

SITE DEVELOPMENT CIVIL INFRASTRUCTURE DRAWINGS & PLANS

FOR

HYUNDAI GENESIS DELRAY

CITY OF DELRAY BEACH
PALM BEACH COUNTY, FLORIDA



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SITE LOCATION
MAP
NTS

LEGAL DESCRIPTION

ALL OF LOTS 16 AND 17, TOGETHER WITH THE EAST 20.00 FEET OF THAT PORTION OF THE OLD DIXIE HIGHWAY ROAD RIGHT-OF-WAY LYING WEST OF AND ADJACENT TO LOTS 16 AND 17 CONTAINED IN RESOLUTION RECORDED IN O.R. BOOK 32712, PAGE 1464, OF DELRAY BEACH ESTATES ACCORDING TO THE PLAT THEREOF RECORDED IN PLAT BOOK 21, PAGE 13, OF THE PUBLIC RECORDS OF PALM BEACH COUNTY, FLORIDA.

AND

ALL OF LOT 15 AND THAT PART OF LOT 14, DELRAY BEACH ESTATES, MORE PARTICULARLY DESCRIBED AS FOLLOW: BEGINNING AT THE NORTHWEST CORNER OF SAID LOT 14 AND RUN SOUTHERLY ALONG THE WESTERLY LINE OF SAID LOT 14, A DISTANCE OF 20.25 FEET TO A POINT; THENCE EASTERLY ALONG A LINE PARALLEL TO AND 20 FEET SOUTHERLY, MEASURED AT RIGHT ANGLES FROM THE NORTHLINE OF LOT 14 A DISTANCE OF 186 FEET TO A POINT; THENCE NORTHERLY AT RIGHT ANGLES TO THE PROCEEDING COURSE A DISTANCE OF 20 FEET TO A POINT IN THE NORTH LINE OF LOT 14; THENCE WESTERLY ALONG THE NORTH LINE OF LOT 14, A DISTANCE OF 189.2 FEET, MORE OR LESS, TO THE POINT OF THE BEGINNING, TOGETHER WITH THE EAST 20.00 FEET OF THAT PORTION OF THE OLD DIXIE HIGHWAY ROAD RIGHT-OF-WAY LYING WEST OF AND ADJACENT TO THE NORTH 20.00 FEET OF LOT 14 AND ALL OF LOT 15 CONTAINED IN RESOLUTION RECORDED IN O.R. BOOK 32712, PAGE 1464, OF DELRAY BEACH ESTATES, ACCORDING TO THE PLAT THEREOF, RECORDED IN PLAT BOOK 21, PAGE 13, OF THE PUBLIC RECORDS OF PALM BEACH COUNTY, FLORIDA.

ELEVATIONS SHOWN, ALONG WITH THE SITE
BENCHMARKS ARE BASED ON A PALM BEACH
COUNTY BRASS DISK STAMPED 'DOGE',
ELEVATION = 15.80' (NAVD 88).

CREECH
CONSULTING, INC.
CIVILIZATION ENGINEERED
PO BOX 327, STUART, FLORIDA 34994 (772) 485-2140

BOARD OF PROFESSIONAL ENGINEERS, CERTIFICATE OF AUTHORIZATION NUMBER 5159
PROFESSIONAL SURVEYORS AND MAPPERS, AMENDED CERTIFICATE NO. 15-0006705

Richard T. Creech
FL P.E. No. 38592

SHEET **C 0**

- BOUNDARY AND TOPOGRAPHIC SURVEY WAS PROVIDED BY CRAIG WATSON AND ASSOCIATES, LLC. DATED 2025-04-07, PROJECT NUMBER 22096.
2. ALL WORK AND MATERIALS SHALL COMPLY WITH ALL CITY OF DELRAY BEACH REGULATIONS AND CODES AND O.S.H.A. STANDARDS.
3. ALL UNDESIRABLE AREAS DISTURBED BY GRADING OPERATION SHALL RECEIVE 4 INCHES OF TOPSOIL. CONTRACTOR SHALL APPLY STABILIZATION FABRIC TO ALL SLOPES 1V:3H OR STEEPER. CONTRACTOR SHALL GRASS DISTURBED AREAS IN ACCORDANCE WITH CITY SPECIFICATIONS UNTIL A HEALTHY STAND OF GRASS IS OBTAINED.
4. ALL ISLANDS WITH CURB & GUTTER SHALL BE LANDSCAPED.
5. ALL DIMENSIONS AND RADII ARE TO THE FACE OF CURB UNLESS OTHERWISE NOTED.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RELOCATIONS, (UNLESS OTHERWISE NOTED ON PLANS) INCLUDING BUT NOT LIMITED TO, ALL UTILITIES, STORM DRAINAGE, SIGNS, TRAFFIC SIGNALS & POLES, ETC., AS REQUIRED. ALL WORK SHALL BE IN ACCORDANCE WITH GOVERNING AUTHORITIES SPECIFICATIONS AND SHALL BE APPROVED BY SUCH. ALL COST SHALL BE INCLUDED IN BASE BID.
7. REFER TO ARCHITECTURAL PLANS FOR SITE LIGHTING AND ELECTRICAL PLANS.
8. ALL SIDEWALKS AND ADA ACCESSIBLE AREAS SHALL HAVE A MAXIMUM RUNNING SLOPE OF 1V:20H & A MAXIMUM CROSS SLOPE OF 1V:50H.
9. ALL CURB RAMPs TO HAVE DETECTABLE WARNINGS & BE CONSTRUCTED PER LATEST EDITION OF FDOT STANDARD PLANS FOR ROAD CONSTRUCTION, INDEX 522-002. FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, SECTION 527 & PER ADA REQUIREMENTS.
10. ALL STRIPING TO BE HIGH SLIP-RESISTANT FINISH TO PREVENT SLIPPING IN WET & DRY CONDITIONS.
11. ALL STRIPING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF FDOT STANDARD PLANS FOR ROAD CONSTRUCTION, INDEX 711-001. FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION SECTION 711 "THERMO PLASTIC PAVEMENT MARKINGS". CITY OF DELRAY BEACH REQUIREMENTS. INSTALL RETRO-REFLECTIVE PAVEMENT MARKINGS (RPMs).
12. ALL STRIPING SHALL BE INSTALLED AFTER NEW PAVEMENT.
13. ALL PROHIBITED EXOTIC SPECIES SHALL BE REMOVED AND ALL REQUIRED LANDSCAPING SHALL BE INSTALLED PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
14. DURING CONSTRUCTION ACTIVITIES, EXIST. NATIVE VEGETATION TO BE PRESERVED (IF ANY) SHALL BE RETAINED TO ACT AS BUFFERS BETWEEN ADJACENT LAND USES, AND TO MINIMIZE NUISANCE DUST, NOISE AND AIR POLLUTION. BARRICADES SHALL BE USED ON SITE TO PRESERVE THE VEGETATION TO BE USED FOR THIS PURPOSE.
15. ALL SIGNS WILL BE REVIEWED FOR COMPLIANCE WITH THE APPLICABLE REGULATIONS AT THE TIME THE SIGN PERMIT IS ISSUED.
16. ALL BUILDING, PARKING AND ACCESS AREAS SHALL DOCUMENT COMPLIANCE WITH THE REQUIREMENTS OF THE AMERICAN DISABILITIES ACT PRIOR TO THE ISSUANCE OF A BUILDING PERMIT.
17. NO LAND CLEARING IS AUTHORIZED PRIOR TO THE MANDATORY PRE-CONSTRUCTION MEETING FOR THE PROJECT. PROPERTY CORNERS AND VEGETATION AREAS SHALL BE LOCATED BY A LICENSED LAND SURVEYOR AND CLEARLY MARKED IN THE FIELD PRIOR TO THE PRE-CONSTRUCTION MEETING. AUTHORIZATION FOR CLEARING TO INSTALL EROSION CONTROL DEVICES AND PRESERVE BARRICADES WILL BE GRANTED AT THE PRE-CONSTRUCTION MEETING. NO ADDITIONAL LAND CLEARING SHALL COMMENCE UNTIL A SATISFACTORY INSPECTION OF THE REQUIRED CONTROL STRUCTURES AND BARRICADES HAS BEEN OBTAINED. AUTHORIZATION FOR THE RELOCATION OF GOPHER TORTOISES WITHIN THE DEVELOPMENT.



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BENCHMARKS ARE BASED ON A PALM BEACH
COUNTY BRASS DISK STAMPED 'DOGE',
ELEVATION = 15.80' (NAVD 88).

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BOARD OF PROFESSIONAL ENGINEERS, CERTIFICATE OF AUTHORIZATION NUMBER 5139
PROFESSIONAL SURVEYORS AND MAPPERS AMENDED CERTIFICATE NO. LB-0006705

[illegible]

DATE	BY	REVISIONS
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SEAL

PROJECT NO. 23-022-001

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Z:\CES\Projects\2024\2024-003-003-Hyundai Genesis Delray Beach\CAD\1- Plans\101 HDRZ CONTROL.dwg C2a WB-67.dwg May 28, 2025 3:45pm

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20' WIDE ROAD R.O.W ABANDONED
BY RESOLUTION NO. 148-19
AND EASEMENT AGREEMENT
O.R. BOOK 32712, PAGE 1464
(EXCEPTION #11)

20' WIDE EASEMENT AGREEMENT
O.R. BOOK 32712, PAGE 1353
(EXCEPTION #10)

FLORIDA EAST COAST RAILWAY CO.

CENTERLINE (100' R/W) AS PER RIGHT OF WAY & TRACK MAP
(MILE POST 314 - 316)

WEST R/W LINE OLD DIXIE HIGHWAY AND
THE EAST R/W LINE FL. EAST COAST RAILWAY

22' ASPHALT
PAVEMENT

OLD DIXIE HIGHWAY
PLATTED AS DIXIE HIGHWAY
PLATTED AS DIXIE HIGHWAY
PLATTED AS DIXIE HIGHWAY

CENTERLINE - 80' WIDE R/W AS PER DELRAY BEACH ESTATES PLAT BOOK 21, PAGE 13

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HYUNDAI - GENESIS DELRAY BUILDING

(SEE ARCHITECT PLANS FOR DETAILS)

3-STORY

FFE: 15.0

LOTS 15, 16 & 17

DELRAY BEACH ESTATES

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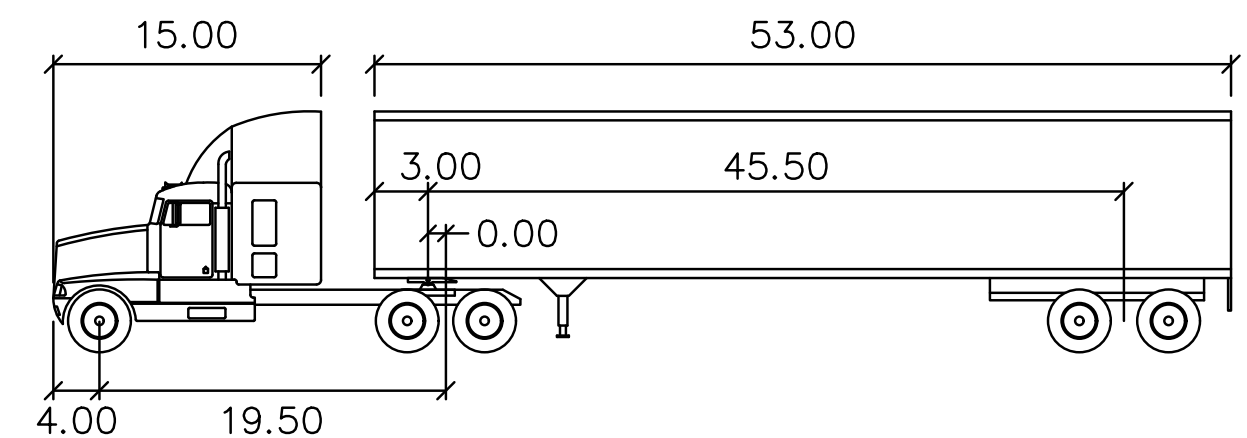
PLAT BOOK 21, PAGE 13

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PLAT BOOK 21, PAGE 13

PLAT BOOK 21, PAGE 13



WB-67

Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 28.4
Tractor Track	: 8.00	Articulating Angle	: 75.0
Trailer Track	: 8.50		

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ELEVATION = 15.80' (NAVD 88).

Always call 811 two full business days before you dig



HYUNDAI GENESIS DELRAY

2612 and 2650 N FEDERAL HWY

WB-67 SEMI TRUCK MOVEMENTS

DELRAY BEACH

FLORIDA

DRAWN BY: JAC

CHECKED BY: RTC / RICKETTS

LATITUDE: 26°29'22.96"N

LONGITUDE: 80° 3'53.74"W

HORIZ. SCALE: 1" = 30'

VERT. SCALE: 1" = 30'

SEAL

C2A

PROJECT NO. 23-022-001

CREECH
CONSULTING, INC.
CIVILIZATION ENGINEER
PO BOX 327, STUART, FLORIDA 34984 (772) 485-2140

BOARD OF PROFESSIONAL ENGINEERS, CERTIFICATE OF AUTHORIZATION NUMBER 5139
PROFESSIONAL SURVEYORS AND MAPPERS, AMENDED CERTIFICATE NO. LE-000705

DATE	BY	REVISIONS
20250509	JAC	Per City of Delray comments Dated 2025-05-20
20250411	JAC	Per City of Delray comments Dated 2025-02-26
20250124	JAC	Per City of Delray comments Dated 2025-01-10

U.S. HIGHWAY NO. 1 - N. FEDERAL HIGHWAY
(STATE ROAD NO. 5)

CENTERLINE - 100' WIDE R/W AS PER
DELRAY BEACH ESTATES PLAT BOOK 21, PAGE 13
STATE OF FLORIDA STATE ROAD DEPARTMENT - SECTION NO. 9301-205

ASPHALT PAVEMENT - NORTH BOUND LANES

ASPHALT PAVEMENT - SOUTH BOUND LANES

PROPOSED RAW DEDICATION

CONCRETE SIDEWALK

CONCRETE SIDEWALK

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Z:\CSES\Projects\2024\2024-003-005 Hyundai Genesis Delray Beach (C40) - Plans\2 EROSION.dwg C3 EROSION esc. 1 May 28, 2025 - 4:56pm

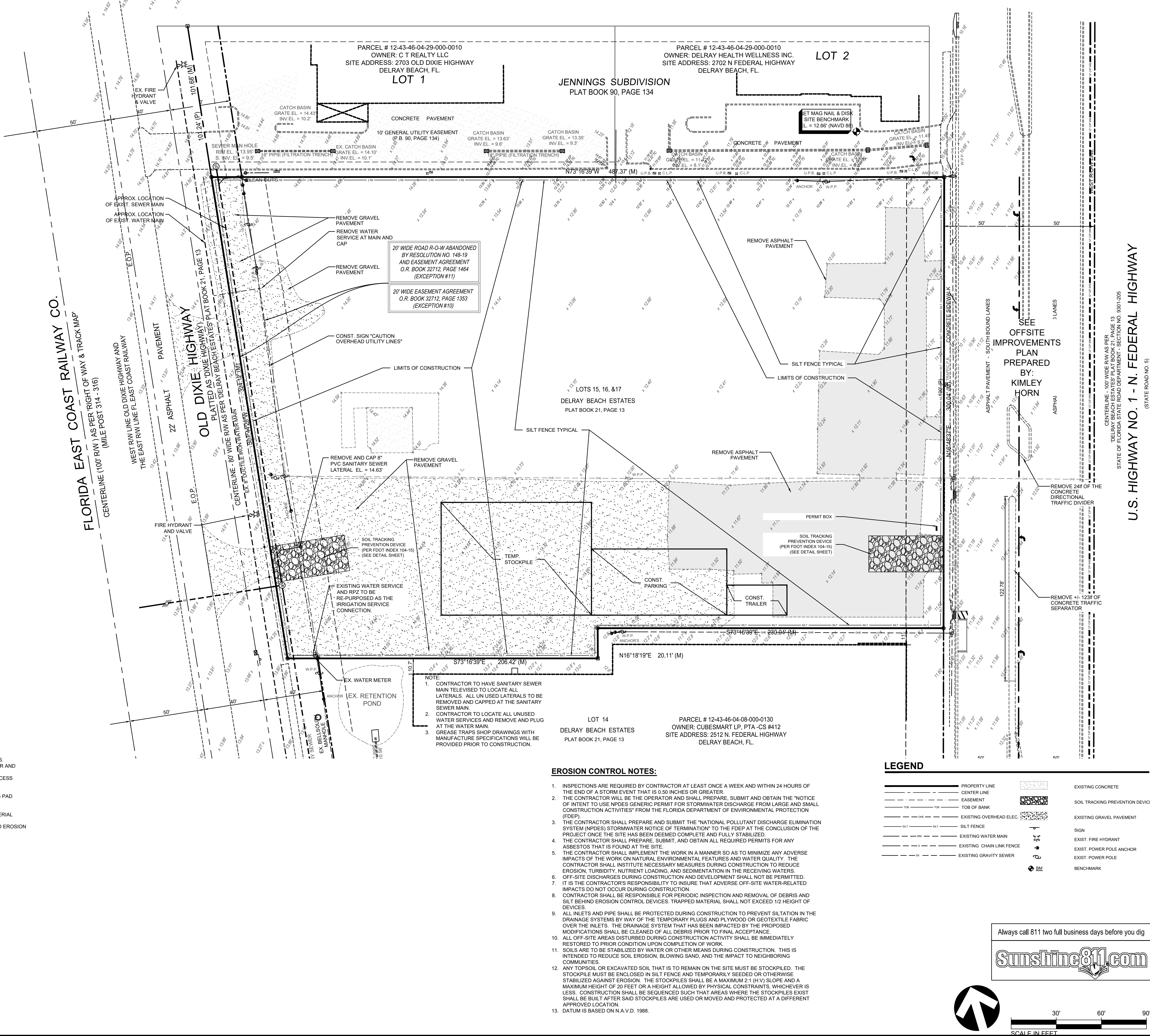
DEMOLITION NOTES:

- THE CONTRACTOR IS RESPONSIBLE FOR THE DEMOLITION, REMOVAL, AND DISPOSAL OF (IN A LOCATION APPROVED BY ALL GOVERNING AUTHORITIES) ALL STRUCTURES, PADS, WALLS, FLUMES, FOUNDATIONS, PARKING DRIVES, DRAINAGE STRUCTURES, UTILITIES, ETC., SUCH THAT THE IMPROVEMENTS SHOWN IN THESE CONSTRUCTION DRAWINGS CAN BE CONSTRUCTED. ALL FACILITIES TO BE REMOVED SHALL BE UNDERCUT TO SUITABLE MATERIAL AND BROUGHT TO GRADE WITH SUITABLE COMPACTED FILL MATERIAL PER THE SPECIFICATIONS.
- THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL DEBRIS FROM THE SITE AND DISPOSING OF THE DEBRIS IN A LAWFUL MANNER. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED FOR DEMOLITION AND DISPOSAL.
- THE CONTRACTOR SHALL COORDINATE WITH RESPECTIVE UTILITY COMPANIES PRIOR TO THE REMOVAL AND/OR RELOCATION OF UTILITIES. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES CONCERNING PORTIONS OF WORK WHICH MAY BE PERFORMED BY THE UTILITY COMPANY'S FORCES AND ANY FEES WHICH ARE TO BE PAID TO THE UTILITY COMPANY FOR THEIR SERVICES. THE CONTRACTOR IS RESPONSIBLE FOR PAYING ALL FEES AND CHARGES.
- THE LOCATIONS OF ALL EXISTING UTILITIES SHOWN ON THIS PLAN HAVE BEEN DETERMINED FROM THE BEST INFORMATION AVAILABLE AND ARE GIVEN FOR THE CONVENIENCE OF THE CONTRACTOR. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THEIR ACCURACY. PRIOR TO THE START OF ANY DEMOLITION ACTIVITY, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES FOR ONSITE LOCATIONS OF EXISTING UTILITIES. CONTRACTOR TO NOTIFY THE ENGINEER & OWNER IMMEDIATELY IF ANY DISCREPANCIES ARE IDENTIFIED.
- ALL EXISTING SEWERS, PIPING AND UTILITIES SHOWN ARE NOT TO BE INTERPRETED AS THE EXACT LOCATION, OR AS THE ONLY OBSTACLES THAT MAY OCCUR ON THE SITE. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS AND PROCEED WITH CAUTION AROUND ANY ANTICIPATED FEATURES. CONTRACTOR SHALL GIVE NOTICE TO ALL UTILITY COMPANIES REGARDING DESTRUCTION AND REMOVAL OF ALL SERVICE LINES AND CAP ALL LINES BEFORE PROCEEDING WITH THE WORK. UTILITIES DETERMINED TO BE ABANDONED AND LEFT IN PLACE SHALL BE GROUTED IF UNDER BUILDING.
- CONTRACTOR SHALL COORDINATE ALL ELECTRICAL, TELEPHONE, CABLE, WATER, FIBER OPTIC CABLE AND/OR GAS LINES NEEDING TO BE REMOVED OR RELOCATED WITH THE AFFECTED UTILITY COMPANY. CONTRACTOR TO PROVIDE ADEQUATE TIME FOR RELOCATION AND CLOSE COORDINATION WITH THE UTILITY COMPANY IN ORDER TO PROVIDE A SMOOTH TRANSITION IN UTILITY SERVICE. CONTRACTOR SHALL PAY CLOSE ATTENTION TO EXISTING UTILITIES WITHIN ANY ROAD RIGHT OF WAY DURING CONSTRUCTION.
- CONTRACTOR MUST PROTECT THE PUBLIC AT ALL TIMES WITH FENCING, BARRICADES, ENCLOSURES, (AND OTHER APPROPRIATE BEST MANAGEMENT PRACTICES), THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR JOB SITE SAFETY.
- PRIOR TO DEMOLITION OCCURRING, ALL EROSION CONTROL DEVICES ARE TO BE INSTALLED.
- SHOULD REMOVAL AND/OR RELOCATION ACTIVITIES DAMAGE FENCING, LIGHTING AND/OR EXISTING STRUCTURES, THE CONTRACTOR SHALL PROVIDE NEW MATERIALS/ STRUCTURES IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. EXCEPT FOR MATERIALS DESIGNED TO BE RELOCATED ON THIS DRAWING, ALL OTHER CONSTRUCTION MATERIALS SHALL BE NEW.
- CONTRACTOR MAY LIMIT SAW-CUT & PAVEMENT REMOVAL TO ONLY THOSE AREAS WHERE IT IS REQUIRED AS SHOWN ON THESE CONSTRUCTION DRAWINGS BUT IF ANY DAMAGE IS INCURRED ON ANY OF THE SURROUNDING PAVEMENT, ETC. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ITS REMOVAL AND REPAIR.
- THE CONTRACTOR SHALL COORDINATE WATER MAIN WORK WITH THE FIRE DEPT. AND CITY OF DELRAY UTILITIES TO PLAN PROPOSED IMPROVEMENTS AND TO ENSURE ADEQUATE FIRE PROTECTION IS CONSTANTLY AVAILABLE TO EXISTING USERS AND SITE THROUGHOUT ALL PHASES OF CONSTRUCTION. CONTRACTOR WILL BE RESPONSIBLE FOR ARRANGING/PROVIDING ANY REQUIRED WATER MAIN SHUT OFFS WITH THE CITY OF DELRAY UTILITIES DURING CONSTRUCTION. ANY COSTS ASSOCIATED WITH WATER MAIN SHUT OFFS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND NO EXTRA COMPENSATION WILL BE PROVIDED.
- DAMAGE TO ANY EXISTING IMPROVEMENTS THAT ARE TO REMAIN WILL BE REPLACED AT CONTRACTOR'S EXPENSE.
- CONTRACTOR SHALL PROTECT ALL AREAS OUTSIDE OF LIMIT OF CLEARING AND DEMOLITION.
- PROPERTY CORNERS SHALL BE LOCATED BY A LICENSED LAND SURVEYOR AND CLEARLY MARKED IN THE FIELD PRIOR TO THE ENGINEERING DEPARTMENT'S PRE-CONSTRUCTION MEETING FOR SITE DEVELOPMENT.
- NO ADDITIONAL LAND CLEARING SHALL COMMENCE UNTIL A SATISFACTORY INSPECTION OF THE REQUIRED EROSION CONTROL BARRICADES HAS BEEN OBTAINED.
- ALL CONSTRUCTION BARRICADES AND SILT FENCES WILL REMAIN IN PLACE AND BE MONITORED FOR COMPLIANCE BY PERMIT HOLDER DURING THE PERMITTED DEVELOPMENT ACTIVITIES.
- PRIOR TO SCHEDULING A FINAL INSPECTION FOR THE INFRASTRUCTURE, ALL BARRICADES AND EROSION CONTROL DEVICES SHALL BE REMOVED. SITE SHALL BE STABILIZED AND DISPOSED OF BY THE CONTRACTOR.
- DISTURBED AREAS ON THE SITE WHERE CONSTRUCTION ACTIVITIES ARE STOPPED SHALL BE SEEDED, SODDED OR VEGETATED NO LATER THAN 7 DAYS AFTER THE LAST CONSTRUCTION ACTIVITY. VEGETATION SHALL BE MAINTAINED FOR THE DURATION OF THE PROJECT.
- AUTHORIZATION TO INSTALL EROSION CONTROL DEVICES AND BARRICADES WILL BE GRANTED AT THE PRE-CONSTRUCTION MEETING. THIS AUTHORIZATION SHALL BE POSTED ON THE SITE, IN THE PERMIT BOX.

SUGGESTED EROSION CONTROL CONSTRUCTION SEQUENCE:

- FLAG AND FENCE ALL WORK LIMITS.
- NOTIFY SEDIMENT CONTROL INSPECTOR (24) HOURS PRIOR TO START OF CONSTRUCTION.
- PERFORM CLEARING AND GRADING REQUIRED FOR INSTALLATION OF PERIMETER CONTROLS.
- INSTALL PERIMETER RUNOFF CONTROLS AND TREE BARRIERS; NOTIFY SEDIMENT INSPECTOR AND OBTAIN APPROVAL BEFORE PROCEEDING FURTHER.
- COMPLETE ALL REQUIRED STOCKPILING, SITE CLEARING, AND GRADING. STOCKPILE ANY EXCESS TOPSOIL OR OTHER EXCAVATED SOIL IN APPROVED STOCKPILES OR REMOVE FROM SITE.
- REMOVE AND DISPOSE HARDPAN LAYER BENEATH DRY DETENTION BOTTOM.
- SOD AND STABILIZE EMBANKMENT SLOPES; CONSTRUCT PARKING SUBGRADE AND BUILDING PAD SUBGRADE, AND INSTALL SITE UTILITIES AND DRAINAGE PIPES AND INLETS.
- INSTALL STORM DRAINAGE PROTECTION, COMPLETE PARKING LOT CONSTRUCTION.
- COMPLETE FINAL GRADING, STABILIZATION, AND LANDSCAPING. REMOVE ANY EXCESS MATERIAL FROM THE SITE AND DISPOSE OF AT A PERMITTED SITE.
- NOTIFY SEDIMENT CONTROL INSPECTOR AND OBTAIN APPROVAL TO REMOVE SEDIMENT AND EROSION CONTROL.

