter from Caltrans indicating concerns with the Project's intersection widening, stating that it could contribute more traffic to the area. A response to Caltrans is included as an attachment to the IS/MND. In brief, it has been explained that the intersection widening is to facilitate improvements to an already congested road segment and to provide better ADA and pedestrian connectivity to Dapplegray Elementary School.

The IS/MND has analyzed all potential environmental Project impacts as required by CEQA. In the Initial Study Checklist, most categories would result in "No Impact" and an explanation has been provided under each topic of discussion. The several categories that could have a potential impact can be mitigated with "Mitigation Measures". The categories of the Initial Study Checklist that include Mitigation Measures for adoption are as follows:

1. Aesthetics (to address the Project's retaining walls)
2. Air Quality (to address asphalt odor suppression during construction)
3. Biological (to address protection of trees during migratory bird nesting season; program for the protection of Monarch butterflies; and compliance with Fish and Wildlife Lake and Streambed Program)
4. Cultural / Paleontological / Indian Tribal Consultation (to address construction compliance in handling possible archaeological and paleontological resources and coordination with the Gabrielino Tongva San Gabriel Band of Mission Indians)

Pursuant to Assembly Bill (AB) 52, and Public Resources Code sections 21080.3.1 and 21080.3.2, the City provided formal notification on April 24, 2021, of the proposed Project to initiate early consultation to the eight individual contacts representing seven local Indian tribes as recommended by the California Native Heritage Commission (NAHC). Notification was provided by emailing letters and maps and by placing follow-up phone calls on September 16, 2021, for those tribes who had not responded to the initial consultation of April 24, 2021.

From the Indian Tribal consultation outreach, Chairperson Anthony Morales of the Gabrielino/Tonga San Gabriel Band of Mission Indians, requested that considering the

known presence of Tongva village sites throughout the Palos Verdes peninsula, cultural resources could exist within the Project boundaries that may be deeply buried. Mr Morales requested to be contacted if any cultural material is discovered during excavation. Accordingly, Mitigation Measures TCR 1 – 3, in the Mitigation Monitoring Program, would apply to reduce potential impacts to less than significant levels. Lastly, no other Indian Tribes (other than the Gabrielino/Tonga San Gabriel Band of Mission Indians) responded to the City's outreach efforts and/or indicated an interest in the Project at the subject location.

For more detailed information on the Mitigation Monitoring and Reporting Program (MMRP), please refer to the Program attached to this report and to City Council Resolution No. 2559.

Construction Management Services Consultant

Staff plans to present a contract for construction management and observation services at a future City Council meeting, upon receiving bids for the Project. It is anticipated that this construction management contract will be awarded at the same time a contract is awarded to the lowest, most responsible bidder, by the City Council for the construction of the Project. It is estimated that construction management will be approximately $300,000, which is 10% of the Project's construction costs (estimated at three million dollars), in-line with industry cost standards.

It is anticipated that this Project can be placed out to bid this fall and a contract awarded by the City Council to the lowest, most responsible bidder in late fall, or early next year, with the Project commencing early next year, and the intersection improvements made during the summer months when school is out.

FISCAL IMPACT

The cost for the proposed Project, including soft costs, is estimated at a grand total of approximately $3,550,000. As discussed above, LACMTA has awarded the City $2,880,252 and the City has a match and available funding source designated for this Project of $619,457 in Traffic Mitigation Fees (Fund 98/Account 5135-430), bringing the Project's available funding to 3.5 million dollars. Between Willdan's costs to provide the engineered plans, CEQA documents, and preparation of bid specifications and bid assistance services (estimated at $250,000 when completed), and actual Project construction costs (estimated at $3,000,000), and construction management costs (estimated at $300,000), the total Project is estimated at $3,550,000 to complete, which would leave a small amount (approximately $50,000 to be funded by other Capital Improvement/Public Works funding sources). Once the Project is put out to bid, staff will have a better understanding of the Project's potential total costs.

PUBLIC OUTREACH

The agenda and staff report for this item were posted and noticed as required; no further outreach was conducted.

Staff has previously presented this Project to both the Traffic & Safety Committee and to the City Council, several times over the past three years. Both entities were in favor of the Project and moving it forward. Staff has also discussed this Project with the School District and will need to have close coordination with the District as the Project moves forward.

RECOMMENDATION

Staff recommends that the City Council:

1. Open the Public Hearing;
2. Take Public Testimony;
3. Discuss the Issues;
4. Close the Public Hearing;
5. Adopt Resolution No. 2559 (Approving the Project's IS/MND and MMRP); and,
6. Direct Staff to Solicit Bids for the Project.

Attachments:

A. City Council Resolution No. 2559
B. Plans
C. CEQA IS/MND & MMRP
D. Caltrans Comment Letter and Response

CITY COUNCIL

CITY OF ROLLING HILLS ESTATES

LOS ANGELES COUNTY, CALIFORNIA

RESOLUTION NO. 2559

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF ROLLING HILLS ESTATES, ADOPTING AN INITIAL STUDY / MITIGATED NEGATIVE DECLARATION (IS/MND), AND A MITIGATION MONITORING AND REPORTING PROGRAM (MMRP) UNDER THE CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) FOR A TRANSPORTATION ENHANCEMENT AND AMERICANS WITH DISABILITY ACT (ADA) IMPROVEMENT PROJECT AT THE ENTRANCE TO DAPPLEGRAY ELEMENTARY SCHOOL (LONDON LANE) AND PALOS VERDES DRIVE NORTH (PVDN). APPLICANT: CITY OF ROLLING HILLS ESTATES; LOCATION: 3011 PVDN AND LONDON LANE.

The City Council of the City of Rolling Hills Estates resolves as follows:

SECTION 1. Findings. The City Council finds as follows:

A. The City of Rolling Hills Estates filed a self-application for a Public Works Project for a Transportation Enhancement and ADA Improvement Project at the entrance to Dapplegray Elementary School (London Lane) and PVDN "Project".

B. Under the California Environmental Quality Act (CEQA) and the State CEQA Guidelines, an Initial Study ("IS") was prepared by the City to assess the potential environmental impacts of the Project. The IS indicated that the proposed Project would not have a significant impact on the environment with proper mitigation. As such, a Mitigated Negative Declaration ("MND") was prepared.

C. Pursuant to Assembly Bill (AB) 52, and Public Resources Code sections 21080.3.1 and 21080.3.2, the City provided formal notification on the 24th day of April 2021 of the proposed Project, to initiate early consultation, to the eight individual contacts representing seven local tribes as recommended by the California Native Heritage Commission (NAHC), by emailing letters and maps and placing follow-up phone calls on the 16th day of September 2021, for those tribes who had not responded to the initial consultation.

D. From the Indian Tribal consultation outreach, Chairperson Anthony Morales of the Gabrielino/Tonga San Gabriel Band of Mission Indians, requested that considering the known presence of Tongva village sites throughout the Palos Verdes peninsula, cultural resources could exist within the project boundaries that may be deeply buried. Mr Morales requested to be contacted if any cultural material is discovered during excavation. Accordingly, Mitigation Measures TCR 1 – 3, in the attached Mitigation Monitoring Program, would apply to reduce potential impacts to less than significant levels.

E. No other Indian Tribes (other than the Gabrielino/Tonga San Gabriel Band of Mission Indians as represented above) responded to the City's outreach efforts and/or indicated an interest in the Project at the subject location.

F. The Initial Study and proposed Mitigated Negative Declaration (IS/MND) were posted for public review on the 7th day of April, 2023, providing a 30-day public comment period from the 10th day of April to the 10th day of May, 2023. See State Clearinghouse (SCH) Project Number 202.3040182 for the Project.

G. In accordance with Section 65033 of the Government Code, the public, abutting cities, affected agencies and districts were notified of the availability of the IS/MND and were given an opportunity to review and comment.

H. The Public Works Department has responded in writing to the one comment received on the IS/MND, which response is part of the final document.

I. The City Council conducted a duly noticed Public Hearing for the subject Project on the 12th day of September, 2023. All interested parties were given full opportunity to be heard and to present evidence.

J. The City Council has reviewed the IS/MND for compliance with CEQA and the

State CEQA Guidelines. After such review, the City Council exercises its independent judgment and finds that the IS/MND has been completed in compliance with CEQA, and that with the incorporation of the proposed mitigation measures there is no substantial evidence before the City Council that the Project will have a significant effect on the environment.

SECTION 2. Adoption of the IS/MND. The City Council adopts the IS/MND for the Project and the accompanying Mitigation Monitoring and Reporting Program (Exhibit A). City staff is authorized and directed to cause a Notice of Determination concerning the adoption of the IS/MND for the Project to be filed in the office of the Los Angeles County Clerk in accordance with CEQA and the State CEQA Guidelines.

SECTION 3. Records of Proceedings. The City Clerk is directed to certify the adoption of this Resolution and to keep a copy of the same with such other documents and records of proceedings as may be designated by the City Manager.

ADOPTED this 12th day of September, 2023.

_____
BRITT HUFF, MAYOR

ATTEST:

_____
LAUREN PETTIT, CITY CLERK

I HEREBY CERTIFY that the foregoing Resolution No. 2559 was adopted by the City Council of the City of Rolling Hills Estates at a regular meeting held thereof on the 12th day of September, 2023, by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

_____
LAUREN PETIT, CITY CLERK

SUBMITTED		APPROVED	
	DATE	ASSISTANT CITY MANAGER	DATE

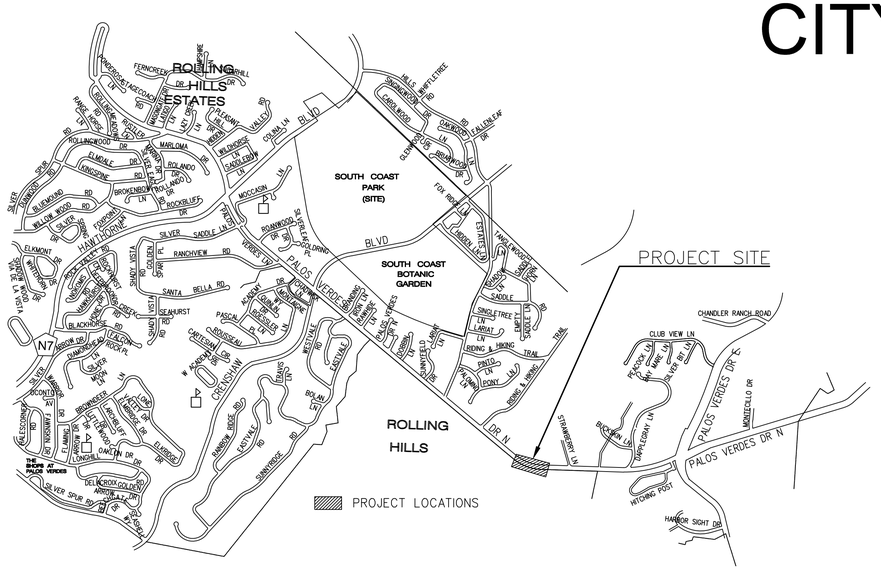
CITY OF ROLLING HILLS ESTATES

CALIFORNIA

CONSTRUCTION PLANS

FOR

INTERSECTION CAPACITY IMPROVEMENTS AT PALOS VERDES DRIVE NORTH AND DAPPLEGRAY SCHOOL ENTRANCE FY 2020-2021



VICINITY MAP
N.T.S.

SHEET INDEX

SHEET NO.	DESCRIPTION
SHEET NO. 1	TITLE SHEET
SHEET NO. 2	TYPICAL SECIONS AND DETAIL
SHEET NO. 3	STREET IMPROVEMENT PLAN AND PROFILE
SHEET NO. 4	STREET IMPROVEMENT PLAN AND PROFILE
SHEET NO. 5	STREET IMPROVEMENT PLAN AND PROFILE
SHEET NO. 6	RETAINING WALL PLAN AND PROFILE
SHEET NO. 7	RETAINING WALL PLAN AND PROFILE
SHEET NO. 8	RETAINING WALL PLAN AND PROFILE
SHEET NO. 9	RETAINING WALL PLAN AND PROFILE
SHEET NO. 10	RETAINING WALL PLAN AND PROFILE
SHEET NO. 11	TRAFFIC SIGNAL MODIFICATION PLAN
SHEET NO. 12	TRAFFIC SIGNAL DECORATIVE POLE DETAILS
SHEET NO. 13	TRAFFIC SIGNAL FOUNDATION DETAILS
SHEET NO. 14	SIGNING AND STRIPING PLAN
SHEET NO. 15	STREET MEDIAN & PARKWAY LANDSCAPE CONSTRUCTION PLAN
SHEET NO. 16	STREET MEDIAN & PARKWAY IRRIGATION PLAN
SHEET NO. 17	STREET MEDIAN & PARKWAY IRRIGATION LEGEND & NOTES
SHEET NO. 18	STREET MEDIAN & PARKWAY PLANTING PLAN
SHEET NO. 19	BUS SHELTER DETAILS
SHEET NO. 20	BUS SHELTER LAYOUT AND CONSTRUCTION NOTES
SHEET NO. 21	IRRIGATION DETAILS
SHEET NO. 22	LANDSCAPE CONSTRUCTION DETAILS

UTILITY CONTACT

CALIFORNIA WATER SERVICE CO.
ATTN: BRETT OMMEN, DISTRICT SUPERINTENDENT (310)377-5528
PLANNER: CARDINAL FERNANDEZEES
(310)377-5528
EMAIL: CFERNANDEZEES@CALWATER.COM

COUNTY SANITATION DISTRICT OF LOS ANGELES COUNTY
ATTN: DOUG WALTON (310)638-1161

COX COMMUNICATIONS
ATTN: SUSAN SCHUTZMAN (619)266-5605
EMAIL: SUSAN.SCHUTZMAN@COX.COM

LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS
ATTN: DARYLL CHENOWETH
(626)459-9109
EMAIL: DCHENOWETH@DPW.LACOUNTY.GOV

SOUTHERN CALIFORNIA EDISON
ATTN: TAYLOR RUIZE/LOCAL PLANNER
(310)783-9426
EMAIL: FRANCISCO.M.MARTINEZ@SCE.COM

THE GAS COMPANY
ATTN: FAVIOLA OCHOA
(213)808-7857
EMAIL: FAVIOCHOA@SEMPRAUTILITES.COM

GENERAL CONSTRUCTION NOTES:

1. ALL WORK SHOWN HEREON SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, CURRENT EDITION.
2. THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES OR SUBSTRUCTURES FOUND AT THE SITE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE OWNERS OF THE UTILITIES OR SUBSTRUCTURES CONCERNED BEFORE STARTING WORK (72-HOURS NOTICE REQUIRED.) PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL CONTACT UNDERGROUND SERVICE ALERT (USA) TOLL FREE AT 1-800-227-2600.
3. PRIOR TO BEGINNING OF CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN FOR DISRUPTIVE STREET WORK, INCLUDING CONSTRUCTION SCHEDULE – SUBJECT TO APPROVAL BY THE ENGINEER. MINIMUM REQUIREMENTS ARE STATED IN THE SPECIFICATIONS. CONSTRUCTION WARNING DEVICES, SIGNS, ETC., SHALL CONFORM WITH CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
4. CONTRACTOR SHALL PROTECT ALL EXISTING PROPERTIES FROM DAMAGE IN ACCORDANCE WITH PROJECT SPECIFICATIONS

811 Know what's below. Call before you dig.

CONSTRUCTION NOTES

1. REMOVE EXISTING ASPHALT CONCRETE, P.C.C., BASE MATERIAL, AND SUBGRADE
2. CONSTRUCT 6-INCH THICK AC OVER 10-INCH THICK CAB , SEE TYPICAL SECTION ON SHEET 2.
3. COLDMILL EXISTING AC PAVEMENT 2-INCH DEPTH
4. CONSTRUCT 2-INCH THICK ASPHALT RUBBER HOT MIX (ARHM) OVERLAY.
5. CONSTRUCT ROLLED CURB TYPE R-2 PER DETAIL A ON SHEET 2.
6. CONSTRUCT ROLLED CURB TRANSITION PER DETAIL ON SHEET 2.
7. CONSTRUCT CURB AND GUTTER PER SPPCW STD PLAN 120-3, TYPE A2-6
8. CONSTRUCT CURB PER SPPWC STD PLAN NO. 120-3, TYPE A1-6
9. CONSTRUCT 4-INCH AC OVER 4-INCH AB MULTI-USE PATH
10. CONSTRUCT CURB RAMP PER SPPWC STD PLAN 111-5, CASE AND TYPE PER PLAN
11. CONSTRUCT CROSS AND LONGITUDINAL GUTTER PER SPPWC STD PLAN NO. 122-3
12. CONSTRUCT 4-INCH THICK P.C.C. RESIDENTIAL DRIVEWAY PER SPPWC STD PLAN NO. 110-2
13. CONSTRUCT 4-INCH THICK PCC SIDEWALK PER SPPWC STD PLAN NO. 110-2, OVER 6-INCH CAB
14. CONSTRUCT CURB AND GUTTER PER SPPCW STD PLAN 120-3, TYPE A2-6, W=1'
15. CONSTRUCT RETAINING WALL PER DETAIL B ON SHEET 9
16. CONSTRUCT CONCRETE DRAINAGE SWALE BEHIND RETAINING WALL PER SPPWC STD PLAN NO. 621-3
17. CONSTRUCT RETAINING WALL, TYPE 7A, PER SPPWC STD PLAN NO. 616-3
18. CONSTRUCT RETAINING WALL, TYPE 5, PER SPPWC STD PLAN NO. 614-3. CASE PER PLAN
19. CONSTRUCT RETAINING WALL, TYPE 5, MODIFIED PER DETAIL HEREON SPPWC STD PLAN NO. 614-3. CASE PER PLAN
20. CONSTRUCT -INCH THICK PCC BUS PAD INCLUDING 6-INCH MONOLITHIC CURB, 3,250 PSI OVER 6-INCH CAB
21. COMPACTED NATIVE BACKFILL AT 90% RELATIVE COMPACTION TO A DEPTH OF 12"
22. CONSTRUCT WALL GUTTER OUTLET TO FACE OF WALL PER SPPWC STD PLAN NO. 617-3
23. CONSTRUCT WALL GUTTER OUTLET TO CURB PER SPPWC STD PLAN NO. 617-3 AND PLAN No. 150-4
24. CONSTRUCT CABLE RAILING PER CALTRANS STD B11-47, PER SECTION C-C

- (P) PROTECT IN PLACE.
- (RL) RELOCATE TYPE AS SHOWN.
- (RO) RELOCATE BY OTHERS.
- (R) REMOVE TYPE AS SHOWN.
- (AG) ADJUST TO GRADE TYPE AS SHOWN.
- (AO) ADJUST TO GRADE BY OTHERS.
- (LS) SEE LANDSCAPE PLANS
- (SS) SEE SIGNING AND STRIPING PLANS.
- (TS) SEE TRAFFIC SIGNAL PLANS.
- (MF) W/L INDICATES MEDIAN FLARE PER SPPWC STD PLAN NO. 141-2

ABBREVIATIONS

AB	AGGREGATE BASE
AC	ASPHALT CONCRETE
AP	ANGLE POINT
AV	AIR VAC
BC	BEGIN CURVE
BCR	BEGIN CURB RETURN
BEG	BEGIN
BO	BLOWOFF
BVC	BEGIN VERTICAL CURVE
BW	BACK OF WALK
BX	BOTTOM OF X
C&G	CURB AND GUTTER
CAB	CRUSHED AGGREGATE BASE
CB	CATCH BASIN
℄/CL	CENTERLINE
CF	CURB FACE
CIR	COLD IN-PLACE RECYCLE
CLF	CHAIN LINK FENCE
CLR	CLEAR
CONC	CONCRETE
CONST.	CONSTRUCTION
CPC	CALIFORNIA PLUMBING CODE
DI	DUCTILE IRON
DWY	DRIVEWAY
DWG	DRAWING
E	EAST
EC	END CURVE
ECR	END CURB RETURN
EG	EDGE OF GUTTER
E.J.	EXPANSION JOINT
ELEV	ELEVATION
EP	EDGE OF PAVEMENT
EVC	END VERTICAL CURVE
EX/EXIST	EXISTING
FDR	FULL DEPTH RECLAMATION
FG	FINISHED GRADE
FH	FIRE HYDRANT
FL	FLOWLINE
FS	FINISHED SURFACE
GB	GRADE BREAK
GI	GALVANIZED IRON
GL	GUTTER LIP
HMA	HOT MIX ASPHALT
HP	HINGE POINT
HTF	HIGH TENSILE FIBER
INT.	INTERSECTION
INV	INVERT
L	LENGTH
LF	LINEAR FEET
LIP	LIP OF GUTTER
LOL	LAYOUT LINE
LT	LEFT, LIGHT
MAX	MAXIMUM
MH	MANHOLE
MIN	MINIMUM
N	NORTH
N.I.C.	NOT IN CONTRACT
N'LY	NORTHERLY
NO	NUMBER
NTS	NOT TO SCALE
O.C.	ON CENTER
OG	ORIGINAL GROUND
OH	OVERHEAD
PI	POINT OF INTERSECTION
PCC	PORTLAND CEMENT CONCRETE
PG	PROFILE GRADE
PG&E	PACIFIC GAS AND ELECTRIC
PMB	PROCESSED MISCELLANEOUS BASE
P.O.C.	POINT OF CONNECTION
PP	POWER POLE
PRC	POINT OF REVERSE CURVE
PROP.	PROPOSED
PRVC	POINT OF REVERSE VERTICAL CURVE
PT.	POINT
PVC	POLYVINYL CHLORIDE
PVMT.	PAVEMENT
R	RATE, RADIUS
R.C.	RELATIVE COMPACTION
RCP	REINFORCED CONCRETE PIPE
REQ'D	REQUIRED
RSP	ROCK SLOPE PROTECTION
RT	RIGHT
R/W	RIGHT-OF-WAY
S	SLOPE
S'LY	SOUTHERLY
SCE	SOUTHERN CALIFORNIA EDISON
SCH	SCHEDULE
SDMH	STORM DRAIN MANHOLE
SDWK	SIDEWALK
ST	STREET
STA	STATION
STD	STANDARD
ST.GR.	STRAIGHT GRADE
TC	TOP OF CURB
TELE	TELEPHONE
TG	TOP OF GRATE
TOP	TOP OF PLATFORM
TR	TOP OF RAIL
TW	TOP OF WALL
TX	TOP OF X
TYP	TYPICAL
V	DEPTH
VAR	VARIES
VCP	VITRIFIED CLAY PIPE
W	WIDTH, WEST
WM	WATER METER
WV	WATER VALVE

100% SUBMITTAL NOT FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER — TYRONE PETER — NO. 81888 — CIVIL ENGINEER — STATE OF CALIFORNIA

PLANS PREPARED BY:
WILLDAN Engineering — Comprehensive Innovative Trusted
13191 CROSSROADS PARKWAY NORTH
SUITE 405 INDUSTRY, CA 91746-3497
(562) 908-6200
UNDER THE SUPERVISION OF

TYRONE PETER RCE No. 81888 DATE

BENCH MARK:
NO. _____ ELEV. _____
DATE ADJ. _____ QUAD. _____
NONE

	NO.	REVISIONS DESCRIPTION	APP.	DATE

CITY OF ROLLING HILLS ESTATES

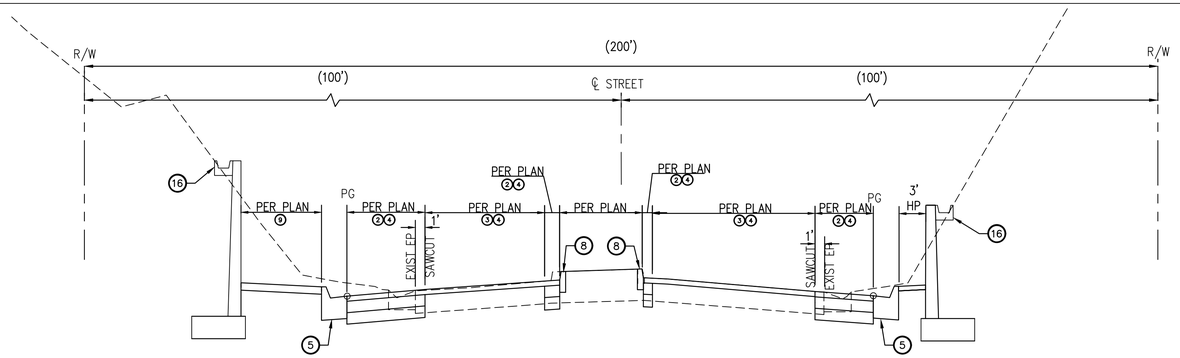
TITLE SHEET

INTERSECTION CAPACITY IMPROVEMENTS
AT PALOS VERDES DRIVE NORTH AND DAPPLEGRAY SCHOOL ENTRANCE

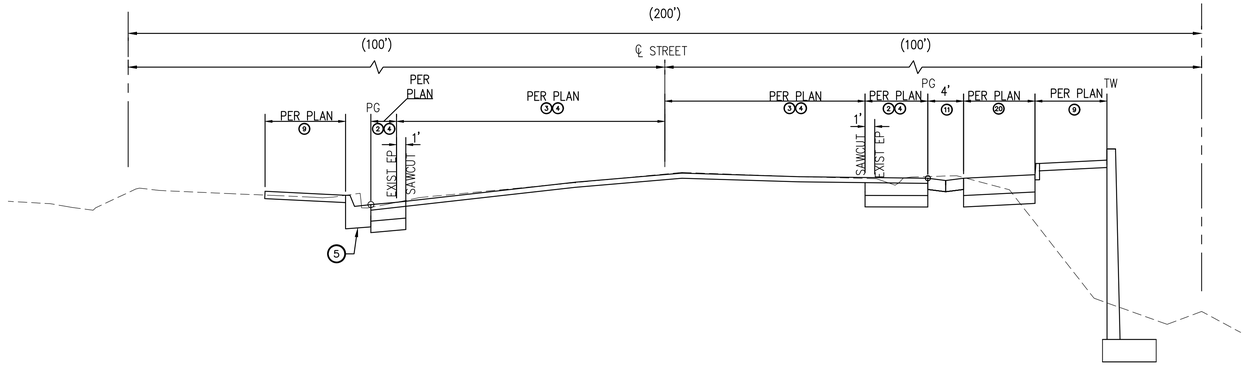
DRAWN BY: BR
DESIGNED BY: BR
CHECKED BY: FW

SHT. 1 OF 22 SHTS.

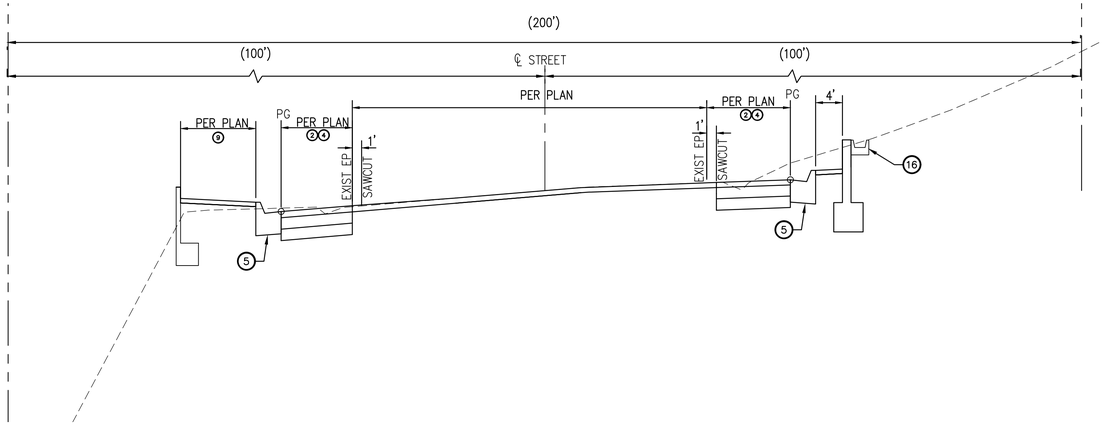
U:\110176 - RHE PVDN@DAPPLEGRAY ELM SCHOOL\900-PS&E\901-Plans\PL-TITLE-01.dwg Apr 05, 23 - 10:03am



TYPICAL STREET SECTION FOR PALOS VERDES DRIVE NORTH
N.T.S.



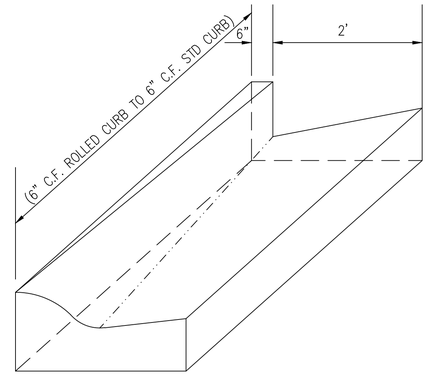
TYPICAL STREET SECTION FOR PALOS VERDES DRIVE NORTH
N.T.S.



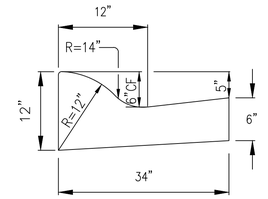
TYPICAL STREET SECTION FOR PALOS VERDES DRIVE NORTH
N.T.S.

CONSTRUCTION NOTES:

1. REMOVE EXISTING ASPHALT CONCRETE, P.C.C., BASE MATERIAL, AND SUBGRADE
2. CONSTRUCT 6-INCH THICK AC OVER 10-INCH THICK CAB , SEE TYPICAL SECTION ON SHEET 2..
3. COLDMILL EXISTING AC PAVEMENT 2-INCH DEPTH
4. CONSTRUCT 2-INCH THICK ASPHALT RUBBER HOT MIX (ARHM) OVERLAY.
5. CONSTRUCT ROLLED CURB TYPE R-2 PER DETAIL A ON SHEET 2.
6. CONSTRUCT ROLLED CURB TRANSITION PER DETAIL ON SHEET 2.
7. CONSTRUCT CURB AND GUTTER PER SPPCW STD PLAN 120-3, TYPE A2-6
8. CONSTRUCT CURB PER SPPWC STD PLAN NO. 120-3, TYPE A1-6
9. CONSTRUCT 4-INCH AC OVER 4-INCH AB MULTI-USE PATH



ROLLED CURB TRANSITION DETAIL
NTS



TYPE R-2
ROLLED CURB DETAIL "A"
NTS

100% SUBMITTAL NOT FOR CONSTRUCTION

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REGISTERED PROFESSIONAL ENGINEER
TYRONE PETER
NO. 81888
CIVIL ENGINEER
STATE OF CALIFORNIA

PLANS PREPARED BY:
WILLDAN Engineering *Comprehensive Innovative Trusted*
13191 CROSSROADS PARKWAY NORTH
SUITE 405 INDUSTRY, CA 91746-3497
(562) 908-6200
UNDER THE SUPERVISION OF

TYRONE PETER RCE No. 81888 DATE

BENCH MARK:
NO. _____ ELEV. _____
DATE ADJ. _____ QUAD. _____
NONE

NO.	REVISIONS DESCRIPTION	APP.	DATE

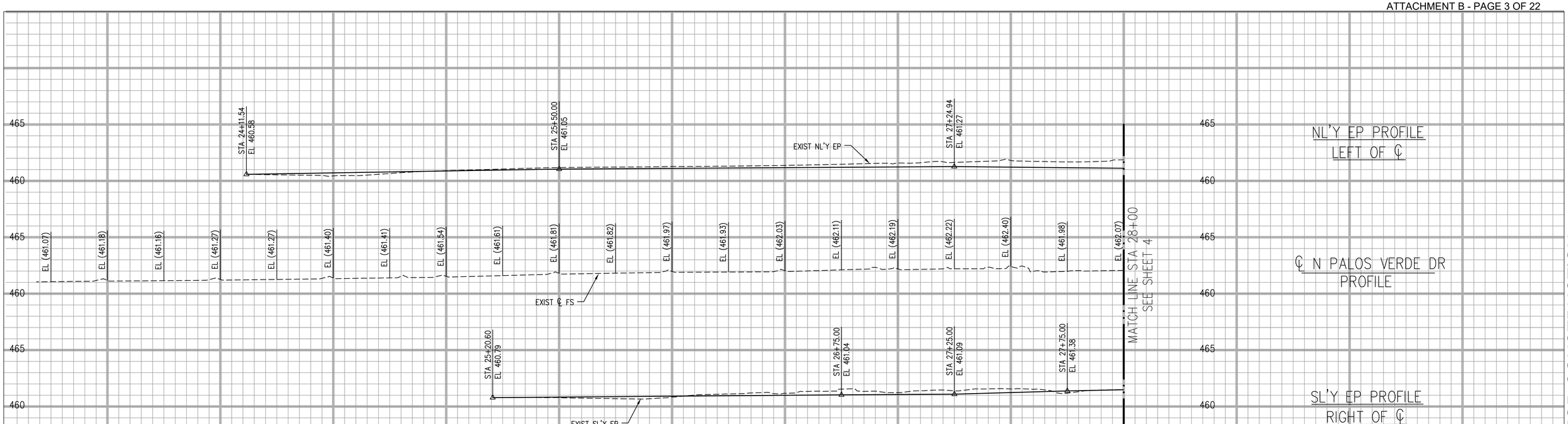
CITY OF ROLLING HILLS ESTATES

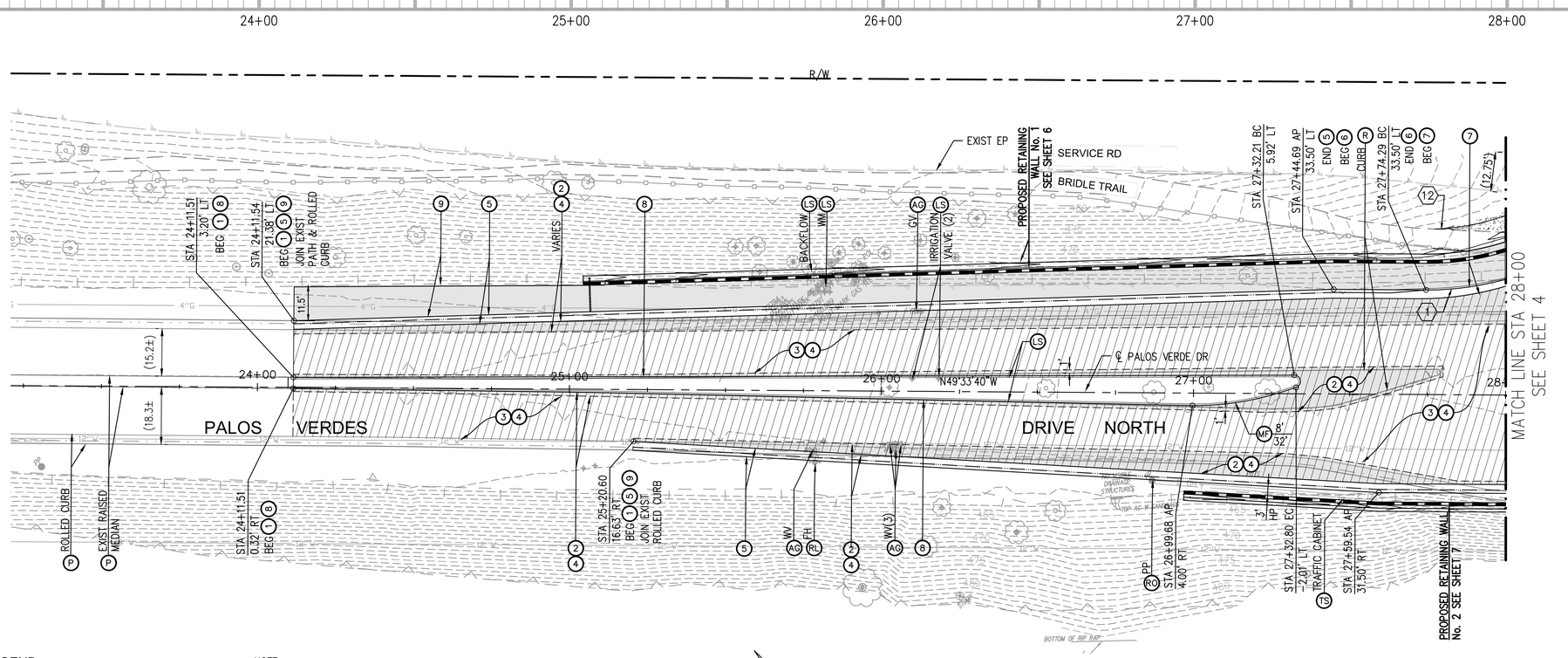
TYPICAL SECTIONS AND DETAIL

INTERSECTION CAPACITY IMPROVEMENTS
AT PALOS VERDES DRIVE NORTH AND DAPPLEGRAY SCHOOL ENTRANCE

DRAWN BY: BR
DESIGNED BY: BR
CHECKED BY: FW

SHT. 2 OF 22 SHTS.





