TXDOT ENTRY PLANS WESTRIDGE SINGLE FAMILY

A SINGLE FAMILY DEVELOPMENT IN COMAL COUNTY TEXAS

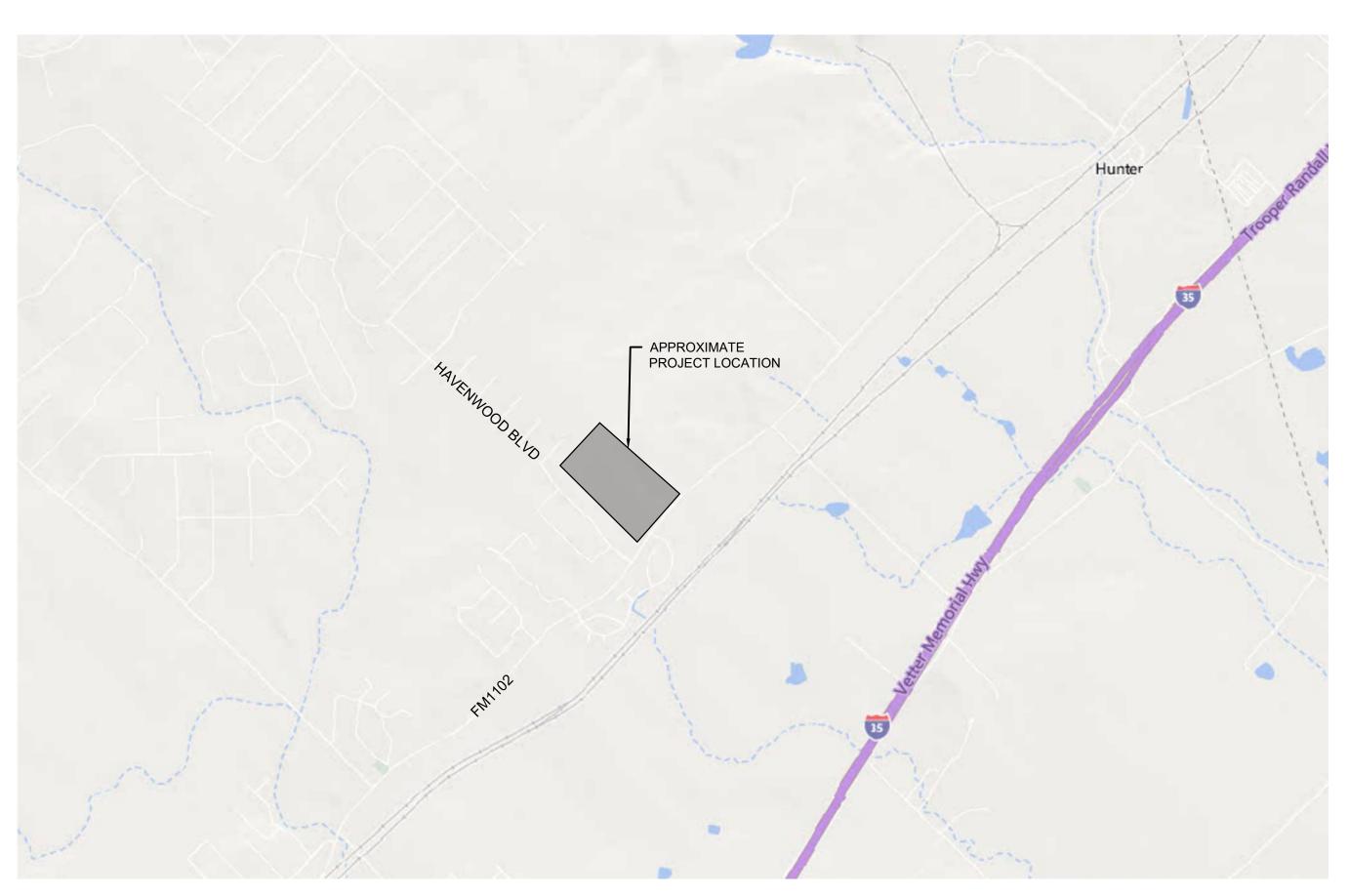
1.00 ACRE LOT SIZE TO BE SERVICED BY

WATER: CRYSTAL CLEAR SPECIAL UTILITY DISTRICT

SEWER: ON SITE SEWER FACILITIES (SEPTIC)

ELECTRIAL: NEW BRAUNFELS UTILITIES

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VICINITY MAP

1" = 2000'



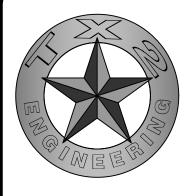
- 1. ALL RESPONSIBILITY FOR THE ADEQUACY OF THESE PLANS REMAINS WITH THE ENGINEER OF RECORD. IN ACCEPTING THESE PLANS, COMAL COUNTY MUST RELY UPON THE ADEQUACY OF THE WORK OF THE ENGINEER OF RECORD.
- 2. IF CONSTRUCTION HAS NOT COMMENCED WITHIN ONE-YEAR OF COUNTY APPROVAL FOR CONSTRUCTION INSPECTION, THAT APPROVAL IS NO LONGER VALID
- 3. THIS SITE IS LOCATED IN THE TRANSITION ZONE OF THE EDWARDS AQUIFER JURISDICTIONAL BOUNDARY.
- 4. THE SITE IS LOCATED IN FEMA FIRM PANEL 48091C0295F WITH AN EFFECTIVE DATE OF 09/02/2009. THE SITE IS LOCATED IN ZONE X.

PROPERTY DESCRIPTION

COMAL COUNTY PARCEL ID: 76986 A-306 SUR- 3 N KENNER, ACRES 68.9

DEVELOPMENT TEAL	M CONTACT INFORMATION
OWNER/DEVELOPER	
XXXXX	XXXXX XXXXX XXXXX, TX 7XXXX (XXX) XXX—XXXX XXXXX@XXX.COM
CIVIL ENGINEER	
TREVOR TAST, P.E. TX2 ENGINEERING	645 FLORAL AVE, STE. C NEW BRAUNFELS, TX 78130 (816) 510-9151 TREVOR@TX2ENGINEERING.COM
SURVEYOR	
ROBERT HARPER SUMMIT GEOMATICS, INC.	4603 N. STAHL PARK SUITE 103 SAN ANTONIO, TX 78217 (210) 971-4870 RHARPER@SUMMIT-GEOMATICS.COM





TX2 ENGINEERING

CONTACT:

645 FLORAL AVE, STE C
NEW BRAUNFELS, TX 78130

TEL: (830) 327-1235

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25 August 2025
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YR: 2025

E FAMILY 02 TX 78132

VESTRIDGE SINGLE I 6821 FM 1102 VEW BRAUNFELS, TX

ESCRIPTION BY

DRAWN BY: TN
QA/QC BY: TN
PROJECT NO.: ###-###
PERMIT #:

T0.0

TXDOT GENERAL NOTES

- The design and construction will provide for preserving all existing features in or near the state right of way being affected by the widening. This includes but is not limited to, existing driveway gate set-backs, relocation of electronic private property gates, mailbox turnouts, mailboxes and supports, cattle guards, roadway signing, existing rip-rap or other permanent erosion control features, diversionary berms, swales, ditches, amount and configuration of driveway flares and driveway centerline profile, metal beam guard fence and end treatments, etc. Existing driveway culverts and safety end treatments if effected by roadway widening will be reconstructed to preserve existing front slope rates. The coordination of items that effect existing private property access, mail delivery, etc. Is the responsibility of the developer. The written concurrence of any effected property owners for construction effecting their driveways or mailbox. Turnouts must be obtained and provided TxDOT prior to TxDOT driveway permits being issued.
- For work in state right of way, the developer is responsible for coordination of, obtaining permits for, and complying with any and all state and federal regulatory agencies and all applicable laws, rules and regulations pertaining to the regulation of drainage, preservation of cultural resources, natural resources and the environment. The developer is responsible for determining if the project is in an environmentally sensitive area such as within the recharge or contributing zone of protected aquifers, and act in accordance with all resource agency
- a. If TxDOT has a CZP or WPAP on file with TCEQ, the developer is responsible for a ending TxDOT's per it, obtaining TCEQ approval and providing TxDOT with the approved amended permit. The a ended per it will address the relocation of TxDOT permanent bmp's including vegetative filter strips that may be impacted by work done within TxDOT.
- b. If TxDOT does not have a CZP or WPAP on file with TCEQ, any permanent bmp's including vegetative filter strips, that may be required in order to treat additional impervious cover placed in TxDOT row will be located in private property and the developer will provide TxDOT with evidence of TCEQ approval of the additional impervious cover."
- c. The developer may not operate under resource agency environmental clearance of a previous or ongoing TxDOT project, but will be required to obtain separate resource/environmental agency clearance.
- If waste areas or material source areas result from this project, the contractor is reminded to follow supersedes all other specifications in the plans the requirements of the Texas aggregate quarry and pit safety act. In addition, it is requested that these areas not be visible from any highway on the state system.

20. Any pavement edge drop-offs between 1 and 2 inches in height will have CW 8-11 warning signs.

Any pavement edge drop-off 2 inches or greater will have a 3:1 compacted safety slope and CW

8-9a or CW 8-11 signs plus channelizing devices. Pavement edges will be shouldered up with

compacted embankment material and 4 inches of topsoil as soon as possible after paving is

pavement structure unless otherwise approved by the TxDOT maintenance supervisor. The

requirement for proof-rolling of subgrade is not superseded by any other requirements

23. All courses of asphaltic concrete pavement (regardless of type) will be placed with an asphalt

24. All surface aggregates will meet the requirements of TxDOT friction classification "B" and will

26. All asphaltic concrete pavement used in base courses will be type "A" OR "B" and will meet PG

requirements of TxDOT Item 666, reflectorized pavement markings. The contractor will place guide marks in accordance with Item 666 and will make arrangements for TxDOT inspection of

the pavement marking layout prior to placement of striping. Equipment used for the placement

of striping will meet the production requirements of item 666 unless otherwise approved in

ground in a manner that does not damage the pavement surface, to remove any pavement

marking accumulation, and will be covered with a strip seal of 18" minimum width, consisting of

25. All surface asphalt concrete pavement will be under-sealed with a one course surface

27. All pavement widening including shoulders will match the existing pavement cross slope.

28. All pavement markings will be type I thermoplastic (100mil) will under-seal meeting the

29. Existing pavement markings that conflict with proposed pavement markings will be lightly

concrete pavement", unless otherwise approved by the maintenance supervisor.

paving equipment meeting the requirements of TxDOT item 320, "equipment for asphalt

a. Tack coat will be applied with an asphalt distributor and spread across the surface receiving

edges consistently black with no areas devoid of tack. Asphalt for tack coat shall meet

the tack coat by multiple passes of a pneumatic roller. The application of tack coat and the

number of passes of the pneumatic roller will be sufficient to make the surface and exposed

21. Proof rolling of subgrade is required and shall be witnessed by TxDOT prior to placement of

completed on the side of the road being widened.

including those of any geotechnical report.

meet PG binder grade 70-22.

treatment.

binder grade 64-22.

22. All flexible base will have a minimum plasticity index of 4.

TxDOT specs and be from a TxDOT approved source.

advance by the TxDOT maintenance supervisor.

precoated Grade 5, friction class B aggregate.

a. Any materials removed and not reused and determined to be salvageable shall be stored within the project limits at an approved location or delivered undamaged to the storage yard as directed. Properly dispose unsalvageable materials in accordance with local, state, and federal regulations. Deface traffic signs so that they will not reappear in public as signs.

- Any trees existing within state right of way are the natural resources of the state and will be protected. In the event that trees must be removed, TxDOT written permission will be received in advance and will identify the specific trees by species, diameter and location to be removed. The developer will be fined for any unpermitted removal of trees.
 - a. In the event that there are areas of public row dedication resulting from the platting process, the area within the public row dedication does not pass into TxDOT ownership as a result of platting. However, the developer will remove any old fencing, gates and unsightly vegetation within the area of the row dedication, leaving it in an aesthetically pleasing condition the area of row dedication will not be mowed or otherwise maintained by txdot. Prior to removal of trees in the area of row dedication, the trees will first be evaluated in accordance with the requirements of local tree protection ordinances and the written concurrence of the local jurisdiction will be provided to TxDOT.
- The developer will maintain at the project site, and make available upon request, copies of all approved joint environmental plans and permits relating to work in state right of way.
- 6. Prior to beginning grading activity, the contractor will set and maintain roadway stationing, control points, marks, stakes to establish lines, slopes, grades and centerlines.
- 7. Any slopes in state right of way which become steeper than 3;1 as a result of the work will be treated with 4" thick reinforced concrete rip-rap and be treated with metal beam guard fence. This may entail additional rip-rap beyond that shown in the plans.
 - a. Unless otherwise shown on the plans, where existing concrete rip-rap is removed, modified or extended, the portion to be removed will be neatly saw-cut prior to removal and the new rip-rap will be formed to match the existing lines and grades of the existing rip-rap and will be doweled into the existing rip-rap with #3 bars on 12"centers. The dowel bars will be epoxied in place with epoxy meeting TxDOT requirements. The minimum embedment length is 9 inches. This applies to any type of concrete rip-rap including metal beam guard fence or cable barrier mow strips.
- 8. Duane Hofferichter (830) 609-0707 in New Braunfels, Travis Young (830) 303-0130 in Seguin, Chad Lux (830) 816-2430 in Boerne, Mark Andrews (830) 393-3144 in Floresville, TxDOT maintenance office will be contacted by the contractor 48 hours prior to work occurring in state right of way.
- State right of way will not be used as an area for contractor parking or for staging the receipt of materials or equipment.
- 10. Traffic control and construction barricades will meet the requirements of the Texas MUTCD.

- 30. All materials and construction methods used in state right of way will meet TxDOT specifications. This supersedes all other specifications in the plans.
- 31. All turn lane concrete pavement in state row will meet the requirements of TxDOT item 360 concrete and will be batched at concrete plants having a current approved mix design. Class P concrete shall have 7 and 28 day compressive strength of 3200 PSI and 4400 PSI respectively.
- 32. When widening existing concrete pavements, joints in the new pavement will match joints in existing pavement and curb.
- 33. The contractor is responsible for ensuring that TxDOT approved materials, mix designs, approved sources and products are used for all work in state row. The contractor will arrange for the services of a qualified testing laboratory for all items requiring testing and will notify TxDOT of any discrepancies between test results and TxDOT specs in a timely manner. The contractor will provide to TxDOT invoices and testing results as soon they are available. Failure to do this will result in rejection of the work.
- 34. Sawing of contraction/construction joints in concrete pavement will be accomplished as soon as personnel can walk on the concrete without damaging the surface regardless of time of day or weather conditions. Stand-by power driven concrete saws will be provided during the sawing operation. Curing compound will be re-applied to the sawed joint immediately upon sawing the
- Guardrail SET's will be Type 3 unless otherwise approved by the TxDOT maintenance supervisor. Guardrail mowstrip placed adjacent to other concrete rip-rap will be separated by a formed construction joint.
- 36. Any concrete curb to be removed will be saw-cut at the limits of removal and be removed entirely. Slicing the top portion of the curb off and leaving remaining portion of curb in place is unacceptable.
- 37. Any damage to TxDOT facilities will be repaired at no expense to the state, to TxDOT's
- 38. Sidewalks placed in the highway right-of-way will be a minimum width of five feet or comply with the more stringent width as required by city ordinance and will meet all other requirements of the Americans with Disabilities Act. Pedestrian ramps will be provided at street and driveway intersections as shown on the current state standard for pedestrian facilities. Color contrast and texturing of pedestrian ramps will be place at street intersection ramps only as shown on the current state standard for pedestrian facilities. Pedestrian ramps at driveway intersections will not receive any color contrast or texturing. Metal plating for sidewalk bridges will match the typical width of the approach sidewalk. Tis may result in a width that is greater than shown in the standard details included in the plans.

39. The contractor will use best management practices (BMP's) to minimize erosion and sedimentation in the state right of way resulting from the proposed construction. Re-vegetation of disturbed areas will be completed in accordance with TxDOT standard specifications. Permanent vegetative cover must achieve 70% coverage prior to project acceptance. Soil retention blankets may be required to prevent erosion of topsoil prior to vegetation re-

The contractor will provide advance notification to the engineer of impending/upcoming lane

13. Unless otherwise noted in the plans and/or as directed by the area engineer or maintenance

supervisor, daily lane closures shall be limited according to the following restrictions:

a. Nighttime: maintenance supervisor and/or area engineer approval required. (with

b. Weekend closures: maintenance supervisor and/or area engineer approval required.

14. No lane closures or roadway closures will be permitted for the following key dates and/or

16. Lane closures will only be permitted with 48 hour prior approval of the TxDOT maintenance

supervisor lane closures will be permitted only between 9: 00 a.m. and 4: 00 p.m. Monday

a. For lane closures on two-lane two-way roadways, including during pilot car operations,

flaggers will be placed at the beginning and end of the work zone as well as at each individual driveway and side road intersection within the limits of the work zone and

zone to control, warn and direct side road and driveway traffic of the change in traffic

extending for a minimum of the beginning of advanced warning signs either end of the work

operations. Whenever one way traffic control is accomplished by traffic signals work zone

flaggers will be similarly stationed at each individual driveway and side road intersection

within the limits of the work zone and extending for a minimum of the beginning of the

17. A minimum 3:1(H:V) temporary safety slope of stable compacted material will be required adjacent to the state highway edge of pavement at all times during non-working hours.

18. Only one side of the roadway will be open to construction at a time. Work will be completed,

All milling, paving and seal coat operations shall proceed in the direction of traffic.

and pavement edges backfilled on one side of the road before work will begin on the opposite

advanced warning signs either end of the work zone. All flaggers will be in constant radio

b. Wednesday before thanksgiving thru the Sunday after Thanksgiving

c. Saturday and Sunday before Memorial Day and Labor Day

d. Saturday or Sunday when July 4 falls on a Friday or Monday.

crossover, etc. closures or detours.

Access to adjoining property must be maintained at all times.

uniformed off duty law enforcement officers)

a. Between December 15 and January 1.

At no time will the roadway travel way be blocked.

through Friday.

contact.

side of the roadway.

establishment.

closures for all temporary and/or permanent lane, ramp, connector, frontage, shoulder, median

- 40. Prior to seeding or re-vegetation the front slopes will be shouldered up with topsoil to eliminate any pavement edge drop-off.
- 41. Mud tracked onto the roadway from the site will be immediately removed to the satisfaction of
- 42. It will be the developer/owner's responsibility to clean out, to the state's satisfaction, any drainage structure or storm sewer system that becomes silted as a result of their operations.
- responsibility of the developer/owner.

43. The adjustment of any utilities in state right of way or adjacent private easement will be the

- 44. The contractor is responsible for placing and maintaining existing signs on TxDOT approved temporary mounts until permanent signs are placed.
- 45. The final placement of permanent signs will be coordinated prior to placement with the local TxDOT maintenance supervisor.
- 46. For work within the state right of way where removal of materials or debris within the construction limits and not incorporated in the finished roadway section of right of way, will be disposed of in a manner acceptable to the maintenance supervisor at no expense to the state. Materials that are not determined to be salvageable by the maintenance supervisor become the property of the contractor for proper disposal at their expense. Materials determined to be salvageable will be returned to the state and delivered to the location as determined by the maintenance supervisor.
- 47. Regardless of errors and omissions in information provided in the plans or cross-sections the permitee is responsible for providing for positive drainage outfalls within and off the limits of
 - a. Keep the signals in operation at all times except when necessary for specific installation operations, including any modifications to existing signal heads to maintain clear visibility at all times. When it is necessary for a signal to be turned off, hire off duty police officers to control the traffic until the signals are back in satisfactory condition.
- 48. (For work in city of new braunfles) all traffic signals on the state highway system within the new braunfels city limits, with the expection of signals on ih 35, are the responsibility of the city of new braunfels and the city of new braunfels will perform construction inspection. Contact garry

SEQUENCE OF CONSTRUCTION:

- CONTRACTOR SHALL OBTAIN CITY APPROVED CONSTRUCTION PLANS, AND TPDES PERMIT, IF APPLICABLE. CONTRACTOR SHALL SCHEDULE PRE-CONSTRUCTION MEETING WITH APPLICABLE JURISDICTIONAL
- CONTRACTOR SHALL INSTALL PROPOSED TEMPORARY EROSION AND SEDIMENT CONTROL PER PLANS.
- 4. CONTRACTOR SHALL STRIP AND CLEAR SITE PER PLANS.
 5. CONTRACTOR SHALL TEMPORARILY SEED AND RESTORE VEGETATION ALL DISTURBED AREAS THAT ARE TO REMAIN AS PERVIOUS TURE.
 6. CONTRACTOR SHALL COMPLETE ALL VERTICAL CONSTRUCTION AND PAVEMENTS.
- CONTRACTOR SHALL SCHEDULE FINAL INSPECTIONS WITH APPLICABLE JURISDICTIONAL AGENCIES.
 CONTRACTOR SHALL REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES UPON ESTABLISHED REVEGETATION PER JURISDICTIONAL STANDARDS AND SPECIFICATIONS.
 CERTIFICATE OF OCCUPANCY IS PROVIDED.