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HYUNDAI GENESIS DELRAY

2612 and 2650 N FEDERAL HWY

DEMOLITION AND
EROSION CONTROL PLAN

FLORIDA
DELRAY BEACH

DRAWN BY: JAC
CHECKED BY: RTC / RICKETTS
LATITUDE: 26°29'22.96"N
LONGITUDE: 80° 3'53.74"W
HORZ. SCALE: 1" = 30'
VERT. SCALE: 1" = 30'

SEAL

C3

PROJECT NO. 23-022-001

DATE	BY	REVISIONS
2/26/2025	JAC	Per City of Delray comments dated 2/26/25-05-20
2/26/2025	JAC	Per City of Delray comments dated 2/26/25-02-26
2/26/2025	JAC	Per City of Delray comments dated 2/26/25-01-10

GREECH
CONSULTING, INC.
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PO BOX 327, STUART, FLORIDA 34984 (772) 485-2140

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Z:\CSES\Projects\2024\2024-003-005 Hyundai Genesis Delray Beach (C40) - Plans\C3 STORM.dwg C4-STORM_esc_1 Jun 02, 2025 - 12:19pm

SIDEWALK GRADING DETAIL

GRADING NOTES

- THE SURVEY WAS PROVIDED BY CRAIG WATSON AND ASSOCIATES, INC., WITH A SIGNATURE DATE OF NOVEMBER 20, 2024.
- THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE DRAWINGS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR TO VERIFY EXISTING UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
- ALL CUT OR FILL SLOPES SHALL BE 4:1 OR FLATTER UNLESS OTHERWISE NOTED.
- PRECAST STRUCTURES ARE TO BE USED.
- STORM PIPE SHALL BE IN ACCORDANCE WITH FDOT STANDARD SPECIFICATIONS.
- ALL STORM PIPES & STRUCTURES TO BE CLEANED, VACUUMED & DESILTED PRIOR TO PROJECT TURN OVER. DRY DETENTION AREA TO BE DESILTED PRIOR TO PROJECT TURN OVER.
- IF ANY EXISTING STRUCTURE TO REMAIN IS DAMAGED DURING CONSTRUCTION IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR AND/OR REPLACE AS NECESSARY TO RETURN IT TO EXISTING CONDITIONS OR BETTER.
- ALL STORM PIPE ENTERING STORM STRUCTURES SHALL BE GROUTED TO ASSURE CONNECTION AT STORM STRUCTURE IS WATERTIGHT.
- ALL STORM SEWER MANHOLES IN PAVED AREAS SHALL BE FLUSH WITH PAVEMENT, AND SHALL HAVE TRAFFIC BEARING RING & COVERS. MANHOLES IN UNPAVED AREAS SHALL BE 6" ABOVE FINISH GRADE. LIDS SHALL BE LABELED "STORM SEWER".
- THE CONTRACTOR SHALL ADHERE TO ALL TERMS & CONDITIONS AS OUTLINED IN THE EPA, FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP), NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) "GENERIC PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES" AND THE PROJECT SPECIFICATIONS.
- CONTRACTOR SHALL ADJUST AND/OR CUT EXISTING PAVEMENT AS NECESSARY TO ASSURE A SMOOTH FIT AND CONTINUOUS GRADE.
- CONTRACTOR SHALL ASSURE POSITIVE DRAINAGE AWAY FROM BUILDINGS FOR ALL NATURAL AND PAVED AREAS.
- CONTRACTOR SHALL STABILIZE DISTURBED AREAS IN ACCORDANCE WITH GOVERNING SPECIFICATIONS UNTIL A HEALTHY STAND OF VEGETATION IS OBTAINED. ALSO REFER TO THE LANDSCAPE PLANS FOR ADDITIONAL REQUIREMENTS FOR LANDSCAPE/OPEN SPACE AREAS.
- CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE GOVERNING CODES AND BE CONSTRUCTED TO SAME.
- PROPOSED GRADE ELEVATIONS SHOWN ARE AT THE EDGE OF PAVEMENT LINE OF UNLESS OTHERWISE NOTED.
- CONTRACTOR TO PAY SPECIAL ATTENTION WHEN COMPACTING SOIL AROUND SANITARY AND DRAINAGE STRUCTURES AND SHALL ENSURE THAT THE SOIL IS PROPERLY COMPACTED TO ELIMINATE DIFFERENTIAL SETTLEMENT. THE PAVEMENT SUBGRADE FILL PLACED WITHIN 24 INCHES OF FINISHED SUBGRADE ELEVATION AND AT LEAST THE UPPER 24 INCHES OF SUBGRADE IN ALL CUT AREAS SHALL BE COMPACTED TO AT LEAST 98% OF THE MATERIAL'S MAXIMUM MODIFIED PROCTOR DRY DENSITY (ASTM D1557).
- CONTRACTOR IS RESPONSIBLE FOR MAINTAINING SUFFICIENT COVER OVER ALL PIPES DURING ALL CONSTRUCTION PHASES IN ORDER TO PREVENT DAMAGE TO THE DRAINAGE SYSTEM.
- ANY DAMAGE TO THE DRAINAGE SYSTEM DURING CONSTRUCTION WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR / REPLACE AND INCUR ALL COSTS.
- CONTRACTOR SHALL TAKE SPECIAL CARE TO AVOID UNNECESSARY DISTURBANCE OF EXISTING SOILS, ESPECIALLY THOSE W/ SENSITIVE OPTIMAL MOISTURE CONTENT.
- DRAINAGE STRUCTURE SYMBOLS SHOWN ON THE DRAWING ARE NOT TO SCALE.
- SAW CUT PAVEMENT AT CONFORMS AND PROTECT EDGE.
- ALL CURB CUT RAMPS SHALL HAVE DETECTABLE WARNING STRIPS AND CONSTRUCTED PER LATEST EDITION OF FDOT STANDARD SPECIFICATIONS SECTION 522-002 AND PER ADA REQUIREMENTS.
- CONTRACTOR IS RESPONSIBLE FOR DEMOLITION OF EXISTING STRUCTURES INCLUDING REMOVAL OF AND EXISTING UTILITIES SERVING PREVIOUS STRUCTURES. UTILITIES ARE TO BE REMOVED TO THE RIGHT-OF-WAY.
- ALL OVERHEAD UTILITIES SUCH AS POWER, CABLE, PHONE SERVICES TO THE BUILDING MUST BE BURIED UNDERGROUND.
- ANY TREES OR SHRUBS PLACED WITHIN WATER, SEWER OR DRAINAGE EASEMENTS SHALL CONFORM TO THE CITY OF DELRAY BEACH STANDARD DETAILS: LD 1.0 & LD 2.0.
- ANY DAMAGE TO ANY ROADWAY PAVEMENT LIKE UTILITY CUTS OR EDGE REPAIR SHALL BE MILLED AND RESURFACED FOR 50' EACH WAY PAST THE LIMIT OF THE DAMAGE PER CITY OF DELRAY BEACH STANDARD DETAIL CU 1.0.
- THE INSTALLATION OR REPAIR OF ANY UNDERGROUND FACILITIES OF PIPING WHICH CONNECTS TO OR FURNISHES WATER FOR THE FIRE PROTECTION SPRINKLER SYSTEM SHALL BE PERFORMED ONLY BY A LICENSED UTILITY CONTRACTOR, FIRE PROTECTION SPRINKLER CONTRACTOR OR LICENSED PLUMBER. SEE O.C.C.A. TITLE 25-11-7-a(4). A COPY OF THE LICENSE OR CERTIFICATE OF COMPETENCY SHALL BE PROVIDED TO THE INSPECTOR AT THE FINAL INSPECTION.
- ALL ROOT BARRIERS MUST MAINTAIN A MINIMUM DISTANCE OF 4 FT FROM ALL THE CITY FACILITIES (MAINS, SERVICES, ETC.). IF NO ROOT BARRIER IS INSTALLED, A MINIMUM DISTANCE OF 10 FT FROM ALL THE CITY FACILITIES (MAINS, SERVICES, ETC.) IS REQUIRED PER CITY OF DELRAY BEACH DETAIL LD 1.0 AND LD 2.0.

THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. RELIANCE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADOPTION BY GRECH ENGINEERS, INC. SHALL BE WITHOUT LIABILITY TO GRECH ENGINEERS, INC.

FLORIDA EAST COAST RAILWAY CO.

WEST RW LINE OLD DIXIE HIGHWAY AND THE EAST RW LINE FLA EAST COAST RAILWAY

CENTERLINE (100' RW) AS PER RIGHT OF WAY & TRACK MAP (MILE POST 314 - 316)

22' ASPHALT PAVEMENT

OLD DIXIE HIGHWAY PLATTED AS DIXIE HIGHWAY

PLATTED AS DIXIE HIGHWAY BEACH ESTATES PLAT BOOK 21, PAGE 13

20' WIDE ROAD R.O.W. ABANDONED BY RESOLUTION NO. 148-19 AND EASEMENT AGREEMENT O.R. BOOK 32712, PAGE 1464 (EXCEPTION #11)

20' WIDE EASEMENT AGREEMENT O.R. BOOK 32712, PAGE 1353 (EXCEPTION #10)

CONCRETE PAVEMENT

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HYUNDAI - GENESIS DELRAY BUILDING

(SEE ARCHITECT PLANS FOR DETAILS)

3-STORY

FFE: 15.0

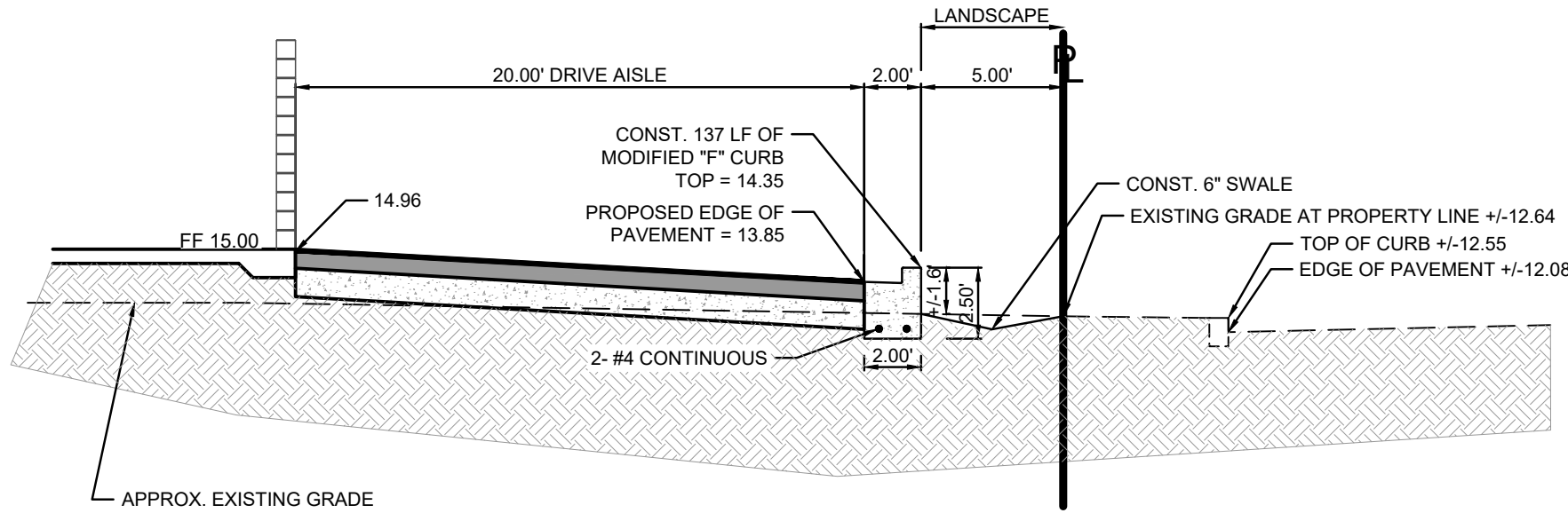
LOT 15, 16 & 17 DELRAY BEACH ESTATES PLAT BOOK 21, PAGE 13

SEE OFFSITE IMPROVEMENTS PLAN PREPARED BY: KIMLEY HORN

LEGEND

	PROPERTY LINE
	CENTER LINE
	EASEMENT
	TOP OF BANK
	WATER SERVICE
	4" FIRE MAIN
	2" FORCE MAIN
	EXISTING OVERHEAD ELEC.
	6" WATER MAIN
	EXISTING GRAVITY SEWER
	EXISTING CHAIN LINK FENCE
	PROPOSED ADS STORMTECH UNDERGROUND CHAMBERS

	PROPOSED PAVEMENT
	CONCRETE
	SIGN
	PROPOSED DITCH BOTTOM INLET
	PROPOSED DRAINAGE STRUCTURE
	DRAINAGE FLOW ARROW
	PROPOSED GRADES
	EXISTING GRADES
	PROPOSED SEWER MANHOLE
	PROPOSED SEWER STRUCTURE NO.
	PROPOSED FIRE HYDRANT
	EXIST. FIRE HYDRANT
	EXIST. POWER POLE ANCHOR
	EXIST. POWER POLE
	PROPOSED DISPLAY LIGHT
	PROPOSED LIGHT POLE
	BENCHMARK



See Landscape Plans Plantings Including Sod
SECTION A-A
VERT. & HORZ. SCALE 1"=6'

ELEVATIONS SHOWN, ALONG WITH THE SITE BENCHMARKS ARE BASED ON A PALM BEACH COUNTY BRASS DISK STAMPED 'DOGE', ELEVATION = 15.80' (NAVD 88).

Always call 811 two full business days before you dig

Sunshine811.com

0 30' 60' 90'
SCALE IN FEET

HYUNDAI GENESIS DELRAY

2612 and 2650 N FEDERAL HWY

PAVING, GRADING & DRAINAGE PLAN

DELRAY BEACH

FLORIDA

GRECH
CONSULTING, INC.
CIVILIZATION ENGINEER
PO BOX 327, STUART, FLORIDA 34984 (772) 485-2140

BOARD OF PROFESSIONAL ENGINEERS, CERTIFICATE OF AUTHORIZATION NUMBER 5139
PROFESSIONAL SURVEYORS AND MAPPERS, AMENDED CERTIFICATE NO. LE-006705

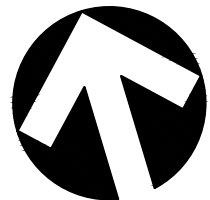
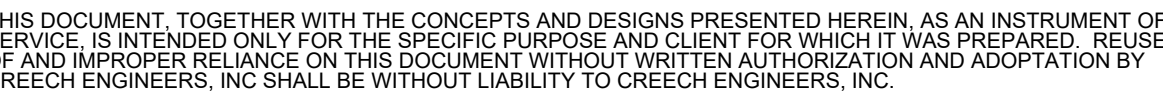
DATE	BY	REVISIONS
20250503	JAC	Per City of Delray comments Dated 2025-05-20
20250411	JAC	Per City of Delray comments Dated 2025-02-26
20250124	JAC	Per City of Delray comments Dated 2025-01-10

DRAWN BY:	JAC
CHECKED BY:	RTC / RICKETTS
LATITUDE:	26°29'22.96"N
LONGITUDE:	80° 3'53.74"W
HORZ. SCALE:	1" = 30'
VERT. SCALE:	1" = 30'

SEAL

SHEET
PROJECT NO. 23-022-001

- EXISTING UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR IN THE FIELD PRIOR TO INSTALLATION OF ANY NEW LINES.
- THE CONTRACTOR IS SPECIALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES HAS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE DELRAY BEACH UTILITIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST SEVEN DAYS PRIOR TO THE DATE OF CONSTRUCTION TO VERIFY THE LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
- ALL FILL MATERIAL IS TO BE IN PLACE, AND COMPACTED BEFORE INSTALLATION OF PROPOSED UTILITIES.
- A CONFIRMATION REPORT FROM THE UTILITY AUTHORITIES INSPECTORS 72 HOURS BEFORE CONNECTING TO ANY EXISTING LINE.
- SANITARY SEWER PIPE SHALL BE AS FOLLOWS:
 - 6" PVC SDR26 PER ASTM D 3034
 - 8" PVC SDR26 PER ASTM D 3034
- WATER LINES SHALL BE AS FOLLOWS:
 - 2" & SMALLER, POLYETHYLENE AS DEFINED BY ASTM D2737 SDR39 COPPER TUBE SIZE
 - 4"-12" DIP CLASS 350
- DUCTILE IRON PIPE (DIP) SHALL BE REQUIRED WHEN WITHIN SIX (6) FEET HORIZONTAL OF SEWAGE FACILITIES OR PIS/W.
- DUCTILE IRON PIPE (DIP) SHALL BE A MINIMUM OF PRESSURE CLASS 350 AND CONFORM TO THE LATEST STANDARDS OF ANSI/AWWA C150/A21.50 FOR THE THICKNESS DESIGN OF DIP.
- ALL UTILITIES SHOULD HAVE A MINIMUM HORIZONTAL SEPARATION OF 3' TO POWER POLES, LIGHT POLES, OR OTHER UTILITIES, 15' TO BUILDINGS, TOP OF BANKS OF LAKE & CANALS AND OTHER STRUCTURES, OR EXISTING MINIMUM DIMENSIONS.
- ALL WATER FITTINGS ARE TO BE DUCTILE IRON MECHANICAL JOINTS AS CALLED OUT IN DELRAY BEACH UTILITIES' MINIMUM DESIGN & CONSTRUCTION STANDARDS.
- WHEREVER SHOWN, THE LINE IS TO BE INSTALLED, INSERTED AND APPROVED BEFORE BACKFILLING. IN THE EVENT OF A VERTICAL CONFLICT BETWEEN WATER LINES, SANITARY LINES, STORM LINES AND GAS LINES (EXISTING AND PROPOSED), THE WATER LINE SHALL HAVE APPROPRIATE RESTRAINTS AS REQUIRED BY DELRAY BEACH UTILITIES'. A MINIMUM OF CLEARANCE (12" PREFERRED).
- ALL EXISTING MANHOLES SHALL BE RAISED AS NECESSARY TO BE FLUSH WITH PROPOSED PAVEMENT ELEVATIONS, AND TO BE ONE FOOT ABOVE FINISHED GROUND ELEVATIONS WITH WATERTIGHT LIDS WHEN COMPACTED AND FINISHED.
- CONTRACTOR IS RESPONSIBLE FOR COMPLYING TO THE SPECIFICATIONS OF THE LOCAL AUTHORITIES REGARDING TO MATERIALS AND INSTALLATION OF THE WATER AND SEWER LINES.
- ALL EXISTING VALVES TO BE ADJUSTED TO FINAL FINISHED GRADE.
- THE CONTRACTOR IS RESPONSIBLE FOR ALL-STATE INSPECTIONS AND/OR CERTIFICATIONS REQUIRED BY CODES AND/or UTILITY SERVICE COMPANIES. THIS AND THE FINAL CONNECTIONS OF THE SERVICES SHALL BE COMPLETED AT LEAST 30 DAYS PRIOR TO C.O.
- CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES FOR INSTALLATION REQUIREMENTS AND SPECIFICATIONS.
- CONTRACTOR IS RESPONSIBLE FOR REPAIRS OF DAMAGE TO ANY EXISTING UTILITY DURING CONSTRUCTION AT NO COST TO THE OWNER.
- SEE DELRAY BEACH UTILITIES' MINIMUM DESIGN & CONSTRUCTION STANDARDS FOR BACKFILLING AND COMPACTION REQUIREMENTS ON UTILITY TRENCHES.
- CONTRACTOR SHALL COMPLY WITH DELRAY BEACH UTILITIES' MINIMUM DESIGN & CONSTRUCTION STANDARDS.
- CONTRACTOR SHALL GROUT ALL PIPE ENTRANCES AND PIPE REMOVALS TO/FROM MANHOLES TO ASSURE WATER-TIGHT CONNECTIONS AND SHOWS.
- DRAWINGS DO NOT PURPORT TO PROVIDE ALL EXISTING UTILITIES.
- CONTRACTOR SHALL REVIEW ALL SURVEY, PLANS AND SPECIFICATIONS FOR ACTUAL LOCATION OF ALL UTILITY ENTRANCES TO INCLUDE SANITARY SEWER LATERALS, DOMESTIC AND FIRE PROTECTION WATER SERVICE, ELECTRICAL, TELEPHONE, FIBER OPTIC, AND GAS SERVICE. CONTRACTOR SHALL NOTIFY THE INSPECTOR IMMEDIATELY IF A HANDLING IS REQUIRED TO AVOID COLLISION ASSUMPTIONS. PROPER DEPTHS ARE ACHIEVED AS WELL AS COORDINATING WITH DELRAY BEACH UTILITIES' REQUIREMENTS AS TO LOCATION AND SCHEDULING FOR TI-INS, CONNECTIONS AND INSPECTIONS PRIOR TO CONNECTING TO EXISTING UTILITIES.
- CONTRACTOR SHALL COMPLY WITH ALL REQUIRED TESTS TO THE SATISFACTION OF THE RESPECTIVE UTILITY COMPANIES AND THE OWNER'S INSPECTING AUTHORITIES.
- CONTRACTOR SHALL COMPLY TO THE FULLEST EXTENT WITH THE LATEST STANDARDS OF OSHA SAFETY AND HEALTH REGULATIONS FOR EXCAVATION AND TRENCHING. ALL STANDARD SAFETY PROCEDURES, THE CONTRACTOR SHALL USE SUPPORT SYSTEMS, SLOPING, BENCHING AND ANY OTHER MEANS OF PROTECTION. THIS INCLUDES, BUT IS NOT LIMITED TO, ACCESS AND EGRESS FROM ALL EXCAVATION AND TRENCHING. CONTRACTOR IS RESPONSIBLE TO COMPLY WITH PERFORMANCE CRITERIA FOR EXCAVATION AND TRENCHING.
- THE INSTALLATION OR REPAIR OF ANY UNDERGROUND FACILITIES OF PIPING WHICH CONNECTS TO OR FURNISHES WATER FOR THE FIRE PROTECTION SPRINKLER SYSTEM SHALL BE PERFORMED ONLY BY A LICENSED PLUMBER OR MECHANIC. A HANDMADE SIGN SHALL BE PLACED AT THE END OF EACH MAINLINE, SEE O.C.G.A. TITLE 25-11-(7-a). A COPY OF THE LICENSE OR CERTIFICATE OF COMPETENCY SHALL BE PROVIDED TO THE INSPECTOR AT THE FINAL INSPECTION.
- ALL ROOT BARRIERS MUST MAINTAIN A MINIMUM DISTANCE OF 4 FT FROM ALL THE CITY FACILITIES (MANHOLE, ETC.) AND ALL OTHER PUBLIC UTILITIES. A MINIMUM DISTANCE OF 10 FT FROM ALL THE CITY FACILITIES (MANS, SERVICES, ETC.) IS REQUIRED PER CITY OF DELRAY DETAILS LD 1.0 AND LD 2.0.



A horizontal scale bar with tick marks at 0, 30, 60, and 90 feet. The text "SCALE IN FEET" is written below the bar.

DELRAY BEACH

BOARD OF PROFESSIONAL ENGINEERS, CERTIFICATE OF AUTHORIZATION NUMBER 5139

REVISIONS

SEAL

C5	
SHEET	
PROJECT NO.	23-022-001

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THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADOPTION BY CREECH ENGINEERS, INC. SHALL BE WITHOUT LIABILITY TO CREECH ENGINEERS, INC.

UTILITY PROVIDER SIGN OFF

FPL: SIGNATURE TITLE

PRINT NAME DATE

COMCAST: SIGNATURE TITLE

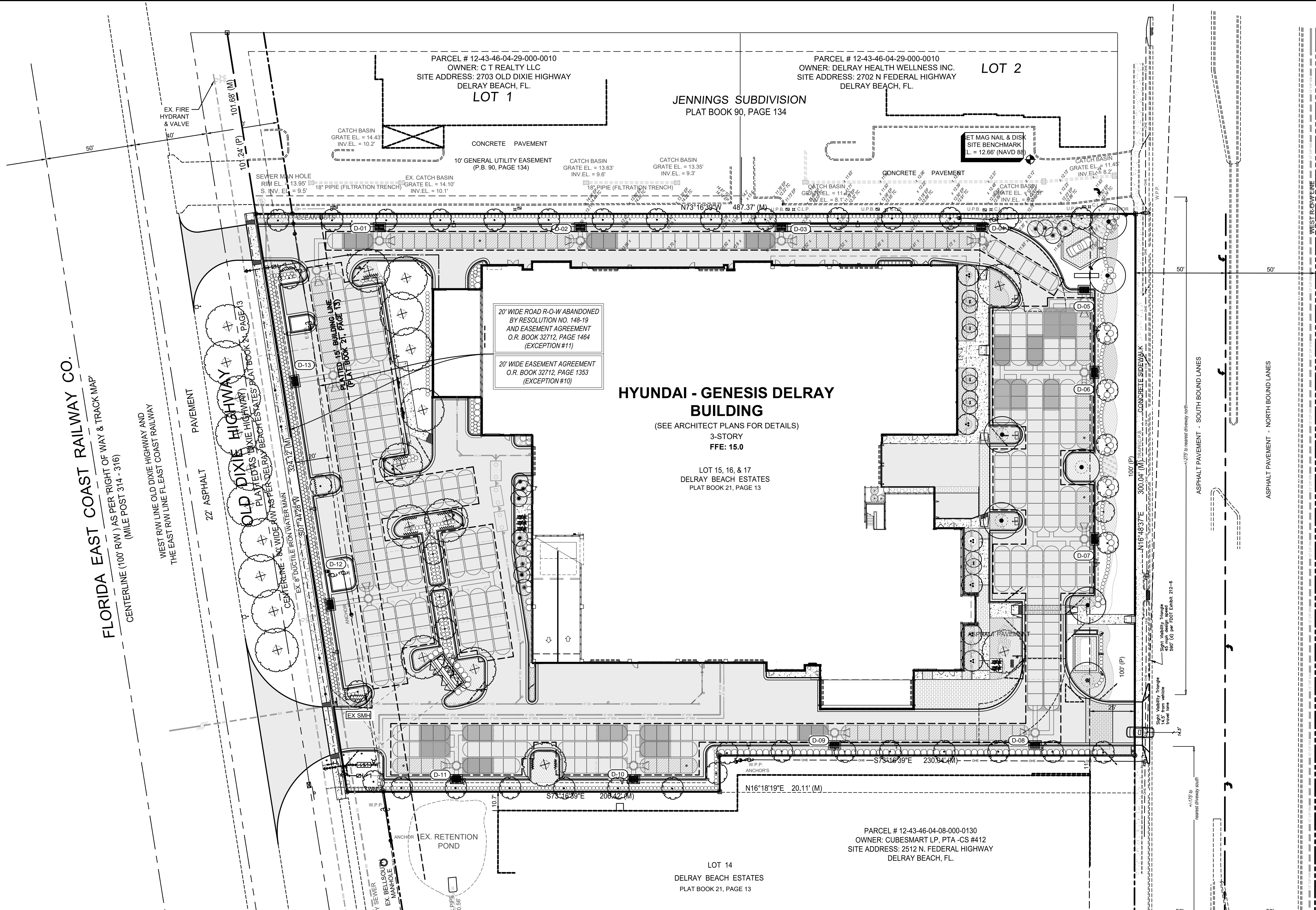
PRINT NAME DATE

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PRINT NAME DATE

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PRINT NAME DATE



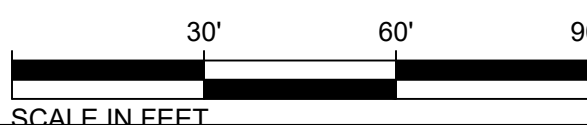
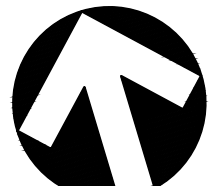
LEGEND

- PROPERTY LINE
- CENTER LINE
- EASEMENT
- TOB OF BANK
- WATER SERVICE
- 4" FIRE MAIN
- 2" FORCE MAIN
- EXISTING OVERHEAD ELEC.
- 8" WATER MAIN
- EXISTING WATER MAIN
- EXISTING GRAVITY SEWER
- EXISTING CHAIN LINK FENCE
- PROPOSED ADS STORMTECH UNDERGROUND CHAMBERS
- SMH-01
- PROPOSED PAVEMENT
- CONCRETE
- SIGN
- PROPOSED DITCH BOTTOM INLET
- PROPOSED DRAINAGE STRUCTURE
- DRAINAGE FLOW ARROW
- PROPOSED GRADES
- EXISTING GRADES
- PROPOSED SEWER MANHOLE
- PROPOSED SEWER STRUCTURE NO.
- PROPOSED FIRE HYDRANT
- EXIST. FIRE HYDRANT
- EXIST. POWER POLE ANCHOR
- EXIST. POWER POLE
- PROPOSED DISPLAY LIGHT
- PROPOSED LIGHT POLE
- BENCHMARK

NOTE:
CONTRACTOR TO FIELD VERIFY
EXACT LOCATION, SIZE, AND
ELEVATION OF ALL IMPROVEMENTS
AT TIME OF CONSTRUCTION AND
REPORT ANY DISCREPANCIES TO
CREECH CONSULTING, INC.

ELEVATIONS SHOWN, ALONG WITH THE SITE
BENCHMARKS ARE BASED ON A PALM BEACH
COUNTY BRASS DISK STAMPED 'DOGE',
ELEVATION = 15.80' (NAVD 88).