CONSTRUCTION NOTES:

1. REMOVE EXISTING ASPHALT CONCRETE, P.C.C., BASE MATERIAL, AND SUBGRADE
2. CONSTRUCT 6-INCH THICK AC OVER 10-INCH THICK CAB , SEE TYPICAL SECTION ON SHEET 2..
3. COLDMILL EXISTING AC PAVEMENT 2-INCH DEPTH
4. CONSTRUCT 2-INCH THICK ASPHALT RUBBER HOT MIX (ARHM) OVERLAY.
5. CONSTRUCT ROLLED CURB TYPE R-2 PER DETAIL A ON SHEET 2.
6. CONSTRUCT ROLLED CURB TRANSITION PER DETAIL ON SHEET 2.
7. CONSTRUCT CURB AND GUTTER PER SPPCW STD PLAN 120-3, TYPE A2-6
8. CONSTRUCT CURB PER SPPWC STD PLAN NO. 120-3, TYPE A1-6
9. CONSTRUCT 4-INCH AC OVER 4-INCH AB MULTI-USE PATH

(P) PROTECT IN PLACE.
(RL) RELOCATE TYPE AS SHOWN.
(RO) RELOCATE BY OTHERS.
(R) REMOVE TYPE AS SHOWN.
(AG) ADJUST TO GRADE TYPE AS SHOWN.
(AO) ADJUST TO GRADE BY OTHERS.
(LS) SEE LANDSCAPE PLANS
(SS) SEE SIGNING AND STRIPING PLANS.
(TS) SEE TRAFFIC SIGNAL PLANS.
(MF W L) INDICATES MEDIAN FLARE PER SPPWC STD PLAN NO. 141-2

LEGEND

- PROPOSED AC PAVEMENT AND OVERLAY
- PROPOSED PCC
- PROPOSED COLD MILL AND OVERLAY
- PROPOSED AC

NOTE:
1. SEE LANDSCAPE PLANS FOR VINYL RAIL FENCE INSTALLATION AND TREE REMOVAL LOCATIONS
2. FOR CURVE DATA TABLE SEE SHEET 5
3. FOR RETAINING WALLS SEE RETAINING WALL PLAN AND PROFILE

HORIZ 1"=20'
20 10 0 20 40
SCALE FEET

REGISTERED PROFESSIONAL ENGINEER
TYRONE PETER
NO. 81888
CIVIL ENGINEER
STATE OF CALIFORNIA

PLANS PREPARED BY:
WILLDAN Engineering *Comprehensive Innovative Trusted*
13191 CROSSROADS PARKWAY NORTH
SUITE 405 INDUSTRY, CA 91746-3497
(562) 908-6200
UNDER THE SUPERVISION OF
TYRONE PETER RCE No. 81888 DATE

BENCH MARK:
NO. _____ ELEV. _____
DATE ADJ. _____ QUAD. _____
NONE

NO.	REVISIONS	APP.	DATE

CITY OF ROLLING HILLS ESTATES

STREET IMPROVEMENT PLAN AND PROFILE

INTERSECTION CAPACITY IMPROVEMENTS
AT PALOS VERDES DRIVE NORTH AND DAPPLEGRAY SCHOOL ENTRANCE

DRAWN BY: BR
DESIGNED BY: BR
CHECKED BY: FW

SHT. 3 OF 22 SHTS.

100% SUBMITTAL NOT FOR CONSTRUCTION

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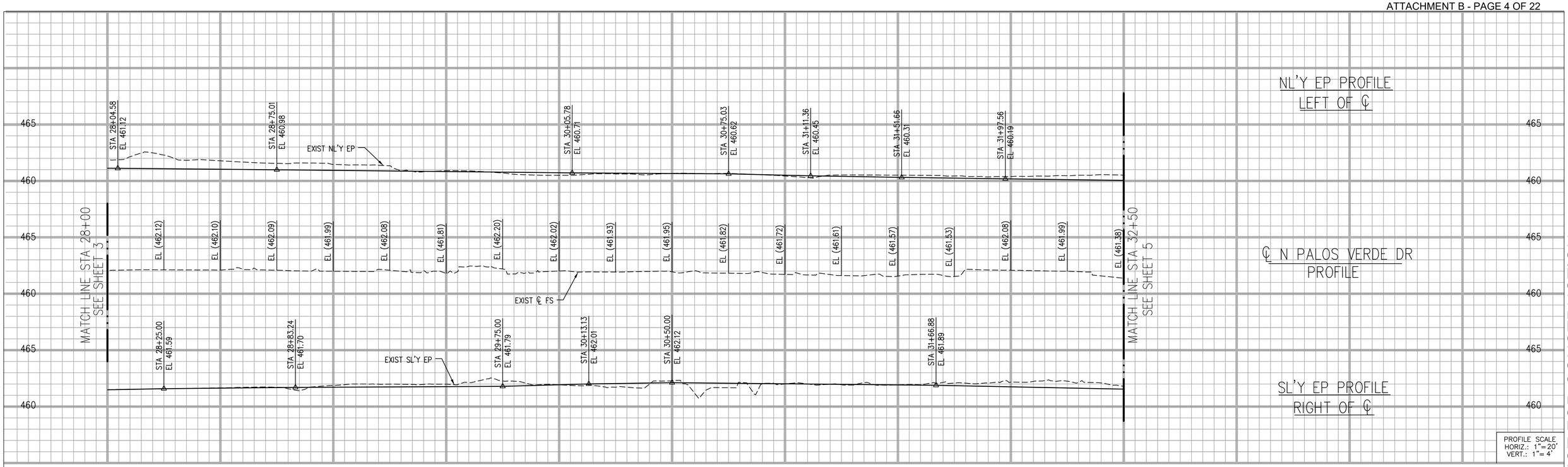

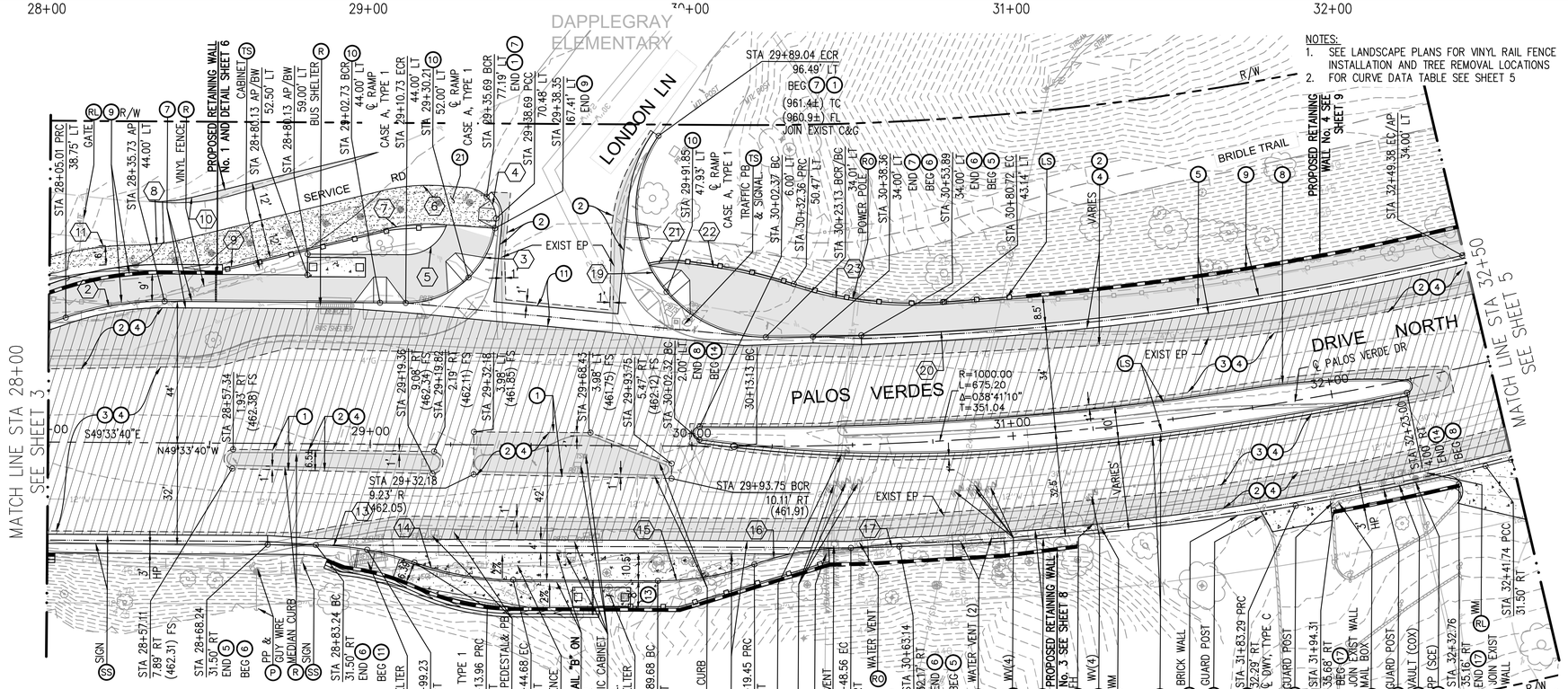

NOTES:
1. SEE LANDSCAPE PLANS FOR VINYL RAIL FENCE INSTALLATION AND TREE REMOVAL LOCATIONS
2. FOR CURVE DATA TABLE SEE SHEET 5

CONSTRUCTION NOTES:

1. REMOVE EXISTING ASPHALT CONCRETE, P.C.C., BASE MATERIAL, AND SUBGRADE
2. CONSTRUCT 6-INCH THICK AC OVER 10-INCH THICK CAB , SEE TYPICAL SECTION ON SHEET 2..
3. COLDMILL EXISTING AC PAVEMENT 2-INCH DEPTH
4. CONSTRUCT 2-INCH THICK ASPHALT RUBBER HOT MIX (ARHM) OVERLAY.
5. CONSTRUCT ROLLED CURB TYPE R-2 PER DETAIL A ON SHEET 2.
6. CONSTRUCT ROLLED CURB TRANSITION PER DETAIL ON SHEET 2.
7. CONSTRUCT CURB AND GUTTER PER SPPCW STD PLAN 120-3, TYPE A2-6
8. CONSTRUCT CURB PER SPPWC STD PLAN NO. 120-3, TYPE A1-6
9. CONSTRUCT 4-INCH AC OVER 4-INCH AB MULTI-USE PATH
10. CONSTRUCT CURB RAMP PER SPPWC STD PLAN 111-5, CASE AND TYPE PER PLAN
11. CONSTRUCT CROSS AND LONGITUDINAL GUTTER PER SPPWC STD PLAN NO. 122-3
12. CONSTRUCT 4-INCH THICK P.C.C. RESIDENTIAL DRIVEWAY PER SPPWC STD PLAN NO. 110-2
13. CONSTRUCT 4-INCH THICK PCC SIDEWALK PER SPPWC STD PLAN NO. 110-2, OVER 6-INCH CAB
14. CONSTRUCT CURB AND GUTTER PER SPPCW STD PLAN 120-3, TYPE A2-6, W=1'
17. CONSTRUCT RETAINING WALL, TYPE 7A, PER SPPWC STD PLAN NO. 616-3
20. CONSTRUCT -INCH THICK PCC BUS PAD INCLUDING 6-INCH MONOLITHIC CURB, 3,250 PSI OVER 6-INCH CAB
21. COMPACTED NATIVE BACKFILL AT 90% RELATIVE COMPACTION TO A DEPTH OF 12"

(P) PROTECT IN PLACE.
(RL) RELOCATE TYPE AS SHOWN.
(RO) RELOCATE BY OTHERS.
(R) REMOVE TYPE AS SHOWN.
(AG) ADJUST TO GRADE TYPE AS SHOWN.
(AO) ADJUST TO GRADE BY OTHERS.
(LS) SEE LANDSCAPE PLANS
(SS) SEE SIGNING AND STRIPING PLANS.
(TS) SEE TRAFFIC SIGNAL PLANS.
(MF) W/L INDICATES MEDIAN FLARE PER SPPWC STD PLAN NO. 141-2

HORIZ 1"=20'
SCALE 20 10 0 20 40 FEET

LEGEND
- PROPOSED AC PAVEMENT AND OVERLAY
- PROPOSED PCC
- PROPOSED COLD MILL AND OVERLAY
- PROPOSED AC

REGISTERED PROFESSIONAL ENGINEER
TYRONE PETER
NO. 81888
CIVIL ENGINEER
STATE OF CALIFORNIA

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13191 CROSSROADS PARKWAY NORTH
SUITE 405 INDUSTRY, CA 91746-3497
(562) 908-6200
UNDER THE SUPERVISION OF
TYRONE PETER RCE No. 81888 DATE

BENCH MARK:
NO. _____ ELEV. _____
DATE ADJ. _____ QUAD. _____
NONE

NO.	REVISIONS DESCRIPTION	APP.	DATE

CITY OF ROLLING HILLS ESTATES

STREET IMPROVEMENT PLAN AND PROFILE

INTERSECTION CAPACITY IMPROVEMENTS
AT PALOS VERDES DRIVE NORTH AND DAPPLEGRAY SCHOOL ENTRANCE

DRAWN BY: BR
DESIGNED BY: BR
CHECKED BY: FW

SHT. 4 OF 22 SHTS.

100% SUBMITTAL NOT FOR CONSTRUCTION

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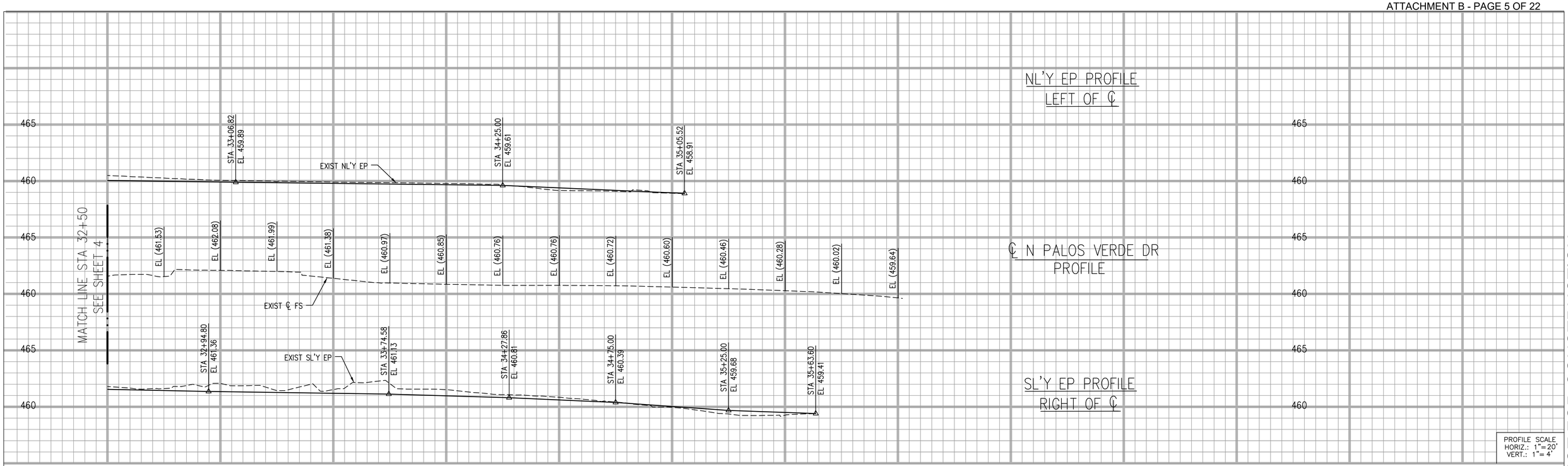

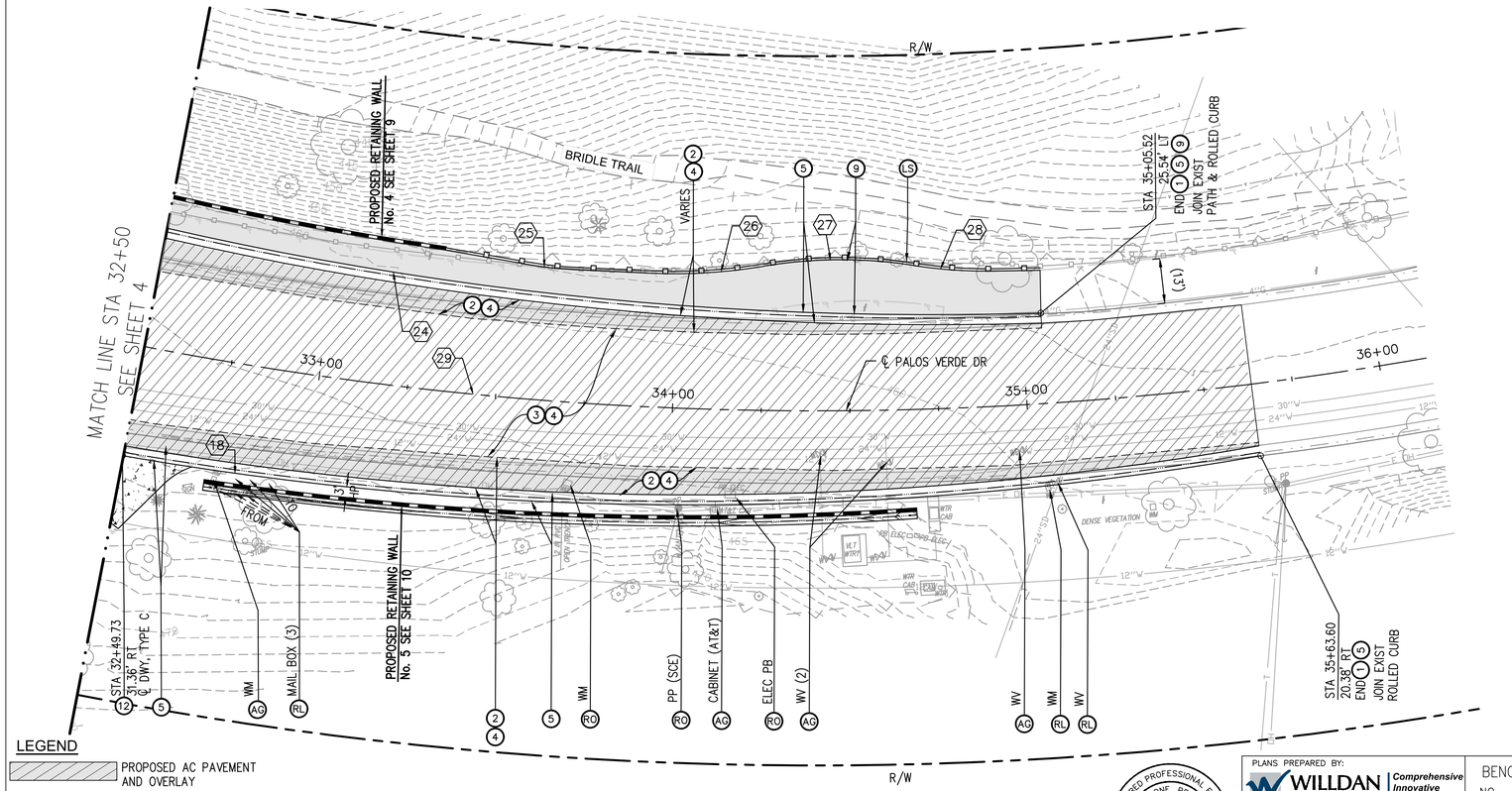

CURVE DATA				
CURVE	LENGTH	RADIUS	DELTA	TANGENT
1	31.314'	92.50'	19°23'47"	15.81'
2	31.314'	92.50'	19°23'47"	15.81'
3	42.459'	28.00'	86°53'01"	26.52'
4	14.624'	10.00'	83°47'18"	8.97'
5	16.759'	13.00'	73°51'41"	9.77'
6	19.191'	62.00'	17°44'07"	9.67'
7	15.477'	50.00'	17°44'07"	7.80'
8	14.314'	55.00'	14°54'42"	7.20'
9	19.615'	80.00'	14°02'53"	9.86'
10	9.247'	45.00'	11°46'24"	4.64'
11	37.744'	109.00'	19°50'24"	19.06'
12	1.235'	5.00'	14°09'15"	0.62'
13	31.314'	92.50'	19°23'47"	15.81'
14	31.314'	92.50'	19°23'47"	15.81'
15	30.626'	87.19'	20°07'33"	15.47'
16	30.626'	87.19'	20°07'33"	15.47'
17	199.408'	893.50'	12°47'13"	100.12'
18	330.692'	935.00'	20°15'52"	167.09'
19	87.051'	40.00'	124°41'27"	76.34'
20	218.811'	966.00'	12°58'42"	109.88'
21	11.276'	31.25'	20°40'26"	5.70'
22	34.380'	154.35'	12°45'44"	17.26'
23	47.235'	120.00'	22°33'11"	23.93'
24	248.679'	966.00'	14°44'59"	125.03'
25	12.568'	100.00'	7°12'03"	6.29'
26	31.899'	150.00'	12°11'04"	16.01'
27	42.564'	131.50'	18°32'43"	21.47'
28	22.565'	130.00'	9°56'43"	11.31'
29	675.200'	1000.00'	38°41'10"	351.04'

CONSTRUCTION NOTES:

1. REMOVE EXISTING ASPHALT CONCRETE, P.C.C., BASE MATERIAL, AND SUBGRADE
2. CONSTRUCT 6-INCH THICK AC OVER 10-INCH THICK CAB , SEE TYPICAL SECTION ON SHEET 2..
3. COLDMILL EXISTING AC PAVEMENT 2-INCH DEPTH
4. CONSTRUCT 2-INCH THICK ASPHALT RUBBER HOT MIX (ARHM) OVERLAY.
5. CONSTRUCT ROLLED CURB TYPE R-2 PER DETAIL A ON SHEET 2.
6. CONSTRUCT ROLLED CURB TRANSITION PER DETAIL ON SHEET 2.
7. CONSTRUCT CURB AND GUTTER PER SPPCW STD PLAN 120-3, TYPE A2-6
8. CONSTRUCT CURB PER SPPWC STD PLAN NO. 120-3, TYPE A1-6
9. CONSTRUCT 4-INCH AC OVER 4-INCH AB MULTI-USE PATH
10. CONSTRUCT CURB RAMP PER SPPWC STD PLAN 111-5, CASE AND TYPE PER PLAN
11. CONSTRUCT CROSS AND LONGITUDINAL GUTTER PER SPPWC STD PLAN NO. 122-3
12. CONSTRUCT 4-INCH THICK P.C.C. RESIDENTIAL DRIVEWAY PER SPPWC STD PLAN NO. 110-2
13. CONSTRUCT 4-INCH THICK PCC SIDEWALK PER SPPWC STD PLAN NO. 110-2, OVER 6-INCH CAB
14. CONSTRUCT CURB AND GUTTER PER SPPCW STD PLAN 120-3, TYPE A2-6, W=1'

- (P) PROTECT IN PLACE.
- (RL) RELOCATE TYPE AS SHOWN.
- (RO) RELOCATE BY OTHERS.
- (R) REMOVE TYPE AS SHOWN.
- (AG) ADJUST TO GRADE TYPE AS SHOWN.
- (AO) ADJUST TO GRADE BY OTHERS.
- (LS) SEE LANDSCAPE PLANS
- (SS) SEE SIGNING AND STRIPING PLANS.
- (TS) SEE TRAFFIC SIGNAL PLANS.
- (MF) W/L INDICATES MEDIAN FLARE PER SPPWC STD PLAN NO. 141-2

HORIZ 1"=20'
20 10 0 20 40
SCALE FEET

LEGEND

- PROPOSED AC PAVEMENT AND OVERLAY
- PROPOSED PCC
- PROPOSED COLD MILL AND OVERLAY
- PROPOSED AC

NOTE:
1. SEE LANDSCAPE PLANS FOR VINYL RAIL FENCE INSTALLATION AND TREE REMOVAL LOCATIONS

REGISTERED PROFESSIONAL ENGINEER TYRONE PETER NO. 81888 CIVIL ENGINEER STATE OF CALIFORNIA

PLANS PREPARED BY:
WILLDAN Engineering Comprehensive Innovative Trusted
13191 CROSSROADS PARKWAY NORTH
SUITE 405 INDUSTRY, CA 91746-3497
(562) 908-6200
UNDER THE SUPERVISION OF

TYRONE PETER RCE No. 81888 DATE

BENCH MARK:
NO. _____ ELEV. _____
DATE ADJ. _____ QUAD. _____
NONE

REVISIONS			
NO.	DESCRIPTION	APP.	DATE

CITY OF ROLLING HILLS ESTATES

STREET IMPROVEMENT PLAN AND PROFILE

INTERSECTION CAPACITY IMPROVEMENTS
AT PALOS VERDES DRIVE NORTH AND DAPPLEGRAY SCHOOL ENTRANCE

DRAWN BY: BR
DESIGNED BY: BR
CHECKED BY: FW

SHT. 5 OF 22 SHTS.

100% SUBMITTAL NOT FOR CONSTRUCTION

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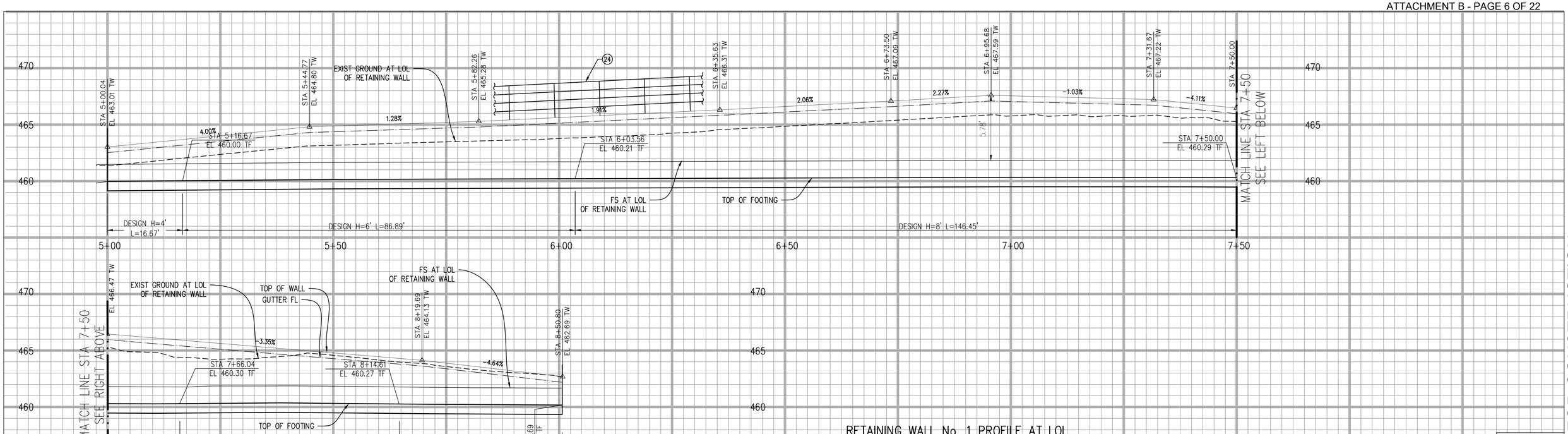
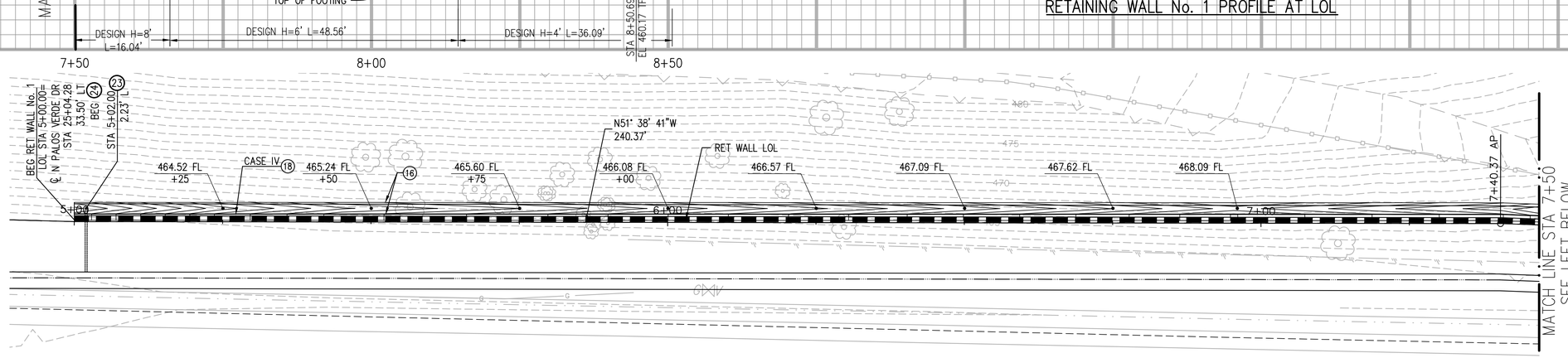
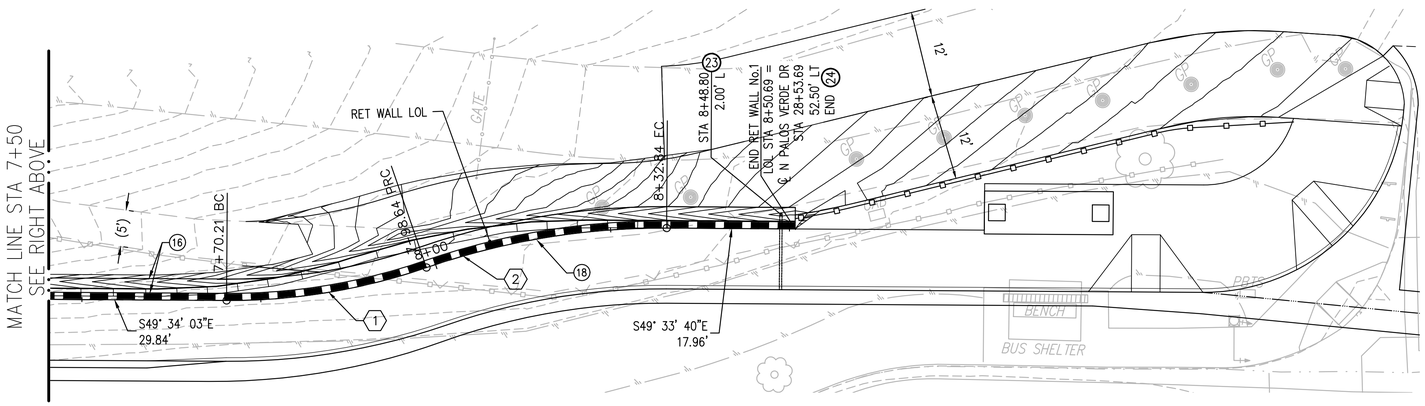


RETAINING WALL No. 1 PROFILE AT LOL

PROFILE SCALE
HORIZ.: 1"=20'
VERT.: 1"= 8'





RETAINING No.1 WALL PLAN

CONSTRUCTION NOTES:

(16) CONSTRUCT CONCRETE DRAINAGE SWALE BEHIND RETAINING WALL PER SPPWC STD PLAN NO. 621-3
(17) CONSTRUCT RETAINING WALL, TYPE 7A, PER SPPWC STD PLAN NO. 616-3
(18) CONSTRUCT RETAINING WALL, TYPE 5, PER SPPWC STD PLAN NO. 614-3. CASE PER PLAN
(23) CONSTRUCT WALL GUTTER OUTLET TO CURB PER SPPWC STD PLAN NO. 617-3 AND PLAN No. 150-4
(24) CONSTRUCT CABLE RAILING PER CALTRANS STD B11-47, PER SECTION C-C

CURVE TABLE				
CURVE	LENGTH	RADIUS	DELTA	TANGENT
(1)	28.440	84.00	19°23'54"	14.36
(2)	34.192	100.84	19°25'39"	17.26

LEGEND

RETAINING WALL

HORIZ 1"=10'
10 5 0 10 20
SCALE FEET

PLANS PREPARED BY:
WILLDAN Engineering | Comprehensive Innovative Trusted
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SUITE 405 INDUSTRY, CA 91746-3497
(562) 908-6200
UNDER THE SUPERVISION OF

BENCH MARK:
NO. _____ ELEV. _____
DATE ADJ. _____ QUAD. _____
NONE

REVISIONS			
NO.	DESCRIPTION	APP.	DATE

CITY OF ROLLING HILLS ESTATES

RETAINING WALL PLAN AND PROFILE

INTERSECTION CAPACITY IMPROVEMENTS
AT PALOS VERDES DRIVE NORTH AND DAPPLEGRAY SCHOOL ENTRANCE

DRAWN BY: BR
DESIGNED BY: BR
CHECKED BY: FW

SHT. 6 OF 22 SHTS.

100% SUBMITTAL NOT FOR CONSTRUCTION

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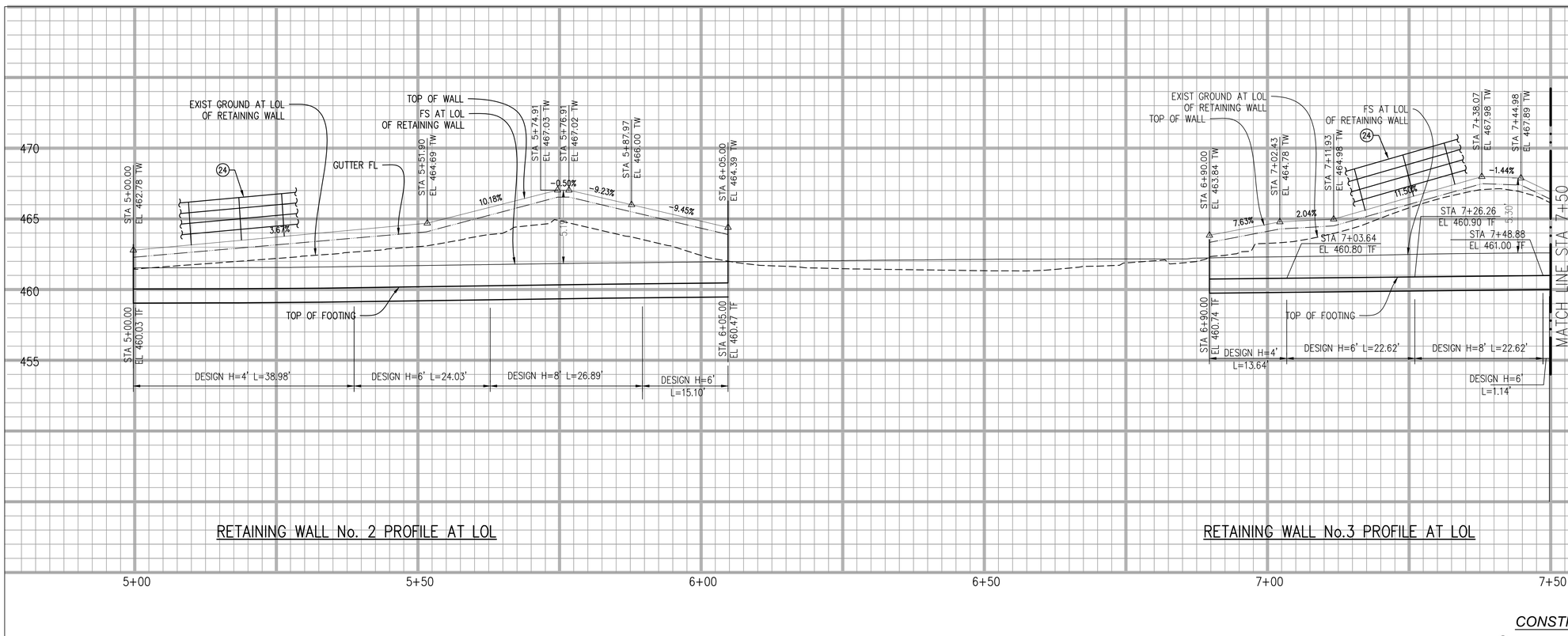


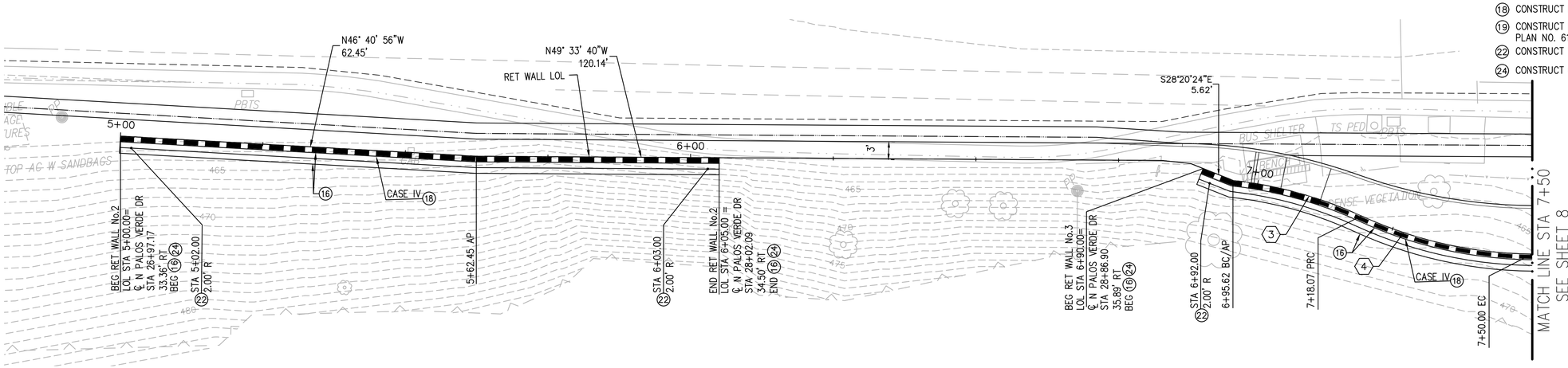
RETAINING WALL No. 2 PROFILE AT LOL

RETAINING WALL No.3 PROFILE AT LOL

PROFILE SCALE
HORIZ.: 1"=20'
VERT.: 1"= 8'

CONSTRUCTION NOTES:

(16) CONSTRUCT CONCRETE DRAINAGE SWALE BEHIND RETAINING WALL PER SPPWC STD PLAN NO. 621-3
(18) CONSTRUCT RETAINING WALL, TYPE 5, PER SPPWC STD PLAN NO. 614-3. CASE PER PLAN
(19) CONSTRUCT RETAINING WALL, TYPE 5, MODIFIED PER DETAIL HEREON SPPWC STD PLAN NO. 614-3. CASE PER PLAN
(22) CONSTRUCT WALL GUTTER OUTLET TO FACE OF WALL PER SPPWC STD PLAN NO. 617-3
(24) CONSTRUCT CABLE RAILING PER CALTRANS STD B11-47, PER SECTION C-C



CURVE TABLE				
CURVE	LENGTH	RADIUS	DELTA	TANGENT
(3)	23.456	73.12	18°22'46"	11.83
(4)	30.926	73.12	24°13'59"	15.70

RETAINING WALL No.2 PLAN

RETAINING WALL No.3 PLAN

HORIZ 1"= 10'
10 5 0 10 20
SCALE FEET

LEGEND
RETAINING WALL

PLANS PREPARED BY:
WILLDAN Engineering | Comprehensive Innovative Trusted
13191 CROSSROADS PARKWAY NORTH
SUITE 405 INDUSTRY, CA 91746-3497
(562) 908-6200
UNDER THE SUPERVISION OF

BENCH MARK:
NO. _____ ELEV. _____
DATE ADJ. _____ QUAD. _____
NONE

NO.	REVISIONS	APP.	DATE

CITY OF ROLLING HILLS ESTATES

RETAINING WALL PLAN AND PROFILE

INTERSECTION CAPACITY IMPROVEMENTS
AT PALOS VERDES DRIVE NORTH AND DAPPLEGRAY SCHOOL ENTRANCE

DRAWN BY: BR
DESIGNED BY: BR
CHECKED BY: FW

SHT. 7 OF 22 SHTS.