TX2 ENGINEERING FIRM #: 20787

CONTACT:

645 FLORAL AVE. STE C NEW BRAUNFELS, TX 78130 TEL: (830) 327-1235

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NOTES

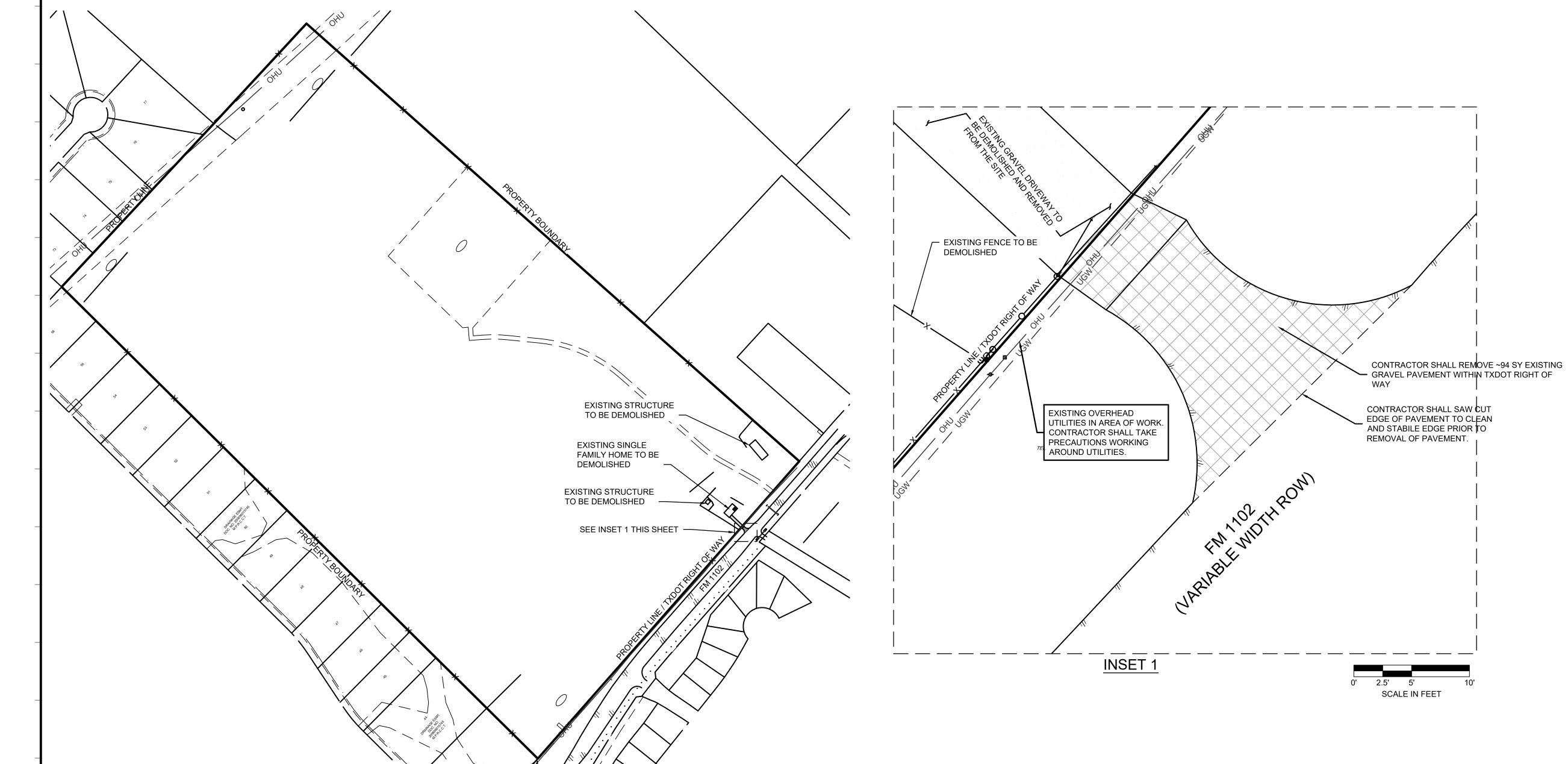
GENERAL

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PERMIT #:

ford, p.e. at (830) 221-4645, 48 hours prior to the need for any inspections. Also when nontraffic signal work is being performed within 400 feet of an existing signalized intersection, flashing beacon or school zone flasher or other type of signal; if within the city of New Braunfels area of responsibility contact Garry Ford, P.E. to determine/verify the location of loop detectors, conduit, ground-boxes, etc. For all other locations, contact TxDOT representative, Mike Garza, at (210) 615-6028, e-mail is mike.garza@txdot.gov. The contractor is responsible for repair or replacement of any signal equipment damaged by construction operations. The method of repair or replacement shall be pre-approved and inspected. Depending on the type and extent of the damage, the engineer reserves the right to perform the repair or replacement work and the contractor will be billed for this work. When working near aerial electrical lines or utility poles, comply with federal, state and local regulations.

49. (For areas other than city of New Braunfels) when non-traffic signal work is being performed within 400 feet of an existing signalized intersection, flashing beacon or school zone flasher or other type of signal, contact TxDOT representative, Mike Garza, at (210) 615-6028, e-mail is mike.garza@txdot.gov. The contractor is responsible for repair or replacement of any signal equipment damaged by construction operations. The method of repair or replacement shall be pre-approved and inspected. Depending on the on the type and extent of the damage, TxDOT reserve the right to perform the repair or replacement work and the contractor will be billed for this work when working near aerial electrical lines or utility poles, comply with federal, state and local regulations.



SCALE IN FEET



PROPERTY LINE EXISTING RIGHT OF WAY EXISTING LOT LINE SURVEY ABSTRACT LINE EXISTING OVERHEAD POWER EXISTING HOG WIRE FENCE EXISTING CHAIN LINK FENCE PROPOSED LOT LINE — PROPOSED CENTERLINE PROPOSED EDGE OF PAVEMENT PROPOSED BUILDING SETBACK LINE — PROPOSED EASEMENT LINE EXISTING PAVEMENT TO BE DEMLISHED

WARNING - OVERHEAD POWER LINES

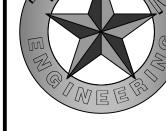
CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING IN THE VICINITY OF OVERHEAD POWER LINES.

> OHL OVER HEAD LINE FND. FOUND MON TXDOT TYPE II MONUMENT CMKR TXDOT TYPE I MONUMENT IRON ROD FOUND DOC. DOCUMENT P.P. POWER POLE

R.O.W. RIGHT-OF-WAY

- GENERAL NOTES:

 1. BEARING ORIENTATION IS BASED UPON THE TEXAS COORDINATE SYSTEM, SOUTH CENTRAL ZONE 4204, NORTH AMERICAN DATUM OF 1983 (NAD 83), 2011 ADJUSTMENT, EPOCH 2010.00. MEASUREMENTS ARE IN U.S. SURVEY FEET.
- 2. MEASUREMENTS ARE IN U.S. SURVEY FEET. DISTANCES SHOWN HEREON ARE IN SURFACE AND MAY BE CONVERTED TO GRID BY USING THE COMBINED SCALE FACTOR OF 0.99987.
- 3. MONUMENTS WERE FOUND OR SET AT EACH CORNER OF THE SURVEY BOUNDARY OF THE SUBDIVISION. MONUMENTS AND LOT MARKERS WILL BE SET WITH 5/8" IRON RODS WITH CAP STAMPED "SUMMIT GEOMATICS, INC." AFTER COMPLETION OF UTILITY INSTALLATION UNLESS NOTED OTHERWISE.



TX2 ENGINEERING FIRM #: 20787

CONTACT:

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CONDITION AND DEMOLITION PLAN

EXISTING (

###-####

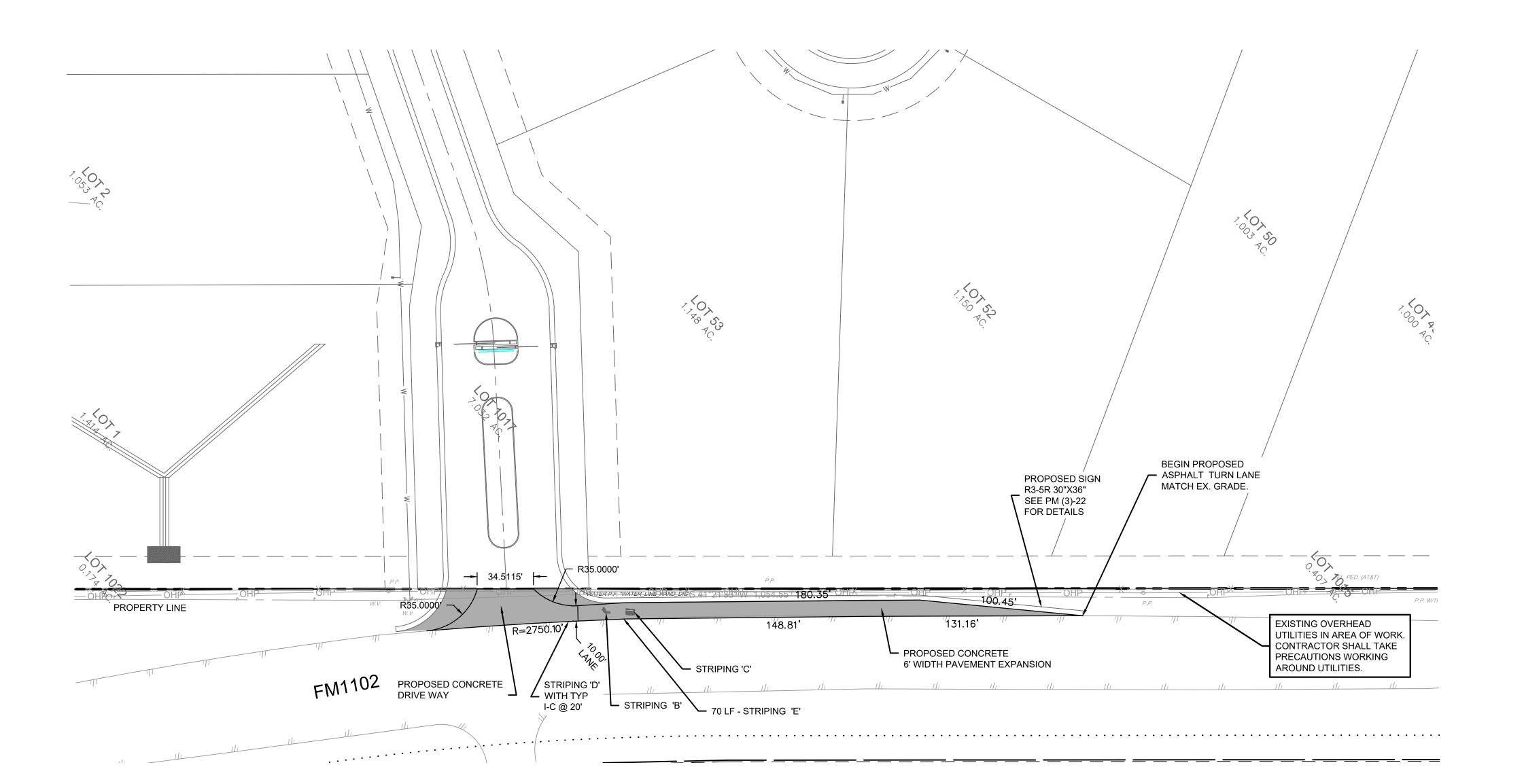
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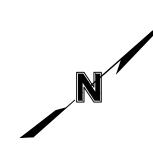
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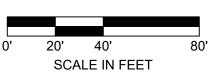




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<u>LEGEND</u>

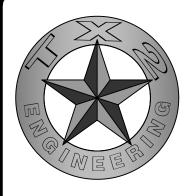
	PROPERTY LINE
	RIGHT OF WAY
———— P-OH ———	EXISTING OVERHEAD POWER
————— UGE ———	EXISTING UNDERGROUND POWER
т т	EXISTING TELPHONE CONDUIT
CATV	EXISTING CABLE TELEVISION CONDUIT
FO	EXISTING FIBER OPTIC CONDUIT
—— G ——— G	EXISTING NATURAL GAS SERVICE
——— FP ———	EXISTING FIRE PROTECTION SERVICE
W W	EXISTING WATER SERVICE
——————————————————————————————————————	EXISTING SANITARY SEWER
SD	EXISTING ROOF DRAINS AND HEADER PIPES
	EXISTING STORM SEWER
— — — — — 610 — — —	— — EXISTING MAJOR CONTOUR
611	— — EXISTING MINOR CONTOUR
 610	PROPOSED MAJOR CONTOUR
 611	PROPOSED MINOR CONTOUR
	PROPOSED LOT LINE
	PROPOSED CENTERLINE
<u> </u>	PROPOSED BUILDING SETBACK LINE
	PROPOSED EASEMENT LINE

NOTES:

- 1. ALL UTILITY SYMBOLS SHOWN REPRESENT APPROXIMATE LOCATIONS UNLESS OTHERWISE NOTED. CONTRACTOR SHALL REFER TO THE APPROPRIATE AGENCY'S STANDARD SPECIFICATIONS AND INSTALLATION DETAILS FOR ACTUAL LOCATIONS UNLESS OTHERWISE DIRECTED BY THE ENGINEER. IT IS THE CONTRACTORS RESPONSIBILITY TO NOTIFY THE TEXAS ONE CALL CENTER, AND FIELD VERIFY EXACT LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.
- 2. CONTOUR INTERVALS DISPLAYED ARE 2' INTERVALS FOR EXISTING AND PROPOSED CONDITIONS.

WARNING - OVERHEAD POWER LINES

CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING IN THE VICINITY OF OVERHEAD POWER LINES.



TX2 ENGINEERING
FIRM #: 20787
CONTACT:

TEL: (830) 327-1235

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DIMENSION CONTROL PLAN
WESTRIDGE SINGLE FAMILY
6821 FM 1102

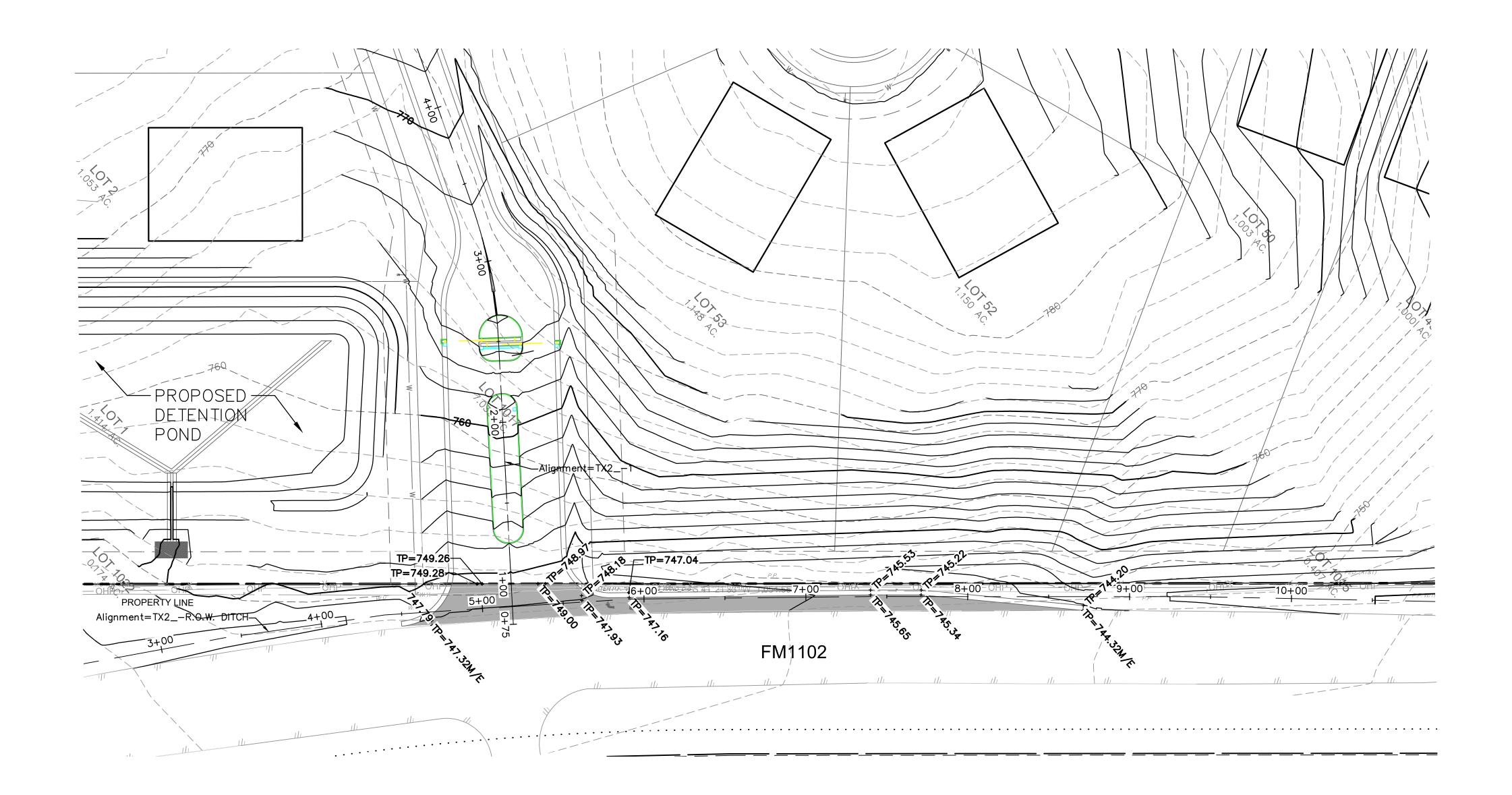
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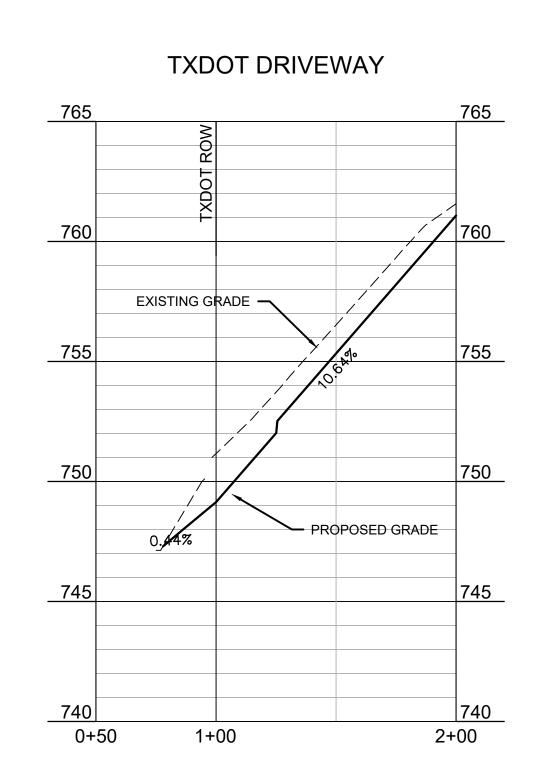
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TALL

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QA/QC BY: TNT
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PERMIT #:

T4.0









LEGEND

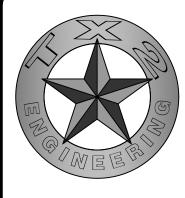
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	PROPOSED EASEMENT LINE

NOTES:

- 1. ALL UTILITY SYMBOLS SHOWN REPRESENT APPROXIMATE LOCATIONS UNLESS OTHERWISE NOTED. CONTRACTOR SHALL REFER TO THE APPROPRIATE AGENCY'S STANDARD SPECIFICATIONS AND INSTALLATION DETAILS FOR ACTUAL LOCATIONS UNLESS OTHERWISE DIRECTED BY THE ENGINEER. IT IS THE CONTRACTORS RESPONSIBILITY TO NOTIFY THE TEXAS ONE CALL CENTER, AND FIELD VERIFY EXACT LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.
- 2. CONTOUR INTERVALS DISPLAYED ARE 2' INTERVALS FOR EXISTING AND PROPOSED CONDITIONS.

WARNING - OVERHEAD POWER LINES

CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING IN THE VICINITY OF OVERHEAD POWER LINES.



TX2 ENGINEERING FIRM #: 20787

TEL: (830) 327-1235

CONTACT:

645 FLORAL AVE, STE C NEW BRAUNFELS, TX 78130

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GRADING PLAN

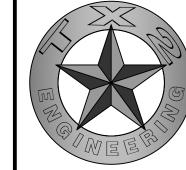
DRAWN BY:

QA/QC BY: PROJECT NO.: ###-#### PERMIT #:

KNOW WHAT'S BELOW. 811 BEFORE YOU DIG.

DWG: Z:\025-0013 Westridge Single Family\40-Design\AutoCAD\Final Plans\Sheets\LDVP\TXDOT\DW GRAD-001.dwg USER: TrevorTast DATE: Aug 25, 2025 7:40am XREFS: 025-0013 EBASE 025-0013 PBASE TBLK_24X36 025-0013 PTOPO





TX2 ENGINEERING FIRM #: 20787

CONTACT:

645 FLORAL AVE, STE C NEW BRAUNFELS, TX 78130 TEL: (830) 327-1235

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EXISTING DRAINAGE PLAN

DRAWN BY: QA/QC BY: PROJECT NO.: PERMIT #:

T6.0

DWG: Z: \025-0013 Westridge Single Family\40-Design\AutoCAD\Final Plans\Sheets\LDVP\TXDOT\DW EDRAIN-001.dwg USER: TrevorTast DATE: Aug 25, 2025 8:19am XREFS: 025-0013 EBASE 025-0013 PBASE TBLK_24X36

Composite Curve Number - EDA-1		
Cover Description	Area (ac)	Curve Number (Hydrologic Soil Group D)
Paved parking lots, roofs, driveways, etc. (excluding right of way)	0	98
Good condition (grass cover 75%)	26.11	80
Total	26.11	80

Composite Curve Number - EDA-2		
Cover Description	Area (ac)	Curve Number (Hydrologic Soil Group D)
Paved parking lots, roofs, driveways, etc. (excluding right of way)	0	98
Good condition (grass cover 75%)	12.68	80
Total	12.68	80

Composite Curve Number - EDA-3		
Cover Description	Area (ac)	Curve Number (Hydrologic Soil Group D)
Paved parking lots, roofs, driveways, etc. (excluding right of way)	0	98
Good condition (grass cover 75%)	11.24	80
Total	11.24	80

Composite Curve Number - EDA-4		
Cover Description	Area (ac)	Curve Number (Hydrologic Soil Group D)
Paved parking lots, roofs, driveways, etc. (excluding right of way)	0	98
Good condition (grass cover 75%)	9.31	80
Total	9.31	80

Composite Curve Number - EDA-5		
Cover Description	Area (ac)	Curve Number (Hydrologic Soil Group D)
Paved parking lots, roofs, driveways, etc. (excluding right of way)	0	98
Good condition (grass cover 75%)	9.57	80
Total	9.57	80

Assumptions	S:
Mannings n (Sheet) (Grass):	0.17
Mannings n (Sheet) (asphalt):	0.016
Mannings n (Channel/ Storm):	0.045
Sheet Flow Length (Max)	100 L.F
ToC (Min.)	10 Min
P ₂ = 2-Year, 24-Hour Storm	4.08 in.