Always call 811 two full business days before you dig



HYUNDAI GENESIS DELRAY

2612 and 2650 N FEDERAL HWY

COMPOSITE UTILITY PLAN

DELRAY BEACH

FLORIDA

DRAWN BY: JAC

CHECKED BY: RTC / RICKETTS

LATITUDE: 26°29'22.96"N

LONGITUDE: 80° 3'53.74"W

HORZ. SCALE: 1" = 30'

VERT. SCALE: 1" = 30'

SEAL

SHEET

C6

PROJECT NO. 23-022-001

CREECH
CONSULTING, INC.
CIVILIZATION ENGINEERED

PO BOX 327, STUART, FLORIDA 34984 (772) 485-2140

BOARD OF PROFESSIONAL ENGINEERS, CERTIFICATE OF AUTHORIZATION NUMBER 5139
PROFESSIONAL SURVEYORS AND MAPPERS, AMENDED CERTIFICATE NO. LE-0006705

DATE	BY	REVISIONS
20250509	JAC	Per City of Delray comments Dated 2025-05-20
20250411	JAC	Per City of Delray comments Dated 2025-02-26
20250124	JAC	Per City of Delray comments Dated 2025-01-10

U.S. HIGHWAY NO. 1 - N. FEDERAL HIGHWAY
(STATE ROAD NO. 5)

CENTERLINE - 100' WIDE RW AS PER
DELRAY BEACH ESTATES PLAT BOOK 21, PAGE 13
STATE OF FLORIDA STATE ROAD DEPARTMENT - SECTION NO. 9301-205

WEST BOUND LANE

ASPHALT PAVEMENT - NORTH BOUND LANES

ASPHALT PAVEMENT - SOUTH BOUND LANES

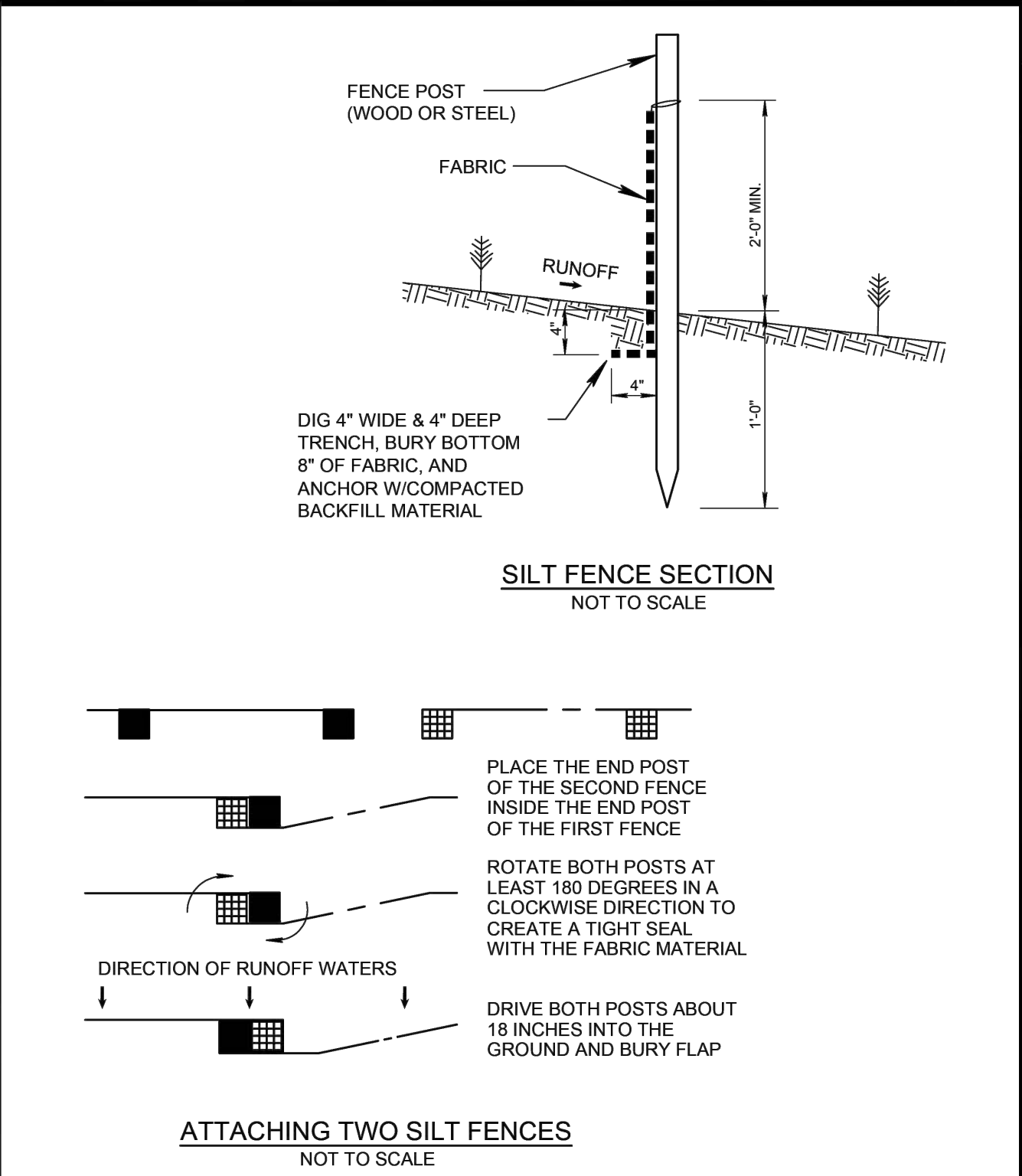
CENTERLINE - 100' WIDE RW AS PER
DELRAY BEACH ESTATES PLAT BOOK 21, PAGE 13
STATE OF FLORIDA STATE ROAD DEPARTMENT - SECTION NO. 9301-205


WEST BOUND LANE

CENTERLINE - 100' WIDE RW AS PER
DELRAY BEACH ESTATES PLAT BOOK 21, PAGE 13
STATE OF FLORIDA STATE ROAD DEPARTMENT - SECTION NO. 9301-205

WEST BOUND LANE

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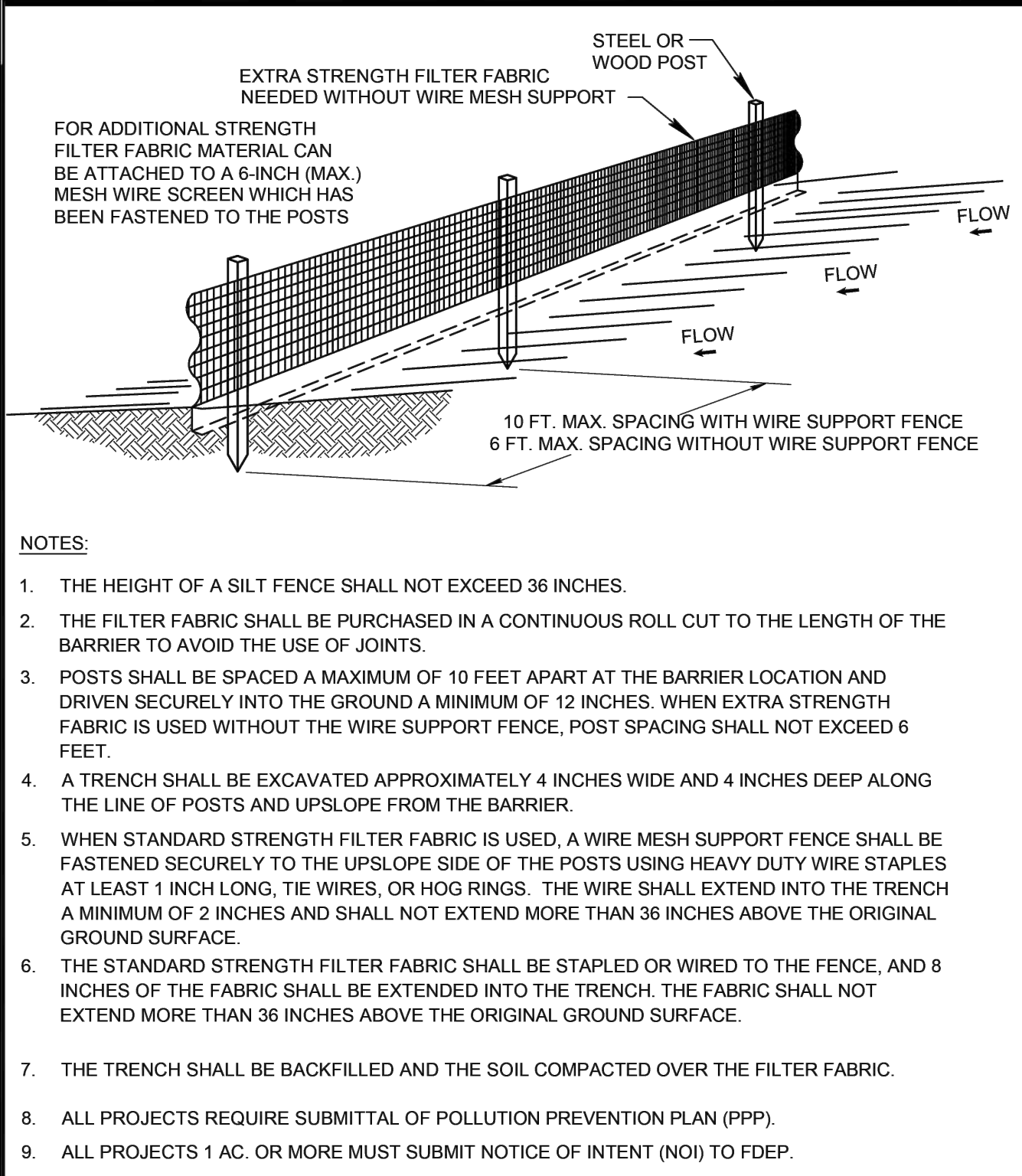
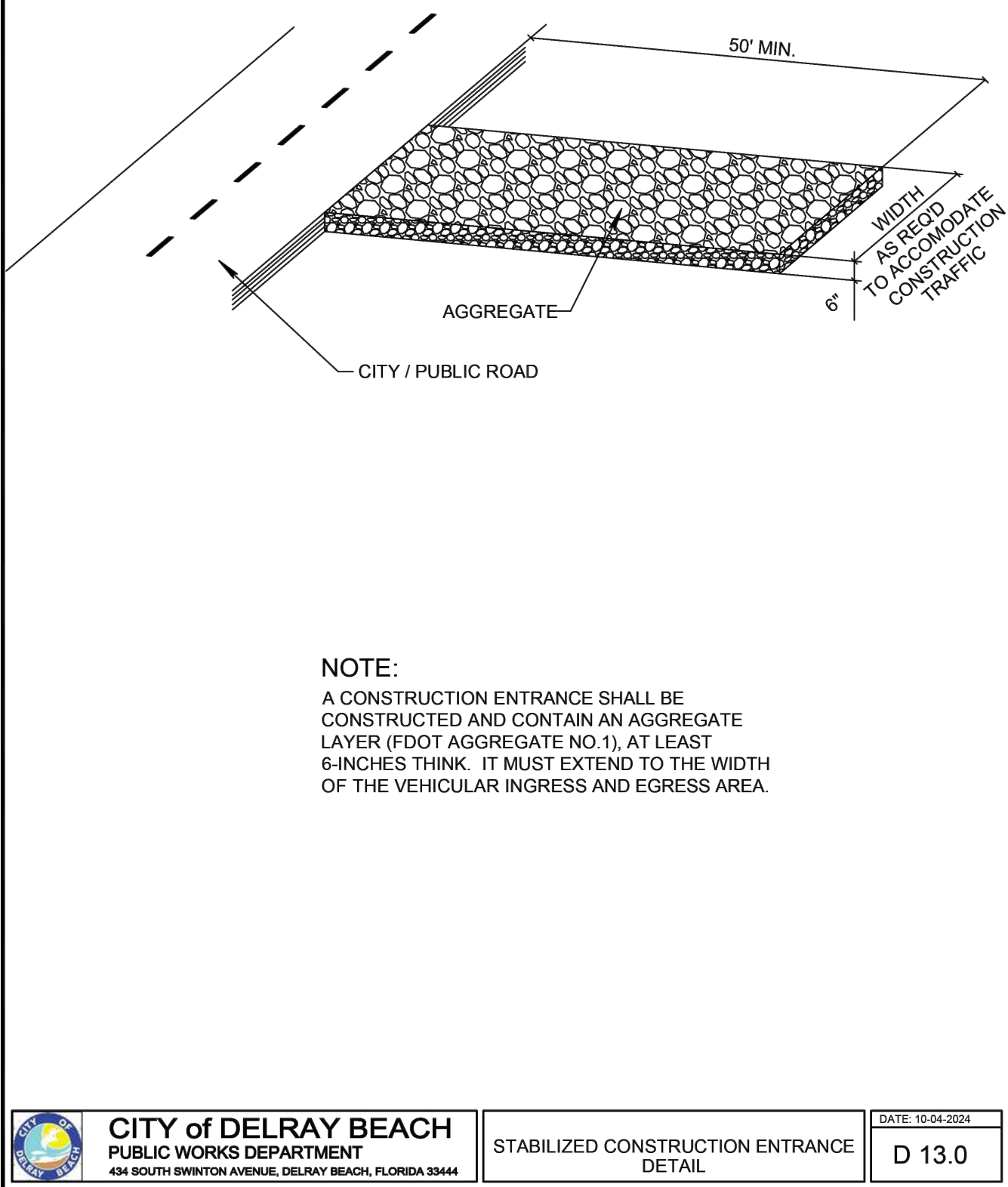




CITY of DELRAY BEACH
PUBLIC WORKS DEPARTMENT
434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

SILT FENCE INSTALLATION DETAIL
(SHEET 2 OF 2)

DATE: 10-04-2024
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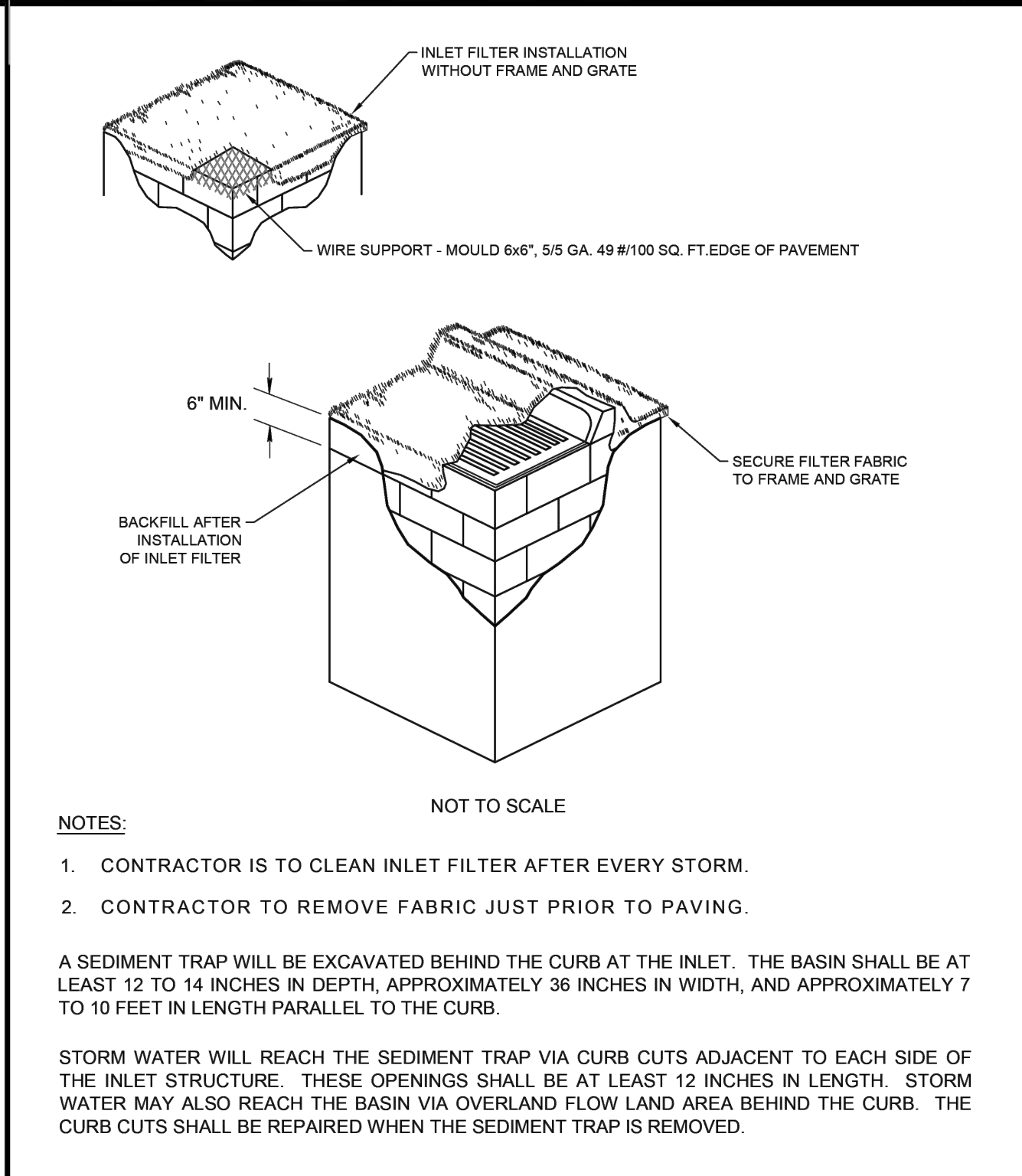
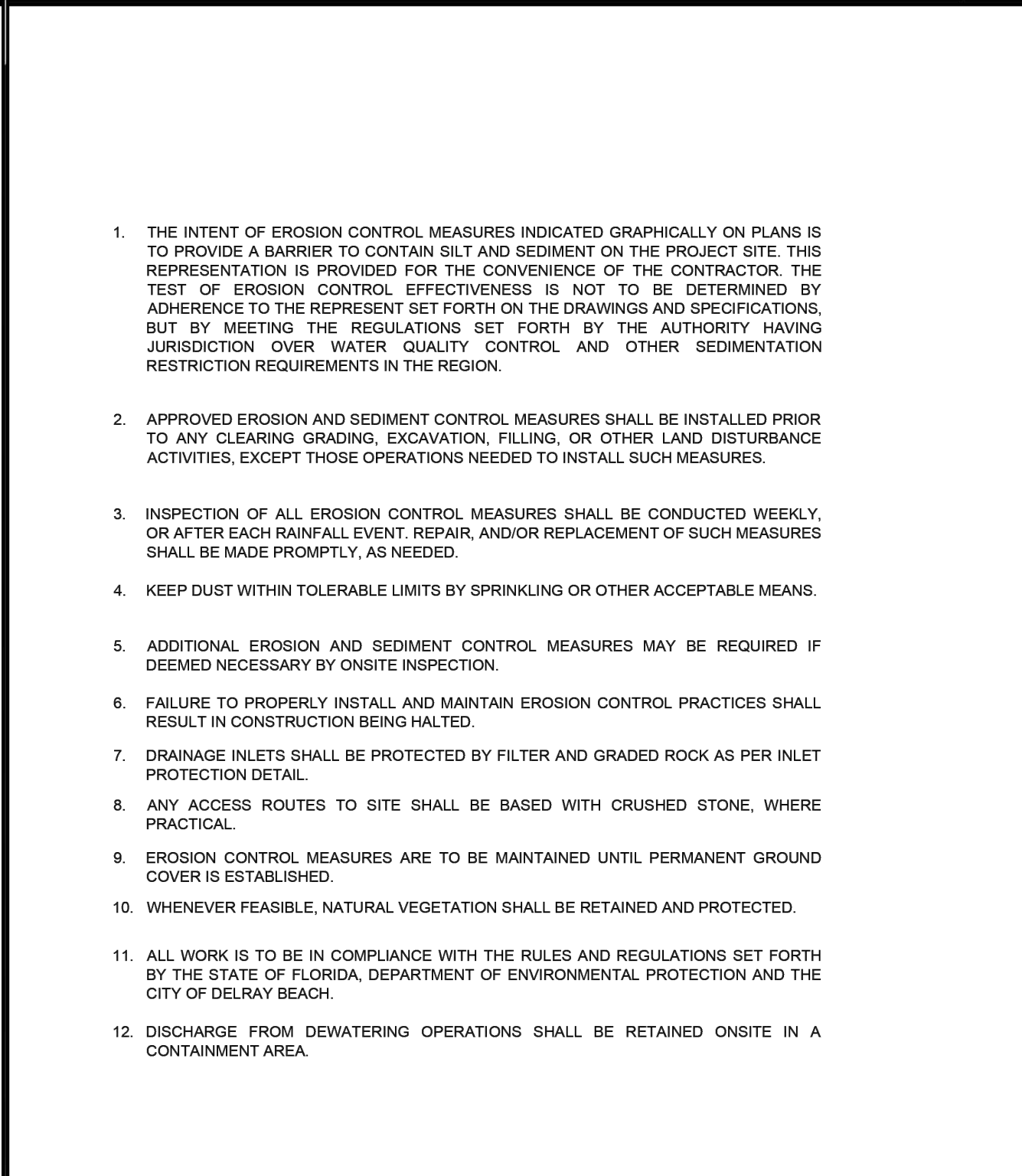




CITY of DELRAY BEACH
PUBLIC WORKS DEPARTMENT
434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

SILT FENCE INSTALLATION DETAIL
(SHEET 1 OF 2)

DATE: 10-04-2024
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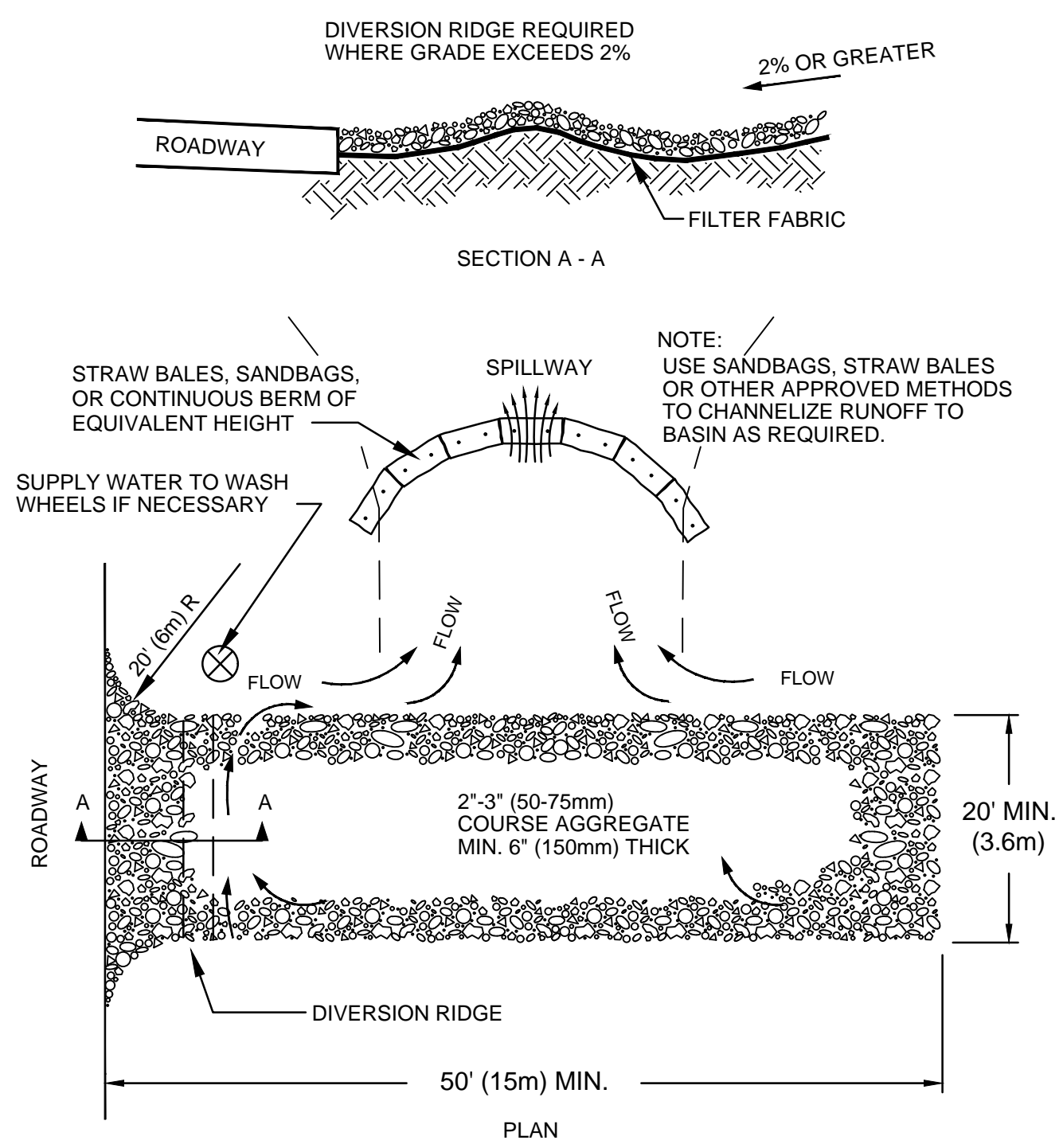




CITY of DELRAY BEACH
PUBLIC WORKS DEPARTMENT
434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

INLET FILTER DETAIL

DATE: 10-04-2024
D10.0



- NOTES:**
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT.
 2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
 3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.

TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT DETAIL

B.M.P.'S (BEST MANAGEMENT PRACTICES)

THESE PLANS ADDRESSES THE FOLLOWING AREAS:

1. GENERAL EROSION CONTROL.
2. PROTECTION OF SURFACE WATER QUALITY DURING AND AFTER CONSTRUCTION.
3. CONTROL OF WIND EROSION. THE VARIOUS TECHNIQUES OR ACTIONS IDENTIFIED UNDER EACH SECTION INDICATE THE APPROPRIATE SITUATION WHEN THE TECHNIQUES SHOULD BE EMPLOYED. IT SHOULD BE NOTED THAT THE MEASURES IDENTIFIED ON THIS PLAN ARE ONLY SUGGESTED BMP(S). THE CONTRACTOR SHALL PROVIDE POLLUTION PREVENTION AND EROSION CONTROL MEASURES AND AS NECESSARY FOR EACH SPECIFIC APPLICATION.

SECTION 1 GENERAL EROSION CONTROL

- 1.1 GENERAL EROSION CONTROL BMPS SHALL BE EMPLOYED TO MINIMIZE SOIL EROSION AND POTENTIAL LAKE SLOPE CAVE-INS. WHILE THE VARIOUS TECHNIQUES REQUIRED WILL BE SITE AND PLAN SPECIFIC, THEY SHOULD BE EMPLOYED AS SOON AS POSSIBLE DURING CONSTRUCTION ACTIVITIES.
- 1.2 CLEARED SITE DEVELOPMENT AREAS NOT CONTINUALLY SCHEDULED FOR CONSTRUCTION ACTIVITIES SHALL BE COVERED WITH HAY OR OVERSEEDED AND PERIODICALLY WATERED SUFFICIENT TO STABILIZE THE TEMPORARY GROUND COVER.
- 1.3 SLOPES OF BANKS OF WET DETENTION PONDS SHALL BE CONSTRUCTED NOT STEEPER THAN 4H:1V FROM TOP OF BANK TO (3) FEET BELOW NORMAL WATER LEVEL.
- 1.4 ALL GRASS SLOPES CONSTRUCTED 4H:1V AND STEEPER SHALL BE SODDED AS SOON AS PRACTICAL AFTER THEIR CONSTRUCTION.
- 1.5 SOD SHALL BE PLACED FOR A 3-FOOT WIDE STRIP ADJOINING ALL CURBING AND AROUND ALL INLETS AS REQUIRED BY PLAN. SOD SHALL BE PLACED BEFORE SILT BARRIERS ARE REMOVED.
- 1.6 WHERE REQUIRED TO PREVENT EROSION FROM SHEET FLOW ACROSS BARE GROUND FROM ENTERING A LAKE OR SWALE, A TEMPORARY SEDIMENT SUMP SHALL BE CONSTRUCTED. THE TEMPORARY SEDIMENT SUMP SHALL REMAIN IN PLACE UNTIL VEGETATION IS ESTABLISHED ON THE GROUND DRAINING TO THE SUMP.

SECTION 2 PROTECTION OF SURFACE WATER QUALITY DURING & AFTER CONSTRUCTION

- 2.1 SURFACE WATER QUALITY SHALL BE MAINTAINED BY EMPLOYING THE FOLLOWING BMPS, AT A MINIMUM, IN THE CONSTRUCTION PLANNING AND CONSTRUCTION OF ALL IMPROVEMENTS.
- 2.2 WHERE PRACTICAL, STORMWATER SHALL BE CONVEYED BY SWALES.
- 2.3 EROSION CONTROL MEASURES SHALL BE EMPLOYED TO MINIMIZE TURBIDITY OF SURFACE WATERS LOCATED DOWNSTREAM OF ANY CONSTRUCTION ACTIVITY. WHILE THE VARIOUS MEASURES REQUIRED WILL BE SITE SPECIFIC, THEY SHALL BE EMPLOYED AS NEEDED IN ACCORDANCE WITH THE FOLLOWING:
 - a. IN GENERAL, EROSION SHALL BE CONTROLLED AT THE FURTHEST PRACTICAL UPSTREAM LOCATION.
 - b. STORMWATER INLETS SHALL BE PROTECTED DURING CONSTRUCTION AS SHOWN. PROTECTION MEASURES SHALL BE EMPLOYED AS SOON AS PRACTICAL DURING THE VARIOUS STAGES OF INLET CONSTRUCTION. SILT BARRIERS SHALL REMAIN IN PLACE UNTIL SODDING AROUND INLETS IS COMPLETE.
 - c. HEAVY CONSTRUCTION EQUIPMENT PARKING AND MAINTENANCE AREAS SHALL BE DESIGNED TO PREVENT OIL, GREASE, AND LUBRICANTS FROM ENTERING SITE DRAINAGE FEATURES INCLUDING STORMWATER COLLECTION AND TREATMENT SYSTEMS. CONTRACTORS SHALL PROVIDE BROAD DIKES, HAY BALES OR SILT SCREENS AROUND, AND SEDIMENT SUMPS WITHIN, SUCH AREAS AS REQUIRED TO CONTAIN SPILLS OF OIL, GREASE OR LUBRICANTS. CONTRACTORS SHALL HAVE AVAILABLE, AND SHALL USE, ABSORBENT FILTER PADS TO CLEAN UP SPILLS AS SOON AS POSSIBLE AFTER OCCURRENCE.
- 2.5 SILT BARRIERS, ANY SILT WHICH ACCUMULATES BEHIND THE BARRIERS, AND ANY FILL USED TO ANCHOR THE BARRIERS SHALL BE REMOVED PROMPTLY AFTER THE END OF THE MAINTENANCE PERIOD SPECIFIED FOR THE BARRIERS.

SECTION 3 CONTROL OF WIND EROSION

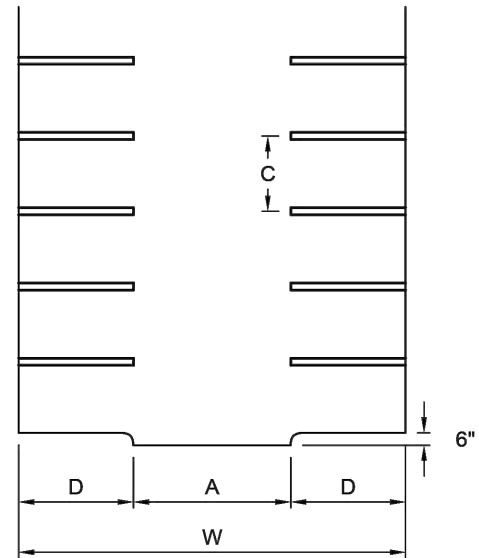
- 3.1 WIND EROSION SHALL BE CONTROLLED BY EMPLOYING THE FOLLOWING METHODS AS NECESSARY AND APPROPRIATE:
 - a. BARE EARTH AREAS SHALL BE WATERED DURING CONSTRUCTION AS NECESSARY TO MINIMIZE THE TRANSPORT OF FUGITIVE DUST. IT MAY BE NECESSARY TO LIMIT CONSTRUCTION VEHICLE SPEED IF BARE EARTH HAS NOT BEEN EFFECTIVELY WATERED. IN NO CASE SHALL FUGITIVE DUST BE ALLOWED TO LEAVE THE SITE UNDER CONSTRUCTION.
 - b. AS SOON AS PRACTICAL AFTER COMPLETION OF CONSTRUCTION, BARE EARTH AREAS SHALL BE VEGETATED.
 - c. AT ANY TIME BOTH DURING AND AFTER SITE CONSTRUCTION THAT WATERING AND/OR VEGETATION ARE NOT EFFECTIVE IN CONTROLLING WIND EROSION AND/OR TRANSPORT OF FUGITIVE DUST, OTHER METHODS AS ARE NECESSARY FOR SUCH CONTROL SHALL BE EMPLOYED. THESE METHODS MAY INCLUDE ERECTION OF DUST CONTROL FENCES. IF REQUIRED, DUST CONTROL FENCES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DETAIL FOR A SILT FENCE, AS SHOWN, EXCEPT THE MINIMUM HEIGHT SHALL BE 4 FEET.