100% SUBMITTAL NOT FOR CONSTRUCTION

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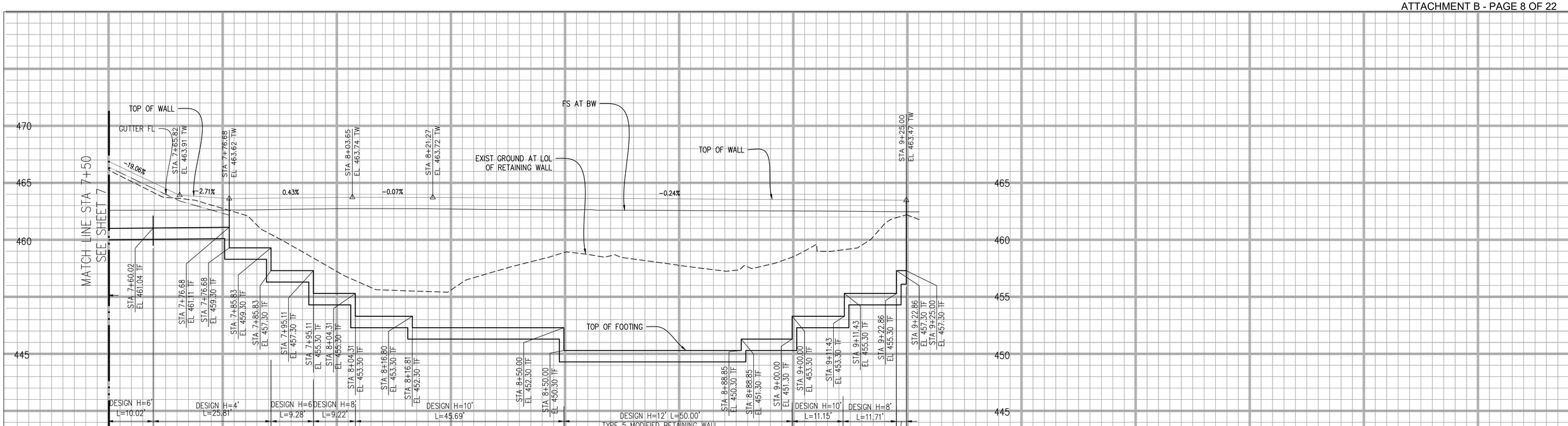
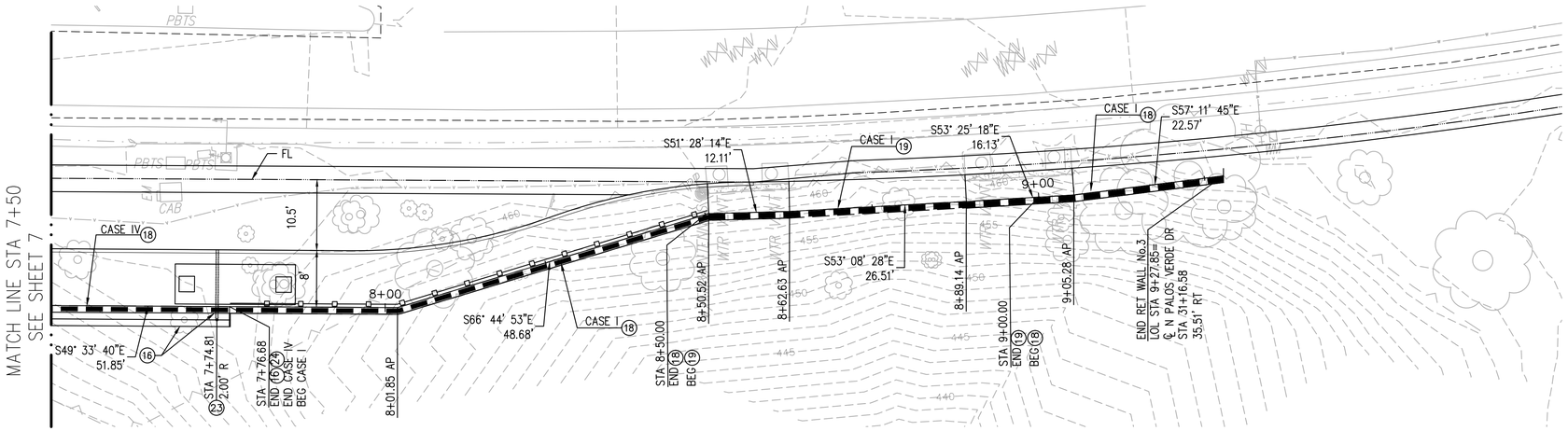


RETAINING WALL PROFILE No.3 AT LOL

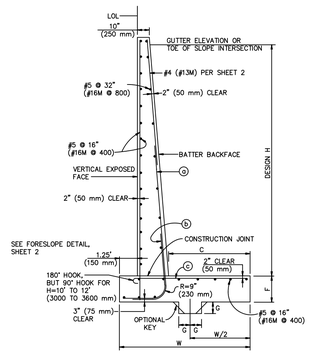
PROFILE SCALE
HORIZ.: 1"=20'
VERT.: 1"= 8'



RETAINING WALL No.3 PLAN

CONSTRUCTION NOTES:

(16) CONSTRUCT CONCRETE DRAINAGE SWALE BEHIND RETAINING WALL PER SPPWC STD PLAN NO. 621-3
(18) CONSTRUCT RETAINING WALL, TYPE 5, PER SPPWC STD PLAN NO. 614-3. CASE PER PLAN
(19) CONSTRUCT RETAINING WALL, TYPE 5, MODIFIED PER DETAIL HEREON SPPWC STD PLAN NO. 614-3. CASE PER PLAN
(23) CONSTRUCT WALL GUTTER OUTLET TO CURB PER SPPWC STD PLAN NO. 617-3 AND PLAN No. 150-4
(24) CONSTRUCT CABLE RAILING PER CALTRANS STD B11-47, PER SECTION C-C



TYPE 5 MODIFIED RETAINING WALL

LEGEND

RETAINING WALL

HORIZ 1"= 10'
10 5 0 10 20
SCALE FEET

PLANS PREPARED BY:
WILLDAN Engineering | Comprehensive Innovative Trusted
13191 CROSSROADS PARKWAY NORTH
SUITE 405 INDUSTRY, CA 91746-3497
(562) 908-6200
UNDER THE SUPERVISION OF

BENCH MARK:
NO. _____ ELEV. _____
DATE ADJ. _____ QUAD. _____
NONE

NO.	REVISIONS	APP.	DATE

CITY OF ROLLING HILLS ESTATES

RETAINING WALL PLAN AND PROFILE

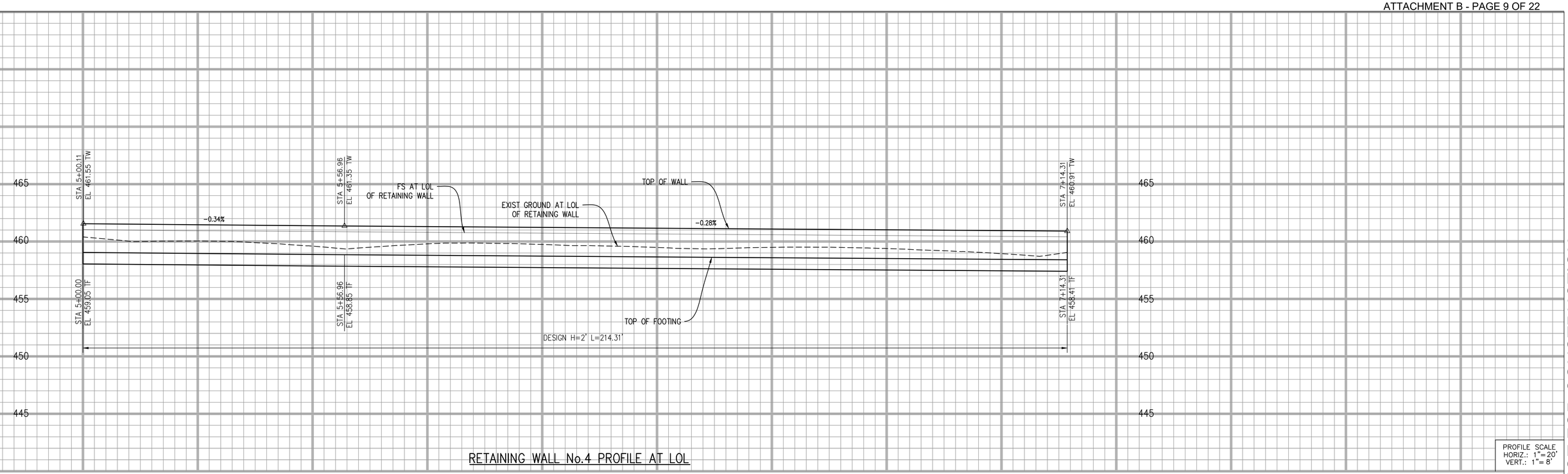
INTERSECTION CAPACITY IMPROVEMENTS
AT PALOS VERDES DRIVE NORTH AND DAPPLEGRAY SCHOOL ENTRANCE

DRAWN BY: BR
DESIGNED BY: BR
CHECKED BY: FW

SHT. 8 OF 22 SHTS.

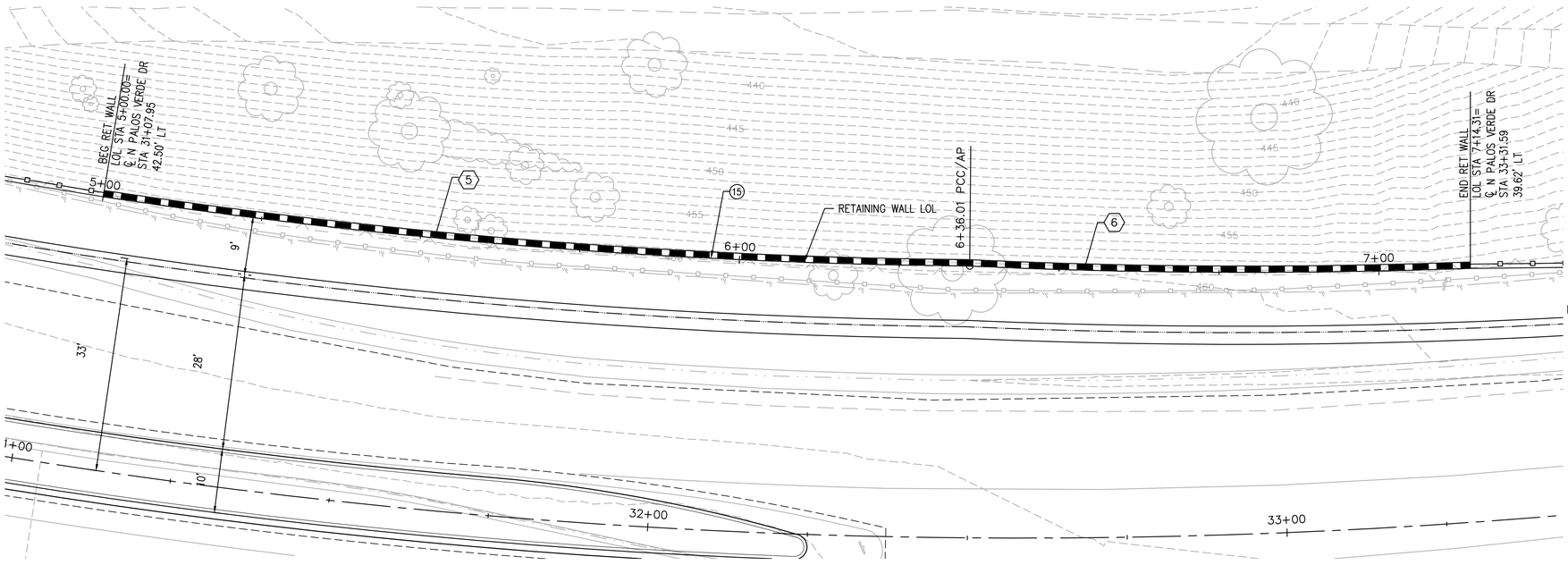
100% SUBMITTAL NOT FOR CONSTRUCTION

U:\110176 - RHE PVDN@DAPPLEGRAY ELM SCHOOL\900-PS&E\901-Plans\PL-RWAL-01.dwg Apr 05, 23 - 10:08am



RETAINING WALL No.4 PROFILE AT LOL

PROFILE SCALE
HORIZ.: 1"=20'
VERT.: 1"= 8'

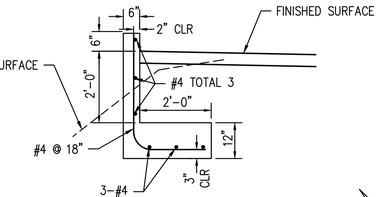


RETAINING WALL No.4 PLAN

CONSTRUCTION NOTES:

(15) CONSTRUCT RETAINING WALL PER DETAIL B ON SHEET 9

CURVE TABLE				
CURVE	LENGTH	RADIUS	DELTA	TANGENT
(5)	136.009	959.61	8°07'15"	68.12
(6)	78.297	957.50	4°41'07"	39.17



2' MAX RETAINING WALL DETAIL "B"

HORIZ 1"=10'
SCALE
10 5 0 10 20
FEET

LEGEND

RETAINING WALL

PLANS PREPARED BY:
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(562) 908-6200
UNDER THE SUPERVISION OF

BENCH MARK:
NO. _____ ELEV. _____
DATE ADJ. _____ QUAD. _____
NONE

REVISIONS			
NO.	DESCRIPTION	APP.	DATE

CITY OF ROLLING HILLS ESTATES

RETAINING WALL PLAN AND PROFILE

INTERSECTION CAPACITY IMPROVEMENTS
AT PALOS VERDES DRIVE NORTH AND DAPPLEGRAY SCHOOL ENTRANCE

DRAWN BY: BR
DESIGNED BY: BR
CHECKED BY: FW

SHT. 9 OF 22 SHTS.

100% SUBMITTAL NOT FOR CONSTRUCTION

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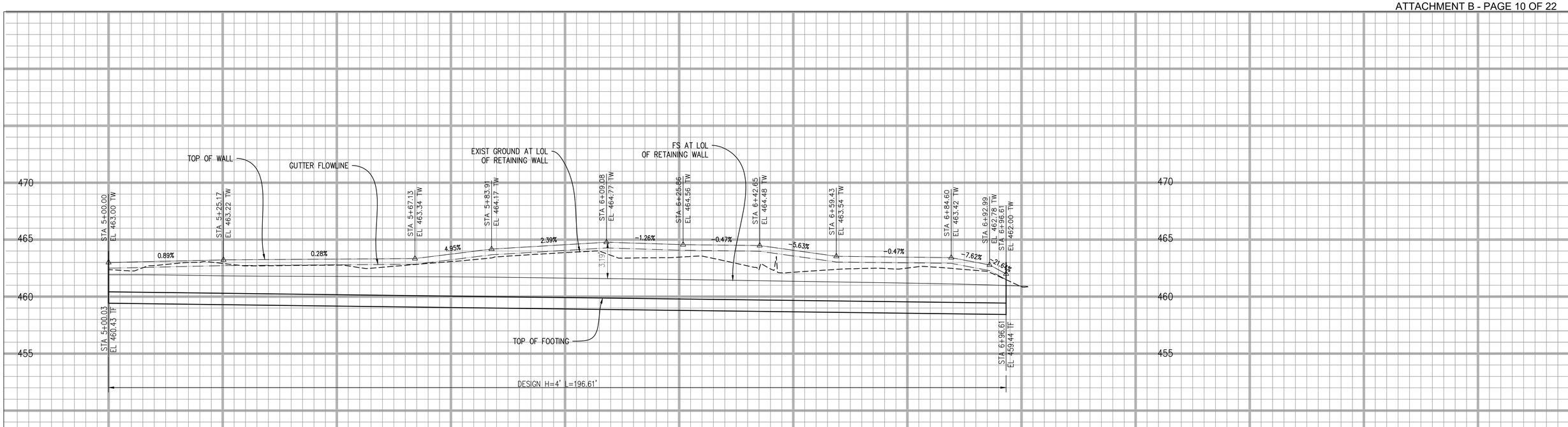
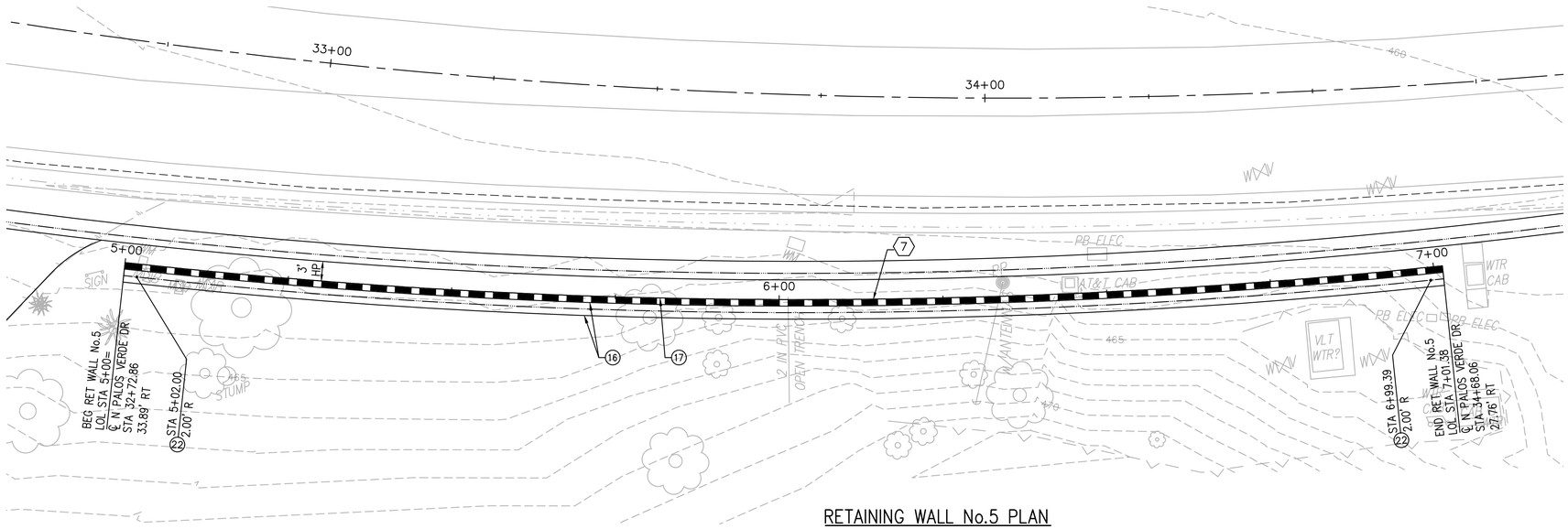


RETAINING WALL No.5 PROFILE AT LOL

PROFILE SCALE
HORIZ.: 1"=20'
VERT.: 1"= 8'



RETAINING WALL No.5 PLAN

CONSTRUCTION NOTES:

(16) CONSTRUCT CONCRETE DRAINAGE SWALE BEHIND RETAINING WALL PER SPPWC STD PLAN NO. 621-3
(17) CONSTRUCT RETAINING WALL, TYPE 7A, PER SPPWC STD PLAN NO. 616-3
(22) CONSTRUCT WALL GUTTER OUTLET TO FACE OF WALL PER SPPWC STD PLAN NO. 617-3

HORIZ 1"= 10'
SCALE
10 5 0 10 20
FEET

LEGEND
RETAINING WALL

PLANS PREPARED BY:
WILLDAN Engineering | Comprehensive Innovative Trusted
13191 CROSSROADS PARKWAY NORTH
SUITE 405 INDUSTRY, CA 91746-3497
(562) 908-6200
UNDER THE SUPERVISION OF

BENCH MARK:
NO. _____ ELEV. _____
DATE ADJ. _____ QUAD. _____
NONE

NO.	REVISIONS	APP.	DATE

CITY OF ROLLING HILLS ESTATES

RETAINING WALL PLAN AND PROFILE

INTERSECTION CAPACITY IMPROVEMENTS
AT PALOS VERDES DRIVE NORTH AND DAPPLEGRAY SCHOOL ENTRANCE

DRAWN BY: BR
DESIGNED BY: BR
CHECKED BY: FW

SHT. 10 OF 22 SHTS.

100% SUBMITTAL NOT FOR CONSTRUCTION

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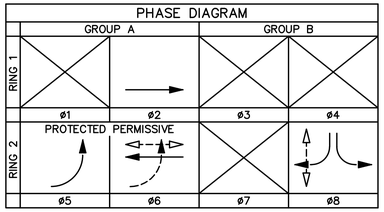
POLE SCHEDULE■

No.	STANDARD TYPE	LUM. M.A.	SIG. M.A.	LUMINAIRE HPS	VEHICLE SIGNAL MOUNTING MAST ARM	POLE	PED SIGNAL MTG.	PPB ø	PPB QUAD	PPB ARROW	EPB* ø	EPB* QUAD	EPB* ARROW	POLE LOCATION (SEE DETAIL "A") E	B	C	REMARKS
(A)	SIGNAL STRUCTURE A	2'	45'	250W	MAS-5A, MAS	SV-3-TB	–	–	–	–	–	–	–	–	–	–	1., 2.
(B)	SIGNAL STRUCTURE B	–	–	–	–	SV-1-T	–	–	–	–	–	–	–	–	–	–	1., 2.
(C)	SIGNAL STRUCTURE C	2'	–	250W	–	SV-3-TB	SP-1-T	8	E	→	–	–	–	–	–	–	1., 2.
(D)	SIGNAL STRUCTURE D	2'	30'	250W	MAS	SV-2-TD	SP-2-T	8	W	→	–	–	–	–	–	–	1., 2.
(E)	SIGNAL STRUCTURE B	–	–	–	–	–	–	6	S	→	6	N	←	–	–	–	1., 2.
(F)	SIGNAL STRUCTURE C	2'	–	250W	–	–	–	6	S	←	6	N	→	–	–	–	1., 2.
(G)	SIGNAL STRUCTURE C	2'	–	250W	–	SV-1-T	SP-1-T	–	–	–	–	–	–	–	–	–	1., 2.

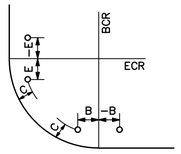
■ ALL EQUIPMENT IS NEW

1. MODIFIED FOUNDATION, SEE DETAILS ON SHEET 13.
2. TRAFFIC SIGNAL POLES ARE SQUARE DECORATIVE SIGNAL STRUCTURES, SEE DETAILS ON SHEET 12.

PHASE DIAGRAM



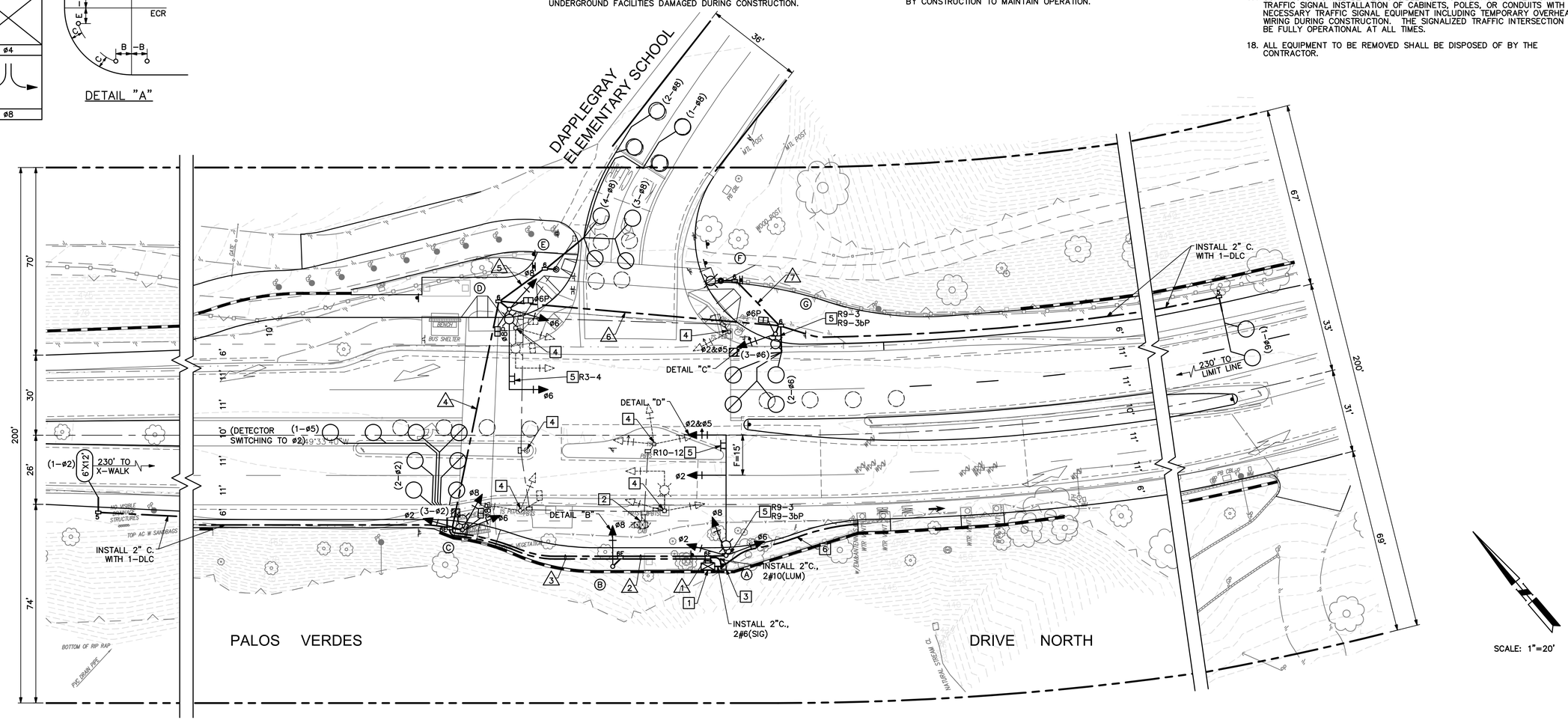
ø5 SHALL NOT BE RE-SERVICED UNTIL SUCH TIME ø2 AND ø6 HAVE TERMINATED SIMULTANEOUSLY



DETAIL "A"

TRAFFIC SIGNAL GENERAL NOTES:

1. TRAFFIC SIGNAL AND HIGHWAY LIGHTING EQUIPMENT, SIGNING, AND THE INSTALLATION THEREOF SHALL CONFORM TO CALTRANS STANDARD PLANS AND SPECIFICATIONS, DATED 2018, THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (CALIFORNIA MUTCD), DATED 2014, THIS PLAN AND THE SPECIAL PROVISIONS.
2. NEW VEHICLE INDICATIONS SHALL BE 12" LED RED, LED AMBER AND LED GREEN PER CALTRANS APPROVED SPECIFICATIONS.
3. NEW SIGNAL HEADS SHALL BE METAL.
4. NEW CONDUIT SHALL BE MIN. SIZE 2" RIGID STEEL AND NEW PULL BOXES SHALL BE #5, UNLESS SHOWN OTHERWISE.
5. ALL PEDESTRIAN INDICATIONS SHALL BE LED COUNT-DOWN PEDESTRIAN HEADS (SEE SPECIAL PROVISIONS).
6. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE AND LOCATION OF ALL OVERHEAD AND UNDERGROUND FACILITIES, AND TO PROTECT THEM FROM DAMAGE. THE CONTRACTOR SHALL BEAR THE TOTAL EXPENSE OF REPAIR OR REPLACEMENT OF ANY OVERHEAD AND UNDERGROUND FACILITIES DAMAGED DURING CONSTRUCTION.
7. CONDUCTOR SCHEDULE IS PROVIDED AS AN INSTALLATION GUIDELINE ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE THE CORRECT CONDUCTORS REQUIRED FOR THE INTENDED OPERATION.
8. CONTRACTOR SHALL OBTAIN APPROVAL FROM THE CITY ENGINEER FOR EXACT EQUIPMENT LOCATION PRIOR TO FINAL PLACEMENT.
9. LOCATION OF UNDERGROUND FACILITIES ARE APPROXIMATE. THE CONTRACTOR SHALL POTHOLE TO DETERMINE THE EXACT LOCATION AND VERIFY ALL CONDITIONS ON THE JOBSITE. HAND DIG FOUNDATIONS UNTIL CLEAR OF OBSTRUCTION. COORDINATE POLE INSTALLATION WITH OVERHEAD UTILITY AND SUBSTRUCTURE OWNERS. CONTACT UNDERGROUND SERVICE ALERT AT 811 OR (800) 227-2600, TWO (2) WORKING DAYS PRIOR TO CONSTRUCTION.
10. ANY MODIFICATION OF OR CHANGES TO APPROVED PLANS MUST BE APPROVED BY THE CITY ENGINEER
11. CONTRACTOR SHALL REPLACE IN-KIND ANY PRIVATE FENCES, WALLS, LAWNS, SHRUBBERY, IRRIGATION, ETC. REMOVED OR DAMAGED TO FACILITATE TRAFFIC SIGNAL INSTALLATION, SIDEWALK, AND CURB CONSTRUCTION. CONTRACTOR SHALL MODIFY AND REPLACE IN-KIND ANY IRRIGATION DAMAGED OR REMOVED BY CONSTRUCTION TO MAINTAIN OPERATION.
12. COORDINATE ELECTRICAL SERVICE DETAILS AND SCHEDULING WITH SOUTHERN CALIFORNIA EDISON. CONTACT MR. RYAN KERBY AT (310) 783-9305.
13. ALL UNUSED AND/OR ABANDONED PULL BOXES AND FOUNDATIONS SHALL BE REMOVED AND THE AFFECTED AREA REPAIRED OR RESTORED TO MATCH SURROUNDING.
14. INDUCTIVE DETECTOR LOOPS SHALL BE 6' DIAMETER TYPE "E" AND CENTERED IN TRAVEL LANE WITH 10' SPACING BETWEEN LOOPS IN THE DIRECTION OF TRAVEL. LIMIT LINE LOOPS SHALL BE MODIFIED TYPE "D" BICYCLE DETECTOR LOOPS PER LOS ANGELES COUNTY STANDARDS. PLACE LIMIT LINE LOOPS 2' INTO CROSSWALK OR LIMIT LINE.
15. CONTRACTOR SHALL FURNISH AND INSTALL TEMPORARY EQUIPMENT NECESSARY TO MAINTAIN CURRENT SIGNAL OPERATION, INCLUDING BUT NOT LIMITED TO CONTROLLER ASSEMBLIES AND SIGNAL POLES.
16. EXISTING CONDUIT NOT SHOWN FOR REUSE SHALL BE ABANDONED AND CONDUCTORS REMOVED.
17. CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING ANY TEMPORARY TRAFFIC SIGNAL INSTALLATION OF CABINETS, POLES, OR CONDUITS WITH ALL NECESSARY TRAFFIC SIGNAL EQUIPMENT INCLUDING TEMPORARY OVERHEAD WIRING DURING CONSTRUCTION. THE SIGNALIZED TRAFFIC INTERSECTION SHALL BE FULLY OPERATIONAL AT ALL TIMES.
18. ALL EQUIPMENT TO BE REMOVED SHALL BE DISPOSED OF BY THE CONTRACTOR.



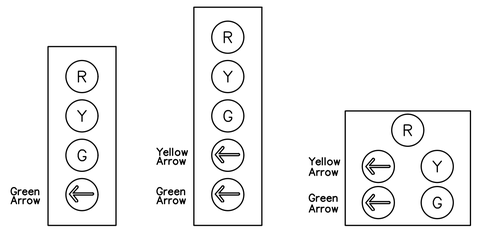
CONSTRUCTION NOTES:

1. INSTALL NEW ECONOLITE TS2 TYPE P CABINET COMPLETE WITH ECONOLITE ASC/3-2100 CONTROLLER ASSEMBLY, BATTERY BACKUP SYSTEM, GPS ANTENNA, GPS UNIT, AND ALL AUXILIARY EQUIPMENT NECESSARY TO PROVIDE THE OPERATION SHOWN. CONSTRUCT NEW FOUNDATION. TOP OF FOUNDATION SHALL BE 18" ABOVE FINISHED GRADE.
2. REMOVE EXISTING TYPE P CONTROLLER CABINET COMPLETE, BATTERY BACKUP AND TYPE II SERVICE CABINET
3. INSTALL 120/240V TYPE III-BF ELECTRICAL SERVICE ENCLOSURE WITH 1-100 AMP METER, PROVIDE 1-50 AMP BREAKER FOR METERED SIGNAL, AND 1-30AMP BREAKER FOR UNMETERED LUMINAIRES. LOCATE ENCLOSURE A MINIMUM OF 6' FROM THE CONTROLLER CABINET AND POWER POLE.
4. REMOVE EXISTING POLE COMPLETE.
5. INSTALL SIGN(S) AS SHOWN.
6. INSTALL 3" SCHEDULE 80 PVC CONDUIT WITH PULL ROPE AND REUSE EXISTING SERVICE RISER PER SCE REQUIREMENTS. COORDINATE INSTALLATION WITH EDISON SERVICE PLANNER RYAN KERBY AT (310) 783-9305 48 HOURS PRIOR TO CONSTRUCTION.