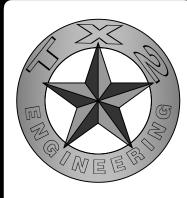


1	UnPaved: $T_{(t_{-}Shall}$) =	$\frac{L}{(60*16.1345*S^{0.5})}$

Time of Concentration (ToC) Calculations

$T_{(t_Channel)} =$	$\sum (\frac{L_i}{60Vi})$
----------------------	---------------------------

	Sheet			Shallow Concentrated Flow			Channel or Storm Drain Flow				Total									
Drainage Basin ID	Elev. Up	Elev. Down	Length (L) (ft)	Slope (S) (%)	T _(t -Sheet) (min.)	Elev. Up	Elev. Down	Length (L) (ft)	Slope (S) (%)	Paved/ UnPaved	T _(t -Shall.) (min.)	Elev. Up	Elev. Down	Length (L) (ft)	Slope (S) (%)	X-Sectional Area (ft²)	Wetted Perimeter (ft)	Velocity (ft/s)	T _(t -Chan.) (min.)	ToC (min.)
EDA1	835.00	833.92	100	1.08%	12.27	833.92	782.95	578.01	8.82%	UnPaved	2.01	782.95	740.03	1308.16	3.28%	41	34.5	6.71	3.25	17.53
EDA2	835.00	833.42	100	1.58%	10.54	833.42	819.00	254.29	5.67%	UnPaved	1.10	819.00	814.00	538.83	0.93%	53.21	75.4	2.52	3.56	15.20
EDA3	835.00	833.26	100	1.74%	10.14	833.26	793.00	627.79	6.41%	UnPaved	2.56	793.00	775.50	371.28	4.71%	35.48	45.24	6.10	1.01	13.72
EDA4	814.19	812.53	100	1.66%	10.33	812.53	779.00	391.66	8.56%	UnPaved	1.38	779.00	762.26	295.66	5.66%	35.48	45.24	6.68	0.74	12.45
EDA5	803.78	800.24	100	3.54%	7.63	800.24	751.32	807.76	6.06%	UnPaved	3.39									11.02



TX2 ENGINEERING FIRM #: 20787

CONTACT:

645 FLORAL AVE, STE C NEW BRAUNFELS, TX 78130 TEL: (830) 327-1235

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EXISTING DRAINAGE CALCULATIONS WESTRIDGE SINGLE FAMILY 6821 FM 1102 NEW BRAUNFELS, TX 78132

DRAWN BY: QA/QC BY: PROJECT NO.: PERMIT #:





TX2 ENGINEERING FIRM #: 20787

CONTACT:

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DRAWN BY: QA/QC BY: PROJECT NO.:

T6.2

DWG: Z:\025-0013 Westridge Single Family\40-Design\AutoCAD\Final Plans\Sheets\LDVP\TXDOT\DW PDRAIN-001.dwg USER: TrevorTast DATE: Aug 25, 2025 8:19am XREFS: 025-0013 EBASE 025-0013 PBASE TBLK_24X36

Composite Curve Number - PDA-1							
Cover Description	Area (ac)	Curve Number (Hydrologic Soil Group D)					
Paved parking lots, roofs, driveways, etc. (excluding right of way)	4.50	98					
Good condition (grass cover 75%)	21.37	80					
Total	25.87	83					

Composite Curve Nun	nber - PDA-2	
Cover Description	Area (ac)	Curve Number (Hydrologic Soil Group D)
Paved parking lots, roofs, driveways, etc. (excluding right of way)	1.62	98
Good condition (grass cover 75%)	8.56	80
Total	10.18	83

Composite Curve Number - PDA-3							
Cover Description	Area (ac)	Curve Number (Hydrologic Soil Group D)					
Paved parking lots, roofs, driveways, etc. (excluding right of way)	2.75	98					
Good condition (grass cover 75%)	12.61	80					
Total	15.36	83					

Composite Curve Number - PDA-4							
Cover Description	Area (ac)	Curve Number (Hydrologic Soil Group D)					
Paved parking lots, roofs, driveways, etc. (excluding right of way)	4.46	98					
Good condition (grass cover 75%)	6.70	80					
Total	11.16	87					

Composite Cumo Num	ahar DDA F	
Composite Curve Nun		
Cover Description	Area (ac)	Curve Number (Hydrologic Soil Group D)
Paved parking lots, roofs, driveways, etc. (excluding right of way)	0.98	98
Good condition (grass cover 75%)	5.34	80
Total	6 32	83

	STORMWATER DISCHARGE - AP1							
STORM EVENT	PREDEVELOPMENT Q (cfs)	POSTDEVELOPMENT Q (cfs) PRE-DETENTION	POSTDEVELOPMENT Q (cfs) POST-DETENTION	NET CHANGE (cfs) PRE-DETENTION	•			
2YR	58.80	80.28	55.21	21.48	-3.59			
5YR	92.37	121.14	86.12	28.77	-6.25			
10YR	126.63	161.71	119.70	35.08	-6.93			
25YR	179.95	224.15	171.64	44.20	-8.31			
50YR	227.72	279.75	217.77	52.03	-9.95			
100YR	282.48	343.36	271.58	60.88	-10.90			

STORMWATER DISCHARGE - AP2								
STORM EVENT	PREDEVELOPMENT Q (cfs)	POSTDEVELOPMENT Q (cfs)	NET CHANGE (cfs)					
2YR	23.18	23.43	0.25					
5YR	36.54	35.72	-0.82					
10YR	50.04	47.98	-2.06					
25YR	71.03	66.89	-4.14					
50YR	89.83	83.74	-6.09					
100YR	111.38	103.02	-8.36					

	STORMWATER DISCHARGE - AP3							
STORM EVENT	PREDEVELOPMENT Q (cfs)	POSTDEVELOPMENT Q (cfs)	NET CHANGE (cfs)					
2YR	23.08	35.35	12.27					
5YR	36.38	53.90	17.52					
10YR	49.82	72.40	22.58					
25YR	70.72	100.92	30.20					
50YR	89.43	126.35	36.92					
100YR	110.87	155.45	44.58					

STORMWATER DISCHARGE - AP4								
STORM EVENT	PREDEVELOPMENT Q (cfs)	POSTDEVELOPMENT Q (cfs)	NET CHANGE (cfs)					
2YR	19.12	29.37	10.25					
5YR	30.13	43.01	12.88					
10YR	41.26	56.42	15.16					
25YR	58.58	76.96	18.38					
50YR	74.07	95.22	21.15					
100YR	91.83	116.12	24.29					

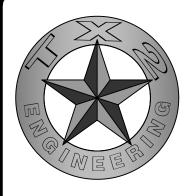
STORMWATER DISCHARGE - AP5							
STORM EVENT	PREDEVELOPMENT Q (cfs)	POSTDEVELOPMENT Q (cfs)	NET CHANGE (cfs)				
2YR	19.65	14.54	-5.11				
5YR	30.97	22.18	-8.79				
10YR	42.42	29.79	-12.63				
25YR	60.21	41.53	-18.68				
50YR	76.14	51.99	-24.15				
100YR	94.40	63.96	-30.44				

STORMWATER DISCHARGE - AP3, AP4, AP5								
STORM EVENT	PREDEVELOPMENT Q (cfs)	POSTDEVELOPMENT Q (cfs) PRE-DETENTION	POSTDEVELOPMENT Q (cfs) POST-DETENTION	• •	NET CHANGE (cfs POST-DETENTION			
2YR	61.85	79.26	60.05	17.41	-1.80			
5YR	97.49	119.09	90.66	21.60	-6.83			
10YR	133.50	158.60	121.25	25.10	-12.25			
25YR	189.51	219.41	168.91	29.90	-20.60			
50YR	239.65	273.57	211.67	33.92	-27.98			
100YR	297.11	335.53	260.79	38.42	-36.32			

A ssumptions	
Mannings n (Sheet) (Grass):	0.17
Mannings n (Sheet) (asphalt):	0.016
Mannings n (Channel/ Storm):	0.045
Sheet Flow Length (Max)	100 L.F
ToC (Min.)	10 Min
P ₂ = 2-Year, 24-Hour Storm	4.08 in.

	Time of Concentration (ToC) Calculations
	Paved: $T_{(t_{\text{Shall}})} = \frac{L}{(60 * 20.3282 * S^{0.5})}$
$T_{\binom{t-Sheet}{}} = \frac{0.007 (n * L)^{0.8}}{(P_2^{0.5})(S^{0.4})} * 60$	UnPaved: $T_{(t_{-} \text{Shall})} = \frac{L}{(60*16.1345*S^{0.5})}$

	Sheet				Shallow Concentrated Flow				Channel or Storm Drain Flow					Total						
Drainage Basin ID	Elev. Up	Elev. Down	Length (L) (ft)	Slope (S) (%)	T _(t -Sheet) (min.)	Elev. Up	Elev. Down	Length (L) (ft)	Slope (S) (%)	Paved/ UnPaved	T _(t -Shall.) (min.)	Elev. Up	Elev. Down	Length (L) (ft)	Slope (S) (%)	X-Sectional Area (ft²)	Wetted Perimeter (ft)	Velocity (ft/s)	ToC (min.) (min.)	
PDA1	831.29	829.71	54.22	2.91%	0.76	829.13	802.68	552.27	4.79%	UnPaved	2.61	802.68	740.47	1425.64	4.36%	41	34.5	7.74	3.07	12.60
	829.71	829.13	45.78	1.27%	6.16															
PDA2	831.29	828.98	18.52	12.47%	0.18	820.65	820.00	110.94	0.59%	UnPaved	1.50	820.00	814.00	501.91	1.20%	53.21	75.4	2.86	2.92	10.00
	828.98	820.65	81.48	10.22%	4.24															
PDA3	831.29	830.13	28.43	4.08%	0.40	828.77	825.63	161.27	1.95%	UnPaved	1.19	825.63	776.00	924.9	5.37%	35.48	45.24	6.51	2.37	11.45
	830.13	828.77	71.57	1.90%	7.49															
PDA4	805.00	804.33	28.43	2.36%	0.50	802.51	779.00	266.2	8.83%	UnPaved	0.93	779.00	752.29	1130.29	2.36%	35.48	45.24	4.32	4.36	12.45
	804.33	802.51	71.57	2.54%	6.67															
PDA5	802.07	800.16	30.99	6.16%	0.36	795.43	773.04	336.57	6.65%	UnPaved	1.35	773.04	749.46	385.4	6.12%	4.158	7.94	5.31	1.21	10.00
	800.16	795.43	69.01	6.85%	4.36															



TX2 ENGINEERING FIRM #: 20787

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2025

WESTRIDGE SINGLE FAMILY 6821 FM 1102 NEW BRAUNFELS, TX 78132

POSED DRAINAGE CALCULATIONS

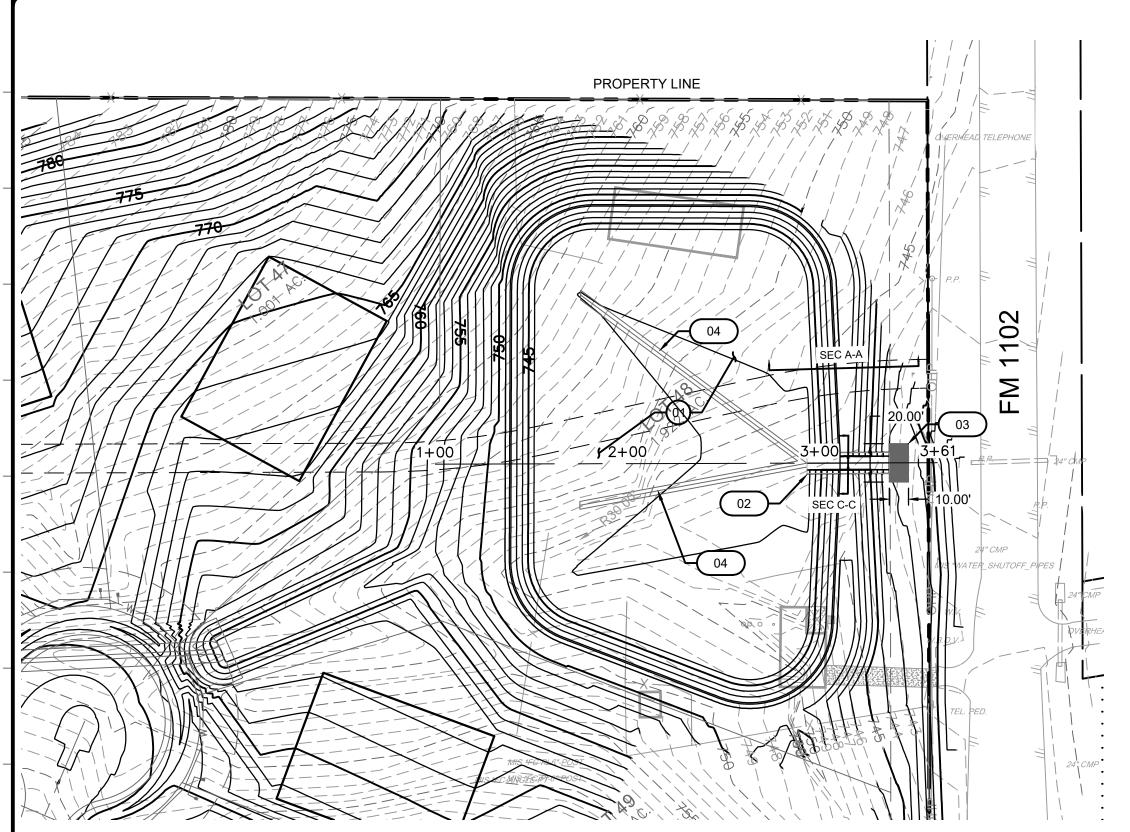
DESCRIPTION BY

REV. DATE DESCRIPTION

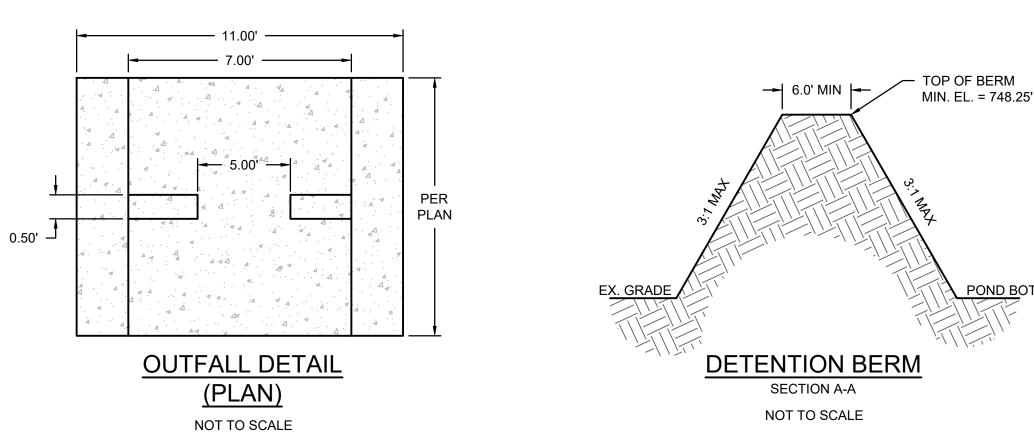
S.A. DATE DESCRIPTION

DRAWN BY:
QA/QC BY:
PROJECT NO.: ###PERMIT #:

T6.3



SE_POND_XS 765 765 760 - PROPOSED GRADING EXISTING GRADE - 100-YR WSE 750 - DETENTION BERM 745 740 740 OUTFALL -RIPRAP 735 1+00 2+00 3+61.40 3+00



DETENTION NOTES:

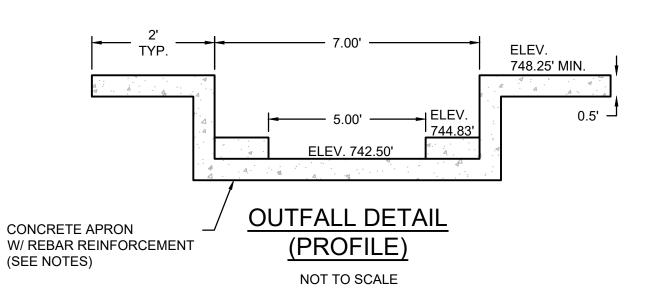
- 1. SOILS FOR EMBANKMENT SHALL BE PLACED AS DIRECTED WITHIN PROJECT GEOTECHNICAL REPORT AND ALL CURRENT ADDENDA.
- 2. CONTRACTOR SHALL NOT EXCEED 3H:1V SLOPE. BARE SOILS SHALL BE SEEDED OR STABILIZED BY OTHER MEANS WITHIN 14 CALENDAR DAYS AFTER FINAL GRADING OR WHERE CONSTRUCTION ACTIVITY HAS TEMPORARILY CEASED FOR MORE THAN 21 DAYS. EROSION CONTROL MATS OR BLANKETS MAY BE INSTALLED TO PROTECT THE DISTURBED AREA BEFORE VEGETATION IS ESTABLISHED.
- 3. THE EMBANKMENT SHALL CONSIST OF NATIVE MATERIALS FREE OF LARGE ROCKS (6" DIAMETER) AND ORGANIC MATERIALS. THE TOP 3" SHALL BE SUITABLE TOP SOIL TO ESTABLISH VEGETATION.
- 4. CONTRACTOR SHALL BE RESPONSIBLE FOR DIVERTING STORMWATER DURING CONSTRUCTION OF DETENTION POND. CONTRACTOR SHALL DEWATER POND AS NECESSARY THROUGHOUT CONSTRUCTION OF THE DETENTION AND OUTLET FACILITIES.
- 5. PER CITY DRAINAGE REQUIREMENTS, 1' FREEBOARD REQUIRED.

NOTES:

- 1. EXISTING UTILITIES IN APPROXIMATE LOCATION. IT IS THE CONTRACTORS'S RESPONSIBILITY TO NOTIFY THE TEXAS ONE CALL CENTER PRIOR TO THE STATE OF ANY CONSTRUCTION. IT IS THE CONTRACTORS'S RESPONSIBILITY TO FIELD VERIFY THE EXACT LOCATION AND DEPTH OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK.
- 2. ALL UTILITY SYMBOLS SHOWN REPRESENT APPROXIMATE LOCATIONS UNLESS OTHERWISE NOTED. CONTRACTOR SHALL REFER TO THE APPROPRIATE AGENCY'S STANDARD SPECIFICATIONS AND INSTALLATION DETAILS FOR ACTUAL LOCATIONS UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- 3. UPON COMPLETION OF THE PROPOSED STORMWATER DETENTION AND/OR WATER QUALITY STRUCTURAL CONTROL(S), AND PRIOR TO THE RELEASE OF THE CERTIFICATE OF ACCEPTANCE OR OCCUPANCY BY THE PERMIT CENTER, THE DESIGN ENGINEER SHALL CERTIFY IN WRITING THAT THE PROPOSED STRUCTURAL CONTROL(S) WAS INSPECTED (INCLUDING DATE AND TIME OF THE INSPECTION) AND CONSTRUCTED IN CONFORMANCE WITH THE APPROVED PLANS.
- ANY SUCH STRUCTURAL CONTROL(S) BUILT WITHIN THE CITY OF SAN MARCOS MUST MAINTAIN COMPLIANCE WITH THE CITY'S MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) AND APPLICABLE MS4 ORDINANCES. PRIOR TO RELEASE OF THE CERTIFICATE OF ACCEPTANCE OR OCCUPANCY, A CITY EASEMENT MUST BE SHOWN AROUND ALL STRUCTURAL CONTROLS INCLUDING A MAINTENANCE COVENANT WITHIN THE CITY LIMITS

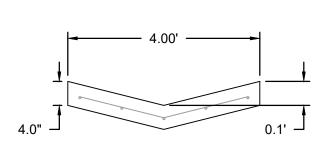
	STORMWATER DISCHARGE - AP1									
STORM EVENT	PREDEVELOPMENT Q (cfs)	POSTDEVELOPMENT Q (cfs) PRE-DETENTION	POSTDEVELOPMENT Q (cfs) POST-DETENTION	NET CHANGE (cfs) PRE-DETENTION	•					
2YR	58.80	80.28	55.21	21.48	-3.59					
5YR	92.37	121.14	86.12	28.77	-6.25					
10YR	126.63	161.71	119.70	35.08	-6.93					
25YR	179.95	224.15	171.64	44.20	-8.31					
50YR	227.72	279.75	217.77	52.03	-9.95					
100YR	282.48	343.36	271.58	60.88	-10.90					

POND OUTLET DESIGN									
STORM EVENT	DISCHARGE (CFS) ELEVATION (FT)	FREEBOARD						
2YR	55.21	744.72	3.53						
5YR	86.12	745.42	2.83						
10YR	119.70	746.04	2.21						
25YR	171.64	746.87	1.38						
50YR	217.77	747.54	0.71						
100YR	271.58	748.25	0.00						
TOOAK	2/1.58	/48.25	0.00						



CONCRETE APRON NOTES:

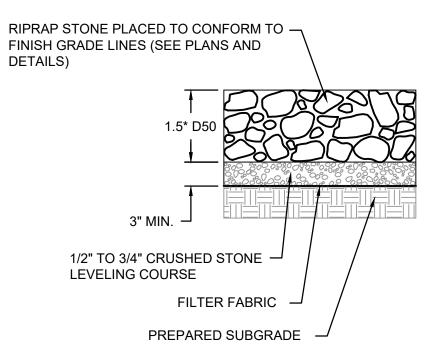
- 1. CONCRETE APRON SHALL BE 4,000 PSI OR AS APPROVED BY CITY ENGINEER.
- 2. REBAR REINFORCEMENT PLACEMENT SHALL BE #4 BARS @ 12" O.C.E.W. WITH EMBEDMENT OF 4".
- 3. CONCRETE APRON SHALL BE INSTALLED WITH WEAKENED JOINTS AND EXPANSION JOINTS AT A SPACING NOT TO EXCEED 12' SQUARE. WEAKENED AND EXPANSION JOINTS SHALL BE PER CITY STANDARDS AND REQUIREMENTS (SEE SIDEWALK DETAILS).