DATE	BY	REVISIONS
2025/05/30	JAC	Per City of Delray comments Dated 2025-05-29
2025/04/11	JAC	Per City of Delray comments Dated 2025-02-28
2025/01/24	JAC	Per City of Delray comments Dated 2025-01-10

DRAWN BY:	JAC
CHECKED BY:	RTC / RICKETTS
LATITUDE:	26°29'22.96"N
LONGITUDE:	80° 3'53.74"W
HORIZ. SCALE:	
VERT. SCALE:	

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90° PARKING



A	aisle	24.0'
S	stall width	9.0'*
D	stall depth	18.0'
W	module width	60.0'

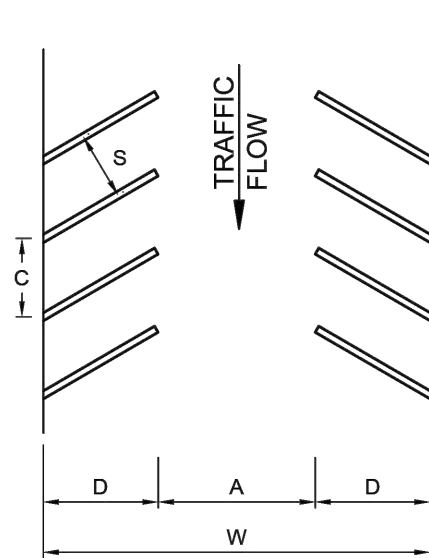
* COMPACT CAR SPACES - 8.0'
ACCESSIBLE SPACES - 12.0' SEE RT 16.2 THROUGH RT 16.2

PARALLEL



C	stall length	22.0'
S	stall width	8.0'*

60° AND 45° PARKING



	STANDARD	60°	45°
A	aisle*	17.0'	15.0'
C	stall length	10.5'	12.5'
S	stall width	9.0'	9.0'
D	stall depth	20.0'	19.0'
W	module width	57.0'	53.0'
ACCESSIBLE SPACES	C	14.0'	17.0'
	D	21.5'	21.0'
	S	12.0'	12.0'

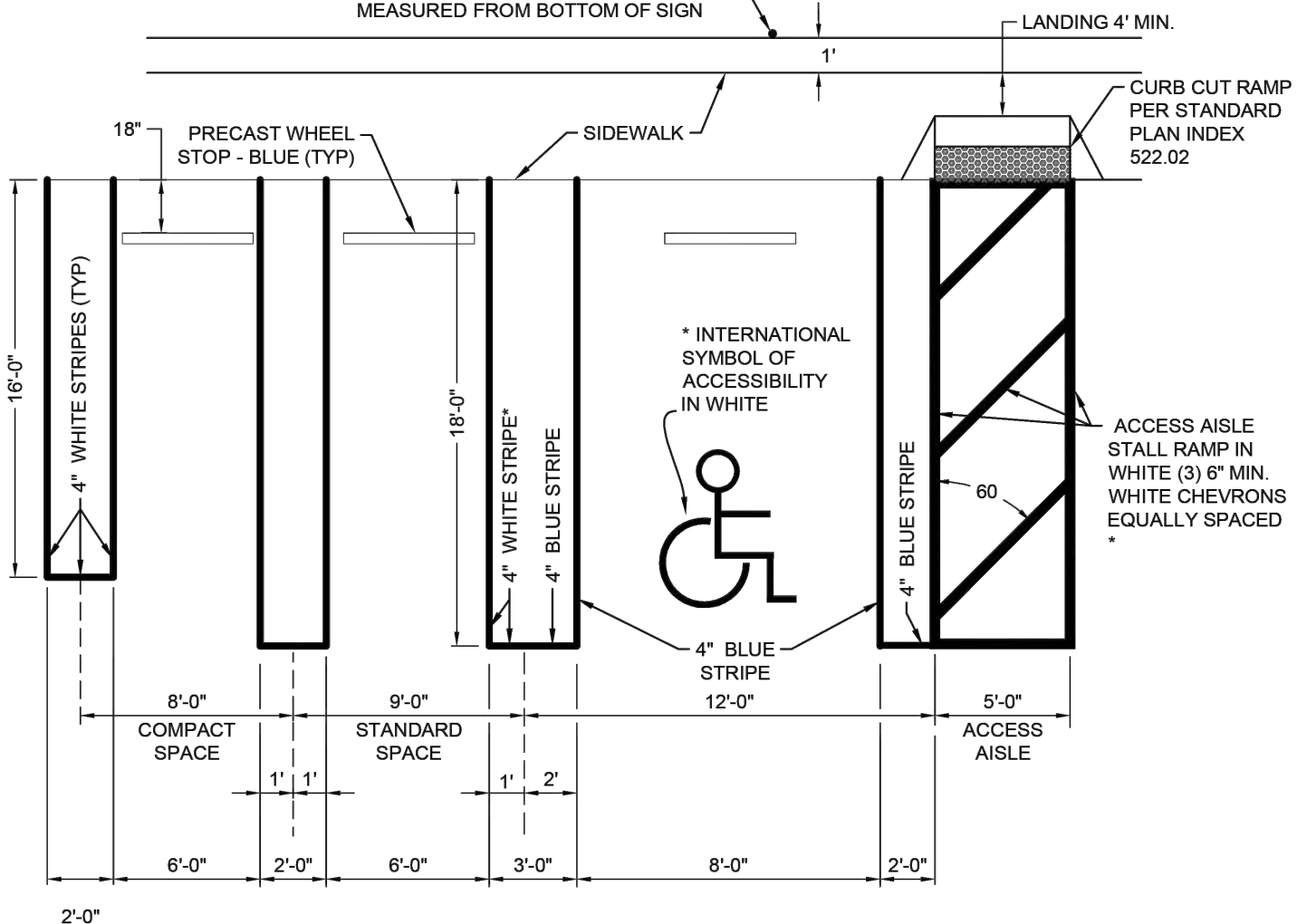
* FOR TWO WAY FLOW A=24.0'

NOTE:

REFER TO TYPICAL PARKING SPACE DETAIL RT 16.0 THROUGH RT 16.2 FOR STRIPING INFORMATION AND ACCESSIBLE PARKING DIMENSIONS.

STOP BAR BETWEEN PARKING LOT & PUBLIC R/W MUST BE THERMOPLASTIC.

ACCESSIBLE PARKING SIGN PTP-21-06 AND PTP-22-06 (MOUNT 60 IN. MIN. ABOVE FINISH FLOOR OR GROUND SURFACE MEASURED FROM BOTTOM OF SIGN)

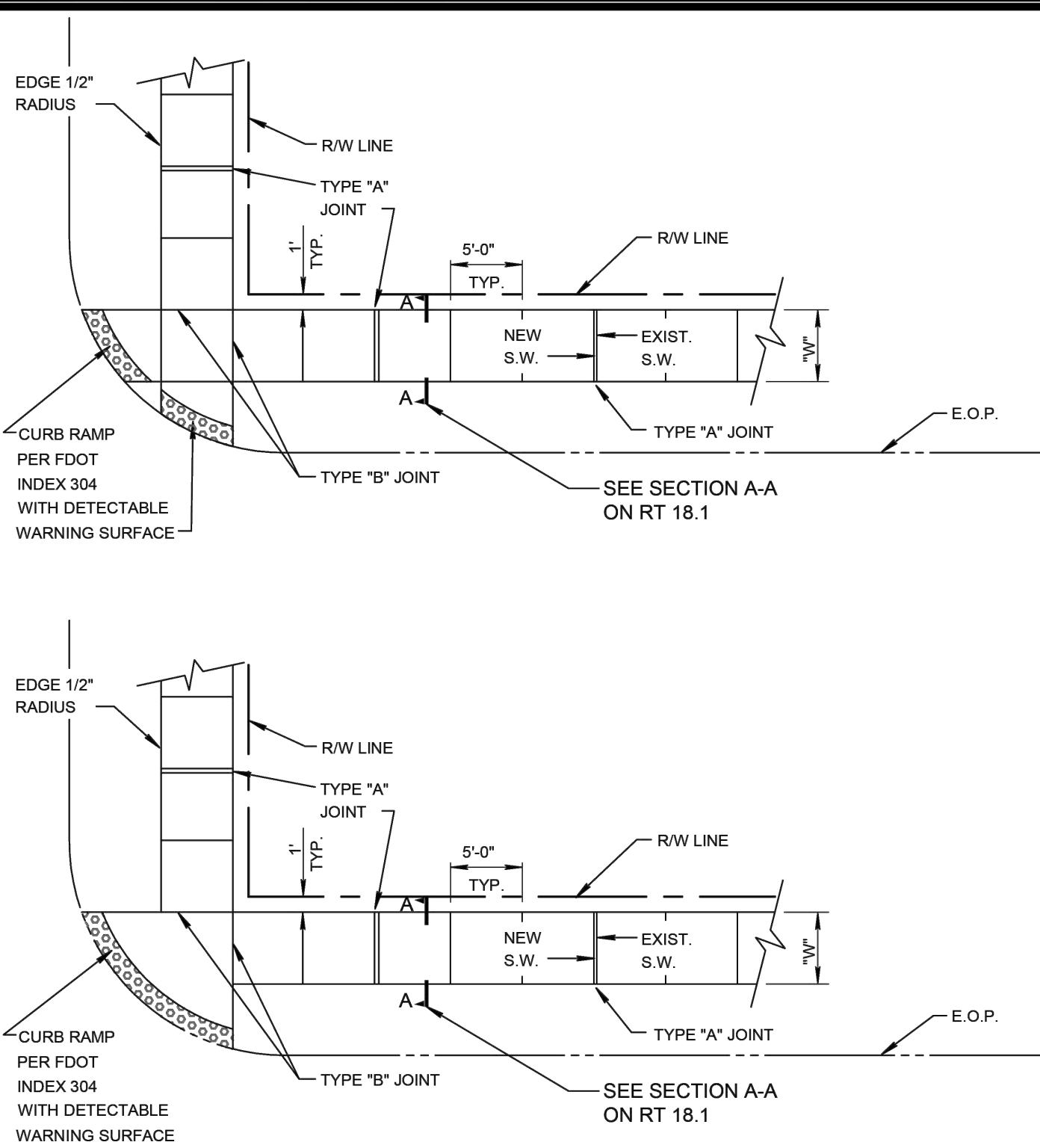


PARKING STALL DIMENSIONS:

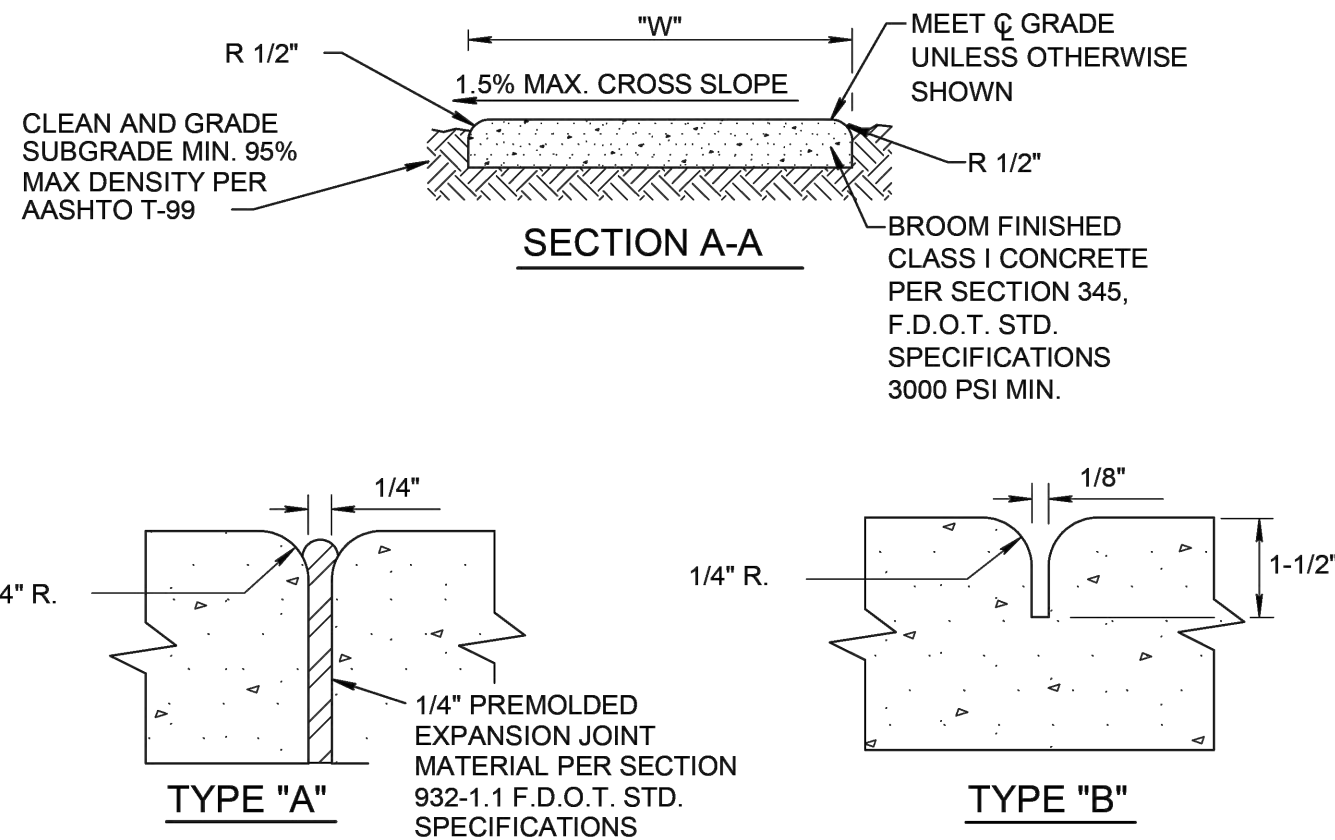
STANDARD 9'x 18'
COMPACT 8'x 16'
ACCESSIBLE 12'x 18' PLUS 5' ACCESS AISLE

* NOTES:

- ON LIGHT COLORED SURFACE I.E. CONCRETE ALL ACCESSIBLE MARKINGS SHALL BE BLUE AND STANDARD PARKING STRIPING SHALL BE 3" WHITE WITH 1" BLACK BORDER.
- ALL STRIPING WITHIN PUBLIC RIGHT-OF-WAY SHALL BE 8 INCHES.
- ALL MEASUREMENTS ARE FROM CENTER LINE.
- ALL COMPACT SPACES MUST HAVE "COMPACT" STENCILED WITH BLACK PAINT ON WHEEL STOP.
- BLUE STRIPE & INTERNATIONAL SYMBOL OF ACCESSIBILITY AND WALKWAY ON CONCRETE.
- 24" STOP BAR BETWEEN ALL PARKING LOTS AND PUBLIC R/W SHALL BE THERMOPLASTIC AND PER FDOT SPECIFICATIONS AND STOP SIGN R1-1 THERMOPLASTIC AND PER FDOT SPECIFICATIONS AND STOP SIGN R1-1.
- CHANGES IN LEVEL ARE NOT PERMITTED IN ACCESSIBLE PARKING STALLS AND ACCESS AISLES SERVING THE STALLS. SLOPES NOT STEEPER THAN 1:48 SHALL BE PERMITTED.



PLAN



SIDEWALK JOINTS

NOTE:

- ALL SIDEWALKS SHALL BE CONSTRUCTED THRU DRIVEWAYS.
- ALL SIDEWALKS SHALL INCLUDE ADA COMPLIANT RAMPS @ INTERSECTIONS.
- ALL SIDEWALKS SHALL INCLUDE CROSS SLOPE AND RUNNING SLOPE IN ACCORDANCE WITH ADA REQUIREMENTS.
- CURB RAMP DETECTABLE WARNING SURFACE SHALL EXTEND THE FULL WIDTH OF THE RAMP AND 24" DEEP.
- SIDEWALK SHALL BE 9" THICK FOR 2' AT THE CONNECTION TO ROADWAYS WITH A 6" TRANSITION TO 6" FOR THE REMAINDER OF THE REQUIRED 10'.

TABLE OF SIDEWALK THICKNESS - "T"

GENERAL AREAS	4"
WITHIN 10' OF CROSS-STREETS, AT DRIVEWAYS & OTHER AREAS	6"

TABLE OF SIDEWALK WIDTHS - "W"

SINGLE-FAMILY AREAS	5'
MULTI-FAMILY AREAS	5'
OTHER AREAS AS SPECIFIED BY THE CITY.	

TABLE OF SIDEWALK JOINTS

TYPE	LOCATION
"A"	P.C. AND P.T. OF CURVES JUNCTION OF EXISTING & NEW SIDEWALKS & EVERY 30'
"B"	5'-0" CENTER TO CENTER ON SIDEWALKS SCORED DURING PLACEMENT OR SAWCUT WITHIN 24 HOURS OF PLACEMENT.
"A"	WHERE SIDEWALK ABUTS CONCRETE CURBS, DRIVEWAYS, AND SIMILAR STRUCTURES.

CITY of DELRAY BEACH
PUBLIC WORKS DEPARTMENT
434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

PARKING LOTS

DATE: 10-04-2024
RT 15.0

CITY of DELRAY BEACH
PUBLIC WORKS DEPARTMENT
434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

TYPICAL PARKING SPACES (1 OF 3)

DATE: 10-04-2024
RT 16.0

CITY of DELRAY BEACH
PUBLIC WORKS DEPARTMENT
434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

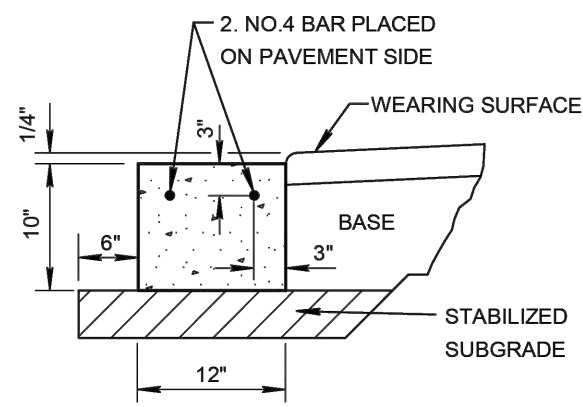
SIDEWALK CONSTRUCTION DETAIL

DATE: 10-04-2024
RT 18.0

CITY of DELRAY BEACH
PUBLIC WORKS DEPARTMENT
434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

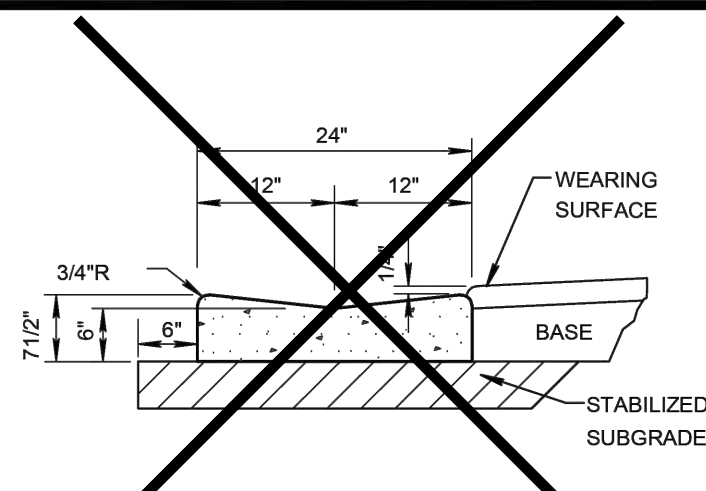
SIDEWALK CONSTRUCTION

DATE: 10-04-2024
RT 18.1



CONCRETE HEADER CURB

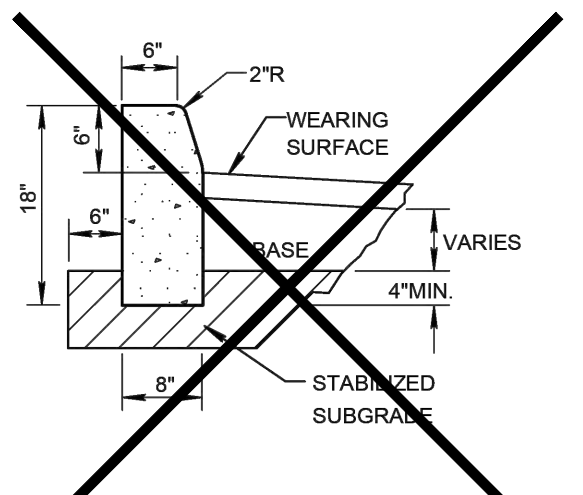
NOT TO SCALE



VALLEY GUTTER

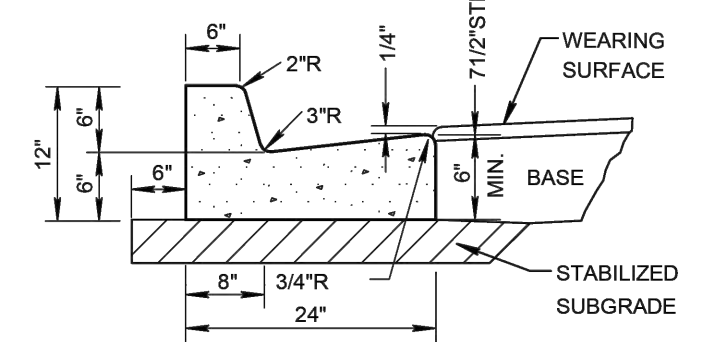
NOT TO SCALE

NOTE: SAWCUTS REQUIRED AT 10' ON CENTER.



F.D.O.T. TYPE "D" CONCRETE CURB

NOT TO SCALE



F.D.O.T. TYPE "F" CONCRETE CURB AND GUTTER

NOT TO SCALE

- NOTES:
- ROADWAY SUBGRADE SHALL IN ALL CASES EXTEND BELOW CURBING.
 - SAWCUTS AT 10' ON CENTER SHALL BE MADE WITHIN 24 HOURS OF CONCRETE PLACEMENT.

CITY of DELRAY BEACH
PUBLIC WORKS DEPARTMENT
434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

CURB AND GUTTER SECTIONS

DATE: 10-04-2024
RT 19.0

CITY of DELRAY BEACH
PUBLIC WORKS DEPARTMENT
434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

FLARED END FOR CURB AND GUTTER

DATE: 10-04-2024
RT 20.0

CITY of DELRAY BEACH
PUBLIC WORKS DEPARTMENT
434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

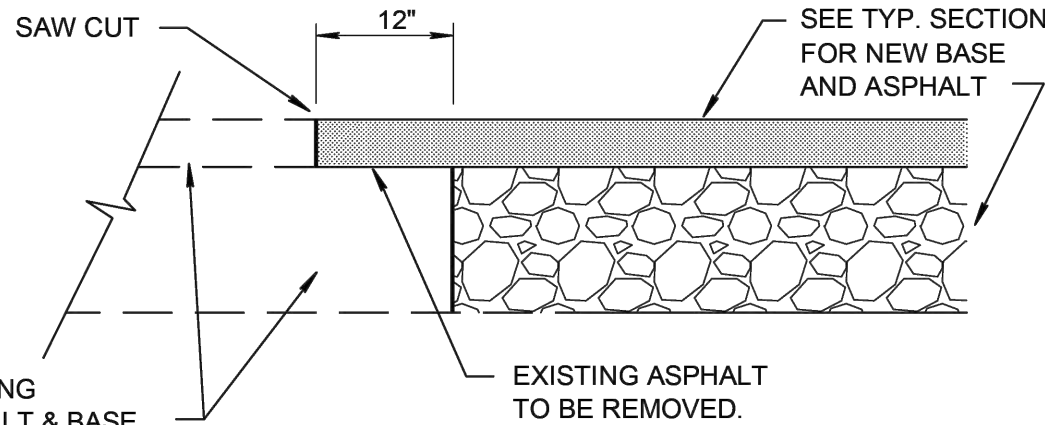
PAVEMENT JOINT DETAIL

DATE: 10-04-2024
RT 21.0

CITY of DELRAY BEACH
PUBLIC WORKS DEPARTMENT
434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

DETECTABLE WARNING RAMP IN PAVEMENT SIDEWALK TYPICAL DETAIL

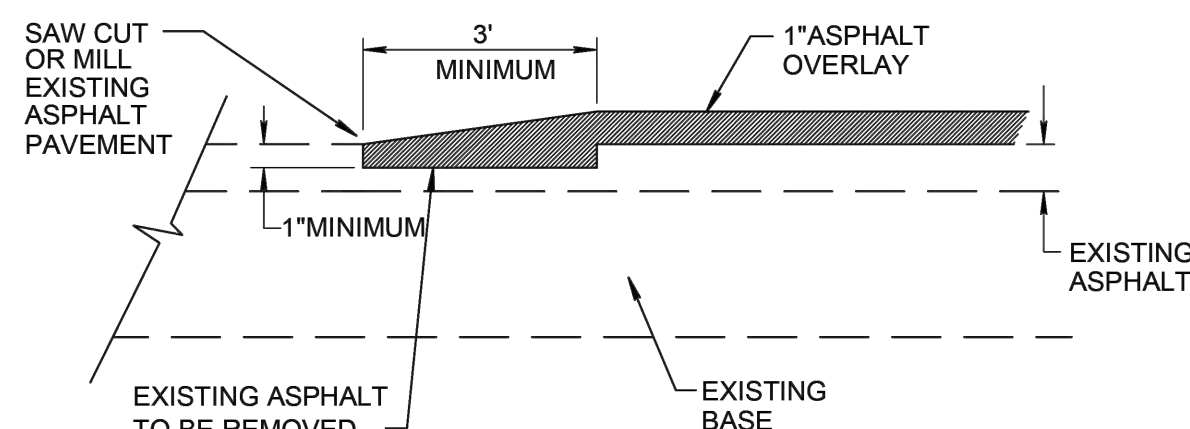
DATE: 10-04-2024
RT 29.0



NEW CONSTRUCTION PAVEMENT JOINT

NOTE:

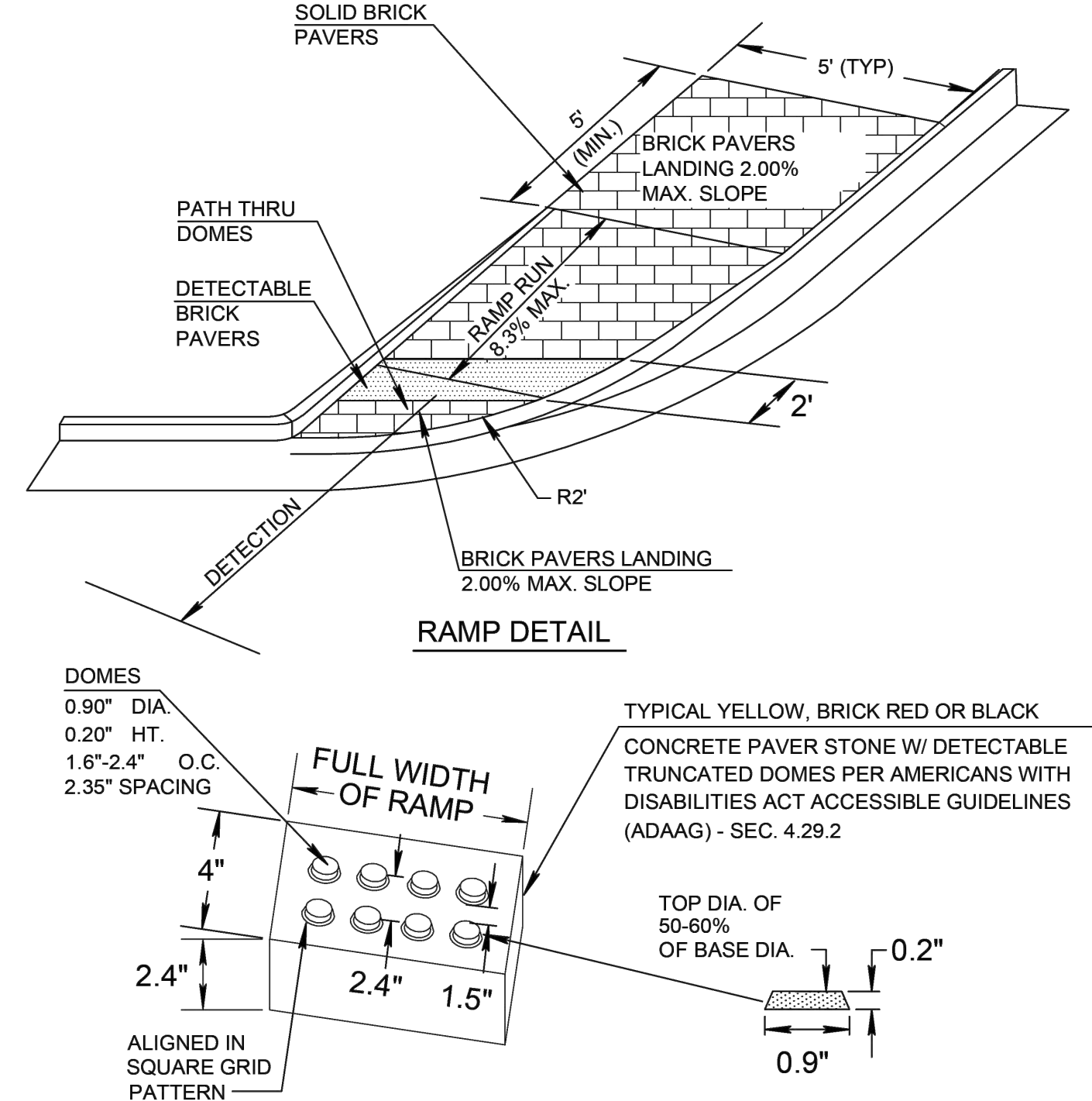
THIS METHOD OF PAVEMENT JOINT SHALL BE USED FOR ANY APPLICATION OR CONSTRUCTION WHERE PROPOSED PAVEMENT AND BASE WILL BE CONNECTED TO EXISTING PAVEMENT AND BASE.