CONDUCTOR SCHEDULE▲

AWG	CIRCUIT	RUN 1	2	3	4	5	6	7
12 CONDUCTOR CABLE	POLE (A)	2	–	–	–	–	–	–
	POLE (B)	1	1	–	–	–	–	–
	POLE (C)	2	2	2	–	–	–	–
	POLE (D)	2	2	2	2	1	–	–
	POLE (E)	–	2	2	2	2	2	–
	POLE (F)	–	2	2	2	2	–	2
	POLE (G)	1	1	1	1	–	1	–
	TOTAL	8	8	8	8	5	3	2
5 CONDUCTOR CABLE	TOTAL	6	6	6	6	5	2	2
#10	LUMINAIRE	–	2	2	2	–	2	2
TYPE B DLC	ø2 DETECTOR	3	3	3	–	–	–	–
	ø5 DETECTOR	1	1	1	–	–	–	–
	ø6 DETECTOR	3	3	3	3	–	3	–
	ø8 DETECTOR	4	4	4	4	4	–	–
	TOTAL	10	10	10	7	4	3	–
CONDUIT SIZE		2-4"	2-4"	2-4"	4"	2"	4"	2"
% FILL		18	16	14	19	17	8	10

▲ ALL CONDUCTORS AND CONDUIT ARE NEW. SEE GENERAL NOTE NO. 7



PLANS PREPARED BY:
WILLDAN Engineering | Comprehensive Innovative Trusted
13191 CROSSROADS PARKWAY NORTH
SUITE 405 INDUSTRY, CA 91746-3497
(562) 908-6200
UNDER THE SUPERVISION OF

JEFFREY LAU, RCE No. 83887 DATE

BENCH MARK:
NO. _____ ELEV. _____
DATE ADJ. _____ QUAD. _____
NONE

NO.	REVISIONS DESCRIPTION	APP.	DATE

CITY OF ROLLING HILLS ESTATES

TRAFFIC SIGNAL MODIFICATION PLAN

INTERSECTION CAPACITY IMPROVEMENTS
AT PALOS VERDES DRIVE NORTH AND DAPPLEGRAY SCHOOL ENTRANCE

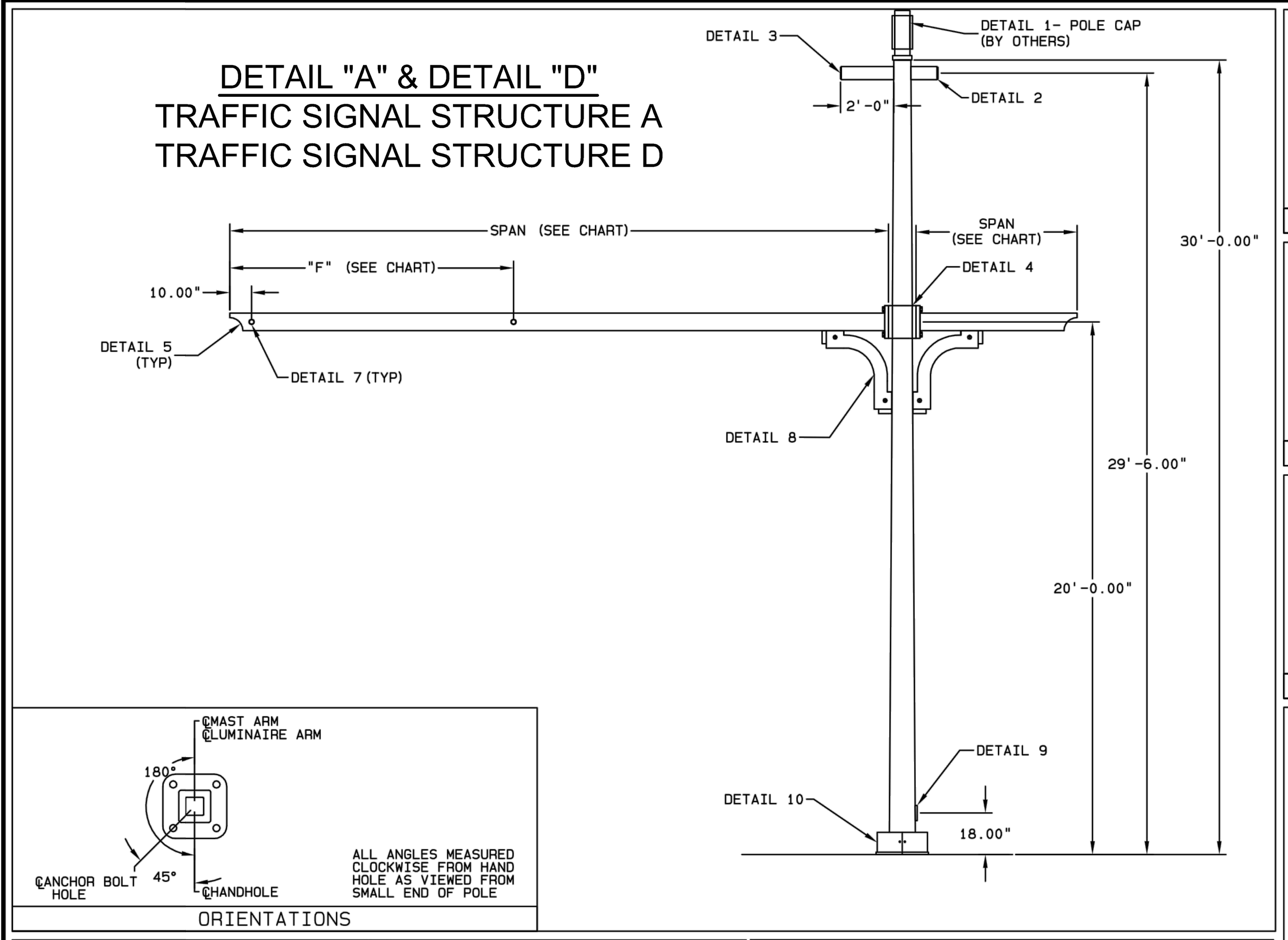
DRAWN BY: RG/KC
DESIGNED BY: RG/KC
CHECKED BY: JL

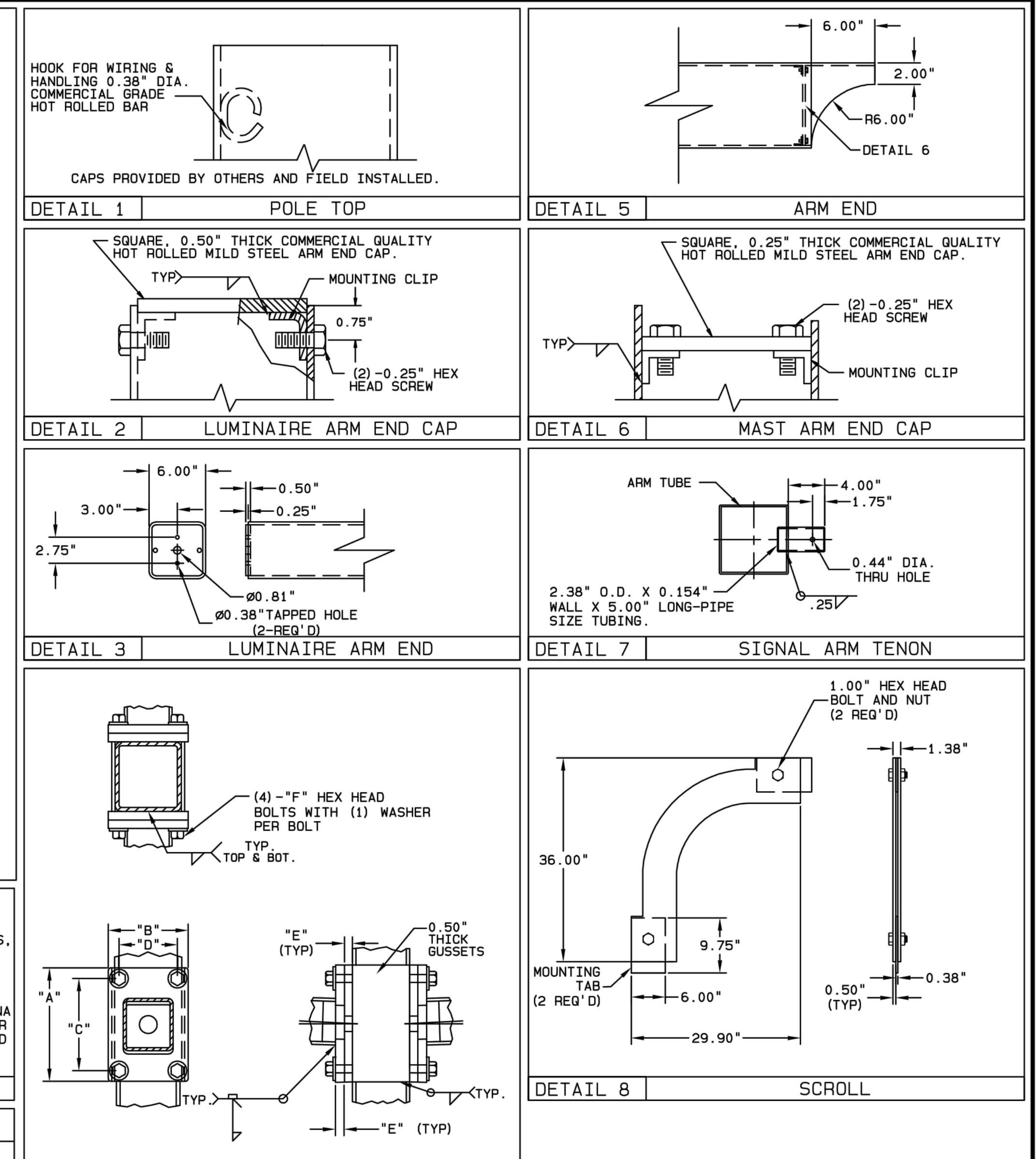
SHT. 11 OF 22 SHTS.

100% SUBMITTAL NOT FOR CONSTRUCTION

U:\110176 - RHE PVDN@DAPPLEGRAY ELM SCHOOL\900-PS&E\901-Plans\PL-SIGNAL-01.dwg Apr 03, 23 - 1:22pm

DETAIL "A" & DETAIL "D"
TRAFFIC SIGNAL STRUCTURE A
TRAFFIC SIGNAL STRUCTURE D





MATERIAL DATA

COMPONENT	ASTM DESIGNATION	MIN. YIELD (KSI)
POLE SHAFT	A572 GR.65	65
PLATES	A572	50
ARMS	A500	46
ARM CONNECTING BOLTS	A325	
ANCHOR BOLTS	F1554 GR.55	55
GALVANIZING-HARDWARE	A153	

FINISH DATA

SYSTEM:
BASE COAT: HOT-DIP GALVANIZED TO ASTM A123
PRIME COAT: HIGH BUILD EPOXY POWDER
FINISH COAT: TGIC POWDER
COLOR: WHITE
SPEC: F-540DA

ALTHOUGH RARE, VIBRATIONS SEVERE ENOUGH TO CAUSE DAMAGE CAN OCCASIONALLY OCCUR IN STRUCTURES OF ALL TYPES. BECAUSE THEY ARE INFLUENCED BY MANY INTERACTING VARIABLES, VIBRATIONS ARE GENERALLY UNPREDICTABLE. THE USER'S MAINTENANCE PROGRAM SHOULD INCLUDE OBSERVATION FOR EXCESSIVE VIBRATION AND EXAMINATION FOR ANY STRUCTURAL DAMAGE OR BOLT LOOSENING. THE VALMONT WARRANTY SPECIFICALLY EXCLUDES FATIGUE FAILURE OR SIMILAR PHENOMENA RESULTING FROM INDUCED VIBRATION, HARMONIC OSCILLATION OR RESONANCE ASSOCIATED WITH MOVEMENT OF AIR CURRENTS AROUND THE PRODUCT.

VIBRATION DISCLAIMER

POLE AND SIGNAL ARM DATA

ITEM	QTY.	POLE TUBE				POLE BASE				ANCHOR BOLT				SIGNAL ARM TUBE				
		BASE SQ. (IN)	TOP SQ. (IN)	LENGTH (FT)	GAUGE OR THK. (IN)	SQUARE "S" (IN)	BOLT CIRCLE "Y" (IN)	THK. "M" (IN)	HOLE "Z" (IN)	DIA. "K" (IN)	LENGTH "J" (IN)	THREAD LENGTH "U" (IN)	THREAD LENGTH "U" (IN)	FIXED END SQ. (IN)	FREE END SQ. (IN)	GAUGE OR THICK (IN)	SPAN (FT)	"F" (FT)
1	1	14.00	9.80	30.00	0.375	24.00	22.00	2.00	2.00	1.75	84.00	9.00	4.00	10.00	10.00	0.250	45.00	15.00
														10.00	10.00	0.219	6.00	-
2	1	12.00	7.80	30.00	0.375	22.00	20.00	2.00	1.75	1.50	54.00	8.00	4.00	8.00	8.00	0.250	30.00	-
														8.00	8.00	0.188	6.00	-

SIGNAL ARM ATTACHMENT DATA - 4 BOLT

MAST ARM SPAN (FT)	"A" (IN)	"B" (IN)	"C" (IN)	"D" (IN)	"E" (IN)	"F" (IN)
30.00	16.00	11.00	12.00	7.75	1.75	1.25 X 3.50
45.00	18.50	15.50	15.00	12.00	2.00	1.25 X 4.00

DETAIL 4 SIGNAL ARM ATTACHMENT

REV	DRAWN BY-DATE	CHECK BY-DATE	DESCRIPTION
A	RBC2 09/22/21	RBC2 09/22/21	ADDED SC CAP AND FOUNDATION DESIGN PAGE 5
—	RBC2 08/18/21	RBC2 08/18/21	— — — — — — — — — — — — — —

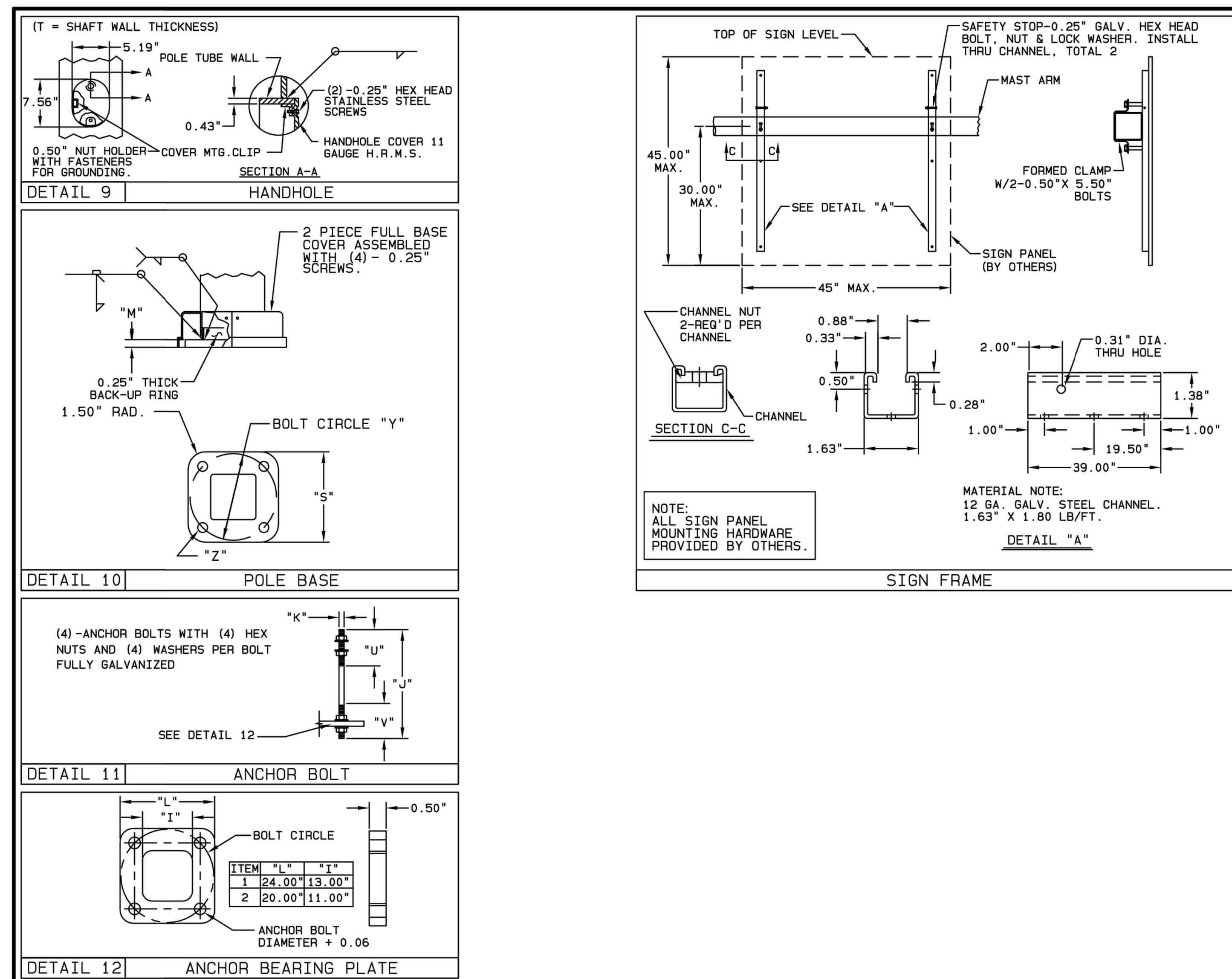
SOLD TO: SOUTH COAST LIGHTING
SHIP TO: TBD
P.O. #:
AGENT: SOUTH COAST LIGHTING

JOB ROLLING HILLS ESTATES DECO TRAFFIC
TITLE TRAFFIC SIGNAL STRUCTURES

VALMONT INDUSTRIES, INC. RESERVES THE RIGHT TO INSTALL VARIOUS, ENGINEER APPROVED, MATERIAL HANGING ACCOMMODATIONS TO FACILITATE THE MANUFACTURING PROCESS.

valmont Valley, NE 68064 (402) 359-2201

ORDER NUMBER: 517241-P1
PAGE NUMBER: 1 OF 5
DRAWING NUMBER CA517241P1 REV A



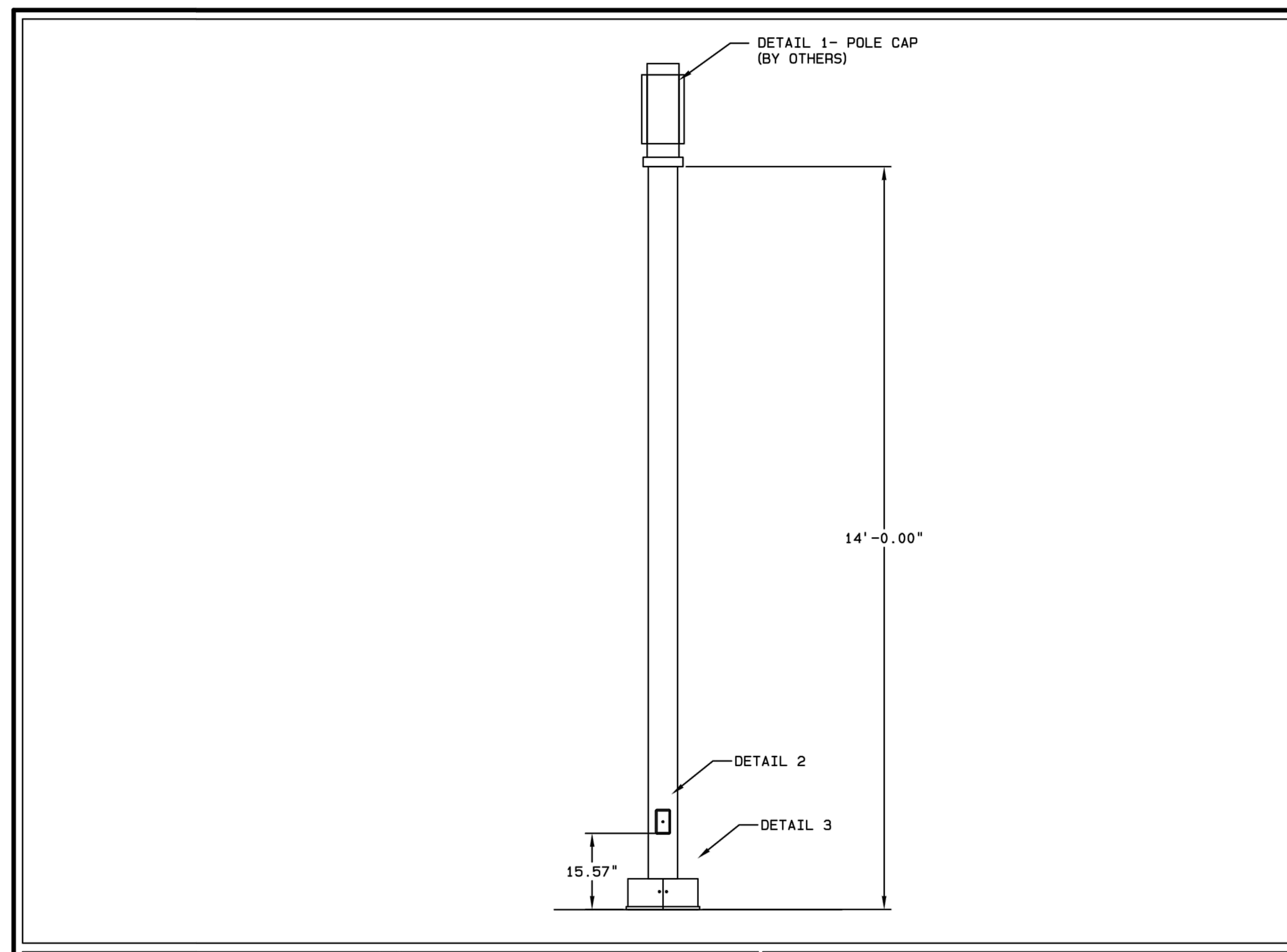
DETAIL "A" & DETAIL "D"
TRAFFIC SIGNAL STRUCTURE A
TRAFFIC SIGNAL STRUCTURE D

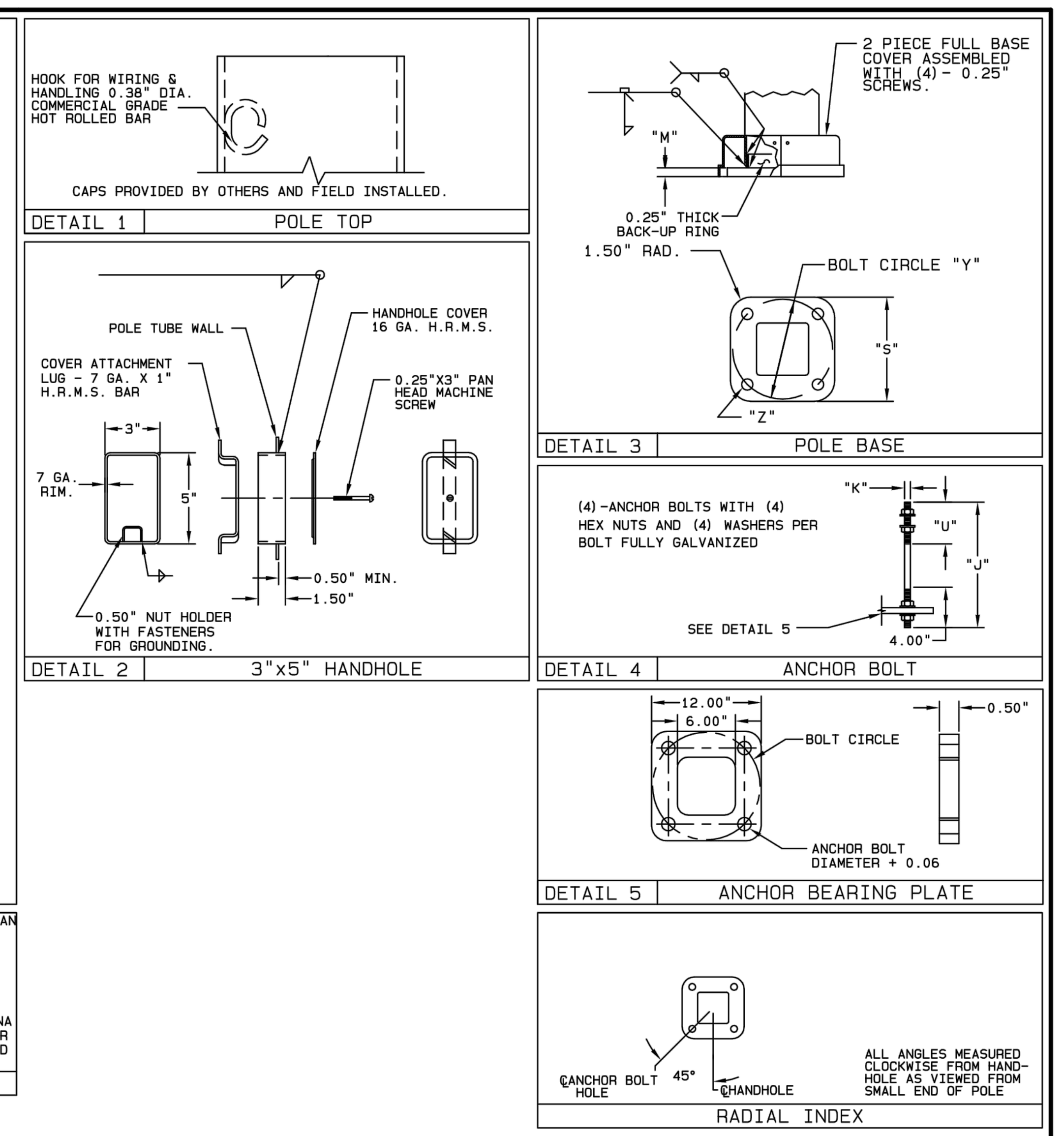
JOB ROLLING HILLS ESTATES DECO TRAFFIC
TITLE TRAFFIC SIGNAL STRUCTURES

VALMONT INDUSTRIES, INC. RESERVES THE RIGHT TO INSTALL VARIOUS, ENGINEER APPROVED, MATERIAL HANGING ACCOMMODATIONS TO FACILITATE THE MANUFACTURING PROCESS.

valmont Valley, NE 68064 (402) 359-2201

ORDER NUMBER: 517241-P1
PAGE NUMBER: 2 OF 5
DRAWING NUMBER CA517241P1 REV A





MATERIAL DATA

COMPONENT	ASTM DESIGNATION	MIN. YIELD (KSI)
POLE SHAFT	A595	55
BASE PLATES	A36	36
ANCHOR BOLTS	F1554 GR.55	55
GALVANIZING-HARDWARE	A153	

FINISH DATA

SYSTEM:
BASE COAT: HOT-DIP GALVANIZED TO ASTM A123
PRIME COAT: HIGH BUILD EPOXY POWDER
FINISH COAT: TGIC POWDER
COLOR: WHITE
SPEC: F-540DA

ALTHOUGH RARE, VIBRATIONS SEVERE ENOUGH TO CAUSE DAMAGE CAN OCCASIONALLY OCCUR IN STRUCTURES OF ALL TYPES. BECAUSE THEY ARE INFLUENCED BY MANY INTERACTING VARIABLES, VIBRATIONS ARE GENERALLY UNPREDICTABLE. THE USER'S MAINTENANCE PROGRAM SHOULD INCLUDE OBSERVATION FOR EXCESSIVE VIBRATION AND EXAMINATION FOR ANY STRUCTURAL DAMAGE OR BOLT LOOSENING. THE VALMONT WARRANTY SPECIFICALLY EXCLUDES FATIGUE FAILURE OR SIMILAR PHENOMENA RESULTING FROM INDUCED VIBRATION, HARMONIC OSCILLATION OR RESONANCE ASSOCIATED WITH MOVEMENT OF AIR CURRENTS AROUND THE PRODUCT.

VIBRATION DISCLAIMER

POLE DATA

ITEM DESCRIPTION	QTY.	POLE TUBE				POLE BASE				ANCHOR BOLT		
		BASE SQ. (IN)	TOP SQ. (IN)	LENGTH (FT)	GAUGE OR THK. (IN)	SQUARE "S" (IN)	BOLT CIRCLE "Y" (IN)	THK. "M" (IN)	HOLE / SLOT "Z" (IN)	DIA. "K" (IN)	LENGTH "J" (IN)	THREAD LENGTH "U" (IN)
CUSTOM SQUARE TYPE 1-14'	1	6.00	6.00	14.00	0.179	12.00	12.50	1.00	1.25	1.00	36.00	6.00

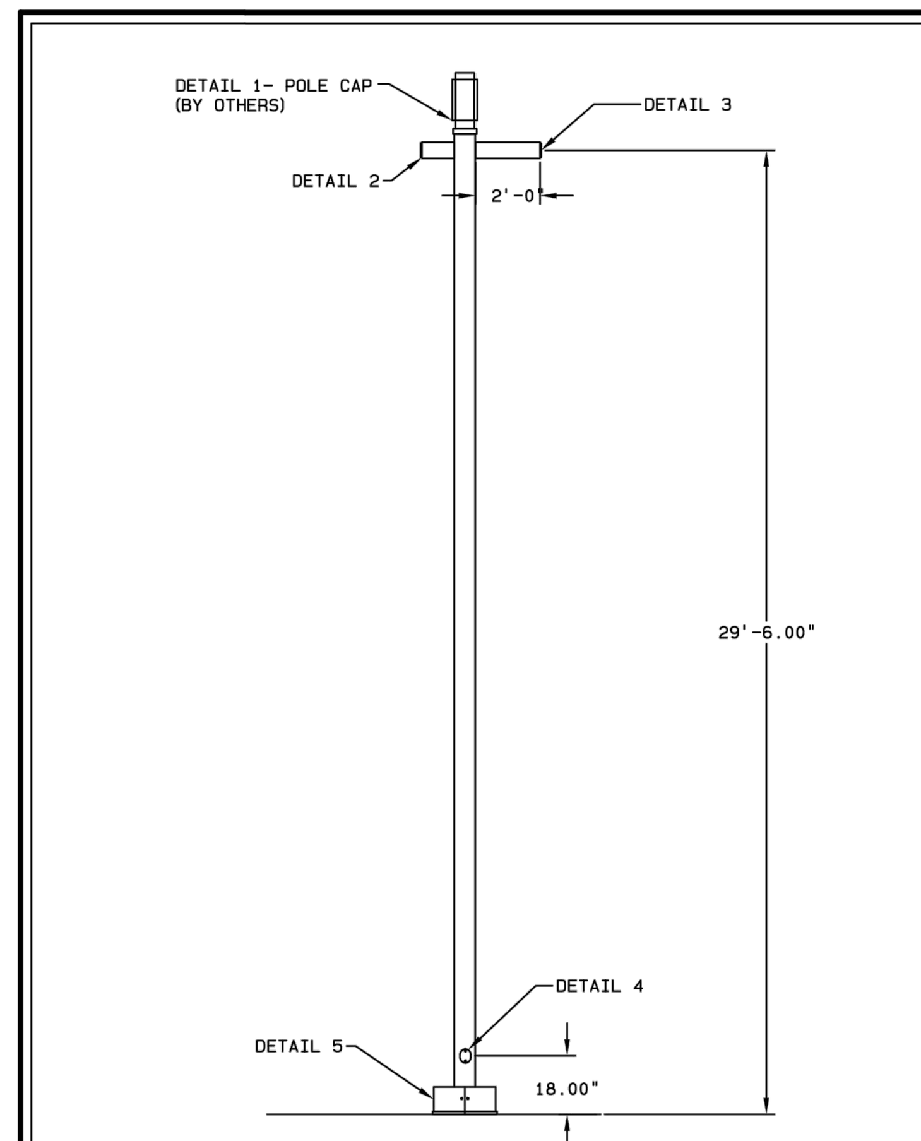
DETAIL "B"
TRAFFIC SIGNAL STRUCTURE B

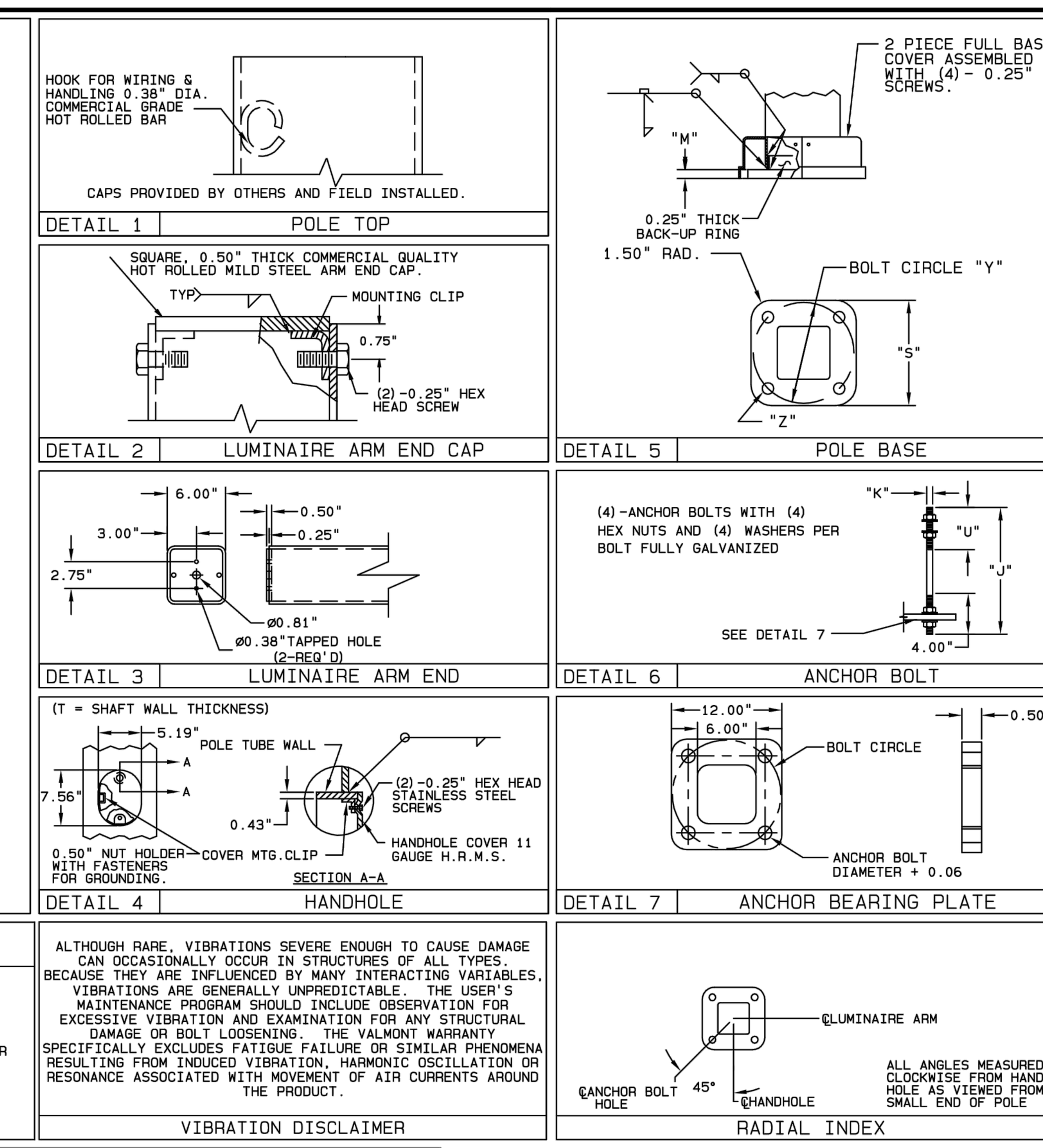
JOB ROLLING HILLS ESTATES DECO TRAFFIC
TITLE TRAFFIC SIGNAL STRUCTURES

VALMONT INDUSTRIES, INC. RESERVES THE RIGHT TO INSTALL VARIOUS, ENGINEER APPROVED, MATERIAL HANGING ACCOMMODATIONS TO FACILITATE THE MANUFACTURING PROCESS.

valmont Valley, NE 68064 (402) 359-2201

ORDER NUMBER: 517241-P1
PAGE NUMBER: 3 OF 5
DRAWING NUMBER CA517241P1 REV A





MATERIAL DATA

COMPONENT	ASTM DESIGNATION	MIN. YIELD (KSI)
POLE SHAFT	A595	55
BASE PLATES	A36	36
ANCHOR BOLTS	F1554 GR.55	55
GALVANIZING-HARDWARE	A153	

FINISH DATA

SYSTEM:
BASE COAT: HOT-DIP GALVANIZED TO ASTM A123
PRIME COAT: HIGH BUILD EPOXY POWDER
FINISH COAT: TGIC POWDER
COLOR: WHITE
SPEC: F-540DA

ALTHOUGH RARE, VIBRATIONS SEVERE ENOUGH TO CAUSE DAMAGE CAN OCCASIONALLY OCCUR IN STRUCTURES OF ALL TYPES. BECAUSE THEY ARE INFLUENCED BY MANY INTERACTING VARIABLES, VIBRATIONS ARE GENERALLY UNPREDICTABLE. THE USER'S MAINTENANCE PROGRAM SHOULD INCLUDE OBSERVATION FOR EXCESSIVE VIBRATION AND EXAMINATION FOR ANY STRUCTURAL DAMAGE OR BOLT LOOSENING. THE VALMONT WARRANTY SPECIFICALLY EXCLUDES FATIGUE FAILURE OR SIMILAR PHENOMENA RESULTING FROM INDUCED VIBRATION, HARMONIC OSCILLATION OR RESONANCE ASSOCIATED WITH MOVEMENT OF AIR CURRENTS AROUND THE PRODUCT.