CONCRETE PILOT CHANNEL DETAIL

NOT TO SCALE

- 1. CONCRETE APRON SHALL BE 4,000 PSI OR AS APPROVED
- BY CITY ENGINEER. 2. REBAR REINFORCEMENT PLACEMENT 6X6 WELDED WIRE
- 3. CONCRETE APRON SHALL BE INSTALLED WITH WEAKENED JOINTS AND EXPANSION JOINTS AT A SPACING NOT TO EXCEED 13' SQUARE. WEAKENED AND EXPANSION JOINTS SHALL BE PER CITY STANDARDS AND REQUIREMENTS (SEE SIDEWALK DETAILS).
- 4. 100 YR FLOW RATE VELOCITY AT EXIT 3.66 FT/S. EXIT VELOCITY FROM WEIR IS NON-EROSIVE FOR GRASSES.



RIPRAP NOTES

- 1. STONE FOR RIPRAP SHALL CONSIST OF QUARRIED ROCK AND BE SOUND, DURABLE AND ANGULAR IN SHAPE.
- 2. SHALE AND STONE WITH SHALE SEAMS ARE NOT ACCEPTABLE.
- 3. STONES SHALL HAVE A MINIMUM THICKNESS OF 6", NO MORE THAN 10 PERCENT SHALL HAVE AN ELONGATION GREATER THAN 3:1, AT LEAST 60 PERCENT OF THE MASS SHALL BE OF PIECES HAVING A VOLUME OF ONE CUBIC FOOT, NO MORE THAN 6 PERCENT OF THE STONES SHALL WEIGH LESS THAN 10 POUNDS.

RIPRAP DETAIL





PROPERTY LINE

LEGEND

RIGHT OF WAY
EXISTING OVERHEAD POWER
EXISTING UNDERGROUND POWER
EXISTING TELPHONE CONDUIT
EXISTING CABLE TELEVISION CONDUIT
EXISTING FIBER OPTIC CONDUIT
EXISTING NATURAL GAS SERVICE
EXISTING FIRE PROTECTION SERVICE
EXISTING WATER SERVICE
EXISTING SANITARY SEWER
EXISTING ROOF DRAINS AND HEADER PIPES
EXISTING STORM SEWER
EXISTING MAJOR CONTOUR
EXISTING MINOR CONTOUR
PROPOSED MAJOR CONTOUR
PROPOSED MINOR CONTOUR
PROPOSED LOT LINE
PROPOSED CENTERLINE
PROPOSED BUILDING SETBACK LINE
PROPOSED EASEMENT LINE
INSTALL CURB & GUTTER
DRAINAGE AREA
TIME OF CONCENTRATION PATH
PROPOSED LIGHT DUTY ASPHALT
PROPOSED HEAVY DUTY ASPHALT
PROPOSED CONCRETE PAVEMENT/ASPHALT
PROPOSED BUILDING

SPOT ELEVATION LEGEND

GR = FINISHED GRADE

TC = TOP OF CURB AT BACK EDGE

TP = TOP OF PAVEMENT LFG = LOW FINISHED GRADE

HFG= HIGH FINISHED GRADE M/E = MATCH EXISTING

KEYNOTES

01 DETENTION POND

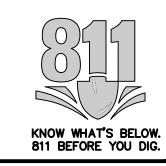
02 OUTFALL STRUCTURE (SEE DETAILS THIS SHEET)

03 ROCK RIP RAP $(D_{50}=6")$

04 CONCRETE PILOT CHANNEL

WARNING - OVERHEAD POWER LINES

CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING IN THE VICINITY OF OVERHEAD POWER LINES.



TX2 ENGINEERING FIRM #: 20787

CONTACT: 645 FLORAL AVE, STE C NEW BRAUNFELS, TX 78130

TEL: (830) 327-1235

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DETENTION

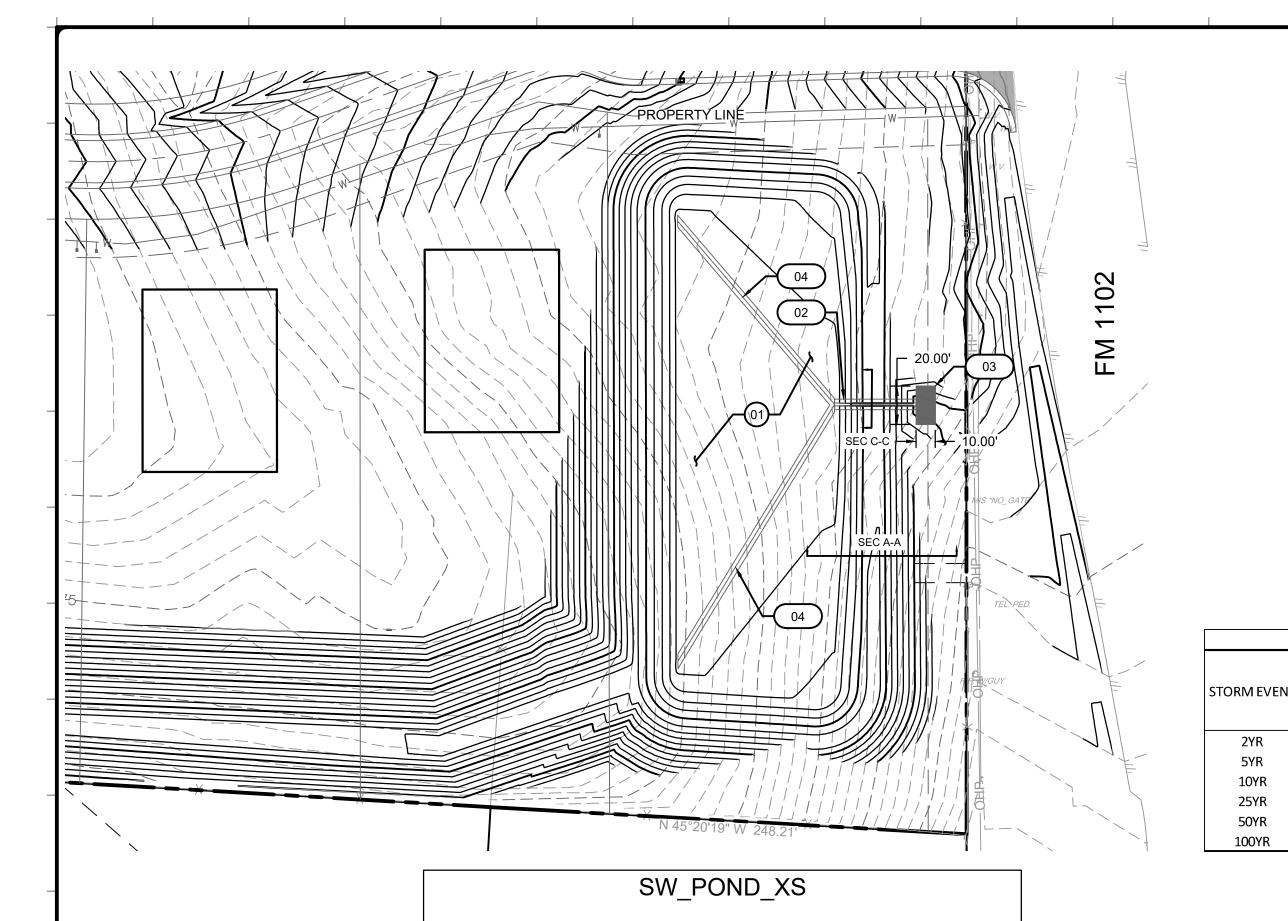
OSED

###-###

DRAWN BY: QA/QC BY:

PERMIT #:

PROJECT NO.:



- EXISTING GRADE

PROPOSED GRADING

→ 100-YR WSE

OUTFALL

2+00

RIPRAP

3+00

-- 6.0' MIN |--

DETENTION BERM

SECTION A-A

NOT TO SCALE

- DETENTION BERM

3+53.26

- TOP OF BERM

MIN. EL. = 755.87'

780

760

755

745

740

1+00

DETENTION NOTES:

2YR 5YR 10YR 25YR 50YR 100YR

CONCRETE APRON

(SEE NOTES)

W/ REBAR REINFORCEMENT

- 1. SOILS FOR EMBANKMENT SHALL BE PLACED AS DIRECTED WITHIN PROJECT GEOTECHNICAL REPORT AND ALL CURRENT ADDENDA.
- 2. CONTRACTOR SHALL NOT EXCEED 3H:1V SLOPE. BARE SOILS SHALL BE SEEDED OR STABILIZED BY OTHER MEANS WITHIN 14 CALENDAR DAYS AFTER FINAL GRADING OR WHERE CONSTRUCTION ACTIVITY HAS TEMPORARILY CEASED FOR MORE THAN 21 DAYS. EROSION CONTROL MATS OR BLANKETS MAY BE INSTALLED TO PROTECT THE DISTURBED AREA BEFORE VEGETATION IS ESTABLISHED.
- 3. THE EMBANKMENT SHALL CONSIST OF NATIVE MATERIALS FREE OF LARGE ROCKS (6" DIAMETER) AND ORGANIC MATERIALS. THE TOP 3" SHALL BE SUITABLE TOP SOIL TO ESTABLISH VEGETATION.
- 4. CONTRACTOR SHALL BE RESPONSIBLE FOR DIVERTING STORMWATER DURING CONSTRUCTION OF DETENTION POND. CONTRACTOR SHALL DEWATER POND AS NECESSARY THROUGHOUT CONSTRUCTION OF THE DETENTION AND OUTLET FACILITIES.
- 5. PER CITY DRAINAGE REQUIREMENTS, 1' FREEBOARD REQUIRED.

NOTES:

- 1. EXISTING UTILITIES IN APPROXIMATE LOCATION. IT IS THE CONTRACTORS'S RESPONSIBILITY TO NOTIFY THE TEXAS ONE CALL CENTER PRIOR TO THE STATE OF ANY CONSTRUCTION. IT IS THE CONTRACTORS'S RESPONSIBILITY TO FIELD VERIFY THE EXACT LOCATION AND DEPTH OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK.
- 2. ALL UTILITY SYMBOLS SHOWN REPRESENT APPROXIMATE LOCATIONS UNLESS OTHERWISE NOTED. CONTRACTOR SHALL REFER TO THE APPROPRIATE AGENCY'S STANDARD SPECIFICATIONS AND INSTALLATION DETAILS FOR ACTUAL LOCATIONS UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- 3. UPON COMPLETION OF THE PROPOSED STORMWATER DETENTION AND/OR WATER QUALITY STRUCTURAL CONTROL(S), AND PRIOR TO THE RELEASE OF THE CERTIFICATE OF ACCEPTANCE OR OCCUPANCY BY THE PERMIT CENTER, THE DESIGN ENGINEER SHALL CERTIFY IN WRITING THAT THE PROPOSED STRUCTURAL CONTROL(S) WAS INSPECTED (INCLUDING DATE AND TIME OF THE INSPECTION) AND CONSTRUCTED IN CONFORMANCE WITH THE APPROVED PLANS.
- ANY SUCH STRUCTURAL CONTROL(S) BUILT WITHIN THE CITY OF SAN MARCOS MUST MAINTAIN COMPLIANCE WITH THE CITY'S MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) AND APPLICABLE MS4 ORDINANCES. PRIOR TO RELEASE OF THE CERTIFICATE OF ACCEPTANCE OR OCCUPANCY, A CITY EASEMENT MUST BE SHOWN AROUND ALL STRUCTURAL CONTROLS INCLUDING A MAINTENANCE COVENANT WITHIN THE CITY LIMITS

	STORMWATER DISCHARGE - AP3, AP4, AP5									
NT	PREDEVELOPMENT Q (cfs)	POSTDEVELOPMENT Q (cfs) PRE-DETENTION	POSTDEVELOPMENT Q (cfs) POST-DETENTION		NET CHANGE (cfs) POST-DETENTION					
	61.85	79.26	60.05	17.41	-1.80					
	97.49	119.09	90.66	21.60	-6.83					
	133.50	158.60	121.25	25.10	-12.25					
	189.51	219.41	168.91	29.90	-20.60					
	239.65	273.57	211.67	33.92	-27.98					
	297.11	335.53	260.79	38.42	-36.32					

ELEV. 750.12'

OUTFALL DETAIL

(PROFILE)

1. CONCRETE APRON SHALL BE 4,000 PSI OR AS APPROVED

2. REBAR REINFORCEMENT PLACEMENT SHALL BE #4 BARS

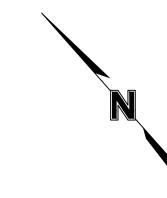
3. CONCRETE APRON SHALL BE INSTALLED WITH WEAKENED

JOINTS AND EXPANSION JOINTS AT A SPACING NOT TO EXCEED 12' SQUARE. WEAKENED AND EXPANSION JOINTS SHALL BE PER CITY STANDARDS AND REQUIREMENTS (SEE

@ 12" O.C.E.W. WITH EMBEDMENT OF 4".

ELEV. 755.87' MIN.

POND OUTLET DESIGN									
STORM EVENT	DISCHARGE (CFS)	ELEVATION (FT)	FREEBOARD						
2YR	60.05	752.11	3.76						
5YR	90.66	752.67	3.20						
10YR	121.25	753.20	2.67						
25YR	168.91	753.95	1.92						
50YR	211.67	754.56	1.31						
100YR	260.79	755.22	0.65						
	_								





PROPERTY LINE

LEGEND

	RIGHT OF WAY
——————————————————————————————————————	EXISTING OVERHEAD POWER
———— UGE ————	EXISTING UNDERGROUND POWER
— т — т —	EXISTING TELPHONE CONDUIT
CATV	EXISTING CABLE TELEVISION CONDUIT
FO	EXISTING FIBER OPTIC CONDUIT
———— G ———————————————————————————————	EXISTING NATURAL GAS SERVICE
———— FP ————	EXISTING FIRE PROTECTION SERVICE
——————————————————————————————————————	EXISTING WATER SERVICE
SS	EXISTING SANITARY SEWER
SD	EXISTING ROOF DRAINS AND HEADER PIPES
	EXISTING STORM SEWER
—————610————	EXISTING MAJOR CONTOUR
—————611 ————	EXISTING MINOR CONTOUR
 610	PROPOSED MAJOR CONTOUR
 611	PROPOSED MINOR CONTOUR
	PROPOSED LOT LINE
	PROPOSED CENTERLINE
-·-·-	PROPOSED BUILDING SETBACK LINE
	PROPOSED EASEMENT LINE
	INSTALL CURB & GUTTER
	DRAINAGE AREA
<u> </u>	TIME OF CONCENTRATION PATH
	PROPOSED LIGHT DUTY ASPHALT
	PROPOSED HEAVY DUTY ASPHALT
	PROPOSED CONCRETE PAVEMENT/ASPHAL
	PROPOSED BUILDING

SPOT ELEVATION LEGEND

GR = FINISHED GRADE

TC = TOP OF CURB AT BACK EDGE TP = TOP OF PAVEMENT

LFG = LOW FINISHED GRADE

HFG= HIGH FINISHED GRADE M/E = MATCH EXISTING

KEYNOTES

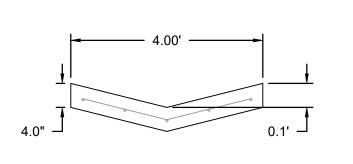
01 DETENTION POND

02 OUTFALL STRUCTURE (SEE DETAILS THIS SHEET)

03 ROCK RIP RAP $(D_{50}=6")$ 04 CONCRETE PILOT CHANNEL

WARNING - OVERHEAD POWER LINES CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING

IN THE VICINITY OF OVERHEAD POWER LINES.



CONCRETE APRON NOTES:

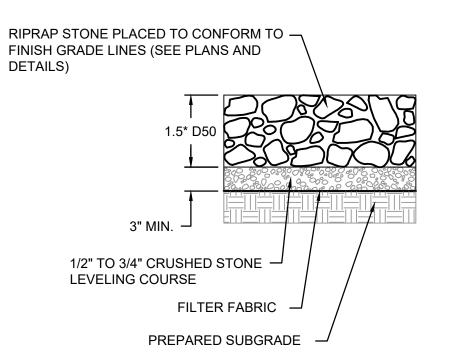
BY CITY ENGINEER.

SIDEWALK DETAILS).

CONCRETE PILOT CHANNEL DETAIL

NOT TO SCALE

- NOTES: 1. CONCRETE APRON SHALL BE 4,000 PSI OR AS APPROVED
- BY CITY ENGINEER. 2. REBAR REINFORCEMENT PLACEMENT 6X6 WELDED WIRE
- 3. CONCRETE APRON SHALL BE INSTALLED WITH WEAKENED JOINTS AND EXPANSION JOINTS AT A SPACING NOT TO EXCEED 13' SQUARE. WEAKENED AND EXPANSION JOINTS SHALL BE PER CITY STANDARDS AND REQUIREMENTS (SEE
- SIDEWALK DETAILS). 4. 100 - YR FLOW RATE VELOCITY AT EXIT 3.66 FT/S. EXIT VELOCITY FROM WEIR IS NON-EROSIVE FOR GRASSES.



RIPRAP NOTES

- 1. STONE FOR RIPRAP SHALL CONSIST OF QUARRIED ROCK AND BE SOUND, DURABLE AND ANGULAR IN SHAPE.
- 2. SHALE AND STONE WITH SHALE SEAMS ARE NOT ACCEPTABLE.
- 3. STONES SHALL HAVE A MINIMUM THICKNESS OF 6", NO MORE THAN 10 PERCENT SHALL HAVE AN ELONGATION GREATER THAN 3:1, AT LEAST 60 PERCENT OF THE MASS SHALL BE OF PIECES HAVING A VOLUME OF ONE CUBIC FOOT, NO MORE THAN 6 PERCENT OF THE STONES SHALL WEIGH LESS THAN 10 POUNDS.

RIPRAP DETAIL



PERMIT #:

DWG: Z:\025-0013 Westridge Single Family\40-Design\AutoCAD\Final Plans\Sheets\LDVP\TXDOT\DW DET-POND-001.dwg
DATE: Aug 25, 2025 8:21am XREFS: 025-0013 EBASE 025-0013 PBASE TBLK_24X36 025-0013 PTOPO

PER

PLAN

OUTFALL DETAIL

(PLAN)

NOT TO SCALE

NEW BRAUNFELS, TX 78130 TEL: (830) 327-1235 THIS DOCUMENT ISSUED ON 25 August 2025 UNDER THE AUTHORITY OF TREVOR TAST, P.E. (LICENSE NO. 124101) IS RELEASED FOR THÉ

TX2 ENGINEERING

645 FLORAL AVE, STE C

FIRM #: 20787

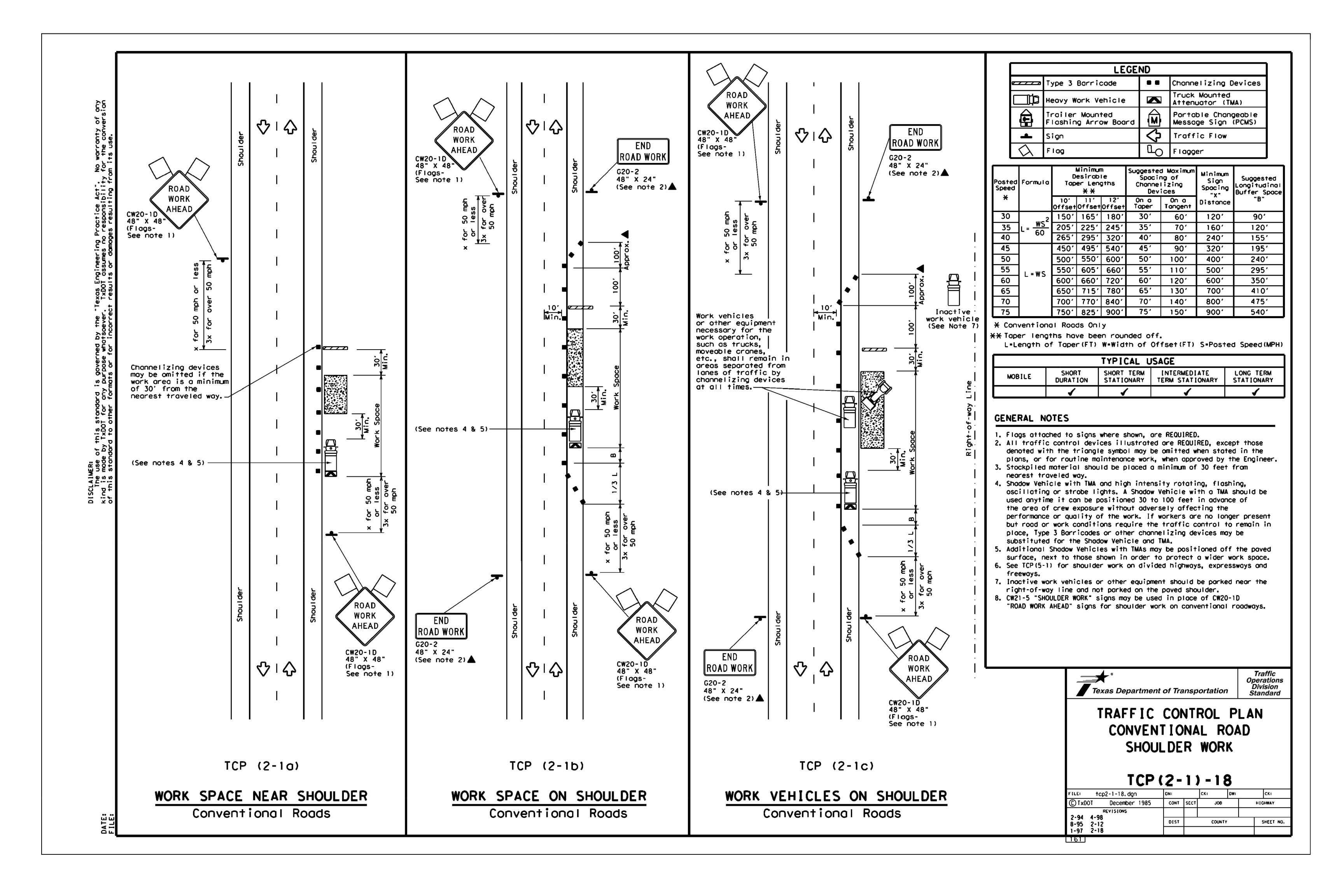
CONTACT:

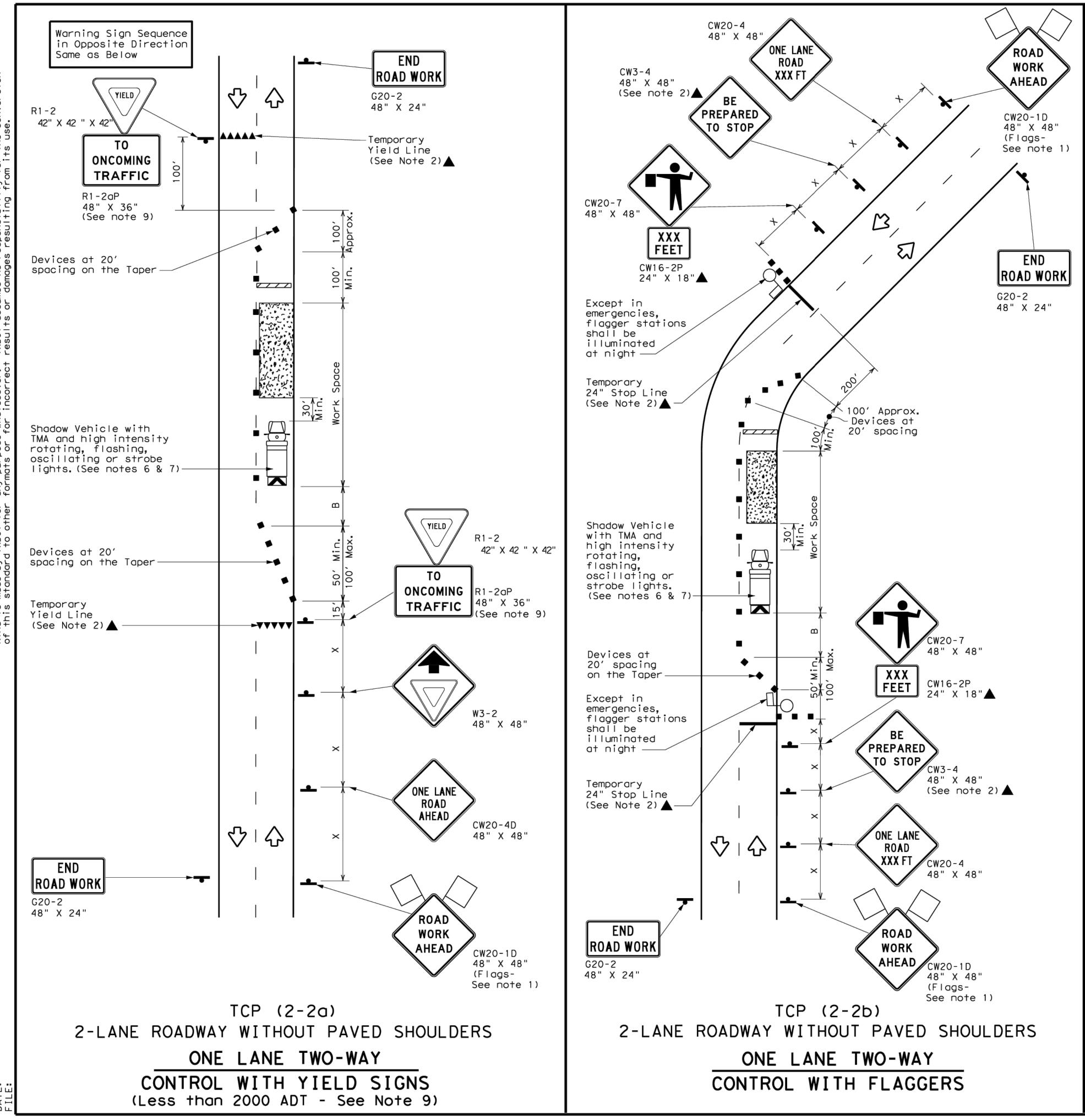
PURPOSE OF REVIEW ONLY THIS DOCUMENT IS NOT TO USED FOR CONSTRUCTION, BIDDING, OR PERMITTING PURPOSES.

DETENTION

OSED

DRAWN BY: QA/QC BY: PROJECT NO.: ###-###





LEGEND									
	Type 3 Barricade		Channelizing Devices						
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)						
	Trailer Mounted Flashing Arrow Board	(<u>X</u>	Portable Changeable Message Sign (PCMS)						
-	Sign	♡	Traffic Flow						
\Diamond	Flag	D	Flagger						

Posted Formula Speed		Desirable Taper Lengths X X			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "X"	Suggested Longitudinal Buffer Space	Stopping Sight Distance
*		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent	Distance	"B"	
30	2	150′	165′	180′	30′	60′	120′	90′	200′
35	$L = \frac{WS^2}{60}$	205′	225′	245′	35′	70′	160′	120′	250′
40	80	265′	295′	320′	40′	80′	240′	155′	305′
45		450′	495′	540′	45′	90′	320′	195′	360′
50		500′	550′	600′	50′	100′	400′	240′	425′
55	L=WS	550′	605′	660′	55′	110′	500′	295′	495′
60	L=W5	600′	660′	720′	60′	120′	600′	350′	570′
65		650′	715′	780′	65′	130′	700′	410′	645′
70		700′	770′	840′	70′	140′	800′	475′	730′
75		750′	825′	900′	75′	150′	900′	540′	820′

X Conventional Roads Only

** Taper lengths have been rounded off.

L=Length of Taper(FT) W=Width of Offset(FT) S=Posted Speed(MPH)

TYPICAL USAGE								
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY				
	1	1	1					

GENERAL NOTES

- 1. Flags attached to signs where shown, are REQUIRED.
- 2. All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
- 3. The CW3-4 "BE PREPARED TO STOP" sign may be installed after the CW20-4 "ONE LANE
- ROAD XXX FT" sign, but proper sign spacing shall be maintained.
- 4. Flaggers should use two-way radios or other methods of communication to control traffic.
- 5. Length of work space should be based on the ability of flaggers to communicate.
- 6. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
- 7. Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect a wider work space.

TCP (2-2a)

- 8. The R1-2 "YIELD" sign traffic control may be used on projects with approaches that have adequate sight distance. For projects in urban areas, work space should be no longer than one half city block. In rural areas, roadways with less than 2000 ADT, work space should be no longer than 400 feet.
- 9. The R1-2aP "YIELD TO ONCOMING TRAFFIC" sign shall be placed on a support at a 7 foot minimum mounting height.

TCP (2-2b)

- 10. Channelizing devices on the center line may be omitted when a pilot car is leading traffic and approved by the Engineer.
- 11. If the work space is located near a horizontal or vertical curve, the buffer distances should be increased in order to maintain stopping sight distance to the flagger and a queue of stopped vehicles.
- 12.Flaggers should use 24" STOP/SLOW paddles to control traffic. Flags should be limited to emergency situtations.

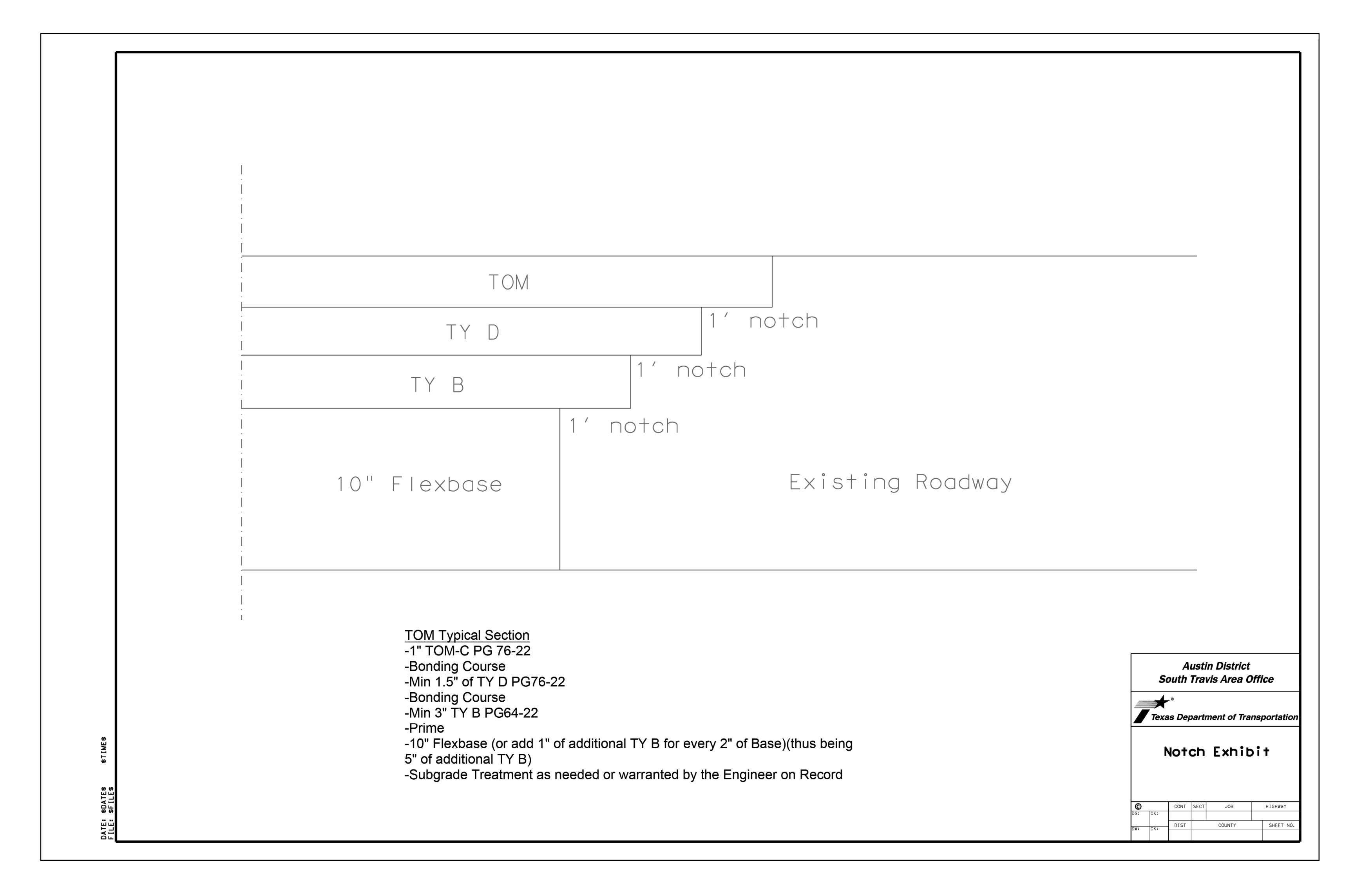


TRAFFIC CONTROL PLAN ONE-LANE TWO-WAY TRAFFIC CONTROL

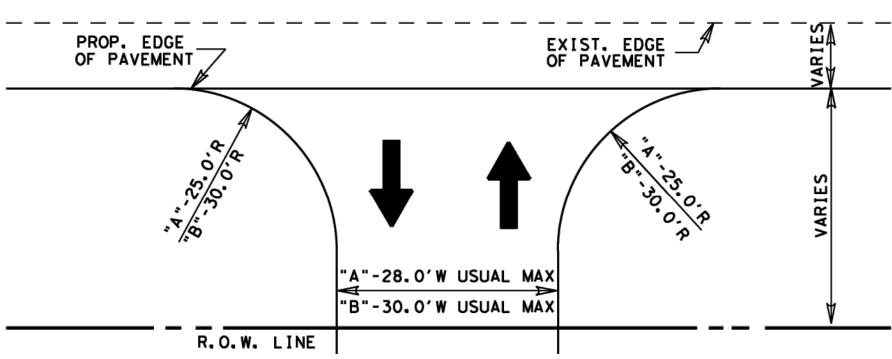
Traffic

TCP(2-2)-18

FILE: tcp2-2-18.dgn	DN:		CK:	DW:	CK:
©TxDOT December 1985	CONT	SECT	JOB		HIGHWAY
REVISIONS 8-95 3-03					
1-97 2-12	DIST		COUNTY		SHEET NO.
4-98 2-18					
160					





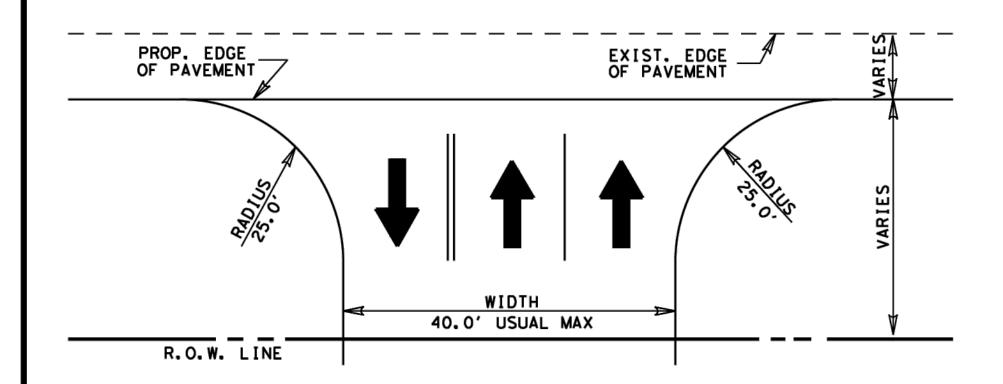


"A"- ONE ENTRY LANE AND ONE EXIT LANE, FEWER THAN 4

LARGE VEHICLES PER HOUR

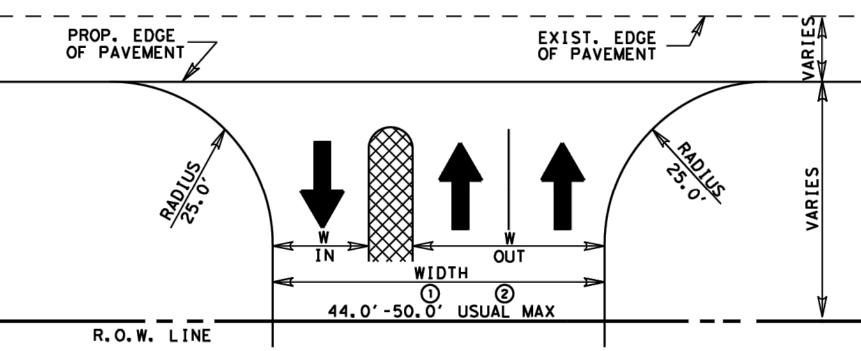
"B"- ONE ENTRY LANE AND ONE EXIT LANE, 4 OR MORE SINGLE
UNIT VEHICLES PER HOUR

1) - DRIWEWAY DESIGNS FOR LARGER VEHICLES WILL BE CONSIDERED ON A CASE BY CASE BASIS



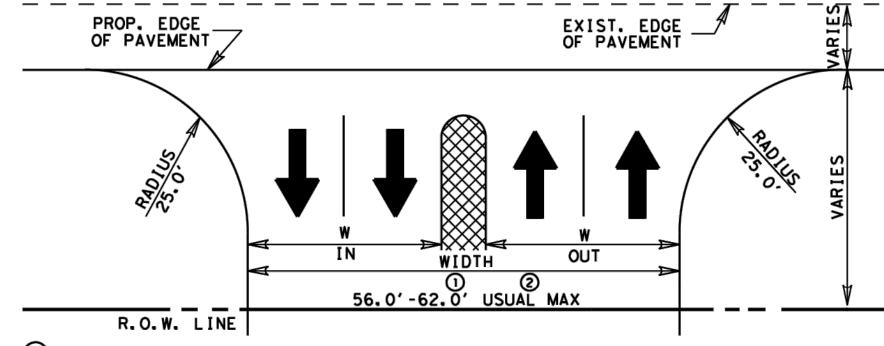
ONE ENTRY LANE AND TWO EXIT LANES (WITHOUT DIVIDERS)

DESIGNS FOR TWO-WAY COMMERCIAL DRIVEWAYS



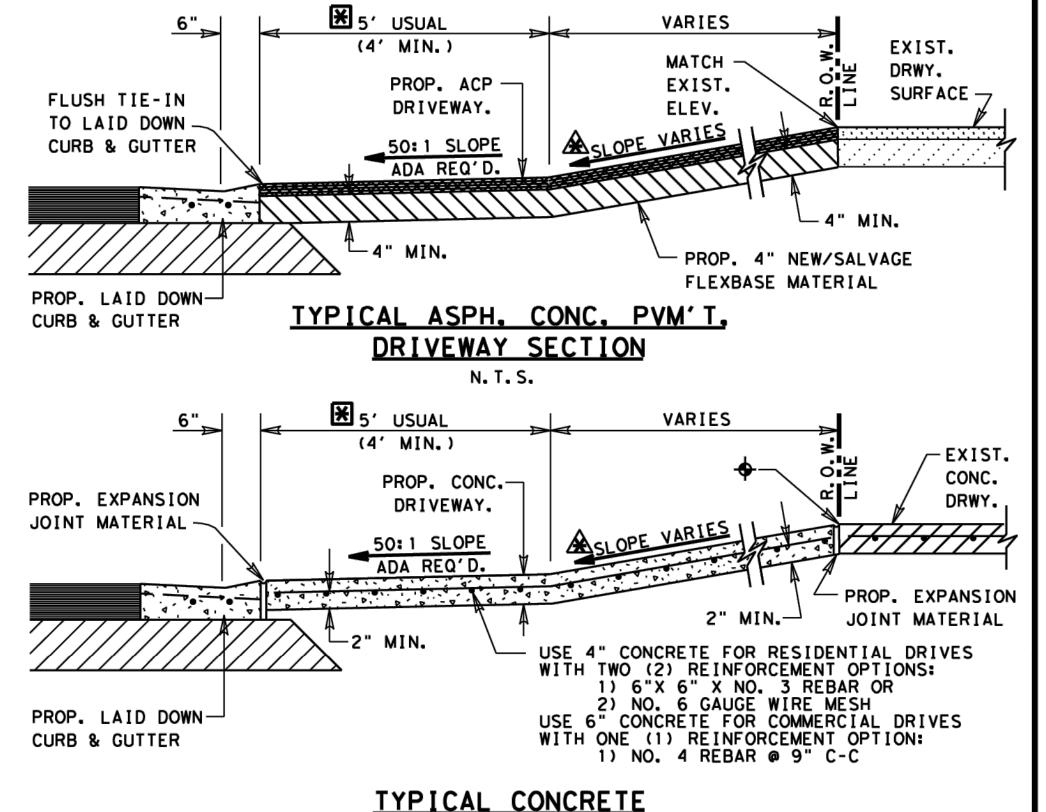
- 1 4.0' WIDE DIVIDER, FACE-TO-FACE CURBS
- 2 10.0' WIDE DIVIDER, FACE-TO-FACE-CURBS

ONE ENTRY LANE AND TWO EXIT LANES (WITH A DIVIDER)



- 1 4.0' WIDE DIVIDER, FACE-TO-FACE CURBS
- (2) 10.0' WIDE DIVIDER, FACE-TO-FACE-CURBS

TWO ENTRY LANES AND TWO EXIT LANES (WITH A DIVIDER)



DRIVEWAY SECTION

PROP./FUTURE SIDEWALK CROSSING LOCATION
UNLESS SHOWN ELSEWHERE ON P&P SHEETS.
SEE P&P SHEETS FOR PROP. SIDEWALK LOCATION
IF SIDEWALKS ARE INCLUDED AS PART OF PROJECT.
REFER TO STATE STANDARDS - PEDESTRIAN
FACILITIES - FOR ADDITIONAL REQUIREMENTS.

PROP. DWY ALGEBRAIC DIFFERENCE TABLE

COMMERCIAL DRIVEWAYS @ A = 6% MAX.

RESIDENTIAL DRIVEWAYS @ A = 8% MAX.

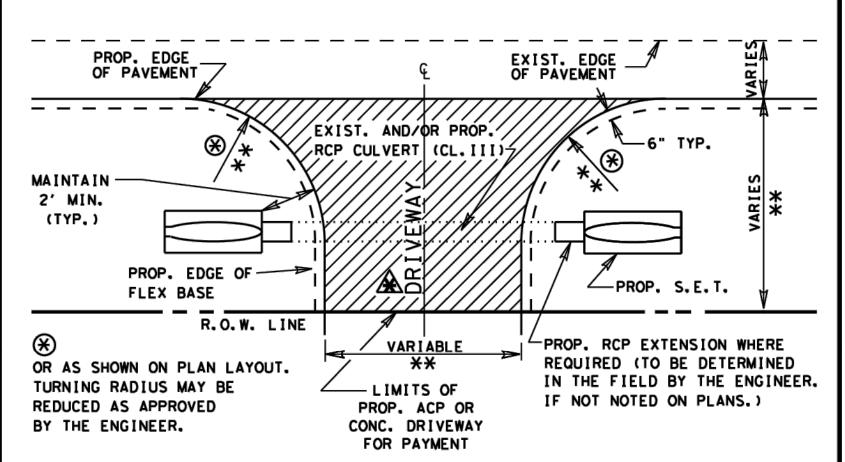
ENTRANCE'S BASE AND SURFACING MAY
BE EXTENDED BEYOND R.O.W. LINE AS
REQUIRED TO MEET EXISTING GRADE IN
A SATISFACTORY MANNER OF WHICH NO
STEEPER THAN 12:1 FOR COMMERCIAL
DRIVEWAY AND 8:1 FOR RESIDENTIAL
DRIVEWAY SLOPE WILL BE CONSTRUCTED.