NEW OVERLAY PAVEMENT JOINT

NOTE:

THIS METHOD OF PAVEMENT JOINT SHALL BE USED FOR ANY APPLICATION OR CONSTRUCTION WHERE PROPOSED PAVEMENT WILL BE CONNECTED TO EXISTING PAVEMENT.



ACCESSIBLE PAVER BRICK DETAIL

- IN ADDITION TO CURB RAMPS TRUNCATED DOMES ARE REQUIRED AT ALL AREAS OF PERIL NOT REQUIRED AT RESIDENTIAL DRIVEWAYS CROSSINGS OR CUT-THROUGH REFUGE ISLANDS LESS THAN 6' IN LENGTH.

CREECH
CONSULTING ENGINEERS
CIVILIZATION ENGINEER
PO BOX 327, STUART, FLORIDA 34984 (772) 485-2140

BOARD OF PROFESSIONAL ENGINEERS, CERTIFICATE OF AUTHORIZATION NUMBER 5139
PROFESSIONAL SURVEYORS AND MAPPERS, AMENDED CERTIFICATE NO. LB-008705

DATE	BY	REVISIONS
2/25/2025	JAC	Per City of Delray Comments Dated 2/25/25-05-20
2/25/2024	JAC	Per City of Delray Comments Dated 2/25/24-02-26
2/25/2024	JAC	Per City of Delray Comments Dated 2/25/24-01-10

HYUNDAI GENESIS DELRAY
2612 and 2650 N FEDERAL HWY

PAVING, GRADING AND DRAINAGE DETAILS

FLORIDA
DELRAY BEACH

DRAWN BY:	JAC
CHECKED BY:	RTC / RICKETTS
LATITUDE:	26°29'22.96"N
LONGITUDE:	80° 3'53.74"W
HORZ. SCALE:	
VERT. SCALE:	

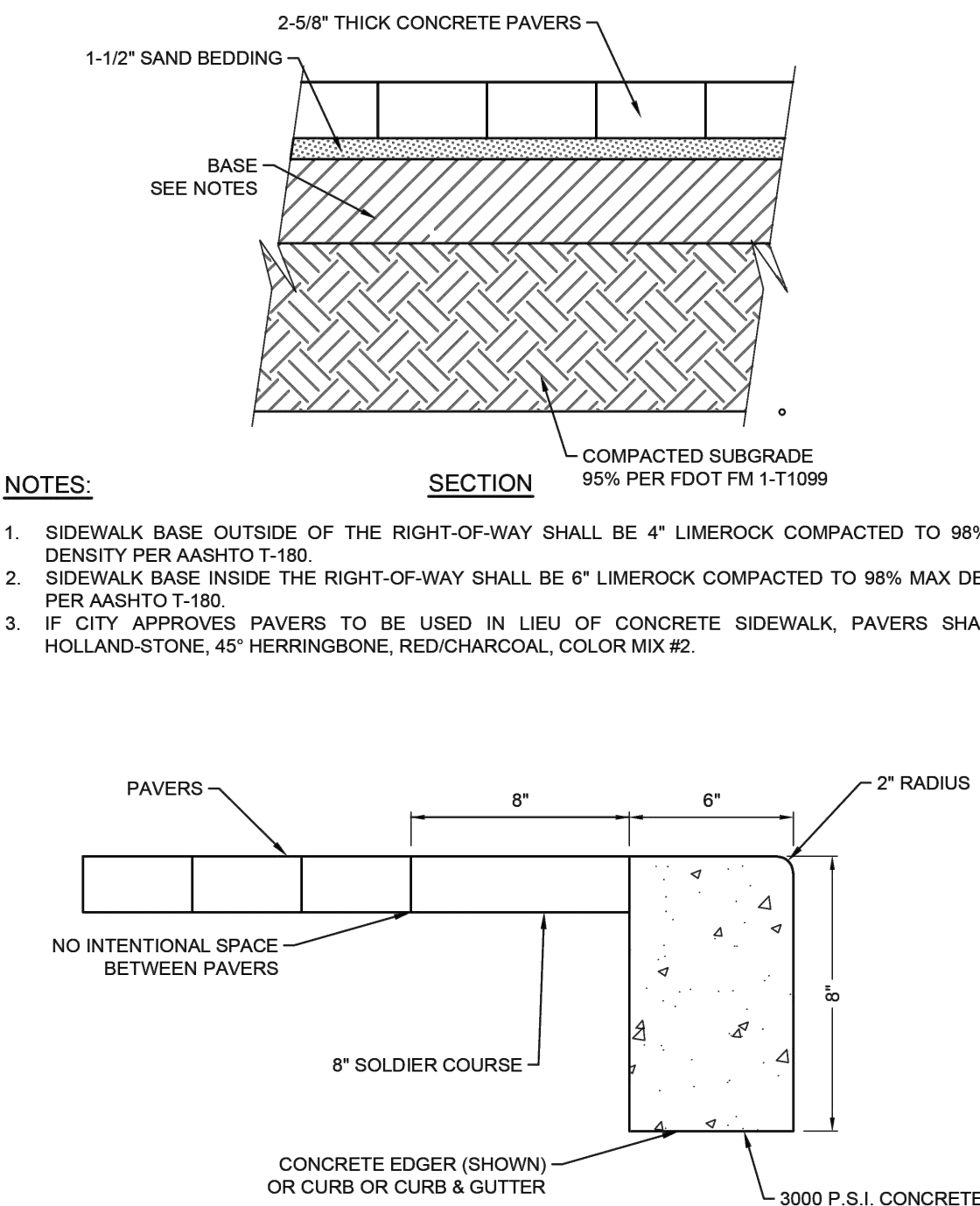
SEAL

SHEET
D2
PROJECT NO. 23-022-001

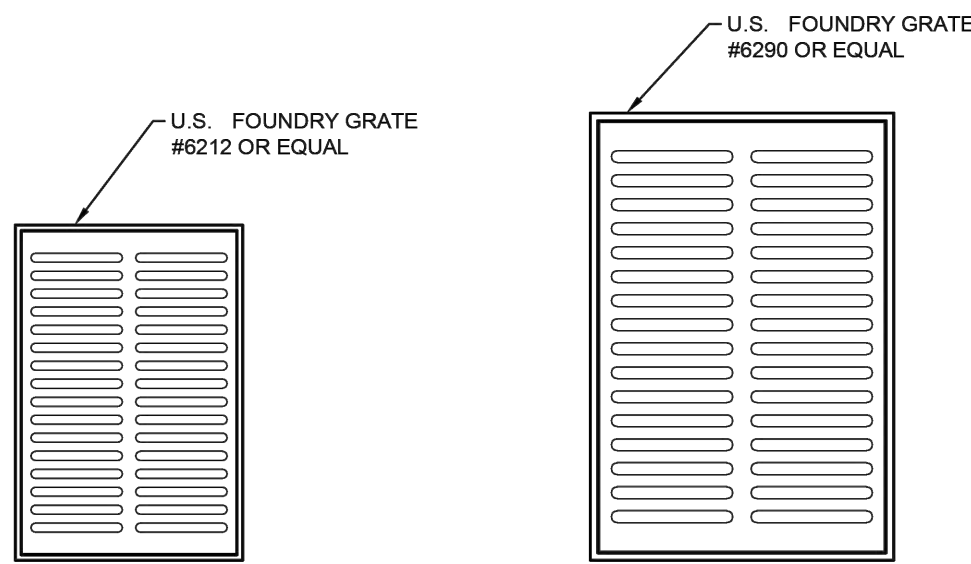
THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADOPTION BY CREECH ENGINEERS, INC SHALL BE WITHOUT LIABILITY TO CREECH ENGINEERS, INC.

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THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADOPTION BY GRECH ENGINEERS, INC. SHALL BE WITHOUT LIABILITY TO GRECH ENGINEERS, INC.



INLET TYPE	DIMENSIONS		GRATE TYPE	MAX. PIPE SIZE	
	A	B		WALL A	WALL B
'C'	2'-0"	3'-1"	U.S. FOUNDRY No. 6212	15" R.C.P.	24" R.C.P.
'E'	3'-0"	4'-5"	U.S. FOUNDRY No. 6290	24" R.C.P.	36" R.C.P.



TYPE "C"

TYPE "E"

NOTES:

- ALL GRATES SHALL BE SUITABLE FOR H-20 LOADING (HIGHWAY TRAFFIC LOADS)
- WHEN INSTALLED IN PAVEMENT OR WITHIN 6' OF PAVEMENT USE U.S.F. 4160-6210

PAVEMENT MARKING SPECIFICATIONS

All Pavement markings to be installed per these typicals, plans and specifications, and as directed by the City and shall conform to the requirements of F.D.O.T. and the manual on uniform traffic control devices, (MUTCD).

PERMANENT MARKINGS

Installation:

- All markings shall be installed by the extruded method.
- Markings shall be free of weaves, bows, drips, drags, and other degrading items.
- Chalk shall be used for all layout markings

Materials:

- All materials shall be alkyl or hydrocarbon thermoplastic meeting all FDOT specifications.

Thickness:

- All markings shall be installed to yield 90 mils of material measured above the pavement surface.

Spheres:

- Reflective glass spheres are to be applied to all stripes and markings per FDOT specifications.

Alternate Material:

- STAYMARK marking tape, or equivalent may be used, as approved or directed by the City.

Layout:

- Layout shall be made using marking chalk.
- It is recommended that marking layout be inspected by the City prior to the placement of final markings.

TEMPORARY MARKINGS

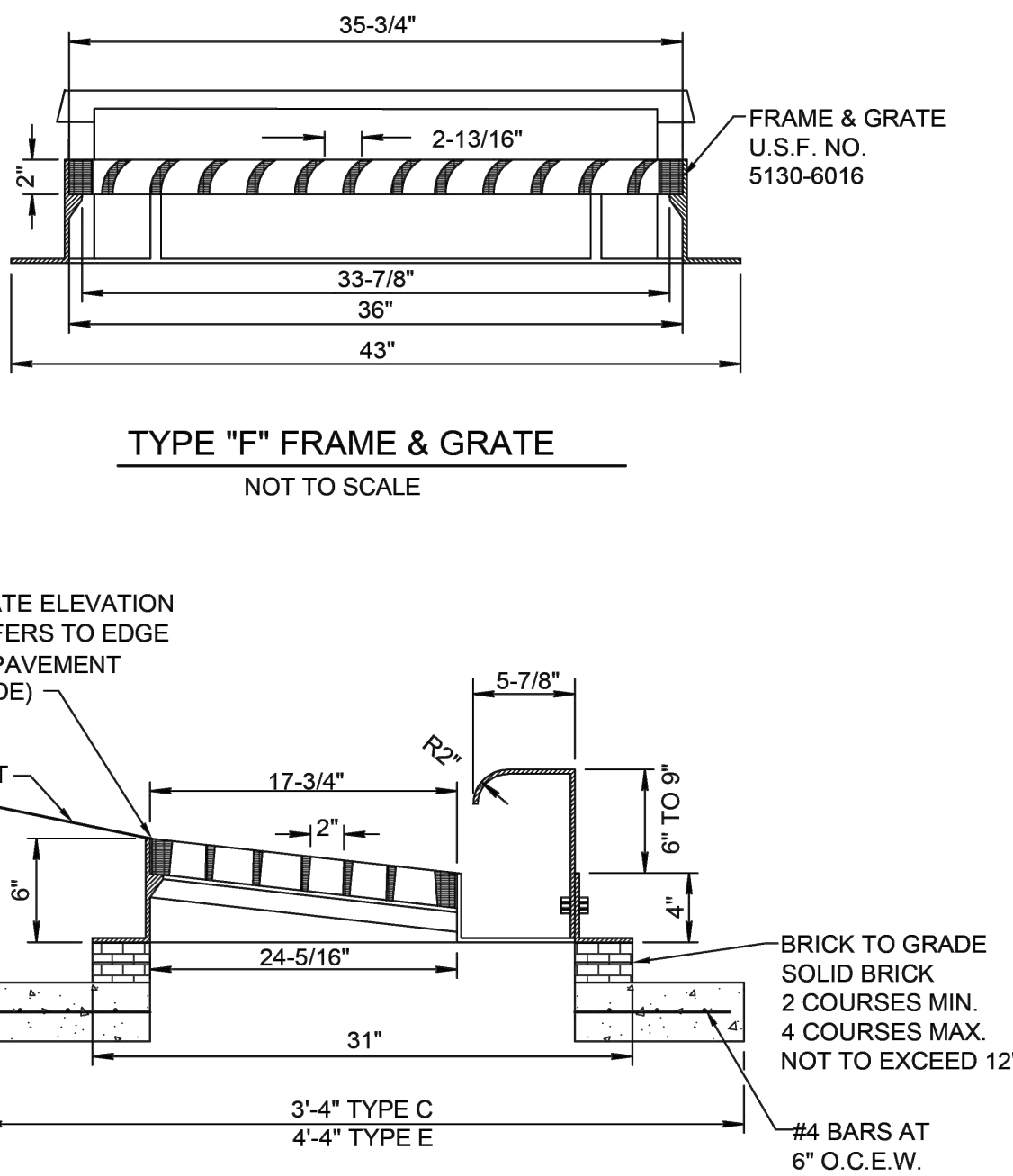
Temporary markings may be used only as specified in this section, or as approved or directed by the City.

Final Pavement Surface:

- Only foil backed marking tape is allowed.
- All tape shall be totally removed concurrent with permanent marking placement.

Other Pavement Surfaces:

- Intermediate pavement surfaces may be marked with FDOT approved materials, designs, and specifications.



TYPE "F" FRAME & GRATE PROFILE

NOT TO SCALE

- U.S.F. NO. 6016 GRATE MAY BE INSTALLED WITH VANE SLOTS FOR LEFT OR RIGHT FLOW.

ALL PAVEMENT MARKINGS

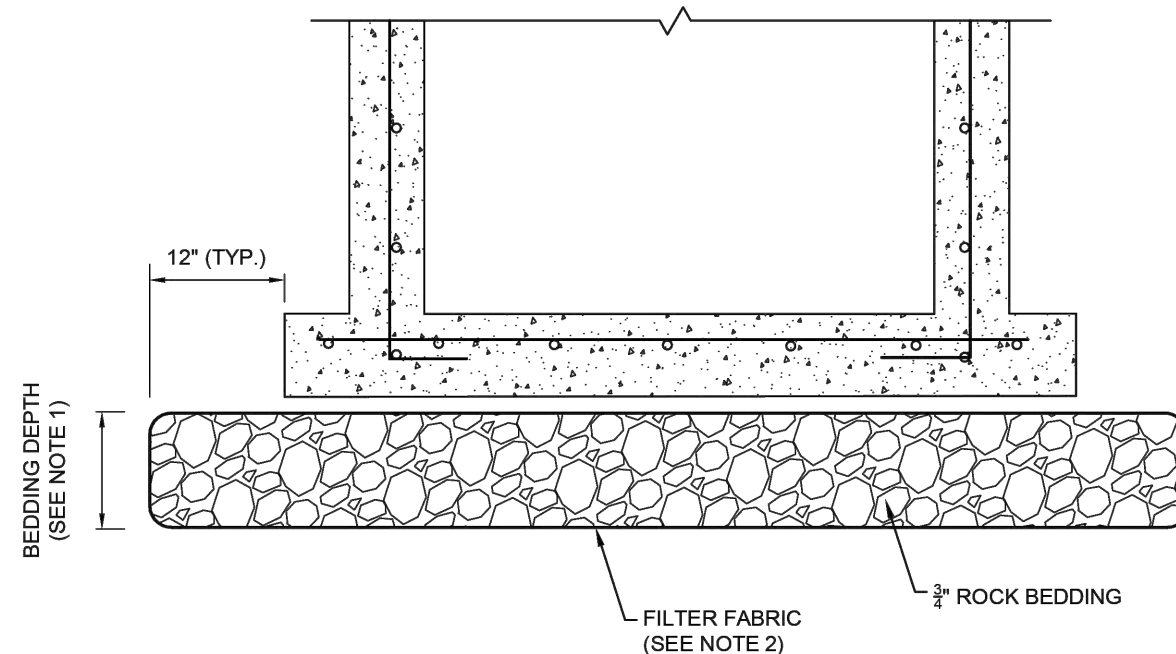
All paved surfaces shall be properly marked prior to the hours of darkness.

RAISED PAVEMENT MARKERS

- R.P.M.s shall be installed on all lane lines and centerlines, spaced at 20' or 40'.
- R.P.M.s shall be a 4 x 4 type class "B" marker meeting F.D.O.T. specifications and shall be approved by the City prior to use.
- R.P.M.'s shall be installed using alkyl thermoplastic on asphalt and epoxy on concrete.

OTHER NOTES

- All Materials within right-of-way shall be thermoplastic and per F.D.O.T. specifications.
- Pavement marking within private parking lots may be painted according to F.D.O.T. specifications, except for all stop bars adjacent to public right-of-way.



NOTES:

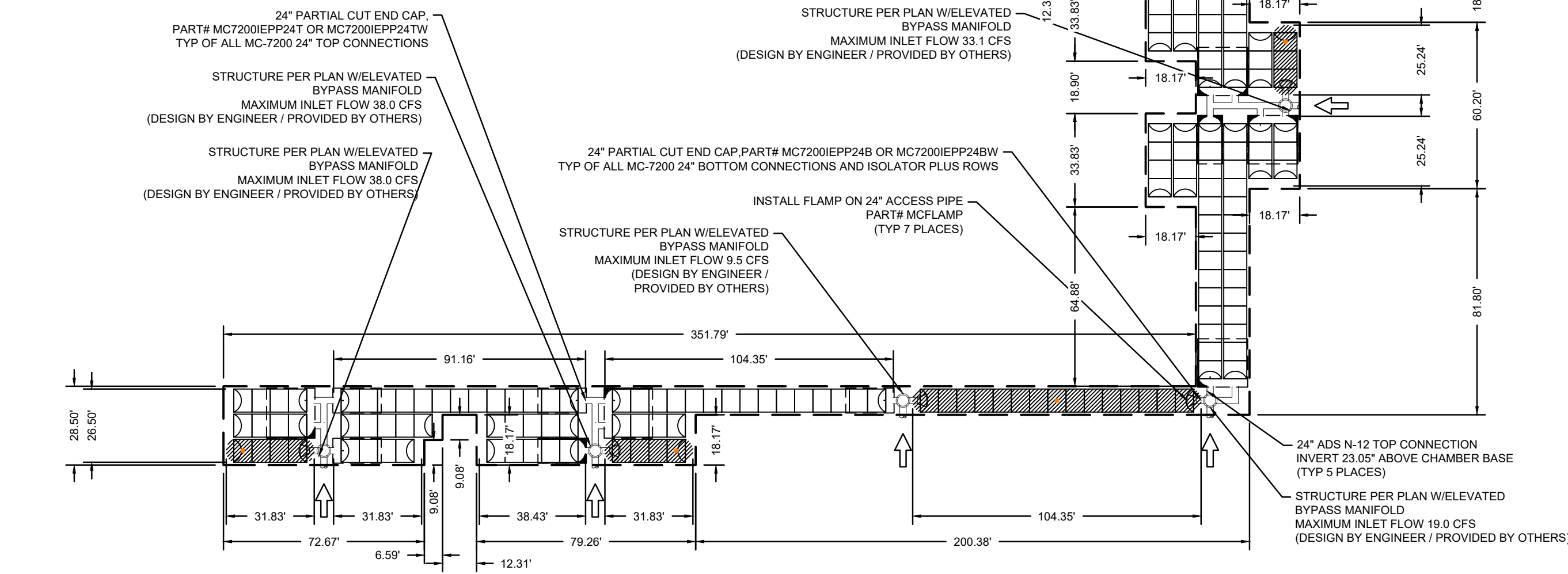
- BEDDING DEPTH SHALL BE 10" UNDER DRAINAGE STRUCTURES AND 18" UNDER SANITARY STRUCTURES.
- ROCK SHALL BE WRAPPED IN FILTER FABRIC THAT MEETS THE REQUIREMENTS OF F.D.O.T. SPECIFICATION SECTION 985.

DATE	BY	REVISIONS
2/20/2025	JAC	Per City of Delray comments Dated 2/20/25-05-20
2/20/2025	JAC	Per City of Delray comments Dated 2/20/25-02-26
2/20/2024	JAC	Per City of Delray comments Dated 2/20/24-01-10

CONCEPTUAL LAYOUT - SYSTEM 1	
202	STORMTECH MC-7200 CHAMBERS
68	STORMTECH MC-7200 END CAPS
12	STONE ABOVE (in)
9	STONE BELOW (in)
40	% STONE VOID
66,781	INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED)
16240	SYSTEM AREA (ft²)
1488	SYSTEM PERIMETER (ft)

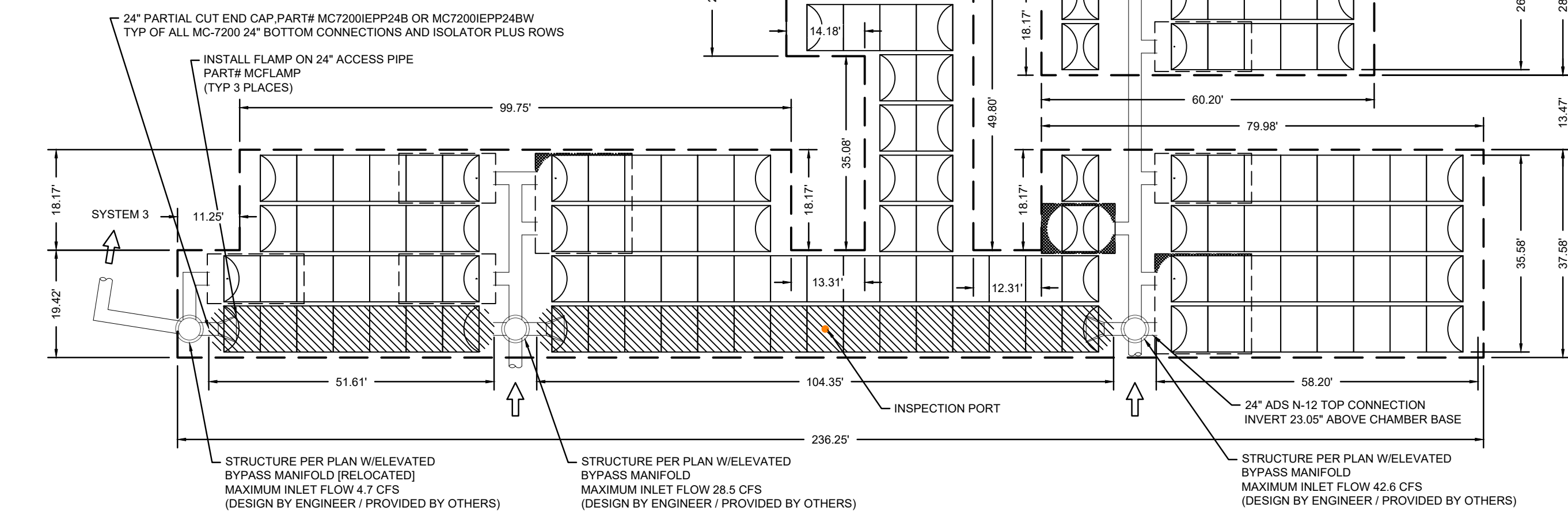
CONCEPTUAL ELEVATIONS - SYSTEM 1	
18.00	MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED)
13.50	MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC)
13.00	MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC)
13.00	MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT)
13.00	MINIMUM ALLOWABLE GRADE (TOP OF RIGID PAVEMENT)
12.00	TOP OF STONE
11.00	TOP OF MC-7200 CHAMBER
7.92	24" TOP MANIFOLD/CONNECTION INVERT
6.19	24" ISOLATOR ROW PLUS CONNECTION INVERT
6.00	BOTTOM OF MC-7200 CHAMBER
5.25	BOTTOM OF STONE

TOTAL VOLUME = 130,435 CF

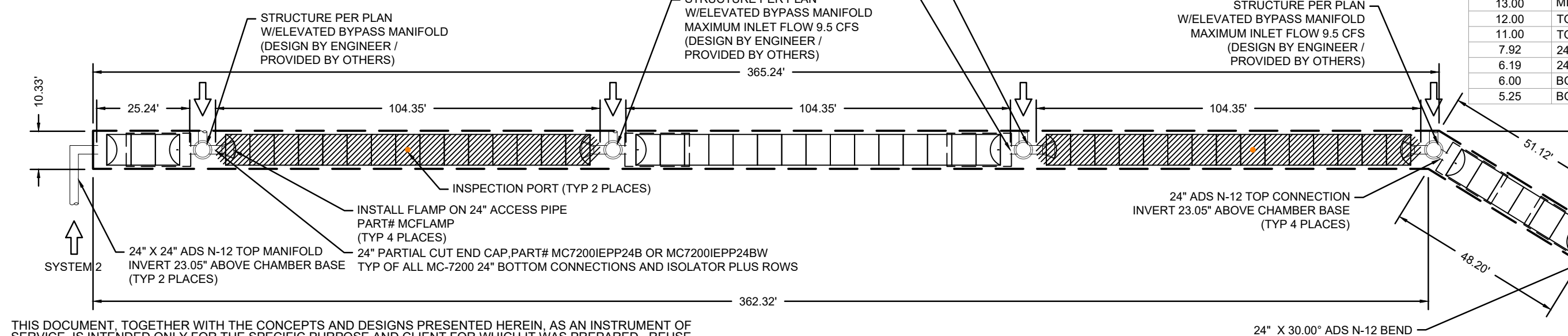
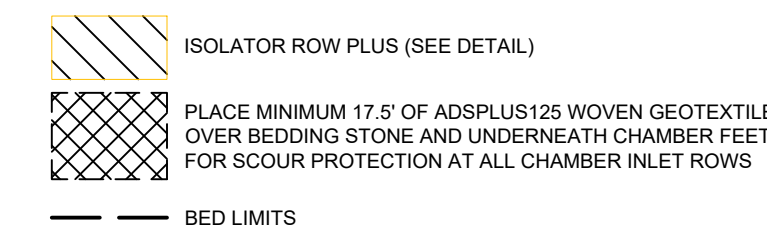


CONCEPTUAL LAYOUT - SYSTEM 2	
139	STORMTECH MC-7200 CHAMBERS
50	STORMTECH MC-7200 END CAPS
12	STONE ABOVE (in)
9	STONE BELOW (in)
40	% STONE VOID
46,183	INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED)
11252	SYSTEM AREA (ft²)
914	SYSTEM PERIMETER (ft)

CONCEPTUAL ELEVATIONS - SYSTEM 2	
18.00	MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED)
13.50	MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC)
13.00	MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC)
13.00	MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT)
13.00	MINIMUM ALLOWABLE GRADE (TOP OF RIGID PAVEMENT)
12.00	TOP OF STONE
11.00	TOP OF MC-7200 CHAMBER
7.92	24" TOP MANIFOLD/CONNECTION INVERT
6.19	24" ISOLATOR ROW PLUS CONNECTION INVERT
6.00	BOTTOM OF MC-7200 CHAMBER
5.25	BOTTOM OF STONE

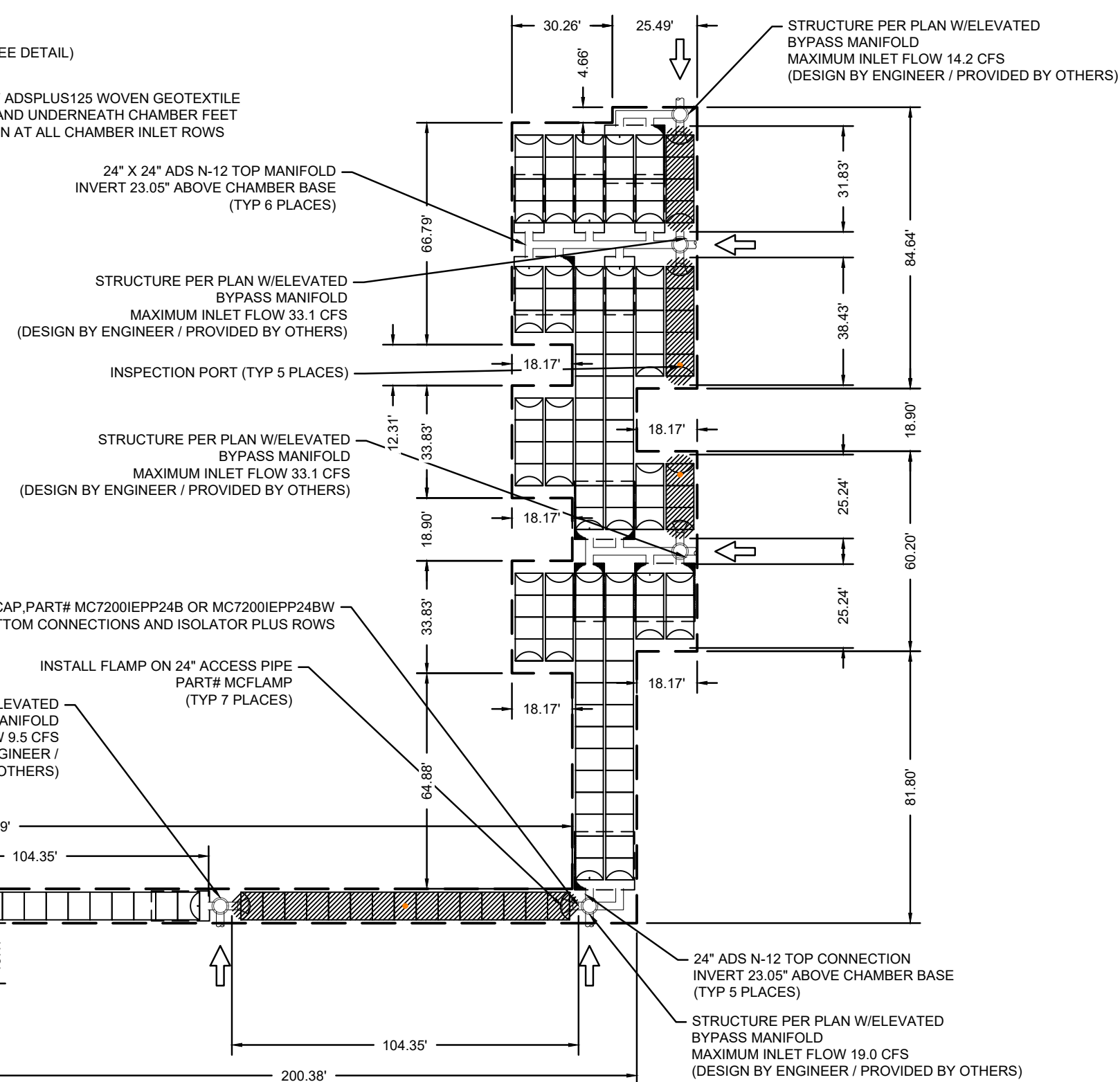
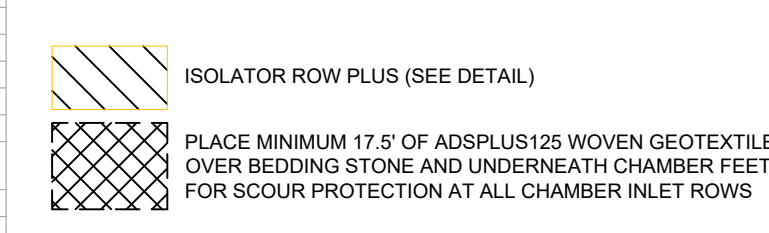


- NOTES**
- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.
 - THE SITE DESIGN ENGINEER MUST CONSIDER THE EFFECTS OF POSSIBLE SATURATED SOILS ON NEARBY SYSTEMS, INCLUDING BUT NOT LIMITED TO, RETAINING WALLS, SLOPE CONSTRUCTION/STABILITY, OR BUILDINGS/STRUCTURES. NO FOUNDATION LOADS SHALL BE TRANSMITTED TO THE CHAMBERS.