VIBRATION DISCLAIMER

POLE DATA

ITEM DESCRIPTION	QTY.	POLE TUBE				POLE BASE				ANCHOR BOLT		
		BASE SQ. (IN)	TOP SQ. (IN)	LENGTH (FT)	GAUGE OR THK. (IN)	SQUARE "S" (IN)	BOLT CIRCLE "Y" (IN)	THK. "M" (IN)	HOLE / SLOT "Z" (IN)	DIA. "K" (IN)	LENGTH "J" (IN)	THREAD LENGTH "U" (IN)
CUSTOM SQUARE NON-TAPERED TYPE 15TS-2'ARM	1	8.00	8.00	30.00	0.188	15.00	14.50	1.50	1.25	1.00	36.00	6.00

NOTES:
SEE FOUNDATION DESIGN ON PAGE 5 OF 5

DETAIL "C"
TRAFFIC SIGNAL STRUCTURE C

JOB ROLLING HILLS ESTATES DECO TRAFFIC
TITLE TRAFFIC SIGNAL STRUCTURES

VALMONT INDUSTRIES, INC. RESERVES THE RIGHT TO INSTALL VARIOUS, ENGINEER APPROVED, MATERIAL HANGING ACCOMMODATIONS TO FACILITATE THE MANUFACTURING PROCESS.

valmont Valley, NE 68064 (402) 359-2201

ORDER NUMBER: 517241-P1
PAGE NUMBER: 4 OF 5
DRAWING NUMBER CA517241P1 REV A

100% SUBMITTAL NOT FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER JEFFREY C. LAU No. 83887 EXP. 09-30-21 CIVIL STATE OF CALIFORNIA

PLANS PREPARED BY:
WILLDAN Engineering | Comprehensive Innovative Trusted
13191 CROSSROADS PARKWAY NORTH
SUITE 405 INDUSTRY, CA 91746-3497
(562) 908-6200
UNDER THE SUPERVISION OF

JEFFREY LAU, RCE No. 83887 DATE

BENCH MARK:
NO. ____________ ELEV. ____________
DATE ADJ. ____________ QUAD. ____________

NONE

REVISIONS			
NO.	DESCRIPTION	APP.	DATE

CITY OF ROLLING HILLS ESTATES

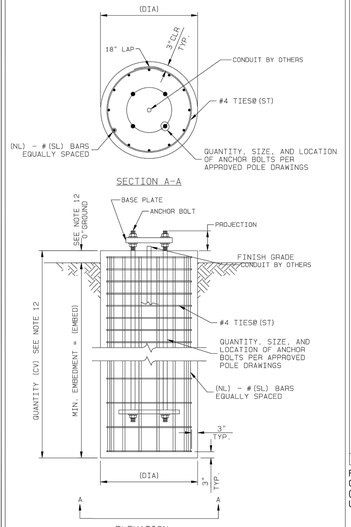
TRAFFIC SIGNAL DECORATIVE POLE DETAILS

INTERSECTION CAPACITY IMPROVEMENTS
AT PALOS VERDES DRIVE NORTH AND DAPPLEGRAY SCHOOL ENTRANCE

DRAWN BY: BR
DESIGNED BY: BR
CHECKED BY: FW

SHT. 12 OF 22 SHTS.

U:\110176 – RHE PVDN@DAPPLEGRAY ELM SCHOOL\900-PS&E\901-Plans\PL-SIGNAL-02.dwg Apr 03, 23 – 1:23pm



1. FOUNDATION HOLE SHALL BE AUGERED AND FILLED WITH CONCRETE. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 3000 PSI MINIMUM AT 28 DAYS. CONCRETE SHALL HAVE A MAXIMUM SLUMP OF 4" AS DETERMINED BY ASTM C143.
2. REINFORCING STEEL SHALL BE IN ACCORDANCE WITH ASTM A615 GRADE 60 OR EQUAL.
3. GEOTECHNICAL REPORT WAS NOT MADE. FOUNDATION IS DESIGNED ASSUMING A NON-COHESIVE SOIL. SOIL HAS A POSSIBILITY OF BEING HIGHLY SENSITIVE TO MOISTURE CONTENT AND MAY HAVE POOR SHRINKAGE AND SWELLING CHARACTERISTICS. CONTRACTOR SHALL CONTACT GEOTECHNICAL ENGINEER WITH SOIL CONDITIONS.
4. IF SOIL CONDITIONS DURING CONSTRUCTION DO NOT MEET THE DESCRIPTION GIVEN ABOVE OR IF SOLID BEDROCK IS REACHED BEFORE REACHING THE SPECIFIED EMBEDMENT DEPTH CONTACT VALMONT ENGINEERING BEFORE CONTINUING EXCAVATION.
5. FOUNDATION TO BE CAST AGAINST UNDISTURBED SOIL. IF CASINGS ARE REQUIRED TO PREVENT CAVING OF THE PIER THE CASING SHALL BE PULLED AFTER USE.
6. FOUNDATION TO BE POURED MONOLITHICALLY. DUE TO THE POSSIBILITY OF EXISTING SENSITIVE SOILS THE CONCRETE SHALL BE POURED THE SAME DAY AS THE EXCAVATION.
7. FOUNDATION DESIGN IS BASED ON WATER TABLE BEING BELOW THE BOTTOM OF THE PIER. CONSTRUCTION BELOW THE WATER TABLE MAY REQUIRE SPECIAL CONSTRUCTION TECHNIQUES TO PREVENT RUPTURING DUE TO HYDROSTATIC PRESSURE.
8. SITE GRADE IS 7H TO 1V OR FLATTER.
9. NO CONDUIT, LAYOUT IS SHOWN. CONDUIT BY OTHERS.
10. CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH OSHA REQUIREMENTS WITH REGARDS TO WORKER ACCESS TO THE EXCAVATION.
11. PROVIDE 3" MINIMUM CONCRETE COVER ON ALL FACES.
12. SITE REQUIREMENTS MAY ADJUST TOP OF FOOTING ABOVE GRADE. CONTRACTOR SHALL FOLLOW PROJECT REQUIREMENTS. CONTRACTOR SHALL DETERMINE TOP OF FOOTING AND ADJUST CONCRETE AND REINFORCING STEEL QUANTITIES. SITE SPECIFIC REQUIREMENTS MUST BE REVIEWED.
13. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF THE LATEST ACI SPECIFICATIONS, LATEST DESIGN CODES, AND LOCAL CODES.
14. CONDUIT SHALL PROJECT A MINIMUM OF 2" ABOVE THE FOUNDATION, MAXIMUM PROJECTION SHALL BE 4".
15. ALL METHODS OF CONSTRUCTION AND INSTALLATION ARE THE RESPONSIBILITY OF THE CONTRACTOR.
16. NO OTHER LOADING CONDITIONS WERE CONSIDERED AND DESIGN IS BASED ON WIND LOADS ONLY.
17. CONTRACTOR SHALL FOLLOW STATE AND LOCAL SPECIFICATIONS.

GENERAL NOTES

NON-COHESIVE LOOSE/MEDIUM SOIL LAYER
ϕ = 30°
γ = 90 PCF ASSUMED
ψ = 0.25 (FRICTION FACTOR)

SOIL DATA IS BASED UPON STANDARD SOIL PARAMETERS USED. CONTRACTOR TO CONFIRM SOIL CONDITIONS ON SITE. UPPER 1'-0" PROVIDES NO PASSIVE RESISTANCE.

SOIL DATA

SPECIAL SQ TRAFFIC POLES

AXIAL	= 4794	LB
$SHEAR_X$	= 4094	LB
$SHEAR_Y$	= 0	LB
$MOMENT_X$	= 0	FT-LB
$MOMENT_Y$	= 71,440	FT-LB
TORSION	= 42,860	FT-LB

SEE POLE CALCS.
(NOMINAL FOR DESIGN)

FOUNDATION LOADS

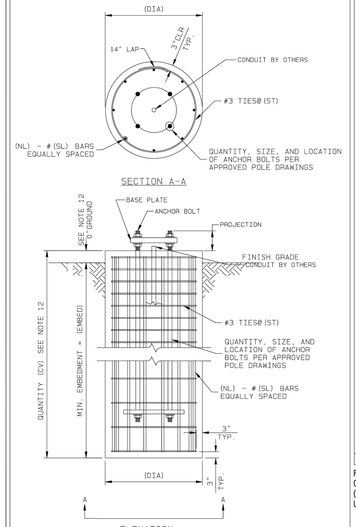
POLE	CAISSON DATA (EA) DIA (FT)	EMBED (FT)	LONGITUDINAL BARS (EA) NL (QTY)	SL (SIZE)	TRANSVERSE BARS (EA) (ST)
MA	3.5	11.5	12	8	#4 TIES @ 6" TOP 5' #4 TIES @ 12" LOWER 6.5'

FOUNDATION LOADS HAVE BEEN CALCULATED BASED ON AN ASSUMED 100 MPH WIND. AN OVERTURNING (FS = 2.0) AND TORSIONAL (FS = 1.1) WERE USED IN DESIGN.

CONTRACTOR TO VERIFY NUMBER OF ANCHOR BOLTS, SIZE AND BOLT CIRCLE.

DETAIL "A" & DETAIL "D"
FOUNDATION DESIGN FOR
TRAFFIC SIGNAL STRUCTURE A
TRAFFIC SIGNAL STRUCTURE D

JOB ROLLING HILLS ESTATES DECO TRAFFIC	VALMONT INDUSTRIES, INC. RESERVES THE RIGHT TO INSTALL VARIOUS, ENGINEER APPROVED, MATERIAL HANGING ACCOMMODATIONS TO FACILITATE THE MANUFACTURING PROCESS.	valmont Valley,NE 68064 (402) 359-2201	ORDER NUMBER: 291602-P1	
TITLE TRAFFIC SIGNAL STRUCTURES			PAGE NUMBER: 3 OF 5	
			DRAWING NUMBER CA291602P1	REV A



1. FOUNDATION HOLE SHALL BE AUGERED AND FILLED WITH CONCRETE. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 3000 PSI MINIMUM AT 28 DAYS. CONCRETE SHALL HAVE A MAXIMUM SLUMP OF 4" AS DETERMINED BY ASTM C143.
2. REINFORCING STEEL SHALL BE IN ACCORDANCE WITH ASTM A615 GRADE 60 OR EQUAL.
3. GEOTECHNICAL REPORT WAS NOT MADE. FOUNDATION IS DESIGNED ASSUMING A NON-COHESIVE SOIL. SOIL HAS A POSSIBILITY OF BEING HIGHLY SENSITIVE TO MOISTURE CONTENT AND MAY HAVE POOR SHRINKAGE AND SWELLING CHARACTERISTICS. CONTRACTOR SHALL CONTACT GEOTECHNICAL ENGINEER WITH SOIL CONDITIONS.
4. IF SOIL CONDITIONS DURING CONSTRUCTION DO NOT MEET THE DESCRIPTION GIVEN ABOVE OR IF SOLID BEDROCK IS REACHED BEFORE REACHING THE SPECIFIED EMBEDMENT DEPTH CONTACT VALMONT ENGINEERING BEFORE CONTINUING EXCAVATION.
5. FOUNDATION TO BE CAST AGAINST UNDISTURBED SOIL. IF CASINGS ARE REQUIRED TO PREVENT CAVING OF THE PIER THE CASING SHALL BE PULLED AFTER USE.
6. FOUNDATION TO BE POURED MONOLITHICALLY. DUE TO THE POSSIBILITY OF EXISTING SENSITIVE SOILS THE CONCRETE SHALL BE POURED THE SAME DAY AS THE EXCAVATION.
7. FOUNDATION DESIGN IS BASED ON WATER TABLE BEING BELOW THE BOTTOM OF THE PIER. CONSTRUCTION BELOW THE WATER TABLE MAY REQUIRE SPECIAL CONSTRUCTION TECHNIQUES TO PREVENT RUPTURING DUE TO HYDROSTATIC PRESSURE.
8. SITE GRADE IS 7H TO 1V OR FLATTER.
9. NO CONDUIT, LAYOUT IS SHOWN. CONDUIT BY OTHERS.
10. CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH OSHA REQUIREMENTS WITH REGARDS TO WORKER ACCESS TO THE EXCAVATION.
11. PROVIDE 3" MINIMUM CONCRETE COVER ON ALL FACES.
12. SITE REQUIREMENTS MAY ADJUST TOP OF FOOTING ABOVE GRADE. CONTRACTOR SHALL FOLLOW PROJECT REQUIREMENTS. CONTRACTOR SHALL DETERMINE TOP OF FOOTING AND ADJUST CONCRETE AND REINFORCING STEEL QUANTITIES. SITE SPECIFIC REQUIREMENTS MUST BE REVIEWED.
13. ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF THE LATEST ACI SPECIFICATIONS, LATEST DESIGN CODES, AND LOCAL CODES.
14. CONDUIT SHALL PROJECT A MINIMUM OF 2" ABOVE THE FOUNDATION, MAXIMUM PROJECTION SHALL BE 4".
15. ALL METHODS OF CONSTRUCTION AND INSTALLATION ARE THE RESPONSIBILITY OF THE CONTRACTOR.
16. NO OTHER LOADING CONDITIONS WERE CONSIDERED AND DESIGN IS BASED ON WIND LOADS ONLY.
17. CONTRACTOR SHALL FOLLOW STATE AND LOCAL SPECIFICATIONS.

GENERAL NOTES

NON-COHESIVE LOOSE/MEDIUM SOIL LAYER
ϕ = 30°
γ = 90 PCF ASSUMED
ψ = 0.25 (FRICTION FACTOR)

SOIL DATA IS BASED UPON STANDARD SOIL PARAMETERS USED. CONTRACTOR TO CONFIRM SOIL CONDITIONS ON SITE. UPPER 1'-0" PROVIDES NO PASSIVE RESISTANCE.

SOIL DATA

SPECIAL SQ TS POLES

AXIAL	= 973	LB
$SHEAR_X$	= 1,383	LB
$SHEAR_Y$	= 0	LB
$MOMENT_X$	= 0	FT-LB
$MOMENT_Y$	= 14,616	FT-LB
TORSION	= 1,725	FT-LB

SEE POLE CALCS.
(NOMINAL FOR DESIGN)

FOUNDATION LOADS

POLE	CAISSON DATA (EA) DIA (FT)	EMBED (FT)	LONGITUDINAL BARS (EA) NL (QTY)	SL (SIZE)	TRANSVERSE BARS (EA) (ST)
TS	2.5	7.5	8	6	#3 TIES @ 6" TOP 3.5' #3 TIES @ 12" LOWER 4'

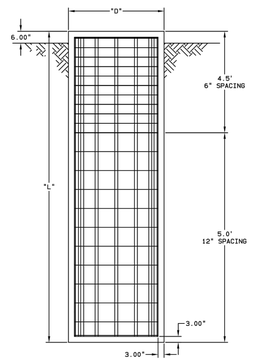
FOUNDATION LOADS HAVE BEEN CALCULATED BASED ON AN ASSUMED 100 MPH WIND. AN OVERTURNING (FS = 2.0) AND TORSIONAL (FS = 1.1) WERE USED IN DESIGN.

CONTRACTOR TO VERIFY NUMBER OF ANCHOR BOLTS, SIZE AND BOLT CIRCLE.

DETAIL "B"
FOUNDATION DESIGN FOR
TRAFFIC SIGNAL STRUCTURE B

JOB ROLLING HILLS ESTATES DECO TRAFFIC	VALMONT INDUSTRIES, INC. RESERVES THE RIGHT TO INSTALL VARIOUS, ENGINEER APPROVED, MATERIAL HANGING ACCOMMODATIONS TO FACILITATE THE MANUFACTURING PROCESS.	valmont Valley,NE 68064 (402) 359-2201	ORDER NUMBER: 291602-P1	
TITLE TRAFFIC SIGNAL STRUCTURES			PAGE NUMBER: 5 OF 5	
			DRAWING NUMBER CA291602P1	REV A

FOUNDATION SIZE(S)						
	CAISSON DATA (EA)			LONGITUDINAL BARS (EA)		TRANSVERSE BARS (EA)
POLE NO.	DIAMETER "D" (FT)	LENGTH "L" (FT)	CONCRETE STRENGTH (PSI)	QUANTITY	SIZE	SIZE
30'TS Pole	2.5	9.5	4000	10	#6	#3



GENERAL NOTES:

1. **REINFORCING STEEL SHALL BE IN ACCORDANCE WITH ASTM A615 GRADE 60 OR EQUAL.**
2. **FOUNDATION TO BE CAST AGAINST UNDISTURBED SOIL.**
3. **FOUNDATION TO BE POURED MONOLITHICALLY.**
4. **FOUNDATION DESIGN BASED ON WATER TABLE BEING BELOW THE BOTTOM OF THE PIER. IF WATER TABLE IS ENCOUNTERED AT TIME OF EXCAVATION, CONSULT A GEOTECH ENGINEER.**
5. **SITE GRADE IS 7H TO 1V OR FLATTER.**
6. **ALL MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF THE LATEST ACI, LOCAL, AND STATE CODES.**
7. **ALL METHODS OF CONSTRUCTION AND INSTALLATION ARE THE RESPONSIBILITY OF THE CONTRACTOR.**
8. **DESIGN BASED ON A LOOSE SANDY SOIL USING STANDARD SOIL PARAMETERS**
9. **ANCHOR BOLT INFORMATION CAN BE FOUND IN VALMONT CALCULATIONS DATED 09/13/2021.**

DETAIL "C"
FOUNDATION DESIGN FOR
TRAFFIC SIGNAL STRUCTURE C

JOB ROLLING HILLS ESTATES 30' SPDL TS POLE	VALMONT INDUSTRIES, INC. RESERVES THE RIGHT TO INSTALL VARIOUS, ENGINEER APPROVED, MATERIAL HANGING ACCOMMODATIONS TO FACILITATE THE MANUFACTURING PROCESS.	valmont Valley,NE 68064 (402) 359-2201	ORDER NUMBER: 517241-P1	
TITLE FOUNDATION DESIGN			PAGE NUMBER: 5 OF 5	
			DRAWING NUMBER CA517241P1	REV A

PLANS PREPARED BY:
WILLDAN Engineering | Comprehensive Innovative Trusted
13191 CROSSROADS PARKWAY NORTH
SUITE 405 INDUSTRY, CA 91746-3407
(562) 908-6200
UNDER THE SUPERVISION OF

JEFFREY LAU, RCE No. 83887 DATE

REGISTERED PROFESSIONAL ENGINEER — JEFFREY C. LAU — No. 83887 EXP. 09-30-21 — CIVIL — STATE OF CALIFORNIA

BENCH MARK:
NO. _____ ELEV. _____
DATE ADJ. _____ QUAD. _____

NONE

NO.	REVISIONS DESCRIPTION	APP.	DATE

CITY OF ROLLING HILLS ESTATES

TRAFFIC SIGNAL FOUNDATION DETAILS

INTERSECTION CAPACITY IMPROVEMENTS
AT PALOS VERDES DRIVE NORTH AND DAPPLEGRAY SCHOOL ENTRANCE

DRAWN BY: BR
DESIGNED BY: BR
CHECKED BY: FW

SHT. 13 OF 22 SHTS.

100% SUBMITTAL NOT FOR CONSTRUCTION

U:\110176 - RHE PVDN@DAPPLEGRAY ELM SCHOOL\900-PS&E\901-Plans\PL-SIGNAL-03.dwg Apr 03, 23 - 1:23pm

SIGNING AND STRIPING GENERAL NOTES:

1. TRAFFIC SIGNING AND STRIPING, LOOP REPLACEMENT, AND THE INSTALLATION THEREOF SHALL CONFORM TO CALTRANS REVISED STANDARD PLANS AND SPECIFICATIONS, DATED 2018, THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (CALIFORNIA MUTCD), LATEST EDITION, THIS PLAN AND THE SPECIAL PROVISIONS.
2. ALL STRIPING DETAILS SHALL BE PER CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (CALIFORNIA MUTCD), LATEST EDITION.
3. ALL STRIPING DETAILS AND PAVEMENT LEGENDS SHALL BE PAINT, THREE COATS, UNLESS OTHERWISE SHOWN.
4. INSTALL TWO-WAY BLUE REFLECTIVE MARKERS AT EVERY FIRE HYDRANT.
5. ALL SCHOOL SIGNS MUST BE FLUORESCENT YELLOW-GREEN (FYG).
6. SIGN POSTS FOR STREET NAME SIGNS, TRAIL SIGNS, AND MULTI-USE PATH SIGNS SHALL BE BROWN.
7. UNLESS OTHERWISE SHOWN, BIKE LANE STRIPE SHALL BE 4' FROM EDGE OF GUTTER. SEE DETAIL "C."
8. PAVEMENT MARKINGS AND TRAFFIC LINE DETAILS SHALL BE PER THE 2010 CALTRANS STANDARD PLAN DETAILS.

SIGNING AND STRIPING CONSTRUCTION NOTES:

[1] PAINT STRIPING DETAIL OR PAVEMENT MARKING AS SHOWN.

[2] PAINT 12" YELLOW CROSSWALK. CROSSWALK SHALL BE 12' IN WIDTH (INSIDE TO INSIDE) UNLESS OTHERWISE SHOWN.

[3] PAINT 12" WHITE LIMIT LINE.

[4] PAINT "BIKE", "LANE" AND BIKE LANE ARROW PAVEMENT LEGEND.

[5] REMOVE CONFLICTING STRIPING BY WET SANDBLASTING, INCLUDING RAISED PAVEMENT MARKINGS.

[6] PAINT MEDIAN NOSE CURB WITH YELLOW REFLECTIVE CURB PAINT PER DETAIL "B."

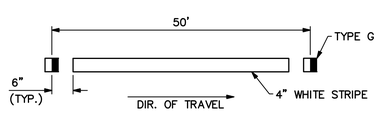
[7] INSTALL SIGN AND POST AS SHOWN.

[8] INSTALL SIGN AND POST AS SHOWN PER DETAIL "B."

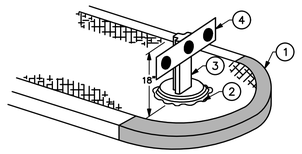
[9] REMOVE SIGN AND POST AS SHOWN.

[10] RELOCATE SIGN AND POST AS SHOWN.

[11] RELOCATE SIGN ON NEW POST AS SHOWN.



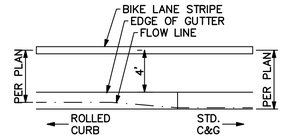
DETAIL "A"
NO SCALE



NOTES:

1. INSTALL HIGH REFLECTIVITY PAINT TO MATCH EXISTING COLOR ON CURB FACE. EXTEND PAINT ON TOP OF CURB AND CURB FACE TO BC, EC, OR END OF FLARE.
2. EPOXY
3. SERIES 400 REPO POST.(18")
4. TYPE K MARKER.

DETAIL "B"
NO SCALE



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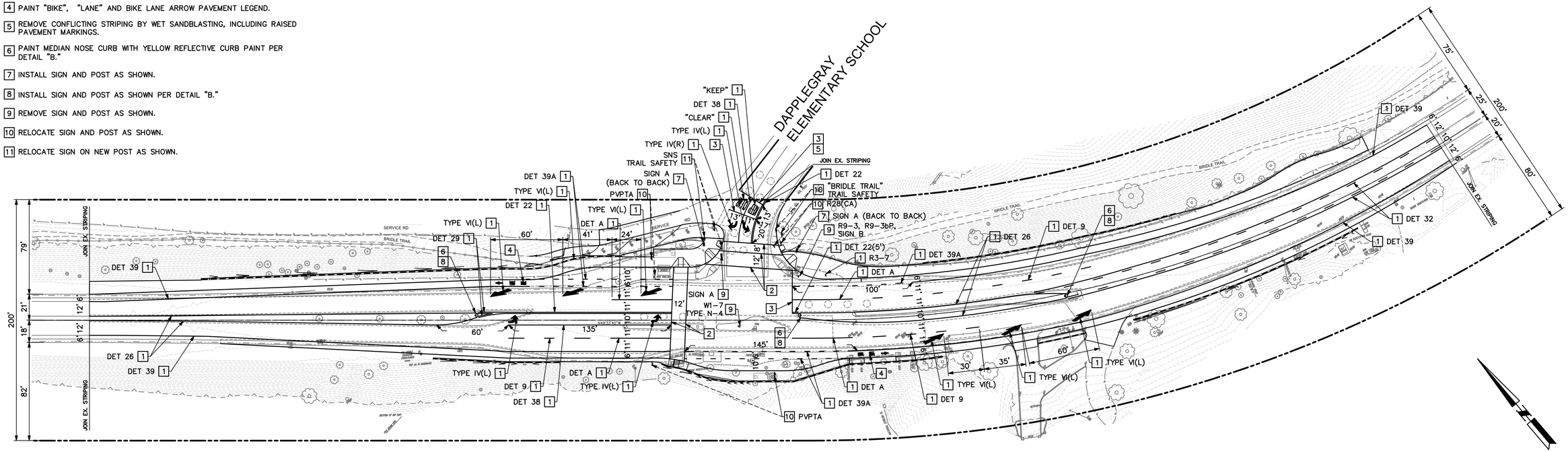


SCALE: 1"=40'

SIGN A

SIGN B

PLANS PREPARED BY:
WILLDAN Engineering | Comprehensive Innovative Trusted
13191 CROSSROADS PARKWAY NORTH
SUITE 405 INDUSTRY, CA 91746-3497
(562) 908-6200
UNDER THE SUPERVISION OF

JEFFREY LAU, RCE No. 83887 DATE

BENCH MARK:
NO. _____ ELEV. _____
DATE ADJ. _____ QUAD. _____
NONE

NO.	REVISIONS DESCRIPTION	APP.	DATE

CITY OF ROLLING HILLS ESTATES

SIGNING AND STRIPING PLAN

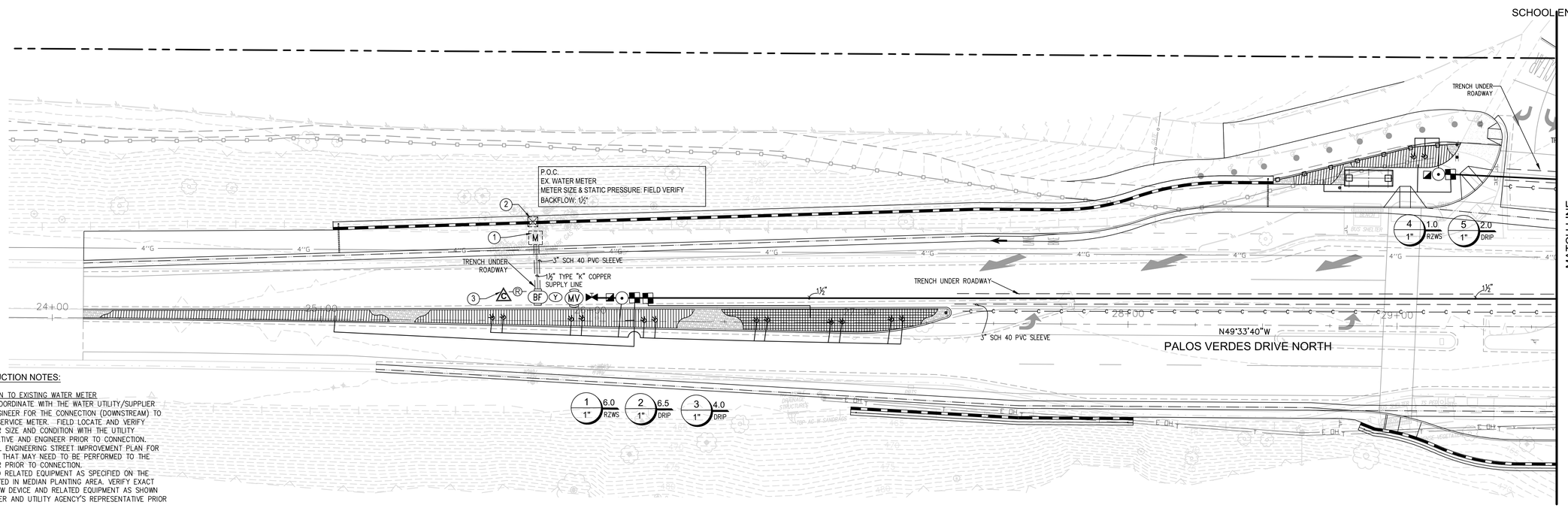
INTERSECTION CAPACITY IMPROVEMENTS
AT PALOS VERDES DRIVE NORTH AND DAPPLEGRAY SCHOOL ENTRANCE

DRAWN BY: RG/KC
DESIGNED BY: RG/KC
CHECKED BY: JL

SHT. 14 OF 22 SHTS.

U:\110176 - RHE PVDN@DAPPLEGRAY ELM SCHOOL\900-PS&E\901-Plans\PL-STRIPE-01.dwg Apr 03, 23 - 1:23pm

100% SUBMITTAL NOT FOR CONSTRUCTION



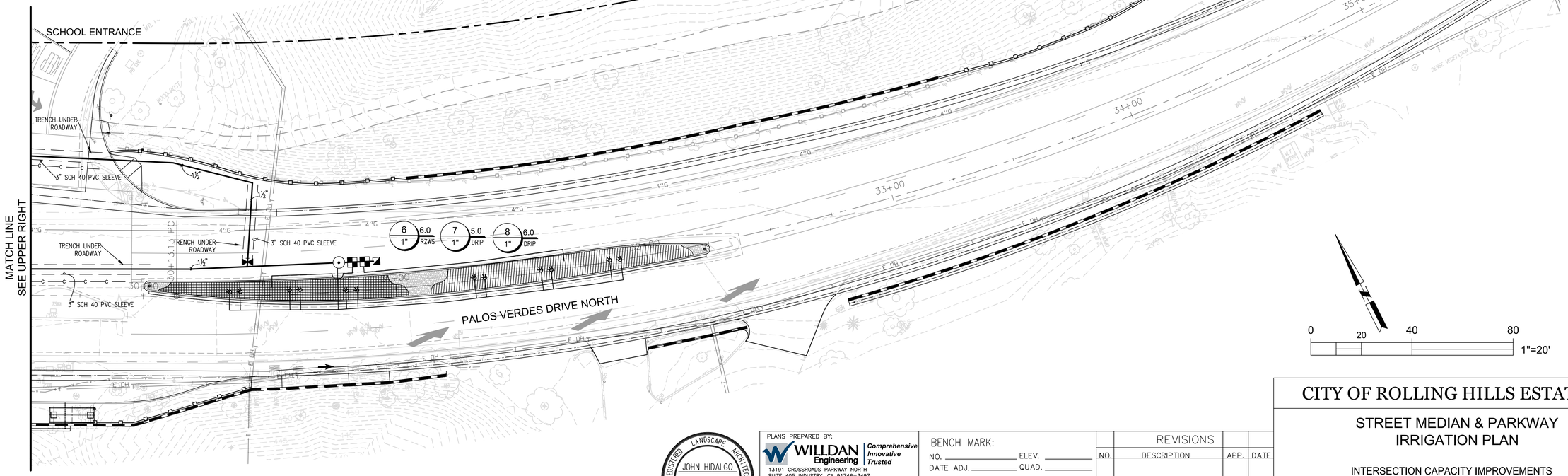
IRRIGATION CONSTRUCTION NOTES:

(1) P.O.C. – WATER CONNECTION TO EXISTING WATER METER
- CONTRACTOR SHALL COORDINATE WITH THE WATER UTILITY/SUPPLIER AGENCY AND WITH ENGINEER FOR THE CONNECTION (DOWNSTREAM) TO THE EXISTING WATER SERVICE METER. FIELD LOCATE AND VERIFY EXISTING WATER METER SIZE AND CONDITION WITH THE UTILITY AGENCY'S REPRESENTATIVE AND ENGINEER PRIOR TO CONNECTION.
- COORDINATE WITH CIVIL ENGINEERING STREET IMPROVEMENT PLAN FOR ANY ADDITIONAL TASK THAT MAY NEED TO BE PERFORMED TO THE EXISTING WATER METER PRIOR TO CONNECTION.
- BACKFLOW DEVICE AND RELATED EQUIPMENT AS SPECIFIED ON THE PLAN SHALL BE LOCATED IN MEDIAN PLANTING AREA. VERIFY EXACT LOCATION OF BACKFLOW DEVICE AND RELATED EQUIPMENT AS SHOWN ON PLAN WITH ENGINEER AND UTILITY AGENCY'S REPRESENTATIVE PRIOR TO INSTALLATION.

CONTACT: CITY OF ROLLING HILLS ESTATE, DEPT. OF PUBLIC WORKS
(310)377–1577 ext. 103
CALIFORNIA WATER SERVICES – RANCHO DOMINGUEZ DISTRICT
(310)257–1400

(2) EXISTING BACKFLOW PREVENTER DEVICE
TO ACCOMMODATE RETAINING WALL CONSTRUCTION, CONTRACTOR SHALL REMOVE, SALVAGE AND RETURN EXISTING BACKFLOW PREVENTER DEVICE TO THE CITY DEPT. OF PUBLIC WORKS. CUT AND CAP ALL SUPPLY WATER LINES CONNECTED TO EXISTING WATER METER.

(3) NEW IRRIGATION CONTROLLER
INSTALL NEW IRRIGATION CONTROLLER (PER LEGEND) AT THIS LOCATION IN MEDIAN PLANTING AREA. VERIFY EXACT LOCATION WITH ENGINEER PRIOR TO INSTALLATION. INSTALL PULL BOX FOR CONTROLLER WIRE SPLICES PRIOR FOR WIRES TO ENTERING CONTROLLER ASSEMBLY.



REGISTERED LANDSCAPE ARCHITECT
JOHN HIDALGO
No. 3551
Exp. 07-31-23
STATE OF CALIFORNIA

PLANS PREPARED BY:
WILLDAN Engineering | Comprehensive Innovative Trusted
13191 CROSSROADS PARKWAY NORTH
SUITE 405 INDUSTRY, CA 91746-3497
(562) 908-6200
UNDER THE SUPERVISION OF

JOHN HIDALGO R.L.A. 3551 DATE

BENCH MARK:
NO. _____ ELEV. _____
DATE ADJ. _____ QUAD. _____
NONE

NO.	REVISIONS DESCRIPTION	APP.	DATE

CITY OF ROLLING HILLS ESTATES

STREET MEDIAN & PARKWAY IRRIGATION PLAN

INTERSECTION CAPACITY IMPROVEMENTS
AT PALOS VERDES DRIVE NORTH AND DAPPLEGRAY SCHOOL ENTRANCE

DRAWN BY: BN
DESIGNED BY: BN
CHECKED BY: JH

SHT. 16 OF 22 SHTS.

PLAN NO. L-2

100% SUBMITTAL NOT FOR CONSTRUCTION

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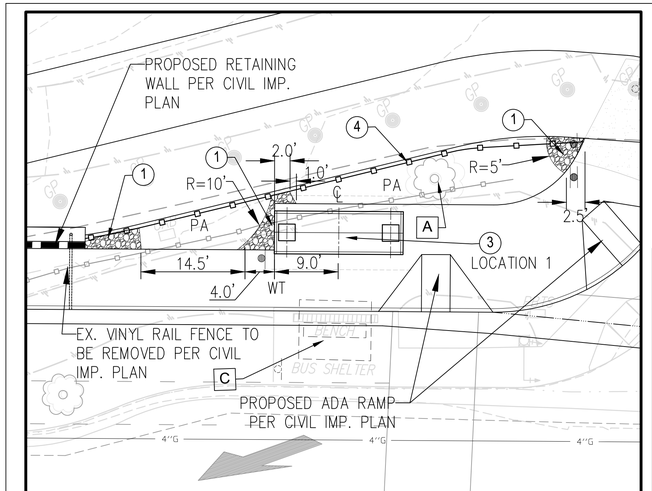


CONSTRUCTION NOTES:

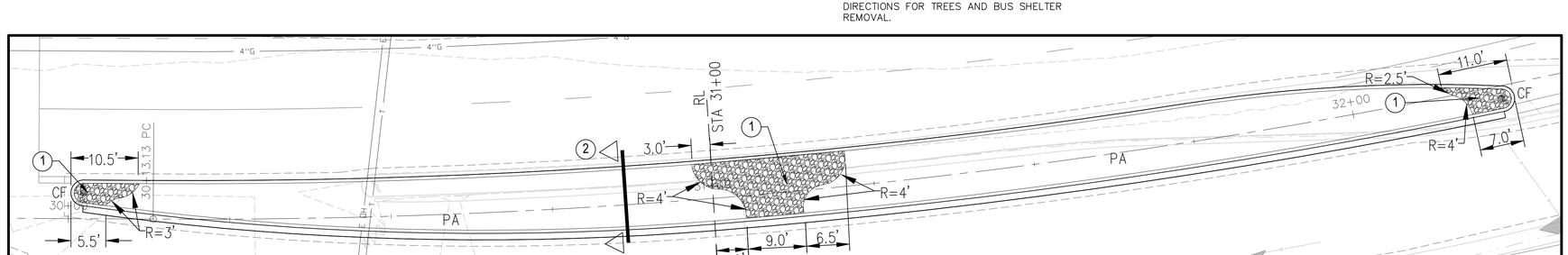
1. CONSTRUCT COBBLESTONE PAVING. SEE DETAIL 5, PLAN NO. L-8.
2. SEE TYPICAL CROSS SECTION, SEE DETAIL 6, PLAN NO. L-8.
3. CONSTRUCT BUS SHELTER. SEE DETAILS, PLAN NO. L-5 & L-6.
4. FURNISH AND INSTALL PVC VINYL RAIL FENCE. SEE DETAIL 7, PLAN NO. L-8.