PROPOSED DRIVEWAY SLOPE TABLE

COMMERCIAL DRIVEWAYS @ 12:1 MAX.

RESIDENTIAL DRIVEWAYS @ 8:1 MAX.

PRIVATE AND COMMERCIAL DRIVES WITHOUT CURB & GUTTER

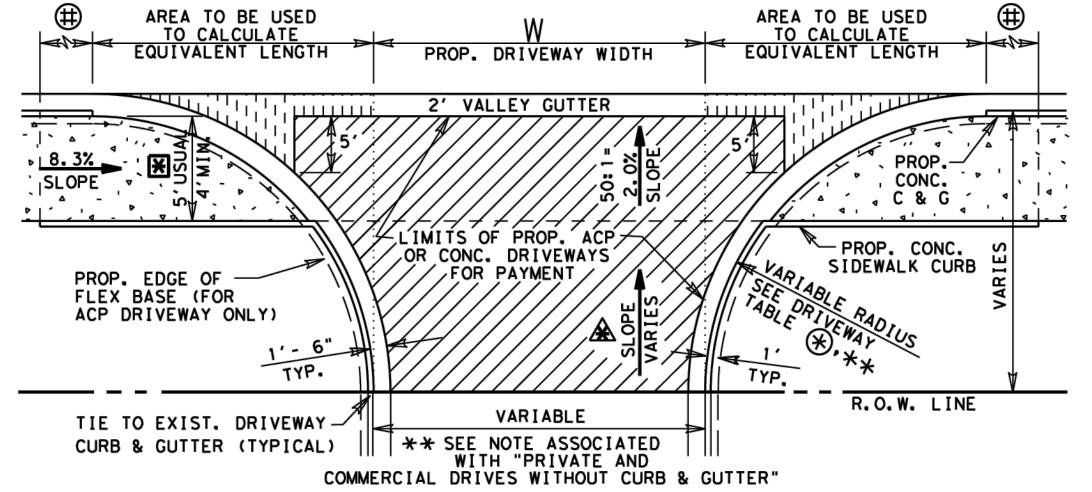


PLAN OF PRIVATE AND COMMERCIAL DRIVES

** FOR PRIVATE RESIDENTIAL DRIVES, TRY TO MATCH EXISTING WITH A MINIMUM WIDTH OF 12 FT. AND A MAXIMUM WIDTH OF 24 FT. WITH 15 FT. USUAL RADIUS. FOR COMMERCIAL DRIVES, USE ABOVE COMMERCIAL DRIVEWAY DETAILS.

AR SEE TYPICAL DRIVEWAY SECTIONS NOTES FOR DRIVEWAY SLOPE CRITERIA.

PRIVATE AND COMMERCIAL DRIVES WITH CURB & GUTTER



PLAN OF PRIVATE AND COMMERCIAL DRIVES SEE P&P SHEETS FOR LOCATIONS OF DRIVES

PROP./FUTURE CONC. SIDEWALK LOCATION UNLESS SHOWN ELSEWHERE ON P&P SHEETS. REFER TO STATE STANDARDS - PEDESTRIAN FACILITIES - FOR ADDITIONAL REQUIREMENTS.

LIMITS OF SLOPE FOR PROP. CONC. CURB BASED ON 8.3% SLOPE FOR SIDEWALK.

SEE TYPICAL DRIVEWAY
SECTIONS NOTES FOR
DRIVEWAY SLOPE
CRITERIA.

LF EQUIVALENT TABLE FOR PAYMENT LIMITS OF 2' VALLEY GUTTER

CUT TO THE LIMITS OF

REMOVAL WHERE APPLICABLE.

LF OF VAL	LEY GUTTER= W + X1 + X2						
WHERE X1 AND X2 MAY VARY DEPENDING ON RADIUS							
Prop. Driveway Radius	X1 Or X2 (Sq Ft Area / 2') Equivalent LF Length						
5 <i>'</i>	1						
8′	2						
10′	4						
12'	6						
15′	9						
18′	12						
20′	15						
22′	18						
25′	24						
28′	30						
30′	34						

SEE DRIVEWAY TABLE FOR LIMITS
OF LAID DOWN CURB TO BE PAID
FOR AS CURB AND GUTTER

DRIVEWAY TYPES

TY PB-1

EXIST. PRIVATE OR COMMERCIAL DRIVEWAYS TO BE CONSTRUCTED AS SHOWN WITH 4" NEW AND/OR SALVAGE FLEX. BASE, PRIMED AND SURFACED WITH 171#/SY ACP. (HMA-D PG 64-22 SAC B MEETING ITEM 340)

CONCRETE (RESIDENTIAL)

EXIST. PRIVATE DRIVEWAYS TO BE CONSTRUCTED AS SHOWN WITH 4" CONCRETE. TO BE PAID FOR BY THE SQ.YD.

CONCRETE (COMMERCIAL)

EXIST. BUSINESS DRIVEWAYS TO BE CONSTRUCTED AS SHOWN WITH 6" CONCRETE. TO BE PAID FOR BY THE SQ.YD.

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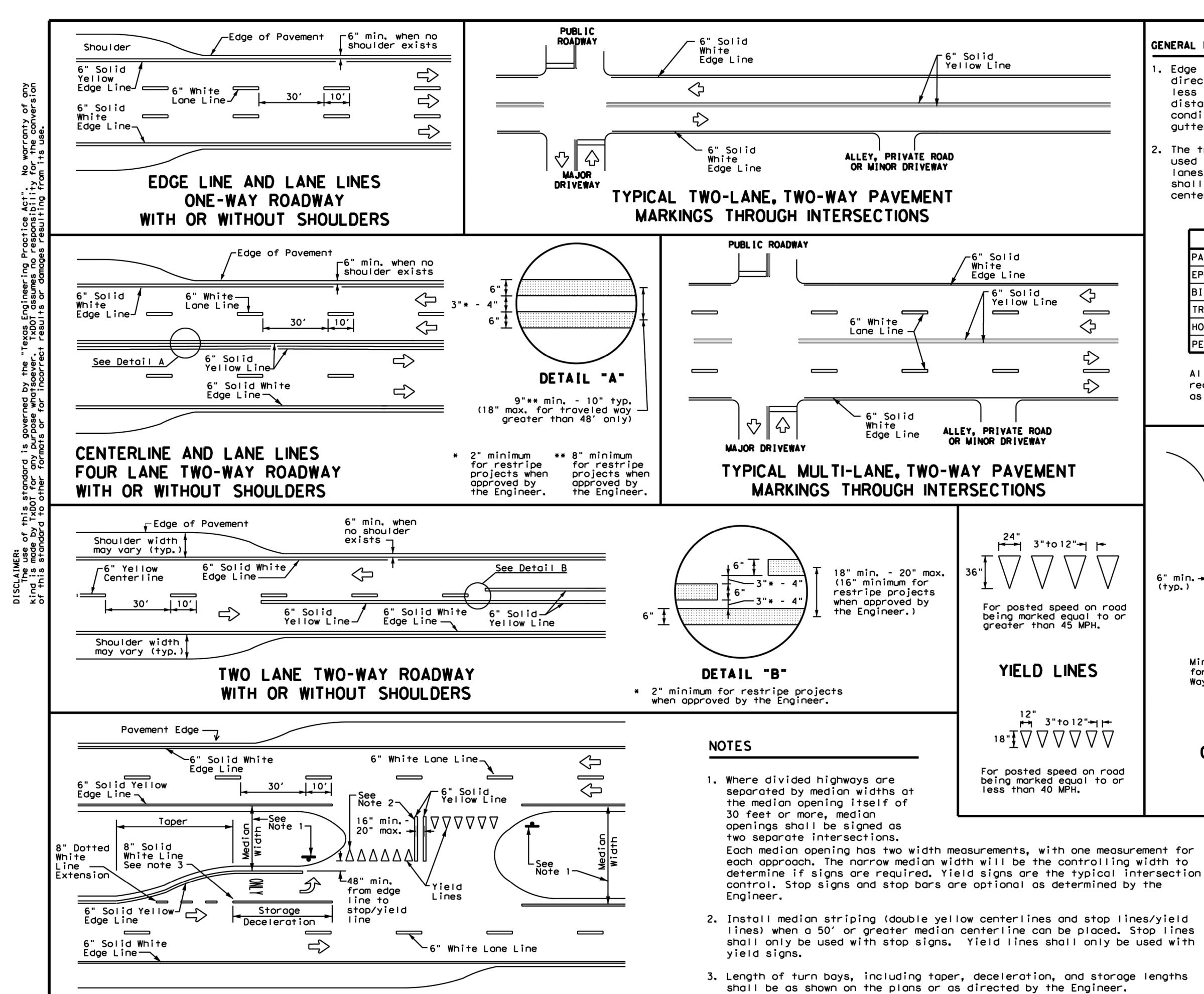
DRIVEWAY DETAILS
PRIVATE
(RESIDENTIAL-COMMERCIAL)

REV. 08/22

FED. RD. PROJECT NO. FILE NO. SHEET NO.

STATE DIST. NO. COUNTY CONT. SECT. JOB HIGHWAY NO.

TEXAS 21



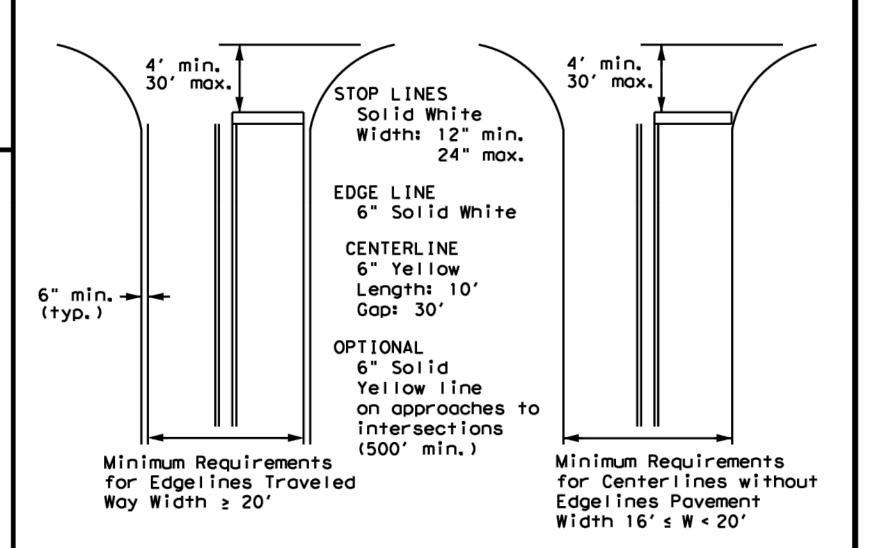
FOUR LANE DIVIDED ROADWAY CROSSOVERS

GENERAL NOTES

- 1. Edge line striping shall be as shown in the plans or as directed by the Engineer. The edge line should not be placed less than 6 inches from the edge of pavement. This distance may vary due to pavement raveling or other conditions. Edge lines are not required in curb and gutter sections of roadways.
- 2. The traveled way includes only that portion of the roadway used for vehicular travel. It does not include the parking lanes, sidewalks, berms and shoulders. The traveled ways shall be measured from the center of edge line to the center of edge line of a two lane roadway.

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200
EPOXY AND ADHESIVES	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130
TRAFFIC PAINT	DMS-8200
HOT APPLIED THERMOPLASTIC	DMS-8220
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240

All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



NOTE: Traveled way is exclusive of shoulder widths. Refer to General Note 2 for additional details.

GUIDE FOR PLACEMENT OF STOP LINES. EDGE LINE & CENTERLINE

Based on Traveled Way and Pavement Widths for Undivided Roadways



Texas Department of Transportation

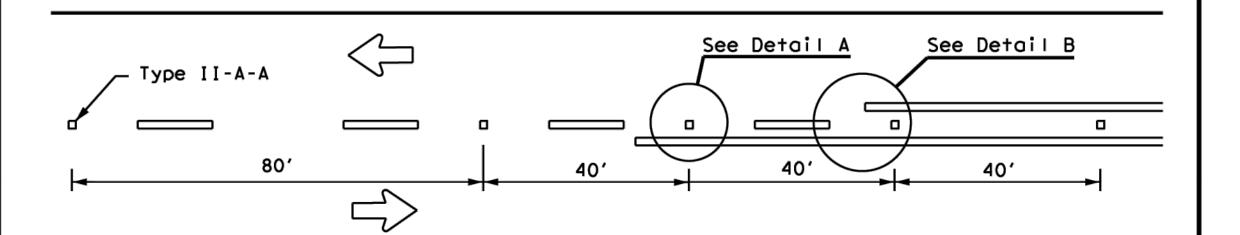
Safety Division

Standard

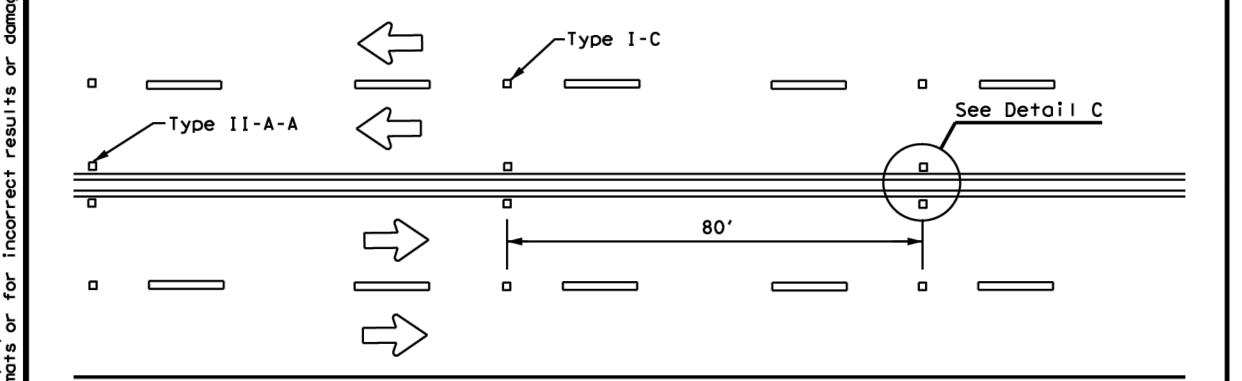
PM(1)-22 pm1-22.dgn CONT SECT REVISIONS

TxDOT December 2022 HIGHWAY 11-78 8-00 6-20 DIST SHEET NO 8-95 3-03 12-22 COUNTY 5-00 2-12 22A

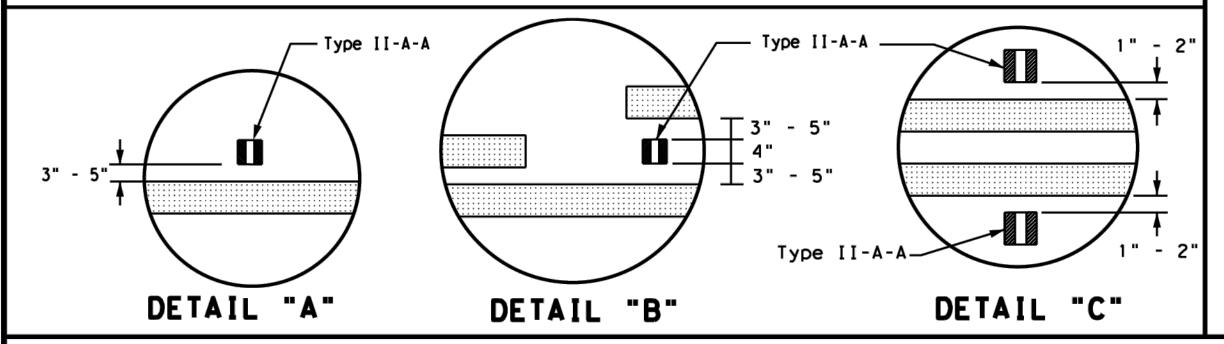
REFLECTIVE RAISED PAVEMENT MARKERS FOR VEHICLE POSITIONING GUIDANCE



CENTERLINE FOR ALL TWO LANE TWO-WAY ROADWAYS

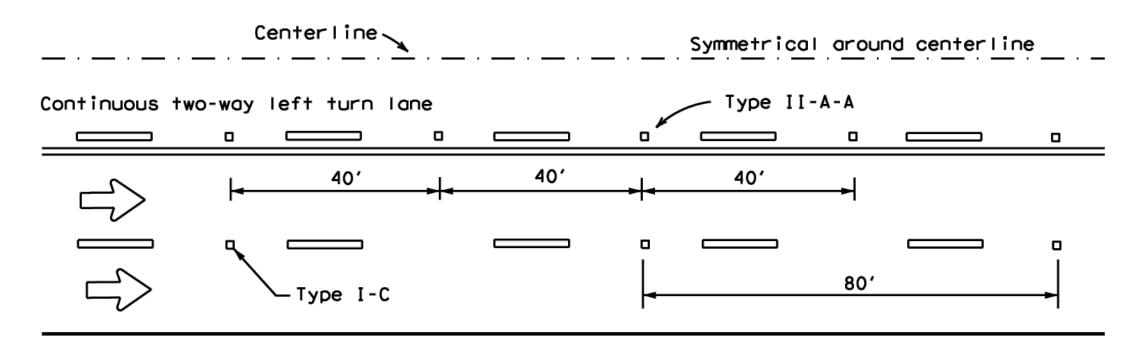


CENTERLINE & LANE LINES FOR FOUR LANE TWO-WAY ROADWAYS

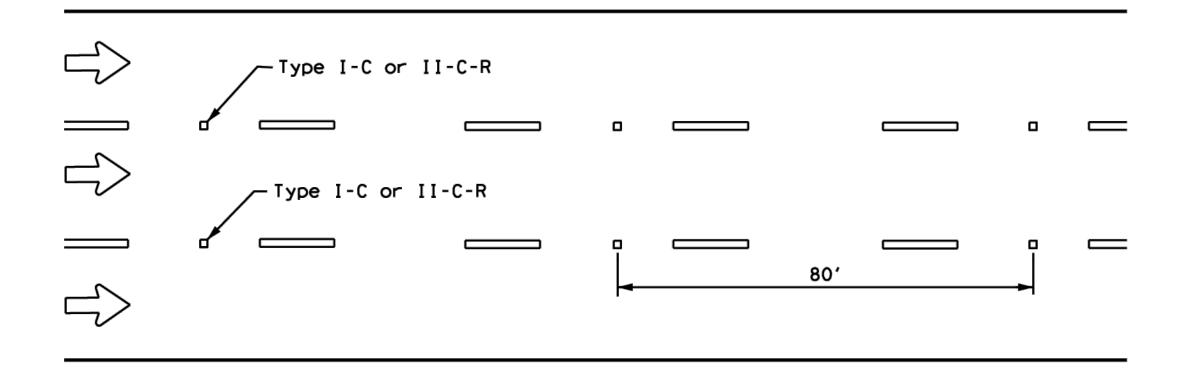


OR 6" LANE LINE

DISCLAIM The kind is



CENTERLINE AND LANE LINES FOR TWO-WAY LEFT TURN LANE



LANE LINES FOR ONE-WAY ROADWAY (NON-FREEWAY FACILITIES)

Raised pavement markers Type II-C-R shall have clear face toward normal traffic and red face toward wrong-way traffic. See Note 3.

2. Profile markings shall not be placed

of 45 MPH or less.

on roadways with a posted speed limit

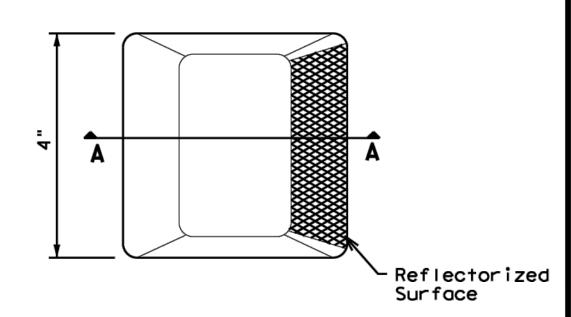
CENTER OR EDGE LINE (see note 1) BROKEN LANE LINE _300 to 500 mil in height 18"<u>+</u> 1" A quick field check for the thickness of base line and profile marking is approximately equal to a stack of 5 REFLECTORIZED PROFILE quarters to a maximum height of 7 quarters. PATTERN DETAIL 2 to 3"—► NOTES USING REFLECTIVE PROFILE PAVEMENT MARKINGS 1. Edge lines should typically be 6" wide and the materials shall be specified in the plans. 6" EDGE LINE, 6" CENTERLINE

GENERAL NOTES

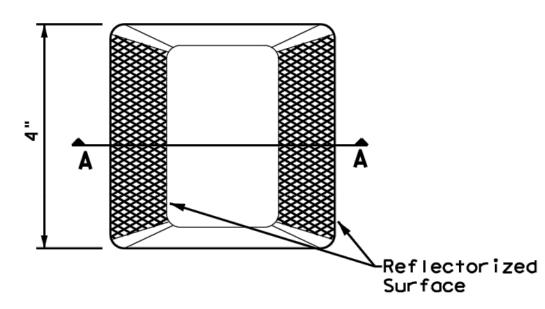
- All raised pavement markers placed along broken lines shall be placed in line with and midway between the stripes.
- On concrete pavements, the raised pavement markers should be placed to one side of the longitudinal joints.
- 3. Use raised pavement marker Type I-C with undivided roadways, flush medians, and two way left turn lanes. Use raised pavement marker Type II-C-R with divided highways and raised medians.