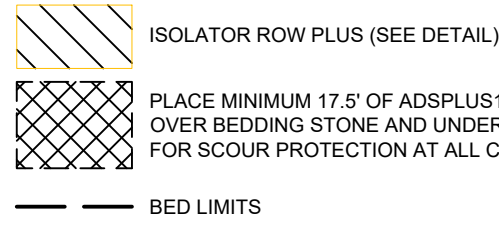


THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY GRECH ENGINEERS, INC. SHALL BE WITHOUT LIABILITY TO GRECH ENGINEERS, INC.

- NOTES**
- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.
 - THE SITE DESIGN ENGINEER MUST CONSIDER THE EFFECTS OF POSSIBLE SATURATED SOILS ON NEARBY SYSTEMS, INCLUDING BUT NOT LIMITED TO, RETAINING WALLS, SLOPE CONSTRUCTION/STABILITY, OR BUILDINGS/STRUCTURES. NO FOUNDATION LOADS SHALL BE TRANSMITTED TO THE CHAMBERS.

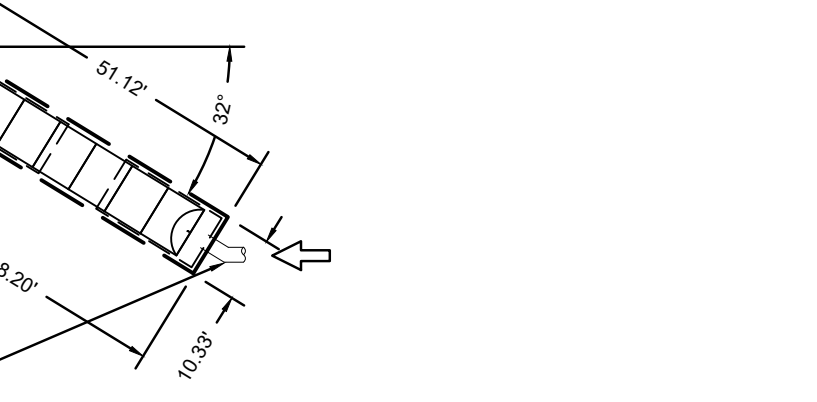


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CONCEPTUAL LAYOUT - SYSTEM 3	
54	STORMTECH MC-7200 CHAMBERS
10	STORMTECH MC-7200 END CAPS
12	STONE ABOVE (in)
9	STONE BELOW (in)
40	% STONE VOID
17,471	INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED)
4272	SYSTEM AREA (ft²)
845	SYSTEM PERIMETER (ft)

CONCEPTUAL ELEVATIONS - SYSTEM 3	
18.00	MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED)
13.50	MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC)
13.00	MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC)
13.00	MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT)
13.00	MINIMUM ALLOWABLE GRADE (TOP OF RIGID PAVEMENT)
12.00	TOP OF STONE
11.00	TOP OF MC-7200 CHAMBER
7.92	24" TOP MANIFOLD/CONNECTION INVERT
6.19	24" ISOLATOR ROW PLUS CONNECTION INVERT
6.00	BOTTOM OF MC-7200 CHAMBER
5.25	BOTTOM OF STONE



MC-7200 STORMTECH CHAMBER SPECIFICATIONS

- CHAMBERS SHALL BE STORMTECH MC-7200.
- CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE CORROVERS.
- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 60x101.
- CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
- THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
- CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (< 1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER; 2) MAXIMUM PERMANENT (24-HR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
 - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
 - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
 - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 450 LBS/FT². THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
- ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE STRUCTURAL EVALUATION SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
 - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
 - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
 - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
- CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.
- MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECH NOTE #6.32 FOR MANIFOLD SIZING GUIDANCE. DUE TO THE ADAPTATION OF THIS CHAMBER TO 12" (300 mm) BETWEEN ADJACENT CHAMBER ROWS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
- ADS DOES NOT DESIGN OR PROVIDE MEMBRANE LINER SYSTEMS. TO MINIMIZE THE LEAKAGE POTENTIAL OF LINER SYSTEMS, THE MEMBRANE LINER SYSTEM SHOULD BE DESIGNED BY A KNOWLEDGEABLE GEOTECHNICAL PROFESSIONAL AND INSTALLED BY A QUALIFIED CONTRACTOR.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF MC-7200 CHAMBER SYSTEM

- STORMTECH MC-7200 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
- STORMTECH MC-7200 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-7200 CONSTRUCTION GUIDE".
- CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR EXCAVATOR SITUATED OVER THE CHAMBERS.
 - STORMTECH RECOMMENDS 3 BACKFILL METHODS:
 - STONESHOOTER LOCATED OFF THE CHAMBER BED.
 - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
 - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
- THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
- JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
- MAINTAIN MINIMUM - 9" (230 mm) SPACING BETWEEN THE CHAMBER ROWS.
- INLET AND OUTLET MANIFOLDS MUST BE INSERTED A MINIMUM OF 12" (300 mm) INTO CHAMBER END CAPS.
- EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE MEETING THE AASHTO M43 DESIGNATION OF #3 OR #4.
- STONE SHALL BE BROUGHT UP EVENLY AROUND CHAMBERS SO AS NOT TO DISTORT THE CHAMBER SHAPE. STONE DEPTHS SHOULD NEVER DIFFER BY MORE THAN 12" (300 mm) BETWEEN ADJACENT CHAMBER ROWS.
- STONE MUST BE PLACED ON THE TOP CENTER OF THE CHAMBER TO ANCHOR THE CHAMBERS IN PLACE AND PRESERVE ROW SPACING.
- THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIAL BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
- ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

- STORMTECH MC-7200 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-7200 CONSTRUCTION GUIDE".
 - THE USE OF EQUIPMENT OVER MC-7200 CHAMBERS IS LIMITED:
 - NO EQUIPMENT IS ALLOWED ON CHAMBERS.
 - NO RUBBER TIRED LOADER, DUMP TRUCK, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-7200 CONSTRUCTION GUIDE".
 - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH MC-7200 CONSTRUCTION GUIDE".
 - FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.
- USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY USING THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

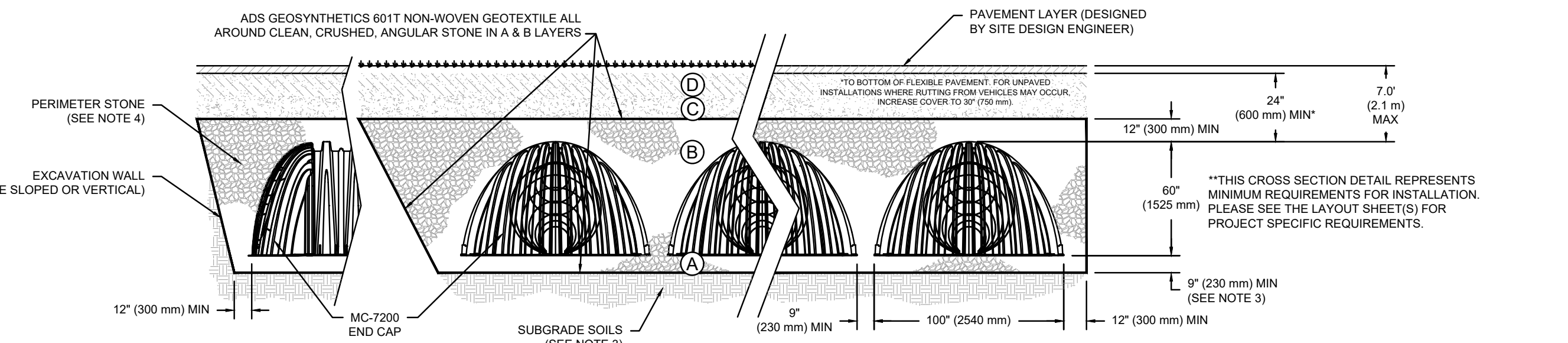
CONTACT STORMTECH AT 1-800-821-8710 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

ACCEPTABLE FILL MATERIALS: STORMTECH MC-7200 CHAMBER SYSTEMS

MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	AASHTO M145¹ A-1, A-2.4, A-3 OR AASHTO M43¹ 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	AASHTO M43¹ 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	AASHTO M43¹ 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE ²,³

PLEASE NOTE:

- THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
- STORMTECH COMPACTION REQUIREMENTS ARE MET FOR A LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
- WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
- ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.
- WHERE RECYCLED CONCRETE AGGREGATE IS USED TO MEET THE ACCEPTABILITY CRITERIA OUTLINED IN TECHNICAL NOTE 6.20 "RECYCLED CONCRETE STRUCTURAL BACKFILL".



NOTES:

- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 60x101.
- MC-7200 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS. REFERENCE STORMTECH DESIGN MANUAL FOR BEARING CAPACITY GUIDANCE.
- PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
 - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
 - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
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MC-7200 CROSS SECTION DETAIL

GRECH ENGINEERS, INC.
CONSULTING ENGINEER
PO BOX 327, STUART, FLORIDA 34984 (772) 485-2140

BOARD OF PROFESSIONAL ENGINEERS, CERTIFICATE OF AUTHORIZATION NUMBER 5139
PROFESSIONAL SURVEYORS AND MAPPERS, AMENDED CERTIFICATE NO. LE-0006705

DATE	BY	REVISIONS
2/26/2025	JAC	Per City of Delray comments Dated 2/26/25-05-29
2/26/2025	JAC	Per City of Delray comments Dated 2/26/25-02-28
2/26/2025	JAC	Per City of Delray comments Dated 2/26/25-01-10

HYUNDAI GENESIS DELRAY

2612 and 2650 N FEDERAL HWY

ADS STORMTECH CHAMBER DRAINAGE SYSTEM

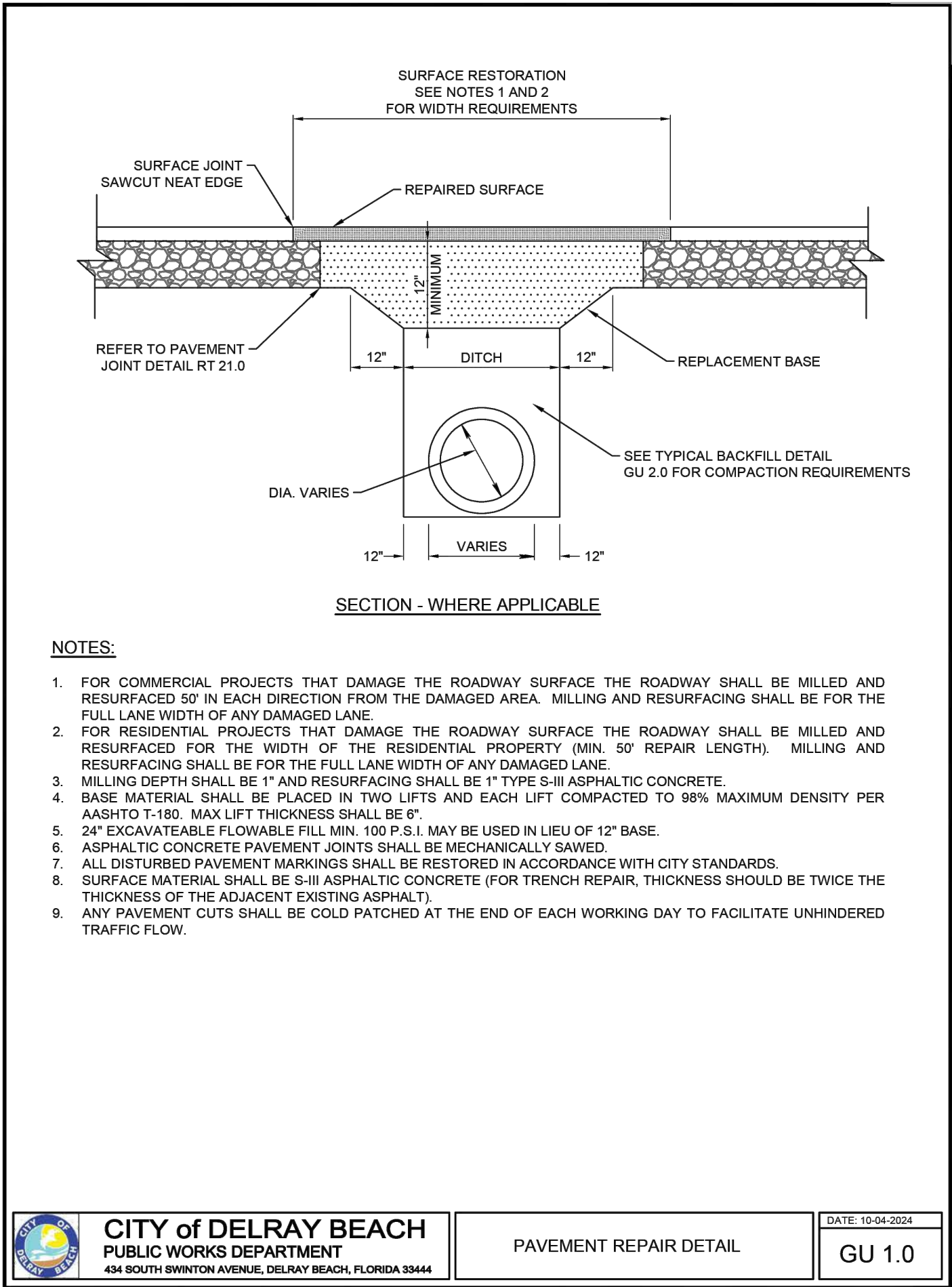
DELRAY BEACH, FLORIDA

DRAWN BY: JAC
CHECKED BY: RTC / RICKETTS
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LONGITUDE: 80° 35'53.74"W
HORZ. SCALE:
VERT. SCALE:

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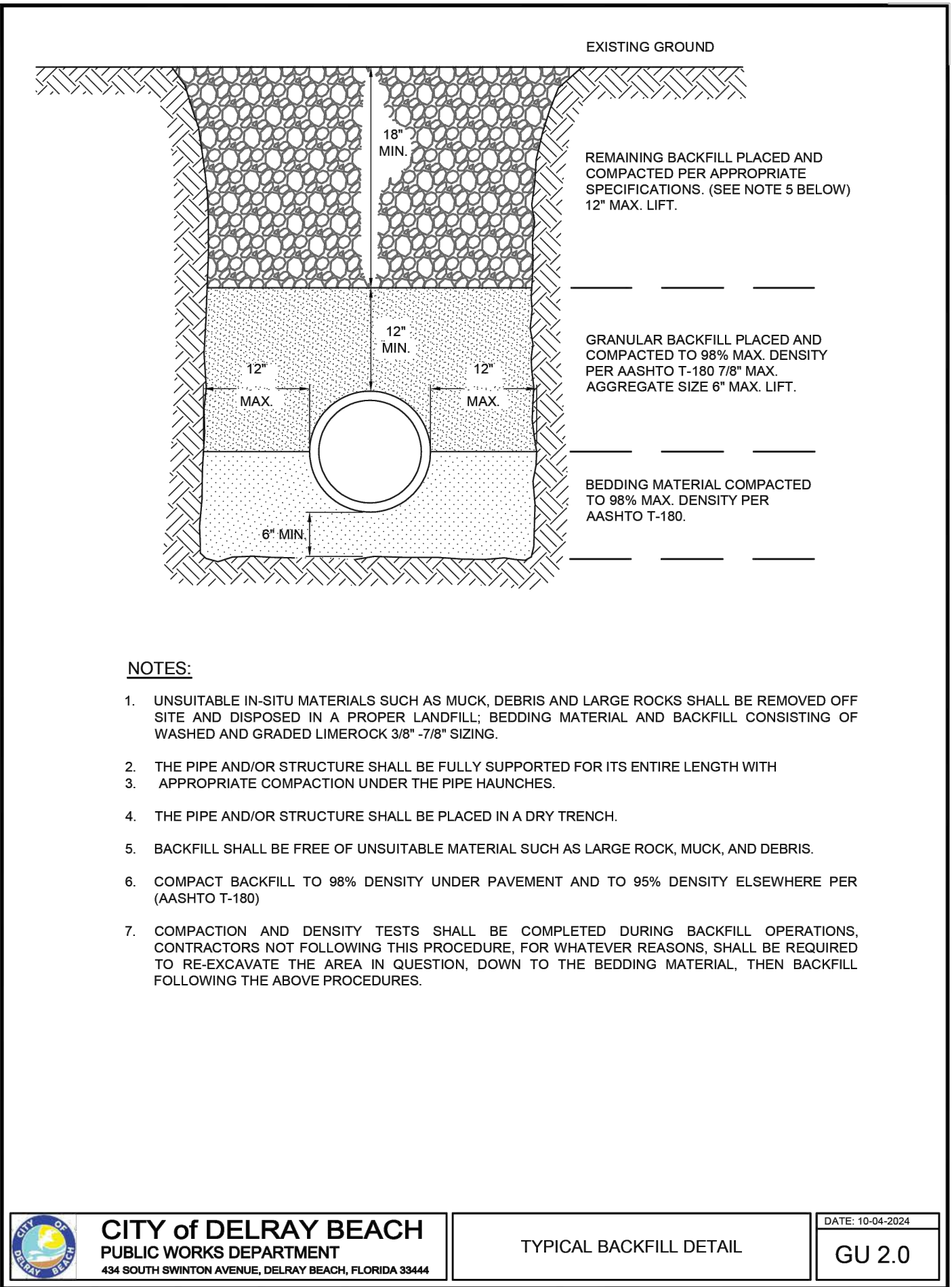
SHEET
PROJECT NO. 23-022-001

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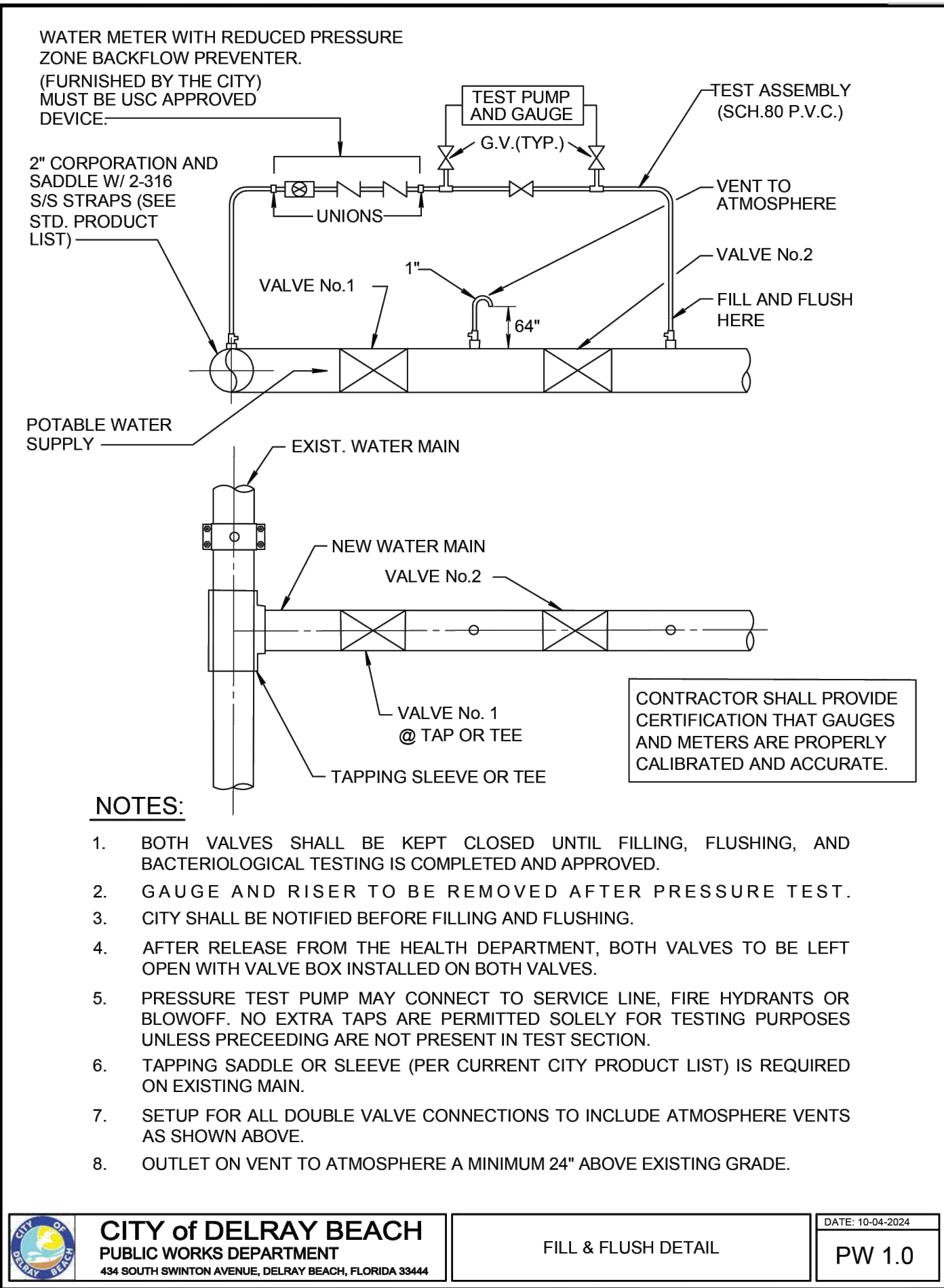
NOTES:

- FOR COMMERCIAL PROJECTS THAT DAMAGE THE ROADWAY SURFACE THE ROADWAY SHALL BE MILLED AND RESURFACED 50' IN EACH DIRECTION FROM THE DAMAGED AREA. MILLING AND RESURFACING SHALL BE FOR THE FULL LANE WIDTH OF ANY DAMAGED LANE.
- FOR RESIDENTIAL PROJECTS THAT DAMAGE THE ROADWAY SURFACE THE ROADWAY SHALL BE MILLED AND RESURFACED FOR THE WIDTH OF THE RESIDENTIAL PROPERTY (MIN. 50' REPAIR LENGTH). MILLING AND RESURFACING SHALL BE FOR THE FULL LANE WIDTH OF ANY DAMAGED LANE.
- MILLING DEPTH SHALL BE 1" AND RESURFACING SHALL BE 1" TYPE 5-III ASPHALTIC CONCRETE.
- BASE MATERIAL SHALL BE PLACED IN TWO LIFTS AND EACH LIFT COMPACTED TO 98% MAXIMUM DENSITY PER AASHTO T-180. MAX LIFT THICKNESS SHALL BE 6".
- 24" EXCAVATABLE FLOWABLE FILL, MIN. 100 P.S.I., MAY BE USED IN LIEU OF 12" BASE.
- ASPHALTIC CONCRETE PAVEMENT JOINTS SHALL BE MECHANICALLY SAWED.
- ALL DISTURBED PAVEMENT MARKINGS SHALL BE RESTORED IN ACCORDANCE WITH CITY STANDARDS.
- SURFACE MATERIAL SHALL BE 5-III ASPHALTIC CONCRETE (FOR TRENCH REPAIR, THICKNESS SHOULD BE TWICE THE THICKNESS OF THE ADJACENT EXISTING ASPHALT).
- ANY PAVEMENT CUTS SHALL BE COLD PATCHED AT THE END OF EACH WORKING DAY TO FACILITATE UNHINDERED TRAFFIC FLOW.



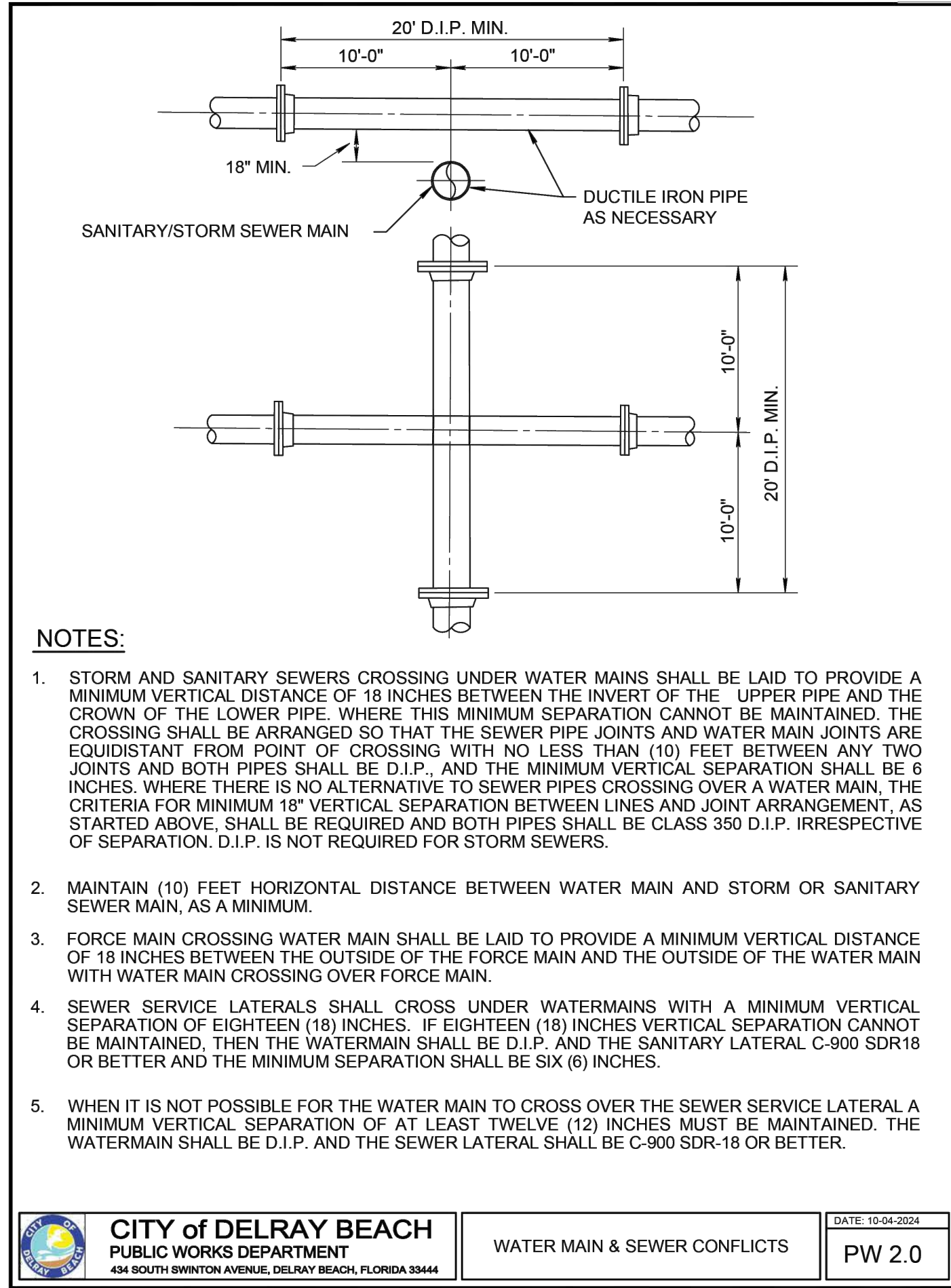
NOTES:

- UNSUITABLE IN-SITU MATERIALS SUCH AS MUCK, DEBRIS AND LARGE ROCKS SHALL BE REMOVED OFF SITE AND DISPOSED IN A PROPER LANDFILL. BEDDING MATERIAL AND BACKFILL CONSISTING OF WASHED AND GRADED LIMEROCK 3/8" - 3/4" SIZING.
- THE PIPE AND/OR STRUCTURE SHALL BE FULLY SUPPORTED FOR ITS ENTIRE LENGTH WITH APPROPRIATE COMPACTION UNDER THE PIPE HAUNCHES.
- THE PIPE AND/OR STRUCTURE SHALL BE PLACED IN A DRY TRENCH.
- BACKFILL SHALL BE FREE OF UNSUITABLE MATERIAL SUCH AS LARGE ROCK, MUCK, AND DEBRIS.
- COMPACT BACKFILL TO 98% DENSITY UNDER PAVEMENT AND TO 95% DENSITY ELSEWHERE PER (AASHTO T-180).
- COMPACTION AND DENSITY TESTS SHALL BE COMPLETED DURING BACKFILL OPERATIONS. CONTRACTORS NOT FOLLOWING THIS PROCEDURE, FOR WHATEVER REASONS, SHALL BE REQUIRED TO RE-EXCAVATE THE AREA IN QUESTION, DOWN TO THE BEDDING MATERIAL, THEN BACKFILL FOLLOWING THE ABOVE PROCEDURES.