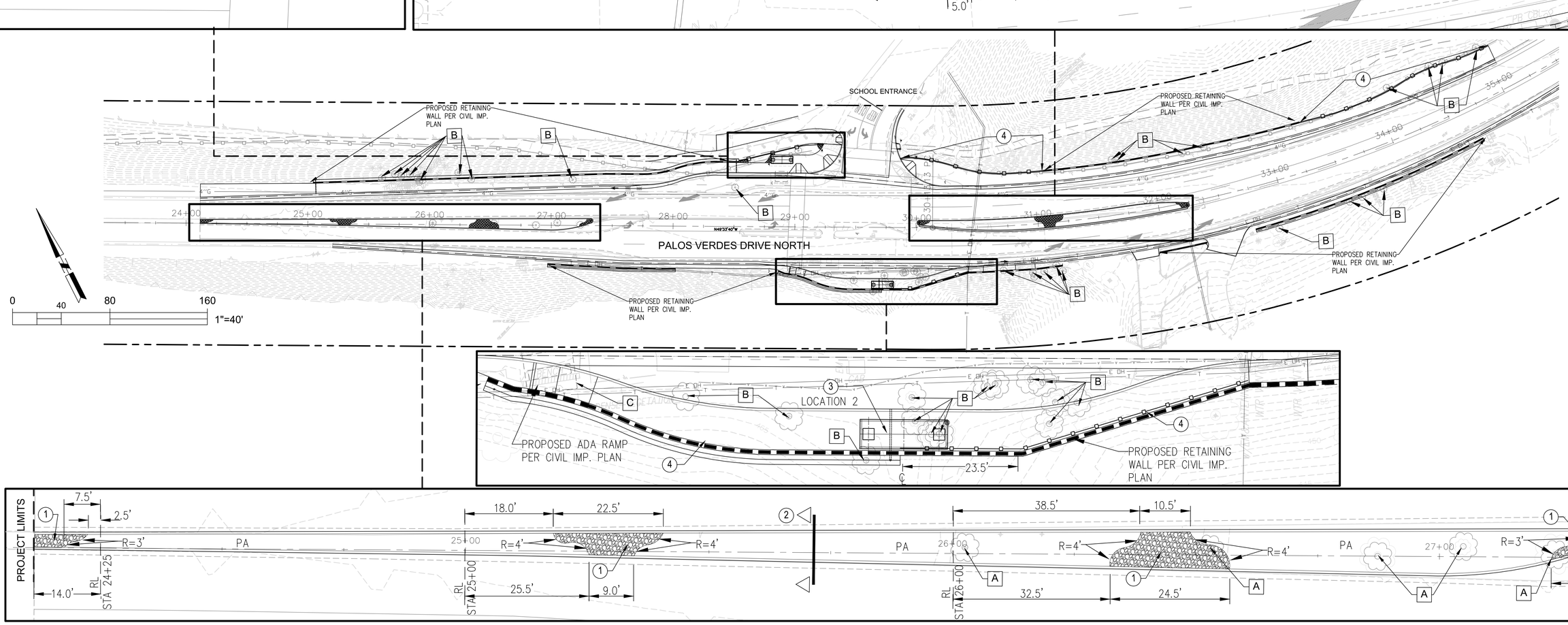
DEMOLITION/REMOVAL NOTES:

A. REMOVE AND PROPERLY DISPOSE EXISTING TREE, COMPLETE INCLUDING ROOTS TO 24" DEPTH.

B. EXISTING TREE TO BE REMOVED AS PART OF THE CIVIL IMPROVEMENT AND CONSTRUCTION PLAN.

C. EXISTING BUS SHELTER TO BE REMOVED AND PROPERLY DISPOSED AS PART OF THE CIVIL IMPROVEMENT AND CONSTRUCTION PLAN. COORDINATE WITH CIVIL STREET IMPROVEMENT PLAN FOR ADDITIONAL DIRECTIONS FOR TREES AND BUS SHELTER REMOVAL.





GENERAL CONSTRUCTION NOTES:

1. VERIFY EXACT LOCATION OF NEW BUS SHELTER WITH ENGINEER PRIOR TO CONSTRUCTION.
2. VERIFY EXACT LOCATION OF PVC VINYL RAIL FENCE WITH ENGINEER PRIOR TO INSTALLATION.
3. VERIFY ALL LOCATIONS AND QUANTITY OF EXISTING TREES INDICATED "TO BE REMOVED" WITH ENGINEER PRIOR TO REMOVAL.

ABBREVIATIONS:

CF CURB FACE
EQ. EQUAL
PA PLANTING AREA
RL REF. LINE
WT WALL TERMINUS
TYP. TYPICAL

REGISTERED LANDSCAPE ARCHITECT — JOHN HIDALGO — No. 3551 — Exp. 07-31-23 — STATE OF CALIFORNIA

PLANS PREPARED BY:
WILLDAN Engineering | Comprehensive Innovative Trusted
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SUITE 405 INDUSTRY, CA 91746-3497
(562) 908-6200
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JOHN HIDALGO R.L.A. 3551 DATE

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DATE ADJ. _____ QUAD. _____
NONE

NO.	REVISIONS DESCRIPTION	APP.	DATE

CITY OF ROLLING HILLS ESTATES

STREET MEDIAN & PARKWAY LANDSCAPE CONSTRUCTION PLAN

INTERSECTION CAPACITY IMPROVEMENTS
AT PALOS VERDES DRIVE NORTH AND DAPPLEGRAY SCHOOL ENTRANCE

DRAWN BY: BN
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SHT. 15 OF 22 SHTS.

PLAN NO. L-1

100% SUBMITTAL NOT FOR CONSTRUCTION

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IRRIGATION LEGEND

SYM	DESCRIPTION	MANUF.	MODEL	REMARKS	DET.	PLN. NO.
M	EX. POTABLE WATER METER	PER UTILITY	–	SEE IRRIGATION CONSTRUCTION NOTE NO. 1	–	–
#	AMBIENT LIGHT POWERED IRRIGATION CONTROLLER(b)	DIG–CORP	LEIT X–10	SEE IRRIGATION CONSTRUCTION NOTE NO. 3	1	L–7
R	RAIN SENSOR	HUNTER	MINI–CLIK	INSTALL IN VANDAL RESISTANT ENCLOSURE MOUNTED TO CONTROLLER ENCLOSURE	1	
BF	BACKFLOW PREVENTER DEVICE	FEBCO	LF825YA	MAINLINE SIZE BACKFLOW PREVENTER DEVICE ASSEMBLY WITH ENCLOSURE AND PCC PAD. SIZE PER PLAN.	2	
MV	REMOTE CONTROL MASTER VALVE	BUCKNER SUPERIOR(c)	3100–SERIES	MAINLINE SIZE NORMALLY CLOSE MASTER VALVE INCLUDING DIG LEMA 1600HE ACTUATOR AND BUCKNER SUPERIOR SOLENOID ADAPTER	3	
Y	WYE STRAINER PRESSURE REG.	WILKINS	500YSBR	COMBINATION PRESSURE REG. & WYE STRAINER–LINE SIZE INSTALL IN SEPARATE VALVE BOX (a)	4	
	GATE VALVE	APOLLO(c)	106T SERIES	MAINLINE SIZE	5	
	DRIP CONTROL ZONE (0.5–30 GPM)	RAIN BIRD	REMOTE CONTROL VALVE (RVC) SIZE NOTED ON PLAN	• RAIN BIRD PESB SERIES: VALVE • NETAFIM TF10418–XXCV: TECHFILTER (1") • PVC BALL VALVE = RCV SIZE • DIG LEMA1600H ACTUATOR • RAIN BIRD SOLENOID ADAPTER	11	
	REMOTE CONTROL VALVE	RAIN BIRD	PESB SERIES	SIZE NOTED ON PLAN INCLUDING DIG LEMA 1600HE ACTUATOR AND RAIN BIRD SOLENOID ADAPTER	16	
	QUICK COUPLER	HUNTER	HQ–33D	(3/4")	6	
P	CONTROL WIRE PULL BOX	APPROVED	–	NOT SHOWN ON PLAN LOCATE PULL BOX IN PLANTING AREA WHERE FEASIBLE. INSTALL PULL BOX WHERE WIRE RUN CHANGES DIRECTION, ENTERING/EXITING SLEEVING AND BEFORE ENTERING CONTROLLER	7	
C	CONTROL WIRE CONDUIT	APPROVED	SCH. 40 PVC	SIZE AS REQUIRED	8, 9 & 10	
	IRRIGATION MAINLINE	APPROVED	CLASS 315 PVC: 2" OR GREATER SCH. 40 PVC: 1.5" OR SMALLER	SIZE NOTED ON PLAN	8, 9 & 10	
	IRRIGATION LATERAL	APPROVED	SCH. 40 PVC	SIZE NOTED ON PLAN	8, 9 & 10	
= =	PIPE SLEEVE	APPROVED	SCH. 40 PVC	TWICE LINE SIZE OR AS NOTED ON PLAN	8, 9 & 10	

(a) IF STATIC WATER PRESSURE @ POC IS =10 PSI ABOVE MIN. PRESSURE REQUIRED, SET PRESSURE REGULATOR +5 PSI ABOVE MIN. PRESSURE REQUIRED.

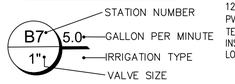
(b) LEIT CONTROLLER ASSEMBLY SHALL INCLUDE:
MCOL 4000L – MOUNTING COLUMN
MKIT 4000 – COLUMN MOUNTING KIT
ENCL 4000 – STAINLESS STEEL ENCLOSURE
LEIT KEY – SPARE KEY
SKIT – SENSOR WIRE ADAPTOR

(c)BUCKNER SUPERIOR, APOLLO VALVE AND CST FLOW SENSOR AVAILABLE THROUGH GENTILE & ASSOCIATES, INC (949) 246–8467

SYM	DESCRIPTION	MANUF.	MODEL	NOZ.	PSI	RAD	GPM	DET.	PLN. NO.
	ROOT ZONE WATERING SYSTEM	HUNTER	RZWS–36–50–CV	PCB	25	–	0.5	15	L–7
	LANDSCAPE DRIPPERLINE(d)	NETAFIM	TLCV4–12 SERIES Techline Dripperline	–	25	–	0.4 GPH/ EMITTER	12, 13 & 14	L–7

WORST CASE PRESSURE CALCULATION LONGEST RUN - P.O.C.	
5.5 GPM @ STATION A9	
1.5" WATER METER	0.0
1.5" BACKFLOW PREVENTER	12.0
WYE STRAINER & PRESSURE REG.	1.0
MASTER VALVE	0.0
GATE VALVE	1.0
990' OF 1.5" MAINLINE	1.0
1" CONTROL VALVE & FILTER	2.0
LATERAL LINE	2.0
10' ELEVATION GAIN	4.3
SUBTOTAL	23.3
10% LOSS THRU FITTINGS	2.3
PSI REQUIRED FOR EMITTER	25.0
MIN. PRESSURE REQUIRED:	50.6 PSI
STATIC WATER PRESSURE @ P.O.C. (POTABLE):	--
RESIDUAL PRESSURE:	--

CONTROL VALVE INFORMATION



(d) IRRIGATION SYSTEM SHALL BE INSTALLED COMPLETE INCLUDING LINE FLUSHING VALVE AND OPERATION INDICATOR PER DETAILS 12, 13 & 14, PLAN NO. L–7.
PVC HEADER SHALL BE 3/4" SCH 40 PVC PIPE.
TECHLINE DRIPPER LINE SPACING @ 12" TO 14" O.C.
INSTALL OPERATION INDICATOR PER DETAIL AND FLUSH VALVE AT LOW POINT.

IRRIGATION CONSTRUCTION NOTES:

1. P.O.C. – WATER CONNECTION TO EXISTING WATER METER
   - CONTRACTOR SHALL COORDINATE WITH THE WATER UTILITY/SUPPLIER AGENCY AND WITH ENGINEER FOR THE CONNECTION (DOWNSTREAM) TO THE EXISTING WATER SERVICE METER. FIELD LOCATE AND VERIFY EXISTING WATER METER SIZE AND CONDITION WITH THE UTILITY AGENCY'S REPRESENTATIVE AND ENGINEER PRIOR TO CONNECTION.
   - COORDINATE WITH CIVIL ENGINEERING STREET IMPROVEMENT PLAN FOR ANY ADDITIONAL TASK THAT MAY NEED TO BE PERFORMED TO THE EXISTING WATER METER PRIOR TO CONNECTION.
   - BACKFLOW DEVICE AND RELATED EQUIPMENT AS SPECIFIED ON THE PLAN SHALL BE LOCATED IN MEDIAN PLANTING AREA. VERIFY EXACT LOCATION OF BACKFLOW DEVICE AND RELATED EQUIPMENT AS SHOWN ON PLAN WITH ENGINEER AND UTILITY AGENCY'S REPRESENTATIVE PRIOR TO INSTALLATION.

   CONTACT: CITY OF ROLLING HILLS ESTATE, DEPT. OF PUBLIC WORKS (310)377–1577 ext. 103
   CALIFORNIA WATER SERVICES – RANCHO DOMINGUEZ DISTRICT (310)257–1400

2. EXISTING BACKFLOW PREVENTER DEVICE
   TO ACCOMMODATE RETAINING WALL CONSTRUCTION, CONTRACTOR SHALL REMOVE, SALVAGE AND RETURN EXISTING BACKFLOW PREVENTER DEVICE TO THE CITY DEPT. OF PUBLIC WORKS. CUT AND CAP ALL SUPPLY WATER LINES CONNECTED TO EXISTING WATER METER.

3. NEW IRRIGATION CONTROLLER
   INSTALL NEW IRRIGATION CONTROLLER (PER LEGEND) AT THIS LOCATION IN MEDIAN PLANTING AREA. VERIFY EXACT LOCATION WITH ENGINEER PRIOR TO INSTALLATION. INSTALL PULL BOX FOR CONTROLLER WIRE SPLICES PRIOR FOR WIRES TO ENTERING CONTROLLER ASSEMBLY.

IRRIGATION DESIGN CRITERIA

NAME OF WATER SUPPLIER: CALIFORNIA WATER SERVICES
CONTACT: (310) 257–1400
STATIC WATER PRESSURE @ P.O.C.: FIELD VERIFY
MAX. FLOW (GPM) AT STATION 2: 6.5

CONTRACTOR SHALL VERIFY STATIC WATER PRESSURE WITH WATER AGENCY/SUPPLIER PRIOR TO INSTALLATION. IF PRESSURE IS BELOW MIN. PRESSURE REQUIRED, CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY. FAILURE TO DO SO WILL RESULT IN CONTRACTOR BEING RESPONSIBLE FOR CHANGES THAT MAY OCCUR.

IRRIGATION CONTROL WIRE SIZING TABLE	
CONDUIT SIZE	MAX. NO. OF WIRES # 14 AWG
¾"	2
¾"	4
1"	6
1¼"	10
1½"	14
2"	25

PIPING SIZES

MINIMUM PIPE SIZE SHALL BE 3/4". FOR ALL PIPE SIZES NOT SHOWN USE THE FOLLOWING GUIDELINES:

G.P.M.	PIPE SIZE	TYPE
0–8	¾"	SCH. 40
9–12	1"	SCH. 40
13–22	1½"	SCH. 40
23–30	1½"	SCH. 40
31–50	2"	CLASS 315

PROJECT INFORMATION (SECTION 492.3(1))*

DATE: 7/13/2021
PROJECT APPLICANT: CITY OF ROLLING HILLS ESTATES
PROJECT LOCATIONS: 3011 PALOS VERDES DR. N.
TOTAL LANDSCAPED AND IRRIGATION AREA: 3,346 S.F.
PROJECT TYPE: PUBLIC AGENCY
WATER SUPPLY: DOMESTIC
WATER AGENCY: CALIFORNIA WATER SERVICES
PROJECT APPLICANT CONTACT: CITY OF ROLLING HILLS ESTATES, DEPT. OF PUBLIC WORKS

"I AGREE TO COMPLY WITH THE REQUIREMENTS OF THE WATER EFFICIENT LANDSCAPE ORDINANCE AND SUBMIT A COMPLETE LANDSCAPE DOCUMENT PACKAGE"

LANDSCAPE ARCHITECT: _____ DATE: 7/13/2021

MAXIMUM APPLIED WATER ALLOWANCE (MAWA)
FORMULA: (ETo)(0.62)[(ETAFxAREA)+(1–ETAFxSLA)]

MAWA = MAXIMUM APPLIED WATER ALLOWANCE (GALLONS PER YEAR)
PF = PLANT FACTOR
ETo = REFERENCE EVAPOTRANSPIRATION (INCHES PER YEAR)
0.62 = ET ADJUSTMENT FACTOR (ETAF)
IE = IRRIGATION EFFICIENCY (0.75–SPRAY, 0.81–DRIP)
0.62 = CONVERSION FACTOR (TO GALLON PER SQUARE FOOT)
SLA = PORTION OF THE LANDSCAPE AREA IDENTIFIED AS SPECIAL LANDSCAPE AREA (SQUARE FEET)
ETAF = PF/IE

MAWA = 39,769 GALLONS

ESTIMATED TOTAL WATER USE (ETWU)
FORMULA: ETWU = (ETo)(0.62)*ETAF*AREA

ETWU = ESTIMATED TOTAL WATER USE PER YEAR (GALLONS PER YEAR)

ETWU= 32,731 GALLONS

WATER EFFICIENT LANDSCAPE WORKSHEET (SEC. 492.4)*

REFERENCE EVAPOTRANSPIRATION (ETo):			42.6				
HYDROZONE	PLANT FACTOR*	IRRIGATION METHOD**	IRRIGATION EFFICIENCY (IE)	ETAF (PF/IE)	AREA (S.F.)	ETAF X AREA	ESTIMATED TOTAL WATER USE (ETWU)
1	0.3	B	0.81	0.37	18	7	176
2	0.3	D	0.81	0.37	932	345	9,117
3	0.3	D	0.81	0.37	568	210	5,556
4	0.3	B	0.81	0.37	3	1	29
5	0.3	D	0.81	0.37	295	109	2,886
6	0.3	B	0.81	0.37	18	7	176
7	0.3	D	0.81	0.37	673	249	6,583
8	0.3	D	0.81	0.37	839	311	8,207
TOTAL					3,346	1,239	32,731
SPECIAL LANDSCAPE AREAS							
A	–	–	–	1	0	0	0
TOTAL					0	0	0
TOTAL ALL LANDSCAPE AREA					3,346		
ESTIMATED TOTAL WATER USE							32,731
MAXIMUM ANNUAL WATER ALLOWANCE							39,769
ETAF (NON–RES.)	ETAF (RES.)	ETAFXLA	ETAFXSLA				
0.45	0.55	1,506	0				

**IRRIGATION METHOD
MS = MICROSPRAY
S = SPRAY
R = ROTOR
B = BUBBLER
D = DRIP
RO = ROTARY

*HYDROZONE
HW = HIGH WATER USE PLANTS – WULCOLS = 0.7–1
MW = MEDIUM WATER USE PLANTS – WULCOLS = 0.4–0.6
LW = LOW WATER USE PLANTS – WULCOLS = 0–0.3

WULCOLS
WATER USE CLASSIFICATIONS OF LANDSCAPE SPECIES
WULCOLS III, AUGUST, 2000
UNIVERSITY OF CALIFORNIA COOPERATIVES EXTENSIONS
CALIFORNIA DEPARTMENT OF WATER RESOURCES

LANDSCAPE AND IRRIGATION MAINTENANCE SCHEDULE (SECTION 492.11)*

1. LANDSCAPE SHALL BE MAINTAINED TO ENSURE WATER USE EFFICIENCY.
2. A REGULAR MAINTENANCE SCHEDULE SHALL BE SUBMITTED WITH THE CERTIFICATE OF COMPLETION.
3. REGULAR MAINTENANCE SCHEDULE SHALL INCLUDE:
   - ROUTINE INSPECTION
   - ADJUSTMENT & REPAIR OF IRRIGATION SYSTEM AND ITS COMPONENTS
   - REPLENISHING MULCH
   - FERTILIZING
   - PRUNING
   - WEEDING

   IN ALL LANDSCAPE AREAS, AND REMOVING ANY OBSTRUCTION TO EMISSION DEVICES.
4. OPERATION OF SYSTEM IS ALLOWED FOR AUDITING AND SYSTEM MAINTENANCE.
5. REPAIR OF ALL IRRIGATION EQUIPMENT SHALL BE DONE WITH THE ORIGINALLY INSTALLED COMPONENTS OR THEIR EQUIVALENTS.

SOIL MANAGEMENT REPORT (SECTION 492.5)*

1. PRIOR TO INSTALLATION OF PLANTING MATERIAL, THE CONTRACTOR SHALL PERFORM SOIL TEST ANALYSIS OF PLANTING AREAS. SOIL ANALYSIS MAY INCLUDE:
   - SOIL TEXTURE
   - INFILTRATION RATE
   - pH
   - TOTAL SOLUBLE SALTS
   - PERCENT ORGANIC MATTER
   - SOIL AMENDMENT RECOMMENDATIONS

   SOIL SAMPLES SHALL BE DELIVERED TO AND TEST SHALL BE CONDUCTED BY A CERTIFIED SOIL LABORATORY.
2. CONTRACTOR SUBMIT SOIL ANALYSIS REPORT TO THE CITY AS PART OF THE CERTIFICATE OF COMPLETION.
3. CONTRACTOR SHALL SUBMIT DOCUMENTATION VERIFYING IMPLEMENTATION OF SOIL ANALYSIS REPORT RECOMMENDATIONS TO THE CITY AS PART OF THE CERTIFICATE OF COMPLETION.

IRRIGATION AUDIT/IRRIGATION WATER USE ANALYSIS (SECTION 492.12)*

1. ALL IRRIGATION AUDIT SHALL BE CONDUCTED BY A CERTIFIED IRRIGATION AUDITOR.
2. NEW CONSTRUCTION & REHABILITATED LANDSCAPE PROJECTS INSTALLED AFTER JAN. 1, 2010:
   CONTRACTOR SHALL SUBMIT AN IRRIGATION AUDIT REPORT WITH THE CERTIFICATE OF COMPLETION TO THE LOCAL AGENCY THAT MAY INCLUDE: INSPECTION, SYSTEM TUNE–UP, SYSTEM TEST WITH DISTRIBUTION UNIFORMITY, REPORTING SYSTEM LEAK AND RUN–OFF THAT CAUSE OVERLAND FLOW, AND PREPARATION OF AN IRRIGATION SCHEDULE.
3. LOCAL AGENCY SHALL ADMINISTER PROGRAMS TO INCLUDE IRRIGATION SURVEYS FOR COMPLIANCE WITH MAWA.

* REFERENCE:
CALIFORNIA CODE OF REGULATION – TITLE 23: WATER
DIVISION 2: DEPARTMENT OF WATER RESOURCES
CHAPTER 2.7. MODEL WATER EFFICIENT LANDSCAPE ORDINANCE

IRRIGATION GENERAL NOTES

1. THIS SYSTEM IS DIAGRAMMATIC. ALL PIPE, VALVES, ETC. SHOWN WITHIN PAVED AREAS ARE FOR DESIGN CLARIFICATION ONLY AND SHALL BE INSTALLED IN PLANTING AREAS WHEREVER POSSIBLE OR AT THE LOCATION AS INDICATED ON PLAN.
2. DO NOT WILLFULLY INSTALL THE IRRIGATION SYSTEM AS INDICATED ON THE PLAN WHEN IT IS OBVIOUS IN THE FIELD THAT UNKNOWN OBSTRUCTIONS OR GRADE DIFFERENCES EXIST AND SHOULD BE BROUGHT TO THE ATTENTION OF THE ENGINEER. IN THE EVENT THAT THIS NOTIFICATION IS NOT PERFORMED, THE CONTRACTOR MUST ASSUME FULL RESPONSIBILITY FOR REVISIONS NECESSARY. NOTIFY THE CITY ENGINEER IMMEDIATELY OF ANY DISCREPANCIES BETWEEN PLANS AND ACTUAL FIELD CONDITIONS.
3. CONTRACTOR SHALL NOT LOCATE ANY ITEMS WHERE IT IS OBVIOUS THAT THEY ARE IN DIRECT CONFLICT WITH UNDERGROUND UTILITIES, STRUCTURES, PERMANENT IMPROVEMENTS OR PEDESTRIAN AND VEHICULAR SAFETY CONSIDERATIONS.
4. SYSTEM DESIGN IS BASED ON MINIMUM OPERATING PRESSURE SHOWN AT EACH POINT OF CONNECTION WITH MAXIMUM GPM DEMAND SPECIFIED. IRRIGATION CONTRACTOR SHALL VERIFY ALL PRESSURES ON SITE PRIOR TO CONSTRUCTION AND GIVEN TO IN WRITING TO THE ENGINEER.
5. MAINLINE FEEDER BETWEEN POINT OF CONNECTION AND METER TO BE OF MATERIAL AS REQUIRED BY CURRENT WATER DISTRICT/AGENCY.
6. IT IS THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO FAMILIARIZE HIMSELF WITH ALL GRADE DIFFERENCES, LOCATION OF WALLS, SIDEWALKS, CURBS, ETC. HE SHALL COORDINATE HIS WORK WITH THE GENERAL CONTRACTOR AND OTHER SUB–CONTRACTORS FOR LOCATION OF PIPE SLEEVES THROUGH WALLS, UNDER ROADS, PAVING AND STRUCTURES DURING BIDDING AND CONSTRUCTION PERIOD.
7. CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING UTILITIES, STRUCTURES AND SERVICES BEFORE COMMENCING WORKS. THE LOCATIONS OF UTILITIES, STRUCTURES AND SHOWN IN THESE PLANS ARE APPROXIMATE ONLY. ANY DISCREPANCIES BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS SHALL BE REPORTED TO THE CITY ENGINEER.
8. LOCATION EXISTING WATER SERVICE/SUPPLY LINE SHOWN ON PLAN IS APPROXIMATE ONLY. CONTRACTOR SHALL FIELD VERIFY AND COORDINATE WITH THE ENGINEER AND INGLEWOOD UTILITIES' REPRESENTATIVE FOR EXACT LOCATION PRIOR TO INSTALLATION.
9. CONTRACTOR SHALL VERIFY IN THE FIELD WITH THE ENGINEER, AND THE LOCAL GOVERNING AGENCY REPRESENTATIVE, ALL LOCATIONS OF POINT OF CONNECTIONS, WATER METERS, MAIN WATER SUPPLY LINE, AUTOMATIC CONTROLLER AND VALVES, PRIOR TO CONSTRUCTION.
10. IN ADDITION TO THE SLEEVES SHOWN ON THE PLAN, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF ADDITIONAL SLEEVES OF SUFFICIENT SIZE UNDER PAVED AREAS AS REQUESTED BY THE ENGINEER. SLEEVES SHALL BE SCH 40 PVC PIPE. CONTRACTOR SHALL FLUSH ALL LINES. SLEEVES TO BE GROUPED WHERE POSSIBLE.
11. PRECISE LOCATION OF IRRIGATION HEAD, NOZZLE TYPE AND DRIPPER LINE SHALL BE APPROVED BY THE ENGINEER.
12. ALL IRRIGATION CONSTRUCTION AND MATERIALS SHALL BE INSTALLED PER THE MANUFACTURES SPECIFICATIONS AT THE LOCATIONS AS SHOWN ON PLANS AND ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH LOCAL AND REGIONAL GOVERNING CODES. VERIFY LOCATIONS OF ALL IRRIGATION EQUIPMENT WITH THE ENGINEER PRIOR TO INSTALLATION.
13. CONTRACTOR SHALL INSTALL ALL EQUIPMENT AS SHOWN ON THE DETAILS AND IN SPECIFICATIONS. CONTRACTOR IS TO PROVIDE ADDITIONAL (5) PILOT WIRES AND (1) COMMON WIRE FROM CONTROLLER ALONG ENTIRETY OF MAINLINE TO THE LAST RCV ON EACH OF EVERY LEG OF MAINLINE. LABEL SPARE WIRES AT BOTH ENDS.
14. INSTALL ALL QUICK COUPLER VALVES AS SHOWN ON DETAILS. QUICK COUPLER VALVE SHALL BE INSTALLED WITHIN 18" OF HARDSCAPE.

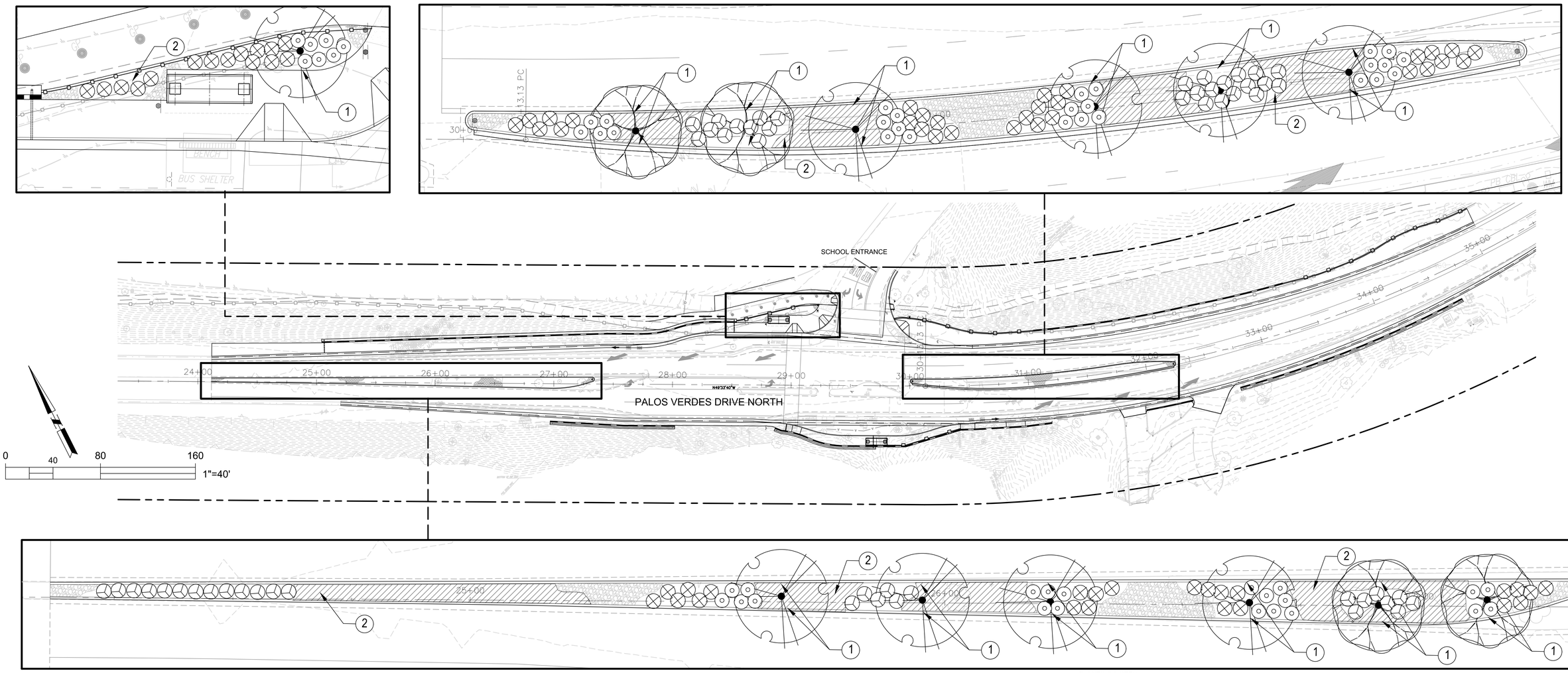
ROADWAY IRRIGATION PIPE TRENCHING NOTE

ALL TRENCHING OPERATION IN ROADWAY FOR IRRIGATION PIPE AND WIRE CONDUIT INSTALLATION SHALL OCCUR AFTER ASPHALT PAVEMENT COLD MILLING AND PRIOR TO RUBBER ASPHALT SURFACE INSTALLATION.

IRRIGATION SCHEDULE

7/13/2021 By: Willdan

Valve Data						Month																																										
Sta. #	GPM	in/hr.*	Planting	Exp	Aspect	Jan			Feb			Mar			Apr			May			Jun			Jul			Aug			Sep			Oct			Nov			Dec			Totals:
1	6	N/A	Tree	Sun	Flat	2	1	4.3	2	1	4.3	3	1	4.3	3	1	4.3	5	1	4.3	5	2	8.6	5	2	8.6	5	2	8.6	5	2	8.6	5	2	8.6	3	1	4.3	2	1	4.3	3,096 Gallons
2	6.5	0.19	Shrub	Sun	Flat	5	1	4.3	5	1	4.3	8	1	4.3	8	1	4.3	10	2	8.6	12	2	8.6	12	2	8.6	15	2	8.6	15	2	8.6	8	2	8.6	8	1	4.3	5	1	4.3	9,140 Gallons
3	4	0.19	Shrub	Sun	Flat	5	1	4.3	5	1	4.3	8	1	4.3	8	1	4.3	10	2	8.6	12	2	8.6	12	2	8.6	15	2	8.6	15	2	8.6	8	2	8.6	8	1	4.3	5	1	4.3	5,624 Gallons
4	1	N/A	Tree	Sun	Flat	2	1	4.3	2	1	4.3	3	1	4.3	3	1	4.3	5	1	4.3	5	2	8.6	5	2	8.6	5	2	8.6	5	2	8.6	5	2	8.6	3	1	4.3	2	1	4.3	516 Gallons
5	2	0.19	Shrub	Sun	Flat	5	1	4.3	5	1	4.3	8	1	4.3	8	1	4.3	10	2	8.6	12	2	8.6	12	2	8.6	15	2	8.6	15	2	8.6	8	2	8.6	8	1	4.3	5	1	4.3	2,812 Gallons
6	6	N/A	Tree	Sun	Flat	2	1	4.3	2	1	4.3	3	1	4.3	3	1	4.3	5	1	4.3	5	2	8.6	5	2	8.6	5	2	8.6	5	2	8.6	5	2	8.6	3	1	4.3	2	1	4.3	3,096 Gallons
7	5	0.19	Shrub	Sun	Flat	5	1	4.3	5	1	4.3	8	1	4.3	8	1	4.3	10	2	8.6	12	2	8.6	12	2	8.6	15	2	8.6	15	2	8.6	8	2	8.6	8	1	4.3	5	1	4.3	7,031 Gallons
8	6	0.19	Shrub	Sun	Flat	5	1	4.3	5	1	4.3	8	1	4.3	8	1	4.3	10	2	8.6	12	2	8.6	12	2	8.6	15	2	8.6	15	2	8.6	8	2	8.6	8	1	4.3	5	1	4.3	8,437 Gallons
																																											0



PLANTING LEGEND

TREES

SYM	BOTANICAL NAME	COMMON NAME	SIZE	QTY	REMARKS	DET.	SHT.	HT. SP.	WUCOLS
	CERCIS OCCIDENTALIS	WESTERN RED BUD	24 GAL.	4	STANDARD	1 & 2	L-8	20' 15'-20'	L
	SCHINUS MOLLE	CALIFORNIA PEPPER	24 GAL.	9	STANDARD	1 & 2	L-8	25'-50' 25'-40'	L

SHRUBS

SYM	BOTANICAL NAME	COMMON NAME	SIZE	QTY	REMARKS	DET.	SHT.	HT. SP.	WUCOLS
	AGAVE DESMETTIANA	*SMOOTH AGAVE*	5 GAL.	54	SPACING PER PLAN	3	L-8	3' 3'	L
	SALVIA LEUCANTHA 'SANTA BARBARA'	*SANTA BARBARA SAGE*	5 GAL.	67	SPACING PER PLAN	3		3' 3'	L
	MUHLENBERGIA CAPILLARIS 'REGAL MIST'	*PINK MUHLY*	5 GAL.	54	SPACING PER PLAN	3		3' 3'	L

GROUNDCOVERS

	ARTOSTRAPHYLUS UVA-URSI 'POINT REYES'	*BEARBERRY*	1 GAL.	148	SPACING @ 36" O.C.	3	L-8	12" 15'	L

WUCOLS: WATER USE CLASSIFICATIONS OF LANDSCAPE SPECIES
H: HIGH M: MODERATE L: LOW

PLANTING CONSTRUCTION NOTE:

1. FURNISH AND INSTALL ROOT CONTROL BARRIER. SEE DETAIL 1, PLAN NO L-8 .
2. FURNISH AND INSTALL 3" LAYER OF REDWOOD CHIPS PER GENERAL NOTE NO. 3.

PLANTING NOTES:

1. VERIFY EXACT TREE LOCATIONS WITH ENGINEER PRIOR TO INSTALLATION.
2. CONTRACTOR SHALL CHALK LAYOUT SHRUB MASSES AND GROUNDCOVERS WITHIN THE PLANTING AREAS AND VERIFY WITH ENGINEER PRIOR TO INSTALLATION.
3. CONTRACTOR SHALL FURNISH AND INSTALL 3-INCH LAYER OF SHREDDED REDWOOD CHIPS, LARGE GRIND, AS TOP DRESS IN ALL SHRUB & GROUNDCOVER AREAS.
   REDWOOD CHIPS AVAILABLE THROUGH
   RECYCLED WOOD PRODUCTS. (877)GROW RWP hank@rwpmulch.com
4. ALL PLANTING BACKFILL AMENDMENTS SHALL BE SUPPLEMENTED WITH "TRI-C HUMATE PLUS" & "MYCO PAK" MANUFACTURED BY TRI-C (909) 590-1790
   https: //www.tri-corganics.com/
   BACKFILL MIXTURE SHALL FOLLOW MANUFACTURER'S SPECIFICATIONS.
5. KEEP REDWOOD CHIPS 6 INCHES CLEAR FROM SHRUB STEM.
6. QUANTITIES SHOWN ON LEGEND ARE FOR CONVENIENCE ONLY, CONTRACTOR SHALL VERIFY EXACT QUANTITY OF EACH SHRUB & GROUNDCOVER SPECIES WITH ENGINEER PRIOR TO COMMENCING PLANTING.