MATERIAL SPECIFICATIONS						
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200					
EPOXY AND ADHESIVES	DMS-6100					
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130					
TRAFFIC PAINT	DMS-8200					
HOT APPLIED THERMOPLASTIC	DMS-8220					
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240					

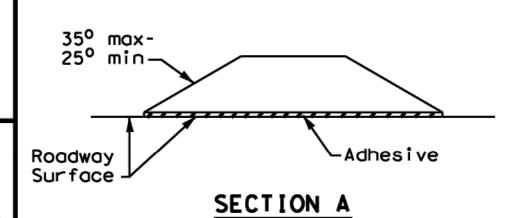
All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



Type I (Top View)



Type II (Top View)



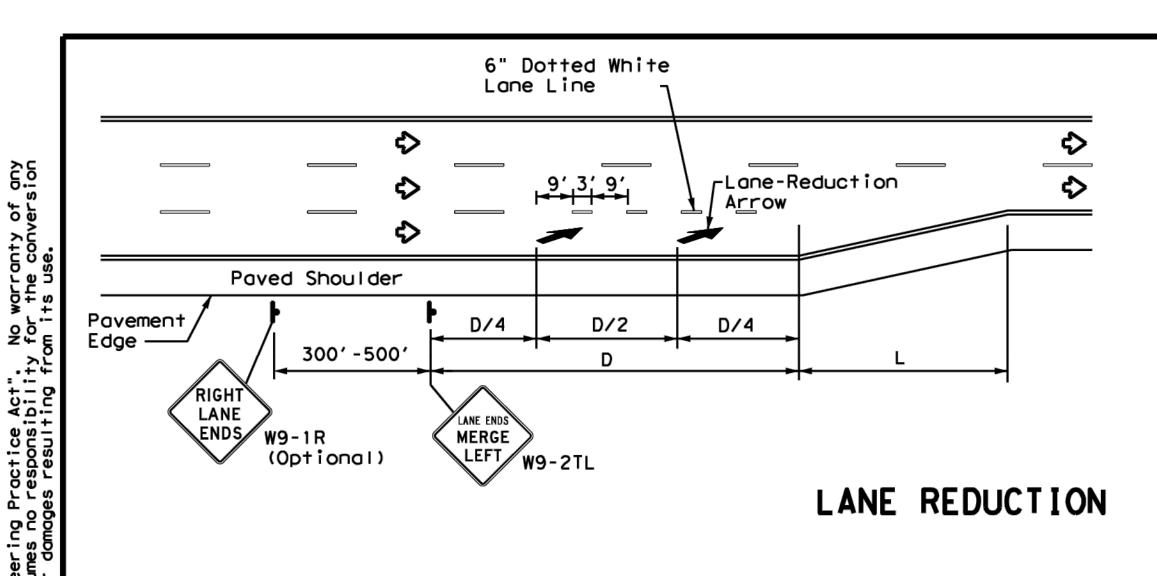
RAISED PAVEMENT MARKERS



POSITION GUIDANCE USING RAISED MARKERS REFLECTORIZED PROFILE MARKINGS PM(2)-22

FILE: pm2-22.dgn	DN:		CK:	DW:		CK:
© TxDOT December 2022	CONT	SECT	JOB		ніс	SHWAY
REVISIONS 4-77 8-00 6-20						
4-92 2-10 12-22	DIST		COUNTY		5	SHEET NO.
5-00 2-12						

22B



Varies (See general Note 2)

SEE DETAIL B

SEE DETAIL A

CROSS STREET NON-SIGNALIZED

MINOR E-WAY,

NOTES

- 1. Lane reduction pavement markings are used where the number of through lanes is reduced because of narrowing of the roadway or because of a section of on-street parking in what would otherwise be a through lane. For Texas Super 2 Passing Lanes, see TS2(PL) standard sheets.
- On divided highways, an additional RIGHT LANE ENDS (W9-1R) sign may be installed in the median aligned with the W9-1R sign on the right side of the highway.
- 3. Lane reduction arrows are required for speeds of 45 mph or greater. An optional third lane reduction arrow may be added based on engineering judgement. If used, the optional third lane reduction arrow should be centered between the first and last lane reduction arrows.
- For lane reductions on Freeways and Expressways, signing shall conform to the TxDOT Freeway Signing Handbook.

	ADVANCED WARNING SIGN DISTANCE (D)						
Posted Speed	D (ft)	L (ft)					
30 MPH	460	wc2					
35 MPH	565	$L = \frac{WS^2}{60}$					
40 MPH	670	00					
45 MPH	775						
50 MPH	885						
55 MPH	990						
60 MPH	1,100	L=WS					
65 MPH	1,200						
70 MPH	1,250						
75 MPH	1,350						

Type II-A-A Markers-

A two-way left-turn (TWLT) lane-use arrow pavement marking should be used at or just downstream from the beginning of a two-way left-turn lane within a corridor. Repeating the marking after each intersection or dedicated turn bay is not required unless stated elsewhere in the plans.

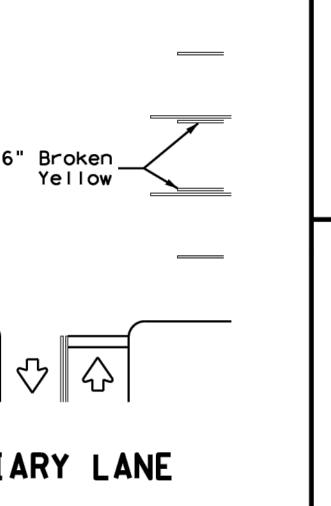
TYPICAL TRANSITION FOR TWLTL AND DIVIDED HIGHWAY

GENERAL NOTES

- 1. Lane use word and arrow markings shall be used where through lanes approaching an intersection become mandatory turn lanes. Lane use word and arrow markings should be used in auxiliary lanes of substantial length. Lane use arrow markings or word and arrow markings may be used in other lanes and turn bays for emphasis. Details for words and arrows are as shown in the Standard Highway Sign Designs for Texas.
- 2. When lane-use words and arrow markings are used, two sets of arrows should be used if the length of the bay is greater than 180 feet. When a single lane use arrow or word and arrow marking is used for a short turn lane, it should be located at or near the upstream end of the full-width turn lane.
- Use raised pavement marker Type I-C with undivided highways, flush medians and two way left turn lanes. Use raised pavement marker Type II-C-R with divided highways and raised medians.
- 4. Length of turn bays, including taper, deceleration, and storage lengths shall be as shown on the plans or as directed by the Engineer. See Chapter 3 of the Roadway Design Manual for additional information on turning lanes or storage lengths.

MATERIAL SPECIFICATIONS					
PAVEMENT MARKERS (REFLECTORIZED)	DMS-4200				
EPOXY AND ADHESIVES	DMS-6100				
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130				
TRAFFIC PAINT	DMS-8200				
HOT APPLIED THERMOPLASTIC	DMS-8220				
PERMANENT PREFABRICATED PAVEMENT MARKINGS	DMS-8240				

All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.



TYPICAL TWLTL AT ONE-WAY STREET AND RIGHT TURN AUXILIARY LANE

≤ 1 Mile (Auxiliary Lane)

6" Broken

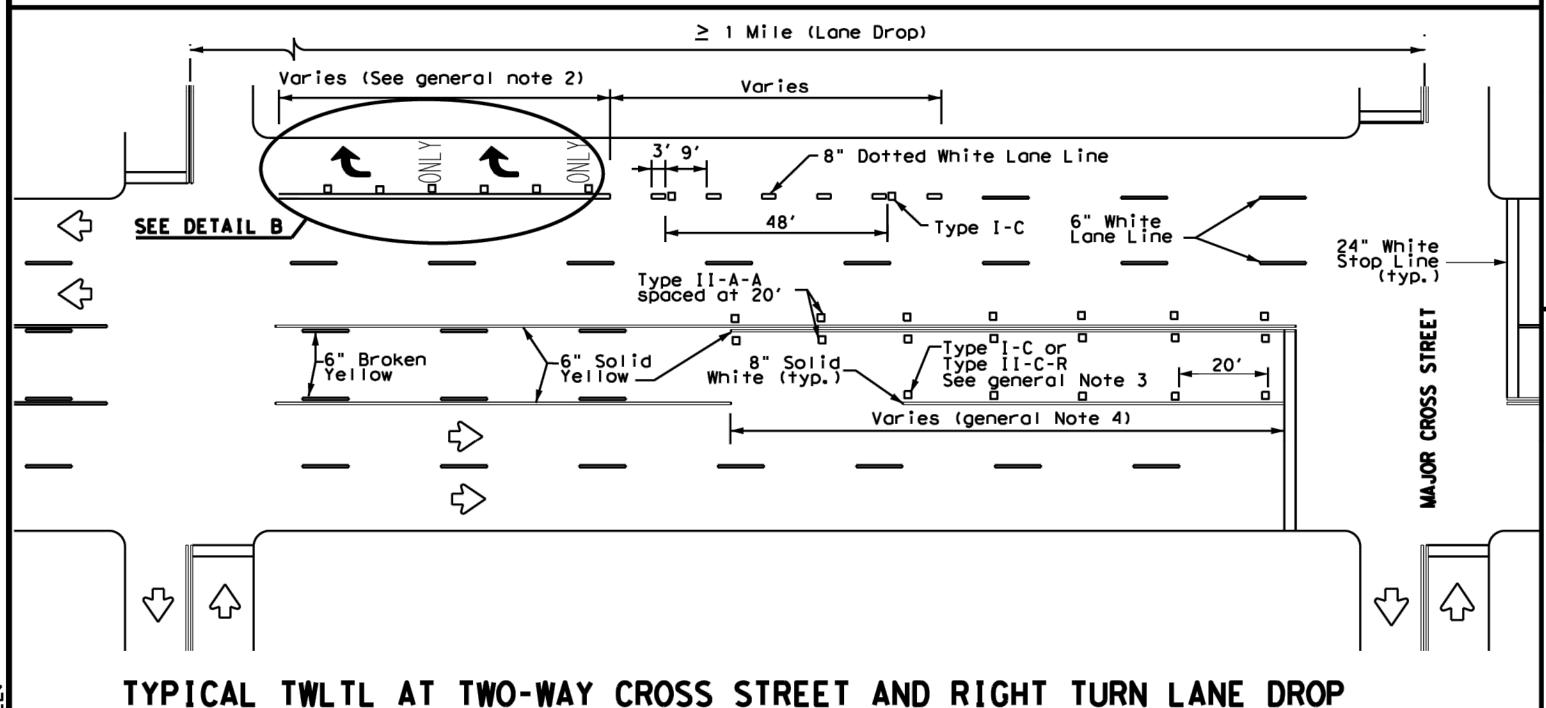
Yellow

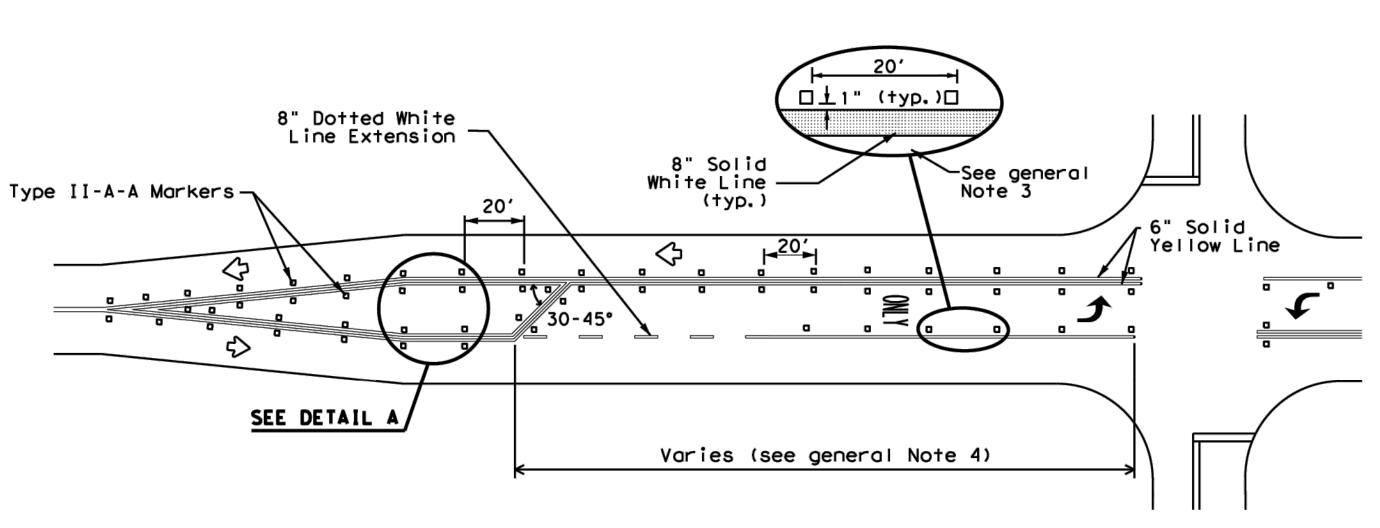
-6" White Lane Line

White Lane Line

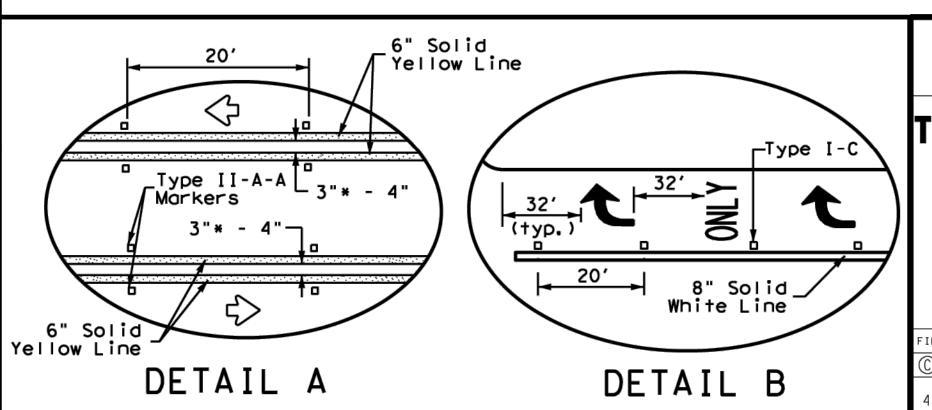
-8" Dotted White Lane Line

-6" Solid Yellow Line





TYPICAL TWO-LANE ROADWAY INTERSECTION WITH LEFT TURN BAYS



* 2" minimum allowed for restripe projects when approved by the Engineer.

Texas Department of Transportation

RURAL LEFT TURN BAYS, AND LANE REDUCTION PAVEMENT MARKINGS

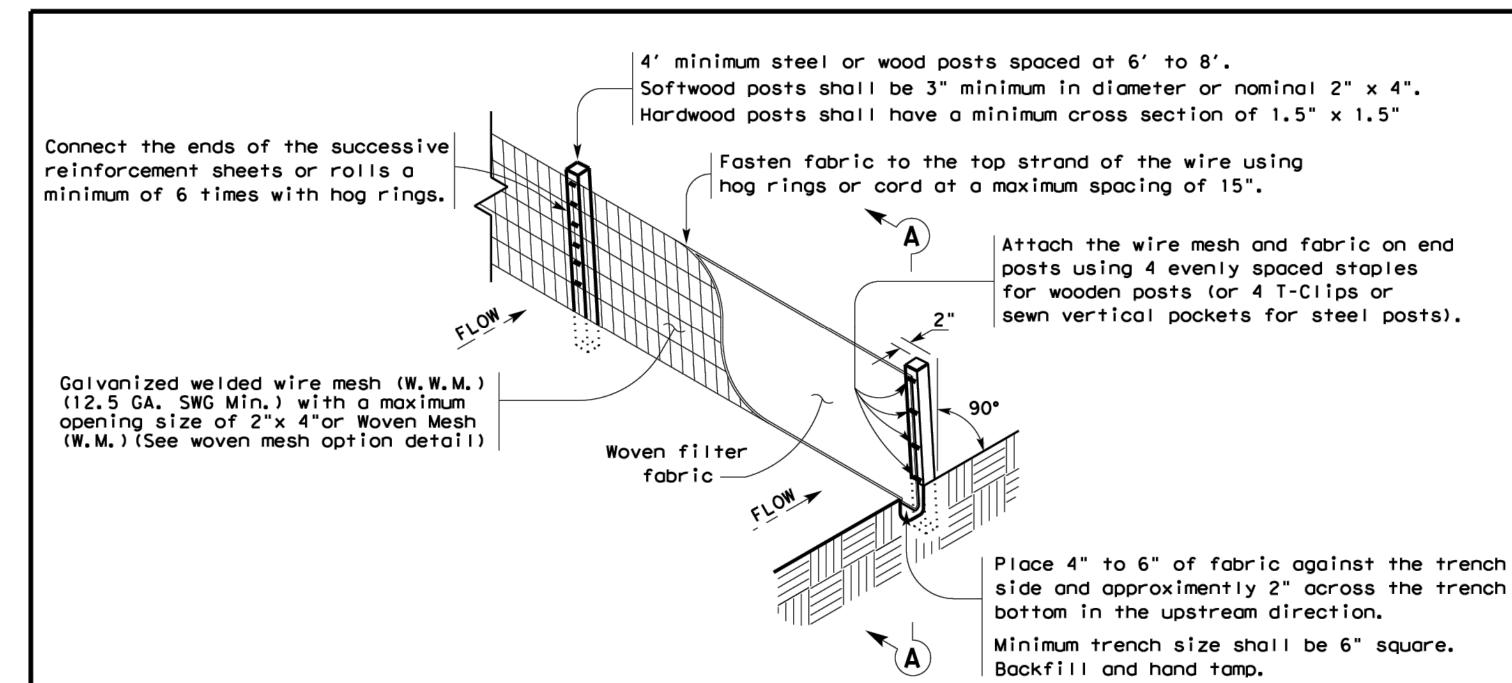
PM(3) - 22

Safety

pm3-22.dgn CONT SECT TxDOT December 2022 4-98 3-03 6-20 DIST SHEET NO 5-00 2-10 12-22 8-00 2-12

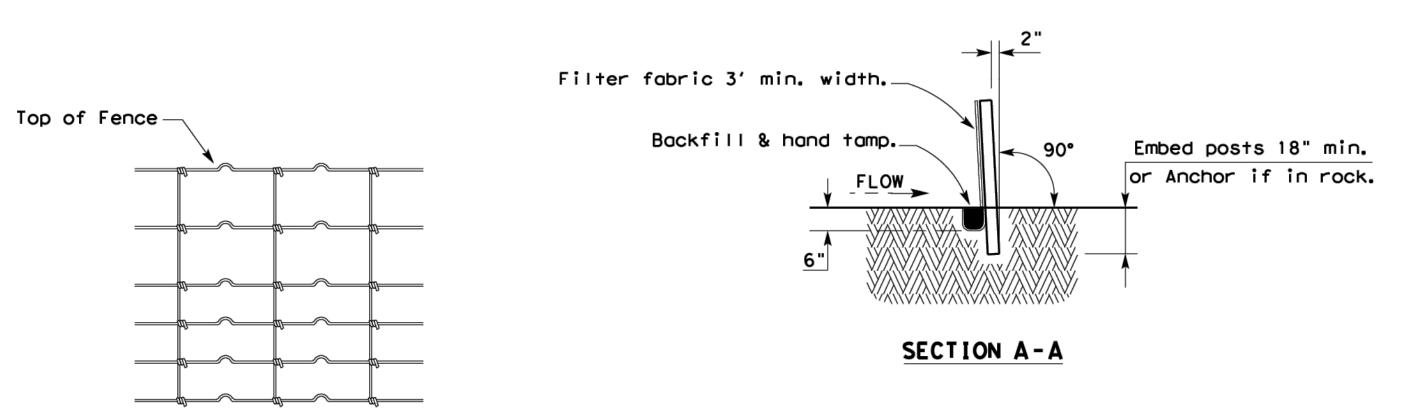
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22C



TEMPORARY SEDIMENT CONTROL FENCE





HINGE JOINT KNOT WOVEN MESH (OPTION) DETAIL

Galvanized hinge joint knot woven mesh (12.5 GA.SWG Min.) requires a minimum of five horizontal wires spaced at a maximum of 12 inches apart and all vertical wires spaced at a maximum of 12 inches apart.

SEDIMENT CONTROL FENCE USAGE GUIDELINES

A sediment control fence may be constructed near the downstream perimeter of a disturbed area along a contour to intercept sediment from overland runoff. A 2 year storm frequency may be used to calculate the flow rate to be filtered.