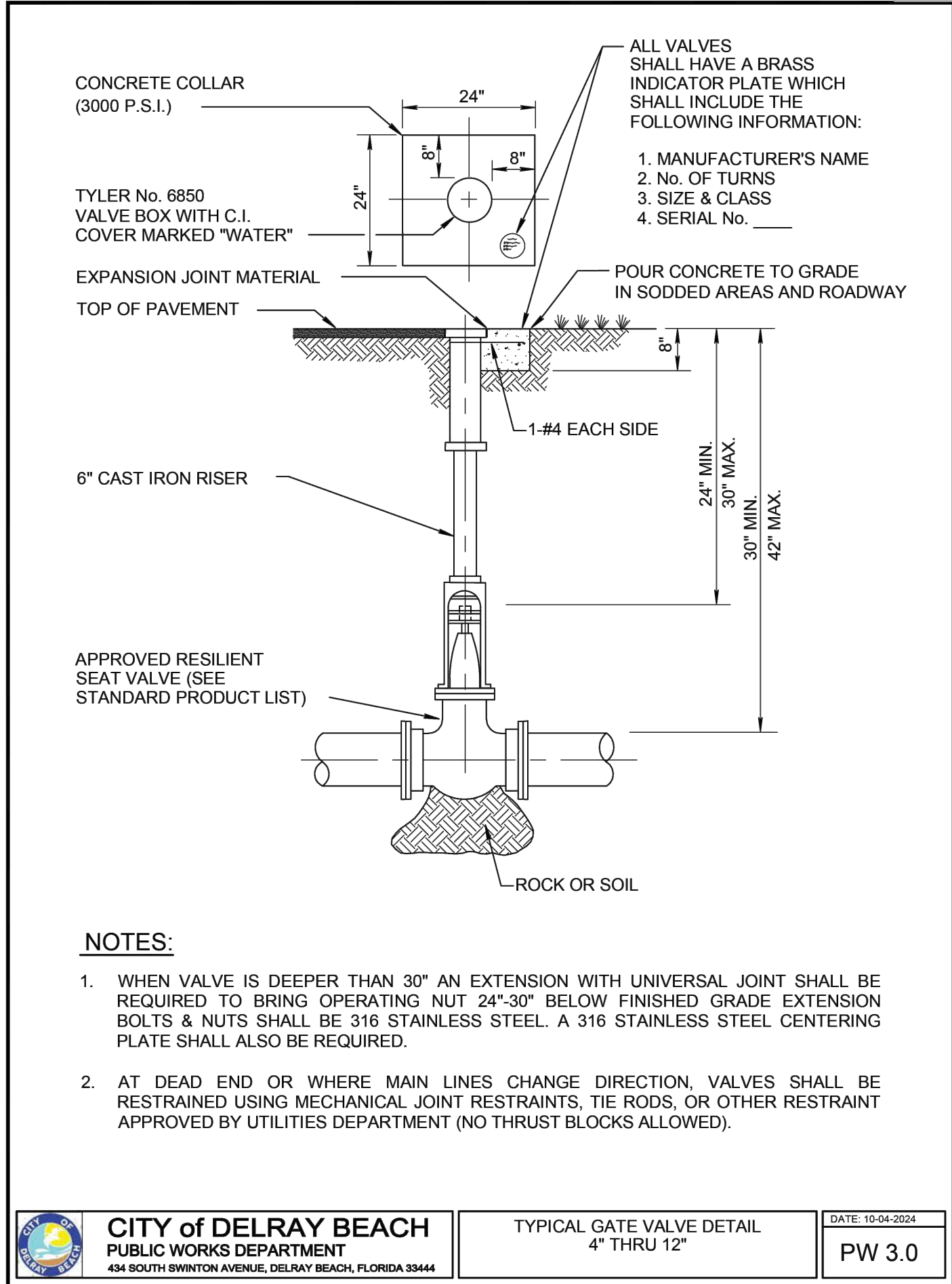
NOTES:

- BOTH VALVES SHALL BE KEPT CLOSED UNTIL FILLING, FLUSHING, AND BACTERIOLOGICAL TESTING IS COMPLETED AND APPROVED.
- GAUGE AND RISER TO BE REMOVED AFTER PRESSURE TEST.
- CITY SHALL BE NOTIFIED BEFORE FILLING AND FLUSHING.
- AFTER RELEASE FROM THE HEALTH DEPARTMENT, BOTH VALVES TO BE LEFT OPEN WITH VALVE BOX INSTALLED ON BOTH VALVES.
- PRESSURE TEST PUMP MAY CONNECT TO SERVICE LINE, FIRE HYDRANTS OR BLOWOFF. NO EXTRA TAPS ARE PERMITTED SOLELY FOR TESTING PURPOSES UNLESS PRECEDING ARE NOT PRESENT IN TEST SECTION.
- TAPPING SADDLE OR SLEEVE (PER CURRENT CITY PRODUCT LIST) IS REQUIRED ON EXISTING MAIN.
- SETUP FOR ALL DOUBLE VALVE CONNECTIONS TO INCLUDE ATMOSPHERE VENTS AS SHOWN ABOVE.
- OUTLET ON VENT TO ATMOSPHERE A MINIMUM 24" ABOVE EXISTING GRADE.



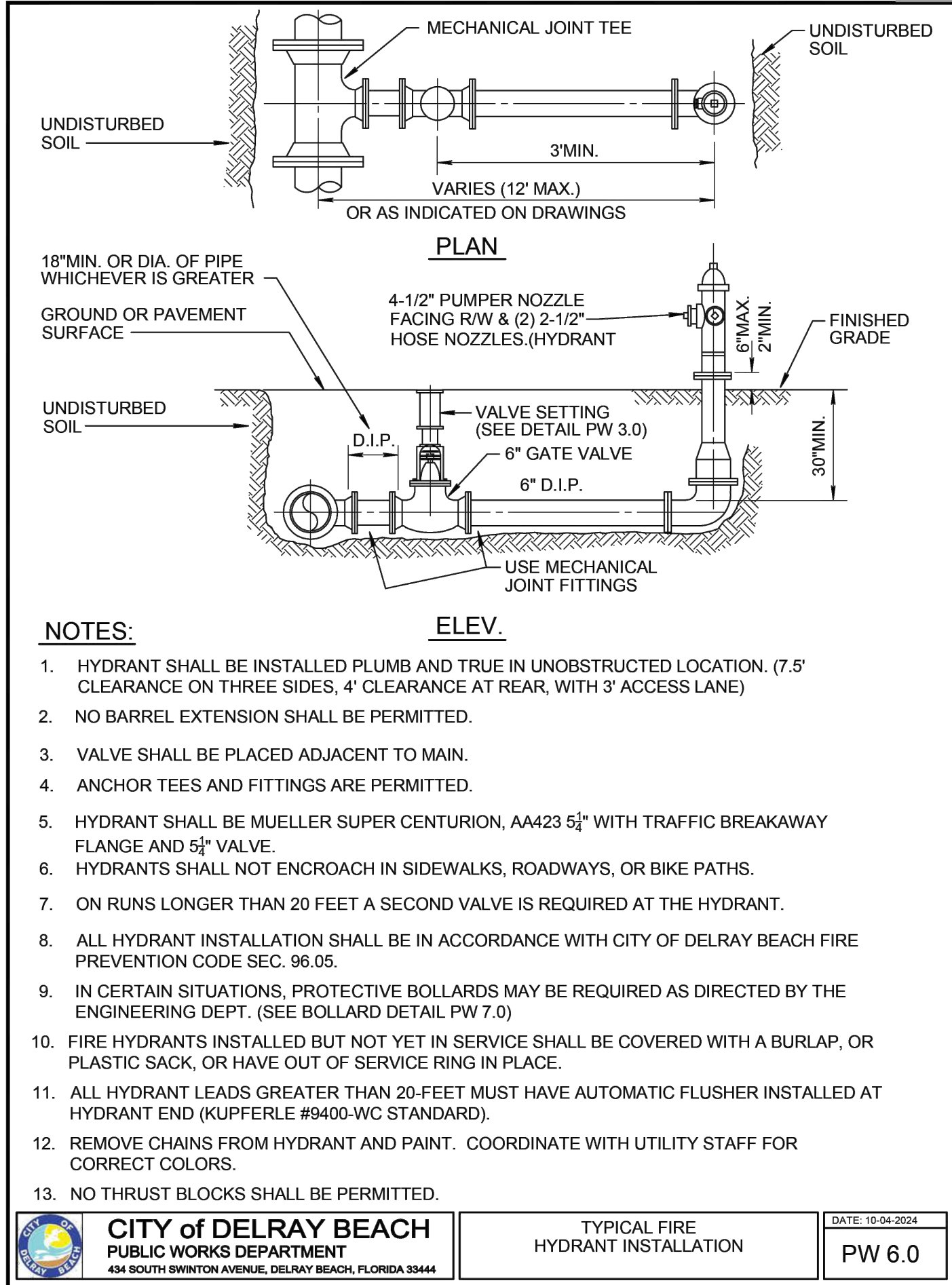
NOTES:

- STORM AND SANITARY SEWERS CROSSING UNDER WATER MAINS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF 18 INCHES BETWEEN THE INVERT OF THE UPPER PIPE AND THE CROWN OF THE LOWER PIPE. WHERE THIS MINIMUM SEPARATION CANNOT BE MAINTAINED, THE CROSSING SHALL BE ARRANGED SO THAT THE SEWER PIPE JOINTS AND WATER MAIN JOINTS ARE EQUIDISTANT FROM POINT OF CROSSING WITH NO LESS THAN (10) FEET BETWEEN ANY TWO JOINTS AND BOTH PIPES SHALL BE D.I.P. AND THE MINIMUM VERTICAL SEPARATION SHALL BE 6 INCHES. WHERE THERE IS NO ALTERNATIVE TO SEWER PIPES CROSSING OVER A WATER MAIN, THE CRITERIA FOR MINIMUM 18" VERTICAL SEPARATION BETWEEN LINES AND JOINT ARRANGEMENT, AS STARTED ABOVE, SHALL BE REQUIRED AND BOTH PIPES SHALL BE CLASS 350 D.I.P. IRRESPECTIVE OF SEPARATION. D.I.P. IS NOT REQUIRED FOR STORM SEWERS.
- MAINTAIN (10) FEET HORIZONTAL DISTANCE BETWEEN WATER MAIN AND STORM OR SANITARY SEWER MAIN, AS A MINIMUM.
- FORCE MAIN CROSSING WATER MAIN SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF 18 INCHES BETWEEN THE OUTSIDE OF THE FORCE MAIN AND THE OUTSIDE OF THE WATER MAIN WITH WATER MAIN CROSSING OVER FORCE MAIN.
- SEWER SERVICE LATERALS SHALL CROSS UNDER WATERMAINS WITH A MINIMUM VERTICAL SEPARATION OF EIGHTEEN (18) INCHES. IF EIGHTEEN (18) INCHES VERTICAL SEPARATION CANNOT BE MAINTAINED, THEN THE WATERMAIN SHALL BE D.I.P. AND THE SANITARY LATERAL C-900 SDR18 OR BETTER AND THE MINIMUM SEPARATION SHALL BE SIX (6) INCHES.
- WHEN IT IS NOT POSSIBLE FOR THE WATER MAIN TO CROSS OVER THE SEWER SERVICE LATERAL A MINIMUM VERTICAL SEPARATION OF AT LEAST TWELVE (12) INCHES MUST BE MAINTAINED. THE WATERMAIN SHALL BE D.I.P. AND THE SEWER LATERAL SHALL BE C-900 SDR-18 OR BETTER.



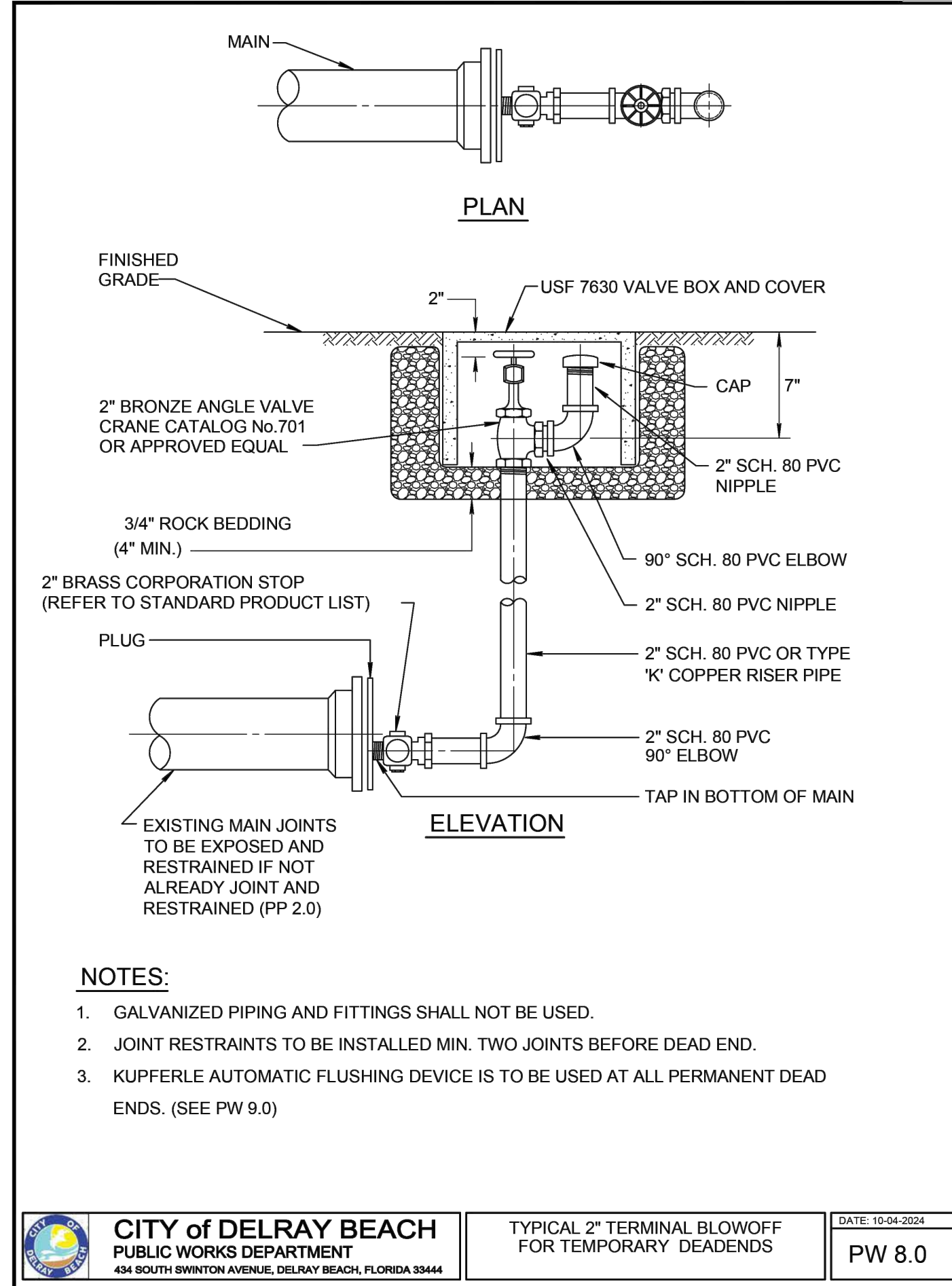
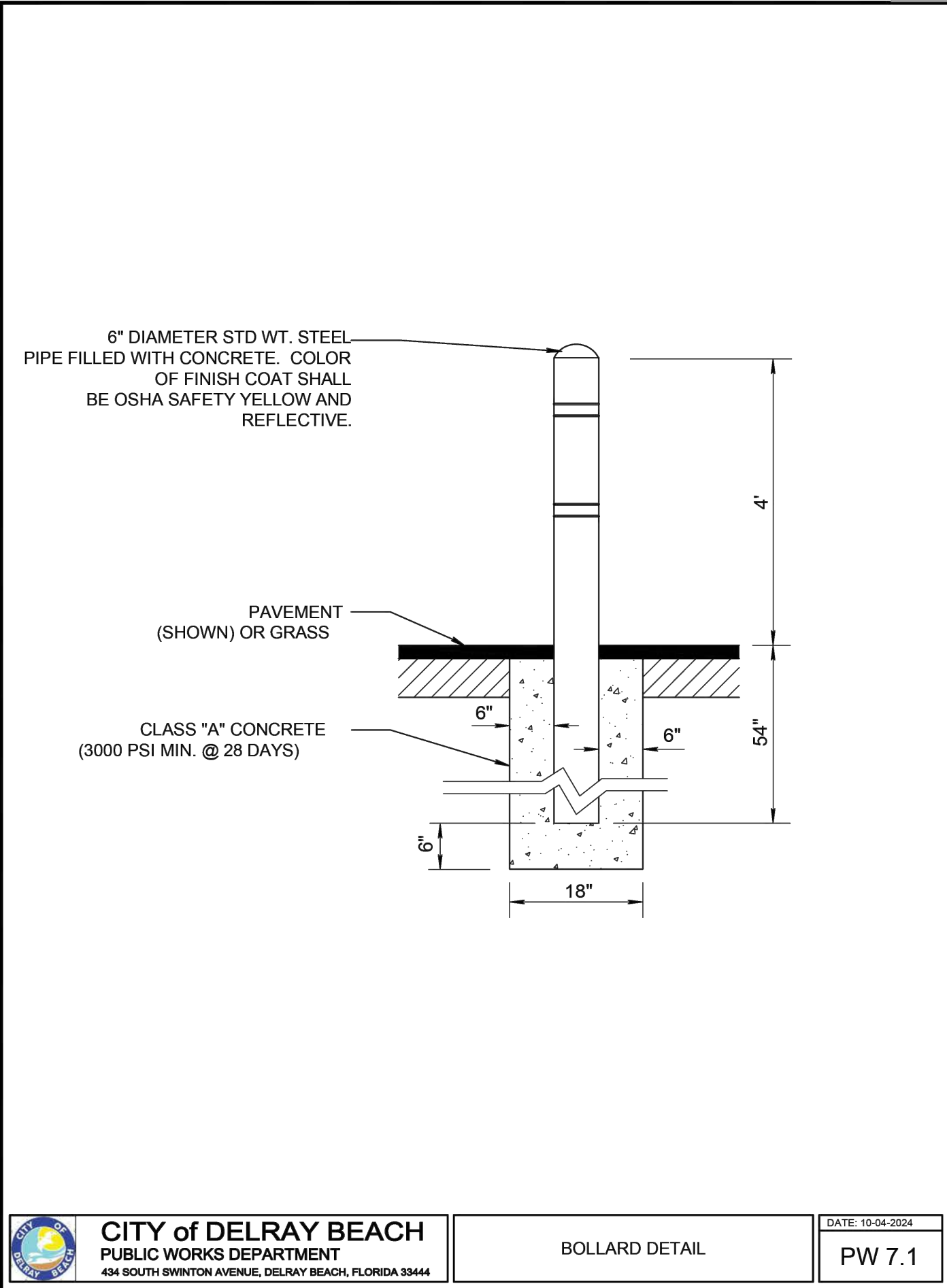
NOTES:

- WHEN VALVE IS DEEPER THAN 30" AN EXTENSION WITH UNIVERSAL JOINT SHALL BE REQUIRED TO BRING OPERATING NUT 24"-30" BELOW FINISHED GRADE EXTENSION BOLTS & NUTS SHALL BE 316 STAINLESS STEEL. A 316 STAINLESS STEEL CENTERING PLATE SHALL ALSO BE REQUIRED.
- AT DEAD END OR WHERE MAIN LINES CHANGE DIRECTION, VALVES SHALL BE RESTRAINED USING MECHANICAL JOINT RESTRAINTS, TIE RODS, OR OTHER RESTRAINT APPROVED BY UTILITIES DEPARTMENT (NO THRUST BLOCKS ALLOWED).



NOTES:

- HYDRANT SHALL BE INSTALLED PLUMB AND TRUE IN UNOBSTRUCTED LOCATION. (7.5' CLEARANCE ON THREE SIDES, 4' CLEARANCE AT REAR, WITH 3' ACCESS LANE)
- NO BARREL EXTENSION SHALL BE PERMITTED.
- VALVE SHALL BE PLACED ADJACENT TO MAIN.
- ANCHOR TEES AND FITTINGS ARE PERMITTED.
- HYDRANT SHALL BE MUELLER SUPER CENTURION, AA423 5 1/2" WITH TRAFFIC BREAKAWAY FLANGE AND 5 1/2" VALVE.
- HYDRANTS SHALL NOT ENCROACH IN SIDEWALKS, ROADWAYS, OR BIKE PATHS.
- ON RUNS LONGER THAN 20 FEET A SECOND VALVE IS REQUIRED AT THE HYDRANT.
- ALL HYDRANT INSTALLATION SHALL BE IN ACCORDANCE WITH CITY OF DELRAY BEACH FIRE PREVENTION CODE SEC. 96.05.
- IN CERTAIN SITUATIONS, PROTECTIVE BOLLARDS MAY BE REQUIRED AS DIRECTED BY THE ENGINEERING DEPT. (SEE BOLLARD DETAIL PW 7.0)
- FIRE HYDRANTS INSTALLED BUT NOT YET IN SERVICE SHALL BE COVERED WITH A BURLAP, OR PLASTIC SACK, OR HAVE OUT OF SERVICE RING IN PLACE.
- ALL HYDRANT LEADS GREATER THAN 20-FEET MUST HAVE AUTOMATIC FLUSHER INSTALLED AT HYDRANT END (KUPFERLE #9400-WC STANDARD).
- REMOVE CHAINS FROM HYDRANT AND PAINT. COORDINATE WITH UTILITY STAFF FOR CORRECT COLORS.
- NO THRUST BLOCKS SHALL BE PERMITTED.



NOTES:

- GALVANIZED PIPING AND FITTINGS SHALL NOT BE USED.
- JOINT RESTRAINTS TO BE INSTALLED MIN. TWO JOINTS BEFORE DEAD END.
- KUPFERLE AUTOMATIC FLUSHING DEVICE IS TO BE USED AT ALL PERMANENT DEAD ENDS. (SEE PW 9.0)

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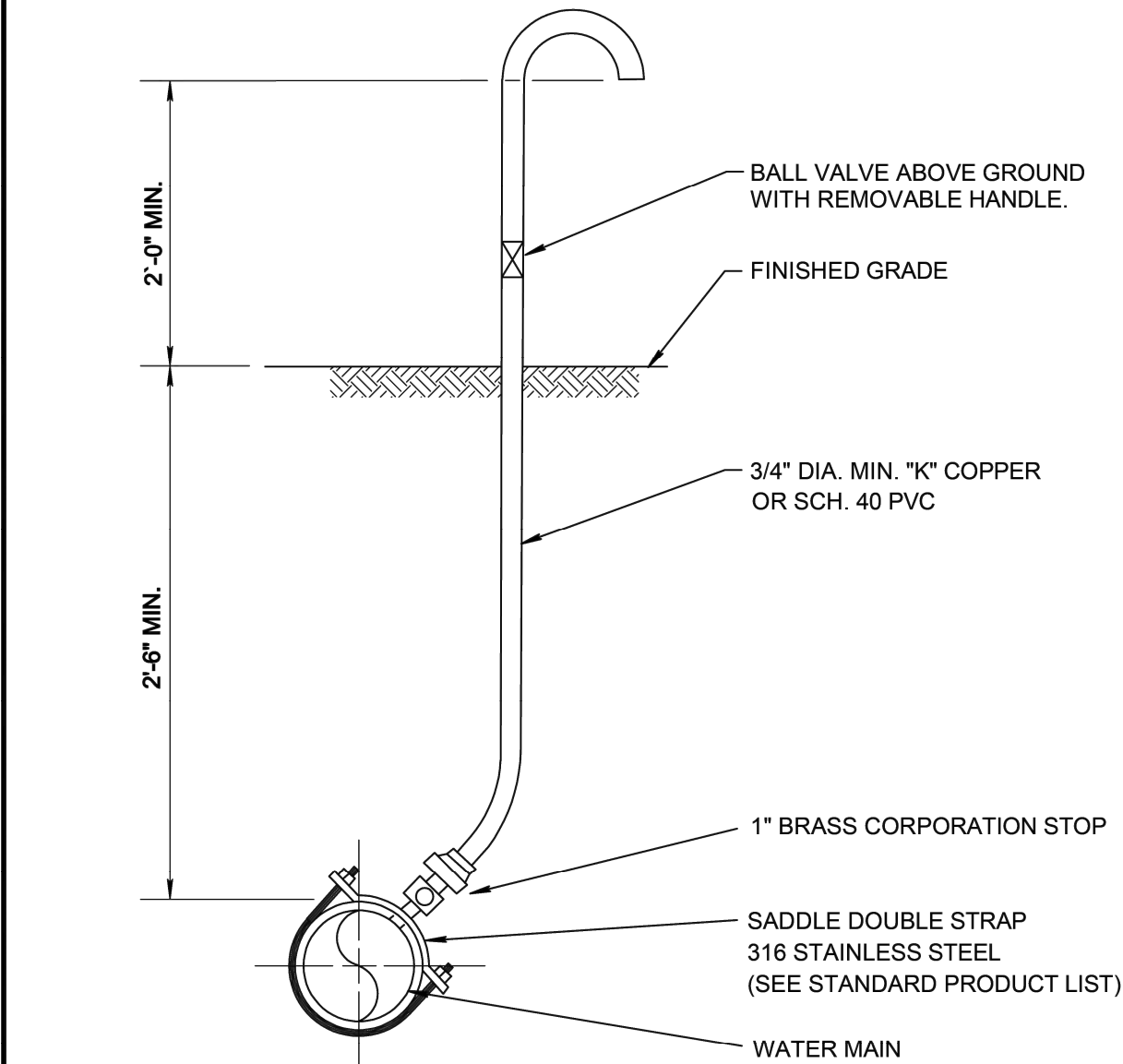
BOARD OF PROFESSIONAL ENGINEERS, CERTIFICATE OF AUTHORIZATION NUMBER 5139
PROFESSIONAL SURVEYORS AND MAPPERS, AMENDED CERTIFICATE NO. LE-006705

DATE	BY	REVISIONS
2/26/2025	JAC	Per City of Delray comments Dated 2/25/25-05-20
2/26/2025	JAC	Per City of Delray comments Dated 2/25/25-02-26
2/26/2025	JAC	Per City of Delray comments Dated 2/25/25-01-10

HYUNDAI GENESIS DELRAY
2612 and 2650 N FEDERAL HWY
POTABLE WATER DETAILS
FLORIDA
DELRAY BEACH

DRAWN BY:	JAC
CHECKED BY:	RTC / RICKETTS
LATITUDE:	26°29'22.96"N
LONGITUDE:	80° 3'53.74"W
HORIZ. SCALE:	
VERT. SCALE:	

SEAL	
SHEET	
D6	
PROJECT NO.	23-022-001



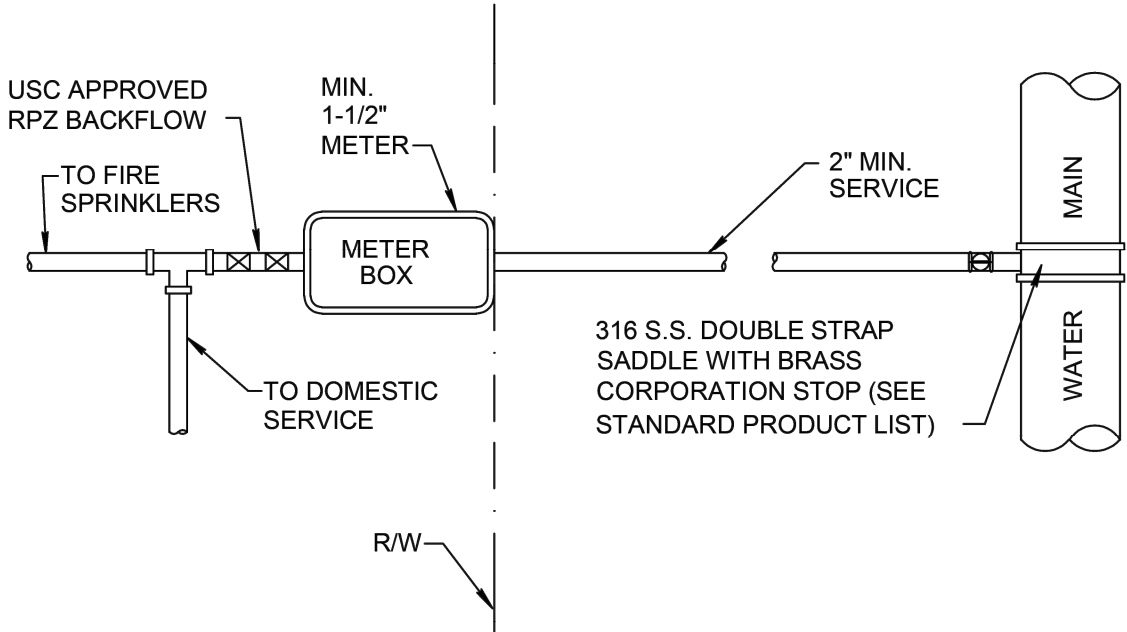
NOTES:

- SAMPLE POINT SHOULD BE AT SERVICE LINE OR FIRE HYDRANT IF POSSIBLE.
- IF SAMPLE POINT IS NOT AT SERVICE LINE OR FIRE HYDRANT, CORP. STOP SHALL BE SHUT OFF AT MAIN AND ALL TUBING SHALL BE REMOVED, AND CORP. STOP SHALL HAVE A BRASS PLUG OR CAP INSTALLED AFTER RELEASE OF WATER MAIN BY PALM BEACH COUNTY HEALTH DEPARTMENT.
- IF AT ALL POSSIBLE SAMPLE POINT SHALL NOT BE LOCATED IN A TRAFFIC AREA.
- SAMPLE POINTS SHALL KEEP RUNNING UNTIL PALM BEACH COUNTY HEALTH DEPARTMENT RELEASE AND ALL MAIN LINE VALVES ARE OPENED.