TREES, SHRUBS AND GROUNDCOVER PROCUREMENT

CONTRACTOR SHALL BE RESPONSIBLE FOR CONTRACT GROW, AT THE CONTRACTOR'S EXPENSE, ALL THE PLANTS LISTED ON THE PLANTING LEGEND. CONTRACTOR SHALL PROVIDE TO THE CITY AN INVOICE OF ALL THE LISTED PLANTS THAT WILL BE CONTRACT GROWN AND/OR RESERVED. THE PROCUREMENT INVOICE STATEMENT SHALL BE SUBMITTED TO THE CITY ENGINEER FOR REVIEW AND APPROVAL WITHIN 15 DAYS OF AWARD OF CONTRACT.

TREES & SHRUBS AVAILABLE THROUGH
LANDSCAPE RESOURCE INC. (760)798-9810 aj@landscaperesourcesinc.com, Tvega722@gmail.com

REGISTERED LANDSCAPE ARCHITECT
JOHN HIDALGO
No. 3551
Exp. 07-31-23
STATE OF CALIFORNIA

PLANS PREPARED BY:
WILLDAN Engineering | Comprehensive Innovative Trusted
13191 CROSSROADS PARKWAY NORTH
SUITE 405 INDUSTRY, CA 91746-3497
(562) 908-6200
UNDER THE SUPERVISION OF

JOHN HIDALGO R.L.A. 3551 DATE

BENCH MARK:
NO. _____ ELEV. _____
DATE ADJ. _____ QUAD. _____
NONE

NO.	REVISIONS	APP.	DATE

CITY OF ROLLING HILLS ESTATES

STREET MEDIAN & PARKWAY PLANTING PLAN

INTERSECTION CAPACITY IMPROVEMENTS
AT PALOS VERDES DRIVE NORTH AND DAPPLEGRAY SCHOOL ENTRANCE

DRAWN BY: BN
DESIGNED BY: BN
CHECKED BY: JH

SHT. 18 OF 22 SHTS.

PLAN NO. L-4

100% SUBMITTAL NOT FOR CONSTRUCTION

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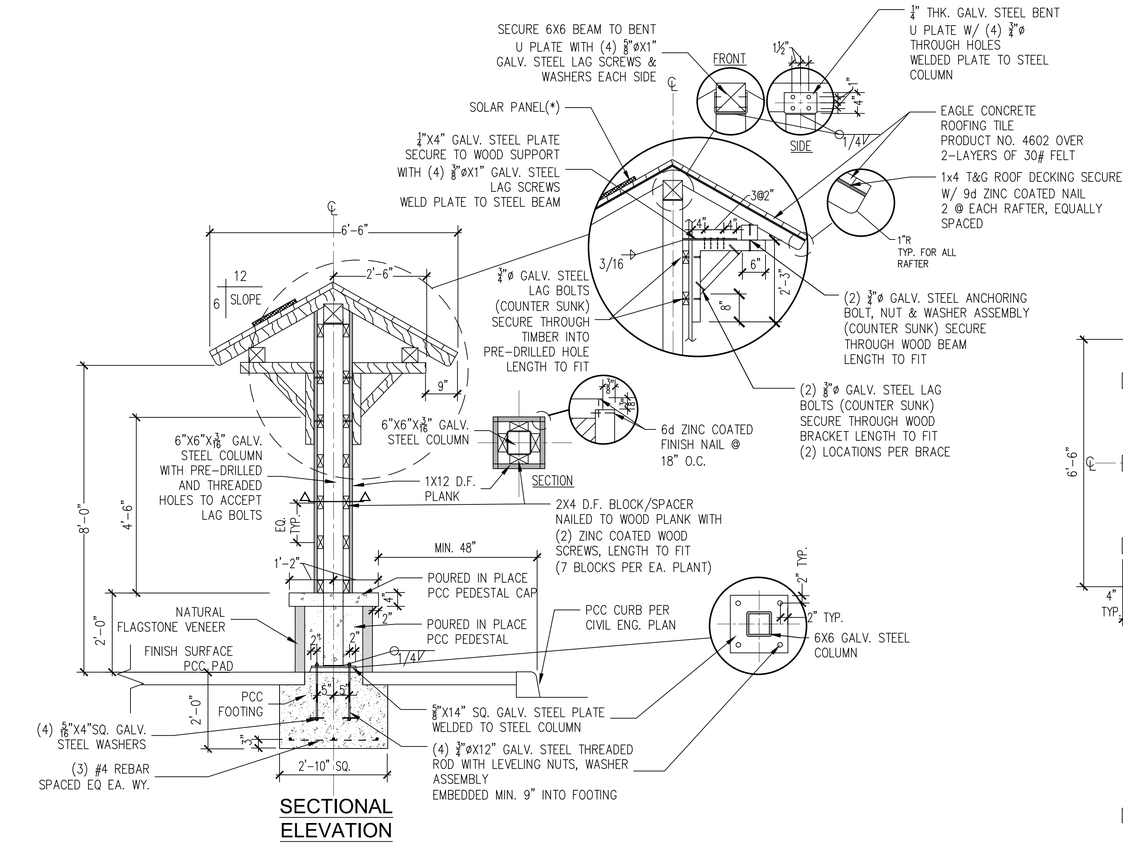
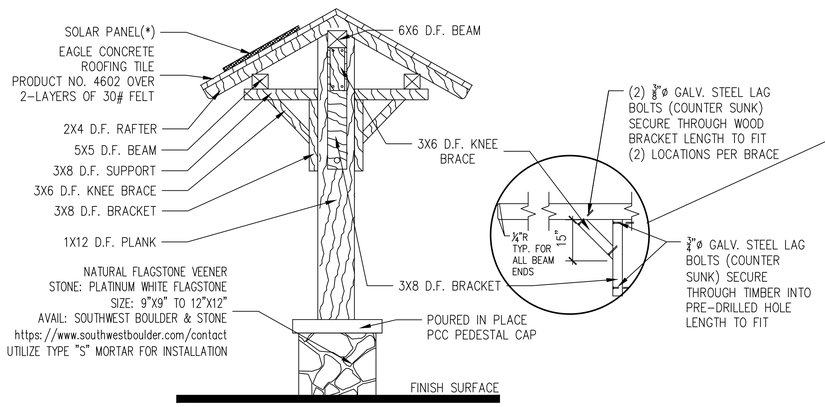
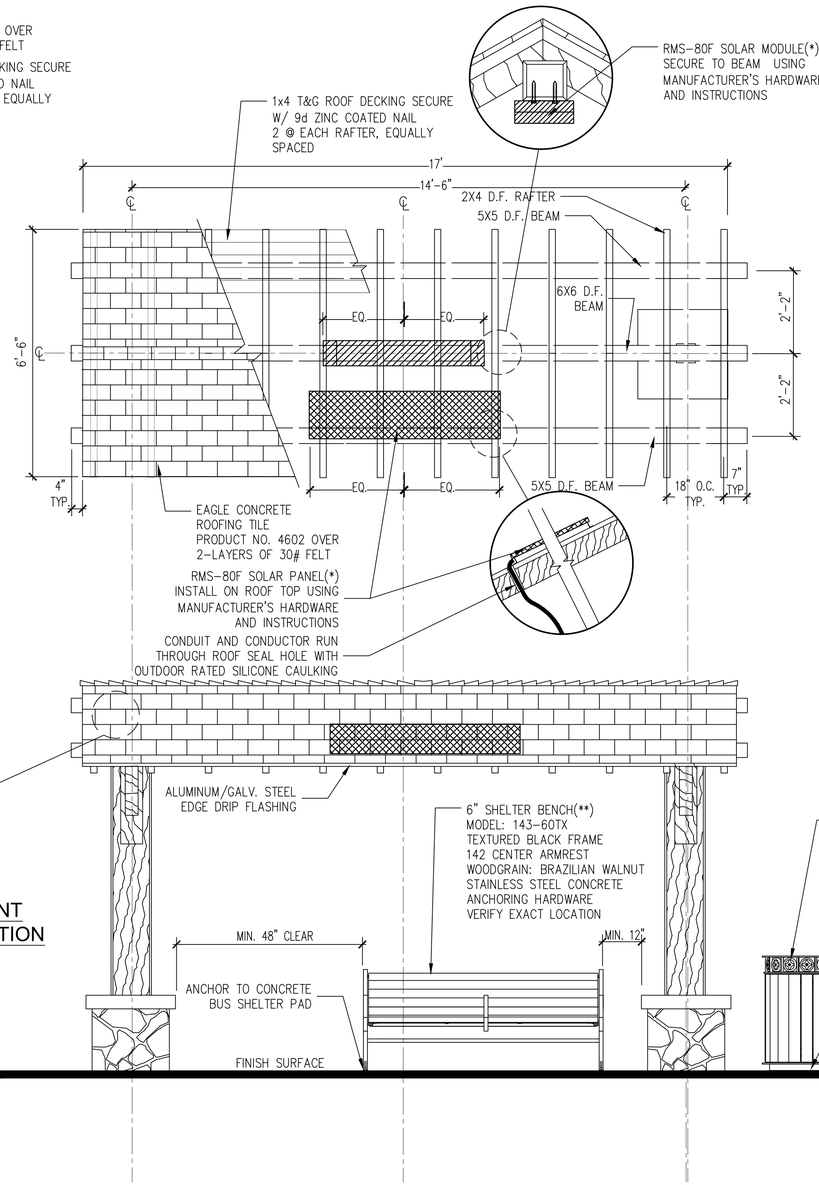


SECTIONAL ELEVATION



SIDE ELEVATION



PLAN VIEW

FRONT ELEVATION

SEE PLAN NO. L-6 FOR SITE LAYOUT AND CONSTRUCTION NOTES

1	BUS SHELTER AND SITE FURNISHING	NTS

REGISTERED LANDSCAPE ARCHITECT
JOHN HIDALGO
No. 3551
Exp. 07-31-23
STATE OF CALIFORNIA

PLANS PREPARED BY:
WILLDAN Engineering — Comprehensive Innovative Trusted
13191 CROSSROADS PARKWAY NORTH
SUITE 405 INDUSTRY, CA 91746-3497
(562) 908-6200
UNDER THE SUPERVISION OF

JOHN HIDALGO R.L.A. 3551 DATE

BENCH MARK:
NO. _____ ELEV. _____
DATE ADJ. _____ QUAD. _____
NONE

REVISIONS			
NO.	DESCRIPTION	APP.	DATE

CITY OF ROLLING HILLS ESTATES

BUS SHELTER DETAILS

INTERSECTION CAPACITY IMPROVEMENTS
AT PALOS VERDES DRIVE NORTH AND DAPPLEGRAY SCHOOL ENTRANCE

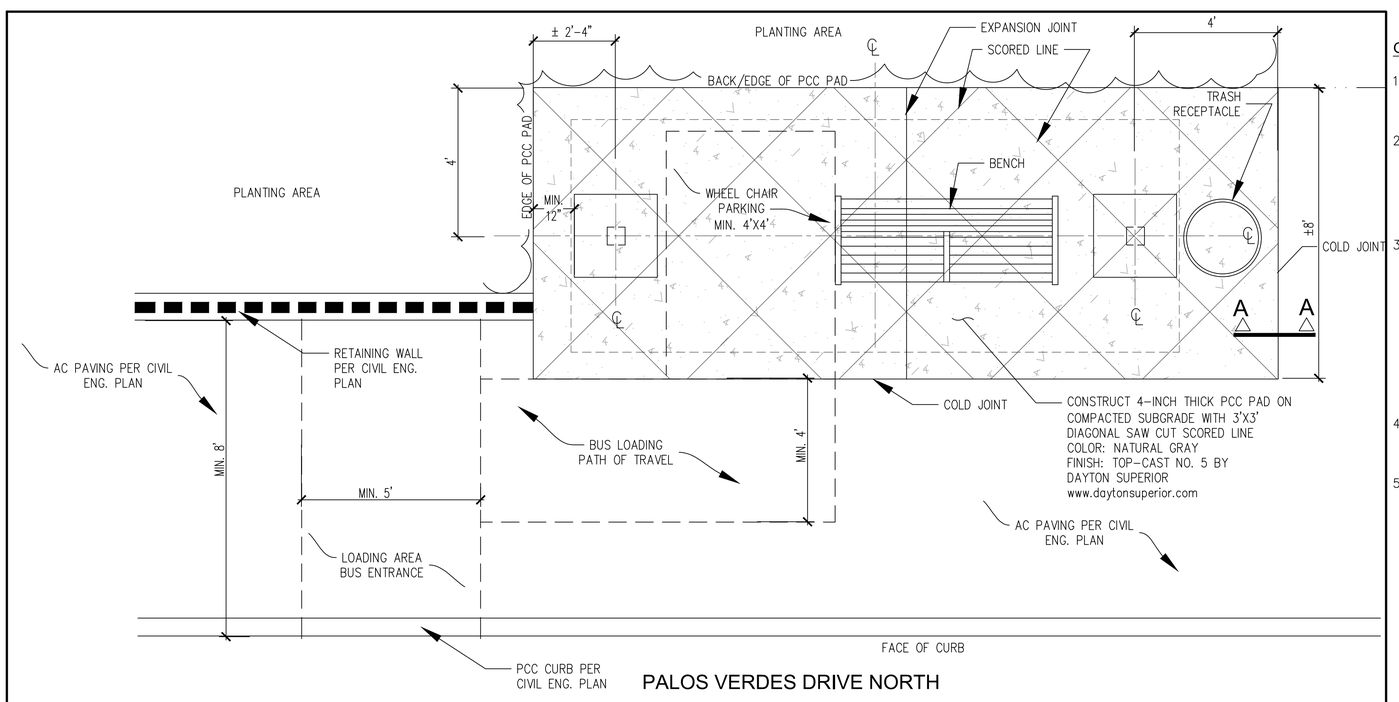
DRAWN BY: BN
DESIGNED BY: BN
CHECKED BY: JH

SHT. 19 OF 22 SHTS.

PLAN NO. L-5

100% SUBMITTAL NOT FOR CONSTRUCTION

U:\110176 - RHE PVDN@DAPPLEGRAY ELM SCHOOL\900-PS&E\901-Plans\landscape Dwgs\L-LNSCP DETAILS.dwg Apr 03, 23 - 1:25pm



LOCATION 1

GENERAL NOTES:

1. VERIFY EXACT LOCATION OF BUS SHELTER, BENCH AND TRASH RECEPTACLE WITH ENGINEER PRIOR TO CONSTRUCTION AND INSTALLATION.
2. DETAILS AND PLANS SHOWN ARE TO ILLUSTRATE THE DESIGN INTENT ONLY. THE CONTRACTOR SHALL SUBMIT COMPLETE SHOP DRAWINGS AND CONSTRUCTION MATERIAL SUBMITTALS TO ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.
3. SHOP DRAWING SHALL INCLUDE ALL SPECIFICATION CALL-OUTS AND DIMENSIONS AS SHOWN INCLUDING ANY NEEDED DIMENSIONS AND CALL-OUTS NOT SHOWN. CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING FOOTING CALCULATIONS FROM A CALIFORNIA REGISTERED ENGINEER TO THE CITY AS PART OF THE BUILDING PERMIT PLAN CHECK SUBMITTAL FOR REVIEW AND APPROVAL.
4. BUS SHELTER COLOR SCHEDULE, BUILDING MATERIAL, AND SITE FURNISHING COLOR SHALL BE AS INDICATED ON THE DRAWINGS.
5. CONTRACTOR SHALL COORDINATE VERIFY ALL EXISTING UTILITY STRUCTURES WITH CIVIL IMPROVEMENT PLANS WITHIN AND SURROUNDING THE PROPOSED BUS SHELTER LOCATIONS AS SHOWN ON PLAN WITH ENGINEER PRIOR TO INSTALLATION.

CONTRACTOR'S RESPONSIBILITIES:

1. CONSTRUCT BUS SHELTER, FURNISH AND INSTALL SOLAR POWERED LIGHTING ASSEMBLY, FURNISH AND INSTALL SITE FURNISHING, COMPLETE PER PLAN.
2. CONTRACTOR SHALL COORDINATE WITH MANUFACTURERS TO OBTAIN SHOP DRAWINGS OF BUS BENCH, TRASH RECEPTACLE, SOLAR LIGHT ASSEMBLY AND CUT SHEETS/SAMPLES OF ROOFING MATERIAL AND STONE VENEER FOR CITY REVIEW SUBMITTAL, INCLUDING SHIPPING AND DELIVERY SCHEDULING PRIOR TO PLACING ORDER.
3. CONTRACTOR SHALL FURNISH SHOP DRAWINGS OF A COMPLETE BUS SHELTER ASSEMBLY PER GENERAL NOTE NO. 2 & 3 TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY CITY BUILDING PERMIT APPLICATION, STRUCTURAL PLAN CHECK SUBMITTAL AND FEE, IF REQUIRED, FOR THE INSTALLATION OF SHELTER.
5. CONTRACTOR SHALL VERIFY EXACT COLORS OF TRASH RECEPTACLE AND BENCH WITH THE CITY PRIOR TO ORDERING.
6. CONTRACTOR SHALL:
   - FURNISH ALL NEEDED GALVANIZED STEEL HARDWARE THAT WAS NOT PROVIDED BY THE MANUFACTURERS FOR THE ANCHORING OF BENCH, TRASH RECEPTACLE AND SOLAR POWERED LIGHTING ASSEMBLY AT LOCATIONS SHOWN ON PLAN. ALL INSTALLATION AND ANCHORING SHALL FOLLOW MANUFACTURER'S SPECIFICATIONS/INSTRUCTIONS.
   - APPLY CLEAR ANTI-GRAFFITI COATING ON ALL EXPOSED SURFACES OF SHELTER. ANTI-GRAFFITI COATING SHALL BE PER SPECIFICATIONS. COATING APPLICATION SHALL BE PER MANUFACTURER'S SPECIFICATIONS/WRITTEN INSTRUCTIONS.
   - ALL INSTALLATION AND SITE FURNISHING ANCHORING SHALL FOLLOW MANUFACTURER'S SPECIFICATIONS/INSTRUCTIONS.

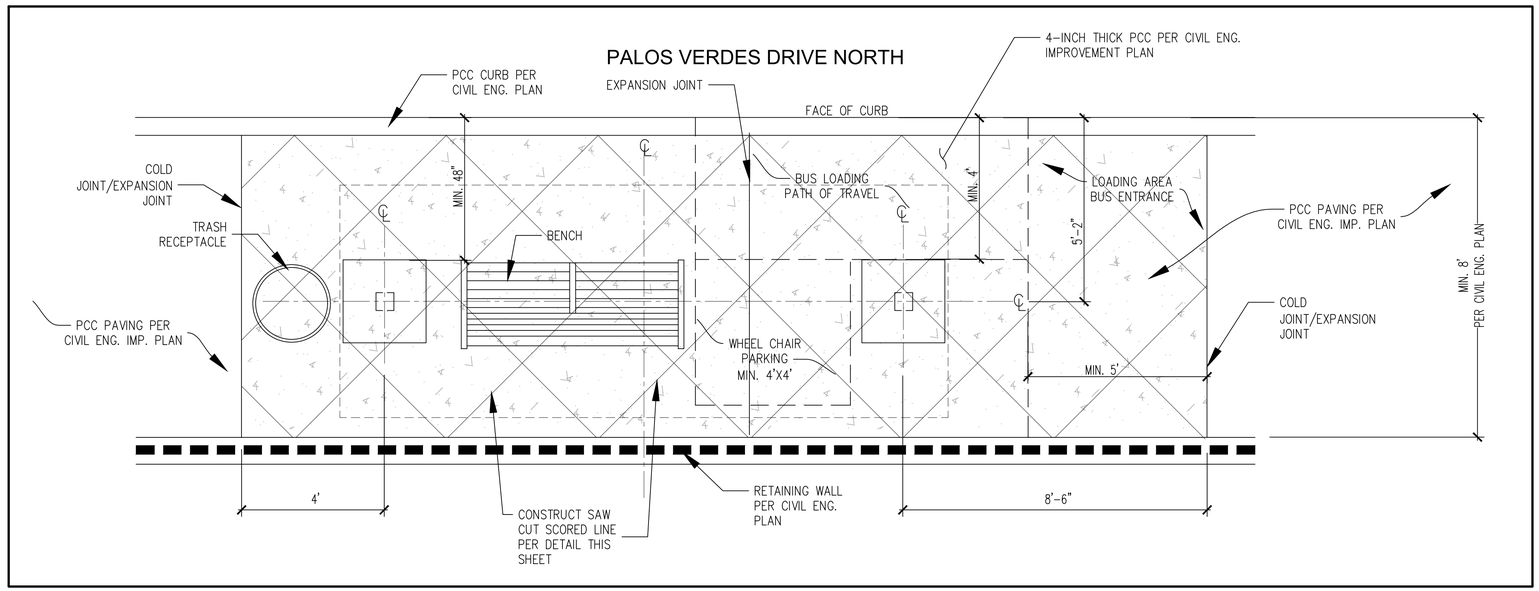
LUMBER NOTE: ALL WOOD TO BE ROUGH SAWN DOUGLAS FIR (D.F.) NO.1 GRADE OR BETTER.

PAINT NOTE:

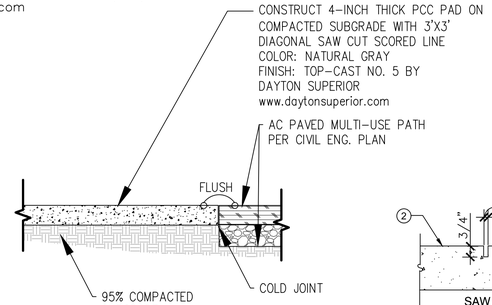
- PRIME AND PAINT ALL EXTERIOR SURFACE OF WOOD MEMBERS AND METAL HARDWARE(a) WITH 1 COAT PRIMER, 2 COATS ENAMEL COLOR: WARM WHITE-DEW380 BY DUNN-EDWARDS CO.
- PROVIDE CITY ENGINEER W/ COLOR SAMPLE PRIOR TO CONSTRUCTION. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

(a)FOR GALV. STEEL HARDWARE, USE ULGM00 AS PRIMER.

MANUFACTURER CONTACTS:
* SOLAR POWERED SHELTER LIGHTING ASSEMBLY
URBAN SOLAR (503)356-5516 info@urbansolarcorp.com
** BENCH AND TRASH RECEPTACLE
DUMOR (800)598-4018 sales@dumor.com
EAGLE ROOFING PRODUCT (800)300-3245 www.eagleroofing.com
DUNN EDWARDS CONTACT: DAVE MAJOR (310)909-3769
dave.major@dunnedwards.com



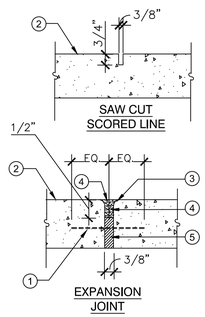
LOCATION 2



TYPICAL CROSS SECTION A-A

NTS

NOTES:
1. APPLY NON-GLOSS CONCRETE SEALER COATING ON PCC PAD MANUFACTURED BY DAVIS COLORS OR APPROVED EQUAL. APPLICATION SHALL BE PER MANUFACTURER'S INSTRUCTIONS.
2. SUBMIT CUT SHEET OF CONCRETE SEALER TO ENGINEER FOR REVIEW AND APPROVAL PRIOR TO APPLICATION.
3. CONTRACTOR SHALL SUBMIT 2'X2' MOCKED-UP SAMPLE OF TOP-CAST FINISH PCC PAVING TO ENGINEER FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.



1. 12" #4 REBAR @ 48" O.C.
2. FINISHED SURFACE
3. 1/4" RADIUS
4. JOINT SEALANT - POLYEURETHANE
5. JOINT FILLER - POLYSTYRENE

GENERAL NOTE:

TOP DRESS SEALANT WITH SILICA SAND. SEALANT COLOR TO MATCH ADJACENT CONCRETE COLOR.

100% SUBMITTAL NOT FOR CONSTRUCTION

U:\1101176 - RHE PVDN@DAPPLEGRAY ELM SCHOOL\900-PS&E\901-Plans\Landscape Dwgs\L-LNSCP DETAILS.dwg Apr 03, 23 - 1:25pm

1	BUS SHELTER LAYOUT PLAN AND CONSTRUCTION NOTES	SCALE: 1"=2'-0"

REGISTERED LANDSCAPE ARCHITECT
JOHN HIDALGO
No. 3551
Exp. 07-31-23
STATE OF CALIFORNIA

PLANS PREPARED BY:
WILLDAN Engineering | Comprehensive Innovative Trusted
13191 CROSSROADS PARKWAY NORTH
SUITE 405 INDUSTRY, CA 91746-3497
(562) 908-6200
UNDER THE SUPERVISION OF

JOHN HIDALGO R.L.A. 3551 DATE

BENCH MARK:
NO. _____ ELEV. _____
DATE ADJ. _____ QUAD. _____
NONE

NO.	REVISIONS DESCRIPTION	APP.	DATE

CITY OF ROLLING HILLS ESTATES

BUS SHELTER LAYOUT AND CONSTRUCTION NOTES

INTERSECTION CAPACITY IMPROVEMENTS
AT PALOS VERDES DRIVE NORTH AND DAPPLEGRAY SCHOOL ENTRANCE

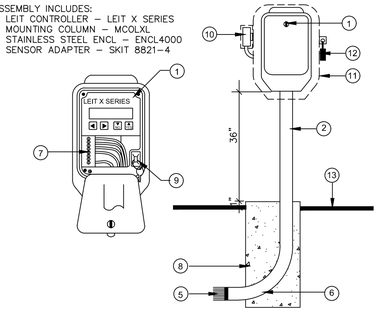
DRAWN BY: BN
DESIGNED BY: BN
CHECKED BY: JH

SHT. 20 OF 22 SHTS.

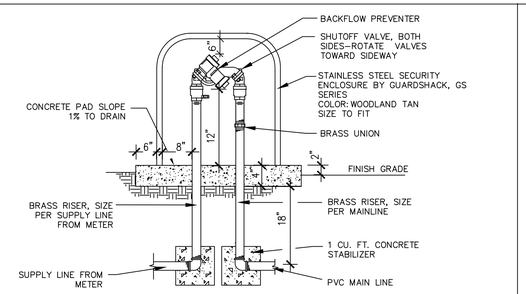
PLAN NO. L-6

1. LEIT X SERIES IRRIGATION CONTROLLER*
2. MOUNTING COLUMN
3. SUB-GRADE
4. FINISHED GRADE / SURFACE
5. DIRECT BURIAL CONTROL WIRES TO CONTROL VALVES
6. 90° SWEEP ELL
7. TERMINAL STRIP
8. 12" DIA. X 18" CONCRETE FOOTING
9. ACCESS KEY
10. RAIN SENSOR INSTALLED IN STAINLESS STEEL VANDAL-PROOF ENCLOSURE MOUNTED ON IRRIGATION CONTROLLER ENCLOSURE. INSTALLATION SHALL BE PER MANUFACTURER'S SPECIFICATIONS
11. STAINLESS STEEL ENCLOSURE
12. PADLOCK FURNISH AND PROVIDE TO CITY'S REPRESENTATIVE (2) KEYS FOR PADLOCK @ EACH CONTROLLER
13. FINISH GRADE

*ASSEMBLY INCLUDES:
1. LEIT CONTROLLER - LEIT X SERIES
2. MOUNTING COLUMN - MCOLXL
3. STAINLESS STEEL ENCL - ENCL4000
4. SENSOR ADAPTER - SKIT 8821-4



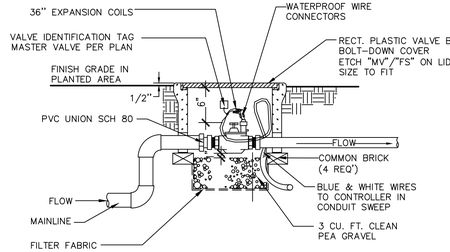
1 IRRIGATION CONTROLLER ASSEMBLY NTS



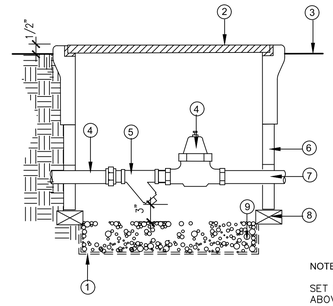
NOTES:
1. ALL FITTINGS AND RISERS TO BE RED BRASS.
2. PCC PAD SIZE SHALL BE SUFFICIENT TO ACCOMMODATE BACKFLOW PREVENTER ENCLOSURE.
3. INSTALL WY STRAINER-PRESSURE REGULATOR IN SEPARATE VALVE BOX.
4. VERIFY EXACT LOCATION WITH ENGINEER PRIOR TO INSTALLATION.
5. INSTALL BACKFLOW PREVENTER AS REQUIRED BY LOCAL CODES AND HEALTH DEPARTMENT. VERIFY LOCAL REQUIREMENTS PRIOR TO INSTALLATION.

2 BACKFLOW PREVENTER DEVICE NTS

NOTE:
REFER TO MANUFACTURER'S GUIDELINES AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.

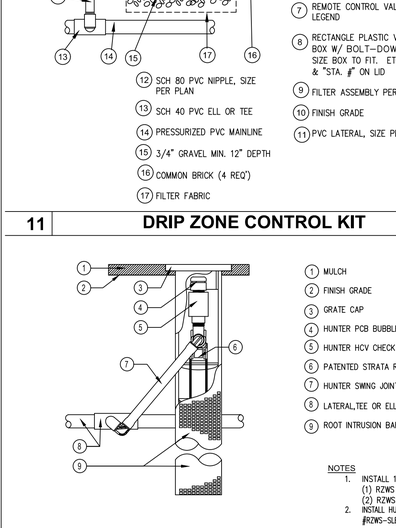


3 MASTER VALVE NTS

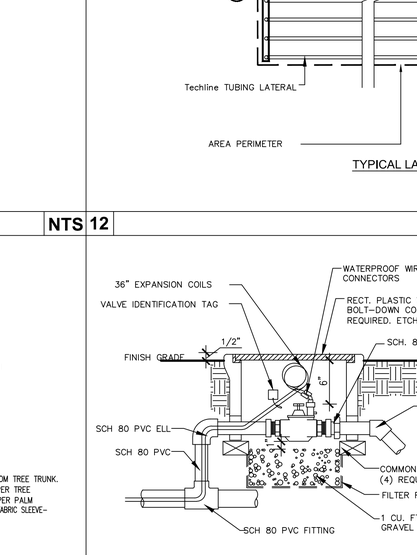


NOTE:
SET PRESSURE REGULATOR +5 PSI ABOVE MIN. PRESSURE REQUIRED.

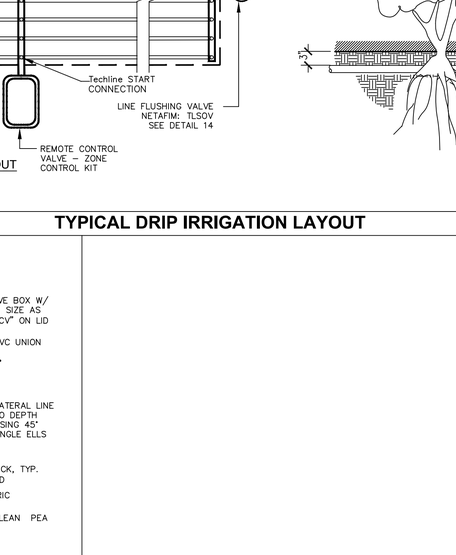
4 WYE STRAINER /PRESSURE REGULATOR NTS



5 GATE VALVE NTS

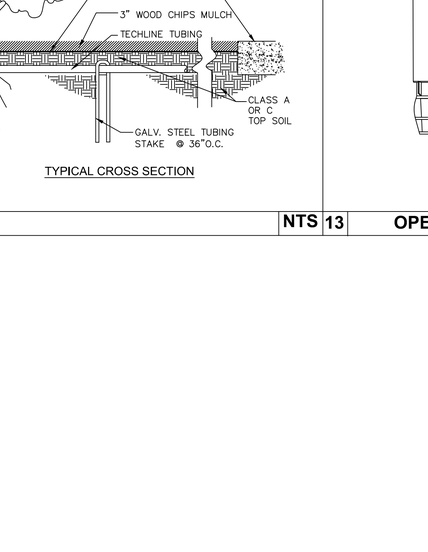


6 QUICK COUPLER VALVE NTS

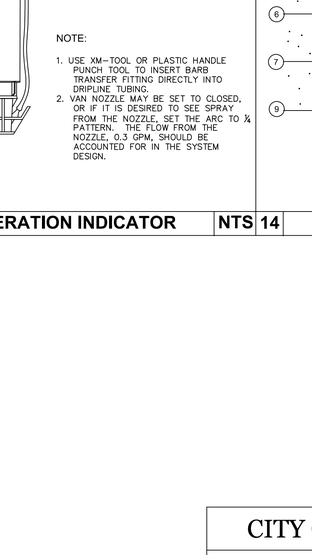


NOTE
PROVIDE (36") WIRE EXPANSION LOOPS.

7 CONTROL WIRE SPLICE BOX NTS

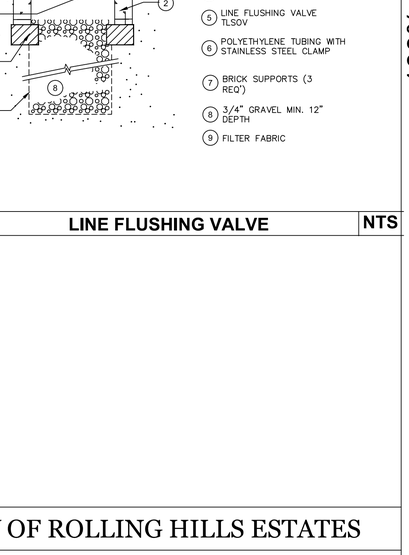


8 TRENCHING UNDER ROADWAY NTS

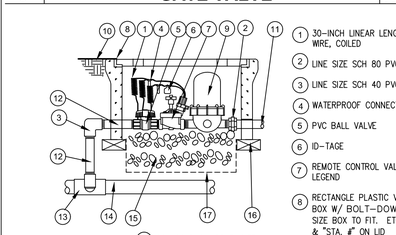


NOTE: PROVIDE 2" OF CLEAN BACKFILL UNDER ALL PIPE

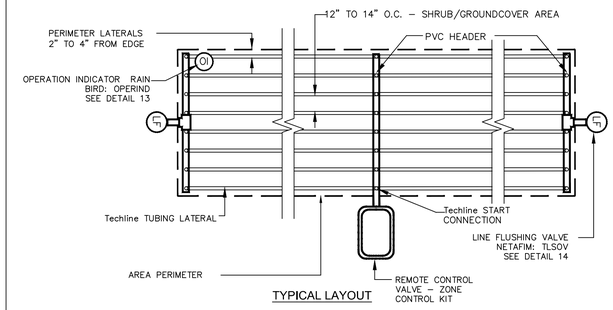
9 TRENCHING IN PLANTING AREA NTS



10 BORING UNDER ROADWAY NTS

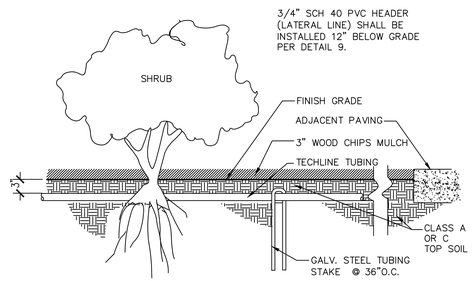


11 DRIP ZONE CONTROL KIT NTS



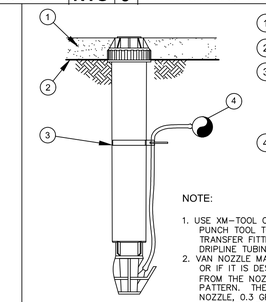
TYPICAL LAYOUT

NOTE
3/4" SCH 40 PVC HEADER (LATERAL LINE) SHALL BE INSTALLED 12" BELOW GRADE PER DETAIL 9.



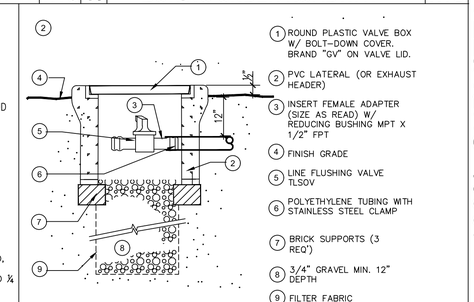
TYPICAL CROSS SECTION

12 TYPICAL DRIP IRRIGATION LAYOUT NTS



NOTE:
1. USE XM-TOOL OR PLASTIC HANDLE PUNCH TOOL TO INSERT BARB TRANSFER FITTING DIRECTLY INTO DRIPLINE TUBING.
2. VAN NOZZLE MAY BE SET TO CLOSED, OR IF IT IS DESIRED TO SEE SPRAY FROM THE NOZZLE, SET THE ARC TO ¼ PATTERN. THE FLOW FROM THE NOZZLE, 0.3 GPM, SHOULD BE ACCOUNTED FOR IN THE SYSTEM DESIGN.