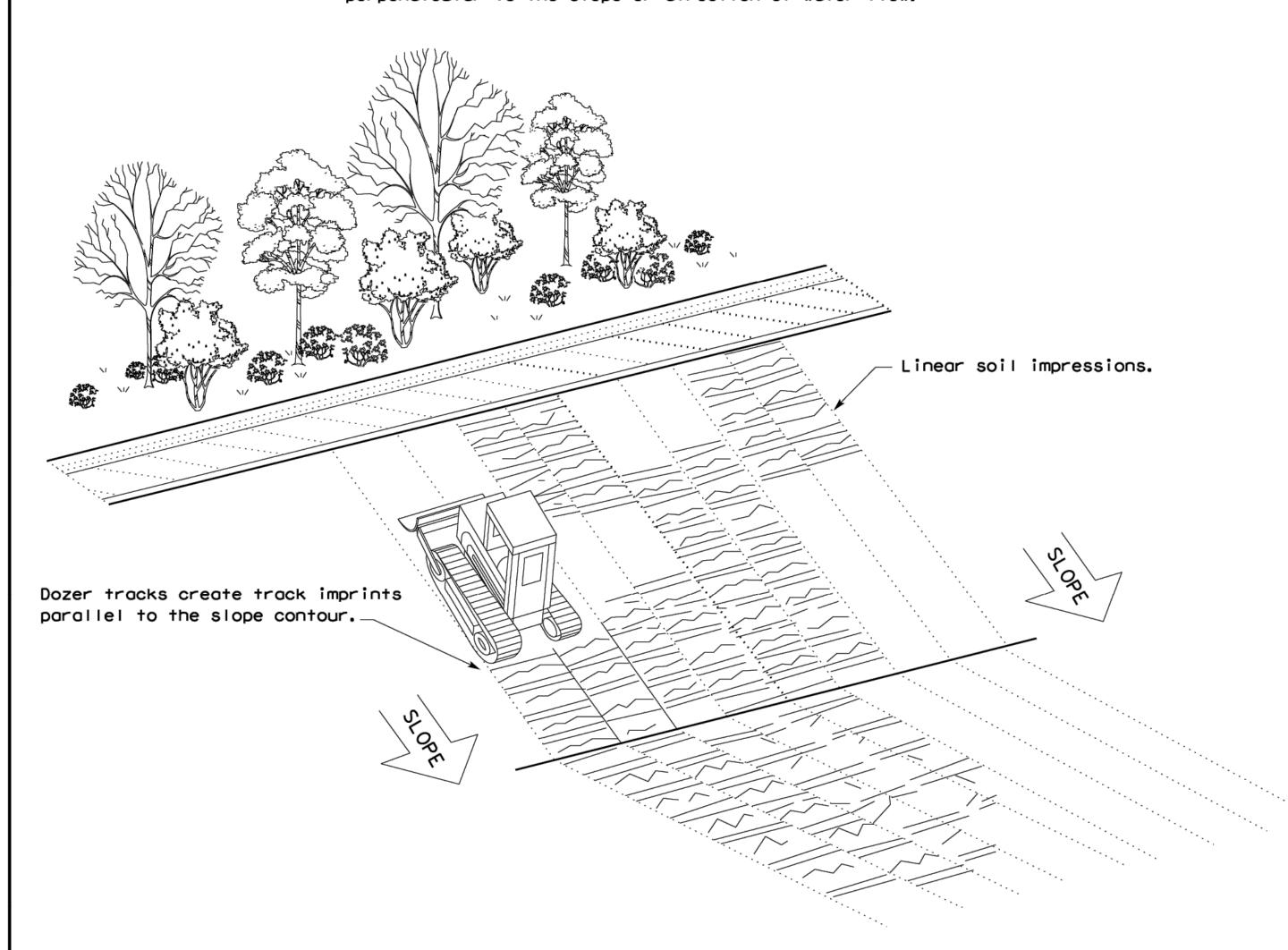
Sediment control fence should be sized to filter a maximum flow through rate of 100 GPM/FT². Sediment control fence is not recommended to control erosion from a drainage area larger than 2 acres.

LEGEND

Sediment Control Fence

GENERAL NOTES

- Vertical tracking is required on projects where soil distributing activities have occurred unless otherwise approved.
- 2. Perform vertical tracking on slopes to temporarily stabilize soil.
- 3. Provide equipment with a track undercarriage capable of producing linear soil impressions measuring a minimum of 12" in length by 2" to 4" in width by 1/2" to 2" in depth.
- 4. Do not exceed 12" between track impressions.
- 5. Install continous linear track impressions where the minimum 12" length impressions are perpendicular to the slope or direction of water flow.



VERTICAL TRACKING



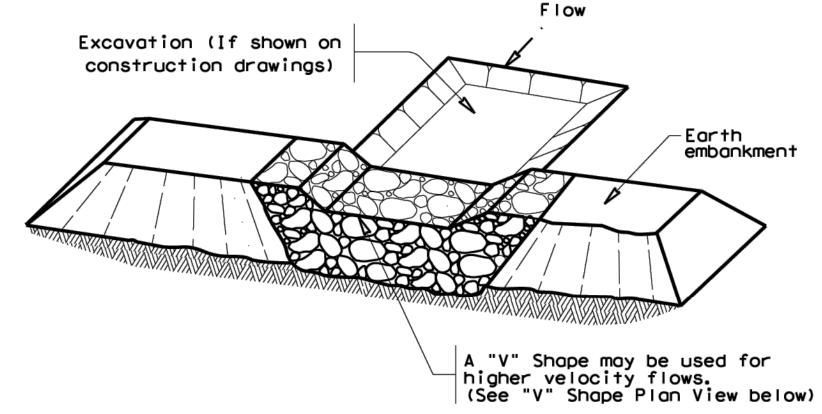
Design Division Standard

TEMPORARY EROSION,
SEDIMENT AND WATER
POLLUTION CONTROL MEASURES
FENCE & VERTICAL TRACKING

EC(1)-16

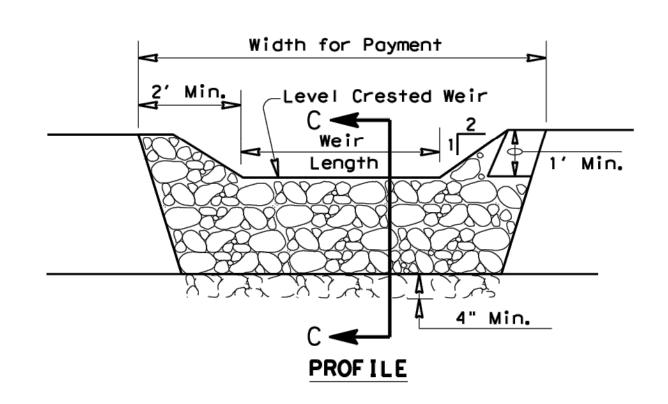
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© TxDOT: JULY 2016	CONT	SECT	JOB	JOB		HIGHWAY	
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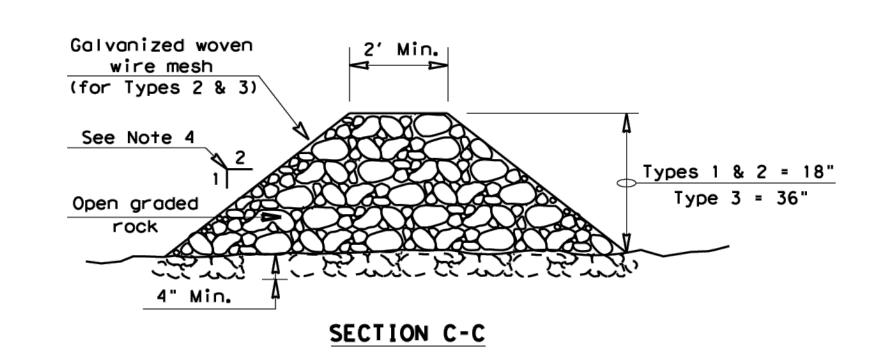
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FILTER DAM AT SEDIMENT TRAP







ROCK FILTER DAM USAGE GUIDELINES

Rock Filter Dams should be constructed downstream from disturbed areas to intercept sediment from overland runoff and/or concentrated flow. The dams should be sized to filter a maximum flow through rate of 60 GPM/FT² of cross sectional area. A 2 year storm frequency may be used to calculate the flow rate.

Type 1 (18" high with no wire mesh) (3" to 6" aggregate): Type 1 may be used at the toe of slopes, around inlets, in small ditches, and at dike or swale outlets. This type of dam is recommended to control erosion from a drainage area of 5 acres or less. Type 1 may not be used in concentrated high velocity flows (approximently 8 Ft/Sec or more) in which aggregate wash out may occur. Sandbags may be used at the embedded foundation (4" deep min.) for better filtering efficiency of low flows if called for on the plans or directed by the Engineer.

Type 2 (18" high with wire mesh) (3" to 6" aggregate): Type 2 may be used in ditches and at dike or swale outlets.

in stream flow and should be secured to the stream bed.

Type 4 (Sack gabions) (3" to 6" aggregate): Type 4 May be used in ditches and smaller channels to form an erosion control dam.

Type 5: Provide rock filter dams as shown on plans.

Galvanized Woven Wire Mesh (for Types 2 & 3) Width for payment SEE NOTE 6 FILTER DAM AT CHANNEL SECTIONS

—— (RFD1)—— OR —— (RFD2)—— OR —— (RFD3)——

GENERAL NOTES

- 1. If shown on the plans or directed by the Engineer, filter dams should be placed near the toe of slopes where erosion is anticipated, upstream and/or downstream at drainage structures, and in roadway ditches and channels to collect sediment.
- 2. Materials (aggregate, wire mesh, sandbags, etc.) shall be as indicated by the specification for "Rock Filter Dams for Erosion and Sedimentation Control".
- 3. The rock filter dam dimensions shall be as indicated on the SW3P plans.
- 4. Side slopes should be 2:1 or flatter. Dams within the safety zone shall have sideslopes of 6:1 or flatter.
- 5. Maintain a minimum of 1' between top of rock filter dam weir and top of embankment for filter dams at sediment traps.
- 6. Filter dams should be embedded a minimum of 4" into existing ground.
- 7. The sediment trap for ponding of sediment laden runoff shall be of the dimensions shown on the plans.
- Rock filter dam types 2 & 3 shall be secured with 20 gauge galvanized woven wire mesh with 1" diameter hexagonal openings. The aggregate shall be placed on the mesh to the height & slopes specified. The mesh shall be folded at the upstream side over the aggregate and tightly secured to itself on the downstream side using wire ties or hog rings. For in stream use, the mesh should be secured or staked to the stream bed prior to aggregate placement.
- 9. Sack Gabions should be staked down with $\frac{3}{4}$ " dia. rebar stakes, and have a double-twisted hexagonal weave with a nominal mesh opening of $2\frac{1}{2}$ " x $3\frac{1}{4}$ "
- 10. Flow outlet should be onto a stabilized area (vegetation, rock, etc.).
- 11. The guidelines shown hereon are suggestions only and may be modified by the Engineer.

PLAN SHEET LEGEND

Type 1 Rock Filter Dam Type 2 Rock Filter Dam

Type 3 Rock Filter Dom

Type 4 Rock Filter Dam



TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES

ROCK FILTER DAMS

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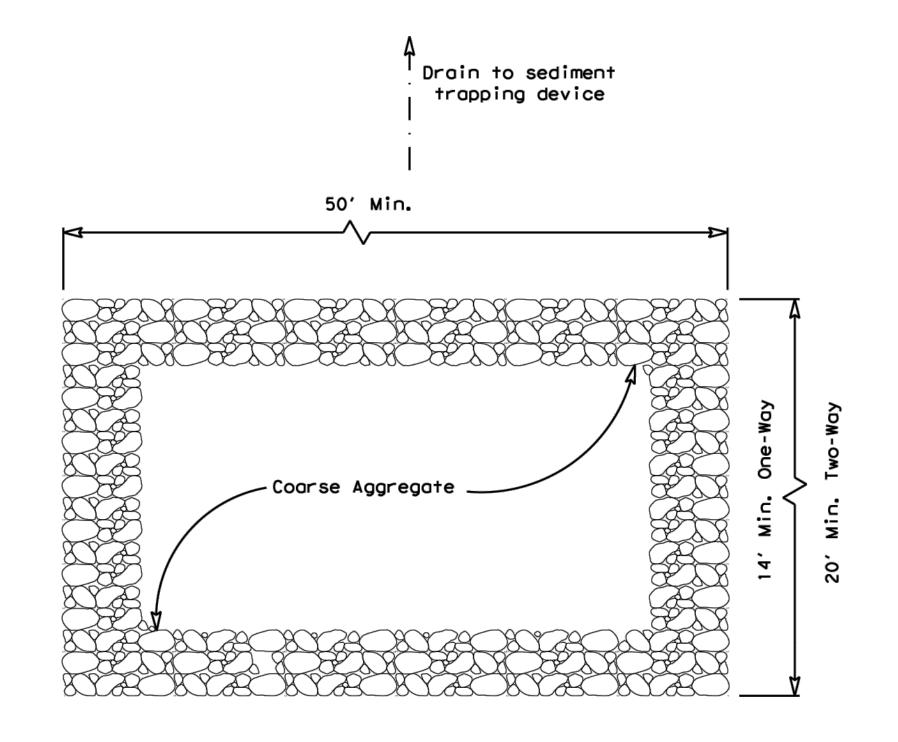
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REVISIONS							
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2' Dia. TYPE 4 (SACK GABIONS) SECTION A-A

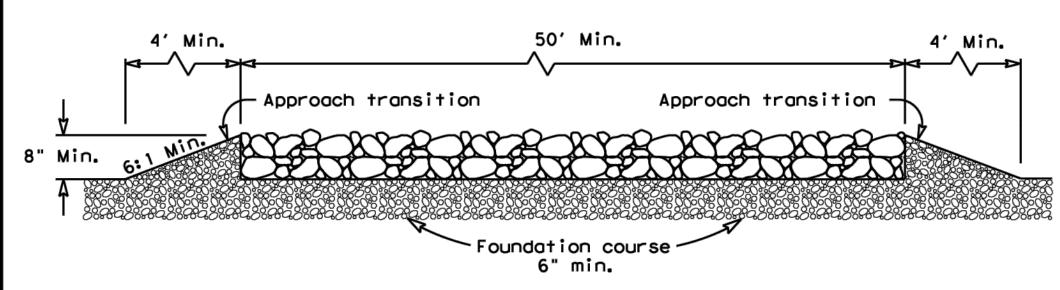
_____RFD4

Type 3 (36" high with wire mesh) (4" to 8" aggregate): Type 3 may be used





PLAN VIEW



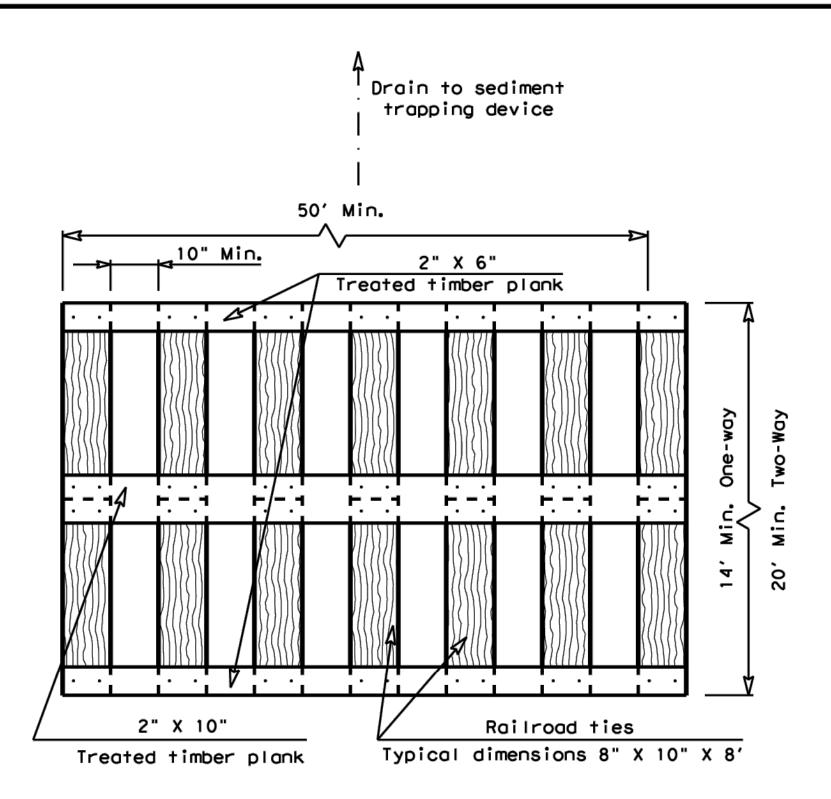
ELEVATION VIEW

CONSTRUCTION EXIT (TYPE 1)

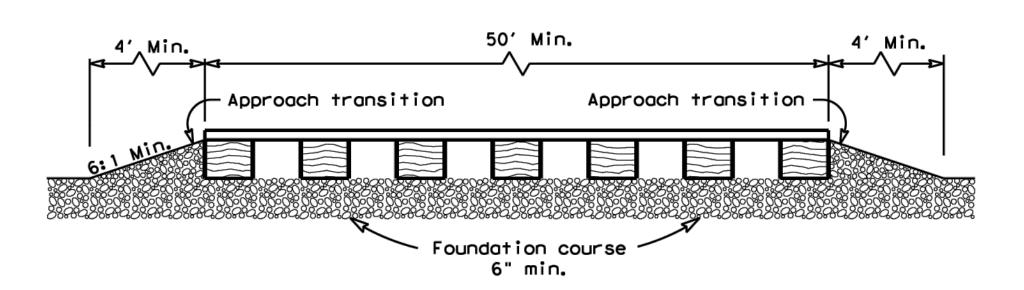
ROCK CONSTRUCTION (LONG TERM)

GENERAL NOTES (TYPE 1)

- 1. The length of the type 1 construction exit shall be as indicated on the plans, but not less than 50'.
- 2. The coarse aggregate should be open graded with a size of 4" to 8".
- The approach transitions should be no steeper than 6:1 and constructed as directed by the Engineer.
- The construction exit foundation course shall be flexible base, bituminous concrete, portland cement concrete or other materialas approved by the Engineer.
- The construction exit shall be graded to allow drainage to a sediment trapping device.
- 6. The guidelines shown hereon are suggestions only and may be modified by the Engineer.
- Construct exits with a width of at least 14 ft. for one-way and 20 ft. for two-way traffic for the full width of the exit, or as directed by the engineer.



PLAN VIEW



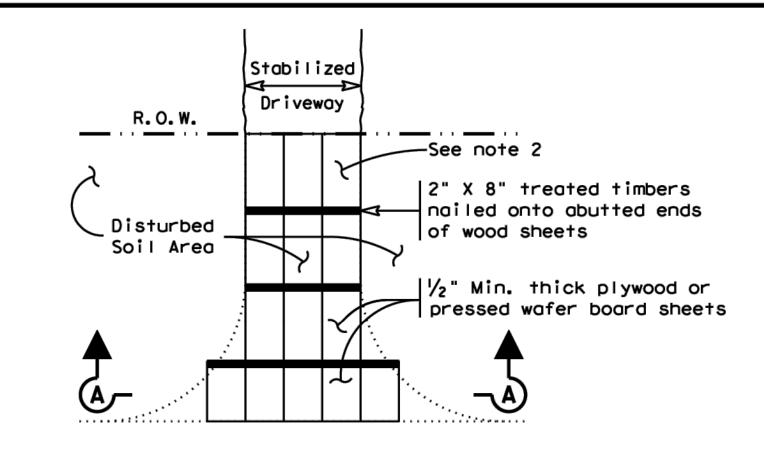
ELEVATION VIEW

CONSTRUCTION EXIT (TYPE 2)

TIMBER CONSTRUCTION (LONG TERM)

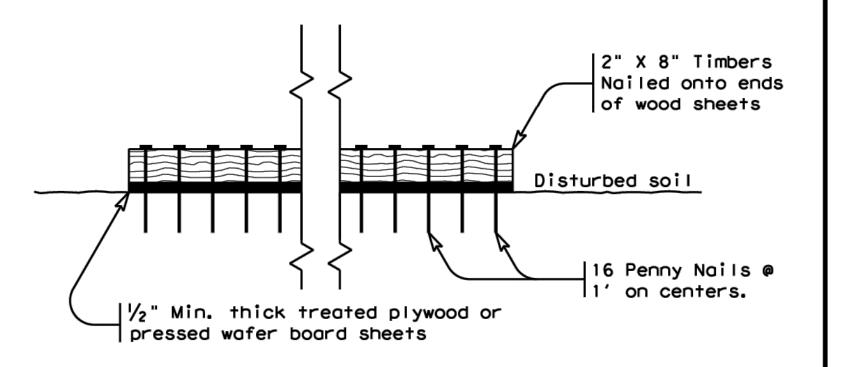
GENERAL NOTES (TYPE 2)

- The length of the type 2 construction exit shall be as indicated on the plans, but not less than 50'.
- 2. The treated timber planks shall be attached to the railroad ties with $\frac{1}{2}$ "x 6" min. lag bolts. Other fasteners may be used as approved by the Engineer.
- The treated timber planks shall be #2 grade min., and should be free from large and loose knots.
- The approach transitions shall be no steeper than 6:1 and constructed as directed by the Engineer.
- The construction exit foundation course shall be flexible base, bituminous concrete, portland cement concrete or other material as approved by the Engineer.
- The construction exit should be graded to allow drainage to a sediment trapping device.
- 7. The guidelines shown hereon are suggestions only and may be modified by the Engineer.
- 8. Construct exits with a width of at least 14 ft. for one-way and 20 ft. for two-way traffic for the full width of the exit, or as directed by the engineer.



Paved Roadway

PLAN VIEW

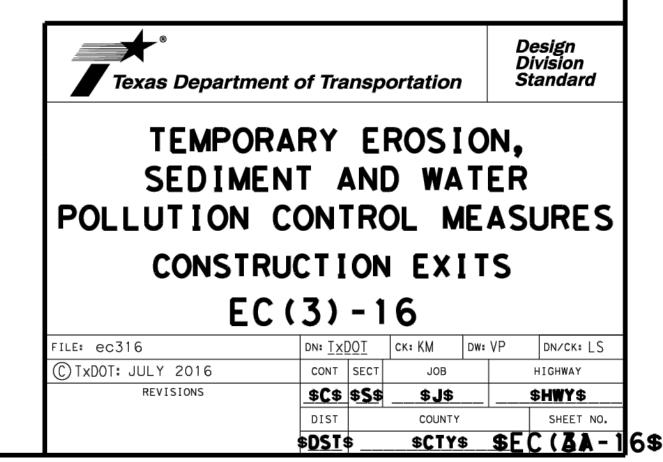


SECTION A-A

CONSTRUCTION EXIT (TYPE 3) SHORT TERM

GENERAL NOTES (TYPE 3)

- The length of the type 3 construction exit shall be as shown on the plans, or as directed by the Engineer.
- 2. The type 3 construction exit may be constructed from open graded crushed stone with a size of two to four inches spread a min. of 4" thick to the limits shown on the plans.
- The treated timber planks shall be #2 grade min., and should be free from large and loose knots.
- 4. The guidelines shown hereon are suggestions only and may be modified by the Engineer.



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