**CITY of DELRAY BEACH**
PUBLIC WORKS DEPARTMENT
434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444


TYPICAL SAMPLE POINT

DATE: 10-04-2024
PW 10.0



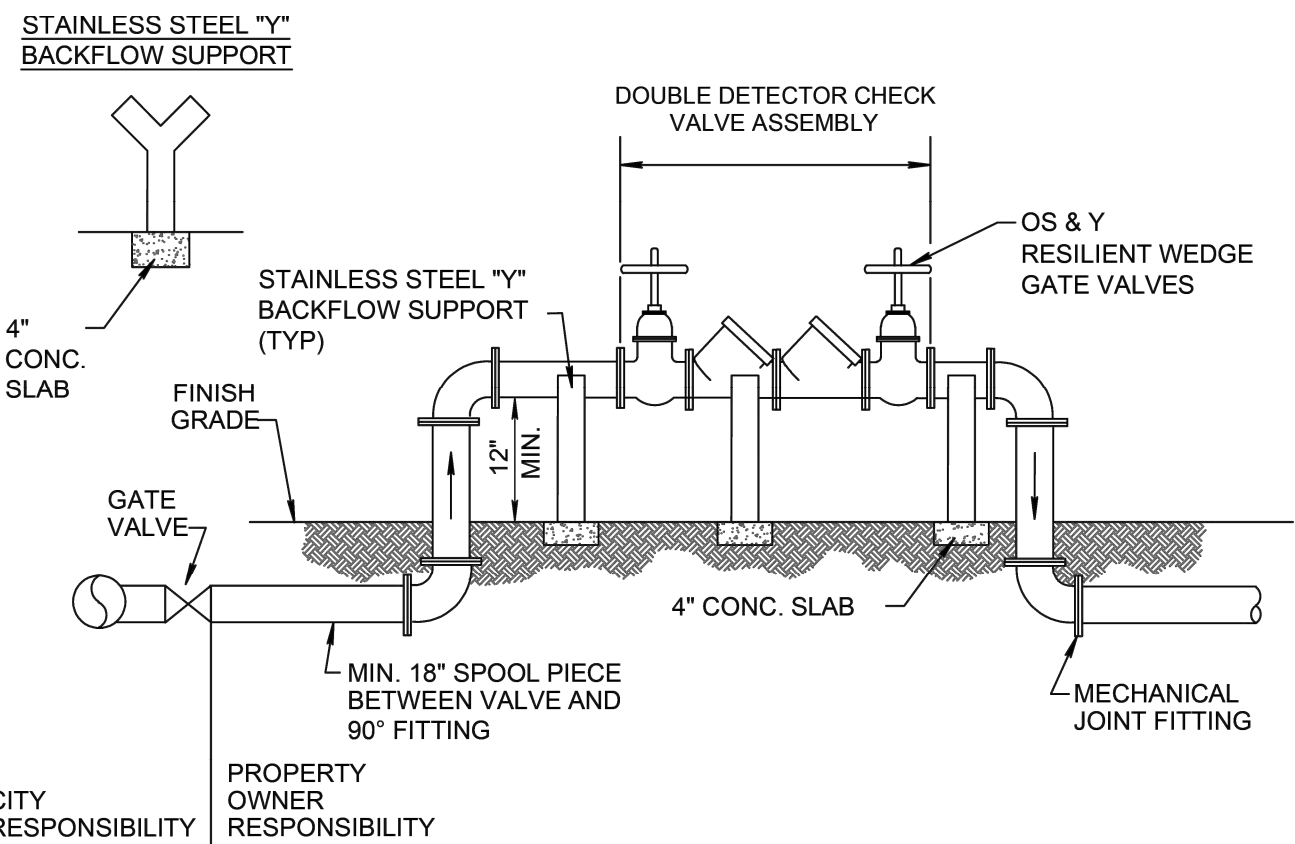
NOTES:

- SUCCESSIVE TAPS INTO THE WATER MAIN SHALL BE SPACED A MINIMUM OF 14" ON CENTER.
- SERVICE LINES SHALL NOT BE PLACED UNDER DRIVEWAYS.
- ALL SERVICE LINES REQUIRE A LOCKING BRASS CURB STOP WITH LOCK WING (1" MIN.).
- NO FITTINGS BETWEEN CORPORATION STOP AND BRANCH ASSEMBLY.
- MAXIMUM SERVICE LENGTH IS 100' TO METER.
- CASING PIPE I.D. SHALL BE SERVICE O.D. PLUS 1" MINIMUM.
- MINIMUM BEND RADIUS ON SERVICES SHALL BE 14" ON ALL SERVICES BEHIND METER.
- ALL VALVES TO BE BALL VALVES.
- METER BOX SHALL BE PROVIDED AND INSTALLED BY CONTRACTOR.
- ALL EXISTING SERVICES TO BE FIELD VERIFIED BY BUILDER/ CONTRACTOR/DEVELOPER. IF EXISTING SERVICE IS GALVANIZED, BUILDER/CONTRACTOR/DEVELOPER SHALL REPLACE WITH POLYETHYLENE PIPING FROM MAIN TO METER.

**CITY of DELRAY BEACH**
PUBLIC WORKS DEPARTMENT
434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444


TYPICAL FIRE SERVICE CONNECTION

DATE: 10-04-2024
PW 13.0



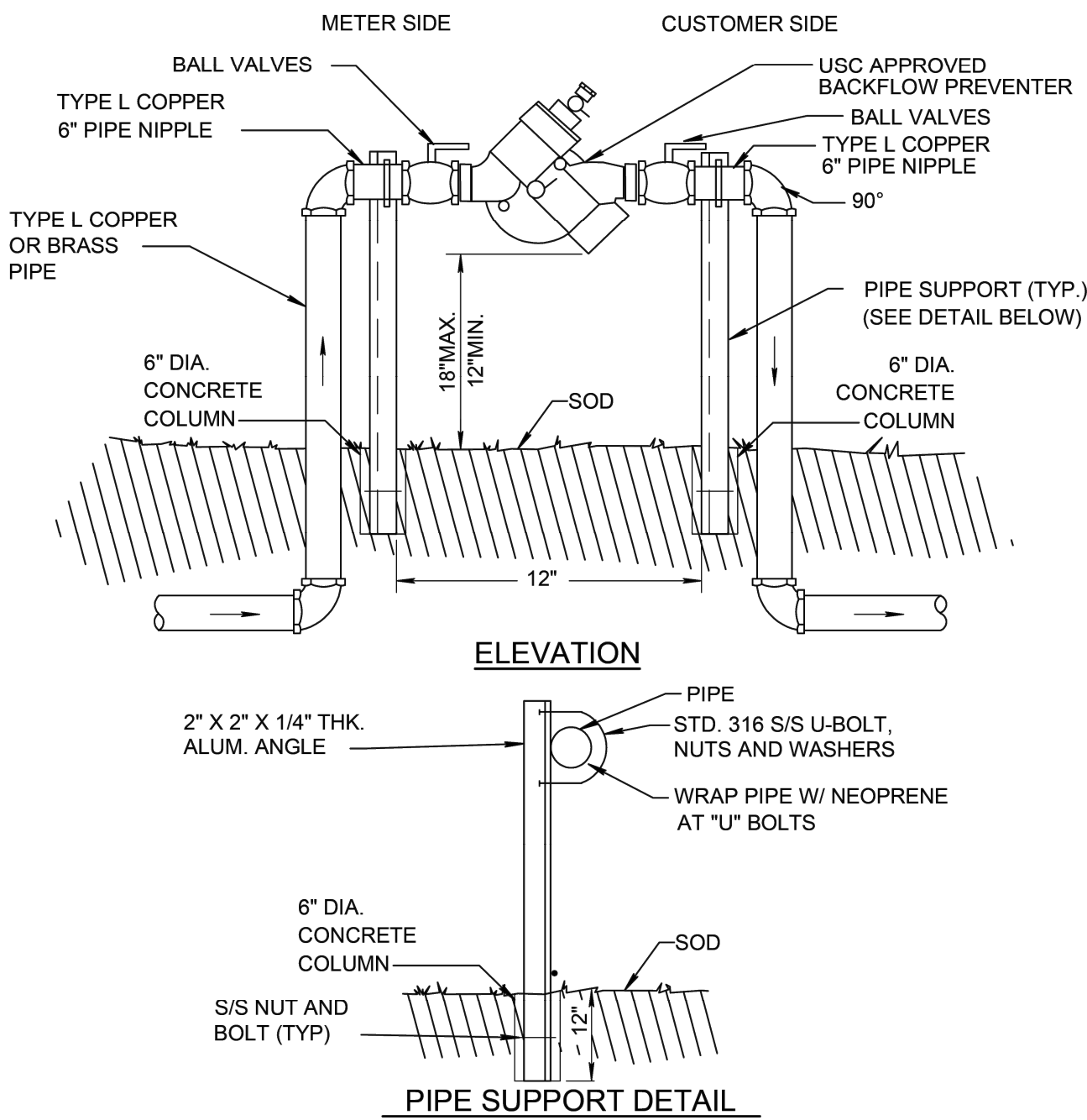
NOTES:

- FOR ALL SERVICES GREATER THAN 2" DIA.
- ALL PIPE AND FITTINGS SHALL BE CLASS 350 DUCTILE IRON CEMENT LINED WITH CEMENT LINED DUCTILE IRON FLANGE FITTINGS FOR ABOVE GROUND USE. MECHANICAL JOINT SHALL BE USED UNDERGROUND IN ACCORDANCE WITH AWWA STANDARDS.
- THE DOUBLE DETECTOR CHECK VALVE ASSEMBLY SHALL MEET AWWA M14 AND AWWA C510, AND APPROVAL OF UTILITIES DEPARTMENT.
- CERTIFICATION OF PROPER INSTALLATION AND OPERATION WILL BE REQUIRED FROM A CERTIFIED BACKFLOW PREVENTION TECHNICIAN PRIOR TO WATER MAIN ACCEPTANCE BY THE CITY OF DELRAY BEACH.
- THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR THE PROPER OPERATION, MAINTENANCE AND ANNUAL TESTING OF THE DOUBLE DETECTOR CHECK VALVE ASSEMBLY.
- BOLLARDS TO BE USED IF THE ASSEMBLY IS WITHIN 5' OF THE PAVEMENT, REFER TO BOLLARD DETAIL PW 7.0.
- CITY OF DELRAY BEACH WILL MAINTAIN TILL THE FIRST GATE VALVE.
- WATER MAIN WILL BE PLACED IN A UTILITY EASEMENT UP UNTIL THE FIRST GATE VALVE. DOUBLE DETECTOR ASSEMBLY WILL NOT BE WITHIN THE EASEMENT.

**CITY of DELRAY BEACH**
PUBLIC WORKS DEPARTMENT
434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444


DOUBLE DETECTOR CHECK VALVE

DATE: 10-04-2024
PW 15.0



NOTES:

- FOR ALL SERVICES LESS THAN OR EQUAL TO 2" DIA.
- ABOVE GRADE PIPING SHALL BE BRASS OR TYPE "L" COPPER OR BRASS TUBING.
- ALL COPPER JOINTS SHALL BE MADE WITH 95/5 SOLDER.
- USC APPROVED RPZ BACKFLOW PREVENTER IS REQUIRED IN ACCORDANCE WITH CITY OF DELRAY BEACH CODE OF ORDINANCES TITLE V, CHAPTER 52.83.
- USC APPROVED RPZ BACKFLOW PREVENTER IS REQUIRED FOR ALL COMMERCIAL PROPERTIES AND ALL RESIDENTIAL PROPERTIES WITH FIRE SPRINKLER SYSTEMS.

**CITY of DELRAY BEACH**
PUBLIC WORKS DEPARTMENT
434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

REDUCED PRESSURE ZONE BACKFLOW PREVENTER

DATE: 10-04-2024
PW 16.0

GRAVITY SEWER NOTES

- MANHOLES SHALL BE INSPECTED BY THE ENGINEER BEFORE PLACEMENT AND SURFACE TREATMENT.
- ALL OPENINGS IN PRECAST MANHOLES SHALL BE CAST AT TIME OF MANUFACTURE. CONNECTIONS TO EXISTING MANHOLES SHALL BE CORE ENTRY ONLY.
- ALL MANHOLES SHALL BE SET PLUMB TO LINE AND GRADE.
- (PVC) GRAVITY SEWER PIPE SHALL CONFORM TO ASTM D 3034, SDR 26, LATEST REVISIONS, WITH PUSH ON RUBBER GASKET JOINTS.
- (DIP) GRAVITY SEWER PIPE SHALL BE CLASS 350, 401 EPOXY LINED OR AS OTHERWISE APPROVED BY UTILITIES DEPARTMENT.
- NO SERVICE CONNECTIONS, WYES, SERVICES OR VALVES WILL BE PERMITTED IN RESIDENTIAL DRIVEWAYS.
- MANHOLE FRAMES SHALL BE ATTACHED TO THE PRECAST STRUCTURE WITH A MINIMUM OF TWO 3/4" 316 STAINLESS STEEL BOLTS, NUTS AND WASHERS. FRAMES SHALL BE SEALED WITH A MINIMUM OF TWO 1/2" BEADS OF RAM-NEK CAULKING.
- TRENCHES SHALL BE DE-WATERED TO ENABLE PIPE AND APPURTENANCES TO BE INSTALLED FREE OF WATER ON UNDISTURBED SOIL. IF UNSUITABLE SUBSURFACE MATERIAL IS ENCOUNTERED, EXCAVATE EXTRA 6" AND BACKFILL WITH 3/4" GRAVEL.
- PVC SHALL BE LAID IN STRICT CONFORMANCE TO MANUFACTURER'S SPEC (JOHNS MANVILLE RING TITE PVC PIPE INSTALLATION GUIDE OR EQUAL). BACKFILLING OF UTILITY TRENCHES WILL NOT BE ALLOWED UNTIL INSPECTED BY THE ENGINEER.
- BACKFILL MATERIAL FOR SEWER MAIN AND LINES SHALL BE NON-COHESIVE, NON PLASTIC MATERIAL FREE OF ALL DEBRIS, LUMPS AND ORGANIC MATTER. BACKFILL MATERIAL PLACED WITHIN ONE (1) FOOT OF PIPING AND APPURTENANCES SHALL NOT CONTAIN ANY STONES LARGER THAN TWO (2) INCHES IN DIAMETER (1" FOR PVC PIPE) AND NO STONES LARGER THAN SIX (6) INCHES IN DIAMETER WILL BE PERMITTED IN ANY BACKFILL.
- ALL EXCAVATION IN EXISTING RIGHT OF WAY SHALL BE BACKFILLED AND STABILIZED AT THE END OF EACH DAY TO PERMIT PEDESTRIAN AND VEHICULAR TRAFFIC PRIOR TO THE CONTRACTOR LEAVING THE SITE.
- WHERE SEWER IS NOT WITHIN PUBLIC R/W, IT IS TO BE LOCATED IN A 12' UTILITY EASEMENT. CITY MAINTENANCE RESPONSIBILITY IS MANHOLE TO MANHOLE ONLY.
- UPON COMPLETION OF THE WORK AND PRIOR TO PLACEMENT OF ASPHALT A VISUAL INSPECTION BY THE ENGINEER SHALL BE MADE OF THE COMPLETED SYSTEM ALONG WITH A LOW PRESSURE AIR TEST. AFTER ROCK BASE FINISHED & PRIMED, OR 1ST LIFT OF ASPHALT PLACED. AFTER ALL OTHER TESTING HAS BEEN COMPLETED, A CD VIDEO RECORDING SHALL BE MADE BY THE CONTRACTOR AND APPROVED BY THE ENGINEER, BEFORE THE LENGTHS ARE ACCEPTED FOR MAINTENANCE.
- EACH LINE SEGMENT SHALL BE LAMPED TO DETERMINE PROPER ROUNDNESS.
- COMPLETE "AS BUILT" INFORMATION RELATIVE TO MANHOLES, VALVES, SERVICES FITTINGS, PIPE LENGTHS, INVERTS AND SLOPES SHALL BE ACCURATELY RECORDED & SUBMITTED TO THE ENGINEER CITY SIGNED AND SEALED BY A REGISTERED LAND SURVEYOR.
- AT THE END OF THE ONE (1) YEAR WARRANTY PERIOD THE DEVELOPER/CONTRACTOR WILL T.V. INSPECT, AIR TEST EVERY JOINT, AND CHECK MANHOLE JOINTS AND CONNECTIONS TO DETERMINE IF REPAIRS ARE NECESSARY BEFORE THE WARRANTY BOND IS RELEASED.
- NO PROPOSED STRUCTURES SHALL BE INSTALLED WITHIN A HORIZONTAL DISTANCE OF 10-FEET FROM ANY EXISTING OR PROPOSED SANITARY SEWER FACILITY.
- ANY PIPE INTRODUCED INTO AN EXISTING MANHOLE MUST HAVE CARBOLINE BITUMASTIC 300M OR APPROVED EQUAL APPLIED EXTERNALLY WITHIN A MINIMUM 2-FOOT RADIUS OF OPENING AND THE ENTIRE MANHOLE MUST HAVE SEWPER COAT OR APPROVED EQUAL APPLIED INTERNALLY.
- ANY REHABILITATION TO AN EXISTING MANHOLE MUST BE INTERNALLY STRIPPED AND LINED WITH SEWPER COAT OR APPROVED EQUAL.

**CITY of DELRAY BEACH**
PUBLIC WORKS DEPARTMENT
434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

GRAVITY SEWER NOTES

DATE: 10-04-2024
WW 1.0

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BOARD OF PROFESSIONAL ENGINEERS, CERTIFICATE OF AUTHORIZATION NUMBER 5139
PROFESSIONAL SURVEYORS AND MAPPERS, AMENDED CERTIFICATE NO. LE-000705

DATE	BY	REVISIONS
20250503	JAC	Per City of Delray comments Dated 2025-05-20
20250411	JAC	Per City of Delray comments Dated 2025-02-28
20250124	JAC	Per City of Delray comments Dated 2025-01-10


HYUNDAI GENESIS DELRAY
2612 and 2650 N FEDERAL HWY
POTABLE WATER DETAILS AND WASTEWATER DETAILS
DELRAY BEACH
FLORIDA

DRAWN BY:	JAC
CHECKED BY:	RTC / RICKETTS
LATITUDE:	26°29'22.96"N
LONGITUDE:	80° 3'53.74"W
HORZ. SCALE:	
VERT. SCALE:	

SEAL
D7
PROJECT NO. 23-022-001

NOTES:

- THIS DISTANCE SHALL BE 10' MINIMUM FROM ALL CITY FACILITIES IF NO ROOT BARRIER IS USED.




CITY of DELRAY BEACH
PUBLIC WORKS DEPARTMENT
434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

TYPICAL TREE WITHOUT
ROOT BARRIER

DATE: 10-04-2024
LD 2.0

NOTE:

- SERVICE LATERALS SHALL TERMINATE INSIDE PROPERTY LINE A DEPTH OF 3 FEET AND MARKED WITH A 2\"X 4\" TREATED STAKE.
- CLEANOUT INSTALLATION SHALL BE PROPERTY OWNERS RESPONSIBILITY AND SHALL BE INSTALLED BY LICENSED PLUMBER.
- SEE DETAIL PW 2.0 FOR SEPARATION REQUIREMENTS.




CITY of DELRAY BEACH
PUBLIC WORKS DEPARTMENT
434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

SEWER SERVICE CONNECTION

DATE: 10-04-2024
WW 8.0

NOTE:

- ALL SANITARY SEWER LATERALS AND CLEANOUT TO BE MINIMUM 6\" DIAMETER IN SIZE UNLESS OTHERWISE PREVIOUSLY APPROVED BY THE DEPARTMENT.
- MINIMUM DEPTH OF SERVICE LATERAL SHALL BE 3 FEET.




CITY of DELRAY BEACH
PUBLIC WORKS DEPARTMENT
434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

TYPICAL CLEANOUT

DATE: 10-04-2024
WW 10.0

NOTES:

- BEDDING DEPTH SHALL BE 10\" UNDER DRAINAGE STRUCTURES AND 18\" UNDER SANITARY STRUCTURES.
- ROCK SHALL BE WRAPPED IN FILTER FABRIC THAT MEETS THE REQUIREMENTS OF F.D.O.T. SPECIFICATION SECTION 985.




CITY of DELRAY BEACH
PUBLIC WORKS DEPARTMENT
434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

STANDARD BEDDING DETAIL

DATE: 10-04-2024
WW 11.0

NOTES:

- ALL ROOT BARRIERS SHALL BE 4\" MINIMUM FROM ALL CITY FACILITIES.
- THE INSTALLATION OF ROOT BARRIERS SHALL BE COORDINATED WITH CITY AND INSPECTED BY CITY PRIOR TO BACKFILLING. ALL ROOT BARRIERS SHALL EXTEND UP TO FINISHED GRADE.
- ROOT BARRIERS SHALL BE MINIMUM 36\" DEEP. APPROVED PRODUCTS INCLUDE \"DEEP ROOT\" AND \"ROOT SOLUTIONS\". FLEXIBLE BARRIERS SHALL BE 36\" PANELS MANUFACTURED BY BIOBARRIER.
- ALL ROOT BARRIERS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS WRITTEN INSTRUCTIONS.




CITY of DELRAY BEACH
PUBLIC WORKS DEPARTMENT
434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

TYPICAL TREE WITH
ROOT BARRIER

DATE: 10-04-2024
LD 1.0

NOTES:

- THE DATA IN THE PREVIOUS TABLE IS BASED UPON THE FOLLOWING INSTALLATION CONDITIONS:
SOIL TYPESAND
TEST PRESSURE150 PSI, 200 PSI FOR PIPES LARGER THAN 24\"
DEPTH OF BURY3'
TRENCH TYPE1.3
SAFETY FACTOR1.5
VERTICAL OFF-SET3'
MINIMUM PIPE LENGTHS ALONG TEE RUN5'
- THE RESTRAINED PIPE LENGTHS APPLY TO DUCTILE IRON PIPE AND PVC PIPE.
- ALL JOINTS BETWEEN UPPER AND LOWER BENDS SHALL BE RESTRAINED.
- RESTRAINED PIPE LENGTHS FOR VALVES APPLY TO PIPE ON BOTH SIDES OF VALVES
- THE PREVIOUS TABLE SHALL SERVE AS A GENERAL DESIGN GUIDE ONLY. IT IS THE ENGINEER OF RECORD'S RESPONSIBILITY TO JUSTIFY AND DOCUMENT ANY DEVIATIONS FROM THE PIPE LENGTHS SPECIFIED IN THE PREVIOUS TABLE.
- SOURCES: EBAA IRON RESTRAINT LENGTH CALCULATION PROGRAM FOR PVC PIPE, RELEASE 3.1 (LATEST EDITION) AND DIPRA RESTRAINT FOR DUCTILE IRON PIPE, RELEASE 3.2 (LATEST EDITION).
- RESTRAINED JOINTS SHALL EXTEND ONE JOINT BEYOND MINIMUM LENGTH REQUIRED.




CITY of DELRAY BEACH
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434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

PIPE RESTRAINT TABLE
PRESSURE PIPE
(SHEET 2 OF 2)

DATE: 10-04-2024
PP 2.1

MINIMUM LENGTHS OF PIPE (FT) TO BE RESTRAINED												
FITTING TYPE	PIPE SIZE											
	4"	6"	8"	10"	12"	16"	20"	24"				
90° HORIZ. BEND	14	20	25	30	35	45	54	62				
45° HORIZ. BEND	6	8	11	13	15	19	22	26				
22.5° HORIZ. BEND	3	4	5	6	7	9	11	12				
11.25° HORIZ. BEND	1	2	3	3	4	4	5	6				
90° VERT. OFFSET	UPPER BEND	55	79	103	125	147	189	228	266			
	LOWER BEND	22	38	49	59	69	88	106	123			
45° VERT. OFFSET	UPPER BEND	22	32	42	51	60	77	93	109			
	LOWER BEND	10	14	19	23	28	35	43	50			
22.5° VERT. OFFSET	UPPER BEND	7	12	17	21	26	34	42	49			
	LOWER BEND	2	4	6	8	10	14	17	21			
11.25° VERT. OFFSET	UPPER BEND	3	4	6	9	11	15	19	22			
	LOWER BEND	1	1	1	2	3	5	7	8			
PLUG (DEAD END)	32	45	59	70	83	107	129	151				
INLINE VALVE	32	45	59	70	83	107	129	151				
TEE (BRANCH RESTRAINT)	4\" X 0"	23										
	6\" X 0"	21	35									
	8\" X 0"	18	34	47								
	10\" X 0"	16	32	46	58							
	12\" X 0"	13	30	44	57	69						
	16\" X 0"	7	26	41	55	67	90					
	20\" X 0"	1	21	38	52	65	88	109				
24\" X 0"	1	16	34	49	62	86	108	129				
REDUCER (LARGER PIPE RESTRAINT)	6\" X 0"	23										
	8\" X 0"	38	25									
	10\" X 0"	57	43	24								
	12\" X 0"	72	60	44	41							
	16\" X 0"	99	90	78	75	45						
	20\" X 0"	123	116	107	105	81	45					
	24\" X 0"	146	140	132	131	111	82	45				

RESTRAIN PIPE ONE BELL PAST MINIMUM DISTANCE




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PIPE RESTRAINT TABLE
PRESSURE PIPE
(SHEET 1 OF 2)

DATE: 10-04-2024
PP 2.0

PRESSURE PIPE NOTES:

- FOR PIPE SIZES 4\"-8\" THERE SHALL BE 30\" MINIMUM COVER FROM FINISHED GRADE TO TOP OF PIPE. FOR PIPE SIZE 10\" AND LARGER THERE SHALL BE 36\" MINIMUM COVER.
- a. DUCTILE IRON PIPE (DIP) FOR FORCE MAINS SHALL BE CLASS 350 WITH 401 EPOXY LINED IN ACCORDANCE WITH AWWA C550.
- b. DUCTILE IRON PIPE (DIP) FOR WATER MAINS SHALL BE CLASS 350 IN ACCORDANCE WITH AWWA C151 (ANSI A21.51), AND SHALL HAVE AN INTERNAL LINING OF CEMENT MORTAR IN ACCORDANCE WITH AWWA C104/ A21.4.
- C-900 PVC PRESSURE PIPE MAY BE USED IN LIEU OF DIP WATER MAIN WITH METAL TAPE AND WIRE ABOVE THE PIPE.
- ALL FITTINGS FOR FORCE MAIN SHALL BE CLASS 350 DUCTILE IRON WITH MECHANICAL JOINTS AND 401 EPOXY LINING.
- WATER MAIN VALVES 12 INCHES AND SMALLER SHALL BE RESILIENT-SEAL WEDGE GATE VALVES IN ACCORDANCE WITH AWWA C509. WATER MAIN VALVES LARGER THAN 12 INCHES SHALL BE BUTTERFLY VALVES IN ACCORDANCE WITH AWWA C504. SEWAGE FORCE MAIN VALVES SHALL BE RESILIENT-SEAL PLUG VALVES IN ACCORDANCE WITH AWWA C517.
- ALL TRENCHING, PIPE-LAYING, BACKFILL, PRESSURE TESTING, AND DISINFECTION MUST COMPLY WITH CITY AND LOCAL GOVERNMENTAL REGULATIONS AND STANDARDS.
- WATER AND FORCE MAINS SHALL BE PIGGED A MINIMUM OF TWO TIMES, AND ADDITIONALLY, IF REQUIRED BY ENGINEER OF RECORD, AS WELL AS, PRESSURE TESTED FOR A PERIOD OF NOT LESS THAN TWO HOURS AT 150 PSI IN ACCORDANCE WITH ANSI/AWWA C600 LATEST STANDARDS. ALLOWABLE LEAKAGE SHALL BE DETERMINED AS FOLLOWS:
$$L = \frac{SD\sqrt{P}}{148,000}$$
WHERE:
L = ALLOWABLE LEAKAGE (GALLONS PER HOUR)
S = PIPE LENGTH (FEET)
D = NOMINAL DIAMETER OF PIPE (INCHES)
P = AVERAGE TEST PRESSURE (PSI)
- RESTRAINTS SHALL BE PROVIDED AT ALL FITTINGS AS SHOWN ON PP 2.0 AND 2.1
- PRIOR TO ANY TESTING UNDER FUTURE PAVEMENT, ROCK SHALL BE FINISHED & PRIMED OR 1ST LIFT OF ASPHALT PLACED.
- PIG SIZE SHALL BE PIPE DIAMETER PLUS 2\" OR NEXT LARGER DIAMETER.
- NO PROPOSED STRUCTURES SHALL BE INSTALLED WITHIN A HORIZONTAL DISTANCE OF 10- FEET FROM ANY EXISTING OR PROPOSED WATER OR FORCE MAINS.
- LINE STOPS SHALL BE INSTALLED A MINIMUM OF 3 PIPE LENGTHS FROM LOCATION OF PIPE REMOVED AND PROVIDE NECESSARY JOINT RESTRAINTS.



CITY of DELRAY BEACH
PUBLIC WORKS DEPARTMENT
434 SOUTH SWINTON AVENUE, DELRAY BEACH, FLORIDA 33444

PRESSURE PIPE NOTES

DATE: 10-04-2024
PP 1.0

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HYUNDAI GENESIS DELRAY
2612 and 2650 N FEDERAL HWY
WASTEWATER DETAILS
FLORIDA
DELRAY BEACH

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