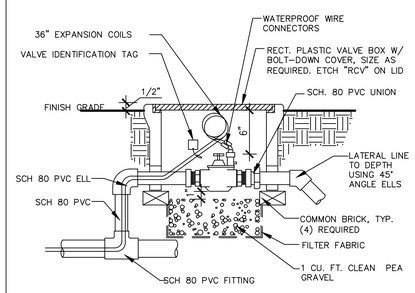
13 OPERATION INDICATOR NTS



14 LINE FLUSHING VALVE NTS

NOTES
1. INSTALL 12" AWAY FROM TREE TRUNK. (1) RZWS ASSEMBLY PER TREE (2) RZWS ASSEMBLY PER PALM
2. INSTALL HUNTER FILTER FABRIC SLEEVE- #RZWS-SLEEVE

15 RZWS NTS



16 REMOTE CONTROL VALVE NTS

PLANS PREPARED BY:
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13191 CROSSROADS PARKWAY NORTH
SUITE 405 INDUSTRY, CA 91746-3497
(562) 908-6200
UNDER THE SUPERVISION OF

JOHN HIDALGO R.L.A. 3551 DATE

REGISTERED LANDSCAPE ARCHITECT
JOHN HIDALGO
No. 3551
Exp. 07-31-23
STATE OF CALIFORNIA

BENCH MARK:
NO. _____ ELEV. _____
DATE ADJ. _____ QUAD. _____
NONE

NO.	REVISIONS DESCRIPTION	APP.	DATE

CITY OF ROLLING HILLS ESTATES

IRRIGATION DETAILS

INTERSECTION CAPACITY IMPROVEMENTS
AT PALOS VERDES DRIVE NORTH AND DAPPLEGRAY SCHOOL ENTRANCE

DRAWN BY: BN
DESIGNED BY: BN
CHECKED BY: JH

SHT. 21 OF 22 SHTS.

PLAN NO. L-7

100% SUBMITTAL - NOT FOR CONSTRUCTION

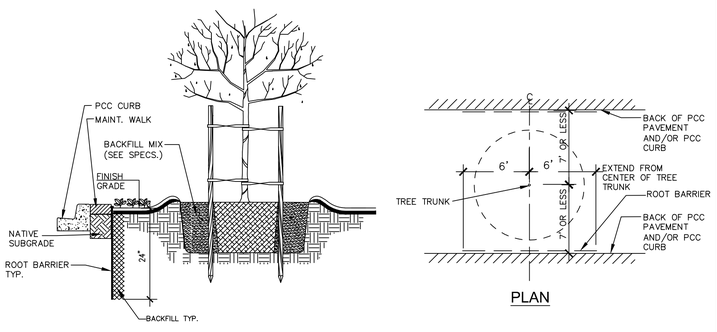
U:\110176 - RHE PVDN@DAPPLEGRAY ELM SCHOOL\900-PS&E\901-Plans\Landscape Dwgs\L-LNSCP DETAILS.dwg Apr 03, 23 - 1:25pm

NOTES

THIS DETAIL IS FOR INSTALLATION OF ROOT BARRIER INSTALLATION. REFER TO TREE INSTALLATION DETAILS FOR TREE INSTALLATION.

ROOT BARRIER NOTES

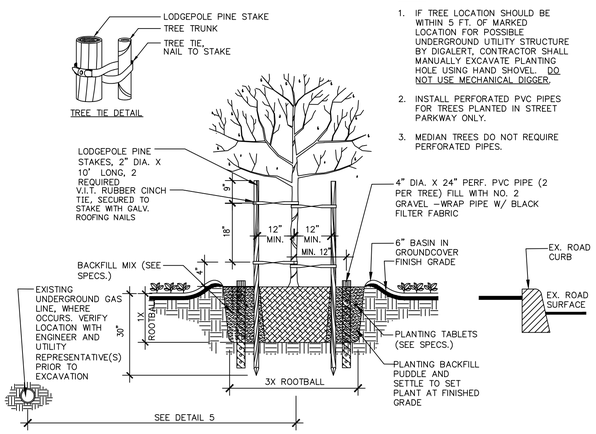
1. TOP OF ROOT CONTROL BARRIER MUST BE AT GRADE.
2. POSITION ROOT CONTROL BARRIER ADJACENT TO STRUCTURE.
3. RAISED ROOT DEFLECTORS MUST BE FACING PLANTED AREA.
4. PROVIDE A MIN. OF 12 FEET OF ROOT BARRIER PER TREE.
5. ROOT BARRIER SHALL BE A MIN. OF 24" BELOW GRADE.
6. ROOT BARRIER SHALL BE MANUFACTURED BY "NDS" OR "DEEP ROOT".



1 ROOT CONTROL BARRIER NTS

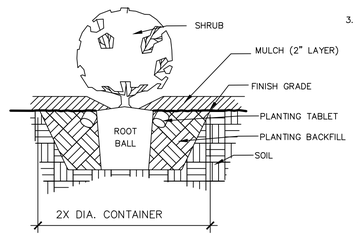
NOTES

1. IF TREE LOCATION SHOULD BE WITHIN 5 FT. OF MARKED LOCATION FOR POSSIBLE UNDERGROUND UTILITY STRUCTURE BY DIGALERT, CONTRACTOR SHALL MANUALLY EXCAVATE PLANTING HOLE USING HAND SHOVEL. DO NOT USE MECHANICAL DIGGER.
2. INSTALL PERFORATED PVC PIPES FOR TREES PLANTED IN STREET PARKWAY ONLY.
3. MEDIAN TREES DO NOT REQUIRE PERFORATED PIPES.



2 TREE PLANTING NTS

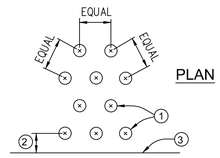
NOTE
LOCATE PLANTS SPACING AS INDICATED ON THE DRAWINGS.



1. LOCATE PLANTS WITH AN EQUAL ON-CENTER SPACING AS INDICATED ON THE DRAWINGS.
2. FULL ON-CENTER SPACING ALONG WALK, PAVING EDGE AND CURB.
3. PAVING OR R/W SHOWING PLANTING AREA LIMIT.

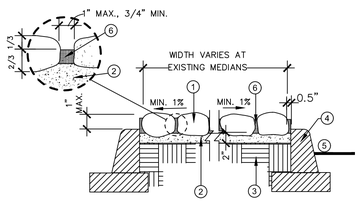
NOTES

1. ALIGN PLANT SPACING ROW LAYOUT PARALLEL TO WALK OR FENCE.
2. DO NOT APPLY PLANTING TABLET TO AGAVE SPECIES.
3. SEE DETAIL 9 FOR SHRUB PLANTING AT TREE UPLIGHT FIXTURE



3 SHRUB & GROUNDCOVER PLANTING NTS

4 NOT USED NTS



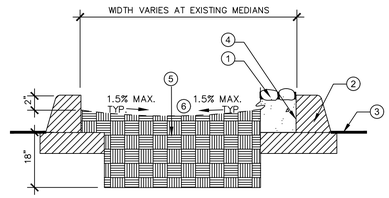
1. ROUND COBBLESTONE, "MISSION COBBLE" FROM SOUTHWEST BOULDER & STONE, SIZE: 4" – 8" DIA. & HT.
   - NO MORE 50% OF ANY ONE SIZE
   - NO BROKEN PIECES ALLOWED
   - PRESS COBBLESTONES INTO CONCRETE BED AND TIGHTLY SPACE TOGETHER. PLACE COBBLESTONES WITH FLAT SIZE UP.

   (877) SWB-ROCK, www.southwestboulder.com
2. 2" LAYER OF CONCRETE BED. SEE NOTE NO. 4.
3. 95% COMPACTED SUBGRADE.
4. PCC CURB PER CIVIL ENG. IMP. PLAN
5. ROADWAY SURFACE
6. MORTAR WITH INTEGRAL COLOR MIX TO MATCH GENERAL COLOR OF COBBLESTONE

NOTES:

1. CONTRACTOR SHALL VERIFY SIZES AND TYPE OF COBBLESTONES WITH CITY ENGINEER PRIOR TO PURCHASING.
2. CONTRACTOR SHALL VERIFY LOCATION OF COBBLESTONE PAVING WITH CITY ENGINEER PRIOR TO CONSTRUCTION.
3. THE CONTRACTOR SHALL CONSTRUCT & SUBMIT AN APPROX. 16 S.F. SAMPLE OF COBBLESTONES PAVING TO ENGINEER FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
4. CONCRETE SHALL BE CLASS 560-E-3250, 4" MAX. SLUMP, CURED @ 28 DAYS. (PEA GRAVEL MIX).
5. WIRE BRUSH ALL JOINTS AFTER INSTALLATION OF THE ROCKS. AFTER CONCRETE HAS SET, CLEAN RESIDUE FROM SURFACES OF ROCKS WITH WATER BLASTING.
6. GAP BETWEEN COBBLESTONES SHALL NOT EXCEED 1" MAX. FILL GAP.

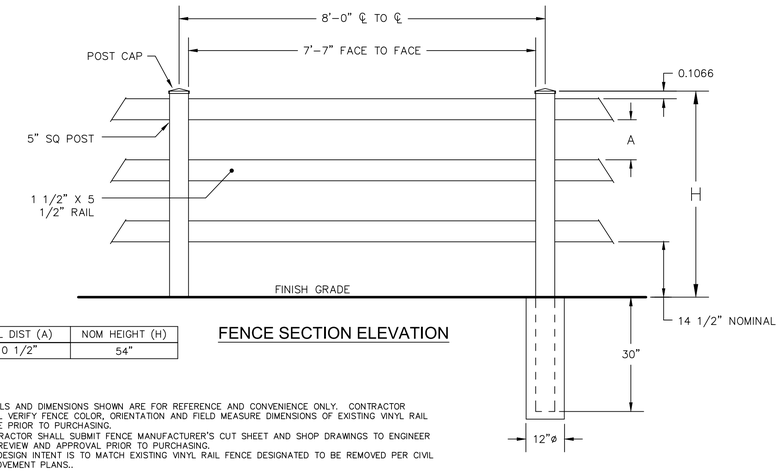
5 COBBLESTONE PAVING NTS



LEGEND

1. COBBLESTONE PAVING WHERE OCCURS
2. PCC CURB PER CIVIL ENG. PLAN
3. FINISH SURFACE OF ROADWAY
4. COLD JOINT
5. EXISTING AND/OR IMPORTED CLASS A/C TOP SOIL
6. FINISH GRADE

6 TYPICAL MEDIAN CROSS SECTION NTS



RAIL DIST (A)	NOM HEIGHT (H)
10 1/2"	54"

NOTES:

1. DETAILS AND DIMENSIONS SHOWN ARE FOR REFERENCE AND CONVENIENCE ONLY. CONTRACTOR SHALL VERIFY FENCE COLOR, ORIENTATION AND FIELD MEASURE DIMENSIONS OF EXISTING VINYL RAIL FENCE PRIOR TO PURCHASING.
2. CONTRACTOR SHALL SUBMIT FENCE MANUFACTURER'S CUT SHEET AND SHOP DRAWINGS TO ENGINEER FOR REVIEW AND APPROVAL PRIOR TO PURCHASING.
3. THE DESIGN INTENT IS TO MATCH EXISTING VINYL RAIL FENCE DESIGNATED TO BE REMOVED PER CIVIL IMPROVEMENT PLANS..

7 PVC VINYL RAIL FENCE NTS

8 NOT USED NTS

REGISTERED LANDSCAPE ARCHITECT
JOHN HIDALGO
No. 3551
Exp. 07-31-23
STATE OF CALIFORNIA

PLANS PREPARED BY:
WILLDAN Engineering | Comprehensive Innovative Trusted
13191 CROSSROADS PARKWAY NORTH
SUITE 405 INDUSTRY, CA 91746-3497
(562) 908-6200
UNDER THE SUPERVISION OF

JOHN HIDALGO R.L.A. 3551 DATE

BENCH MARK:
NO. _____ ELEV. _____
DATE ADJ. _____ QUAD. _____
NONE

NO.	REVISIONS	APP.	DATE

CITY OF ROLLING HILLS ESTATES

LANDSCAPE CONSTRUCTION DETAILS

INTERSECTION CAPACITY IMPROVEMENTS
AT PALOS VERDES DRIVE NORTH AND DAPPLEGRAY SCHOOL ENTRANCE

DRAWN BY: BN	SHT. 22 OF 22 SHTS.	PLAN NO. L-8
DESIGNED BY: BN		
CHECKED BY: JH		

100% SUBMITTAL NOT FOR CONSTRUCTION

U:\110176 - RHE PVDN@DAPPLEGRAY ELM SCHOOL\900-PS&E\901-Plans\Landscape Dwgs\L-LNSCP DETAILS.dwg Apr 03, 23 - 1:25pm

DRAFT MITIGATION MONITORING AND REPORTING PROGRAM
Transportation Enhancement and ADA Improvements for Dapplegray School at Palos Verdes Drive North

SCH No. 2023040182

LEAD AGENCY:

City of Rolling Hills Estates

4045 Palos Verdes Drive North
Rolling Hills Estates, Ca 90274
Telephone 310.377.1577 • Fax 310.377.4468
www.RHE.city

David Wahba
Public Works Director
(310) 377-1577 ext. 103

Prepared by:

WILLDAN ENGINEERING

13191 Crossroads Parkway North, Suite 405
Industry, CA 91746
Contact: Mr. Salvador Lopez
slopez@willdan.com

May 2023

MITIGATION MONITORING AND REPORTING PROGRAM

Transportation Enhancement and ADA Improvements for Dapplegray School at Palos Verdes Drive North

This Mitigation Monitoring and Reporting Program (MMRP) has been prepared for the Transportation Enhancement and ADA Improvements for Dapplegray School at Palos Verdes Drive North Project in compliance with Section 21081.6 of the Public Resources Code and Section 15097 of the CEQA Guidelines, which is required for all projects where an Environmental Impact Report (EIR) or Mitigated Negative Declaration (MND) has been prepared. Section 21081.6 of the Public Resources Code states: "…the [lead] agency shall adopt a reporting or monitoring program from the changes made to the project or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment… [and the program] shall be designed to ensure compliance during project implementation." The primary purpose of this MMRP is to ensure that the mitigation measures identified in the MND are implemented, thereby minimizing identified environmental effects. The City of Rolling Hills Estates is the Lead Agency for the proposed project.

The MMRP for the proposed project will be in place through all phases of project implementation. The Public Works Department shall be responsible for managing and assigning the MMRP activities to its staff, other City departments, consultants, and/or contractors. The Public Works Department will also ensure that mitigation monitoring is documented through reports and that deficiencies are promptly corrected. The designated environmental monitor (e.g., Public Works Director, building inspector, project contractor, certified professionals, etc., depending on the provisions specified below) will track and document compliance with mitigation measures, note any problems that may result, and take appropriate action to remedy problems. The MMRP lists mitigation measures according to the same numbering system contained in the MND sections. Each mitigation measure is categorized by topic, with an accompanying discussion of the following:

- The implementation phase of the project during which the mitigation measure should be monitored (i.e., Operation, Construction, or Pre-construction activities);
- The responsible enforcement authority for monitoring implementation of mitigation measure(s) (i.e., Public Works Director, City building inspector, certified professional, etc.); and
- The reporting procedure used to verify compliance (i.e., issuance of permit, report on monitoring activities, etc.).

MITIGATION MONITORING AND REPORTING PROGRAM

Transportation Enhancement and ADA Improvements for Dapplegray School at Palos Verdes Drive North

Mitigation Measure	Implementation Period	Implementation and Monitoring Responsibility	Reporting Procedure	Comments
AES-1: To reduce the aesthetic and glare impacts of the project's retaining walls, the City shall incorporate one or more of the following measures into the wall design for all retaining walls that face PVDN, except for Wall No. 4 (measures may be combined to accomplish the effect of adding varied form, color, and shape to the wall faces). All finished concrete shall be sealed with an anti-graffiti coating in addition to manufacturer-recommended sealers. This list of measures is not intended to limit potential design solutions, and other measures may be selected by the City provided that they are proven to accomplish the goals of aesthetic improvement and glare reduction. A. Construct walls using in-form molds to provide surface texture simulating rock outcrops, laid brick, stacked stone, or other pattern that provides substantial relief to the finished surface. B. Apply vertical concrete overlay to the exposed finished wall surfaces to provide surface texture as described in (A) above. C. Apply natural or simulated stone overlay to the exposed finished wall surfaces to provide surface texture as described in (A) above. D. Within six months of project completion, the City shall commission a mural project to decorate all exposed wall faces. The mural project shall be scheduled for completion within one year of commissioning. E. Incorporate planting pockets along all retaining walls that face PVDN and accompanying tamper-resistant irrigation devices (emitters, bubblers, etc.) into the project design, and specify appropriate clinging vine plant material, including but not limited to creeping fig (*Ficus pumila*), catclaw vine (*Macfadyena unguis-cati*), or Boston ivy (*Parthenocissus tricuspidata*). Planting pockets shall be spaced according to the recommendation of a registered landscape architect or master gardener to ensure a minimum of 80% wall coverage at plant maturity.	Bid Preparation Plan Check Construction	Public Works Director	The Public Works Director or designee shall determine compliance with this measure.	

MITIGATION MONITORING AND REPORTING PROGRAM

Transportation Enhancement and ADA Improvements for Dapplegray School at Palos Verdes Drive North

Mitigation Measure	Implementation Period	Implementation and Monitoring Responsibility	Reporting Procedure	Comments
AQ-1 Asphalt Odor Suppression. Asphalt odor-suppression additives shall be required for all on-site hot-mix asphalt applications. Project engineering specifications shall incorporate additive specifications. This requirement shall be placed in all engineering notes sections on project plans.	Bid Preparation Plan Check Construction	Public Works Director	The Public Works Director or designee shall determine compliance with this measure.	This measure reduces odors from asphalt application and curing.
BIO-1: Migratory Birds/MBTA Compliance. All construction activities shall comply with the federal Migratory Bird Treaty Act of 1918 (MBTA) and California Fish and Game Code Sections 3503, 3511 and 3513. The MBTA governs the taking and killing of migratory birds, their eggs, parts, and nests and prohibits the take of any migratory bird, their eggs, parts, and nests. Compliance with the MBTA shall be accomplished by completing the following: A. Vegetation removal should optimally be conducted between September 1 and January 31. B. If vegetation removal and construction activities near tree canopy (or shrub cover that will be retained) will take place inside the peak nesting season (between February 1 and August 31), the City shall engage a qualified biologist to (1) perform a pre-construction survey to identify any active nesting locations within 72 hours before vegetation removal and construction activities begin and (2) to monitor construction activities if nests are discovered (Biological Monitor). C. If the biologist does not find any active nests during the pre-construction survey, construction work may proceed, and no monitoring shall be required. The biologist conducting the survey shall document a negative survey (no nests observed) with a report indicating that no impacts to active avian nests will occur.	Pre-construction	Public Works Director	The designated biologist shall submit a pre-construction survey report to the Public Works Director within 14 days of construction start date. Measures BIO-1 C-F explain additional reporting procedures.	

MITIGATION MONITORING AND REPORTING PROGRAM

Transportation Enhancement and ADA Improvements for Dapplegray School at Palos Verdes Drive North

Mitigation Measure	Implementation Period	Implementation and Monitoring Responsibility	Reporting Procedure	Comments
D. If the biologist finds an active nest within the pre-construction survey area, the biologist shall map its location on an aerial photograph and shall determine whether the nest may be impacted. If so, the biologist shall delineate an appropriate buffer zone around the nest on the map and in the field. The size of the buffer shall be determined by the biologist and shall be based on the nesting species, its sensitivity to disturbance, expected types of disturbance, and location in relation to the construction activities. These buffers are typically 300 feet from the nests of non-listed species and 500 feet from the nests of raptors and listed species, and are subject to CDFW discretion. E. Only construction activities that have been approved by the Biological Monitor, if any, shall take place within the buffer zone until the nest is vacated. The Biological Monitor shall supervise construction activities near active nests to ensure that no inadvertent impacts on these nests occur. F. Results of the pre-construction survey and any subsequent monitoring reports shall be provided to the City. The monitoring report shall summarize the results of the nest monitoring, describe construction restrictions currently in place, and confirm that construction activities can proceed within the buffer area without jeopardizing the survival of young birds.				
BIO-2: Monarch Butterfly Survey. If vegetation removal will occur inside the peak overwintering season (between September 16th and March 14th), the City shall engage a qualified biologist to conduct a pre-construction survey within 72 hours prior to construction activities to ensure no overwintering populations of monarch are located within the proposed project footprint. A. If the biologist does not find an overwintering population, the construction work may proceed as specified in Mitigation Measure BIO-1 above. The biologist conducting the clearance survey shall document a negative survey with a report indicating that no impacts to monarch overwintering populations shall occur. B. If the biologist observes an overwintering population of monarchs within the project footprint, the biologist shall notify the City, and no construction activities shall proceed until butterflies have vacated the site.	Pre-construction if construction set to begin between February 1 and August 31.	Public Works Director	The designated biologist shall submit indicated reports to the Public Works Director as specified in the mitigation measure. No long-term overwintering habitat management plan is required if no monarchs are found roosting/overwintering in the project footprint.	

MITIGATION MONITORING AND REPORTING PROGRAM

Transportation Enhancement and ADA Improvements for Dapplegray School at Palos Verdes Drive North

Mitigation Measure	Implementation Period	Implementation and Monitoring Responsibility	Reporting Procedure	Comments
C. The biologist shall prepare a long-term Monarch Butterfly Overwintering Habitat Management Plan to restore overwintering habitat in the project vicinity. The City shall begin plan implementation within one year of project completion.				
BIO-3: LSA Agreement Notification and Compliance: Prior to preparing construction bid documents, the City shall notify the California Department of Fish and Wildlife Lake and Streambed Alteration Program about the project using the process outlined on the LSA webpage of the CDFW website. If the CDFW requires an Agreement, including measures to avoid and/or repair damage to the ephemeral streambed, the City shall implement those measures as directed. CDFW mitigation measures shall be included in the construction contract bid documents. If the CDFW does not require an Agreement, no further action is required.	Pre-bid preparation Bid Preparation Plan Check Construction	Public Works Director	Reporting procedure shall be as described in mitigation text.	
CUL-1 Pre-construction Briefing. Prior to the commencement of grading or demolition of subsurface structures, a professional archaeologist who meets U.S. Secretary of the Interior's Professional Qualifications and Standards, shall conduct a brief archaeological and paleontological informational session for construction personnel. The training session may consist of an in-person meeting, such as a tailgate training, accompanied by a written handout describing: (1) how to identify archaeological and paleontological resources that may be encountered during earth-moving activities and (2) the procedures to be followed in such an event, including contact information for the appropriate entities if archaeological or paleontological resources are discovered.	Construction bid documents Pre-construction Site Preparation Construction	Public Works Director	Construction supervisor shall notify the Public Works Director after stopping work in the vicinity of the find, place a temporary barrier around the area and caution workers to avoid the area of the find.	See also Mitigation Measures TCR-1 and TCR-2 below.

MITIGATION MONITORING AND REPORTING PROGRAM

Transportation Enhancement and ADA Improvements for Dapplegray School at Palos Verdes Drive North

Mitigation Measure	Implementation Period	Implementation and Monitoring Responsibility	Reporting Procedure	Comments
CUL-2: Treatment and Evaluation of Discovered Resources: If archaeological resources are unearthed during ground-disturbing activities, the ground-disturbing activities shall be halted or diverted away from the vicinity of the find so that the find can be evaluated. A buffer area of at least 50 feet shall be established around the find, where construction activities will not be allowed to continue until a qualified archaeologist or paleontologist has examined the newly discovered artifact(s) and has evaluated the area of the find. Work shall be allowed to continue outside the buffer area. If the archaeologist identifies the find as a tribal cultural resource or suspects it to be a tribal cultural resource, the City shall contact the Native American Heritage Commission (NAHC) to report the discovery and shall contact local Native American tribal representatives as directed by the NAHC. Should the newly discovered artifact(s) be determined to be a tribal cultural resource, Native American construction monitoring will be initiated. The City shall coordinate with the archaeologist and tribal representative(s) to develop an appropriate treatment plan for the resources.	Pre-construction Site Preparation Construction	Public Works Director	Construction supervisor shall notify the Public Works Director after stopping work in the vicinity of the find, place a temporary barrier around the area and caution workers to avoid the area of the find.	See also Mitigation Measures TCR-1 and TCR-2 below.
CUL-3: Treatment and Evaluation of Human Remains. As required by California Public Resources Health and Safety Code Section §§ 7050.5-7055, if human remains are encountered during project construction, work shall stop in the vicinity of the find. The City shall immediately notify the County Coroner who will determine whether the remains are of recent human origin or of older Native American lineage. If the latter, the City shall notify the Native American Heritage Commission (NAHC) to report the discovery and shall subsequently notify the most likely descendant (MLD) as directed by the NAHC. The MLD is required to make recommendations for disposition of the remains within 24 hours of his or her notification by the NAHC. These recommendations may include scientific removal and nondestructive analysis of human remains and items associated with Native American burials, on- or off-site burial, and ritual ceremonies on- or off-site.	Pre-construction Site Preparation Construction	Public Works Director	Construction supervisor shall notify the Public Works Director after stopping work in the vicinity of the find, place a temporary barrier around the area and caution workers to avoid the area of the find.	

MITIGATION MONITORING AND REPORTING PROGRAM

Transportation Enhancement and ADA Improvements for Dapplegray School at Palos Verdes Drive North

Mitigation Measure	Implementation Period	Implementation and Monitoring Responsibility	Reporting Procedure	Comments
GEO-1: Paleontological Resource Protection/Recovery/Curation: Before project excavation begins, the City shall contract with a qualified professional paleontologist to prepare a Paleontological Resource Impact Management Plan (PRIMP), and to implement that plan. At a minimum, the plan shall abide by the Society of Vertebrate Paleontologists (SVP; https://vertpaleo.org/) Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources, including monitoring excavation of undisturbed sediment, wet-screening of sand samples, identification of any significant fossils encountered, reporting of the project monitoring and findings, and curation of any significant fossils in a permanent scientific collection.	Construction bid documents Pre-construction Excavation	Public Works Director	Construction supervisor shall notify the Public Works Director after stopping work in the vicinity of the find, place a temporary barrier around the area and caution workers to avoid the area of the find.	The Altamira shale formation underlying the project footprint is known to contain significant marine fossil deposits.
TCR-1: If suspect resources with any potential cultural value to a California Native American Tribe are found during ground-disturbing activities into native soils, the City shall contact and retain a Native American monitor, procured by the Gabrieleno/Tongva San Gabriel Band of Mission Indians or consulting Tribe under AB52. During excavation, the Native American monitor shall have the authority to halt any activities adversely impacting tribal resources. If human remains are uncovered, the Los Angeles County Coroner, Native American Heritage Commission, local Native American representatives, and archaeological monitor shall determine the nature of further studies, as warranted in accordance with Public Resource Code 5097.98.	Site Preparation Construction	Public Works Director	Follow steps in mitigation measure and maintain records in project file.	
TCR-2: The Lead Agency shall, in good faith, consult with the Gabrieleno/Tongva San Gabriel Band of Mission Indians on the disposition and treatment of any Tribal Cultural Resource encountered during all ground disturbing activities.	Site Preparation Construction	Public Works Director	Follow steps in mitigation measure and maintain records in project file.	

DEPARTMENT OF TRANSPORTATION
DISTRICT 7- OFFICE OF REGIONAL PLANNING
100 S. MAIN STREET, SUITE 100
LOS ANGELES, CA 90012
PHONE (213) 897-0067
FAX (213) 897-1337
TTY 711
www.dot.ca.gov

Making Conservation a California Way of Life.

May 2, 2023

David Wahba
City of Rolling Hills Estates, Public Works Director
4045 Palos Verdes Dr. North
Rolling Hills Estates, CA 90274

RE: Transportation Enhancements & ADA Improvements for Dapplegray School at Palos Verdes Drive North – Mitigated Negative Declaration (MND)
SCH# 2023040182
GTS# 07-LA-2023-04206
Vic. LA Multiple

Dear David Wahba,

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the above referenced project. The Project proposes to widen a segment of Palos Verdes Drive North (PVDN) to include two additional through lanes eastbound and westbound. PVDN is a primary roadway with a segment intersecting London Lane/Dapplegray School Driveway which connects to the frontage of Dapplegray Elementary School. The proposal also includes:

- Replacing 8-inch traffic signal heads with 12-inch heads
- Replacing a temporary signal pole with a custom steel pole according to city specifications
- Adding illuminated street name signs
- Upgrading ADA access ramps
- Removing and replacing two bus shelters according to city specifications
- Constructing six cast-in-place concrete retaining walls of various heights
- Removing +/- 39 non-native trees to accommodate widening, new medians, and retaining wall construction
- Re-aligning a segment of the bridle trail after retaining walls are constructed
- Constructing and planting a new raised median with trees, bunchgrasses, and groundcover.

After reviewing the MND, Caltrans has the following comments:

The proposed project is currently designed in a way that prioritizes cars and trucks while degrading the safety and comfort for pedestrians and students who need to walk, bike, or take the bus in the project area. Caltrans does not concur that widening the roadway is the safest solution for an intersection redesign.

Widening the road and increasing curb radii will result in increased vehicle speeds, turning speeds, as well as pedestrian crossing distances. Research shows that vehicle speed is correlated with crash severity and pedestrian injury in a collision. The project also removes two median islands, which are currently functioning as a pedestrian refuge island, which is a highly desirable safety improvement for any transformative transportation safety project. By removing the center medians with push buttons, pedestrians will be required to cross greater distances in a single phase, leaving people who are not able to cross quickly enough without a protective area to wait for a second crossing phase. It is advised that the design consider these safety concerns for any interactions between students, bicyclists, and drivers.

Caltrans recommends preserving the physically and visually narrow roadway to maintain slower vehicle speeds. In addition, maintaining smaller curb radii slows vehicles during turning movements, decreases crash severity, and allows for better pedestrian ramp alignment. Requiring vehicles to slowdown when making a turn also ensures pedestrians and bicyclists are more visible to drivers. The intersection can be further enhanced by upgrading existing crosswalks with continental crosswalk striping for better visibility, updating bike lanes with green paint, and improving bus shelters, signal poles, and ADA access in their current orientation. Improving connections from Dapplegray Elementary School to existing active transportation and transit infrastructure can be strengthened with robust signage near school crosswalks, wayfinding, and human scale amenities. Without reconfiguring other existing geometrics, Caltrans would recommend upgrading the Class 2 Bikeway to a Class 4 to further improve multi-modal transportation options through the area.

Additionally, as proposed the project induces demand for additional Vehicle Miles Traveled (VMT) by increasing capacity for vehicles, which conflicts with California's established goals and mandates for Greenhouse Gas (GHG) reduction. Once roadways are expanded, induced demand has shown that traffic volumes will rise again to similar levels of congestion and potentially create significant VMT impacts.

Finally, any transportation of heavy construction equipment and/or materials which requires use of oversized-transport vehicles on State highways will need a Caltrans transportation permit. We recommend large size truck trips be limited to off-peak commute periods.

If you have any questions, please contact project coordinator Anthony Higgins, at anthony.higgins@dot.ca.gov and refer to GTS# 07-LA-2023-04206.

Sincerely,

Miya Edmonson

MIYA EDMONSON
LDR Branch Chief

cc: State Clearinghouse

CITY OF ROLLING HILLS ESTATES

RESPONSES TO COMMENTS
REGARDING THE ENVIRONMENTAL CHECKLIST FORM AND INITIAL STUDY FOR
TRANSPORTATION ENHANCEMENTS AND ADA IMPROVEMENTS FOR DAPPLEGRAY SCHOOL
AT PALOS VERDES DRIVE NORTH

The following comments were received on 5/2/23 from Ms. Miya Edmonson, LDR Branch Chief, California Department of Transportation (Caltrans), District 7:

Comment: Edmonson – 1

The proposed project is currently designed in a way that prioritizes cars and trucks while degrading the safety and comfort for pedestrians and students who need to walk, bike, or take the bus in the project area. Caltrans does not concur that widening the roadway is the safest solution for an intersection redesign.

Response: Comment noted. As explained in the Initial Study (p. 2), this long-anticipated project implements a mitigation measure adopted for the Peninsula Village Overlay District. That project was approved when the City used LOS criteria and associated traffic delays for determining transportation impacts. The Overlay District was projected to increase the number of vehicles on Palos Verdes Drive North (PVDN), causing congestion at the PVDN/London Lane intersection, as well as potentially increasing the number of rear-end collisions.

In addition to accommodating projected through-traffic, the widening in the immediate vicinity of the intersection is designed in part to *increase* safety for vehicles – and their passengers - entering and exiting London Lane from PVDN. The minimal widening, by creating deceleration and acceleration lanes along approximately 1,000 linear feet of the Dapplegray School frontage, accommodates decelerating and stopped vehicles (as well as accelerating vehicles), allowing them to move out of the way of through-traffic, reducing the potential for rear-end collisions and providing additional storage space in the intersection. Additionally, there are no existing or proposed sidewalks on either side of the widening of PVDN. The only use for the sidewalk is to allow pedestrians who use the bus to get across the street.

Comment: Edmonson – 2

Widening the road and increasing curb radii will result in increased vehicle speeds, turning speeds, as well as pedestrian crossing distances. Research shows that vehicle speed is correlated with crash severity and pedestrian injury in a collision. The project also removes two median islands, which are currently functioning as a pedestrian refuge island, which is a highly desirable safety improvement for any transformative transportation safety project. By removing the center medians with push buttons, pedestrians will be required to cross greater distances in a single phase, leaving people who are not able to cross quickly enough without a protective area to wait for a second crossing phase. It is advised that the design consider these safety concerns for any interactions between students, bicyclists, and drivers.

Response: Comment and request noted. Pedestrians, cyclists, and equestrians will be accommodated by new sidewalks, a marked Class II bicycle route, and a re-aligned equestrian path along PVDN. The City

acknowledges that removing the raised median at the crosswalk on the west side of the intersection (see Exhibit A, Sheet 14, Signing and Striping Plan) eliminates a perceived "safety island;" however, the cross-section's geometry and available right-of-way required this design solution. The existing median island was only 4' in width which is not wide enough to function as a refuge island. As can be seen on the retaining wall exhibits, widening this street segment made it necessary to cut back existing fill slopes. To create sufficient space for a safety median, additional excavation would be needed, resulting in taller, more costly, and aesthetically unappealing retaining walls. In part to address aesthetic concerns, the City has directed that the retaining walls' heights be minimized. In order to address pedestrian concerns, the City will monitor signal timing and adjust it as needed.

Comment: Edmonson – 3

Caltrans recommends preserving the physically and visually narrow roadway to maintain slower vehicle speeds. In addition, maintaining smaller curb radii slows vehicles during turning movements, decreases crash severity, and allows for better pedestrian ramp alignment. Requiring vehicles to slowdown when making a turn also ensures pedestrians and bicyclists are more visible to drivers. The intersection can be further enhanced by upgrading existing crosswalks with continental crosswalk striping for better visibility, updating bike lanes with green paint, and improving bus shelters, signal poles, and ADA access in their current orientation. Improving connections from Dapplegray Elementary School to existing active transportation and transit infrastructure can be strengthened with robust signage near school crosswalks, wayfinding, and human scale amenities. Without reconfiguring other existing geometrics, Caltrans would recommend upgrading the Class 2 Bikeway to a Class 4 to further improve multi-modal transportation options through the area.

Response: Comment and request noted. See response to Comment 1 regarding the project's initiation as a mitigation measure for the Peninsula Village Overlay District. The intersection will be signalized, which will in itself reduce vehicle speeds. As described in the Initial Study, the project includes replacing older bus shelters and signage with new ones that correspond to the City's sophisticated design standards. The City of Rolling Hills Estates takes pride in its public amenities, including human-scale ranch-style fixtures, equestrian trails, wayfinding features, etc.

With respect to upgrading the Bikeway to a Class 4 bikeway, the project budget does not allow for this additional feature; moreover, the widening is limited to the indicated road segment. Changing the Class II bike route along PVDN to a Class IV within the project footprint would not likely affect the existing route's utility or safety.

The City will consider adding continental striping using highly-reflective paint to the new crosswalk. Note also that the crosswalk serves only bus passengers from the eastbound direction (south side) of PVDN, and that there is no City-maintained sidewalk or pedestrian path on that side.

Comment: Edmonson – 4

Additionally, as proposed the project induces demand for additional Vehicle Miles Traveled (VMT) by increasing capacity for vehicles, which conflicts with California's established goals and mandates for Greenhouse Gas (GHG) reduction. Once roadways are expanded, induced demand has shown that traffic volumes will rise again to similar levels of congestion and potentially create significant VMT impacts.

Response: Comment noted. See response to Comment 1. Additionally, the City believes that an approximately 1,000' change to the PVDN geometry will not appreciably change VMT. No new through-lanes would be added with the project; rather, as explained above, the widening creates deceleration and acceleration lanes specifically for vehicles entering and exiting the Dapplegray school property. The project does not increase capacity for PVDN since it returns back to the existing two-lane configuration East and West of the intersection. Since this doesn't connect any new corridors it is not allowing increased capacity to PVDN. It simply allows more storage room for vehicles to mitigate congestion within the intersection.

Comment: Edmonson – 5

Finally, any transportation of heavy construction equipment and/or materials which requires use of oversized-transport vehicles on State highways will need a Caltrans transportation permit. We recommend large size truck trips be limited to off-peak commute periods.

Response: Comment noted. Project construction contractors will obtain necessary permits.